

NIPP

National Industrial Participation Programme Report 2005

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

As South Africa celebrates eleven years of democracy and moves into the future, there is much to be proud of - political and economic stability; a more empowered electorate; and for many, greater access to education, health and housing. Despite the changes, the challenges of unemployment, poverty and inequity remain. One of the ways to deal with these problems and to meet these challenges is to expand and broaden industrial development resulting in South Africa increasing even further its manufacturing competitiveness. This will help to provide sustainable employment and income-generating activities for all citizens.

The role of South Africa's National Industrial Participation (NIP) programme is to fast-track investment, foster collaborations in technology development and transfer, and to create market opportunities for local value added goods and services abroad. The programme uses the instrument of Government procurement to leverage these initiatives, thus contributing to the achievement of South Africa's economic and social goals.

This report on the NIP programme covers the many and varied project activities from 2004 to 2005. The report focuses mainly on the variety of projects and what they have achieved in terms of the programme objectives described above. When looking at these projects, the scale of the NIP programme becomes apparent both in terms of its potential to create economic growth and technological advancement as well through the resulting social spin-offs.

The NIP projects detailed in this report range from the small, but exciting Storm's River Bridge project to the resuscitation of the Magwa Tea Estate near Lusikisiki in the Eastern Cape and the Gold Advance Scheme for the jewellery manufacturing sector.

1.2 BLACK ECONOMIC EMPOWERMENT

Black Economic Empowerment partnerships within the NIP projects have created the opportunity to gain equity in these NIP projects and thereby help redress the economic legacy of the past by benefiting historically disadvantaged individuals and communities. Successful BEE partnerships include those such as that of DaimlerChrysler with Sisonke Printers, where Sisonke will be subcontracted to print all the owner manuals for the new C-Class right hand drive Mercedes Benz which is to be assembled in South Africa. These manuals will be distributed world-wide.

A further example is that of ALSTOM SA which is involved in various ongoing partnerships and patronage of small, medium and micro BEE enterprises in South Africa. Another successful (and rurally based) BEE partnership is the Magwa Tea Estate at Lusikisiki in the Eastern Cape.

These projects along with others illustrating BEE involvement in partnerships will be discussed in greater detail later in this report.

1.3 PARTNERSHIPS

Partnerships within the NIP projects assist local companies and initiatives by linking them to multinational companies with experience, influence and contacts especially in the export field. These partnerships support local companies in various ways ranging from research and development, technology transfers and human resources development through to new market opportunities.

Examples of successful partnerships within the NIP programme include the Airbus work packages where Airbus has provided the South African aerospace industry with an opportunity to participate in the commercial activities of Airbus through the procurement of sub-contracted parts and design services, and Aerosud, which exports its production of cabin interior parts for the Boeing range of aircraft to the African continent. These work packages include the manufacture of galleys for the Airbus A319 and A320 aircraft as well as electrical racks for the Airbus A320. Details of these work packages are included later in the report.

In another project the jewellery manufacturing sector benefits from the Gold Advance Scheme established by BAES/SAAB in partnership with South African companies AngloGold Ashanti, Goldfields and Standard Bank. The scheme is a financial structure that emulates gold loan facilities in developed jewellery manufacturing countries and which enables South African jewellers to benefit from the improved management of working capital thereby increasing efficiency.

Aventis Pasteur, in a non-equity based strategic alliance with the Biovac Institute, has provided both technical assistance through technology transfer and product development as well as financial support to help resuscitate the local manufacture of vaccines appropriate for the African continent.

Other projects include SAS, which manufactures cockpit modules for the BMW 3 Series and Columbus Steel, which produces stainless steel used in the manufacture of Volvo buses.

1.4 SKILLS DEVELOPMENT

Skills Development is an important aspect in NIP projects as experience has shown that in areas where a skilled labour force is available, investment is drawn to these areas thereby creating opportunities for sustainable employment.

Some projects have already commenced training programmes for their employees while others have plans to ensure that their training programmes will be implemented in the near future. The following are some of the NIP projects in which training has been successfully implemented:

MAN Ferrostaal has made funding available to the Atlantis Economic Development Trust (AEDT) to initiate a dedicated industrial training centre. The training provided at this centre has assisted local workers in improving their qualifications in industrial, technical and other skills.

EXECUTIVE SUMMARY

This is important because while local communities are a potential source of labour, few of them are skilled enough to work in industry locally, and employees have had to be drawn from the cities rather than locally.

Furthermore, local residents wishing to further their education, have had to travel a long distances which is both time consuming and costly.

The Biovac Institute, situated in Cape Town, includes two international technology equity partners - Bionet and Heber Biotec (Cuba). These partners are responsible for sharing and transferring technology to the Institute, as well as providing training in key aspects of vaccine production. Preference for this training will be given to previously disadvantaged employees provided that they meet the minimum qualification requirements.

The Cultural Kitchen forms part of the Westland Helicopters Ltd funded Storms River Project - an exciting addition to the Eastern Cape tourism industry. Westlands has offered to train the staff in project management and practical accounting so as to ensure that the Kitchen is properly run and financially viable thereby ensuring the sustainability that will benefit the local community.

Skills development in the South African nuclear industry has become essential as the knowledge base is shrinking and the existing workforce is ageing. AREVA has, therefore, initiated a series of training sessions designed both to retrain existing skilled staff as well as to bring on new entrants. Additional training programmes within this industry sector have been pursued by Framatome and are discussed later in this report.

1.5 GENERAL

The examples given above highlight the current trends in NIP projects and illustrate the knowledge intensiveness and export orientation of many of these projects thereby creating opportunities for South Africa both now and in the future.

The total value of the obligations currently being monitored by **the dti** is approximately US\$ 15 billion. Those obligations resulting from the Strategic Defence Package (SDP) will be discharged by 2011 whilst those resulting from SAA's acquisition of Airbus aircraft will be discharged by 2013. Whilst the NIP programme was launched in 1997, the majority of the projects only commenced in 2000 following the signing of the SDP along with the acquisition of Boeing aircraft by SAA. During this period NIP projects have generated investment and sales credits to the value of approximately US\$ 3.5 billion. This includes investments estimated at US\$ 1 billion, with export and local sales, technology transfer, BEE and SMME promotion making up the balance. In the process approximately 8000 direct new jobs have already been created.

During the period March 2004 to August 2005 the Industrial Participation Control Committee approved 134 projects in a broad range of sectors including all those sectors outlined in **the dti's** IMS (Integrated Manufacturing Strategy).

Underpinning all of the above initiatives is the NIP programme as the majority of these projects were backed by obligors because of the NIP obligations they incurred through sales to government. Had it not been for these obligations under the NIP programme, it is highly unlikely that South Africa would have attracted the same level of investment.

1.6 MILESTONE PERFORMANCE REVIEW

BAES/SAAB

BAES/SAAB has achieved more than 100% of the investment target and has in aggregate achieved almost 95% of the contractual milestone. The IPS is satisfied that as BAES/SAAB continues to meet its milestones, it will be able to meet its NIP commitment.

Agusta

Having achieved its first milestone, at end of August 2005, Agusta's delivery against the second milestone stood at 68%. Agusta has been made aware of this shortfall and is working tirelessly to find additional projects to rectify this situation. The IPS is, however, concerned that Agusta may not be able to meet their commitment within the agreed time frame.

German Frigate Consortium: ThyssenKrupp

ThyssenKrupp has achieved an aggregate of 65% in performance against the second milestone which is due this year. ThyssenKrupp, as per the contract, is being afforded the opportunity to remedy the situation. Although ThyssenKrupp is working on a few strategic projects that have the dti's blessing, the IPS is concerned that ThyssenKrupp may not be able to meet their milestone within the agreed time frame.

German Submarine Consortium: Ferrostaal

Having been granted a period to meet their first milestone target, Ferrostaal is now expected to achieve approximately 82% of this first contractual milestone. In terms of their NIP contract, Ferrostaal needs to achieve at least two-thirds of the milestone target to avoid invoking the penalty clause.

Thales

Thales has achieved almost 100% of the investment target and, overall has achieved almost 93% of the contractual milestone. The IPS is satisfied that Thales is in good position to meet its NIP commitment.

SELECTED PROJECT REVIEW

2. SELECTED PROJECT REVIEW

2.1 WESTLAND HELICOPTERS LTD., A FINMECCANICA COMPANY

The three Westland Helicopters Limited (WHL) projects, Storms River Adventures, ROMOX Timber Doors and St Lucia Sawmills clearly demonstrate the diversity of many of the NIP projects. Ranging from tourism in the Eastern Cape to sawmills in KwaZulu-Natal, these projects all show the potential to grow and expand their production and capabilities both within South Africa and overseas. With the growth of tourism in the Storms River area, and with a growing awareness of and demand for adventure activities, Storms River Adventures believe that they will continue to grow and expand their activities. They have also been asked by the governments of Botswana, Mozambique, Kenya and Zambia, to set up franchise operations in these countries. Both ROMOX Timbers Doors and St Lucia Sawmills report opportunities to expand further into the growing Australian market, as will be shown in the reports on these projects below.

All three of the WHL projects have BEE involvement with the Storms River Culture Kitchen leading the way with a 44% BEE shareholding. In addition, the project has created local employment with 98% of the employees coming from the local Tsitsikamma community. The St Lucia Sawmills (SLS) lease their land from the local community and employ over two hundred local staff. By the end of 2007, the SLS will have established a broad BEE partnership for the manufacture of timber furniture that will be sold locally.

2.1.1. Storms River Adventures

Storms River Adventures is an exciting tourism initiative in the beautiful Storms River area of the Tsitsikamma in the Eastern Cape. The objectives of WHL's investment in this project are to:

- expand the existing Cultural Kitchen
- establish a crafters workshop and market
- construct a new adventure-tourism activity - The Gorge Traverse

This project is divided into 2 phases:

Phase 1

The first phase of the project will be the expansion of the Cultural Kitchen and the establishment of a crafters workshop and market. It is believed that this will attract 20000 tourist clients per annum. WHL intends to provide funding of ZAR 50 000 to Storms River Adventures for the construction of the Crafters workshop adjacent to the main reception area. Here visitors will be able to see local crafters at work.

Another area will be set aside as a showroom and a shop to sell finished craft work to visitors.

The existing Cultural Kitchen has proved to be a great success with mountain bikers and tourists traversing the local forest canopy. Between 2002 and 2003 a 25% increase in the number of meals served indicated that the Cultural Kitchen needed to increase its capacity. The vegetables and most of the ingredients used by the kitchen are purchased from local suppliers.

WHL will provide Storms River Adventures with a cash grant of ZAR 100 000 to:

- increase the kitchen preparation area
- install a new bread oven
- install a new refrigeration unit.

This will increase the output of the kitchen, thereby increasing the number of meals provided with a consequent increase in the quantity of ingredients purchased from the local community.

Phase 2:

The second phase of the project will see the construction of a new adventure tourism attraction by Storms River Adventures. This is the Gorge Traverse.

The Gorge Traverse is a new adventure activity that will happen at a nearby gorge and will offer visitors the opportunity for a short-duration adventure activity. It is believed that the Gorge Traverse will maximise the revenue obtained from visiting tourists.

The Gorge Traverse will consist of two lengths of wire strung across the gorge. Visitors will slide down this, suspended from a pulley-wheel and supported by climbing harnesses and slings. The Gorge Traverse attraction will create fifteen permanent new jobs. In addition, a trust fund will provide the community with funding for job creation. A proportion of the sales revenue from the attraction will be retained to fund this trust.

Storms River Adventures have asked WHL to provide them with investment funding to cover the initial planning applications, construction and marketing of the Gorge Traverse. This will provide cash-flow until the turnover from visitors makes the attraction self-sustaining.

Storms River Adventures have always strived to maximise their involvement with the local community. As a result they have been able to recruit excellent local staff. All work on the Gorge Traverse will be contracted with local suppliers. All guides will be recruited from the local community and trained by existing staff at Storms River Adventures.

2.1.2. ROMOX Timber Doors

ROMOX (Pty) Ltd is a South African based company that manufactures high quality, internal pine doors for the local and international market. ROMOX has expanded from operating in a sawmill in 1997 to the construction of a 13 000m² factory in 2003. Doors for the international market are mainly supplied to the British Do-It-Yourself and merchants market, and to Ireland and Australia.

In 2004 ROMOX began to work with a new distributor in the UK, Premium Timbers. Premium Timbers distribute approximately 165 000 doors per annum. They have since asked ROMOX to increase the volume of doors supplied each year to 306 825. This has doubled the demand in only 12 months.



Wood to be treated in the new kiln

ROMOX timber doors use South African Pine (SAP) and Blue Gum (Saligna). This has been found to be suitable for Australian climatic conditions. Exports by ROMOX to Australia currently total 4 000 doors a month. This number is expected to increase to 40 000 doors per month by the year 2007.

ROMOX also plans to increase sales to the local housing market by supplying doors to the lower end of the market. This includes sales to companies such as 'Build It' and 'Cash Build'.

WESTLAND HELICOPTERS LIMITED

ROMOX is reliant on a regular supply of good quality timber from the local area and has entered into long term contracts with local timber growers in order to secure future supplies.

WHL has provided ROMOX with a low-cost loan for the funding of a new timber-drying kiln. This will increase the capacity of the timber-drying kilns at the Richmond factory. This kiln was constructed by Thermodynamics, Fluids and Design (TFD) utilising South African materials and using local builders in Stellenbosch.

WHL has also helped ROMOX with their marketing in Europe and Australia. This has secured new customers and has helped to diversify the product range.

2.1.3 St. Lucia Sawmills

WHL, together with GKN CHEP SA, has in the past supported Pine Glade Forest Products (PFP) in developing the export of Kiln-Dried Heat Treated (KDHT) SA pine timber products to CHEP USA (Atlas Pallets). The strengthening of the ZAR to the USD, however, has forced CHEP to seek alternative, less expensive, global timber suppliers. This has meant that Pine Glade Forest Products have re-engineered their business and re-focused their efforts at their timber mill in northern KwaZulu Natal. In the process they have renamed their business St. Lucia Sawmills (SLS). They have also identified new domestic opportunities for the sale of kiln-dried heat treated timber in the following three business sectors:

a. Building Industry

There is an increasing demand for structural graded timber for truss plants, especially in the informal sector with the increasing demand for residential housing.

b. Moulding and Decking

The declaration of the Greater St. Lucia Wetlands Park as a World Heritage Site means that eight major tourist development projects will begin next year. These developments mainly consist of lodges and chalets with decking and pathways. This site is adjacent to the St. Lucia Sawmills

c. Export of Pallets

The recently introduced Phyto-Sanitary Regulations have forced South African exporters to seek kiln-dried heat treated timber pallets and packing crates for the export of their products. In order to meet increasing demand, St. Lucia Sawmills plans to develop and upgrade their timber milling facility. This will manufacture export grade timber pallet components for the local manufacturing and fruit industries.

In order to exploit these market opportunities, St. Lucia Sawmills will need to expand its operation in northern KwaZulu Natal. The capital investment required is approximately GBP 150 000 which WHL intends to make available to St. Lucia Sawmills as a low-cost loan.

St. Lucia Sawmills is responsible for all the production, marketing, sales and distribution of their kiln-dried timber products in South Africa. WHL will assist St. Lucia Sawmills with the export promotion of the products in the UK, Australia and New Zealand, in particular.



the dti visits the production facility at St Lucia Sawmills

2.2. GERMAN SUBMARINE CONSORTIUM PROJECTS

MAN Ferrostaal is currently working on a number of different projects on behalf of the German Submarine Consortium. These are spread throughout South Africa and across a number of sectors. They range from agricultural projects such as the resuscitation of the Magwa Tea Estate in the Eastern Cape to recycling projects in Gauteng and the support of an industrial training centre in the Western Cape.

2.2.1 The Magwa Tea Estate

This project is a partnership with the Eastern Cape Development Corporation (ECDC). It plans to resuscitate the Magwa Tea Estate near Lusikisiki in the Eastern Cape. The tea estate is large, covering 2500 hectares of land. Of this, tea is planted on over 1800 hectares.

The Magwa Tea Estate was once the largest producer of high quality tea in South Africa. The objective of this NIP venture is, therefore, to relaunch tea production on the estate starting from zero in 2003/2004 to 3.6 million kilograms of high-quality tea each year.

In order to do this, a suitable operating partner was needed. The Indian company, JV Gokal has been brought in under an interim-management contract. This partnership

provides Magwa Tea Estate with expertise in plantation management and marketing. A long-term business plan for the estate has also been developed.

An out growers scheme has been set up to develop small farmers in the area. These farmers will sell their produce to the Magwa Tea Estate. This will add a further ten percent to the tea production on the estate. It will lead to an increase in the quantity of tea processed from the planned 3.6 million kilograms per year to 4 million kilograms during the next five years.

Given the community development nature of this project, the resuscitation of the tea production factory coupled with the increase in tea growing and production will create a livelihood for several hundred people.



High quality tea bushes at the Magwa Tea Estate

2.2.2 The Welfit Oddy Tank Container Plant Expansion Project

Welfit Oddy is a family owned business involved in the design and manufacture of ISO standard stainless steel inter-model and custom-designed tank containers. These tank containers are built for both local and export markets.

This project involves the expansion of the current Welfit Oddy operations to increase production capacity by at least 1000 tank containers per annum. With increased production, sales and exports will be increased. This will sustain the local industry and will provide a much needed economic boost for the Eastern Cape.

2.2.3 The Atlantis Training Centre

MAN Ferrostaal has made funding available to the Atlantis Economic Development Trust (AEDT) for the creation and the initial operation of a dedicated industrial training centre in Atlantis in the Western Cape. The factory area adjoining Atlantis is home to a number of engineering, textile and other industries which serve domestic and export markets.

Despite an 85% matric pass rate in Atlantis, local industry has struggled to find sufficient technically qualified and proficient personnel. Whilst Atlantis residents often travel into Cape Town to undertake menial jobs - a round trip of some 100km daily - industry in Atlantis is seeking skilled workers which it often has to recruit from the city. In response to this, the training centre provides training and further qualifications in a range of industrial, technical and other skills that are in short supply in the area.

A skills-requirement audit that was conducted in the community and in local industry, has helped the AEDT to focus on key training areas. The first courses offer skills-upgrades for existing workers and initial training for one hundred and six market entrants. Further courses will be offered in:

- computer-aided design and draftsmanship
- PC hardware maintenance
- light and heavy electrical current construction
- maintenance
- textile manufacturing
- garment cutting and production
- welding and woodwork

The Atlantis Economic Development Trust is able to accommodate three hundred and forty trainees in its refurbished factory which is within walking distance of the residential areas of Atlantis.

2.2.4 MAN Turbo Project

The expansion of MAN Turbomachinery (Pty) Ltd has given the company the capacity to exploit the growing domestic and international market for turbine blades and machinery.

These unique products and services now reach a larger market and the company's competitiveness has grown following the installation of the latest technologies.

2.2.5 The Hosaf PET Recycling Plant

This plant in Southern Gauteng, recycles plastic bottles to produce Polyethylene Terephthalate (PET) granulate, which is an oil-based product. This granulate is a high quality form of polyester. The plant is located in Gauteng because it has a superior waste collection infrastructure that is able to supply the plant with the necessary plastic bottles, compressed into pellets. Waste material collectors are contracted by waste management companies to collect empty soft drink and other PET bottles. These companies then sell the washed PET bottles to Hosaf who in turn process them into granulate.

Hosaf Fibres own 100% of Hosaf Recycling (Pty) Ltd. Hosaf Fibres have seen significant growth in their PET market, whereas the base polymer production has remained largely fixed. This means that there will be a shortfall in raw material demand. The recycled PET will supply this demand.

Because of the high quality of the recycled PET, markets will be pursued where the margins on the material will be high. These include using PET for applications such as sheeting and strapping.

Ferrostaal will provide the start up capital required for the project in the form of a secured loan at a preferential rate.

2.3 BAES/ SAAB PROJECTS

These selected BAES/SAAB projects in the jewellery manufacturing and financial sectors are both aimed at increasing exports from South Africa.

2.3.1. The Treacle Fund 2

The Treacle Fund 2 is an investment project that was launched at the end of March 2005. Whilst no investments had been made at the time of this report, The Treacle Fund 2 has established the Treacle Foundation. This is a broad-based public benefit trust that has been established for the purpose of funding the further education and training of historically disadvantaged individuals (HDI's) who are then employed by Treacle's portfolio companies.

The mandate of the Treacle Fund 2 is to invest in:

- export-based businesses that are in need of expansion capital
- companies that supply goods and services to core-industries in the SA economy that are in need of expansion capital
- businesses that operate in under-rated industry sectors where there is a temporary lack of investor or shareholder interest
- start-up companies that will enhance South African economic growth.

2.3.2. The Jewellery Manufacturing Sector Gold Advance Scheme

BAES/SAAB, together with partners AngloGold, Ashanti, Goldfields and the Standard Bank of South Africa, have established a gold-financing facility to stimulate the South African jewellery industry. It aligns the jeweller's commercial and operational requirements with government policy and proposed new precious metals legislation.



Gold available for downstream beneficiation

The long- term objective of the scheme is to facilitate the development of a sustainable and cost-effective gold advance market to manufacturing jewellers. This will allow the sector to compete on an equal footing with international jewellery manufacturers.

The value of guarantees put into place by BAES/SAAB, AngloGold Ashanti and Goldfields is US\$11.2 million. The gross value of sales is estimated at a potential US\$90 million per annum - assuming an average gold price of US\$ 425/ ounce.

The participants in this scheme have developed a financial structure that emulates gold loan facilities in developed jewellery manufacturing countries, but which is new to South Africa. The legal agreements pertaining to the scheme were signed in March 2005 by BAES/SAAB, AngloGold, Ashanti, Goldfields and Standard Bank.

The project has been structured in such a way that participating jewellers will benefit from better financial controls coupled to a more sophisticated method of managing working capital.

2.4 GERMAN FRIGATE CONSORTIUM

The German Frigate Consortium has, through ThyssenKrupp, funded a number of projects. These range from the production of aluminum tubes to the production of insulated sandwich housing panels. Partnerships have been formed with the Royal Bafokeng and MERAPE (SA Chrome and Alloys). The projects are located across the country and are particularly valuable in that they bring industry and employment to rural areas.

2.4.1 The Housing (Panel Line) Project

The development of this project began in November 2000. It will involve the erection of a production facility for the production of insulated panels to be used in houses built in the area of Phokeng in the North West Province. Houses made using the panels are easy to erect with no heavy machinery (such as cranes) required.

The partners in this project are the Royal Bafokeng Administration, African Dawn Capital (introduced by ABSA Bank) and Hoesch Contecna, a ThyssenKrupp company.

The planned capacity of the production line is up to fifteen thousand houses per year. The Sandwich Panel System will be certified by Agrément and will, therefore, qualify for the housing subsidy offered by the South African Government.

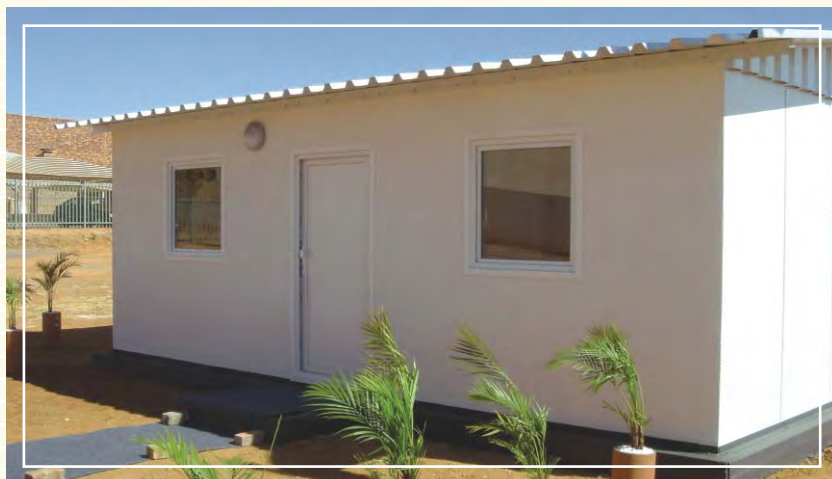
Production has yet to commence but when it does seventy people will be employed at the factory in Phokeng while six hundred and fifty people will be employed in the erection of the houses.

2.4.2 The Low-cost Titanium study

A pre-feasibility study has been carried out by Deutsche Titan in co-operation with Mintek, on behalf of Thyssen Rheinstahl Technik. This study evaluated the production of low-cost titanium to replace other low weight materials in the automotive industry.

The study shows that it is possible to produce titanium sheets of 1.0mm thickness at acceptable costs. These can be used by automotive manufacturers for exhaust systems and other body parts.

Deutsche Titangesellschaft (DTG) has developed and patented these titanium sheets. An agreement has been signed with a premium German car manufacturer for the development of the system.



Example of a model house using panels

2.5 FRAMATOME

2.5.1 Training for the Nuclear Industry

Trends in the South African nuclear industry tend to follow the same patterns as those internationally. In South Africa the existing workforce is ageing and the nuclear knowledge-base is shrinking. The demand for nuclear skills is limited to specific skills-sets and the skills-development feeder systems do not attract the young, skilled and professional people necessary to sustain the industry and ensure its growth.

Knowledge management (including the development and retention of skilled staff), has therefore become a critical success factor. It is now essential to attract and retain the knowledge and skills-base needed to meet the nuclear industry's skills requirements.

Education and higher education are important challenges for South Africa, especially in the industrial field. This is why AREVA has developed and implemented a series of training sessions. To date fifty-five South African engineers and executives, (mainly from NECSA, NNR and Eskom) have attended these sessions. Training has taken place in France.

NECSA is now entering a new growth phase. It has embarked on an urgent process of transformation whereby individuals from historically disadvantaged communities will be given training and employment in the nuclear industry.

The success of both these initiatives is highly dependent on the availability of training programmes and facilities for both new and existing employees. The areas in which the planned training will be applied include the following:

- The safe and efficient operation of the SAFARI research reactor and the extensive programme of radioscope production for international markets.

- The provision of support services in the fields of fuel fabrication processes, fuel testing, reactor physics, materials and safety evaluation for the PBMR project.
- Nuclear waste management. The processing and disposal of low and medium active waste as well as preparation for the deep geological disposal of highly-active waste.

In addition to the overseas training, the FRAMATOME Training School ran a four part course for eighteen ESKOM trainees and one Lesedi trainee in late 2004. This was held at the Koeberg facility.

Cathare Codes Training

The regulatory function is central to the viability of a nuclear industry and therefore the availability of high levels of expertise within the nuclear regulatory authority is of vital importance. With its limited resources, the NNR will be unable to make significant impact in the development and advancement of capacity in the short term. It is for this reason that the NNR seeks and welcomes opportunities to cooperate with institutions nationally and internationally for the purpose of developing capacity.

Following these training sessions, it became clear that carrying out this training in France would not be the optimum option and, as a result, through the intervention of **the dti**, Framatome transferred the Cathare Code and training material to the NNR at no cost thereby facilitating the in-house training and qualification of nuclear engineers.

2.5.2 ARECSA Human Capital Proprietary Limited

The JV training company ARECSA Human Capital (Pty) Ltd and AREVA will manage and deliver further training to South African personnel in the fields of nuclear energy, mining and high technology industries. The recommendations of the Science and Technology Education Fund (SETF) which was created to analyse the current situation and needs of the South African nuclear industry are as follows:

- Capacity building
- Succession management
- Education, training and development
- Knowledge, transfer and skills retention
- Industry skills planning
- Qualification structure for the nuclear industry

The development of learning-pathways and career paths at all levels is crucial to ensure that learning and competencies are performed to national standards and criteria. The training offered will depend on the partners' needs. For example, the training for the NNR will address some of their immediate short-term needs, but the Eskom Nuclear Cluster believes the management of the critical skills shortage is crucial to the sustainable development of the industry.

2.5.3 The Green Coal project

The objective of the project is to promote a new technology - Green Coal. This will be patented and developed by Pro-Natura International and financed by AREVA.

The Green Coal project meets the recommendations of the international convention against desertification which encourages the supply of appropriate technologies to reduce dependence on firewood. The Green Coal project will produce a household fuel that is an alternative to wood, and is derived from agricultural residues that are not used for animal feed. Savannah, weeds, reeds and various types of straw

(wheat, rice or maize), cotton stems, rice husks, coffee husk, bamboo or, more generally, all plants with a sufficient lignin content, can be used to produce Green Coal.

Numerous attempts to carbonise biomass have failed because of pyroligneous gas emissions during combustion. These gases are carcinogenic and pose a health risk when used for cooking purposes. This project envisages a domestic fuel that is made from Green Coal. This is obtained by a unique and efficient carbonisation procedure that allows wood to be replaced by Green Coal at a very competitive price and which, in addition, has the following benefits, ie

- Ecological: By reducing dependence on firewood, the project protects forests and helps to stop desertification. The carbonization process does not emit methane or any other toxic fumes.
- Cost-effective: People in developing countries will have a new and high quality household fuel that is cheaper than charcoal. This will help create sustainable development in those regions. For example, the government of Mauritius has recognised the high-cost of fuel supply. It believes that the Green Coal technology will help combat poverty.

The Green Coal process is based on the continuous carbonisation of vegetable material and the agglomeration of the carbon into balls, pellets or briquettes. Other attempts to carbonise biomass on a batch-processing basis have, to date, all failed for mechanical reasons. The continuous carbonization process that has been proposed and developed in collaboration with the society PRO-CARBONE has resolved these problems.

The Green Coal project has the National Energy Corporation of South Africa (NECSA), MONDI and Black Gold as local partners. NECSA is the BEE partner in the project, with 100% BEE ownership.

2.6 ALSTOM

ALSTOM SA has worked with ALSTOM Europe and AREVA both to cover the African market and to retain distribution agreements with various foreign suppliers. The company has increased its BEE shareholding and much of its procurement supports BEE. It is involved both with training and social transformation through the support for a local school.

2.6.1 The Export Promotion Programme

ALSTOM SA's competitive edge provides social expertise, low-cost manufacturing ability and a closer proximity to the African market. In addition, the company has identified export markets and has convinced their European shareholders - ALSTOM Europe and AREVA, to grant ALSTOM SA the opportunity of quoting on projects that fall outside those territories currently allocated to ALSTOM SA.

ALSTOM SA has the exclusive distribution, technology and representation rights for ALSTOM and AREVA in Southern Africa. It also has distribution agreements in place with various foreign suppliers which include:

- General Electric - for the import and distribution of lamps
- Cutler Hammer for the distribution of low-voltage equipment
- Twiflex for the distribution of brakes and clutches
- Expelair for the distribution of domestic fans
- Invensys (now Eaton Power), for the import and distribution of Uninterrupted Power Supplies.



Welding of H fins onto an economizer tubing, as part of a large watertube boiler contract, at the group's John Thompson factory in Bellville, Western Cape

During 2002, the ALSTOM Group went through a restructuring process. This enabled the group to bring on board a number of BEE shareholders thereby diluting the shareholding of ALSTOM Holdings (Europe) to 10%. Five percent of this shareholding was subsequently sold to AREVA, the French nuclear agency that has acquired ALSTOM Transmission and Distribution business worldwide.

Kgorong Investment Holdings, one of ALSTOM SA's shareholders, is ALSTOM SA's empowerment partner. A new legal entity, ALSTOM SA (Pty) Ltd, was formed with effect from 1 July 2002. The empowerment equity was underwritten by Rand Merchant Bank pending the finalisation of the empowerment capital requirements. ALSTOM's BEE shareholding is now thirty-eight percent and includes the following partners:



Operator assembling components forming part of a large electrical motor at the ALSTOM factory in Benoni

Tiso Private Equity Fund	13%
Kagiso Trust Investment Co.	10%
Kgorong Investment Holdings (Pty) Ltd	10%
Employee Trust	3%
Sibilant Investments (Pty) Ltd	2%

More than forty percent of purchases by the ALSTOM S.A. group are from BEE partners and ALSTOM SA has nearly 200 BEE and small, medium and micro enterprise (SMME) companies that it deals with on an ongoing basis. ALSTOM SA spends more than R1 million per annum with these partners which include:

- Revive Electrical Transformers
- Bukubhle Wire
- Shosholoza Steel Supplies

2.6.2 Training and Social Transformation

ALSTOM SA operates its own apprentice training centre from its premises at Knights, Boksburg. Fifty apprentices are currently being trained in various aspects of electrical engineering.

The company also has a graduate programme in place where business units are encouraged to employ BEE graduates. These positions are compensated for by the Head Office should the graduates remain in the employ of the company for more than two years. To date, a total of twenty positions have been identified.

ALSTOM SA also supports Balmoral College, a local school that accommodates children from the local community which includes a number of the informal settlements that surround their Boksburg factories.



A Test Technician at the ALSTOM Protection & Control site performing functional checks on a Bus Zone Protection Scheme for export to Sudan.



A Test Technician busy programming a Current Differential Protection Scheme for export to Sudan in the Test Bay at the ALSTOM Protection & Control site in Knights, Boksburg.

2.7 DaimlerChrysler SA

2.7.1 Sisonke Printers and Signage Company (Pty) Ltd.

This BEE company was founded in 1997 and will be contracted to print the Owner's manuals for the new right-hand drive C-Class vehicles that are designed and manufactured at DaimlerChrysler's East London plant. These manuals will be exported worldwide to all those countries that use right-hand drive vehicles.

Sisonke entered into a shareholder's agreement with Sommer Corporate Media from Waiblingen, Germany in 2003. At the time of the agreement, Sommer Corporate Media were already a well established service provider to DaimlerChrysler.

This new partnership aims to improve the capacity of Sisonke through the transfer of the latest technology and skills from Sommer Corporate Media. This will now enable Sisonke to offer their clients state of the art content management systems and database publishing services.

Sisonke currently employs twenty-seven people and has an annual turnover in excess of ZAR18.2 million. Of this, the DaimlerChrysler S.A. contract is worth approximately ZAR 4.5 million per annum for the next seven years. This offers employment to a further six staff members, who are employed directly to work on the printing of the C-Class manuals.



Machine Printer working on a printing machine

Sisonke plan a further investment of ZAR10.5 million in new equipment, mainly to print the C-Class Owner's manuals.



A machine operator setting up a proofing machine at Sisonke Printers

2.7.2 Kolbenco Automotive Piston Manufacturer (Pty) Ltd

Kolbenco is the largest manufacturer of superior quality pistons and gudgeon pins in Africa. It manufactures pistons for the latest diesel engine (Model 904) for DaimlerChrysler trucks. The pistons are exported to Europe, the United States and Japan.

Kolbenco currently employs 380 people, many with over 25 years experience. An additional 36 staff members are employed solely for the Daimler Chrysler OM 904 Project.

Kolbenco is committed to growth through the ongoing development and training of its staff and continues to invest in the latest technology and employee training programmes.

2.8 AIRBUS

2.8.1 A320 Electrical Racks

This package of work is for the design and manufacture of electrical racks for the A320 and A380 aircraft. The racks are fabricated metal containers assembled from pressed metal structures. This required specific process capabilities and Airbus assisted Aerosud throughout this process. Labinal, an Airbus first tier supplier, has awarded Aerosud a production contract for 50% of the single aisle electrical racks. Airbus and Labinal have undertaken a series of programme reviews, technology transfers, process inspections, first article inspections and process changes to facilitate production start in 2005.

2.8.2 Manufacture of Galleys

The objective was to qualify Aerosud as an Airbus BFE (Buyer Finished Equipment) supplier for the Airbus single aisle programme thereby enabling Aerosud to bid on the open market for galley work with new Airbus customers thereby further develop their Airbus galley business. The Airbus multi-function team was set up to achieve this. During this process the know-how on the BFE galley qualification was transferred to Aerosud. Following this Aerosud won the South African Airways A319 galley contract for the 11 aircraft shipsets. Aerosud is also awarded a contract to supply A320 galley systems to a new low cost Indian airline; IndiGo.



Galley found on aircraft

2.8.3 African Non Destructive Testing Centre (NDT)

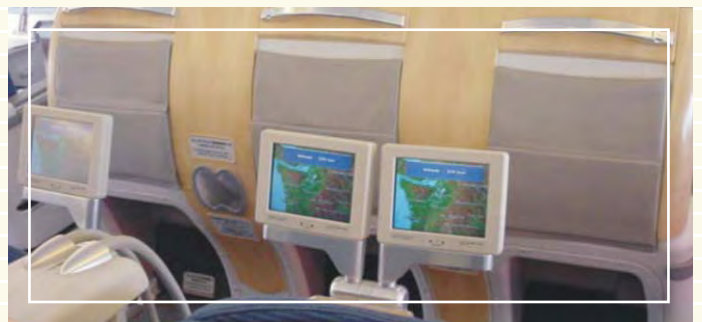
Airbus has helped to ensure that there is a non-destructive testing centre in South Africa. The centre has been established to:

- Promote South African exploration and quality assurance
- Create a centre of excellence in non-destructive testing. This centre is responsible for the training and examinations, aircraft inspections, industry inspections, research and development, NDT high-tech equipment supply and NDT installation plant consultation and validation.

2.9 BOEING

2.9.1 Work Packages

This project involves the serial production of cabin interior parts for all makes of Boeing commercial aircraft. These parts are manufactured to Boeing process specifications and standards and are supplied directly to the Boeing production-lines in Renton and Everett. Monthly production by Boeing Interior Parts exceeds 2500 parts. Annual sales are between US\$ 6.5 and US\$ 7 million.



Interior found on Boeing aircraft

Thirty direct jobs and ten indirect jobs are provided by this project. Fifteen people were trained in Seattle during 2002. Since the start of the programme in 2001, Aerosud has delivered more than sixty five thousand parts to Boeing.

2.10 THALES

As part of its strategy to broaden the beneficiary base of its economic activities under the NIP programme, Thales facilitated a US\$ 50 million (ZAR 300 million) financing package from Caylon Investment Bank to the IDC to support the IDC's strategy of funding small and medium sized enterprises (SME's) in South Africa.

This funding is the most affordable source of commercial borrowing ever received by the IDC and the full benefit of this funding will be passed on by the IDC.

In line with the IDC's development mandate, this five year facility will be used to promote and sustain SME development in historically poorer provinces such as the Eastern Cape, North West, Limpopo and the Free State through support for feasibility studies and investment projects. This facility will further be used to fund enterprises that are adjacent to townships and SME's located in rural areas.

The IDC's strategy is to focus on job creation, BEE and financial assistance to SMEs, thereby providing a vital contribution to sustainable development within the South African economy and this financing facility will help to support the creation and preservation of around one thousand five hundred jobs.

2.10.1 BlackStone Tek

This project specialises in the use of carbon fibre in both engineering and manufacturing. The products produced from the carbon fibre include motorcycle wheels, parts and accessories as well as specialised x-ray beds.

Carbon fibre is considered the material of the future because of its specific properties. It is light in weight, yet offers exceptional strength and durability. It is used extensively in industries ranging from sport to aeronautics, aerospace and building. BlackStone Tek (BST) has developed significant skills in the area of carbon fibre manufacturing and is at the forefront of composite usage, design and manufacture.



BTS wheels in manufacture



BST wheels on the Ducati of Kenny Dreer, chairman of Norton Motorcycles

After being audited by the German TUV, BlackStone Tek has been able to achieve the ISO9001:2000 certification. This certification applies both to the manufacturing facility and to the manufacturing process. It has allowed BlackStone Tek to provide new employment for forty-three people. Of these, 85% were unemployed before they started work at BlackStone Tek where their skills have been developed through in-house training and education.

2.10.3 Thales Global Telematics SA (Pty) Ltd.

Thales Telematics SA (a fully owned subsidiary of the Thales Group through Thales Telematics UK) has been selected to become the global headquarters for Thales international customer services, alarm response and order fulfilment operations.

Thales has also decided to transfer the research and development activities related to Thales Telematics (hardware design and software development) to South Africa. This will be part of a new division which will be called 'Technology and Solutions'.

These two projects will employ more than a hundred people over the next five years. The annual cost of this will be more than ZAR 25 million.

International Customer Services

The Customer Call Centre is now fully operational. It employs thirty-nine people on a 24 hour basis with designated staff for English, German, Italian and French-speaking clients. The number of employees will reach seventy-three in 2007.

Research and Development Centre

The research and development centre for Thales Telematics activities is now housed within Global Telematics SA. Twenty-five employees will work on the development of new applications and products for Thales Telematics.

The set-up of this research and development centre required new information technology and communications equipment. Additional funding is being provided for the recruitment and training of staff.



Shift workers manning the call centre

2.10.2 Tenesa

TENESA Manufacturing (Pty) Ltd (TENESA) is the only subsidiary of the TENESOL SA group manufacturing photovoltaic modules. A photovoltaic module produces electricity when exposed to the sun. TENESA, based in Cape Town, supplies the entire group requirement.

Since its creation the company has employed a policy of continually upgrading its machine park and, to date, over ZAR 20 million has been invested. Investments in new machinery continues and asset value of the company is now approaching ZAR 51 million. As a result the company expects its turnover to reach ZAR 500 million by the end of this year.

Of this production 95% is exported. With an expected increase in the local market an investment of ZAR 4 million will be required to increase production capacity.

TENESA employs two hundred and ten employees with an additional thirty indirect jobs created through outsourcing. To ensure that high quality standards are maintained the company has a full time trainer on site. Recurrent training sessions are necessary to improve the skills of the operators.

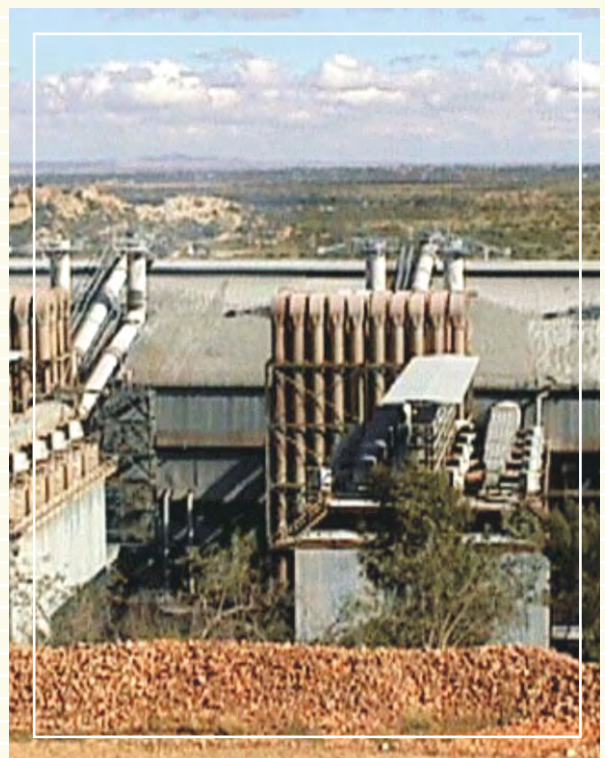
A health and safety programme began in 2005. All members of staff have embarked on this training programme to assess and investigate risk as well as to understand the necessity of team work to ensure safety.

As part of its commitment to Black Economic Empowerment (BEE), TENESA signed a distribution agreement with RENTECH (a subsidiary of POWERTECH), a company that opens its share capital to BEE entities. TENESA is in the process of extending this distribution contract for another 3 years.

2.10.4 Silicon Smelters Upgrade of #1 Furnace

This project followed the previous years' upgrading of the company's #2 and #3 furnaces. In each case, power to the furnaces was increased through larger transformers. Increased outputs from the furnaces was also accompanied by investment in improved quality controls such as new furnace control systems and raw material metering. As a result of these upgrades upstream improvements were also required in areas such as monitoring the quality of raw materials. Downstream improvements included new analytical equipment for the laboratory.

Silicon Smelters competes with many silicon producing countries including China, the USA and Europe. In order to stay competitive in their export markets, Silicon Smelters must continuously aim for better quality and service at lower costs. Since the export markets are far from the plant there is also the need for effective cost management.



External view of Silicon Smelter plant in Polokwane

2.11 AVENTIS PASTEUR

Aventis is supporting the establishing of both vaccine research and development and a manufacturing facility in South Africa. These facilities will develop and manufacture appropriate vaccines for the African continent.

2.11.1 The Biovac Institute

The Biovac Institute was formed as a Public - Private Partnership between the Department of Health and the Biovac Consortium. The Consortium brought together a cross-section of local and international vaccine manufacturers, technical experts and interested parties to salvage South Africa's vaccine manufacturing capability. The lead member of the consortium is a South African company, Biovac Holdings, who currently import and distribute vaccines. Other South African members include BEE partners Litha Healthcare and the Disability Employment Concerns Trust. (DECT)



Cold room facility at the Biovac Institute

The Disability Employment Concerns Trust is an empowerment partner that brings strategic management, governance, and human resource capacity to the Institute. It is an empowerment investment trust that has been established by seven major South African national disability non-governmental organisations (NGO's) to engage in business ventures in the context of BEE.

In order to manufacture appropriate vaccines for the African Continent, the Biovac Institute must establish capacity along the vaccine-manufacturing value chain.

Investment needs lie in the areas of:

- vaccine development and manufacturing capacity
- vaccine formulation
- filling, packaging and labelling
- quality assurance and control
- analytical development

Once these steps have been completed, the Biovac Institute will be a fully integrated vaccine-manufacturing facility. This means it will be capable of both manufacturing vaccines and then delivering them to the market in a sustainable manner. This will add value to South Africa and developing African nations in general.

The Biovac project consists of a number of components. The Aventis SIP contribution forms part of this project which covers the establishment of a full-value chain in vaccine manufacture. Step one has been completed and the following five steps will be completed within a five year period. These are:

1. The construction of a building (warehouse) for the labelling and packaging of the vials.
2. The upgrade of an existing formulation and filling suite.
3. The construction of a new quality control/ quality assurance laboratory.
4. The upgrade of the rabies vaccine manufacturing facility.
5. The construction of new research and development facilities.

The Biovac Institute currently has forty-two employees of which twenty-eight (65%) are women. The proposed expansion will create an additional thirty jobs bringing the staff complement to seventy-two over the project's predicted life-span of ten years.

The levels of women and historically disadvantaged employees will increase accordingly.

In order to ensure that vaccine production complies with World Health Organisation GMP, the Institute will implement a well-funded and integrated training programme. It will also ensure sustainability by supplying products for development.

Commitments have also been made for training. This will be contributed by the technology partners Bionet and Heber Biotec (Cuba). The training will be carried out at either the Cuban or the Cape Town facility.

The issue of international vaccine-manufacturing capacity is both topical and serious. WHO and the United Nations have regularly warned of the impact of a looming influenza pandemic. The creation of this vaccine manufacturing, research and development capability will also give South Africa the strategic capacity and capability to directly address internal vaccine issues surrounding HIV, malaria and TB.

A potential pipeline of vaccines through institutions such as the South African Aids Vaccine Initiative (SAAVI) and the South African Universities also exists. This has a socio-economic impact as it improves the supply of relevant vaccines to the region while potentially improving the cost profile of those vaccines.

2.12 ALCOM MATOMO

2.12.1 Design and implementation of Turnkey Communication Systems

The project involves the systems design and full implementation for the manufacturing of two-way VHF and UHF radios repeater systems. Repeaters are transmitter/receiver units used in radio systems that enables a two-way communication process.

These products are used in various industries such as mining, telecommunication, security systems and power utilities amongst others. These radios are exported to various African countries as well as to Iraq. Countries in the Far East will also be supplied with these products in the near future.

In manufacturing these two-way radio systems, Alcom Matomo sources the required components from Webb Industries and Motorola. Alcom Matomo normally buys the duplexers from Webb Industries and the VHF and UHF radios from Motorola.

The manufacturing process takes place in Alcom Matomo's manufacturing facility in Rivonia where the various parts and components are integrated into the final products.

2.13 SNECMA MOTEURS

2.13.1 CSIR programme

The CSIR has been recognised by Snecma Moteurs as partners in the field of aircraft engine materials as both companies have collaborated on turbine-vane casting material used for military engines.

In 2003 Snecma Moteurs agreed to assist the CSIR in becoming fully approved for the manufacturing and testing of LCF (Low Cycle Fatigue) and creep specimens for both Titanium and Nickel super alloys. This project is being undertaken by Snecma Moteurs as a result of the additional offset obligation resulting from SAA's purchase of CFM565C/P aircraft engine. This project will require investment by CSIR in equipment upgrades and approval is still pending.

2.13.2 Hall Longmore Project

Hall Longmore produces steel pipes for oil, gas and water transportation. Snecma Moteurs is co-operating with Hall Longmore in a marketing strategy to identify new customers and opportunities to generate incremental export sales of steel pipes. Hall Longmore and Snecma Moteurs have also worked closely with the Stemcor Group, a UK based company.

Hall Longmore's specialities include a range of:

- coatings and linings for corrosion protection such as fibre glass reinforced bitumen wrapping
- fusion bonded polyethylene (Sintakote)
- fusion bonded epoxy (FBE)
- cement mortar lining
- a range of epoxy linings

Well-equipped laboratories and sophisticated equipment are used for the inspection and testing of materials, welding processes, dimensions and to ensure the quality of coatings and linings.

The majority of the steel pipes produced are exported to the United States and countries in the European Union.

2.13.3 Export Turnkey Water Treatment

Ondeo-Degremont is a water treatment full-line supplier based in Johannesburg. It services the Sub-Maghreb region of Africa as well as the Indian Ocean islands. With the incentivised support Snecma Moteurs, Ondeo-Degremont (Pty) Ltd can develop its commercial activity within South Africa.

The water-treatments supplied by Ondeo-Degremont are suitable for both fresh water and sewage treatment plants. Whilst they include a standard treatment for exports to the Sub-Maghreb and the Indian Ocean islands these water treatments services can also be used in the South African domestic market for:

- The design, installation and manufacture of fresh water treatment units either wholly or partly subcontracted by Ondeo-Degremont.
- The design of fresh water treatment plants contracted by Ondeo-Degremont.
- The manufacture of fresh water treatment plants, equipment and accessories subcontracted to South African companies with the supervision of the contractors carried out by Ondeo-Degremont.
- After-sales support either wholly or partially carried out by Ondeo-Degremont. This includes spares and utility-procurements subcontracted to South African companies.

The support provided by Snecma is helping Ondeo-Degremont to cover the additional costs required to structure the local Ondeo-Degremont team in order to support the above. This includes the necessary training and qualification.

2.14 SIEMENS

2.14.1 BMW 3-Series Cockpit Modules

The car cockpit module volumes required by BMW South Africa warrant local development and assembly. This has led Siemens and Faurecia to set up SAS-Automotive RSA (Pty) Ltd. SAS Automotive RSA develops and manufactures the car cockpit module for the BMW 3-Series in South Africa.

As one of the global leaders in automotive interiors, Faurecia has vast experience. It specializes in interior-systems and exterior components, while Siemens VDO is a leader in electronic systems. These combine advanced technologies in control, and communications systems.

A cockpit unit incorporates over a hundred components and sub-systems. SAS-Automotive has set up its new facility at the Automotive Supplier Park in Rosslyn, near Pretoria and close to the BMW plant.



View of the final stages of the assembly line including testing stage.



Initial stages of the cockpit assembly line

The target of BMW is to produce about two hundred and fifty cars a day, of which 60-80% will be exported. The quantity of cockpits manufactured by SAS Automotive RSA will be aligned to the demands of BMW.

Extensive training of engineering staff, production supervisors, project managers, quality managers and support staff has taken place in Europe. These trained staff are responsible for the training of most of the local staff.

2.15 VOLVO

2.15.1 Acerinox

Acerinox is a Spanish company with a 76% shareholding in South African company Columbus Steel. The remainder of the shares in Columbus Steel are held equally by Samancor (a joint venture with Anglo American and BHP Billiton). The company produces and sells stainless steel on the world market.

Acerinox Scandinavia is a subsidiary company with regional marketing, sales, warehousing and cutting capacity. This has its head office in Oslo.

Volvo, as an important customer for stainless steel, has convinced Acerinox to favour Columbus Steel as their sourcing partner. This steel is used in the manufacturing of Volvo buses.

Columbus is equipped to produce consistently high quality stainless steel to the precise specifications of their customers. This requires a smooth and faultless operation, the best tools for the job that are managed - wherever possible - by the best software available and monitored by highly qualified personnel. Extensive training is provided on a continuous basis as technology is continuously changing.

Columbus Steel actively promotes business with small, medium and micro enterprises (SMMEs) that are owned or controlled by historically disadvantaged individuals or companies.

2.16 GENERAL ELECTRIC

2.16.1 Metallurgical Manufacturing Services - refurbishment of locomotive diesel engine cylinder liners

This is a new NIP project that was implemented in 2004. A local company Metallurgical Manufacturing Services (MMS) has been contracted to refurbish the cylinder assemblies of the General Electric Transportation Rail division's locomotive engines. This is done in South Africa rather than shipping the engines back to the US for refurbishment.

It is planned that MMS will eventually become a refurbishment centre for cylinder assemblies from Africa, the Middle East, Asia and Europe. The General Electric facility in Australia has also indicated their interest in refurbishing some cylinder head assemblies at MMS, rather than shipping them back to the USA.

To ensure that MMS met General Electric's quality standards - a pre-requisite to qualify for work packages from General Electric - MMS was subjected to the rigours of the General Electric Six Sigma New Product Introduction process.

3. NIP Projects Geographic Spread

GAUTENG

Carbon Fibre Wheels
Novamoda
Joint Venture DSU / Dispack
ABB Procurement
Atlas Copco
Industrial Business Park
IT Fund
Kolbenco Management Buy-In
NEI Africa Ltd
Soya Protein Manufacturing
Plastic Recycling
Aluminium Wheels
Export of Telephone booth to Oman
Triclinium Clinical Research Organisation
Grintek
Glass and Aluminium
Strategic Exports
Paper Based Manufacturing
TTS Electronics
General Electric
Treacle Fund
Gold Loan Fund
Onde Degremont Water Treatment
Robotube Export Promotion
Sicad Sensitive Tapes
M-Tec
Global Telematics
Pre-stressed bars
Denel Work Packages

Railway Signalling System
F3 Motors
Railway Rolling Stock
MDF9120 Connector Strips
Software Development (Siemens)
Subcontracting of Engineering and R&D work
Microwave Minilink
Regional Hub Activities
Export of Copper and Optic Fibre Cables
Aeronautical and Component Manufacturing
Tay Gearbox
Service Centre for Radio Products
Hall Longmore -Pipes
Plastic Recycling
Stainless Steel Pipes
Engineering Services
Man Turbo Expansion Project
HOSAF Recycling
Bearings Procurement
Sourcing of Truck Frames for Locomotives
Metallurgical Manufacturing Services
High Voltage Impulse Track Circuits
NF Die Casting
A1 Manufacturing
ANDTC
Aerosud Work Packages

LIMPOPO

Upgrade of Silicon Smelters
Investment into densification Plant

NORTH WEST

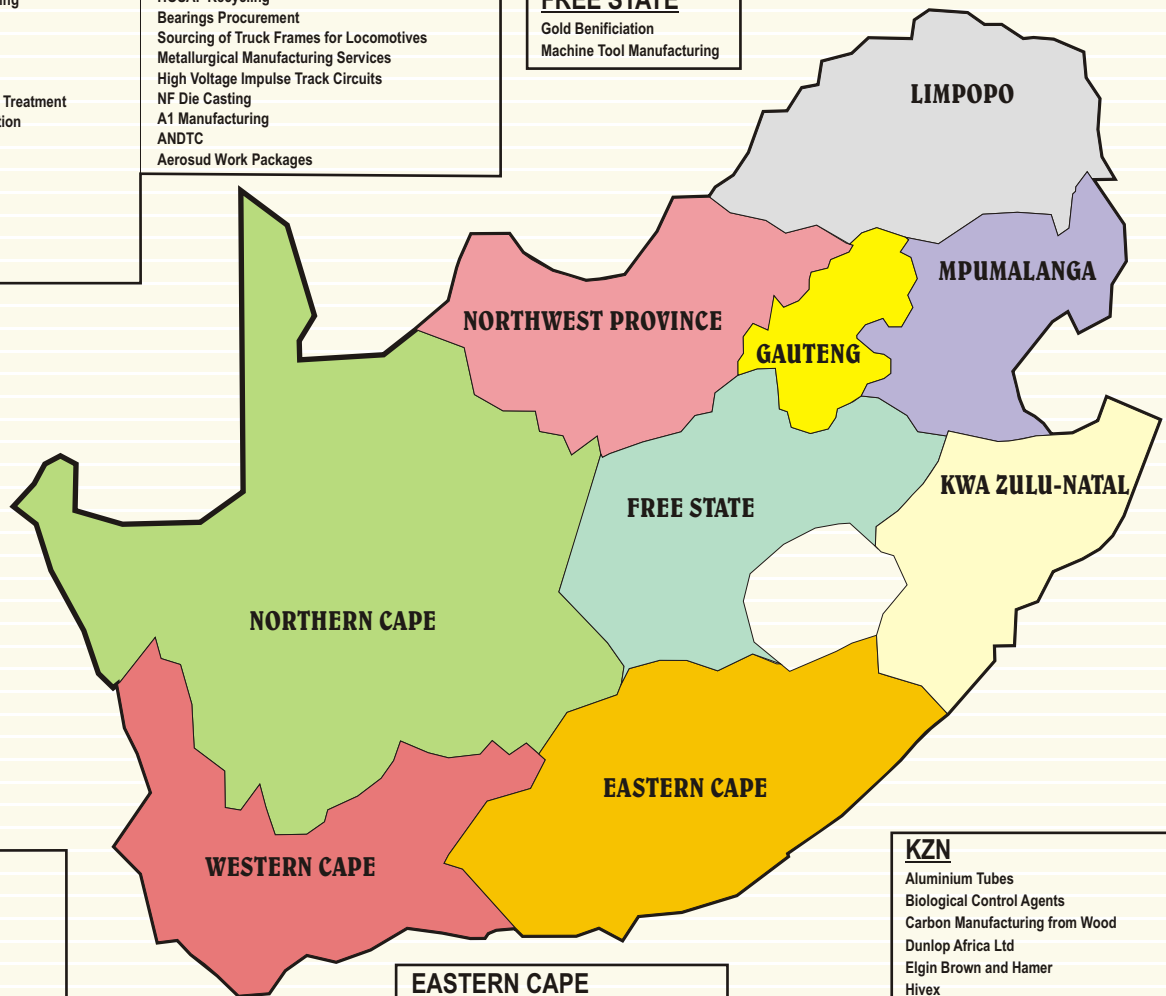
Export of Telecommunication Cables
Ferrochrome Beneficiation
Export of Telecommunication Cables
Ferrochrome Project with Merafe
Housing Project to manufacture Panels

MPUMALANGA

Global Forest Products
Stainless Steel Columbus

FREE STATE

Gold Beneficiation
Machine Tool Manufacturing



WESTERN CAPE

Tenesa-Solar Panel
Electrolux
NEI Africa Ltd
Platinum Jewellery
Filk Gold Chains
Atlantis Foundries
Evertrade Medical-Waste Treatment
The Biovac Institute - Vaccine Manufacturing
TGA Automotive Forge
Takata Petri
Atlantis Forge
Glass and Aluminium
Winecorp SA
Atlantis Training Centre
Sinter Metals
Lesedi
Sygnium
IT Fund
SAP Wines

EASTERN CAPE

Amlac Oil Refinery
Bel-Mec High Pressure Die Casting
Package Tourism
Visteon Air Fuel Charge Systems Manufacturing
Cape Mohair
Leather Seats, tannery, expansion
Leather Trim Covers
Natural Fibre
Magwa Tea Plantation
Tank Container Plant Expansion Project
Storms River Adventures
Aberdare Cables
Arvin Meritor
Calsonic
Rehau Plastics

KZN

Aluminium Tubes
Biological Control Agents
Carbon Manufacturing from Wood
Dunlop Africa Ltd
Elgin Brown and Hamer
Hivex
Sourcing of bearings
GreenHeat
Capstone
SA BioProducts
St Lucia Sawmills
Dunlop Industrial Products
Glass & Aluminium
Pineglades Forest Products
Romox Doors Manufacture
Bell-Exports of ADT

Agusta

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Flik Gold Chains	1999	56	Cape Town	Oro Africa, Filk SPA	Manufacture of gold chains for the local and export markets

Total Investment: US\$ 7,029 million Projected Sales: US\$ 150 million

Cape Mohair	1999	70	Port Elizabeth	Alpha Tops, Umbala Dyers, Alpela Establishments, Cape Mohair Spinners	Spinning, dyeing and knitting for the export market
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Total Investment: US\$ 823,000 Projected Sales: US\$ 15 million

Mario Levi	2003	286	Eastern Cape	Mario Levi Investments, Saftan International	Split leather production for motor vehicles
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Total Investment: US\$ 22 million Projected Sales: US\$ 96 million

Italian Plastics	2001	69	Gauteng	Italian Plastics Ltd, Novamet, Kantana Investments	Recycling plastic waste materials for pellets, cables, sheeting and piping and blast barriers for the mining industry
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Total Investment: US\$ 3,5 million Projected Sales: US\$ 11,5 million

Airbus

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Africa Non Destructive Testing Centre	2003	8	Gauteng	-	Non-destructive testing methods for the aerospace industry

Total Investment: ZAR 11 million Projected Sales: ZAR 60 million

Aerosud Work Packages	2002	20 10 Indirect	Gauteng	Aerosud Labinal	Design and manufacture of galleys for A319 and A320 aircrafts. Manufacture of electrical racks for the A320 aircraft
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Total Investment: - Projected Sales: US\$ 15 million

Alcom Matomo

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
South African Police Services	2004	2 11 (Contract)	Rivonia Gauteng	Local, Foreign and BEE	Turnkey design, supply, installation, commissioning and testing of a TETRA standard digital trunked two-way radio system for the SAPS for communication coverage to include the whole of the Gauteng Province

Total Investment: ZAR 9 million Projected Sales: ZAR 40 million

Alstom

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Export Promotion Programme (Alstom SA)	2004	+4000	Gauteng And WC	Areva (Europe) Kgorong Inverstment Holdings	Export markets are identified and this affords the project the opportunity to promote their equipment

Total Investment: ZAR 10 million Projected Sales: ZAR 400 million

Planning & Design of Railway Signalling Systems	2000	4	Gauteng	Alstom France	Planning and design of railway signalling systems for the export market
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Total Investment: ZAR 2 million Projected Sales: ZAR 7 million

F3 Motors for Export & Local Markets	2000	-	Gauteng	Alstom France	Manufacture of lower power rating motors for the local and export markets
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Total Investment: ZAR 6 million Projected Sales: ZAR 100 million

Railway Rolling Stock	2001	-	Gauteng	Alstom France	Production of railway rolling stock parts and replacement units for Alstom's transport
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Total Investment: ZAR 200k Projected Sales: ZAR 10 million

Aventis

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
The establishment of a vaccine manufacturing facility for the development and local manufacture of vaccines appropriate for the African continent	2004	42	Pinelands WC	Biovac Consortium; Dept. Of Health; Litha Health Care; Disability Employment Concerns Trust; Bionet; Herber Biotech (Cuba)	To establish the capacity to manufacture vaccines and to deliver them to the market in a sustainable and feasible manner

Total Investment: ZAR 112.9 million Projected Sales: ZAR 140 million

BAES / SAAB

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Treacle Fund 2	2005	TBD	Johannesburg Gauteng	BAES/SAAB 50% BEE	The Treacle Foundation is a broad based public benefit trust which has been established with the purpose of funding further education and training of HDI's employed by Treacles portfolio companies

Total Investment: US\$ 50 million Projected Sales: US\$ 261 million

Jewellery Manufacturing Sector Gold Advance Scheme	2005	TBD	National	AngloGold Ashanti; Goldfields; Standard Bank; BAES/SAAB	To facilitate the development of a sustainable, cost gold advance market to manufacturing jewellers in order for the sector to compete on a equal footing with international manufacturers
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Total Investment: US\$ 15 million Projected Sales: US\$ 588 million

Glass and Aluminium	2004	170	Johannesburg Gauteng	AG Industries Ltd; SA Commercial Banks; SAAB Supporter ETT AB Sweden	To increase the manufacture and export capacity required to support the sustainable growth strategy of finished and other value added glass and aluminium products
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Total Investment: US\$ 13 million Projected Sales: US\$ 527 million

Carbon Manufacturing	2002	300	KZN	Karbotek	Carbon for liquid and gas filtration, made from eucalyptus wood
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Total Investment: US\$ 32 million Projected Sales: US\$ 580 million

Greenheat	2002	20 60 seasonal	KZN	Greenheat SA	Stoves, firelighting, heating
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Total Investment: US\$ 640 000 Projected Sales: US\$ 46 million

Bel Mec High Pressure Die Casting	2002	75	EC	Almec	High pressure die casting components for the automotive industry
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Total Investment: US\$ 9.5 million Projected Sales: US\$ 123 million

Boeing

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Boeing Interior Parts Production	2002	30 10 (Indirect)	Centurion Gauteng	Areosud	The serial production of cabin interior parts of all makes of Boeing Commercial aircraft

Total Investment: Projected Sales:

Denel	-	-	Gauteng	Denel	Building components for Boeing 737, 747, 757, 767, 777 aircraft
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Total Investment: Projected Sales:

DaimlerChrysler SA

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Kolbenco Automotive Piston Manufacturer (Pty) Ltd	2004	36	Johannesburg Gauteng	KS Kolbenschmidt GmbH	Manufacturer of superior quality pistons and gudgeon pins

Total Investment: ZAR 25 million Projected Sales: ZAR 167 million

Sisonke Printers and Signage Co (Pty) Ltd	-	27	Johannesburg Gauteng	Sommer Corporate Media	The printing of the C-Class Owner's manuals for the right-hand drive vehicles worldwide
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Total Investment: Projected Sales: ZAR 30 million

Natural Fibre	-	150	Limpopo	Brits Textiles	Rear parcel trays for Mercedes Benz C Class vehicles, made of sisal fibre
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Total Investment: ZAR 20.34 million Projected Sales: ZAR 34.2 million

Atlantis Foundries	-	500	WC	-	Vehicle cyclinder head blocks and crankshafts
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Total Investment: ZAR 250 million Projected Sales: ZAR 1.16 billion

Atlantis Forge	-	270	WC	Atlantis Forge (Pty) Ltd	Crankshafts and camshaft forgings, connecting rods for vehicle engines
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Total Investment: ZAR 16 million Projected Sales: ZAR 2.5 billion

Calsonic Kansei	-	8 5 (Indirect)	EC	Calsonic Kansei	Catalytic Convertors
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Total Investment: ZAR 22 million Projected Sales: ZAR 96 million

Framatome

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Training Phase 1	2003	1040	Koeberg Nuclear Power Station & within ESKOM's Generation Division Nuclear Cluster Ltd	Eskom Framatome ANP	To develop and retain the knowledge base of the South African nuclear industry in order to meet the nuclear industry's skills requirements

Total Investment: Euros 2 million Projected Sales: -

Green Coal	2004	280	Pelindaba NW; Durban KZN	NECSA; Mondi; Black Gold	Green Coal promotes a new technology to produce a household fuel which will be an alternative to wood, derived from agricultural residues not used for animal feed and which meets the recommendations of the International Convention against desertification
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Total Investment: Euros 300 000 Projected Sales: Euros 100 000

ARECSA Human Capital Proprietary	2005	2	SA	NECSA; Eskom: NNR; PBMR Ltd	To manage and deliver further training to South African personnel in the fields of nuclear, mining and high technology industries
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Total Investment: - Projected Sales: -

General Electric

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Scaw Metals	-	-	Gauteng	Scaw Metals	Locomotive truck frames

Total Investment: - Projected Sales: US\$ 50 million

Federal & Mongul Large Bearings	-	-	Gauteng	Glacier Bearings	Gas turbine Bearings
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Total Investment: - Projected Sales: -

GFC: German Frigate Consortium

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Low Cost Titanium	2001	200	-	UhdeGmbH; ZTMC Titanium & Magnesium Combine	The production of low-cost titanium metal in order to replace other low weight materials in the automotive industry

Total Investment: US\$290 million Projected Sales: US\$240 million

Housing 11 (Panel-Line)	2000	70 650	Phokeng	Royal Bafokeng; Hoesch Contecna	The production of insulated sandwich panels for houses
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Total Investment: US\$12 million Projected Sales: US\$135 million

Bio Diesel Refinery	-	250 5000 (Indirect)	KZN	-	A refinery to produce Bio Diesel out of the Jatropha Curcas Plant
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Total Investment: - Projected Sales: -

Ferrochrome	2000	165	Rustenburg NW	MERAPE (SA Chrome and Alloys)	The production of the new chrome melting plant built by SA Chrome
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Total Investment: US\$18.5 million Projected Sales: US\$300 million

Aluminium Tubes - Radiators Alltube Extension	2000	50	KZN	20% shares bought by BEE company	The erection of a second production line, with the same capacity as the first, to expand export contracts. This is to ensure that existing capacity exists in the event of technical problems
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Total Investment: US\$2.9 million Projected Sales: US\$27.9 million

DSU (Gesellschaft für Dienstleistung und Umwelttechnik GmbH)	-	-	Gauteng	Dispack	Packaging, plant services, technical and logistics
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Total Investment: US\$6 million Projected Sales: US\$10 million per annum

GSC: German Submarine Consortium - Ferrostaal

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Magwa Tea Estates	2004	1800 1000 (seasonal)	Lusikisiki EC	JV Gokai; Magwa Tea Estate Workers' Trust; Landowners; ECDC; MAN Ferrostaal	The resuscitation of the tea plantation near Lusikisiki

Total Investment: Euros 4 million Projected Sales: -

Hosaf PET Recycling Plant	2004	63 700 (Indirect)	Johannesburg Gauteng	Hosaf Fibres; MAN Ferrostaal	To recycle plastic bottles to produce PET (Polyethylene Terephthalate) a high quality form of polyester which can be further refined into fibres
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Total Investment: Euros 2 million Projected Sales: Euros 12.5 million

MAN Turbo Project	-	15	Germiston Gauteng	MAN Turbo Machinery (Pty) Ltd.; Man Turbo AG; MAN Ferrostaal	To produce world standard quality turbine blades and machinery which are of a competitive price
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Total Investment: Euros 1.5 million Projected Sales: Euros 6.7 million

Welfit Oddy Tank Container Plant Expansion Project	2004	180	PE EC	Welfit Oddy; Burg Industries	The design and manufacture of ISO-standard stainless steel intermodel and custom designed tank containers for local and export market
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Total Investment: Euros 6 million Projected Sales: Euros 70.4 million

Atlantis Training Centre	-	13 4 (OS)	Atlantis WC	AEDT	A dedicated industrial training centre in Atlantis which provides training and further qualifications in a range of industrial, technical and other skills
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Total Investment: Euros 3 million Projected Sales: -

Stainless Steel Pipes	-	50	Gauteng	Salmac	Stainless steel pipes for Export
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Total Investment: ZAR 65 million Projected Sales: ZAR 650 million

GSC: German Submarine Consortium - Ferrostaal

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Engineering Services	-	90	Gauteng	Ferroman (Pty) Ltd	The supply and implementation of industrial plants worldwide

Total Investment: Euros 10 million Projected Sales: Euros 115 million

MDM Ferroman	-	-	Gauteng	MDM Ferroman	Mineral process engineering and project management
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Total Investment: Euros 15 million Projected Sales: Euros 265 million

Mobile Data Solutions Incorporated (MDS)

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Software Development Centre	-	-	Gauteng	MDSI SA	To develop software development modules. Also support and maintenance for such software and development local, customised software

Total Investment: US\$ 2.6 million Projected Sales: US\$ 6.1 million

Siemens

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Manufacture of BMW 3-series Cockpit modules	2005	103	Rosslyn Gauteng	Siemens VDO; SAS Automotive; Faurecia Interior Systems (IS)	Car cockpit modules for BMW 3 Series

Total Investment: ZAR 17 million Projected Sales: ZAR 2.5 billion

Software Development	-	72	Gauteng	-	Software for Siemens digital switching exchanges
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Total Investment: US\$ 1 million Projected Sales: US\$ 52 million

MDF Connector Strips	-	11 16 (indirect)	Gauteng	-	Main distribution frame connector strips for telecommunications
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Total Investment: US\$ 1 million Projected Sales: US\$ 52 million

SNECMA Moteurs

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
CSIR Programme	2002	-	Pretoria Gauteng	Snecma Moteurs; CSIR-M&M Tek	To provide aircraft engine rotating components (Life Limited Parts)

Total Investment: - Projected Sales: US\$ 750 000

Hall Longmore	2002	30	Wadeville Gauteng; Duncanville Vereeniging	Snecma Moteurs; Hall Longmore; Stemcor Group	The production of steel pipes for oil, gas and water transportation
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Total Investment: - Projected Sales: ZAR 46 million

Export Turnkey Water Treatment	2003	-	Sunninghill Gauteng	Snecma; Ondeo-Degremont	This is a water treatment programme that applies to both fresh water and sewage treatment plants
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Total Investment: - Projected Sales: ZAR 100 million

Thales

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Blackstone Tek Carbon Fibre Engineering	2002	43	Johannesburg Gauteng	Propario Axa Private Equity, Bourbon	Engineering and manufacturing in carbon fibre. Products include motorcycle wheels, specialized medical X-ray beds, parts and accessories for motorcycles

Total Investment: US\$ 20 million Projected Sales: US\$ 315 million

Tenesa	1999	45	WC	Tenesa Manufacturing (Pty) Ltd	Solar Panels
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Total Investment: US\$ 9.7 million Projected Sales: US\$ 82.5 million

Silicon Smelter & Fume Dioxide	2000	390	Limpopo	Silicon Smelters	Silicon fume and silicon fume dioxide
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Total Investment: US\$ 25.63 million Projected Sales: US\$ 102 million

Evertrade Medical Waste Facility	2001	74	Gauteng WC	Evertrade	Health care risk waste processing and waste management facilities and waste bin manufacturing plants for export
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Total Investment: US\$ 63.62 million Projected Sales: US\$ 107.59 million

Volvo

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Acerinox	2004	1111	Middleburg Mpumalanga	Acerinox SA; Columbus Stainless (Pty) Ltd; Samancor; IDC	To increase the exports of stainless steel from Acerinox SA to the Scandonavian countries

Total Investment:

N/a

Projected Sales:

ZAR1.8 billion

Zeuna Catalytic Converters	-	124	Northwest	Alwin Exhaust Group	Catalytic converters
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Total Investment:

US\$12 million

Projected Sales:

US\$129.7 million

Johnsons Control Leather Seats	-	150	EC	JCI South Africa	Leather seat covers for Volvo, Sweden
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Total Investment:

US\$10 million

Projected Sales:

US\$31.5 million

APPENDIX

ST LUCIA SAWMILLS
ROMOX TIMBER DOORS
STORMS RIVER ADVENTURES
PINEGLADES FOREST PRODUCTS

Westland Helicopters Limited

PROJECT NAME	START OF PROJECT	DIRECT JOBS	LOCATION	PARTNERS	DESCRIPTION OF PROJECT
Storms River Adventures	2003 (Phase 1)	47	Storms River Eastern Cape	-	Expansion of the Cultural Kitchen and Craft Market to feed tourists after adventure tourist activity such as mountain biking
	(Phase 2)	18		Franchises offered in neighbouring countries	Gorge Traverse: Visitors slide across gorge on system of pulleys

Total Investment: GBP 40 000 Projected Sales: GBP 2.2 million

Romox Timber Doors	2001	45	Richmond KZN	-	Production of wooden doors using SA Pine. Exports to the UK and into Australia
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Total Investment: GBP 200 000 Projected Sales: GBP 20 million

St. Lucia Sawmills	2001	38	St. Lucia KZN	-	Kiln Dried Heat Treated Pine timber products
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Total Investment: GBP 170 000 Projected Sales: GBP 20 million

GKN Sinter Metals (Pty) Ltd	-	-	Western Cape	SMCT	Ferrous and non-ferrous components using the sintering process for powered metals
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Total Investment: GBP 800 000 Projected Sales: GBP 5 million

Pineglades Forest Products	-	-	KZN	-	Kiln-dried timber; sawn and planed timber pallets using SA pine
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Total Investment: - Projected Sales: GBP 12 million