



NTP Radioisotopes SOC Ltd

A subsidiary of Necsa SOC Ltd

Pelindaba, South Africa



Session 5: Economic Considerations Conversion to LEU based Mo-99 Production

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**National Academies: Opportunities and Approaches for Supplying
Molybdenum-99 and Associated Medical Isotopes to the Global Market
17-19 July 2017; IAEA, Vienna**

Outline

- Broad Principles of Full Cost Recovery
- Cost Basis of Production
- Development Cost Drivers
- Sustainability



Broad Principles of Full Cost Recovery

WE COMMIT, with the aim of jointly promoting an internationally consistent approach to ensuring the long-term secure supply of medical radioisotopes, to implement the HLG-MR principles in a timely and effective manner, and to:

- Take co-ordinated steps, within our countries' powers, to ensure that ^{99}Mo or $^{99\text{m}}\text{Tc}$ producers and, where applicable, generator manufacturers in our countries implement a verifiable process for introducing full-cost recovery at all facilities that are part of the global supply chain for $^{99\text{m}}\text{Tc}$;
- Encourage the necessary actions undertaken by ^{99}Mo processing facilities or $^{99\text{m}}\text{Tc}$ producers in our countries to ensure availability of reserve capacity capable of replacing the largest supplier of irradiated targets in their respective supply chain;
- Take the necessary actions to facilitate the availability of $^{99\text{m}}\text{Tc}$, produced on an economically sustainable basis, as outlined in the HLG-MR principles;
- Encourage all countries involved in any aspect of the $^{99\text{m}}\text{Tc}$ supply chain, and that are not party to the present Joint Declaration, to take the same approach in a co-ordinated manner;
- Take the necessary actions described above by the end of December 2014 or as soon as technically and contractually feasible thereafter, aware of the need for early action to avoid potential shortages of medical radioisotopes that could arise from 2016;
- Report on an annual basis to the OECD Nuclear Energy Agency (NEA) on the progress made at the national level and support an annual review of the progress made at the international level, both in light of this Joint Declaration.

Cost Basis of Production

Cost Basis of Existing HEU based Production

- Front-end
- Irradiation
- Processing
- Back-end
- Sustainability



Differential Cost due to Conversion to LEU Based Production

Development Cost Drivers

- Target
- Irradiation
- Processing
- Plant
- Regulatory
- Transition



Sustainability

The future of the nuclear medicine industry depends heavily on:

- Full-cost recovery through the entire supply chain
- Realistic ^{99m}Tc pricing
- Aspirant entrants realisation of the actual level of effort for development, industrialisation, validation and regulatory processes
- Realistic time frames from new market entrants

Thank you for your attention

