

IEA Findings: Thailand Electricity Security Assessment (TESA)

Matthew Wittenstein, Bangkok, January 22



General ESAP Principles for Thailand

- Clarify individual and shared responsibilities for electricity security
- Align accountabilities with functional responsibilities
- Ensure the boundaries of authority to act are clearly specified for all parties, and that the authorities granted are sufficient to meet their responsibilities
- Provide strong incentives for effective co-ordination and information exchange
- Create transparency and objectivity
- Strengthen coverage, accountability and enforcement to help reinforce incentives for providing electricity security, and to improve the credibility of the policy and regulatory framework
- Apply policies and regulations consistently throughout the power system

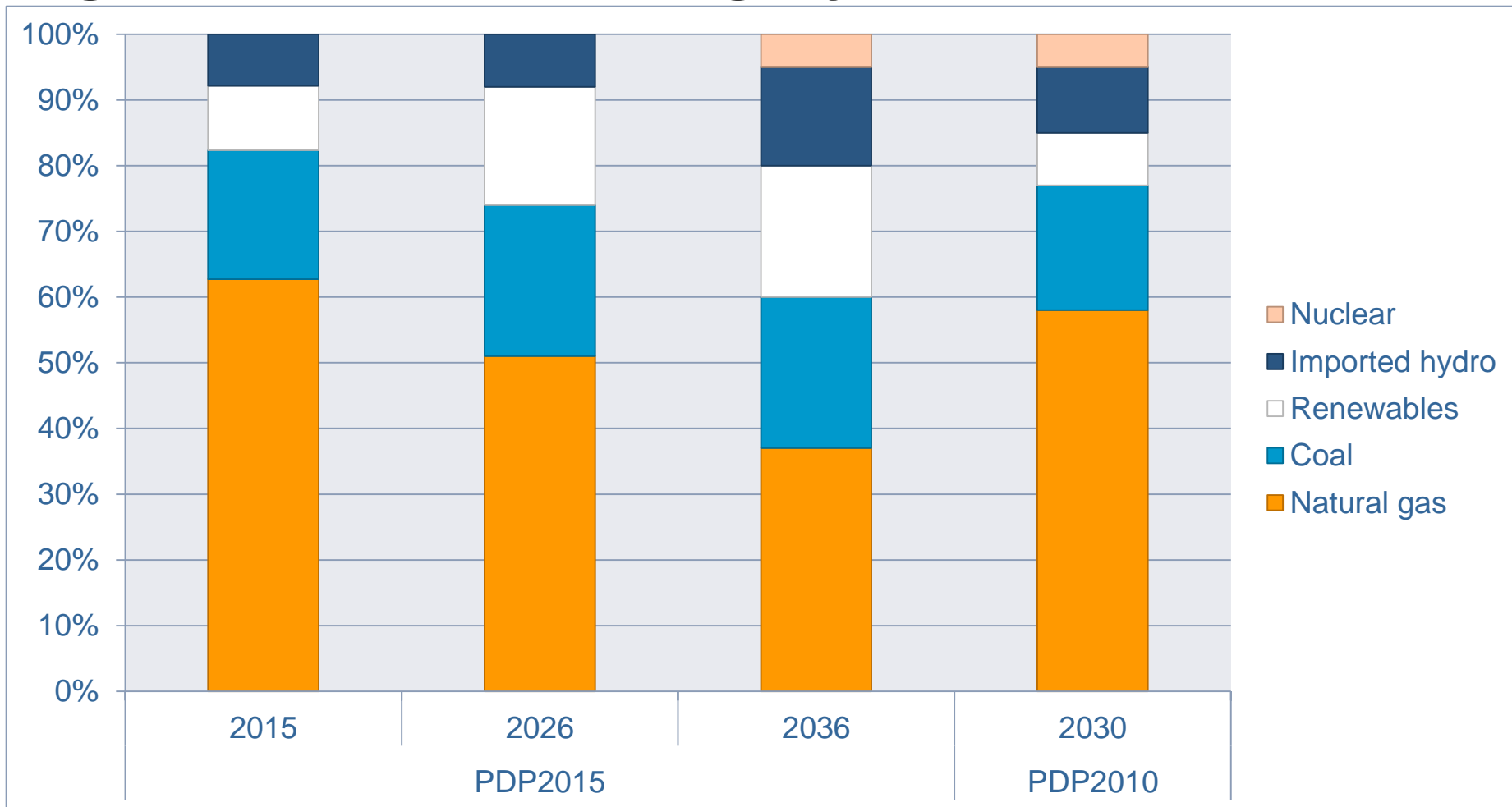
Thailand Key Findings – Policies & Institutions I

- Thailand meets many of the best practices identified by the IEA.
- Thailand’s recent efforts to interlink all energy plans (the Integrated Energy Blueprint) are a key step to ensure secure, clean and affordable electricity.
- The current market and institutional structure aligns with a commitment to electricity security, but a firm sign is needed regarding the future.
- Regardless of the market environment, establishing a “one-stop-shop” for the licensing of new power plants – in particular renewables - would improve the investment environment.
- At a practical level there exist overlaps and potential misalignments of the roles and responsibilities of MoEN, ERC and EGAT.
- Increasing the independence of the ERC would help to improve oversight. ERC is separate from the MoEN but not explicitly declared to be independent. Furthermore, portions of the Act may undermine the possibility of explicit independence.

Thailand Key Findings – Policies & Institutions II

- Meeting all guiding principles of the PDP (security, economy, environment) equally is, at present, impossible. Thailand needs to determine an appropriate balance on the political level.
- The current reserve margin is too deterministic. A probabilistic framework, estimating the likelihood that supply will fail to meet load would provides a more accurate and relevant reserve margin.
- The ownership structure between EGAT and various IPPs could create uncertainty in terms of investment and in terms of operations. Conflicts of interest could undermine the investment environment and day-to-day operations.
- Relative flexibility of PPAs can impact long- and short-term electricity security.

Under PDP15, the power system will see a significant rebalancing by 2036



Thailand Key Findings – Generation I

- **Increasing generation diversity important for increasing electricity security**
- **PDP15 lays out a very specific timetable for new investments – but is there enough flexibility to account for possible construction delays?**
 - **Current high reserve margins minimize these concerns somewhat, but delays now could have long-term impacts**
- **All generation – but, in particular, coal generation – should be built to the highest possible environmental standards**
 - **Including generation built outside of Thailand**
- **Invest in natural gas storage to improve domestic fuel security**

Thailand Key Findings – Generation II

- **Ensure new investments in generation maintain the overall flexibility of the Thai power system**
- **Moving away from unidirectional imports to grid-to-grid connections with neighbors can increase electricity security by taking full advantage of regional resource diversity**
 - **Regional power trade would be facilitated by the development of permanent regional institutions**

Key Recommendations – Policies and Institutions

- Strengthen the capacity of the Ministry of Energy and the Energy Regulatory Commission.
 - In particular, the role of the regulator needs to be enhanced and further safeguarded from political influence. Capacities within the regulator should be developed so that it can properly evaluate the plans and actions of EGAT, MEA and PEA.
- Make a firm decision on whether or not to replace the enhanced single buyer model with a power pool model.
- Assess the potential for any new generator to become a stranded asset keeping mind future climate change obligations and consider environmental impact of imported electricity.
- Increase the ambition for renewable generation in particular solar.
- Start dynamic planning for grid capacity and assess capacity on real generation

Key Recommendations - Generation

- **Prioritize the replacement of inefficient generation**
- **Ensure power sector development plans are consistent with future climate change obligations**
- **Commit to building only the most efficient coal that is economically feasible**
- **Commitments to reduce the environmental impact of new generation should extend to imported power**
- **Power sector as a whole should be developed with an eye toward flexibility**
- **Assess the possibility for any new generation to become a stranded asset**



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