Coal Transitions: Research and Dialogue on the Future of Coal

Project Overview Presentation

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1. Why this project?

• Coal makes up 28.1% of global primary energy demand

• A number of major countries are highly dependent on coal

• Addressing climate change and other environmental issues will require a significant transition in the coal sector

• There is increasing recognition that climate policy must involve strategies to get high carbon assets offline
1. Why this project?

• For climate policy to be politically and socially feasible, potential social, political and economic impacts must be managed

• Currently, there is a lack of joined up and comprehensive research on:
  
  • Effective policies to drive and accompany structural coal sector transition
  
  • International market implications of different country transitions

• There is a lack of national and international dialogue between policy-makers, private sector and civil society dialogue on these issues
1. Why this project?

2030 Fossil Fuel Demand in INDC scenario, bridge 2C scenario, and 2C scenario

Source: IDDRI, 2015
2. Who is participating?

<table>
<thead>
<tr>
<th>Project Coordinators</th>
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<tbody>
<tr>
<td>IDDRI</td>
<td>France</td>
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<td>Climate Strategies</td>
<td>UK</td>
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<table>
<thead>
<tr>
<th>Country Teams</th>
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<tr>
<td>Indian Institute of Management Ahmedabad</td>
<td>IIMA</td>
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<tr>
<td>Tsinghua University</td>
<td>China</td>
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<tr>
<td>Australian National University</td>
<td>Australia</td>
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<tr>
<td>University of Cape Town, Energy Research Centre</td>
<td>South Africa</td>
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<tr>
<td>German Institute for Economic Research</td>
<td>Germany</td>
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<tr>
<td>Institute for Structural Research</td>
<td>Poland</td>
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Funded by the KR Foundation

Plus additional country partners:
Melbourne University
Indian Institute of Information Technology
3. What will we do?

• The project consists of 2 interlinked components:
  - Multidisciplinary research at national and international level
  - Stakeholder engagement and dialogue

• The research agenda
  - Quantified national pathways for coal demand, production, trade for Australia, South Africa, India, China, Germany and Poland
  - Quantitative and qualitative national case studies on issues related to coal sector transition
  - A report on lessons learned from previous structural transitions
  - Global quantitative scenarios for global steam coal trade
3. What will we do?

- Country scenarios for “(I)NDC” and “2C” developed using national modelling tools and expert judgement

- A common reporting template will ensure transparency, comparability and “dialogue” between models

- Global coal sector modelling will be conducted using COAL-MOD

- Several iterations to explore consistency and interactions between national and global scale composite picture
Entire value-chain represented with relevant costs and constraints (production, export harbors, and transportation).

Demand for energy provided by steam coal in each country, but production and transportation of tonnage.
3. What will we do?

BAU: National Energy and Power Generation Mix

Fuel-wise primary energy consumption in BAU

Technology-wise electricity generation in BAU

Existing and future generation stock in BAU
3. What will we do?

• **National case studies:**
  - Australia: policy approaches and political economy of coal sector transition in the Latrobe Valley
  - South Africa: just transition for South Africa's coal economy: optimizing constrained resource extraction and use for development
  - China: strategic approaches to managing coal overcapacity in the power sector
  - Germany: policy approaches and political economy of coal sector transition in the Lausitz region
  - India: energy sector transition options to manage coal dependence
  - Poland: managing labour market impacts of coal sector transition
3. What will we do

Risk of overcapacity in coal generation – actual investment versus scenarios for China

- Historical investment - Net change 2010-2015
- Future aggregate investment benchmarks - Net change 2010-2020
- Future aggregate investment benchmarks - Net change 2020-2030
3. What will we do?

Coal Transitions: Latrobe Valley opportunities and barriers

Opportunities
- Increasing consensus on inevitable power station closures
- Strong community, trade union, Victorian and local government support for ‘just transition’ strategies
- Closure and transition options
  - Carbon price
  - Revoke licenses/Lifetime limits
  - Increase royalties
  - Tighten emission limits
  - Competitive closure bidding
  - Redundancy packages
  - New industries and skills investment

Barriers
- Interests and actions of mine and power station owners
- Ongoing differences about transition speed and responsibilities
- Vulnerable regional economy and community with limited economic and employment alternatives
- High proportion of workers with limited qualifications and narrow skill base
- Lack of Australian government leadership
<table>
<thead>
<tr>
<th></th>
<th>No support</th>
<th>Compensation or grandfathering (backward-looking)</th>
<th>Structural adjustment assistance (forward-looking, narrow)</th>
<th>Adaptive support (forward-looking, broad)</th>
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</thead>
<tbody>
<tr>
<td><strong>Consumers/households</strong></td>
<td>No support</td>
<td>New policies that raise consumer prices or taxes are fully or partially offset for all or some (e.g. low-income) households</td>
<td>Consumers (or a sub-set, eg. low-income) are supported to adapt to the new policy</td>
<td>-</td>
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<tr>
<td>No support</td>
<td>Compensation for losses</td>
<td>Workers are given cash or in-kind assistance to assisting them to retrain into new jobs and/or relocate</td>
<td>-</td>
<td>Workers are given strong support not only to find new jobs but to maintain existing or develop new valued attachments (of the kind that cannot easily be compensated), e.g. work of a similar social standing, in the same industry and/or same place.</td>
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<tr>
<td>No support</td>
<td>-</td>
<td>-</td>
<td>Communities in which industries have declined are supported (e.g. through public investment in infrastructure, skills, industry policy)</td>
<td>-</td>
</tr>
<tr>
<td><strong>Workers</strong></td>
<td>No support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Communities</strong></td>
<td>No support</td>
<td></td>
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<tr>
<td><strong>Corporations</strong></td>
<td>No support</td>
<td>New policies that adversely affect the value of corporate assets are accompanied by compensation for lost asset value or existing assets are “grandfathered”</td>
<td>Businesses are provided cash or in-kind assistance to adapt to new policy</td>
<td>-</td>
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Background

Reduction in coal mining capacity and consumption in some parts of the world, for a variety of reasons (non climate). Interest in managing transition is growing: what has worked and what has gone wrong, and why.

What lessons can be learned from existing coal transitions experience and from other comparable economic transitions? How can its success be replicated in other places? How can mistakes be avoided?

This first report will attempt to answer these questions and will include:

- a review of selected examples of national transitions from coal
- analysis of how socio-economic impacts were managed
- lessons derived from these past experiences and from the results of strategies applied to tackle these challenges
Questions to be addressed by each in-country case study:

**Quantitative description** of the coal sector transition, e.g.
- Energy sector data on primary production, imports, exports, primary consumption, coal inputs to energy sector transformation (power), coal inputs into final energy consumption etc.
- Economic data on employment, value added, fiscal revenues from the coal sector, etc.
- Description on what replaced coal (in both energy system and economic terms, e.g. employment)

Qualitative and quantitative description of the **forces which drove** it: Economic, Social, Political and policy related. Quantitative and qualitative description of **policies put in place** (or not) to accompany the transition
- What was the theoretical or practical basis for designing the underlying policies?
- How socially and economically sustainable has this transition been?
- How were socio-economic impacts managed?

What **lessons can be learned** from coal phase-out experience in this country?
- How can its success be replicated in other parts of the globe?
- How can mistakes be avoided?
- Is it possible to compare this experience to other economic transitions?
4. What role for stakeholder engagement

- A project with no taboos, no “a priori”, and based on trusted dialogue
  - Stakeholder engagement is at the core of the project
  - All stakeholder interactions will be under Chatham House Rules

- The environmental constraint and the Paris Agreement form an important point of departure

- There will be:
  - Three stakeholder meetings (like this one), plus in-country stakeholder engagement
  - A project advisory group will established
  - A large-scale international roundtable towards the end of the project
  - A website will be up and running soon: www.coaltransitions.org