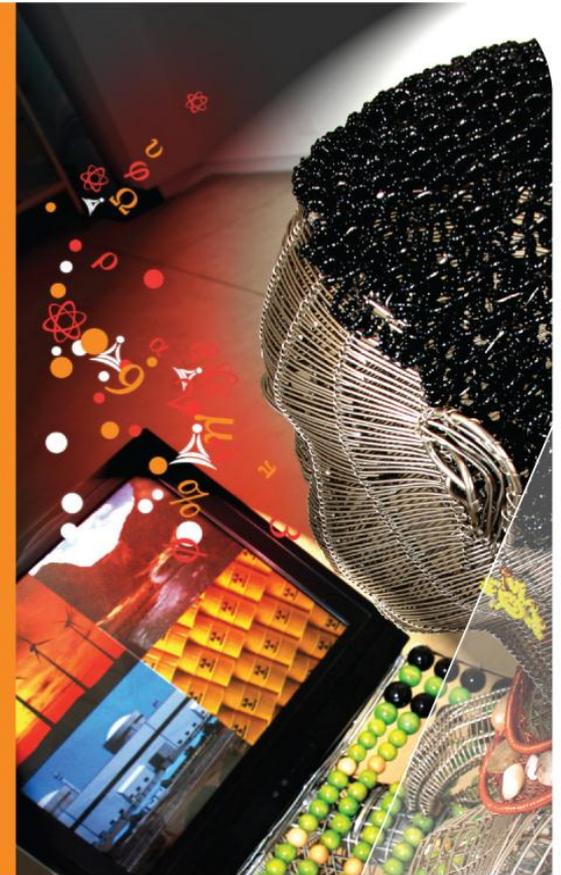


# NECSA 2010/11 ANNUAL REPORT PRESENTATION TO PARLIAMENTARY PORTFOLIO COMMITTEE ON ENERGY

1 November 2011



# Presentation Outline

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- **Mandate**
- **Highlights**
- **Nuclear Technology Report**
- **Sustainability Report**
- **Commercial Report**
- **Corporate Governance**
- **Financial Report**
- **The Road Ahead**



# Mandate



# Mandate

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**Necsa derives its mandate from:**

- **The Nuclear Energy Act No 46 of 1999;**
- **The Nuclear Energy Policy (NEP) of 2008 [development of a South African nuclear fuel cycle for SA nuclear energy fleet];**  
and
- **Directives conferred on it by the Minister of Energy**

**The policy and legislative framework confirms Necsa's central role for a coordinated SA nuclear industry.**



# Highlights

- **NTP, the SAFARI-1 Reactor and the Necsa Fuel Department continued to successfully address the global medical radioisotopes supply crisis.**
- **As a result of an effective maintenance programme, fully staffed and trained reactor operations group, and the implementation of a reactor ageing management programme, the SAFARI-1 Reactor achieved its best ever operational availability of 101.1% against scheduled availability, at an average reactor power of 19.44 Megawatt (MW).**
- **In line with its core research and development (R&D) mandate, Necsa recorded 31 innovation disclosures.**
- **The NTP Group achieved sales of R869 million, some 13% more than budgeted and remained the world leader in the supply of medical isotopes and the only company in the world to produce Molybdenum-99 (Mo-99) using a totally low enriched uranium (LEU) process.**



## Highlights cont.

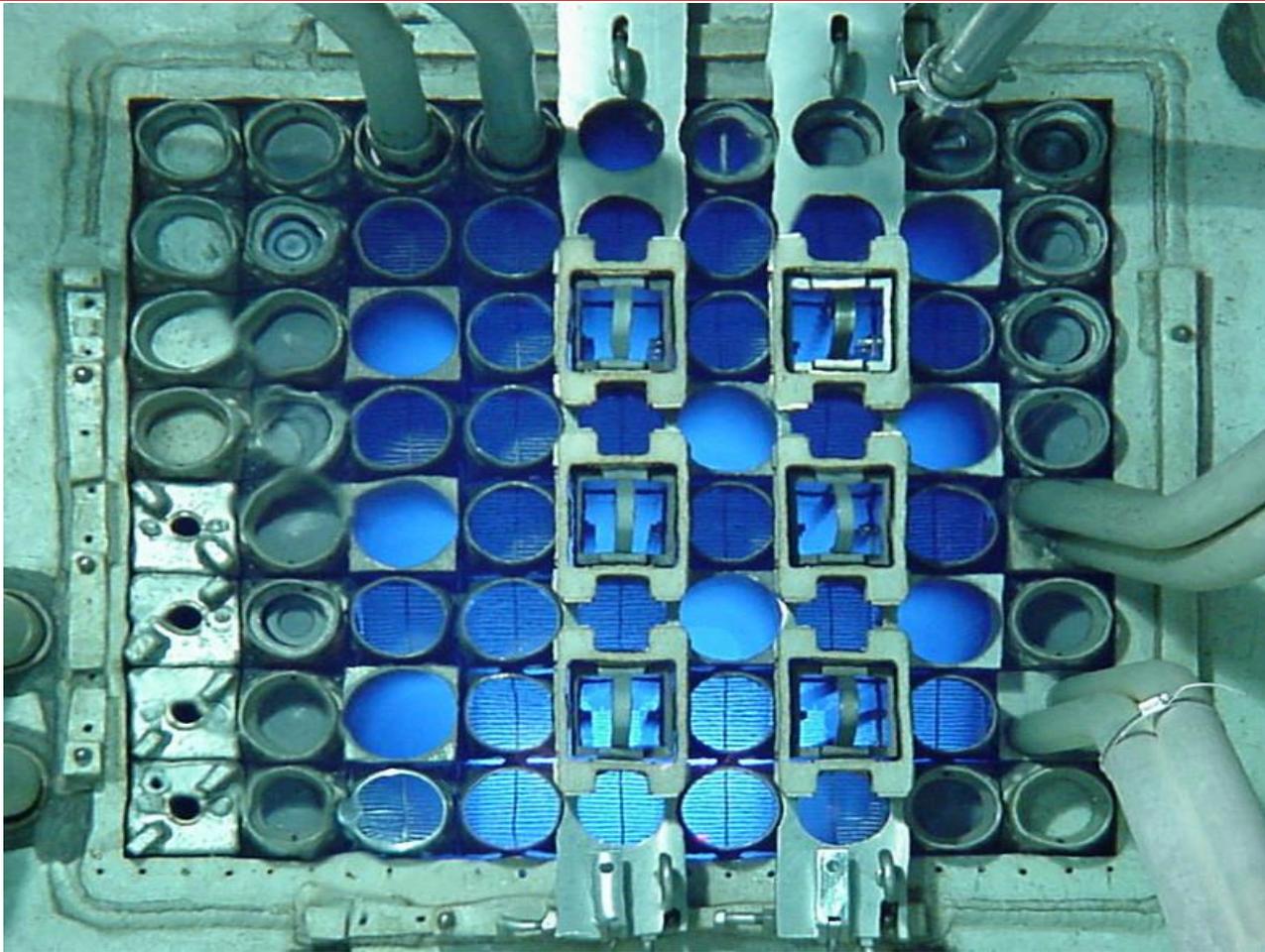
- **Necsa was awarded a special contract by the US Department of Energy (DOE) in recognition of and support for the South African programme to fully convert the Mo-99 production process from highly enriched uranium (HEU) to LEU-based operations and technology.**
- **The state-of-the-art Necsa Visitor Centre, which incorporates interactive displays on nuclear technologies, was launched by the Minister of Energy, Ms Dipuo Peters, during February 2011.**
- **The Nuclear Skills Development (NSD) Centre trained 487 apprentices in semester training programmes and the Decentralised Trade Test Centre was officially launched by the Minister of Trade and Industry, Dr Rob Davies in February 2011.**
- **Necsa's preparations for attaining ASME 3 certification well advanced.**



# NUCLEAR TECHNOLOGY REPORT



# RESEARCH AND DEVELOPMENT



# RESEARCH AND DEVELOPMENT

Some of the key R&D focus areas include:

- Nuclear materials, with emphasis on the establishment of local NFC technology capabilities (including AMI)
- A common focus area is R&D support for the Necsa subsidiaries, NTP and Pelchem
- R&D programmes at Necsa are specifically linked to the following DST Grand Challenges: Energy Security, Farmer to Pharma, Climate Change and Space Science.
- NTeMBi



# RESEARCH AND DEVELOPMENT cont.

Some of the key outputs include:

- 31 innovation disclosures were recorded for the year - Necsa continues to effectively fulfil its R&D mandate and is managing a fast growing IP portfolio which includes amongst others the following:
  - Contaminant identification during decommissioning;
  - Analytical techniques and tools; and
  - Hot cell techniques and equipment.



# NUCLEAR TECHNOLOGY INDUSTRIALISATION



# NUCLEAR TECHNOLOGY INDUSTRIALISATION

- **Successful conversion of SAFARI-1 to LEU.**
- **A PWR fuel development team was constituted to focus on manufacturing of components required for nuclear PWR fuel elements.**
- **A spent fuel storage study covering various options for the storage of cooled PWR spent fuel.**
- **Conceptual designs for uranium conversion and uranium enrichment facilities.**
- **Advanced progress on certification for nuclear equipment manufacturing in support of localisation requirements of SA nuclear new build**



# TECHNICAL SERVICES



# TECHNICAL SERVICES

**Nuclear Waste Projects approved by the NNR for the period included:**

- **Transport of Necsa's low level waste to Vaalputs;**
- **Relocation of the molybdenum transfer station;**
- **Construction and decommissioning of the Volume Reduction Facility (Drum Press) in Pelstore.**

**Nuclear Waste Disposal:**

- **Following the enactment of the National Radioactive Waste Disposal Institute (NRWDI) Act, No. 53 of 2008, Necsa was mandated to manage the NRWDI on behalf of the DoE until such time as the NRWDI has been fully established and capacitated. As part of this delegated function, Necsa is maintaining the Vaalputs license conditions and has renegotiated the waste disposal contract with Eskom.**



# TECHNICAL SERVICES cont.

- **Waste shipments from Koeberg resumed with three consignments consisting of 360 low level waste packages for final disposal**

## **Significant Projects:**

- **Return of US Origin Spent Fuel – A significant milestone was reached with the signing of a contract on 24 August 2010 between the US DOE National Nuclear Security Agency and Necsca. This enabled the project execution phase.**



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# SUSTAINABILITY REPORT



# NUCLEAR COMPLIANCE



# NUCLEAR COMPLIANCE

- **The NNR issued a total of 40 Nuclear Installation Licenses (NILs) to Necsa.**
- **Necsa has continued to closely co-operate with the NNR resulting in an improved rate of authorisations**
- **Safeguards and nuclear non-proliferation activities were performed on behalf of the Department of Energy, in accordance with all legislative as well as IAEA NPT requirements.**
- **Significant resources were allocated to planning and implementing the nuclear safety plan during the FIFA World Cup™ Tournament.**
- **Necsa complied fully with all legislative and licence conditions through its comprehensive environmental monitoring programme.**
- **The annual NKP audit was conducted on 2 August 2010 resulting in an overall score of 95.5%.**



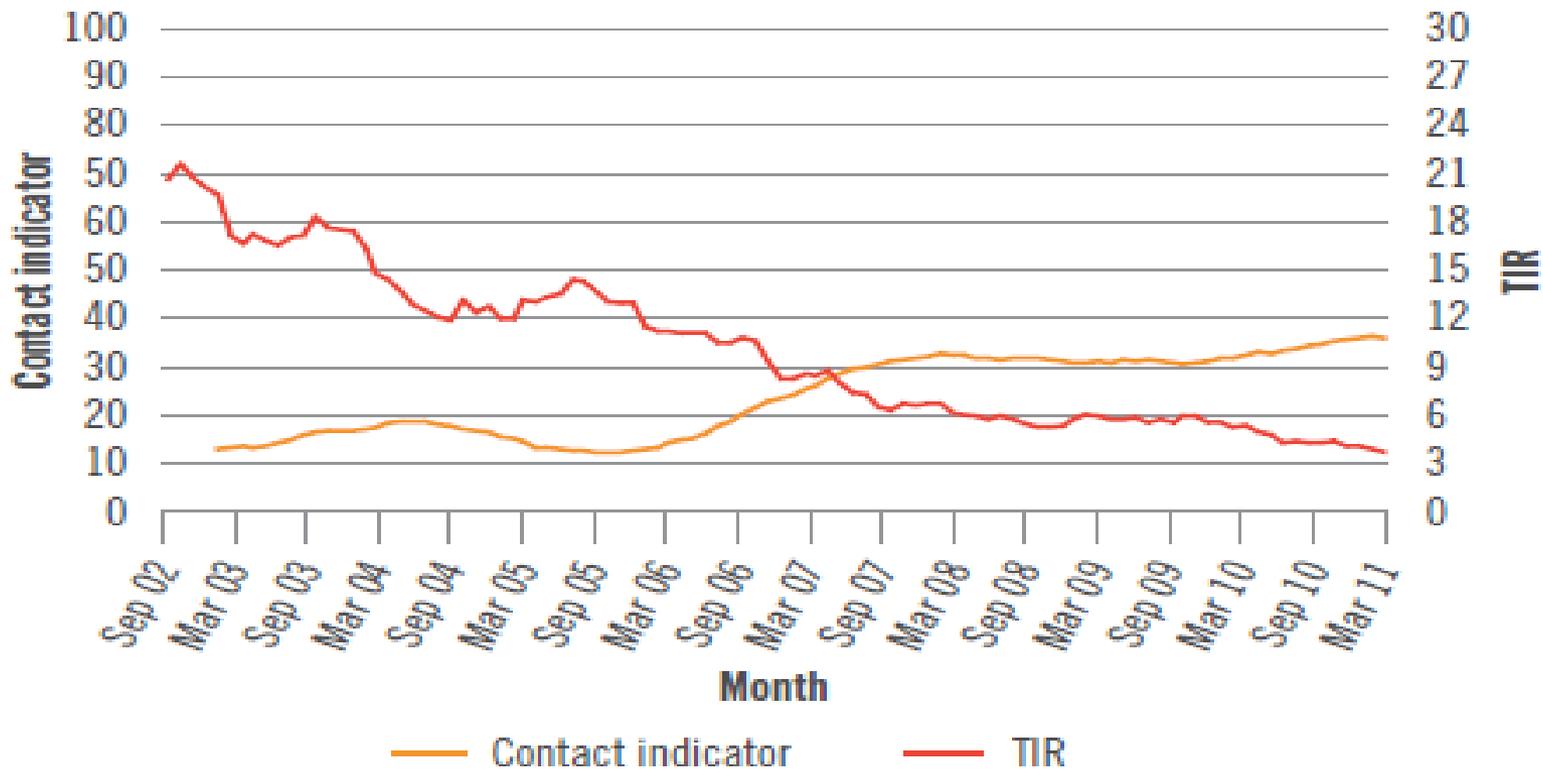
# NUCLEAR COMPLIANCE cont.

- South Africa achieved the broader conclusion from the IAEA regarding the absence of undeclared nuclear material and activities in the country.
- The implementation of the BBS process resulted in a major improvement in Necsa's Total Injury Rate (TIR) from 20.9 in September 2002 to 4.3 in March 2011 as shown in the graph on the next slide.
- Dr R Masango was appointed the new Chairperson of the Joint Planning Committee during the financial year.
- Necsa Emergency Control Centre was upgraded and was used during the FIFA 2010 World Cup™ Tournament.
- Six Necsa site emergency exercises were held during the course of the year. A plan was also developed to assist the Madibeng Disaster Management Group to build capacity to ensure appropriate readiness levels to respond, if and when the need arises.



# NUCLEAR COMPLIANCE cont.

## Necsa: All Processes



# FINANCE & INFORMATION MANAGEMENT

- As at 31 March 2011 the Necsa Group had a total of 1,118 suppliers of which 498 or 44.5% are BBBEE rated suppliers, with accreditation levels ranging from 1 to 8.
- Purchases from BBBEE suppliers amounted to 29.2% (R238.3 million) of the Necsa Group procurement spend (excluding foreign orders).
- The number of BBBEE suppliers decreased, due mainly to the BBBEE ratings of some suppliers having expired during the financial year.
- The Necsa Group was assessed as a Level 4 contributor with a BBBEE procurement recognition level of 100%. As a value-adding supplier, a final BBBEE procurement recognition of 125% was recorded.
- NTP was assessed as a Level 4 contributor with a BBBEE procurement recognition level of 100%. Further, as a value-adding supplier, NTP received a final BBBEE procurement recognition of 125%.



# MARKETING AND COMMUNICATION

- **Necsa hosts the PSIF and VPSIF to engage with communities in Pelindaba and Vaalputs, respectively.**
- **During the year 2,075 learners and educators from 41 different schools across the country attended the NSW programme at Necsa.**
- **The Necsa brand and reputation was assertively profiled as a credible source of opinion during the Fukushima incident by a '24/7 Media Monitoring Team'.**
- **Necsa also initiated a marketing campaign aimed at dealing with the public perception around nuclear technologies.**



# HUMAN RESOURCES cont.



# HUMAN RESOURCES

## **Necsa Group Employment:**

- **The Necsa Group staff complement increased by 3.12% from 2113 in the previous reporting period, to 2 179.**
- **In the same period, the number of Female employees increased by 7.5% from 607 to 653**
- **As at 31 March 2011, the Necsa Group employed 1 020 Black employees (excluding contract workers) – representing 54.6% of its total permanent staff complement**



# HUMAN RESOURCES cont.

## Necsa Executive Management Composition:



**Dr Rob Adam**  
Chief Executive Officer



**Dr Van Zyl de Villiers**  
Group Executive:  
Strategy and Performance



**Mr Arie van der Bijl**  
Group Executive:  
Nuclear Technology  
Industrialisation



**Ms Nishina Dayaram**  
Group Executive:  
Finance and Information  
Management



**Dr Ramatsemela Masango**  
Group Executive:  
Nuclear Compliance



**Mr Aukney Mabunda**  
Legal Services and Company  
Secretariat  
(Ex-officio member)



**Mr Joseph Shay**  
Group Executive:  
Technical Services



**Mr Daniel Moagi**  
Group Executive:  
Human Resources



**Ms Chantal Janneker**  
Group Executive:  
Marketing and  
Communication



**Prof. Petro Terblanche**  
Group Executive:  
Research and Development



# HUMAN RESOURCES cont.

## Nuclear Skills Development Centre:

- The quality of training offered through the NSD is highly regarded, resulting in partnerships with several clients such as the Department of Public Works (100 students), the Development Bank of South Africa (150 students), Alstom (55 students), DB Thermal (35 students) and others (88) on job creation projects.
- A project was initiated through the Safety and Security SETA (SASSETA) to obtain accreditation as a service provider for security learnership training in NQF Levels 3 and 4, National Key Point and Firearms Training. Accreditation was obtained on 12 December 2010, which will allow for the learnership training of 10 learners through CHIETA in 2011.



# COMMERCIAL REPORT



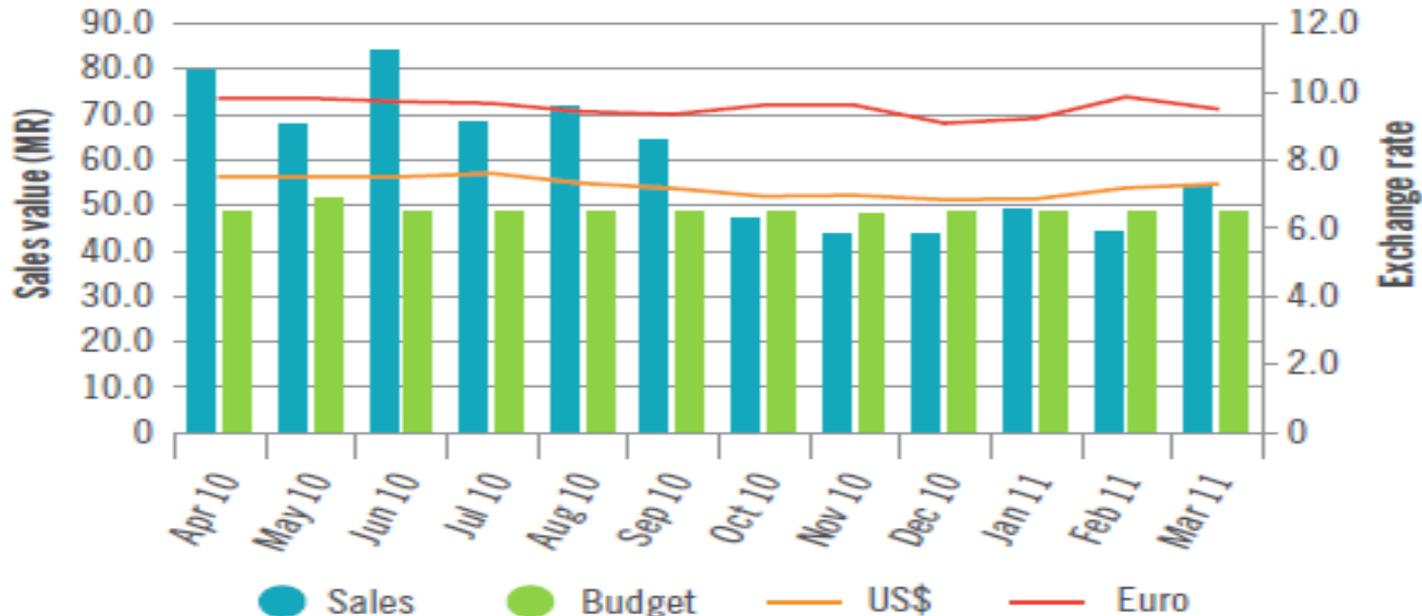
# NTP RADIOISOTOPES (PTY) LTD cont.



# NTP RADIOISOTOPES (PTY) LTD cont.

- Company sales were R711 million, which is 22% above budget and 8% better than the previous financial year. Group sales of R869 million, some 13% more than budgeted.

## NTP Turnover



# NTP RADIOISOTOPES (PTY) LTD cont.

## Dedicated Isotope Production Reactor (DIPR):

- The 46-year-old SAFARI-1 Research Reactor is ageing and a new reactor is required to ensure NTP's production capabilities for the next 50 years. Construction of a DIPR is being considered and a feasibility study is currently being conducted. This includes siting, environmental impact assessment, compiling user requirement specifications as well as screening and the pre-selection of viable turnkey suppliers, all of which are in various stages of investigation. Completion of the feasibility study phase is expected towards the end of 2012.



# PELCHEM (PTY) LTD



# PELCHEM (PTY) LTD

- Pelchem is a 100% subsidiary company of Necsa Ltd with a business focus on the fluorochemical industry. It plays a strategic role in supporting Necsa and government plans for a South African nuclear fuel programme.
- The volume of 70%HF sold into Brazil increased substantially over previous years. Pelchem was also successful in being awarded the tender to supply the Shell refineries in Australia and is now the sole supplier of AHF to the Australian refineries – a position achieved through competitive pricing and superior service.
- Pelchem also remains the sole supplier of AHF and 70%HF to the southern African market.
- HF production in 2010/11 was at a record high – 4,659 tons were produced, 3% above the nameplate capacity of the plant.
- Pelchem continues with its global dominance in the supply of xenon difluoride ( $\text{XeF}_2$ ) although there was not a significant growth in sales volume.



# PELCHEM (PTY) LTD cont.

- The Linde Group informed Pelchem in November 2009 that it wished to disinvest in LESA and offered its NF3 plant to Pelchem. In order to retain the NF3 plant as an F2 sink, Pelchem conducted negotiations with the Linde Group on the purchase of the NF3 plant, and negotiated an agreement whereby the Linde Group would buy the NF3 from Pelchem and resell it to the market. This transaction is still awaiting Ministerial approval.
- Overall, Pelchem achieved sales of R162.0 million (2010: R152.7 million) which represents a 6.0% increase over the previous year. The target of delivering a positive net profit was not realised and remains a major target for the year ahead.
- A strategic alliance was formed with the Swiss company, Lonza, to manufacture and market APIs, firstly for the anti-retroviral (ARV) market, and later for other applications. This strategic alliance will be marketed under the name 'Ketlaphela'.



# ARECSA HUMAN CAPITAL (PTY) LTD

**ARECSA Human Capital (Pty) Ltd is a joint venture (JV) company between AREVA from France and Necsa, with Necsa representing the JV the interests of two other nuclear industry stakeholders, namely Eskom and the NNR.**

- In the 2010/11 financial year no new funding was secured for training and funding that was expected from one of the obligors based in France did not materialise.**



# CORPORATE GOVERNANCE



# Board of Directors



**Dr Manne Dipico**  
Deputy Chairperson,  
De Beers Consolidated Mines  
(Non-executive Director)



**Dr Rob Adam**  
Chief Executive Officer,  
Necsa  
(Executive Director)



**Dr Ntuthuko Bhengu**  
Chief Operations Officer,  
Clinix Health Group  
(Non-executive Director)



**Adv. Nazreen Shaik-Peremanov**  
Senior Lecturer:  
Department of Public  
International Law, Unisa  
(Non-executive Director)



**Prof. Thokozani Majazi**  
Professor: Department of  
Chemical Engineering,  
University of Pretoria  
(Non-executive Director)



**Dr Velaphi Msimang**  
Chief Director: Hydrogen  
and Energy Sub-programme,  
Department of Science and  
Technology  
(Non-executive Director)



**Ms Noluphumzo Noxaka**  
Director, Alatha Consulting  
(Non-executive Director)



**Mr Lampona Aphane**  
Chief Director: Electricity,  
Department of Energy  
(Non-executive Director)



# Board of Directors cont.



**Mr Phumzile Tshelane**  
Acting General Manager:  
Nuclear Build, Eskom  
(Non-executive Director)



**Mr Abdul Minty**  
Ambassador, Department  
of International Relations  
and Communications  
(Non-executive Director)



**Mr Leslie Gumbi**  
Chief Director: United Nations  
Political, Department of  
International Relations and  
Cooperation  
(Alternate Director:  
Mr Abdul Minty)



**Mr Jeetesh Keshaw**  
Director: Nuclear Policy  
and Technology,  
Department of Energy  
(Alternate Director:  
Mr Lampona Aphane)



# Risk Management

## Most Significant Group Risks:

- ***Financial resource constraints*** – Government grant funding which has been concurrently reduced over the past two the MTEF periods, placing the organisation under significant financial strain. Initiatives are under way to bolster funding from other sources and this will be continued.
- ***Misalignment of human resources with corporate objectives*** – During the year under review Necsa initiated the implementation of a new business model and identified key HR requirements to give effect to its new business model and will progressively realise this as policy implementation and commercial opportunity exploitation allows.
- ***Regulatory capacity constraints resulting in time overruns by the NNR*** – The nuclear industry is characterised by the highest and most stringent regulatory requirements. Compliance with these regulatory requirements requires both Necsa, as the operator, and the NNR, as the regulator, to have the requisite skills and human capital to ensure an effective process with minimised turnaround times.



# FINANCIAL REPORT

17.47	17.02	42.15	+0.13	0.48%
42.45	40.86	27.09	+0.46	2.09%
27.15	26.07	22.47	-1.26	-5.12%
22.59	21.71	23.37	+12.51	3.30%
23.97	22.74	391.66	+0.74	0.78%
391.70	377.43	95.61	+0.42	1.69%
95.67	93.96	25.22	+0.30	1.22%
25.32	24.74	24.82		
24.89	24.35			
57.55	55.00			



# Financial Performance and Projections for the Necsa Group

	2008/09 R'million	2009/10 R'million	2010/11 R'million	2011/12 R'million (Projected)
Sales	621	1,049	1,107	1,221
Government Grant	409	446	477	486
Sundry Grants	30	25	28	60
Other Income	29	24	78	36
Finance Income	62	55	52	34
<b>Total Income</b>	<b>1,151</b>	<b>1,600</b>	<b>1,742</b>	<b>1,837</b>
Personnel and Personnel Related Expenditure	-424	-525	-587	-704
Other Expenditure	-647	-911	-1,026	-1,061
<b>Net Profit after Tax</b>	<b>80</b>	<b>164</b>	<b>129</b>	<b>72</b>



# Financial Performance and Projections for the Necsa Corporate

	2008/09 R'million	2009/10 R'million	2010/11 R'million	2011/12 R'million (Projected)
Sales	183	248	312	370
Government Grant	409	446	477	486
Sundry Grants	30	16	18	25
Other Income	25	35	27	29
Dividends	20	38	29	54
Finance Income	62	27	26	15
Total Income	729	810	889	979
Personnel and Personnel Related Expenditure	-382	-464	-504	-569
Other Expenditure	-331	-348	-393	-468
Net Profit	16	-2	-8	-58



# Financial Performance and Projections for the Necsas Corporate

	2010/11	2011/12	2012/13	2013/14
	R'million	R'million	R'million	R'million
Baseline Government Grant: November 2009	522,258	550,965	584,023	619,064
Baseline Government Grant: January 2011	503,605	514,065	502,664	485,970
Reduction (R)	-18,653	-36,900	-81,359	-133,094



# Auditor-General's Report

- **Unqualified report for 2010/11**
- **Emphasis of matter**
  - **Restatement of corresponding figures on Property, Plant and Equipment and Investment Property classification**
- **Compliance with Laws and Regulations**
  - **Certain items of fruitless and wasteful expenditure were identified relating to mainly penalties and interest. Total of R152k in the group and R17k on Necsa corporate**



# State of Financial Position

Necsa's mandate was expanded by the publication of the Nuclear Energy Policy in 2008.

However:

- These expanded mandate functions have not culminated into increased baseline funding;
- With the Nuclear Energy Policy implementation strategy, SA is required to respond to new electricity generation capacity (IRP 2 – November 2010);
- Misalignment between IRP 2 policy development and the national budget process introduces further challenges for Necsa going forward;
- Necsa has already had to reprioritise its funding in order to begin preparing for the requirements of SA's nuclear energy expansion (e.g. NFC, NMC, NSD, PBMR staff);
- Despite the increased/expanded mandate, as well as the above requirements Necsa had its baseline reduced by R270 million (excluding VAT) over the 2010/11 to 2013/14 MTEF period.
- In the current tough economic climate, Necsa's two major subsidiaries, NTP and Pelchem are also under pressure in terms of revenue and profit.



## State of Financial Position cont.

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Based on the above, it is clear that surpluses cannot be achieved, as Necsa has already re-prioritised projects, looked at efficiencies within operations, in a tough economic climate and all funds will be fully utilised. Within the approved budget, risks exist regarding the achievement of generation of revenue and new sundry grant allocations.



# The Road Ahead

The Necsca Group is well set to continue building on its foundation of good performance and some of the key activities that will be pursued include:

- NFC development aligned with IRP 2010 and Eskom requirements;
- Developing localisation capabilities including American Society of Mechanical Engineers (ASME) III certification;
- A significant investment to upgrade NTP's quality assurance system to comply with the latest international Good Manufacturing Practice (GMP) quality system;
- Developing Pelchem's diversification strategy into the pharmaceutical products domain;
- Expanding R&D programmes in support of Necsca's core activities and in contributing to the NSI;
- Successful completion of a number of industrialisation projects; and
- Further developing a nuclear security training programme.



# Thank You!!!

