



# Infrastructure for Nuclear Power Plants (NPPs) in Israel

Dr. Ilan Yaar

Manager Material Science Research  
Chief Scientist Office

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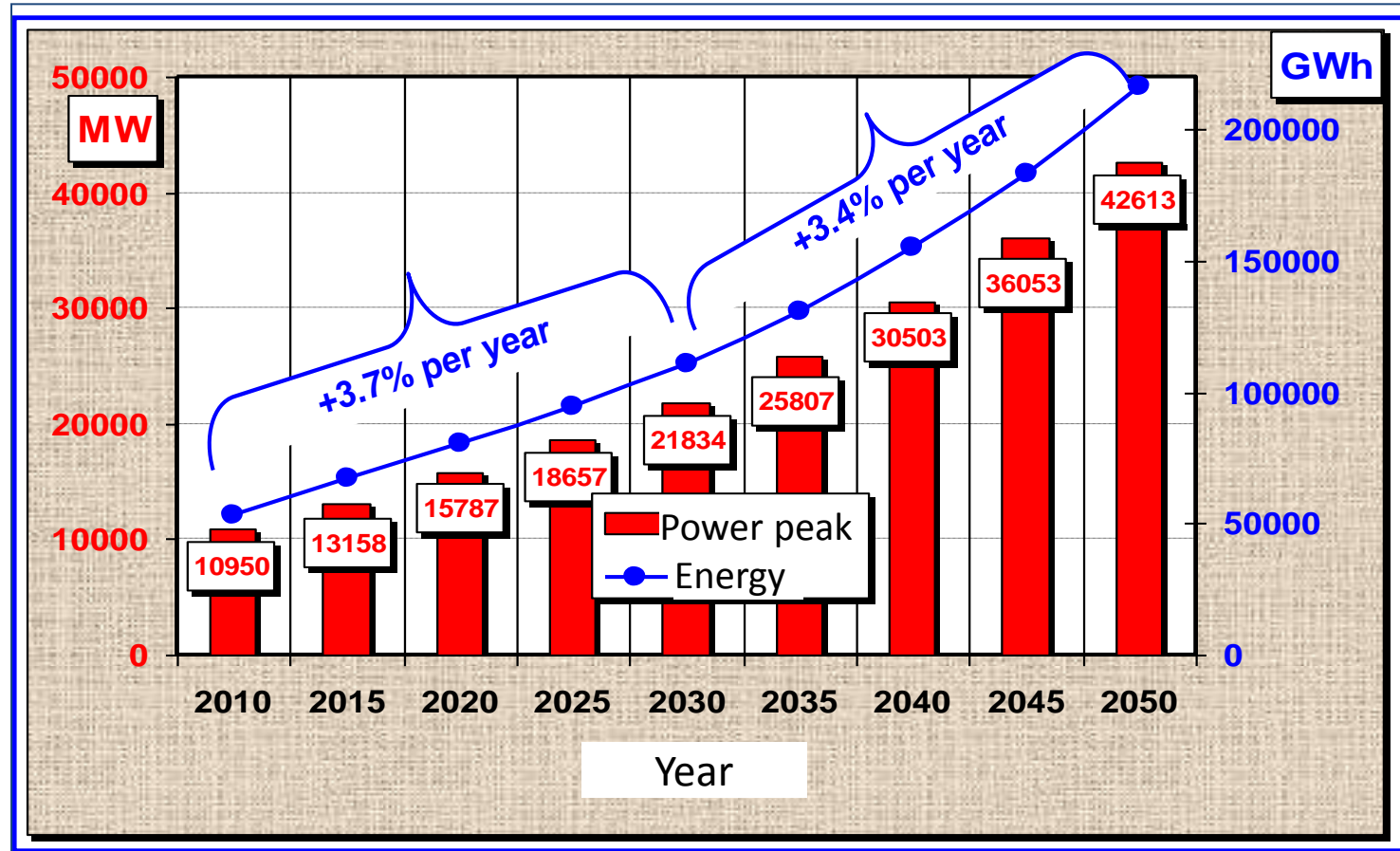


# The Ministry vision

- Provide sustainable supply of all needs of energy, water and natural resources to the residents of Israel, regularly and in a case of emergency.
- All these, while complying with the highest environmental standards and in an economically affordable way.



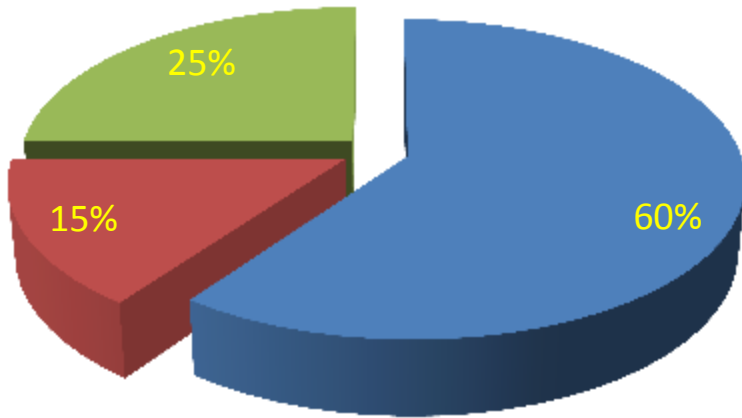
# Prediction of the electricity demand in Israel<sup>1</sup>



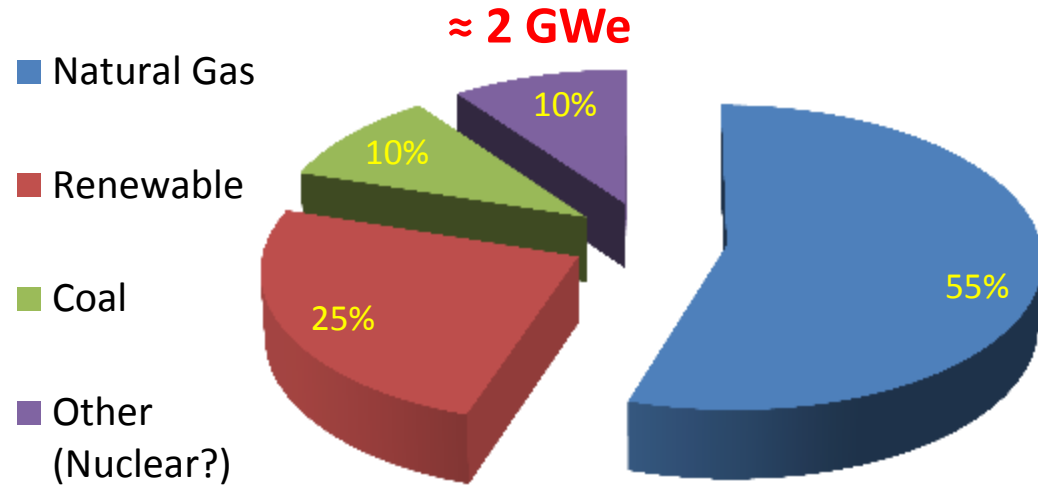
1. Y. Levanon et al., Pre-feasibility study for the construction of the first NPP in Israel, the Ministry of National Infrastructures, Energy and Water Resources (2013).



# Prediction of the power production distribution in Israel in 2030<sup>2</sup>



**Basic design**

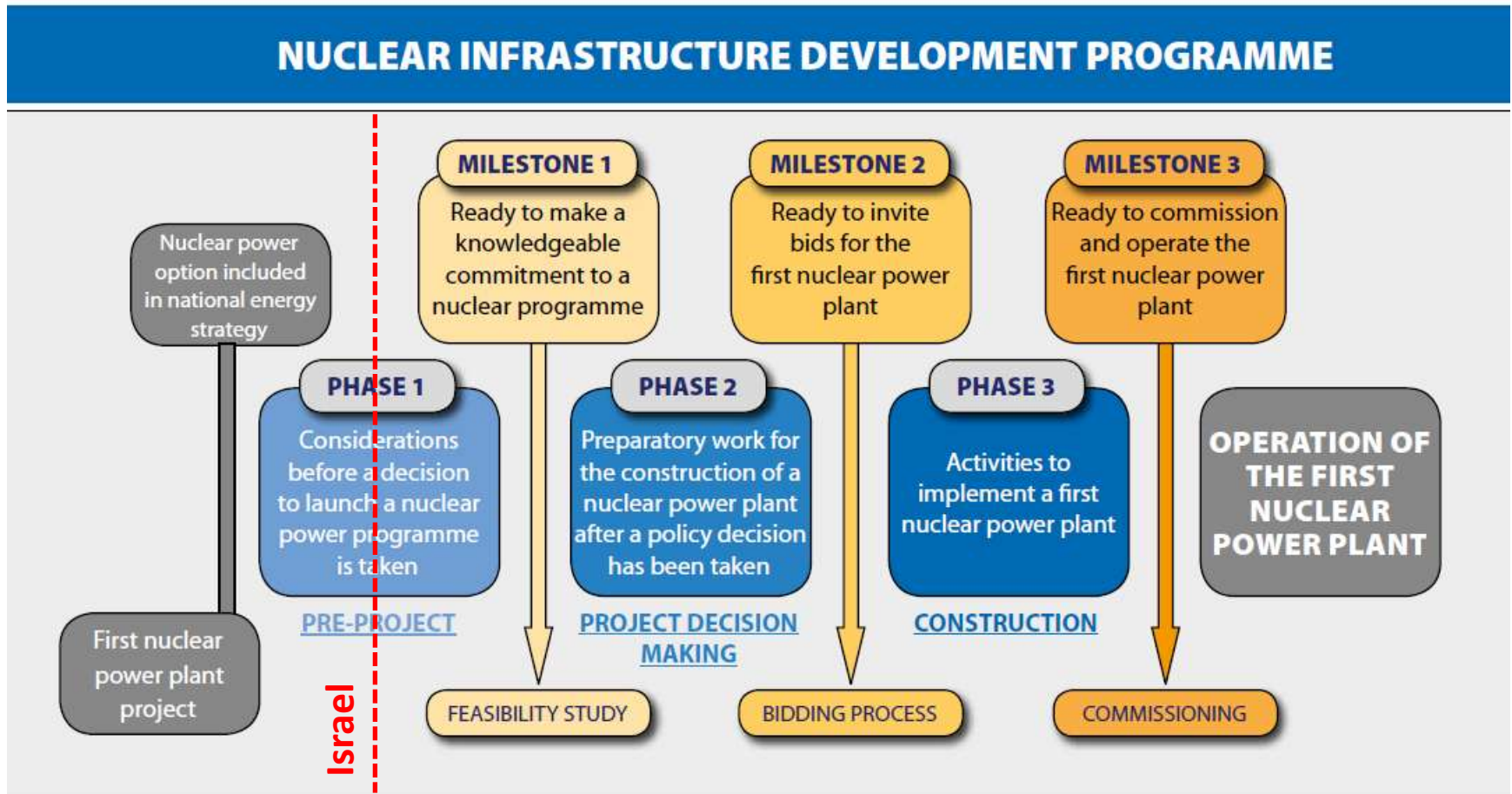


**Preferred design**

2. Ministry of Energy and Water Resources and TAHAL Group, Master plan for energy economy in Israel, 147420-T13-307 (Dec 2013)



# The IAEA framework for a first NPP<sup>3</sup>



3. IAEA Services for MEMBER STATES, Developing Infrastructure for New Nuclear Power Programs, IAEA-11-2407, Vienna, Austria (Sep. 2011)



# Application of INPRO Infrastructure methodology<sup>4</sup> in Israel

- A country considering whether to acquire its first NPP have to identify, early in its planning, the steps needed to establish the required infrastructure.
- The INPRO Infrastructure methodology is used in order to identify these requirements and gaps that have to be addressed in planning for a first NPP.

4. IAEA, Guidance for the Application of an Assessment Methodology for Innovative Nuclear Energy Systems, INPRO Manual – Infrastructure, Volume 3 of the Final Report of Phase 1 of INPRO, IAEATECDOC-1575 Rev. 1, Vienna (Nov. 2008)



# Prospects for NPP construction in Israel

- At present, no formal decision to construct a first NPP was taken by the government of Israel.
- However, some preliminary work was initiated by our Ministry in order to allow this project in the future, if such a decision will be taken.



# The Pre-feasibility Study

- The prefeasibility study was initiated two years ago by our Ministry, in cooperation with the Israel Atomic Energy Commission (IAEC) and the Prime Minister's Office.
- The program's main goals were:
  - To determine if there is a need for a NPP in Israel
  - If needed, to analyze the major gaps that might prevent NPPs in Israel in the future.
- The report was submitted (Feb. 2013) and most of its major recommendations have been adopted.





# The way forward

- Continue with the prefeasibility study in order to:
  - Remove or minimize the major gaps on the way to implement NPPs in Israel
  - Establish a **sustainable infrastructure** (experts and research facilities) needed in order to enable the execution of a full feasibility study in the future
  - Locate and allocate siting for a future NPP



# The way forward (continued...)

- The NPP topic was included in the Ministry's 2014 Call for R&D tenders
- Two key projects aimed at attracting new scientists are planned,
  - Nuclear experimental facility
  - Thermo-hydraulic laboratory
- A proposal for a national technical project “**Updating the criteria for NPP siting in Israel**” was accepted as one of the IAEA 2016 technical cooperation projects



# The way forward (continued...)

- Upcoming conferences in Israel dealing with NPPs,
  - Energy & Environment session (Eilat-Eilot, 7-9, Dec. 2014, <http://www.eilatenergy.org/>)
  - International workshop on NPP Siting Criteria (planned for 2015)
  - The 28<sup>th</sup> Conference of the Nuclear Societies in Israel (planned for 2016)



# Thanks

