

NECSA GROUP STRATEGY

PARLIAMENTARY PORTFOLIO COMMITTEE ON MINERAL
RESOURCES & ENERGY -
20th MAY 2020

AB Myoli
ACTING NECSA GROUP CEO



STRATEGIC ASSUMPTIONS

Based on the Minister of Mineral Resources and Energy's budget vote speech of 10th July 2019, the following assumptions were derived from implied policy statements and are considered key to Necsa's sustainability;



- ✓ New Nuclear Build is part of future electricity generation planning
- ✓ A Multi-Purpose Reactor (MPR) for Nuclear research & commercial isotope production to be built
- ✓ The State-owned Pharmaceutical Company's operation is advanced

NECSA GROUP STRATEGY

NECSA GROUP COMMERCIAL OBJECTIVES

STRATEGIC INTENT: "To be a world leader in nuclear, radiation and related technologies by 2030"

Sweat assets

12 months (R2bn)

NTP- Regain 20% Mo-99 market share

Widen the range of medical radio-isotopes from 3 to 4

Pelchem- Refurbish plants to realize additional R78m revenue

Necsa - Achieve R1,4bn revenue by:

Being the preferred supplier of ASME type components to SOC's particularly Eskom

Maximizing / monetizing the U- recovery project assets including disposal options for SNF (Improve the Balance Sheet and the cash flow)

Contract Research and Development income of R20m

Optimizing D&D and reduce the current nuclear liability by 10%

NECSA GROUP COMMERCIAL OBJECTIVES

Consolidate and grow
5 years (R5bn)

NTP- Increase market share to 24% & new markets

Widen the range of medical radio-isotopes from 4 to 6

Pelchem - high purity spec products to realize additional revenue and 0.025% Market share

Upscale of specialty fluorochemicals by 5000%

Thuthukani - Commercialize 30,000 tpa HF Plant through partnerships

Ketlaphela - 35% market share for ARVs R721m Revenue

NECSA GROUP COMMERCIAL OBJECTIVES

Consolidate and grow
5 years (R5bn) continued

Necsa- Being the preferred supplier of ASME type components to SOC's particularly Eskom

Maximizing / monetizing the U- recovery projects assets and improvement of the balance sheet

Increasing market share by 30% in Life extension projects through services and products

Net income generated through R&D impact area projects: R192m

Optimizing D&D and reduce the current nuclear liability by 50%

NECSA GROUP COMMERCIAL OBJECTIVES



Expand and Grow
10 years (R8bn)

NTP- Nuclear Medicine R2bn through new markets and products and 33% market share.

Widen the range of medical radio-isotopes from 6 to 9

Pelchem- (Fluorochemicals) Commercialization of specialty fluorochemicals to yield R1.3bn revenue

Ketlaphela -ARV's & other burden of diseases to generate R4.1bn revenue

Necsa- Commercialization of specialty ASMEIII and ASME VIII components

Preferred supplier of ASME type components to SOC's particularly Eskom

Maximize / monetize U-recovery projects assets and improvement of the balance sheet

NECSA GROUP COMMERCIAL OBJECTIVES

Expand and Grow

10 years (R8bn) ... continued

R&D- Net income generated through R&D impact area projects:
R240m

Optimize D&D to reduce the current liability by 75-100% and
reduce government guarantees related to these activities by 75%

Generate ~20% of revenue from the MPR

NECSA GROUP FINANCIAL PLAN

NECSA GROUP FINANCIAL OBJECTIVES

- Although the Group will make a turnover of more than R2bn in the 2021FY, there will be a projected net loss of R61m in that year. For year-5, the Group projects about R551m net profit and in year-10 a R1.4bn net profit.
- The key financial objective of the Group in the short term is to reduce losses and to rehabilitate the Balance Sheet to enable the Group to fund its Growth and Expansion strategy.

Key Financial Objectives

Objective (R bn)	12 Months	5 Years	10 Years
Revenue	3,121	5,186	7,914
Expenses	3,156	4,560	6,408
Net Profit / Loss	(0,061)	0,551	1,412

NECSA GROUP FINANCIAL PLAN



	Group	Necsa Company	Group	Necsa Company	Group	Necsa Company	Group	Necsa Company	Group	Necsa Company	Group	Necsa Company	Group	Necsa Company
	Forecast 2019/20	Forecast 2019/20	Budget 2020/21	Budget 2020/21	Plan 2021/22	Plan 2021/22	Plan 2022/23	Plan 2022/23	Plan 2023/24	Plan 2023/24	Plan 2024/25	Plan 2024/25	Plan 2029/30	Plan 2029/30
	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Revenue														
Sale of goods and services	1 165 681	400 534	2 109 152	539 915	2 451 261	557 638	2 709 077	572 476	2 980 264	606 123	3 117 356	634 005	3 903 416	793 873
Government grants	652 854	652 854	784 059	784 059	821 166	821 166	855 719	855 719	893 612	893 612	934 718	934 718	1 170 413	1 170 413
Other grants	102 226	102 226	41 383	41 383	49 604	49 604	49 064	49 064	44 939	44 939	47 006	47 006	58 859	58 859
Other income	88 977	56 168	100 621	41 741	97 500	42 929	105 252	45 271	114 520	47 867	119 788	50 069	149 993	62 694
Revenue - Impact areas			86 026	86 026	226 982	201 264	311 166	260 975	325 515	216 730	967 530	272 339	2 631 562	416 184
Total Income	2 009 738	1 211 782	3 121 241	1 493 124	3 646 514	1 672 601	4 030 278	1 783 505	4 358 850	1 809 271	5 186 399	1 938 137	7 914 243	2 502 022
Operating expenses														
Personnel expenses	1 114 627	776 497	1 355 928	914 952	1 411 820	929 574	1 473 246	951 503	1 601 761	1 034 548	1 675 442	1 082 137	2 097 915	1 355 005
Personnel related expenses	16 048	8 233	35 081	15 400	36 403	15 775	38 416	16 552	40 959	17 162	42 843	17 951	53 646	22 478
Other Expenses	1 057 856	490 991	1 822 289	715 832	1 935 174	637 234	2 121 978	662 527	2 269 012	669 204	2 826 170	699 987	3 538 805	876 493
Dividends	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Expenditure - proposed decrease			(80 000)	(72 000)	(80 000)	(72 000)	(80 000)	(72 000)	(80 000)	(72 000)	(80 000)	(72 000)	(80 000)	(72 000)
Expenditure - Impact areas			23 610	23 610	91 731	91 731	108 801	108 045	122 938	81 867	548 771	91 433	1 364 636	109 759
Total expenditure	2 188 531	1 275 721	3 156 907	1 597 794	3 395 129	1 602 314	3 662 442	1 666 627	3 954 670	1 730 781	4 560 443	1 819 509	6 408 048	2 291 735
Profit before taxation	(178 793)	(63 939)	(35 666)	(104 669)	251 385	70 286	367 836	116 878	404 179	78 491	625 956	118 628	1 506 195	210 287
Taxation	18 844	-	(25 694)	-	(46 026)	-	(56 584)	-	(71 236)	-	(74 513)	-	(93 302)	-
Nett operating Surplus / (Deficit)	(159 949)	(63 939)	(61 360)	(104 669)	205 359	70 286	311 252	116 878	332 943	78 491	551 443	118 628	1 412 893	210 287

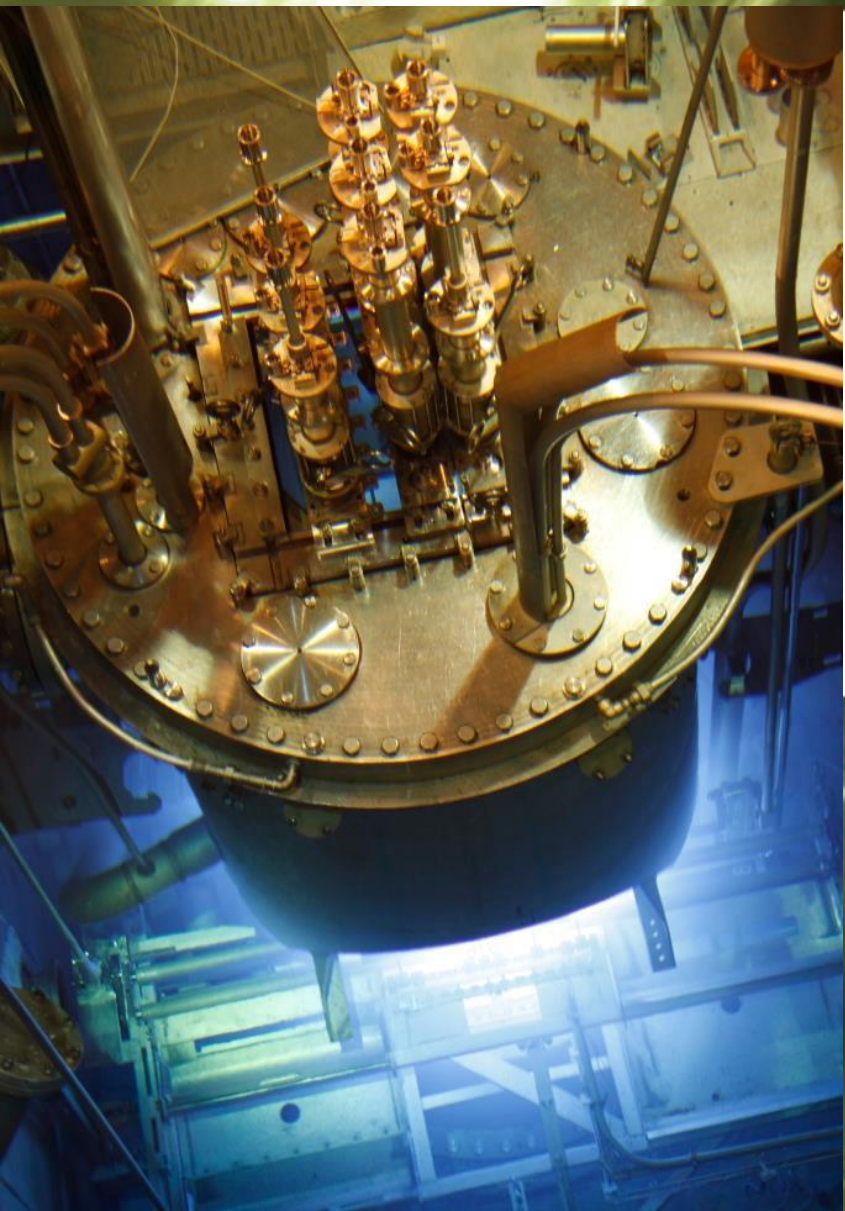
Surplus/(Deficit) before impact areas and expenditure decrease (159 949) (63 939) (203 777) (239 086) (9 892) (111 246) 28 887 (108 052) 50 366 (128 373)

The R61m budget loss reflected in the previous Table for 2021FY budget is a significant improvement from the 2020FY budget loss of R203m for the group (and R237m budget loss for Necsa Company). It should also be noted that in the 2020FY the R63.9m projected loss at year-end (for Necsa Company), against a R239m budget loss, was achieved mainly through savings and austerity measures in 2020FY, which are expected to be carried over in the 2021FY, albeit with difficulty.

CURRENT STATUS

CURRENT STATUS

1. Necsa Board approved Necsa Group Strategy at the end of April 2020.
2. Necsa finalising revised Group Corporate Plan for the period 2020/21 – 2022/23.
3. DMRE Minister approved Ketlaphela project at the beginning of May 2020.
4. NTP is on a path for sustainability.
5. Projected COVID 19 impact on Necsa Group is currently estimated at about R150m (estimate was in April 2020).
6. Necsa Board and Management are looking forward to implementing the Necsa Group Strategy to ensure turnaround and long-term financial sustainability of Necsa.



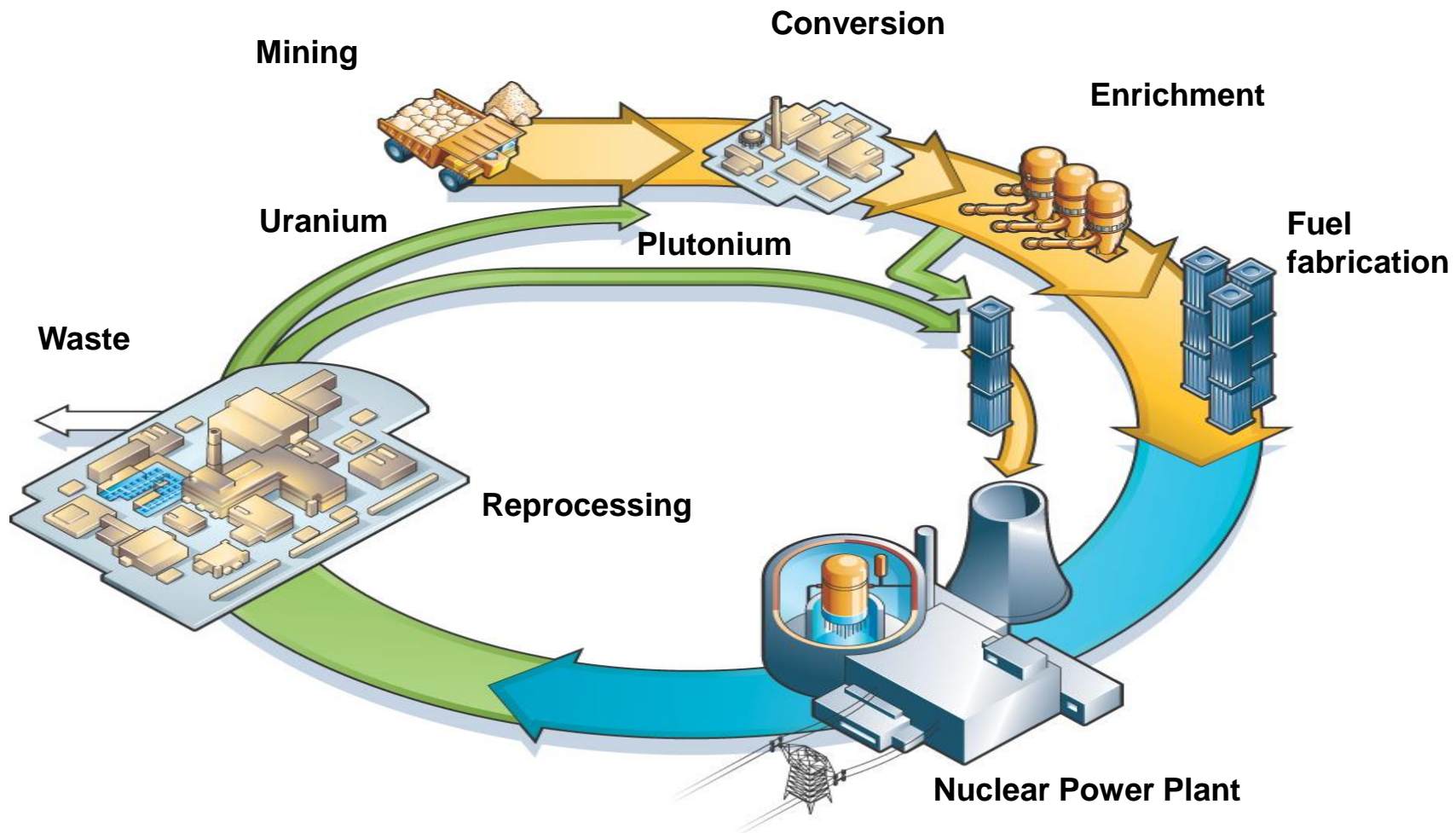
QUESTIONS?

BACK-UP SLIDES

- **NECSA Mandate** →
- **NECSA Group Operational Objectives** →
- **NECSA Group Research & Technology Development (R&TD) Objectives** →
- **Alignment with Government's Priorities** →
- **Strategic Group Risks** →

NECSA MANDATE

THE NUCLEAR FUEL CYCLE



- ❑ To undertake and promote **research and development** in the field of nuclear energy and radiation sciences and technology and to make these generally available.
- ❑ To **process** source material, special nuclear material and restricted material and to **reprocess** and **enrich** source material and nuclear material.
- ❑ To co-operate with any person or institution in matters falling within these functions.

- ❑ **Also:** Execute **institutional responsibilities** on behalf of **government**, e.g. operation and utilisation of SAFARI-1, decommissioning and waste management, international obligations.

NECSA GROUP OPERATIONAL OBJECTIVES

NECSA GROUP OPERATIONAL OBJECTIVES

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Cell 19	Continued safe, sustainable and efficient operation with, on average, up to 3 runs per week	HMI and supporting systems upgraded and industrial IT network implemented along with continued safe, sustainable and efficient operation with, on average, up to 3 runs per week	Cell 19 usage to be phased out due to cell 11 & 20 being upgraded to the next generation production technology

NECSA GROUP OPERATIONAL OBJECTIVES

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Cell 20	Continued safe, sustainable and efficient operation with, on average, up to 5.5 runs per week.	HMI and supporting systems upgraded and industrial IT network implemented along with continued safe, sustainable and efficient operation with, on average, up to 6 runs per week	Cell 11 & 20 to be upgraded to new, possibly alternate, production technologies

NECSA GROUP OPERATIONAL OBJECTIVES

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Cell 11	Recommencement of cell 11 replacement project	Completion of cell replacement project, hot commissioning and commencement of routine commercial production.	Cell 11 & 20 to be upgraded to new, possibly alternate, production technologies

NECSA GROUP OPERATIONAL OBJECTIVES

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Cell 2; Cell 3 and Cell 6	Successful completion of the hot commissioning runs for the uranium residue facility and commencement of routine operation.	Routine operation of the uranium residue facility and Necsa Thabana pipe store facility. Reduction in inventory of older uranium residue containers.	Completion of a Necsa uranium recovery facility and commencement of transfer of uranium residue containers to uranium recovery facility

Short-term: Finalization of the design of the transfer flask and the Necsa Thabana pipe store modification to receive the welded LTS containers.

NECSA GROUP OPERATIONAL OBJECTIVES (CONT.)

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Lu-177	Successful cGMP audit by SAHPRA of the P2100 Lu-177n.c.a. production facility.	Continued safe, sustainable and efficient production of Lu-177 with significant contributions to NTP's bottom line.	Upgraded facility based on technology advancements and increased capacity

NECSA GROUP OPERATIONAL OBJECTIVES (CONT.)

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Radiopharmaceutical plant	Complete short term actions as contained in action plan relating to 2019 SAHPRA cGMP audit	Design and implement appropriate solutions to address longer term cGMP shortcomings as projected in the Radiopharmaceutical Strategy.	Continued safe, sustainable and efficient production of existing and new radiopharmaceuticals

Medium term: Commence with introduction of new radiopharmaceutical products.

NECSA GROUP OPERATIONAL OBJECTIVES (CONT.)

Operations Plan

Operating facility	Short term (12 Months)	Medium term (5 Years)	Long term (10 Years)
Safari-1	Plant Health assessment Phase1 and Phase 2 completed and approved by NNR	Continuation of Ageing Management projects and Assessments of all other SSCs.	Reassessment of Plants Health and Plant life beyond 2030
MPR	Completed and approved Feasibility study	Completed Business case and Funding approval obtained. All Engineering and Construction Work.	Handover, Commissioning and Operation

NECSA GROUP OPERATIONAL OBJECTIVES (CONT.)

Operations Plan

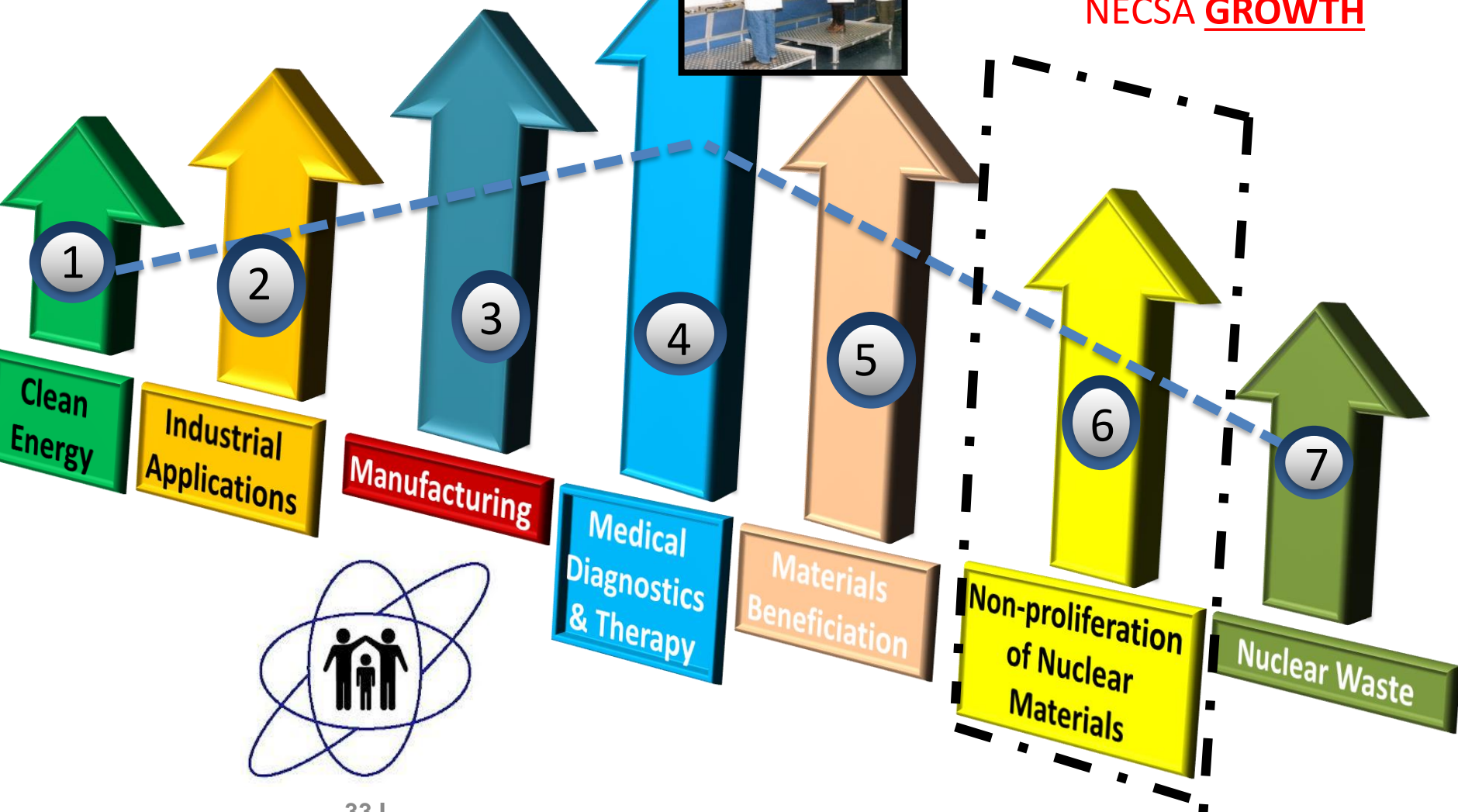
Hydrofluoric Acid Plant	4089 tons per annum	4709 per annum	35000 per annum
Fluorine Plant	84 per annum	600 per annum	5000 per annum
Surface Fluorination Plant	6051 runs per annum	0 runs per annum ¹	0 runs per annum

NECSA GROUP RESEARCH AND TECHNOLOGY DEVELOPMENT (R&TD) OBJECTIVES

Necsa Impact Areas



IMPACT AREAS FOR
NECSA GROWTH



R&TD Projects Plan (Product commercialization)

Impact area	12 month period	5 year period	10 year period
Medical Diagnostics and Therapy		<ul style="list-style-type: none"> • Re-188 SCT • Ga-68 PSMA • Tritium • Tb-161 	<ul style="list-style-type: none"> • Xofigo • Pt-195m Cisplatin • Tc-99m ECDG
Nuclear waste	<ul style="list-style-type: none"> • Plasma Technology Medical Waste 	<ul style="list-style-type: none"> • Plasma Technology Municipality Solid Waste 	
Materials Benefici-ation		<ul style="list-style-type: none"> • Zircon doped Pigments • Spheroidisation for Additive Manufacturing (3-D printing) 	<ul style="list-style-type: none"> • NF_3

NECSA GROUP R&TD OBJECTIVES

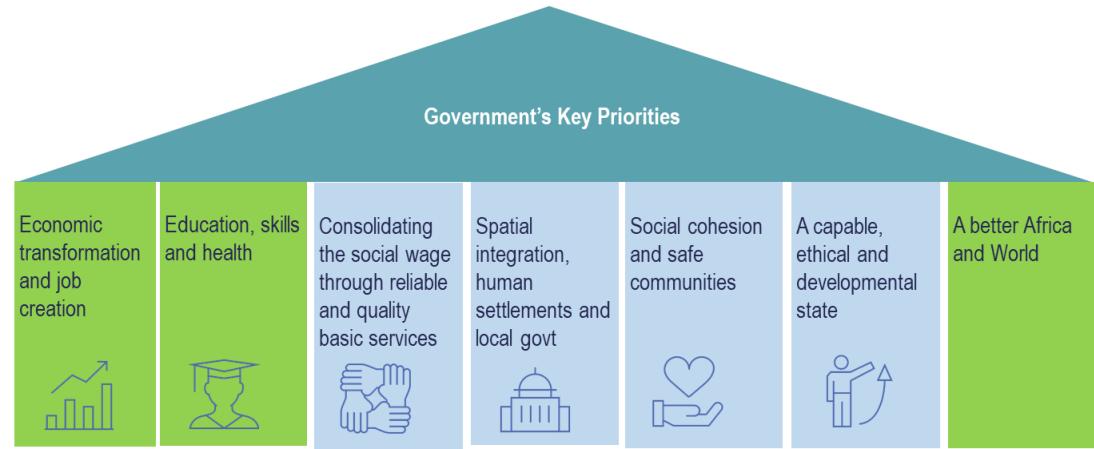
R&TD Projects Plan (Product commercialization)

Impact area	12 month period	5 year period	10 year period
Clean Energy	<ul style="list-style-type: none">RRASP (Radiation & Reactor Analysis Services & Products)	<ul style="list-style-type: none">LiPF₆	

ALIGNMENT WITH GOVERNMENT PRIORITIES

ALIGNMENT WITH GOVERNMENT PRIORITIES

1) Economic transformation and job creation: Pelchem targets to achieve a BBBEE level 2 by 2022 financial year through driving transformation of its major suppliers and investing more into training and development as well as increasing gender representation.



Ketlaphela will create an estimated 730 direct jobs and 2190 indirect jobs by 2025. Pelchem through execution of Thuthukani targets to create 300 direct jobs and 2000 indirect jobs by 2024 financial year.

2) Education, skills and health: Pelchem has partnered with Services SETA to create first of a kind Fluorochemicals Centre of Excellence (FCOE) and will invest R14m in the next 5 years to develop a 100 people talent pipeline specifically for Fluorochemical industry requirement. The supply of nuclear medicine through NTP contributes towards the medical sector locally and abroad.

ALIGNMENT WITH GOVERNMENT PRIORITIES

- 3) Necsa through its Nuclear Learning Academy (NLA) provides artisan training and contributes towards addressing the shortfall of artisans in the country through this facility which is also one of the few trade test centres in the country. As a source of employment of high-end skills, Necsa (as is the case with the nuclear industry in general) also provides training for specialized and well sought skills globally. This is also reflected in the number of South African nuclear engineers who are working overseas in countries like the US, UK, Holland, UAE etc. The latter is using many SA engineers in the project by the South Koreans (KEPCO) to build their nuclear power plants in the UAE.
- 4) **A better Africa and World:** Pelchem manufactures products are critical for the industries of Petrochemical, Stainless Steel, Mining, Medical, Polymers, Electronics, Cosmetics and the future Nuclear Fuel Cycle. Ketlaphela will implement state objective of achieving 90-90-10 target for HIV/AIDs and contributes to security of supply and availability of burden of diseases leading to improved and healthy society in tandem with National Health Insurance (NHI).

- 5) In addition to aforementioned government priorities, the following projects and activities support government policy directly linked to the DMRE, namely:
- ✓ New nuclear build is part of the approved IRP and hence consideration is made for additional 2.5GW nuclear power generation and Koeberg Nuclear Power Station's life extension project;
 - ✓ A new multi-purpose research reactor (MPR) for nuclear research and commercial medical isotopes production is part of our plans;
 - ✓ Advancement of our state owned pharmaceutical company for manufacture of ARVs; and
 - ✓ Leverage of SA's nuclear engineering and manufacturing capabilities to benefit advanced manufacturing in SA (even for other industry sectors) – this will help deepen localization and industrialization in the country

STRATEGIC GROUP RISKS

STRATEGIC GROUP RISKS

Business Unit / Area	Risk Name / description
HR	Lack of transformation and inability to retain designated groups
R&D	Decrease in DMRE grant to support technology platforms
R&D	Inability to execute RD&I competitively on time, and without risk to staff
R&D	Inadequate funding to maintain and grow the technology development required to improve commercial offerings
Pelchem	Going Concern
	Lack of funding to refurbish production facilities
	Long lead times for governmental approvals

STRATEGIC GROUP RISKS

Business Unit/ Area	Risk Name / description
	Governance – lack of full Board compliments & numerous approval layers / bureaucracy disempowering business
	Feedstock (Security of Supply)
	Delay in Set-Aside to supply of ARV's & Rapid Test Kits
NTP Radioisotopes	Non-adherence and non-compliance to safety and regulatory requirements
	Loss of key customer(s) and/or market share
	Business growth stagnation
Finance	NECSA Group's ability to continue to be sustainable as supported by the liquidity of the organizations
Operations	Security of supply of LEU, LEU fuel and LEU target plates

STRATEGIC GROUP RISKS

Business Unit/Area	Risk Name / description
Commercial strategy	Revenue concentrated to limited products