

REGULATORY FRAMEWORK ON ENVIRONMENTAL IMPACT ASSESSMENT OF NPP IN INDONESIA

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ENVIRONMENT IMPACT



Health effect

NPP



Air quality



Water quality



Socio-economic

- Impact assessments are carried out to assess the consequences of the individual projects [by **Environmental Impact Assessment**] or of the policies and programs [**by Strategic Environmental Assessment**]
- International Association for Impact Assessment (IAIA) defines an **Environmental Impact Assessment** as "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made."
- **Environmental Impact Assessment (EIA)** is a tool used to identify the environmental, social and economic impacts of a project prior to decision-making

- Act 23, year 1997 on Environmental Management mandates AMDAL (Environmental Impact Assessment) to be conducted before project or activities begin.
- Government Regulation No. 27 year 1999 on the requirements for EIA prior to decision making before a project/activity is performed
- Strategic EIA is performed before a policy, plan or program is executed.
 - Act No. 32 2009 on Environmental Protection and Management
 - Ministry of Environment Regulation No. 9 year 2001
 - Government Regulation No. 46 year 2016 on conducting Strategic EIA
 - Ministry of Environment Regulation No. 69 year 2017
- Ministry of Environment Regulation No. 17 year 2001 regulates activities requiring EIA, including for nuclear power generation *juncto* Ministry of Environment Decision No. 11 year 2006 on Businesses and Activities Requiring EIA

REGULATORY FRAMEWORK ON EIA



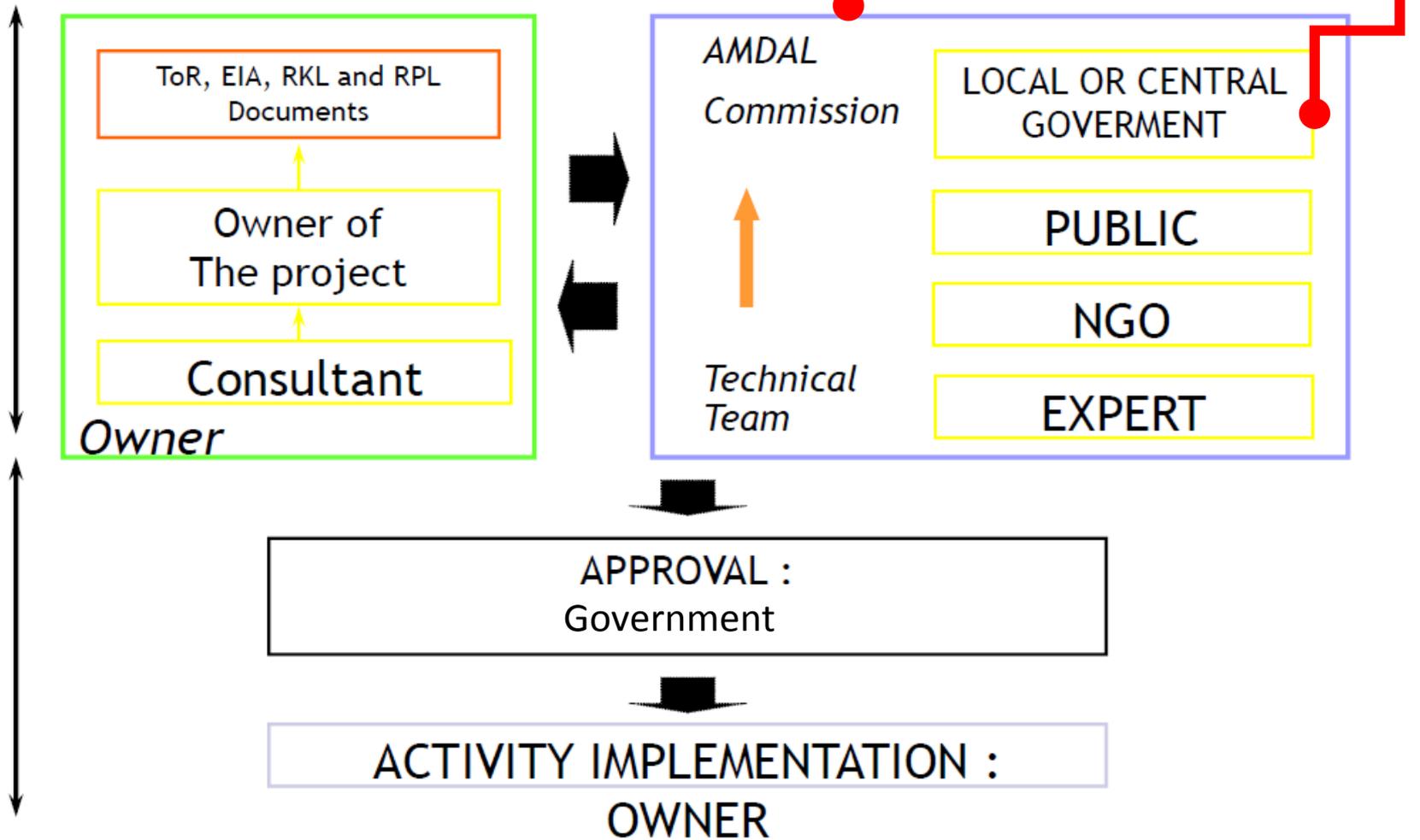
- BAPETEN Chairman Regulation No. 3 year 2014 on Nuclear EIA
 - regulates trans boundary significant impact(s)
 - Covers site, construction, operation, decommissioning stages
- Presidential Decision No. 81 year 1993 on the Ratification of Convention on Early Notification of a Nuclear Accident
- AMDAL process requires participation from public or its representatives so that the public is:
 - Aware on the development in the area
 - Acknowledge environmental changes, including its cost and benefit
 - Aware of their rights and obligations regarding the environment
- Act 10/1997 clearly states that nuclear activities should take into account safety, security and peace, workers' health, and surrounding community and **environment**.

EIA STAKEHOLDERS



MINISTRY OF ENVIRONMENT

BAPETEN



EIA REPORTING AND EVALUATION



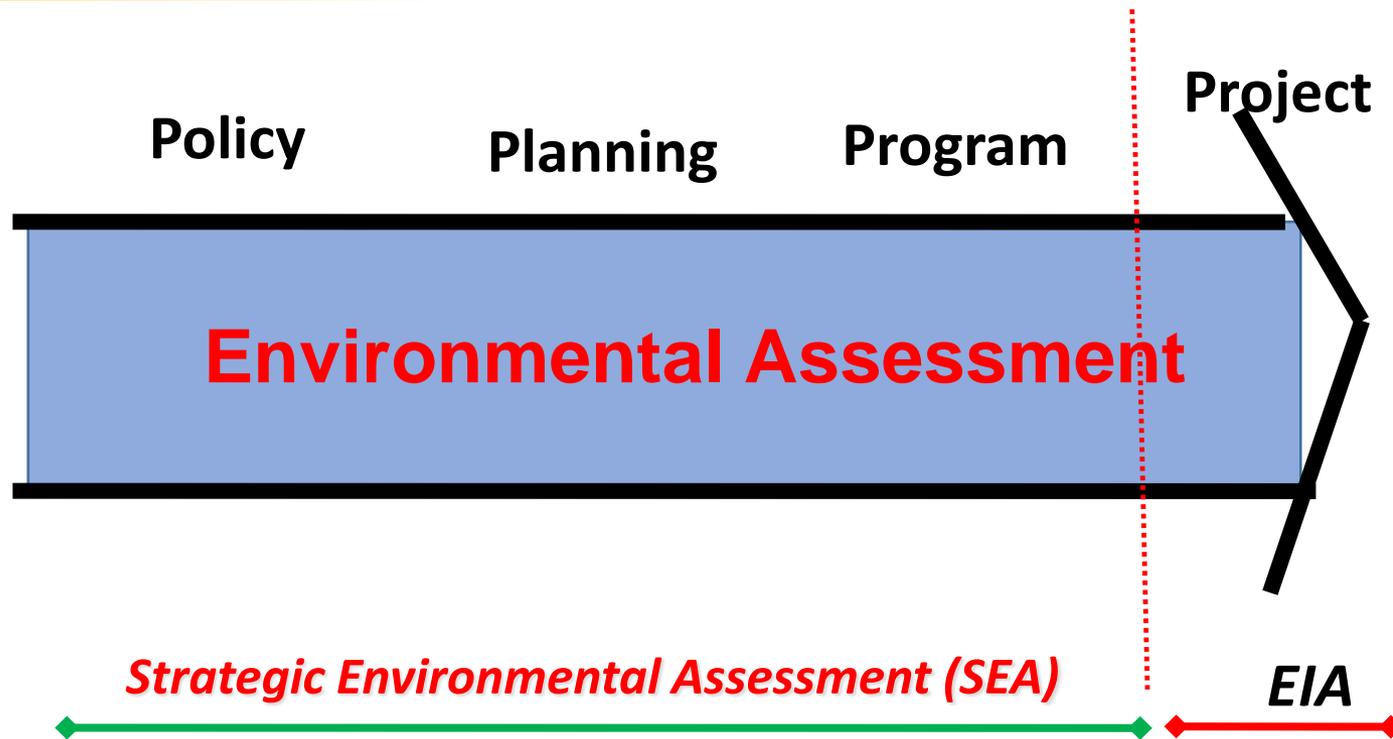
- Act 23, year 1997 on Main Environmental Management
- Act 23, year 1997 on Environmental Management
- Government Regulation No. 27 year 1999 on EIA requirements
- Ministry of Environment Regulation No. 17 year 2001 *juncto* Ministry of Environment Decision No. 11 year 2006 on Businesses and Activities Requiring EIA
- Act No. 24 Year 2007 on National Disaster Countermeasure

- BAPETEN Chairman Regulation No. 3 year 2014 on Nuclear EIA
- Presidential Decision No. 81 year 1993 on the Ratification of Convention on Early Notification of a Nuclear Accident

- **BAPETEN Charmain Regulation No. 4, 2013** on Radiation and Safety Protection in the Use of Nuclear Energy
 - Dose limitation value for workers, interns and public.
 - Average effective dose/year:
 - worker – 20 mSv
 - Interns – 6 mSv
 - Public – 1 mSv
- **Ministry of Environment regulation No. 51 year 2004** on Sea Water Quality Standard:
 - Change is possible up to $< 2^{\circ}\text{C}$ from natural temperature
 - Change is possible up to $< 0,2$ pH unit
 - Change is possible up to $< 5\%$ average salinity

- The critical population occurred towards SSE at 6 km from the site of West Bangka site: maximum annual dose of 1.26 3.11 $\mu\text{Sv}/\text{year}$ for 6 x 1000 MWe of NPP
- The critical population occurred towards North at 4 km from the site 1.71 $\mu\text{Sv}/\text{year}$ for 4x1000 MWe of NPP

STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)



- SEA is a systematic process for evaluating the environmental consequences of proposed policy, plan, or program initiatives in order to ensure they are fully included and appropriately addressed at the earliest appropriate stage of decision-making on par with economic and social considerations

STRATEGIC ENVIRONMENTAL ASSESSMENT



Type of Impact	Activity	Potential Impact	Preliminary Impact Rating		
			Consequence	Likelihood	Impact
Environmental Impact	Process of construction with heavy equipment	Pollution of air, water, and soil	Moderate Negative	C	Sufficient Negative
	Excessive use of groundwater	Depletion of natural resources	Moderate Negative	C	Sufficient Negative
	Land use and deforestation	Animal migration and ecosystem damage	Moderate Negative	C	Sufficient Negative
Economic aspect	Needs of workers in large numbers	New employment	Moderate Positive	B	High Positive
Social aspect	The use of public facilities	Disturbances in the use of public facilities	Moderate Negative	D	Sufficient Negative

A: Almost certain, B: Likely, C: Occasionally, D: Unlikely

IMPACT FOR OPERATION PHASE



Type of Impact	Activity	Potential Impact	Preliminary Impact Rating		
			Consequence	Likelihood	Impact
Environmental Impact	Produces no greenhouse gas emission	Alternatives to fossil fuel replacement	Moderate Positive	A	High Positive
	Discharge of high temperature water from cooling system	Pollution of the marine environment	Moderate Negative	D	Sufficient Negative
Economic	Very large electricity production	Long-term investment in energy sector	Significant Positive	B	High Positive
	Needs of workers in large numbers	New employment	Moderate Positive	B	High Positive
	Sea water cooling intake process	A narrow fishermen fishing area	Moderate Negative	C	Sufficient Negative
Social	Development of new public facilities	Stimulate the area development	Moderate Positive	B	High Positive
	Migration and increasing population density	Increase of hazard level in vicinity area	Moderate Negative	C	Sufficient Negative

CONCLUSION



- Regulatory framework for nuclear EIA has been established and further synchronization is necessary between the Ministry of Environment, Nuclear Regulatory Agency, and other stakeholders.
- Nuclear Power Plant will have some negative impacts on the environment and sustainable development especially during the construction, operation, decommissioning, and especially if an accident occurs. The significant impacts should be managed and monitored through Environmental Management and Monitoring Plan.
- Strategic Environmental Assessment (SEA) for nuclear power plant development planning in Indonesia is prepared based on strategic issues which include aspects of environmental, economic, and social, with references to the laws and regulations related to SEA (Regulation of the Minister of Environment No. 9 Year 2011) and references from other countries

Thank you

ありがとう ございます





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