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Governing Coal Transition in Japan, China and India: Solutions for Just Transition

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OUTLINE

Background

Climate Change Impact & Response
Low-carbon and 'Just' Society
Just Transition

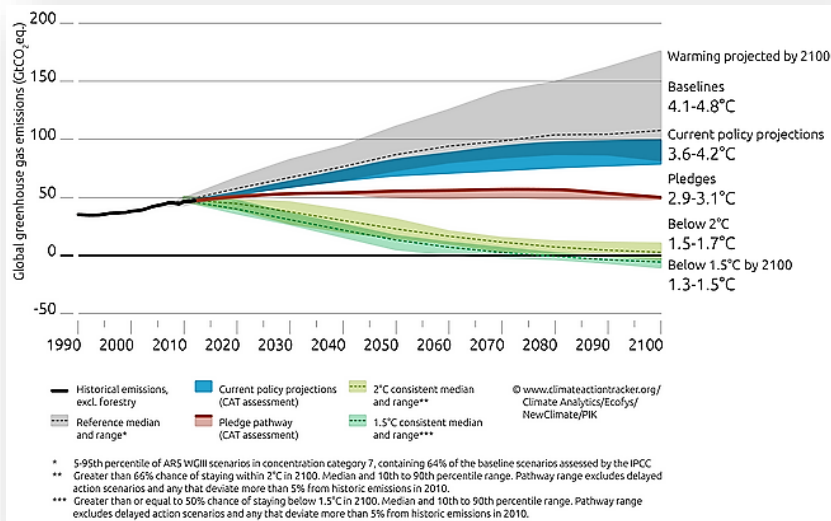
Case

JT towards Decarbonisation of Japan's Power Sector
Coal Transition in China and India
Governing Coal Transition

Discussion

Climate Change Impact & Response

Emission Scenarios and Projected Changes in Temperature



(Source: Climate Action Tracker 2014)

- Required urgent and large-scale shift in the power sector.
- Emphasis on sustainability and inclusivity is growing through the interaction between climate change and the livelihoods of the underprivileged.
- Need policies to achieve multi-benefits that are environmentally sustainable and socially just.

2030 Agenda for Sustainable Development: SDGs



(Source: www.undp.org)

Low-carbon and 'Just' Society

Within environment, climate and energy research communities, transition means abound and each has own perception for the justice:

- Environmental justice aims to treat all citizens equally and to involve them in the process of development and implementation and enforcement of environment related laws, regulations, policies and action plans (Capek, 1993; Walker and Buckeley, 2006);
- Climate justice concerns unequal distribution of the benefits and burdens of climate change from a human rights perspective (Caney, 2014);
- Energy justice refers to the application of human rights across the energy lifecycle (McCauley et al., 2013); Heffron and McCauley, 2017) and emphasizes safe, affordable and sustainable energy for all (McCauley et al., 2016).

Governments, institutions, companies and researchers discuss transitions to low-carbon society with no consideration on 'Just' (Heffron and McCauley, 2018).

G7 Summit in 2018 reaffirmed strong commitment to implement the Paris Agreement through reducing emissions while ensuring a Just Transition and COP24 highlighted the necessity of a Just Transition that enhanced the acceptability of climate policies.

Just Transition

addresses the economic and environmental side effects of energy extraction and consequences decarbonizing energy sources and economies and acknowledges the disproportionate environmental and economic burden place upon fossil fuel communities (Cha, 2019).

- (mal-)Distribution
- (mis-)Recognition
- Participation

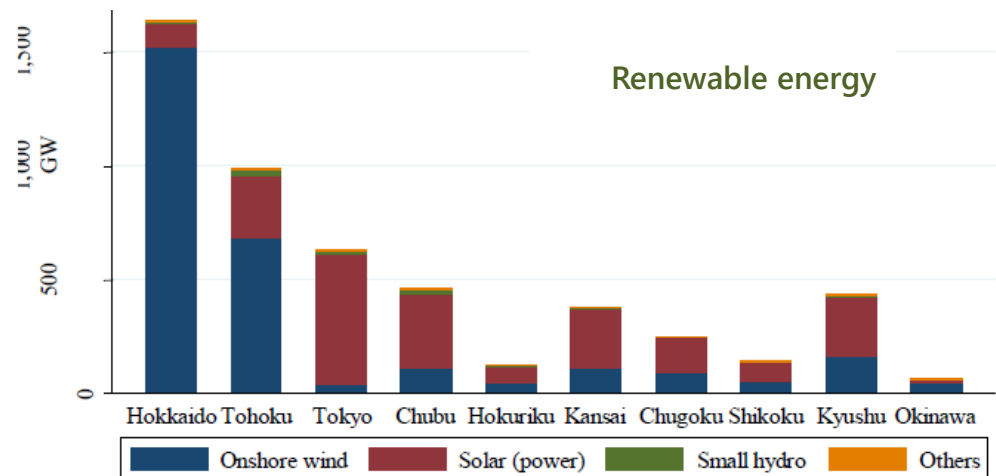
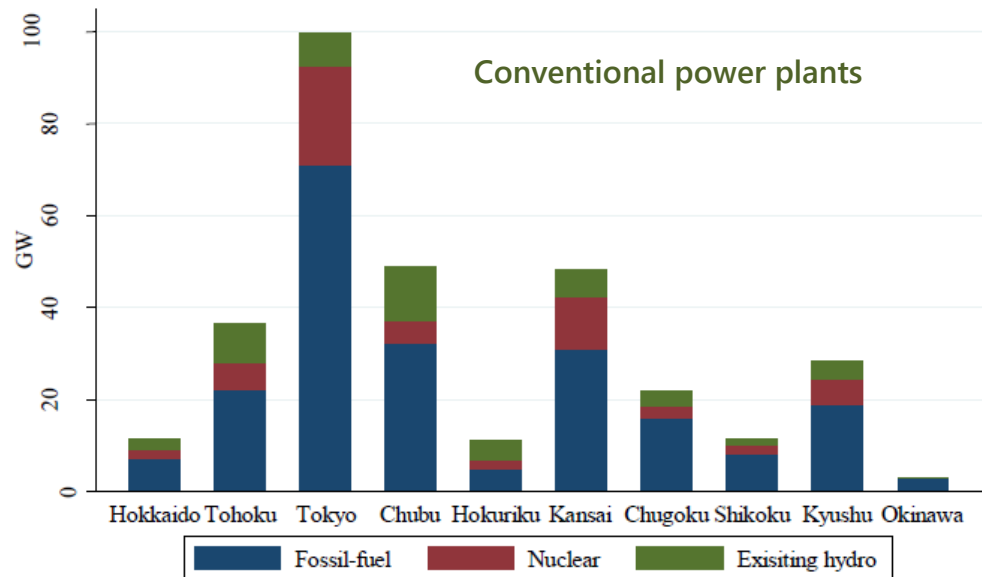
EXAMPLES	(negative) IMPACTS of COAL INDUSTRY	(anticipated) SOLUTIONS
WORKERS	e.g. Health impacts during extraction, processing and distributing./ Low income level./ Low industrial diversification.	e.g. Opportunities of career progress in non-fossil fuel parts of the company or with transferable skills to navigate the labor market.
LOCALS	e.g. Environmental degradation and pollution including poison water supplies, toxins in coal dust etc. / Induced health problem./ Restricted access to land that minimizes harvests and reduce income./ Unequal compensation payments./ Limited employment at the mines or the power plant to the locals./ High proportion of youth unemployment./ Insufficient channel to represent their needs./ Lack of information sharing on negative impacts.	e.g. New sources of revenue and support investments to transform their economies./ Distress local ecological and health impacts of coal industry then demand a transition from coal dependency to a clean energy local economy./ Local-organized energy production and supply based on small-scale renewables.
GOV. OFFICIALS		e.g. Social dialogue and democratic consultation of social partners (trade unions and employers) and other stakeholders (such as communities)./ Training and skills development to support the deployment of new technologies and foster industrial change./ Local economic diversification plans that support decent work and provide community stability in the transition.

Hypothesis: Without adequate policy mechanisms to tackle the challenges, transitioning from coal can have long-term adverse impact on the labour force that depends on the coal mining and associated activities

Just Transition towards Decarbonisation of Japan's Power Sector

- ✓ What is the impact of Renewable Energy based decarbonisation on the employment?
- ✓ What kind of policy measures are needed for a smooth transition to decarbonisation in the power sector?

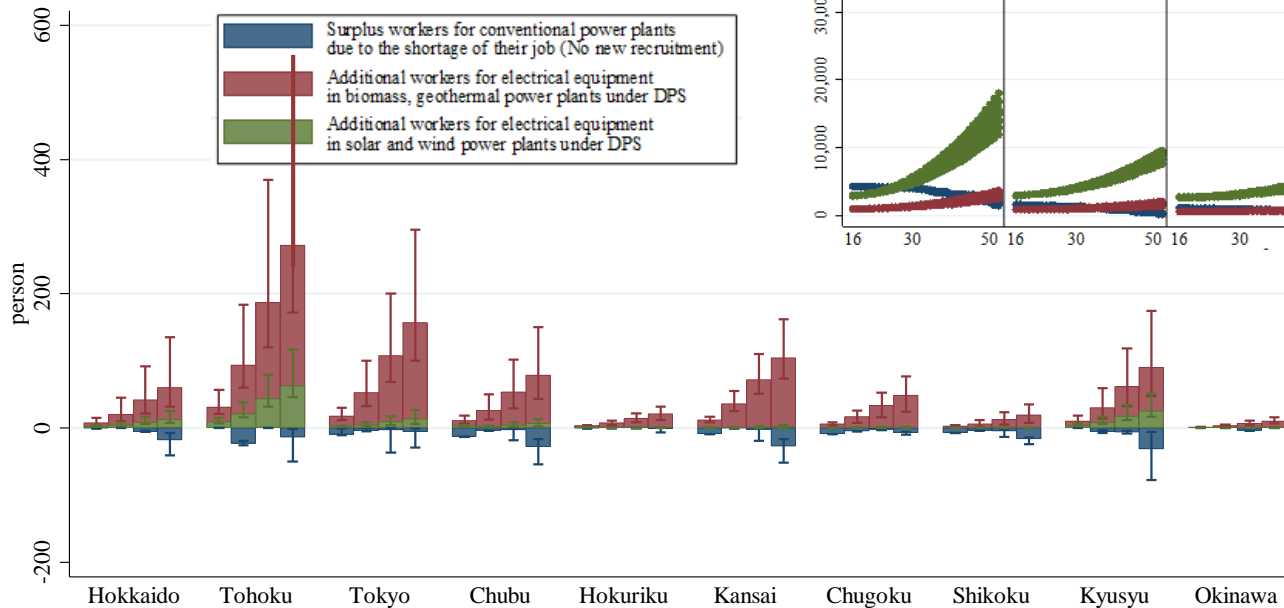
Generation capacity of conventional power plants and potential of renewable energies by the 10 regions



Just Transition towards Decarbonisation of Japan's Power Sector

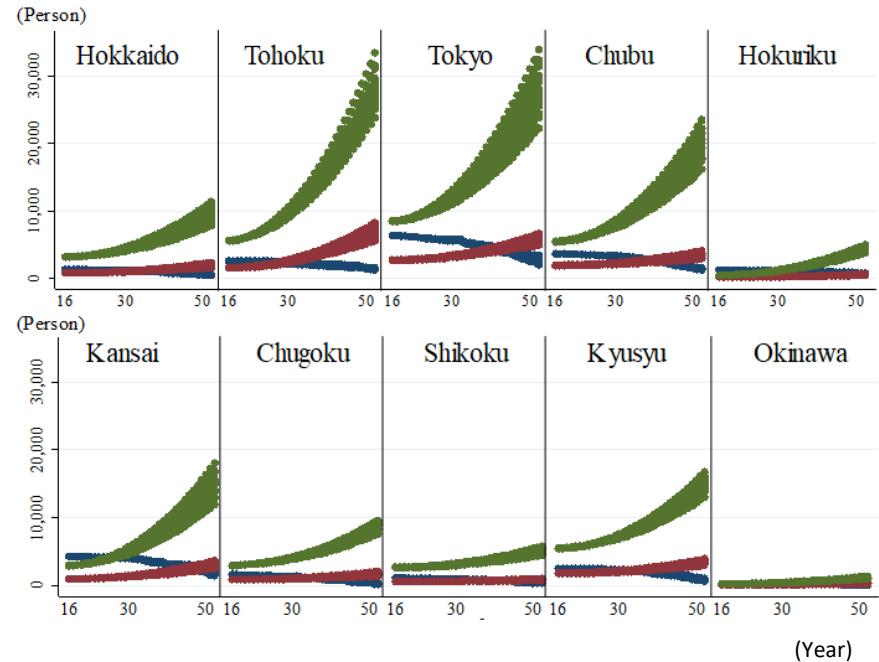
- DPS generates a net positive impact of employment in power sector.
- It provides stable and long-term employment in rural area.
- It requests policy support for job training as well as possible relocation.

Job opportunities in the 10 regions



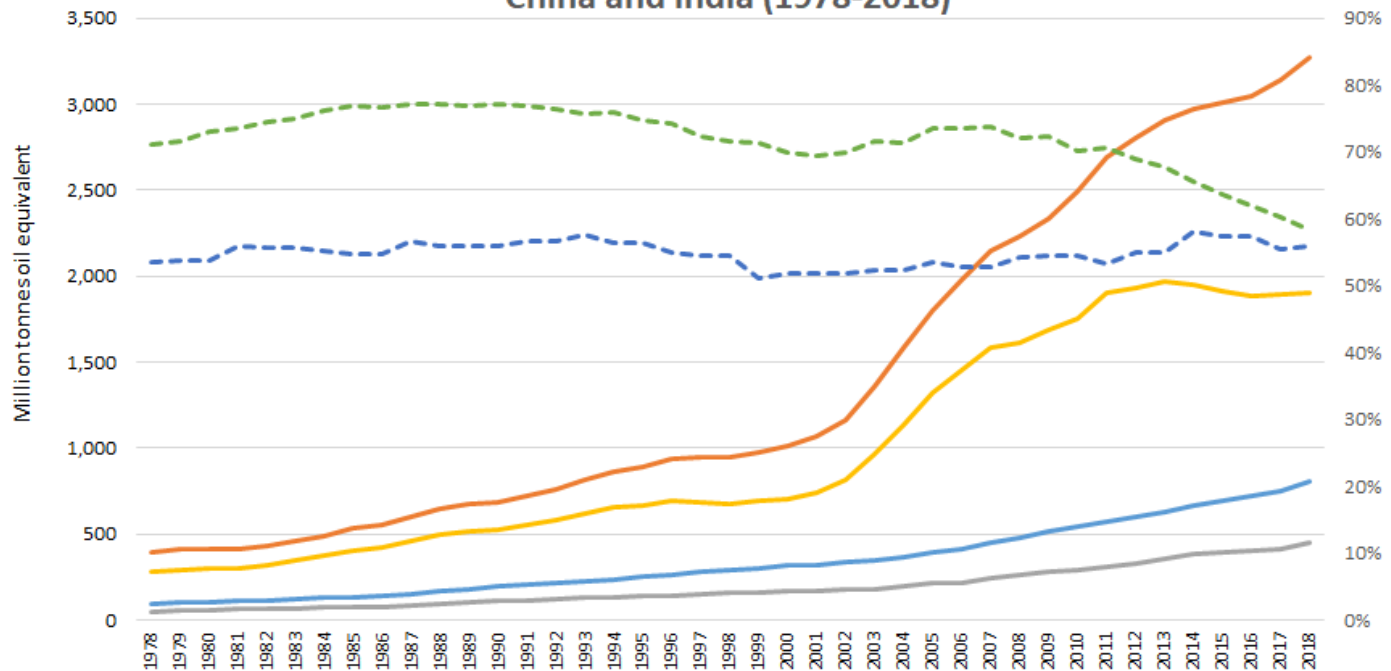
of workers under the DPS scenarios

- Range of number of workers for conventional power plant
- Range of number of workers for electrical equipment of renewable energy facility (EERE)
- Range of number of workers for maintenance activity of renewable energy facility (MARE)



Coal Transition in China and India

Figure 1 Historical Trends in Primary Energy and Coal Consumption in China and India (1978-2018)



— India: Primary Energy Consumption (left axis)

— India: Coal Consumption (left axis)

- - India: Share of Coal in Primary Energy Consumption (right axis)

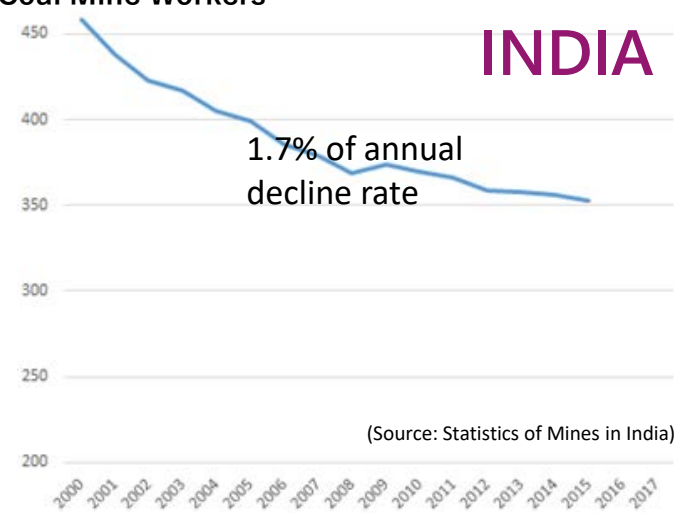
— China: Primary Energy Consumption (left axis)

— China: Coal Consumption (left axis)

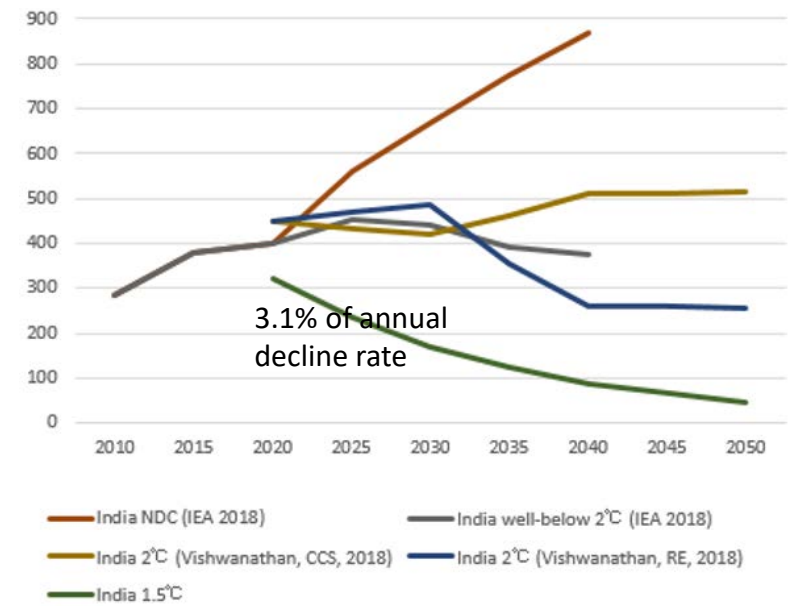
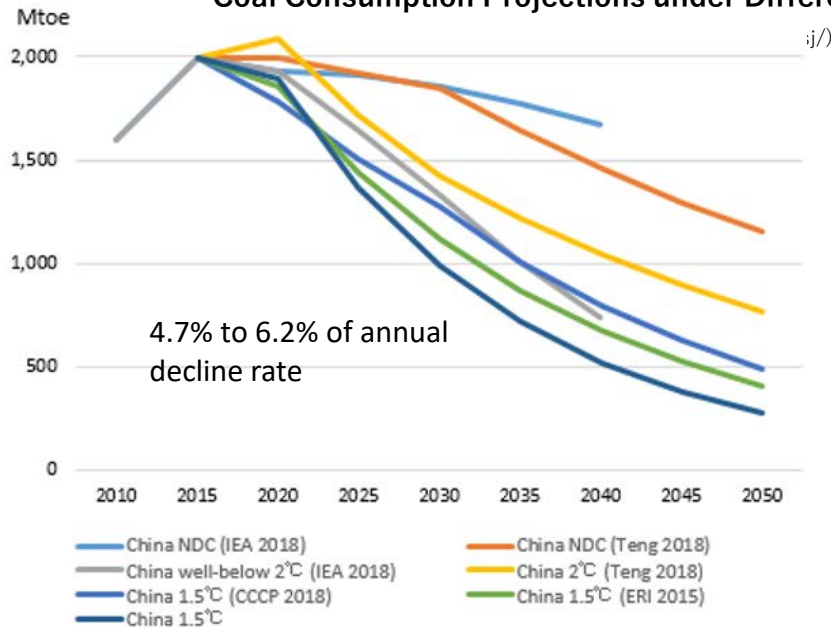
- - China: Share of Coal in Primary Energy Consumption (right axis)

Degree & Scale of Coal Transition

Historical Trend of Number of Coal Mine Workers



Coal Consumption Projections under Different Climate Change Mitigation Scenarios



Governing Coal Transitions

Policy for transitional assistance

(Source: Green 2018; Spencer et al. 2018)

Target \ Type	Backward-looking	Forward-looking
Workers	Early retirement benefits Special payments	Subsidised education/training, relocation assistance
Companies	Compensation for lost corporate assets	Assistance to companies to adapt to new policy/context, e.g. tied grants for technology updating
Regions/ Communities	Compensation for lost tax revenues	Investment in (low-carbon) local-level public investment
CHINA	compensation	Structural adjustment assistance
Workers	Early retirement benefits Compensation, pay-off wages and social insurance for the laid-off workers	Subsidised education/skilling, relocation assistance
Companies	Financial subsidies to the central enterprise groups for the elimination of overcapacity of coal industry	Encouraging coal companies to develop new businesses for industrial structure adjustment and the relocation of diverted employees
Regions/ Communities	Financial subsidies for the elimination of overcapacity of coal industry via provincial governments	Holistic adaptive support Development of the tertiary industries i.e. tourism

INDIA No specific analysis yet taken.

DISCUSSION

- ❑ Formulation of long-term strategies under the Paris Agreement provides opportunities to prepare and take transition assistant in a systematic manner.
- ❑ Governing coal transition should be designed to empower those workers and regions that otherwise would be locked in carbon-intensive systems to find their roles in decarbonised societies.
 - to ensure Just Transition, understanding on who would be affected as well as how and when is essential.
 - new jobs created in low-carbon sectors should provide 'decent' jobs and avoid the reproduction of a singular character of low-skilled factory-type work.
- ❑ Government intervene for Just Transition should be tailored to local contexts and support coalitions among ecological/social movements, labour unions, local communities and energy sector workers with a long term focus and early planning.