



PALLAS-Reactor

to guarantee long term supply of medical isotopes from Petten (NL) to global marketw

Opportunities and Approaches for Supplying Molybdenum-99 and Associated Medical Isotopes to Global Markets
Vienna, July 17-18, 2017

Hermen van der Lugt, PALLAS Director

High Flux Reactor plays important role

Importance of the High Flux Reactor (HFR) in Petten

Supplier of medical isotopes



- 48 million nuclear procedures globally
- 25-30% of Mo-99 from HFR

Role in nuclear infrastructure



- National cluster – with Covra, Urenco, TU Delft, EPZ
- European network – with OECD-NEA, JRC, other European reactors

Part of regional cluster



- Laboratories
- Waste management facilities
- ECN
- Curium
- Euratom JRC-IET



High Flux Reactor reaches end of life

A brief history of HFR



3

Medical community asking for secure supply

Demand for PALLAS-reactor from medical community

A screenshot of a news article from NOS (Dutch public broadcaster). The headline reads "Physicians demand decision on medical isotopes". Below the headline is a small image of the reactor building. At the bottom of the snippet is a video frame showing a woman speaking, with a red banner that says "nucleair geneeskundige" and some Dutch text.

A snippet of a newspaper article with the headline "PALLAS needed for isotopes". The article includes a photograph of two people in white protective suits working in a laboratory or industrial setting. The text of the article is partially visible but mostly illegible.

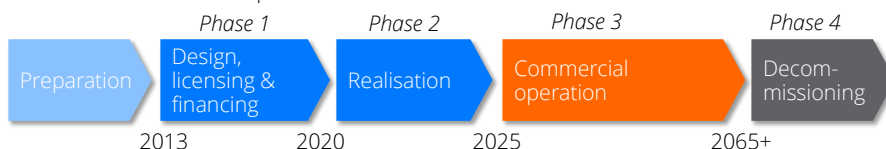


4

The PALLAS assignments till 2024

Assignment for 2014-2024: designing, licensing & financing

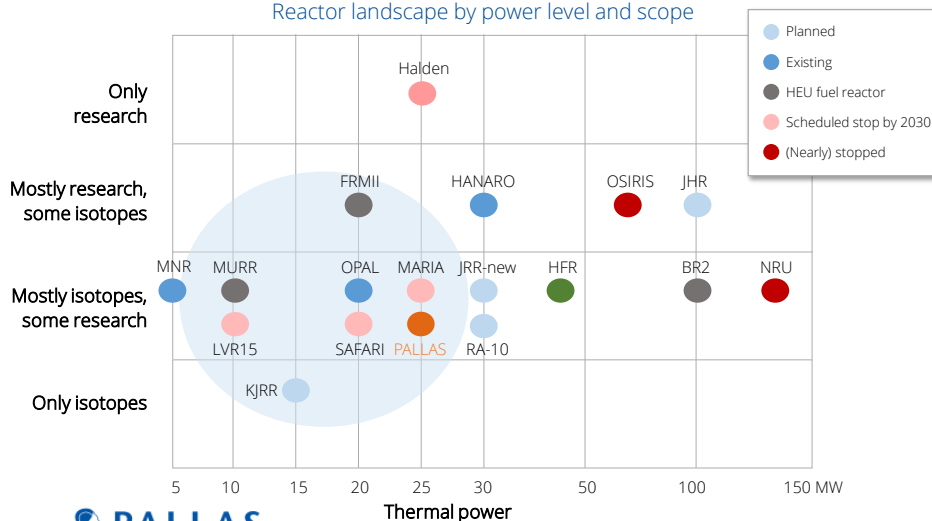
- PALLAS is a separate legal entity, independent from HFR
- Founded by the Department of Economic Affairs and the Province of North Holland.
- Funded by government loans for Phase 1, repay during phase 2
- With the assignment to:
 - **Design** and **license** the PALLAS-reactor replacing the HFR and
 - Develop a **business case** and secure **private financing** for realisation and commercial operation of the PALLAS-reactor



5

PALLAS-reactor will focus on isotopes

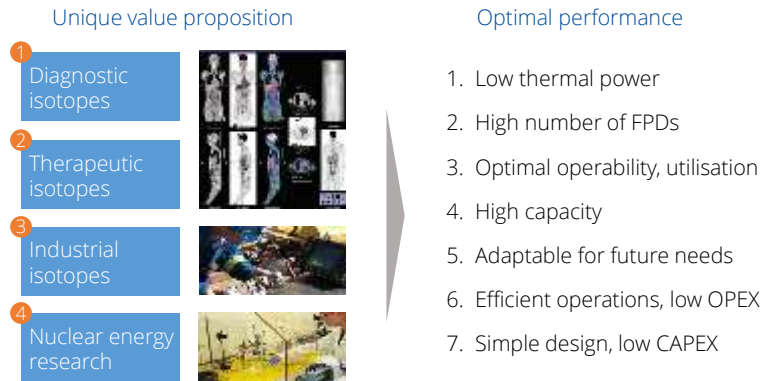
Reactor landscape by power level and scope



6

Commercial focus requires lean reactor

Alignment between reactor scope and value proposition



7

PALLAS-reactor status update

- PALLAS is close to selecting the Designer of the Nuclear Island
 - 2 years tender procedure, including reviews of pre-conceptual designs
 - Three intense dialogue rounds with three prequalified consortia
 - Consortia ready to re-tender in August 2017
 - Contract award expected October 2017
 - Innovative contract structure that enables bankability of the design/construction
- PALLAS has contracted the Designer of the Off-Plot-Scope
 - Covering all non-nuclear facilities and buildings
- PALLAS will submit the first of two Strategic Environmental Assessment studies
 - Related to changing the local Zoning Plan
- PALLAS has completed the majority of the site characterisation studies
 - Now preparing local site for construction phase
- PALLAS has full agreement with the nuclear regulator on several steps towards nuclear construction and nuclear operation licence.



8

Summary

PALLAS will realise a state-of-the-art, safe and commercial production facility for (medical) radioisotopes by

1. Professional and capable project organisation,
2. Solid and promising business case, for private financing,
3. Engineering towards safe and business oriented design drivers,
4. Unique and solid licensing approach.

PALLAS will provide continuity to the international market on current HFR operation beyond 2024.

PALLAS needs global compliancy to OECD NEA Full Cost Recovery Principles in order to establish international level playing field for investors.



9



Thank you
for your attention!

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<http://www.pallasreactor.com/?lang=en>

