Long-Term Energy Scenarios (LTES) for developing national energy transition plans in Asia.

Webinar series

Peninsular Malaysia Generation Development Plan

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Suruhanjaya Tenaga / Energy Commission Malaysia
9th August 2023
Presentation Outlines

1. Development of scenarios
   • Regulatory overview
   • Planning governance
   • Moving Forward: Integrated System Planning

2. Use of scenarios
   • Purpose of scenario planning
   • Communication of scenario results

3. Scenario capacity building
Regulatory Overview

Minister of Natural Resources, Environment and Climate Change
- For matters relating to the supply of electricity

Ministry of Economy
- For matters relating to the supply of gas through pipelines (natural gas & LPG)

Suruhanjaya Tenaga (Energy Commission)
- A statutory body responsible for regulating the energy sector, specifically the electricity and piped gas supply industries, in Peninsular Malaysia and Sabah.

Electricity Supply and Piped Gas Industries

Electricity Supply Industry Structure in Peninsular Malaysia

- Ministry of Natural Resources, Environment and Climate Change (NRECC)
- Suruhanjaya Tenaga (ST)
- Generators with PPA/SLA
- NEDA Participants
- Interconnections
- Single Buyer
- Grid System Operator
- Oversight Panel Chaired by ST
  - Members:
    - Suruhanjaya Tenaga (ST)
    - Representatives from NRECC
    - Industry experts appointed by ST
- TNB Grid
- Franchised Retailers
- TNB Retail
- Consumer

PPA: Power Purchase Agreement   SLA: Service Level Agreement
NEDA: New Enhanced Dispatch Arrangement   TNB: Tenaga Nasional Berhad
Planning Governance

- **JPPPET has been mandated by the Cabinet** to determine the planning and direction of the country's electricity supply industry.

- **JPPPET membership:**
  1. Secretariat - Ministry of Natural Resources, Environment and Climate Change (NRECC)
  2. Ministry of Finance (MOF)
  3. Ministry of Economy (MOE)
  4. Ministry of Investment, Trade and Industry (MITI)
  5. Ministry of Utilities Sarawak
  6. Economic Planning Unit Sarawak, Sabah
  7. Energy Commission (ST)
  8. Sustainable Energy Development Authority (SEDA)
  9. Tenaga Nasional Berhad (TNB)
  10. Sabah Electricity Sdn. Bhd. (SESB)
  11. Petroliam Nasional Berhad (PETRONAS)

• Demand projection considering emerging trends (e.g., EE, EV, RE)
• System reliability assessment
• Fuels projection
• New capacity requirement
Moving Forward: Integrated System Planning

- **System Development Plan** to be introduced to integrate both the generation and transmission components in the planning process.
- Planning scenarios to reflect future uncertainties involving **decentralization and decarbonization** of demand and supply outlook.

**SYSTEM Development Plan**
- 20-year Pen. M’sia regional demand forecast
- 20-year Pen. M’sia capacity expansion plan (includes capacity, technology & location)

**Planning Scenarios**
- Significant Transformation
- Rapid Shift
- Balanced Transition
- Progressive Outlook

Decentralization

Decarbonization
Use of scenarios

Purpose of scenario planning

Transmission Engineering assessment
- Potential sites review and nodal assessment
- Assess and select additional transmission options
- Power system analysis

Communication of scenario results

- Report publications
- Stakeholder engagements

LT: Long Term    MT: Medium Term    ST: Short Term    PASA: Projected Assessment of System Adequacy
Scenario capacity building

In-house modelling capacity

- Actively engaged in user group meetings with global industry-leading energy modelers

- Participate in technical training with integrated assessment model consultant

Collaboration among agencies/institutions for scenario development
Thank you for your attention

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Webinar series

1. Speakers instructions
2. Template
General instructions 1 / 2

Slides: Max. 6 content slides for a 15-minutes presentation. Please use the template provided in this file starting on slide 4.

Virtual platform: This is an open event that will be held on Zoom. You will receive a link a few days before the session to access the event as a panelist. We kindly ask you to connect 45 minutes before the start of your session.

Language: The sessions will be in English.

Session format: Each session will last 90 minutes, except the first and lasts sessions that will include a 30 minutes opening and closing remarks, respectively. They will consist of 2 country presentations, followed by a discussion and Q&A session, before a brief intervention by one of LTES partner institutions. A polling feature may be added to interact with the audience.
Focus of the session: Governance structures around the development and the use of LTES to plan the energy transition, and institutional efforts to enhance them. The webinar is not meant to focus on displaying quantitative scenario results or energy policies, targets or goals for new energy sector infrastructure. It is recommended to touch upon the 3 following aspects:

**Topic 1: Development of scenarios**
- Governance structure: Are there good practices on developing efficient governance structures for the development of LTES? Who are responsible for developing government scenarios and how is the process coordinated across different institutions in the country?
- Consultative and participatory process to LTES: Are there good practices on designing and implementing participatory process for developing and/or using LTES in the country? How these processes work in the country?
- Boundary of planning scenarios: What efforts are being made to expand the scope of the LTES developed in your country (from an institutional perspective and/or from a methodological or technical perspective)? What is the scope of national LTES? How are the clean and just energy transition features reflected in the LTES.

**Topic 2: Use of scenarios**
- Purpose of the use of the scenario building: In which ways are the LTES used for policy making? What are the main purposes of LTES development in your country? For example, to forecast or backcast, build consensus, raise target ambition, plan infrastructure development, or explore alternatives.
- Communication of scenario results: What approaches have been implemented to communicate the government scenarios? How transparent the scenario assumptions and results have been communicated? For example, annual publication, workshops, online visualisation platforms of scenarios.

**Topic 3: Scenario capacity building**
- Planning capacity in government: What type of scenario planning capacity does the government have and how are they being enhanced? For instance, does government possess inhouse modelling capacity or are these skills rather outsourced? How are the cooperation with external institutions such as consultancy firms, research institutes, development partners in enhancing the scenario-based planning capacity?