The low-carbon transition: jobs and policy implications

Enrico Botta
OECD
The low-carbon transition and jobs

Key lessons from past and present transitions

Protecting people and the environment: key pillars for a just transition
The aggregate impact on employment is expected to be limited...

Job reallocations by region, global carbon tax of USD 50t/CO2

...but can be substantial in certain sectors

Job reallocations by region, global carbon tax of USD 50t/CO2

A gender dimension to the low-carbon transition?

Share of male employment, selected sectors

Source: Eurostat
A gender dimension to the low-carbon transition?

**Share of male employment, selected sectors**

Men mainly impacted by the LC transition
Expansion of RE create opportunities and challenges for women
The LC transition will mainly impact older workers…

Age distribution in polluting industry

Source: OECD 2012 The job potential for a shift towards low-carbon economy
The LC transition will mainly impact older workers…

Age distribution in polluting industry

Increase adjustment costs, for governments AND workers

Limit participation in education and training programs

Source: OECD 2012 The job potential for a shift towards low-carbon economies
The role of skills – Blue collar workers

Sectoral composition of job destruction and job creation - Global carbon tax of USD 50t/CO2

OECD Countries

Training programs need to be tailored

Training needs for switching industry: skill difference to switch from the mining sector to...

Source: OECD skills for jobs data base, from Botta 2018
The geographical dimension of the LC transition

• A change in the spatial repartition of jobs
  – Coal mining activities are centralised and clustered
  – Electricity generation and supply is location independent

• The risk of divergence between job destruction and job creation
  – RE generation needs to be localised close to the natural resources
The geographical dimension of the LC transition

• A change in the spatial repartition of jobs
  – Coal mining activities are centralised and clustered
  – Electricity generation and supply is location independent

• The risk of divergence between job destruction and job creation
  – RE generation needs to be localised close to the natural resources

Higher risk for small and not diversified regional economies
The low-carbon transition and jobs

Key lessons from past and present transitions

Protecting people and the environment: key pillars for a just transition
A successful “past” transition - Limburg Region, Netherlands

Example of economic diversification away from coal mining in the 90’s, to face international competition

• **Key success factors**
  – Policy vision
  – Significant funding for regional education (skills)
  – Investment in infrastructure
  – Workers protection (skills again)

Objective

Key measures
– Multi stakeholders engagement
– Economic diversification
– Programme to upgrade skills
– Targeted social benefits to protect workers

Climate Leadership Plan (2015)
Accelerate the phasing-out of coal-fired power generators and associated mines (2029)

A planned closure - Alberta, Canada

A sudden closure - The Latrobe valley, *Australia*

Closure of Hazelwood coal power plant (announcement 5 months before the closure)

- **Key measures:**
  - Rehabilitation works
  - Large sources of funding (federal and regional level)
    - local infrastructure,
    - labour market structural adjustment package
    - Regional Jobs and Investment Package
  - Establishment of the Latrobe Valley Authority

Source: CCEP, 2017. “Prospects for a “just transition” away from coal-fired power generation in Australia: Learning from the closure of the Hazelwood Power Station”
A recent diversification strategy – Antofagasta, Chile

OECD case study for economic diversification away from copper mining (65% of GDP)

• OECD Recommendations
  – Leverage existing economic assets to diversify (mining and port network)
  – Attract and retain skilled workforce (Improve urban quality of life)
  – Empower local authorities
    • strengthen capacity to secure financing not linked to central-level funding sources

Source: OECD, 2013. "OECD Territorial Reviews: Antofagasta, Chile 2013"
The low-carbon transition and jobs

Key lessons from past and present transitions

Protecting people and the environment: key pillars for a just transition
The pillars to enable structural adjustment

**Enabling a ‘Just Transition’**

**Long-term vision**
Identify areas of competitive advantages for diversification
The pillars to enable structural adjustment

Skills policies

- Support new skills development
- Collaboration between local government, universities, business

Enabling a ‘Just Transition’

Long-term vision
Identify areas of competitive advantages for diversification
The pillars of a Long-term vision

Identify areas of competitive advantages for diversification

Enabling a 'Just Transition'

Support new skills development
Collaboration between local government, universities, business

<table>
<thead>
<tr>
<th>Countries</th>
<th>Occupations</th>
<th>Core training</th>
<th>Up-skilling</th>
<th>New occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Industry electrician / energy technologist</td>
<td>VET qualifications / tertiary engineering qualifications</td>
<td>Knowledge of energy sources, ability to integrate energy systems, project management</td>
<td>Manager in renewable energy</td>
</tr>
<tr>
<td></td>
<td>Industrial operator / industry electrician</td>
<td>VET qualifications / upper secondary qualifications</td>
<td>Assembly, installation of parts, use of tools</td>
<td>Wind turbine operator</td>
</tr>
<tr>
<td>Estonia</td>
<td>Construction worker</td>
<td>No professional standard</td>
<td>Knowledge of energy systems, data analysis, project management</td>
<td>Energy auditor</td>
</tr>
<tr>
<td>France</td>
<td>Recycling sector worker</td>
<td>General certificate of vocational qualification</td>
<td>Sorting and reception techniques, knowledge of conditioning and storage</td>
<td>Waste recycling operator</td>
</tr>
<tr>
<td></td>
<td>Product design and services</td>
<td>22 initial training courses with varying specialisation</td>
<td>Integrating environmental</td>
<td>Eco-designer</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Commodity trader / broker</td>
<td>Tertiary qualification</td>
<td>Practical skills on functioning of carbon market, understanding of trading tools</td>
<td>Carbon trader / broker</td>
</tr>
</tbody>
</table>

Source: Cedefop, 2010. “Skills for Green Jobs”
The pillars to enable structural adjustment

**Skills policies**
- Support new skills development
- Collaboration between local government, universities, business

**Active labour market policies and workers’ protection**
- Job-search training
- Entrepreneurial training
- Retraining

**Long-term vision**
- Identify areas of competitive advantages for diversification

**Enabling a ‘Just Transition’**
The pillars to enable structural adjustment

**Enabling a ‘Just Transition’**

**Skills policies**
- Support new skills development
- Collaboration between local government, universities, business

**Active labour market policies and workers’ protection**
- Job-search training
- Entrepreneurial training
- Retraining

**Structural policies**
- Ease of doing business
- Strengthen market competition
- Housing policies

**Long-term vision**
- Identify areas of competitive advantages for diversification
Conclusions

- As previous restructuring experiences highlight, a suite of policy instruments is necessary to facilitate workers relocation across sectors. These include well-designed structural reforms, active labour market and skills policies.
- The transition may be characterised by two interrelated gender dimensions.
- Some evidence points to an over-representation of older workers in “carbon intensive” industries in certain OECD countries.
- The impact of the transition is likely to be geographically concentrated.
THANK YOU

Enrico Botta
enrico.botta@oecd.org

<table>
<thead>
<tr>
<th>Dimensions of inclusive growth</th>
<th>Trade-offs</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income (energy affordability)</td>
<td>Higher energy and transport prices affecting low-income households</td>
<td>Revenues of carbon taxes could be invested in pro-poor programmes</td>
</tr>
<tr>
<td>Income (housing affordability, energy affordability)</td>
<td>Retrofitting programmes are expensive</td>
<td>Improve the quality of housing and reduce poor households energy bills</td>
</tr>
<tr>
<td>Income (transport affordability) Access to jobs</td>
<td>Restrict access to jobs and city centres to low-income populations</td>
<td>Proceeds invested in better public transport systems to improve transport access, quality, safety and affordability</td>
</tr>
<tr>
<td>Income (housing affordability) Access to jobs</td>
<td>Gentrification</td>
<td>Integrate the periphery with the core of the city</td>
</tr>
</tbody>
</table>
1. **Political and corporate commitment**
   - Is there a clear statement and willingness at the highest political and corporate level to engage on an ambitious low-carbon and just transition, backed by action plans?
   - Are funding commitments in place?

2. **Long-term strategies:**
   - Is there a long-term low-emission pathway developed for the region?
   - Have communities, assets, and activities at the risk of being stranded been identified?
   - Have activities that can substitute to high-carbon ones been identified?
   - Is the strategy going beyond electoral cycles?
A check list for a just transition

3. Policy effects:
   • Have the positive and negative impacts of low-carbon policies on welfare of population been identified, ‘here and now’ but also ‘elsewhere and later’?
   • Have the spillover effects of climate policies been identified beyond the administrative boundaries, at the level of the functional area?

4. Integrated approaches to implementation:
   • Have policy interlinkages between sectoral policies, innovation policies, education, labour market policies been considered in sectoral strategies and proposals?
   • Is the overall policy framework conducive to innovation?

5. Aligning policies across levels of governments:
   • Are implementation responsibilities clearly divided and actions aligned between levels of governments?
A check list for a just transition

6. **Stakeholder participation:**
   - Have local communities and unions been consulted on identifying activities at risk?
   - Is there an active social dialogue between unions, employers and local or central governments?
   - What are the mechanisms in place to ensure stakeholders input into decision-making processes?

7. **Monitoring and reporting:**
   - Are they any mechanisms in place to monitor policy impacts and report to the public?