



University of
Zurich ^{UZH}

Institute of Political Science – Center for Comparative and International Studies



Clustering renewables and grid strengthening to catalyze Just Energy Transition

Axel Michaelowa, axel.michaelowa@pw.uzh.ch / michaelowa@perspectives.cc

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- **The concept of JETP**
- **JETPs’ challenges to mobilize action on the ground: The case of Vietnam**
- **Carbon markets as catalysts for JETPs**
- **Clustering renewable electricity and grid strengthening**
- **Conclusion**



- As plurilateral framework facilitating the transition away from fossil fuels, JETPs coordinate financial and technical support from International Partners Group (IPG) - Canada, Denmark, EU, France, Germany, Italy, Japan, Norway, US. Ongoing JETPs
 - South Africa: USD 8.5 billion pledged, mitigation outcomes of 1-1.5 billion t CO₂e over the next 20 years
 - Indonesia: USD 20 billion pledged, net-zero emissions in the power sector by 2050, focus on the early retirement of coal-fired power plants
 - Vietnam: USD 15.5 billion pledged, aims to bring forward peak emissions of all GHG from 2035 to 2030. Limit coal and increase renewables share in the grid mix to at least 47% by 2030
 - Senegal: USD 2.7 billion pledged, aims to achieve renewables share in the grid mix of up to 40% by 2030



- Very small share of grants (few percent only)
- Lion's share is concessional loans and private finance at market rates from banks that are members of an alliance of financial institutions interested in underwriting low-GHG investments (GFANZ)
 - Host countries fear high debt burden that becomes unsustainable
- Interministerial conflicts
 - Ministries of Environment serving as JETP focal points going for ambitious phase out plans but having no political clout
 - Ministries of Energy that are not interested in phase-out and fear grid instability due to intermittency of renewable electricity
 - Labour ministries that fear job losses in coal mining regions and need for costly retraining, as well as pressure from labour unions



- Socialist country with heavy bureaucracy but very versatile private sector
- Attractive feed in tariff triggered **>15 GW solar power investments** by private sector between 2018 and 2021
- Grid was **overwhelmed** by intermittent power, **severe curtailment** of solar plants, blackouts and public discontent
- Power sector investment plan foresees **no relevant renewables expansion** until 2030 (exception: large-scale offshore wind)
- **Corruption scandals** have led to arrest of important politicians and officials in the energy sector
- **Standoff** between ministries as follows
 - MONRE (environment): weak, wants international reputation for ambition
 - MOIT (energy): strong, against renewables, paralyzed by anti-corruption drive
 - MOF (finance): strong, blocks foreign sovereign borrowing critical for grid strengthening



- Carbon credits can leverage private and concessional capital
 - Precondition: trust of institutions in long term stability of carbon markets
- Revenues from sale of carbon credits are additional revenues that do not lead to burdens for host countries
 - Host country needs to consider need to mobilize greenhouse gas mitigation to cover the double bookkeeping under Article 6 of the Paris Agreement
 - Possibility to keep 50% of the mitigation to cover corresponding adjustment
- Carbon markets can overcome relevant obstacles for JETPs provided credit prices are sufficiently high
- Which activities under JETPs are particularly attractive under international carbon markets?
 - Clusters of renewable electricity, grid strengthening and coal power phase out



- Renewable electricity generation **on its own** would no longer qualify as additional because it is commercially attractive
- However, new renewable electricity generation is **not politically acceptable** as long as the grid is not strengthened
- Grid strengthening is **commercially unattractive** and will not happen
- **Combine renewable** electricity generation with **required grid strengthening**
- At **ITMO prices of 20-50 \$/t CO₂** and a **baseline emissions factor of 800-1200 g CO₂/kWh for coal plants** the following revenues could be generated
 - **1.6 – 6 cent/kWh** renewable electricity produced
 - International literature gives range of **1-3 cent/kWh** as cost for grid strengthening
 - **Carbon market revenue would be sufficient to cover the grid strengthening component**
 - **Remaining challenge: compensation for revenue losses for premature closure of coal power plants**



- JETP concept started with high expectations but “honeymoon period” is over
 - Interesting political economy and interministerial conflicts!
- Uneasiness due to high share of commercial finance and concessional loans
 - Loans generate fear of unsustainable debt burden
- International carbon markets can harness financing without strings attached
- While renewable electricity alone is not additional in most countries and circumstances, in combination with grid strengthening it will generally be additional because there is no alternative financing for grid strengthening
- Develop clusters of activities consisting of renewable electricity generation and the related grid strengthening to ensure reliable grid operation
 - ITMO revenues can cover significant share of grid strengthening costs
 - Second step: coal power plant retirement