Industrial Policy Action Plan 2011/12 – 2013/14

ECONOMIC SECTORS AND EMPLOYMENT CLUSTER

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the dti
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the dti **Campus**
77 Meintjies Street
Sunnyside
Pretoria
0002

the dti **Postal Address**
Private Bag X84
Pretoria
0001

the dti **Customer Contact Centre:** 0861 843 384

the dti **Website:** www.thedti.gov.za

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ABBREVIATIONS AND ACRONYMS

AIDC	Automotive Industry Development Centre
AIDS	Acquired Immune Deficiency Syndrome
APDP	Automotive Production and Development Programme
API	Active Pharmaceutical Ingredients
ART	Anti-retroviral Treatment
ARV	Anti-retrovirals
AsgiSA – EC	Accelerated and Shared Growth Initiative for South Africa – Eastern Cape
ATF	Aluminium Trifluoride
B-BBEE	Broad Based Black Economic Empowerment
BNDES	Brazil's *Banco Nacional de Desenvolvimento Econômico e Social*
BPS	Business Process Services
BTX	Benzene, Toluene and Xylene
CAV	Centurion Aerospace Village
CEF	Central Energy Fund
CIACM	Competitiveness Improvement of Automotive Component Manufactures
CIPRO	Companies and Intellectual Property Registration Office
CKD	Completely Knock Down
CMT	Cut, Make and Trim
COC	Centre of Competence
CSDP	Competitive Supplier Development Programme
CSID	Corporate Strategies and Industrial Development
CSIR	Council for Scientific and Industrial Research
CSP	Customised Sector Programme
CTS	Concentrated Thermal Solar
CTCP	Clothing and Textiles Competitiveness Programme
CTFL	Clothing Textiles, Leather and Footwear
DAC	Department of Arts and Culture
DAFF	Department of Agriculture, Forestry and Fisheries
DBSA	Development Bank of Southern Africa
DFIs	Development Finance Institutions
DG	Director-General
DMR	Department of Mineral Resources
DoC	Department of Communications
DoD	Department of Defence
DoE	Department of Energy
DoH	Department of Health
DoHE&T	Department of Higher Education and Training

DoJ	Department of Justice
DoL	Department of Labour
DoT	Department of Transport
DPE	Department of Public Enterprises
DPW	Department of Public Works
DST	Department of Science and Technology
DTT	Digital Terrestrial Television
DWEA	Department of Water and Environmental Affairs
EC	Eastern Cape
EDD	Economic Development Department
EIA	Environment Impact Assessment
EIP	Enterprise Investment Programme
EMIA	Export Marketing and Investment Assistance
ERA	Enterprise Reference Architecture
ESKOM	Electricity Supply Commission
EU	European Union
EV	Electric Vehicle
FIETA	Forest Industries Education and Training Authority
FRIDGE	Fund for Research into Industrial Development Growth and Equity
FSA	Food Safety Agency
FSA	Forestry South Africa
FTPP	Forestry, Timber, Pulp and Paper
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GW	Gig watt
ha	hectares
HF	Hydrogen Fluoride
HIV	Human Immune Virus
HRD	Human Resource Development
HS	Harmonised System
ICT	Information Communication Technologies
IDC	Industrial Development Corporation
IDZ	Industrial Development Zone
IEE	Industrial Energy Efficiency
IFPI	International Federation of the Phonographic Industry
IPAP	Industrial Policy Action Plan
IRP	Integrated Resource Plan
ITAC	International Trade Administration Commission
ITED	International Trade and Economic Development

JV	Joint Venture
KAP	Key Action Programme
KDB	Korean Development Bank
KZN	KwaZulu-Natal
m	meters
MACC	Mobilisation, Alignment, Capacity Building and Cooperation
MerSETA	Manufacturing, Engineering and Related Services SETA
MHCV	Medium and Heavy Commercial Vehicles
MIDP	Motor Industry Development Programme
MNC	Multi-National Corporations
MOA	Memorandum of Agreement
MoU	Memorandum of Understanding
MTBPS	Medium-Term Budget Policy Statement
MW	Megawatt
NAAMSA	National Association of Automobile Manufacturers of South Africa
NAMC	National Agricultural Marketing Council
NQF	National Qualification Framework
NCSDP	National Craft Sector Development Programme
NCPC	National Cleaner Production Centre
NDT	National Department of Tourism
NECSA	South African Nuclear Energy Corporation
Nedlac	National Economic Development and Labour Council
NEF	National Empowerment Fund
NERSA	National Energy Regulator of South Africa
NFVF	National Film and Video Foundation
NIPF	National Industrial Policy Framework
NIPP	National Industrial Participation Programme
NMISA	National Metrology Institute of South Africa
NNR	National Nuclear Regulator
NPA	National Prosecuting Authority
NRCS	National Regulator for Compulsory Specification
NSF	National Skills Fund
NT	National Treasury
NTB	Non-Tariff Barriers
NFTN	National Foundry Technology Network
NTI	National Tooling Initiative
NTP	Nuclear Technology Products
OEMs	Original Equipment Manufactures
PBMR	Pebble Bed Modular Reactor

PFMA	Public Finance Management Act
PGM	Platinum Group Minerals
PGWC	Provincial Government of the Western Cape
PI	Production Incentive
PPA	Power Purchase Agreement
PPP	Public Private Partnership
PPPFA	Preferential Procurement Policy Framework Act
PRASA	Passenger Rail Agency of South Africa
PSA	Proudly South African
RIBS	Rigid Inflatable Boats
ROV	Remotely Operated Undersea Vehicles
R&D	Research and Development
REFIT	Renewable Energy Feed in Tariff
QCTO	Quality Council for Trades and Occupations
SA	South Africa
SAA	South African Airways
SABC	South African Broadcasting Corporation
SABS	South African Bureau of Standards
SADC	Southern African Development Community
SAFVCA	South African Fruit and Vegetable Canning Association
SANAS	South African National Accreditation System
SANs	South African National Standards
SAOSO	South African Organics Sector Organisation
SARS	South African Revenue Services
SAT	South African Tourism
Seda	Small Enterprise Development Agency
SETAs	Skills Education and Training Authorities of South Africa
SKD	Semi Knock Down
SMEs	Small and Medium-sized Enterprises
SMMEs	Small, Medium and Micro-sized Enterprises
SOEs	State-Owned Enterprises
SPS	Sanitary and Phyto-sanitary Standards
SPX	Sequenced Packet Exchange
SQAM	Standards, Quality Assurance and Metrology
SSAS	Sector-Specific Assistance Scheme
STB	Set Top Box
SWH	Solar Water Heaters
SWOT	Strength, Weakness, Opportunity and Threats
TBT	Technical Barriers to Trade

TEO	The Enterprise Organisation
the dti	Department of Trade and Industry
TISA	Trade and Investment South Africa
TPA	Tonnes Per Annum
TNPA	The National Ports Authority
TV	Television
UNIDO	United Nations Industrial Development Organisation
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USA	United States of America
WC	Western Cape
WTO	World Trade Organisation

FOREWORD BY THE MINISTER OF TRADE AND INDUSTRY

Minister of Trade and Industry, Dr Rob Davies

In line with the focus on job creation in President Jacob Zuma's 2011 State of the Nation Address, the Department of Trade and Industry (**the dti**) will continue to build on its industrial development efforts, at the core of which is the Industrial Policy Action Plan (IPAP 2). The 2010/11 – 2012/13 Industrial Policy Action Plan (IPAP 2) represented a qualitative step forward in government's industrial policy efforts and much progress has been made across a wide range of fronts. The next iteration of the industrial policy action plan, namely IPAP 2 2011/12 – 2013/14, represents a further step in the evolution of this work and serves as an integral component of government's New Growth Path.

IPAP 2 2011/12 – 13/14 represents the consolidation and strengthening of plans and programmes outlined in the previous iteration. Those Key Action Plans, which were met, have given way to new Key Action Programmes, which further strengthen and take forward government interventions to support industrial development and employment creation. In some cases, other actions and programmes have been transferred to departments best suited to undertake these responsibilities as part of their principal functions. These include functions which will fall under the authority of the Departments of Tourism, Science and Technology, and Agriculture, Forestry and Fishing. Plans for two new transversal

interventions, namely skills and innovation and technology, have been added to those in IPAP 2 2010/11 – 2012/13. Apart from upgraded action plans across sectors, two new sector-specific programmes on Boatbuilding, and Oil and Gas, have been included in the follow-up action plan. Work on Green Industries introduced in the previous iteration of IPAP now finds expression in significantly scaled-up programmes of action for this sector.

We are confident that significant progress has been registered since the publication of IPAP 2 2010/11 – 2012/13 and that the plans laid out in this iteration of IPAP will deepen and strengthen this work. The success of government's plans and programmes depend, in no small measure, on the extent to which it can contribute to building partnerships for economic growth, development and employment creation. It is in this context that government will continue to make every effort, as we did in the course of the 2010/11 financial year, to keep government's social partners abreast of progress and consult with them on unfolding plans.

I wish to thank all those, in and outside of government, whose hard work has contributed to the arduous and difficult task of securing the progress registered over the past year, including that of strengthening this action plan.

Most importantly, I encourage all concerned to redouble their efforts and work together for development and employment creation.

Dr Rob Davies, MP
Minister: Trade and Industry

1. INTRODUCTION

1.1 Contribution of IPAP to the New Growth Path (NGP)

Government has committed to making employment creation the main criterion for economic policy. The New Growth Path, launched in November 2010 by the Ministry of Economic Development, articulates this sentiment, as made clear in its aim of establishing a more labour-absorbing growth path.

The NGP acknowledges that the recovery of economic growth between 1994 and 2008 did not lead to an adequate reduction in unemployment and inequality or mitigate the emissions intensity of growth. In response, it sets a target of five million new jobs by 2020. It builds on the long-term government stance, reflected amongst others in AsgiSA and the National Industrial Policy Framework (NIPF), which argues that restructuring the economy is essential to ensure more inclusive and sustainable growth.

The NGP identifies a number of jobs drivers, led by agriculture, mining, manufacturing, tourism and other high-level services, which can create substantial employment. It proposes both sectoral interventions and a package of macro-economic and micro-economic policies designed to ensure that the economy becomes both more competitive and more employment friendly.

The IPAP constitutes a central tool in the NGP job-creation strategy. It is anticipated that IPAP 2 2011/12- 2012/13 interventions will lead to 43 000 direct jobs and 86 000 indirect jobs, totalling 129 000 jobs.

1.2 The Evolution of IPAP

In January 2007, Cabinet adopted the National Industrial Policy Framework (NIPF), which sets out government's broad approach to industrialisation, with the following core objectives:

- To facilitate diversification beyond our current reliance on traditional commodities and non-tradeable services, which requires the promotion of increased value-addition, characterised particularly by movement into non-traditional tradeable goods and services that compete in export markets and also against imports;
- To ensure the long-term intensification of South Africa's industrialisation process and movement towards a knowledge economy;

- To promote a more labour-absorbing industrialisation path, with the emphasis on tradeable labour-absorbing goods and services, and economic linkages that create employment;
- To promote industrialisation, characterised by the increased participation of historically disadvantaged people and marginalised regions in the industrial economy; and
- To contribute towards industrial development in Africa, with a strong emphasis on building the continent's productive capacity.

Guided by the NIPF, the implementation of industrial policy was set out in an Industrial Policy Action Plan (IPAP). In August 2007, Cabinet approved the first IPAP, which reflected mainly 'easy-to-do' actions. However, there has been growing recognition that industrial policy needs to be scaled-up from 'easy-to-do' actions to 'need-to-do' interventions, to generate a new path of industrialisation. A process of intensive consultation and analysis – led by the Minister of Trade and Industry – culminated in a revised IPAP, for the 2010/11 – 2012/13 (IPAP 2) financial years. It was recognised that a one-year IPAP is too short a period and hence, future IPAPs will set out key interventions over a three-year rolling period, updated annually and with a 10-year outlook on desired economic outcomes. The IPAP 2010/11 – 2012/13 (IPAP 2) represented a significant step forward in our industrial policy efforts. Hence, the IPAP is a living document and continuous engagement with government's social partners, labour and business, informs both its implementation and evolution.

Since the launch of IPAP 2 in February 2010, significant progress has been registered across all the transversal interventions and sector strategies. Key highlights include:

- **Procurement Policy**
    - Cabinet approved revisions to the Preferential Procurement Policy Framework Act (PPPFA) regulations, developed by National Treasury (NT), the Economic Development Department (EDD) and **the dti**. The revisions await promulgation by the NT and will allow for the following:
        - Alignment of PPPFA with Broad-Based Black Economic Empowerment (B-BBEE) Codes,
        - Allows for **the dti** to designate sectors or sub-sectors for domestic production at specified levels of local content.
    - **the dti** has developed sector designation methodology and is compiling necessary research to designate a range of sectors.

- The introduction of localisation and supplier development within State-Owned Enterprises (SOEs) has encouraged these entities to introduce new policies, processes and systems, and increase capacity-building to embed supplier procurement leverage more systematically.
- Seventy-two percent (72%), by value of a R4,2 billion anti-retroviral (ARV) tender, was awarded to South African manufacturers, with significant price reductions relative to the 2008 ARV tender.

- **Industrial Financing**
  - The Industrial Development Corporation (IDC) reviewed its business model and balance sheet, and identified R66 billion over the next five years, for investment in the New Growth Path and IPAP 2 sectors, depending on economic conditions.
  - Phase one of a study was finalised, the proposals from which are expected to identify and create long-term sources of concessional industrial financing.
  - Phase two of the study will feed into the budget, through the 2011/12 adjustment estimate process and successive budget processes.
- **Competition**
  - Referrals were made against the following companies: tyre companies; scrap merchants; chemical companies; airlines; an online ticketing company; bicycle companies; construction companies. Further, findings regarding bread collusion were made by the Competition Commission.
- **Trade**
  - The International Trade Administration Commission (ITAC) has processed numerous applications for increases, rebates and reductions of duties, in line with IPAP priorities. An early warning system has been developed by the South African Bureau of Standards (SABS) to identify technical barriers to trade for exporters. Outcomes are distributed to exporters on a monthly basis.
- **Automotives**
  - The finalised Automotive Investment Scheme (AIS) led to investment commitments of R13 billion, from assemblers and component suppliers, supporting 24 000 jobs in the sector.

- **Clothing and Textiles**
    - The roll-out of the Clothing Textile Competitive Programme (CTCP) and Production Incentive (PI), with 106 and 94 companies benefiting under the CTCP and PI respectively, was achieved.
- **Business Process Services**
    - Investments of up to R40 million resulted in the creation of 950 jobs, within the nine-month period. Approval of R42 million new investment commitments were linked to 806 jobs. A total of 3 400 recruits are currently being trained under the Monyetla II Programme – 70% constitute guaranteed employment by a Business Process Outsourcing (BPO) consortium.
- **Green Industries**
    - Revision of building standards, which will require higher levels of energy efficiency and mandatory installation of solar water heaters in new buildings, was completed.
    - The SABS finalised enabling standards for solar water heaters; wind energy turbines; energy-efficient lighting, appliances and products; electric batteries and alternative fuel vehicles; and co-generation of electricity and biofuels.
    - Significant progress with the development of the renewable energy feed in tariff (REFIT) rules was requested.
    - The intra-departmental South African Renewables Initiative (SARI) will leverage international climate finance, to supplement domestic funding sources, for renewable energy production linked to domestic manufacturing.
- **Forestry**
    - One hundred and sixty-one (161) water licences, for 10 000 hectares (ha), were issued by the Department of Water and Environmental Affairs (DWEA), which lays the basis for more rapid progress.
- **Iron and Steel**
    - An Intra-Departmental Task Team Report on Iron Ore and Steel was adopted by Cabinet, mandating the Department of Mineral Resources (DMR), **the dti** and EDD to secure a developmental steel price, in exchange for cost plus iron ore.

IPAP 2011/12 – 2013/14 (IPAP 2) constitutes a consolidation of plans and programmes outlined in the previous iteration of IPAP 2. Economic data and sector profiles have been updated, Key Action Programmes which have been met have been removed from the plan giving way to further Key Action Programmes designed to strengthen and take forward the development of the industrial policy action plan. This includes a new transversal intervention – Skills for the Economy as well as sector-specific programmes on Boatbuilding and Oil and Gas. Work on Green Industries introduced in the previous iteration of IPAP now finds expression in a scaled up programme. Key Action Programmes for this sector, in addition to a new section of the South African Renewable initiative (SARi), have been introduced.

1.3 Refinement of Roles and Responsibilities

Since the 2009/10 IPAP 2 was published, there have been significant developments in policy and the structure of government. This gives rise to the need for refining certain roles and responsibilities, in relation to IPAP 2.

IPAP 2 plays a central role in relation to the recently released NGP, and focuses on manufacturing and other value-added sectors, with a combination of high employment and growth multipliers. This includes the co-ordination of certain value chains where manufacturing mediates the progression from primary to final goods such as agro-processing and biofuels. It also includes certain tradeable services sectors such as Business Process Services and IT Software.

Within the Skills Education Training Authorities in South Africa (SETAs) and National Skills Fund (NSF) system – there is an extremely important role for sector-specific training programmes and skills facilities that emerge directly from industry demands in relation to detailed Customised Sector Programmes. This has in the past led to the establishment of programmes such as the Monyetla Work-Readiness Programme for BPS and the Department of Trade and Industry's (**the dti**'s) Centres of Excellence. **the dti** will therefore work with the Department of Higher Education and Training (DHE&T) to introduce the necessary window within the SETA and NSF system for new Skills Centres based on the needs of IPAP sector strategies. In addition, a process to transfer existing Skills Centres/Centres of Excellence into the SETA/NSF system to promote their long term financial and organisational sustainability will be initiated. An appropriate forum will be established to oversee these initiatives.

The Green Economy is a major new thrust for the South African economy which presents multiple opportunities to create jobs and value-adding industries. IPAP 2 will focus on the manufacturing aspects of the Green Economy; namely Green Industries and Industrial Energy Efficiency. It will also champion the South African Renewables Initiative (SARi) aimed at drawing in international concessional funding to achieve greater critical mass of renewable energy generation hand-in-hand with localisation of manufacturing related to renewables.

Mineral Beneficiation is an area of work that presents much untapped opportunity but which has lagged in policy development and implementation. It is proposed that **the dti** co-develops this area of working closely with the DMR to take it forward urgently.

Tourism now has its own dedicated department in the form of the National Department of Tourism (NDT). Therefore the Tourism policy work of **the dti** previously reflected in IPAP will be transferred to NDT during the course of the 2011/12 financial year. For this period, it will remain on **the dti**'s business plan and in future will be reflected in the policy and implementation documents of the NDT including the National Tourism Strategy. **the dti** will focus on other tradeable services sectors, such as education services and software development.

Similarly a dedicated Department of Agriculture, Forestry and Fisheries (DAFF) has been established. It is therefore timeous for DAFF to take full responsibility for work related to the Forestry sector; excluding the issue of water licences which falls under DWEA.

The optimal value chain of activity between **the dti** and the Department of Science and Technology (DST), in relation to the development and commercialisation of technology, lies with DST. DST is responsible for assisting in technology development and **the dti** is responsible for assisting in the commercialisation of technology. Therefore certain activities related to aerospace will be transferred to DST with **the dti** focusing on the manufacturing aspects of the industry.

This refinement will both optimise allocation responsibilities amongst government departments and free up capacity and resources within **the dti** to increase its effectiveness in implementing IPAP 2 Key Action Programmes, for which it is directly responsible.

2. PROBLEM STATEMENT

Prior to the global economic crisis of 2008 and 2009, South Africa achieved reasonably high growth rates, particularly over the 2005 to 2007 period. However, these growth rates mask key structural challenges in the South African economy.

2.1 Structural imbalances in South Africa's current growth path

First, for decades, South Africa's growth rates have been lower than the average growth rates of our medium- and low-income peers. The economy continues to be under stress, as structural imbalances persist. Since the crisis, the South African economy has under-performed relative to the global economy and emerging economies, with respect to real Gross Domestic Product (GDP) average growth rates (Table 2). Of the Brazil-Russia-India-China (BRIC) group of countries, China, Brazil and India were quick to recover to their pre-crisis growth paths. This was due to rapid and large stimulatory measures during the crisis and owing to continuity of pre-crisis policies, galvanised to change the structure of their economies. Russia's growth path since the crisis is similar to that of advanced countries, as the crisis has exposed the dependence of its growth on resources and financial speculation.

Table 1: Real Gross Domestic Product in World Economy and selected countries, 2009 – 2010 (%)

	Actual	Actual
	2009	2010
World output	-0.6	5
Advanced Economies	-3.4	3
Emerging and Developing Economies	2.6	7.1
Sub-Saharan Africa	2.8	5
South Africa	-1.7	2.9
Brazil	-0.6	7.5
Russia	-7.9	3.7
India	5.7	9.7
China	9.2	10.3

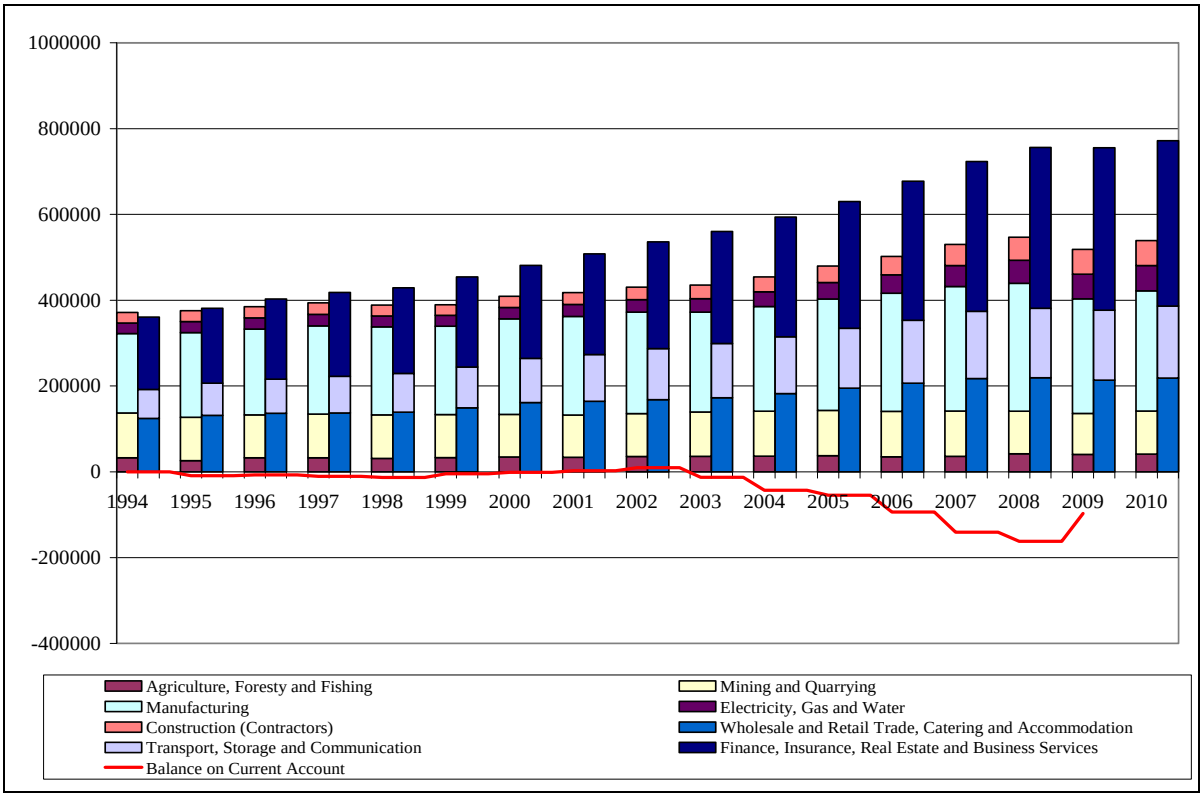
Source: IMF, World Economic Outlook, January 2011.

Second, growth leading up to the crisis was driven increasingly by unsustainable increases in private credit extension and consumption not sufficiently underpinned by growth of the production-driven sectors of the economy (Figure 1). Thus, consumption-driven sectors

(i.e. finance and insurance, real estate, transport and storage, communication, wholesale and retail, catering and accommodation) grew by 114% between 1994 and 2010 7,1% annually. By contrast, production-driven sectors (i.e. agriculture, mining, manufacturing, electricity and water, and construction) grew by only 38,3% (2,4% annually). This has led to large and unsustainable imbalances in the economy particularly in the form of a large current-account deficit. The current account deficit has moderated somewhat in 2009 and 2010. However, this has been predominantly due to relatively slow growth of the economy.

Third, even at the peak of recent average annual growth of 5,1% between 2005 and 2007, unemployment did not fall below 22,8%. Since the crisis, unemployment worsened to a peak of 24,5% in Q3 of 2009 and improved slightly in Q4 of 2009, to 24,2%.

Figure 1: GDP by Production and Consumption Sectors, 1994 – 2010 and Balance on Current Account (R million at 2005 prices)



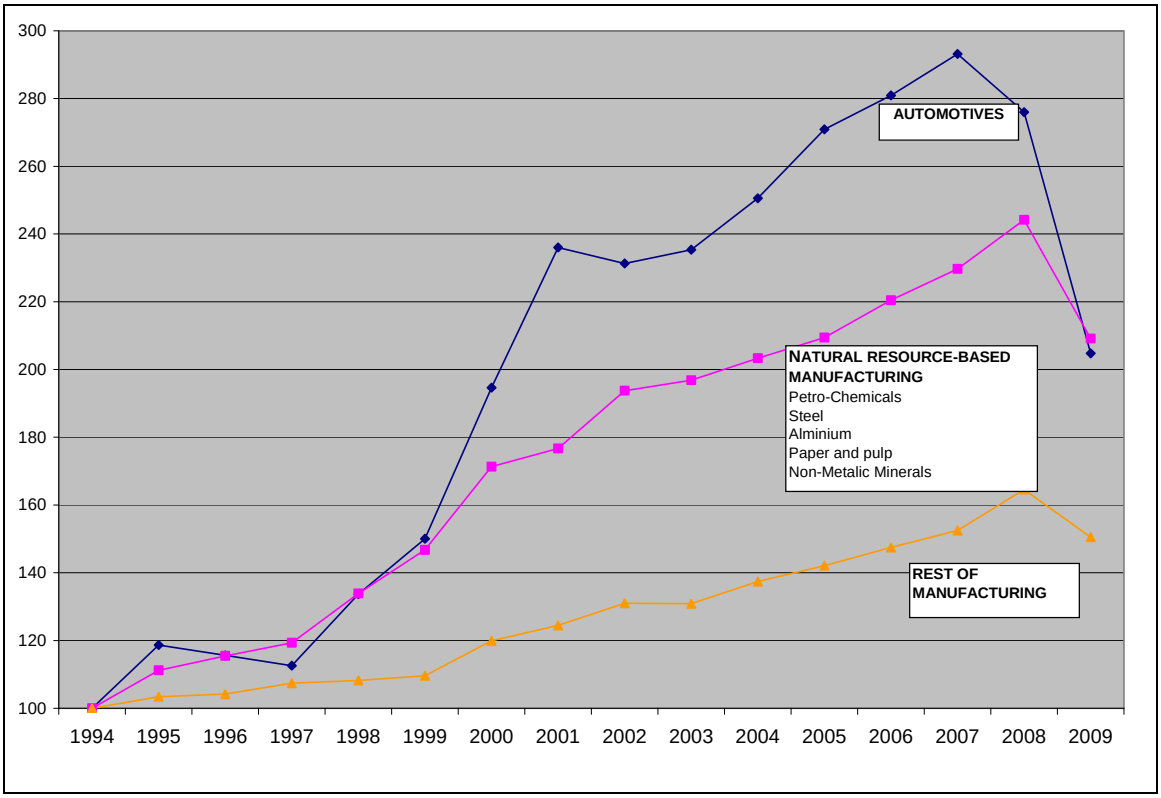
Source: SARB.

In recent years, formal employment growth has predominantly come from the services sector, particularly wholesale and retail, and business services sub-sectors. However, these employment gains are currently precarious. Wholesale and retail employment growth has been a consequence of massive and unsustainable private credit extension, leading to a widening current-account deficit. Business services employment growth has been driven predominantly by two factors: the outsourcing of activities, such as logistics and catering; and growth in the private security sector. The unsustainable dependence of wholesale and retail employment growth on private credit extension, rather than income growth in productive sectors, has been demonstrated by the large reduction of employment in this sector. This resulted from the collapse in credit extensions, as a consequence of the economic crisis. Therefore, long-term increases in employment – in all sectors of the economy – need to be underpinned by higher growth in the production sectors of the economy, led by manufacturing.

2.2 Manufacturing

Manufacturing accounts for the largest share of GDP amongst the production-driven sectors of the economy: 54,4% in 2010. Within manufacturing itself, there has been a wide divergence of performance. Through the Motor Industry Development Programme (MIDP), the automotive sector has more than doubled in size since 1994, with an exponential growth in exports, but there are remaining challenges in terms of localisation and job creation. The natural-resource-based sectors have also demonstrated relatively strong growth. These are the capital- and energy-intensive sectors, most of which were established through a variety of apartheid-era industrial policies and have now become largely internationally competitive. They comprise petro-chemicals, steel, aluminium, paper and pulp, and cement. The rest of manufacturing has by and large stagnated, although there has been some improvement since 2003. This coincides with the growth in public capital expenditure led by improvements in sectors such as metal fabrication and capital equipment (Figure 2).

Figure 2: Manufacturing Growth 1994 – 2009, Indexed (1994 = 100)



Source: Quantec.

The 2010/11 IPAP identified a range of key constraints to the development of manufacturing and other value-added tradeable sectors. These remain deeply relevant:

- An exchange rate that is volatile and generally over-valued;
- The high cost and limited allocation of capital to productive sectors, particularly the relatively more labour-intensive and value-adding sectors of the economy;
- Failure to adequately exploit domestic supply opportunities of the public capital expenditure programme, other large public 'fleet' expenditure, as well as private procurement expenditure;
- The monopolistic provision and pricing of key inputs into manufacturing and other productive processes, and the concentrated purchasing power of outputs of these sectors;
- A weak skills system, which does not adequately respond to the needs of productive sectors; and
- Aged, unreliable and expensive rail and ports systems.

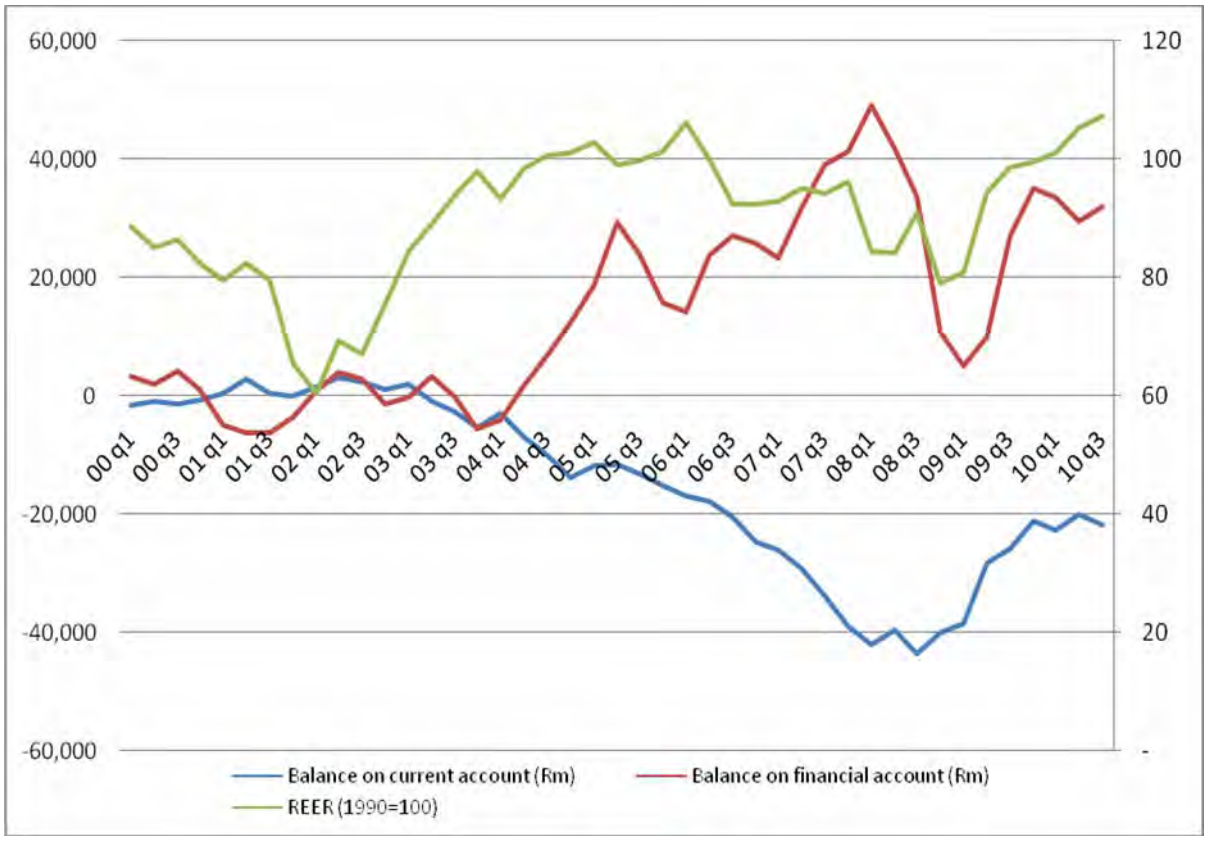
A further constraint is becoming increasingly apparent:

- Higher electricity prices and the transition to a lower carbon economy in the context of increasing climate change and environmental concerns.

Globally the impact of the recession continues to be felt, particularly with respect to the slow recovery of South Africa's traditional trading partners. South Africa's value-added exports have predominantly gone to traditional advanced markets such as the European Union (EU) and United States of America (USA), while our primary and semi-processed commodity exports have been demanded by large developing economies such as China and India. South African manufacturing exports will thus be faced with a long and painful adjustment period.

The difficulty of this adjustment is severely compounded by the continued overvaluation and volatility of the currency (Figure 3). The real effective exchange rate reached its highest point on record in the third quarter of 2010. Although it subsequently depreciated in the early part of the first quarter of 2011 it has experienced renewed appreciation in March 2011.

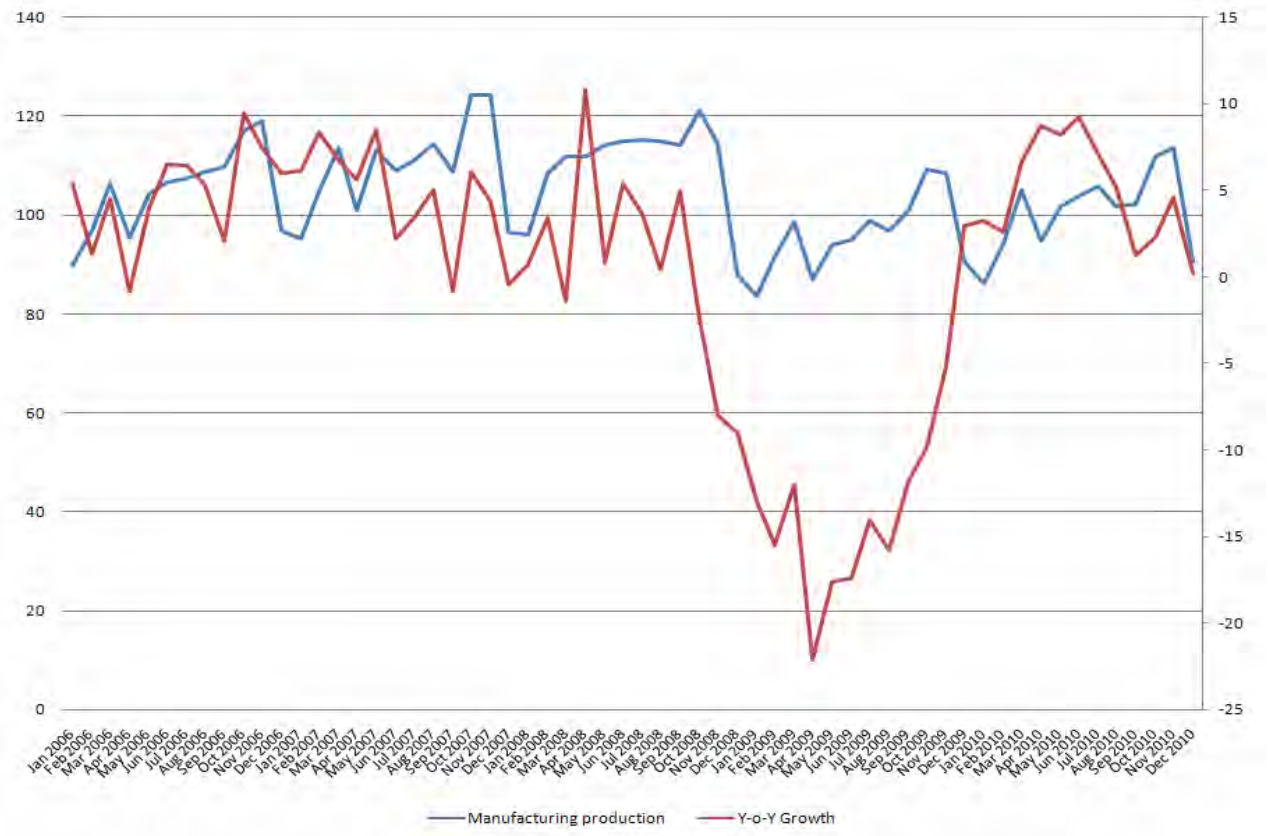
Figure 3: Balance on Current Account, Financial Account and Real Effective Exchange Rate (R million, Index 2000 = 100)



Source: SARB.

The volume of manufacturing production remains weak and has not yet recovered to pre-crisis levels (Figure 4). The limited recovery of manufacturing has been dominated, in particular, by the automotives sector, which grew by 25% from Q3 to Q4 of 2010.

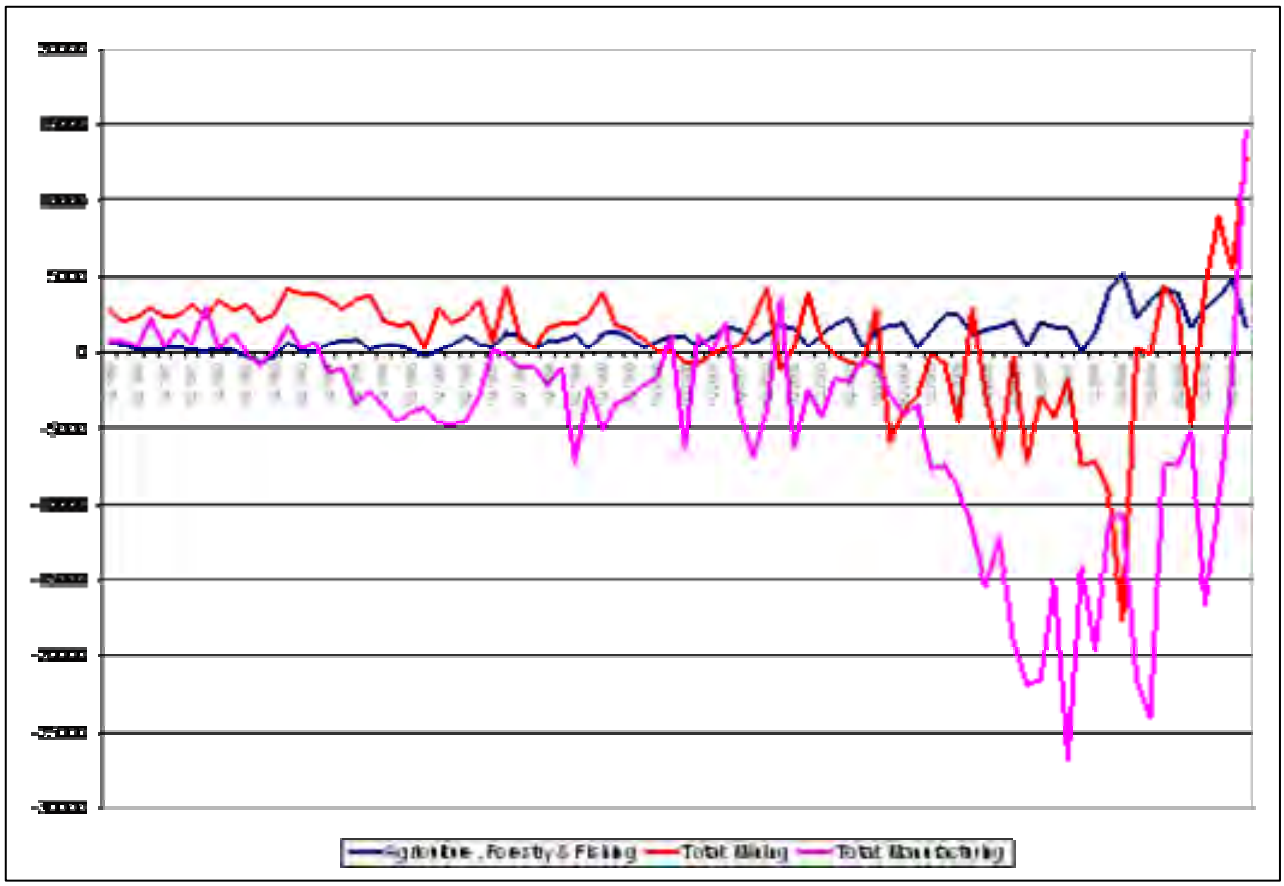
Figure 4: Physical Volume of Manufacturing Production – Indexed to 2005 = 100



Source: StatsSA.

Overall, South Africa continues to run a substantial current account deficit, felt disproportionately in the manufacturing sector (Figure 5).

Figure 5: Trade Balance by Sector Q1 – 1990 to Q4 – 2010, Rand million

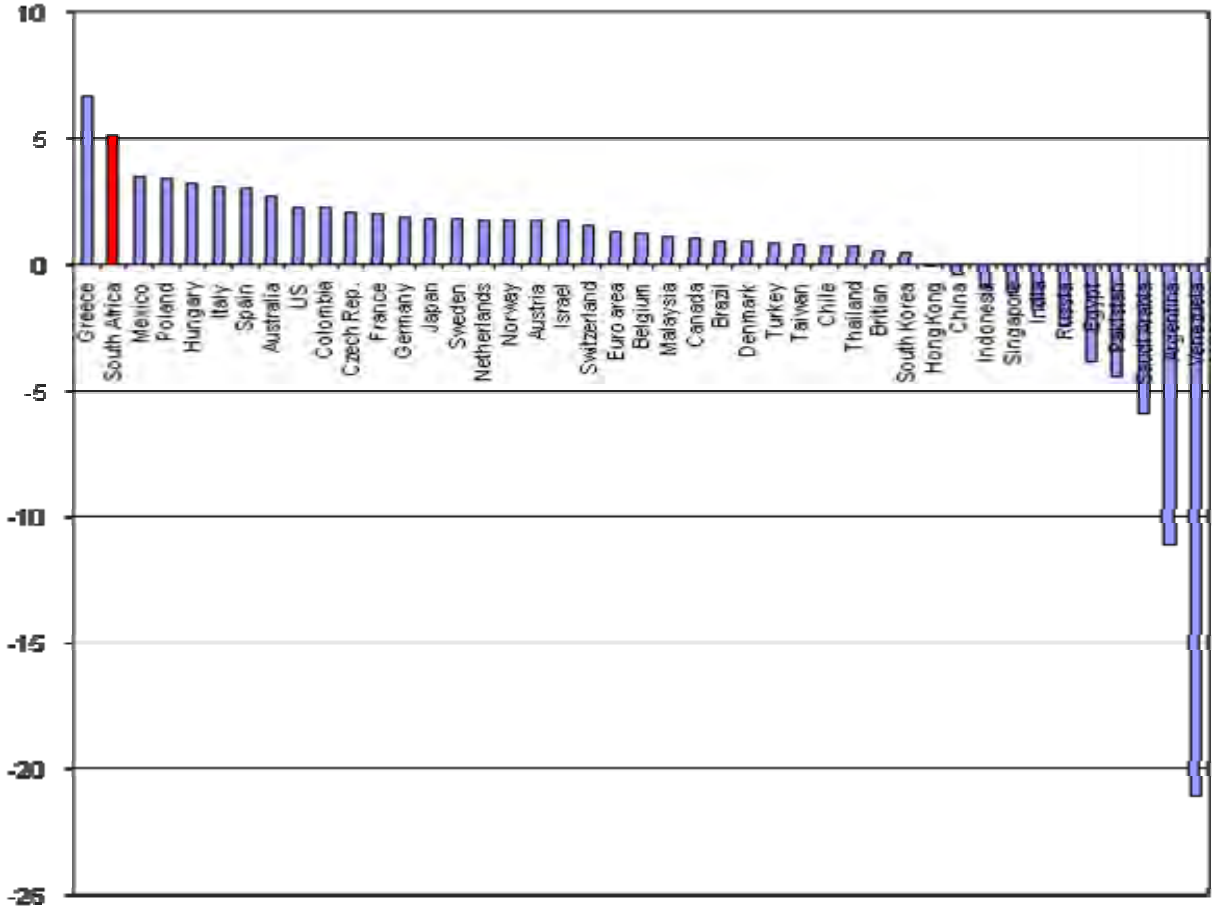


Source: Quantec.

IPAP 2010/11 made the point that notwithstanding massive growth in the extension of private credit since 1994, only a very small proportion is extended to fixed investment – a mere 5,7% in 2009.

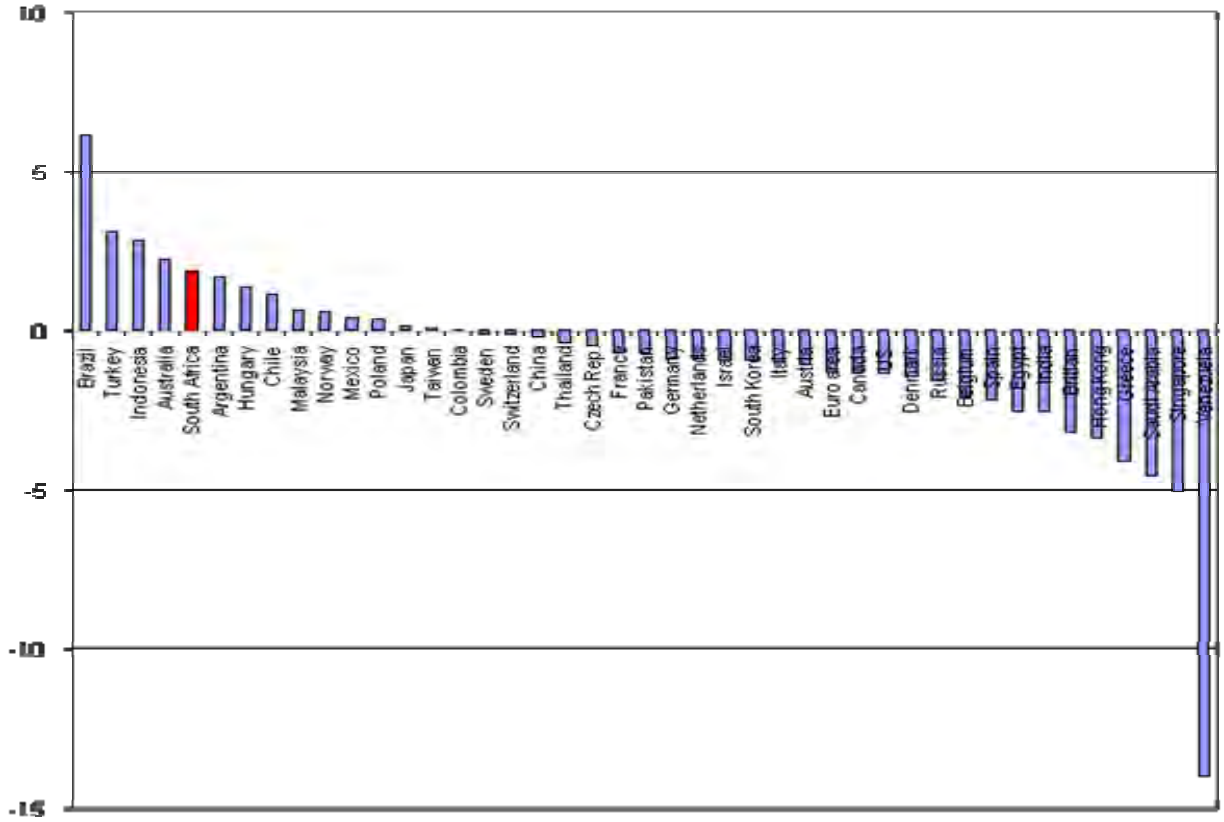
Despite nominal interest rates at 30-year lows, Figures 6.1 and 6.2 show that the underlying real cost of capital in South Africa remains high relative to that of our main trading partners. In manufacturing, the cost of capital is even lower in many trading partners due to subsidies and subsidised credit through development banks and export credit banks and agencies. For example, Brazil's *Banco Nacional de Desenvolvimento Econômico e Social* (BNDES) plays a fundamental role in extending concessional credit to productive sectors of the economy, including manufacturing, infrastructure, mining and innovative service industries.

Figure 6.1: Cost of Capital: Long-Term Real Interest Rates in South Africa and our Main Trading Partners, February 2011



Source: The Economist.

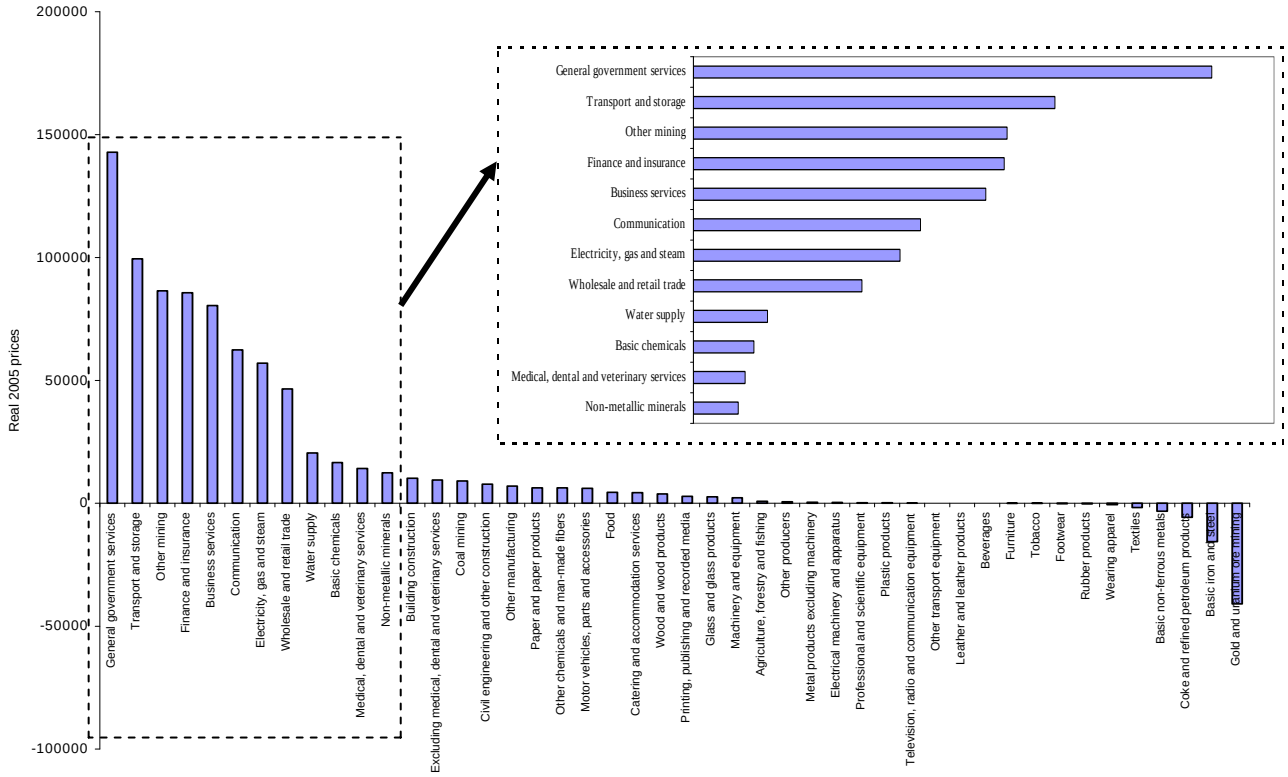
Figure 6.2: Cost of Capital: Short-Term Real Interest Rates in South Africa and our Main Trading Partners, February 2011



Source: The Economist.

Figure 7 illustrates that despite the recent improvement between 2005 and 2009, fixed investment has been concentrated in three main areas. First, recent fixed investment has been driven primarily by public capital expenditure of the state-owned enterprises (SOEs) and government. Second, private investment has been predominantly concentrated in debt-driven consumption sectors such as finance and wholesale and retail. Third, investments in production sectors have, themselves, been concentrated in capital-intensive mineral-and-energy sectors such as mining, cement and chemicals. With the exception of the automotive industry, most relatively labour-intensive and value-adding productive sectors have experienced low – and sometimes falling – rates of investment.

Figure 7: Change in Capital Stock between 2000 and 2009, Across all Economic Sectors (Rand million at constant 2005 prices)



Source: CSID (Quantec), 2009.

Public infrastructure investment has been a key driver of recently-improved investment rates. Public investment of R404 billion was attracted over the 2006/07 – 2008/09 period, rising to R787 billion for the period 2009/10 – 2011/12 (Table 2).

Table 2: 2009 Revised Medium-Term Expenditure Framework (MTEF) Infrastructure Expenditure Estimates

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
R million			**Rev.est**	**Medium-term estimate**		
National departments [1,2]	4 631	5 712	7 157	8 024	8 641	12 867
Provincial departments [2] (All sectors)	27 112	29 395	34 664	39 899	46 517	52 439
Of which Provincial departments (Education, Health, Roads) [2b]	16 146	19 178	21 810	24 881	27 184	29 902
Municipalities	21 084	30 736	46 093	49 496	53 738	59 074
Of which direct & indirect grants [2c]	8 390	16 612	18 625	19 608	21 845	26 043
Public private partnerships [3] of which:	1 343	3 857	7 633	13 897	11 692	11 727
SANRAL [7]	2 292	3 392	4 073	5 525	6 665	
Extra-budgetary public entities	3 699	3 726	4 895	6 971	7 509	8 112
Non-financial public enterprises of which:	25 736	56 765	90 192	119 585	131 335	145 842
Eskom [4]		23 803	46 876	80 735	79 735	70 289
Transnet [5]		16 935	20 531	24 301	20 071	12 570
Infraco [6]	627	-	377	210	140	
SARCC rolling stock, signalling, Buildings,perways, public transport infrastructure and systems grant(PTIS) [7]		4 135	5 347	6 608	7 723	
ACSA				4 983	1 174	967
Total	**83 605**	**130 191**	**190 634**	**237 873**	**259 433**	**290 061**
Percentage of GDP	*4.6%*	*6.3%*	*8.3%*	*9.6%*	*9.7%*	*9.8%*
GDP	*1 810 664*	*2 067 884*	*2 304 111*	*2 474 214*	*2 686 254*	*2 952 989*

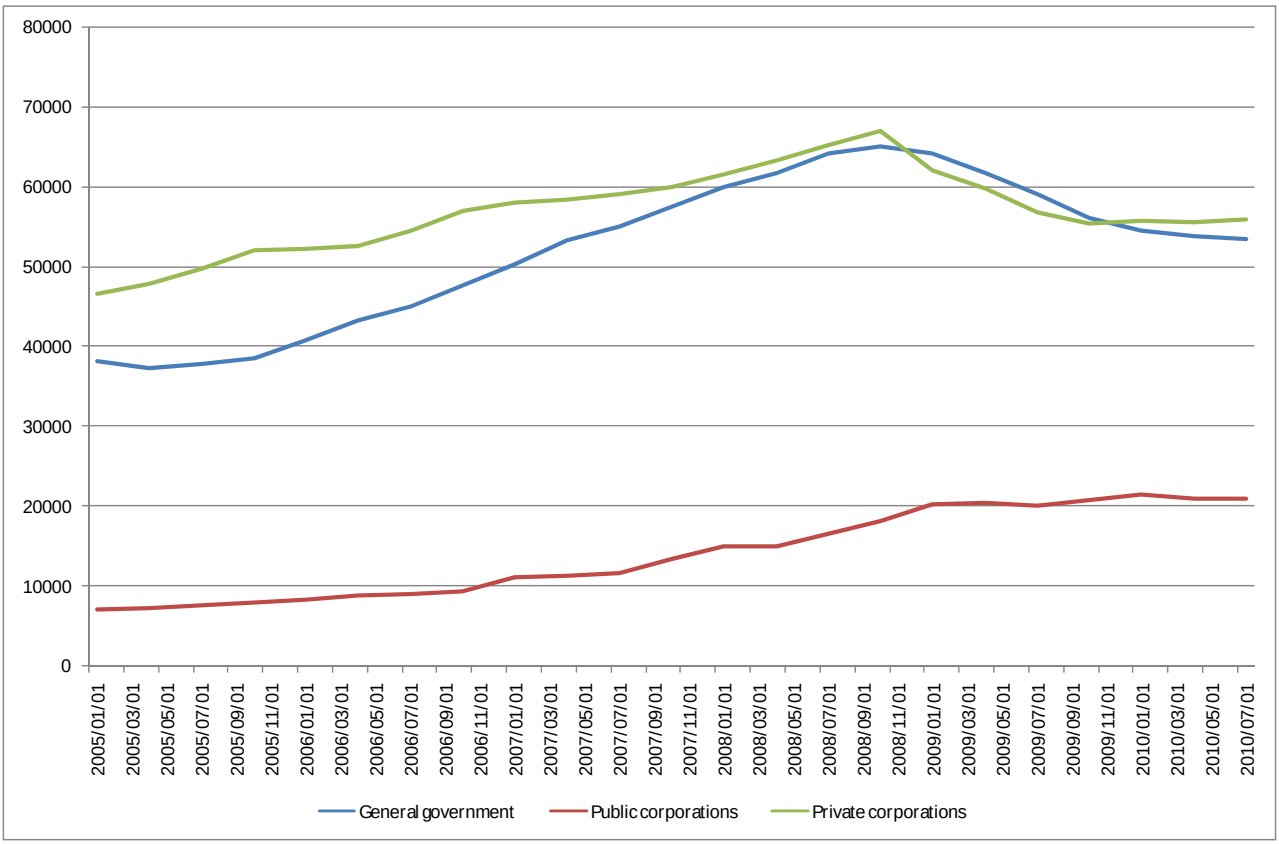
Source: National Treasury (2008) – Medium-Term Budget Policy Statement (MTBPS), National Treasury (2009) – Budget Review.

However, much of the tradeable content of public infrastructure investment, as well as other large components of public procurement, are being imported. This has both micro- and macro-economic consequences. At the micro-economic level, the failure to adequately promote public procurement represents an enormous lost opportunity to resuscitate key sectors of the economy, raise their competitiveness and reposition them as exporting sectors of the future. These include the metal fabrication, capital and transport equipment sectors. At the macro-economic level, high levels of imports have increased the current account deficit, which can lead to balance-of-payments problems and thus threaten the sustainability of the capital expenditure (capex) programme itself.

Since the fourth quarter of 2008, gross fixed capital formation of both private enterprises and government began to decline, while investment by public corporations plateaued (Figure 8). This is a matter of concern for general growth and employment prospects –

particularly due to lower growth and employment in the construction sector. It also impacts manufacturing, due to lower demand for inputs, such as steel and cement.

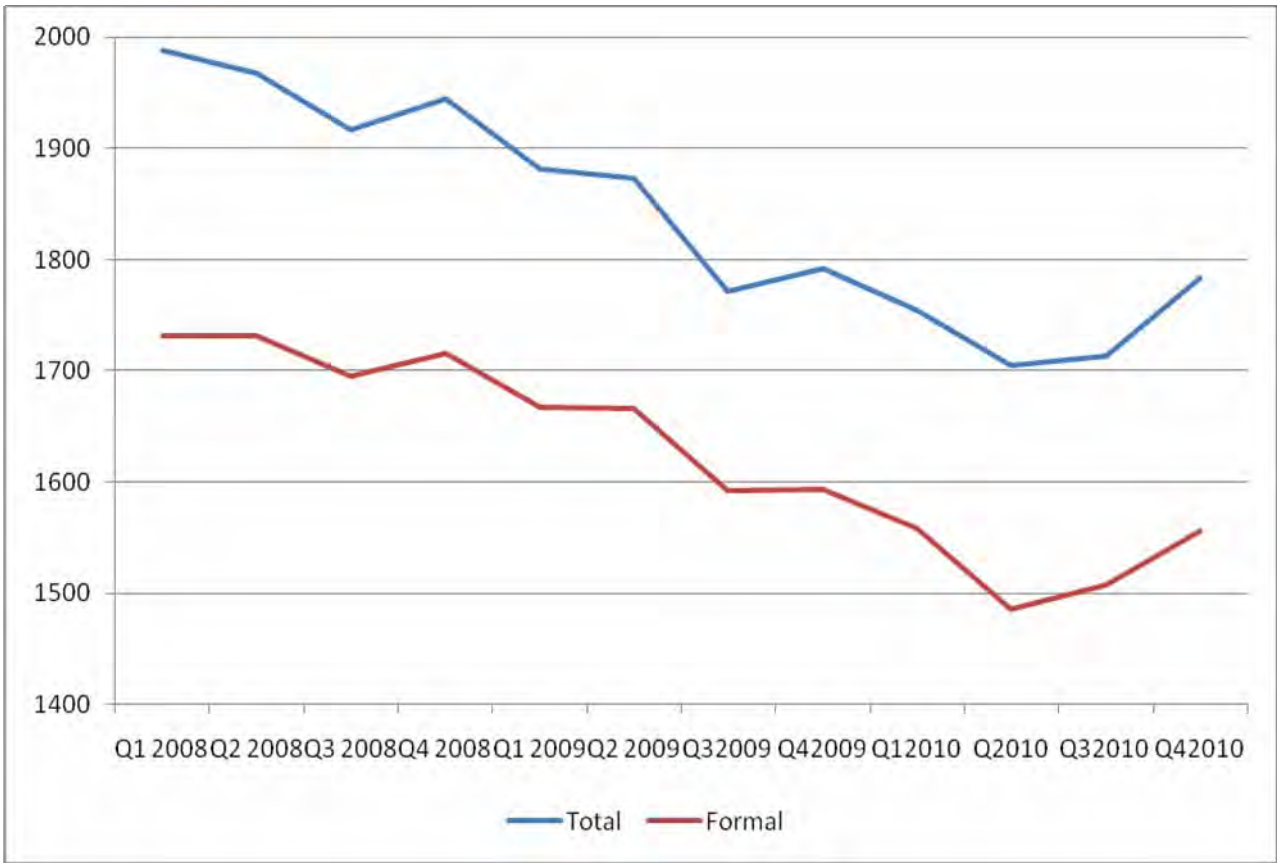
Figure 8: Real Gross Fixed Capital Formation Q1 – 2005 to Q3 – 2010 (R'm 2005 prices)



Source: South African Reserve Bank.

As a consequence of the negative factors identified above and ongoing prevailing constraints, manufacturing continued to shed jobs from the Q1 – 2008, through to Q2 – 2010, with employment levels recovering somewhat in both the third and fourth quarters of 2010 (Figure 9).

Figure 9: Total and Formal Manufacturing Employment, Q1 – 2008, to Q4 – 2010



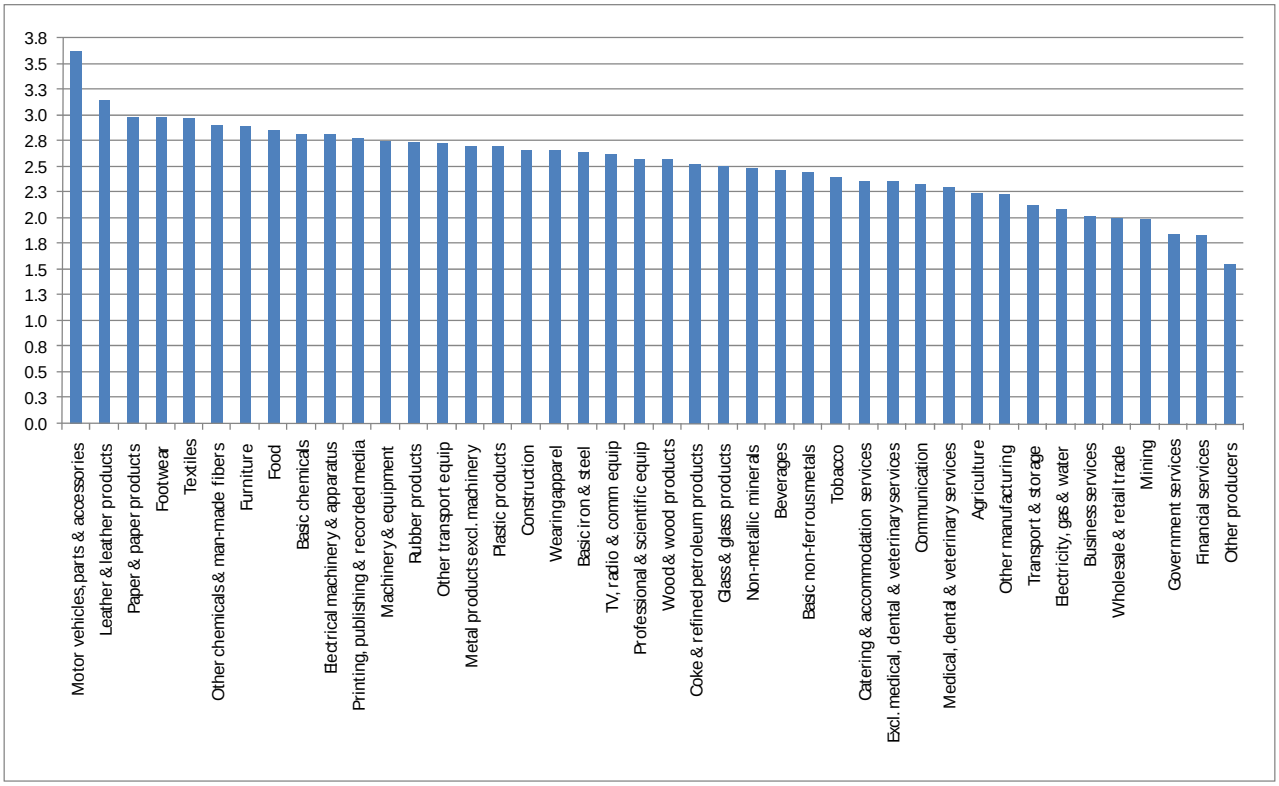
Source: StatsSA.

3. THE IMPORTANCE OF IPAP FOR THE NEW GROWTH PATH

Industrial policy and the IPAP form part of a larger set of inter-related policies and strategies, which make up government's New Growth Path (NGP). The NGP provides a fuller articulation, integration and coherence of a range of policies and programmes. IPAP emphasises that sectors have differing characteristics and are important in an economy in their own right, as well as through the impact they have on other sectors, particularly via multiplier effects.

Figure 10 demonstrates that manufacturing sectors have the highest growth multipliers in the economy.

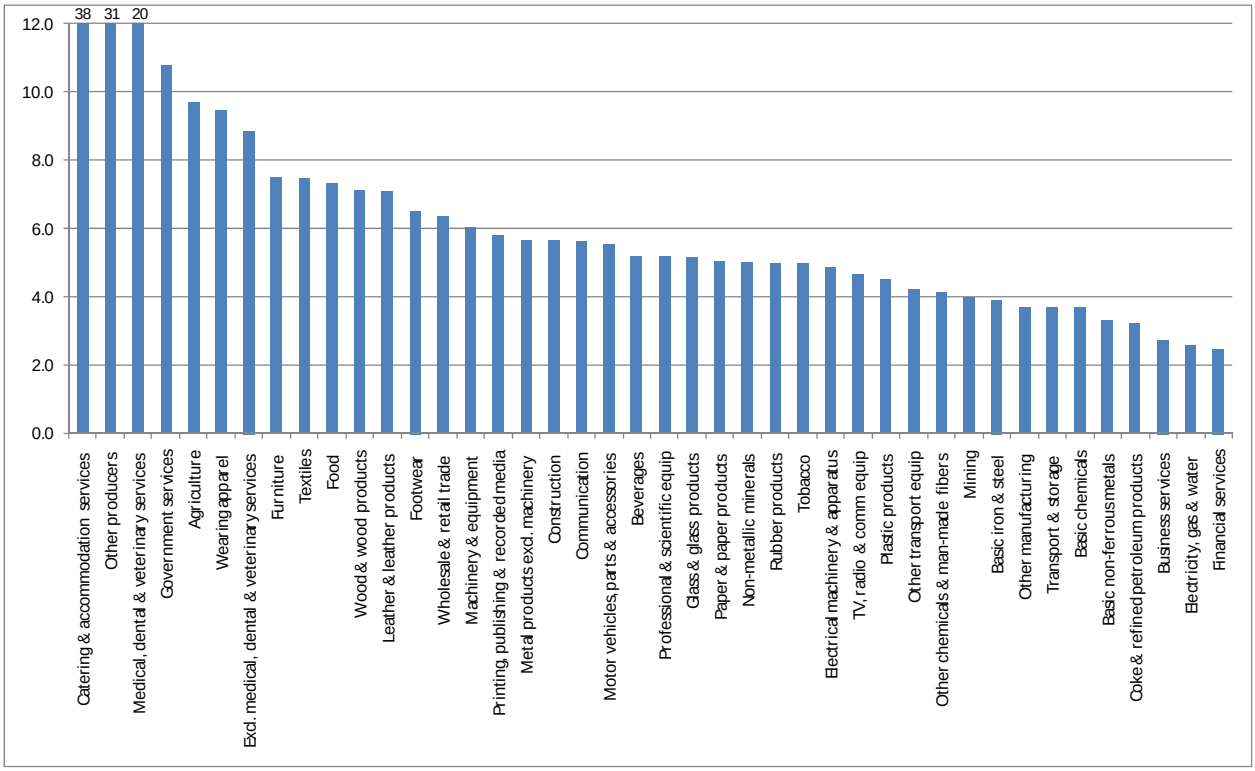
Figure 10: Growth Multipliers



Source: CSID calculations, using Quantec data.

Figure 11 shows that a number of manufacturing sectors also have relatively high employment multipliers.

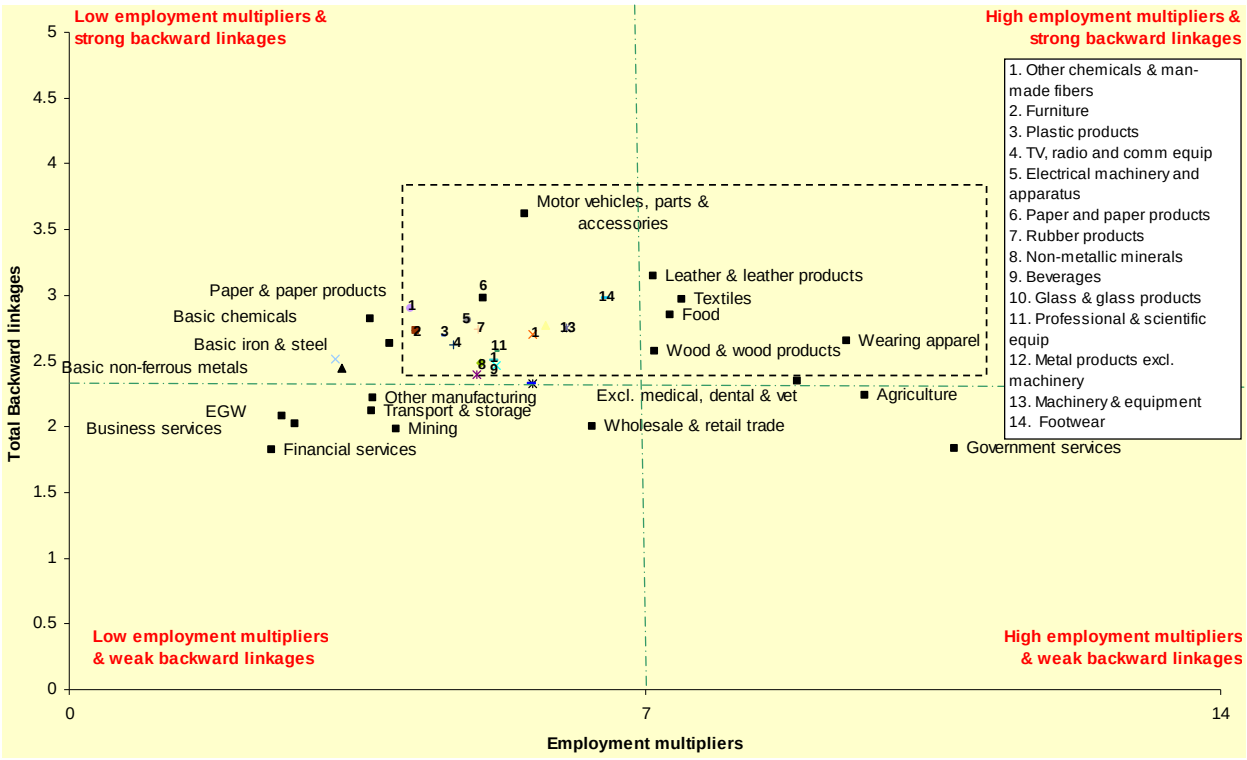
Figure 11: Employment Multipliers



Source: CSID calculations, using Quantec data.

IPAP thus has a particular role to play in dynamising employment and growth in the economy, through its focus on value-adding sectors that embody a combination of relatively high employment and growth multipliers (Figure 12). As measured through backward linkages, manufacturing and other IPAP sectors pull through inputs from the primary sectors and other manufacturing and services sectors, and transform them into higher-value products, thereby stimulating employment along the entire value chain. They also provide an additional impetus to employment and growth through forward linkages to 'downstream' sectors, predominantly in services. It is in this sense that manufacturing and other IPAP sectors play the central dynamising role in the economy, through a combination of direct and indirect effects.

Figure 12: IPAP: Value-Added Sectors with High Employment and Growth Multipliers



Source: CSID calculations, using Quantec data.

4. A COMPREHENSIVE AND INTEGRATED RESPONSE TO THE SCALED-UP INDUSTRIAL POLICY

The above analysis indicates that seven sets of policies are critical to achieving a scaled-up industrial policy and a shift towards strengthening the productive side of the economy in general.

1. Stronger articulation between macro- and micro-economic policies;
2. Industrial financing channelled to real economy sectors;
3. Promotion of public and private procurement, to raise domestic production and employment in a range of sectors, including the alignment of B-BBEE and industrial development objectives, and influence over private procurement;
4. Developmental trade policies that deploy trade measures in a selected and strategic manner, including tariffs, enforcement, and SQAM or Standards, Quality Assurance, Accreditation and Metrology measures;
5. Competition and regulation policies that lower costs for productive investments, and for poor and working-class households;
6. Skills and innovation policies that are aligned to sectoral priorities; and
7. Deployment of these policies in general and in relation to more ambitious sector strategies, building on work already done.

5. STRENGTHENED COHERENCE BETWEEN MACRO- AND MICRO-ECONOMIC POLICIES

Numerous commentators have emphasised the need for macro-economic policies to be aligned and tailored to micro-economic imperatives. Therefore, there is a need to work towards stronger coherence and mutual support between macro- and micro-economic policies.

The success of the IPAP depends fundamentally on macro-economic policies that are favourable – relative to our key trading partners – in the following respects:

- A competitive and stable exchange rate structure; and
- A competitive real-interest-rate structure.

Micro-economic policies can make a substantial contribution to the stability of macro-economic variables. This contribution includes:

- A focus on certain micro-economic policies – particularly competition policy – on lowering inflation, particularly with respect to:
    - 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.
- Active promotion of investment in certain sectors, which can also have a positive impact on inflation. For instance, the promotion of small-scale maize millers will contribute to increasing competition and moderating pricing in a key sub-sector, which has an impact on food pricing.
- IPAP will contribute substantially towards an improvement in the trade balance, with respect to not only increasing the production of domestic goods and services, but also building new areas of export competitiveness.

6. INDUSTRIAL FINANCING

Many commentators have noted the low relative profitability of sectors that have high prospects for developmental returns in the economy, particularly manufacturing. One key determinant of profitability is the availability and cost of capital. Research undertaken over the past year demonstrates that the duration or term of the industrial financing and the manner in which industry specific financing instruments are delivered – including with respect to ensuring that industrial financing is closely aligned with incentives – also plays a critical role.

The analysis above demonstrates that:

- South Africa's cost of capital is high, and the average term of loans is short, relative to our major trading partners;
- Most recent private credit extensions have been in the form of debt-driven consumption; and
- Where credit has been extended for investment, it has been highly concentrated in consumption-driven services sectors and to a lesser extent, to relatively capital- and energy-intensive industries. Therefore, the private financial sector in South Africa is not adequately aggregating savings and distributing them towards productive investment.

Ongoing research points to inherent market failures, such as a mismatch between short-term sources of funding (particularly deposits) and the ability to extend long-term lending. Hence, the role of public industrial financing is to channel capital into productive investments that directly and indirectly generate sustainable jobs and value-addition. It is critical to emphasise that targeted industrial financing has a number of positive macro-economic impacts. Industrial financing lowers pressure on monetary authorities for unduly low interest rates across the entire economy, which could be channelled into unsustainable, debt-driven consumption and speculative investment activities. Increased supply in productive sectors lowers price pressures in the economy and thus moderates inflation. Increased investment that generates a mix of import replacements and exports, lowers the current-account deficit and reduces associated balance-of-payments risks. It also has a positive net revenue effect.

Both on-budget investment incentives and Development Finance Institutions (DFIs) are extremely important in allocating capital towards productive sectors. The 2008/09 recession has placed immense pressure on the budget, and hence DFIs – particularly the IDC – will need to play a disproportionate role in financing private investment in real-

economy sectors. Development banks have played a critical role in channelling finance to productive activities in countries that have industrialised rapidly, such as the Korean Development Bank (KDB) and Brazil's *Banco Nacional de Desenvolvimento Econômico e Social* (BNDES).

The IDC has risen to the challenge; reviewed its business model and has set aside R66 billion for IPAP and NGP sectors.

On-budget incentives also play a critical role in industrial financing. A key focus for successive iterations of IPAP will be to strengthen the conditionalities around both on- and off-budget support mechanisms, to maximise the development impact. In particular, a process will be undertaken to review and strengthen conditionalities related to:

- Direct and indirect employment intensity and contribution;
- Localisation of supply chains and supplier development;
- Market behaviour of dominant firms; and
- Much stronger scrutiny and conditionalities for any further capital and electricity-intensive 'mega-projects'.

6.1 Key Action Programmes

6.1.1 Securing ongoing sources of concessional funding for disbursement by the IDC into IPAP sectors

Key milestones

- 2011/12 Q3: Finalise proposals over and above those already implemented for concessional industrial financing including the term of loan and sector-specific financing packages.

Lead departments/agencies: Economic Development Department (EDD)
Supporting departments/agencies: **the dti**, National Treasury (NT), Industrial Development Corporation (IDC)

6.1.2 Strengthen conditionalities with respect to on-budget incentives

Key milestone

- 2011/12 – 2013/14: Review and strengthen conditionalities attached to core on- and off-budget forms of support.

Lead departments/agencies: EDD

Supporting departments/agencies: **the dti**, NT/IDC

7. LEVERAGING PROCUREMENT

The strategic promoting of public procurement will be critically important for the success of the IPAP across a range of sectors, including:

- Metal fabrication, capital equipment and transport equipment;
- Buses and other medium and heavy commercial vehicles;
- Pharmaceuticals (appropriately sequenced so as not to disrupt the roll-out of critical medicines); and
- Electronics such as set-top boxes.

Much public procurement is conducted on an *ad hoc* rather than a strategic basis and does not deliver adequately on either value-for-money or key industrial policy objectives. Some fundamental changes are required with respect to procurement legislation, regulations and practice. These changes must be sequenced to avoid disruptive transitions.

Preferential procurement regulations and legislation will be overhauled through a two-stage process. First, the current process of amending regulations to the Preferential Procurement Policy Framework Act (PPPFA) is near to finalisation and promulgation. This will give effect to the National Economic and Labour Council (NEDLAC) Crisis Response Framework.[1] These amendments align preferential points with B-BBEE and strengthen local procurement provisions by empowering **the dti** to designate sectors of critical importance. The amendments also enable pro-active promotion of local procurement in non-designated sectors. **the dti** has completed a detailed process and template for designation. There is a strong focus on industry structure, competitive conditions and modalities to ensure maximum value for money for the state. The first designations for local procurement are targeted to take place in the first half of 2011; depending on the timing of the promulgation of the regulations.

Work on proposals for a revised National Industrial Participation Programme (NIPP), which includes the Competitive Supplier Development Programme (CSDP), will seek to introduce Fleet, Indirect and Direct procurement provisions. These provisions seek to strengthen the public procurement instrument in support of local manufacture and align empowerment considerations with interventions to support the growth of the productive sectors of the

[1] The Framework Agreement – which was confirmed as government policy in the President's State of the Nation Address of 3 June 2009 – identifies procurement of domestically produced goods and services as central to the crisis response:
"All the social partners, including parastatals, will encourage local procurement of supplies, services and other requirements wherever possible in order to maintain and increase local output and employment levels. This applies particularly to the large procurement programmes attached to major public and private investment projects where co-operation among social partners can be employed to promote local suppliers. This will also include procurement of pharmaceuticals and medical supplies, clothing and textile products, food and perishables, stationery, computers, office equipment and consumables, automobiles and transport services, consulting services and printing. The review of preferential procurement legislation should be undertaken with urgency."

economy. The combined NIPP and CSDP will leverage investment, exports and technology in the context of large public procurements which embody more than US$ 10 million of imported content. Pre-tender processes in relation to strategic tenders, with domestic production and supplier development requirements built up-front into strategic tenders, will be embodied in the revised framework. The DST-funded Technology Localisation Programme is already operating in collaboration with DPE on the CSDP activities overseen by Eskom and Transnet. This work on technology assistance to qualifying manufacturing companies will also support the NIPP and CSDP Metro councils; and municipalities will be brought into the process.

Work is underway to identify eight to ten large and strategic procurement 'fleets'. The following 'fleets' have indicatively been identified thus far:

- Locomotives, wagons and coaches for freight and commuter rail, procured by Transnet and the Passenger Rail Agency of South Africa (PRASA);
- Key elements of the coal-fired electricity build programme, procured by Eskom,
- Key elements of a potential nuclear electricity build programme, procured by Eskom;
- Buses, procured by various Metros; and
- Appropriate sequencing for inclusion of key pharmaceuticals, procured by the Department of Health (DoH), particularly anti-retrovirals (ARVs) production, including strategic active pharmaceutical ingredients (APIs).

In addition to public procurement, government also has instruments with significant potential influence over private procurement. The B-BBEE policy is a lever that relies on influencing public procurement by the private sector to promote inclusion in the economy in various forms. However, the linkages between B-BBEE and industrial policy have not been adequately formulated. This requires a process of review and adjustment. The impact of B-BBEE as a potential leverage on domestic industrialisation will form part of the current B-BBEE review.

DFIs, such as the IDC and the Development Bank of Southern Africa (DBSA), are important lenders in the South African economy for industrial and infrastructural investments. They often invest in large projects in South Africa and more broadly on the African continent. DFIs – particularly the IDC and DBSA – must ensure that they build local and regional localisation into their funding conditionalities, especially for large projects. While there must be a strong focus on crowding in South African manufacturers of machinery and other inputs, there must also be a conscious effort to crowd in and develop suppliers in African countries in which regional projects are financed.

Proudly South African (PSA) is an institution that can potentially strongly influence procurement in favour of domestic production. To achieve this, stronger management and a resuscitation of the profile of PSA is required. Moreover, PSA should strengthen the value of its label by accrediting companies with high levels of local content. The South African National Accreditation System (SANAS) will play a role in assisting PSA to do so.

In the near future these instruments will be utilised to greatly strengthen the extent to which procurement can be used as an instrument to support local manufacturing. The finalisation and deployment of these instruments will be followed by a broader review and amendment of all procurement legislation and processes.

7.1 Key Action Programmes

7.1.1 Implementation of the amendment to the regulations of the PPPFA

Key milestones

- 2011/12 Q1: Amendment to the regulations of the PPPFA have been finalised and await promulgation. The regulations include:

    - Alignment of preferential points with B-BBEE,
    - Designation of sectors for local production in state tender processes,
    - Completion of designations with a strong focus on industry structure and competitive conditions and modalities to ensure maximum value for money for the state, and
    - Enablement of pro-active promotion of local procurement in non-designated sectors.

The first designations for local procurement are targeted to take place in the first half of 2011.

Lead departments/agencies: NT/**the dti**/EDD
Supporting departments/agencies: Department of Public Enterprises (DPE) and Department of Science and Technology (DST)

7.1.2 Amalgamation of the provisions of the NIPP with the CSDP

Key Milestones

- 2011/12 Q2: Amalgamate the NIPP and CSDP through a Cabinet Memorandum and supporting documentation. The process will convert the NIPP/CSDP into a pre-tender process for strategic procurements. Strategic procurements will require a pre-tender process that embodies the following:

    - A detailed breakdown of demand, identifying *inter alia* areas of repeat procurement and opportunities for standardisation;
    - A detailed supply analysis that identifies existing domestic supply capacity;
    - A gap analysis that identifies areas for domestic procurement based on both existing capacity and capacity that can be built through active supplier development; and
    - Inclusion of these domestic procurement requirements upfront in the tender. Exemption from NIPP in relation to a specific procurement only occurs when there is both a CSDP plan in place related to the said procurement and that this plan is being implemented.
- 2011/12 Q1: DPE to strengthen shareholder compacts with Eskom and Transnet, including the explicit introduction of local value-added as a Key Performance Indicator.

Lead departments/agencies: the dti, DPE
Supporting departments/agencies: NT

7.1.3 Identification of strategic procurement 'fleets' and development of long-term procurement and local-content plans

Key milestones

- 2011/12 Q2-Q4: Designation through Cab memo and, where relevant in terms of the PPPFA, of the following 'fleets':
    - Locomotives, wagons and coaches for freight and commuter rail procured by Transnet and PRASA;
    - Buses procured by various Metros;
    - Set-top boxes for DOC digital migration process;
    - Components and materials for aircraft procured by South African Airways and the defence sector to introduce Fleet, Indirect and Direct procurement provisions; and

- Align empowerment considerations with interventions to support the growth of productive sectors in the economy.

- 2011/12 Q2: Finalising agreements with relevant procuring entities around the scope and timing of designation of the following 'fleets':
  - Key elements of the coal-fired electricity building programme procured by Eskom;
  - Key elements of the nuclear electricity building programme procured by Eskom;
  - Key pharmaceuticals procured by the DoH, particularly ARVs and production, including strategic APIs;
  - Key elements in the aerospace industry; and
  - Work with procuring entities to identify local procurement plus supplier development requirements in tenders.

Lead departments/agencies: the dti
Supporting departments/agencies: EDD, Department of Transport (DoT), DoC, DPE, DoH, DST/Transnet, PRASA, Metros and Eskom.

7.1.4 Alignment between B-BBEE and industrial policy

Key milestone

- 2011/12 Q1: Review selected aspects of the B-BBEE codes and propose amendments to align the codes with industrial policy considerations.

Lead departments/agencies: the dti
Supporting departments/agencies: EDD/B-BBEE Advisory Council

7.1.5 Strengthening the role of DFIs in locking in domestic and regional procurement

Key milestone

- 2011/12 Q1: Development and communication of guidelines to DFIs for promotion of local and regional content in relation to their financing, particularly for large projects in South Africa and Southern Africa.

Lead departments/agencies: EDD

Supporting departments/agencies: **the dti**, NT and DFIs

7.1.6 Revamping PSA and establishing standards and accreditation support for procurement of local content

Key milestones

- 2011/12 Q2: Strengthen management and oversight of PSA.
- 2011/12 Q3: South African Bureau of Standards (SABS) to finalise the development of a South African National Standard (SANS) for procurement of good and services with local content
- 2011/12 Q4: SANAS to develop an accreditation program for certification bodies that will certify local content for procurement of goods and services as per the abovementioned SANS

Lead departments/agencies: the dti

Supporting departments/agencies: SANAS and PSA

8. DEVELOPMENTAL TRADE POLICIES

The NIPF identifies tariffs as instruments of industrial policy that have implications for employment, investment, technology and productivity growth. Tariff policy should be decided primarily on a sector-by-sector basis dictated by the imperatives of sector strategies.

The NEDLAC Crisis Response Process has re-emphasised the need to consider lowering tariffs on intermediate inputs into manufacturing and other productive sectors. It has also identified scope for the selective use of tariffs under the following circumstances:

- Potential for significant creation and/or retention of sustainable jobs;
- Potential for significant import replacement;
- 'Water' between bound and applied rates; and
- Formalising and strengthening conditionalities related to tariff increases.

Various forms of customs fraud and illegal imports, including smuggling and under-invoicing, are undermining productive capacity and employment across a range of sectors. Therefore, South Africa will need to enforce its trade laws more effectively. Measures to deal with this include:

- As part of its Customs Modernisation Project, the South African Revenue Service (SARS) will extract indicative prices that will be used to alert customs officials to under-invoicing and other types of customs fraud.
- Dedicated capacity will be set up to deal with fraudulent and illegal imports in sensitive sectors, commencing with clothing and textiles.
- The disposal of seized goods will be done in a manner that does not disrupt the domestic market.
- Work to define dedicated ports of entry for certain high-risk products will be stepped up.
- Criminal prosecutions instead of fines will be pursued in sensitive sectors and above certain thresholds.
- Loopholes will be identified and closed, for instance neighbouring countries being used as conduits for illegal/fraudulent imports as well as the misuse of 'trade fairs' to avoid the payment of customs duty.

Matters related to SQAM – otherwise known as Technical Infrastructure – are set to play an increasing role in global trade. The application of Technical Barriers to Trade (TBTs) and Non-Tariff Barriers (NTBs) by industrialised countries and advanced developing

countries makes it difficult to access their markets. These countries have put in place increasingly demanding standards, generally related to safety and health. A specific emerging threat is the rise of 'eco-protectionism' under the guise of addressing climate change concerns, particularly from advanced countries. For instance, some countries are considering the imposition of 'border adjustment taxes' on imports produced with greater carbon emissions than similar products produced domestically, and subject to carbon-emission limits.

Our Technical Infrastructure policies and institutions need to re-orient themselves to play a strategic industrial policy role. The key institutions involved are:

- South African National Accreditation System (SANAS);
- National Regulator for Compulsory Specifications (NRCS);
- South African Bureau of Standards (SABS); and
- National Metrology Institute of South Africa (NMISA).

This re-orientation will have two broad strategic thrusts:

- 'Locking out' unsafe and poor quality imports; and
- 'Locking in' access to increasingly demanding export markets.

Technical Infrastructure systems will be strengthened to address weaknesses that have been identified in the system of institutions. For instance, a number of electrical and plumbing inputs into buildings do not comply with mandatory standards. However, enforcement lies with municipalities who – due to multiple service-delivery demands – are not actively enforcing these standards. Thus a shift to pre-border enforcement of certain mandatory standards is necessary. Work to strengthen our technical infrastructure will be undertaken in a manner consistent with our international treaty obligations.

Therefore, our technical infrastructure institutions will also re-prioritise their activities to support the development, accreditation and enforcement of standards that can create, scale up and resuscitate certain industries while simultaneously contributing to broader social benefits. These industries can serve either domestic or export markets. For instance, strengthening standards in relation to energy and water efficiency can contribute fundamentally to the growth of domestic industries in areas such as the production and installation of solar water heaters, energy-efficient industrial motors and domestic rain-water tanks. These institutions will also have to support more actively export market

access by assisting exporting firms to meet the increasingly demanding standards of advanced developed and developing countries. Moreover, technical infrastructure will need to play an increasing role in addressing energy and water-efficiency imperatives, at the household and industry levels.

Multi-lateral, regional and bi-lateral trade agreements are all creating long-term downward pressure on tariffs as an instrument of strategic trade policy. The role of TBTs and NTBs is increasing the relative importance of technical infrastructure policies and institutions. Developed countries and advanced developing countries are increasingly using TBTs and NTBs to protect their markets.

In order for South Africa to deepen its manufacturing capabilities and move into knowledge-intensive value chains, a tremendous amount of industry upgrading will be necessary. A sound technical infrastructure plays a significant role in the economy in two ways. First, it assists firms to adopt and meet the quality standards necessary to compete in global markets. Secondly, it assists in ensuring that low-quality imports do not undercut the productive base of our manufacturing sector. The ability to manufacture to specific requirements is critical in many advanced sectors. It is these measurement-based capabilities that are key criteria for potential players to become members of global supply chains. Government's aim is to deepen the integration of prioritised sectors into these important value chains.

Technical regulations and standards, and environmental compliance and attendant administrative requirements can create technical barriers to trade that can impede government's efforts to diversify the economy and grow the South African export basket. Technical infrastructure allows our economy to develop and set standards, test against these standards and accredit various suppliers as being competent to perform technical measurements. This is an effective mechanism for the TBT regime.

Key opportunities

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

- Stronger enforcement of existing mandatory standards, with a possible shift to enforcement at the border and the establishment of a South African import-alert programme;

- The introduction of additional mandatory standards;
- The identification of industries that could be created/resuscitated through a strengthening of standards that also have positive social benefits;
- The identification of key export markets and products that require stronger SQAM support to unlock significant growth opportunities; and
- The strengthening of the capacity of technical-infrastructure institutions and conformity assessment services to be able to respond better to the needs of the industry.

Constraints

Current measures to exclude non-compliant products from the market are not effective. Medium and small enterprises have difficulty meeting increasingly higher demands for compliance with the standards and technical regulations of sophisticated markets. The technical infrastructure institutions also need to be strengthened to enable them to respond timeously to industry needs.

8.1 Key Action Programmes

8.1.1 Ongoing developmental tariff reform

Key milestones

- 2011/12 – 2013/14: Ongoing – scope for industries to apply to the International Trade Administration Commission (ITAC) for selective tariff increases on products with scope for significant potential for the creation/retention of sustainable jobs, import replacement and 'water' between bound and applied rates.
- 2011/12 – 2013/14: Ongoing – scope for further selected decreases in tariffs on intermediate inputs into manufacturing and other productive sectors.

Lead departments/agencies: the dti/ITAC
Supporting departments/agencies: EDD

8.1.2 Clampdown on customs fraud

Key milestones

- 2011/12 – 2013/14: Ongoing – application of an indicative reference price system to alert customs officials to possible under-invoicing and other types of customs fraud.
- 2011/12 – 2013/14: Ongoing – dedicated investigations and prosecutions of fraudulent and illegal imports.
- 2011/12 – 2013/14: Ongoing – disposal of seized goods in a manner that does not disrupt the domestic market.
- 2011/12 – 2013/14: Ongoing - work with SARS in relation to dedicated ports of entry for specified sensitive products.
- 2011/12: Closure of loopholes by ITAC, such as the misuse of 'trade fairs' for the sale of imports.

Lead departments/agencies: SARS/NT
Supporting departments/agencies: **the dti** and ITAC

8.1.3 Review trade valuation methodology to bring South Africa more in line with major trading partners

Key milestone

- 2011/12 Q1: International Trade and Economic Development (ITED), and SARS, to complete investigations on the implications of migrating from Free On Board to Cost Insurance and Freight, with a view towards aligning it with major trading partners.

Lead departments/agencies: the dti (ITED)
Supporting departments/agencies: EDD, Department of Agriculture, Forestry and Fisheries (DAFF), NT, Department of Mineral Resources (DMR)/SARS and ITAC

8.1.4 Strengthen market standards

Key milestones

South African Bureau of Standards (SABS) to develop South African National Standards (SANS) for automotive diesel fuel; alternative-fuel vehicles; electrical products; and certain chemicals.

- 2011/12 Q1: SANS 1518 for Transport of dangerous goods for the design, construction and testing, approval and maintenance of road vehicles and portable tanks.
- 2011/12 Q3: SANS 10252-1 for water supply and drainage for buildings - Part 1: Water supply installations for buildings.
- 2011/12 Q4: SANS 10254 for the installation, maintenance, replacement and repair of fixed electric storage water heating systems; SANS 885 for Processed Meat - Requirements for the production of packaged meat products; SANS 1935 for Automotive Bio diesel and SANS 833 for Biodiesel QMS - Producer requirements.
- 2012/13 Q1: SANS 941 for energy efficiency (EE) in electrical and electronic apparatus.
- 2012/13 Q4: SANS 1103 for electric vehicle propulsion systems; SANS 1104 for gas vehicle propulsion systems approved as projects and SANS 1598 for unleaded petrol.

SABS to introduce testing capacity to support the creation/scaling up of industries

- 2011/12 Q3: Solar water heaters testing.
- 2011/12 Q4: Automotive testing.
- 2011/12 Q2: SANAS to finalise the accreditation system for energy efficient measurement and verification.
- 2012/13 Q4: SANAS to finalise the accreditation system for local content certification.
- 2011/12 Q1: NMISA to purchase a resistance bridge to test humidity and temperature for agro processing and chemicals.
- 2011/12 Q4: NMISA to provide technical support for exports by developing standards for diagnostic radiology for agricultural products, finalise measurements for advanced materials, develop measurement facilities for EE lamps,

commissioning of a Co-ordinate Measuring Machine (CCM) and roundness machine for the automotive and aerospace industry.

Lead departments/agencies: the dti

Supporting departments/agencies: EDD**/**National Regulator for Compulsory Specifications (NRCS), South African Revenue Service (SARS), South African Bureau of Standards (SABS), South African National Accreditation System (SANAS) and National Metrology Institute of South Africa (NMISA)

8.1.5 Strengthening enforcement of existing and new mandatory standards of IPAP sectors

Key milestones

- 2011/12 Q4: NRCS to identify specific products for border enforcement and work with SARS to prevent entry of non-compliant products.
- 2011/12 Q4: NRCS to introduce additional mandatory national standards in the following sectors: solar water heaters, electrical products in fixed installations, frozen fish and paraffin appliances
- 2012/13 Q4: New mandatory standards for processed meats, rock lobster, live aquaculture, energy efficiency for household appliances and lamps
- 2013/14 Q4: New mandatory standards for plumbing components and water efficient building regulations published for public comment

Lead departments/agencies: the dti

Supporting departments/agencies: NRCS, SARS and SABS

8.1.6 Developing and strengthening South African National Standards (SANS) to support the creation/resuscitation of specific industries

Key milestones

- 2011/12 Q3: SANS 6211-1 for thermal performance tests outdoor method and SANS 6210 for Mechanical tests for solar water heaters
- 2011/12 Q4: 7 SANS for wind turbines, SANS for small renewable energy and hybrid systems for rural electrification and SANS 1307 for domestic solar water

heaters to be revised to incorporate information on new designs and to update the requirements for resistance testing.

- 2012/13 Q4: 5 SANS for wind turbines on design requirements, acoustic noise measurement techniques, measurement and assessment of power quality, conformity testing and certification, lightning protection, and power performance measurements of electricity producing wind turbine
- 2011/12 Q3: NMISA to upgrade the power and energy measurement standards by providing calibrations for Eskom and other calibration laboratories

Lead departments/agencies: the dti
Supporting departments/agencies: SABS

8.1.7 Technical infrastructure support for exports

Key milestones

- 2011/12 Q2: Draft SADC policy proposal, for the use and implementation of the globally harmonised system of classification and labelling of chemicals (GHS) in regulations for occupational health and safety and transport in SADC.
- 2011/12 Q4: SADC Trade and Industry ministerial approval of common SADC standards for environmental management, including the following uniform provisions and approvals:
    - production of retreaded pneumatic tyres, for commercial vehicles and their trailers and motors;
    - safety glazing materials and their installation on vehicles;
    - approval of retro-reflective markings for vehicles, household and similar electrical appliances -grills, toasters and similar portable cooking appliances;
    - 2012/13 Q3: SADC Trade and Industry ministerial approval of SADC policy proposal for the use and implementation of the globally harmonised system of classification and labelling of chemicals (GHS) in regulations for occupational health and safety and transport in SADC; and
    - 2012/14 Q4: Develop common standards for the classification of chemicals in the SADC to support South African exports.

Lead departments/agencies: the dti

Supporting departments/agencies: EDD**/**SANAS, SABS, NMISA and NRCS

8.1.8 Strengthening the South African technical infrastructure to support industrial development

Key milestones

Technical skills plan for NMISA, SABS, SANAS and NRCS

- 2011/12 Q1: Develop draft technical skills plan that targets the following competencies: metrologists, accreditors, standards writers and compulsory-specification practitioners.
- 2011/12 Q2: Finalise technical skills plan that targets the following competencies: metrologists, accreditors, standards writers and compulsory-specification practitioners.
- 2011/12 Q3-4: Secure funding for the skills plan.
- 2012/13: Commence with the training of 40 trainees.
- 2013/14: Continue with training of additional 40 trainees.

Move from Trade Metrology to Legal Metrology

- 2011/12 Q1: Finalise legal metrology policy paper for new legislation.
- 2011/12 Q2: Appoint legal drafter.
- 2011/12 Q4: Drafting of the bill and consultations with NRCS and stakeholders.
- 2011/12 Q4: Finalise the bill and submit to Minister.
- 2012/13 Q1- 2012/13 Q4: Submission of the Bill through Parliamentary process.
- 2013/14 Q2: Cabinet approval.
- 2013/14 Q4: Promulgation of the Legal Metrology Act.

Lead departments/agencies: the dti

Supporting departments/agencies: EDD/SANAS, SABS, NMISA and NRCS

9. COMPETITION POLICY

The South African economy continues to experience ongoing challenges, with respect to low levels of effective competition. This means that firms can exert market power, whether unilaterally or jointly through collusive conduct; and there are significant barriers to the entry and growth of new firms.

In general, low levels of competitive rivalry imply a lethargic economy, where activity is controlled by a few entrenched firms. Returns are derived not by effort and innovation but from the historical position inherited by such firms. More specifically, where the anti-competitive conduct concerns important inputs to downstream, labour-absorbing activities, it directly impacts on employment. Where the products are consumer goods – relied upon by low-income households – it harms the poor.

In the case of the monopolistic provision of strategic goods and services that are publicly provided, there is generally regulation by a legislatively established sector regulator. This is also the case in areas of telecommunications, where the fixed-line incumbent used to be state-owned and -controlled. While there is a clear need to strengthen regulation of public entities, the focus in the IPAP is on role of the competition authorities, working alongside regulatory bodies, particularly in relation to private sector behaviour.

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, especially where they receive state support, are based on dynamic long-term investments in building capabilities and not the short-term exploitation of market power. This must be supplemented by support for the entry and growth of new firms, where practical.

Three areas of activity remain problematic:

- The concentrated supply of certain strategic inputs into manufacturing and other productive processes; such as carbon and stainless steel, chemical polymers and fertilisers, and aluminium is not ideal. In addition to the concentrated supply of inputs there is also frequent concentration in the purchasing of inputs. Thus, value-adding and labour-absorbing manufacturers often face both upward cost and downward price pressures.
- Wage goods and other products purchased largely by poor and working-class households, particularly food, pose a problem.
- The cost-effectiveness of the public infrastructure programme is questionable.

The broader focus of the Competition Commission's activities, over the IPAP period, will continue to be on exercising both existing and recently established legislative powers, with a core focus on the three areas identified above. This will mean working for increased impact in priority areas. The Commission will also be increasing its engagement with government and public institutions, to play a more active role in following up on the findings of anti-competitive conduct and making policy recommendations to government.

9.1 Key Action Programmes

9.1.1 Strengthening implementation of competition policy

Key milestones

- 2011/12 – 2013/14: Continued active focus of competition authorities on investigation, prosecution and policy advocacy with respect to:
    - Intermediate industrial and energy-intensive products, such as steel, chemicals, coal, fuel and cement;
    - Food and agro-processing;
    - Banking; and
    - Infrastructure and construction.
- 2011/12 – 2013/14: Annual reporting on 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.
- 2011/12 – 2013/14: Small number (at least one per year) 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

9.1.2 Ensuring competitive outcomes

Key milestones

- 2011/12 – 2013/14: Stronger conditionalities to be established on state support for large firms, including development finance, linked to competitive conduct.

- 2011/12 – 2013/14: Monitoring of compliance with conditions, in consultation with the Competition Commission.
- 2011/12 – 2013/14: Evaluation of trade policy measures for sectors, in the light of the conduct of firms, to ensure that dynamic comparative advantages are developed, in consultation with the Competition Commission.
- 2011/12 – 2013/14: Wider actions to be identified, including possible regulatory measures against dominant firms engaging in anti-competitive conduct, especially with regard to key inputs into labour-absorbing sectors and the pricing of wage goods.
- 2011/12 – 2013/14: Increased support for entrants and smaller rivals, relative to entrenched dominant firms.

Lead departments/agencies: EDD
Supporting departments/agencies: the dti, Competition Commission, IDC, ITAC, Small Enterprise Development Agency (Seda)

10. DEVELOPING DEMAND-SIDE SKILLS STRATEGIES FOR INDUSTRIAL DEVELOPMENT

A key structural constraint to sustainable industrialisation in South Africa has been the absence of demand-driven, sector-specific skills strategies and programmes, aligned with investment, employment and technological imperatives, flowing from key industrial sector strategies under IPAP. A supply-driven approach to skills planning and delivery, as well as the poor interpretation and measurement of medium-to-long term skills demand, have persisted under the National Skills Development Strategy for 2005 – 2011 and the decentralised skills delivery system, through the Skills Education and Training Authorities (SETAs).

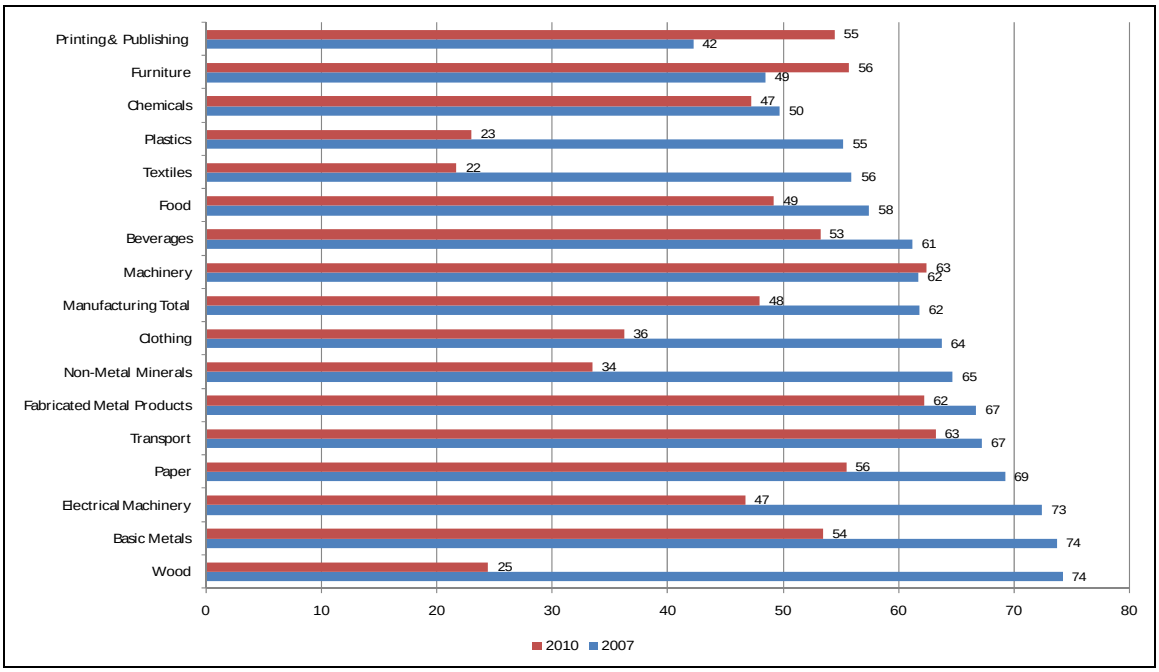
Thus, despite a greater awareness of the need for sector-skills alignment, in practice this has not resulted in sustainable long-term and demand-driven skills interventions that are sufficient in scale, appropriateness, quality and speed (timing of delivery) to address skills needs and shortages at high and intermediate levels. Consequently, there has been an over-supply of so-called lower-skill qualifications (for e.g. NQF levels 1-3) and an under-supply of intermediate and high skill qualifications or 'deep' capabilities (for example, NQF levels 4 and higher). An added complication has been slow progress in effective co-ordination and articulation, across the entire education and skills development pipeline. Skills development curricula, lecturer capacity, equipment, machinery and training facilities have lagged behind production and technological changes. These deficiencies stem from a range of reasons, including the prohibitive costs of capital upgrading especially in public training institutions. These are contributory factors to the inadequate supply of artisans, exacerbated by an average pass rate of 43% up to 2008 in the trade test.

Consequently, changes in the aggregate size and quality of graduate supply across the education and skills development pipeline have not provided a sufficient base to support growth opportunities in the manufacturing sector and new and emerging sectors.

By way of illustration, Figure 13 shows that shortages of skilled labour remain an important constraint on manufacturing. The constraint becomes greater the higher the level of sector demand. Thus, prior to the global economic crisis in 2008, 62% of manufacturing firms reported shortages of skilled labour as a constraint. In contrast, by 2010, the shortage of skilled labour was reported as less of a constraint. However, the structural nature of the problem remains evident in sectors such as fabricated metals, machinery, chemicals and transport equipment, where the skills constraint remained relatively constant irrespective of demand conditions. Manufacturing is still struggling to recover in the light of the global crisis, slow growth in traditional trading markets and an overvalued currency. Into the future, as demand conditions improve skilled labour shortages as a generalised constraint

will require meaningful industrial policy measures spread across and within a broader range of sectors.

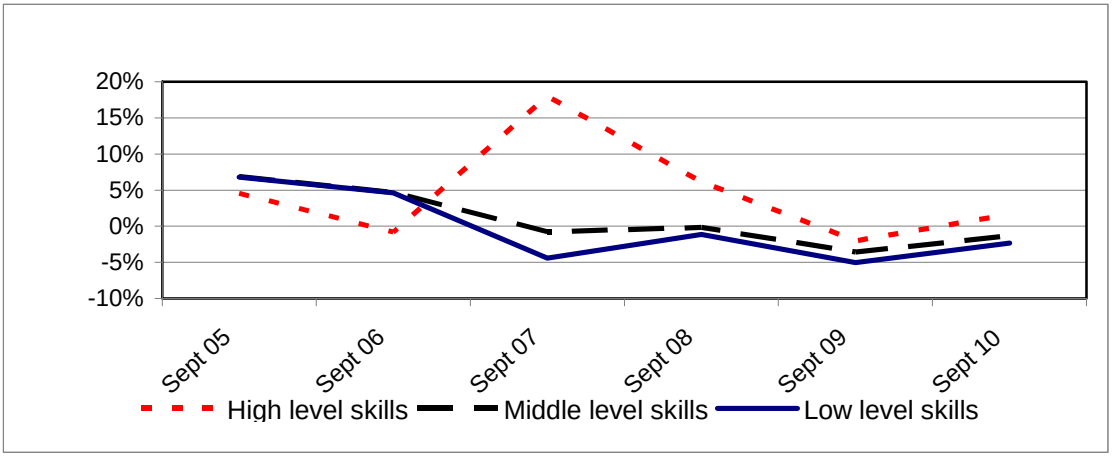
Figure 13: Proportion of firms reporting shortages of skilled labour as a constraint to manufacturing (2007-2010) (%)



Source: BER Manufacturing Survey

Other research evidence supports the assertion that there has been uneven success in improving the general supply and growth of high and intermediate skills in the labour force. Figure 14 shows that except for the sharp annual increase in the employment of high skilled labour in 2007, employment across all skill levels has been growing at a declining rate. Employment of mid-level skills (including artisanal employment) has been shrinking, only showing some recovery from 2009. This may be attributed to the effects of skills demand arising from infrastructure development for the World Cup and other public infrastructure.

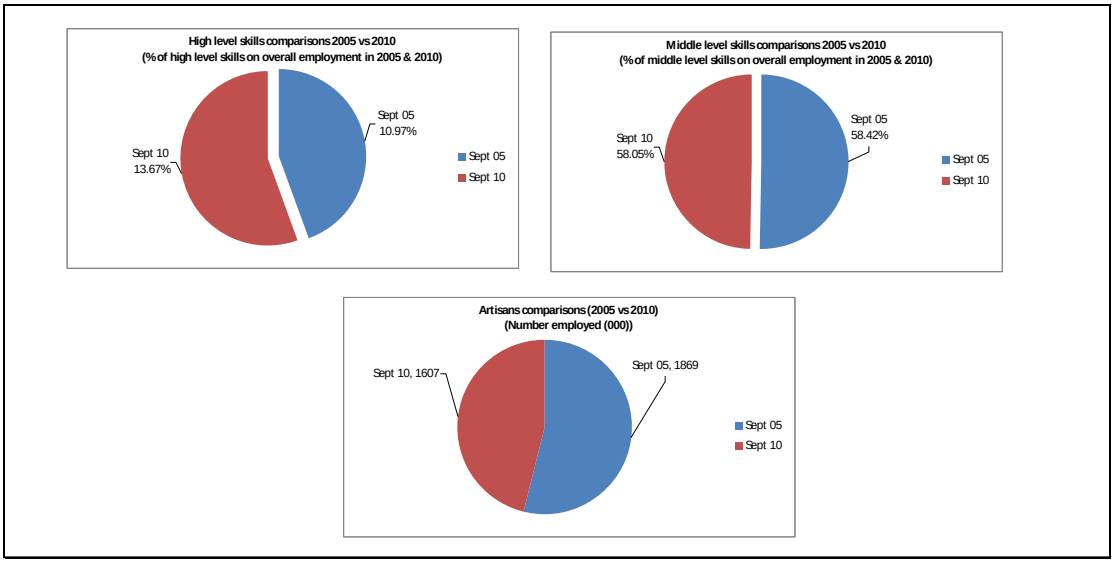
Figure 14: Annual growth trends by high, middle and low level skills (Sept 2005-Sept 2010) (%)



Source: Statistics SA, Labour Force Survey (2005-2010); own calculations

Figure 15 shows that while there has been an increase in the share of high skills to overall employment, the share of intermediate skills has remained static, and there has been a decline in the share of artisanal employment. This implies that the current size and trends in the skills profile of the labour force do not support growth and technological opportunities arising from IPAP 2 in the foreseeable future.

Figure 15: Changes in employment of high, intermediate and artisanal skills (Sept 2005 – Sept 2010) ('000)



Source: Statistics SA, Labour Force Survey (2005-2010); own calculations

Key opportunities

The Human Resource Development Strategy (HRD) for SA seeks to secure planning and delivery alignment across the entire education and skills development pipeline in order to address mid-to-long-term social and economic objectives.

The third phase of the NSDS commits to more responsive skills planning to secure alignment between the SETA planning and delivery system and national development priorities, including IPAP priorities. There is a renewed focus on more occupational qualifications in artisanal and professional skills, instead of short courses. This focus is strengthened by the establishment of a National Artisan Development Project supported by a new institutional framework embodied in the Artisan Moderating Body and the Quality Council for Trades and Occupations (QCTO).

Constraints

On the supply-side of skills development, the SETAs, private training providers, FET colleges and universities do not have a well-established history of demand-side skills planning, and are thus less responsive. Industry leaders have been slow to insert a more long-term perspective in the skills development planning and delivery systems. The role of state-owned enterprises (SOEs) in producing skills beyond their internal needs has been substantially reduced.

10.1 Key Action Programmes

10.1.1 Strengthen demand-side skills planning through the development of a dedicated IPAP National Artisan Development Programme (NADP) for priority sectors

The purpose of a dedicated NADP for IPAP is to centralise and streamline the planning and quality assurance of artisanal qualifications to IPAP priority sectors. It will require investment in dedicated research capacity to measure and project skills demand and supply, fast-track the design and accreditation of occupational appropriate curricula and qualifications through the QCTO; identify appropriate training facilities (skills centres, trade test centres, work experience placement opportunities) and an agreement on appropriate funding of capital requirements (equipment and machinery) at public FET colleges. Thus, a centralised plan for artisan development with medium-to long term targets, action and funding plans will be developed for specific artisanal occupations and sectors.

Key milestones

- 2011/12-2013: Finalisation of an IPAP National Artisan Development Programme concept proposal and agreement with DHET and key SETAs.

Lead departments/agencies: DoHE&T and **the dti**
Supporting departments/agencies: EDD, Manufacturing, Engineering and Related Services SETA (MerSETA), Chieta, FoodBev SETA, Clothing, Textile and Leather SETA, Service SETA and HRD Council, National Skills Fund (NSF).

10.1.2 Streamline the skills delivery system through SOE-Skills Delivery Fora and dedicated Industry-Skills Partnerships for artisans, technicians and engineers in growth and new or 'emerging' sectors

The purpose of dedicated skills delivery systems for IPAP priorities is to ensure that there is greater coherence in the delivery of specialised intermediate and high level skills. It is proposed that strategic delivery partnership agreements be reached among **the dti**, DoHE&T, key SOEs or corporates and selected universities and FET colleges in specific regions or industrial centres. Pooling of resources within specified industrial or geographical regions or areas will optimise skills delivery and allow for greater collaboration with further and higher educational institutions.

Key milestones

- 2011/2012: Identify potential SOE skills delivery fora and develop concept proposals for partnership agreements in 2 high impact priority sectors.

Lead departments/agencies: DoHE&T and **the dti**
Supporting departments/agencies: Key SOEs (final list to be determined based on an assessment of capacity and willingness) including TELKOM, SASOL etc, and key corporates in selected sectors (e.g. fabricated metals, pharmaceuticals, automotive etc).

10.1.3 Support of the National Centres of Excellence to integrate sector competitiveness and skills needs

the dti is currently supporting Centres of Excellence in priority sectors (advanced manufacturing, clothing and leather, aerospace) to support best practice in terms of sector competitiveness as well as skill support. It is proposed that a range of options be

considered in order to ensure the financial and operational sustainability of the Centres of Excellence within the existing SETA system.

Key milestones

- 2011/12 Q3: Complete proposals for the appropriate institutional and funding model for the Centres of Excellence.
- 2011/12 Q4: Complete the transfer where appropriate to the new institutional and funding arrangements.

Lead departments/agencies: DoHE&T**, the dti** and Centres of Excellence.
Supporting departments/agencies: Selected SETAs and the NSF.

11. INNOVATION AND TECHNOLOGY

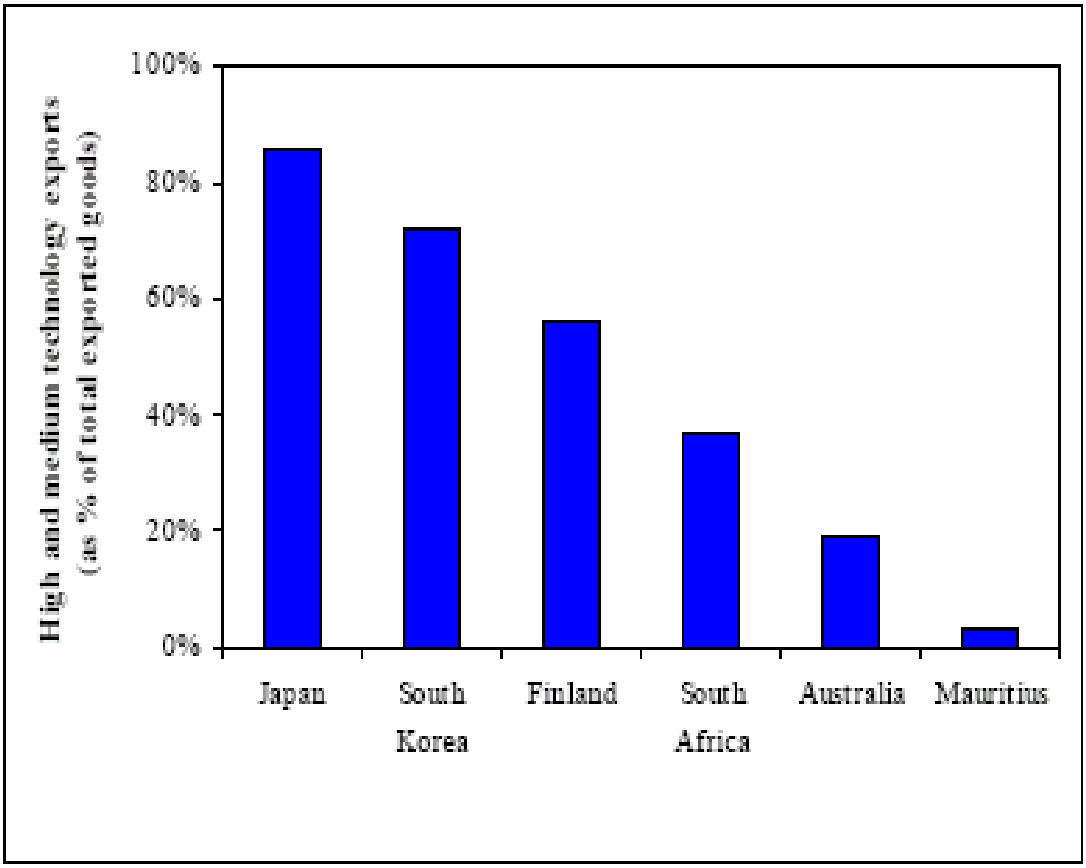
There is an urgent need to ensure that technological capacity and the learning required to use modern technologies in production, especially in manufacturing industries, is continuously upgraded. This necessitates amongst others, continued and increasing support for research and development, measures to support the rapid commercialisation of new domestic innovations and the capacity to apply and use these innovations and those which may be newly acquired.

Global technological advances have increased the skills levels and technological intensity of production, thereby requiring that firms master increasingly sophisticated production techniques in order to remain competitive. Enormous technological advances and the splitting up of production chains across the global economy has contributed to high technology products having shown the fastest growth in manufactured exports. Medium technology products retain a high but steady share, and low technology and resource-based products have declined in world trade.

It is widely recognised that investment in and support for the use of new innovation and technology is under-provided by the market, due mainly to high inherent risks and long term horizons for returns on investment. Apart from the need for public sector support for research and development, commercialisation and operationalising new technologies: many start up manufacturing firms utilising new technology and those acquiring and utilising improved technologies, often require support for periods where returns on investment are initially poor and while tacit knowledge and 'learning by doing' is acquired. To overcome this state of affairs, many industrialised and developing countries utilise a range of policy and financial instruments to support learning and to secure the levels of effort that go into ensuring success in production.

Government has set a target of increasing and sustaining research and development expenditure to at least 1% of GDP to secure development objectives including industrial development and job creation. The need for more expenditure on R&D is further borne out by the fact that all of South Africa's high technology manufacturing industries have trade deficits which are growing steadily.

Figure 16: High and Medium Technology Exports (as percentage of total goods exported)



Source: OECD Report 2007

Figure 17: High Technology Manufacturing Industry: Exports and Imports for SA (2005 to 2008) (Million Rand)

		2005	2006	2007	2008
Exports	High-technology manufacturing	13,930	16,638	19.985	24,207
	Total manufacturing	212,775	252,601	316,193	417,286
	Percentage	6.5	6.6	6.3	5.8
Imports	High-technology manufacturing	80,573	95,425	101,357	122,778
	Total manufacturing	295,409	381,822	462,400	561,388
	Percentage	27.3	25.0	21.9	21.9

Source: South African Science and Technology Indicators, 2009 (NACI).

The data provided above demonstrates the importance of South Africa substantially increasing its innovation efforts. Greater efforts will help to develop and commercialise new products and processes; particularly in medium and high technologies. Consequently this will help to reduce our growing trade deficit in high technology manufactured products and to increase our competitiveness in international markets. However the impact on the competitiveness of and trade deficit in high technology manufactured products is subject to up-scaling the following: investments in R&D; commercialisation of new domestic innovation; more strategic deployment of financial instruments to support the commercialisation and application of new technologies and the operational and management systems that must accompany these.

The Department of Science and Technology's National Research and Development Strategy sets the overarching framework for technological interventions, particularly on the research side of the overall process. The focus of **the dti**'s efforts should be in increased support for the commercialisation of process and product innovation and new technologies. Specifically this requires intervention at three distinct levels as follows:

- Leveraging industrial development through state support for the commercialisation of new technology innovations; including those arising out of research and development at state institutions such as the CSIR, as well as new private sector process and product innovation and technology;
- Consolidation of existing commercial opportunities from research work previously carried out but which has not been fully commercialised and with respect to technologies that can be acquired in order to upscale production capabilities in defined sectors where opportunities exist and
- A much clearer alignment between demand side skills needs and training programmes and the deployment and operationalisation of new technology and industrial processes.

11.1 Key Action Programmes

11.1.1 Commercialisation new process and product technologies Support Programme

Nature of the intervention: Developing new policy interventions and financial instruments to support commercialisation and application of new process and product technologies.

Economic Rationale: To build SA's manufacturing capacity into higher levels of competitiveness, particularly in the value added, traceable IPAP sectors and to reduce the burgeoning trade deficit in a wide range of manufactured goods.

Outcomes: The commercialisation of new domestic innovation and technology and the application of these and other acquired technology.

Key milestones

- 2011/12 Q1: Establish a data base of all newly developed technologies and those in the short term pipeline for potential commercialisation.
- 2011/12 Q2: Develop a time-based action plan for commercialisation of these projects in order of maturity and greatest potential.
- 2011/12 Q2: Review existing **the dti** incentive packages including the IDC administered Support Programme for industrial Innovation (SPII) to build in a 'window 'of support measures for commercialisation, new product development and prototyping in order to underwrite costs in key IPAP industries, for example in new packaging in canning, auto components and so forth.
- 2011/12 Q2: Establish in close collaboration with the IDC a venture capital programme, to be managed by the IDC to support enterprises to commercialise locally developed and newly acquired technologies.
- 2011/12 Q2: Finalise policy and managerial structures at the IDC for the technology venture capital programme implementation through a memorandum of agreement (MOA)

Lead departments/agencies: DST, **the dti**
Supporting departments/Agencies: IDC

12. SECTOR CLUSTERS

The key sectors that the 2011/12 – 2013/14 IPAP will focus on are clustered into three groups:

- **Cluster 1 – Qualitatively New Areas of Focus**
  - Realising the potential of the metal fabrication, capital and transport equipment sectors, particularly arising from large public investments;
  - Oil and gas;
  - 'Green' and energy-saving industries;
  - Agro-processing, linked to food security and food pricing imperatives; and
  - Boatbuilding.

- **Cluster 2 – Scaled-Up and Broadened Interventions in Existing IPAP Sectors**
  - Automotive products and components, and medium and heavy commercial vehicles;
  - Plastics, pharmaceuticals and chemicals;
  - Clothing, textiles, footwear and leather;
  - Biofuels;
  - Forestry, paper, pulp and furniture;
  - Strengthening of linkages between cultural industries and tourism; and
  - Business process servicing.

- **Cluster 3 – Sectors with Potential for Long-Term Advanced Capabilities**
  - Nuclear;
  - Advanced materials; and
  - Aerospace.

13. SECTORS

CLUSTER 1 – QUALITATIVELY NEW AREAS OF FOCUS

13.1 Metal Fabrication, Capital and Transport Equipment

Sector profile

The metal fabrication, capital and transport equipment cluster of sectors includes:

- Basic iron and steel and basic non-ferrous metals (these two sub-sectors are not part of the metal fabrication, capital equipment and transport equipment sector, but they underpin supply with associated challenges, particularly regarding pricing);
- Metal products, excluding machinery;
- Machinery and equipment;
- Other transport equipment; and
- Electrical machinery and apparatus.

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. Therefore, metal fabrication, capital and transport equipment, as a cluster of industries, form an important component of any industrialisation path and are also a key driver of the manufacturing sector's competitiveness.

These industries have different characteristics, for example well-developed niche capabilities in areas such as mining equipment and structural steel, which can effectively compete in global markets; while others are in decline or stagnant, such as the casting and tooling industries.

Variable	Contribution in 2009
Manufacturing value-add (% of GDP)	R39,8bn (2.5%)
Manufacturing employment (% of Manufacturing)	310 913 (22%)
Trade balance: • Metal fabrication, capital equipment and transport equipment, and • Iron, steel and non-ferrous metals.	 -R85bn R159bn

Key opportunities

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

- Boosting the public infrastructure programme presents the single largest opportunity to stimulate the industry. It does this by reducing import leakage of the capital and operational expenditure programmes of SOEs and all spheres of government.
- Export opportunities exist in relation to infrastructure and mining turnkey projects, especially in the rest of Africa and South America.
- Lack of maturity in South African beneficiation chains presents opportunities to extend value chains through further downstream manufacturing.
- The new Automotive Production and Development Programme (APDP) offers additional opportunities for metal-component manufacturing.

Constraints

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

- Lumpy, *ad hoc* procurement and the unrealistically short delivery times often demanded by SOEs and government departments undermine local manufacturing and associated investments. This in turn, is a symptom of a lack of long-term procurement planning.
- 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 country's export banks or agencies.

Inadequate capital investment due to three decades of low demand has led to plants and machinery and equipment not being continuously upgraded or replaced. The import parity pricing of major material inputs such as steel and aluminium remains an impediment to the further development of these sectors.

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 best capture new opportunities offered by both private and public capex programmes.

In addition, there are intense and increasing global cost-competitive pressures, particularly from low-cost imports. This is exacerbated by downward tariff pressures on a number of value-added products. It is therefore imperative to enhance the manufacturing competitiveness of South African suppliers to increase local content and exports. Increased research and development (R&D) levels are key requirements for competitiveness and the development of competencies.

Key Action Programmes

13.1.1 Identification of fleet programmes or products to make investments in associated supply chains viable and thereby promote local manufacturing

Nature of the intervention: Identification and designation of strategic fleets via Cabinet memoranda and in terms of the PPPFA, where relevant. This incorporates a strategic assessment of the current and future government capital and operational expenditure programmes, which will facilitate the standardisation and designation of fleets within the programmes. Fleet refers to any ongoing and repetitive procurement requiring fabricated products or equipment of a similar function that is essential to build or maintain an operation or service. Two areas already identified are:

- Locomotives, coaches and carriages related to Transnet and PRASA rolling stock programmes; and
- Key inputs related to Eskom's coal-fired-electricity building programme.

The analysis to be undertaken will have to demonstrate adequate demand from capex requirements and/or long-term operating expenditure (opex) opportunities to justify an investment by a supplier in a relevant industrial capability and therefore the prioritisation of the fleet.

Economic rationale: Inconsistent procurement, often with short delivery times, creates uncertainty in supplier industries because suppliers are not able to adequately plan and phase in investments in preparation for meeting the requirements of these contracts. This KAP aims to facilitate a smoother and more predictable demand in relation to strategic fleets.

Outcomes: The KAP is expected to reduce import leakage, increase investments in key manufacturing processes and activities in order to supply into the domestic market, and to capture after-market opportunities. It is also expected to revive lost manufacturing capacity and to increase employment and exports.

Key milestones

- 2011/12 Q1: DoT to complete the feasibility study on PRASA's new rolling stock fleet requirements, which will determine the work going forward.
- 2011/12 Q1: DPE and Transnet to complete the long-term procurement plan for rolling stock, including the funding proposals. The plan should be approved by the Transnet Board.
- 2011/12 Q2: **the dti** to submit the designation of steel power pylons and rolling stock components for internal approval in Q1 and subsequently submit to National Treasury in Q2.
- 2011/12 Q3: DoT and DPE to table the proposals for the new fleet acquisition and funding model proposals to Cabinet.
- 2011/12 Q4 and beyond: **the dti**, DST and DPE to develop the industry structure for relevant supply chains within the agreed fleets and leverage associated industrial investments.
- 2012/13 and beyond: procuring entities to commence with sequentially higher impact long-term fleet procurement.

Lead departments/agencies: DPE and DoT
Supporting departments/agencies: **the dti ,** EDD, NT, DST/SOEs, and IDC

13.1.2 Competitive financing programme for suppliers into public capex programmes

Nature of the intervention: A financing programme to assist South African suppliers to acquire project financing at competitive rates in order to compete with foreign suppliers when bidding to supply into large capex projects in South Africa.

Economic rationale: Industrial financing is required to match concessional financing packages offered to foreign suppliers by their export financing institutions for bids in South Africa. A competitive financing package is required to improve the ability of South African suppliers to bid for projects within the public capex programmes on a more equal competitive footing with foreign suppliers.

Outcomes: Help to reduce import leakage of the capex programme; increase investments in key manufacturing processes and activities to supply into the demanding home market; capture after-market opportunities and increase employment and exports.

Key milestones

- 2011/12 Q1: Guildelines for the programme finalised with the IDC and the launch of the programme.
- 2011/12 Q2 and onwards: Roll-out of the programme to industry.

Lead departments/agencies: the dti
Supporting departments/agencies: IDC, NT, DPE, DoT, EDD, DST, procuring entities (Transnet, Eskom, PRASA and others)

13.1.3 Benchmarking and matchmaking programme

Nature of the intervention: Collaboration with the United Nations Industrial Development Organisation (UNIDO) to implement a benchmarking programme of South African second- and third-tier suppliers as well as to facilitate the matchmaking process between the suppliers and Original Equipment Manufacturers (OEMs) in specific value chains.

Economic rationale: This KAP aims to close the information gap between SOE demand-and-supply capabilities.

Outcomes: Reduce import leakage; increase investments in key manufacturing processes and activities to supply into the demanding home market; capture the after-market opportunities; and increase employment and exports.

Key milestones

- 2011/12 Q1 – Q4: 400 companies profiled and registered on the database; 120 companies benchmarked with development plans
- 2011/12 Q4: Initiate an exit strategy for the United Nations Industrial Development Organisation (UNIDO)
- 2012/13 Q1 – Q4: 500 companies profiled and registered on the database; 300 companies benchmarked with development plans
- 2012/13 Q4: UNIDO exit strategy finalised and internal process created

- 2013/14 Q2: business plan for the next 3 years and administration of the programme finalised and funding request submitted to National Treasury through the MTEF

Lead departments/agencies: the dti
Supporting departments/agencies: DPE**,** UNIDO, DST, IDC and industry associations

13.1.4 National Tooling Initiative

Nature of the intervention: The National Tooling Initiative (NTI) is a national, multi-stakeholder initiative, structured as a Public Private Partnership (PPP). 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 order to improve the competitiveness of the overall manufacturing sector. Interventions already in place with the DST-funded Advanced Institute for Tooling will be strengthened to develop high-end design capabilities in tooling.

Economic rationale: The erosion of the tooling industry over the past 20 years has led to underperformance of the manufacturing sector and contributed significantly to the trade deficit, because South Africa is a net importer of tools.

Outcomes: The KAP will reduce reliance on imported tooling, especially in the more advanced tooling segments. It will 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 and exports. It will also increase manufacturing competitiveness.

Key milestones

- 2011/12 Q1: 650 Level 1 apprenticeship students enrolled 2011/12 Q2: Evaluation of the pre-apprenticeship programme with MerSETA
- 2011/12 Q3: On-the-job training undertaken
- 2011/12 Q3: 420 Level 1 apprenticeship students trained and qualified.
- 2011/12 Q3: 5 Learning Modules for Level 2 apprenticeship curriculum developed.
- 2011/12 Q4: Accreditation and certification of the pre-apprenticeship programme finalised with MerSETA and QCTO.
- 2011/12 Q4: 10 Learning Modules for Level 2 apprenticeship curriculum developed.

- 2011/12 Q4: 650 Level 2 apprenticeship students enrolled.
- 2012/13 Q1: Students to complete phase 1 of level 2 training
- 2012/13 Q2: Students to complete phase 2 of level 2 training
- 2012/13 Q3: On-the-job training undertaken
- 2012/13 Q3: 450 Level 2 apprenticeship students trained and qualified.
- 2012/13 Q3: 5 Learning Modules for the master artisan programme curriculum developed.
- 2012/13 Q4: Accreditation and certification of the apprenticeship programme finalised with MerSETA and QCTO.
- 2012/13 Q4: 8 Learning Modules for the master artisan programme level 1 curriculum developed.
- 2012/13 Q4: 215 students enrolled for the master artisan programme.
- 2013/14 Q2: 7 modules master artisan level 2 curriculum developed.
- 2013/14 Q3: 150 students trained and qualified on level 1 Master Artisan programme.
- 2012/13 Q4: Accreditation and certification of the Master Artisan Programme finalised with MerSETA and QCTO.

Lead departments/agencies: the dti
Supporting departments/agencies: NT, DST, DoHE&T and NTI, QCTO, MerSETA,

13.1.5 National Foundry Technology Network

Nature of the intervention: The National Foundry Technology Network (NFTN) is a foundry industry support initiative with the key objective of facilitating the development of a South African foundry industry through appropriate skills training, technology transfer, and diffusion of state-of-the-art technologies.

Economic rationale: A significant decline of the foundry industry over the past two decades as well as the important linkages that this industry has with the entire manufacturing sector has led to the development of the NTFN initiative.

Outcomes: Reduced import leakage, increased investments in key manufacturing processes and activities, and employment.

Key milestones

- 2011/12 Q1 – Q3: NTFN to conduct the feasibility study for the establishment of the training centre in Gauteng.
- 2011/12 Q1 – Q4: 150 workers trained on NQF 2-4 industry skills programme and 50 workers trained in the advanced foundry technology course at University of Johannesburg.
- 2011/12 Q2: Technical benchmarks completed on 6 permanent mould foundries.
- 2011/12 Q3: Technical benchmarks completed on 14 sand foundries.
- 2011/12 Q4: Gauteng training centre commissioned with installed training equipment.
- 2011/12 Q4: Three emerging foundries completed their two-year mentoring and development, and an additional three foundries completed their first-year programme.
- 2012/13 Q1 – Q3: NTFN to conduct the feasibility study for the establishment of the training centre in Limpopo Province.
- 2012/13 Q1 – Q4: 200 workers trained on NQF 2-4 industry skills programme and 70 workers trained in the advanced foundry technology course at University of Johannesburg.
- 2012/13 Q2: Technical benchmarks completed on 10 permanent mould foundries 2012/13 Q3: Technical benchmarks completed on 25 sand foundries.
- 2012/13 Q4: Limpopo training centre commissioned with installed training equipment.
- 2012/13 Q4: 3 emerging foundries completed their 2-year mentoring and development and additional 12 complete their first year programme.
- 2013/14 Q1 – Q4: 300 workers trained on NQF 2-4 industry skills programme and 70 workers trained in the advanced foundry technology course at University of Johannesburg.
- 2011/12 Q4: 12 emerging foundries completed their 2-year mentoring and development and additional 13 complete their first year programme.

Lead departments/agencies: the dti

Supporting departments/agencies: NT, DST, DoHE&T, NFTN and MerSETA

13.1.6 Facilitate the upgrading of the White-Goods industry to increase production and grow export

Sector profile

The domestic White Goods Industry is segmented between large and small appliances. The large appliance manufacturers account for 80% of the domestic market share. Domestic manufacturing is focused on refrigeration and cooking appliances which represents 63% of sales. A fundamental characteristic of all the domestic manufacturers is the importation of specific product lines to supplement their product range, which cannot be produced locally at competitive prices.

Overall there has been a growth in this sector that has been driven predominantly by middle income households. It is predicted that potential future growth lies with the low income household purchasing of stoves, microwaves and hotplates to satisfy demand at the lower-end of the product range. Both components and finished products are imported and then distributed to other African countries. International exports currently account for about 5% of goods produced. 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.

Key opportunities

Increasing exports particularly in the SADC region and the rest of Africa presents an opportunity to grow the local manufacturing sector given the small size of the domestic market. This will require:

- Manufacturing lower end products for Africa where electricity and transport is a challenge, e.g. production of dual (gas and electricity) appliances;
- Skills development and technology transfer from upgrading and retooling;
- Regional branch network providing sales support, distribution and after –sales service;
- Ensuring full capacity in the maintenance and repair segment;
- Duties on components and products and the rebate scheme for manufacturers and their local suppliers.

Constraints

Domestic and international freight costs are high. and the fact that the trade process is poorly administered. Other constraints highlighted affecting the competitiveness and therefore the growth of the industry includes:

- High volume of imports

- Input costs, specifically import parity prices of steel and aluminium,
- Outdated manufacturing technology compared to global standards
- Small size of the local market
- Cost of capital to finance technology and capital upgrade.

Key Action Programmes

13.1.7 Facilitate the upgrade of manufacturing facilities and capabilities to increase domestic production and growth of exports

Nature of the intervention: The programme will aim to encourage capital investment into the industry to meet the technological requirements. Therefore the programme will help to increase productivity, volumes and efficiencies. Additional interventions will be explored to reduce input costs and protect the domestic industry from imports.

Economic rationale: The initiative aims to increase the competitiveness within the industry; increase export volumes and find new markets for South African products; identify new and more cost efficient appliances that could possible be manufactured by the local industry players; design and manufacture energy efficient appliances; maintain the brand value of domestic White Goods manufacturers; realize the growth potential presented by the emerging middle and lower income household segment of the market and to prevent the potential for significant job losses due to increasingly lower margins experienced in this industry.

Outcomes: This initiative will be primarily aimed at expanding the domestic manufacturing base to meet the increasing demands of both local and export markets. In meeting this target additional revenues will be generated as will the potential for the retention of employment. Both technological and capital upgrades will result in increased productivity and overall
efficiencies along the supply chain. With growth, the support industries will benefit from additional spin-offs and product development. Skills transfer will take place with the adoption and incorporation of new technologies along the production line. Increases in export volumes will result in improved economies of scale resulting in lower product costs over the medium to long term.

Key milestones

- 2011/12 Q1: Develop a comprehensive White Goods Industrial Strategy and Programme in collaboration with the IDC.
- 2011/12 Q1-Q4: Facilitate the implementation of the Technology Upgrading Incentive, administered by TEO
- 2011/12 Q1-Q3: Facilitation of the participation of the White Goods industry in the South African Tooling Initiative.
- 2011/12 Q1-Q3: Establishment of energy efficiency through implementing a combination of compulsory minimum energy performance (MEP) requirements and compulsory labelling requirements for appliances.
- 2012/13 Q1: Develop a programme in consultation with SABS and NRCS aimed at enforcing mandatory standards for imports and technology.

Lead Departments/agencies: the dti
Supporting departments/agencies: DoE, Electrotechnical Export Council, Electrotechnical Association, SABS, NRCS, IDC, Customs and Excise (SARS)

13.2 Upstream Oil and Gas Services and Equipment

Sector profile

Sub-Saharan Africa is one of the fastest growing and highest potential oil and gas exploration and production areas in the world. It is still in the relatively early stages of what promises to be a huge build-up of infrastructure and activity. There is a commensurately large opportunity to supply the services and equipment that will unlock these resources. Over the coming decade, hundreds of billions of dollars will be spent exploring, developing and operating oil and gas fields. After that a decades-long tail of maintenance and operations activity will result in hundreds of billions of additional expenditure. Within South Africa, upstream oil and gas activity is poised for strong growth over the next decade with significant opportunities in Mossel Bay, the Orange River Basin off our northwest coast and the onshore shale gas opportunity in the Karoo.

As the major economy in the region; underpinned by good infrastructure, a solid base of engineering capability and effective institutions, South Africa is well positioned to become a major hub for the supply of oil and gas services and equipment to the West and East coast. The region currently imports almost all of what it needs from Europe, North America and Asia.

The sector is built on the legacy of our gas developments in Mossel Bay and has expanded in the past decade to target the big opportunities in West Africa. South Africa currently has significant competence and activity in a number of upstream service and supply areas:

- **Upstream Ship Repair Hub**: The repair, maintenance and upgrade of various kinds of oil and gas marine vessels e.g. drilling rigs, pipe laying vessels, various kinds of work barges.
- **Oil and gas logistics and distribution**. The Western Cape has been identified as a major logistics point for supply of the West African upstream sector. Similar opportunities will arise for KZN with growing exploration and exploitation on the east coast of Africa.
- **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, process equipment etc 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 competitively supplied from South Africa. More technical services include a significant cluster of firms doing inspection and maintenance, training, diving services, remotely operated undersea vehicles (ROV) operation and repair, health and safety services etc.

Key opportunities

Given the scale and scope of the upstream opportunity in sub-Saharan Africa there are many opportunities that will emerge for South Africa in this sector. Key areas of immediate opportunity for growing the sector or achieving higher impact include:

- **Removing constraints and scaling up the Upstream Ship Repair Hub** in the Western Cape is the largest single short- to medium-term opportunity to create significant employment and foreign sourced revenue in the sector. A similar opportunity exists in Durban/KZN as oil and gas activity grows on the east coast of Africa.
- **Marketing South African companies and capabilities in the region**. A focused marketing and trade development programme to position and raise the profile of South African capabilities and companies with key regional buyers (many of whom are based

in Europe and North America) is a substantial opportunity for growing business volumes.

- **Growth of the oil and gas logistics industry** is a substantial opportunity that also opens up further procurement opportunities into the regional oil and gas supply chain.

Constraints

Underinvestment by the National Ports Authority (TNPA) in infrastructure, availability of port space, inconsistent and high pricing of facilities, poor scheduling of facilities and general lack of collaboration and engagement with the industry to resolve issues and pursue the market. All this has had a negative impact on global client perceptions and the industry's ability to deliver to clients.

Key Action Programmes

13.2.1 Resolution of key port constraints on the Upstream Ship Repair Hub through a collaborative engagement between industry and TNPA

Nature of the intervention: Establishment of high level joint task force between TNPA and the Upstream Ship Repair industry to identify and resolve key bottlenecks.

Economic rationale: Resolving the key pricing and scheduling constraints in the ports will strengthen the industry's competitive position and allow South Africa to position itself uniquely in Africa and as a favourable alternative to Europe, Dubai and the Far East for major upstream ship and rig projects.

Outcomes: More maintenance and repair; particularly in larger and more profitable upgrade projects in South African ports; establishing a position as the preferred fleet service hub for one or more of the major global rig and vessel operators in the region; R2 - R4 billion (three to five times current levels) additional annual foreign sourced revenue over a three- to four-year period and full-time employment of the pool of 2 500 to 3 000 contractors who currently work only when projects are available and an addition of a further 1 000 to 2 000 direct jobs to this pool.

Key milestones

- 2011/12 Q1: DPE/**the dti**, and South African Oil and Gas Alliance (SAOGA), to establish a joint task team to address constraints and solutions including with respect to ports,

Lead departments/agencies: DPE and **the dti**
Supporting departments/agencies: Transnet/TNPA, SAOGA, Provincial Government of the Western Cape and KZN.

13.2.2 National Marketing Initiative for the South African upstream clusters

Nature of the intervention: A two pronged programme to market South African upstream capability in the region. On the one hand, a generalised marketing and publicity initiative to raise awareness of the cluster through trade media placements, direct visits to key buyers, publicity campaign and conference or exhibition presentations. On the other hand, a trade matching and networking programme to directly link South African companies with upstream buyers and/or potential partners.

Economic rationale: Raising awareness of South African upstream capabilities and matching companies to specific buyers or partner companies will have a direct impact on export sales by the sector.

Outcomes: Greater export sales for South African-based companies in the sector; productive partnerships between South African and foreign companies resulting in more export revenue and/or South African-based activity and creation of high quality jobs as the sector expands.

Key milestones

- 2011/12 Q1 – Q2: SAOGA to develop print and online marketing collateral and a directory of South African companies to be used to showcase and promote the industry.
- 2011/12-2013/14 SAOGA, **the dti** and regional trade associations to develop and execute a targeted media and publicity programme to raise the profile of the South African upstream sector with sub-Saharan buyers.
- 2011/12 Q4: SAOGA to initiate an export readiness training programme to assist companies to acquire skills required to develop international trade opportunities.

- 2011/12 Q4: SAOGA and **the dti** to work with international trade agencies and association to develop a trade matchmaking programme focused on helping upstream companies to find specific sales and partnering opportunities in the region.

Lead departments/agencies: the dti/TISA
Supporting departments/agencies: SAOGA, provincial trade and investment agencies, international industry associations and trade development agencies

13.2.3 Improve the attractiveness of South Africa as a destination for upstream investments in regional logistics and distribution capability.

Nature of the intervention: Consolidation of plans to establish an Industrial Development Zone (IDZ) that is attractively positioned to serve the regional oil and gas industry; conduct research to understand the key limiting aspects of the current trade regime (especially customs and excise) for investment in South African oil and gas logistics facilities and growth of logistics business and then develop and implement a strategy to resolve these issues.

Economic rationale: Oil and gas companies are globally mobile and will locate capacity and facilities where it is most favourable to do so. Resolving critical customs and excise issues related to storing and moving oil and gas equipment in and out of South Africa will open the door for global upstream companies to locate Africa-wide distribution centres in South Africa. IDZs have elsewhere been effective incentives for upstream companies to locate activities.

Outcomes: Greater volumes of oil and gas materials and equipment being handled through South Africa; more distribution centres established by global upstream companies; employment growth related to these distribution centres and the replacement of foreign sourced materials and equipment being shipped through these centres with more competitive South African products.

Key milestones

- 2012/13 Q2: SAOGA to complete an initial industry survey, study and action plan to identify key customs and excise issue impeding the growth of oil and gas logistics.
- 2012/13 Q1-Q4: SARS, **the dti** and SAOGA implement the agreed strategic plan.
- 2011/12-2012/13: **the dti** to lead the process of establishing an IDZ at Saldanha Bay.

Lead departments/agencies: the dti

Supporting departments/agencies: PGWC, SAOGA, SARS (Customs and Excise)

13.2.4 Establish an industry research and advisory programme to identify and develop additional upstream market opportunities for South African industry

Nature of the intervention: Create an advisory support programme to provide market analysis and strategies to aid in the identification and development of new upstream oil and gas supply opportunities. These will focus on developing upstream niche segments and on leveraging local content initiatives on the back of South African upstream projects. This will involve continued collaboration with Marintek/Sintef (a Norwegian 'CSIR')

Economic rationale: South African industry has significant capabilities that could be applied to the oil and gas industry but is unfamiliar with the upstream sector and its value chain. There is therefore great value to having world class expertise to help identify and unlock potentially profitable opportunities arising from either existing areas of industrial competence or opportunities for leveraging South African projects to create new capabilities through local content initiatives.

Outcomes: Outcomes from this initiative include the following:

- Entry of more South African companies into the upstream oil and gas market. This would expand export sales and result in additional jobs;
- Creation of new national competencies through investments in specialised capacity, technology applications and education.
- Attraction of foreign investment into specific targeted focus sectors – increasing jobs and revenue.

Key milestones

- 2011/12 Q1 – Q2: SAOGA, PGWC, Marintek, NORAD and **the dti** to define and agree on work programme and funding proposal for the envisaged advisory support programme.
- 2011/12 – 2013/14: Execute agreed initiatives focused on identifying competitive South African-based upstream market opportunities and developing strategies for capturing them. As appropriate, cluster task teams will be formed to initiate new activities.

Lead departments/agencies: the dti

Supporting departments/agencies: SAOGA, PGWC (Provincial Government of Western Cape) and the Provincial Government of KZN, NORAD/Marintek from Norway, Transnet/TNPA, DST, Universities

13.3 Green industries

Increasing concerns about carbon emissions and climate change will have a profound impact on our economic landscape, introducing both threats and opportunities. There is a growing threat of increasing 'eco-protectionism' from advanced industrial countries in the form of tariff and non-tariff measures such as carbon taxes and restrictive standards. Increasing energy costs pose a major threat to manufacturing, rendering our historical resource-intensive, processing-based industrial path unviable in the future.

However, there are significant opportunities to develop new 'green' and energy-efficient industries and related services. In 2007/2008, the global market value of the 'Low-Carbon Green Sector' was estimated at £3 046 billion (or nearly US$5 trillion), a figure that is expected to rise significantly in the light of climate-change imperatives, energy and water security imperatives.

Due to our high solar intensity, solar power has significant potential in Southern Africa. Recent electricity tariff increases and electricity supply challenges have made South Africans more receptive to the concept of alternative technologies to conventional electricity, such as solar water heaters in particular.

To support the Renewable Energy White Paper goal of 10 000 Gigawatt Hour (GWh), the Minister of Energy has made a commitment to install one million solar water heaters by 2014. It is expected that this goal will be increased to 5,6 million units by 2020. This initial commitment will be funded through a variety of mechanisms for various market sectors, including Eskom, municipalities, the IDC and the private sector. The main instrument for driving renewable supply of electricity in South Africa is the Renewable Energy Feed-in Tariff (REFIT).

Solar Water Heaters

The current size of the South African solar water heater market is approximately 35 000 units per annum, or 100 000m^2 of solar collectors. The market is dominated by flat-plane technology (90%), while evacuated-tube technology makes up 10% of the market.

Imports of solar water heaters are growing rapidly and it is estimated that importers captured 40% of the market in 2009. None of the local manufacturers reported significant exports.

There are 11 million houses in South Africa, indicating a large potential market for solar water heaters. The industrial application of solar water heaters will also increase demand significantly.

Sales in the industry total approximately R220 million per year. Indications are that most companies are currently quite wary of risk because of uncertainty regarding demand and market growth, which results in the industry being characterised by small-scale manufacture and imports. Approximately 700 people are currently employed in the sector: 200 in manufacturing, 400 as installers and the rest in administration. This excludes a large number of independent installers, including plumbers who do not focus on solar water heater installation as a primary activity. Solar water heating (SWH) is a relatively labour-intensive form of energy generation.

The entire supply chain creates employment, from manufacturing to maintenance. More than 50% of total employment is involved in the installation stage. Hence a co-ordinated effort is required to scale up the manufacturing and installation of solar water heaters. An important contribution to establishing this market in South Africa will be the phasing in of mandatory requirements relating to the installation of solar water heaters.

Key opportunities

- **Improved financial efficiency:** Most solar water heaters have a positive net present value in that the discounted future electricity savings and maintenance costs are higher than the capital outlay of installing a solar water heater. However, these savings currently accrue over a period that is not short enough to sufficiently induce low income or indebted households to install solar water heaters; hence the need for a financial solution that smoothes out costs over time to a level that is off-set by monthly savings in electricity.

- **Increased domestic investment:** The prospect of sustainable demand will induce entrepreneurs to invest in supply capacity domestically.
- **Long-run export earnings:** As shown by countries such as Australia and Israel, successful domestic SWH-promotion programmes can lead to the establishment of an internationally competitive solar water heater manufacturing industry that can become a global supplier. The international (particularly African) market should therefore be seen as a source of long-run demand that will outlast any short-term large roll-out strategy.

Constraints

- The high initial cost of SWH dampens sales, requiring the funding model being developed by the DoE.
- There are insufficient installers to meet the DoE's targets, although installers can be trained over approximately a six-month period, implying the ability to create installation jobs fairly rapidly.
- Poor-quality products run the risk of giving the industry a bad name, hence the requirement for clear standards for the industry. SABS testing bottlenecks also need to be unblocked.

1. Wind

Large parts of South Africa's western and southern coasts, as well as various areas inland have an economically viable resource of wind energy. The scale and maturity of the global wind industry have made it a cost-competitive energy option, compared not just to other renewable technologies, but also to many fuel-based technologies.

While unpredictable, wind does not use water and can be installed relatively quickly. Like solar PV it is complimented by electric energy storage.

2. Photovoltaic power

Photovoltaic (PV) power is one other solar technology that turns sunlight directly into electricity. PV is growing rapidly world-wide, which together with constant innovation, is rapidly driving down costs.

While PV does not consumes water and can be installed rapidly, even by individuals, in the absence of a backup electricity source, it needs to be combined with electric energy storage (a battery) to ensure supply at night or when the sun does not shine.

3. Concentrated Solar Thermal power

Solar power is particularly attractive for South Africa given the country's high solar resource. Concentrated Solar Thermal (CST) power is a promising renewable energy generation option in SA, but is relatively small on a global scale. This presents the country with an opportunity for developing competitive local manufacturing.

The IDC has a significant pipeline of renewable energy projects which includes CST. In the case of the CST, there is a need not just to scale up the industry through reliable long-term demand (as through the REFIT or SARi), but also to overcome initial technology barriers by demonstrating the technology at scale and with high levels of performance. This requires *inter alia* that Eskom should expedite its Power Purchase Agreement (PPA). The successful demonstration of the viability of the pilot plant will contribute to a broader roll-out of this technology and associated manufacturing opportunities.

4. Industrial Energy Efficiency

Rising electricity prices and increasing commitments in relation to carbon emission reductions will increase the need for the manufacturing sector to become increasingly more energy efficient. It also introduces the opportunity to establish an industry in relation to machinery and services that improves energy efficiency in the industrial sector. One particular area that has been highlighted with potential for significant increases in energy efficiency is the adjustment or replacement of industrial motors. Therefore an industrial energy-efficiency programme will be developed, including consideration of more attractive financing models and the scaling up of the role of the National Cleaner Production Centre (NCPC).

5. Water efficiency

Although energy efficiency (or the lack thereof) has received the bulk of attention, South Africa is also a water-scarce country. The 2011/12 – 2013/14 IPAP 2 identifies as focal areas industries that allow for water to be recycled and used efficiently, including the strengthening of standards related to water efficiency in building and industrial applications. It could also lead to industrial and service opportunities, such as the manufacturing and installation of rain-water collection tanks.

6. Waste management

Waste management is not only a necessity for human health and resource-efficiency in the use of water and materials; it also represents industrial opportunities, particularly in waste collection and processing.

7. Biomass and waste management

Further work will be undertaken in order to unpack the potential of sectors such as wind, biomass and waste management as part of the IPAP.

8. Energy-efficient vehicles

The automotive sector will be profoundly affected by the long-term shift from the internal combustion engine to cleaner technologies such as electric vehicles. Initiatives to commercialise a domestically developed electric car are set out in the automotive section below (13.5.7). This project will have broader spill-over effects, not least of which will be the creation of a legislative and regulatory environment to allow for the operation of electric vehicles; relevant testing infrastructure for electric vehicles; local manufacturing for domestic and global markets; the initiation of charging infrastructure; and educational campaigns on electric vehicles.

Sector profile

The Green Industries sector is wide and overlaps with other sectors. Thus in some case specific industries are not considered under this section not because they are not green, but because they are covered under other sectors. These include Organic agriculture (Agro-Processing), Biofuels, Buses and electric vehicles (Automotives sector) and Nuclear energy (Advanced Manufacturing). In selecting focal sub-sectors or segments of the Green Industries, the Sector Strategy considers their overall impact on the economy, the environment and society. These impacts and criteria include:

Economic Criteria

- Growth potential: green industries in general and renewable energy in particular are amongst the fastest-growing industries world-wide (annual growth of 30% or more), due to both global action on climate change and energy security concerns and a massive global Green Stimulus.
- Local industry development: low and medium-technology components of new products represent an opportunity for localisation, building on South Africa's existing industrial base and local innovation.
- Competitiveness: ensuring security of energy and water supply, as well as carbon-competitiveness in a global move towards low-carbon production is important for safe-guarding trade and economic growth.
- Regional linkages: new industries can also play a role in addressing the continent's infrastructure backlog.

Social Criteria

- Job intensity: renewable industries and land-based industries in particular are more job-intensive than the industries they replace.
- Service delivery: ensuring universal access to energy (which extends beyond electricity to include clean cooking and heating), as well as access to clean water, sanitation and waste management is essential for the well-being of all South Africans and addressing multi-dimensional poverty.
- Rural development: land-based and household-oriented industries present an opportunity for the development of rural industries beyond agriculture.

Ecological Criteria

- Resource security: mitigating the risk inherent in a dependence on scarce or volatile resources like oil, electricity or water is required to ensure a sustainable, diversified economy.
- Climate change: South Africa's international commitment to fighting climate change must be backed by local action that also addresses key national concerns around investment in manufacturing capacity, job creation and energy security.
- Biodiversity: South Africa's world-leading endowment of biodiversity is a source of national pride and underpins many of our key industries. Its protection ensures continued livelihoods in agriculture, tourism and bio-industries.

Based on these criteria, the following focal sub-sectors are identified and an initial round of concrete measures proposed for development of the sector.

- Wind and Solar Energy
- Biomass Energy
- Clean and multi-energy stoves
- Water and energy-efficient appliances and materials
- Efficient motors, variable-speed drives, energy metering and control and electricity storage
- Waste and waste water treatment and (energy and material) recovery

These sub-sectors cover the supply and demand of energy (electricity and heat), water and waste.

Key Action Programmes

13.3.1 Roll-out of national solar-water-heating programme – manufacturing and installation capacity

Nature of the intervention: Developing a phased approach to solar water heater production to increase local market size and allow sufficient lead times for manufacturers to upscale.

Economic rationale: Increased local manufacture, skills development and employment will result from a phased approach to SWH. In addition, this approach mitigates production bottlenecks and the resultant potential for a surge in imports. Ultimately, a phased approach will create a credible and stable market with reduced risk in order to promote investment.

Outcomes: Increase installations from 35 000 units per annum to 250 000 units per annum over the next three years; and increase manufacturing from 20 000 units per annum to 200 000 units per annum.

Key milestones

- 2011/12 Q2: Contribute to ensuring that existing Eskom subsidy is combined with product financing, a streamlined claim procedure and improved marketing to improve uptake including IDC industrial financing and **the dti** incentives. The DoE to introduce a subsidy programme which will cover the installation of one million units by 2014.
- 2011/12 Q3: **the dti** and the NRCS to publish amended National Building Regulations to make it compulsory for new buildings and upgrades to homes to install solar water heaters and other energy-efficient building requirements.
- 2011/12 Q2: **the dti** to ensure that a compulsory specification that will be administered by the NRCS for SWH is developed to ensure a minimum level of performance and safety.
- 2011/12-2013/14: Enable private sector Solar Hot Water Utility roll-out in metros, by encouraging the collection of utility payments for approved hot water providers through the municipal billing system. Include the installation of energy-efficient appliances and materials, particularly ceilings, lights and water heaters in public housing and electrification/energisation programmes.

Lead departments/agencies: the dti and EDD/IDC

Supporting departments/agencies: DoE, DWEA, DST, National Energy Regulator of South Africa (NERSA)

13.3.2 Solar and Wind Energy

Nature of the intervention: Stimulate demand to create significant investment in renewable energy supply and the manufacturing of local content for this supply.

Economic rationale: Wind energy is among the cheapest and fastest energy supply options available to South Africa, while the country has a world-leading solar resource and the cost of solar technology continues to decline. With significant local content, these technologies can also raise the employment intensity of the electricity generation sector.

Outcomes: Improved energy security through diversification, greenhouse gas mitigation, the development of new (and bolstering of existing) manufacturing capacity and net job creation in the energy sector.

Key Milestones

- 2011/12 Q1: Contribute to finalisation of the procurement arrangements for the Feed-in Tariff, leading to first REFiT Call for Tenders. The first REFiT PPAs to include Solar Parks with localisation criteria and appropriate financial instruments and mechanisms
- 2011/12 Q2: Secure technology-specific bilateral concessionary loan support (particularly for solar) through SARi in a manner that sets a precedent for a similar, multilateral mechanism under the United Nations Framework Convention on Climate Change (UNFCCC) process.
- 2011/12 Q1 SARi cab memo
- 2011/12 Q3: MoA signed with donor countries
- 2011/12 Q3: Work with DEA to ensure that Environmental Impact Assessment and water licenses for renewable energy installations (particularly wind and solar) are processed.
- 2011/12 – 2013/14: continuously update and publish resource measurements for wind, solar and biomass energy in an atlas for Southern Africa.
- 2011/12 Q3: Make concrete proposals to the UNFCCC process on the future role of Clean Development Mechanism CDM and reforms required to ensure its fair and equitable administration. Submission in the form of Cab memo.

- 2011/12 Q3: Investigate the use of Tradeable Renewable Energy Certificates TRECs for supporting renewables outside of the REFIT and offering green tariffs to consumers (and tourists).
- 2011/12 Q3: Provide for reverse/bi-directional metering in small-scale distributed renewable energy installations and publish for comment guidelines for distributed generation.
- 2011/12 Q3: Deliver an R&D plan for cost reduction and local content in solar and wind power

Lead departments/agencies: DoE and **the dti**
Supporting departments/agencies: DEA, NERSA, NT and DPE

13.3.3 Development of an industrial energy-efficiency programme

Nature of the intervention: Develop an industrial energy-efficiency programme to counteract higher energy prices, lower emissions and create new goods and services.

Economic rationale: Higher electricity prices and carbon emission commitments will raise the need for the manufacturing sector to become increasingly more energy efficient.

Outcome: More attractive financing options for introduction of industrial energy-efficiency improvements.

Key milestone

- 2011/12 Q1: Finalise design and launch of an Industrial Energy-Efficiency Programme, including energy-efficient motors and scaling up of the NCPC.

Lead departments/agencies: the dti
Supporting departments/agencies: NCPC, DOE, DWEA, EDD/IDC

13.3.4 Strengthen water-efficiency standards

Nature of the intervention: Strengthen building and commercial water-efficiency standards.

Economic rationale: South Africa is a water-scarce country that requires more efficient water usage.

Outcomes: Improved building and commercial water efficiency, which can also lead to economic opportunities.

Key milestones

- 2011/12 Q1: Finalise and launch strengthened building and commercialisation water efficiency standards.
- 2011/12 Q4: **the dti** to scope and identify economic opportunities associated with improved water efficiency.

Lead departments/agencies: the dti and SABS
Supporting departments/agencies: the dti, DWEA, DoE, EDD

13.3.5 Demonstrate viability of Concentrated Solar Thermal (CST) power as a major renewable energy generation source

Nature of the intervention: To co-ordinate the establishment of a CST demonstration plant.

Economic rationale: CST is a new technology in South Africa, which requires the demonstration of commercial viability and broader economic linkages.

Outcomes: Demonstration of the economic viability of a CST plant and unpacking of roll-out and manufacturing opportunities.

Key milestone

- 2012/13 Q1: IDC-led financing of a CST demonstration plant in South Africa.

Lead departments/agencies: the dti and EDD/IDC
Supporting departments/agencies: DoE, DWEA, DST/NERSA

13.3.6 Biomass Energy

Nature of the intervention: Add economic value to waste biomass, waste streams and much-needed infrastructure by converting it into electricity or useful heat.

Economic rationale: Despite being constrained in scale compared to solar or wind energy, biomass energy can be cost-effective, is highly job-intensive and holds unique opportunity for rural development and integration with service delivery in the form of waste management.

Outcomes: Improved rural and agricultural energy security, greenhouse gas mitigation and net job creation in the energy sector.

Key milestones

- 2011/12 Q1**:** Contribute to the finalisation of the procurement arrangements including co-generation for a Feed-in Tariff, to support electricity from solid biomass and biogas (in addition to landfill gas).

Lead departments/agencies: DoE and **the dti**
Supporting departments/agencies: NT, NERSA

13.3.7 Clean and Multi-Energy Stoves

Nature of the intervention: Support universal access to clean energy through a technology-appropriate intervention at the household level that also holds low-tech local manufacturing opportunities.

Economic rationale: The provision of clean cooking is essential for air quality and human health. This aspect of energy poverty is not always sufficiently addressed by basic electrification.

Outcomes: Improved rural energy security, air pollution mitigation and low-tech job creation in the energy sector.

Key milestones:

- 2011/12 Q3: Redefine the drive for ‘electrification’ as one of ‘energisation’, including ensuring affordable access to clean cooking fuel and stoves as a means for addressing energy poverty. Develop standards for domestic fuel-burning stoves.

Lead departments/agencies: DoE and **the dti**
Supporting departments/agencies: DST, SABS

13.3.8 Water- and Energy-Efficient Appliances

Nature of the intervention: Use a combination of appliance and building standards, contracting for energy savings in a manner similar to contracting for renewable energy and public procurement to stimulate the wholesale uptake of water- and energy-efficient appliances.

Economic rationale: Standardising minimum levels of water and energy efficiency minimises waste of two of the country's highest-risk resources, while paying for on-demand electricity savings (as per DSM agreements) is justified by the deferred marginal cost of generation or the cost of unserved energy.

Outcomes: Improved rural energy security, greenhouse gas mitigation and net job creation in the energy sector**.**

Key milestones

- 2011/12 Q1: Finalise a mandatory national labelling scheme for fridges and air-conditioners
- 2011/12 Q3: Integrate SANS204 into the building code, requiring minimal thermal performance and efficient water heating in all new building.

Lead departments/agencies: the dti and DoE

13.3.9 Efficient Motors, Variable-Speed Drives, Energy Metering and Control and Electricity Storage (Batteries and Fuel Cells)

Nature of the intervention: Pursue the adoption and manufacture of a collection of technologies within the electric products cluster that relate to the emergence of smart grids, buildings and processes, as well as motive power and the electrification of transport.

Economic rationale: Intelligent and efficient use of energy represents a savings in the marginal cost of electricity supply. Electricity storage improves the viability of cheap, but variable energy sources like wind. It also enables the electrification of road transport (electric vehicles); which presents an opportunity to substitute the country's number one import - oil – an increasingly costly and volatile commodity and amongst the few for which the country has scarce supply.

Outcomes: Upgrading of industrial (process) machinery to better levels of efficiency, facilitation of a national smart grid and the transformation of the transport sector from its dependence on oil.

Key Milestones

- 2011/12 Q4: Develop standards for smart meters, stationary battery storage, EV batteries and chargers and mandate efficiency labelling of industrial 3-phase motors.

Lead departments/agencies: the dti and DoE

13.3.10 Waste and Waste Water Treatment

Nature of the intervention: Implement the waste hierarchy to ensure the maximum benefit and minimum cost of waste and ensure the restoration of water treatment infrastructure in a way that maximises the potential for materials and energy recovery.

Economic rationale: A failure to manage waste and waste water leads to socialised costs through, for example pollution. Dangerous waste (like acid mine drainage) must be treated to prevent damage to ecosystems, infrastructure and health, while the extraction of value from waste streams improves the cost-benefit of waste management overall.

Outcomes: Efficient implementation of the waste hierarchy (minimising waste-to-landfill and maximising energy and materials recovery), waste water treatment plants that operate reliably meet international standards.

Key Milestones

- 2011/12 Q1: Contribute to ensuring that a REFIT tariff is established for energy recovery from waste (including, but not limited to landfill gas) and waste water (methane capture).
- 2011/12 Q4: Develop a ‘fleet strategy’, for the refurbishment of waste water treatment plants, including energy recovery wherever feasible.

Lead departments/agencies: the dti and DWA
Supporting departments/agencies: NERSA

13.3.11 Green Industries special focus: The South African Renewables Initiative (SARi)

The South African Renewables Initiative (SARi) is an intra-governmental initiative set to catalyse industrial and economic benefits from an ambitious program of renewables development; including financing and associated institutional arrangements that would not impose an unacceptable burden on South Africa's economy, public finances or citizens.

A critical mass of renewables is needed to achieve the green growth opportunities of domestic job creation, improved export competitiveness and energy security. A continual ramp up of renewables capacity at the ambitious level of around 1–3 GW per year, would build up towards the generally acknowledged potential of at least 15% of the electricity grid by 2020-2025. This will support South Africa's industrial and broader economic development objectives. Alongside an ambitious target, a technology strategy that optimises the balance between economic localisation opportunities and energy costs is needed, supported by adequate and secure pricing and institutional arrangements.

Catalysing this critical mass of renewables development is the key to progressing South Africa's green growth transition. Success in the large-scale development of renewables could realise direct economic benefits of up to 50 000 jobs and US$55 billion in green investment over the next 15 years, a modest but significant addition to South Africa's energy reserve, with associated economic benefits, as well as protection of up to US$11,2 billion in annual exports, facing increasingly carbon-sensitive international markets. The localisation of major elements of the global value chain for wind and possible solar could also establish South Africa as a regional renewables manufacture and servicing hub, delivering both domestic economic benefits and accelerating renewables development across the region. Less directly, but crucially, it would nurture the political and economic conditions for green growth opportunities to be more broadly pursued.

Achieving significant renewables development would contribute towards South Africa's international carbon mitigation commitments. South Africa's emissions reduction commitments under the Copenhagen Accord will be easier and more likely to be realised if embedded in a green growth strategy. At its most ambitious, such a renewables programme could deliver 20 GW of renewables capacity by 2020. Therefore the initiative would contribute nearly a quarter of the emission reductions needed for the country to transition towards a pathway of 'peak, plateau and decline' of emissions by 2020-25. The

implied cost per ton of carbon mitigated compares very favourably to international benchmarks, especially for on-shore wind.

Appropriate financing of incremental costs of renewables is the key to unlocking renewables' green growth potential. The estimated incremental costs of an ambitious renewables programme would have a net present value of about US$21 billion at current REFIT rates, or US$9 billion if they were reduced to a more cost competitive level. Such an additional domestic burden to South Africa would not be appropriate and so currently prevents the more ambitious renewables targets being adopted and pursued.

An innovative solution to financing the incremental costs of renewables is needed. Detailed analysis and extensive consultation, both domestically and internationally, highlight the opportunity to secure a lower REFIT price and to leverage relatively small amounts of public finance to catalyse privately led investment in an ambitious renewables programme. Proposed is to bring down the cost of capital, through domestic institutional de-risking and the provision of a blend of concessionary debt and risk guarantee instruments from international sources. This could be combined with modest amounts of domestic private and public funds channelled through the feed-in tariff at a level offset by domestic economic benefits. International public grants also channelled through the feed-in tariff would complete the financing of estimated incremental costs.

International co-operation is key to advancing the proposed financing solution. National funding sources alone are insufficient to achieve a critical mass of renewable investment. Consequently, international cooperation is required to secure the necessary concessionary finance and risk guarantee instruments in a manner that delivers the required, longer-term enabling environment that in turn would stimulate private investment.

The SARi will finalise an integrated industrial and financing strategy to unlock South Africa's green growth potential. Such a viable strategy will have to be embedded into the South African Government's broader, national Integrated Resource Plan. Moving forward will require domestic and international key public and private sector actors to be aligned in their ambition, interests and to contribute their capabilities and resources to the initiative. Most of all, as for any innovative, large-scale plan, it will require the will of these actors to collaborate in realising the potential of the initiative. The SARi provides a vehicle for bringing together these key actors, including critical decision-makers, in a collaborative process to complete this work during 2011 and thereafter to implementation.

Key Milestones

- 2011/12 Q1: Cabinet memorandum on SARi
- 2011/12 Q3: Memorandum of Understanding signed with donor countries.

Lead and supporting departments/agencies: the dti, DoE and DPE

13.4 Boatbuilding and associated services industry

Sector profile

The industry is divided into 5 main categories namely:

- Building of boats (comprises the core boatbuilding industry sub-classified by type of vessel)
- The manufacture and trade in engines and engine systems (e.g. outboard, inboard, cooling and hydraulic systems, mounting equipment, stern gear and propellers etc)
- The manufacture and trade in marine equipment and accessories (e.g. boatbuilding materials and equipment, boat care products such as paint and resins, boat covers, deck hardware, electrical and electronic equipment , personal gear, hardware etc)
- Consumer goods and services (e.g. charter/rentals, repairs, maintenance, retail, events management, yacht clubs)
- Business goods and services (e.g. consulting, design, surveying, training, government agencies etc)

The last four categories could be considered the support or auxiliary industry to the core boatbuilding industry

In turn the boatbuilding sector can be divided as follows, with the contributions per sub-sector:

- The building of sailboats, comprising multi hulls (21 or 35%) as well as mono hulls (13 or 22%);
- Building of Inflatables accounts for (11 or 18%) – this incorporates the manufacture of inflatable, semi-rigid as well as rigid inflatable boats (RIBs);
- Motorboat manufacturers account for (6 or 10%), followed by manufacturers of commercial crafts such as fishing vessels, military craft and diamond vessels (5 or 8%) and
- Activity crafts–mostly kayaks and canoes account for (3 or 5%).

The total South African boatbuilding and support industry employs 4 500 people and produces goods and service valued at R1.2 billion with 85% of the industry (according to

turnover) located in the Western Cape. With the exception of 5 firms in the sector all others are SMMEs. The sector is heavily export dependant, with over 80% of the industry involved directly or indirectly with exports. Small craft less than 10m in length are predominantly manufactured for the local market whilst multi hulls (catamarans) are nearly exclusively for exports. The sector is globally competitive having won numerous international 'Boat of the Year Awards' and has major growth potential; however, significant growth and development constraints exist that require collective action to support the sector in realising this growth potential.

Variable	Contribution in 2009
Manufacturing value-add	R1,2bn
Manufacturing employment	4500

Key opportunities

- Export opportunities into Africa and the Indian Ocean Islands, with specific emphasis on light commercial vessels, such as RIBS and Patrol Vessels.
- Opportunity to leverage on world class reputation as catamaran manufacturers and expand into the developing markets, and markets new to the boating culture.
- Clustering of the industry on a national basis will bring together critical mass to implement industry development programmes to upgrade machinery and business processes within SMMEs.
- The international markets for catamarans remains largely untapped and growth in the export market could become a real driver for job creation.
- The sector shares many skill sets with the renewable energy, aeronautical and automotive sector. Therefore the development of a broad base of skills in composite manufacturing could translate into other sectors.

Constraints

The boatbuilding sector is mainly focused on manufacturing for the leisure boat market and the recent global recession has had a knock on effect similar to other sectors producing luxury and lifestyle products. The international market is starting to bloom again but growth is cautious at present.

Inadequate investment at firm level in acquiring new technologies and machineries to stay abreast of international innovation trends will start to have its impact felt on the export market. Competitor countries are driving the technological growth of the sector and there is a threat that South African manufacturing will be left behind.

The lack of industry specific skills with a clear link between academic learning and the workplace results in a technical skills deficit for boatbuilding as well as a managerial knowledge deficit. These constraints are compounded by the high level of tacit knowledge required by a boat-builder. The high level of import duties on input materials is a constraint and doubly so when one considers that there is no duty on the completed vessels being imported into South Africa.

The lack of a co-ordinated national approach and support to policy making in relation to the recreational craft sector locally has had the effect that over regulation and red tape is stifling the domestic boating market and amongst other things, leading to monopolistic behaviour amongst the larger players.

Key action programmes

13.4.1 Industry Standards and Accreditation

Nature of the intervention: Develop standards for quality, safety and environment in order to enable all boatbuilding firms to build to international standards in an effort to 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 as the costs associated with changing manufacturing processes and tooling to build to internationally comparable standards can be prohibitive. The industry accreditation programme is to be reviewed and a study undertaken to ascertain its applicability to the wider boating sector.

Economic rationale: Increasing the quality and standards of products increases the manufacturer's ability to sell products not only on the local but also international market, assisting small firms to grow exports. It also enables the local manufacturers to remain competitive in the global economy. The Accreditation process will highlight areas of concern within firms and interventions to address those shortcomings that can be created and the interventions 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 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 increase the level of ethics and business management across the industry, with increased accountability and also reputation.

Key milestones

- 2011/12 Q1: Workshop held with SABS, SAMSA, **the dti** and industry to discuss which international standards to implement and if there are changes needed to our local conditions.
- 2011/12 Q2: Technical Committee on Boatbuilding Standards formed.
- 2011/12: **the dti** and industry to review the current Accreditation system and look at necessary changes to structure and implementation.
- 2011/12 Q4 - 2012/2013: **the dti** in conjunction with SABS to develop standards of phased approach to the implementation of international standards across the industry.
- 2013/2014: Phased implementation of standards and reviewed accreditation programme.

Lead departments/agencies: the dti
Supporting departments/agencies: Export Council, industry associations, SABS

13.4.2 Trade Policy

Nature of the intervention: Review the applicability of the current tariff structure for the boatbuilding industry including rebates provisions and proposed new measures where applicable.

Economic rationale: Excessive duties on input materials not manufactured locally and the heavy fines associated with vessels that exceed the rebate periods has contributed significantly to the cost of our vessels and impacts on our competitiveness. A reduction in imported duties for the boatbuilding sector and an extension on the rebate periods to cater for the lengthy manufacturing time of larger catamarans and other yachts.

Outcomes: A marked reduction in the cost of vessels and increase in competitiveness. It will also translate to a reduction in red tape and administrative burdens on small firms

Key milestones

- 2011/12 Q1: Industry to identify products that should be considered for a reduction in duties.

- 2011/12 Q3: Finalise the review of ITAC rebate provision for Schedule 3 created for goods manufactured for the local market, which does not include VAT exemption.
- 2011/12 Q4: Finalise ITAC rebate for exporters similar to 470.03 with longer build periods included with vessel lengths specified.

Lead departments/agencies: the dti
Supporting departments/agencies: ITAC, SARS

13.4.3 Skills Development Strategy

Nature of the intervention: Develop an industry skills development strategy. Investigate possibility of establishing an industry driven training initiative, a boatbuilding apprenticeship system and a strong industry support mechanism to assist firms to participate in the various training opportunities. Specific training for the boatbuilding sector is lacking and high level composite training is a real priority. A number of scarce skills have been identified and a national boatbuilding training strategy needs to be drafted and implemented.

Economic rationale: The boatbuilding industry has traditionally relied on in-house training that has been informal, inconsistently applied and production dependent. This has had a negative impact on the skills base and resulted in a technical deficit at shop-floor level and at middle management level where there is a knowledge deficit; including tacit marine knowledge gained through years of experience in the industry. Remuneration in the industry remains low with few opportunities for vertical growth for employees who remain unqualified. While the industry contributes to the national Skills Development Levy as legislated, the incumbent expenditure on training is piecemeal and unco-ordinated. The cost and risk of training through the existing SETA structures is too high for many of the SME boat-builders who do not have dedicated human resource or administrative staff. The knowledge gap between the level of school attainment and the requirements of the work place have a significant cost impact on boat production at shop floor level. The lack of formal specialisation at management level and the lack of managerial and business acumen is a cost to industry particularly in terms of industry growth and expansion.

Outcomes: Increased competitiveness of the South African industry and general growth in the industry; Production efficiency and quality improved and B-BBEE transformation and investment.

Key milestones

- 2011/12 Q2: First draft of the Boatbuilding Skills Development Strategy and implementation plan drafted.
- 2011/12 Q3: Final draft of the strategy.
- 2012/13 Q1: Implementation of the strategy.

Lead departments/agencies: DoHE&T, **the dti**
Supporting departments/agencies: SETAs, NSF, QCTO, FETs

13.4.4 Designation for Public Procurement

Nature of the intervention: Local industry has the capacity to provide the vessels needed by government and parastatals and we must ensure that local firms are given the opportunity to do so. Some firms already supply patrol vessels and RIBS but we need to ensure that South African expertise and vessel construction is promoted within all the spheres of government

Economic rationale: By purchasing local products, the value chain benefits are retained within the country, more jobs can be created and local suppliers are given the opportunity to grow their business. It also means that the skills needed for repair and maintenance are available locally and do not require expensive international trouble-shooting interventions.

Outcomes: Increase domestic market for our products; which will lead to further investment in firms and possible export opportunities, especially in the light commercial sector. Build a strong market image for local boat-builders.

Key milestones

- 2011/12 Q2: Identify products for designation for public procurement in terms of the revised regulations of the PPPFA; and
- 2011/12 Q4: Designate certain products of the boatbuilding industry for public procurement.

Lead departments/agencies: the dti

13.4.5 Industrial Financing

Nature of the intervention: Develop financial support measures suitable for the boatbuilding industry.

Economic rationale: The boatbuilding industry has very unique features and challenges and many of the incentives available through **the dti** and IDC do not meet industry requirements. Customers need to see and experience a yacht prior to purchase; and therefore enabling a manufacturer to have a demo vessel on hand at a show will directly translate into sales. In developing new markets for South African vessels, it is imperative that we have product on hand to display. There is also a dire need for local firms to invest in new upgraded plant, new machinery and new businesses processes; all of which are very costly to SMMEs. Incentive support is thus vital

Outcomes: Direct increase in export sales, export sales to new markets and new product development; and improved South African boatbuilding footprint globally.

Key milestones

- 2011/12 Q2: Develop Specific financial support measures for the boatbuilding industry or modify the existing support measures to accommodate the requirements of the boatbuilding industry.
- 2012/13 Q3: Commence implementation of the support measures for the industry.

Lead departments/agencies: the dti
Supporting departments/agencies: IDC

13.5 Agro-processing

Sector profile

The agro-processing sector comprises a highly diverse group of sub-sectors and industries. The major sub-sectors include:

- Food processing,
- Beverages,
- Aquaculture,
- Horticulture, and
- Medicinal, aromatics and flavourants.

The agro-processing sector has particularly strong linkages both up- and down-stream. Up-stream, the sector links to agriculture across a wide variety of farming models and products. Down-stream, the sector's products are marketed across both wholesale and retail chains, as well as through a diverse array of restaurants, pubs, shebeens and fast-food franchises.

Moreover, the food processing sector is now the largest manufacturing sector in employment terms, with some 171 000 employees. This increases to more than a million jobs if up-stream (primary) agriculture is included. 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. This narrowly defined agro-processing sector's contribution to the economy is summarised in the table below.

Variable	Contribution in 2009
Manufacturing value-add (% of GDP)	R45bn (2,8%)
Manufacturing employment (% of Manufacturing)	232 079 (16,5%)
Trade balance	-R2,9bn

Key opportunities

Agro-processing is strongly linked to consumer preferences and changes in the level of consumer demand, which in turn are linked to South and Southern Africa's economic growth rate. The domestic market therefore represents an attractive prospect for the agro-processing sector in general. On the non-food side there are opportunities that are being exploited for high-value products for the medicinal, aromatics and flavourants markets.

Moreover, South Africa possesses competitive advantage in a number of fruit and beverage sub-sectors that – if fully exploited – would place South Africa among the top 10 export producers in high-value agricultural products. The products from sub-sectors such as high-quality wines, indigenous Rooibos and Honeybush tea, and certain fruits are highly sought after in export markets.

The global market has also seen substantial growth in the trade of 'farmed' fish and related products. As natural fish resources continue to decline and demand grows, the viability of farming a range of fish species has grown. Although fish farming is relatively capital intensive, South Africa has the potential to create significant numbers of jobs in meeting

local demand for fish, for example trout, as well as international demand for, *inter alia,* abalone and mussels.

Parts of South Africa's agro-processing sector have an unfortunate history of engaging in anti-competitive conduct, thereby contributing to the high prices of basic food products. The competition authorities have been aggressively pursuing a number of cases in the agro-processing sector, and it is expected that firms will become increasingly wary of engaging in such conduct. This is likely to lead to potentially profound changes in a number of key sub-sectors. In particular, the creation of a small-scale milling sector would appear to be viable with moderate assistance from government. Such an initiative may not create vast numbers of jobs but could play an important role in reducing the cost of basic food products, thereby alleviating poverty, reducing hunger and contributing to a competitively-priced milling and baking sub-sector.

Constraints

The agro-processing sector can be categorised into three broad product groups:

A. High-quality, high-value, competitive sub-sectors, e.g. fresh fruit, wine and fish products.

B. Moderately competitive and uncompetitive, mature sub-sectors that are 'stuck' in low-value streams, e.g. tea, canning, food processing and cotton.

C. 'New' sub-sectors with niche market potential but small-scale production, e.g. ostrich meat, indigenous flowers, biofuels, essential and olive oils, and medicinal extracts.

Producers in **Group A** typically face constraints that are related to trade policies in developed countries. These trade policy constraints include subsidies, tariffs, and sanitary and phyto-sanitary standards (SPS). Moreover, as developed countries have tended to grow more slowly than developing countries, the potential to grow exports and employment without penetrating new export markets is relatively low. South Africa will continue to pursue better trade policy outcomes through multilateral and bilateral trade fora. However, there is a clear need to support South African exporters to position their products better in fast-growing, developing countries. This may require focused export intelligence and marketing support as well as inter-government assistance to ensure that South African products are not unfairly subject to non-tariff barriers.

Producers in **Group B** currently face significant constraints in both the export and domestic markets. In export markets, trade policies hamper South African products from

trading competitively as a result of the use of agricultural subsidies by the European Union (EU) and the United States of America (USA) in particular. In addition, in the case of both the black and indigenous tea sectors, market arrangements by multinational corporations (MNCs) prohibit South African producers from moving up the value chain. Currently, South Africa produces relatively high-quality tea that is exported in bulk, blended and marketed through MNC brands. These branded products represent the high-value, high-margin market. There is little incentive for these MNCs to change the current market configuration. Therefore, a movement of South African products into these branded categories will require a significant and extended period of brand development and marketing support to allow these sectors to break into these lucrative markets. There would appear to be a *prima facie* case for government to assist these sectors to position their products as having intangible brand attributes. Countries that have been successful at this include Egypt (cotton), Sri Lanka (tea) and Ethiopia (coffee). In these cases, the branding of the countries' products positions them as high-quality, high-value goods, even if the quality of the product varies widely across producers within the country and is largely intangible.

Producers in **Group B** would also benefit from an enhanced focus on productivity and competitiveness, because some of these sub-sectors have underinvested in new plant and machinery. This group remains important for South Africa, because it comprises the largest group and is likely to remain the mainstay of the sector in production terms.

Producers in **Group C** face significant regulatory barriers, because South Africa's approach to the regulation of 'new' sectors is based on a 'positive' list. This approach essentially 'lists' approved sectors whilst all others are assumed to be undesirable. The implication is that any 'new' sector faces considerably higher regulatory barriers than is necessary. The barriers are inevitably harder to meet, because there is often a knowledge gap between private-sector investors with specific technical knowledge and government regulators, who need to be convinced of the merits of a 'new' sectoral activity.

Key Action Programmes

13.5.1 Development of a Food Processing Strategy and Action Plan

Nature of the intervention: the dti and IDC will develop an institutional structure for engaging the food processing sector. This structure will include the CEOs of the 15 largest food-processing companies and will develop a rolling agenda of cross-cutting and company-specific initiatives to accelerate growth, transformation, and job creation.

Economic rationale: A number of local food processors are large enough and produce products with sufficient brand power to compete successfully on the world market. In addition, their scale and financial resources provide these companies with the means to enter new markets which would be difficult for SMMEs to attempt. Assisting these companies to 'internationalise' their brands could have substantial positive benefit for local manufacturing and upstream industries.

Outcome: Accelerated Growth in the food processing sector.

Key milestones

- 2011/12 Q1: **the dti** to convene the food processing task-team.
- 2011/12 Q2: **the dti** and IDC to commission market research for 3 export markets.
- 2011/12 Q3: **the dti** and IDC to select 5 companies to develop joint export strategies.
- 2011/12 Q4: **the dti** and IDC to implement export strategies with 5 companies.

Lead departments/agencies: the dti
Supporting departments/agencies: IDC, EDD and DAFF

13.5.2 Development of a Soya Bean Strategy and Action Plan

Nature of the intervention: Develop a national strategy and action plan in order to develop the soya bean value chain at both upstream and downstream, processing levels.

Economic rationale: SA imports large quantities of soya beans (upstream) as well as the processed product soybean meal or oil (downstream). There would appear to be significant potential to increase local farming of soya beans on a commercially viable basis, as well as improve local production of value-added processing products. This initiative will also assist maize farmers who currently face low domestic market prices, to diversify into higher-value crops.

Outcome: Increased local farm production of soya beans as well as processed products.

Key milestones

- 2011/12 Q1: DAFF, National Agricultural Marketing Council (NAMC), IDC and **the dti** to review the soya bean value-chain.

- 2011/12 Q3: DAFF, NAMC, IDC and **the dti** to develop a Soya Bean Strategy and Action Plan.
- 2011/12 Q4: **the dti** to review the tariff policy for Soya Beans and commence implementation of the Action Plan.

Lead departments/agencies: the dti
Supporting departments/agencies: DAFF, IDC, NAMC and ITAC

13.5.3 Development of marine aquaculture zones

Nature of the intervention: The global aquaculture sector has grown at 9% per annum since 1973, while South Africa's sector has grown at only 3%. One reason for this is the lack of sites suitable for aquaculture development because of competition with other potential users. It is also difficult to obtain the necessary approvals for use of the sea for marine aquaculture. The proposed aquaculture development zones (land and sea based) entail designating areas that will be exclusively used for aquaculture.

Economic rationale: The current cost and time requirements for investors to obtain the necessary approvals for aquaculture development are prohibitive and are holding back development of the sector. Obtaining blanket approval for a zone is both more cost-effective and time-efficient. In addition, bulk infrastructure and the specialised services required by aquaculture investors can be more cost-effective in concentrated geographic spaces.

Outcomes: The intervention is expected to lead to substantially increased investment in the aquaculture sector, thereby leading to increased production, job creation and diversification of the sector.

Key milestones
- 2011/12 Q1: DAFF to conclude Environmental Impact Assessments (EIAs) of potential zones.
- 2011/12 Q1: DST to provide technical reports from a pilot in Port Elizabeth.
- 2011/12 Q1: DAFF to declare the first marine aquaculture zone.
- 2011/12 Q3: DAFF to declare the second marine aquaculture zone.
- 2012/13 Q4: DAFF to establish infrastructure for two marine aquaculture zones.

- 2012/13 Q3: DAFF to establish support services (such as advisors, extension and veterinary services).
- 2011/12 Q1: **the dti** and IDC to develop and launch appropriate industrial support mechanisms.

Lead departments/agencies: DAFF
Supporting departments/agencies: EDD, **the dti**, DWEA, provincial departments and local authorities

13.5.4 Establish aquaculture hatcheries

Nature of the intervention: The aquaculture sector is dependent on the reliable supply of juvenile aquatic animals for further growth by aqua-farmers. This intervention entails the establishment of two hatcheries to provide a reliable and continuous supply of high-quality juveniles to the aquaculture sector. DST is establishing two abalone hatcheries as the extension of the pilot Hondeklip Bay intervention.

Economic rationale: All aquaculture is totally dependent on a reliable supply of 'seed' - otherwise known as fry, fingerlings or spat - for further growth by aqua-farmers. Currently South Africa has only a few big companies with in-house hatcheries, while some of the seed is imported. Most small-scale farmers are compelled to buy seed that is costly, and availability depends on the demand by competing aqua-farmers in both South Africa and the region.

The participation of communities and SMMEs in the sector could therefore be inhibited by a lack of resources to establish hatcheries or to source spat from elsewhere. In most developing countries that have successful aquaculture sectors, the establishment of hatcheries was undertaken by the government, because the lack of seed is potentially a binding constraint on the development of the sector.

Outcome: The intervention is expected to facilitate the development of the aquaculture sector by ensuring a reliable supply of high-quality seed to aqua-farmers.

Key milestones
- 2011/12 Q1: DAFF to survey and secure site for hatcheries.
- 2011/12 Q2: DAFF to issue call for tenders to develop hatcheries.

- 2011/12 Q4: DAFF establishes first hatchery.
- 2012/13 Q2: DAFF establishes second hatchery.
- 2010/11 Q2: DST to commence work on two abalone hatcheries.

Lead departments/agencies: DAFF
Supporting departments/agencies: DWEA and DST

13.5.5 Development of the organic food sector

Nature of the intervention: Implementation of the Organic Produce Strategy.

Economic rationale: The organic food sector represents a high-value niche sub-sector with the potential to create 20 000 jobs over five years in both the primary agriculture and agro-processing stages of the value chain. Moreover, South Africa currently imports a significant proportion of the organic food demanded by consumers, and there are thus both import replacement and export possibilities for the sub-sector.

Outcome: A competitive organic sub-sector producing high-quality food products for both the local and export markets.

Key milestones

- 2011/12 Q1: DAFF to approve South African Organic Products Standards.
- 2011/12 Q1: **the dti** to implement the retailer/small-farmer/processor programme.

Lead departments/agencies: the dti and DAFF
Supporting departments/agencies: DRD&LR and Provincial Departments of Agriculture

13.5.6 Implementation of a Water Efficiency Programme for the Sugar Sector

Nature of the intervention: The intervention entails the development and piloting of a water efficiency programme with the sugar sector.

Economic rationale: SA is a water-stressed country. At present the commercial agriculture sector consumes approximately 60% of total water consumption. Within commercial agriculture, the sugar sector is a relatively high consumer of water relative to its land under cultivation. The impact of climate change and the continued growth of the

population will likely increase the pressure on domestic water resources. This could limit new commercial agricultural opportunities and may also limit agriculture for industrial purposes, for example for biofuel production. The net effect of this would be to limit the job creation potential of expanding commercial agriculture. Implementing a programme of water efficiency in commercial agriculture could play an important role in freeing up additional water resources for new, or expansion of existing, agricultural sectors.

Outcomes: Improvement in the water efficiency of sugarcane farming.

Key milestones

- 2011/12 Q1: **the dti** and DWA to develop a pilot water efficiency programme in the KZN Province
- 2011/12 Q2: **the dti** to sign a memorandum of agreement (MoA) with the SA Sugar Association to implement the water efficiency programme in KZN
- 2012/13 Q1: **the dti** and DWA to roll-out the water efficiency programme to other commercial agricultural sectors

Lead departments/agencies: the dti
Supporting departments/agencies: DWA and DAFF

13.5.7 Development of a small-scale milling industry

Nature of the intervention: The 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 cost of basic food products. The intervention consists of a standardised maize mill machinery package embedded in a franchising business model. This will allow local milling at competitive prices and to the quality standard demanded by consumers.

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. This would contribute to poverty reduction and would alleviate pressure on real wages, because lower-income workers spend a substantial proportion of their income on basic food products.

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

Key milestones

- 2011/12 Q1: **the dti** and IDC to introduce a support programme to facilitate the market entry of small-scale maize mills.
- 2011/12 Q2: **the dti** and IDC to roll out the small-scale maize mill programme.

Lead departments/agencies: the dti
Supporting departments/agencies: IDC, EDD and DAFF

13.5.8 Enhancement of competitiveness 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 11 000 factory workers, over 500 administrative employees and approximately 17 000 farm workers on 1 200 farm units that supply the fruit to factories. These are situated in an economically depressed area with very limited employment opportunities, making the fruit canning industry a major source of employment in the area.

Outcome: To create a sustainable platform for the long-term growth and competitiveness of the industry.

Key milestones

- 2011/12 Q2: **the dti** and industry to launch a generic domestic marketing campaign for canned fruit.
- 2011/12 Q2: **the dti** to designate the vegetable canning industry for local procurement.

- 2011/12 Q3: **the dti** to develop a programme to support product development in the fruit canning industry.
- 2011/12 Q4: **the dti** to assist the industry to penetrate the India market (no exports currently) and achieve sales to the value of R2 m.
- 2013/14 Q3: South African Fruit and Vegetable Canning Association (SAFVC) to double exports to China.

Lead departments/agencies: the dti

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

13.5.9 Promote exports of beneficiated Rooibos and Honeybush products

Nature of the intervention: Development of domestic Rooibos and Honeybush packaging capacity.

Economic rationale: To fully boost export and job creation opportunities in the Rooibos and Honeybush tea industries. Rooibos and Honeybush grow exclusively in South Africa and are mainly exported in bulk. Estimates suggest that the percentage of retail-packed tea in total exports is less than 5% for Rooibos and less than 10% for Honeybush.

Outcomes: Increase the supply of finished Rooibos and Honeybush products by 50% over five years. Beyond five years it is expected that not less than 95% of finished and packed Rooibos and Honeybush tea will be exported. Retain 5 000 jobs in the Rooibos and Honeybush sub-sector.

Key milestones

- 2011/12 Q1: **the dti** to begin implementation of an export market development programme.
- 2011/12 Q3: **the dti** to assist the Northern Cape Rooibos Tea sector to begin exporting packaged products to targeted export markets.
- 2012/13 Q4: The industry to increase exports of packaged tea products by 50%.

Lead departments/agencies: the dti

Supporting departments/agencies: DAFF, IDC, Western Cape and Northern Cape Provincial Departments of Agriculture

CLUSTER 2 – SCALED-UP AND BROADENED INTERVENTIONS IN EXISTING IPAP SECTORS

13.6 Automotive products; components; and medium and heavy commercial vehicles

Sector profile

The automotive sector is a critical segment of the economy in any country, because it links several industries and services. The production of a vehicle incorporates a wide range of industrial activities. It is South Africa's leading manufacturing sector, contributing approximately 4.8% to GDP in 2009. The industry employs at least 129 000 people in the manufacturing of accessories, components and vehicles, amounting to about 9.2% of total manufacturing employment, while the retail segment employs about 200 000 people. Production in 2009 was 373 923 units, which was less compared to 2008 due to the impact of the economic crisis. In 2009, exports from the automotive sector amounted to R46 billion, while imports amounted to R80,2 billion, leading to a R34,2 billion trade deficit. In the absence of local production and exports this trade deficit would be much higher.

Variable	Contribution in 2009
Manufacturing value-add (% of GDP)	R23,2bn (1,5%)
Manufacturing employment (% of Manufacturing)	128 990 (9,2%)
Trade balance	-R34bn

Key opportunities

There are major opportunities to boost the Automotive Production and Development Programme (APDP) to strengthen, broaden and deepen the automotive product and components, and medium and heavy commercial vehicles sector. In automotive products, the twin objectives are to raise volumes to 1,2m vehicles per annum by 2020 and to substantially diversify and deepen the components supply chain. This will require ongoing increases in minimum plant volume thresholds and working with the vehicle assemblers or original-equipment manufacturers (OEMs) to identify areas where greater economies of scale in component sourcing are possible, particularly components that are potentially common across OEMs.

The medium and heavy commercial vehicle (MHCV) sector has not received adequate policy attention. There are opportunities to resuscitate bus production in South Africa as well as other MHCV sectors, boosting opportunities such as the roll-out of the Bus Rapid

Transport Systems in Metros. There is also a growing demand for other MHCVs in areas such as infrastructure, construction, mining and possibly agricultural demand. This includes a stronger focus on so-called 'yellow metals' manufacturers of products such as articulated dump trucks.

The automotive industry is being impacted by the imperatives of climate change and increasing demand for lower-emission vehicles. A strong focus will be on ensuring that these technological developments are embodied in South African production. This includes support for the commercialisation of our own electric car.

Constraints

Notwithstanding the successes achieved since 1995, the industry faces a number of challenges. 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 stagnated. Several studies indicate gaps in the manufacturing competitiveness levels of automotive component suppliers. Some progress has been made through a three-year supplier development programme implemented by the Automotive Industry Development Centre (AIDC). Although good results have been achieved, a more consolidated focus on broadening and deepening the component base and its competitiveness is required. The rapid liberalisation of the MHCV sector as well as the apparent lack of co-ordination between the various government arms and agencies have diminished the ability to increase state procurement of buses or bus services in order to grow the sector. The procurement processes at the various agencies have also been marred by delays, leading to minimal local build of the buses as timelines become too compressed.

Key Action Programmes

13.6.1 Automotive Production and Development Programme (APDP)

Nature of the intervention: Regulatory amendments and implementation of the tariff regime, production incentive and volume assembly allowance elements of the APDP.

Economic rationale: The automotive industry works with long forward timelines and therefore a stable and transparent policy environment is required to enable investment decision making.

Outcomes: Policy certainty through publication of clear implementation guidelines, procedures and associated administrative framework, including a stronger monitoring and evaluation framework with strengthened conditionalities.

Key Milestones

- 2011/12 Q1 : publications of APDP Regulations by ITAC
- 2012/13 Q3 :expiration of MIDP
- 2012/13 Q3 onwards :Implementation and continuous monitoring of APDP

13.6.2 Identification of opportunities to broaden and deepen automotive-component manufacturing

Nature of the intervention: An OEM-led strategy for further localisation of technologically advanced suppliers of identified products in five key sub-sectors such as electronics, body parts, interiors, exteriors, chassis and drive-train.

Economic rationale of the intervention: Identification of joint-sourcing opportunities across OEMs to broaden, deepen and raise economies of scale.

Outcomes: Identification of specific components for local acquisition by OEMs, including identification of global and local suppliers, leading to increased capacity at component level and to increased competitiveness at OEM level.

Key milestones

- 2011/12 Q1: Investigate business cases (focus area and potential suppliers).
- 2011/12 Q1: Priority list of components for localisation compiled.
- 2010/11 Q2: Action agenda based on priority list.
- 2010/11 Q3: Draft action plan for implementation.
- 2011/12 Q4: Final action plan and commencement of implementation.

Lead departments/agencies: the dti in conjunction with automotive OEMs
Supporting departments/agencies: Provincial and local government

13.6.3 Competitiveness Improvement of Automotive Component Manufacturers (CIACM)

Nature of the intervention: Firm level manufacturing competitiveness improvement through benchmarking, gap identification and assistance to close competitiveness gaps by engineers or advisors and post-intervention assessment.

Economic rationale: Improving firm level manufacturing competitiveness will enable local component manufacturers to better compete with their counterparts based in areas such as India and China, leading to increased local content of locally assembled vehicles. This situation will lead to the sustainability of the local industry and employment.

Outcome: Improved automotive component manufacturing global competitiveness.

Key milestones

- 2011/12 Q1: Recruitment of 25 firms for assistance.
- 2011/12 Q2: Benchmarking the 25 firms prior to intervention. Commencement of a 12-month intervention to improve competitiveness.
- 2011/12 Q3: Recruitment of a further 25 firms for assistance.
- 2011/12 Q4: Benchmarking the last firms prior to the intervention and commencement of a 12-month intervention to improve competitiveness.
- 2012/13 Q1: Post intervention progress assessment for 25 firms.
- 2012/13 Q2: Post intervention assessment of last 25 firms.
- 2012/13 Q3: Final project report.

Lead departments/agencies: the dti
Supporting departments/agencies: Automotive Industry Development Council

13.6.4 Enterprise Reference Architecture (ERA) portal for small and medium enterprise (SME) suppliers

Nature of the intervention: Portal to help firms optimise existing technology investments through best practices.

Economic rationale: A complementary tool for the other competitiveness improvement initiatives focussed on technology utilisation improvement of third- and fourth-tier manufacturers.

Outcome: Improved automotive component manufacturing competitiveness.

Key milestones

- 2011/12 Q1: Secure funding.
- 2011/12 Q2: Contracting a service provider to implement programme.
- 2011/12 Q3: Project set-up.
- 2012/12 Q4: ERA selection and configuration.

Lead departments/agencies: the dti
Supporting departments/agencies: AIDC and the University of Stellenbosch

13.6.5 Mentorship of SME component manufacturers

Nature of the intervention: This project will involve the facilitation of learning for component manufacturers, especially third- and fourth-tier suppliers, through the provision of mentors over a specified, short period of time according to pre-determined guidelines.

Economic rationale: Small manufactures with advanced capabilities often fail because they are led by technicians or engineers with limited business skills or experience.

Outcome: Lower failure rate of small automotive component manufacturers.

Key milestones

- 2011/12 Q1: Secure funding.
- 2011/12 Q2: Contract a service provider.
- 2011/12 Q3: Develop selection criteria for mentors and firms.
- 2011/12 Q3: Develop a mentoring methodology.
- 2011/12 Q4: Recruitment of mentors.
- 2011/12 Q4: Develop a performance measurement system.

Lead departments/agencies: the dti
Supporting departments/agencies: DoHE&T, AIDC and educational institutions

13.6.6 Medium and Heavy Commercial Vehicle (MHCV) development action plan

Nature of the intervention: Completion of a study to identify opportunities and interventions to resuscitate the MHCV sector.

Economic rationale: The MHCV segment is labour intensive in assembly and offers further opportunities to broaden and deepen component manufacturing. This includes a focus on the bus industry, 'yellow metals' and MHCVs required for infrastructure, construction, mining and agricultural applications.

Outcome: Identification of opportunities and interventions to resuscitate and grow the MHCV sector.

Key milestones

- 2011/12 Q1: Finalisation and approval of MHCV action plan and business plan.
- 2011/12 Q2: Implementation of key actions around MCVH market development.
- 2011/12 Q4: Implementation of interventions aimed at growing OEMs production capacity.
- 2012/13 Q2: Implementation of interventions aimed at deepening value added components.

Lead departments/agencies: the dti
Supporting departments/agencies: DoT and NT

13.6.7 Commercialise South Africa's electric car

Nature of the intervention: Provision of appropriate support to encourage local manufacture of electric vehicles (EVs) and related components, installation of infrastructure for such EVs, creation of testing facilities, provision of demand stimulation mechanisms and public education on the use and benefits of alternative-energy-source vehicles.

Economic rationale: Direct and positive spill-over effects of developing a local electric vehicle coupled with the creation of a broader regulatory environment for such vehicles.

Outcomes: Creation of a legislative and regulatory environment to allow the operation of EVs, relevant testing infrastructure for EVs, local manufacturing for domestic and global markets, initiation of charging infrastructure and educational campaigns on electric vehicles.

Key milestones

- 2011/12 Q1: Final draft position paper on electric vehicles.
- .2011/12 Q2: Memorandum submitted for Cabinet consideration.
- 2011/12 Q3: Continue implementation of support mechanisms for local EV manufacturing.
- 2012/13 Q4: Rollout of implementation of plan.

Lead departments/agencies: the dti
Supporting departments/agencies: DoT, DST, provincial governments and targeted Metros

Economic impact: An estimated 160 000 direct jobs will be created in the industry in the next ten years. Investment levels exceeding R20 billion are expected to take place in the next four years, with an expected further annual R3 billion for the following six years. Greater localisation of component manufactures will lead to an improvement in the trade balance.

13.7 Downstream minerals beneficiation

Sector profile

The South African economy has been built on the back of mining and electricity-intensive resource-processing activities. Mining and semi-processed raw materials continue to make up a large part of SA's export basket. Less than 10% – or R40 billion – of gross revenue for sales of all minerals in South Africa, amounting to R225 billion, is generated from the processing of base metals, precious metals and minerals. However, this economic structure is not sustainable. Minerals are a non-renewable 'wasting asset' that needs to be

exploited during its lifespan to build a more diversified, labour-intensive and value-adding economy.

Key opportunities

Significant opportunities already exist or are being operationalised, including the use of Platinum Group metals (PGM) in emissions control (catalytic converters) in the auto industry. Other significant opportunities depend on a clear plan and programme.

Constraints

- Monopolistic pricing of certain minerals and most semi-processed raw materials, such as steel and chemicals, occurs in the form of import parity pricing.
- Many producers are 'locked in' to long-term supply targets of basic commodities.
- The security and cost of energy supply poses a constraint.
- There is limited research and development and not enough requisite skills.
- Existing trade barriers in some prospective target markets for beneficiated products limit potential access to these markets.
- The location of mining operations relative to established manufacturing centres and the lack of infrastructure linking the two are problematic.

Key Action Programmes

13.7.1 Setting minimum beneficiation levels for key commodity chains

Nature of the intervention: The DMR to work closely with **the dti** to upscale a strategy and programme for mineral beneficiation.

Economic rationale: This will lay the foundation for creating specific value chains – in five cases, up to the fourth level of minerals value addition.

Key milestones

- 2011/12 Q1 – Q4: DMR and **the dti** to jointly upscale the mineral beneficiation strategy and programme including the identification of downstream beneficiation 'offset opportunities' arising from the Mining Charter.

Lead departments/agencies: DMR
Supporting departments/agencies: the dti, EDD, DST

13.7.2 Gold loan scheme to promote jewellery production

Nature of the intervention: A financing mechanism to enable jewellers to acquire gold from the lending institution(s) at a competitive interest rate and stable prices.

Economic rationale: The cost of holding expensive precious metals/minerals such as gold is a major deterrent to the development of the jewellery sector.

Outcomes: Increased investments in gold manufacturing activities, increased number of Small and Medium-sized Enterprises (SMEs), increased foreign exchange through increased exports, and increased employment.

Key milestones

- 2011/12 Q1: finalise the guidelines for the forward buying scheme (for SMEs) and the administrative function with Khula and launch the programme.
- 2011/12 Q2: finalise the guidelines for the pipeline financing scheme (for large companies) and the administrative function with IDC.
- 2011/12 Q3: launch the pipeline financing programme.
- 2011/12 Q4 2013/14: roll-out the two schemes to industry.

Lead departments/agencies: the dti
Supporting departments/agencies: IDC and DMR

13.8 Plastics and pharmaceuticals

Plastics sector profile

The plastics sector has potential to create new jobs. It is largely comprised of small firms due to the ease of entry. Plastics manufacturing contributes approximately 0.6 % to South Africa's GDP, and 3.5 % to the manufacturing sector's GDP. Value added in the plastics sector was R9,2 billion in 2009, and the sector employed 33 846 people in 2009. The export value of plastic products in 2009 was R2,2 billion compared with the import value of R6,1 billion, leading to a trade deficit of R3,8 billion.

Variable	Contribution in 2009
Manufacturing value-add (% of GDP)	R9,2bn (0,6%)
Manufacturing employment (% of Manufacturing)	33 846 (2,4%)
Trade balance	-R3,8bn

Key opportunities

Key areas of opportunity for growing the sector include:

- Automotive (interiors: products such as carpets and dashboards, and exteriors: products such as bumpers and mirror casings);
- Packaging;
- Medical (drips and syringes);
- Building (pipes, flooring, building sheet, sanitation, woven/netted Polypropylene PP bags); and
- Electrical and electronics (cables, appliances and casing components).

Some important surveys have been done in the sector to identify further industry development opportunities. The recent lowering of import tariffs on polymers and other inputs will contribute towards more competitive input prices.

Constraints

Plastics converter 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. Constraints faced by the plastics sector include import parity pricing of polymers and other key inputs, as well as:

- Pricing of raw materials;
- Relative small local and regional market;
- Lack of advanced manufacturing practices;
- Lack of downstream focus on R&D effort; and
- South Africa's geographic position and resultant logistics costs.

Pharmaceuticals sector profile

Manufacturing employment in the pharmaceutical sector was 9 500 in 2007 (down from 16 000 in 1999). It is the fifth-largest contributor to South Africa’s trade deficit: R14,8 billion in 2008. While the South African pharmaceutical market is only 0,35% of the global market, it is also the world’s largest market for anti-retrovirals. Currently, there are 900 000 Acquired

Immune Deficiency Syndrome (AIDS) patients receiving anti-retroviral treatment (ART) in South Africa, of whom 800 000 are in the public sector and 100 000 in the private sector. The cost of ARV procurement by government in 2009 is estimated at R2,8 billion, escalating to R7 billion in 2011. Apart from the economic burden, this poses risks to the security of supply of ARVs.

Imports in 2008 were R16 billion, while exports were R1,2 billion. The export market has been under significant pressure due to the crisis in Zimbabwe – this market accounted for 50% of South Africa's pharmaceutical exports until 2001 – and competition from exports from India.

Variable	Contribution in 2008
Manufacturing value added (% of GDP)	R3,25bn (1%)
Manufacturing employment (% of Manufacturing)	9 500 (0,7%)
Trade balance	-R14,8bn

Key opportunities

- Domestic production of active pharmaceutical ingredients for key ARVs;
- Local production of reagents for AIDS/HIV diagnostics, under licence;
- Domestic production of vaccines under licence;
- Domestic production of biological medicines such as erythmpoietin, monoclonal antibodies and vaccines; and
- Removing regulatory barriers and constraints to clinical research in South Africa (current market R2 billion per year). Potential market size is R4 billion to R5 billion per year.

Constraints

- Small size of the South African market (0,35% of global) – the only segment that attracts the attention of foreign investors is the South African ARV market;
- Downward pressure on prices, reducing attractiveness of South Africa to existing and potential investors; and
- Lack of key skills in new drug design, pharmaceutical formulation and pharmaceutical biotech. Excessive supply of graduates with conventional skills and knowledge (more suitable for pharmaceutical marketing and sales).

Key Action Programmes

13.8.1 Polypropylene beneficiation

Nature of the intervention: A Fund for Research in Industrial Development Growth and Equity (FRIDGE) study into potential downstream polypropylene products was commissioned and subsequently used as a base for the development of a polypropylene business case. Outputs from the study have been used during investment campaigns in targeted countries. The case outlines benefits for investing in South Africa coupled with technical assistance given by local feedstock suppliers. The intervention relates to the roll-out of the programme that started during the 2007/08 IPAP.

Outcomes: Increased export, investment and employment opportunities.

Key milestones

- 2011/12 Q1: Develop Key Action Plans based on the Plastics Strategy
- 2011/12 Q3 – Q4: **the dti** will facilitate industry access to capital for technology upgrading.
- 2011/12 Q3 – Q4: **the dti** to facilitate investment by polypropylene converters.

Lead departments/agencies: the dti

Supporting departments/agencies: DST, DoE/CSIR and IDC

Economic impact

Given full implementation, the polypropylene conversion project will result in around 40 000 tonnes per annum (TPA) of new plastic products being fabricated, made from polypropylene feedstock that is currently exported. The project will add around R600m in revenue per annum, replacing existing imports as well as adding new exports of around R300 million. Capital expenditure of around R1 billion is expected once the plan has been fully implemented; and up to 22 754 new manufacturing jobs will be created through the utilisation of technologies such as blow and injection moulding, as they require low capex and have high employment potential.

13.8.2 Domestic production of ARV APIs

Nature of the intervention: Appropriate sequencing – in consultation with DoH – of the production of selected ARV APIs domestically.

Economic rationale: The intervention will reduce the current trade deficit by reducing the dependence on imports. In addition, the structural gap in API production capacity will be addressed by injecting advanced technology into the local industry.

Outcomes: Agree with DoH on appropriate sequencing of domestic production of ARVs.

Key milestone

- 2010/11 Q1: Joint technical report and Cabinet Memorandum by **the dti**/DoH.

Lead departments/agencies: the dti
Supporting departments/agencies: DoH, NT, DST

13.8.3 Domestic production of vaccines

Nature of the intervention: To restart production of vaccines to supply the domestic market, estimated at R1,2 billion.

Economic rationale: To achieve security of supply and upgrading of technology. Advantages are both a high return on investment and foreign currency savings.
Outcome: To achieve local production of at least half of total domestic demand under licence.

Key milestones

- 2010/11 Q4: To begin production of sterile filling of vaccines.
- 2012/13 Q4: Production of antigens.

Lead department/agencies: DST
Supporting departments/agencies: the dti, DoH and NT

13.8.4 Skills development to meet the pharmaceutical manufacturing sector's and the SA public and private healthcare sector's demand for qualified staff

Economic rationale: Providing the required skills for the SA pharmaceutical industry (from R&D to manufacturing) and for the broader public and private healthcare sector.

Adjusting training programmes to meet demand for specific scarce skills, by rationalising programmes funded by Skills' Levies.

Outcome: Completion of a study to verify and validate the demand for skills within the pharmaceutical sector, conduct gap analysis on the adequacy of the education and training provision in the area of the current critical sector skills requirements; and conducting international benchmarking with an aim of recommending the successful models in designing and implementing the training programmes. These will range from equipment operators to post-graduate programmes in new drug design, biological medicines, drug delivery systems (including nanotechnology), high-potency medicines etc.

Key milestones

- 2011/12 Q2: Completion of the study.
- 2011/12 Q4: Draft recommendations to changes to the curricula and training programme of medical/pharmaceutical faculties of SA medical schools.
- 2012/13 Q2: Facilitate in changing the CHIETA training programme to better align it with the existing and future needs of the SA pharmaceutical industry.

Lead departments/agencies: the dti
Supporting department/agencies: DST and DoH

13.9 Clothing, textiles, footwear and leather

Sector profile

The clothing, textiles, footwear and leather industries have been in distress for some time. This is due to a range of factors, including: Rand strength and volatility; under-invoicing and illegal imports; competitiveness challenges; skills deficits; and limited economies of scale in parts of textiles. These industries are labour intensive and are often used by developing countries as a platform for sustained economic growth and job creation. In South Africa, the employment trend has been downward across the sector. The trade balance increased negatively from 2000 onwards in all the industries across the sector, with the clothing industry being the worst affected.

Variable		Contribution in 2009
Manufacturing value-add	(% of GDP)	R11,3bn (0,7%)
Manufacturing employment	(% of Manufacturing	168 833(10,3%)
Trade balance		-R18bn

Key opportunities

The key opportunity is to recapture domestic market share by improving competitiveness through a range of interventions. These include a focus on product, process and delivery efficiencies and harnessing proximity to local retailers. Ongoing clampdowns on under-invoicing and other illegal activities will help to level the playing field. The industry needs to seize the opportunity of a coherent and comprehensive set of support instruments in order to fundamentally transform its competitiveness. Going forward, the commercialisation of new technologies should give the textile industry an added advantage in the global arena. This will include the beneficiation of new fibres now being grown in South Africa. Traditionally, only cotton and wool were grown for export in the semi-processed form.

Constraints

The constraints facing the industry are well-documented. A set of support measures will be instituted with the aim to tackle most of the key constraints. These include:

- Currency strength and volatility;
- The ongoing surge of global imports that has been underway since the expiry of the Multi-fibre Agreement;
- Illegal imports and fraudulent under-invoicing;
- Inadequate policing of ‘country of origin’ labelling legislation;
- Lack of skilled personnel to take over from ageing industrial executives and senior management, who generally did not have succession plans;
- A 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; and
- An historical deficit with respect to innovation, research and development.

Key Action Programmes

13.9.1 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: Stability and competitiveness of the sector. The CTCP will be extended to the leather and leather goods, and the footwear industries. The production incentive will be finalised and implemented.

Key milestones

- 2011/12 Q1: New guidelines for the PI and CTCP.
- 2011/12 Q2: Dedicated website for the PI and CTCP to go live
- 2011/12 Q3: Testing of the monitoring and evaluation system for the PI and CTCP
- 2011/12 Q4: Revision of Guidelines and Programmes

Lead departments/agencies: IDC
Supporting department/agencies: the dti

13.9.2 Illegal imports programme

Nature of the intervention: The programme is designed to clamp down on illegal imports that are flooding the country. The illegal imports are brought in by either using documents that under-invoice the consignments, or use wrong tariffs. The programme will also scale up the policing of country-of-origin labelling.

Economic rationale: Cheap or illegal imports landing in the country are the main threat to clothing and textiles companies in the country. The elimination of illegal imports will help level the field of play for local manufacturers.

Outcome: Reduction and the elimination of illegal imports over the next three years.

Key milestone

- 2011/12 – 2012/13 Q2: Ongoing and targeted campaigns against under-invoicing and other illegal activities in the sector.

Lead departments/agencies: SARS/NT
Supporting departments/agencies: the dti and EDD/ITAC

13.9.3 Skills development

Nature of the intervention: The programme is involved with the upgrading of skills in the sector. The programme will facilitate the finalisation of funding arrangements with the National Skills Fund (NSF). The skills strategy will be rolled out through the Textiles and Clothing Centre of Excellence established at the CSIR in Port Elizabeth. This will speed up the implementation of programmes instead of establishing another implementing organisation.

Economic rationale: A lack of succession plans in the sector has resulted in very few young graduates joining the industry. Most of the leaders of the industry are beyond retirement age, but there are no skilled personnel to take over. Most of the training that has taken place in the sector has been at the operator level.

Outcomes: The programme outcomes will include the graduation of technicians, technologists, engineers, managers and scientists for the textiles, clothing, leather and footwear industries.

Key milestones

- 2011/12 Q1 onwards: Roll-out of skills development programme by NSF and Clothing, Textiles, Footwear and Leather (CTFL) SETA.
- 2011/12 Q2: A revised curriculum for the garment manufacturing industry will be developed in collaboration with the DoHE&T and the transfer of the programme to the appropriate institutional and funding arrangement.

Lead departments/agencies: NSF, CTFL SETA
Supporting departments/agencies: DoHE&T, DST and CTFL SETA.

13.9.4 Audit of textiles capabilities

Nature of the intervention: The programme will cover the audit of the capacity and the technology currently in the textile industry. Through the intelligence gathered, the programme will then explore the possibility of consolidating the textile industry. The aim is that companies will focus on different products; thereby assisting them to gain a mindset that looks at specialisation instead of the 'shotgun' approach currently being followed by some companies.

Economic rationale: The textiles industry will build a culture of specialisation that will develop them into experts in their fields. This will make them more sustainable and they will diversify into products that the garment manufacturers and retailers are in need of and that are currently being imported.

Outcomes: The industry will be transformed into a 21st century textile industry and become a global trend setter instead of being a follower as it is at present.

Key milestones

- 2011/12 Q1: Commission textiles capacity audit in conjunction with industry stakeholders.
- 2011/12 Q2: Monitor progress.
- 2011/12 Q4: Review preliminary findings and make recommendations.
- 2012/13 Q1: Finalise study and initiate review of textile tariff structure by ITAC in light of the findings.

Lead departments/agencies: the dti/IDC
Supporting departments/agencies: Competition Commission

13.9.5 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 data base 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, wild silk, cashmere, and kenaf. New technologies such as non-woven products and fibre-

reinforced composites will be commercialised in South Africa. Technologies in garment designing and servicing the fashion industries will also be pursued.

Economic rationale: South Africa cannot compete globally in commodity textiles with countries such as Bangladesh, India and China. It has to focus on niche markets and those sectors of the textile trade in which developing economies are better positioned to compete because of cheap labour and cheap raw materials.

Outcomes: The main outcome of the programme will be a transformed textiles industry, which will be in a position to compete globally with home-grown garment technologies.

Key milestones

- 2011/12 Q1: **the dti** to establish the South African garment sizing database.
- 2011/12 Q2- 2013/14: **the dti** to oversee the commercialisation of fibres such as wild silk, and cashmere and also the printing of imported hemp and flax.
- 2011/12 – 2013/14: **the dti** to oversee the migration of part of the industry to technical and smart textiles.

Lead departments/agencies: the dti
Supporting departments/agencies: DST/CSIR and IDC

13.9.6 B-BBEE

Nature of the intervention: Explore boosting B-BBEE obligations at retail level to promote domestic manufacturing and sustainable black ownership. The promotion of succession plans that favour the promotion of black management will also be encouraged.

Economic rationale: The programme will go a long way towards transforming the informal sector into a formal sector, rendering the employment statistics more robust. The sector has not transformed after 15 years into the new dispensation.

Outcomes: More local production on the retailers' shelves and advancement of B-BBEE objectives.

Key milestone

- 2011/12: **the dti** to finalise a strategy with industry.

Lead departments/agencies: the dti
Supporting departments/agencies: EDD/IDC and industry associations

Economic impact
It is expected that the tide of the closure of companies and job losses will be stemmed, because the industry will be transformed and become sustainable. The sustainable creation of quality jobs at the rate of 2000 per annum from 2010 will become possible. These jobs will initially come from the formalisation of the informal sector and the enterprises becoming Bargaining Council compliant. As the sector becomes more competitive, companies will be able to satisfy local retailers' needs more adequately. The turn around will reduce imports, improving the trade balance and contribute positively to GDP.

13.10 Biofuels

Sector profile
The biofuel sector has grown rapidly internationally. However, up to now, South Africa has remained only a peripheral participant in the sector's growth. There are a number of reasons for this. First, because it is a relatively new sector there are a variety of complex regulatory barriers that need to be finalised. Second, the global economic crisis and the resultant reduction in oil prices have reduced the commercial viability of some investments and; more generally, have negatively affected investor sentiment. Third, national debates have tended to focus on food-versus-fuel arguments while taking relatively little cognisance of the dynamic nature of agriculture and the potential to create biofuels using current crop surpluses.

Nonetheless, a (then) Department of Minerals and Energy's National Biofuels Study in 2006 found that South Africa had significant potential to develop a commercially viable biofuels sector, notwithstanding the country's water-poor status. At present the IDC and the Central Energy Fund (CEF) are the main investors in the sector in South Africa. The IDC in particular is involved in all four of South Africa's current biofuel projects.

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. In addition, second-generation biofuel technology will also contribute to South Africa meeting its renewable-energy targets in a sustainable manner.

Key opportunities

Government is already committed to a 2% blend target for biofuels inclusion into the national fuel supply. However, the details of the regulatory processes have not yet been finalised. A number of other developing countries have set blending targets of 10% for biofuels without any need for significant engine adjustment. Were South Africa to increase its blending target to 10%, some 125 000 direct jobs could be created, many of which would be based in rural areas, where the deepest pockets of poverty occur.

Key Action Programmes

13.10.1 Accelerated development in the biofuels sector

Nature of the intervention: Developments in the biofuels sector have been slow. This intervention is designed to accelerate development in the biofuels supply side at farm level as well as at manufacturing level. To do so requires an improved regulatory environment and greater certainty around the demand for biofuels. The intervention entails high-level co-ordination with relevant government departments, investors and development finance institutions to ensure that a coherent and co-ordinated approach to the development of the sector is followed.

Economic rationale: The regulatory environment for the sector is still in the process of being developed and it will be essential to ensure that this is supportive of accelerated production of biofuel crops. The best available data suggests that a successful biofuels sector requires mandatory blending to provide investors with demand certainty in the medium term. South Africa has the potential to create significant numbers of jobs through the development of a large-scale biofuels sector. This will have additional benefits in terms of import replacement, improved security of fuel supply and expansion of the farming sector.

Outcome: Accelerated development of an up- and down-stream biofuels sector operating in a supportive regulatory environment.

Key milestones

- 2011/12 Q2: Create a permit-base rebate facility for the importation of bio-ethanol in the event of local bio-ethanol supply disruption.
- 2011/12 Q2: Amend fuel specifications to allow for requisite waivers.
- 2011/12 Q3: Conclude and sanction price support/incentive mechanism for biofuel producers.
- 2011/12 Q3: Mandate 2% upliftment of biofuel increasing to 10% over the next 10 years.
- 2011/12 Q4: Develop water tariff policy for biofuel feedstock producers.
- 2011/12 Q4: The IDC to provide industrial financing options to investors, thereby leading to the commissioning of biofuel processing facilities.

Lead departments/agencies: DoE
Supporting departments/agencies: the dti, NT, DWA, SABS, SARS, ITAC and IDC

Economic impact: The Key Action Programmes highlighted above are expected to lead to the creation of between 100 000 and 150 000 direct jobs over the next decade. In addition, investment of approximately R5 billion can be expected over the decade.

Resource-Based Industries

13.11 Forestry, timber, paper and pulp, and furniture

Sector profile

The forestry, timber, paper and pulp (FTPP) and furniture sector has the potential to contribute greatly to rural and economic development by contributing to GDP and also creating job opportunities and income in poor rural communities. Functions which rightfully fall under the Department of Agriculture, Forestry and Fisheries (DAFF) will be transferred to DAFF.

The FTPP industries accounted for 170 000 jobs in 2008. Forestry's contribution to GDP was 1,1% in 2009. Forestry product exports in 2009 came to R12,5 billion while imports totalled R9,6 billion.

The furniture sector employed 38 267 people in 2009. It posted a small trade surplus over the last few years. In 2009, the sector contributed 1.1% to manufacturing GDP and 0.2% to the economy as a whole.

Variable		Contribution in 2009
Manufacturing value-add	(% of GDP)	R23bn (1,4%)
Manufacturing employment	(% of Manufacturing)	207 967 (14%)
Trade balance		R3,1bn

Key opportunities

In a joint **the dti**/industry study completed in 2005, the KwaZulu-Natal and Eastern Cape provinces were identified as offering the best potential for new forestry. Conservative estimates identified 100 000 hectares (ha) in the Eastern Cape, 6000 ha in Limpopo, 10 000 ha in Mpumalanga and 39 000 ha in KwaZulu-Natal. New afforestation has the potential to create 15 600 jobs country-wide. There is also potential to improve the yields of the existing plantations and to convert existing wattle jungles into commercial plantations.

Most of the forests exist on communal land where a number of value-added opportunities can be explored for small growers who are currently supplying their timber to big companies for pulp and paper mills. Opportunities exist to expand the small-scale saw

milling industry, since most of the saw millers are located close to forests in rural areas. Consequently, this is an important sector from the perspective of rural development. Opportunities also exist to use jungle wattle, which could otherwise go to waste for charcoal production. The recycling of wood waste is another sector that can be explored to create much needed employment in the rural areas.

Constraints

Key economic constraints that are holding back development in the forestry sector are as follows:

- **Water licences**: The issuing of water licences has become a serious obstacle for forestry development. Communities can sometimes not afford the required EIA. Furthermore, there is also a delay from the regulatory government departments. Lack of personnel capacity in regional offices, and sometimes incomplete application forms, also add to the delay.
- **Skills development and technology transfer:** The new forest growers and beneficiaries of land reform do not necessarily have the skills and relevant technology to grow the trees optimally. The communities also require business skills to manage their operations effectively.
- **Investment finance:** Tree planting cannot take place without securing investment finance. Long rotations in forestry require long-term capital for establishment, maintenance and harvesting operations. Consequently, return on investment is delayed. As a result, there is some reluctance to invest in the forestry business.
- **Land tenure:** Most of the land that has been identified as suitable for new afforestation is tribal, or land belonging to communities; where land-claims settlement issues still need to be resolved before tree planting can take place. Also, there is a lack of proper consultation and mobilisation with communities in line with forestry development protocols.
- **Demand for raw material exceeds supply:** The demand for raw material far exceeds supply and this has resulted in the closure of most downstream processing industries. This applies particularly to the furniture and small-scale saw-milling industries. More jobs will still be lost if the demand: supply equation is not addressed effectively. The small players in the industry are affected most by this because of the vertically integrated nature of the industry where big companies own plantations and small businesses rely on supply from DAFF plantations.

Key economic constraints that are holding back development in the furniture sector are as follows:

- Raw material supply, especially for small enterprises;
- Influx of cheap imports and the challenge of getting retailers to buy locally produced products;
- Competitiveness issues such as high-level skills required to move towards high-end segment with a focus on superior design coupled with niche products and niche markets; and
- Quality and standards to differentiate from cheap low-quality imports.

Key Action Programmes

13.11.1 Integrated approach to fast-tracking the issuance of water licences

Nature of the intervention: Supporting rural communities owning land with potential for forestry development and where communities are also showing interest in new afforestation. Support will be in the form of:

- Appointing a facilitator to mobilise communities to discuss operating structures with them;
- Providing capacity to put together an application for water-use licence;
- Funding the EIA;
- Assisting in crafting business plans to apply for investment capital; and
- Providing skills and technology for forest development and business management.

This approach will be targeted to specific catchments in both the Eastern Cape (EC) and KwaZulu-Natal (KZN).

Economic rationale: To increase the supply of raw material and thus stimulate downstream processing activities. This has the potential to create a total of 15 600 jobs at both plantation and value-adding levels.

Outcomes: Accelerated forestry development and well maintained plantations.

Key milestones

- 2011/12 Q1: **the dti** to facilitate EIAs through the panel of practitioners for rural communities and provide capacity for them to apply for water use licences issued by DWA,.
- 2011/12 Q2: **the dti** to facilitate access to capital for communities through IDC and Land Bank to fund afforestation in EC and KZN.
- 2011/12 Q3-onwards: IDC to provide continuous assistance to communities on project preparation and management.

Lead departments/agencies: DWEA
Supporting departments/agencies: the dti, DAFF and EDD/Forestry South Africa (FSA), AsgiSA-EC, IDC and Land Bank

Key Action Programmes

13.11.2 Skills transfer and technology upgrading programme for small-scale saw millers

Nature of the intervention: This programme is intended to upscale the current skills transfer and technology upgrading programme that is currently being piloted in the EC with 60 participants. It will be implemented in Limpopo, Mpumalanga and KZN provinces.

Economic rationale: Small operators lack production efficiency skills, and as a result there is a lot of waste that result from the operations.

Outcome: Reduced wood waste and improved productivity.
Key milestones

- 2011/12 Q1: Review the current skills programme focusing on business management and productive improvement in KZN, Mpumalanga and Limpopo provinces, to cater for medium to large saw millers.
- 2011/12 Q1: SEDA to provide ongoing mentorship to co-operatives in the sector.

Lead departments/agencies: DoHE&T
Supporting departments/agencies: the dti, DAFF / SEDA**,** FIETA

13.11.3 Furniture

Nature of the intervention: The need to finalise a sector strategy and action plan for the furniture sector as a whole. This sector is fragmented, uncompetitive with respect to many products including product design and innovation. It also suffers from skills constraints and lacks an appropriate institutional framework including with respect to the potential for clusters and the benefits that these could bring. The benefits of cluster formation includes economies of scale, shared infrastructure, shared transport costs, sharing of information and reduced input costs..

Economic rationale: There is potential to grow the sector through a more focused and integrated intervention which combines the capacities of **the dti** and IDC to address market failures in order to recapture domestic market and grow the sector.

Outcomes: Improved competitiveness of the industry, and better skilled and resourced manufacturers.

Key milestones

- 2011/12 Q1: Finalisation by **the dti** and the IDC of the sector strategy and key action plans including with respect to addressing issues of increased competitiveness, skills upgrading. The strategy and Key Action Programmes will also include the appropriate deployment of industrial policy instruments such as financing packages and local procurement and an appropriate industry institutional framework.
- 2011/12 Q2: Roll-out of a set of Key Action Programmes finalised for the sector strategy.

Lead departments and agencies: **the dti** and IDC

13.11.4 Charcoal manufacturing enterprises

Nature of the intervention: Supporting the establishment of charcoal plants in the EC and KZN using mainly jungle wattle as an input, which is an alien species that could have otherwise gone to waste.

Economic rationale: The objective of establishing charcoal plants in the EC and KZN is another intervention for the further processing of timber and to attract investment in areas

closer to plantations. The market requires low levels of capital input and limited technical knowledge and uses unskilled labour, yet is labour intensive. The project has the potential to increase participation in the rural areas and boost job creation and skills transfer in participating communities.

Outcomes: This initiative will also promote the further beneficiation of raw material (timber) and the use of other waste products such as jungle wattle. Communities will be trained, and the production capacity of the charcoal industry will be improved. Charcoal production has the potential to contribute to the energy crisis facing the country, because more companies may opt to use charcoal to substitute electricity use.

Key milestones

- 2011/12 Q1: SEDA to train 12 co-operatives in communities showing an interest in charcoal production.
- 2011/12 Q3: SEDA to develop and establish a business management structure and provide training to co-operatives.
- 2011/12 Q4: NEF to provide funding for business plan implementation.
- 2012/13 Q1 – 2012/13 Q4: SEDA to implement business plan and co-operative monitoring programme.

Lead departments/departments: the dti

Supporting departments/agencies: DAFF/provincial government departments, AsgiSA-EC, SEDA, NEF and district and local municipalities

13.11.5 Biomass sub-sector development for SMMEs

Nature of the intervention: This entails the economic use of sawdust from saw-mill operations and off-cuts, sanding dust and shavings from the furniture manufacturing industries, which pose health hazards to surrounding communities. A study on this small-scale industry, commissioned by the unit in 2008, confirmed that no wood-waste management strategy was in place, given the low recovery rate for small saw-millers.

Economic rationale: Besides the environmental benefits of processing wood waste there are also economic benefits, such as stabilising the existing wood industries and promoting job stability and job creation through cost reduction. This applies especially to the promotion of SMMEs, the generation of new jobs and new economic inputs through recycling, and contributing to the sustainable use of our natural resources.

Outcome: Improved management of waste (dust) from the saw milling and furniture industries.

Key milestones

- 2011/12 Q1: **the dti** to develop a wood waste scoping draft report
- 2011/12 Q2: Final draft of wood waste scoping report presented to stakeholders
- 2011/12 Q3: **the dti** to develop a business plan for the sub-sector pending the outcome of the scoping exercise.
- 2011/12 Q4**: the dti** to drive implementation of the business plan.

Lead departments/departments: the dti
Supporting departments/agencies: DAFF/provincial government departments

Economic impact: The best estimate of the collective impact of all the Key Action Programmes listed above if fully implemented and rolled out over the next 10 years is:

- **In terms of employment**: The forestry sector has identified large tracts of land in the EC, KZN, Mpumalanga and Limpopo as being suitable for new afforestation.
- **In terms of improvement in trade balance:** The forest products industry ranks among the top exporting industries in the country. The sector's exports in 2008 equalled R14,8 billion, which, after deducting local forest-product consumption of R11,3 billion, gave a net foreign exchange earning of R3,5 billion. This is a contribution of about 15% to the country's trade balance.

13.12 Creative industries: crafts and music

Crafts sector profile

The lack of historical data on the craft sector makes it difficult to accurately and properly account for the sector's economic contribution including the fact that the sector is not defined in terms of statistical classifications. It is estimated that the South African craft sector contributes R1,1 billion to GDP (0,01%) and it provides income and employment to approximately 38 062 people through the economic activity of about 7 028 micro- and small enterprises operating across the value chain. South Africa contributes slightly less than 1% of the global trade in crafts, said to be US$35 billion. Over the last five years the sector has shown an average growth of 8%, which is attributed to growth in tourism and the impact of interventions in the sector.

Employment in the sector is accounted for in two ways: through informal employment and registered craft enterprises. The first addresses the producers who are active in the production value chain by directly earning income for themselves. These producers produce and sell the product and have no formal registered companies. The second addresses craft enterprises operating as businesses. These are further divided into two components. The first component is those operating their business at home; and in which, in the main, those employed are immediate family members and friends. The second component consists of small, emerging, established and exporting businesses who have production, office and warehouse space with a small number of people being employed permanently (the number of permanent staff does not often exceed 10 people) with a significant portion employed as contract or part time workers. It is also important to note that unlike other sectors, intake of employees in this sector tends to be seasonal and order-demand driven. Most businesses maintain a hand full number of contract workforce to enable continuous supply to more permanent clients.

The craft sector is characterised by the fact that production is done for a broad range of utilitarian and decorative items produced on a small scale with hand processing being the main contributor to the end-product. Production is often classified in terms of material (textile, clay, glass etc), product type (home ware, giftware etc), technique (beading, weaving), design style (traditional, contemporary etc). Since, the skills required in the production and manufacturing of craft materials does not necessary require people from this sector to have a specific set of qualifications, entrance is therefore easy. Therefore more and more people, mostly from the rural areas dominate this sector.

The crafts sector is a strategic sector because it has the ability to contribute to economic growth and impact on local (particularly rural) economies and human resource development. It can provide a bridge between informal and formal employment and add to the development of small businesses. It can also provide innovation and design skills to other sectors such as clothing and textiles, furniture and jewellery.

The sector also supports other national government priorities such as B-BBEE, the empowerment of women, rural and urban development, small-business development, export promotion and the local beneficiation of products.

Key opportunities

The global market for craft is significant and growing. The National Craft Sector Development Programme (NCSDP) seeks to address the needs of craft enterprises and craft entrepreneurs. The NCSDP is centred on both immediate and long term policy interventions. These interventions will allow the craft sector to reach its full potential by addressing market access challenges facing the sector. These challenges include competition from imported goods as well as address production and quality standards to maximise the sector's competitiveness.

As a result of the unique South African design signature, South African products are highly valued in the global market. To increase this market confidence **the dti** developed the South African Handmade Collection brand (SAHC) to offer quality assurance and develop standards for the sector. Since 2007, when the brand was unveiled there has been an influx of South African craft into the European Union (EU), the USA, Canada and Australasia.

Key Action Programmes

13.12.1 National Craft Sector Development Programme

Nature of the intervention: This intervention envisages development of a craft support programme. A number of areas have been identified as being critical to the economic development of a sustainable craft sector and its transformation from a supply-driven into a demand-led sector. These are support for crafter in the following areas: product design and innovation, pricing, quality assurance and market access.

Economic rationale: The programme will ensure a multi-dimensional enabling environment through which regional economic activity can be supported to access local, national and international markets. The ultimate aim is to build the commercial sustainability of the sector.

Outcomes: This programme will facilitate access to local and global markets, improve the competitiveness of companies and contribute to advancing sustainable job growth.

Key Milestones

- 2011/12 Q 2: Roll out of the craft sector support programme.

- 2011/12 Q3: Designation of corporate gifts in terms of PPPFA.
- 2011/12 Q1-Q4: Rollout of the South African Handmade collection.

Lead departments/agencies: the dti
Supporting departments/agencies: DAC and DoT/provincial departments

13.12.2 Craft Enterprises Support Fund

Nature of the intervention: Bridging finance to assist craft businesses to meet the challenge of access to raw materials.

Economic rationale: Access to raw materials is one of the market barriers facing the sector. Bridge finance will remove a significant barrier for SMEs and support SME development and job creation.

Outcomes: establishment of a Craft Enterprise Support Fund.

Key milestones

- 2011/12 Q1: Finalise proposal for establishment of fund.
- 2011/12 Q1: Stakeholder engagement on the proposed fund.
- 2011/12 Q2: Finalisation of fund management process.
- 2011/12 Q4: Roll out of the fund.

Lead departments/agencies: the dti
Supporting departments/agencies: IDC/Khula

13.13 The Music Industry

Sector profile

The music industry has the potential to make significant contributions to economic growth and employment. South Africa has a competitive capability in musical production. There is little existing national and/or regional data on the contribution of the music industry to GDP growth and employment. It can be assumed that the music industry is labour intensive and has many economic multipliers and has great potential to generate significantly more employment than it already does. The Gauteng province alone employs around 18 800 people with the potential for significant expansion.

The global music market is worth around $36,9 billion, the International Federation of the Phonographic Industry (IFPI - the International music industry group) estimates that in 2009, ‘physical’ music sales (CDs, etc.) were $11,6 billion, with digital sales of $4,2 billion, making total sales $15,8 billion. Despite the global recession, sales data shows that the recording industry in South Africa was worth around R1,7 million and ranked 17th in the world in 2007. Indigenous South African repertoire sells more units domestically than international recordings, which can be attributed to a growth in spending on music, as well as the development of a home-grown repertoire.

Key opportunities

The South African music industry is a hive of innovation and creative talent, populated by hundreds of small and medium-sized entrepreneurs who give the South Africa a unique cutting edge on a global stage. This aggregate growth of the music industry coupled with the increased popularity and exposure of local genres and the variety of initiatives underway to bolster the local music industry and to provide the foundations for potential future growth. First music is a form of electronic information and is consequently easily distributed to the world market. Thus music is an ideal export product that is not constrained by the high transport costs associated with the export of physical products.

Second, a substantial proportion of the music industry’s revenue is derived from intellectual property rights. Accordingly there are few South African industries better placed to take advantage of the global shifts towards knowledge-based, export-oriented growth and that draws on local competencies as a source of competitive advantage, than the music industry.

New digital and information and communication technologies (ICTs) have revolutionised the industry's production processes, distribution channels, and consumption modes. Low-cost digital recording technologies have not only made production cheaper but also facilitated the distribution of sound, text, and image to small entrepreneurs without any noticeable compromise in quality.

Mass production technologies have been replaced by niche production and mass customisation of ring tones, movies-on-demand, interactive media, and social networking sites like MySpace and YouTube. The diffusion of production makes the production stage of the value chain the most competitive, and margins have fallen as a result.

Lastly, the convergence of the telecommunications, the Internet, and cultural content has revolutionised product sales and marketing, and changed the nature of piracy and royalties collections. It has also upset the balance between independent companies and the major content distribution and marketing companies, thus giving the consumer greater choice. But these gains depend on wider access to Internet services and the expansion of interoperability between content providers, digital distribution channels, and consumption devices such as mobile phones, smart-phones and iPods.

Constraints

Intellectual property protection: The creative industries cannot survive in the marketplace without adequate protection from copyright infringement. Music is one of the easiest art forms to pirate as a result of the wide availability of reproduction technologies, such as recordable compact discs and Internet-based file-sharing and peer-to-peer formats. Without such protection, cultural entrepreneurs would be at the mercy of piracy, counterfeiting and other forms of infringement.

Skills development: Many artists and cultural entrepreneurs have little if any formal training in performance, production or management skills. Existing training programmes tend to focus on performance in classical forms as opposed to popular culture, which makes up the bulk of the recording and performing industry.

Technical skills in areas such as sound recording and engineering, lighting, stage management and audio-visual and multimedia technology are scarce. Business and financial planning and the legal and contractual aspects of the music industry are also underdeveloped. The latter is the cause of much conflict among artists, managers and record producers. These problems are partially responsible for the lack of corporate investment in the sector and most artists not able to build a sustainable living from their craft.

Financing: A music industry worth more than R2 billion to the economy is forward looking and run by skilled entrepreneurs comfortable with new technology and optimistic about the future, but has difficulties raising finance. A large group of creative entrepreneurs are persistently encountering barriers to growth, particularly due to their inability to access finance.

13.13.1 Develop a music industry strategy

Nature of the intervention: Development of a strategy for the music industry.

Economic rationale: Music is an important cultural heritage that has untapped potential for economic development both in its own right and in terms of strengthening economic activity in other sectors such as Tourism.
Outcome: A Music sector strategy in support of the industry with key action plans

Key milestones

- 2011/12 Q3: **the dti** to work with DAC and the IDC to finalise a Music Industry Strategy and action plan.

Lead departments/agencies: IDC and **the dti**
Supporting departments/agencies: DAC

13.14 Business Process Services (also known as Business Process Outsourcing)

Sector profile

In 2002 **the dti** commissioned a study to form the basis for a customised sector programme for Business Process Services (BPS). At about the same time the private sector participated in a research programme on the potential of the BPS sector. Both studies showed rapid world-wide growth in this sector and pointed to its potentially positive impact on developing countries.

In 2004 the global BPS industry was forecast to grow at 50% per annum over five years (resulting in growth of between $50 billion and $60 billion) and a window of opportunity was identified for South Africa to realise significant value by developing this sector of the economy. It was predicted that the sector had the potential to create 100 000 new jobs in South Africa (25 000 direct and 75 000 indirect jobs)[2] and contribute up to R1 billion in GDP to the economy.

[2] Using an indirect job multiplier of 3, comparative multipliers are: financial services – 2.3, gambling – 3.1, trade, catering and accommodation – 4.9 and motor vehicles – 1.3. This is calculated on the basis of economic models for determining the GDP multiplier.

The cost of a 2 megabit per second telecommunication line from South Africa to the UK had been reduced from R180 000 to around R45 000 per month and 20 new foreign investors had been attracted. This was largely due to significant and successful efforts by partnerships between government and the Private sector; with the support of the Business Trust in implementing key programmes. These programmes included a R1 billion incentive programme and a pilot of the Work-Readiness Programme.

Key opportunities

There is an opportunity for government to grow the sector and attract more investment by investing in infrastructure that will be readily available for BPS investors to locate in South Africa with ease. Such an initiative would have the benefit of reducing the cost of doing business and ensuring that jobs are created at a faster rate than would be the case without any intervention. Having successfully completed the pilot Work-Readiness programme with the second phase in progress; and following a positive response by investors to the incentive programme between 2006 and 2009; a new incentive programme has been recently approved and a follow-up tranche of the Monyetla Work-Readiness Programme has become necessary.

Constraints

- **Telecommunication:** The cost of telecommunication remains an inhibitor to rapid growth in this sector.
- **Access to the market** by emerging players continues to be a big challenge. This is driven by the following reasons: 1) Lack of access to Infrastructure; 2) Lack of capital investment and 3) Contracts
- **Availability of skills:** A systematic stream of work-ready entrants is required, because an increasing number of global investors view South Africa as an attractive destination. It is important that there is a constant supply that is readily available for investors to tap into. Although we have managed to train 1 307 work-ready entrants, this figure is not sufficient to cater to the demand of the industry. Ongoing skills and development support from government is necessary. **the dti** has sourced the necessary funding to be able to proceed to the second phase of the Monyetla Work-Readiness Programme and the process of conceptualising the application for the subsequent phase (Monyetla III) has also commenced

Key Action Programmes

13.14.1 Roll-out of Business Process Services (BPS) incentive programme

Nature of the intervention: Ongoing roll-out of the BPS incentive programme.

Economic rationale: As part of the process of continuing South Africa's improvement as an investment destination, a systematic review of the BPO incentive programme was undertaken with the private sector and has resulted in the establishment of a revised BPS incentive. The rationale behind this initiative is to overcome the high cost of telecommunication and help demonstrate South Africa as an attractive BPS destination that can compete with the offerings of key competitor countries.

Outcomes: A competitive investment environment relative to key competitor countries to scale up South Africa as a BPS destination with concomitant employment creation.

Key milestone

- 2011/12 Q1 onwards: Ongoing roll-out of BPS incentive programme.

Lead departments/agencies: the dti

13.14.2 Skills development and training for the BPS sector

Nature of the intervention: Monyetla Work-Readiness Programme, a dedicated investor friendly set-up process, and a programme to improve industry service standards, requisite skills from entry level to supervisory level ,in order to position South Africa as a preferred off shoring destination for BPS operations.

Economic rationale: A major determinant for an investor wishing to start a BPS operation is the availability of labour in the location under consideration. In addition, having a readily available pool of labour would ensure that young people in South Africa are trained and absorbed into the economy and that foreign direct investment is injected into the economy, thereby increasing GDP growth.

Outcomes: A readily available pool of labour for investors to draw from, which includes English and Dutch language skills, provides career paths across the industry and provides scope for increasing the proportion of local senior managers.

Key milestones

- 2011/12 Q1: Training of 5 000 learners takes place.
- 2011/12 Q2: **the dti** to agree on appropriate funding mechanism with DoHE&T and the Services SETA.
- 2011/12 Q4: DoHE&T and the Services SETA to identify and contract middle-management trainers.
- 2011/12 Q4: DoHE&T and the Services SETA to contract middle-management trainers.
- 2012/13 Q1: **the dti** to roll out middle-management training (training of 1 000 supervisors).
- 2012/13 Q2: **the dti** to agree on appropriate funding mechanisms with DoHE&T and the Services SETA.
- 2012/13 Q4: DoHE&T and the Services SETA to contract trainers for Dutch language.
- 2013/14 Q1: Dutch language training takes place.

Lead departments/agencies: DoHE&T
Supporting departments/agencies: the dti/training institutions

Economic impact: There is the potential to create 56 000 direct sustainable jobs over 10 years in BPS with an increase in foreign earnings from the 'exportable' services sector.

CLUSTER 3: SECTORS WITH POTENTIAL FOR DEVELOPMENT OF LONG-TERM ADVANCED CAPABILITIES

13.15 Advanced Manufacturing

Advanced manufacturing is a collection of high value adding manufacturing processes, management techniques, technologies and knowledge capital that occupy the top-tier amongst manufacturing industries and drive competitiveness in the local and global economies. Advanced manufacturing is also associated with mastering highly regulated safety and/or quality requirements, the exploitation of intellectual property in the form of world class processes, products and services.

The South African Advanced Manufacturing industry structure and characteristics: An advanced manufacturing framework can be built around three distinct cycles. These three cycles describe the industry as well as Intellectual Property (IP) and technology inflows and outflows into the South African market. The framework provides a structure that can be used to describe the relationships between the various cycles and how this structure affects the industry.

Sector profile

- Advanced Manufacturing contributes significantly to the competitiveness of manufacturing industries through the development of high value adding goods and services
- South Africa has specialist capabilities in Advanced Materials, Nuclear, Chemicals, Mining and Minerals, Automotive and Aerospace and Defence industries.
- In 2008, the SA AM industry contributed approximately $17,72 billion to the South African economy with notable contributions from the Automotive ($7,78 billion), Chemicals ($7,6 billion) and Aerospace and Defence industries ($1,38 billion).
- While the Material Sciences and Nuclear industries have been identified globally as key areas of development, activities related to these industries have not yet reached anywhere near their potential with Material Sciences contributing an estimated $654,7 million. Finally, the Mining and Minerals industry contributes the least in SA AM adding only $300.6 m in value in 2008.

Advanced Materials Sector Profile

Advanced materials are those that outperform conventional materials and have superior properties such as toughness, hardness, light weight, durability and elasticity. They can have novel properties too, including the ability to memorise shape or sense changes in the environment and respond appropriately. The development of advanced materials can lead to the design of completely new products, including medical implants and computers. The four major growth areas in the South African advanced-materials industry include titanium, nanotechnology, advanced composites and bio-ceramic applications.

Advanced materials contribute to emerging economies, global competitiveness and innovative productivity, which is driving industry growth in developed economies. Global competition has led to increased innovation and the use of technologies to produce higher-quality goods and services at lower prices. The ability of companies to remain competitive in this changing global environment requires the integration of new technologies as well as the ability to respond rapidly to economic, social and environmental changes. Hence the development and application of advanced materials have become critical in South Africa and will bring much-needed technological and economic advantages.

Key opportunities

South Africa's advanced-materials industry has pockets of excellence in research situated in universities and science centres. Moreover, there are a few established manufacturing industry clusters that are internationally competitive. The commercialisation of advanced materials is crucial to transforming scientific discovery into societal benefits, realising private-sector commercialisation and opening opportunities for the South African industry in the following areas:

- Nano-materials;
- High-performance materials based on natural resources (advanced bio-composites);
- Composites (intelligent textiles used in the medical, building and construction industries); and
- Continuous fibre-reinforced thermoform composites.

Constraints

- South Africa lags in some respects but has a small number of engineers who are working on already-developed technologies.
- There is an inadequate commercialisation drive between R&D and commercialisation phases of advanced-manufacturing value chains. Therefore some completed R&D

work does not move to the next critical phase of producing tangible products. This is partly the result of a lack of investment in appropriate machinery to make prototypes, and test and accredit the work for commercial applications.

Nuclear sector profile

Currently, South Africa has two pressurised-water reactors, operated by the state utility, Eskom, that provide some 6% of electricity. The country also has world-class nuclear engineering capacity within the Nuclear Energy Corporation of South Africa (NECSA). NECSA conducts nuclear research and development, and is one of the largest exporters of medical isotopes in the world. South Africa also has advanced nuclear testing facilities and extensive uranium resources. It also has previous experience in uranium enrichment and nuclear fuel fabrication.

Nuclear component and equipment manufacturing

Nuclear component and equipment manufacturing is very limited at present due to the lack of local and global demand over the last two decades. A future nuclear programme will cost in excess of R1 trillion. This will place enormous strain on the balance of payments and without an effective localisation programme, will have severe consequences for the South African economy.

Regulatory environment

Regulation and certification with regard to components and equipment in the nuclear industry require extremely high quality and high standards. The industry has intermediate barriers to entry, but because of South Africa's established regulatory system and previous experience, the country is well positioned to enter this lucrative high-value-added industry. This provides opportunities for the establishment of local component and equipment suppliers that can also supply advanced equipment to other industries, e.g. the petro-chemicals industry.

Key opportunities

The DoE indicated that, based on the Integrated Resource Plan (IRP) for energy in South Africa, the following assumptions can be made:

- A fleet approach will be adopted for the purchasing of nuclear plants.
- The first unit will be in commercial operation in 2023. The target is 9 600 MW of installed nuclear capacity by 2030.

- The nuclear building programme presents a huge opportunity for new investment and joint ventures (JVs) to supply both local and global markets.

Constraints

- Successful localisation will require a fleet approach to ensure economies of scale and the commencement of construction of one new reactor every 18 to 24 months to ensure the viable pursuance of business opportunities.
- Meeting nuclear quality accreditation and regulatory standards, technology and skills transfer from one of the main nuclear vendors and the many global component suppliers.
- An appropriate combination of global partnerships and access to global supply chains, funding and skills development.
- The careful phasing in of investments into the programme and into appropriate government-led programmes to ensure that local procurement is boosted and localisation enforced.

Aerospace and Defence sector profile

This sector is a critical and pervasive generator of new technologies and is crucial to future innovation in South Africa. It also enhances government engagement across substantial parts of the manufacturing, services and primary sectors of the economy to achieve long-term intensification of the country's industrialisation processes and movement towards a knowledge economy. Significant progress has been achieved in developing recognition by and confidence from global original equipment manufacturers (OEMs) in aerospace. The OEMs find that South Africa has the capability to extend component and parts manufacturing as well as to enter into the high-value global supply chains of advanced materials such as titanium, avionics and electronics.

Key opportunities

Key areas of opportunity for growing the sector and achieving higher impact are:

- Government procurement, including South African Airways (SAA), direct offsets and CSDPs; and
- Airport development and upgrading activities, including services.

Constraints

Key constraints include a loss of critical skills; the challenge of rapid technology changes; the difficulty of developing a sustainable supplier base; a lack of infrastructure funding; a

lack of financial assistance or incentives regarding non-recurring costs in aviation manufacturing; and a lack of investment in airport capacity, resulting in a reduced baseline number of passengers.

Set-Top Box (STB) sector profile

The world is migrating to digital terrestrial television, and South Africa is not an exception. The move is expected to significantly boost the digital terrestrial television (DTT) STB market world-wide.

The South African electronics manufacturing sector is characterised by large, middle-sized and small manufacturers with a primary focus on the assembling and manufacturing of electronic consumer products such as televisions, telecommunications equipment, and STBs for the pay television market. Domestic manufacturers have varying degrees of capacity and expertise, which include strong engineering design capabilities, particularly in software and systems development, which is a critical element in the manufacturing of STBs. Some manufacturers have already established relationships with the retail market and have distribution networks with easy access to outlets in cities and in towns throughout the country.

The manufacturing of STBs consists largely of assembling electronic components in accordance with engineering designs. Maximising the value in the manufacturing process ensures that many local manufacturers participate in the full manufacturing value chain. Maximising the value in the manufacturing process will result in the improvement of the capability to manufacture specific electronic components.

The South African free-to-air DTT/STB market is estimated to be eight million in total. However, the growth of this sector is closely related to the television industry. South Africa is a net importer and continues to record a large trade deficit in this sector. Between 2000 and 2008, the values of both imports and exports have doubled. Employment in this sector has halved since 2000 and could probably be attributed to manufacturers shifting away from completely knocked down (CKD) operations, to semi-knocked down (SKD) operations, which require less manual labour. This, in turn, is reflected in the declining contributions to GDP.

Key opportunities

The programme aims to strengthen the STB strategy. The programme will seek to utilise procurement and the NIPP. It will thus encourage an increase in local investment in the

industry to meet the technological requirements to produce STBs, protect local industry and ensure the efficient distribution and after-sales service of STBs. The development of a world-class electronics manufacturing industry in South Africa will help contribute to the revitalisation of this industry.

In order to meet the expected domestic demand for STBs, significant volumes of these consumer products will be required. The local industry must therefore gear itself to satisfy this demand through increasing investment in production capacities. Local manufacturing of STBs also presents opportunities for growth in other supporting industries such as plastics, packaging, metals and manuals.

There are six existing STB/television manufacturers in the country, three of whom have engineering design capabilities. It is also expected that new manufacturers will enter the market. This presents an opportunity for the growth and transformation of the industry through increasing participation by historically disadvantaged persons.

Constraints

- The deadline for digital migration is approaching and time constraints to prepare for the roll-out should be factored therein.
- Delays could also result in manufacturing opportunities not filtering down to a broader spectrum of domestic manufacturers.
- Capacity constraints in the industry include the fact that small-scale firms do not have the intellectual property, capital, technology or capability to manufacture STBs.
- The opportunity for driving B-BBEE and transformation in the electronics industry may be overlooked due to time constraints and higher priority being afforded to other components of the project.

13.15.1 Nuclear build programme

Nature of the intervention: Promoting procurement for the nuclear building programme to ensure localisation and participation in global nuclear value chains.

Economic rationale: Because of the high cost of the programme, localisation is essential if the trade balance is to be protected and other industrial policy objectives realised. The following benefits are expected:

- Promotion of technology and skills transfer from main nuclear vendors and suppliers of nuclear-grade components to the South African industry.
- Promotion of joint ventures and consortiums and the establishment of new companies to grow South Africa's nuclear manufacturing capability and nuclear supply industry to supply to the nuclear building programme.
- Enhancement of exports into the global nuclear supply chain.
- Creation of high-level direct jobs and a significant contribution to value-addition and GDP growth in the manufacturing sector.

Outcomes: A long-term procurement plan with detailed up-front specification, mechanisms and regulations to ensure implementation of the stated objectives; identification of increasing domestic manufacturing opportunities; an optimal funding mechanism for localisation and export opportunities and strengthened procurement to deliver greater cost-effectiveness and industrial development.

Key milestones

- 2011/12 – 2012/13: **the dti**, to revise and improve NIPP, CSDP and/or other localisation programmes, with specific requirements and guidelines to support localisation by Eskom and/or other SOEs.
- 2011/12 – 2012/13: **the dti** and Eskom to identify components for localisation and export, as well as requirements to establish local production.
- 2011/12 – 2012/13: **the dti** to develop industrial policy support measures to support the localisation in the nuclear industry.

Lead departments: the dti
Supporting departments/agencies: EDD, DoE, DPE, DST, NT/Eskom

13.15.2 Conformity assessment framework for the South African nuclear industry

Nature of the intervention: Nuclear manufacturers have to comply with American Society of Mechanical Engineers ASME III or similar quality and certification requirements. However, once companies comply they have a competitive advantage over non-compliers, allowing entry into a lucrative high-value-add sector. These rules and procedures are

complex to implement within manufacturing entities and also require that the appropriate legal framework exists from government's side.

Economic rationale: Compulsory regulation and certification requirements are necessary barriers to entry for manufacturers in the nuclear industry.

Outcomes:

- The development of appropriate skills in terms of inspectors and nuclear supervisors to serve the manufacturers, certification bodies and inspection bodies.
- The localisation of nuclear certification, inspection and skills development services in South Africa, underpinned by accreditation. This should open the door for the local nuclear industry to secure conformity assessment services that are affordable (i.e. up to 40% less expensive) and that do not discriminate against local manufactures in favour of overseas manufacturers, who have access to these services in their own countries.

Key milestones

- 2011/12: **the dti** and SANAS to streamline, test and refine an accreditation system for the nuclear sector.
- 2011/12: **the dti** and SANAS to conduct workshops on the requirements for accreditation.
- 2012/13: **the dti** and SANAS to undertake assessor training.

Lead departments: the dti

Supporting departments/agencies: DoHE&T, DST/National Nuclear Regulator and SANAS

13.15.3 Skills development support

Nature of the intervention: Establish a Radiation Protection Training Centre

Economic rationale: South Africa as an industrial country has a large number of industries that uses radioactive sources and or produces ionising radiation. These sources are used in industries such as paper manufacturing; engineering companies using density gauges; beverage companies using level gauges; farming using soil gauges. X ray machines producing ionising radiation are used as screening machines for luggage at

airports. Radioactive sources and X-ray machines are also used by the medical industry (hospitals) in diagnostic radiology, nuclear medicine and radiation therapy. South Africa also have an active nuclear industry with Africa's only Nuclear Power Station, Koeberg in the Western Cape and NECSA which has a research reactor and one the world's largest isotope producing facility.

These industries are subjected to strict regulations in order to protect the public, environment and workers from the harmful effects of radiation. Subsequently, these industries require well trained safety practitioners, known as Radiation Protection Officers (RPOs). Radiation Protection Officers (RPO) help to develop and implement safety programmes in order to control the use of radiation; which helps to protect the public, the environment and workers. Due to the downturn in the nuclear industry several years ago, tertiary institutions stopped presenting training in radiation protection.

There is a considerable need for training of RPOs within the nuclear and non-nuclear industry and Necsa is at the forefront with its training programme. During a visit to South Africa, the auditors from the IAEA training group strongly recommended the establishment of a training unit to support industry. The IAEA is the International Atomic Energy Agency, based in Vienna.

Outcome: The objective is to establish such a training unit to serve not just Necsa but also the South African industry as a whole. This includes the nuclear and non-nuclear industries such as engineering, mining and medical. The unit can also be available for industries outside South Africa, specifically the SADC region. Necsa (NSD) will manage the unit and present short courses and extended training based on standardised curricula.

Key milestones

- 2011/12 Q2: Secure agreement on an appropriate institutional architecture and funding mechanism to establish to establish a radiation protection training centre at NECSA.

Lead department/agencies: the dti and DOHE&T
Supporting departments/agencies: DST, DoE, and NECSA

Economic impact: The creation of highly skilled jobs.

13.15.4 Commercialisation of the Natural fibre-Reinforced composites

Nature of the Intervention: Advanced materials require equipment to get tested prototyped and accredited for commercial applications. Most developed countries are moving from synthetic materials to natural fibres due to their economic and environmental benefits. South Africa is working with global companies to produce natural based composites. These composites will be used for aerospace and automotives interiors, building products as well as for bio- degradable packaging material for the export of fruit and other foodstuffs.

Economic Rationale: There is an increasing interest in natural fibre reinforced composites driven by economic and technical considerations as well as increasing environmental sensitivity. The advantages of bio composites can be summarised as follows:

- Cost and weight reduction potential compared to conventional composites.
- Reduced environmental footprint.
- Reduced energy required in production compared to conventional composites.
- Health, safety and cosmetic benefits.
- New enterprise development with job creation potential for rural communities.

Outcomes:

- Availability of advanced bio-composites prototyped for commercial applications.
- Small scale production of economical, light, flexible and heat resistant material easy to manufacture leading to socially-acceptable products.
- The benefits of using natural fibre composites, which are bio- degradable strong and fire resistant.
- Uptake of the new composites by various industries for their respective applications.

Key milestones

- 2011/12 Q1: Strengthening work with a Bio Composites Committee to access prototyping equipment to enable more rapid commercialisation for new products.
- 2011/12 Q3: Support for the initialisation of small-scale prototyping activity for bio-composites and investigation of the cost structure and benefits of new bio-composites.
- 2011/12 Q4: Support for the process to ensure that bio-composites for aircraft interiors meet the technical and qualification requirements of an OEM.

Lead departments/agencies: DST and the CSIR,
Supporting departments/agencies: the dti, AISI and TIA

13.15.5 Strengthening manufacturing of Set-Top Box (STB)

Nature of Intervention: The programme is designed to strengthen the implementation of the STB manufacturing strategy whose aim is to grow a sustainable STB sector. This will be done through encouraging local investment and competitiveness in the industry by providing incentives. Moreover the programme looks to grow local capacity by leveraging procurement. The programme will also strengthen standards for the STB industry in order to protect it from low quality imports. Other targeted interventions include bolstering distribution of STBs, after sales support.

Economic Rationale: The migration from analogue to digital broadcasting presents the country with an opportunity to develop the STB sector by increasing our software engineering capabilities, and local production capacity.

Outcome: A competitive and strong STB manufacturing base that will contribute towards growth and job creation both directly and indirectly.

Key Milestones

- 2011/12 Q2: Facilitating growth by establishing an industry forum to co-ordinate all the stakeholder activities relating to the development of the STB industry in South Africa including with respect to regulatory issues and support instruments such as procurement.
- 2011/12 Q4 – 2012/13 Q3: strengthening standards to protect local Industry and government support by:
    - Developing a proposal on the need for conditional access,
    - Request SABS to incorporate changes to standards,
    - Request ITAC to review the current import duty on STBs,
- 2012/13 Q1 – 2012/13 Q4: establishment of infrastructure arrangements for new distribution channels and after sales support.

Lead department/agencies: the dti
Supporting departments/agencies: NT, DOC, SABS, DST, Electronics Association, ITAC, IDC Retailers, Post Office, USAASA

Industrial Development Division Contact Details

Policy Issues
Mr Nimrod Zalk Deputy Director-General: Industrial Development Division (012) 394 1366
Ms Malebo Mabitje-Thompson Chief Operating Officer: Industrial Development Division (012) 394 1058
Mr Garth Strachan Chief Director: Industrial Policy (012) 394 1166

Sectoral Issues
Mr Abisha Peter Tembo Chief Director: Clothing, Textiles, Footwear, Leather (012) 394 3717
Mr Andre Kudlinski Director: Pharmaceuticals (012) 394 1384
Mr Bernhard Meyer Director: Tourism (012) 394 1155
Mr Desmond Hadebe Director: Chemicals (012) 394 1156
Mr Masizakhe Zimela Chief Director: Forestry, Paper and Pulp, and Furniture (012) 394 1395
Mr Mkhululi Mlota Chief Director: Automotives and Components (012) 394 1186
Ms Nomfuneko Majaja Chief Director: Advanced Manufacturing (012) 394 1471
Mr Stephen Hanival Chief Director: Agro-Processing and Biofuels (012) 394 1350
Ms Thandi Phele Chief Director: Metal Fabrication, Capital and Transport Equipment (012) 394 1356

Sectoral Issues
Mr Themba Khumalo Director: Services (012) 394 1300
Mr Thokozani Masilela Director: Plastics (012) 394 1406
Dr Tshenge Demana Chief Director: Technical Infrastructure and Green Industries (012) 394 1382

the dti **Campus**
77 Meintjies Street
Sunnyside
Pretoria
0002

the dti
Private Bag X84
Pretoria
0001

the dti **Customer Contact Centre:** 0861 843 384

the dti **Website:** www.thedti.gov.za

the dti
Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA