

INDUSTRIAL POLICY ACTION PLAN

ECONOMIC SECTORS AND EMPLOYMENT CLUSTER
IPAP 2014/15 - 2016/17



the dti

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

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FOREWORD BY THE MINISTER OF TRADE AND INDUSTRY Dr Rob Davies MP

It is my pleasure, once again, to make some preface remarks to the sixth annual Industrial Policy Action Plan (IPAP 2014/15 – 2016/17). Looking back over the past five years of the IPAP, we believe we can confidently claim that it has significantly strengthened our industrial policy in the most difficult of times. It has created new platforms, absorbed significant new learning, built capacity and strengthened the partnerships that are critical to successful industrialisation.

We are nevertheless far from content with what has been achieved to date. Significant progress has indeed been made in a number of the IPAP's sectoral and transversal areas of application; but the results have been uneven and much remains to be done to develop greater traction around many IPAP interventions.

This year's IPAP is therefore all about further upping our game: pinpointing where we think policy improvements can be made; how we can achieve more concerted transversal action; and how we can implement sector strategies based on a deeper understanding of sector and company dynamics, with increased consistency and certainty. But the fact that we are into our sixth iteration is also a testament to the degree to which IPAP has become embedded in the policy sphere and woven into the fabric of the South African development project.

The year 2014 will open up new platforms for action mandated by the incoming administration. At the same time as responding to these, IPAP should remain focussed on continuous improvement of the instruments that have been painstakingly and transparently developed over the past six years. These include: continuing to build the capacity required to analyse, coordinate and implement effective programmes underpinned by sound research; forging strong partnerships and stakeholder engagement; rigorous programme oversight; and open-minded 'discovery' with respect to what works and what does not.

Evidence, consultation, listening, doing

As we have noted before, Government industrial policy interventions on their own, in isolation from the actions of all the stakeholders who have an investment in our democratic future, are not enough. Confronting the many challenges that undermine our economy requires a disciplined and principled joint effort on the part of all the state agencies and social partners. It requires unconditional respect for rigorous, evidence-based argument, matched by an equal willingness to listen to 'ordinary' voices that speak to us from beyond the normal comfort zones of theoretical and media debate. In the same vein, we need to be constantly wary of all 'big' economic narratives - especially those that present themselves as 'authoritatively binding' accounts of reality - always subjecting them to close scrutiny and a healthy dose of scepticism. Global experience has shown that yesterday's commanding economic orthodoxies can become today's failed projects, especially where country-specific context and dynamics are not properly factored in.

We at **the dti** are committed to doing everything in our power to contribute towards securing a collective social agenda that will allow us to address South Africa's most pressing developmental challenges with renewed urgency and decisiveness. This means, for us, first and foremost tackling the unacceptable levels of poverty, economic exclusion and inequality that continue to hurt millions of our people, disfigure our country and undermine its future security. We see no necessary contradiction between economic growth and development and social rights; and our approach to industrial development means never losing sight of our constitutional mandate to contribute towards building an inclusive values- and rights-based economy and society.

Government must listen and engage, up and down the social spectrum, whilst continuously pushing for optimal policy coherence - within government, between departments and across the full range of stakeholders and social partners. That is why all the IPAP Key Action Programmes take the form of quarterly, sequenced and monitored multi-stakeholder interventions subject to rolling annual review. It is also why progress on the implementation and impact of key IPAP programmes (in, for example, areas like Business Process Services and the Automotive Production and Development Programme) is so tightly monitored and is subjected to major impact evaluations at regular intervals by independent, expert service providers.

Finally, it is why the IPAP pays such consistent attention to identifying the economy-wide constraints that stand in the way of more rapid progress on a wide range of fronts; and why it continuously identifies and speaks to newly emergent opportunities as they present themselves, making the case for those it believes should be vigorously pursued.

The IPAP continues to proceed by taking full cognisance of international developmental 'success stories', whilst maintaining a strong, creative and nuanced alignment with the broad vision of the National Development Plan (NDP) and the main drivers of the New Growth Path (NGP). Building on these foundations, we fully expect the IPAP to play an increasingly sophisticated and determinant role in South Africa's ongoing development, with a consistent focus on growing the dynamism, competitiveness and labour-absorbing capacity of the manufacturing sector, especially in the traditional and non-traditional tradable and value-adding sectors of the economy.

It is important once again to stress that IPAP is predicated on the state defending, supporting, and nurturing the manufacturing sector. The state exercises leadership by 'steering but not rowing'. Thus IPAP identifies a complex range of complementary, interlocking policies that require alignment, and in some areas - such as aspects of macro policy - subordination to industrial policy.

Chief amongst the issues to be tackled going forward must be a substantial reduction of the current account deficit, through a combination of expanded exports and replacement of imports - particularly in the value-added and more labour-intensive sectors with high trade deficits.

The global scene

The SA manufacturing sector has largely weathered the Great Recession triggered by the financial crisis of 2007-2009, albeit with some damage to the diversity and sustainability of the sector. However, many threats and constraints remain to be confronted: most significantly, on the international front, a continuing inertia associated with the slow, hesitant and uneven recovery of the global economy; on the domestic front, the ongoing negative impact of sharply escalating administered prices and a turbulent industrial relations environment.

Strong fiscal expansionary policies in major developed economies have not succeeded in fostering credit creation or significantly strengthening aggregate demand, especially in SA's major trading partners, the EU and US, where depressed demand continues to hurt SA exports and is expected to remain sluggish.

At the same time, the commodity super-cycle that spawned high prices for mineral commodities is over; and a major structural shift is under way in the global economy, characterised by persistent negative and slow growth in the developed economies and by sustained, but diminished growth in the developing and transition economies. These latter economies are of necessity moving away from an exclusive focus on export-led growth and are placing more emphasis on domestic demand – not least in China, which is making rapid structural change up the value chain.

There is good reason for this generalised change of direction. In our view – and that of many others – there is now a formidable body of evidence to suggest that:

- i. Growth strategies relying exclusively on primary or low value-added exports must sooner or later reach their limits – particularly when many countries pursue them at the same time.
- ii. Competition among economies based on low unit labour costs and taxes leads to a race to the bottom, with few development gains but potentially disastrous social consequences. At the present juncture, where growth of demand from developed countries is expected to remain weak for a protracted period of time, the limitations of such a growth strategy are becoming ever more obvious.
- iii. Therefore - as has been consistently argued in successive iterations of IPAP - a rebalancing of the drivers of growth is indispensable, with full weight given to domestic demand and a much more robust South-South orientation.

On this platform, we need to intensify our focus on export expansion into the rest of the African continent, taking advantage of continuing higher rates of growth than in many other regions of the global economy, Deepening our trade and regional integration linkages with the rest of Africa makes very good sense given geographical proximity, the logistical linkages that are already in place and the existence of a range of economic sectors with good potential to match up with SA's productive capabilities.

Keeping afloat in a high-tech digitised world

Furthermore, uncertain as the global economic recovery may be, technological change continues at breakneck speed. It is already common cause that we have entered a new wave or 'second machine age' driven by additive manufacturing; exponential progress in computing, telecommunications and digital access to knowledge; composite and new materials; and the drive for energy efficiency and climate change mitigation.

It is critically important that SA manufacturing remains in touch with these new frontiers, energetically leveraging their potential to drive up productivity, competitiveness and employment creation.

This necessitates an ever-closer relationship between government departments such as **the dti** and DST, the private sector and universities and research and development (R&D) institutions. It also means that government must up the pace in developing the policy instruments required for technology acquisition, innovation support and commercialisation of home-grown new technologies; and must do so in a manner attuned to SA's competitive advantages and opportunities.

On the climate change front, our view is that great caution must be exercised to ensure that emergent carbon mitigation policy interventions and environmental regulation - including the proposed carbon tax - are carefully sequenced and calibrated, taking into account the concrete circumstances of the most vulnerable sectors, so that important domestic capabilities are not destroyed and jobs lost in the process.

The challenge of shale gas

Natural gas currently makes up only 3% of the total primary energy mix in South Africa. The preliminary identification of massive reserves of shale gas - currently estimated at possibly as large as 485 trillion cubic feet - which would, if proven to be correct, make it the fifth largest shale gas field in the world - presents SA with a very important opportunity to lower the cost of energy, especially for the production sectors of the economy and for working families.

This means that both the exploration and exploitation of this potential windfall must be carried forward within the framework of a programme that is both environmentally sustainable and at the same time maximises the upstream and downstream linkages that will need to be built.

This is in line with one of the central tenets of the beneficiation approach set out in the previous IPAP (and the first Action Plans for which are now set out in IPAP 2014-2016.) This is the principle that SA must leverage its enormous resource endowment as a competitive global advantage for its manufacturing sector, whatever the difficulties associated with so called resource-based industrialisation, if we are not to further deepen the very growth path of dependence on primary commodity export from which we are trying so hard to escape.

The nuts and bolts of manufacturing: towards a deeper knowledge

Mindful of these considerations, there is an associated 'internal' challenge to be met: developing a much better understanding of the structure and dynamics of key sectors of domestic manufacturing, down to company level. The trick is not to pick winners in advance, but to identify and engage with proven and emergent strong performers, providing them with the support they need to become even more competitive. This requires a strong emphasis on stimulating industrial/manufacturing clusters and associated upstream and downstream value-chain linkages; supporting integration into global value chains; imposing binding (export or domestic) performance criteria; and driving enhanced competitiveness across the economy as a whole.

We need to know our home turf in detail. Continuous improvement of industrial policy must ensure a qualitative transitional shift from generalised sector knowledge to a more intimate understanding of - and year-round engagement with - specific sub-sectors, industry associations and individual firms.

SA must develop a smarter, more focused and nuanced export strategy that strongly supports competitive winners and leverages our resource endowments and technical/scientific capabilities. Taking account of the serious and persistent negative balance on the trade account and mindful of both the sectors and companies that are doing well, especially with respect to new markets in Africa and elsewhere, we need a process to better identify key export-oriented firms and support and reward them with conditional incentives, increased industrial financing and export promotion assistance.

At the same time, the search for new export markets must be accompanied - and, indeed be co-dependent upon - a strongly enhanced focus on stimulating and growing aggregate domestic demand. This must include consolidation of the key instruments already in place: infrastructure development, designation and local procurement, plus selected trade measures. Support for local manufacturing as a whole should also seek to create and strengthen dynamic linkages between the production and services sectors of the economy.

Strengthening and focusing industrial finance

Mobilising industrial finance is crucial. We must make further and more rapid progress towards ensuring that SA's industrial financing, across all DFIs, is better designed, more coherently aligned and more competitive in relation to our peer middle-income countries, with an optimal mix of public and private sector financing. State and private capital co-operation must increasingly complement one another if we are to achieve the levels of investment in the production sectors that is required. Specifically, immediate attention needs to be given to:

- strengthening of conditionalities of industrial financing instruments, taking due care not to disrupt the flow of industrial financing;
- Improving the coherence of the industrial financing system particularly as between on-budget **dti** incentives and funding flows from the IDC and the Export Credit Insurance Corporation (ECIC).

Leveraging procurement and supplier development

The experience gained and platforms already built have opened the door for a step-change in the implementation of local procurement and supplier development across all state agencies. National Treasury is currently leading a multi-departmental review of procurement policy and practice, which will secure greater value for money and wider economic benefits. This should include securing deeper compliance with localisation instruments and building capacity in procurement agencies to roll out effective strategic sourcing and supplier development programmes.

Further progress and consolidation of public procurement support for manufacturing is critical - especially where these measures are fiscally neutral, with wide economic multipliers and benefits.

Getting these measures right – and beginning to see clear evidence of their beneficial impact - should provide a stronger basis for persuading large private sector companies that local procurement and strategic sourcing are not only in the national interest but that, in many instances, can make sound commercial sense - particularly if security of supply, quality standards and cost of lifecycle (rather than purchase cost) are taken into account.

The big picture

To achieve and consolidate the objectives we have been discussing, new platforms will need to be continuously built to strengthen existing stakeholder engagement and deepen trust and cooperation between government, the private sector and organised labour. We warmly invite all stakeholders to join us in this project, in the spirit of active and open-minded collaboration that we are strongly advocating as the guiding thread for all our joint actions in 2014 and beyond.

In conclusion, I would like to emphasise that whatever successes have been achieved in many areas of **the dti**'s work would not have been possible without the support of fellow Ministers and Deputy Ministers; coordination and cooperation with sister departments; the alignment and support of all **the dti** divisions and entities; and the close engagement of other institutions, especially the Industrial Development Corporation. To all these individuals and institutions - and to the hard-working staff at **the dti** - I offer both my gratitude and my encouragement to redouble our collective efforts.



Dr Rob Davies, MP
Minister
Trade and Industry



A MESSAGE FROM THE DIRECTOR GENERAL

Lionel October

The publication of the sixth iteration of the Industrial Policy Action Plan is an important milestone. The National Industrial Policy Framework and successive iterations of IPAP provide a policy and programme fulcrum for the work of the Department of Trade and Industry as a whole, enabling alignment and integration of its work within the strategic vision of a more equitable society provided by the National Development Plan and the programmatic perspectives set out in the New Growth Plan.

Thus the work of all the divisions of **the dti** both inform and are informed by action plans and programmes set out in the IPAP 2014/15 – 16/17, in keeping with the Department’s constitutional mandate and mission statement. This incorporates **the dti**’s vision of a dynamic South African industrial economy, globally competitive and characterized by inclusive growth and development, decent employment and equity – in short, an economy built on the full potential of all citizens.

The IPAP is not the exclusive preserve of **the dti**. It is a product of the Employment and Economic Sectors Cluster of Government; many of the programmes and actions plans it sets out require coordination and often a lead by other departments and agencies.

There are no quick fix solutions for industrial development, especially in the face of extremely strong headwinds – the Great Recession and its aftermath for the global economy; the deep structural problems which characterize the domestic economy and the constraints and tactical challenges that have to be overcome. I am, however, confident that much has been achieved, significantly deeper capacity built and good learning absorbed. New industrial policy platforms have been created and existing ones strengthened. The IPAP has been embedded as an indispensable part of the broader developmental policy framework of government. We say this as we recognize that more needs to be done on all fronts.

Most of what the department does has to be carried out in close consultation and co-operation with **the dti**’s stakeholders: business, labour and the community constituency.

On behalf of **the dti** I wish to thank all the many stakeholders – from trade unions to business organisations, industry associations and companies, to organisations and institutions of civil society - and to the many individuals who have supported its work.

In the same vein, all our industrial development work, across the full spectrum of sectors, is underpinned by the work of the Industrial Development Corporation. No modern economy can function without the foundation of a Standards, Quality Assurance and Metrology (SQAM) institutional framework. This is provided by the untiring work of the South African Bureau of Standards, the National Metrology Institute of South Africa, the National Council for Compulsory Specifications and the South African National Accreditation System. In parallel, Government’s collective effort to stem the tide of illegal imports and illicit economic activity rests on the Customs Division of the South African Revenue Service; whilst the strategic deployment of tariff policy rests on the International Trade Administration Commission. The work of the Competition Commission forms an indispensable component of the all-round effort to foster a more competitive economy.

Thanks should also go to the many individuals and institutions responsible for the research work which underpins the IPAP and other industrial development efforts of **the dti**. To all these organisations, and all those many more which support the work of the IPAP, I am grateful and commit to strengthening even further our collaborative efforts.

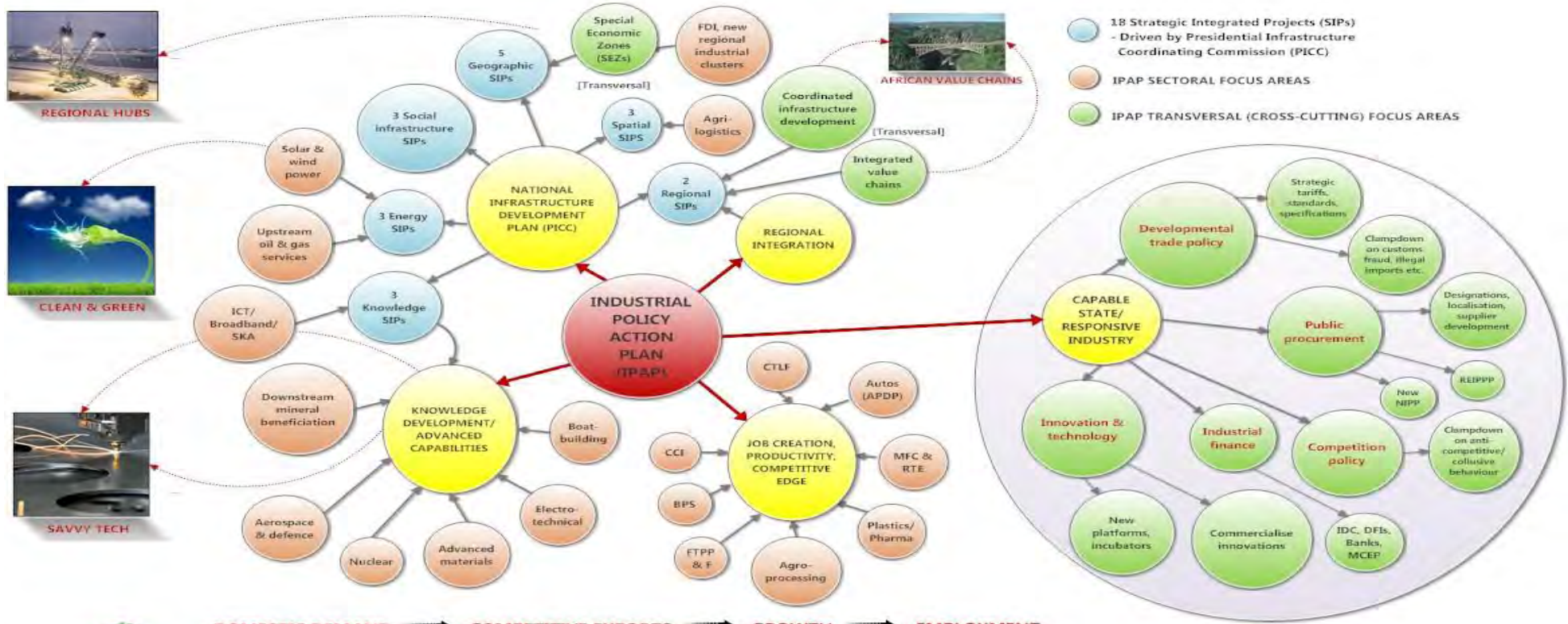
Finally I wish to thank **the dti**’s sister departments in the Economic Cluster and the provincial and local spheres of government for their continuous collaboration with **the dti** in the effort to make sure that the programmes set out in the IPAP happen.

I am confident that through our collective efforts much has been achieved and a clearer path setting out what needs to be done mapped out. Finally, as I have stated before, our resolve to do more in the years to come is underpinned by the conviction that our efforts are strengthened immeasurably if we work together to move towards the vision of an equitable society.

Lionel October
Director General
The Department of Trade and Industry

IPAP IN ACTION: HOW IT ALL FITS TOGETHER

IPAP: THE INDUSTRIAL MUSCLE OF THE SA ECONOMY



DOMESTIC DEMAND → COMPETITIVE EXPORTS → GROWTH → EMPLOYMENT

ACRONYMS KEY:

- APDP = Automotive Production and Development Programme
- BPS = Business Process Services
- CCI = Creative & Cultural Industries
- CTLF = Clothing, textiles, leather & footwear
- DFIs = Development Finance Institutions
- FTPP & F = Forestry, timber, paper, pulp & furniture

- IDC = Industrial Development Corporation
- MCEP = Manufacturing Competitiveness Enhancement Programme
- MFC & RTE = Metal fabrication, capital and rail transport equipment
- NIPP = National Industrial Participation Programme
- REIPPP = Renewable Energy Independent Power Producer Programme
- SKA = Square Kilometre Array (radio telescope)

ECONOMIC ANALYSIS: THE POLICY CONTEXT FOR IPAP

South Africa's long term vision of an equitable society is defined by the National Development Plan (NDP). The IPAP is informed by this vision and is both framed by and constitutes a key pillar of the programmatic perspectives set out in the New Growth Path (NGP). Its core objectives remain as set out in the National Industrial Policy Framework (NIPF) of August 2007:

- To facilitate diversification beyond our current reliance on traditional commodities and non-tradable services. This requires the promotion of increased value-addition per capita characterised particularly by movement into non-traditional tradable goods and services that are competitive in both export markets and the domestic economy.
- The long-term intensification of South Africa's industrialisation process, and movement towards a twenty-first century knowledge economy.
- The promotion of a more labour-absorbing industrialisation path with a particular emphasis on tradable labour-intensive goods and services and economic linkages that catalyse employment creation.
- The promotion of a broader-based industrialisation path characterised by greater levels of participation by historically disadvantaged economic citizens and marginalised regions in the mainstream of the industrial economy.
- Contributing to industrial development in Africa, with a strong emphasis on building regional productive capabilities.

But reality changes all the time. The programmes set out in the IPAP 2014 reflect a continuing process of response and readjustment to the shifting demands and opportunities that must be confronted in order to keep this mandate alive and vital; most recently, a much closer alignment of IPAP priorities with the National Infrastructure Plan currently being implemented under the guidance of the Presidential Infrastructure Coordinating Committee (PICC). This very large and ambitious infrastructure build programme – consisting of 18 Strategic Integrated Projects - is specifically designed to underpin industrial development across the economy as a whole, unblocking critical bottlenecks and - provided that maximum localisation of inputs is achieved – promising to massively increase domestic demand.

In this strategic context, IPAP puts a high premium on collaborative, properly sequenced actions. It is premised on the need for ever-closer alignment and consolidation of its linkages with the policies and action plans of the primary productive sectors of the economy - in particular agriculture and minerals. It is also predicated on the need for continuously strengthened intra-governmental co-ordination and tighter compliance with key industrial policy levers (such as public procurement) that are specifically designed to support the broader domestic manufacturing sector.

This means, on the one hand, developing the innovative, competitive, knowledge-based, tech-savvy initiatives needed to create a revitalised export sector, whilst, on the other hand, advancing our capacity to integrate with the critical national infrastructure programme and support labour-intensive, value-adding sectors that are best placed to stimulate domestic demand and deliver long term, sustainable employment growth.

Successive iterations of IPAP have consistently sought to articulate a deeper, more comprehensive and integrated set of solutions to the major fault-lines of South Africa's economic structure; an orientation that necessarily implies a fundamental shift of policy emphasis in favour of the productive sectors of the economy. In order to deliver on these objectives, the following key areas of intervention will continue to be energetically pursued throughout the 2014-2016 period contemplated in this document - and further into the medium and longer term future:

1. Economy-wide:

- Pursuit of a stronger articulation of macro- and micro-economic policies, greater policy coherence and better implementation.
- Stronger alignment of industrial policies and programmes with investment and export-promotion programmes such as the National Exporter Development Programme (NEDP) focussed on widening and balancing SA's exporter base.
- Better policy alignment, both in general and in relation to specific sector strategies, focussed particularly (but not exclusively) on those sectors where the domestic economy enjoys global competitive advantages.

2. Procurement:

- A sustained effort to secure compliance with existing public procurement policies and strategic supplier development/sourcing measures, with the overall aim of supporting the manufacturing sector to raise domestic production and grow employment.

This effort will be combined with:

- further policy framework and institutional improvement measures flowing from the Public Procurement Review: and
- strong persuasive initiatives to secure greater private sector support for local manufacturing - a contribution that large companies in particular are well placed to make, given their significant procurement spend. It also includes providing further support for broad based black economic empowerment (BBB-EE) and better alignment between BBB-EE and industrial development objectives – further discussed below in the section on ‘Critical New Initiatives’.

3. Industrial finance:

- Stronger alignment and progressive strengthening of industrial financing across all DFIs - and within the Industrial Development Corporation (IDC) in particular – in order to secure an optimal mix of public and private sector funding that can progressively strengthen investment in the productive, especially manufacturing, sectors of the economy.

4. Developmental trade policy:

- Ongoing strengthening of developmental trade policies; with the following key components:
 - deployment of trade measures such as selective and strategic tariffs and their improved alignment with industrial policy objectives; working closely with the International Trade Administration Commission (ITAC) while recognising their independent role;
 - closer and more detailed cooperation with the Customs Division of the South African Revenue Services (SARS) to combat the ever-present (and steadily growing) problem of illegal and fraudulent imports – one of the key pillars of the illicit economy;
 - steady and incremental strengthening of the capacity and capabilities of the Standards, Quality Assurance, Accreditation and Metrology (SQAM) institutions, which provide an indispensable support framework for a modern and competitive economy.

5. Competition policy:

- Strengthened interventions to combat anti-competitive and collusive behaviour in both the private sector and State Owned Companies - and in so doing, lower the cost of procurement to the national fiscus and of wage goods to working families.

6. Regulation and intellectual property:

- An Intellectual Property Rights (IPRs) regime that seeks to create a supportive environment for South Africa’s industrialisation objectives. The regime should provide broad terms of scope for protection and less stringent criteria for novelty. Thus the recently signed Intellectual Property Amendment Bill enables the regime to strike a balance between encouraging incremental innovations, providing protection for indigenous knowledge and providing enough incentives for innovators to make the necessary research and development investments.

7. Innovation and technology:

- New policies and programmes to ramp up competitive capabilities in the production and services sectors of the economy, taking advantage of every opportunity to leverage the quantum advances on offer in the sphere of digital and other globally emergent advanced technologies.

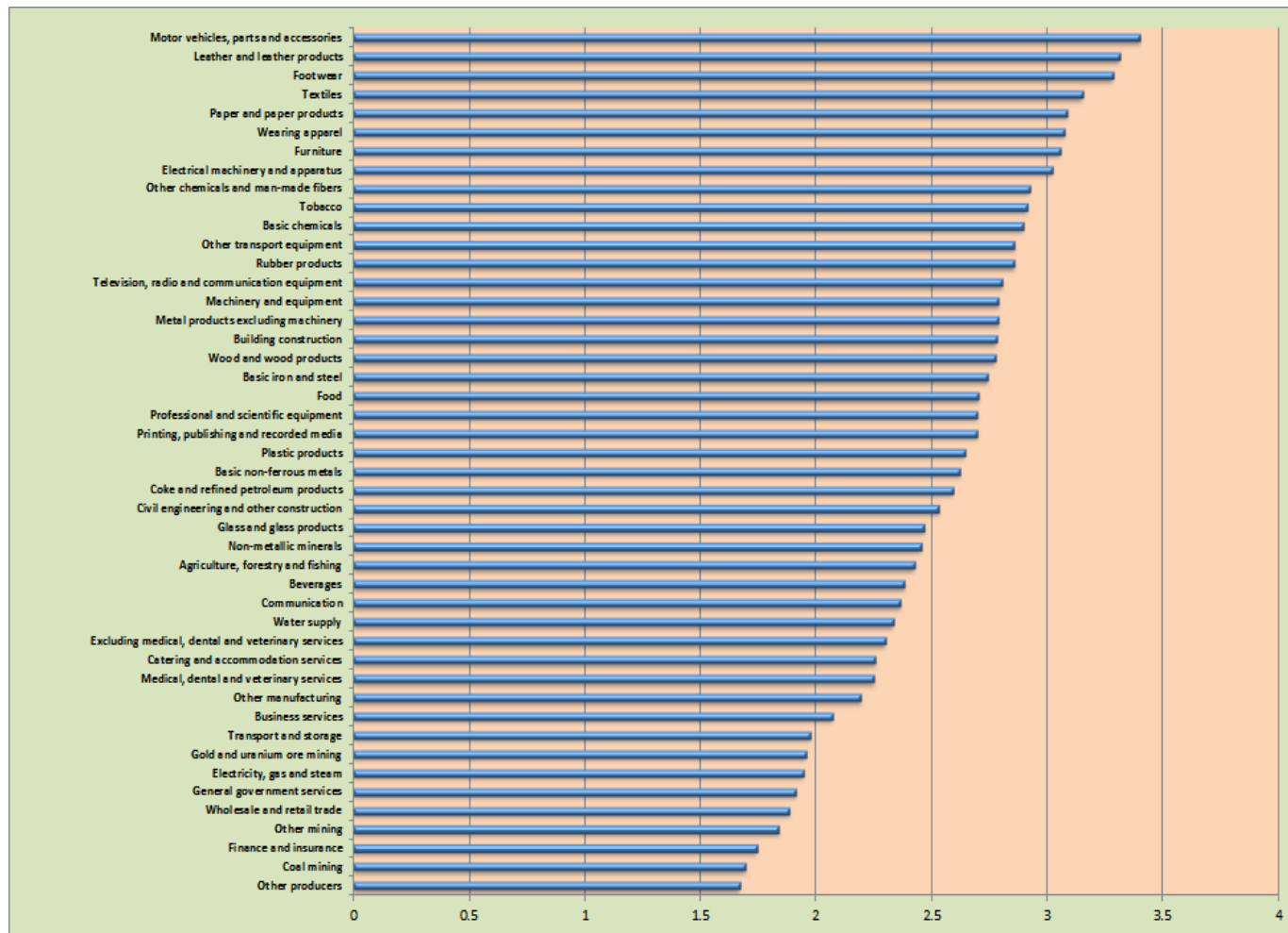
The focus on manufacturing

IPAP’s central focus on manufacturing derives from a thorough analysis and understanding of its major attributes as a driver of balanced development. It is, as always, worth reiterating the benefits that a strong, well- diversified manufacturing sector brings to the economy as a whole:

1. The manufacturing sector has the highest economic and employment multipliers of any sector. (See Figures 1 and 2). Backward linkages in manufacturing ‘pull through’ inputs from primary and other manufacturing and services sectors and transform them into higher-value added products, stimulating employment and economic linkages along the entire value chain. At the same time manufacturing provides an added impetus to employment and growth through forward linkages to ‘downstream’ sectors, including services.

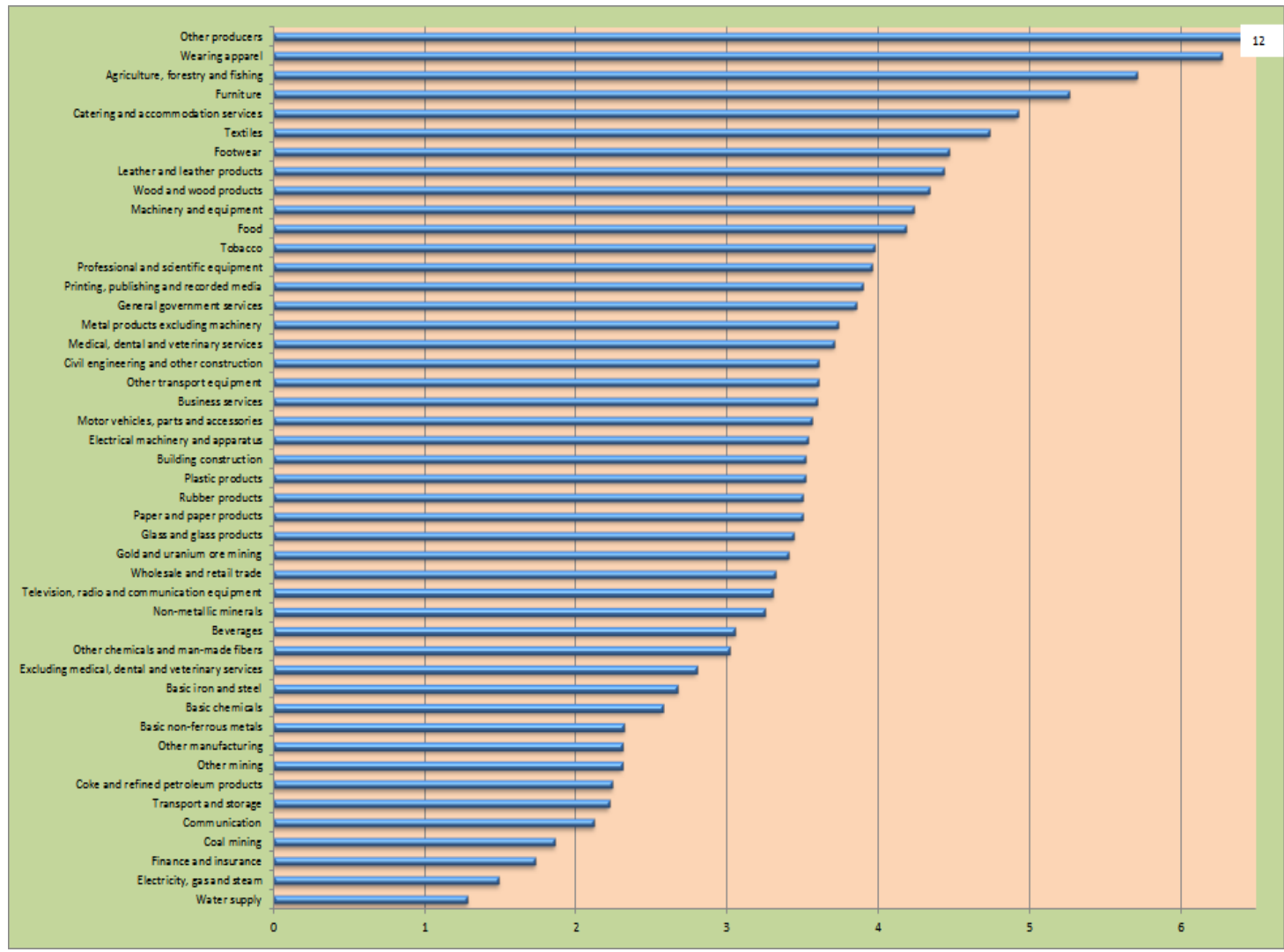
thorough analysis and

Figure 1: Growth multiplier 2012



Source: the dti, using Quantec data

Figure 2: Employment multiplier 2012



Source: the dti using Quantec data

2. Manufacturing is central to our export strategy, based on value-added, labour-intensive tradable products that generate revenues which have both a significant positive impact on the balance of trade and impact directly on the non-exporting sub-sectors which form part of domestic value chains. It also reduces SA’s vulnerability to commodity price fluctuations/volatility and alleviating “Dutch disease” type effects on the currency.

3. Manufacturing plays a critical and indispensable role as a driver of innovation and productivity growth. It should increasingly provide the capital goods and equipment inputs required for the infrastructure build programme which is central to SA’s growth strategy - while, more generally, ‘feeding’ locally manufactured inputs into public goods, including transport, health, education and housing. An enhanced role for manufacturing in providing inputs to the infrastructure programme will also be critical in reducing its dependence on imports and mitigating wider vulnerabilities, particularly on the balance of trade.

4. The growth and strengthening of the manufacturing sector both requires and is a driver of more energy-efficient, less carbon-intensive growth. Greener manufacturing has a great potential contribution to make in limiting wasteful resource consumption and mitigating the environmental impact of economic development.

5. The manufacturing sector generates amongst the strongest forward and backward linkages across the economy, which are important transmission mechanisms for growth and poverty reduction. This underscores the crucial role manufacturing has in driving growth and employment levels. On the demand side, these linkages create indirect and induced jobs; on the supply side, the linkages come from knowledge and technological spill-over effects. Service inputs such as logistics, financial services, ICT, advertising, research and development, office support staff and so forth supports the manufacturing sector. The manufacturing-related services sector also tends to operate in much closer proximity to new technological frontiers, with innovation a key factor in driving both fresh demand and productivity gains across the entire manufacturing landscape.

The global economy and the manufacturing sector

The analysis provided below seeks to identify and analyse critical trends and dynamics that are relevant to the 'big picture' of domestic manufacturing. This picture is intentionally selective and not exhaustive, seeking to complement and refine key aspects of the analysis provided in previous IPAP iterations.

The global economy has begun to emerge, tentatively and unevenly across countries and economic zones, from the Great Recession precipitated by the financial crisis of 2008. There will, by many accounts, be no quick return to sustained and strong growth in the global economy; whilst world output is predicted to remain muted over the medium term.

This includes slow growth and decreased demand in SA's traditional trading partners, the Eurozone, the UK and the US. [The Eurozone averaging a barely positive 0.1% over quarters 1-3 of 2013 both the UK and the US averaging just 1.9% growth over all four quarters of 2013 (the UK up from 0.3% in 2012; the US down from 2.8% in 2012, though showing some recovery - to 3.2% - in Q4 2013)].

The Great Recession has both revealed and intensified emerging structural changes and shifts in the balance of economic growth and power in the global economy. Developing economies are predicted to continue to grow at a significantly faster rate than the developed economies, though that growth will be relatively muted (compared with pre-2008 levels) precisely because of the persistence of depressed demand in the economies of the North. Developing countries are thus of necessity increasingly focussing on expanded domestic demand and rapid structural change up the value chain. A 'new pattern' of global growth is emerging, which places SA, along with many other emerging

economies, in a situation where it must seek to maintain its trade with its traditional trading partners whilst simultaneously building stronger trade links and enhanced export performance in relation to other emerging economies of the South.

What this tells us, from a policy point of view, is that it is essential that we build sectors and companies that can compete against imports in the domestic economy and more effectively penetrate international export markets. (This is further discussed below, in the section headed 'Manufacturing exports').

Structural imbalances in South Africa's current growth path

South Africa achieved reasonably high growth rates during the 2005-2007 period. But even in this period its growth trajectory was (and remains) encumbered by structural imbalances. Pre-dating the onset of the recession – and despite the fact that South Africa did not experience a significant commodity boom – the domestic economy has continued to attract massive short-term capital inflows into domestic resource and equity shares and the bond market as a direct result of high real interest rates relative to other developing countries. This contributed to preventing the exchange rate from playing its role as a stabiliser of the productive sectors of the economy. Latterly, while the exchange rate has weakened significantly, ongoing currency volatility remains a serious problem.

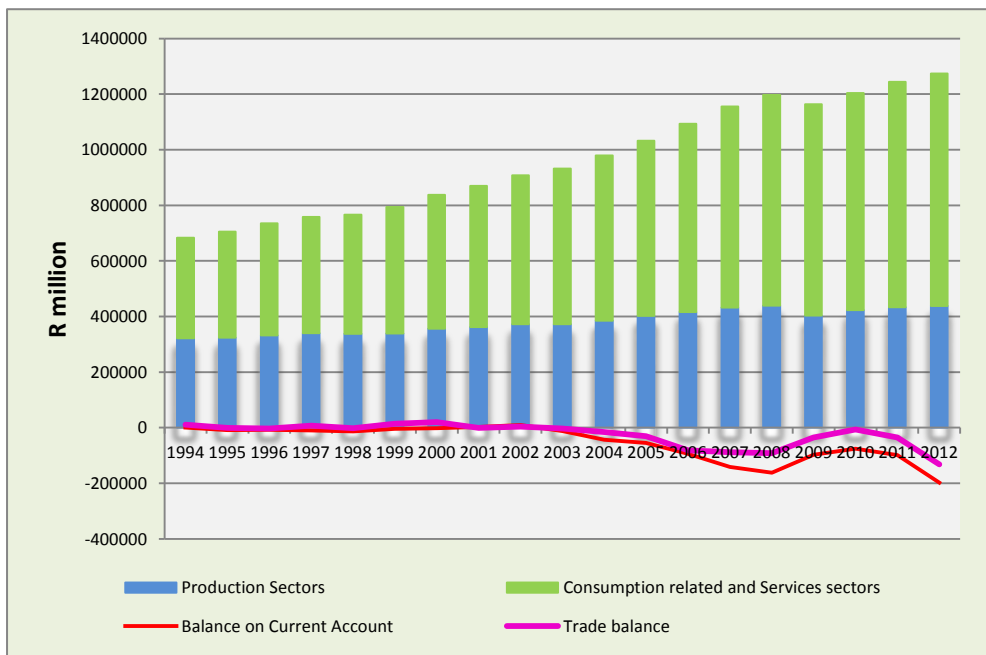
At the same time, SA's exports remain predominantly commodity-based, while the country's 'export basket' continues on the whole to be characterised by low levels of value addition. This is in distinct contrast to the situation in a number of other developing countries where policies have been implemented that focus much more strongly on growing the production sectors. The results, for some of these countries, have been both a significant cushioning of the effects of the global economic crisis and the achievement – e.g. in Brazil - of some striking successes in ameliorating poverty and reducing inequality.

South Africa, by contrast, has essentially been 'treading water'. The medium-term outlook is for growth to improve gradually but for the recovery to be less robust than previously forecast. Real GDP growth is projected to recover to 2.7% in 2014 - from the estimated 1.8% in 2013 - and to reach 3.4% in 2015. Looking slightly further ahead – and in a continental perspective – SA's real GDP growth is expected to remain well below the average of 5.4% projected for Sub-Saharan Africa in 2014–16.

If the South African economy is to overcome this lacklustre performance, we must begin to make a decisive break with the entrenched growth model – previously driven by increases in private credit extension and consumption - and move onto a more sustainable path underpinned by growth in the productive and employment creating sectors of the economy.

Figure 3 below clearly illustrates the continuing predominance of the consumption-driven sectors (finance and insurance, real estate, transport and storage, communication, wholesale and retail, catering and accommodation, security services) over the main production-driven sectors (agriculture, mining, manufacturing, electricity and water, and construction). This has had a negative impact on both the current and trade accounts which is demonstrated by the deficits on both. This necessitates a dependence on foreign capital inflows.

Figure 3: GDP by production and consumption sectors, Trade balance and Balance on Current Account at constant prices

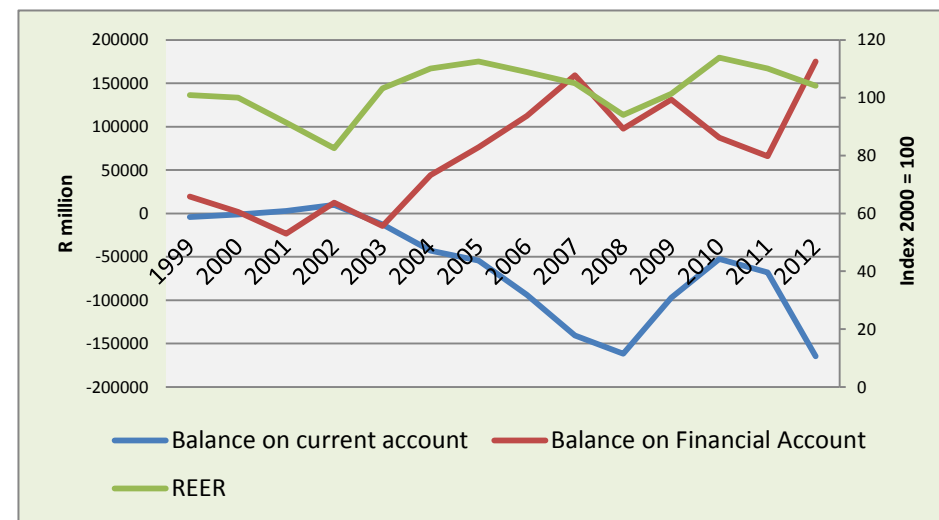


Source: SARB

The Real Effective Exchange Rate (REER), which is a measurement of the Rand's performance against a basket of currencies, declined by 15.2% from March 2012 to September 2013. This, in principle, has the potential to give new impetus to price competitiveness, notwithstanding developments in other emerging markets.

Figure 4 below illustrates how the REER has affected the current account and clearly indicates how it is being financed by capital inflows via the balance on the financial account.

Figure 4: Balance on current account, financial account & real effective exchange rate



Source: SARB

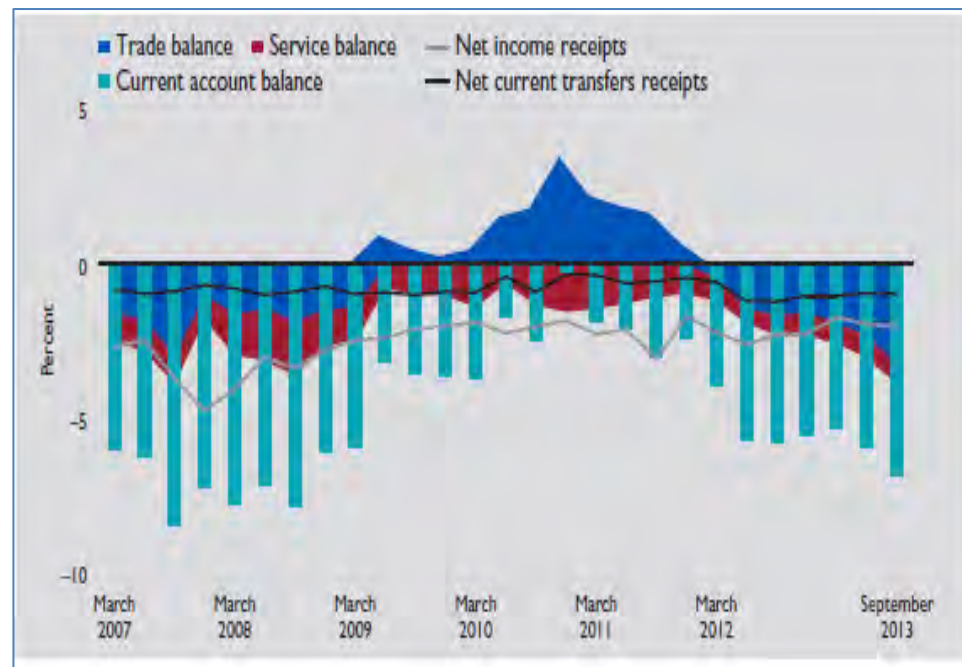
Clearly, developing a stronger export-competitive dynamic cannot be a quick and straightforward matter. Value-added manufacturers have indeed not yet responded particularly strongly to the recent depreciation of the currency. This relative non-responsiveness – taken together with the large current account deficit - has been interpreted by many economic commentators as proof that SA manufacturing is *fundamentally uncompetitive* - without taking into account the debilitating impact of long periods of overvaluation followed by sudden sharp depreciations.

In this context, the relatively weak response to the recent depreciation is unsurprising. Manufacturing is based on building up capabilities over considerable periods of time. Long periods of overvaluation and volatility have had a major cumulative effect on investment in equipment and capabilities, leading to a significant overall weakening of the industrial base. When inevitable "corrections" occur, manufacturing does not respond like a tap that can be turned on and off at will. Manufacturers do not plan only for periods of depreciation; they know well from experience that any depreciation is likely to be followed in due course by periods of appreciation to which they will have to find carefully planned, long term competitive responses.

At present, therefore, the continuation of a 'mixed' pattern of responses to currency devaluation should be seen as a reflection of the ongoing struggle to adjust, re-tool and reinvest – in the light of a very challenging past five years of uncertainty and volatility compounded by severe external and domestic shocks.

Meanwhile, South Africa's ballooning current account deficit continues to expose serious macroeconomic vulnerabilities, especially given the role of short-term capital inflows in financing it. As illustrated in Figure 5 below, the current account deficit widened to a post-crisis high of 6.8% in Q3 2013 (mainly driven by high demand for capital inputs related to the public investment programme, higher oil prices and the impact of the depreciating Rand); while at the same time imports continued to outpace exports, pushing the trade deficit up to 3.2% of GDP.

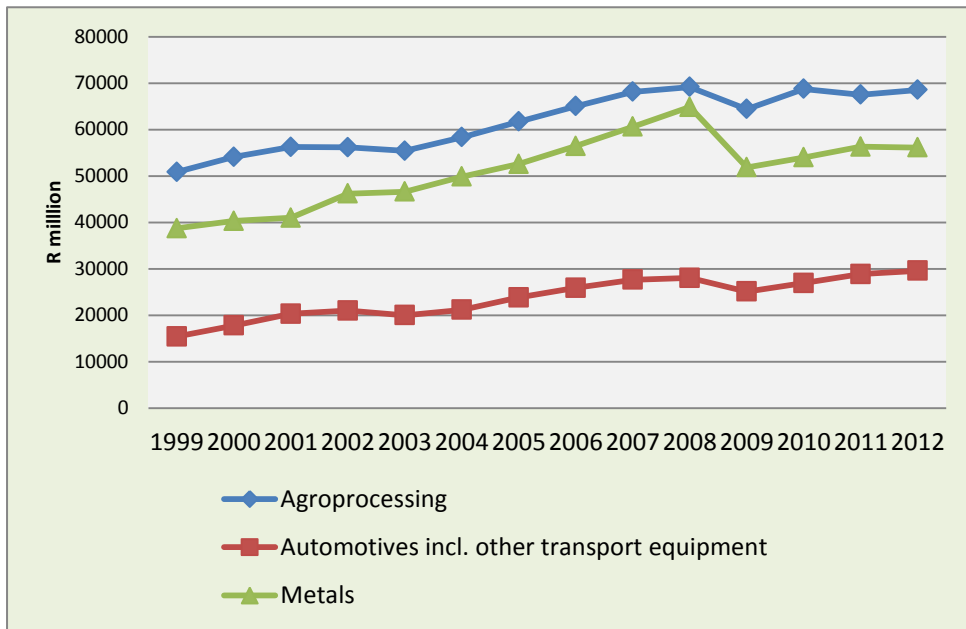
Figure 5: Current account & trade balance trends 2007-2013



Source: World Bank

Since the advent of targeted IPAP interventions - over and above broader industrial support measures across sectors – a stabilisation in value addition in these sectors has been observed. Figure 6 demonstrates how selected lead sectors (agro-processing, automotives incl. other transport equipment and metals) have performed over time.

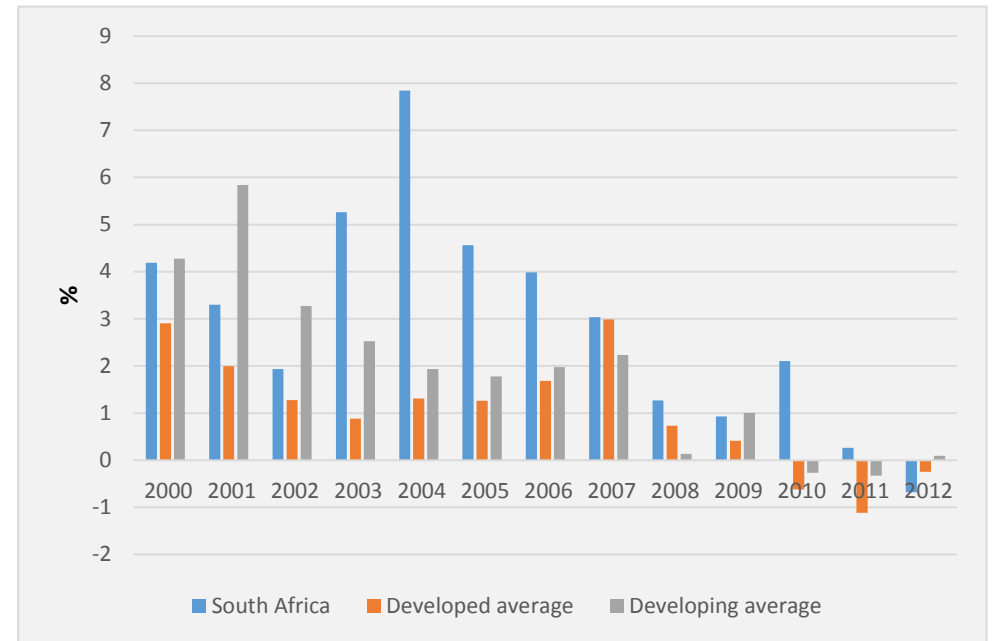
Figure 6: Value-add by selected IPAP sectors



Source: Quantec

Despite the massive growth in credit extended to the private sector, only a tiny proportion has been extended to fixed capital investment: 5.6% in 2011 and 5.5% in 2012. South Africa’s relatively high real interest rates have started to compare more positively with those of our main peer competitors. For the first time in many years in 2012 our short term real interest rates were negative. The decline in the real cost of capital in figure 7 has the potential to start creating new impetus for expansion in the manufacturing sector. However the decline in the real cost of capital may not be a panacea for the expansion of the manufacturing sector, if there is insufficient demand and wide ranging competitiveness challenges are not addressed.

Figure 7: Short-term real interest rates in South Africa and major developed and developing economies

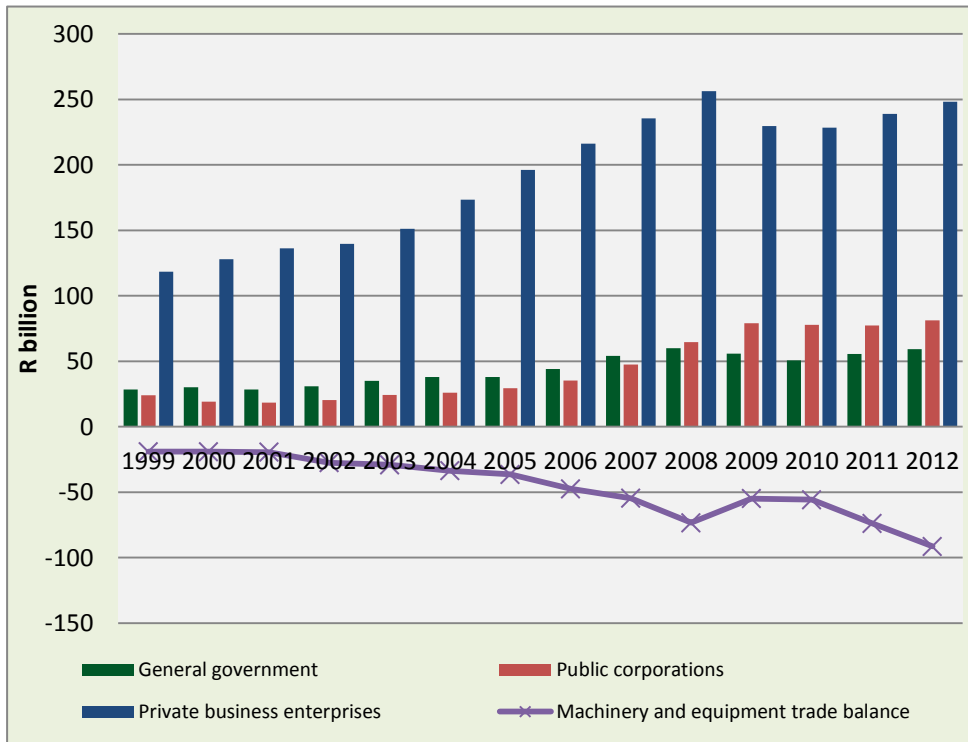


Source: Quantec

Figure 8 shows a general increase in gross fixed capital formation by general government and public corporations over the period. Indications are that public investment has picked up and is set for significant increases, driven by the Presidential Infrastructure Coordinating Committee (PICC).

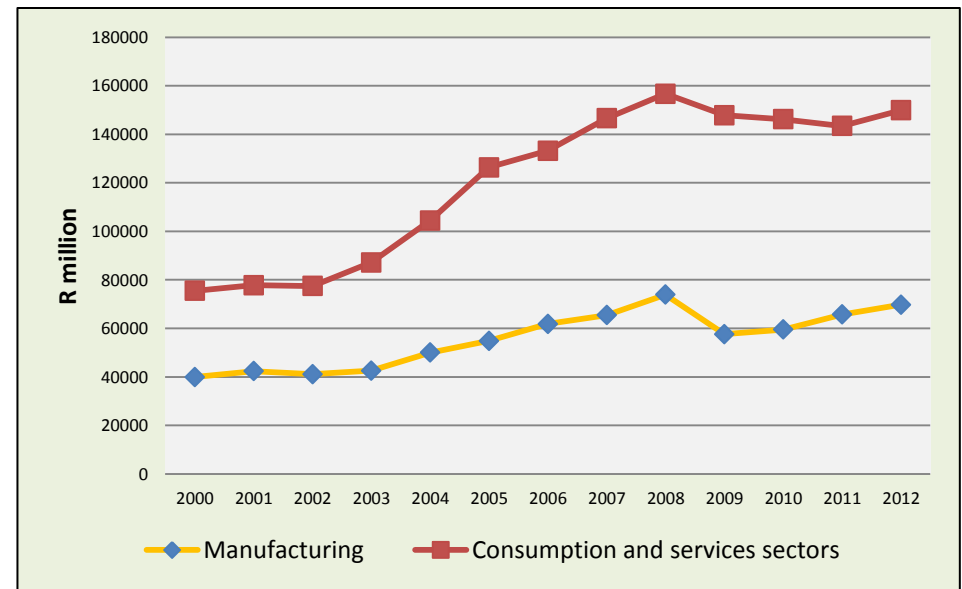
Figure 9 indicates fixed capital formation by manufacturing and consumption and services sectors. It shows that the bulk of fixed investment is by the consumption related sectors compared to the manufacturing sector. This points to the need to urgently upscale gross fixed capital formation within the manufacturing sector if we are to make a significant dent in the performance of the sectors.

Figure 8: Gross Fixed Capital Formation and machinery & equipment trade balance



Source: SARB

Figure 9: Real gross fixed capital formation at constant prices

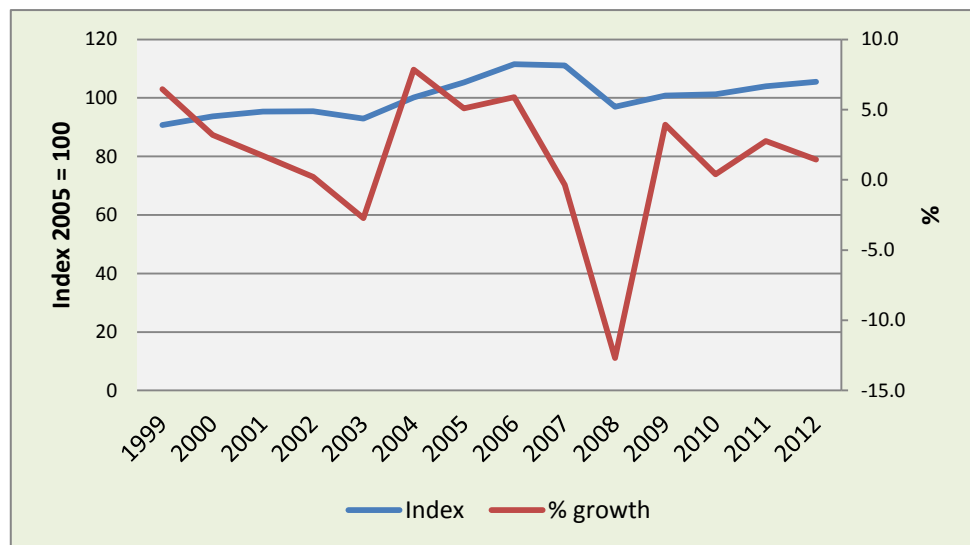


Source: SARB

Manufacturing performance

In 1994 the manufacturing sector made up 21% of GDP, steadily declining to 12.4% in 2012. Year-on-year manufacturing growth recovered tentatively during 2010 onwards. The volume of manufacturing production seasonally adjusted grew by 0.4% year-on-year in 2010, by 2.8% in 2011 and 1.4% during 2012. In 2013 the overall picture remained uneven and unsteady.

Figure 10: Manufacturing Production and Growth seasonally adjusted

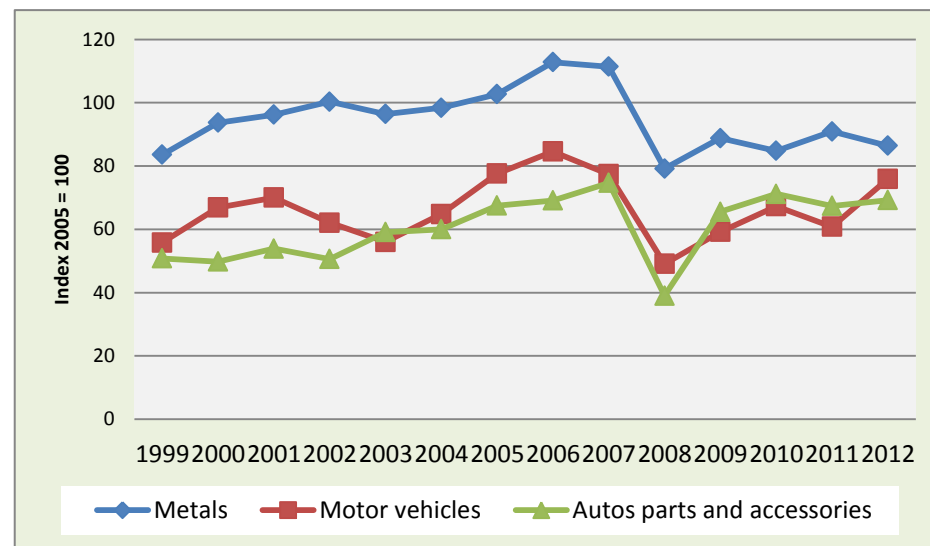


Source: Quantec

As illustrated in Figure 10 above, the major impact of the global credit crisis which started in 2007 spilled over to the real economy in 2008, with the manufacturing sector bearing the brunt of the impact. The recession started in 2009 with a 6.4% reduction in manufacturing production (output) and a 10.1% contraction in its GDP. It was, however, during this same period that countervailing IPAP interventions started to be implemented.

While precise correlation between these interventions and recovering performance in key IPAP sectors is difficult to pin down, from 2010 onwards sectors such as metals, motor vehicles and automotive parts and accessories showed fairly steady improvement in their levels of production. (See Figure 11 below).

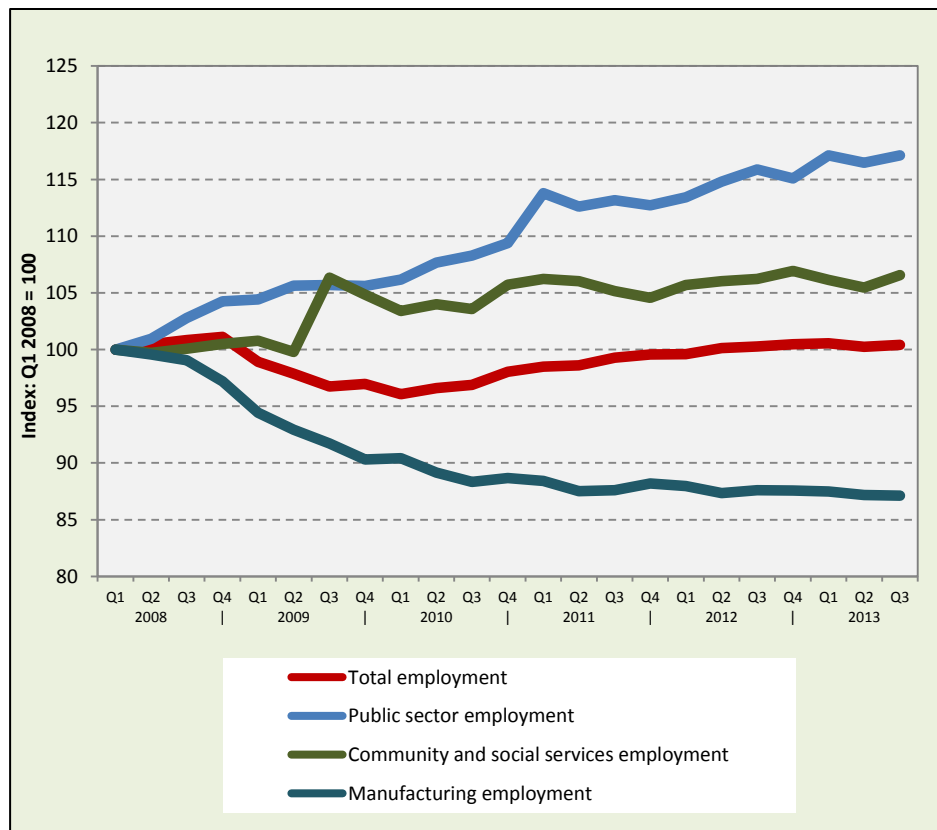
Figure 11: Manufacturing Production of IPAP sectors



Source: Quantec

On the employment front, however, the picture for manufacturing remains very disquieting - as illustrated in Figure 12 below. During the recession the economy shed around 1 million jobs with 200 000 jobs being lost in the manufacturing sector. Formal employment growth continues to come predominantly from the services sector, particularly wholesale and retail and the business services sub-sectors. In 2010, manufacturing employment briefly rebounded from its steep post-crisis downward path; but the recovery was short-lived and employment levels have steadily continued to fall. The decline in manufacturing employment levels can be attributed to a range of structural problems set out in IPAP.

Figure 12: Employment in the formal non-agricultural sector



Source: IDC

Manufacturing exports

Manufactured goods constituted 51.6% of the merchandise export basket in 2012, up from 41.2% in 1994. A few sectors are the main contributors to this trend: machinery & equipment, motor vehicles (including components for auto assembly); refined petroleum products and other chemicals. Manufacturing exports are highly concentrated, with the top 20 manufacturing sub-sectors (out of 120) accounting for 77% of SA’s manufacturing export basket in 2012 and – even more strikingly – the top 5% of South African export companies accounting for more than 90% of total exports.

The other side of this coin – as pointed out in a recent World Bank Report on South African export competitiveness¹ - is the fact that at present the vast majority of South Africa’s exporting firms (more than 21,000 of them) are operating on a very small scale, with the median exporter earning just \$29,000 per annum from exports - by far the lowest earnings level amongst our peer countries.

One unusual feature of this imbalance, however, is that current evidence points to relatively greater dynamism and innovation amongst the ‘minnow’ exporters than on the part of the so-called ‘super-exporters’. As the World Bank Report notes:

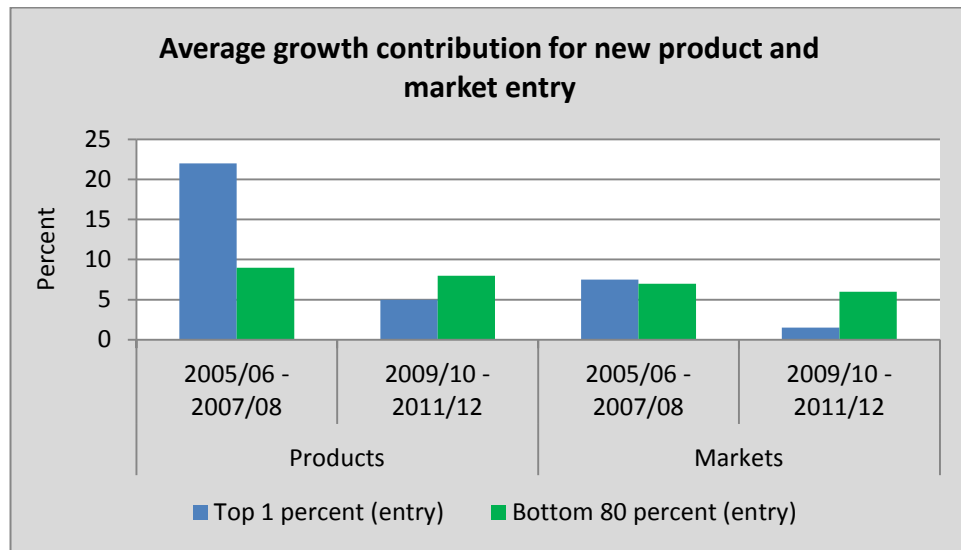
“While the top 1 per cent of exporters grew fastest across all regions in the pre-crisis years, the situation has since reversed. The largest exporters have grown the slowest, and some have declined, reflecting losses in existing products and markets and less success (or less ambition) with new product introduction.

The top 1 per cent of firms has seen a sharp drop in the contribution of new products to their markets in recent years [See Figure 13 below].

Since 2010 the share of total exports (among the top 1 per cent of exporters) coming from firms selling 10 or more products has fallen from 73 per cent to just 64 per cent. By contrast, smaller exporters are expanding in both products and markets. However, the high concentration in South Africa’s export sector means that the net impact of increased dynamism at the bottom end of the market fades into insignificance against the super-exporters’ retreat from experimentation.”

¹ *South Africa Economic Update: Focus on Export Competitiveness*, World Bank Group, Africa Regional Poverty Reduction and Economic Management, Issue no.6, February 2014, p.21

Figure 13 Declining experimentation and competitiveness of SA’s major exporters (v. small exporters)

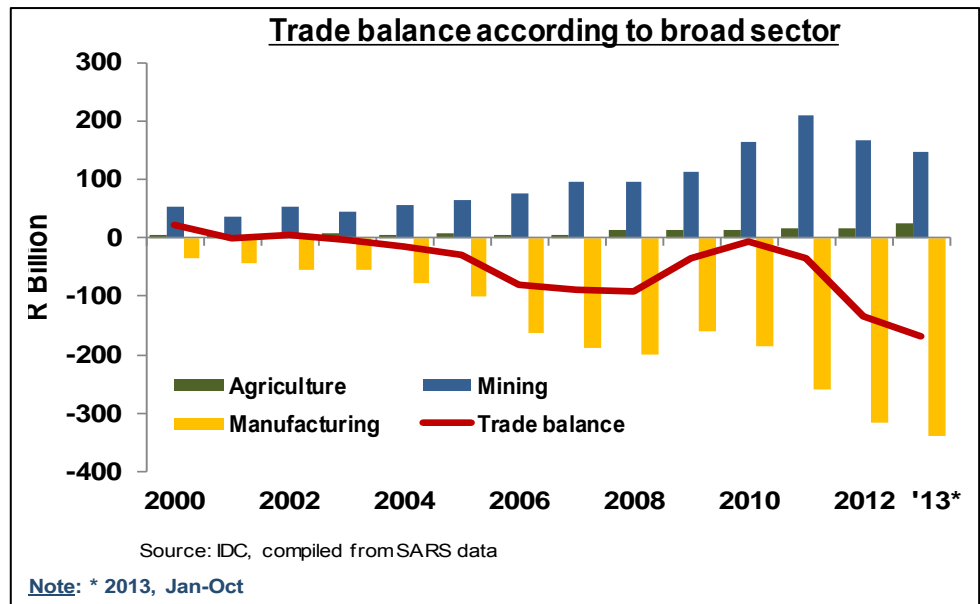


Source: Adapted from World Bank graphic, based on SARS data

Overall, the unevenness in our export performance – reflected in the persistent and growing trade deficit in the manufacturing sector - underscores the fact that the imbalances in our manufacturing export profile have now become a major structural concern for the SA economy as a whole.

As can be seen from Figure 14 below, the manufacturing trade deficit increased sharply from 2010 onwards , in part (but not only) due to weak export demand. The more pertinent question to pose here – bearing in mind the discussion above - is: ‘Weak demand for what *kinds* of export products, in which markets, in what categories, at what volumes and quality levels?’

Figure 14: Trade balance by sector



Source: IDC compiled from SARS data

Critical new initiatives

All the discussion above points inescapably to the need to strengthen support measures and to introduce considerably stronger performance requirements in relation to industrial financing and other manufacturing support mechanisms; and that we build greater coherence between these instruments and support packages. Getting such a support base in place will require the following important steps:

- Achieving much greater coherence between industrial financing mechanisms: particularly the Industrial Development Corporation (IDC), the Export Credit Insurance Corporation of South Africa (ECIC) and **the dti's** Industrial Development Incentive Administration Division (IDIAD).
- Imposition of stronger performance requirements and *quid pro quos* in relation to industrial financing.
- A strong focus on tackling the current account deficit through a combination of import replacement and export promotion.
- A particular focus on exports into the rest of the continent, in the context of the drive for regional industrial integration.

While IPAP 2014 will be pushing hard on all these fronts, it will also be addressing a very important issue that touches on the lingering inheritance of apartheid: namely, the skewed and unrepresentative social composition of manufacturing capital. There is a simple question that has to be answered: "Why do we still have no significant base of black industrialists?"

Recent research work on the metals and machinery sector has clearly revealed that the vast majority of BEE initiatives and deals have to date been largely based on emulation of practices in the ('white') financial sector. Emerging BEE groups have been expanding through shallow shareholdings across multiple sectors rather than deep shareholdings in productive sectors. Much of this investment has taken a private equity form, with a short term investment perspective and the expectation of exit within 5 years (or even less) with substantial profits. The lack of 'deep entrepreneurship' by black investors in manufacturing is one of the most salient reasons why the voice of manufacturing is not heard loudly enough in policy debates in South Africa.

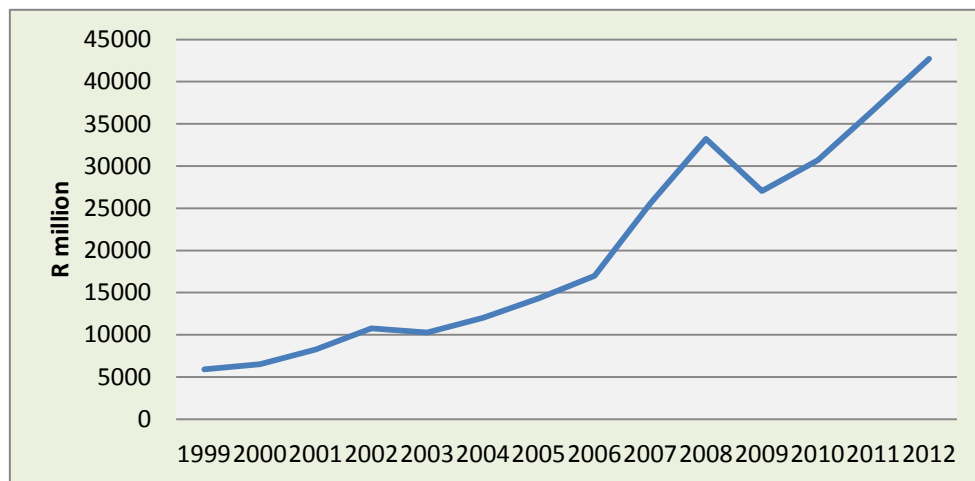
This clearly needs to become a strong focal point of work going forward; to include, perhaps, the following sorts of measures:

- Providing support for industrialists who are committed to long term participation in manufacturing through a combination of majority ownership and active management.
- Development of targeted industrial financing instruments for black industrialists to acquire *majority* control of manufacturing enterprises, either through new investments or acquisition.
- Development of related support programmes such as a dedicated MBA to develop black managers and owners in manufacturing.
- Getting DFIs to take this objective on board very seriously – through specific financing by the IDC and reorientation of the National Empowerment Fund (NEF) to prioritise support for black industrialists.

Regional export reorientation

South Africa’s trade with the rest of the African continent is a fast-emerging ‘bright spot’ in the overall export picture as exports of manufactured goods to Africa in 2012 surpassed that of manufactured exports to the EU. It continues to increase at a good pace, with total exports into Africa more than doubling from R100 billion in 2008 to over R200 billion in 2012. Figure 15 below shows exports to Africa in the mining, metals and capital equipment sectors, where growth has been steadily on the up since 2006.

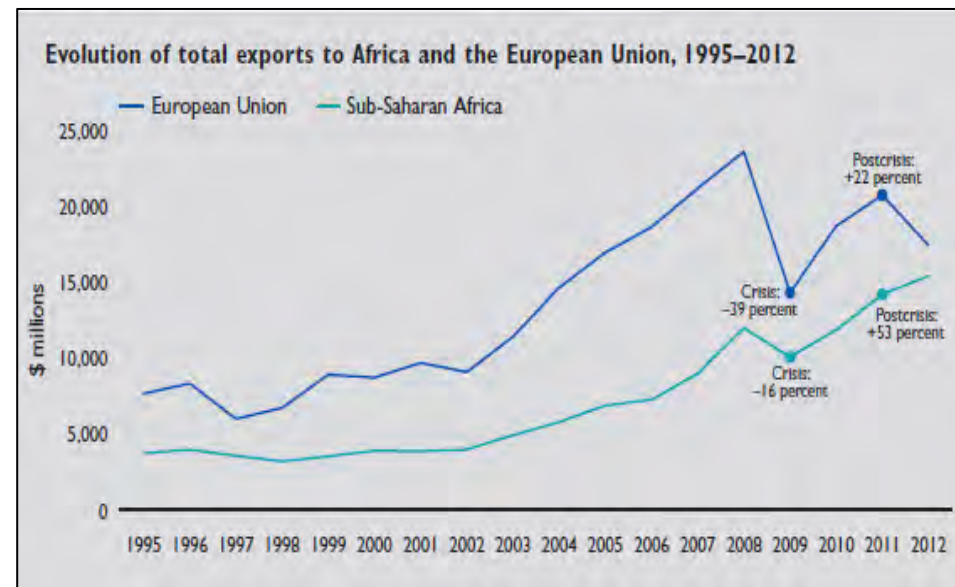
Figure 15: Exports to Africa in mining, metals and capital equipment



Source: Quantec

The emerging long-term secular trend in the pattern of South Africa’s trade is clearly a gradual movement away from heavy dependence on the countries of the North and a re-balancing that gives much greater weight to South-South and African regional trade. As Figure 16 illustrates, the gap in the value of trade with the EU and Sub-Saharan Africa has been rapidly narrowing – to a point where, by the end of 2012, convergence was close to being reached.

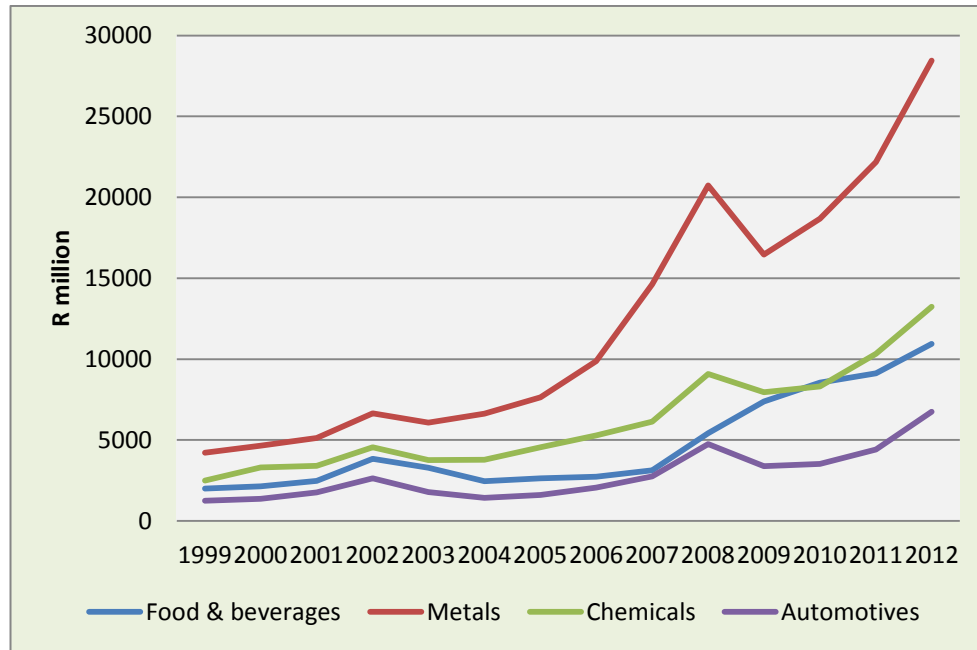
Figure 16: Exports to European Union and Sub-Saharan Africa



Source: World Bank

In percentage terms, over the past decade or so, SA’s non-mineral exports to Sub-Saharan Africa grew from 19% to almost 29%, overtaking exports to the European Union (down from 41% to 28%). Sub-Saharan Africa now accounts for around half of SA’s non-mineral exports; while at the same time non-mineral exports to our BRICS partners have almost doubled: up from 5% in 2000 to 9% in 2012. As shown in Figure 17 below, exports to our near neighbours in the SADC countries have shown particularly strong growth; though it is worth remarking that this ‘basket’ could be widened and deepened beyond the current over-concentration in four particular sectors: food and beverages, metals, basic and other chemicals and automobiles.

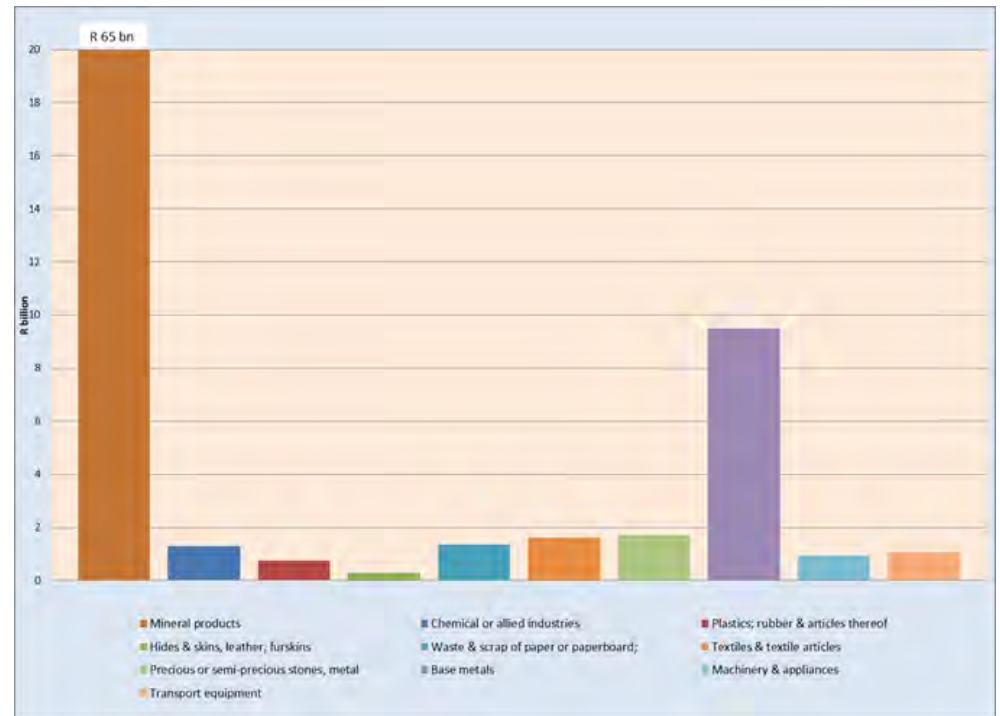
Figure 17: Exports to SADC of selected sectors (R million)



Source: Quantec

Whilst exports to Africa and SADC are at least to some extent diversified and offer significant opportunities for growth, exports to the emerging, fast growing countries of the Middle and Far East (particularly China) are heavily concentrated in primary commodities. In 2012, for example, out of total exports to China valued at R84.7 billion, mineral exports accounted for R65 billion, with base metals far behind in second place at R9 billion. Exports of iron ore to China in the same year was 47% of merchandise exports. Furthermore China has the intention to re-balance its economy which has implications for SA exports: demand from China is gradually changing from investment-driven growth towards consumption-driven growth.

Figure 18: SA's exports to China in 2012



Source: the dti

While the commodity-heavy bias of SA's exports to China is glaringly apparent, so too is the reverse pattern of import penetration. South Africa's trade deficit with China increased from R36 billion in 2012 to R38 billion last year. Over 90% of SA's top 10 exports to China were in raw materials, while 100% of our top imports from China were manufactured products. In joint consultation, however, both countries have recognised that this is not sustainable. (See BRICS perspectives below, p.33).

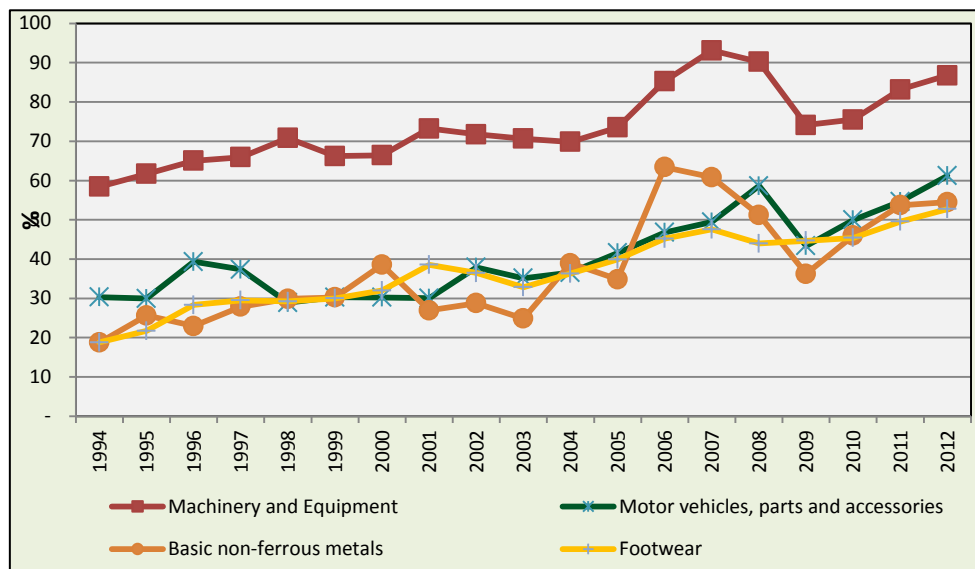
On the other hand, however, between January 2003 and January 2014, 38 Chinese FDI projects were recorded, representing a total capital investment of R13.33 billion – an average of R350.48 million per project – creating 10,992 jobs.

Another serious issue for SA manufacturing is the economy’s continuing reliance on imported capital equipment and intermediate inputs. There are two main reasons for this: lack of appropriate domestic capacity in key areas of the capital goods sector and the ingrained tendency of many procuring entities to persist in favouring imports, even where domestic inputs are available and competitive. Figure 19 below demonstrates the share of domestic demand being satisfied by imports for manufacturing.

The machinery & equipment sector has the highest share at 90%, whilst other sector shares have steadily increased to above 50% from a low base.

2. This will necessarily require continuing, up-scaled industrial policy interventions - including export promotion and targeted financing – to provide sustained support for sectors that are both globally competitive and positioned to maximise the benefits and opportunities arising from SA’s measured South-South reorientation, BRICS membership and geographical proximity to Sub-Saharan markets.

Figure 19: Import share in domestic demand of selected sectors (Percentage)



Source: Quantec

Taken together, all the above trends offer some important lessons:

1. Industrial policy is working where it is properly resourced and underpinned by solid research and stakeholder engagement. Our continuing strategic approach must therefore be to intensify support for value-addition, with a strong focus on developing our tradable and labour-intensive sectors to support, strengthen and further diversify our manufacturing base so that it is better placed to cope with global headwinds and domestic shocks and constraints going forward.

CONSTRAINTS AND THREATS

South Africa still faces many serious challenges on its road to re-industrialisation. The implementation of IPAP continues to go forward under the shadow of uneven and hesitant global economic recovery and against a set of deep-seated domestic structural problems and constraints. These include:

Administered prices

There is an urgent need for Government to step up its efforts across departments to develop a methodology for establishing more rational and consistent administered prices, both for consumers and (especially) industrial users. This must strike an economically and socially sustainable balance between the different goals and modes of financing, the user-pay and other principles and the range and quality of services provided.

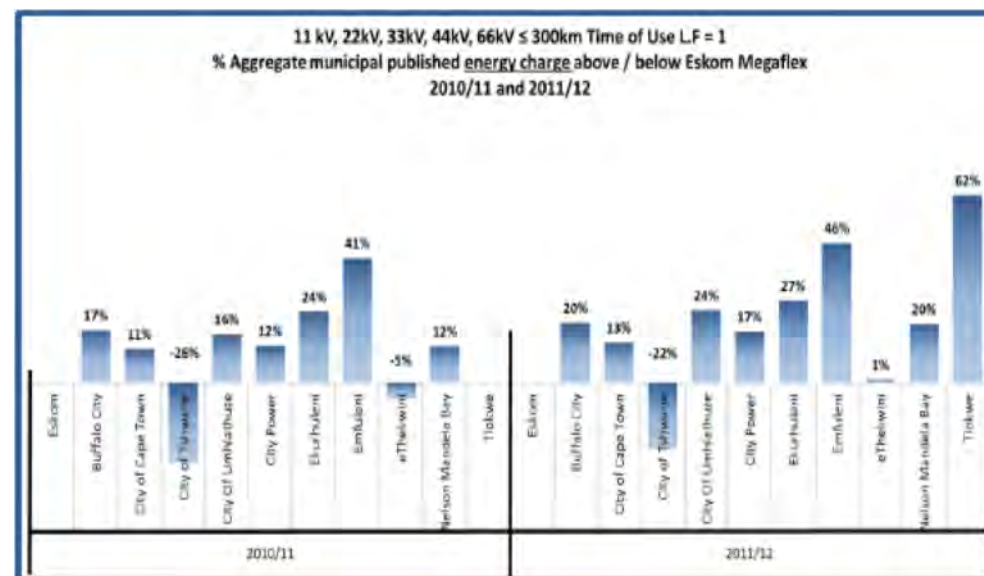
Sharply escalating and ‘bunched up’ administered prices – most notably, electricity and port charges and inefficiencies. The graphs below give an indication of the scale of the problems and – in the case of broadband – the impact on penetration. Since in every case these prices have major implications for the growth capacity and competitiveness of the manufacturing sector, it is critical that the tariff determination policy on these prices be urgently revised.

Electricity: the security of electricity supply and interruptions; Eskom price hikes and of major and increasingly acute concern are the triple-digit premiums added on to Eskom prices by municipalities implementing a local government funding model based on both cost recovery and revenue generation from electricity. This is often compounded by significant inefficiencies and inconsistencies within and between municipalities and billing problems and inconsistencies. Industrial competitiveness deteriorates relative to national and global counterparts in other jurisdictions with the loss of volume or plant closure resulting in reduced shifts and ultimately job losses. A consequential reduction in electricity sales to some or all municipal residents reduces the amount of revenue any particular municipality is able to collect now and in the future; tempts municipalities to increase tariffs to reduce the shortfall and raises moral hazard

Furthermore investment attractiveness decreases with very significant increases of operational expenditure attributed to electricity. This downward spiral creates numerous problems for municipalities, including further reducing revenue. From an industrial perspective: electricity accounts for a far greater percentage of operational expenditure across all industry sectors.

The situation is worsened by the escalating expense experienced by customers supplied by municipalities – considerably higher than if they were supplied by Eskom. Far greater electricity costs, especially for medium and small companies in vulnerable sectors such as foundries; means that municipal customers have and are increasingly becoming less competitive than Eskom-fed competitors. This situation has very negative and unintended consequences, including acting as an incentive for irrational behaviour, such as moving to an Eskom-supplied zone or another country.²

Figure 20: Municipal profit margins for demand charges charged above Eskom Megaflex



Source: EIUG

² Adapted, with acknowledgement, from the Energy Intensive Users Group of SA’s *Municipal Tariffs Study*, Sep. 2012.

A range of possible measures therefore needs to be urgently considered by government to rationalise municipal electricity tariffs and iron out inconsistencies and inefficiencies in and between municipalities.

Water supply and availability: An increasingly serious problem that needs to be addressed is recurrent interruption of water supply, especially in smaller municipalities and to small and medium companies.

Port tariffs: High port charges are a significant barrier and constraint for the export of value-added goods. The cost of export of value-added tradable goods has for some time now been higher than both the cost of exports of primary commodities and the import of tradable goods.

As illustrated in Table 21 below, South Africa has one of the highest levels of port tariffs for containers and automobiles in the world; from more than double to almost four times the global average. At the same time, it is to be noted that South Africa’s port tariffs for iron ore and coal are significantly *lower* than the global average. This is a perversity: port tariffs for primary commodities should be *higher* than for manufactured products, because they embody no manufactured value-add (MVA).

Figure 21: South African port tariffs v. global average

Tariff category	Global average	Tariff	South Africa	South Africa's premium or discount on the global average (%)
Container	\$62,414.90		\$287,217.80	360.2
Container (with rebate)	\$62,414.90		\$245,913.20	294
Automotive	\$92,682.80		\$300,253.60	224
Automotive (with rebate)	\$92,682.80		\$289,560.70	212.4
Iron ore	\$257,113.20		\$208,489.90	-18.9
Coal	\$124,307.80		\$71,049.60	-42.8

Note: Comparisons are based on a set of assumptions (standardized across ports included in the study) with regard to vessel size, load size, services, and the like

Source: Ports Regulator of South Africa 2012

The cost of export of value-added tradable goods has for some time been higher than both the cost of exports of primary commodities and the import of tradable goods. This is mainly because In recent years SA Manufacturers have essentially been ‘subsidising’ other TNPA operations – a situation that is in direct contradiction to government’s policy commitment (under the NIPF/IPAP and NGP) to support the export of manufactured goods to achieve a range of wider economic benefits, including improving the balance of trade.

However, the commitment made by the Transnet National Ports Authority (March 2013) to change its pricing model in favour of the export of manufactured goods by lowering tariffs on tradable exports by about 40% is a step in the right direction and has the potential to significantly boost South African manufacturing.

As things currently stand, the changes under implementation by TNPA are as follows:

- Container full export cargo dues to be reduced by 43.2%
- Container full import cargo dues to be reduced by 14.3
- Motor vehicles exported on own wheels (Ro-Ro) cargo dues to be reduced by 21.1%
- The remainder of the tariffs in the tariff book will be retained at the same level as for the 2012/13 tariff year.

In total, Transnet has disbursed close to R 870 million in export rebates to date, with a further R120 million still awaiting disbursement. It is imperative that everything possible is done to maintain the momentum towards a tariff structure which is strongly supportive of value addition in the economy.

Transport and logistics constraints

High logistics costs and economic infrastructure blockages limit the country's economic development, thus impeding industrial development and competitiveness. The performance of the logistics system has a major impact on the economy especially in the primary and secondary sectors, as they are considerably enabled by transport infrastructure. (The manufacturing sector is a secondary sector in the sense that it involves the movement of manufactured goods). Therefore, high logistics costs affect manufacturing cost structures and revenues, as well as value-addition in manufactured goods and services. Producers are also negatively affected with respect to delivery times, product quality and customer responsiveness capabilities.

- The costs of logistics as a percentage of total GDP have risen by 0.7% to 12.6% in 2011, and are estimated to have risen to 12.8% in 2012.
- Transport costs shot up by 24% between 2010 and 2011, while a further increase of 10.3% is estimated to have taken place between 2011 and 2012. Its contribution to overall logistics costs in 2012 is pinned at 61%, which is the highest it has been in the past nine years - and also significantly higher than the global average.

The roads/rail mix: imbalances, inefficiencies and costs

- Perhaps most importantly, however, the current 70/30 road and rail split has to be reversed towards the historical 30/70 split in order to give further impetus to the development of a better rail infrastructure, sharply reduce operational inefficiencies and create much more robust and efficient linkages into neighbouring markets
- Better logistics performance is strongly associated with trade expansion, export diversification, ability to attract foreign direct investment and economic growth. Logistics costs also affect the ability of the manufacturing sector to expand in terms of international trade.

Skills for the economy

Persistent skills deficits and mismatches - especially in critical sectors of the productive economy - continue to hamper industrial and technological development. There is thus an urgent need for further demand-led skills interventions in these sectors. These efforts must include: support for better demand-side planning; deeper involvement of SOCs and the private sector in providing resources for training; and a more strategic and sustainable approach to meeting scarce skills needs overall - including on-going review of immigration policy constraints.

Monopolistic pricing of privately owned key intermediate inputs into the manufacturing sector.

The price of key intermediate inputs - particularly steel products and products in the plastics value-chain - remains a binding constraint on the competitiveness of SA manufacturing. Given South Africa's enormous resource endowment and associated capabilities, what should be a competitive advantage becomes, in some instances, a disadvantage.

Recent downward adjustments and removals of import tariffs on some of these products - particularly in sectors where single market-dominant firms exist - have provided a modest degree of price moderation, estimated at between 5% and 10%. However, import parity pricing mark-ups are often of a higher order of magnitude, meaning that such tariff reductions have a limited impact on price moderation. The cost of critical intermediate inputs such as steel, plastics and polymers into the manufacturing sectors continues to constitute a major constraint to industrialisation.

It is therefore important to reiterate the point we made last year: namely, that the prevailing practices of import parity pricing and excessive profit-taking require urgent remedial attention. If this is not achieved, we will continue to effectively throw away the potential competitive advantage of South Africa's enormous resource endowment.

Financial market failure

South Africa has yet to start making a decisive break from its entrenched consumption-driven growth model. A market-driven approach results in only very modest investment in the productive economy, characterised by relatively high finance costs and onerous term conditions. This continues to starve the manufacturing sector of private sector investment, perpetuating the high cost of finance for industrial development.

On-going efforts to deal with this issue include a scoping and review exercise currently under way which will make proposals for a more strategically focussed set of investment instruments and incentives across all DFIs and departments.

Potential unintended consequences of environmental compliance

Protection of the environment and the limitation and exclusion of the negative health and social impacts of industrial development on the population are paramount. It is important to also recognise that energy efficiency and less carbon-intensive production will increasingly become a competitive advantage in the long run. In the short to medium term however it is important to guard against the potential unintended consequences of policy fragmentation in the environmental arena. Without compromising efforts to ensure that South Africa meets its global commitments to carbon mitigation strategies, great care must be taken not to produce and implement 'blanket' environmental legislation without properly designed phasing-in mechanisms for vulnerable industrial sectors. In the absence of such mechanisms, onerous compliance requirements can easily lead to further factory closures; job losses and higher levels of poverty

In addition, the proposed Carbon Tax (intended to positively strengthen climate change mitigation measures) could turn out to be a 'tipping point' for industry if it is implemented without due regard to energy intensive and especially small and medium sized users.

In this context, it is important to begin developing a systematic set of approaches that can provide a reasonable degree of transitional protection for vulnerable industries, while at the same time continuing to energetically scale up energy efficiency interventions such as the National Cleaner Production Centre.

Intra-governmental / inter-departmental coordination

On the environmental front there is a clear need for much better intra-governmental coordination and policy coherence with regard to identifying the likely impacts of carbon mitigation legislation on employment, investment and growth.

More generally, the necessary accelerated implementation of the state infrastructure and other important developmental programmes continues to be checked by a range of problems related to insufficient structural and operational integration (in addition to regulatory blockages and compliance obstacles). Amongst other things, addressing these issues will require a considerable strengthening of the mechanisms through which the productive sector clusters work.

State-led infrastructure programme

The expeditious roll-out of the public infrastructure investment programme being driven by the Presidential Infrastructure Co-ordinating Commission (PICC) continues to be critical, and will need to be supported by robust localisation measures to ensure that the infrastructure build does not 'suck in' unnecessarily high volumes of imports to SOC programmes, thus impacting negatively on the already overstrained current account balance. At the same time it will be important to ensure that SOCs' financing of infrastructure does not lead to further damaging user-pay increases for manufacturers.

OPPORTUNITIES FOR INDUSTRIALISATION

As already extensively argued above, the global economy is witnessing massive structural changes and significant shifts in the balance of power. In addition, we are entering a new wave or 'second machine age' driven by exponential advances in technology - additive manufacturing; composite materials, deepening digitization of information flows and productive processes – together with the intensifying need to secure effective energy efficiency and carbon mitigation measures. It is of critical importance that South African manufacturers remain competitive in the context of these dynamics. In the never-ending search for greater competitiveness, higher productivity, lower prices and economies of scale, SA cannot afford to find itself left behind. Consolidation and further step-changes are therefore required, demanding - amongst other things - the following:

Industrial policy

Industrial policy must develop 'deep-dive'/granular knowledge across all the main manufacturing sectors in order to identify and support dynamic export-oriented companies (especially in sectors where SA enjoys competitive advantages/opportunities). This must be accompanied by a stronger focus on performance conditionalities and more effectively targeted industrial financing in government and private sector partnerships - particularly for key sectors such as Mining and Transport Capital Equipment.

Industrial policy must at the same time protect and strengthen domestic demand by securing both public and private sector local procurement and supplier development practice and programmes.

Beneficiation

Strengthening and deepening industrial development will need to rest in great measure on securing concessional access to mineral feed-stocks as a source of competitive advantage and developing value-adding beneficiation as a competitive advantage for the domestic manufacturing sector.

IPAP 2014/15 contains the first of a set of Key Action Plans, commencing what must over the next few years become a comprehensive set of interlocking policies, programmes and action plans to secure this competitive advantage.

Infrastructure development

A key challenge for 2014 and beyond will be to use the massively scaled up infrastructure investment programmes being driven under the Presidential Infrastructure Coordinating Committee (PICC) as a powerful driver of industrialisation. This will provide both a challenge and an enormous opportunity for the localisation of a wide range of manufactured inputs into the infrastructure build – especially in construction, metals, capital and rail transport equipment and renewable energy - provided that the required institutional architecture and localisation programmes can be fully secured. Figure 23 below provides a sense of the scale of investment in the pipeline over the upcoming decade.

Figure 23: Mega projects under consideration 2013 -2023

R billion	Project stage								Total	Per- cent of total
	Con- cept	Pre- feasi- bility	Feasi- bility	Finan- cing	Detailed design	Tender	Con- struc- tion	Ongoing pro- grammes ¹		
Water	–	–	20	47	22	7	15	20	131	3.6
Transport	383	–	130	19	52	88	25	126	823	22.9
Electricity	300	53	550	–	98	464	385	152	2 002	55.7
Liquid fuels	–	3	209	8	–	–	23	–	243	6.8
Education	12	–	–	68	–	–	18	34	133	3.6
Health	–	–	50	29	–	–	–	37	116	3.2
Telecommunication	12	–	–	0	4	16	3	–	36	1.0
Human settlement	–	–	–	84	–	–	26	–	110	3.2
Total	707	56	958	256	176	575	496	368	3 592	
<i>% total expenditure</i>	<i>19.7%</i>	<i>1.6%</i>	<i>26.7%</i>	<i>7.1%</i>	<i>4.9%</i>	<i>16.0%</i>	<i>13.8%</i>	<i>10.2%</i>	<i>100.0%</i>	

1. Ongoing programmes include multiple projects at different stages of development, such as universal access to electricity and school building programme

Source: National Treasury Budget Review 2013

Competition Issues

Strengthened, fast-tracked work is needed on competition and regulation policies and legislation, with a view to lowering the costs of inputs of critical goods and services into manufacturing and other productive activities and goods and services that are consumed by poor and working class families. This will require a thorough review of competition policy in general and the Competition Act in particular, with a view to enhancing the powers of the Commission to ensure competitive outcomes, initiate complaints protecting the broader public interest and monitor and enforce compliance.

Natural and shale gas

The discovery and exploitation of extensive natural gas fields in Eastern and Southern Africa and of very large Indicative deposits of shale gas in South Africa brings with it the potential for a major shift in the regional energy mix and provide enormous impetus to future industrial and economic growth for the region as a whole and as an anchor for regional industrial integration.

In the short to medium term South Africa's shale gas deposits must be subject to an exploration and exploitation process geared towards both environmental sustainability and affecting a structural shift in the economy. Properly handled the enormous gas and shale gas endowment in Southern Africa has the potential to very substantially lower the cost of energy across the entire manufacturing sector, while at the same time driving significant up and side stream manufacturing and services sector growth; open up the possibilities for new sectors such as ceramics and enhance downstream beneficiation with very significant multipliers for the economy.

Regional industrial integration and new export markets

Sustained and concerted regional growth is arguably the biggest stimulus to long-term growth in South Africa. Dynamic SA manufacturing companies have already seized the opportunity to increase exports, intensify marketing initiatives and establish after-sales servicing capacity. The prospects of regional integration offers the region as a whole an enormous opportunity for shared and integrated industrial development, inclusive of opportunities for SA to grow its exports base. A number of ongoing and scaled-up interventions are in the pipeline. These include: planning cross-border infrastructure; effective articulation of up- and downstream linkages in resource exploitation; and the realisation of massive construction opportunities.

Continuing rapid progress in the regional integration drive will, however, require stronger identification of complementarities and cross-border value chains; the strengthening of existing export market research; market and product identification; and an export promotion drive built around strategic domestic manufacturers.

Significant moves have, however, begun to be made under the auspices of TISA. The African Regional Strategy – now incorporated into the Diversification Strategy – is directly aimed at intensification of export promotion strategies into the continent.

BRICS

South Africa's participation in the BRICS provides important opportunities to build its domestic manufacturing base, enhance value-added exports, promote technology sharing, support small business development and equitably balance and expand trade and investment opportunities. The BRICS countries are at various stages of industrialisation and their markets are highly differentiated. At the same time as ensuring that the space for policy adjustment remains open in the ongoing process of intra-BRICS engagement the development of complementarities and integrated value chains should be underpinned by an overall approach that puts industrialisation at the core of the engagement.

IPAP 2013-2014: ACHIEVEMENT HIGHLIGHTS

A. TRANSVERSAL HIGHLIGHTS

1. INFRASTRUCTURE AND INDUSTRIAL FINANCING

- Over the past five years of this administration R1 trillion has been spent on infrastructure investment, with steadily increasing localisation.
- The IDC stepped up funding to boost youth entrepreneurship to a total of R2.7 billion. Over the past four years the IDC has invested R45 billion in equity or loans, helping to create new job opportunities in manufacturing, infrastructure development, the green economy and the services sector.
- Over the past 9 months (between April 2013 and December 2013) IDC funding approvals of approximately R9 billion resulted in effective support for 9, 111 jobs (either created or saved).

The approvals include funding to the value of:

- R5.5 billion for the green industry;
- R828 million in Chemicals and Allied Products;
- R686 million in mining and minerals beneficiation;
- R552 million in Metal, Transport and Machinery Products;
- R396 million in Textiles and Clothing;
- R334 million in Forestry and Wood Products;
- R239 million in ICT;
- R130 million in Agro-industries;
- R6.6 million in Media and Motion Pictures;
- R393 million in Healthcare.

1.1. Manufacturing Competitiveness Enhancement Programme (MCEP)

- Since its inception in May 2012, The Manufacturing Competitiveness Enhancement Programme (MCEP) has approved funding for 413 entities and R2.8 billion has been committed to support manufactures with a total investment value of R12.4bn, helping to sustain 110 977 jobs; 63,094 of which will be in agro-processing, metals, chemicals, plastic, wood, pharmaceuticals, printing, the electro-technical sector and film.
- Agro-processing received grants totalling R1 billion; chemicals R440 million; metals R883 million; wood R50 million; print R134 million.

1.2. 12i Tax incentive

- Since 2010, the 12i tax incentive has offered R20 billion in tax breaks for compliant manufacturing projects, enabling the dti to leverage R32-billion in actual and projected new investments over the period 2010-2015.
- A number of the tax allowances awarded so far have been of very significant size, with PhytoAmandla, Rainbow Nation Fuels and Sephaku receiving over R896 million and Sappi and Arengo 316 approximately R543 million.

1.3. Manufacturing Investment Programme (MIP)

Since inception in 2008, the Manufacturing Investment Programme (MIP) has approved 1,856 projects, with a total incentive value of R4.9 billion. These are projected to secure investments amounting to R35.4 billion and create 43,570 jobs. The top 3 sectors for project approval were Agro-processing (498 projects, 27%); Metals (462 projects, 25%); and Chemicals (418 projects, 22.5%).

1.4. National Exporter Development Program (NEDP)

On 3 April 2013 **the dti** launched a new development programme, The National Exporter Development Programme (NEDP), aimed at bolstering South African exporters' readiness to compete globally through the identification of key products and markets, as well as skills enhancement, knowledge sharing and support. The programme seeks to boost the country's slower-than-anticipated exports and under-developed exporter base.

The Export Credit Insurance Corporation (ECIC) is an important vehicle in boosting export trade between South Africa and the rest of the continent and has been voted the best Export Credit Agency (ECA) in Africa by the readers of Global Trade Review magazine.

ECIC's increased role on the continent has resulted in a steady growth of new commitments and has seen its overall portfolio value rising from R11 billion to R17 billion. The supported projects will generate at least 15,000 job opportunities in South Africa and in the host countries where the projects are located.

2. SPECIAL ECONOMIC ZONES & INDUSTRIAL DEVELOPMENT

2.1. SEZ

In August 2013 legislation was endorsed by the National Assembly and National Council of Provinces Trade and Industry Portfolio Committees that will enable the graduation of Industrial Development Zones into Special Economic Zones. The Bill is presently before Parliament. A new tax incentive which offers a blanket corporate tax rate of 15% was approved as an investment incentive in SEZs.

2.2. IDZ

The Saldanha Bay IDZ was launched by President Zuma in October 2013. It is committed to contributing 86% to the region's gross geographic product and creating nearly 12,000 direct, indirect and induced jobs. It is expected to attract R9.3-billion in foreign direct investment over the next 25 years.

The Saldanha IDZ - which is one of South Africa's 18 Strategic Integrated Projects - is strategically located to serve the large oil and gas sector on the West Coast of Africa and provide an opportunity for greatly expanded and enhanced manufacturing of componentry for the oil and gas industry.

The Saldanha Bay IDZ licensing company has signed six lease agreements with international and South African oil and gas companies.

The Richards Bay Industrial Development Zone (RBIDZ) was allocated funding to the value of R151.9 million over the three-year period 2013/14-2015/16.

3. NATIONAL INDUSTRIAL PARTICIPATION PROGRAMME (NIPP)

- The Revised NIPP guidelines, approved by Minister Davies in 2013, have effectively closed existing loopholes with respect to multiplier calculations and have placed a strong emphasis on Direct NIPP – investment by overseas companies which secure government tenders above US\$10 million – directly into the value adding and tradable manufacturing sectors in which the procurement took place.

4. PUBLIC PROCUREMENT

As will be seen in more detail later in this document (in the section on 'Transversal Interventions'), the key issue here is achieving closer alignment and strengthening of all public sector procurement and supplier development instruments.

- Government is currently using (i) designation/local content, (ii) National Industrial Participation (NIPP) and (iii) the Competitive Supplier Development Programme (CSDP) as distinct procurement levers to leverage expenditure aimed at developing new industrial and technological capabilities.
- In November 2013, PSA unveiled South Africa's above-the-line buy-local campaign, *BuyBack SA*, a collaborative effort between **the dti**, business and *Proudly South African*, including co-financing.
- On 5 July 2013, the Minister officially launched the new SABS Local Content Verification Office, together with a new technical instrument (SATS 1286) in support of South Africa's localisation strategy for state and SOE procurement. The tool creates clear objective criteria for the issuance of an audited 'Local Content Certificate'.

5. DEVELOPMENTAL TRADE POLICY

5.1. Customs

- In August 2013 SARS implemented the new automated customs management system which centralises the clearing of all import and export declarations using a single distributed processing engine. It is reported that the system is proving highly successful, with close to 39,000 import declarations and more than 55,000 export declarations having been processed since its introduction. It is also expected that it will contribute substantially to reducing delays at border posts.
- These export and import declarations represented more than 500,000 consignments that were declared and processed within the new system. Since its implementation, goods to a total trade value of R40-billion have moved through South Africa's borders, with more than R2.5-billion collected in duties.
- Over three years, R1 billion worth of illegal or substandard goods have been confiscated. This progress has been registered against the background of the SARS Modernisation Programme, which includes a real-time electronic system and introduces an electronic reference pricing system and risk engine for search and seizure. This has been supported by technical upgrading, co-ordination of intelligence and strengthening of capacity at ports of entry.

5.2. Legal Metrology Bill

The Legal Metrology Bill has now been passed by Parliament. It is aimed at promoting fair trade, industrialisation and enhanced protection for both the environmental and public health and safety. Its main measures are to expand and strengthen the scope of trade metrology and enforce legal metrology, protecting consumers against inaccurate measures and support local industrial competitiveness.

6. COMPETITION POLICY

- In 2013 the Competition Commission fined 15 major construction firms a collective R1.46-billion for collusive tendering related to projects concluded between 2006 and 2011.

- The Competition Tribunal confirmed the settlement agreement reached between telecommunications group Telkom and the Competition Commission. Telkom admitted to anticompetitive behaviour and agreed to pay a fine of R200-million over three years.
- *Poultry*: The Commission settled its price fixing and abuse of dominance case against Astral and an administrative penalty of R16.7 million was imposed.
- *Glass*: The Commission settled its price fixing and market allocation case against Glass South Africa and an administrative penalty of R4.3 million Glass SA undertook to refrain from engaging in anti-competitive conduct.
- *Cattle feed*: The cattle feed price fixing case against MGK was settled and an administrative penalty of R32 346.00 was imposed.
- *Grain*: The exclusionary conduct or margin squeeze case against SENWES was settled by the Commission and SENWES. SENWES undertook to transfer its remaining grain marketing business comprising SENWES client base and goodwill in relation to white maize sunflower and diverse commodities to a separate legal entity owned by SENWES (referred to as NEWCO) by 31 May 2014.
- The World Economic Forum's Global Competitiveness Report for 2013-14 ranked South Africa eighth out of 148 countries for the effectiveness of its anti-monopoly policy.
- The Competition Commission has gazetted the terms of reference for the market inquiry into private healthcare. The inquiry will probe the private healthcare sector as a whole to determine the factors that restrict, prevent, or distort competition, increases in private healthcare prices and expenditure in South Africa.

B. SECTORAL HIGHLIGHTS

1. AUTOMOTIVE

- Between April 2013 and December 2013, 22 Automotive Investment Scheme (AIS) projects were approved, with total estimated investments of R6.2 billion and an expected 711 new jobs to be created.
- In collaboration with the Department Environmental Affairs (DEA), **the dti** launched the Electric Vehicle (EV) Industry Road Map initiative, which looks to develop a local EV industry in South Africa through the application of several strategic new technology interventions.
- In terms of investments, industry has committed to invest R4.5 billion in manufacturing plants and automotive supplier plants. Major companies have included:
 - Iveco announced the formation of Iveco South Africa Works, a new 60:40 joint venture partnership between Iveco and local public transport operator and bus manufacturer Larimar group. The plant in Rosslyn will assemble an initial 5,000 units in 2014, with the creation of more than 1,000 new jobs.
 - Toyota invested in a manufacturing facility to produce a new model Toyota Corolla at the company's Durban plant.
- Mercedes-Benz SA has escalated its total investment in SA to over R5 billion, underpinning an increase in its local output to 100,000 units a year and creating 800 new jobs.
- Production of the new C-Class has already started at Mercedes' East London plant, and will slowly ramp up from the current 250 units a day to full capacity of 420 units a day by year's end. The new model will be introduced to the South African market in June 2014.
- Since the Designation of buses, 300 buses have been procured with localisation requirements as set out in the Designation. Major contracts have included:
 - Mercedes-Benz SA's successful tender to provide 134 buses for phase 1B of Johannesburg's *Rea Vaya* BRT system;

- Volvo SA's successful tender to provide 40 new vehicles to the City of Cape Town for its extended MyCiti bus routes, at a cost of R180m;
- MAN supplying 80 new commuter buses to Great North Transport, Limpopo's largest public transit operator.

- General Motors South Africa (GMSA), in partnership with component manufacturer Tenneco South Africa (SA), had been awarded a R6-billion contract to export catalytic converters to North America.

2. METAL FABRICATION, CAPITAL AND RAIL TRANSPORT EQUIPMENT

- On 17 March 2014, transport utility Transnet awarded a R50 billion contract to four manufacturers for the building of 1,064 locomotives, which will create and/or preserve approximately 30,000 jobs.
 - The contracts – which include stringent local content, skills development and training commitments - were awarded to CSR Zhuzhou Electric Locomotive and Bombardier Transportation SA to supply 599 electric locomotives, while General Electric South Africa Technologies and CNR Rolling Stock South Africa (Pty) Ltd would build and supply 465 diesel locomotives.
 - All the locomotives except 70 are to be built at Transnet Engineering's plants in Koedoespoort (Pretoria) and Durban, to help drive the country's regional integration objectives.
- The National Tooling Initiative Programme (NTIP), supported by the Gauteng Tooling Initiative (GTI), in conjunction with the Toolmaking Association of South Africa (Tasa) and the Gauteng Department of Economic Development (GDED), has launched an enterprise development programme to bring Gauteng tooling manufacturers in line with global best practice and boost their competitiveness and profitability in July 2013.
- The Gauteng Foundry Training Centre was successfully launched on 18 September 2013 at the Ekurhuleni East FET. This will assist the industry in the implementation of foundry apprenticeship programme.
- The tool maker apprenticeship course was accredited by SAQA in Nov 2013.

3. AEROSPACE AND DEFENCE

- European plane maker Airbus Military, part of the Airbus group, announced in 2013 that it had awarded South African aerospace company Aerosud major component contracts for the A400M airlifter for the whole of the programme.
- A ten-year multibillion-rand Armscor contract, which would see State-owned Denel produce over 200 armoured vehicles for the South African National Defence Force (SANDF) was expected to “significantly and permanently” change the South African defence industry. The production of the Badger is expected to create about 2,000 jobs during its production period.
- South African company Saab Grintek Defence (SGD), part of the Swedish Saab aerospace and defence group, has been awarded two orders, worth \$33-million (about R335-million) in total, by Indian State-owned aircraft company Hindustan Aeronautics Limited (HAL) to supply it with electronic warfare (EW) self-protection systems. These will be fitted to the HAL Dhruv advanced light helicopters being delivered to the Indian Air Force and Army.
- The first cube satellite developed on the African continent - ZACUBE-003 - was launched into space on 21 November 2013 in Russia and is fully operational. This was made possible by a combined intervention between **the dti**, SACSA and the DST to support the development of the FSATI/CPUT Engineering in Training Programme and authorise the issuing of a launch licence.

4. GREEN INDUSTRIES

- After 28 bids in the first round, significant progress has been made in REIPPPP, with the Department of Energy approving 19 bids in the second round. The solar photovoltaic sector accounts for 9 bids; wind for 7 bids; small hydro for 2; and concentrated solar power (CSP) for 1.

The total preferred bidders’ investment is estimated at R28.1 billion with a local content value of R11.8 billion and 7,385 jobs expected to be created. The IDC’s total REIPPPP-related commitments currently stand at R7.7-billion.

- The IDC approved funding for 43 projects worth R3.8 billion in Green Industries. More investments are set to follow in wind tower production, solar PV structures and PV panel assembly.

- JA Solar and Powerway established a Solar Module Manufacturing Facility in South Africa, located in Port Elizabeth’s COEGA Industrial Development Zone, servicing customers in the broader Southern African region with solar modules assembled from JA Solar’s high-efficiency cells.

Production is scheduled to begin in the second quarter of 2014, with the plant targeted to reach an initial annualised capacity of 150 MW. The facility is expected to provide 200 jobs.

- In February 2014, engineering group DCD Wind Towers completed construction of a R300-million wind tower manufacturing facility, also located in the Coega IDZ. The factory will have the capacity to produce 110 wind towers a year, increasing in due course to 200 a year. The facility will be manufacturing for various original-equipment manufacturers (OEMs) already participating in the REIPPPP.
- Multi-sector company Corporación Gestamp’s wind industrial division, GRI Renewable Industries, will start manufacturing wind towers at its new manufacturing facility in Cape Town during the second half of 2014. The €22-million facility will have the capacity to create 150 towers a year and is expected to create more than 200 jobs. The Gestamp group, through its subsidiary Gestamp Wind, will also be constructing a €160-million, 75 MW wind farm on the Noblesfontein farm in the Karoo, as part of an award made under the first window of the REIPPPP; and is currently bidding for another 100.8 MW wind project in the third round of the public tender process.

5. CLOTHING, TEXTILES, LEATHER AND FOOTWEAR

- Overall, the introduction of the Clothing and Textile Competitiveness Programme (CTCP) has stabilised the sector. Under the Competitiveness Improvement Programme (CIP) 44 applications were received to the value of R 645 million, with R77.7 million already disbursed. Under the Production Incentive Programme (PIP) 777 approvals have been made to date, to a total value of R2.2 billion. Since inception 63,311 jobs have been saved and 8,459 new jobs created.

[By way of example, one success story: the K-WAY factory ownership has recently stated that its record of success growth over the past few years was directly due to **dti** assistance that allowed it to buy the best machinery available, turning round from the brink of collapse to becoming a highly profitable and stable entity producing garments of outstanding quality. Over the period of **dti** assistance it has doubled both the scale of its operations and the number of people it employs].

- The Competitiveness Improvement cluster programme has secured the participation of some notable local retailer chains. Retailers are sourcing almost a third of their clothing from local suppliers in order to respond more rapidly to breaking fashion trends.
- The share of locally produced clothing sold in the South African market has remained at around the 25% to 30% mark, despite fierce international competition and the continuing threat of 'grey' and illegal imports, while aggregate consumer demand has steadily grown over the past 10 years. Vertical clusters set up between large clothing and textile manufacturers such as Celrose and Clotex and small, micro and medium enterprises and other smaller CMT operations have made all this possible.
- Two new regional footwear clusters have been established under the National Leather and Footwear Cluster Initiative – the Fast-Track Cluster (Eddels) in KwaZulu Natal and the Southern Cape Regional Footwear Cluster (Watsons). Fast-Track's production has grown from zero to 1,200 pairs of shoes per day (approximately 26,000 pairs per month) and has created 150 sustainable new jobs, whilst Southern Cape Regional's production has grown from zero to 6,350 pairs per day (approximately 13,3350 pairs per month) and created 560 sustainable new jobs.

6. AGRO-PROCESSING AND BIOFUELS

- **Milling:** The **dti** in collaboration with Buhler, launched the innovative Isigayo plant in April 2013. The **dti** also facilitated the establishment and launch of a small-scale milling plant by Kuvusa (Pty) Ltd in Durban. 24 more mills are in the pipeline, with 8 feasibility studies having already been concluded. This initiative seeks to increase competition and reduce maize-meal prices to working class and poor consumers.
- **Agro-processing:** Company-level joint action plans were developed with a number of major companies in the agro-processing sector to facilitate investment and promote product and export destination diversification.

Partly as a result of these interventions and incentive support, significant new investments were undertaken across a spectrum of sub-sectors such as animal feed, soybean processing, food-processing, beverages, and processed fruit and vegetables.
- 8 new products in the South African Fruit and Vegetables Canning Association (SAFVCA) were launched by the Minister in Cape Town.
- The *Eat Well, Eat Safe* campaign was launched and rolled-out to, stressing the advantages of buying local, high quality, safe products.
- To date seven biofuels manufacturers have been licensed by Department of Energy & an eighth potential manufacturer is in initial stages of licensing. Manufacturers are in 4 provinces; KwaZulu Natal, Eastern Cape, Free State & Gauteng. These producers will use Sugar Cane, sugar beet, Canola oil, Sorghum & Soya beans as feedstock. This is expected to boost job creation in agricultural sector in these provinces.

Aquaculture

To unlock the latent economic potential of the aquaculture sector, in 2013 **the dti** (in collaboration with DAFF) developed and launched the Aquaculture Development and Enhancement Programme (ADEP) - an incentive scheme designed to increase investments in the sector, enhance competitiveness and grow employment.

Since inception 11 projects with an investment value of R314 million were approved for ADEP to the tune of R72 million in incentives expected to create 364 jobs in Western Cape and Gauteng.

7. PLASTICS, PHARMACEUTICALS, CHEMICALS AND COSMETICS

- A pioneering South African medical device took the spotlight in the award-winning American medical drama *Grey's Anatomy*. The device is unrivalled as the world's first, and only, full-body, high-speed, digital x-ray scanner. Originally developed as a security tool in the diamond industry, the device was adapted by South African company Lodox Systems to enable a huge advance in medical trauma management.
- Part of the 2013-2014 Family Planning Tender (all SA-made contraceptives) worth an estimated R100 million has been designated. Preliminary data show that 70% of the 2013-2014 anti-TB tender (worth R 850 million) has been won by SA manufacturers (in the absence of designation).

8. BUSINESS PROCESS SERVICES (BPS)

- 8 new projects have been approved on the BPS incentive programme which will create an additional 2,421 jobs and attract R528 million in investments over 3 years. Since inception in 2011, the total amount of claims paid on the incentive has reached R249.6 million and the number of jobs sustained is estimated at 8,904.

- In recognition of this success, the National Skills Fund has approved a further R71 million for the Monyetla Training Project for financial year 2013/14. With match-funding guaranteed by the DBSA, this allowed the Project to move without interruption into Phase 4, guaranteeing that another 6000 learners will be trained in the short to medium term.

9. CREATIVE INDUSTRIES: CRAFT, MUSIC AND FILM

9.1 Film

- According to a recent study conducted by Deloitte for the National Film and Video Foundation (NFVF), South Africa's film industry has grown significantly since 2005, contributing R3.5 billion to the national economy in 2012 with further growth expected over the next five years.
- Between April 2013 and December 2013, 66 film and TV productions were supported by **the dti**, with an estimated total investment of R1.8 billion.
- On the basis of sustained support from **the dti**, South Africa has already attracted an impressive roster of locally shot blockbuster films, including: *Long Walk to Freedom*.

9.2 Craft

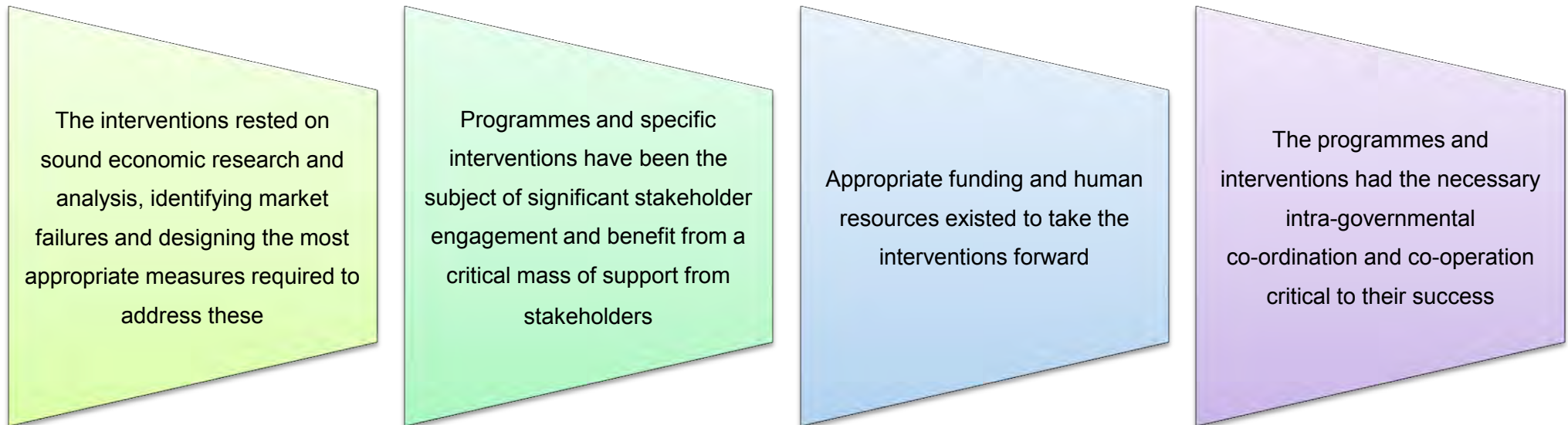
- Arising from a joint initiative between the Cape Craft & Design Institute (CCDI) and National Treasury's Jobs Fund programme, implemented by the DBSA, 104 new sustainable long-term jobs were created between September 2012 and October 2013 in the Western Cape craft and design sector – with more in the pipeline. During the first year of this three-year programme, the CCDI disbursed over R5.5 million to 44 participating enterprises, while the businesses themselves contributed over R1.3 million. The Jobs Fund covers 80% of new intervention costs, with craft enterprises making up the balance.

PROGRESS IN THE IMPLEMENTATION OF IPAP

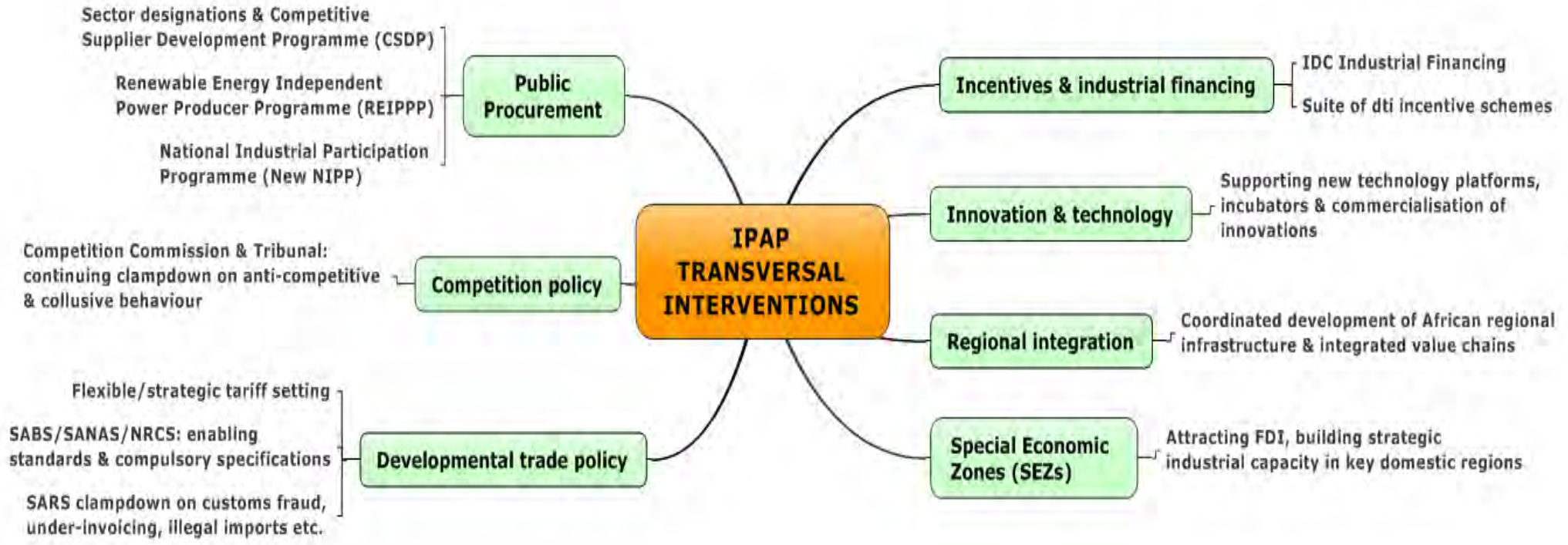
In this sixth iteration of IPAP, the key progress highlights for the previous year are once again set out graphically, for both transversal and sector-specific interventions.

These progress highlights do not represent an exhaustive list of all the outcomes and progress platforms built in the course of the previous year. They serve as a snapshot of a much more substantive body of work which underpins these achievements, based on a set of critical and indispensable principles for industrial policy and industrial development.

These are as follows:



IPAP 2014/15 – 2016/17 INTERVENTIONS: MAIN TRANSVERSAL FOCUS AREAS



TRANSVERSAL INTERVENTIONS

Public Procurement

Public procurement accounts for a sizable part of the economies of both developed and developing countries, generally contributing between 15 to 25% to GDP. In South Africa, it is one of the key industrial levers set out in the New Growth Path (NGP) and Industrial Policy Action Plan (IPAP). It is also a key policy instrument in delivering on government priorities, underpinning the achievement of the social, economic and environmental benefits that sustainable economic growth demands. In South Africa, a number of priority areas are being integrated into public procurement policy and procedures. These include: supporting and strengthening small and emerging enterprises; encouraging the commercialisation of new products and services; and fostering a sustainable green economy.

Closer alignment and strengthening of all public sector procurement and supplier development instruments is currently under way, with a particular focus on Designations, the National Industrial Participation Programme (NIPP), the Competitive Supplier Development Programme (CSDP) and the mandatory localisation provisions incorporated into large projects such as the Renewable Independent Powers Producers Procurement Programme (REIPPP). These efforts need to be aligned with more strategically focussed initiatives by organisations like *Proudly South African* and all-round endeavours to change consumer attitudes and private sector procurement policy through local initiatives like the *BuyBack SA* Campaign.

In addition, ongoing efforts to secure increased private sector support for localisation - especially by large companies with significant procurement spending - must be given much greater impetus. Strategic local sourcing and supplier development in the mining; health and ICT sectors would add considerable momentum to the overall campaign.

Government has significant purchasing power that it can use to stimulate economic development and industrial innovation and transform public services. The extent to which the policy instrument of designation can be leveraged in support of the domestic manufacturing sector is indicated by the fact that in 2012 public procurement amounted to R236.65 billion and constituted 7.4% of GDP.

Table 1: List of designated industries, sectors and sub-sectors for local production

Industry/sector/sub-sector	Minimum threshold for local content
Buses (bus body)	80%
Textile, clothing, leather and footwear	100%
Power pylons	100%
Canned / processed vegetables	80%
Rolling stock	65%
Pharmaceutical products (oral solid dosage tender)	(73% of the tender volume)
Set-top boxes for TV digital migration	30%
Furniture <ul style="list-style-type: none"> • Office Furniture • School Furniture • Base and Mattress 	85% 100% 90%
Power and telecom cables	90%
Solar Water Heaters (collectors and storage tanks/geysers)	70%

Nevertheless, too much emphasis in procurement processes is still being placed on the traditional practice of acquiring goods and services at the lowest cost, regardless of origin and quality – thereby failing to stimulate either domestic development of improved products and services or the creation of new markets for industrial innovations.

Non-compliance across government departments and agencies remains a significant problem, indicating a clear need to build strategic sourcing and supplier development practices right across the public sector.

Harmonisation of procurement levers used by government

Government is currently using (i) designation/local content, (ii) National Industrial Participation (NIPP) and (iii) the Competitive Supplier Development Programme (CSDP) as distinct procurement levers to leverage expenditure aimed at developing new industrial and technological capabilities. The case for developing a strategy to promote specific South African industries through better leveraging of procurement goes beyond the obvious opportunity presented by the increase in government procurement spending. It is in the national interest to develop a strong and diversified local industrial base capable of expanded production of *new goods and services* in key strategic sectors.

This will require clear-cut criteria and a robust governance framework for procurement decision-making and scaling in strategic projects promoting key industrial capabilities. Such an approach should balance South Africa's short-term practical needs with the long-term goal of high value-added participation in global markets. The required guidance framework can be achieved by:

- ensuring close cooperation between **the dti**, the National Treasury (NT), the Department of Economic Development (EDD), the Department of Public Enterprises (DPE) and the major state-owned companies (SOCs) in order to complete, as soon as possible, the full-scale review of the public procurement system which is already in process under NT leadership;
- leveraging public expenditure on strategic infrastructure projects to enhance local production capabilities;
- working closely with the NT to get more departments and municipalities to participate in locally-managed transversal contracts (as has already begun to happen in the area of textiles and buses). This will assist government in negotiating for reasonable supplier prices, achieving economies of scale and providing value for money to the fiscus;
- building the necessary procurement planning, strategic sourcing and supplier development capacity across the full range of government agencies.

National Industrial Participation Programme (NIPP)

The NIPP was reviewed in 2012. This resulted in new guidelines which were approved by the Minister of Trade and Industry in 2013 as part of a process to align and consolidate the public procurement regime. The new guidelines significantly close previous loopholes - especially with respect to the calculation of multipliers – and strongly favour “direct” investment in the sector in which procurement took place.

The next challenge is to ensure that there is very strict adherence to the new NIPP Guidelines. This will require further work with the NT and other departments and agencies to ensure that existing PFMA, MFMA and associated regulations, including practice notes, are amended to make NIPP compliance unambiguous and explicit. This should be in addition to efforts to ensure that localisation and supplier development are strongly built into tender processes.

Going forward, emphasis will be placed on developing tender-specific strategies on how to exploit the direct NIPP option to leverage investment and competitiveness upgrading in the tender value chain. It is self-evident that properly aligned public procurement instruments have the potential to greatly stimulate domestic manufacturing capacity, increase industry competitiveness, create new export channels for locally produced goods and, in the process, contribute substantially to job creation.

Monitoring and evaluation of local procurement

Effective monitoring and evaluation of the designated sectors and NIPP obligations is crucial to the successful use of procurement levers. This requires that strengthened systems are put in place to ensure that the set minimum local content thresholds are met by potential suppliers. In this regard the SABS has finalised the verification frameworks and started with the verification of local production for textiles and clothing, rail rolling-stock and buses. **The dti** has also briefed the Auditor-General on the monitoring and auditing of expenditure for designated sectors. This is important in providing audit opinions on contracts relating to designated sectors, performance in general and supplier compliance.

Amplification of a focused buy-local campaign in support of the manufacturing sector

Properly organised and sustained buy-local campaigns have the potential to shift spending to benefit local businesses. It is for these reasons that the Minister of Trade and Industry – working in cooperation with *Proudly South African* - launched the first phase of the *Buy-back SA* Campaign in November 2013. Buying local means more than consumers just buying locally manufactured goods. It is also crucial that companies with large procurement budgets and supply chains support local manufacturers. Doing so is not only in the national interest but has sound commercial logic in terms of total cost of ownership, after-sales service, quick response, security of supply, niche product requirements, quality assurance and so forth.

Further work and Key Action Programmes

In keeping with key IPAP priorities, further ‘waves’ of designation will follow in the following sectors:

- Metal fabrication, capital equipment and transport equipment;
- Green industries and components of the renewable energy generation build programme;
- Big ticket items defined in government’s strategic infrastructure projects at all levels of government.

Other priorities for the future will include:

- Designation of further sectors/sub-sectors and industries for public procurement;
- Review of existing public procurement legislation and levers;
- Deepening the transversal and central procurement of strategic projects;
- Monitoring and evaluating the performance of designated sectors;
- Alignment of the BB-BEE Codes, PPPFA and amended Regulations.

Key Action Programmes

1. Monitoring and evaluation of the performance of designated sectors

Nature of intervention and rationale

Establishment of an M&E system with the two following main components:

- A framework for monitoring year-to-date procurement in line with local content levels as set out in SATS 2011:1286 and tracking procurement expenditure against outcomes through in-year monitoring reports;
- Developing clear indicators of procurement performance aimed at providing early indication of progress (or lack thereof) in designated sectors.

Key milestone

2014/15 Q1-Q4: Implement a monitoring and evaluation tool for designated sectors.

Lead departments/agencies: dti and SABS

Supporting departments/agencies: NT, National and Provincial Departments, ITAC, SARS and AG.

2. Annual Re-prioritisation of the Procurement Plan

Key milestones

2014/15 Q1-Q4: Review of research work done by Sector Desks for further designation of sectors/sub-sectors for local procurement.

2014/15 Q1-Q4: Issue Procurement Instruction Notes for designated sectors.

2014/15-2015/16: Work with other government departments and public entities to identify opportunities for further designation.

2014/15-2015/16: Implement section 9.3 of the PPPFA Regulations, 2011. Consult with other government departments, state entities and business to identify opportunities for promoting local procurement in non-designated sectors.

2014/15 Q1-Q4: Working in consultation with other government departments, review the PPPFA and other public procurement levers.

2014/15 Q1-Q4: Support professionalisation of supply chain/procurement/localisation practitioners. Work with NT, PALAMA and other training institutions to empower officials to be in a position to verify local content declarations before final awards and provide a support function to bidders/potential suppliers.

Lead departments/agencies: NT, dti, EDD.

Supporting departments/agencies: DPE, SANAS, SABS, PALAMA.

3. Roll-out of the new NIPP Guidelines

This entails increasing the ability of NIPP to respond to Industrial development imperatives, particularly industrial diversification and job creation through direct investment. This will be achieved by NIPP obligors discharging NIPP obligations in industry sectors, sub-sectors and products that are directly related to the procurement or value chain. The creation of awareness of the revised NIPP policy and guidelines is also a key aspect of this work.

Economic rationale

The scale of import leakage associated with non-compliance is massive. It has been estimated that, apart from the SDP, NIPP only influenced tenders to the value of R72 billion out of R900 billion spent by all levels of government on capital items. This has led to considerable import leakage, loss of procurement leverage and potential loss of domestic jobs and economic activity. The aim is to maximize the value of NIPP by securing compliance within government, the local business community and the obligors.

Outcomes

The roll-out is expected to lead to the maximization of the value of NIPP through increased levels of investment, domestic manufacturing capability and capacity, industrial competitiveness, export opportunities and the creation of new jobs that can be directly linked to the NIPP.

Key Milestones

2014/15 Q1: Obtain capital expenditure projections of major procuring entities and develop tender-specific strategies on how to exploit the direct NIPP option to leverage investment and competitiveness upgrading in the value chain of the tenders

2014-15 Q2: Complete NIPP/DIP policy review and obtain Cabinet approval of the dislodgement of the NIPP requirement from Armscor procurement

2014-15 Q1-Q2: Ensure that existing PFMA, MFMA and associated regulations, including practice notes, are amended to make NIPP compliance unambiguous and explicit.

2014-15 Q1-Q3: Create awareness and secure compliance in Government and the private sector through NIPP presentations on the revised NIPP policy and Direct NIPP as a preferred method of fulfilling NIPP obligations.

2014-15 Q1-Q4: Create a culture of compliance with the NIPP requirements through presentations of the revised NIPP policy at strategic procurement forums and industry workshops so as to minimize the levels of non-compliance and import leakage through government tenders.

Lead Department: the dti

Supporting Departments/Agencies: National Treasury, key municipalities, DPE, Eskom, Transnet, DME, PetroSA, DPSA, SITA.

Industrial Financing

Many of the issues relating to industrial financing highlighted in previous iterations of the IPAP still plague the economy as a whole and the manufacturing sector in particular. The availability, cost and duration terms of finance remain key determinants of the viability of manufacturing investment. More specifically, research indicates that:

- South Africa's cost of capital is too high and the average term of loans too short relative to our major trading partners and comparable middle-income developing countries.
- Recent private credit extension has mostly been in the form of debt-driven consumption, much of which has fuelled imports.
- Where credit has been extended for investment, it has been highly concentrated in consumption-driven service sectors and, to a lesser extent, capital- and energy-intensive industries.
- New entrants without substantial equity require grace periods to go through one or more production cycles to generate the necessary liquidity to finance their capital repayments.

- Working capital is of critical importance to the operational performance of a firm: the smaller the firm size, the greater the impact of the working capital burden on the performance of the firm.
- The private sector venture capital market in South Africa is still very weak.

The private financial sector in South Africa is not adequately aggregating savings and distributing them towards productive fixed investment in the economy. Inherent market failures exist, the most critical of which is the asset-liability mismatch. The short term nature of the source of funding (mainly deposits and short-term capital inflows) manifests in impatient capital eager to fund either established relatively 'low-risk' industries (e.g. upstream capital-intensive and energy-intensive industries) or industries achieving quick and high returns (e.g. consumption-driven services).

Consequently, banks are not willing to channel funds towards relatively less well entrenched or established industries (particularly downstream manufacturing industries) as these require longer-term investment horizons and grace periods for new entrants. Moreover, downstream manufacturing industries face structural limitations in their ability to raise working capital.

The magnitude of working capital is a function of a sector's buying power and the length of time required for value addition. Consequently, working capital is a permanent and significant burden on downstream manufacturing firms – both because of the length of time required to transform input(s) to final product and the asymmetry in power in favour of upstream input markets, which dictate the terms of their transactions with downstream firms as a result of their financial depth, comparatively large scale and concentration.

Thus, firms engaged in manufacturing activities generally require financing instruments that have the following characteristics:

- longer financing terms;
- grace period allowance;
- lower interest rates; and
- effective mechanisms to fund working capital.

Various government departments and agencies have designed and implemented a range of incentive schemes aimed at addressing some of the challenges. In particular, over the past seven years, **the dti** had designed and administered a host of incentive programmes aimed at supporting and enhancing the competitiveness of various types of manufacturing firm across a range of sectors.

Perhaps the best-known example - the Manufacturing Competitiveness Enhancement Programme (MCEP) launched in 2012 - assists manufacturing firms to improve their competitiveness by providing support for the upgrading of production facilities, processes, products and people; support for capital investment, working capital and pre-shipment finance; feasibility studies, product development and process improvement; value chain localisation and supplier development; cluster studies, new market access and energy efficiency upgrading.

The suite of **dti** incentives has constantly been re-developed over the years to address the changing needs of the local manufacturing sector and capture the changing dynamics of the domestic and global economic landscape – prompting many re-thinks as to how these incentives can best be calibrated and administered to keep them relevant and 'on-point'.

Some of the key considerations and requirements that have emerged from this process are the following:

- Understanding the characteristics of those firms that have used government support effectively;
- Understanding the characteristics of those firms that continue to be successful and internationally competitive *without* government support.
- Tightening the alignment between **dti** sector strategies and the manner in which incentives are administered – (i.e. are we providing support to firms that are critical to our sectors meeting their strategic objectives?).
- Achieving a better balance between the incentives offered and the economic conditionalities imposed.
- Streamlining the manner in which foreign trade missions are financed and managed, to attain maximum value for money.

- Developing an ever-closer working relationship with the Industrial Development Corporation (IDC). Despite significant progress by the IDC in re-orienting and prioritising its activities in support of NGP and IPAP sectors (within the constraints of a commercially-based balance sheet), further alignment between **the dti** and the IDC is critical to the development of incentive packages that are comprehensive, focused and provide better value for money.
- Achieving greater alignment between the activities of three key financing institutions: the Export Credit Insurance Corporation (ECIC), the Development Bank of South Africa (DBSA) and the IDC.

This process will involve constant interactions with manufacturers, the IDC and other global, regional and domestic development finance institutions. Not mentioned in the list above is the need to develop a better overall monitoring and evaluation system. **The dti** is working closely with the United Nations Development Organisation (UNIDO) to develop a monitoring, evaluation and impact assessment methodology for the MCEP, benchmarked against best practice in other comparable countries. It is hoped that this methodology will provide a useful basis from which other **dti** incentives can also be assessed.

Key Action Programme

1. Re-calibration of existing dti incentives

Nature of the Intervention

The general scarcity of both global and domestic capital necessitates that South Africa adopt a more targeted approach when deploying certain financial incentives, with the focus on attaining maximum benefit for every Rand spent.

This exercise will, as outlined above, require: continuous dialogue with manufacturing industry stakeholders; better understanding of the characteristics of firms that leverage government support effectively or continue to be internationally competitive without government support; and, finally, maximising potential synergies between the actions of the various developmental finance institutions.

Economic Rationale

South African companies are faced with a wide range of critical problems arising from the intense international competition for capital, rising input costs (especially electricity) and low and falling levels of investment arising from institutional and private sector market failures. It is critical that the manufacturing sector be provided with support during the continuing economic downturn and that market failures are actively addressed in order to raise competitiveness, prevent further industrial decline and maximise the opportunities which exist and will flow from an improved global economic climate.

Outcomes

Greater levels of competitiveness arising from access to industrial financing for working capital; product development; new market access, energy efficiency; clustering and other potential outcomes not specifically covered in existing incentive schemes - including enhanced support for BEE in the manufacturing sector.

Key Milestones

- 2014/15 Q3: Scope the design, range, quantum, conditions, take-up and impact of the full suite of government industrial financing packages and incentives across and in consultation with other departments and institutions.
- 2014/15 Q4: Develop and design a set of proposals for expanding the suite of existing support mechanisms, including fine-tuning the MCEP and designing a specialised incentive to support BEE in the manufacturing sector.
- 2014/15 Q4: Develop and design further sector-specific incentives for strategic sectors - in particular Green Industries, Agro-processing and the Metals, Capital and Rail Transport Equipment Sectors.

Developmental trade policy

The technical infrastructure institutional framework supports industrial development through maintenance and improvement of compulsory standards and regulations that require accredited testing, calibrations, inspections, certification and verification services as evidence of compliance. This capacity is an indispensable component of any modern competitive economy. Accurate and internationally recognised standards of measurement performed in industry are an important factor for competitiveness in international trade. Compliance with regulations, standards and other specifications or labelling requirements has to be demonstrated for every batch of goods.

The development of world-class testing, calibration and certification capabilities is of great value in scaling up and resuscitating manufacturing industries, while simultaneously contributing to broader social benefits.

Great strides have already been made with focused enforcement programmes targeting the main South African border posts, coupled with a visible media campaign to broadcast the seizure and destruction of non-compliant products. This has been made possible through increased cooperation between **the dti**, Customs and the South African Revenue Services (SARS) - partnerships that will be further strengthened over the coming period.

The broad strategic thrust of the technical infrastructure institutions is to support the state's comprehensive and integrated drive to scale up industrial policy, with a strong focus on priority sectors that have been identified and positioned for up-scaling: namely, the green industries, agro-processing and metal fabrication, capital and rail transport equipment, advanced manufacturing and clothing, textiles and footwear production.

The key technical infrastructure institutions involved are the South African National Accreditation System (SANAS), National Regulator for Compulsory Specifications (NRCS), South African Bureau of Standards (SABS) and the National Metrology Institute of South Africa (NMISA).

These institutions – in conjunction with others such as SARS – are also critical in curbing various forms of customs fraud and illegal imports, harmful sub-standard products, smuggling and under-invoicing – all of which undermine productive capacity and employment growth across a wide range of sectors.

Key opportunities

The key opportunities that Technical Infrastructure policies and institutions will exploit over the next three years include:

- An increasingly integrated and coordinated approach towards handling industrial and trade-related matters;
- Stronger enforcement of existing mandatory standards that lock out inferior and sub-standard products;
- The introduction of additional mandatory standards that will foster the development of new industries, particularly in the green industry area;
- Providing strengthened conformity assessment support for export products, in order to unlock export growth opportunities in key identified markets;
- Up-scaling both the human and technical capacity of the technical infrastructure institutions and conformity assessment services so as to respond more effectively to the needs of industry in general;
- Continuously implementing improved, accurate, internationally accepted measurement to effectively monitor imports for safety and conformity;
- Stronger integrated and co-ordinated programmes with SARS (premised upon intelligence-driven information from industry) to step up compliance monitoring and increase the rate of successful prosecutions.

Constraints

- Lack of understanding - and therefore underutilisation - of technical Infrastructure offerings on the part of emerging industries and other stakeholders.
- Insufficient recognition of technical infrastructure offerings as support mechanisms for improved outcomes in the other **dti** /EDD agencies - e.g. ITAC, IDC, NCC etc.
- Given that the technical infrastructure institutions serve a variety of regulators, any delay in the implementation of their regulations impacts negatively on the overall efficacy the programmes of these institutions. Collaborative forums have been established to manage this issue.
- Budgetary issues that constrain the ability of the technical infrastructure institutions to deliver fully on their mandates.

Key Action Programmes

1. Re-alignment of technical infrastructure activities with IPAP sectors

Nature of the intervention

Strengthening and aligning the activities of the technical infrastructure institutions with IPAP imperatives, through the development of accurate measurement and testing capabilities, standards, compulsory specifications and accreditation programmes that serve sector priorities.

Economic Rationale

In line with the approach adopted in the previous IPAP iteration, the technical infrastructure institutions as a collective developed a framework for the appraisal of existing national policies applicable to each IPAP sector. This resulted in synchronised Action Plans in the following sectors: green industries, agro-processing, metal fabrication, capital and rail transport equipment, advanced manufacturing, clothing, textiles and footwear and the nuclear industry. The key milestones in the identified sectors reflect targeted responses to the gaps that were identified during this process.

Outcome

Re-aligned and synchronised technical infrastructure institutions' activities, better able to support IPAP priorities.

1.1. Green industries

Key milestones

- 2014/15 Q2 - 2016/17 Q4: Second phase upgrade of the electrical power and energy measurement standards by NMISA to support measurements required by ESKOM for the maintenance of the national power grid.
- 2014/15 Q3: SANS 53165 on thermal insulation products for buildings; specification for factory-made rigid polyurethane foam (PUR) products.
- 2014/15 Q3: Expand the capacity of the Appliances Laboratory to enable it to test for energy efficiency.

- 2014/15 Q4: Revision of SANS 204 - Energy Efficiency in Buildings.
- 2014/15 Q4: Provide national measurement standards for building efficiency (energy saving).
- 2014/15 Q4 – 2015/16 Q4: New upgraded national measurement standards for energy efficient lighting.
- 2014/15 Q4 - 2016/17 Q4: Provide national measurement standards for air pollution monitoring.
- 2014/15 Q4: Air quality testing accreditation programme to be expanded to include stack testing emissions monitoring.
- 2015/16 Q4: Energy Efficiency Performance of Buildings Accreditation Programme to be developed and rolled out.
- 2015/16 Q4: Amendment of Compulsory Specification VC 9006 for hot water storage tanks; upgrading of energy-efficiency requirements and labelling finalised.

Lead departments/ agencies: NMISA, NRCS, SABS, SANAS.

1.2. Agro-processing

Key milestones

- 2014/15 Q2: Publication of SANS 1377 on olive oil and pomace oil.
- 2014/15 Q4: Revision of SANS 1675 for canned meat products.
- 2014/15 Q4: New SANS for Live Rock Lobster.
- 2014/15 Q4: Organic Agriculture Production food accreditation programme to be developed and rolled out.
- 2014/15 Q4: Roadmap for the traceability of bio-analytical measurements in South Africa.
- 2014/15 Q4 - 2016/17 Q4: Provide reference measurement capability for pesticides and inorganic elements in environmental and food matrices, including fish, in support of food safety.

2014/15 Q4 - 2016/17 Q4: Provide reference measurement capability for dioxins and furans and dioxin-like toxic substances in environmental and food matrices in support of food safety and EHS.

2015/16 Q2: New Compulsory Specification for olive oil.

2015/16 Q2: Amendment of Compulsory Specification for canned fish products.

2015/16 Q3: Amendment of Compulsory Specification for canned meat products.

2015/16 Q4: New Compulsory Specification for Live Rock Lobster published for public comment.

2016/17 Q4: New standard for live aquaculture oysters.

Lead departments/ agencies: NMISA, NRCS, SABS, SANAS.

1.3. Metal Fabrication, Capital and Rail Transport Equipment

Key milestones

2014/15 Q3: Upgrade the laser tracker dimensional facility at NMISA to ensure traceability of large dimensional measurements for locomotives and coaches.

2014/15 Q4: Establish an X-ray Diffraction Facility for advanced stress and strain measurement. This initiative will also be in support of cutting edge nano-technology.

Lead departments/ agencies: NMISA.

1.4. Automotive Products and Components

Key milestones

2014/15 Q4: Upgrade safety standards for passenger and commercial category vehicles: amendment of Compulsory Specifications VC 8023 and 8025 for M and N category vehicles to make ABS braking systems compulsory.

2014/15 Q4: Finalise Amendment of Compulsory Specifications VC 8022, 8023, 8024 and 8025, to add additional safety features to automotive vehicles and align SA requirements with latest UN (ECE) requirements.

2014/15 Q4: Finalise Amendment of Compulsory Specifications VC 8056 and 8059 for pneumatic tyres for passenger and commercial vehicles.

2014/15 Q4: Develop and roll out the Road Transport Management Accreditation Programme.

2015/16 Q1: Finalise Amendment of Compulsory Specification VC 8013 for hydraulic brake and clutch fluid.

2014/15 Q3 - 2015/16 Q4: Recapitalisation of the dimensional, force and torque laboratories in support of the automotive sector.

Lead departments/ agencies: NMISA, NRCS, SABS, SANAS.

1.5. Biofuels

Key milestones

2014/15 Q4 – 2016/17 Q4: Develop or improve measurement standards, certified reference materials and standard methods for accurate measurement needs for biofuels.

Lead departments/ agencies: NMISA

1.6. Plastics, Pharmaceuticals, Chemicals, Cosmetics

Key milestones

2014/15 Q1: Revision of SANS 597 on sterilized components sodium lactate intravenous infusion (Ringer-lactate solution for injection).

2014/15 Q2: SANS 721 on polypropylene (PP) pipes and fittings for soil, waste and vent applications for above ground use.

2014/15 Q4: SANS 1631 on plastic based push-fit fittings for copper tubes.

2014/15 Q4: Revision of SANS 1526 on thermoplastics sheeting for use as a geo-membrane.

2014/15 Q4: Revision of SANS 1557 on sunscreen products.

2014/15 Q4: Revision of SANS 368 on aloe products.

2015/16 Q1: Development of standards for traditional/complementary medicines.

- 2015/16 Q1: SABS upgrading facilities for testing of supplements and complementary medicines.
- 2014/15 Q4 - 2016/17 Q4: Develop analytical capabilities for monitoring of hazardous substances in polymers, plastics and packaging materials.
- 2015/16 Q4- 2016/17 Q4: Provide analytical reference measurement traceability for pharmaceutical, personal care and cosmetic products; specifically to analyse for toxic elements.

Lead departments/ agencies: NMISA, SABS, SANAS

1.7. Clothing, textiles and footwear

Key milestones

- 2014/15 Q4: Amendment of Compulsory Specification VC 9002 for safety footwear finalised.
- 2014/15 Q4: Development of a standard for wild landfire-fighting personal protective equipment SANS 16073).
- 2015/16 Q4- 2016/17 Q4: Provide analytical reference measurement traceability for textile fibres and dyes.
- 2016/17 Q4: Refurbishment of textiles laboratory to continue supporting the consignment inspection services.

Lead departments/ agencies: NMISA, SABS

1.8. Advanced manufacturing

Key milestones

1.8.1. Advanced materials

- 2014/15 Q4 – 2016/17 Q4: Establish nano-traceability facility to address accurate measurements in nano manufacturing.

1.8.2. Electro-technical

- 2014/15 Q2: Testing of power tools: following the upgrading of the now fully equipped laboratory, increase the drive to ensure testing of all power tools as required by the compulsory standard.
- 2014/15 Q2: Electric meter testing and verification: upgrade the laboratory to enable it to test to the full requirements of the Specification.
- 2014/15 Q3: Expansion of NETFA-SABS Electro-technical Testing Facility [e.g. High Voltage Direct Current (HVDC)].
- 2014/15 Q4: Finalise new Compulsory Specification for electrical luminaires (includes LEDs).
- 2015/16 Q4: NETFA capitalisation (SABS and Eskom project) in order to improve capability to test to full scope of national, international and VC standards in High Voltage, increasing capacity in short circuit to test up to 33kV (currently up to 11 kV).

1.8.3. Information & Communications Technology

- 2014/15 Q4- 2016/17 Q4: Upgrade the national measurement standards required to perform diagnostic network tests on fibre optic and wireless telecommunication systems.
- 2014/15 Q4: Conduct a feasibility study on developing a full Accreditation Programme for Information Security Management Systems and Information Technology Services Management Systems.
- 2014/15 Q3: SANS 1466 series on Information technology: process benchmarking framework (parts 1 and 2).
- 2015/16 Q1: SANS 1466 series on Information technology: process benchmarking framework (parts 3 - 5).

Lead departments/ agencies: NMISA, NRCS, SABS, SANAS.

1.9. Nuclear energy

Key milestones

- 2014/15 Q2 -
2015/16 Q2: Procurement, installation and commissioning of an X-ray system in support of the South African Nuclear Industry: traceability for radiation dosimetry and radiation protection.
- 2014/15 Q4: Support the South African nuclear regulatory bodies (DOH and NNR) in fulfilling their mandate through improved traceable measurements and technical expertise.
- 2015/16 Q4: Develop and roll out an Accreditation Programme for nuclear pressure equipment and component inspection and facility management system certification.
- 2015/16 Q4: Identify technical experts and train SANAS technical assessors.

Lead departments/ agencies: NMISA, SANAS

1.10. Business Process Services

Key milestones

- 2014/15 Q4 - 2016/17 Q4: Upgrade the national measurement standards required to perform diagnostic network tests on fibre optic and wireless telecommunication systems.

Lead departments/ agencies: NMISA

2. Strengthen the technical infrastructure to support industrial development

Key milestones

2.1. Movement from Trade Metrology to Legal Metrology

- 2014/15 Q1: Promulgation of the Legal Metrology Act.

2.2. Updating of the National Building Regulations and Building Standards Act

- 2014/15 Q4: Finalise National Building Regulations and Building Standards Policy Paper for new legislation.

- 2015/16 Q4: National Building Regulations and Building Standards Bill drafted.
- 2016/17 Q4: Parliamentary legislative process.
- 2015/16 Q2: New NBR Part XB for water efficient building regulations submitted to **the dti**.
- 2015/16 Q2: Amendment of relevant National Building Regulations to include plumbing requirements as per the Water Act.
- 2015/16 Q2: New Compulsory Specification for plumbing components published for public comment.
- 2016/17 Q4: Finalise new Compulsory Specification for timber roof-trusses and punched metal fasteners.

Lead departments/ agencies: the dti, NRCS.

2.3. Strengthening the enforcement system of NRCS

Key milestones

- 2014/15 Q4: Prepare a report benchmarking SA border enforcement against international best practice and calibrating the NRCS's enforcement strategy.
- 2015/16 Q2: Finalise gap analysis research report to inform the NRCS risk-based strategy aimed at improving NRCS coverage of the higher-risk industries; draft appropriate regulations.

Lead departments/ agencies: NRCS

2.4. Consumer protection initiatives

Key milestones

- 2015/16 Q3: Development of standards for consumer warranties and Consumer Contact Centres to Support Consumer Protection Act.
- 2015/16 Q4: New legal metrology technical regulation for multi-dimensional measuring instruments and gas meters.
- 2015/16 Q4: New Compulsory Specification for safety of toys.

2015/16 Q2: Amendment of Compulsory Specification VC 8032 for personal flotation devices finalised.

Lead departments/ agencies: NRCS, SABS

3. Ongoing developmental tariff reform

Nature of intervention

South Africa's tariff framework is informed by the National Industrial Policy Framework (NIPF) and is defined by a strategic approach to tariff-setting. It is administered by the International Trade Administration Commission under the terms and conditions of SA's obligations to the World Trade Organisation.

South Africa's tariff policy-setting takes place on a sector-by-sector basis, informed by different sector strategies. Therefore, both developmental tariff reform and tariff setting are continuous on-going interventions.

Economic Rationale

The global economic crisis has led, amongst other things, to increasing use of defensive trade measures – both tariffs and non-tariff barriers - which pose significant threats to value-addition, employment and investment. The process of accelerated, often undifferentiated, trade liberalisation in South Africa after 1994 (characterised by sharp tariff reductions across the board) has contributed very significantly to the steady decline of the country's industrial capabilities. With this in mind, the selective and flexible use of tariffs is now regarded as a key instrument for increasing value-addition, employment, investment, innovation and productivity growth.

In general, flexible and strategic tariff reform means two things: on the one hand, lowering tariffs in upstream sectors characterised by monopolies (in order to reduce input costs for downstream value-adding manufacturers); on the other hand, working on a case by case basis that takes into account a range of factors in each sector, including impacts on value-addition and employment.

Outcome

Improved competitiveness through further downstream value-addition and increased manufacturing sector employment.

Key milestones

2014/15 – 2016/17 ongoing: Scope for industries to apply to ITAC for selective tariff increases on products with significant potential for the creation and retention of sustainable jobs, import replacement and “water” between bound & applied rates.

2014/15 – 2016/17 ongoing: Scope for further selected decreases in tariffs, particularly in monopolistic sectors that manufacture intermediate inputs into manufacturing and other productive sectors, in order to support downstream value-addition.

2014/15 – 2016/17 ongoing: Scope for selective creation of rebates for manufacturing products that attract duties, particularly where these are intermediate products in manufacturing, in support of the value-adding manufacturing sectors.

Lead departments/agencies: the dti, ITAC, EDD.

4. Clampdown on customs fraud, illegal imports and sub-standard products.

Nature of intervention

Ongoing interventions in customs fraud-related issues, illegal imports and sub-standard products, including the roll-out of the Customs Modernisation Programme aimed at curbing customs fraud, illegal imports and sub-standard products.

Economic Rationale

To protect the South African manufacturing sector from the threats posed to it by illicit trade: sub-standard products and illegal imports characterised by undervaluation, false declarations (origin and tariff), stage consignments, rerouting via third countries and misuse of duty rebates and credits. Illegal imports and substandard imports which do not meet minimum South African standards and specifications for goods provide unfair competition at the expense of local manufacturers producing quality products that meet South African standards.

Outcome

Stronger integrated and co-ordinated programmes in the clampdown on customs fraud, illegal imports and sub-standard products - such programmes to combine border enforcement and post-border compliance, with enforcement extended to the points of distribution and sale.

Key milestones

- 2014/15 – 2016/17: Strengthening of a range of measures – including closer collaboration between **the dti**, industry, NCRS, SABS and SARS – through multi-sectoral forums.
- 2014/15 – 2016/17: Extend application of the Indicative Reference Price System to other vulnerable sectors to provide an increasingly effective early warning system.
- 2014/15 – 2016/17: Ongoing development of programmes aimed at improving compliance within industry and contributing to the formulation of best practice in the facilitation of trade, in accordance with all the Acts administered by SARS.
- 2014/15 – 2016/17: Conduct continuous targeted investigations and raids on non-compliant products; confiscation of substandard and illegal products in the possession of individuals and companies.

Lead departments/agencies: SARS/NT/ITAC

Competition Policy

Successive iterations of IPAP have made the point that the South African economy continues to experience ongoing problems with regard to low levels of effective competition in sectors dominated by a few entrenched firms. Returns are derived less from effort and innovation than from the historical position inherited by such firms. More specifically, where anti-competitive conduct concerns important inputs to downstream, labour-absorbing activities, it directly impacts on employment. Anti-competitive behaviour also has serious adverse effects on low-income households in that it leads to unnecessarily high prices for the basic consumer goods they rely upon.

In the case of the monopolistic provision of publicly provided strategic goods and services, oversight is provided by a legislatively established Sector Regulator. However, while there is a clear need to continue to strengthen regulation of public entities, the main focus in the IPAP is on the role of competition authorities in relation to private sector behaviour, especially where critical and strategic inputs for the manufacturing sector are concerned.

It is also recognised that competitive outcomes require more than enforcement by the competition authorities. Interventions across institutions must be geared to monitoring the conduct of dominant firms. They must ensure that such firms' strategies, particularly where they receive state support, are based on dynamic, long-term investments in building capabilities and not on the short-term exploitation of market power. This must be supplemented by support for the entry and growth of new firms wherever practical.

Thus key intermediate inputs in critical value chains continue to be a matter of considerable concern. In particular:

- The concentrated supply of certain strategic inputs into manufacturing and other productive processes such as carbon and stainless steel, aluminium, chemical polymers and fertilizers;
- In addition to the concentrated supply of inputs, there is frequent concentration in the purchasing of inputs. Thus value-adding and labour-absorbing manufacturers often face both upward cost and downward price pressures;
- Expensive wage goods such as food, basic clothing, municipal services and public transport, all of which have a major impact on working-class and poor households..

The focus of the Competition Commission's activities over the IPAP period will continue to be on the three areas identified above. The Commission will increase its engagement with government and public institutions to play a more active role in following up on findings of anti-competitive conduct and in making further policy recommendations to government.

There are additional areas of complementary work that require strengthening. These include the following:

- The strengthening of practical measures and mechanisms for implementation and ensuring accountability;
- The identification of concrete complementary measures to competition enforcement, as part of a broader policy toolkit that could be deployed to address anti-competitive behaviour. This requires the establishment of a statutory mechanism by which the Competition Commission can make recommendations regarding complementary actions required to address anti-competitive conduct.

For example, a standard mining licence includes a stipulation that minerals sold in South Africa are to be sold at competitive prices; but there is no mechanism for the monitoring and review of compliance. In this regard, an important aspect of the Mineral and Petroleum Resources Development Act (MPRDA) is to make provision for the Minister to initiate or prescribe measures to incentivise the beneficiation of minerals in South Africa, subject to particular terms and conditions that the Minister may determine. The implementation of this provision is particularly important where the exercise of market power is disincentivising mineral beneficiation.

This work, which dovetails with a set of proposals agreed by Cabinet in terms of proposals arising from the work of the Inter-Departmental Task Team on Iron and Steel, could include the following:

- A process for monitoring and enforcement of mineral licence provisions;
- A process for engagement with ITAC to ensure that it takes into account competition considerations in tariff reviews, such as guarding against further protection of dominant firms exploiting their market power; and
- An exploration of whether the powers of the National Electricity Regulator of SA (NERSA) can be extended to regulate the pricing of by-products from fuels such as ammonia and polymer chemicals.

In addition, government has committed to ensuring that administered prices do not, as a group, rise faster than inflation. EDD undertakes to monitor administered prices and on that basis work with the relevant authorities to help develop more sustainable balances around cost to users, financing options, and quality of service.

Key Action Programmes

1. Strengthening implementation of competition policy

Nature of the intervention

This programme seeks to actively conduct comprehensive investigations on targeted manufacturing and services sectors with the aim of improving compliance and reducing anti-trust behaviour in the economy.

Economic Rationale

The South African economy continues to be dominated by a few entrenched firms, which tend to abuse their dominance through anti-competitive behaviour. Many producers are squeezed between monopolistic providers of their inputs (for example, steel and chemicals) and purchasers of their outputs (e.g. retailers). Monopolistic provision of key goods and services therefore remains a major challenge that needs to be addressed for the long-term benefit of the manufacturing sector.

Outcome

Improved economic welfare for consumers and reduced barriers to entry for small and medium manufacturers.

Key milestones

- 2014/15 - 2016/17: Continued active focus of competition authorities on investigation, prosecution and policy advocacy with regard to:
- Intermediate industrial and energy-intensive products, such as steel, chemicals, coal, fuel and cement;
 - Air transport, information technology;
 - Food and agro-processing;
 - Banking and insurance;
 - Infrastructure and construction.

2014/15 - 2016/17: Annual reporting on the impact of competition enforcement in these sectors, and identification of appropriate complementary measures to be taken by Government and public institutions to improve competitive outcomes.

2014/15 – 2016/17: A number of strategically identified market enquiries initiated by the Competition Commission into priority areas identified in consultation with Government.

Lead departments/agencies: EDD and Competition Commission

Supporting departments/agencies: the dti

2. Ensuring competitive outcomes

Nature of the intervention

This intervention focuses on the economic impacts revealed by the findings of investigations into anti-competitive behaviour. This entails strictly monitoring compliance with the conditions attached to penalties imposed on firms. It could also involve leveraging various kinds of government support to encourage competitive behaviour.

Economic Rationale

The competition authorities have been actively pursuing investigations, some of which have led to penalties being imposed on a number of medium to large firms. A significant number of these firms have historically benefitted from state support, including provision of infrastructure, financial assistance and procurement, and some continue to benefit without adequate criteria or conditions attached to the support provided. The prevalence of abuse of market power by entrenched firms, therefore, requires the tightening of conditionalities associated with state support. This also requires putting in place monitoring mechanisms to ensure that such conditionalities are adhered to.

Outcome

Increased competition within the South African economy through increased support for new entrants into the market and reduced abuse of market position by dominant enterprises.

Key milestones

2014/15 – 2016/17: Stronger conditionalities to be established on state support for large firms, including development finance and infrastructure inputs, linked to competitive conduct.

Review of Competition Act in particular to strengthen capacity of Commission to initiate investigations and to enforce conditions.

2014/15 – 2016/17 Q1: Develop a guidance paper to assist Government on pro-competitive means of implementing localisation in the industries that have been designated.

2014/15 – 2016/17: Monitoring of compliance with conditions, in consultation with the Competition Commission.

2014/15 – 2016/17: Evaluation of sectoral trade policy measures in light of the conduct of firms in particular sectors, to ensure that dynamic comparative advantages are developed (in consultation with the Competition Commission).

2014/15 – 2016/17: Wider actions to be identified, including possible regulatory measures, against dominant firms engaging in anti-competitive conduct, particularly with regard to key inputs into labour-absorbing sectors and the pricing of wage goods.

2014/15 – 2016/17: Increased support for entrants and smaller rivals relative to entrenched dominant firms.

2014/15 – 2016/17 Q4: Undertake three impact assessments to measure the cost effectiveness and wider economic benefits and value to the economy of the Commission's interventions in that sector or sub-sector, in order that future policy formulation is informed by the outcomes.

Lead departments/agencies: EDD

Supporting departments/agencies: the dti, Competition Commission, IDC, ITAC, seda.

Innovation and Technology

Leveraging Science, Technology and Innovation for Industrial Growth and Development

Background

Science, Technology and Innovation (STI) are recognised as key drivers of long-term economic growth, which today is increasingly led by the production and dissemination of knowledge for the enrichment of all fields of human endeavour, and wherein the ability to distribute and effectively exploit knowledge has become a major source of competitive advantage, wealth creation and improvements in the quality of life.

Governments are increasingly making innovation a key issue on policy agendas, recognising its potential to promote economic growth and address social and environmental challenges. The importance attached to innovation is reinforced in the national and international policy domain through, for example, the Innovation Strategy³ of the OECD (Organisation for Economic Co-operation and Development), the European Commission’s concept of the ‘Innovation Union’⁴, and South Africa’s own 10-year plan ‘Innovation towards a knowledge-based economy’⁵.

The importance of STI can in part be attributed to the following factors:

- Substantial increase in global science, engineering and technology (SET) efforts, leading to enhanced capabilities and knowledge intensive production;
- Increasing participation of developing countries in global SET activities;
- Ever-increasing complexity and technological capacity in components and products;
- Significant growth in higher technology and advanced manufacturing goods, indicative of changing global exports and markets, and
- The fact that technology has a time-bound value, implying that continuous knowledge reinvestment is required, irrespective of the type of industrial sector.

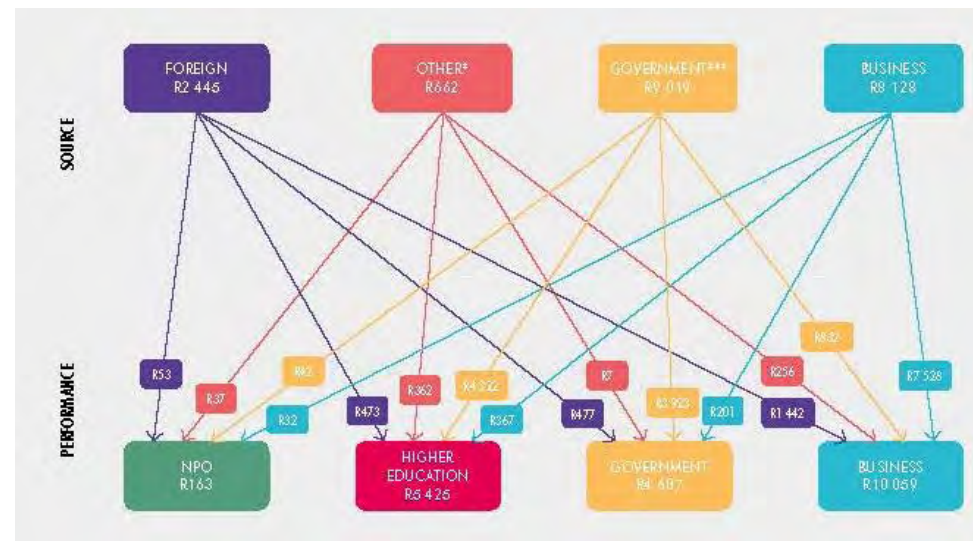
³ See: <http://www.oecd.org/site/innovationstrategy/>

⁴ See: http://ec.europa.eu/research/innovation-union/index_en.cfm

⁵ South African Journal of Science 2012, Vol. 108, Issue 7/8

South Africa’s STI policy package provides a sound basis for further improvement and up-scaling of the country’s industrial development interventions as spelled out in the National Industrial Policy Framework (NIPF) and in successive iterations of the IPAP.

Figure24: Major R&D funding flows (million), 2010/11⁶



Decades of research have shown that innovation is the most important driver of long-term prosperity and that innovative businesses create more jobs and grow faster⁷. Data from the most recent Innovation Survey⁸ found that 65.4% of South African firms were involved in innovative activities, but that only 27.2% of firms were able to successfully bring their innovations to market. In addition to this, the type of innovation (assessed in terms of percentage of turnover generated from new innovations), is predominantly incremental rather than ‘brand new’ – with firms reporting that 85% of the turnover from fresh innovation is attributable to building on existing technological capabilities.

⁶ National Survey of Research and Experimental Development [2010-11 Fiscal Year]

⁷ <http://www.nesta.org.uk/project/plan-i> Accessed on 4 February 2014

⁸ South African Innovation Survey 2008, covering the period 2005 - 2007

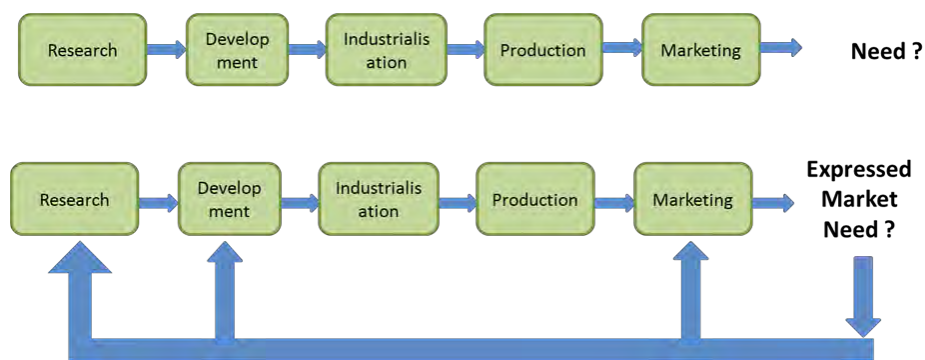
South Africa’s STI policy package and development interventions have to date been elaborated in a manner that seeks to address some of these challenges: not only by incentivising R&D, but also by creating innovation support structures that aim to enable a greater translation of innovative ideas into prototypes for further commercial development.

South Africa’s STI economic and industrial development context: coordination through streamlining and harmonisation

The effective improvement and up-scaling of the country’s industrial development objectives – i.e. towards diversifying the economy through movement into non-traditional tradable goods and services and towards a knowledge economy - requires effective dovetailing of South Africa’s STI, economic and industrial policy objectives. Efforts directed to address this requirement are demonstrated in the Key Action Plans set out in this iteration of IPAP; in particular through enhanced collaborative efforts between the DST and **the dti**.

The existing instruments and support mechanisms in South Africa’s National System of Innovation also seek to maximise opportunities for innovation, derived from market, business and R&D needs, as illustrated in the simplified schematic below.

Figure 25: Schematic depicting innovation due to R&D exploitation, or as a result of market demand



The development and leveraging of STI is ideally achieved through partnerships between government, academia (including Science Councils) and industry (large, medium, small and micro enterprises).

The DST carries overall responsibility for STI policy, which can be summarised as follows:

- Enhancing knowledge generation capacity;
- Developing the country’s innovation capacity;
- Developing appropriate human capital to meet the science, technology and innovation needs of society;
- Building a world-class STI infrastructure; and
- Positioning South Africa as a strategic research, development and innovation partner and destination.

The dti occupies the other end of the value chain which is associated with commercialisation and support for the ‘learning and effort’ required for the commercialisation of new and acquired technologies. In addition, several other departments contribute to the national STI effort in funding human capital development, focussed R&D programmes, and local development programmes.

Harmonisation and intra-governmental coordination of research and development support and incentives are essential if optimal value is to be unlocked from the national investment in STI. This should be achieved through the joint design and implementation of various development interventions by the DST and **the dti** in particular.

The following STI development interventions will be emphasised:

- *Identification and support of large research and development (R&D) programmes in knowledge-intensive areas, with the potential to renew existing or establish new industries to enable enhanced market penetration and sustainable competitiveness.*

This will be coordinated through the development and implementation of the Emerging Industries Action Plan (EIAP). This serves as a mechanism a) to enable partnerships across government and with local industrial partners, in order to increase market access (local and foreign); and b) to improve funding certainty by leveraging commitments from development finance institutions (such as the Technology Innovation Agency and the Industrial Development Corporation).

- *Support the movement of South Africa's industrialisation process towards a knowledge economy by enhancing the participation of innovative enterprises and high-technology SMEs in particular.*

This will be achieved by supporting both existing and new technology-based SMEs to access STI knowledge, infrastructure and innovation support programmes, in order to better enable the conversion of innovative prototypes into commercial and industrial products and services.

- *Conduct an environment scan of research, development and innovation support initiatives to develop a comprehensive understanding of the offerings already in existence, as well as identifying possible mechanisms to create better linkages between them.*

Plans will be developed to address areas where innovation support gaps and/or needs are identified. A web-based platform will also be established to serve as an interactive vehicle to foster continuous engagement between the various actors within the technology innovation and commercialisation landscape, and to act as a channel through which government (in particular the DST and **the dti**), can communicate with stakeholders.

- *Initiatives in the development of a Technology Commercialisation Strategy will be accelerated so as to produce a policy framework that will facilitate and improve the translation of research outputs into commercially viable products and services.*

Key Action Programmes

1. Large R&D programmes in knowledge-intensive areas

Nature of the intervention

Establishment of the Emerging Industries Action Plan (EIAP). This will be aimed at providing a formal platform, that will a) reflect and elevate government-led technological programmes supporting new industrial development; and b) aid in the formal interdepartmental coordination and appropriate positioning of the various programmes. Furthermore, the EIAP will serve as a mechanism to increase market access (local and foreign) and improve investment certainty throughout the project life cycle. This will be achieved by securing firm commitments from developmental finance institutions (such as the Technology Innovation Agency and the IDC), in addition to providing clear value-propositions to potential local and foreign funding and industry partners.

Economic rationale

South Africa has a demonstrated capacity to generate large innovations with a potentially disruptive nature – i.e. innovations that help create new technologies, markets and value networks, in a manner that eventually dislodge and displace existing technologies, markets and value networks over a period of time. The DST is currently investing in number of potential high impact programmes that are a) cross-cutting (requiring close integration and support from other departments); b) have the potential to renew or establish new industries; and c) make a substantial contribution to longer term, sustainable competitiveness and successful penetration of new markets.

Examples of 'R&D-led industry development' programmes include titanium metal powder manufacturing development, fuel cell development and additive manufacturing.

Such programmes are knowledge-intensive and based on proprietary 'know-how', with corresponding markets often not yet established. This implies that, in view of the technical and market risks, development funding is difficult to secure. Besides the financial aspects, the speed of the process of technical and market development is deemed key to success.

In order to help mitigate the risks outlined above and to ensure interdepartmental and, where appropriate, industry, support and buy-in, the Emerging Industries Action Plan (EIAP) was devised, and is fully incorporated into, government's Medium Term Strategic Framework (MTSF).

Outcome

Accelerated technology development and commercialisation of R&D-led industry development projects, through improved interdepartmental coordination and improved funding/investment certainty.

Key milestones:

- 2014/15 Q2: Finalise the EIAP instrument and Terms of Reference.
- 2014/15 Q4: Secure stakeholder support and commitment for the evaluation of the first EIAP flagship project.
- 2015/16 Q4: First techno-economic evaluation completed and EIAP project selected and finalised.

Lead departments / agencies: DST

Supporting departments / agencies: the dti, NT, EDD, DoE, DoH, DMR, TIA, IDC, provincial government departments, Science Councils, universities, and private sector organisations as relevant.

2. Enhancing the participation of innovative enterprises and high-technology SMEs

The long-term intensification of South Africa's industrialisation process and movement towards a knowledge economy is to be realised through supporting both existing and new technology-based SMEs to access the STI knowledge infrastructure and innovation support programmes. Such support will better enable the conversion of innovative prototypes into commercial and industrial products and services.

SMEs are an essential component of the national industrial ecosystem. High-technology SMEs, in specific sectors such as engineering and instrumentation, have higher ratios of innovation per capita, compared with typical large firms. Such high-tech SMEs do, however, have close linkages to large firms, often providing either expert services or niche-manufacturing capabilities. Accelerated incentivisation of such high-tech SMEs has, therefore, to be properly attuned to their specific supply chains and geographical location (clusters/manufacturing zones). It must also pay careful attention to finding ways of overcoming their main constraint: access to capital and commercialisation support.

One particular area in which strongly incentivised high-tech SMEs can potentially have a significant impact is in rural communities and townships which typically lack sufficient infrastructure to support and sustain the growth of conventional large enterprises. Access to incubation services and facilities will help local enterprises to form partnerships with existing SMEs in the area, creating critical mass for new economic growth. Incubators, being 'light-footed' with respect to geographical location, have considerable potential to grow linkages with near and extended communities, unlock access to capital and skills, and attract the government support required to establish sustainable, thriving small businesses.

Nature of the intervention

The study seeks to investigate ways to close the gap between prototyping and industrial production, with a particular emphasis on creating the capacity to up-scale to small production batches.

Larger industry partners will be identified to support incubators as part of their corporate social responsibility and/or enterprise development programmes, while the expertise located in regional universities and technology stations will also be brought into play to help with the conversion of prototypes into market-ready products.

Economic rationale:

To promote and encourage interdisciplinary, multi-sectoral connectedness, based on partnerships between government, industry and research institutions, whilst encouraging the engagement of small and medium enterprises in research and technology development activities, and stimulating competency development in high- and emerging-technology firms.

Outcome

Improved linkages between SMEs and the knowledge-creation capabilities located in universities and science councils.

Key milestones:

- 2014/15 Q1: Commission a study to identify the key constraints currently blocking the conversion of prototypes into marketable products.
- 2014/15 Q2: Approved Memoranda of Understanding between rural communities/townships and 3 identified industry partners.
- 2014/15 Q3: Support 5 incubators in rural communities and / or townships.
- 2014/15 Q4: Support 3 university- or science council-based incubators.
- 2014/15 Q4: Implement recommendations on increased prototype-to-product conversion.

Lead departments / agencies: the dti

Supporting departments / agencies: DST, EDD, Rural Development, TIA, IDC, provincial government departments, science councils, universities, SOEs, private sector organisations.

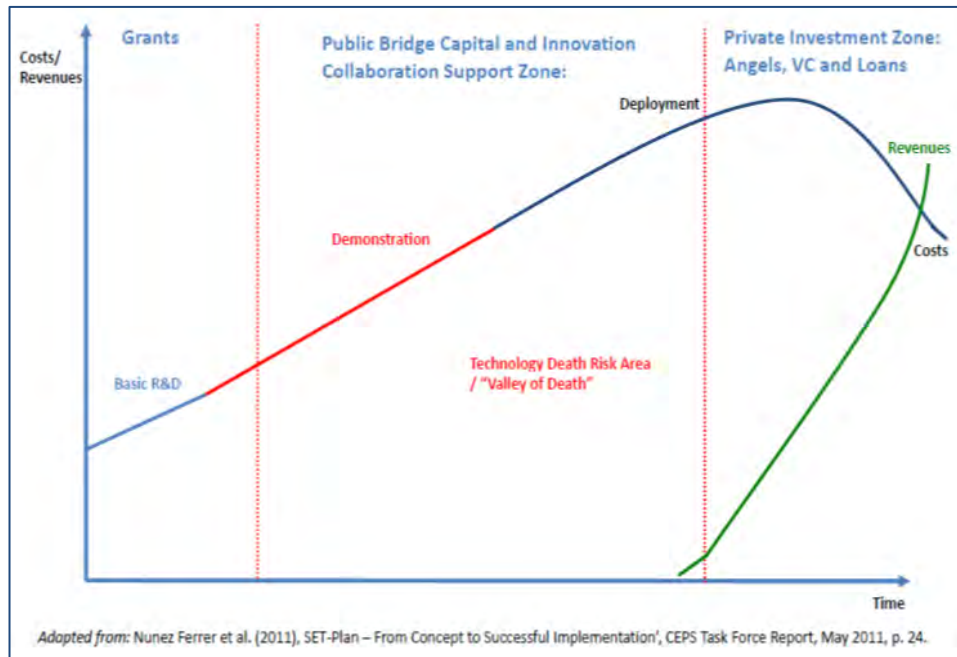
3. Technology Commercialisation Strategy

Technology commercialisation is understood as the process, or processes, of introducing a new product or production method into the market. This can include both new-to-the-world and new-to-the-market initiatives (the latter representing something new in a given context and not in absolute terms). Such innovations merit support to the extent that they have demonstrable potential to capture economic and/or social value.

Nature of the intervention

The Technology Commercialisation Strategy seeks to accelerate the journey between ideation and/or research and development and commercialisation, so as to assist start-ups and other players in the commercialisation space to overcome the ‘valley of death’ (i.e. the gap between R&D and the creation of successful products, processes and services. The strategy will provide guidance on investment strategies and on de-aligning with the inherent complexity of innovation exploitation.

Figure 26: Innovation Funding and Support Instruments along the Technology Cycle



The strategy is particularly crucial given the share of research carried out in public institutions and funded by government. Increasing awareness of commercialisation challenges and the involvement of partners with a commercial understanding in research decisions is important for assessing and responding to market needs. The commercialisation of technology presents significant challenges; so the strategy seeks to identify areas where support could be tailored to commercialise technology developed either by the public research institutions or by the private sector, taking into consideration the individual needs of the stakeholders at different stages along the commercialisation pathway.

Economic Rationale

To bridge the gap between the pre-production prototype stage and commercialisation; and also to enhance the probability of successfully commercialising new technologies.

Key milestones

- 2014/15 Q1: Finalise the Terms of Reference for the Technology Commercialisation Strategy.
- 2014/15 Q3: Hold workshops with relevant stakeholders and consolidate inputs.
- 2015/16 Q2: Approved Technology Commercialisation Strategy.

Co-leading departments/agencies: the dti and the DST

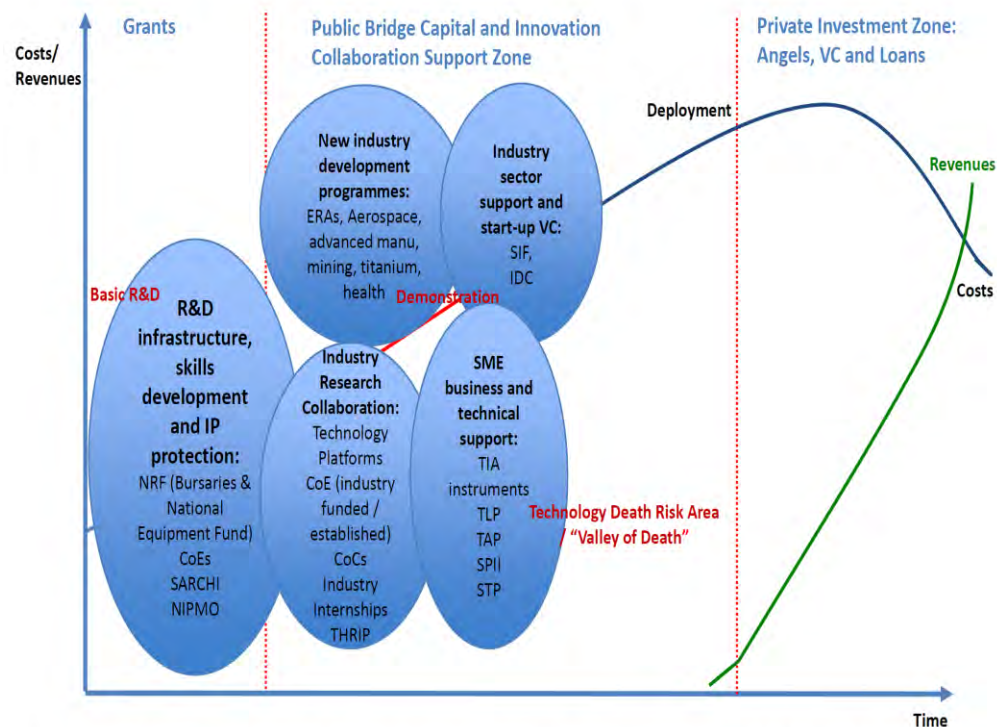
Supporting departments/agencies: NT, EDD, IDC, TIA, NRF, NIPMO, Universities, Science Councils, SOEs, private sector organisations.

4. Harmonisation of innovation support programmes

South Africa has strong science and technology capabilities and well-developed STI institutional frameworks. Concern has, however, been expressed about the inadequate levels of coherence and coordination in prioritisation and agenda-setting for science and technology innovation by, and between, government, business, academia and civil society. A significant strengthening the system is therefore required to achieve greater coherence in the use of R&D to drive social and economic development.

Whilst numerous innovation support initiatives are currently being implemented by government departments and agencies, their effectiveness continues to be limited by overlap, duplication and dispersion of efforts. Adequate information on existing support programmes is not readily available, limiting access to, and use of the support mechanisms they provide

Figure 27: Snapshot of South African Innovation Funding and Support Instruments along the Technology Cycle



Adapted from: Nunez Ferrer et al. (2011), SET-Plan – From Concept to Successful Implementation’, CEPS Task Force Report, May 2011, p. 24.

Preliminary assessments of some of the existing innovation financing and support programmes of government reveal that there is collective, and at times, overlapping support for commercialisation from basic and applied R&D stages through to demonstration (see diagram above).

An emerging ‘gap’ that therefore needs to be filled is in the area of funding (and other) support for both the technology deployment and full commercialisation stages. Efforts to identify gaps and pinpoint opportunities for complementarity amongst the various available instruments are ongoing and will continue to inform DST and dti efforts to harmonise and coordinate their packages of support activities.

Economic Rationale

To facilitate harmonisation and synergies between existing and future innovation support programmes across departments and entities for increased impact on the growth of the economy.

Key milestones

- 2014/15 Q2: Finalise the Review of Innovation Support Programmes; identify potential for coordination across innovation support programmes and implement steps to facilitate harmonisation in the system.
- 2014/15 Q4: Establish and develop the requirements for a web-based platform to serve as a “one-stop-shop” for innovation support instruments.
- 2015/16 Q1: Develop a proposal for additional innovation instruments to meet system and stakeholder needs.
- 2015/16 Q3: Launch the beta version of the web platform and develop a user-guide.

Co-leading departments/agencies: DST and the dti

Supporting departments/agencies: EDD, NT, IDC, TIA, NRF, NIPMO.

Special Economic Zones (SEZ) and Industrial Development

Special Economic Zones (SEZs) are important instruments to support long-term industrial and economic development. **The dti** aims to enhance its efforts to create employment and economic growth by establishing a series of strong industrial bases across the country through SEZs, creating an environment conducive for both DFI and domestic investment and for the development of new strategic industrial capabilities.

In order to ensure that the SEZ programme is effective, a dedicated and integrated legislative framework for SEZs has been developed. This will enable government to effectively regulate and support all categories of SEZs, including the existing Industrial Development Zones (IDZs). This will mark a departure from the existing IDZ programme, which was not supported by dedicated legislation.

It is the intention that industrial production in the SEZ's will focus strongly on support for the manufacture of value-added goods. Once designated, the SEZs should create backward and forward linkages between companies inside and outside of these zones and build and strengthen localisation and supplier development programmes.

Key Opportunities

- Increased foreign and domestic investment;
- Rise in production output leading to increased exports of value added manufactured goods;
- Employment creation;
- Transfer of technology and skills development;
- Creation of economic linkage through supplier development;
- Regionally spread industrial development.

Constraints

- Supply and availability of energy;
- A shortage of skills in strategic manufacturing sectors as well as with respect to the necessary expertise to develop and manage SEZs;
- Port inefficiencies: in particular, container terminal capacity constraints;
- Underdeveloped infrastructure: including rail branch-lines, roads, electricity and water supply;
- High logistics costs;

- Complex regulatory and inter-governmental integration.

Key Action Programmes

1. Establishment of Industrial Clusters through SEZs

Nature of intervention

Designation of SEZs across the country to promote industrial development, export of value-added goods and job creation.

Economic rationale

Designation and development of SEZs will provide a platform for various areas and provinces of the country that will support implementation of the Industrial Policy Action Plan, regional industrial development strategies and the National Development Plan (NDP); to contribute towards strengthening the terms of trade of the country through export of value added commodities and creation of value chains and much needed jobs.

Key milestones

- 2014/15 Q1-Q4: Rollout of Saldanha Bay IDZ (SBIDZ): Infrastructure support provided within the IDZ
- 2014/15 Q1-Q4 Establish SBIDZ Board
- 2014/15 Q3: Sign MOU between **the dti** and Indonesia to facilitate collaboration on the establishment of Oil and Gas industry at Saldanha Bay
- 2014/15 Q1-Q4: Secure 8 Investments into Saldanha Bay IDZ within Oil & Gas and Marine Repair Cluster.

Lead departments/agencies: the dti

Supporting departments / agencies: NT, NPC, EDD, DoE, DPE, DHA, DEA, Eskom, Transnet, SARS and the DFIs.

2. Implementation of SEZ Bill proposals

Nature of intervention

The Bill seeks to provide for the designation, development, promotion, operation and management of Special Economic Zones.

Economic rationale

To provide for the establishment of the Special Economic Zones Board; to regulate the application and issuing of Special Economic Zones operator permits; and to provide for the establishment of the Special Economic Zones Fund. The Bill will further support the acceleration of industrial development and the creation of a regionally diverse industrial economy through the establishment of new industrial hubs in underdeveloped regions of the country.

Outcomes

The concurrent and incremental establishment of SEZs within the appropriate legislative, regulatory, institutional and governance framework, leading to their consolidation and strengthening.

Key milestones

- 2014/15 Q2: SEZ Regulations and Guidelines (in line with the promulgation of the SEZ Act)
- 2014/15 Q2: Establishment of the SEZ Board (Once the SEZ Act has been promulgated)
- 2014/15 Q1-Q3: Implementation Protocols entered into by the Minister (**the dti**) and 4 government departments that are critical to the success of the SEZs
- 2014/15 Q3: Testing of the SEZ One Stop Shop Model.
- 2014/15 – 15/16: Ongoing establishment of SEZs.

3. Special economic zones: planning and development

Nature of intervention

Effective planning and development of Special Economic Zones, including identification of the strategic industrial opportunities and capabilities to be developed, the regions which can successfully host and anchor the development of the desired capabilities and the customisation of support measures in line with the needs of the desired industrial sectors and the host regions.

Economic rationale

SEZs cannot be developed in all the regions of the country at the same time. There are currently 10 concept proposals for special economic zones across the country. There is therefore a need to distinguish between those that are economically viable over the long-term and those that are not. Long-term plans for those that are economically viable will then be developed and implemented through a set of broad-based partnerships involving all three spheres of government, academia and research agencies and other key stakeholders.

Outcomes

Effective planning and development of SEZs, driven through a collaborative effort between and across the spheres of government – to be underpinned by a comprehensive support package that includes both industrial and social infrastructure, technology and innovation and human capital development. This is expected to lead to rapid development of industrial eco-systems in targeted regions; mastery of targeted industrial capabilities; attraction of foreign and domestic direct investment; and, finally, sustained growth and employment creation.

Key milestones:

- 2014/15 Q1: Pre-feasibility study reports for 8 proposed special economic zones
- 2014/15 Q4: 5 technical feasibility reports (from Q2).

4. SEZ Capacity Building Programme

Nature of intervention

SEZ-related skills and capacity development programme.

Economic rationale

The planning, development and management of Special Economic Zones in South Africa is a relatively new practice. The country needs to rapidly develop a large pool of new skills across the three spheres of government, including its agencies.

Outcomes

Increase in the quality and quantity of skilled professionals, across the three spheres of government, required for the planning, development and management of SEZs.

Key milestones:

- 2014/15 Q1: Planning and finalisation of logistical arrangements with the Chinese government on the training of South African officials on SEZ in China
- 2014/15 Q2: Recruitment of 30 candidates, across the country, to be trained in China on special economic zones planning, development and management.
- 2014/15 Q3: Training of 30 officials in China on the planning, development and management of special economic zones

Regional integration

A large number of African countries have recorded some of the highest growth rates in the world in recent years, some averaging 5% and upwards per annum from 2000. The main source of this growth - sustained by rising if highly uneven income levels - remains expansion in agriculture production, robust growth in services and a rise in oil production and mineral exports.

Whilst some estimates suggest that over 200 million Africans will enter the consumer goods market by 2015, the fact remains that, for now at least, the pattern of exchanging relatively lower-priced primary goods in exchange for highly priced manufactured goods remains in place. This keeps the continent as a whole largely confined to the lower end of global supply chains, heavily dependent on commodity production and unbeneficiated exports, with too little value-addition and few forward and backward linkages to other sectors of the economy. It is increasingly obvious that - as it is in other parts of the world - development of competitive manufacturing activities will have to be the game-changer as far as sustained and inclusive growth is concerned.

Therefore, a strategy combining development and implementation of national industrial strategies with systematic regional development initiatives remains critical to moving African manufacturing activities higher up the global value chain.

South Africa is committed to upping its role in fostering regional economic integration based on market integration, infrastructure development and enhanced connectivity between countries, whilst at the same time promoting industrial development to address productive capacity and supply side constraints.

Stronger regional markets are important for the industrialisation of Africa. Over the past year, South Africa has worked with fellow member states in the SADC and Tripartite Free Trade Area Negotiations to among others develop a practical agenda to build supply-side capacities through the development of strong regional value chains to underpin intra-regional growth and diversification of trade.

Work is currently under way to concretise areas of collaboration at both bilateral and multilateral levels. South Africa has already initiated discussions that have led to the identification of a significant number of projects for cooperation, practically demonstrating its commitment to the region and the continent.

Key Action Programmes

1. Work programme of the Regional Economic Communities

Nature of the intervention

Implementation of the work programme with Regional Economic Communities as agreed by SADC member states.

Economic Rationale

In pursuit of deeper regional integration South Africa must continue to upscale its work with fellow African states to implement agreed priorities, including the establishment of joint infrastructure development projects, development of regional value chains and the provision of technical assistance for policy and institutional development.

Outcome

Increased economic integration and co-operation between the regional economic communities.

Key milestones

- 2014 - 2018: Work with fellow member states to implement the approved SADC Industrial Development Implementation Matrix to build on the Regional Industrial Development Strategy, prioritising agro-processing, mineral beneficiation and pharmaceuticals as initial sectors of focus.
- 2014 - 2016: Work with member states to concretise areas of collaboration on the identified projects that support development of regional value chains in the region.
- 2014 - 2016: Work with fellow member states to concretise areas of collaboration to promote productive capacity in the tripartite region.

2. Cross-border infrastructure and sector development

Nature of the intervention

This intervention seeks to promote a cross-border infrastructure and sector development project to complement the Free Trade Area (FTA) discussions to create a market of more than 600 million people in South, Central and East Africa.

Economic Rationale

A critical constraint to regional industrial development and integration is the continuing prevalence of weak cross-border infrastructure. Despite robust GDP growth, inadequate infrastructure remains a constraint to growth, choking integration efforts. Adequate infrastructure is essential for regional integration as it facilitates formation of large competitive markets in place of small isolated and inefficient ones. It also lowers the cost of production across sectors.

Outcome

Integrated cross-border infrastructure that facilitates investment, trade and development of regional value chains.

Key milestones

- 2014 - 2016: Consolidate project preparation and development facilities, working with Development Finance Institutions.
- 2014 - 2016: Promote regional sourcing in all regional infrastructure development programmes.
- 2014 - 2018: Promote participation of South African manufacturers in mutually beneficial regional value chains particularly in agro-processing, mineral beneficiation and pharmaceuticals.
- 2014 – 2018: Identify viable regional value chains and relevant levers to promote their development.

3. Technical Assistance

Nature of the intervention

This intervention seeks to promote sharing of best practice and building capacity.

Economic Rationale

South Africa has strong technical capacity at a number of levels and through a number of organisations which can be shared with the rest of the region. A number of DFIs in South Africa have MoUs with other DFIs across the continent to offer training in project planning, project appraisal, research and information management.

Outcome

Shared knowledge and capacity building between the regional economic communities.

Key milestone

2014 - 2016: Continue to cooperate with countries across the continent on capacity building programmes.

4. Co-operation on Standards, Quality Assurance, Metrology and Accreditation (Technical Infrastructure)

Nature of the intervention

South Africa will work with countries in the region to strengthen co-ordination of technical infrastructure activities, including standards, metrology and accreditation and conformity assessment services, mindful of the fact that the development of such capacity has a long lead time.

Economic Rationale

The capacity to comply with international standards, norms and technical regulations underpins the potential for economic and industrial growth. The strengthening of technical infrastructure capacity in African countries is a precondition of industrialisation efforts.

The dumping of cheap, sub-standard manufactured goods on African markets has sometimes led to the collapse of local industries and acted as a major barrier to industrial development. Tightened standards and conformity assessment are, therefore, of great importance in preventing the influx of sub-standard and injurious products into African markets.

Outcome

Improved quality and enhanced potential access of African products to export markets.

Key milestones

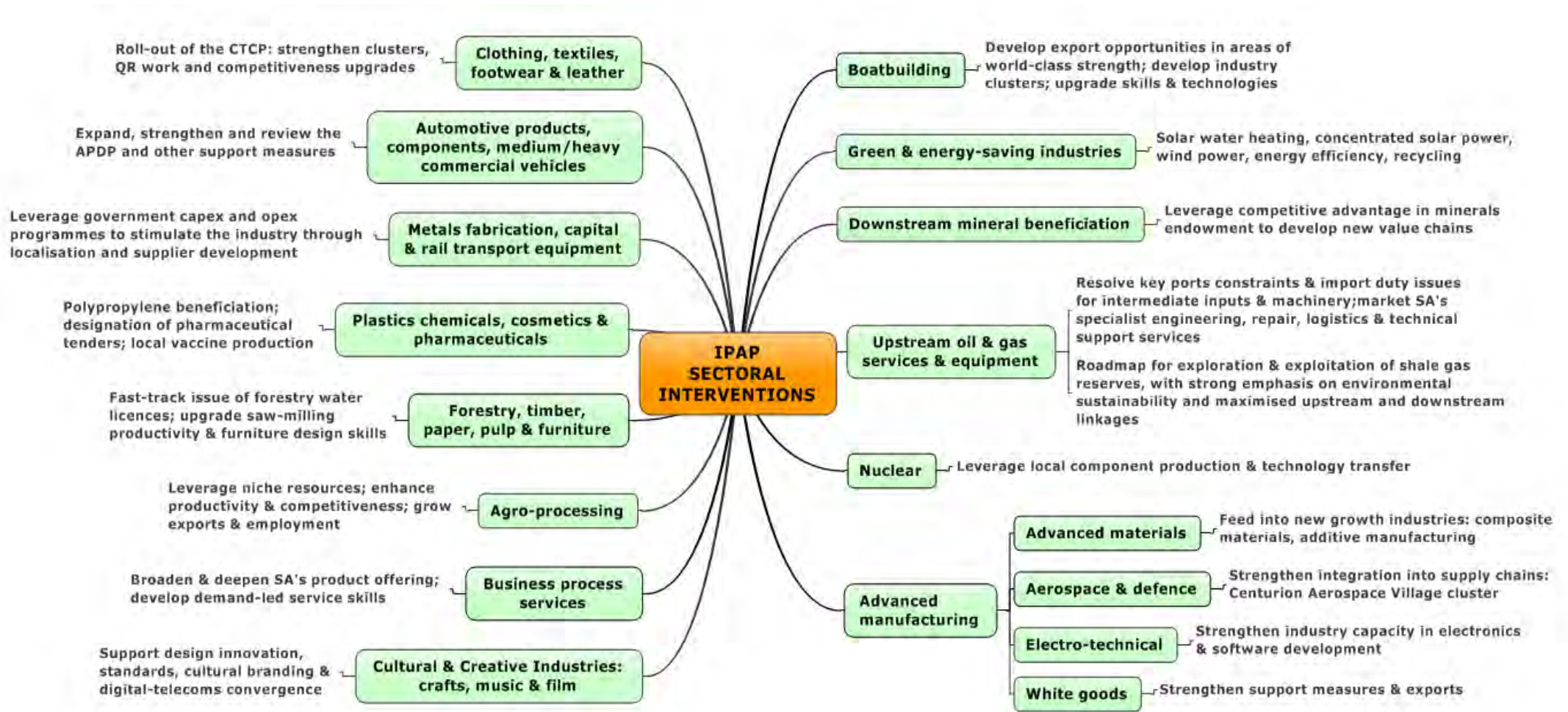
2014/15 Q4: 4 AFRAC pre- and peer evaluations carried out in order to obtain mutual recognition of conformity assessment of results in Africa. Also secure joint peer evaluation with ILAC and AFRAC to obtain international recognition for the SADC Accreditation Services.

2014/15 Q4: Regional integration of electricity transmission networks through African power pools (specifically Southern African and East African power pools (SAPP and EAPP). Both are affiliate members of AFSEC and support common adoption of standards for rural electrification using distributed generation - in particular photovoltaic (PV) systems.

2014/15 Q4: Work with AFRIMETS member states to further the adoption of OIML (Legal metrology) and CIPM (scientific metrology) directives and publications as the main strategy to implement the CIPM Mutual Recognition Arrangement and facilitate the harmonization of technical regulation on the continent.

Lead departments/ agencies: the dti, NMISA, NRCS, SABS, SANAS.

IPAP 2014/15 – 2016/17 INTERVENTIONS: MAIN SECTORAL FOCUS AREAS



SECTORAL INTERVENTIONS

Clothing, Textiles, Leather & Footwear

Sector profile

Since the introduction of the Clothing and Textiles Competitive Programme (CTCP) in 2009 there has been a significant positive impact on the clothing, textiles, leather and footwear (CTLF) sector in South Africa, notwithstanding ongoing challenges and threats.

The CTCP is subdivided into the Production Incentive Programme (PIP) and the Competitiveness Improvement Programme (CIP). These programmes have seen the stabilisation of the four sectors over the last four years and the creation of new, decent, sustainable jobs – this despite the fact that the CTCP was initially designed only to halt the rapid decline of the sector, under massive pressure from the cheap and illegal imports which had flooded in from the Far East. In its four years of operation a total of 12,680 new decent jobs have been created, as against 4,356 lost in the same period - giving a net gain of 8,324 jobs created. To date Government has made R2.488 bn available for the CTCP programmes, with 688 transactions approved and 362 companies receiving crucial support.

The programmes have been responsible for the establishment of both horizontal and vertical clusters which involve the whole textiles and footwear value chain from fibres and hides up to retailer outlets. The quick-response principles which have been established through these cluster programmes have enhanced the procurement of locally manufactured garments, footwear, leather goods and home textiles. The clusters offer formal platforms for cross-sectoral knowledge-sharing as they encompass members from across both the textile-clothing-retail value chain and the leather-footwear-retailer value chain. National clusters have also been established which include the National Leather and Footwear Cluster, the National Fashion Cluster, the National Cotton Cluster and the National Exotic Leather Cluster. These clusters promote new technology development, skills development, innovative processing techniques, world class manufacturing systems, individual company benchmarking against international norms and value chain alignment.

In December 2011, under the Preferential Public Procurement Framework Act (PPPFA), the four CTLF sectors were designated at 100 % local content threshold for all government tenders; and the required Instruction Note from the Minister of Finance

was signed off in July 2012. This was done to support growth in these sectors and complement the CTCP.

Whilst there has been a marked improvement in procurement from government entities focusing on quality locally manufactured products instead of imported goods, there nevertheless remain indications of non-compliance across a range of government spheres.

The dti signed an MOU with the People’s Republic of China to assist in providing state-of-the-art technical training for the CTLF sector, with the first (30-strong) group of trainees having left for China in November 2013 to embark on a two-month intensive training programme in textile and clothing design. Domestically, the CSIR’s Textiles and Clothing Centre of Excellence in Port Elizabeth has overseen the skills development of a range of students studying for BSC, MTech and PhD degrees, in collaboration with Nelson Mandela Metropolitan University, Stellenbosch University, Durban University of Technology, Tshwane University of Technology, UNISA, Walter Sisulu University and the Cape Peninsula University of Technology. **The dti** is also working closely with the Fibre Processing and Manufacturing SETA to identify FET colleges country-wide which can be used to train technicians and technologists for the CTLF sectors, in collaboration with the National Clusters which have been established.

Constraints

The constraints facing the industry are well-documented and include:

- Recurrent periods of currency overvaluation and continuing volatility;
- The ongoing surge of global imports that has been under way since the expiry of the Multi-fibre Agreement;
- Illegal imports and fraudulent under-invoicing;
- Inadequate compliance with ‘country of origin’ labelling legislation;
- Lack of skilled personnel to take over from ageing industrial executives and senior management, who generally did not leave behind succession plans;
- Historical failure to develop and implement skills development plans, particularly for critical areas of operations and in production;
- Outdated capital equipment and technology resulting from inadequate capital investment and technology upgrading;
- An historical deficit with respect to innovation, research and development.

In order to address the ongoing challenges of illegal imports and under-invoicing the Clothing, Textiles, Footwear and Leather Forum (CTFLF) was established, with the enabling Terms of reference document signed on 15 November 2013. Chaired by the SARS Customs Unit, it includes **the dti**, all the CTFLF sector associations and organised labour.

An immediate positive development was the introduction by the Forum of the Reference Price Initiative. This has already begun to deliver some appreciable results, with the total value of declared port-of-entry invoices having shown a significant recent increase. But the battle to reduce illegal imports remains far from won.

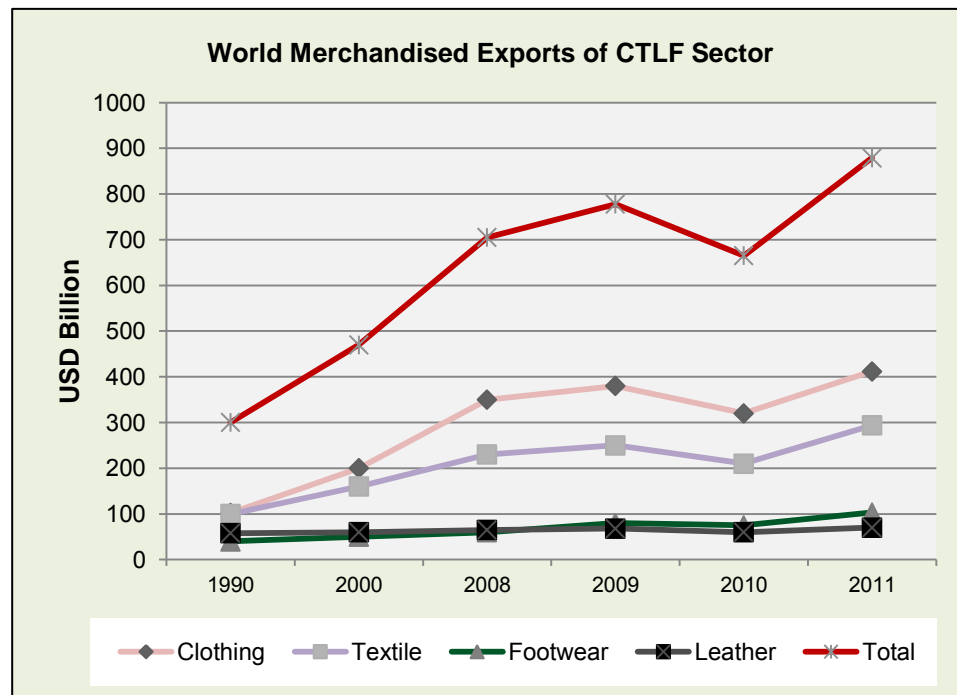
The key opportunity for the sectors is to recapture a bigger share of the domestic market share by implementing a range of interventions to improve global competitiveness. These include: a strong focus on product, process and delivery efficiencies; harnessing proximity to local retailers; and more effective clampdowns on under-invoicing and other illegal activities. The industry is gradually but steadily responding to the available instruments. These include:

- Support for the commercialisation of new technologies – which promises to give both the textile and footwear industries a new competitive edge;
- Opportunities for the beneficiation of new fibres now being grown in South Africa;
- Finalisation of the garment sizing initiative; and
- Effective implementation of the cluster programmes that have been established.

Sector economic data: GDP and trade balance

Variable	Contribution in 2013
Manufacturing value-add (% of GDP)	R12,4 billion (0,7%)
Manufacturing employment (% of Manufacturing informal employment)	108 000 (9,1%) 59 700 (FPM SETA information)
Trade balance:	-R20,7 billion

Figure 28: CTLF export performance



Source: Quantec

Figure 29: CTLF trade deficit trends Source



Source: Quantec

Key Action Programmes

1. Clothing, Textiles, Footwear and Leather Competitiveness Programme

Nature of the intervention

The programme will enable the sector to compete sustainably and effectively against international competitors in both the domestic and the export markets. In addition, company-level competitiveness will be improved substantially.

Economic rationale

The sector lags behind its international competitors in terms of conversion efficiencies and other key indicators of world-class manufacturing principles - of which quality, cost and delivery are the main drivers.

Outcomes

The programme will assist in building sustainable competitiveness. The roll-out of the CTCF will be extended to new companies in the textiles, clothing, and leather and footwear industries. New decent jobs will be created as the sector starts to grow.

Key milestone

2014/15 Q1-Q4: Ongoing roll-out of the PIP and CIP programmes. There will be a concerted focus on the cluster programmes, where successful impact is beginning to be realised.

Lead departments/agencies: the dti and National Treasury

Supporting department/agencies: IDC, EDD

2. Illegal imports programme

Nature of the intervention

The programme is designed to further clamp down on the illegal imports that are continuing to flood the country. It will also scale up the policing of country-of-origin labelling and SADC rules of origin.

Economic rationale

The elimination of illegal imports will help level the playing field for local manufacturers. There is a need to build on the successes so far achieved by the introduction of the "reference price" by SARS in the clothing sector, which is now being rolled out to the other sectors. The successful establishment of the CTLF Forum has created a platform upon which all stakeholders can jointly formulate strategies to combat illegal imports.

Outcome

Reduction of illegal imports will be rigorously pursued over the next three years, with a medium term view to their elimination.

Key milestone

2014/15 – 2016/17: Ongoing and targeted campaigns against under-invoicing and other illegal activities in the sector.

Lead departments/agencies: SARS, National Treasury, ITAC and the dti

Supporting departments/agencies: EDD

3. Skills development programme

Nature of the intervention

The programme will engage with the Department of Higher Education and Training, through the Fibre Processing and Manufacturing (FPM) SETA. Further Education and Training Colleges (FETs) will be identified to undertake skills development training for the sectors, in collaboration with the National Clusters. More students will be taken through **the dti-PR** China training programmes, beginning with a further 30 students in the new financial year.

Economic rationale

Skills development in the sector has been focused on operator level for a very long time through the SETA programmes, with very little attention being paid to training in technology and scientific skills development and many university programmes discontinued due to the lack of industry support. The programme seeks to reverse this pattern of decline.

Outcomes

Enhanced training and graduation of technicians, technologists, engineers, production managers and scientists for the CTLF sector.

Key milestone

2014/15 Q1- Q4: Ongoing roll-out of skills development programmes through CSIR Textiles and Clothing Centre of Excellence (TCCoE) based in Port Elizabeth, the FPM SETA, and ongoing collaboration with China in technical training programmes.

Lead departments/agencies: the dti,

Supporting departments/agencies: FPM SETA, CSIR, TEI's

4. Communal Hides Beneficiation

Nature of the intervention

The programme will continue to provide training to communal farmers and rural households in animal care methods designed to deliver high quality hides. The training focuses on slaughtering techniques, tanning and marketing. The programme was

introduced in KwaZulu Natal during the 2013/14 financial year and will be extended to other South African Provinces.

Economic rationale

It is estimated that the communal farmers are responsible for nearly 30 % of the country's cattle livestock and this project will help in increasing the availability of quality hides into the market.

Outcomes

Higher quality hides will be obtained from communal farmers, at better prices, to ensure a lift in their household living standards.

Key milestones

2014/15 Q2: Finalise negotiations with Provincial government to extend programmes to the provinces concerned.

2014/15 Q4: Implementation of the research recommendations after sourcing the necessary funding.

Lead departments/agencies: the dti, Provincial Governments

Supporting departments/agencies: DOAF, EDD

5. Innovation and technology

Nature of the intervention

Distinct technologies will be identified and, where commercialisation is possible, this will be undertaken with relevant partners. The technologies to be pursued will include the establishment of a South African garment-sizing database using three-dimensional (3-D) body-scanner technology, computer-aided design (using 3-D scanner data) and the processing of new natural fibres such as flax, cashmere and kenaf. New technologies such as non-woven products and fibre-reinforced composites will be commercialised. Technologies in garment designing and servicing the fashion industries will also be pursued.

Economic rationale

South Africa cannot compete globally in commodity textiles. It has to focus on niche markets and not those sectors of the textile trade in which other developing economies are better positioned to compete.

Outcomes

The main outcome of the programme will be a transformed clothing industry, which will be in a position to compete globally with home-grown garment technologies and the establishment of the linen garment manufacturing industry

Key milestones

2014/15 Q1: Finalise the data consolidation using the 3 D Body Scanner technology

2014/15 Q4: Implementation of the Sizing Data by South African garment manufacturers. Commercial manufacturing of linen garments and home textiles implemented.

Lead departments/agencies: the dti

Supporting departments/agencies: UNISA and Cape Peninsula University of Technology.

6. Exotic Leather Cluster

Nature of intervention

The project will focus on the implementation of the Exotic Leather National Cluster programme which focused on crocodile hides in the previous financial year. The programme will include ostrich hides in the new financial year.

Economic rationale

The exotic leather industry has been working under the radar for a long time, with very little local beneficiation: historically, over 90 % of skins exported having been in raw form. The project will assist in implementing local beneficiation and promoting the export of finished high-value exotic leather goods like belts and bags. The intervention will focus on good animal husbandry in both ostrich and crocodile farming and skills development in the tanning of hides, using new technologies available in the global market. Collaboration with international brands and designers will be promoted.

Outcome

Exportation of high value-added exotic leather goods and manufacture of affordable exotic leather goods for the local hospitality industry and local retailers.

Key milestones

2014/15 Q1: Bring the ostrich industry association fully on board as a member of the National Exotic Leather Cluster

2014/15 Q2 – Q4: Establish partnerships between the National Exotic Leather Cluster and the FETs and begin the development of syllabi in collaboration with the Vaal University of Technology and the FDDI of India.

Lead departments/agencies: the dti, University of Pretoria, Vaal University of Technology

Supporting departments/agencies: IDC, EDD, FETs.

Automotives

Light Motor Vehicles, Medium and Heavy Commercial Vehicles, & Components

Sector profile

The automotive production sector remains a critical segment for most economies because of its cross-cutting linkages across several industries and services as well as its documented contribution to various economic development imperatives. The production of a vehicle incorporates a wide range of industrial activities and as such the sector is South Africa's leading manufacturing industry, contributing almost 7% of the country's more than R3,401 billion GDP in 2013.

As at year-end 2013, almost 100,000 people are employed in the manufacture of vehicles and components with a further 200,000 employed in the retail and repair segments. The total vehicle production volume in 2013 was approximately 550,000 vehicles compared to 540,000 units for 2012, translating into a mere 1.8% growth. This muted growth can, amongst other reasons, also be attributed to the prolonged strike action in the industry during the third quarter of 2013.

There are also a great number of imported automotive products in South Africa, leading to a trade deficit of R49.2 billion in 2012.

Economic impact

An estimated 160,000 direct jobs can be created in the industry in the period 2010 up till 2020. Outside of the traditional financial support measures that are in place through the APDP, on-going supplier development and increased levels of supply chain competitiveness have to play a complementary role in attracting higher levels of sector investment and further localisation opportunities

Key opportunities

The year 2013 saw the introduction of the APDP as a replacement to the MIDP. It was a year of learning, consolidation and realignment within South Africa's automotive production environment as local producers continue to synergise their businesses with the sector-specific programmes.

Two key objectives of the APDP are to raise volumes to 1.2 million vehicles per annum by 2020 and to substantially diversify and deepen the components supply chain. This will require on-going increases in minimum plant volume thresholds and identification of

areas where greater economies of scale in component sourcing and/or value chain development are possible.

All of this needs to be done on the back of South Africa continuously developing itself as a globally competitive destination for automotive investment and production.

The medium and heavy commercial vehicle (MHCV) sector has also received – and continues to receive - its fair share of policy attention. A number of opportunities are being exploited to resuscitate bus production in South Africa as well as other MHCV sectors through boosting the roll-out of the Bus Rapid Transport Systems in Metros and implementing the revised state preferential procurement framework. Recent progress made in this regard includes updates to the Automotive Investment Scheme (AIS).

There continues to be growing demand for other MHCVs in areas such as infrastructure, construction, mining and agriculture, while at the same time a stronger focus continues to be placed on 'yellow metals'.

Like many industries globally, but more intensively than most, the automotive sector is impacted by the imperatives of climate change, with heightened demands for products with lower emission levels. A strong focus will need to be placed on ensuring that these technological developments are incorporated throughout the South African production landscape, with particular attention to be given to the opportunities afforded by Electric Vehicle (EV) production.

Constraints

Notwithstanding the successes achieved since 1995, the industry faces a number of challenges on its journey through the revised APDP paradigm. Economies of scale in assembly and the depth of domestic component manufacturing are not yet internationally optimal. A relatively small number of automotive components dominate the export basket and local content has tended to stagnate.

Several studies have drawn attention to gaps in the manufacturing competitiveness levels of automotive component suppliers. To address this issue, various supplier development initiatives have been implemented over the years, with the most recent iteration being **the dti**-driven Supplier Development Programme, delivered in conjunction with the Automotive Industry Development Centre and UNIDO. Following this multi-year program that ran from 2010 to end 2012, **the dti**, in consultation with industry stakeholders, has developed and launched the Automotive Supply Chain Competitiveness Initiative (ASCCI), which will drive various competitiveness improvement interventions across the domestic automotive value chain.

The rapid liberalisation of the MHCV sector as well as an apparent lack of co-ordination between various government agencies has in the recent past diminished government's ability to increase state procurement of buses or bus services in support of the sector. The procurement processes at the various agencies have also been marred by delays, leading to minimal local build of buses as timelines have become too compressed.

In parallel with the launch of the APDP, other significant developments on other complementary fronts were realised – including the design of the Electric Vehicle Roadmap and the MHCV strategy. In these circumstances, it was considered prudent to allow consolidation as manufacturers shaped their operations in line with the new frameworks.

Key Action Programmes

1. Review of the Automotive Production Development Programme (APDP) - Light Vehicle Review

Nature of the intervention

A review of the APDP, with a particular focus on light vehicles. This will require the collection of sufficient data to support informed proposals, recognising that many current industry practices are still influenced by the now discontinued MIDP. OEMs establish new volume and sourcing plans at new model introduction and not all OEMs have yet introduced new models on the APDP assumptions. A review of the changes for those that have already done so is required to provide valuable insight into the future industry outlook and as part of a broader review of the Light Vehicle Segment of the industry.

It must be noted that this Programme focuses on light vehicles and excludes any consideration of medium and heavy commercial vehicles and related transport products. However the light vehicle APDP already includes incentives for the production of components for medium and heavy commercials, so the Review should consider the appropriateness of these and their impact on the overall programme.

Economic Rationale:

The APDP parameters were established in 2008 and in the past five years major global and domestic events have impacted on expectations and projections. For example, the model prepared in 2008, on which the APDP parameters were based, projected local light vehicle production of 745,000 units for 2012.

In fact actual production achieved was 31% lower at 511,000, given the global recession and other prevailing factors. In contrast, most other regions have seen recovery and even growth from pre-crisis levels, with the notable exception of the EU where current volumes remain 16% below 2007 production. It is critical that certainty for investors is maintained whilst exploring opportunities for programme adjustments to recognise issues such as the likelihood of surplus credits resulting in lower local component production.

In this context it will be important to obtain more detailed information on the types of assistance provided by national and regional governments in other jurisdictions, in support of their automotive sectors. All these considerations must be viewed against the background of the lower starting base for the APDP. It is therefore important to reaffirm the major objectives of the APDP, namely production volumes of 1.2 million by 2020, with significantly higher levels of localisation.

Key milestones

- 2014/15 Q1-Q3: Gathering of economic data, modelling and analysis of the subsector.
- 2014-2015: Engagement with all stakeholders to identify and analyse all the data and key strategic options, including measures needed to achieve Programme objectives and scale these up where possible and appropriate.
- 2014/15 Q3: Development of possible amendments and enhancements to the Programme to address issues and shortcomings, including identification of component sub-sectors which provide growth potential and the implementation of measures to assist these.
- 2014/15 Q4: Submission of draft proposals to the Minister/Executive.

2. Competitiveness Improvement Initiatives

2013 saw the finalisation and launch of the Automotive Supply Chain Competitiveness Initiative (ASCCI). This collaboration between major auto manufacturing industry stakeholders will see various projects being implemented in the following years, with specific focus on increasing supplier capabilities, increased localisation levels better strategic guidance with regard to increasing the levels of automotive supply chain competitiveness in South Africa.

ASCCI activities are important in the context of enabling competitiveness, growth, employment creation and transformation in the South African automotive industry. Elevating productivity has been identified as one of the cornerstones of a competitive industry and in this regard an immediate focus is being placed on promoting the adoption of base operating standards at suppliers, and in particular tier 2 and SME suppliers.

With a view to enabling the enhanced sustainability of the intervention, this activity will be undertaken within the context of leveraging and elevating existing industry supply chain practices.

Nature of the intervention

Promote the adoption of base operating standards at automotive suppliers.

Economic rationale

Increased manufacturing competitiveness to drive further localisation, thus generating the potential for employment creation.

Outcomes

Enhanced supplier productivity through the establishment of base operating standards at suppliers, with a particular emphasis on tier 2 suppliers.

Key milestones

2014/15 Q1: Concept Note and scoped Project Plan: base operating standards.

2014/15 Q3: Approved Report and Implementation Plan.

2014/15 Q4: Project implementation.

2014/15 Q4: Preliminary project evaluation.

Lead departments/agencies: the dti, in conjunction with automotive industry stakeholders.

Supporting departments/agencies: EDD, Provincial and Local government.

Metal Fabrication, Capital & Rail Transport Equipment

Sector profile

- Ferrous Metals
 - Primary iron and steel (flat-rolled products, long products) and related downstream industries;
 - Metal products (tubes, structural steel, extrusions and wires).
- Non-ferrous Metals
 - Primary non-ferrous (aluminium, copper, rare earth, brass, lead, tin, zinc, precious metals fabrications and related downstream industries);
 - Jewellery (gold, silver and platinum group metals).
- Capital Equipment
 - Capital equipment and machinery;
 - Engineering and allied services.
- Rail transport equipment
 - Rail Rolling Stock (locomotives, electric multiple unit, wagons, and coaches);
 - Rail Infrastructure (signalling, perway, and overhead electric transmission).

These industries are at the centre of economic development because they produce products, applications and services used across the entire economy. This includes infrastructure programmes, construction, general engineering, mining, automotives and packaging. The metal fabrication, capital and rail transport equipment cluster of industries forms an important component of any industrialisation path and is a key driver of the manufacturing sector's overall competitiveness.

The industries in this cluster have rather different and uneven characteristics. For example, South Africa has well-developed niche capabilities in areas such as mining equipment and structural steel, which can effectively compete in global markets, while other sub-sectors such as the casting and tooling industries are stagnant or in decline.

Sector economic data

Variable	Contribution in 2012
Manufacturing value-add (% of GDP) <ul style="list-style-type: none"> • Basic iron and steel and basic non-ferrous metals • Metal fabrication, capital and rail transport equipment 	R23.9 billion (1.37%) R44.2 billion (2.54%)
Manufacturing employment (% of Manufacturing) <ul style="list-style-type: none"> • Basic iron and steel and basic non-ferrous metals • Metal fabrication, capital and rail transport equipment 	67,858 (5.90%) 275,251 (23.92%)
Trade balance: <ul style="list-style-type: none"> • Basic iron and steel and basic non-ferrous metals • Metal fabrication, capital and rail transport equipment 	R183 billion -R127 billion

Source: Quantec

Key opportunities

Key areas of opportunity for growing the sector or achieving higher impact include:

- Boosting the public infrastructure programme: this presents the single largest opportunity to stimulate the industry, and can be strengthened via a reduction of import leakage in the capital and operational expenditure programmes of SOCs - and, indeed, all spheres of Government. The localisation programme launched under the Presidential Infrastructure Coordinating Commission (PICC) will present opportunities for the sector.

- Continuing to embed prescribed local content in the sectors designated thus far.
- Opportunities presented by the Integrated Resource Plan 2010.
- Seizing export opportunities that exist in relation to infrastructure programmes on the African continent, especially the North-South Corridor.
- Mining turnkey projects in South Africa, the rest of Africa and South America.
- Opportunities to extend value chains through further downstream manufacturing initiatives, turning the lack of maturity in existing South African beneficiation chains into a strength.
- Taking advantage of the APDP to create additional opportunities for metal-component manufacturing.

Constraints

Current procurement practices by SOCs and government departments in relation to large contracts are not optimal:

- Uncompetitive input costs (electricity, logistics, raw materials):
 - Escalating electricity prices are rendering firms, especially high energy consumers, uncompetitive. This will be further exacerbated by the 8% tariff increase granted to Eskom over the next 5 years and compounded by further additional premiums likely to be imposed by the municipalities.
 - The import-parity pricing of major material inputs such as steel and aluminium remains a major impediment to the further development of these sectors.
 - Access and pricing of scrap metals.
 - Inefficiencies and high costs of road, rail and port infrastructure.
- Technological inefficiencies across the entire value chain:
 - Inadequate capital investment due to three decades of low demand has led to plant, machinery and equipment not being continuously upgraded or replaced.
- Variable and often out-of-date production and technological capabilities have resulted in the industry losing ground in maintaining local content and being unable to effectively capture opportunities offered by both private and public capital expenditure programmes.
- Severe skills shortages at artisan, technical, engineering and project management levels.
- Unequal trading platforms:
 - Higher tariffs and non-tariff barriers in potential markets.
 - Downward tariff pressures on a number of value-added products which is resulting in a surge of imports, particularly in low-value and high-volume manufactured goods.
- Leveraging procurement
 - A lack of competitive financing impedes the ability of South African companies - particularly lower-tier suppliers - to compete on an equal footing with foreign companies. Foreign companies often receive highly concessional export financing from their home countries' export banks or agencies.

Key Action Programmes

1. Leveraging the government's capital (CAPEX) and operational (OPEX) expenditure programmes and promoting localisation in the private sector

Nature of the intervention

This incorporates a strategic assessment of current and future government and private sector capital and operational expenditure programmes to facilitate standardisation and deepen localisation. The analysis will have to demonstrate adequate demand from CAPEX requirements and/or long-term OPEX opportunities to justify an investment by a supplier in a relevant industrial capability - and therefore the prioritisation of such industry/product.

This work will reinforce and complement localisation programmes, including designations that have already been implemented for the past 3 years. The areas that have already been designated include locomotives, coaches and EMU components related to Transnet and PRASA rolling stock renewal programmes; steel power pylons; and industrial valves. The Instruction Notes for designation of these fleets which specify the minimum local content thresholds were issued in 2012 and 2013.

Technical work on transformers, large-bore conveyance piping and rail signalling has also been completed and our localisation targets have been prioritised and will be communicated to the market in due course.

Economic rationale

Whilst improvements have been registered in smoothing out SOCs' procurement processes, long-term procurement planning remains a key challenge. In major areas, state procurement is still lumpy, *ad hoc* and has short delivery times undermining local manufacturing and potential investments in the associated supply chains.

Outcomes

Optimisation of localisation opportunities presented by state infrastructure programmes.

It is expected that the KAP will reduce import leakage; increase investments in key manufacturing processes and activities that supply into the domestic market; capture after-market opportunities; start to revive lost manufacturing capacity and increase employment and exports.

Key milestones

2014/2015 Q3:	Completed detailed analysis for possible designation of overhead track equipment.
2014/2015 Q4:	Analysis of the SA tariff structure and stage consignment facilities for products relevant to the localisation programme, in consultation with the industry; make recommendations to ITAC and SARS.
2014/2015 Q4:	Rail Transport Equipment cluster enhancement programme developed.
2014/2015 Q4:	Consolidated report on local manufacturers' capabilities to supply capital goods into the minerals value chain.
2015/2016 Q1:	DPE/Transnet to submit supplier development and local content commitments on the 1,064 locomotives contract, aligned to the 2012 instruction note.
2015/2016 Q2:	Completed detailed analysis for possible designation of steel tubes ranging from 12mm – 219mm.
2015/2016 Q2:	Completed detailed analysis for possible designation of industrial pumps.
2015/2016 Q3:	Preliminary report on the localisation of Transnet's 95-locomotive tender.
2015/2016 Q3:	Completed detailed analysis for possible designation of coal-fired power station components.
2016/2017 Q4:	Preliminary report on the localisation of PRASA rail signalling contract for Gauteng North.
2016/2017 Q4:	The dti to review the rail rolling stock components designated under PPPFA and make adjustments to the levels of local content and components.

Lead departments: the dti and DPE

Supporting departments/agencies: DoT, EDD, NT, DST, SOCs and IDC.

2. National Tooling Initiative

Nature of the intervention

The National Tooling Initiative (NTI) is a joint programme between **the dti** and the tooling industry. The initiative comprises programmes aimed at rehabilitating the South African Tool, Die and Mould-Making industry. The NTI aims to increase and strengthen the human capacity and competitiveness of the tooling industry in South Africa.

In 2010, a new competency-based apprenticeship programme was introduced in partnership with FET colleges. The Foundation-level programme has recently been accredited by MERSETA as the Tool-room Assistant Qualification; whilst in 2013 the Toolmaker Apprenticeship qualification was approved by both QCTO and SAQA. From 2014 going forward, all new toolmaker apprenticeship intakes will be trained in accordance with the National Tooling Initiative curriculum. This skills development programme is internationally benchmarked through a partnership with the National Institute of Metalworking Skills of America (NIMS) and the Fraunhofer Institute of Germany.

In 2013, funding was secured from the National Skills Fund to up-scale and support the enrolment of 1,610 students from foundation phase to tool-maker engineer level over a three-year period.

Economic rationale

The erosion of the tooling industry over the past 20 years has led to the underperformance of the manufacturing sector and contributed significantly to the trade deficit as South Africa is a net importer of tools. In the immediate term, there will be prioritisation of skills development and training programmes to address the dire skills shortage.

Outcomes

The KAP will reduce reliance on imported tooling, particularly in the more advanced tooling segments, capture after-market opportunities, increase investments in tooling manufacturing, increase local content, enhance capacity in South Africa's tooling industry skills upgrading and increase employment, exports and manufacturing competitiveness.

Key milestones

2014/2015 Q1:	Master Toolmaker Trade Test developed.
2014/2015 Q4:	Tooling Engineer Modules and Curriculum developed.
2014/2015 Q2:	Launch of NECSA Tooling Centre of Excellence.
2014/2015 Q3:	Launch of Western Cape Tooling Centre of Excellence.
2014/2015 Q4:	540 students enrolled on the different levels of the apprenticeship programme.
2014/2015 Q4:	50 tooling engineering students enrolled on Level I.
2014/2015 Q3:	Launch of Tshwane Tooling Centre of Excellence.
2014/2015 Q2:	Launch of KZN Tooling Centre of Excellence.
2015/2016 Q4:	390 students enrolled on the different levels of the apprenticeship programme.
2015/2016 Q4:	40 tooling engineering students enrolled on Level II.
2016/2017 Q4:	dti -NTI Artisan skills development partnership programme project closeout report.

Lead department: the dti

Supporting departments/agencies: NT, DST, DHET, NTI, QCTO, SAQA, MERSETA and National Artisan Moderating Board (NAMB)

3. National Foundry Technology Network

Nature of the intervention

The National Foundry Technology Network (NFTN) is a foundry industry support initiative. Its key objective is to facilitate the development of a revitalised foundry industry through appropriate skills training, technology transfer and diffusion of state-of-the-art technologies. The programme is aimed at reversing the erosion of the industry which has negatively impacted on the competitiveness of manufacturing as a whole.

Economic rationale

The NFTN represents a concerted effort to reverse the significant decline that the foundry industry has experienced over the past two decades and the consequent weakening of the important linkages that this industry has with the entire manufacturing sector.

Outcomes

Reduced import leakage, increased human skills capacity, investments in key manufacturing processes and activities and employment creation.

Key milestones

- 2014/15 Q1-Q4: 15 young foundry men/women enrolled on the New Foundry Generation Forum programme aimed at developing future managers and address the aging skills challenge in the sector.
- 2014/15 Q1-Q4: 250 workers trained on the formal foundry qualifications (NQF 2–4).
- 2014/15 Q1-Q4: 20 foundries assisted under the competitiveness improvement programme.
- 2014/15 Q1-Q4: 3 new localisation and/or casting opportunities identified and supported.
- 2015/16 Q1-Q4: 15 young foundry men/women enrolled on the New Foundry Generation Forum programme aimed at developing future managers and address the aging skills challenge in the sector
- 2015/16 Q1: 20 apprentices in 1st year of the apprenticeship programme at the GP foundry training centre at EEC
- 2015/16 Q1-Q4: 250 workers trained on the formal foundry qualifications (NQF 2-4).
- 2015/16 Q1-Q4: 20 foundries assisted under the competitiveness improvement programme.
- 2015/16 Q1-Q4: 3 new localisation and/or casting opportunities identified and supported.
- 2016/17 Q1-Q4: 250 workers trained on the formal foundry qualifications (NQF 4).
- 2016/17 Q1– Q4: 20 foundries assisted under the competitiveness improvement programme.

2016/17 Q1–Q4: 20 apprentices in 1st year of the apprenticeship programme at the GP foundry training centre at Ekurhuleni East College.

2016/17 Q3: NFTN to host the World Foundry Forum in South Africa.

Lead department: the dti

Supporting departments/agencies: NT, DST, EDD, DHET, NFTN, Merseta.

Mineral Beneficiation (Upstream and Downstream)

SA faces the challenge of diversifying away from mining and resource extraction towards a manufacturing, value-adding and job-creating economy. Minerals downstream beneficiation and minerals upstream (inputs) have been identified as a key 'pillar' of SA's reindustrialisation push. The aim is to ensure that more value is added to domestic mineral products before export, so as to extract greater economic value and employment from the country's remaining mineral resources, while at the same time using minerals sector demand to develop mining input industries (capital goods, consumables and services). Although South Africa is endowed with exceptional mineral resources, further downstream and upstream beneficiation has not fully reached its economic potential, mainly due to structural conditions within key value-chains.

the dti has completed a research project that analysed backward and forward beneficiation potential in four key value-chains (ferrous metals; polymers; titanium, platinum group metals) and developed strategies to increase the localisation of mining inputs (capital goods, consumables and services).

The next phase is to unpack the high-level analysis and identify key potential projects in the selected value chains that can be taken forward to support beneficiation in SA. The 2014/15 IPAP will focus on the iron-ore/steel, polymers and titanium value chains as well as leveraging state tariffs for beneficiation.

Key Action Programmes

1. Leveraging state tariffs for mineral value addition

Nature of the intervention

Both government and business have recognised the role of appropriate infrastructure as a driver of economic growth in South Africa, and called for the cost of doing business to be reduced in order to enhance the competitiveness of the country's goods and services. In this regard, government has identified the crucial role that SOCs play in achieving the strategic objectives of job creation, reducing the cost of doing business, poverty alleviation and positioning SA as the investment destination of choice in Africa.

In active response to these objectives the Transnet National Ports Authority (TNPA) has decided to introduce a Beneficiation Promotion Programme (BPP) to incorporate the government's industrial policy into the determination of cargo dues tariffs.

The TNPA's pricing strategy proposes a reduction in export cargo dues on beneficiated cargo, with varying levels of discount according to the beneficiation stage of the exported goods. TNPA's pricing strategy on BPP tariffs is largely based on the **dti** framework for stages of beneficiation as outlined in the Metals Sector Strategy. **The dti** has already started working with TNPA on the Mineral Value Chain Research Project, which is aimed at clearly defining the stages of beneficiation for the various minerals.

Similar strategies should be assessed for other state "tariffs" such as rail (Transnet), energy (Eskom), finance (IDC and DBSA) and, possibly, roads (SANRAL). The relevant SOCs and Departments will be engaged to assess such beneficiation incentives.

The intervention is therefore aimed at defining the stages of beneficiation for the various mineral and mineral products exported, where Stage 1 minerals are not beneficiated (i.e. primary action of mining such as ore or concentrate), Stage 2 involves limited beneficiation (i.e. converting concentrate into a bulk tonnage intermediate product such as metal or alloy), Stage 3 includes higher value-adding processing (i.e. semi-fabricated products) and Stage 4 represents the maximum possible value addition (i.e. finished goods ready for sale).

Economic rationale

High value-added mineral products like metal automotive and aerospace components, capital and rail transport equipment are produced through labour-intensive manufacturing processes resulting in increased revenue and job creation and providing opportunities for the development and application of technology by skilled workers. Lower tariffs of up to 60-80% are being considered by TNPA for Stage 4 mineral products, providing a significant incentive for the export of value-added products as opposed to unbeneficiated minerals.

Outcomes

- Clear definition of the stages of beneficiation for each mineral and/or mineral product to enable the TNPA to determine the appropriate level of tariff reduction or incentive for each stage.
- Clarity on the efficacy of using other state tariffs to promote beneficiation.

Key Milestones

- 2014/15 Q2: Analysis of current mineral exports from SA and the tariffs applied.
- 2014/15 Q3: Research and determine the stages of beneficiation for all exported minerals and/or mineral products with recommended minimum levels of beneficiation.
- 2014/15 Q4: Report providing clear definitions and criteria for the stages of beneficiation for each mineral and/or mineral product with recommendations for the level of tariff reduction.

Lead departments/agencies: the dti, Transnet (TNPA, TFR), Eskom, SANRAL.

Supporting departments/agencies: the dti, the DMR, DPE, EDD, DOT.

2. Viability of an Iron/Steel and Titanium Pigment Industrial Complex

Nature of intervention

The dti minerals value chain studies have identified the possibility of locating an iron and titanium complex on the Bushveld titanite-magnetites to produce steel and titanium pigment. Several private sector projects are currently assessing the mining of these resources. This intervention will assess the viability of an iron/Steel and Titanium Complex comprising mining, smelting, iron and steel production (for the domestic and export markets) and titanium pigment production (for export).

Economic Rationale

Iron ore/steel production is currently severely constrained by monopoly pricing (IPP) in the domestic market. South Africa has huge potential resources of iron-ore and titanium in the Bushveld Complex (BC) magnetites which could underpin the development of a world class steel and titanium plant. The assessment (scan) of the economic viability of a combined iron/steel and titanium industrial complex will indicate whether such a project would be viable and what support or facilitation it may need.

Outcome

The scoping study is aimed at identifying both existing constraints/technology gaps and the interventions that will be needed for the establishment of an integrated iron/steel and titanium pigment industrial complex. The exercise will include identification of potential investors and technology providers. If viable, the longer-term outcome will be the establishment of the industrial complex with positive fiscal, employment and

balance of payments impacts, particularly in downstream iron/steel-based manufacturing enterprises.

Key Milestones

- 2014/15 Q1: Development of the terms of reference.
- 2014/15 Q2: Initiate study and engage with key stakeholders.
- 2014/15 Q3-Q4: Assess the economic viability and determine requisite interventions for the establishment of the putative Fe/Ti industrial complex.

Lead departments/agencies: the dti, IDC

Supporting departments/agencies: the dti, EDD, DMR, DPE

Agro-Processing

Sector profile

Agro-processing has been identified as a segment with the potential to actualise a number of the macroeconomic objectives set out in both the National Development Plan (NDP) and the New Growth Path (NGP).

A key characteristic of the agro-processing sector is its strong up- and downstream linkages. Upstream, the sector links to primary agriculture across a wide variety of farming models and products. Downstream, agro-processing outputs are both intermediate products to which further value is added and final goods that are marketed through wholesale and retail chains, plus a diverse array of restaurants, pubs, shebeens and fast-food franchises. This link with agriculture makes it critical for employment creation and poverty eradication.

Despite the continued ripple effect of the 2008 economic meltdown, the food processing sub-sector continues to show resilience; and is also one of the largest domestic manufacturing sectors by employment – providing an estimated 207,893 jobs as at the 3rd quarter of 2013. (This, however, against a backdrop of job losses in other sub-sectors). Food processing is also, of course, significant in terms of the value-addition it brings to primary agricultural products.

For the purposes of data continuity, the agro-processing sector is defined in statistical terms by the food-processing and beverage manufacturing sub-sectors only.

Sector economic data

Variables	Contribution in 3 rd Q of 2013
Agro-processing (% of GDP in manufacturing)	R7.7bn (16. %)
Agro-processing employment (% of Manufacturing)	207,893 (18.2%)
Trade balance	-R1.4bn ⁹

Sources: Quantec and StatsSA

⁹ Based on 2012 Quantec data

Key opportunities

The agriculture and agro-processing value chain is defined by a sizable labour/capital ratio L/C of (1:5.54) which makes it an important source of labour-intensive growth. In addition, this value chain is central to government's rural development and smallholder farmer development objectives.

The agro-processing sector's economic performance is closely related to the overall rate of economic growth in South Africa and in key export markets. Export-focused sub-sectors such as horticulture and aquaculture are likely in the near term to experience stagnant or slow growth in traditional export markets such as the EU and the US. Substantially more attractive opportunities are likely to be found and must be explored in Asia and sub-Saharan Africa, where the combination of positive growth rates and rapid urbanisation is creating significant opportunities for the export of middle-income consumer products. The Middle East and BRICS continue to represent important new markets for upper-income consumer products such as confectionery, fruit juices, indigenous teas, fruits and wine.

One important emerging opportunity lies in the processing of cassava into starch, which has a wide number of applications in confectionery, sweeteners, textiles, paper, animal feed and alcohol production. Currently, however, supplies of cassava are largely sourced and imported from South East Asia.

The Department of Energy recently announced that as of October 2015 it will be mandatory to blend 2% of locally produced bioethanol into petrol. Sorghum and soybeans will be used as the respective biofuels and biodiesel feedstocks. This will potentially create a R15 billion p.a. bio-fuels industry, with a second-order effect of creating 15,000 to 18,000 direct jobs in the various agricultural value chains alone.

The milling sector - which still remains highly concentrated in the hands of a few major industry players – is in serious need of increased competition and innovation into alternative products. This will require continuous, up-scaled support for small-scale production plants that can be located close to both maize and soybean feedstocks and major consumption markets. While these plants do not typically create large numbers of jobs, their main impact is in reducing the cost of key basic food products such as maize-meal and intermediate goods such as soybean meal for cattle and poultry production. Additionally, wet milling presents an opportunity that can be explored in parallel to traditional milling in order to meet increasing demand for tortilla flour by the economies of South America.

Much as South Africa is home to a well-developed broiler industry which has over the years built superior capabilities, it has in the recent past seen a surge in imports which threatens its survival. This can potentially be countered by building up a formidable export base for companies targeting the broader African and Asian markets; and, in so doing, greatly improve both the domestic and global competitiveness of the South African broiler meat industry.

Constraints

Given the diversity of the sub-sectors that make up the agro-processing sector, the constraints are relatively sector-specific. Export-focused producers in the wine and spirit, fresh and canned fruit, indigenous tea and flowers, confectionery, processed food, fruit juice and aquaculture subsectors face constraints that are related to developed-country trade policy – including subsidies, tariffs, and sanitary and phyto-sanitary standards (SPS).

This necessitates more sophisticated export intelligence, better export marketing, a more visible South African ‘presence’ and dynamic product innovation and customisation to fight for market share in the developed economies. Producers primarily focused on supplying the domestic market – such as the soybean-processing, fruit juice, processed vegetables, confectionery, meat and processed food sub-sectors – currently face heightened competition from imports. Import competition is particularly severe in the poultry, frozen vegetables, wheat, pasta and confectionery subsectors.

Increased import penetration has coincided with rising domestic input cost pressures including electricity, water, road transport, fertiliser and seed costs. The resulting margin squeeze has led to significant job losses and ongoing under-investment in productivity-enhancing measures and plant-level maintenance. **the dti** will address these constraints on a sub-sector basis, focusing on developing comprehensive interventions that will include, where applicable, trade measures, support for local procurement, financial assistance for productivity-enhancing investments, financial assistance for the development of competitive ‘clusters’ and appropriate infrastructure development.

Key Action Programmes

1. Development of emerging broiler producers

Nature of the intervention:

Facilitate the development and entry of successful emerging poultry producers into the main-stream broiler value chain in order to grow the domestic industry as well as improve its competitiveness.

Economic rationale:

Barriers to entry into the broiler industry are relatively low, which in turn presents opportunities to create economically viable communities with possibilities for increasing gainful employment. Emerging broiler producers do, however, face numerous challenges: not only rising input costs, but also poor market information and weak knowledge management capabilities. This initiative will contribute towards the development of successful “emerging broiler clusters” by unblocking the constraints that currently prevent host communities from effective participation in the mainstream broiler value chain. Through the promotion of these strategic clusters, both by government and the private sector, the domestic broiler industry will be placed on a stronger growth and competitiveness trajectory.

Outcome:

Increased participation and integration of emerging producers into the domestic broiler value chain. This will contribute towards both import replacement and mitigation of South Africa’s negative trade balance.

Key milestones:

- 2014/15 Q1-Q2: Mapping of existing hatcheries and contract growers towards the development of new broiler clusters.
- 2014/15 Q3-Q4: Review and package for funding at least 1 broiler investment project targeting small scale producers.
- 2014/15 Q4: Implement at least one small scale project

Lead department: the dti

Supporting departments/agencies: DRDLR, DAFF, DPFO/SAPA, IDC, EDD.

2. Development of a small-scale dry and wet milling industry

Nature of the intervention

This intervention will facilitate the entry of small-scale maize millers into the South African market. They are expected to be particularly competitive in rural areas, where high transport and logistics costs raise the price of basic food products. The intervention consists of the packaging of a range of support measures from **the dti** to facilitate the market entry of small-scale maize mills.

Economic rationale

The maize milling sector is highly concentrated and domestic prices appear to be subject to anti-competitive practices. There is significant potential for the development of a class of small-scale millers, which could sustainably reduce the current high cost of basic food products, contributing to poverty reduction and alleviating pressure on real wages (given that lower-income workers spend a substantial proportion of their income on basic food products).

Outcome

Small-scale maize milling enterprises producing for local markets at competitive prices, thereby creating jobs and contributing to enterprise development and poverty alleviation.

Key milestones

2014/15 Q1: **the dti**, FABCOS, and the NMC to facilitate the roll-out of small-scale maize milling in one additional province.

2014/15 Q3: **the dti**, FoodBev Seta and the NMC to develop a milling skills programme.

2014/15 Q4: **the dti** to facilitate the roll-out of small-scale maize milling and branding of the in-house products of FABCOS (home-grown) in one additional province.

Lead departments/agencies: **the dti**

Supporting departments/agencies: IDC, EDD, NMC, Provincial Departments of Economic Development, FABCOS and Old Mutual Masisizane Fund.

3. Enhancement of production efficiency in the fruit and vegetable Canning industry

Nature of the intervention

Implementation of a PPP fruit canning initiative designed to raise competitiveness for the long-term sustainability of the fruit canning industry.

Economic rationale

The fruit canning industry employs approximately 11,000 factory workers, more than 500 administrative employees and ±17,000 farm workers on 1,200 farm units that supply the fruit to factories. These are situated in economically depressed localities with limited alternative employment opportunities, making the fruit canning industry a major source of employment in these areas.

Outcomes

The creation of a sustainable platform for the long-term growth and competitiveness of the industry.

Key milestones

2014/15 Q1: In collaboration with the NCPC-SA, **the dti** will identify and recruit companies from the South African Fruits and Vegetables Canners Association (SAFVCA) to participate in the Resource Efficient and Cleaner Production Programme (RECPP). It will then conduct RECPP training and awareness courses for employees at the companies and roll out the programme in the identified companies.

2014/15 Q1-2: **the dti** will support initiatives of SAFVCA in terms of market access and recruit 6 companies to participate in the RECPP.

2014/15 Q2: In further collaboration with the NCPC-SA, **the dti** will facilitate the application processes of companies seeking to access the incentive grants of the MCEP for implementation of the Resource Efficient and Cleaner Production (RECP) Recommendation.

2014/15 Q3: In collaboration with SAFVCA, **the dti** will facilitate a transformation programme that will establish new fruit orchards in the Western Cape.

Lead departments/departments: NCPC-SA,

Supporting departments/agencies: IDC, Western Cape Department of Agriculture, SAFVCA and PSA.

4. Food-processing sector skills programme

Nature of the intervention

Establishment of an apprenticeship programme that will skill and prepare the youth for participation in the food-processing labour market.

Economic rationale

The deep-seated unemployment problem in South Africa is structural: that is to say, there is a serious skills mismatch between what is required by the economy and the qualifications turned out by training institutions. As a consequence, a large segment of the country's youth requires effective alternative skills development and education opportunities if they are to become effectively employable.

Outcome

Enhancing skills development amongst the youth in order to grow employment in the food-processing sub-sector.

Key milestones

2014/15 Q1: **the dti**, FoodBev Seta and DHE to develop a proposal for a skills programme to be implemented by food processing companies.

2014/15 Q2: **the dti**, to recruit, select youth and participating companies for the food skills programme.

2014/15 Q3-Q4: Implementation of the food skills programme

Lead /departments/ Agencies: **the dti**, FoodBev, Food Processing Companies and the DHE.

5. Commercialisation of industrial cassava starch

Nature of the intervention

Increase starch production in the cassava industry to replace imports of starch and create jobs in the domestic economy.

Economic rationale

There is a continued demand for cassava starch in industrial applications within the papermaking industry locally. It is used to manage down processing costs, improve paper dry strength and surface quality. Currently supplies are sourced and imported from South East Asia. South Africa has the appropriate geography and conditions for the cultivation and processing of cassava.

Outcome

Reducing dependence on imports (which compounds the trade deficit) and creation of a new industry.

Key milestones

2014/15 Q1: Conduct a feasibility study to determine the commercial viability of a cassava starch industry.

2014/15 Q2: Identify small scale farmers to participate in the programme.

2014/15 Q3-Q4: Conduct field trials for cassava production in selected areas in South Africa.

Lead departments/departments/ Agencies: **the dti**, Department of Rural Development and Land Reform, DAFF, IDC, and TIA.

Aquaculture

1. Promote public and private investments in aquaculture

Nature of the intervention

This intervention is intended to leverage substantially increased investment levels in the aquaculture sector.

Economic rationale

Even though South Africa's contribution of 6,600 tons is very minimal in relation to global aquaculture production, it has demonstrated consistent modest growth over the past few years. It is now a reality that aquaculture in South Africa has the potential to supplement the supply of wild stock with cultured fish products. DFIs and private financiers have begun to show an appetite for investing in this sub-sector, now that its commercial viability has been adequately proven; while at the same time domestic markets are starting to warm up to farmed marine finfish products - particularly dusky kob and fresh water species such as trout and catfish.

Outcome

Increased investments in both marine and freshwater fish species, for both domestic and export markets, in order to create employment in rural areas.

Key milestones

2014/15 Q1-Q2: Review and package 1 investment proposal targeting new black entrants into the aquaculture sector.

2014/15 Q3-Q4: Project preparation towards implementation of at least 1 project commences.

2014/15 Q4: Implementation and Monitoring of at least 1 project commences.

Lead departments/agencies: the dti, DAFF

Supporting departments/agencies: DFIs, Provincial government departments and agencies, industry.

Forestry, Timber, Paper, Pulp and Furniture

Sawmilling sector

Sector Profile

The South African Forestry Sector is dominated by the pulp and paper industry, which consumed close to 13 million m³ of timber compared to 4.4 million m³ by the sawmilling industry (the next largest industry). The total commercial timber plantation area in 2010/2011 was 1,273,357 ha (compared to 1,271,286 ha in 2009/2010). The sawmilling industry supplies timber and timber products to processing industries such as furniture manufacturing. There are about 200 sawmills countrywide, mainly concentrated in KZN, the Eastern Cape, Mpumalanga and Limpopo.

The sector is a major source of employment in rural areas and has high multiplier effects. The sawmilling industry is labour intensive and has a high ratio of workers to volume of round-wood timber processed, with approximately 30,000 people directly and indirectly employed.

Key constraints

- **Shortage of raw materials:** The forestry industry is highly vertically integrated. Large companies obtain their raw material from their own plantations, leaving small and medium enterprises in the saw milling and furniture industries tied into short timber supply contracts with DAFF, SAFCOL and rendering them highly vulnerable to recurrent supply shortages.
- **Low recovery rates:** The sawmilling industry is characterised by many smaller companies using out-dated and inefficient processing equipment. This results in low recovery rates and waste of valuable resources. Considering that the cost of logs makes up to 50% of the total cost in sawmills, this is an important constraint. Improving the recovery rates of sawmills will contribute significantly to improving competitiveness within the sector.

Key opportunities

- The sector plays a critical role in supplying raw materials for the production of value-added products such as furniture components, low-cost housing components, doors, windows, window frames and similar building products. Its competitiveness thus affects a number of downstream industries.

- Small-scale sawmills have the opportunity of organising themselves into cooperatives/clusters to increase the combined size of their orders in securing log supplies.
- The sector has strong potential for job creation in rural communities.

Key Action Programmes

1. Productivity improvement through technology upgrading

Nature of the intervention

This programme is intended to assist small- and medium-scale sawmills to improve their productivity through technology upgrading.

Economic rationale

Small to medium sawmills use old technology which makes their businesses uncompetitive and unsustainable.

Outcome

Improved recovery rate and competitiveness of the sawmilling industry.

Key milestones

- 2014/15 Q1: **The dti** to identify and consult 4 small-scale sawmilling companies and conduct a SWOT Analysis of these enterprises.
- 2014/15 Q2: **The dti** to develop an action plan report for the identified companies.
- 2014/15 Q3-Q4: **The dti** to facilitate the application process for funding of equipment and machinery.

Lead departments/agencies: the dti

Supporting departments/agencies: SEDA, Fibre Processing and Manufacturing SETA.

Furniture manufacturing

Furniture Sector Profile

The furniture industry currently employs approximately 29,000 people, with 2,200 registered establishments involved in the manufacture of furniture, bedding and upholstery. The furniture industry is labour-intensive and contributes 0.95% to manufacturing GDP and 1.6% to manufacturing employment.

Sector Opportunities

The furniture sector has strong potential to create employment, especially in poor rural areas. But this will require much improved productivity and competitiveness, based on systematic interventions to upgrade skills and enhance innovation within a framework of cluster development. Cluster development is the obvious route towards realising significant economies of scale through shared infrastructure, shared and reduced input costs and better information exchange. Once recapitalised and armed with upgraded design skills, clustered companies will be much better able to access new markets.

Sector Constraints

The sector is facing constraints that are holding back development in the furniture sector and negatively affecting the sector's competitiveness, namely:

- Shortage of skills, especially technical and high-level skills like design.
- Lack of research and development to support industry growth.
- Influx of cheap imports and the challenge of getting retailers to buy locally produced products. The survival of the industry will largely depend on interventions to deal with the escalation of imports and increase procurement of locally manufactured products.
- Wood raw material supply, especially for small enterprises.
- Difficulties in enforcing quality and standards measures to differentiate local products from cheap, low-quality imports. Although some quality standards exist, they are currently not enforceable. There is also a need to align the standards with public procurement.

2. Furniture Design Program

Nature of the intervention

The program seeks to support skills development in the sector - especially high-level design skills - that will help address market failures, encourage specialisation and improve productivity.

Economic rationale

The South African furniture manufacturing industry lacks sufficient tuition specifically geared towards furniture design. The accredited training providers that do exist tend to be limited as to what they can offer, and this in turn reflects in the familiar mismatch between the skills required by the industry and those that are in practice available, leaving it uncompetitive in relation to its international competitors. Hence, the need to build up a major set of training interventions over time.

Outcomes

Improved competitiveness of the industry through higher design content in domestically produced furniture.

Key milestones

- 2014/15 Q1: To develop a roadmap for furniture design workshops.
- 2014/15 Q2: **the dti**, SABS Design Institute and FPM Seta to collaborate on implementing the design workshop.
- 2014/15 Q3/4: Design program rolled out in the industry.

Lead /departments: the dti, SABS Design Institute, FPM Seta.

3. Furniture Cluster Development

Nature of the intervention

Cluster development in the furniture sector. Companies to be located in the same geographical areas, with targeting of furniture design trainees exiting the incubators.

Economic rationale

SMMEs in the furniture industry are not able to access a reliable market. This is mainly due to their size, and its impact on their ability to supply required quantities and quality. This affects their level of competitiveness and sustainability.

The establishment of clusters will begin to address the size constraints upon small enterprises' access to market. SMME clusters can be defined as groups of small and medium sized enterprises located in a relatively confined geographic area engaged in the production of the same sorts of products. Clustered SMMEs can deliver economies of scale through shared physical infrastructure, information and knowledge exchange and can improve competitiveness through specialisation and co-operation in the joint marketing of products.

Outcome

Competitive furniture clusters.

Key milestones

- 2014/15 Q1: Develop TOR for the cluster management
- 2014/15 Q2: Development Business Plan and Marketing Plan for cluster product
- 2014/15 Q3-Q4: Implementation of the business plan.
- 2014/15 Q4: Facilitate acquisition of resources for the functioning of the cluster.

Lead departments/ departments: the dti, EDD, Industry, Provincial Departments of Economic Development.

Biofuels

Key Action Programmes

1. Accelerated development in the biofuels sector

Nature of the intervention

This intervention will facilitate the production of biofuels feedstock in seed production for soybean and sorghum. It will further the development of the biofuels industry by leveraging the Regulations on Mandatory Blending of Biofuels with Petrol and Diesel which is due to come into operation from the 1st October 2015.

Economic rationale

The global economic crisis and the resultant reduction in oil prices have combined to reduce the commercial viability of some types of investment in the sector and, more generally have negatively affected investor sentiment. The biofuels sector has strong linkages to agriculture, manufacturing and distribution and has the potential to create substantial numbers of labour-intensive jobs in the agriculture sector in particular.

Outcome

Accelerated investment in the biofuels and upstream agricultural sectors.

Key milestones

- 2014/15 Q1: **the dti**, with Grain SA, to support the increase in the capacity of biofuels feedstock in seed production for Soy bean and Sorghum.
- 2014/15 Q2: **the dti**, with Grain SA, to increase research capacity into the development of suitable cultivars in the biofuels feedstock in SA.
- 2014/15 Q3: **the dti**, with DAFF, to link small-holder farmers to markets via a supplier development programme and sign take-off agreements with industry players in the biofuels industry in time for the arrival of mandatory blending in 2015.
- 2014/15 Q4: **the dti** and DoE to host an industry stakeholder seminar on Biofuels.

Lead departments/agencies: the dti

Supporting departments/agencies: DoE, EDD, IDC, DAFF and Grain SA.

Plastics, pharmaceuticals, chemicals and cosmetics

Plastics

The South African plastics market is well developed throughout the plastics value chain and caters to both local demand and export markets. It is a growing market. Generally, the leading markets for plastics are in packaging, building, construction and the automotive industries. However, other industries which use some form of plastic include agriculture, textiles and electrical, electronic and mechanical engineering.

These industries have been experiencing a profound downturn in demand, as they struggle to adjust to changes in the market for their products and against a rising tide of imports. Competition from advanced developing countries is having an impact on patterns of domestic demand, with cheap imports of relatively low added-value products causing many parts of the world's plastics industry to restructure or collapse. As a result, a number of companies have relocated their manufacturing facilities to low-cost production countries and have themselves become importers. The rising cost of the polymers used by the plastics conversion industry has made many of its customers resist the inevitable price increases that follow and led them to seek alternative sources of supply wherever possible.

Plastics manufacturing in South Africa contributed approximately 0.5% to GDP and 3.2% to the manufacturing sector in 2012. The export value of plastic products in 2012 was R13.1bn compared to an import value of R20.2bn, leading to a trade deficit of R7.1bn. The industry's contribution to the economy is nevertheless significant, and also expressive of increasingly innovative connections with the green economy. With increased investment and technological know-how, the plastics industry in South Africa is in principle capable of undergoing a major diversification from basic to more sophisticated products.

Plastic consumption for 2012 in South Africa was 1,628 million tonnes, which indicates a per capita consumption of 28kg. Included in the consumption figure is recycled plastic, which contributed 264,758 tonnes of recycled input material in 2012 - a 7.8% increase compared to 2011.

The compound annual growth rate (CAGR) for the plastic industry over the next 5 years is expected to be 4.8%, as against the 2012 growth rate of 5.4%. This reduced, but still modestly positive CAGR can mainly be attributed to an expected increase in demand for packaged food and an expected rise in the use of plastics in the automotive industry.

There are approximately 2,000 companies in the plastic converting industry, employing 60, 959 workers - each of whom, on average, converts approximately 25 tonnes annually.

Sector economic data

Variable	Contribution in 2012
Manufacturing value-add	R50bn
Manufacturing employment	60,959
Trade balance	-R7.1bn

Constraints

Key barriers to growth in the plastics sector are:

- Import parity pricing of polymers and other key inputs;
- Pricing of raw materials;
- Electricity pricing;
- The slow pace of technological upgrading;
- Strong competition from imports;
- (Non-) proximity to markets (and related high logistics costs);
- The relatively small size of local and regional markets;
- Enterprise scale: plastics conversion plants are generally small to medium-sized, with an average size of 130 employees. Many plants have fewer than 50 employees, and those with 400 and more employees are generally considered to be large.
- Endemic skills shortages: plastics engineers (beyond first degree) are not being produced in sufficient quantity to support the growth rate the industry needs. Similarly, at an operations level, mould-setters and plant operators with the required new competencies associated with rapid innovation and technological development are in very short supply. The same applies to the availability of trained and experienced artisans in the sector.

All of these challenges need to be seriously addressed in order to create stronger prospects for the growth of the domestic plastics market.

Key Opportunities

Key areas of opportunity for growing sector include:

- Automotive interior and exterior products;
- Food packaging;
- Medical products;
- Buildings- pipes, flooring and building sheets;
- Electrical and electronics cables, appliances and casing components.

Key Action Programmes

1. Development of plastic production and innovation cluster

Nature of the intervention

Cluster development in the plastics sector to deal with testing, R&D and skills.

Economic rationale

Plastics conversion plants are generally small to medium-sized, family owned businesses with no or limited R&D activities, testing facilities and skills deficits. The intervention will enable converters to develop economies of scale based on shared infrastructure, equipment and knowledge, thereby strengthening capacity to access existing and new markets. Cluster development will assist unemployed learners to participate in accredited work programmes and acquire skills, while enhanced R&D will transform the training division into a value added, high performance strategic partner to the industry.

Outcome

Sustainable plastic cluster with access to markets.

Key milestones

2014/15 Q1-Q2: **the dti** to facilitate establishment of the cluster management structure.

2014/15 Q3: **the dti** to facilitate the acquisition of operational resources for the cluster through the MCEP.

Lead departments/agencies: the dti, Plastic SA

Supporting departments/agencies: DST, CSIR

2. Plastics trade policy measures

Nature of the intervention

Encourage and support local production of components to help the sector compete effectively and sustainably in global markets. The regulatory intervention on ‘incorrect coding’ is aimed at clamping down on illegal imports that have up to now been massively penetrating the country.

Economic rationale

The sector lags behind its international competitors in terms of conversion efficiencies and other key indicators of world class manufacturing practice – namely, consistent high quality, competitive cost and timely delivery. At the same time, plastic companies face a severe threat from cheap and/or illegal imports. The elimination of illegal imports will therefore represent an important step in levelling the playing field for local manufactures.

In addition, the project will boost revenue figures, replace imports and provide new export opportunities. Through the use of technologies such as blow and injection moulding, capital expenditure is expected to increase and new manufacturing jobs will be created.

Outcome

Improved support for local manufacturing and boost competitiveness of the plastic sector.

Key milestones

2014/15 Q2-Q3: Conduct an awareness campaign amongst plastic manufacturers in all provinces to bring them up to speed on available **dti** support measures and the structure of import duties related to intermediate and finished products.

Pharmaceuticals and medical devices

Healthcare

In 2012, South Africa spent 8.5% of its GDP on health-care, split roughly 50:50 between the private sector (providing care for 8 million South Africans with private medical insurance) and the public sector (providing care to the remaining 42 million people). While overall spending as a percentage of GDP is comparable to most EU countries, it conceals the huge disparities between private and public sector spending per capita (R11,150 vs. R2,766). The National Health Insurance programme, which aims to create a single healthcare system over 12 years (2012 to 2025), will greatly increase demand for quality health facilities, medicines and medical devices.

It is of paramount importance that the policies of the relevant departments – and particularly those of the National Health Department (DoH) and **the dti** - are fully harmonized and co-ordinated to transform this growing economic burden into an opportunity for the SA economy.

The medical products sector

The South African medical products sector - comprising pharmaceuticals, medical devices and medical diagnostics - is estimated at US\$6.5 to 7 billion at ex-factory price levels (approx. R55 billion in 2012). The medical products sector is the 5th largest contributor to South Africa’s trade deficit, with imports comprising 65% of the domestic pharmaceutical market, 90% to 95% of the medical devices and close to 100% of the medical diagnostics market.

Pharmaceuticals

The South African pharmaceutical sector at the ex-factory price level was US\$ 4.0 billion (R 36 billion) in 2012 – or just 0.4% of the global pharmaceutical market by value. South Africa’s pharmaceutical market and industry are, however, by far the largest in Africa. South Africa also has the world’s largest ARV programme, providing treatment to 2.2 million people in the public health sector and 150,000 in the private sectors (as at December 2013). The number of people on ART is expected to plateau at 3.7 million in 2017.

The domestic manufacturing profile is skewed, “bottom-heavy”, with technologically advanced yet often under-utilised formulation capacities (including the multi-core “3 in 1” fixed-dosage ARV tablets) and disproportionately smaller active pharmaceutical ingredients (API) manufacturing.

Domestic manufacture of vaccines, which ceased in 1999/2000, has not yet been re-established despite considerable assistance from Government. The manufacture of biological medicines is also struggling to attract investment and advanced technologies.

Sector economic data

The South African Pharmaceutical Sector – essential statistics		
Variable		Contribution in 2012
Market size (at ex-Factory prices)	Total	R 36 billion (US\$ 4.0 billion)
	Private (insurance & out-of-pocket)	R 23.5 billion (65%)
	Public (Government)	R 12.5 billion (35%)
Import penetration		55% (65% including APIs)
Number of domestic manufacturers		23
Manufacturing value-add		Varying from 95% to < 15%; weighted aver. 50%
Employment	Industry	9,500
	Downstream (logistics & pharmacies)	25,000
Trade balance (TH Chapter 30, excl. APIs)		R -17.8 billion (imports R 19.4 Bn, exports R 1.6 Bn)
		Main contributors: Medicines in finished-dosage form (TH 30.04) – 78.5%; biologics & vaccines (TH 30.02) – 13.5%; “medical textiles” (TH 30.05) – 2%.
		Origin of imports: India (R 2.42 Bn); Germany (R 1.86 Bn); Italy (R 1.36 Bn); UK (R 1.3 Bn); USA (R 1.3 Bn); France (R 1.25 Bn); Switzerland (R 780 million).

Key challenges

- The SA pharmaceutical industry was decimated between 1998 and 2005, losing 37 manufacturing plants and 6,500 jobs, chiefly as a result of global trends (consolidation, mergers and acquisitions). Job losses in some segments, most notably medical textiles (bandages, wound dressings, plasters etc.) have reached 70%, despite a degree of protection by import duties.
- The pharmaceutical industry revival programme, assisted by **dti** incentives (tax allowance of R813 million awarded under the SIP programme between 2003 and 2008) brought mixed results. Aspen-Pharmacare became the world’s 8th largest generic pharmaceutical manufacturer in 2012, but an increasing proportion of its revenue comes from (and investment goes to) foreign markets. South Africa’s second largest pharmaceutical company, Adcock-Ingram, has been experiencing serious financial difficulties, running some of its plants at below cost-recovery level - chiefly due to the loss of both key state tenders and private market share. As a result, it has been unable to recover the R2.5 billion it invested in plant upgrading between 2008 and 2012.
- According to the industry, the main challenges affecting its financial performance and dampening investment appetite are: (i) the impact of price controls on medicines, (ii) regulatory delays – poor performance of the Medicines Control Council (MCC); and (iii) the new preferential procurement regulations that took away the (already minuscule, vis-à-vis countries such as Brazil) preference points for local contents.
- The effects of the recent Intellectual Property Bill are difficult to predict – these may include reduced future presence of large innovative pharmaceutical companies (US and European multi-nationals); but also perhaps stimulation and acceleration of technology transfer and substitution of imported branded products by SA-made generics.
- Medical devices: The medical devices sub-sector is made up of a wide range of basic products including instruments (disposable syringes and scalpel blades); wheelchairs; specialised furniture (hospital beds, dentists’ chairs, operating tables etc.) and surgical implants and stents. At the more sophisticated end of the spectrum lies electronic monitoring and diagnostics equipment, including complex and expensive items such as NMR (nuclear magnetic resonance) and PET (positron emission tomography) scanners.

Medical devices also include in-vitro laboratory diagnostics used to detect infection (seroconversion) and monitor progress in the treatment of patients suffering from infectious and non-communicable diseases.

- Domestic production of medical devices supplies less than 10% of the market and is predominantly limited to surgical implants, stents etc. Nevertheless, striking pockets of local innovation capability have been shown to exist – most notably the recent development of the Lodox full-body scanner featured in an episode of the US television series *Grey's Anatomy*. South Africa has also become the world's leading manufacturer and exporter of isotopes for medical diagnostics.

The major employers in the sector are laboratory diagnostics services. In this area, there is significant unrealised potential to create well-paid jobs in servicing the imported diagnostic equipment.

Key opportunities – pharmaceuticals

- Meeting fast-growing public sector demand for pharmaceuticals, especially (i) ARVs (demand projected to increase from the current 2.2 million to 3.7 million patients in 2016-2017); (ii) anti-TB medicines; and (iii) medicines for non-communicable diseases/conditions such as diabetes, cancer, circulatory and cardiovascular conditions etc.
- Manufacturing generic copies of medicines losing patent protection in 2014-2015 for supply into the SA public and private health sectors.

Key constraints – pharmaceuticals

- Almost total reliance on imports of active pharmaceutical ingredients (APIs), including ARV APIs, affecting the DoH's readiness to increase the allocation of tenders/contracts to SA manufacturers due to concerns about security of supply.
- The virtual absence of domestic manufacturing capability in fine chemicals (intermediates for API synthesis) has the effect of reducing the future competitiveness of the domestic API industry and necessitating continuing interim financial support from government.
- Limited ability of the National Treasury to provide the necessary financial support for the nascent domestic API industry.
- Lack of private sector interest in investing in local API manufacture, mainly due to fierce competition from low-cost Indian and Chinese imports.

- Non-existing local expertise in the manufacture of biological medicines and vaccines.
- Delayed entry of new medicines (including the commercially attractive newly off-patent generic medicines) due to regulatory delays.

Key opportunities and constraints – medical devices

These will be identified through a study of the SA medical devices sector (started in November 2013 and due to be completed before mid-2014).

Key Action Programmes

1. Development of strategy for the medical devices sector

Nature of the intervention

The dti, in cooperation with the relevant stakeholders (the SA medical device sector, the National Health Department and the SA Medical Research Council) will develop a comprehensive Medical Devices Sector Strategy. This will be a multi-faceted intervention, focussed on: stimulating growth in the domestic industry; reducing the sector's trade deficit; rationalising imports; creating jobs in manufacturing and maintenance/specialised services; using the instrument of tender designation to facilitate SA manufacturers' access to both domestic and export markets; and, finally, easing existing regulatory barriers.

Economic rationale

South Africa imports 90% to 95% of the medical devices in use in the health sector, and 100% of medical diagnostics equipment, costing the country between R25 and 30 billion (US\$ 2.5 to 3 billion) per annum. A large proportion of the goods imported are inadequately supported by the necessary technical back-up, which results in frequent down-time, resource wastage and redundancies. Concurrently, the absence of an internationally-recognised South African Medical Devices Certification Authority impedes South African exports.

Outcomes

Unlocking the potential in domestic manufacture and servicing of imported medical devices; reducing the sector's trade deficit; creating quality jobs in manufacturing and maintenance; reducing the wastage of funds in procurement of inefficient or sub-standard medical devices.

Key milestones:

- 2014/15 Q1: Completing the study of the SA medical devices sector.
- 2014/15 Q1: The study presented to a broad stakeholder forum.
- 2014/15 Q2: Draft strategy for the medical devices sector completed, presented to (i) the Ministerial cluster and (ii) the private health sector stakeholders.
- 2014/15 Q3: Final strategy completed, presented as a Cabinet Memorandum.

Lead departments / agencies: the dti.

Supporting departments/agencies: DoH, MCC, DST, EDD, National Treasury, Medical Research Council (MRC) and SABS.

2. Designation of pharmaceutical tenders in the 2014-2015 tender cycle

Nature of the intervention

Designation of selected pharmaceutical tenders and individual products, following a thorough analysis of public sector needs vis-à-vis the capabilities of the domestic industry (installed capacity, product registration, and access to the primary and secondary/back-up sources of Active Pharmaceutical Ingredients).

Economic rationale

An increasing proportion of medicines procured by the Department of Health are imported, while domestic manufacturing capacity remains underdeveloped.

Outcomes

Increasing the utilisation of domestic manufacturing capacity without affecting security of supply; improving investor confidence in the local pharmaceutical sector.

Key milestones

- 2014/15 Q1: Analysis of the performance of suppliers in the 2012 - 2013 tender cycle; lessons from the designated tenders; analysis of the DoH's procurement programme for 2014-2015 vis-à-vis the capabilities of the domestic industry.
- 2014/15 Q1: Update of **dti's** position document on the designation of pharmaceuticals, including a new cost-benefit analysis.

- 2014/15 Q1: Tender designation framework for 2014-2015 agreed upon with industry and the DoH.
- 2014/15 Q1-Q2: Submission to the Minister requesting designation of specific pharmaceutical tenders and products in the 2014-2015 tender cycle.
- 2014 - 2015: Monitoring of the performance of suppliers in the designated tenders: on-going throughout.

Lead departments / agencies: the dti.

Supporting departments/agencies: The DoH and National Treasury.

3. Facilitation of Project Ketlaphela

Project summary

Project Ketlaphela aims to establish domestic manufacture of ARV APIs supplying 40% of South Africa's projected peak demand for ARVs in 2016-2017. Ketlaphela will be a state-controlled enterprise (the State controlling 60% via the IDC and Pelchem), jointly operated with a private investor and technology provider.

Ketlaphela will provide 500 tons of ARV APIs, adequate to formulate 500 million tablets per year of the once-a-day "3 in 1" fixed-dosage ARV combination which is the basis of 1st line ART. This amounts to 40% of the projected peak demand for ARVs in 2016-2017. The capital cost of the project is R2 billion (140 million Euro) and the operational capital needed is R1 billion.

As reported to Cabinet, in order to be viable, the project requires (apart from **the dti's** generic incentives) a capital grant of R600 million and additional operational support – a production rebate of 10% for the first seven years of operation - totalling R 1.7 billion (R245 million) per annum. Subsequently, the project would then be expected to become economically sustainable without further operational support.

Following the withdrawal of the initial foreign investment partner and technology provider (the Swiss company Lonza) in March 2013, government published a Request for Expression of Interest in May 2013. Four bidders were short-listed in October by the inter-departmental task team and the evaluation process is currently under way.

Nature of the intervention

The dti, as a member of an inter-departmental Ketlaphela Task Team will continually re-assess the project's strategic and economic rationale while providing the necessary technical, financial and legal support.

Economic rationale:

The rationale of Project Ketlaphela is more strategic than economic. However, by improving the security of supply of ARVs and averting treatment interruptions, the project will help to slow-down the drift from the low-cost 1st line ART to the expensive 2nd line.

Outcomes

Reduced reliance on imports of APIs will improve the security of supply of ARVs.

Key milestones

2014/15 Q1: Selection of the preferred bidder, negotiations and signing of contract.

2014-2015: Commencement of project (detailed design, followed by construction).

2017/18 Q1: Commissioning of the project and start of production (1st ARV API)

Lead departments/agencies: DST, dti

Supporting departments / agencies: DoH, NT, EDD, IDC, Pelchem and the CSIR.

Cosmetics sector

The South African cosmetic and personal care industry is widely regarded as vibrant and dynamic. It comprises an interesting mix of multinational giants, small, medium and large local brand owners and small entrepreneurial companies. The industry is self-regulated, generally subscribes to high quality standards and is well placed to make its mark in the international arena.

Beauty and personal care achieved double digit growth in 2010 (*Euromonitor 2011*). There is an increasing presence of local companies within South African beauty and personal care, even though the sector is still dominated by the major global players. Leading departmental retail stores in South Africa are increasing their ranges of premium skin care, colour cosmetics and fragrances in order to expand product reach. SMMEs, however, are still finding it difficult to access shelf space in local retail stores, with the result that their products struggle to make a breakthrough into consumer consciousness.

Although the global cosmetics industry was affected by the recession of 2008-09, by 2011 it appeared to be moving into modest recovery, in line with global economic trends.

The sector's main challenges are maintaining good quality at viable price levels whilst coping with sharp rises in raw material costs and packaging expenses.

Sector economic data

Variable	Contribution in 2012
Manufacturing value-add	1%
Manufacturing employment	50,000
Trade balance	-R555 million

Key opportunities

- Maintaining growth in the cosmetics sector is not easy, but is possible – particularly if SMMEs receive the support they need from contract manufacturers.
- Marketing locally produced cosmetics products in the provinces is a huge challenge. In order to promote ‘the buy local concept’, the sector desk will continue engaging with industry through provincial workshops allowing companies opportunities to network and showcase their products. Key stakeholders include the IDC, SEDA, SEFA, CECOSA, CTFA and incubations institutions.
- Since the cosmetics industry is self-regulatory, companies need to produce good quality compliant products. South Africa has a number of privately owned laboratories and university institutions that are already testing cosmetics products in order to ensure compliance with both local and international standards.
- As a remedy for the absence of a dedicated and accredited local Cosmetics Safety Assessment Course, **the dti** is working together with the industry to develop just such a course.

Key constraints

- Skill shortages (especially toxicologists) are required to do safety tests for export opportunities.
- Import duties on raw materials are high, making product pricing less competitive than it could and should be.
- There is as yet no sector-specific incentive scheme in place.

Key Action Programmes

1. Development of the cosmetics sector strategy

Nature of the intervention

Together with the relevant stakeholders, **the dti** will develop the Cosmetic Sector Strategy in order to stimulate growth, improve local company performance, create jobs and enhance access to both local and export markets in Africa and other regions.

Economic rationale

The strategy seeks to alleviate constraints experienced by cosmetic companies in South Africa and encourage expansion and growth in the cosmetic manufacturing sector.

Outcomes

Accelerated growth in the cosmetics sector, creating jobs and increasing skills levels.

Key milestones

2014-2015: Develop & implement a Key Action Plan as informed by recommendations from the Sector Strategy.

Lead departments/agencies: dti

Supporting departments/agencies: DST, CTFA, Chemin, CECOSA, Tshumisano, Chemcity, EgoliBio.

2. Cosmetics Products Safety Assessment

Nature of the intervention

In the absence of an accredited Cosmetics Safety Assessment Course, South Africa is currently unable to train the required number of scientists to become recognised safety assessors. In partnership with the Toxicology Association of South Africa (TOXA) and DST, therefore, **the dti** is in the process of developing a two year safety assessment course that will include a learnership programme. At the same time (in partnership with the University of Cape Town) the sector desk is facilitating the establishment of a Hair Testing and Cosmetics Testing Laboratory. This laboratory will focus on new product development, testing of hair care products and cosmetics products that are both imported and locally manufactured. Training will be offered at MSc and PhD level.

Economic rationale

To create an internationally-recognised database of locally trained and registered cosmetics toxicologists capable of routine, day-to-day testing and certification of cosmetic products, which will then become much more readily acceptable globally. This will reduce the exorbitant costs currently incurred by companies that are at present compelled to test their products overseas.

The UCT Laboratory will offer both toxicology testing and hair product claims validation (both of which are essential for the export market).

Outcomes

Cosmetics products produced in SA will be tested and certified locally by SA toxicologists to meet EU safety standards and thereby grow the sector's export base.

Key milestones

2014/2015: Work with University of Pretoria, TOXSA and DST to develop the two-year Safety Assessment Course; establish the Hair Testing and Cosmetics Testing Laboratory at UCT.

2015-2017: Two-year Safety Assessment Course commences, targeted at 75% South Africans and 25% from other African countries

Lead departments/agencies: dti

Supporting departments/agencies: DST, TOXA, University institutions, CHIETA.

Business Process Services

Sector profile

The Business Process Services industry involves contracting a third party to perform a company’s necessary but non-core processes in place of an internal source. Off-shoring describes the relocation of such business processes (like operations, support processes including accounting and customer service as well as back office processes) to other countries, particularly in global production networks. Off-shoring is thus not only about foreign inputs being serviced domestically, but also about cross-country collaboration.

South Africa has energetically taken hold of the growing off-shoring opportunities on offer, successfully leveraging such in-country attributes as appropriate infrastructure, narrow time zone differential (especially with regard to EU countries) and suitable skills (in terms of cultural compatibilities, language and diction capabilities).

In 2006, South Africa’s BPS industry was almost non-existent with only a window of opportunity having been identified and a new ambitious strategy in place. While there was some outsourcing, there was very little off-shoring and no local firms were servicing overseas clients. By 2010, following concerted government and industry efforts in implementing the strategy, Gartner, a top global BPO research firm, identified South Africa as one of the top 30 countries for offshore services. South Africa was named in the EMEA category together with Bulgaria, the Czech Republic, Egypt, Hungary, Mauritius, Morocco, Poland, Romania, Russia, Slovakia, Turkey and Ukraine. After winning the Offshoring Destination of the Year award from the UK National Outsourcing Association (NOA) in 2012, South Africa received the same accolade from the European Outsourcing Association (EOA) in 2013.

In 2012, the London School of Economics developed a matrix framework on how to assess the attractiveness of locations for Business Process Offshoring. (See Figure 30 below). Using this instrument, it then conducted an opinion survey of thirty senior global sourcing analysts working in client, provider, management consultancy, market analysis, and research organisations. Ten direct competitor countries were assessed: namely India, the Philippines, South Africa, Poland, Morocco, Malaysia, Kenya, Sri Lanka, Egypt and Northern Ireland.

Figure 30: LSE Location Attractiveness Framework (2012)

Cost	Skills availability	Environment	Infrastructure	Risk profile	Market potential
Labour	Skills pool [competency]	Government support	ICT infrastructure	Security	Local markets
Quality of infrastructure		Business	Real Estate (Office space)	Disruptive events	Nearby markets
Taxes and Incentives	Providers landscape	Quality of life	Transport	Macro-economic outlook	
		Accessibility	Power/Energy reliability	Regulatory framework	
				Intellectual Property rights	

Source: Outsourcing Unit: London School of Economics

The most significant finding of the survey was that there was only minor variation among the top six ranked countries, namely - 1) India, 2) the Philippines, 3) Poland, 4) South Africa, 5) Northern Ireland, and 6) Malaysia - whose overall rating was described as “good”; whereas Morocco, Sri Lanka, Egypt, and Kenya were collectively rated as “meeting minimum requirements”.

The dti’s Business Process Services programmes continue to aim at growing investments that service the off-shore market, increasing employment, particularly youth employment, increasing the domestic market’s capacity to service the off-shore market and increasing South Africa’s market share as a global destination for off-shored business process services. To date the South African Business Process Services incentive has grown to support approximately 16,000 jobs with an estimated investment of R 1, 65bn; largely attributable to the introduction of a BPO & O incentive between 2007 and 2010, and the shift from BPO & O to BPS in 2011.

On the skills side, by the end of the 2013/14 financial year the partnership created in 2008 between the industry and government (National Skills Fund, Jobs Fund and **the dti**) had resulted in a robust domestic BPS platform which is increasingly able to capture foreign contracts. The end of the 2013/14 financial year also saw the milestone being reached of 10,000 unemployed youth completing the training programme; some 7,500 of whom subsequently found gainful employment in BPS sector. The industry at large, including the domestic component, has grown to more than 200,000 agents and 30,000 support staff. The estimated growth rate is 8% per annum and the industry as a whole was valued at approximately \$150 billion in 2012.

Sector economic data

Variable	Contribution 2007- 2010 (BPO&O)	Contribution 2011- 2013 (BPS)	Total contribution
Employment resulting from BPO&O and BPS incentives	7,295	7,738	15,033
Unemployed youth trained under MWRP	4,467	6,320	10,787
Employment from MWRP	3,483	4,268	7,751
Foreign direct investment	R349m	R1,3bn	R1.65 bn

Source: Markets

The value proposition for South Africa as a key off-shoring destination is anchored on its ability to offer English-speaking talent at a scale, a robust enabling environment, deep domain skills advantages, significant cost savings and a first world experience for those who set up operations. Not surprisingly, therefore, South Africa remains the preferred destination of the English speaking markets, with the UK still commanding the largest

share as a source market. 60% of off-shore operations located in South Africa are either UK captive operations or third-party operations servicing UK clients from South Africa.

More broadly, the package of services delivered for international customers includes telecoms, online shopping, finance and accounting, legal process services, insurance and media.

Key opportunities

Some notions still remain that the industry is solely comprised of call centres; but it has in fact become much more diversified, offering back-office hubs, knowledge process outsourcing, legal process outsourcing, software design and engineering, animation, game development and transcription services. These sub-sectors are still relatively small in terms of number of companies and employees; but they are showing steady growth, and if properly supported have the potential to create significant long term, sustainable employment opportunities. At the same time an important window of opportunity exists for the South African BPS industry to catch the wave of African continental growth in the area of Shared Services operations.

Key opportunities

Legal Process Outsourcing

Legal Process Outsourcing is a process where legal support services from either an external law firm or a legal support services firm are used (either directly or indirectly through an intermediary) to perform agreed legal support services. Recently some multinational corporations (mostly from the UK) have outsourced certain legal support functions to Northern Ireland and Australia. The preference for Northern Ireland as a destination for outsourced legal support functions is evidently attributed to the new incentive offerings in that country, while Australia is perceived as a strong alternative location due to its perceived cost-effectiveness and cultural fit. In South Africa there are pockets of successful off-shored legal functions deriving in the main from the shared Commonwealth countries legal framework that is in place.

The key determinants that influence decisions on off-shoring legal support functions are: availability of the requisite legal skills pool (number of qualified lawyers, paralegals and law graduates); property costs (office units and accommodation); and infrastructure (IT, communications costs, availability of fibre optic communication backbones). Important emerging considerations are the international trend toward ITO/BPO integration and the increased use of cloud computing by big corporations.

The dti, working in close cooperation with the Law Society of South Africa, has identified important niche area opportunities in source markets such as Australia and the UK. The Law Society has now partnered with other industry players and submitted an application for the establishment of an LPO Joint Action Group. In parallel, the dti has embarked on a drive to research this sub sector's long term potential for sustainable job opportunities.

Africa the next growth frontier for off-shore services

Over the coming decade, near-shore outsourcing from companies in the rest of Africa will drive the overall size of the South African BPO market. With the rise of the African continent as an increasingly compelling global trade and investment destination, more and more multinational providers will strive to extend their footprint across Africa, bringing with them their business expertise and maturity and at the same time opening up new off-shoring opportunities for local niche service providers. Large firms will typically opt to centralise business processes in one location, servicing multiple operations across the continent from that single near-shore base. South Africa has grasped this logic and is already home to nearly half of the top 40 African-owned companies with established global operations in the finance and accounting, telecoms, logistics, procurement and banking industries. With the largest economy and best regulated business environment on the African continent – and with a strong telecommunications and IT skills pool - South Africa stands the best chance of hosting these shared services centres.

From its own home base South Africa has made some - but still insufficient - inroads into the African continent, providing BPS services for global and domestic firms expanding across Africa. In principle, the attributes outlined above should put South Africa in pole position to provide both basic and KPO services to the rest of the region on an extended scale - particularly in the context of emergent regional shared services operations.

Capturing new English speaking markets

South Africa is among the Top 3 global locations that can support English language skills at scale with a sufficient BPS industry-addressable workforce added annually across educational streams. The large talent pool means the country is well poised to service international markets. While good headway has been made into the UK over the last few years, other English speaking markets to be explored in countries like Australia – where a few successful contracts are already being managed from South Africa.

Constraints

- A continuing shortage of appropriately skilled talent - especially middle and senior management personnel with the requisite industry-specific skills – and hence continuing over-reliance on imported expats.
- A fragmented approach to industry mobilisation by industry associations.
- An incentive-dependent industry culture which undermines its long term stability.
- Obsolete industry standards in a number of areas.
- Insufficiently developed market access for South African businesses to service the offshore market, leading to the outflow of revenue back to the source countries.
- A generally weak international economic environment and the persistent uncertainty created by continuing global recession.

Key Action Programmes

1. Implementation of the Business Process Services (BPS) incentive programme

Nature of the intervention

Ongoing implementation of the BPS incentive programme.

Economic rationale

For BPS investors, the cost of operating is one of the critical areas of consideration for an investment decision. The rationale behind this initiative is to counteract high operational costs in certain business areas and profile South Africa as an attractive BPS destination that can match and exceed the offerings of other key competitor countries. The dti has revised its capital expenditure-based BPO & O incentive programme, replacing it with the BPS incentive under which investors can offset against any operational expenditure. It is expected that as South Africa becomes more clearly competitive as a destination, more investment will necessarily flow in and more jobs will be created.

Outcomes

An additional 10,000 off-shore jobs leveraged by March 2015 through provision of incentives to the value of approximately R600 million.

Key milestones

- 2014/15 Q1: Launch of the new BPS incentive guidelines.
 2014/15 Q1-Q4: Ongoing implementation of the BPS incentive

Lead departments/agencies: the dti

Supporting departments/agencies: National Treasury

2. Talent development for the BPS sector

Nature of the intervention

The Monyetla Work-Readiness Programme™ is a dedicated sector-specific, demand driven work readiness programme which bridges the divide between unemployment and the opportunity for sustainable employment. It provides the industry with requisite skills from entry level to supervisory levels in order to position South Africa as a preferred off-shore location for BPS operations.

At inception, the Programme was offered at NQF level 2. From 2013 onwards it has been offered at two additional levels - NQF level 3 (which targets entry level agents) and NQF level 4 and above (which seeks to address the shortage of higher level skills). With some adaptation, this programme could be replicated in other growth sectors with similar results.

Economic rationale

One of the major determinants for investors wishing to start BPS operations is the availability of appropriately skilled labour in the location under consideration. In addition, having a readily available pool of labour would ensure that young unemployed people in South Africa are trained and capable of absorption into other areas of work.

Outcomes

- A readily available pool of labour for investors to draw upon.
- Improved career-pathing across the industry, providing scope for increasing the proportion of local middle and senior managers.

Key milestones

- 2014/15 Q2-Q4: Training of 3,000 unemployed youth at NQF Level 3.
 2014/15 Q3: Training of 500 supervisors, team leaders and provision of other industry-specific skills.
 2014/15 Q4: Minimum of 11% targeted for tier 2 and tier 3 towns, townships and rural areas is achieved.
 2014/15 Q4: 70% of trained learners contracted into employment for a minimum 12 month contract.

Lead departments/agencies: DHET, the dti

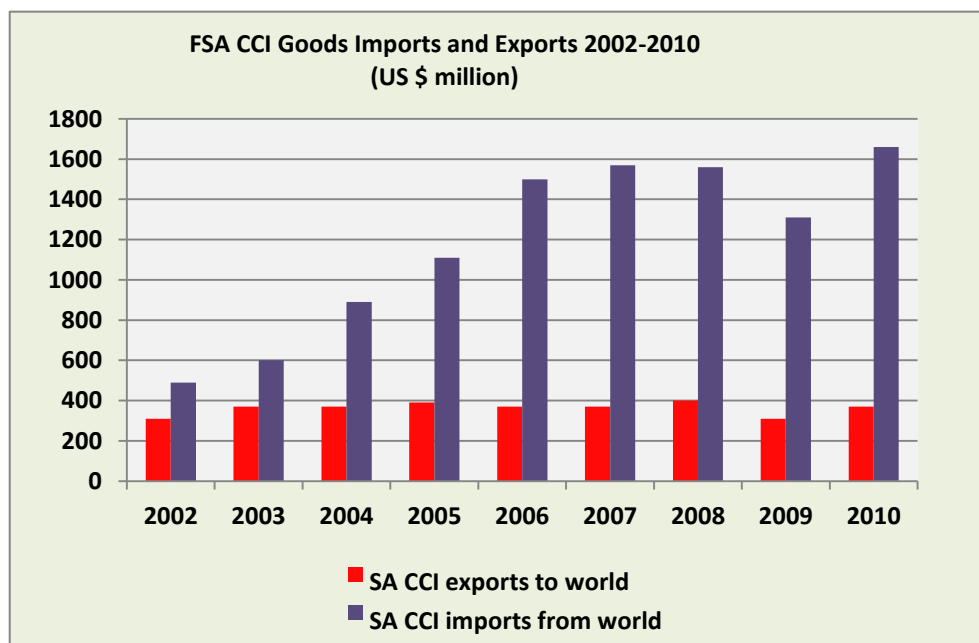
Supporting departments/agencies: Accredited training institutions, Contact Centre Management Group, Business Process enabling South Africa, employers in the BPS sector.

Cultural and creative industries

The creative industries hold great potential for developing countries that seek to diversify their economies and leapfrog into one of the most dynamic sectors of the world economy. South Africa has long identified the potential of the Cultural and Creative Industries (CCI) to contribute to both economic and social development as evidenced in CIGS, ASGISSA, NIPF, NDP and the IPAP.

However, the South African creative economy has long been dominated by imports. This has a direct impact on the ability of the local creative industry to create, support and sustain local manufacturing, services and the jobs they create. Over the period 2002-2010, South Africa's total CCI goods trade with the rest of the world remained relatively constant, while imports rose considerably. (Fig. 31)

Figure 31: CCI imports and exports

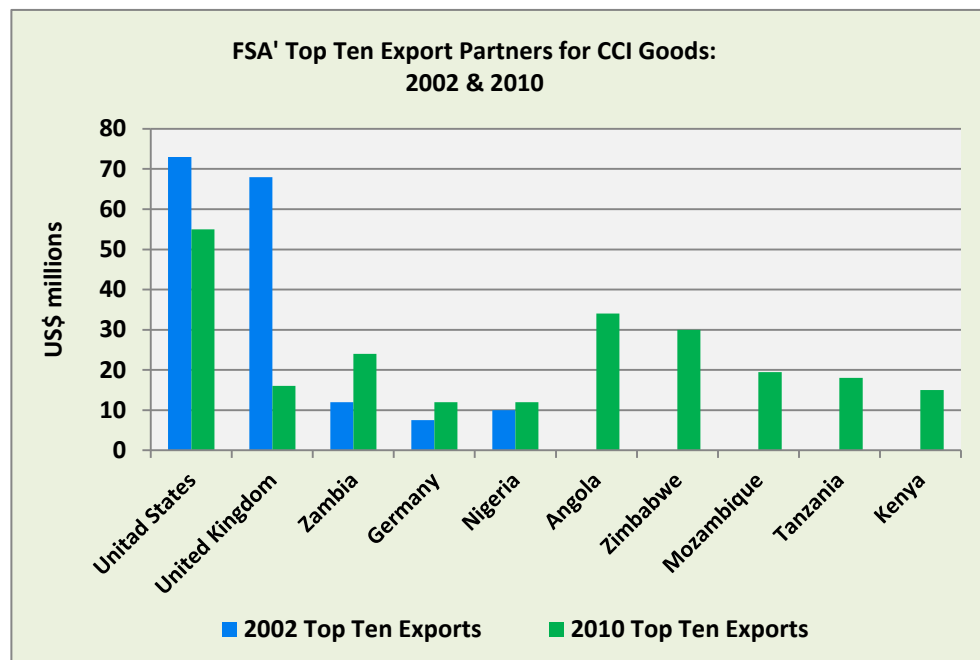


Source: UNCTAD

South Africa's top export and import partners

There has also been a distinct change in the profile of South Africa's major export partners over the 2002-2010 period, with African countries particularly coming to the fore and developed economies - including the USA, UK, France, Australia and Germany - falling away. (See Figure 32 below).

Figure 32: SA 'Top-ten' CCI export partners



Source: UNCTAD

While there is clear evidence of robust demand for creative and cultural goods and services in South Africa, supply continues to be dominated by imports. There is thus an urgent need for a key strategic developmental focus on the South African CCI sector, prioritising interventions that promote the growth of domestic demand and matching supply capabilities.

The focus on domestic demand, local production and consumption must not of course be pursued at the expense of export development; but it should serve as the necessary springboard for export growth.

Sub-sector Focus: Music

The South African music industry is one of the most developed music industries in Africa and indeed compares reasonably well with other strong music industries in Asia, Latin America and Eastern Europe. The local music industry has continued to show growth despite the global recession and the continuous growth of piracy and decline in physical sales.

In 2012, South Africa accounted for approximately 0.52% of the international recorded music sales market, to a value of R698 million. In parallel, the South African live music industry was estimated to be worth R928 million in consumer spending on concert and festival ticket sales, merchandise, food and sponsorships. South Africa also boasts a strong industrial base in recording, manufacture, retail and broadcasting.

On the other hand, manufacturing of music instruments and audio equipment in South Africa remains limited and economically insignificant. Imports of musical instruments have grown in value from \$11 million in 2002 to \$27 million in 2011, while imports of sound production equipment have grown from \$104 to \$150 million over the same period.

Key opportunities

The move to digital broadcast and the opening up of more distribution and broadcasting channels will be driving increased demand for creative industries digital content, especially in film and music. Other factors driving increased demand for music, film and digital games will be: rapid growth of online distribution methods; the associated growth in ownership and usage of various forms of digital audio platforms, including online radio, iPod/MP3 players, and mobile phones; and the strong migration of more and more consumers towards the use of legitimate download sites.

Constraints

Although the South African music industry is considered relatively mature and stable, it continues to experience immense pressure from imported music products and services. While a high percentage of all music products distributed in South Africa consists of imported material - thus extending and entrenching the market domination of foreign content - access to finance for investment in local production, distribution, infrastructure and equipment facilities has proven to be difficult, with very few financing vehicles responsive to and dedicated to the music industry.

Key Action Programmes

1. Developing Manufacturing in the Music Industry

Nature of the Intervention

This programme will aim to encourage investment into development of manufacturing across the music value-chain; support partnerships with international musical equipment manufacturers; and support research and development for locally designed and produced music technology, instruments and equipment.

Economic Rationale

Manufacturing in the creative industries especially music and film has been largely neglected in most developing economies. Aside from traditional craft-based production of musical instruments, the manufacturing of almost all musical instruments and equipment is based in the US, Europe and Asia. While South African imports and (re-) exports of musical instruments and equipment are substantial, they do not contribute to local work opportunities since the exports are not of goods that have been manufactured in South Africa.

Outcomes

- Increased investment into local manufacturing of musical instrument and equipment.
- Establishment of a local musical instrument and equipment manufacturing industry for both international and local music industry products.
- Increased employment creation.

Key Milestones

2014/15 Q1: Develop an investment proposition to attract foreign manufacturers to establish local manufacturing plant for musical instruments and audio equipment.

Lead Departments/Agencies: the dti

Supporting Departments /Agencies: CSIR, IDC, SABS.

2. Domestic and international market share development

Nature of Intervention

This programme aims to increase the domestic and international demand and consumption of South African music industry products and services by supporting and incentivising distribution and marketing of music goods and services on all distribution platforms. At the same time it seeks to support and incentivise local and foreign music venues to host and programme regular live music performances, thus creating more regular work opportunities for artists.

Economic Rationale

The global music industry market has shown consistent positive growth over the last few years. In order for South Africa's music industry to remain sustainable there is a clear need to develop strong export markets from which revenue can be generated and foreign currency attracted to bolster the local economic activity of music production.

Outcomes

- Increase in volume of demand and consumption of locally produced Music products and services across all domestic and international distribution and consumption platforms.
- Improved access to domestic and international distribution networks, wholesale and retail platforms and spaces.

Key Milestones

2014/15 Q1-Q2: Develop a comprehensive music marketing and distribution model for both local and international market access to stimulate distribution and grow domestic and international market share for South African music.

2014/15 Q3-Q4: Establish and develop a direct South African presence in key markets, with either foreign representative or SA companies continuously investigating and expanding market opportunities for South African products and services.

2014/15 Q1-Q4: Leverage or amend existing **dti** incentives to better support local and foreign music venues to host regular live music performances, thus creating more regular work opportunities for artists.

Lead Departments/Agencies: the dti, DOC, DAC

Supporting Departments/Agencies: NFVF, IDC, Brand SA

Sub-sector Focus: Film

South Africa is considered unique in that it combines wonderful locations and weather with first world infrastructure and filming facilities. The market for filmed entertainment in South Africa generated revenue of R2.2 billion in 2012, representing a 6.5% year-on-year growth over 2011. South African box-office revenues generated R23 million in the first half of 2013, while the South African TV sector reached a highly impressive value of R27.4 billion in 2012. (PWC: *South African Entertainment and Media Outlook: 2013-2017*).

Key opportunities

Digital terrestrial television (DTT) and further growth of legitimate online TV is expected to drive demand for content not only for television but also for feature film production – the latter, initially at least, likely to be targeted mainly towards cinema and DVD distribution.

The rapid development of new media platforms and the ability of consumers to choose and select content is also creating more demand for differentiated content. With the large number of channels that DTT will afford, more content in indigenous languages will also be in greater demand.

Constraints

The South African film and television market is heavily dominated by imported content. NFVF reported that performance of local films at box office has been generally poor compared to foreign films, which continue to dominate the local exhibition chain and are generally well received by local audiences.

High distribution costs and the profit-sharing formula in place between distributors and the producers have the effect of favouring distributors and generally shifting all the risk to producers. The resultant is that fewer films are made, at higher costs, and the demand for more content is 'automatically' fulfilled by imported films.

Key Action Programme

1. Access to Finance and Infrastructure

Nature of the Intervention

The programme aims to:

- Improve investment and access to capital, funding, production capacity and greater overall business skills;
- Support enterprises to meet technological and infrastructure requirements and strengthen business support mechanisms;
- Promote access to information on how best to access available funds within the industry.

Economic Rationale

Access to working capital, credit and equity is often limited for many companies in the film and television industry, resulting in a high percentage of survivalist enterprises in the sector. Without investment capacity, the film and television industry will not be able to innovate and adopt digital technologies, let alone gear up its development agenda and re-tool its traditional business model to cope with challenging times.

Although the cost of some production technologies has come down, the cost of producing film is still significantly out of reach, especially for previously disadvantaged emerging film makers. There is significant demand in South Africa for both animation and video games; but at the moment this market remains largely controlled by foreign products.

Outcomes

- Increase in the number of enterprises accessing investment and available financing incentives and packages.
- Increased access to film value chain infrastructure as part of the country's quest to build a thriving film industry with all sections of the film value chain contributing optimally to economic growth and a people-centred information society.
- Increased employment in enterprises that provide technology and infrastructure across the film value chain.

Key Milestones

- 2014/15 Q1-Q4: Roll out of the revised Film and Television Incentives incorporating the "Emerging Black Film Makers Incentive" category.
- 2014/15 Q1-Q4: Existing dti incentives are leveraged or amended to support infrastructure development for innovative and new converging technologies for the production of digital content.

Lead Departments/Agencies: the dti, DAC

Supporting Departments Agencies: IDC, NFVF, Provincial Film Commissions,

Sub-sector Focus: Craft

Accurate profiling and measurement of the craft sector is the most difficult task within all the creative industries sub-sectors. The challenges range from definitions and delineation of the sector to the informal and unorganised nature of employment and trade.

International trade in art crafts totalled \$32 billion in 2008. The global market for art crafts is strong and expanding: over the period 2002-2008 world exports increased by 8.7%, from \$17.5 billion to \$32 billion. Over the same period, however, South Africa's exports of craft decreased substantially - from R 320 million in 2002 to R 280 million in 2008 - while Imports increased dramatically, from R355 million in 2002 to R1.2 billion in 2010 (*UNCTAD Creative Economy Report 2010*). Key markets for South African craft continue to be the US and the EU, particularly Germany, France and the UK. Chinese imports have spectacularly overtaken the US and EU over the same period, rising from \$8 million to \$700 million.

Key opportunities

The Crafts and Design sector is characterised by a large number of SMMEs and cooperatives. This profile derives from the sector's relatively low entry barriers for unskilled and semi-skilled job creation, which in turn presents considerable opportunities for workforce expansion.

Demand for craft goods - particularly from the US and the EU - continues to be strong, underpinned by various preferential market access agreements with developing countries. The growth in craft imports into the US and EU has been heavily based on a group of developing/emerging countries - China, India, Thailand, Vietnam, Indonesia, Brazil, Pakistan, Bangladesh - which also includes South Africa.

While it is an unfortunate fact that South Africa's standing in the global craft market has unfortunately diminished over the past decade - with exports declining and imports increasing - opportunities do nevertheless exist to make a return and reconnect with this growth trajectory.

Constraints

Access to markets and distribution channels continues to be a major impediment to the growth of crafters and their enterprises because of the nature and structure of our economy.

The reality is that craft producers (essentially very small manufacturers) are largely excluded from mainstream retail value chains; which in turn reinforces and compounds the general lack of appreciation for local craft products.

Penetration into both local and international markets is limited, and even when a breakthrough has been achieved, the ability of craft enterprises to sustain their presence in these markets tends to be extremely limited because of the difficulties they experience in up-scaling their production and the limited access they enjoy to consistent and predictable market demand. In the face of dramatically increased Asian craft Imports over the past ten years locally handmade crafts have been struggling to compete in the critical middle- to lower-value markets. Access to finance, access to materials, intellectual property rights and protection also continue to hamper the development of the craft sector.

Key Action Programmes

1. Scaling up of handmade and manufactured craft

Nature of the intervention

The aim of this programme is to upscale the roll-out and implementation of the Craft CSP product development interventions to improve design and production capacity. The goal is to strengthen established craft enterprises in the production of Handmade Products by introducing production-line systems and equipment where appropriate, with linkages to national retail platforms. The programme will also introduce manufacturing processes for appropriate craft designs and products to support the scaling up of these businesses and the building of a light manufacturing industry.

Economic rationale

South Africa is in danger of completely losing market share of manufactured craft products to imports. These imports are not only of craft products design and produced by other countries, but also South African-designed craft products that are manufactured outside of the country.

High-end and high quality craft products are consistently able to fetch appropriately high prices in particular markets. The demand for these products continues unabated; but at the same time there is also sufficient untapped potential in the market for affordable middle- to lower-end craft products to justify investment in increased production levels.

Outcomes

- Improved design and production capacity of established and emerging entities.
- Establishment of local streamlined craft manufacturing processes.

Key Milestone

2014/15 Q2-Q4: Product development programmes implemented for both traditional and contemporary craft supported to implement production line systems to increase and improve productivity, volume and quality of product.

Lead Departments/Agencies: the dti, DAC, Craft Hubs

Supporting Departments /Agencies: IDC, SABS, CSIR, MINTEK.

2. Access to domestic and foreign Markets

Nature of the intervention

The aim of this programme is to upscale the roll-out and implementation of the Craft CSP market access programme to grow domestic and international market share for South African crafts through two main instruments:

- Establishment of marketing, retail and distribution mechanisms and channels for crafters and craft enterprises.
- Continued support and funding of craft hubs and other agencies/entities to enable them to implement and support market access programmes as well as other interventions as per the Craft CSP.

Economic rationale

A number of interventions and programmes have focused solely on improving and developing handmade craft products and increasing supply capacity, but scant attention has been paid to effective and continuous access to markets. Market access interventions have been focused on trade exhibitions, which although effective, do not provide continuous exposure to the market.

Thus, while there have been supply side interventions, there has been very little in the way of demand side interventions. Local municipalities play a central role in the establishment and regulation of both municipal and private markets as they have the authority to establish markets and manage them for the benefit of informal and formal traders.

Outcomes

Increased marketing and distribution channels; access to direct sales; sustainable job opportunities for emerging craft enterprises across the country.

Key Milestones

2015/16 Q1 – Q3: Approve and implement a marketing, retail and distribution model for craft as well as an e-commerce platform; establish provincial Craft Emporiums/Permanent Craft Markets, in partnership with four Provinces and Municipalities.

2015/16 Q1-Q4: Increase support and funding of craft hubs and Economic Development Agencies from two craft hubs and one Agency to four craft hubs and two Agencies to enable them to implement and support market access, product and enterprise development programmes.

Lead Departments/Agencies: the dti, DAC

Supporting Departments /Agencies: IDC, SABS, SEDA, SEFA

Green industries

The South African industrial sector developed over many decades on the back of cheap coal and electricity. SA finds itself in a position today where approximately 85% of our total energy supply is from fossil fuel and 85% of our electricity is generated by coal fired power plants, putting the country in a position where it has one of the highest carbon intensities (fossil fuel consumption as a percentage of total energy consumption) in the world today.

Heavy or energy intensive sectors furthermore contribute approximately 60% of the net value output of total manufacturing in South Africa. The Minerals and Energy Complex (MEC) alone contributes approximately 20% to gross domestic output in South Africa, while - if transport and storage are included this contribution rises to approximately 30% of gross domestic output. Again including transport and storage, the MEC contributes approximately 70% to exports and employs in the order of 1.5 million workers (Source: Quantec). The MEC sector is also intricately linked to other manufacturing sectors in the economy. This further complicates the challenge we face as a country because we are also in the difficult position where our energy intensity (total energy consumption expressed as a ratio of GDP) is one of the highest in the world.

Depending on the data set used, South Africa ranks approximately 22nd out of 186 countries in total carbon dioxide emissions and 20th in per capita CO₂ (which stands at around 10 metric tonnes per person/per annum). While South Africa 'only' makes a 1.5% contribution to global CO₂ levels, it comes in at an alarming 6th place when CO₂ emission is expressed as a ratio of GDP.

Given all the above, it comes as no surprise that the bulk of the capital stock in the South African economy is in the MEC and associated services sectors, with only a small percentage of the total capital stock located in the non-MEC manufacturing sectors.

While it is common cause that the main socio-economic challenges facing South Africa at present are unemployment, poverty, and inequality, there is also a consensus view that countries that do not adapt to greener growth trajectories will eventually risk serious declines in growth that will in turn only exacerbate poverty and unemployment. It is therefore clear that South Africa will have to take very seriously its adaptation to a much less carbon- and energy-intensive economy.

The structural challenges facing the South African economy are unique when compared to other comparable economies. Thus, the solutions we find with respect to energy and resource efficiency and cleaner production are also going to have to be unique. Since its inception, a central thrust of the IPAP has been the sustainable long term development of our manufacturing industry - both as a means towards addressing the deep socio-economic challenges we face and as a key driver of the transition towards massive reduction in the energy intensity of our economy. A key pillar of Green Growth in the South African context therefore has to be giving maximum priority to the development of our non-MEC manufacturing sector and tilting the balance of the entire productive economy in its favour.

In the immediate term, the problem is very simple: the high carbon intensity in the South African context is a result of our reliance on coal used to generate electricity. This is now very well recognised, and the challenge has begun to be addressed by the adoption of (recently updated) Integrated Resource Plan (IRP 2010), which aims to reduce our reliance on coal used in electricity generation to below 50% by 2030. The IRP 2010 plans significant electricity infrastructure expansion and with that comes a massive opportunity to manufacture componentry for renewable energy and demand side management equipment, where we have already seen new significant investment and growth. Other opportunities include energy-efficiency equipment and services related to government buildings, industrial and commercial property, households and private and public lighting. Interventions in these areas also call for – and create opportunities for - strongly up-scaled investments in R&D, innovation and the commercialisation of green technologies, products and services.

It should be noted however that the transition will require a massive technological shift and structural changes in the economy that will not happen automatically. Both the scale and types of change required will need to be in synergy with IPAP's core development propositions, in the sense that 'front-loaded' fiscal measures will become more important in promoting the establishment of higher value-adding, labour intensive manufacturing industries with a much lower carbon footprint than our traditional sectors. Indications are that great care will need to be taken in designing the measures that will be required to manage the transition of our traditional resource processing sectors onto a greener trajectory so that they do not collapse under increasing electricity prices, possible mandatory carbon taxes and other costs associated with tighter environmental laws and regulations.

Key Action Programmes

1. Adaption of South Africa's GHG emission commitments

Nature of the intervention

In order to meet Government's mitigation objectives, and in accordance with the Department of Environmental Affairs' mandate to oversee the implementation of the NCCRP, the Department of Environmental Affairs (DEA) commissioned a Greenhouse Gas Mitigation Potential Analysis for South Africa during 2013. Through a process of identifying and analysing mitigation options, the overall objective of this study was to present a set of viable options for reducing GHGs in key economic sectors: Energy, Transport, Industry, Waste and Agriculture, Forestry and Other Land-Use (AFOLU).

Mitigation options have been identified and analysed and then combined to construct Marginal Abatement Cost Curves (MACCs) for key sectors and subsectors. MACCs show the costs and potential (in tonnes of CO₂e abated) for emissions reduction from different measures or technologies. These were then ranked from cheapest to most expensive to represent the marginal costs (in R per tonne of CO₂e abated) of achieving incremental levels of emissions reduction.

The GHG mitigation opportunities for the industry sector cover emissions from three separate sources:

- Emissions from industrial processes, from the use of greenhouse gases in products, and from non-energy uses of fossil fuels.
- Emissions from the use of fuels in stationary combustion. (Emissions resultant from the combustion of fuels in order to provide heat or mechanical work).
- Indirect emissions from the consumption of electricity, where fossil fuels are consumed in order to generate the electricity.

The next step for the industry sector is to set Desired Emission Reduction Outcomes (DEROs) and to develop an Industrial Policy Roadmap to achieve these outcomes in line with the opportunities articulated in the introductory paragraphs.

Economic Rationale

The challenge of climate change presents opportunities to improve the energy and resource efficiency of our current manufacturing sectors, to develop new industrial sectors and grow sectors with a lower energy and/or carbon intensity than our traditional energy intensive sectors. There needs to be a careful balancing act here: on the one hand, implementation of a number of mitigation options can improve the competitiveness of existing firms by reducing energy and carbon intensity; on the other, any future global and/or local GHG mitigation regime also presents immediate potential threats to the survival and competitiveness of existing industry, based as it still is on high energy and carbon intensity. In this context, environmental taxes, carbon caps, carbon budgets and associated environmental legislation will have to be handled with extreme care and attention to detail with regard to sequencing, support for energy efficiency improvements, opportunities for downstream manufacturing and the nurturing and development of new green industry sectors.

Outcome

Industrial Policy Roadmap to inform the transition to a low carbon manufacturing sector.

Key Milestones

2014/15 Q4: Agreement within government and in consultation with industry on Desired Emission Reduction Outcomes for the South African manufacturing sector.

2015/16 Q4: Industrial Policy Roadmap to inform the transition to a low carbon manufacturing sector.

Lead Departments/ Agencies: DEA, the dti

Supporting Departments: DoE, EDD and DST, NT.

Renewable Energy

The South African government has embarked on a Renewable Energy roll-out programme that will see South Africa securing its energy future while curbing the impact of greenhouse gas emissions and reducing unemployment. The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) was kicked off in 2011 when government announced that 3,725 MW of renewable energy would be procured up to 2016. In the first bidding round 28 preferred bidders were selected to supply 1,416 MW, while in 2012 19 preferred bidders were selected to supply a further 1,044 MW. This commitment opened up opportunities for the development of a strong local renewable energy industry, through the manufacturing of components to supply both the independent power producers and the international market. A number of significant investments have already been made to develop capacity in the local manufacture of renewable energy components.

Due to the nature of the REIPPPP, the demand for renewable energy components is entirely dependent on the size and pace of the renewable energy roll-out. Investments are made based on the published Integrated Resources Plans and the success of these ventures will depend on a stable and continuous roll out of renewable energy in South Africa.

The most serious risks faced by investors are therefore:

- Uncertainty regarding future roll-out – i.e. when actual implementation of the REIPPPP leads to unstable demand for components (for example, where a large allocation in one bidding window may exceed industrial supply and then be followed by a smaller or even no allocation in a subsequent bidding window).
- Significant changes in the energy mix - for example a reduction in the allocation of a specific technology when updated plans are published.

One of positive spin offs of renewable energy development is that funds are being directed into the sector from government, institutional investors and individual investors both local and foreign. Between 2011 and 2013 more than R100 Billion was committed towards development of renewable energy projects in South Africa.

In order to develop the local renewable energy industry sector, **the dti** has collaborated with other government department and the broader stakeholder community to conduct extensive research to determine the localisation potential for the majority of renewable energy technologies proposed for South Africa. This research will be updated annually or as required and will inform the recommendations for future local content requirements in later bidding rounds.

2. Development of the local wind and solar industry through the REIPPPP

Nature of the intervention

In consultation with other relevant line departments, **the dti** is mandated to set local content targets for the REIPPPP. The nature of the intervention is to revise the minimum and target levels of local content of renewable energy projects linked to the REIPPPP. The aim of the revision is to increase the local content requirement to incentivise and support local industrial development and to align its requirements with the realistically anticipated state of local industrial capability. It is therefore necessary to conduct studies to assess localisation potential for all renewable energy technologies, and determine the appropriate localisation roadmaps in consultation with the broader stakeholder community.

Economic Rationale

The IRP 2010 explicitly spells out the need to support the development of a local industry for renewable technologies, in particular wind and solar. The plan is to maintain a stable roll-out programme that provides an opportunity for localisation, not only in the construction of the equipment, but in the development of skills to support the renewable programme. The total roll-out of 17.4 GW is projected to have an overnight cost exceeding R500 billion. This sheer size and long term nature of the REIPPPP provides an ideal vehicle to support the development of a competitive renewable energy manufacturing sector and related support industries that will also lead to the creation of decent jobs.

Outcome

Increased local content threshold for renewable energy projects in line with the development of a competitive local renewable energy manufacturing industry.

Key Milestones

- 2014/15/16: Adjustment of local content requirements with every successive REIPPPP bidding round, based on the developmental status of the component industry and demand conditions created by the REIPPPP.
- 2014/15 Q1: Analysis of actual local content achieved in previous bid rounds, and analysis of possible new technologies to be employed in the REIPPPP.
- 2014/15/16 Q2: Review the local content targets on an annual basis and make recommendations to the DoE on local content targets for future bidding rounds.

Lead Departments/Agencies: the dti, DoE

Supporting Departments/Agencies: EDD and DST, NT.

3. Designation of Solar Photovoltaic Panels

Nature of intervention

The development of the PV industry in South Africa is highly dependent on the uptake of PV technology by different market segments, which are driven by different factors. The utility-scale market segment is policy-led as it is regulated by the Renewable Energy Independent Power Producer Procurement Programme; therefore the roll-out of the PV industry in this market segment is assumed to follow the IRP schedule. The commercial/industrial and residential market segments are largely demand-driven.

Making use of mathematical equations to predict various diffusion patterns for commercial/industrial and residential market segments, and analysing different roll-out scenarios, it is projected that total size of the PV market in South Africa could reach between 11,946 MW and 20,133 MW by 2035. The rate at which the total PV installed capacity in the country grows will have a direct impact on the timescale within which certain localisation scenarios can be achieved. While South Africa currently plays a small role in the global PV market, it is well positioned to become a key participant in the future.

Currently the utility-scale market segment presents the only opportunity to support a local manufacturing industry. Further facilitation by government to develop all of the market segments will lead to a larger, more consistent demand for solar panels and has the potential to contribute to further industry growth over the coming years. Indications are that certain provincial governments are planning to install solar PV on a significant scale to supply electricity to public buildings.

Investors have also expressed interest in manufacturing solar silicon cells in South Africa; but caution will have to be the order of the day in this arena. The nature of these investments requires very significant economies of scale, access to state-of-the-art technology, a stable market and the ability to export into an extremely competitive global market. Through the REIPPPP and possible designation of solar PV panels, conditions can be improved to make investments in solar PV components manufacture attractive and viable in South Africa.

Economic Rationale

Designation of Solar PV panels is intended to increase demand and develop local supply through the development of local manufacturing capacity, thus increasing employment creation in the renewable energy sector. Development of this sector will increase a broad base of technical skills, particularly in assembly, maintenance and services, which can increase the employability prospects of trained individuals in other sectors of the economy.

Outcomes

Increase in demand for solar PV components.

Key Milestones

- 2014/15 Q2: Data collection, stakeholder engagement and market research.
- 2014/15 Q4: Decision to designate solar PV components under the PPPFA.

Lead Departments/Agencies: the dti

Supporting agencies: DoE, EDD and DST.

Carbon Tax and Green House Gas Mitigation

Climate change mitigation is an imperative from both a climate and trade and industry perspective. South Africa's production and trade will become increasingly vulnerable to carbon sensitive policies and private standards developed in other countries, some of which are being deployed with protectionist intent. The challenge for South Africa and probably all developing countries is to grow the economy while introducing energy and resource efficiency measures to reduce the dependence on fossil fuel and to transition to a much less carbon- and energy-intensive economy.

The introduction of carbon taxes, carbon budgets and emission caps while dealing with poverty, inequality and unemployment will require a high level of policy coherence across all spheres of government and a major effort to prevent policy duplication and unintended consequences affecting important economic and social challenges. Careful consideration must be given to the potentially negative impact of any carbon tax (and the costs associated with other environmental laws and regulations) on our global competitiveness - which is already a problem. This will in turn flow through to other negative consequences including a strong impetus to pass these costs onto downstream consumers or (as may be the case in steel) a threat to the viability of a key energy intensive sector.

Carbon taxes and environmental laws and regulations aim to change consumer and producer behaviour in an economy. This implies that producers or consumers will (i) reduce their energy intensity (total energy consumption per \$ GDP); (ii) reduce carbon intensity (in the case of South Africa, meaning a reduction in coal consumption as a % of total energy consumption); (iii) implement structural change (produce or consume goods with a lower energy or carbon intensity); and/or (iv) close down certain carbon or energy intensive sectors.

The sectors that would be the hardest hit by carbon taxes, carbon budgets and emission caps would be the ones not able to achieve the required behavioural change in the short to medium term. In order to reduce energy intensity producers implement energy efficiency measures. Evidence suggests that this approach has been actively planned and implemented in South African industry for at least a decade or more. The main driver or motivator is the increasing pressure on South African industry to remain competitive against the headwinds of administered price increases, especially massive hikes in the price of electricity and continuing high rail and port charges.

To reduce the carbon intensity of the South African economy self-evidently requires a reduction in coal consumption as a percentage of total energy consumption. This means we have to implement cleaner energy generation options such as nuclear, renewable energy and hydro power. This is beyond the individual control of consumers and producers alike, since the bulk of the electricity in South Africa is supplied by Eskom and the generation mix is determined by the Department of Energy. The danger is that a new carbon tax (most obviously, for example, on coal-based electricity) would immediately increase Eskom's operating costs, resulting in even higher electricity prices.

The dti, as is well-known, supports measures to promote structural change in the South African economy towards more value-adding, labour-intensive and less energy-intensive sectors of production. The fact remains, however, that at present the distribution of capital stock across the economy continues to reside largely within the MEC sector. To ensure continued economic growth, job creation and poverty reduction will require measures to manage the transition of our traditional resource-processing sectors so that they do not collapse under increasing electricity prices and/or a mistimed or miscalibrated carbon tax – whilst at the same time implementing measures to improve the competitiveness and support the growth of downstream value-adding, labour-intensive sectors and the new green industry sector. These can and must include investment in green energy, industrial energy efficiency and demand-side management linked to localisation. For example:

- Componentry for green electrical generation, together with demand-side management equipment.
- Goods and services related to industrial, commercial and household energy efficiency.
- Investments in R&D, innovation and commercialisation of green technologies, products and services, to be undertaken in South Africa.
- Expanded fiscal support measures to incentivise companies to reduce emissions and/or improve efficiency. (The National Cleaner Production Centre already has 11 years' experience in this area and the existing support available under the Manufacturing Competitive Enhancement Programme can be expanded).
- Measures to ensure the shifting of relative prices in favour of less carbon-intensive, more labour-intensive and value-adding sectors; in particular, a sharp downward revision in the pricing of intermediate inputs such as steel, polymers and aluminium to levels considerably below those dictated by import parity pricing (IPP).

The Department of Environmental Affairs is mandated under the National Climate Change Response Policy (NCCRP) to implement South Africa's climate change mitigation and adaptation response. In accordance with the mitigation objectives of the Response Policy, it is necessary to understand mitigation potential in key sectors of the South African economy. These key sectors are:

- Energy
- Industry
- Transport
- Waste
- Agriculture, Forestry and Other Land Use.

A strategic mitigation priority under the Response Policy is the formulation of desired emission reduction outcomes. In achieving its mitigation objectives, the Response Policy's interventions must also "build and sustain South Africa's social, economic and environmental resilience and emergency response capacity". In order to develop the mitigation approaches set out in the National Climate Change Response Policy, the Department of Environmental Affairs has established a Technical Working Group on Mitigation, comprising of a range of stakeholders including the relevant government line departments and National Treasury, business representatives, civil society and academics. The role of the Technical Working Group on Mitigation is to provide technical advice, as well as to coordinate and align all mitigation work at sectoral and national levels.

A key element in government's overall approach to mitigation under the NCCRP is to define "desired emission reduction outcomes" for each significant sector and sub-sector of the economy based on an in-depth assessment of the mitigation potential, best available mitigation options, science, evidence and a full assessment of the costs and benefits" (DEA, 2011a).

Given these mitigation objectives, the approach to mitigation as set out by government seeks to balance the need to achieve South Africa's development priorities, the economic and social opportunities presented by the transition to a lower carbon economy and the country's contribution as a responsible global citizen to the international effort to curb global emissions.

It is recommended that the above analysis be finalised and that the optimum balance between our priorities determined by following a coherent and coordinated approach between government departments and industry stakeholders.

Waste Management and Recycling

The most recent national waste baseline indicates that South Africa generated approximately 108 million tonnes of waste in 2011. About 98 million tonnes was disposed of at landfill, with 59 million tonnes classified as general waste and 49 million tons as unclassified and hazardous. It is estimated that only 10% of all waste generated in South Africa was recycled in 2011.

The low recycling rate indicates that there are huge untapped opportunities for innovation, industrial development and employment creation in the recycling sector. This is supported by the emphasis of the National Waste Management Act (2008) puts on the re-use, recovery and recycling of waste before disposal.

In acknowledging the challenges associated with the waste sector, government has made further commitments through various programmes, including the National Waste Management Strategy (2011) and the National Cleaner Production Strategy for South Africa (2004) to promote waste minimisation initiatives with emphasis on industrial efficiency and increased recycling. The commitment to invest in waste management projects that divert waste from landfill sites through employment creating initiatives is further emphasised in the New Growth Path (2010) and the National Development Plan (2012).

Key opportunities

Through cost savings in materials and energy, recycling of waste has the potential to promote industrial resource development, greater energy efficiency, cleaner production and improved manufacturing competitiveness. Investments in the waste management and recycling sector have also been proven to make a contribution towards the achievement of national targets on GHG emissions and energy security – mainly through waste-to-energy projects.

The Waste Management and Recycling sector is also known for its significant potential to promote SMME development and employment creation opportunities, through interventions such as organised waste collection systems, beneficiation of waste as an input resource and manufacturing of new products from recyclables.

Constraints

- Mixed waste streams due to a lack of separation at source.
- Lack of a structured and regulated industrial recycling system.
- Inadequate identification of best available locally manufactured technologies to sort and process different types of waste streams.
- Under-investment by industry in the exploration of alternative ways to use waste in their processes.
- Thin information on the sectors that produce more re-usable waste.
- Insufficient attention paid to the creation of markets for products manufactured from recycled materials.
- A paucity of good incentives to support the development of an organised recycling industry.
- Lack of thorough value chain analysis of each waste stream in terms of economic value.
- Weak capacity-building and technical training.

4. Development of Waste Management and Recycling Industry Strategy

Nature of the intervention

Stakeholder engagement, facilitation and analysis to inform a Waste Management and Recycling Industry Strategy

Economic Rationale

Waste management in South Africa is largely characterised by landfill disposal rather than re-use and recycling of waste. This approach ultimately leads to long-term financial, environmental and social costs being incurred by the Government and society. Waste collection and sorting, and recycling can potentially create significant employment opportunities, reduce input material costs, protecting human health and the environment and promote industrial efficiency.

Outcomes

Waste Management and Recycling Industry Strategy.

Key Milestones

2014/15 Q2: Data collection, stakeholder engagement and market research.

2014/15 Q4: Waste Management and Recycling Industry Strategy.

Lead department: the dti

Supporting departments/agencies: DEA, DST, CSIR.

Upstream and Midstream Oil and Gas

Shale gas

On-Shore Potential

Using data collected by Soekor (now PetroSA) in the late 1960’s, the US Energy Information Administration (EIA) estimated that South Africa has potentially 485tcf of total recoverable shale gas resources. This figure has subsequently been revised downwards to 390 tcf. The task team appointed by the Department of Mineral Resources (DMR) to investigate South Africa’s shale gas potential - on the back of the EIA’s projections - suggests that South Africa has perhaps 30 tcf of recoverable shale gas from the 485/390 tcf of resources estimated by the EIA.

Whether or not the 30 tcf is an under-estimate, shale gas still has the potential to be a “game changer” in terms of South African energy self-sufficiency and economic development. This clearly indicated in the table below, which outlines only large beneficiation projects with little domestic or commercial demand. To realise this potential however, it is essential that South Africa get its policy decisions correct and ensures that it is able to leverage this resource to achieve its industrialisation and social objectives, while at the same time ensuring that it avoids issues related to the “resource curse”.

Gas utilisation option	Gas resource required over 20 years
Gas To Liquids (80 thousand barrels per day)	5.2 tcf
Gas To Methanol (5 000 tonnes per day)	1.1 tcf
Gas to Power (600 MW CCGT)	0.6 tcf
Liquefied Natural Gas - LNG (10 Million Tonnes pa)	5.6 tcf

As a starting point it is important to appreciate the reasons and circumstances that led to shale gas being a “game changer” in the United States - and why the South African situation is so different. For instance, the United States already had a viable gas market, with a well-established distribution infrastructure. South Africa does not. This difference poses some interesting questions for South Africa to consider – namely:

- Distribution and sale of shale gas: should South Africa invest in gas distribution infrastructure or should it transport gas to the local and foreign market via liquefied Natural Gas (LNG) or Compressed Natural Gas (CNG) tankers?
- Electricity generation: should gas be directly used for industrial and commercial purposes or should it be converted to electricity?
- Gas to liquids (GTL): Both PetroSA and Sasol have significant GTL capabilities; so the question arises: should shale gas be used as a feedstock into this process? What sorts of interventions are required to develop first-mover technological advances - as was done with Fischer Tropps in the ‘60s - such as innovation with the direct gas-to-methanol process?
- Localisation: What sorts of interventions are required to ensure that South African companies are able to support the exploration, drilling, infrastructural and operational needs of this industry?
- Building forward and backward linkages: What sorts of interventions are required to ensure that South Africa is able to build its capacity in terms of developing technologies used in exploration activities or in adjacent industries and ensure that economic multipliers in other sectors are maximised?

The questions posed above are by no means an exhaustive list. They merely serve as an illustration of the complexities involved in unlocking the “game changing” potential of this resource. It is thus imperative that South Africa develop a comprehensive strategy to tackle the issues raised above. **The dti** has a vital role to play in this process, especially when dealing with issues concerning (but not limited to) localisation and the building of forward and backward linkages.

Key Action Programmes

1. Strategy to leverage opportunities presented by SA's shale gas resources

Nature of the intervention

The intervention is aimed at developing an industrial strategy that can support the optimal exploration and extraction of SA's shale gas resource. This will include an analysis of the backward and forward linkages in terms of the upstream localisation opportunities in the capital equipment and metals fabrication sector and downstream polymer beneficiation opportunities for the plastics sector. The strategy will investigate gas as a potential long-term low cost energy option and include an assessment of the regulatory, policy, financing and technology requirements to exploit the resource.

Economic Rationale

SA probably has among the top 10 resources of shale gas in the world, even if the originally estimated 390 trillion cubic feet (tcf) of technically recoverable resources proves not to be so. But the stakes nevertheless remain high. Preliminary economic modelling results indicate that 30-50 tcf of recoverable reserves over a 25 year production period would have upstream value-added potential of R2,142 bn. The predicted impact on employment across the entire value chain (assuming a recovery of 50 tcf over a 25 year production) is on average 700,000 jobs.

So the "game changer" scenario is indeed possible: provided that a clear strategy is developed that establishes and strengthens the linkages into and out of the possible shale gas industry so as to leverage the full economic impacts of the resource.

Outcomes

A strategy that analyses the upstream and downstream opportunities - including required mechanisms for support, gas as a potential low cost energy option, infrastructure requirements and technology assessment.

2014/15 Q1: Identification and analysis of the shale gas upstream localisation opportunities 2014/15.

2014/15 Q2: Identification and analysis of the downstream localisation opportunities.

2014/15 Q3: Analysis of gas as a potential low cost energy source and infrastructure requirements (distribution, reticulation, compression, liquefaction etc.)

2014/15 Q4: Analysis of the regulatory, policy requirements and mechanisms of support.

2015/16 Q1: Analysis of the technology and financing requirements and mechanisms of support.

Lead departments/agencies: the dti, DMR, DOE, EDD

Supporting departments/agencies: the dti, EDD, DWEA, DST, PASA, CEF

Off-shore potential

Sector profile

Sub-Saharan Africa is one of the fastest growing and highest potential oil and gas exploration and production locations in the world, estimated to constitute 10% of global reserves. There is significant oil and gas activity on both the West and East coast of Sub-Saharan Africa, with the East coast in particular seen as a game changer for the global gas industry.

The past 24 months has also seen significant interest in deep water prospecting activity around South Africa's coast line. Many of the major Oil & Gas players have acquired or are in the process of acquiring exploration licenses for deep water blocks along the South African coast. For example:

- 10 February 2012: Royal Dutch Shell was awarded an exploration license in the Orange Basin Deep Water area, off South Africa's west coast.
- 16 August 2012: PetroSA and Carin India Group ("Carin India") signed a farm-in agreement for crude oil and natural gas exploration in offshore block 1 in the Orange Basin on the west coast of South Africa.
- 17 December 2012: ExxonMobil, the world's largest publically traded international oil and gas company, signed an agreement with a subsidiary of Impact Oil & Gas Limited, to acquire a 75% participating interest in the Tugela South Exploration Right and will become the operator.
- 30 September 2013: Total completed the acquisition of a 50% interest in Block 11B/12B in the Outeniqua Basin, from CNR International (South Africa) Ltd, a wholly owned subsidiary of Canadian Natural Resources Limited. Total expects to drill its first well before the end of 2014.

- 13 November 2013: Sasol (Sasol Petroleum International) obtained an Exploration Right Permit to explore for hydrocarbons off the East Coast (Durban and Zululand Basins), offshore of Kwazulu-Natal province.

Latest estimates (November 2013) indicate that there are approximately 72 rigs in West Africa, 8-10 rigs based in East Africa and a further 42 Floating Production Storage and Offloading (FPSO) facilities operating in the region - with these numbers set to increase once more fields are brought into production and exploration activities commence around South Africa's coast line. As a rule of thumb, each rig typically requires between 8-10 support vessels and as a result support vessels of various types account for around 80% of the offshore fleet.

With exploration activity in the region set to increase over the next 5-10 years, the servicing and repair of oil and gas vessels could yield substantial returns for South African firms and the country as a whole. Given that South Africa already boasts industrial capacity associated with maritime and rig repair, in addition to capacity associated with mining-related industrial technology, it is strategically and technically well-positioned in the Sub-Saharan African region to capitalise on the growing regional commerce in offshore oil and gas by positioning itself as an oil and gas marine engineering and servicing and supply hub.

The Saldanha Bay IDZ/SEZ

The Saldanha Bay IDZ (SBIDZ), launched in October 2013, will house an oil & gas marine engineering and logistics complex within a customs-free area. The service offerings of the SBIDZ can be loosely grouped as follows:

- Repair & maintenance;
- Fabrication;
- Logistics and other services.

The SBIDZ could potentially service up to three rigs at a time, with contract values of R10 - R500 million. Engineering services could be supplied *in situ* not only to floating units, but also to fixed platforms, of which there are estimated to be over 800 in the region in total. Fabrication work would be linked to the construction of new units, as well as conversions, upgrades and major repair jobs.

The SBIDZ would also function as a regional logistics centre supplying spare parts and specialist staff to smaller offshore supply bases throughout the region, replacing goods and services which are currently supplied to West Africa from centres in Aberdeen, Stavanger and Houston. At the same time, pipes, cement, oilfield chemicals, equipment and other commodities needed for oil and gas exploration and production would be stored in open and closed on-site warehousing facilities. It is estimated that the SBIDZ could initially generate 2,600 direct and indirect jobs, with this figure rising to 15,000 jobs as the SBIDZ gains traction.

By January 2014 the SBIDZ licensing company had signed six lease agreements with international and South African oil and gas companies. In addition the licensing company was in talks with an international consortium which is willing to invest R200 million to develop a rig module building facility and which has the potential to generate approximately 300 jobs.

These developments suggest a strong vote of confidence in the SBIDZ and an understanding of its objective of establishing itself as a world-class oil and gas servicing and supply hub.

Key Opportunities

Based on the preceding discussion, the immediate opportunities within this sector lie in the following broad categories:

- **Upstream Ship Repair and Servicing Hub:** The repair, maintenance and upgrading of various kinds of oil and gas marine vessels such as drilling rigs, pipe laying vessels and various kinds of work barges.
- **Oil and gas logistics and distribution:** South Africa has the potential to build major logistics points to service the burgeoning growth of the oil and gas sector across the Sub-Saharan region.
- **Engineering services** that design, fabricate or construct specialised modules or facilities for the oilfields - e.g. storage tanks, processing modules for offshore platform or onshore facilities, docking facilities, tugs/barges, civil structures and platforms etc.
- **Equipment and materials suppliers** providing a wide range of pumps, valves, pipes, motors, instrumentation, and process equipment for the specialised needs of the upstream industry.

- **General and technical support services** for the upstream industry. General services include legal, financial, IT, medical, hospitality, recruitment and many other services that can be competitively supplied from South Africa. More technical services include a significant cluster of firms doing inspection and maintenance, training, diving services, remotely operated undersea vehicle operation and repair, health and safety services etc.

Constraints

The development of a world class oil and gas servicing and supply hub requires efficient and effective port and back-of-port infrastructure. In this context, the South African oil and gas industry has faced significant challenges regarding access to often inadequate facilities at South African ports. In other words not only do firms operating within this sector have trouble accessing port facilities, but these facilities have often been inadequate to service the demands of the highly specialized oil and gas industry.

Having recognised the potential multiplier effects of this industry, **the dti**, DPE and NPA completed a study that looked into the challenges faced by industry at South African ports and how best to address them. Findings from the study highlight several bottlenecks that are preventing the further development of port-related industries. These bottlenecks could be summarized as follows:

- **Administrative/Operational issues** ranging from working hours and labour practices at ports to issues concerning costs and the terms and conditions when operating in the ports.
- **Port Infrastructure** - with specific regard to ship building - is in a poor condition and will require significant investments to made in order to get these facilities to an internationally competitive standard.

Key Action Programme

1. Developing a ship/rig repair implementation strategy

Nature of the intervention

Having recognised the potential multiplier effects of this industry (and other port-related industries) **the dti**, the DPE and NPA have resolved to jointly develop a ship/rig repair implementation strategy. This strategy will be informed by the findings of the recent investigation into port related industries that was commissioned by **the dti**, the DPE and NPA during the previous financial year.

The objectives of this strategy will be to develop a way forward in terms of implementing the recommendations of the ports industry study.

Economic Rationale

Port related industries have the potential to generate a significant number of jobs through the opportunities located within its vast value chain. Unlocking these opportunities requires the ports system to operate in an efficient and effective manner. Getting the operating procedures and practises at South African ports correct and ensuring that the physical infrastructure, both in terms of port and back of port infrastructure, is in place is absolutely vital for South Africa developing into a world class oil and gas (ship repair) servicing and supply hub.

Outcomes

A ship/rig repair implementation strategy that seeks to establish a world-class oil and gas servicing hub.

Key milestones

2014/15 Q2: The DPE/**dti**/TNPA joint task team will develop a ship/rig repair implementation strategy that seeks to address short, medium and long term constraints through the implementation of tangible projects. Arising from this a “product offering” and requisite marketing material to drive an investment promotion programme will be developed.

2014/15 Q4: Launch of an Investor Conference that will showcase South African capabilities within this sector.

Lead departments/agencies: DPE and **the dti**

Supporting departments/agencies: Transnet/TNPA, SAOGA, Provincial Governments and Local Councils.

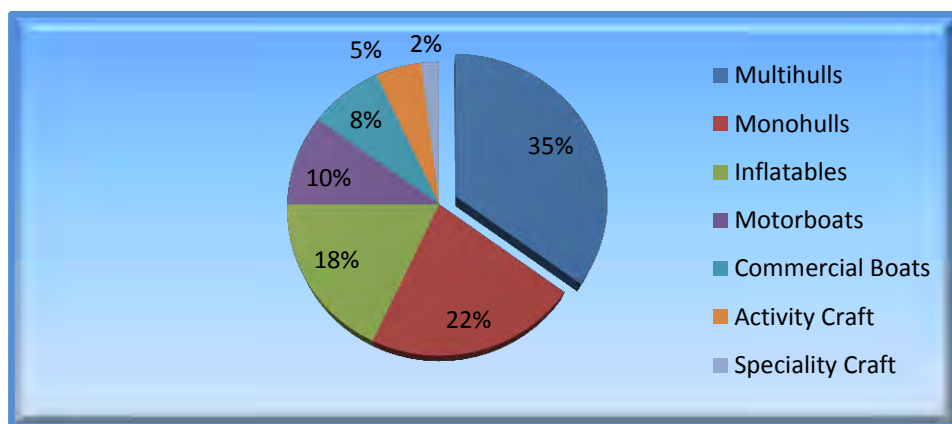
Boatbuilding and Associated Services Industry

Sector Profile

The South African ship/boatbuilding sector has developed a particular strength in sailing multihull catamarans, with some South African companies seen as global leaders. South African companies have also developed capacity in niche segments in commercial and public sector markets, e.g. fire-fighting boats and crew transport boats for the oil and gas sector. There has also been some diversification into power catamaran production. South Africa enjoys a reputation for good quality and customisation, as well as competitive labour costs relative to developed world manufacturers. Therefore the South African ship/boatbuilding industry has a competitive advantage in labour intensive processes (e.g. hull construction).

The commercial ship/boat sub sector continues to experience substantial market growth - in particular growing its market share into Africa substantially. Reports show that there is a 50% year-on-year growth in the supply of crew transfer vessels and other commercial craft. This sub-sector covers high speed offshore craft, ferries, water ambulances and working vessels being supplied into African countries where road infrastructures have collapsed and navigable waterways are the most effective transport method for promoting economic growth and development. The market advantage lies in design, build and delivery of semi-customised vessels to high quality levels, including international maintenance and repair services. The South African ship/boatbuilding industry is sub-divided into seven categories. (See below).

Figure 33: The contribution of each sub-sector in the boatbuilding industry



The manufacture and repair of ships and boats in South Africa is viewed as a highly strategic industry, with an employment multiplier for ship repair of between 4 and 7. (i.e. for every direct job, between 4 and 7 indirect jobs are created). This generates employment and other positive spin-offs across numerous sub-sectors in the ship/boatbuilding industry. The repair industry is very labour-intensive, with employees making up the single largest cost in the industry, estimated at 25% of the cost of sales. With between 2,000 and 3,000 people directly employed in the sector, this translates, via the multiplier effect, into total employment of around 12,000 people.

Ship repair is an industrial rather than a transport activity; measures that might assist ship repairers to develop their capacities and create new jobs must be considered in conjunction with all the other measures intended to promote secondary industry. Research has indicated that the turnover of the ship repair industry varies considerably from year to year; but, for example, at full capacity the work value of ship repairs undertaken in Durban is estimated to be in the order of R1.5 billion.

Statistics indicate that the commercial ship/boatbuilding sector continues to maintain a positive trade balance. Exports across the sub sector grew, increasing from R110m in 2011 to the current level of R1.4bn, imports in the sector also increased from R67m in 2011 to R1.3bn in 2012.

Sector statistics

Variable	Contribution in 2012
Manufacturing employment	5 600
Trade balance	R 58 million

Based on the current capabilities and performance, the South African boatbuilding industry faces the following opportunities and constraints:

Key opportunities

- Opportunities to expand exports in non-traditional markets driven by industrial development and tourism development in emerging markets including sub-Saharan Africa and the Middle East.

- Substantial growth opportunities in the commercial boat market, particular in sub-Saharan Africa, with an emphasis on offshore speed craft, ferries, water ambulances and working boats.
- Opportunities to develop training, repair and maintenance operations in sub-Saharan Africa.
- Opportunities to increase innovation through collaboration between industry and research organisations to improve the competitiveness of the industry in terms of international standards.
- The development of sector-specific training and skills improvement programmes.

Constraints

Constraints to the development of the domestic market include:

- Lack of available berths and inadequate mooring infrastructure.
- Lack of price competitiveness, given the fact that we are so dependent on imports for a high proportion of components.
- Lack of transformation in the industry - mainly because of high production costs and the high cost of starting a business in this industry.
- Shortage of skilled labour and scarcity of highly specialised skills.
- Lack of finality on the future ports expansions programme.
- Currency volatility: because ship repair is largely US Dollar-based, the (previous) strength of the Rand, followed by its more recent sharp weakening, have caused difficulties for the local industry in meeting budgets predictably.

Key Action Programmes

1. Boatbuilding Skills Development Programme

Nature of the intervention

The skills challenge in the ship/boatbuilding industry demonstrates the need to develop a specialised skills training programme aimed at addressing skills deficits across the entire value chain nationwide in support of the growth potential of the industry.

The Boatbuilding Skills Development Programme seeks to establish a centralised, centrally funded, industry-driven training initiative that includes an apprenticeship system and an effective industry support mechanism, for the enhancement of the global competitiveness of the industry. The intervention proposes the implementation of a National Boatbuilding Training Programme to address the following concerns:

- Sectoral skills deficit;
- Lack of information on skills development and training;
- Mismatch between industry needs and the forms of training currently available;
- In-house training – which is generally informal, inconsistently applied and production-dependent;
- Deficiency of specialist trainers;
- Lack of innovation and technology development; and
- Unavailability of training beyond NQF Level 4.

Economic rationale

In South Africa, the ship/boatbuilding industry is characterised by a shortage of skilled labour, scarcity of highly specialised skills, a technical knowledge deficit at both shop-floor and middle management level, and lack of high-level composite training and project management skills. Research indicates that despite the implementation of various in-house skills training programmes (which remain largely informal, inconsistently applied, and order-book dependent), the challenge of unavailability of specialised skills needed for the growth of the sector remains urgent throughout the industry, and particularly in the smaller towns. This situation has had an ongoing negative impact on the skills base, resulting in persistent technical knowledge deficits at shop-floor level and at middle management levels – including loss of tacit marine knowledge gained through years of experience in the industry and limited opportunities for upward mobility of employees who remain unqualified.

The ship/boatbuilding industry is in the process of being designated for local procurement. The designation will result in higher local demand for world class vessels to be produced locally at competitive prices. Therefore, a pool of skilled people with innovative capacity will be needed to match the quality and quantities required for working vessels and thus enhance the competitiveness of the industry.

Outcomes

Creation of a pool of skilled workers to address the skills deficit in the core boatbuilding industry and wider value chain; consolidation of industrial placements and enhancement of innovation and technology-use in the sector; enhanced international competitiveness.

Key milestones

- 2014/15 Q1 - Q2: Development of a skills strategy with options that will inform the development of demand-led skills programme.
- 2014/15 Q3: Industry consultations on the architecture of the skills programme.
- 2014/15 Q4 - 2015/16 Q1: Development of the institutional arrangements that will govern the implementation of the skills plan.
- 2015/16 Q2: Implementation of the skills development programme.
- 2015/16 Q3 - Q4: Monitoring and evaluation; feedback translated into adjustment of the implementation process through the establishment of a Technical Working Group (TWG) on skills strategy that includes industry, **the dti** and the training institutions.

Lead department/agencies: the dti

Supporting department/agencies: NT, SETA, DHET, DOT, Industry.

2. Formation of a ship/boatbuilding/repair cluster

Nature of the intervention

To assess the feasibility of establishing a shipbuilding and repair cluster for the ship/boatbuilding industry.

Economic rationale

Since this is such a segregated (insulated) and complex industry it is important to encourage industry clustering. All the sub-sectors all experience similar constraints - e.g. infrastructure, skills development, transformation, etc. The initiative will assist industry to be more productive, internationally competitive and better positioned to gain access to financial resources to invest in tooling and upgrading of facilities.

Clustering can also encourage collaborative approaches within the industry, with related sectors sharing relevant services between them. The outcomes of these collaborations can be beneficial in growing the industry to be more competitive, principally by looking at joint development of infrastructure or equipment and joint approaches to training, as well as by identifying and inviting key external stakeholders to collaborate with the local ship/boatbuilding and repair industry.

Outcomes

Create a cluster for the ship/boatbuilding and repair industry to address the constraints the industry face as a collective and build international competitiveness.

Key milestones

- 2014/15 Q1 - Q2: Conduct research into clustering opportunities in the shipbuilding/ repair industry in locations that can offer suitable space for ship/boatbuilding and repair.
- 2014/15 Q3 – Q4: Commence consultation process with relevant stakeholders on the feasibility of establishing a ship repair cluster. Facilitate workshops to inform ship/boatbuilding industry about the cluster idea and identify potential cluster participation.
- 2015/16 Q1 - Q4: Finalise the modalities of establishing the shipbuilding and repair cluster in collaboration with industry and stakeholders.

Lead department/agencies: the dti

Supporting department/agencies: Industry, MIASA, SAMSA, eThekweni Maritime Cluster, SA Association of Shipbuilders and Repairs, TNPA.

3. Industry Standards and Accreditation

Nature of the intervention

Develop standards for quality, safety and environmental compliance in order to enable all boatbuilding firms to build to international standards, increase competitiveness and access to international markets. The strategy will be phased in over a period of 5 years and support programmes will be established to help offset the often prohibitive costs associated with changing manufacturing processes and tooling to build to internationally competitive standards. The industry accreditation programme will be reviewed and a study undertaken to explore its applicability to the wider boating sector.

Economic rationale

Increasing the quality and standards of products increases the manufacturer’s ability to sell products competitively into both local and international markets and, consequently, grow aggregate sector exports. The accreditation process will highlight areas of concern within firms and design interventions to address identified shortcomings that can be implemented at firm level. Creating a baseline production standard will increase consumer confidence and spending.

Outcomes

Local manufacturers will be able to more easily move into the export arena and will also be able to compete locally against imported vessels. Increasing the quality of the vessels built will ensure safety for the boating public in South Africa and assist in marketing efforts to promote the activity of boating to a larger audience. The accreditation system will improve the level of ethics and business management across the industry, leading to both increased accountability and reputation-building.

Key milestones

- 2014/15 Q1-Q2: **the dti** and industry to review the current Accreditation system and look at necessary changes to structure and implementation.
- 2014/15 Q3 - 2015/2016 Q3: **the dti** in conjunction with SABS to develop standards of phased approach to the implementation of international standards across the industry.
- 2016/2017: Phased implementation of standards and review of the accreditation programme.

Lead department/agencies: the dti, SABS, industry stakeholders.

Nuclear Energy

The Department of Energy (DoE) promulgated the Policy Adjusted Integrated Resource Plan for Electricity (IRP) 2010- 2030 in 2011 which provided for 9.6 GW of additional generation capacity from nuclear energy, as part of a balanced energy mix that will ensure supply security and mitigation of CO₂ emissions. The policy adjusted IRP 2010 indicated that the first unit is planned to start commercial operation in 2023.

Following up from this, in December 2013 the DoE released the updated IRP for public comment. The updated IRP indicates that while the policy adjusted IRP 2010 remains the official government plan for new generation capacity (until replaced by a full iteration) the update is intended to provide interim insight into critical issues for consideration before key decisions are taken. The document engages with two main areas of change: ongoing shifts in the underlying relationship between economic growth and optimal energy requirements, and - following from this - adjusted projections of future electricity demand. It projects lower than previously envisaged electricity demand up to 2030, with the consequence that at least 6,600 MW less capacity is likely to be required over the period. This projection takes into account the aspirational economic growth rate suggested by the National Development Plan (an average of 5.4% per annum until 2030) as essential for effective reduction of unemployment and poverty alleviation in South Africa.

The update points out many of the variables that are in play, inevitably creating a range of uncertainties. In this context, it suggests that a preferable alternative to a fixed capacity plan (as espoused in the IRP 2010) would be a more flexible approach taking into account different possible outcomes based on changing assumptions and scenarios. It also explores some of the likely determinants of key investment decisions under different conditions.

Of particular importance to the nuclear sector is that, in line with the energy demand scenarios it considers, no new nuclear base-load capacity may be required until after 2025 - as opposed to the 2023 date provided in the IRP 2010. The effect of this, from a planning point of view, is that over the shorter term (the next two to three years) the decision on nuclear upgrade can be delayed.

Key opportunities

This being said – and with an eye to the longer term - the nuclear build programme envisaged in the IRP still presents substantial opportunities for the development of a local nuclear manufacturing industry. South Africa already has a significant level of nuclear expertise that can be leveraged and serve as a catalyst in meeting the country's desired localisation levels, in tandem with the evolution of the procurement process.

Over the past three years, the Nuclear Energy Sub-Working Group (NESWG) has already completed (at high-level): (i) A Nuclear Localisation Strategy and Implementation plan; (ii) a Nuclear Skills Development Strategy; and (iii) the architect engineering organisation's recommendations in anticipation of the announcement of the nuclear procurement process.

Constraints

- Meeting nuclear quality accreditation and regulatory standards;
- Improving technology and skills transfer from the main nuclear vendors and the many global component suppliers;
- Developing an appropriate combination of global partnerships and access to global supply chains, funding and skills development; and
- Careful phasing-in of investments into the programme and into appropriate government-led programmes to ensure that local procurement is boosted and localisation enforced.

Key action programme

1. Localisation of Nuclear Components and Services

Nature of the intervention

Increased interaction with industry to determine optimum alignment of government's localisation aspirations and industry potential.

Economic rationale

Localisation is intended to ensure:

- Increased industrial capacity and potential contribution to GDP;
- Promotion of technology and skills- transfer from the main nuclear vendors and suppliers of nuclear-grade components to the South African industry;
- Promotion of joint ventures, consortia and partnerships;
- Enhancement of exports into the global nuclear supply chain;
- Creation of high-level direct jobs and associated intellectual property.

Outcomes

The development of industrial support policy and measures, which will subsequently lead to the development of localisation strategies and plans to support local industry development.

Key milestones

Given the uncertainties with regard to possible kick-off dates for the nuclear build programme, the milestones will be only be finalised once more clarity emerges from the ongoing debates around the updated IRP.

Lead department: DoE, the dti

Supporting departments/agencies: SANAS, DMR, DST, EDD, DPE, NT, NNR, NECSA, Eskom.

Advanced Manufacturing

Advanced manufacturing has been recognised globally as a potentially very important avenue towards reversing de-industrialisation and creating decent, productive, well-paying jobs. Combinations of new and old knowledge and technologies (components of advanced manufacturing) are increasingly being recognised as advanced and specialised factors of production to complement traditional factors (labour, materials, capital goods, energy, etc.) in the manufacturing sector. Evidence of this can be found in international think tank reports and in the global government manufacturing policy discourse which recognises talent-driven innovation and technological advancement as key drivers of global manufacturing competitiveness.

In essence, advanced manufacturing is an approach that:

- depends on the use and integration of information, knowledge, state-of-the-art equipment, precision tooling, automation, computation, software, sensing and networking;
- makes use of cutting-edge materials and new industrial platform technologies that have multiple commercial applications (e.g. composite materials) while also delivering strong spill-over effects; dynamically exploits emerging physical and biological scientific capabilities (e.g. nanotechnology, biotechnology, chemistry and biology) and incorporates green manufacturing philosophies;
- mobilises high-level design methods and creates highly developed multi-disciplinary skills teams and networks.

The defining characteristics of advanced manufacturing may be summarised as follows:

- Product innovation: making new products emerging out of new advanced technologies (including processing technologies).
- Process innovation: new methods of making existing products (goods or services).
- Organisational or business model innovation: combining new or old knowledge and technologies with traditional factors of production and applying them in unique configurations to non-traditional fields or disciplines.

It is well established that firms that adopt advanced manufacturing practices exhibit stronger productivity growth, higher real wage increases and strong multiplier effects, giving them significant competitive advantage over their peers. Importantly, advanced manufacturing also creates skills and technologies that spill over into adjacent industries. It is therefore imperative for South Africa to embrace and adopt advanced manufacturing approaches alongside conventional manufacturing methods for growth, employment and international competitiveness.

Advanced manufacturing should not be seen as a sub-sector of the economy, but rather as a cross cutting approach to be adopted by incumbent and emerging manufacturers, irrespective of firm size or sub-sector. Indeed, advanced manufacturing spans the full spectrum from large aerospace companies all the way down to small companies created through spin-outs out of university research. It can also play an important role in improving the competitiveness of traditional and/or distressed sectors such as the clothing and textiles, footwear and foundry industries.

In this regard, a number of companies in the milling and animal/pet food industry, including major players SASKO and Feedpro, have been assisted with product development through extrusion and have been able to order their customer-specified extruders from North West University's Advanced Manufacturing Centre. These innovative interventions have already created about 70 new jobs and introduced a number of new products that were not previously available in the market.

Key opportunities

South Africa's advanced-materials industry has pockets of research excellence situated in universities and science centres; and also in certain manufacturing industry clusters that are internationally competitive. The next big move – from research-derived knowledge to commercialisation of advanced materials is critically important, particularly in the areas of nano-materials, high-performance materials based on advanced bio-composites, composites, intelligent textiles used in the medical, building and construction industries and continuous fibre-reinforced thermoform composites.

Constraints

- Insufficient numbers of engineers working on already-developed technologies.
- A small domestic market for the utilisation of advanced materials.
- Slow commercialisation of innovation.
- Nearly all significant R&D and commercialisation work is undertaken by state research institutions and universities, with few industry players participating. This means that they do not benefit from the variety of funding instruments that currently exist – which seriously retards opportunities for commercialisation of innovation and smart industrial development in general.
- Commercialisation entails a range of risks and most industry participants still tend to be highly risk-averse, preferring to work on already commercialised technologies. This is a clear example of market failure, calling for strong government intervention.

Key Action Programmes

1. Commercialisation of Natural Fibre Reinforced Composites

Nature of the intervention

The establishment of pilot-scale manufacturing facilities and specialised testing equipment for proof of concept of new products developed from natural fibre based composite materials, with applications in the aerospace, automotive, boatbuilding, renewable energy and building and construction industries.

Economic rationale

The increased interest in natural fibre reinforced composites (bio-composites) is driven by economic and technical considerations as well as heightened environmental awareness. The advantages of bio-composites include cost and weight savings, a reduced environmental footprint, reduced energy consumption in production, and health and safety benefits. There is also potential for new enterprise development and job creation, including in rural communities. Fibre crops may provide up to three times the value that farmers can extract from traditional textile and handcraft applications.

Outcomes

Pilot and up-scale agricultural fibre production and processing, commercialisation and implementation of various composite manufacturing technologies (including resin infusion, compression moulding, pultrusion, extrusion and injection moulding); and facilitate the establishment of natural fibre value chains.

Progress and update

The DST-funded Bio-composites Centre of Competence (BCC) hosted by the CSIR, is supporting interdepartmental coordination of R&D-led industrial development.

An independent panel review of the value proposition of the BCC was concluded.

Crop trials have been conducted by the Agricultural Research Council (ARC), positioning the local cultivation of kenaf for up-scaling.

An audit of public sector research, development and innovation capabilities has been conducted and has identified the country's main opportunities and gaps in relation to bio-composites and, more broadly, composites in general.

Prototype composite parts for aircraft, automotive and building applications are being completed.

Key milestones

- | | |
|------------------|---|
| 2014/15: | Implement the Management Response to the independent panel review of the BCC's value proposition. |
| 2014/15: | Undertake several techno-economic studies to assess the viability of new bio-composite products. |
| 2014/15: | Upscale agricultural processing of natural fibres suitable for bio-composite products. |
| 2014/15: | Development of composite manufacturing and testing capability to support industry adoption of natural fibres into composite applications. |
| 2014/15-2015/16: | Prototyping, trial manufacture and limited manufacturing in partnership with industry. |

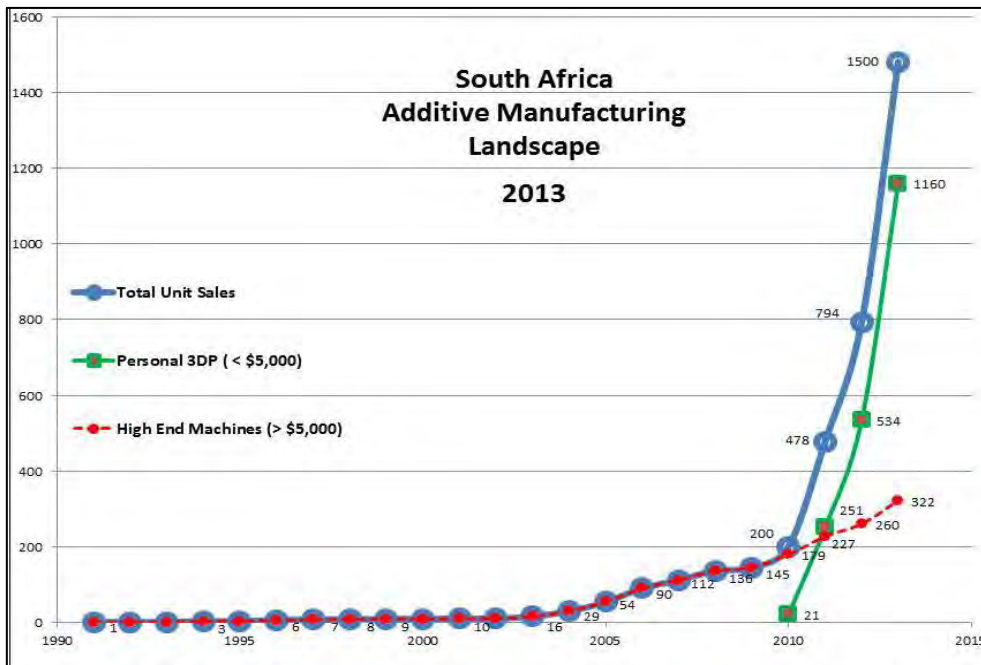
Lead departments/agencies: DST, the dti, DAFF and CSIR

Supporting departments/agencies: EDD, DRDLR, ARC, TIA, NRF.

Additive Manufacturing

Additive Manufacturing (or 3D Printing as it is more commonly known) is the process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to traditional manufacturing methods such as machining or casting. It is a process to manufacture parts rapidly by taking a 3D model of a part, “slicing” that model into thin layers and then building the part layer-by-layer in a machine, choosing from a variety of materials. Additive Manufacturing allows a user to “print” a physical representation of any object. This advanced manufacturing method finds application in a number of industries including aerospace and defence, clothing, footwear and textiles, medical industries, and automotive. It is also used to create bespoke jewellery, sculptures, movie props (scale models) and other products in the creative and fine arts.

Figure 33: Additive manufacturing in South Africa



Source: Courtesy of Prof J de Beer (VUT)

The DST is working with **the dti** to develop an Additive Manufacturing Technology Roadmap, which will help government identify, define and prioritise future product and market opportunities.

The implementation of the Additive Manufacturing Technology Roadmap will improve existing firm and industry competitiveness, leading to the creation of new opportunities through incremental and disruptive technological innovation.

Key opportunities

Opportunities have been identified in number of areas including the aerospace industry - where small engine components, large structural components, rocket nozzles and satellite components are already manufactured - as well as in the tooling, medical devices and footwear industries.

Economic Rationale

Advantages of Additive Manufacturing over conventional manufacturing processes include short lead times (in the order of days or even hours), no tooling, high complexity, freedom of design (almost any shape can be made), moving parts (integrated joints and couplings), customisation and the use of various unconventional combinations of materials (including nylon, polycarbonate and even metals such as titanium, aluminium, and stainless steel).

South Africa’s competency in Additive Manufacturing has built up steadily over the past two decades and there are pockets of world-class excellence emerging at universities and local companies that can be leveraged by government to improve the competitiveness of local industries.

There are approximately 1,600 3D printers in South Africa and estimates for 2013 place total Additive Manufacturing systems sales at R86 million in South Africa.

Impact on competitiveness
 “Additive Manufacturing is the next step in manufacturing and represents a new manufacturing paradigm. As a disruptive technology it has the potential to radically change manufacturing as we know it”

The global 3D printing market (consisting of all 3D printing products and services) grew at a cumulative average growth rate of 28.6% to US\$2.2 billion in 2012. The market is expected to grow to US\$4 billion by 2015, about US\$6 billion by 2017 and to around US\$11 billion by 2021. South Africa needs to ensure that it taps into these growth opportunities.

Constraints

- Insufficiently widespread awareness of Additive Manufacturing across manufacturing industry as a whole.
- Perceptions that additive manufacturing is useful only for product design and prototyping; lack of awareness that Additive Manufacturing has matured to the point where functional parts can be made.
- SMEs have limited access to Additive Manufacturing; 3D printing bureaus are not widespread and public-funded centres have limited funds for subsidised access by SMEs to their equipment.
- No central location or portal where potential users can go to get information and advice on Additive Manufacturing (systems, machines, raw materials, design software, 3D scanning, printing bureaus, etc.).
- High raw material costs.
- High cost of industrial-level Additive Manufacturing systems compared with traditional manufacturing methods.
- Lack of Integration of AM systems into production systems.
- Insufficient availability of appropriately skilled operators and technicians.

Key milestones

- 2014/15 Q1: Finalisation of the Additive Manufacturing Technology Roadmap.
- 2014/15 Q4: Launch of an Integrated Additive Manufacturing Industry Support Pilot Project

Lead Departments and agencies: DST, the dti, CSIR, TIA, Industry, academia.

Aerospace & Defence

The aerospace and defence industry is a cluster of private and public sector organisations, including commercial companies and business units, which are directly or indirectly involved in the provision of goods and services to security forces and civil society. The 2011 statistical survey of the South African Defence-Related Industry (SADRI) indicated that it has an annual turnover of about R12.9 billion (compared to R10 billion when the last official survey was undertaken in 2008/2009). Its exports increased from 50% to 60%.

The sector invests roughly R1.3 billion in technology and R&D development annually, and has consistently provided employment for about 15,000 highly skilled engineers, technicians and artisans – many of them contributing to key national projects in space, transportation (including rail safety), mining, construction, power generation and telecommunications. Conservatively, the sector is estimated to have multipliers of 1:4 and thus supports at least 60,000 further jobs in the economy. The 2012 financial statistics of the National Conventional Arms Control Committee (NCACC) indicate that Contracting Permits to 80 countries (amounting to R171 bn) were issued; Export Permits to 89 countries (amounting to R10.6 bn) and Import Permits to 67 countries (amounting to R3.2 bn).

The above statistics indicate that the technological intensity of the aerospace and defence sector acts as a driver for new technologies and technical skills, which are diffused to other sectors in the economy, thereby intensifying industrialisation and contributing to evolution towards a knowledge economy.

Past progress and updates

The Aerospace Sector Development Plan made a number of key recommendations for the future development and growth of the industry. The establishment of the Joint Aerospace Steering Committee (JASC) was the main recommendation, allowing for interventions and coordination on clustering, skills development, national programmes and positioning of the aerospace industry. With its membership drawn from government departments, industry representative bodies, R&D and development finance institutions, the JASC was formally launched in October 2012. It has been able to coordinate and integrate on a number of issues around policy, grant funding and industry positioning.

A flagship project in the domain of unmanned aircraft systems has been launched, in which government, industry and R&D organisations are focusing on expediting technology and market development in this area of consistent high growth and technology development.

The JASC is deemed essential for coordinated positioning of the capabilities, products and services of the local aerospace and defence sector as reputable partners in the global industry.

Key opportunities

The present main opportunities are in:

- Unlocking niche export markets and partnerships.
- Providing tailor-made solutions to selected export markets.
- Leveraging government and State Owned Companies' acquisitions and maintenance of defence-related products to expand local capability and boost local manufacturing, both by participating in offset programmes and building further on global supply value chains.
- Development of niche capabilities and technology programmes such as additive manufacturing and titanium metal powder manufacturing and processing.

Key constraints

The primary constraint is the difficulty of securing a sufficient pipeline of skilled personnel to absorb current knowledge and experience.

Other notable constraints in the aerospace and defence sector are as follows:

- Shortage of large development programmes to build the technology and skills pipeline and accelerate knowledge transfer between the knowledge generating entities (science councils, universities) and manufacturing industry (both local and global). This is also related to recent reductions in R&D spend, including technology demonstrators, and more general human capital development and retention.
- Limited participation of locally-owned companies in key strategic technological areas.
- A limited aerospace and defence industry support programme, including export support, compliance with international standards and skills development.

- Insufficient diversification into export markets based on product diversification (both civil and commercial).

Key Action Programmes

1. Development of a Titanium Production Capability Roadmap with the focus on downstream manufacturing technologies and products

Nature of the intervention

Acknowledging that the DST has established a Titanium Centre of Competence (TiCoC) working on a long term program of titanium powder beneficiation - as well as the fact that industry is also already using other traditional and new technologies - requires that **the dti** develops and prepares the local manufacturing industry to effectively exploit the current opportunities as well as future potential of Titanium production in South Africa. Through its Integrated Aerospace Programme (IDAP), **the dti** has been instrumental in preparing and supporting the industry, human capital development and academia through various industrialisation projects.

Further interventions are necessary to:

- Identify the possible work streams relevant to the commercialisation of manufactured titanium products and the processes applicable in the aerospace and defence industry, whilst supporting the alignment of the industry with emergent commercialisation opportunities.
- Create an opportunity for the aerospace and defence industry to adopt relevant new materials processing technologies such as investment casting, laser shock peening, laser cladding, laser welding, laser hardening, friction stir welding and advanced machining.

The key emphasis is on ensuring that the industry adopts these advanced manufacturing technologies in the long run.

Economic rationale

- To position South Africa as a lead supply chain participant within the global titanium manufacturing industry, concentrating on aerospace and defence products and new technologies.

- To increase the spill-over effects of these new technologies into related activities and adjacent industries such as medical, energy, automotive, chemical processing, marine, oil and gas.

Outcomes

- Evaluation of the industry's ability to adopt these new technologies and use them in repair work and maintenance for the entire defence industry, including marine systems, thus ensuring its readiness to meet global supply chain requirements.
- Strengthened coordination between **the dti**, DST, research and development institutions (Science Councils and universities) and the Industry, both in support of titanium manufacturing and of South Africa's evolution towards a knowledge economy.
- In the long term, the aim is to locally produce niche titanium products and components for the global aerospace and defence industry, positioning South Africa as an established and reliable supplier base.

Key milestones

- 2014/15 Q2: Approval of the Industrialisation Roadmap.
- 2014/15 Q3: Development of a Titanium Production Capability Roadmap - other than using additive manufacturing - for the local aerospace and defence industry.
- 2014/15 Q4: Introduction of the Titanium Production Capability Roadmap to the relevant stakeholders, including industry.

Lead and supporting departments / agencies: the dti, IDAP, DST, CSIR

2. Development and evaluation of the Flagship Projects in mobilising coordinated resource support for the JASC programme of work

Nature of the intervention

The purpose of the flagship programmes is to facilitate technology and capability development through joint, large programmes. This approach is followed by a number of countries where new technology development is required, in conjunction with new capabilities and an ultimate increase in the competitiveness of the industry. The JASC initiated a flagship project in unmanned aircraft, with an associated development in navigation and control for unmanned aircraft.

The current flagship project is a multi-year project, requiring both increased interdepartmental participation in the selection and funding of flagships and increased project expenditure to drive renewal of the technological capability of the aerospace industry and deliver maximum benefits spin-off benefits across the industry.

Outcomes

- Accelerated technology development.
- Increased innovation networks, attributed to the broad participation in flagship projects.
- More effective leveraging of government funding.
- Broadening of platforms for commercial and civil applications.

Key Milestones

- 2014/2015 Q1: Progress Review of the first flagship project, with the aim of expanding both technology networks and industry participation.
- 2014/2015 Q3: Selection of a second flagship, supported by other government departments.

3. Broadening industry participation through a supplier development scheme offered by IDAP

Nature of the intervention

An incentive scheme aimed at ensuring the inclusion and integration of a representative supplier base which would otherwise not have had the opportunity to participate in the industry.

Economic rationale

In order for the industry to transform and broaden its supplier base, significant investment is required by the integrators to ensure that lower-tier suppliers are certified to meet the quality standards of the OEMs. This level of investment represents a barrier to entry for SMMEs and an obstacle to growth and production at the higher-tier suppliers to Airbus and Boeing.

Inclusion in the international aerospace industry value chain requires that lower-tier companies comply with the same stringent certification and quality standards as the South African integrators, which poses a considerable cost challenge to both the integrator and the SMME. To encourage local integrators to invest in broadening their supplier base, this incentive scheme proposes to make funding available based on the increase in annual turnover of the qualifying SMME – and increase which should be as a direct result of contracts placed by the integrator for aerospace component manufacture.

Participating SMMEs will be evaluated based on, but not limited to, their:

- BB-BEE status;
- Technological, organisational and business capabilities;
- Potential for sustainability and growth;
- Acceptance/identification by the integrators;

Outcomes

- A broader and more inclusive supplier base;
- Conformance of SMMEs with international standards;
- Inclusion of SMMEs in the economic activities of the aerospace industry.

Key Milestones

- 2014/2015 Q1: Scope and design the range and quantum of the support mechanism based on a consultative identification of qualifying SMMEs by **the dti**, industry associations and system integrators.
- 2014/2015 Q4: Evaluate the take-up and impact of the mechanism with a view to further development and fine-tuning and to ensure effective support and broadening of the BB-BEE supplier base in the aerospace sector.

Lead and supporting departments/agencies: the dti, DST, TLIU, IDAP

4. Advocacy and promotion of aerospace and defence products and capabilities in global markets

Nature of the intervention

Support the establishment of the following:

- An integrated web portal for the Aerospace and Defence Industry.
- A permanent Exhibition Centre at an appropriate location.
- A vibrant Export Council which will promote and champion the interest of local manufacturers in international markets and ensure an increase in aerospace and defence exports.

The aim of these support mechanisms is to retain and develop sovereign aerospace and defence capabilities whilst marketing these capabilities to the international defence community.

Economic rationale

The Aerospace and Defence industry contributes significantly to industrial growth, foreign revenue, local technical capability and employment generation, national security and improvement in national competitiveness. Its exports are gradually increasing and are expected to continue increasing in the future.

It is of great importance to support such an increase of exports by establishing an infrastructure that will deal solely with export promotion - In this instance, an Export Council and a Permanent Exhibition centre.

The Export Council is a body that will mainly assist members to become preferred exporters and gain and maintain export share. This will be achieved through effective promotional initiatives in international markets and underpinned by a Permanent Exhibition Centre at CAV which will showcase aerospace and defence products to foreign delegations, host product launches, and hold industry workshops, conferences and seminars.

Outcomes

- Establishment of an Export Council.
- Formation of the Permanent Exhibition Centre.

Key milestones

2014/15 Q1: Establishment of an Export Council.

2015/16 Q2: Feasibility Study for the formation of the Permanent Exhibition Centre.

Lead and supporting departments/agencies: the dti, CAV

5. Consolidation of Aerospace Industry Support Initiative (AISI) and National Aerospace Centre (NAC) to form an Integrated dti Aerospace Programme (IDAP)

Nature of the intervention

The objective is to integrate the functions and physical locations of AISI and NAC, in order to strengthen their contribution to the development of the aerospace and defence sector as defined by **dti** policy and guidelines on Centres of Excellence.

Economic Rationale

The South African aerospace and defence industry has followed a development path primarily aimed at developing indigenous products and technologies. This has resulted in the consolidation of a wide range of technological capabilities and the associated infrastructure required for complete vertical product integration. Competitive capabilities increase chances of entry into global markets and supply chains.

IDAP's major role in this regard is to provide an enabling platform, which includes:

- Supporting the implementation of the Aerospace Sector Development Strategy.
- Providing a range of specialist services that strengthen aerospace manufacturing activities - including skills development - and build up the global supply value chains already developed.
- Strengthening industry competitiveness and broadening economic participation to meet current and future market requirements by identifying and developing new capabilities.
- Strengthening the co-ordination of technological and skills development across the aerospace and defence industry as a whole.

Outcome

Amalgamated and deeper penetration of the industry support programme.

Key milestones

2014/15 Q4: Establishment of the IDAP in line with **the dti** strategic intent

Lead and supporting departments/agencies: the dti, CSIR, AISI, IDAP and NAC.

6. Building a competitive industry through advanced manufacturing, aerospace and defence cluster development

Nature of the intervention

- Integration of sub-tier suppliers of the local industry into the global supply chain by bringing aerospace and defence industry suppliers into close proximity with one another and co-locate them next to major system integrators and anchor partners.
- Promotion of local innovation, new business and exports in the aerospace and defence sector.

Economic Rationale

Aerospace and defence has continued to grow in revenue primarily in the export markets. In order to maintain and expand this export market, there is need to strengthen the potential for further growth by establishing a supplier development park.

The cluster should provide an aero-mechanical, advanced manufacturing, maintenance, repair and overhaul capability infrastructure for anchor tenants, as well as a range of large to medium enterprises attracted by the opportunity to do business related to the growth of the aerospace industry.

It is expected that the park will benefit local OEM suppliers of components, parts and tools, as well as hosting related service providers to develop further synergies and balanced applications. Other relevant industrial sectors likely to directly or indirectly benefit from the establishment of the cluster include tooling and machining, electro-technical, metals, chemicals and the like.

Outcome

The completion of the bulk utility, infrastructure and services and the finalisation of the uptake agreements will open the way for the construction of buildings by prospective tenants and industry investors.

Key Milestones

2014/2015 Q3: Conclusion of uptake agreements with prospective tenants and industry investors.

2014/2015 Q4: Completion of the prioritised core CAV landside bulk utility services and infrastructure, including water and sanitation, roads and storm-water drainage, electricity and land management.

Lead and supporting departments / agencies: the dti, and CAV

The South African software industry

The SA software industry is broad and incorporates a number of areas in which South Africa has niche, globally competitive capabilities. These are mainly centred on customised software-hardware development.

In order to help create a basis for software skills and capability development the ICT R&D and Innovation Roadmap was developed and approved by Cabinet in 2012. The Roadmap identifies several vertical ICT market opportunities which can be complemented by the software development industry programme in the areas of big data and analytics and industry applications (including advanced manufacturing).

Advanced software development capability will be an important prerequisite to support these initiatives. In addition, the designation of South Africa as host for the majority part of the Square Kilometre Array has increased the importance of areas such as high speed data networks to Europe and large data storage and handling.

On the other hand South Africa's commercial software development industry is relatively young and fragile. Its future viability has not been helped by decisions taken by sectors such as banking, insurance and telecommunications to outsource their software development projects and services to countries like India and China. This has the potential to destroy thousands of existing jobs and to negatively impact on SA's future ability to develop software locally.

Key opportunities

Upgrading South Africa's ability to produce computer software is an important strategic priority. If software developers in South Africa are able to successfully compete globally, there will be both significant potential to service the local market and to grow exports of software products and services to destinations such as Europe, North America, Asia, etc.

While price and other factors may be important, the primary reason for a customer to select a specific supplier is the ability of that supplier to deliver, on-time and within budget, a high quality software product that meets all the functional requirements. Competition in the global software development industry is largely focused on these three issues. If these are addressed, this would lead to creation of jobs and meeting local demand for software products.

Key constraints

- The high cost of funding for certification and the time taken to complete the certification process.
- Limited awareness in the domestic market of the importance of certification and low levels of technical know-how on certification.
- Limited availability of information on software development companies and their capabilities in both local and international markets.
- Many software developers are not export-ready.
- Scepticism in the industry towards the effectiveness of the role that government can play in supporting and developing the industry.

IPAP intends to contribute to the sector’s recovery and growth through the recently launched Software Development Process Improvement Programme. This is designed to improve the quality of South African software through process improvement training using methods such as the Capability Maturity Model Integration (CMMI) and Team Software Process (TSP); and by better aligning product development with domestic and global requirements.

A Memorandum of Agreement has been signed with the appointed implementing agency and funds have been secured through the Employment Creation Fund. Agreement has been reached on the selection criteria for participating entities within regional IT clusters and an Operations Manual and curriculum have been developed for use in the initial pilot project.

Key Action Programme

1. Software Development Process Improvement Programme

Nature of intervention

To improve the quality of South African software through process improvement training using Capability Maturity Model Integration (CMMI) and Team Software Process (TSP) methods and through alignment of product development with domestic and global requirements. This will include widening participation of unemployed graduates as part of a skills development and capacity building programme for better performance.

Economic rationale

Raise awareness of the importance of quality systems certification, improve the quality of South African software companies and support the take-up of internationally recognised quality system certification for software developers in South Africa.

Outcomes

This initiative will enhance the competitiveness of local SA software companies and create a significant breakthrough in market access for SA software developers. It will also result in large-scale creation of high-skilled employment opportunities.

Milestones

- 2014/2015 Q1: Agreement on alignment of the SA Electro-technical Export Council mandate, EMIA and the Joint Action Group for the Software Industry to support export-ready companies. Performance Review of the first four software development entities; refinements made to Operations Manual and training curriculum.
- 2014/2015 Q2: Two additional software development entities identified and participating in the process improvement programme.
- 2014/2015 Q3: Establishment of an Advisory Council, comprised of government and private sector representatives, to oversee the roll-out.
- 2015/2016 Q1: Further review of performance of all software development entities; refinements to Operations Manual & training curriculum; Add four more software development entities as part of the roll-out.

Lead Departments: the dti and JCSE

Public Residential Electrification Programme for low cost housing

Sector profile

The Integrated National Electrification programme (INEP) is presently implemented by the Department of Energy in partnership with Eskom and the South African Local Government Association (SALGA).

In the financial year 2012/13 an amount of R2.9 billion was allocated for electrification; and, as of January 2012, Eskom and the municipalities had completed 220,000 connections. At the same point in time, however, some 3.4 million households nationally remained without electricity, while INEP in the rural areas had a 75% backlog. The Programme in urban areas accounted for only a fraction of the backlog - mainly in the 177 municipalities licensed for distribution – with informal settlements accounting for the remaining 25% backlog.

The Eskom Localisation Plan has three priority focus areas, with electrification located under its Projects and New Build Programme. The most recent estimate suggests that an additional 1.6m households will be connected to the grid over the next five years, opening up a strong space for the designation of residential electricity metering, including smart pre- and post-payment meters.

Key opportunities

The present main opportunities are in:

- Support of local manufacturing of electrification components or products, (such as circuit breakers, surge arrestors, switch gears, earthing, connections, mv motors etc.) by leveraging on government spending associated with the DoE's Electrification Master Plan - which intends electrifying 97% of households by 2025 – in order to develop sustainable sector productive capabilities.

Key Action Programme

1. Localisation of electrification components through designation as per amended Preferential Procurement Policy Framework Act (PPPFA)

Nature of the intervention

The localisation of electrification components comes close to meeting the procurement requirements of ESKOM and municipalities as it includes a number of major components that are an integral part of the electrification programme and gives practical effect to the designation of these components for use in the electrification or low voltage reticulation system. This will lead to the creation of a sustainable demand market for local manufacture of electrification components/products.

Economic rationale

- With the spending envisaged by government over the upcoming 10-year period, the creation of a sustainable components and product manufacturing industry is a realistic prospect.

Outcomes

- Identification and stimulation of local content for the entire or parts electrification or reticulation low voltage system;
- Strengthening of the local electro technical manufacturing industry

Key milestones

2014/15 Q2: Comprehensive list of identified products/components intended for use in the government Housing Electrification Programme.

2014/15 Q4: Designation of products for the electrification system as identified above.

Lead and supporting departments / agencies: the dti, DOE, EDD, PICC, ESKOM, SALGA, AME.

Electronics industry support

Leveraging on aggregate demand for electro-technical manufacturing

Sector profile

South Africa has world-class engineering facilities, an internationally accepted system of standards and testing, and a base of capacity and capabilities including skills that can be optimised in the electronics industry. The Electronic sector (excluding software) contributes in the region of 12.5% to South African GDP.

Supported by **the dti** and IDC, private investors have built capacity and capability to produce electronic products. This has been in the form of both electronics and contract manufacturing facilities that produce products such as set-top boxes (already designated for local procurement), electrical and telecoms cables (designated), televisions (rebate system), residential electricity meters (designated), electromagnetic systems, personal computers and laptop assembly.

Domestic manufacturers have demonstrated capability to support government initiatives such as digital broadcasting migration, broadband roll-out, e-learning platforms and the state-led electrification programme. It is important to leverage these programmes for the benefit of the local industry as they raise aggregate demand for various types of products with mostly similar production processes. Local delivery of these products will contribute to job creation and general economic growth and development.

Key Opportunities

The key opportunities identified for this industry are as follows:

- To leverage public procurement in support of localisation;
- To develop local skills and technology; and
- To attract foreign direct investment into the industry.
- Promoting exports and participation of the industry in large continental strategic projects.

Key Constraints

- High volumes of imported devices and components;
- High cost of technology and infrastructure investments (e.g. PC board populating machines);

- Lack of a developed electronics manufacturing support strategy;
- Inability to consider tariffs for computer-related products (WTO agreement);
- Poor regulatory environment, with influx of illegal imports;
- Poor compliance with standards and industry-compulsory specifications.

Key Action Programme

1. To develop an action plan to support broadband roll-out

Nature of the intervention

The objective of this work will be to consider/identify industrial policy interventions that can support and stimulate electronics manufacturing and assembly arising from the broad band roll-out programme. Building on the designation of STBs, Cables, and residential electrical meters, this work will seek to further assess existing standards, compulsory specifications, incentives and industrial financing for products that are required to support domestic broadband roll-out and other public sector initiatives.

Economic Rational of the Intervention

To develop policy interventions in the industry that can revitalise and scale up the local electronics industry as a whole, leveraging on the potential of both broadband and e-learning platforms to raise aggregate demand.

Outcomes

- Strengthened capacity and capabilities in electronics manufacturing.
- Improved competitiveness of local industry.
- Increased employment.

Key Milestones

2014/2015 Q2: Develop an Action Plan to support broadband roll-out, inclusive of tariff policy, standards, industrial incentives and export promotion.

2014/2015 Q4: Develop an approach that supports both electronics and contract manufacturing.

Lead and Supporting Departments/Agencies: the dti, IDC, DoC, EDD, PICC, ITAC, SABS and SARS.

White goods

Sector Profile

The domestic White Goods Industry is segmented between large and small appliances. The large appliance manufacturers account for 80% of domestic market share. Until recently, the major manufacturers were Defy Appliances and Whirlpool; but, as noted below, they have recently been joined by three major new entrants.

Domestic manufacturing has traditionally focussed on refrigeration and cooking appliances, which represent 63% of sales. The industry value chain is made up of three tiers of firms, with manufacturers of large and small appliances at the top. The value chain is completed by suppliers of niche components, standardised items, fabricated parts and raw materials.

Currently, employment is estimated to be at about 3,000 employees, mainly split between the two major manufacturers. Overall, there has been steady growth in the white goods sector, driven predominantly by middle-income households and the public electrification programme for low-cost households. It is predicted that potential future growth lies with low-income household purchases of stoves, microwaves and hotplates to satisfy demand at the lower end of the product range.

Exports currently account for about 5% of goods produced by South African companies. Some industry players supply large retailers, which have international operations throughout Africa. As a result, products are often shipped directly to retail outlets in these areas. Foreign direct investment in the form of mergers bodes well for the development of the South African white goods industry.

Market Development

There has been considerable market development within the white goods sector that could aid government in reaching its objectives of increased employment, particularly within the manufacturing space. With new entrants LG Electronics and HiSense already having established a presence – and with Samsung on the point of setting up a local manufacturing facility, it is clear that the global players are seeing South Africa as an attractive market proposition. This creates an opportunity for government to assist with the facilitation of exports into other markets, particularly since there is an appetite on the part of these companies to aggressively grow their exports into the African regional market.

Key Opportunities

Increasing exports - particularly into the SADC region and other regional markets - presents a clear opportunity to grow the local white goods manufacturing sector, overcoming the constraints of a relatively small domestic market. This will require:

- Manufacturing lower-end products for Africa - where electricity supply and transport remain serious challenges - e.g. production of dual (gas and electricity) appliances;
- To position S.A as a viable platform for expanded multinational exports into Africa, taking advantage of increasing African middle class demand for higher-end products.
- To review duties on components and products and implement a rebate scheme for manufacturers and their local suppliers.

Key Constraints

Constraints affecting the competitiveness and, therefore, the growth of the industry include:

- High volume of imports;
- Input costs, specifically import parity pricing of steel and aluminium;
- Small size of the local market; and
- Cost of capital to finance technology and capital upgrade.

Key Action Programmes

1. Development of a White Goods Export Strategy

Nature of Intervention:

The development of a well-researched and structured White Goods Export Strategy to enlarge South Africa's footprint in both international and local/regional markets; in particular leveraging SA's competitive advantage in terms of proximity to Southern Africa and logistical and transport capabilities. This export push will be supported by various trade concessions related to SA's membership in regional trade agreements with the SACU and SADC groupings.

Economic rationale

Promotion of industrial capacity, technological infrastructure, energy efficiency, lower production costs, access to global supply chains, economic growth and employment creation.

Outcomes

2014/15 – Q3: White Goods Export Strategy developed.

2. Facilitate technological upgrading within the Industry through MCEP financial elements

The programme will seek to ensure adequate provision of industrial financing support to the industry, including the working capital to ensure plant recapitalisation and technological upgrading. Targeted funding streams will be aimed at:

- Increased productivity, product diversification and industry competitiveness;
- Expansion of production and export volumes;
- Creation and retention of new sustainable jobs.

Key milestones

2014/15 Q4: Applications for financing considered; recapitalisation process started.

Lead Departments/agencies: the dti and ITAC, Electro-Technical Export Council, IDC and SARS.

3. Facilitate a favourable tariff regime and introduce a rebate mechanism for local manufacturers

The programme will seek to ensure that there are no tariff duties on input components manufactured locally, in order to assist in reducing final cost-of-product and improve international competitiveness. This will further assist in:

- Increasing export volumes and finding new markets for South African products;
- Enhancing the access of both local and SA-located global industry players to the African market;
- Reducing the negative impact of cheap imported products on local employment;
- Applying a reasonable level of protection for domestic producers; and
- Increasing overall competitiveness within the white goods industry.

Key milestones

- 2014/15 Q4: Finalise the review of tariffs for the white goods industry.

Lead Departments/agencies: the dti, ITAC, EDD, Electro-technical Export Council, IDC and SARS.

ABBREVIATIONS AND ACRONYMS

ABC	Aerial Bundled Conductor	COC	Centre of Competence
AECMSA	Association of Electric Cable Manufacturers of South Africa	CSA	Corrugated Seamless Aluminium
AIDC	Automotive Industry Development Centre	CRM	Customer Relations Management
AIDS	Acquired Immune Deficiency Syndrome	CSDP	Competitive Supplier Development Programme
AIS	Automotive Investment Scheme	CSID	Corporate Strategies and Industrial Development
APDP	Automotive Production and Development Programme	CSIR	Council for Scientific and Industrial Research
API	Active Pharmaceutical Ingredients	CSP	Customised Sector Programme
ART	Antiretroviral Treatment	CTS	Concentrated Thermal Solar
ARV	Anti-retroviral	CTCP	Clothing and Textiles Competitiveness Programme
AsgiSA- EC	Accelerated and Shared Growth Initiative for South Africa - Eastern Cape	CTLF	Clothing Textiles, Leather and Footwear
ATF	Aluminium Trifluoride	DAC	Department of Arts and Culture
B-BBEE	Broad Based Black Economic Empowerment	DAFF	Department of Agriculture, Forestry and Fisheries
BNDES	Brazil's Banco Nacional de Desenvolvimento Econômico e Social	DBSA	Development Bank of Southern Africa
BPS	Business Process Services	DFIs	Development Finance Institutions
BTX	Benzene, Toluene and Xylene	DG	Director General
CAV	Centurion Aerospace Village	DIRCO	Department of International Relations and Cooperation
CDM	Clean Development Mechanism	DMR	Department of Mineral Resources
CEF	Central Energy Fund	DoC	Department of Communications
CIACM	Competitiveness Improvement of Automotive Component Manufactures	DOD	Department of Defence
CKD	Completely Knock Down	DoE	Department of Energy
CMMI	Capability Maturity Model Integration	DoH	Department of Health
CMT	Cut, Make and Trim	DHET	Department of Higher Education and Training
		DoJ	Department of Justice
		DoL	Department of Labour
		DoT	Department of Transport

DPE	Department of Public Enterprises	FTPP	Forestry, Timber, Pulp and Paper
DPW	Department of Public Works	GDP	Gross Domestic Product
DST	Department of Science and Technology	GHS	Globally Harmonised System
the dti	The Department of Trade and Industry	GFCF	Gross Fixed Capital Formation
DTT	Digital Terrestrial Television	GW	Gigawatt
DWEA	Department of Water and Environmental Affairs	GWH	Gigawatt Hour
EC	Eastern Cape	ha	hectares
EE	Energy Efficiency	HF	Hydrogen Fluoride
EEC	Ekurhuleni East College	HIV	Human Immune Virus
EDD	Economic Development Department	HRD	Human Resource Development
EIA	Environment Impact Assessment	HS	Harmonised System
EIP	Enterprise Investment Programme	ICT	Information Communication Technologies
EMIA	Export Marketing and Investment Assistance	IDAP	Integrated dti Aerospace Programme
EPI	Extended Programme of Immunisation	IDC	Industrial Development Corporation
ERA	Enterprise Reference Architecture	IDZ	Industrial Development Zone
ESKOM	Electricity Supply Commission	IEE	Industrial Energy Efficiency
EU	European Union	IFPI	International Federation of the Phonographic Industry
EV	Electric Vehicle	IPAP	Industrial Policy Action Plan
FET	Further Education and Training	IRP	Integrated Resource Plan
FIETA	Forest Industries Education and Training Authority	ITAC	International Trade Administration Commission
FPM	Fibre Processing and Manufacturing	ITED	International Trade and Economic Development
FPSO	Floating Production Storage & Offloading	JASC	Joint Aerospace Steering Committee
FRIDGE	Fund for Research into Industrial Development Growth and Equity	JV	Joint Venture
FSA	Food Safety Agency	KAP	Key Action Programme
FSA	Forestry South Africa	KDB	Korean Development Bank

KZN	KwaZulu-Natal	NEF	National Empowerment Fund
LSOH	Low Smoke Zero Halogen	NERSA	National Energy Regulator of South Africa
m	metres	NFVF	National Film and Video Foundation
MACC	Mobilisation, Alignment, Capacity Building and Cooperation	NGP	New Growth Path
MCEP	Manufacturing Competitiveness Enhancement Programme	NIPF	National Industrial Policy Framework
MerSETA	Manufacturing, Engineering and Related Services SETA	NIPP	National Industrial Participation Programme
MHCV	Medium and Heavy Commercial Vehicles	NLA	National Laboratory Association
MIDP	Motor Industry Development Programme	NMISA	National Metrology Institute of South Africa
MNC	Multi-National Corporations	NNR	National Nuclear Regulator
MOA	Memorandum of Agreement	NPA	National Prosecuting Authority
MoU	Memorandum of Understanding	NRCS	National Regulator for Compulsory Specification
MSTF	Medium term Strategic Framework	NSDS	National Skills Development Strategy
MTBPS	Medium Term Budget Policy Statement	NSF	National Skills Fund
MTBS	Medium Term Budget Statement	NSSS	Nuclear Steam Supply System
MTIDC	Malawi-Tanzania Industrial Development Cluster	NT	National Treasury
MW	Megawatt	NTB	Non-Tariff Barriers
NAAMSA	National Association of Automobile Manufacturers of South Africa	NFTN	National Foundry Technology Network
NADP	National Artisan Development Programme	NTI	National Tooling Initiative
NAMC	National Agricultural Marketing Council	NTP	Nuclear Technology Products
NQF	National Qualification Framework	OEMs	Original Equipment Manufactures
NCSDP	National Craft Sector Development Programme	PFMA	Public Finance Management Act
NCPC	National Cleaner Production Centre	PGM	Platinum Group Minerals
NDT	National Department of Tourism	PGWC	Provincial Government of the Western Cape
NECSA	South African Nuclear Energy Corporation	PI	Production Incentive
NEDLAC	National Economic Development and Labour Council	PILC	Paper Insulated Lead Covered

PPA	Power Purchase Agreement	SANAS	South African National Accreditation System
PPP	Public Private Partnership	SAOGA	South African Oil and Gas Alliance
PPPFA	Preferential Procurement Policy Framework Act	SAOSO	South African Organics Sector Organisation
PRASA	Passenger Rail Agency of South Africa	SAPS	South African Police Services
PSA	Proudly South African	SARS	South African Revenue Services
PV	Photovoltaic	SARi	South African Renewables Initiative
REFIT	Renewable Energy Feed in Tariff	SAT	South African Tourism
REIPP	Renewable Energy Independent Power Producers	SATS	South African Technical Standard
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme	SDI	Spatial Development Initiatives
RFP	Request for Proposals	SDP	Supplier Development Plans
RIBS	Rigid Inflatable Boats	SANAS	South African National Accreditation System
RPO	Radiation Protection Officers	SEDA	Small Enterprise Development Agency
R&D	Research and Development	SETA	Skills Education and Training Authorities
RSDIP	Regional Spatial Development Initiatives Programme	SEZ	Special Economic Zones
QCTO	Quality Council for Trades and Occupations	SKD	Semi-Knock Down
SA	South Africa	SME	Small and Medium Enterprises
SaaS	Software as a Service	SMME	Small Medium and Micro Enterprises
SAA	South African Airways	SOCs	State-Owned Companies
SABC	South African Broadcasting Corporation	SOC-ATD-TT	State-Owned Companies Artisan Development Task Team
SABS	South African Bureau of Standards	SOEs	State-Owned Enterprises
SADC	Southern African Development Community	SPS	Sanitary and Phyto-sanitary Standards
SAFVCA	South African Fruit and Vegetable Canning Association	SQAM	Standards, Quality Assurance and Metrology
SAHC	South African Handmade Collection	SSAS	Sector Specific Assistant Scheme
SANS	South African National Standards	SSP	Sector Skills Plans
		STB	Set Top Box

SWH	Solar Water Heaters
SWOT	Strength, Weakness, Opportunity and Threats
TBT	Technical Barriers to Trade
TEO	The Enterprise Organisation
T/G	Turbine Generator
TISA	Trade and Investment South Africa
TPA	Tonnes Per Annum
TNPA	Transnet National Ports Authority
TSP	Team Software Process
TV	Television
TVC	Technology Venture Capital
UNIDO	United Nations Industrial Development Organisation
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
VAT	Value Added Tax
WC	Western Cape
WTO	World Trade Organisation

NOTES:

