IPAP Presentation

INDUSTRIAL POLICY ACTION PLAN
ECONOMIC SECTORS AND EMPLOYMENT CLUSTER
IPAP 2014/15 - 2016/17

EDGE Seminar
Industrial Land & Policy in eThekwini
27 JUNE 2014
Context and underlying principles: 1

- IPAP is aligned with the vision of the NDP and the key growth drivers of the NGP. It seeks to:
  - Restructure the economy and reverse the threat of deindustrialisation;
  - Place it on a more value-adding, labour-intensive and environmentally sustainable growth path - especially in globally competitive non-traditional tradable goods and services;
  - Produce a decisive shift of focus towards historically disadvantaged people and regions of SA;
  - Contribute towards comprehensive industrial development in Africa, primarily focussed on infrastructure, industrial productive capacity and regional integration.
IPAP is fundamentally committed to:

- Sound research;
- Intensive stakeholder engagement;
- Intra-governmental coordination and integration;
- Identification of key areas of market failure;
- Industrial ‘self-discovery’ and learning-by-doing.

IPAP asserts state leadership in strategic areas of the economy by ‘steering but not rowing.’

It is also committed to internal process improvement and capacity building, both within the dti and in support of its partner institutions.
Key Action Plans:

- Over the past 6 years, IPAP has developed a wide range of transversal and sector-specific Programmes and Key Action Plans (KAPs).
- IPAP KAPs are designed around time-bound milestones and the allocation of lead and supporting responsibilities to specified departments and institutions.

Methodology:

- The IPAP has proven to be an important tool for:
  - Planning and management;
  - Monitoring and evaluation;
  - Oversight;
  - Intra-governmental coordination and integration.
Context and underlying principles: 4

- Provision of targeted, conditional support to industry:
  - IPAP increasingly requires strong *quid pro quos* from recipients of its targeted investment and incentive schemes. (Reciprocal responsibility and accountability).
  - Recipients are particularly required to make clear improvements in the key areas of:
    - Plant and process upgrading;
    - Competitiveness and export orientation;
    - Employment retention and new job creation.
Consolidating the foundation:

The new platforms created by IPAP have built a foundation upon which industrial policy can be deepened and extended.

These include:

- Procurement;
- Infrastructure and localisation;
- Industrial financing and incentives;
- Stronger and more focussed export support and promotion.

All the above need to be combined with greater efforts to overcome cross-cutting constraints and intensify intra-governmental integration and co-ordination.
“Industrial policy works”

- Demonstrable progress and results illustrate that industrial policy can and has worked when it is firmly based on these principles and adequately resourced.

- Clear examples of IPAP-assisted success can be seen in the automotive sector, clothing and textiles, business process services and the film industry.

- It is important to emphasise that the progress achieved to date has been in the face of extremely unfavourable domestic and global economic conditions. (As illustrated in the next slide: “Constraints and Threats”)
CONSTRAINTS & THREATS

Constraints

- Protracted recession and decreased demand for SA exports in our traditional export markets in the US and Euro Zone. Difficulties associated with changing our export paradigm.
- Weakened domestic demand as the credit-fueled boom of 2005-2007 continues to prove unsustainable.
- Financial market failure and lack of investment in productive sector: requiring a much more strategically focussed set of investment instruments and incentives across all DFIs and departments.
- Monopolistic pricing of privately owned key intermediate inputs into the manufacturing sector – especially steel and plastics.
- Continuing currency volatility.

Threats

- Sharply escalating and ‘bunched up’ administered prices - most notably double digit electricity municipal price increases.
- Weaknesses in intra-governmental coordination.
- Possible negative consequences for productive economy if environmental regulations are not phased in so as to allow necessary breathing space for manufacturers to reach full compliance.
- Continuing high port charges and freight and logistics inefficiencies for export of value-added goods.
- Continuing skills deficits and mismatches across the economy – an especially critical problem for the new growth sectors.
- Continuing labour relations volatility.
Address two major problems for the SA economy: depressed demand from SA’s traditional trading partners and - linked with this - the negative balance on the current account.

**How?**

- Rebalance the drivers of growth, with strong emphasis on domestic demand and full participation in BRICS and African regional integration / industrialisation - to expand our export markets and drive up competitiveness.

Ensure that SA’s public sector infrastructure programme fully supports localisation in public procurement.

Develop a dialogue to encourage much stronger support for localisation in private sector procurement.

Support competitive domestic manufacturing so that it effectively meets and stimulates local demand and is able to rise to the challenges of cutting-edge emergent technologies.

Develop a smarter export strategy based on:
- support for R&D;
- incentives for proven competitive winners;
- deeper exploitation of our massive mineral resource endowment;
- mobilisation of all the technical/scientific capabilities at our disposal.

Improve the coherence of the state/private sector industrial financing system:
- as a first step, harmonising existing and new dti incentives with funding flows from the IDC\(^1\), DBSA\(^2\), ECIC\(^3\) etc.

Strategically support LNG\(^4\) and shale gas exploration and exploitation - within an environmentally sustainable framework – to realise potentially ‘game changing’ upstream and downstream economic benefits.

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1. Industrial Development Corporation
2. Development Bank of Southern Africa
3. Export Credit Insurance Corporation
4. Liquid natural gas
IPAP SECTORAL FOCUS AREAS

**IPAP SECTORAL INTERVENTIONS**

**Boatbuilding**
- Develop export opportunities in areas of world-class strength; develop industry clusters; upgrade skills & technologies

**Green & energy-saving industries**
- Solar water heating, concentrated solar power, wind power, energy efficiency, recycling

**Downstream mineral beneficiation**
- Leverage competitive advantage in minerals endowment to develop new value chains

**Upstream oil & gas services & equipment**
- Roadmap for exploration & exploitation of shale gas reserves, with strong emphasis on environmental sustainability and maximised upstream and downstream linkages

**Nuclear**
- Leverage local component production & technology transfer

**Advanced materials**
- Food into new growth industries: composite materials, additive manufacturing

**Aerospace & defence**
- Strengthen integration into supply chains: Centurion Aerospace Village cluster

**Electro-technical**
- Strengthen industry capacity in electronics & software development

**White goods**
- Strengthen support measures & exports

**Roll-out of the CTCP: strengthen clusters, QR work and competitiveness upgrades**

**Expand, strengthen and review the APDP and other support measures**

**Leverage government capex and opex programmes to stimulate the industry through localisation and supplier development**

**Polypropylene beneficiation; designation of pharmaceutical tenders; local vaccine production**

**Fast-track issue of forestry water licences; upgrade saw-milling productivity & furniture design skills**

**Leverage niche resources; enhance productivity & competitiveness; grow exports & employment**

**Broaden & deepen SA’s product offering; develop demand-led service skills**

**Support design innovation, standards, cultural branding & digital-telecoms convergence**

**Clothing, textiles, footwear & leather**

**Automotive products, components, medium/heavy commercial vehicles**

**Metals fabrication, capital & rail transport equipment**

**Plastics chemicals, cosmetics & pharmaceuticals**

**Forestry, timber, paper, pulp & furniture**

**Agro-processing**

**Business process services**

**Cultural & Creative Industries: crafts, music & film**

**IPAP**

Department: Trade and Industry
REPUBLIC OF SOUTH AFRICA
IPAP 2014: KEY AREAS OF TRANSVERSAL INTERVENTION: I

**Procurement**

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

- This effort will be combined with:
  - Further policy framework and institutional improvement measures flowing from the Public Procurement Review;
  - Strong persuasive initiatives to secure greater private sector support for local manufacturing;
  - Providing further support for broad based black economic empowerment (BB-BEE) & better alignment between BB-BEE & broader industrial development objectives.
Stronger alignment and strengthening of industrial financing and incentives across all institutions to secure an optimal mix of public and private sector funding that can progressively strengthen investment in the productive especially manufacturing sectors.

Development of targeted industrial financing instruments for black industrialists to acquire majority control of manufacturing enterprises, either through new investments or acquisition.

Development of related support programmes such as a dedicated MBA to develop black managers and owners in manufacturing.

DFIs to take this objective on-board very seriously, including: specific financing by the IDC, and reorientation of the National Empowerment Fund (NEF) to support black industrialists.
On-going strengthening of developmental trade policies - with the following key components:

- Deployment of trade measures such as selective and strategic tariffs and their improved alignment with industrial policy objectives; working closely with the International Trade Administration Commission (ITAC)
- Closer cooperation with the Customs Division of the SARS to combat the problem of illegal and fraudulent imports
- Steady and incremental strengthening of the capacity and capabilities of the Standards, Quality Assurance, Accreditation and Metrology (SQAM) institutions
Strengthening implementation of competition policy with focus on strategic inputs into the manufacturing sector

Improve competitive outcomes through stronger conditionalities and monitoring of compliance
IPAP 2014: KEY AREAS OF TRANSVERSAL INTERVENTION: V

**Innovation and technology**

- Accelerated technology development and commercialisation of R&D-led industry development projects, through improved interdepartmental coordination and funding
- Improved linkages between SMEs and the knowledge-creation capabilities located in universities and science councils
- Review of innovation support programmes across departments to promote innovation and commercialisation of technologies, e.g.
  - Technology and Human Resource Industry Programme (THRIP),
  - Support Programme for Industrial Innovation (SPII),
  - Incubation Support Programme (ISP)
IPAP 2014: KEY AREAS OF TRANSVERSAL INTERVENTION: VI

**Special Economic Zones (SEZ’s)**

- The roll-out of the SEZs by designation SEZs across the country to promote industrial development, export of value-added goods and job creation
- The establishment of industrial clusters through SEZs to promote industrial development
- The SEZ Bill has been approved and implementation of the proposals to start
- Capacity-building programme to develop a pool of skills across three spheres of government for the effective planning, development and management of SEZs
Regional integration

- Movement away from the narrow market integration approach that focused on reduction and elimination of tariffs
- SA is working with SADC member states to develop a framework to support the development of productive capacity and infrastructure to achieve real economic integration
- Within SACU, work is currently underway to concretise collaboration with DFIs to promote the development and integration of regional value chains
- Strengthening the role of DFIs to channel funding towards productive sectors of the economy
- Co-operation on Standards, Quality Assurance, Metrology and Accreditation (Technical Infrastructure)
Main Sectoral Focus Areas

- Clothing, textiles, footwear & leather
- Automotive products, components, medium/heavy commercial vehicles
- Metals fabrication, capital & rail transport equipment
- Plastics chemicals, cosmetics & pharmaceuticals
- Forestry, timber, paper, pulp & furniture
- Agro-processing
- Business process services
- Cultural & Creative Industries: crafts, music & film
- Boatbuilding
- Green & energy-saving industries
- Downstream mineral beneficiation
- Upstream oil & gas services & equipment
- Nuclear
- Advanced manufacturing
- Advanced materials
- Aerospace & defence
- Electro-technical
- White goods
Clothing, Textiles, Leather & Footwear (CTLF)

Sector Profile

The Clothing and Textiles Competitive Programme (CTCP) introduced in 2009 has brought stabilisation of the CFLT sector in South Africa, notwithstanding ongoing challenges and threats (from cheap and illegal import from far East):

- To date R 2.488 bn has been made available under the CTCP
- The sector is designated at 100% local content for all government tenders
- Establishment of both horizontal and vertical clusters involving the whole value chain from fibres and hides to retailer outlets
- Clusters offers platforms for cross-sectoral knowledge sharing
- National clusters include the National Leather and Footwear the National Leather and Footwear Cluster, the National Fashion Cluster, the National Cotton Cluster and the National Exotic Leather Cluster.
- The clusters promote new technology development, skills development, innovative processing techniques, world class manufacturing systems, individual company benchmarking against international norms and value chain alignment.
- MoU for assistance in State-of-the-art technical training signed between the dti and the People’s Republic of China
The CTLF Sectors face some challenge including:

- Overvaluation and volatility of the currency
- The surge of global imports that has been under way since the expiry of the Multi-fibre Agreement;
- Illegal imports and fraudulent under-invoicing;
- Inadequate compliance with ‘country of origin’ labelling legislation;

To recapture a bigger share of the domestic market and improve global competitiveness, the range of KAPs include:

- CTCP: to enhance competitiveness on the domestic and global market
- Illegal import programme: to further clamp down on illegal import
- Skills Development Programme: to identify FETs for skills development training in collaboration with the national Clusters.
- Communal Hides Beneficiation: animal care methods training to communal famers and households for the delivery of high quality hides
- Innovation and Technology: such as the use of 3-body scanner
- Exotic Leather Cluster: with focus on crocodile and ostrich hides
Automotives
Sector Profile & Opportunities

A critical segment for most economies because of its cross-cutting linkages across several industries and services and contribution to various economic development imperatives (contributed almost 7% of the R3,401 billion GDP in 2013).

The key opportunities includes:

- The APDP was introduced in 2013 as a replacement to the MIDP: to raise output to 1.2 million vehicles per annum, and to diversify and deepen the component supply chain.

- The resuscitation of bus production is being explored with opportunities offered.
Automotives

Key Action Programmes

The Auto Sector face some challenges including:

- Impact of the imperative of climate change (demand for products with lower emission level)
- Economics of scale in assembly and in the depth domestic component manufacturing are not yet internationally optimal
- Gaps in the manufacturing competitiveness levels of automotive component suppliers
- Diminished government’s ability to increase state procurement of bus and bus services in support of the sector (lack of coordination between agencies)

The sector has the following KAPs:

- Review of APDP – Light vehicles: to provide valuable insight into the future industry outlook
- Competitiveness Improvement Initiatives: The Automotive Supply Chain Competitiveness Initiative (ASCCI) with focus on increasing supplier capabilities, and localisation levels and increasing the level of competitiveness in the supply chain
Metal Fabrication, Capital & Rail Transport Equipment

Sector Profile

➢ Ferrous Metals:
  ✓ Primary iron and steel (flat-rolled products, long products) and related downstream industries;
  ✓ Metal products (tubes, structural steel, extrusions and wires).

➢ Non-ferrous Metals:
  ✓ Primary non-ferrous (aluminium, copper, rare earth, brass, lead, tin, zinc, precious metals fabrications and related downstream industries);
  ✓ Jewellery (gold, silver and platinum group metals).

➢ Capital Equipment:
  ✓ Capital equipment and machinery;
  ✓ Engineering and allied services.

➢ Rail transport equipment:
  ✓ Rail Rolling Stock (locomotives, electric multiple unit, wagons, and coaches);
  ✓ Rail Infrastructure (signalling, perway, and overhead electric transmission).

These Sector is the centre of economic development with outputs (products, applications and services) used across the entire economy: infrastructure programmes, construction, general engineering, mining, automotives and packaging. It is an important component of any industrialisation path and is a key driver of the manufacturing sector’s overall competitiveness.
Metal Fabrication, Capital & Rail Transport Equipment – Opportunities & Key Action Programmes

Key areas of opportunity to stimulate industry growth include:

- Public infrastructure programme in South Africa and on the African continent (North South Corridor)
- Localisation programme under the Presidential infrastructure Coordination Commission (PICC) and prescribed local content in sectors designated
- Integrated Resource Plan 2010
- Mining turnkey projects in South Africa, the rest of Africa and South America
- Possibility of beneficiation chain: further downstream manufacturing initiatives
- APDP to create additional opportunities for metal component manufacturing

Key Action Programmes:

- Leveraging the government’s capital (CAPEX) and operational (OPEX) expenditure programmes and promoting localisation in the private sector
- National Tooling Initiative
- National Foundry Technology Network
Mineral Beneficiation (Upstream and Downstream)
Sector Profile, Opportunities & KAPs

- Minerals downstream beneficiation and minerals upstream (inputs) have been identified as a key ‘pillar’ of SA’s reindustrialisation push: to ensure that more value is added to domestic mineral products before export, while at the same time using minerals sector demand to develop mining input industries (capital goods, consumables and services).

The key opportunities includes:
- Backwards and forward beneficiation potential in four key value-chains (ferrous metals; polymers; titanium, platinum group metals)
- Developed strategies to increase the localisation of mining inputs (capital goods, consumables and services).

The Key Action Plan includes
- Leveraging state tariffs for mineral value addition
- Viability of an Iron/Steel and Titanium Pigment Industrial Complex
A sector with strong up- and downstream linkages making the potential to actualise a number of the macroeconomic objectives set out in both the National Development plan (NDP) and the New Growth Path (NGP), with a value chain which is central to government’s rural development and smallholder farmer development objectives. Despite the continued ripple effect of the 2008 economic meltdown, the food processing sub-sector continues to show resilience; and is also one the largest domestic manufacturing sectors by employment.

The key opportunities includes:

- Market opportunity in export-focused sub-sectors (e.g. horticulture and aquaculture) with positive growth rates and rapid urbanisation in Asia and Sub-Saharan Africa (middle-income consumer products).
- The Middle East and BRICS continue to represent important new markets for upper-income consumer products such as confectionery, fruit juices, indigenous teas, fruits and wine.
- Mandatory regulation: to blend 2% of locally produced bioethanol into petrol
Agro-Processing
Key Action Programmes

The key Action Programmes includes:

- Development of emerging broiler producers
- Development of a small-scale dry and wet milling industry
- Enhancement of production efficiency in the fruit and vegetable Canning industry
- Food-processing sector skills programme
- Commercialisation of industrial cassava starch

Aquaculture
Key Action Programmes

- Promote public and private investments in aquaculture
Forestry, Timber, Paper, Pulp and Furniture
Sawmilling sector Profile, Opportunities

The sector key opportunities includes:

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

- Small-scale sawmills have the opportunity of organising themselves into cooperatives/clusters to increase the combined size of their orders in securing log supplies.

- The sector has strong potential for job creation in rural communities.

The sector Key Action Programmes includes:

- Productivity improvement through technology upgrading
Forestry, Timber, Paper, Pulp and Furniture
Furniture sector Profile, Opportunities

The sector key opportunities includes:

- The sector has strong potential to create employment, especially in poor rural areas.
- Cluster development is the obvious route towards realising significant economies of scale through shared infrastructure, shared and reduced input costs and better information exchange.
- Once recapitalised and armed with upgraded design skills, clustered companies will be much better able to access new markets.

The sector Key Action Programmes includes:

- Furniture Design Program
- Furniture Cluster Development
The sector key opportunities includes:

- The strong linkages to agriculture, manufacturing and distribution

The sector Key Action Programmes includes:

- Accelerated development in the biofuels sector
Business Process Services

• **BPS UP-SCALING**
  
  Gartner, a top global BPO research firm, identified South Africa as one of the top 30 countries for offshore services.
  
  Opportunity exists for the South African BPS industry to catch the wave of African continental growth in the area of Shared Services operations.
  
  Over the past five years, South Africa has emerged as a global competitor in BPS & Off-shoring, attracting many of the world’s biggest service providers.

• 6 new projects have been approved on the BPS incentive programme which will create an additional 1,986 jobs and attract R446 million investment over 3 years. Since inception in 2011, the total amount of claims paid on the incentive is R457 million and the number of jobs sustained is 8,524.

• **Monyetla Work-Readiness Programme™** is a dedicated sector-specific, demand driven work readiness programme which bridges the divide between unemployment and the opportunity for sustainable employment.

• In recognition of this success, the National Skills Fund has approved a further R71 million for the Monyetla Training Project for financial year 2013/14. With match-funding guaranteed by the DBSA, this allowed the Project to move without interruption into Phase 4, guaranteeing that another 6,000 learners will be trained in the short to medium term.
Cultural and creative industries

- South Africa has long identified the potential of the Cultural and Creative Industries (CCI) to contribute to both economic and social development

- **Sub-sector Focus: Music**
  - **Key Action Programmes**
    - encourage investment into development of manufacturing across the music value-chain
    - increase the domestic and international demand and consumption of South African music industry products and services by supporting and incentivising distribution and marketing of music goods and services on all distribution platforms

- **Sub-sector Focus: Film**
  - South Africa’s film industry has grown significantly since 2005, contributing R3.5 billion to the national economy in 2012 with further growth expected over the next five years.
  - Between April 2013 and December 2013, 66 film and TV productions were supported by the dti, with an estimated total investment of R1.8 billion.
  - On the basis of sustained support from the dti, South Africa has already attracted an impressive roster of locally shot blockbuster films, including *Long Walk to Freedom*.
  - South Africa is considered unique in that it combines wonderful locations and weather with first world infrastructure and filming facilities
  - The market for filmed entertainment in South Africa generated revenue of R2.2 billion in 2012, representing a 6.5% year-on-year growth over 2011.
Cultural and creative industries

- **Sub-sector Focus: Craft**
  - In the first year of a joint 3-year initiative between the Cape Craft & Design Institute (CCDI) and National Treasury’s Jobs Fund programme, the CCDI disbursed over R5.5 million to 44 participating enterprises.
  - The dti has been instrumental in assisting Chic Fusion to establish itself in local and international markets, with around 25% of its annual turnover coming from exports.
  - Demand for craft goods - particularly from the US and the EU – continues to be strong, underpinned by various preferential market access agreements with developing countries.
  - The goal is to strengthen established craft enterprises in the production of Handmade Products by introducing production-line systems and equipment where appropriate, with linkages to national retail platforms.
  - Access to domestic and foreign Markets
ENERGY EFFICIENCY AND RENEWABLES

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

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

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

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

- Production is scheduled to begin in the 2nd quarter of 2014, with the plant targeted to reach an initial capacity of 150 MW and create 200 new jobs.
Green industries

- **WIND & GAS POWER**

In February 2014, engineering group DCD Wind Towers completed construction of a R300-million wind tower manufacturing facility, also located in the Coega IDZ. The factory will have the capacity to produce 110 wind towers a year, increasing in due course to 200 a year.

- Multi-sector company Corporación Gestamp’s wind industrial division, GRI Renewable Industries, will start manufacturing wind towers at its new plant in Cape Town during the second half of 2014. The €22-million facility will have the capacity to create 150 towers a year and is expected to create more than 200 jobs. The Gestamp group will also be constructing a €160-million, 75 MW wind farm on the Noblesfontein farm in the Karoo, and is currently bidding for another 100.8 MW wind project in the third round of the REIPPPP public tender process.

- Sasol New Energy inaugurated South Africa’s first gas engine power plant at its Sasolburg site, at a cost of R1.5-billion. The plant has an operating capacity of 140 MW, enough to power 200,000 households. Half of the electricity generated by the plant will be used by Sasol's adjacent chemical factory, Sasol Infrachem, with the remainder to be fed into the national power grid.
Leverage opportunities presented by SA’s shale gas resources

- SA probably has among the top 10 resources of shale gas in the world, even if the originally estimated 390 trillion cubic feet (tcf) of technically recoverable resources proves not to be so. But the stakes nevertheless remain high. Preliminary economic modelling results indicate that 30-50 tcf of recoverable reserves over a 25 year production period would have upstream value-added potential of R2,142 bn. The predicted impact on employment across the entire value chain (assuming a recovery of 50 tcf over a 25 year production) is on average 700,000 jobs.

The Saldanha Bay IDZ/SEZ

Sub-Saharan Africa is one of the fastest growing and highest potential oil and gas exploration and production locations in the world, estimated to constitute 10% of global reserves. There is significant oil and gas activity on both the West and East coast of Sub-Saharan Africa, with the East coast in particular seen as a game changer for the global gas industry.

The Saldanha Bay IDZ (SBIDZ), launched in October 2013, will house an oil & gas marine engineering and logistics complex within a customs-free area. The service offerings of the SBIDZ can be loosely grouped as follows:

- Repair & maintenance;
- Fabrication;
- Logistics and other services.
Boatbuilding and Associated Services Industry

- Key Action Programmes

**Boatbuilding Skills Development Programme**

In South Africa, the ship/boatbuilding industry is characterised by a shortage of skilled labour, scarcity of highly specialised skills, a technical knowledge deficit at both shop-floor and middle management level, and lack of high-level composite training and project management skills.

**Formation of a ship/boatbuilding/repair cluster**

Clustering can encourage collaborative approaches within the industry, with related sectors sharing relevant services between them. The outcomes of these collaborations can be beneficial in growing the industry to be more competitive, principally by looking at joint development of infrastructure or equipment and joint approaches to training, as well as by identifying and inviting key external stakeholders to collaborate with the local ship/boatbuilding and repair industry.

**Industry Standards and Accreditation**

Increasing the quality and standards of products increases the manufacturer’s ability to sell products competitively into both local and international markets and, consequently, grow aggregate sector exports. The accreditation process will highlight areas of concern within firms and design interventions to address identified shortcomings that can be implemented at firm level. Creating a baseline production standard will increase consumer confidence and spending.
Nuclear Energy

- The Department of Energy (DoE) promulgated the Policy Adjusted Integrated Resource Plan for Electricity (IRP) 2010-2030 in 2011 which provided for 9.6 GW of additional generation capacity from nuclear energy, as part of a balanced energy mix that will ensure supply security and mitigation of CO2 emissions. The policy adjusted IRP 2010 indicated that the first unit is planned to start commercial operation in 2023.

- Key opportunities
  - The nuclear build programme envisaged in the IRP still presents substantial opportunities for the development of a local nuclear manufacturing industry. South Africa already has a significant level of nuclear expertise that can be leveraged and serve as a catalyst in meeting the country’s desired localisation levels, in tandem with the evolution of the procurement process.

Key action programme

Localisation of Nuclear Components and Services
Localisation is intended to ensure:
- Increased industrial capacity and potential contribution to GDP;
- Promotion of technology and skills transfer from the main nuclear vendors and suppliers of nuclear-grade components to the South African industry;
- Promotion of joint ventures, consortia and partnerships;
- Enhancement of exports into the global nuclear supply chain;
- Creation of high-level direct jobs and associated intellectual property.
Advanced Manufacturing

Advanced manufacturing has been recognised globally as a potentially very important avenue towards reversing de-industrialisation and creating decent, productive, well-paying jobs. Evidence of this can be found in international think tank reports and in the global government manufacturing policy discourse which recognises talent-driven innovation and technological advancement as key drivers of global manufacturing competitiveness.

Key Action Programmes

Commercialisation of Natural Fibre Reinforced Composites

The advantages of bio-composites include cost and weight savings, a reduced environmental footprint, reduced energy consumption in production, and health and safety benefits. There is also potential for new enterprise development and job creation, including in rural communities. Fibre crops may provide up to three times the value that farmers can extract from traditional textile and handcraft applications.

Additive Manufacturing

Additive Manufacturing (or 3D Printing as it is more commonly known) is the process of joining materials to make objects from 3D model data, usually layer upon layer, as opposed to traditional manufacturing methods such as machining or casting. Additive Manufacturing allows a user to “print” a physical representation of any object. Opportunities have been identified in number of areas including the aerospace industry - where small engine components, large structural components, rocket nozzles and satellite components are already manufactured - as well as in the tooling, medical devices and footwear industries.

South Africa’s competency in Additive Manufacturing has built up steadily over the past two decades and there are pockets of world-class excellence emerging at universities and local companies that can be leveraged by government to improve the competitiveness of local industries.

There are approximately 1,600 3D printers in South Africa and estimates for 2013 place total Additive Manufacturing systems sales at R86 million in South Africa.
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