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# Discussion for: Towards a coherent policy framework for facilitating electricity transition in Indonesia

By. Achmed Shahram Edianto

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Energy Transition from Coal to Low-Carbon Future

**Discussant: Rika Safrina**  
Energy Modelling and Policy Planning Officer  
ASEAN Centre for Energy

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- The paper assesses the efficacy of Indonesia's existing policy framework to successfully advance the country's electricity transition agenda
- This paper argues that Indonesia's existing policy framework is incapable of providing sufficient guidance to address the challenges impeding technological, systemic and landscape changes required for Indonesia's electricity transition
- A learning-based reflexive process is likely to be more suitable for governing the electricity transition → successful implementation in other countries?

## Contribution

- Providing potential solutions to improve the existing framework
- Addressing the challenges government faces in phasing out coal

### **Indonesia's renewable energy (RE) target:**

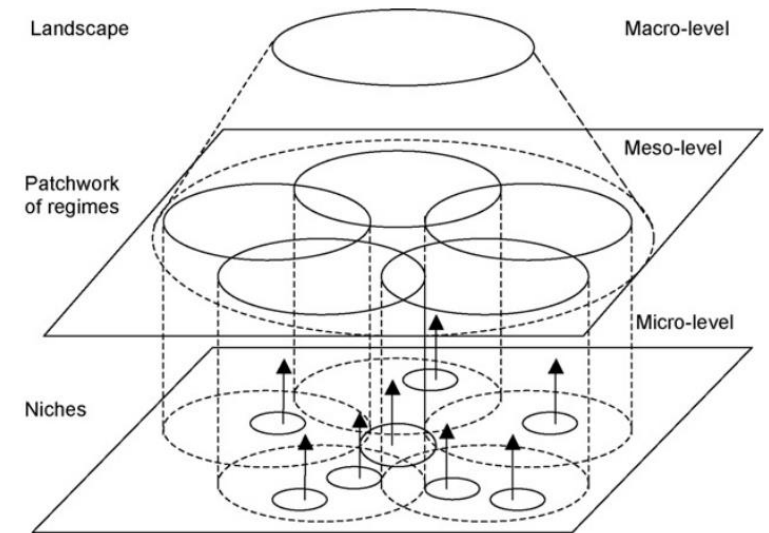
- 23% RE in total primary energy supply (TPES) by 2025
  - 31% RE share in TPES by 2050
- (Source: NEP, 2014)

## Using Multi Level Perspective (MLP) on socio-technical transition

- Niche technologies → a network of new technologies in the development phase
- Electricity system → represents the energy systems and governance
- Socio-economic landscape → external factors that influence transition processes

## Strength

- The dynamic flows of MLP move the transition away from the top-down approach
- Comprehensive review of Indonesia's existing energy policies
- The policy analysis was traced back until 1970, even from 1945



Source: [Genus and Coles, 2008](#)

## Key challenges of Indonesia's electricity transition based on MLP

Niches

### **Need for rapid development of clean electricity infrastructure**

- The investment in electricity transmission networks should be prioritised due to their multiplier effect and meeting long term energy security and sustainability
- Limited public budgetary allocations → carbon pricing

Regimes

### **Unlocking electricity sector from its current fossil-intensive development pathway**

- Excessive supply in the central and limited access in remote areas → rural off-grid renewables
- Governance complexity that offers little guidance to planners and to investors as to what technologies to pursue → the Government is finalizing energy transition roadmap towards carbon neutral; To look at regional and global trends

Landscape

### **Socio-economic adaptation for a clean electricity future**

- The coal-related interests are connected to jobs and local development → reuse of coal-fired power plants (biomass co-firing, geothermal, etc)
- Only 0.01% of total employment directly involved in coal mining activities in 2019 (MEMR, 2022) → how about the total employment involved in coal supply chain?

## Consider to include:

- JETP targets in **bottom-line thinking** (e.g., setting up clear deadlines for peaking and phasing down coal generation):
  - Peaking power sector emissions by 2030 at an absolute value of no more than 290 MtCO<sub>2</sub>eq (down from a 2030 baseline value of 357 MtCO<sub>2</sub>eq)
  - Net zero emissions in the power sector by 2050
  - 34% RE share in power generation by 2030
- Interconnection in **closer international cooperation**
  - ASEAN Power Grid → 500 kV / 600 MW Interconnection Sumatera-Malaysia (2030), Sumatera-Singapore (Source: [RUPTL/PDP 2021-2030](#))
  - Power interconnectivity → one of Indonesia's energy priorities in ASEAN Chairmanship 2023 (Source: [ACE, 2023](#))
- The link between conclusions and MLP theoretical framework

- Different numbers → “...the share of renewable generation remains rather low (about 18%)...” **versus** “... the share of renewable generation only rising slightly, from 12% in 2016, to 13% in 2020...”
- Incomparable indicators → “...the share of renewable **generation** remains rather low (about 18%)...” **versus** “...envisages a 23% **primary energy supply** from renewable energy sources by 2025...”
- To create a timeline graph on key energy policy and regulation documents (e.g., Presidential Decree No.71/2006 → No.4/2010 → KEN → RUEN → RUPTL 2021-2030)
- To convert Rupiah into USD
- “In fact, strong coal lobby has been identified as one of the key impediments to coal phasedown in Indonesia [see, for example, 10,60,65,67]”
- “In 2014, the Indonesian government released the National Energy Policy (Kebijakan Energi Nasional, KEN) that stipulated a structural shift in primary energy mix, to have at least 23% of renewable energy by 2025, while the share of coal would remain at around 30% (2015, n.d.).”
- Some references are not alphabetically ordered
- “**ISER**, 2021. *Electricity surplus in Indonesia, can it be exported?* Jakarta.”



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# Thank You