

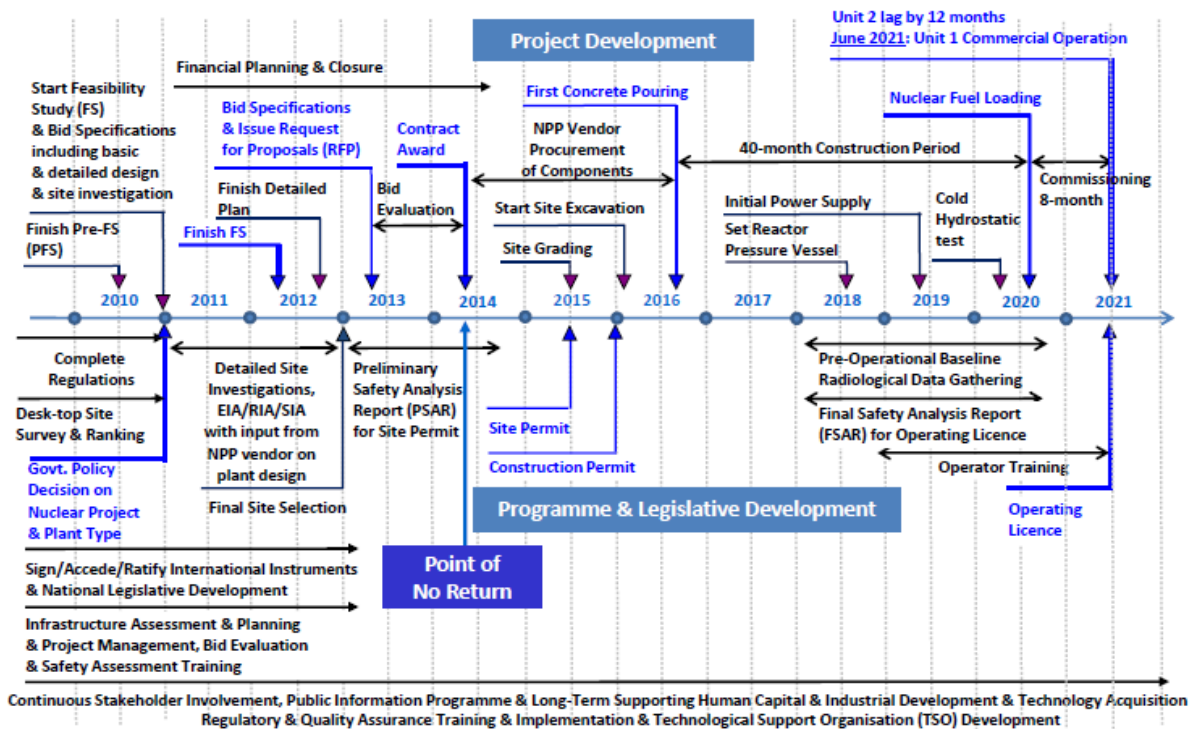
THE PROGRESS OF NUCLEAR POWER PROGRAMME IN MALAYSIA

INPRO Dialogue Forum on Nuclear Energy Innovations: Common User Consideration for Small and Medium-sized Nuclear PR, Vienna, 10 - 14 October 2011

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DETAILED TIMELINE ON NUCLEAR POWER DEPLOYMENT



Source: Nuclear Malaysia; Malaysia NKEA OGE Laboratory 2010.

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Current Activities of MNPC

International Tender for appointment of consultant:

- Regulatory infrastructure study (Study in Progress)
- Site study (awarded)
- Feasibility study (awarded)
 - Technology assessment and selection
 - May be SMR or Bigger
- Nuclear Power Infrastructure Development Program study (awarded)
 - Industrial capability
 - R&D Capability
 - Education & Training capability
 - ETC
- Public acceptance study (awarded)

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KEY CHALLENGES IN NUCLEAR POWER DEPLOYMENT

	Challenge	Potential resolution
Public Acceptance 	<ul style="list-style-type: none"> ▪ Promote public acceptance 	<ul style="list-style-type: none"> ▪ Public opinion survey to identify priority segments & concerns ▪ Awareness projects ▪ Transparency in project implementation
International Governance 	<ul style="list-style-type: none"> ▪ Sign/ratify relevant treaties & conventions 	<ul style="list-style-type: none"> ▪ Fast-track process and make government priority
Regulatory Context 	<ul style="list-style-type: none"> ▪ Put in place detailed regulations 	<ul style="list-style-type: none"> ▪ Align on international best practices ▪ Top-down mandate to accelerate process ▪ Engage foreign experts to assess site & construction permit applications
Nuclear Plant Site Acquisition 	<ul style="list-style-type: none"> ▪ Acquire approval for plant sites ▪ Obtain public support in locality 	<ul style="list-style-type: none"> ▪ Public information programme ▪ Option for localities to bid to host nuclear plants as in Japan & Republic of Korea
Construction Timeline 	<ul style="list-style-type: none"> ▪ Require best-in-class timeline from vendors 	<ul style="list-style-type: none"> ▪ Negotiate with vendors based on timeline
Project Financing 	<ul style="list-style-type: none"> ▪ Obtain low-cost financing 	<ul style="list-style-type: none"> ▪ Combine low-cost & market financing (e.g. sovereign-guaranteed foreign export credits, foreign equity, commercial loans, including Islamic financing)

Source: Nuclear Malaysia; Malaysia NKEA OGE Laboratory 2010.

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3rd ENERGY FORUM: The Energy Sector
Powering Malaysia's Economic Transformation
Programme, 12 July 2011, Kuala Lumpur



Is Nuclear Power a Suitable Energy Supply Alternative (& on-going Activities by MNPC)

Tuesday, 12 July 2011

Government Decision (1)

26 June 2009:
Government
agreed to

- consider nuclear energy as one of the options for electricity generation, post 2020 particularly in Peninsular Malaysia
- set up Nuclear Power Development Steering Committee (JPPKN) and three (3) Working Committees
- allocate RM25 million for a period of 3 years (2010 – 2012) to implement activities under JPPKN

ETP Report (1)



EPP 11: Deploying Nuclear Energy for Power Generation

Rationale

Malaysia is exploring the option of deploying nuclear energy in order to meet future demand and diversify the energy mix for Peninsular Malaysia. A Nuclear Power Development Steering Committee, headed by the Ministry of Energy, Green Technology and Water, was set up in June 2009 to plan and coordinate the preparatory efforts towards deploying nuclear energy for electricity generation. The committee has been tasked to conduct various studies towards preparing a Nuclear Power Infrastructure Development Plan (NPIDP), which is targeted to be ready by 2013. Prior to conducting these necessary studies, a nuclear power pre-feasibility study and initial site selection study has already been undertaken.

Actions

The Steering Committee is studying the possibility of delivering a twin-unit nuclear power plant with a total capacity of 2 gigawatts, with the first unit in operation by 2021. The plan under development lays out a development timeline of 11 to 12 years from pre-project to commissioning. The plan presents a positive case for nuclear energy in Malaysia (*Exhibit 6-17*). Firstly, if Malaysia developed nuclear energy, it would be cost-competitive, supplying the cheapest source of energy. Secondly, nuclear power is a cleaner energy than coal and gas (0 grams of carbon dioxide equivalent per kilowatt hour vs approximately 800 and 400 grams respectively).

ETP Report (2)



Funding

Building the twin unit nuclear plant is expected to require a RM21.3 billion investment up to 2020.

Enablers

In order to ensure prompt delivery, the project will be launched without delay and four critical path items must be addressed with highest priority. Firstly, there must be public acceptance of the project. Secondly, Malaysia must ratify the relevant international treaties. Thirdly, the Government must ensure that the correct regulatory framework is put in place. Finally, approvals for plan sites including from local populace must be obtained.

Impact

Construction of the nuclear power plants will have a temporary GNI impact in the construction sector, with GNI contribution of RM0.2 billion from the creation of 2,600 jobs. The jobs will include roles covering plant operation and maintenance, waste management and licensing and regulation. Once operational (post 2020), the two 1-gigawatt nuclear power plants will generate GNI amounting to RM1.8 billion per year from the electricity generated.



Insights on nuclear power expenditures

David Durham
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HITACHI

March 29, 2012

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Status of global nuclear new build



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Hundreds of new plants needed by 2040 to maintain nuclear generation share worldwide

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