Just Transitions and the Fossil Fuel Phase-Out

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4 W’s

- Why is just transition important?
- What scale of intervention is required?
- What are the key elements of a just transition?
- What is the role of RE jobs in a just transition?
Net zero emissions by 2050 means fossil fuels need to decline rapidly.
What will happen to the livelihoods of millions of fossil fuel workers, and their community members?
Why should we care?
From a justice point of view, it’s important to think about fossil fuel workers and their communities.

Just transition endorsed by:
- ILO
- UNFCCC
- World Bank
“…I’m the only candidate who has a policy about how to bring economic opportunity using clean renewable energy as the key into coal country. Because we’re going to put a lot of coal miners and coal companies out of business, right?”

–

At a town hall meeting in Ohio in March 2016

Later admitted in her book that this was the biggest regret of her campaign 😞
President Trump promised to bring back coal jobs and won almost all major coal states. After winning, he reversed pro-climate policies.
What is at risk regionally?

**Jobs & Pensions**
- Direct jobs = 12 million
- Indirect jobs
- Induced jobs
- Informal/artisanal mining jobs
- Pensioners

**Local Government Revenues**
- Various taxes
- Royalties

**Welfare Spending**
- Corporate social responsibility
- Mineral funds
Entire families are involved

Pai & Carr-Wilson, Total Transition: The Human Side of the Renewable Energy Revolution
Kids help their parents scavenge coal from nearby abandoned mine sites and/or rejected coal.
Millions of people work in the informal sector

- Coal cycle wallahs transport 150-450 kg of coal on their bicycles to cities, travelling up to 60 km
- Earn $3-$6 USD per trip

Pai & Carr-Wilson, Total Transition: The Human Side of the Renewable Energy Revolution
Suresh Bhuiyan, a coal worker

“The coal industry is dirty, and I am dying a slow death living here. But I have no other option.”

“If I got the opportunity, I would love to work in the solar industry, but how will I find a job? My present is painful, but the future is uncertain.”

Pai & Carr-Wilson, Total Transition: The Human Side of the Renewable Energy Revolution
### Analysis of Academic/Policy Literature on “Just Transition”

<table>
<thead>
<tr>
<th>Elements identified</th>
<th>Justice forms</th>
<th>Space</th>
<th>Time</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term planning</td>
<td>R2</td>
<td>National &amp; state/provincial level</td>
<td>Long-term</td>
<td>(Snell, 2018), (Snyder, 2018), (Weller, 2019), (Rosemberg, 2010), (Eisenberg, 2019)</td>
</tr>
<tr>
<td>The role of unions</td>
<td>P</td>
<td>National &amp; state/provincial &amp; local level</td>
<td>Long-term</td>
<td>(Cha, 2016), (Abraham, 2017), (Stevis &amp; Felli, 2015)</td>
</tr>
<tr>
<td>Community engagement</td>
<td>P</td>
<td>Local level</td>
<td>Long-term</td>
<td>(Eisenberg, 2019), (Goddard &amp; Farrelly, 2018), (Rosemberg, 2010), (Snell, 2018), (Weller, 2019)</td>
</tr>
<tr>
<td>Local jobs and diversified economies</td>
<td>D, R2</td>
<td>Local level</td>
<td>Long-term</td>
<td>(Carley et al., 2018), (Olson-Hazboun, 2018), (Prinz &amp; Pegels, 2018), (Rosemberg, 2010), (Snell, 2018), (Snyder, 2018)</td>
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What is the role of renewable energy jobs in a just transition?
Climate Mitigation → More Energy Jobs

- We estimate (current jobs)
  - 17 million direct energy jobs
  - Almost 12 million in fossil fuel industries

- We estimate (2050)
  - Current NDC policy: 21 million [18-21]
  - Well below 2°C: 26 million [21-27]
  - Manufacturing solar/wind will create large numbers of jobs

(Pai, Emmerling, Drouet, Zerriffi & Jewell – under review – do not copy or distribute or quote)
Coal Mining Areas Not Always Suitable for Solar/Wind Power

<table>
<thead>
<tr>
<th>Country</th>
<th>Solar capacity required (GWe)</th>
<th>% area for solar</th>
<th>Wind capacity required (GWe)</th>
<th>% area for wind</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>5.73</td>
<td>29%</td>
<td>7.5</td>
<td>5%</td>
</tr>
</tbody>
</table>

(Pai, Zerriffi, Jewell & Pathak, 2020, Environmental Research Letters)
Take Home Messages

❑ Just transition requires governments phasing out fossil fuels to develop concrete plans in consultation with affected communities

❑ Need for more nuanced research & advocacy on just transitions in fossil fuel producing countries

❑ Meeting Paris climate goals will create more jobs than today

❑ Renewable energy jobs could be an option for some fossil fuel workers but not for all
Thank you & Questions

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