Phasing-out Coal, Reinventing European Regions

An Analysis of EU Structural Funding in four European Coal Regions

Timon Wehnert, Wuppertal Institute
Scope of Study
Objectives and Coal Regions

Key objective of the study:

› Use of ESIF funding in four European coal regions

Analysed regions:

› Spain – Aragon
› Germany – Lusatia
› Greece – Western Macedonia
› Poland – Silesia

Analysed funds:

› European Structural and Investment Funds (ESIF)
  i.e. the European Regional Development Fund, the European Social Fund, and the Cohesion Fund

› 2014-2020 period budgets of approved projects

  as documented by October 2017
  Aragon: budget planned for whole funding period

Source: Thinkstock / WI
Are ESI funds used to address challenges of a transition beyond coal?

We developed four categories to assess ESI funded projects:

In a first step all projects funded in the regions were assessed based on their intervention codes. Of the 123 EU intervention codes, 39 codes were considered to have a direct effect on coal transition 62 codes were considered as general structural support. In a second step project within the remaining 22 codes were checked on a project by project basis.

Direct effect on coal transition
Projects in this category are considered to directly respond to challenges from decreasing coal use and coal mining. This includes: retraining programmes for former employers of the coal sector, innovation and support which aims at a diversification of the industry base in the region, projects which create local employment opportunities outside the coal sector.

Reinforcing coal
This category relates to all efforts which support the existing coal mining and coal use infrastructure. It includes innovation in technologies, which are primarily applied for coal mining and use as well as infrastructure investment directly related to coal.

Ambiguous toward coal related structures
Some projects are in our view ambiguous in their probable effect - they combine aspects that support a transition away from coal with aspects that could increase structural dependencies. One example are coal-fired combined heat and power infrastructure investments. They help to increase the energy efficiency thus decrease the use of coal in the short term. However, they structurally support a mid- to long-term dependency on coal use, since a phase-out of coal would lead to stranded assets.

General structural support
In this category we classify projects which generally support structural development in the region but are neither direct support for a coal related economy nor do they explicitly support alternatives. This very broad category includes e.g. investments in transport infrastructure and primary education - both of which are necessary for regions to develop opportunities beyond coal, but would equally support regions, which plan to rely on coal.
Key priorities: transport infrastructure (50%) and employment (13%)
0.3% of funds in coal related activities
Western Macedonia
Use of ESIF co-financing

Key priorities: social, health, transport and education

Zero funds in coal related activities
Key priorities: Innovation, business development and education

But use of funds partly not classifiable due to lack of information
### Aragon

**ESIF funding priorities (based on programs)**

#### ERDF
- **ICT**
- **low carbon, resource efficiency**

#### ESF
- **social inclusion**
- **training**
- **sustainable and quality employment**

- **No funds allotted to projects yet (status Oct 2017)**

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**ERDF Priority Areas**

- **ICT**
  - $51,086$ million € (43%)
- **Env. Protection & Resource Efficiency.**
  - $18,204$ million € (15%)
- **Research and Innovation**
  - $17,872$ million € (15%)

**ESF Priority Areas**

- **Social Inclusion**
  - $34,619$ million € (44%)
- **Sustainable & Quality Employment**
  - $26,398$ million € (33%)
- **Educational & Vocational Training**
  - $16,641$ million € (21%)
- **Technical Assistance**
  - $2,088$ million € (2%)
- **Competitiveness of SMEs**
  - $5,373$ million € (4%)
- **Social Inclusion**
  - $3,834$ million € (8%)
- **Low-Carbon Economy**
  - $15,612$ million € (13%)
- **No funds allotted to projects yet (status Oct 2017)**
Summary of ESIF funding assessment

Current use of funds:

- Priorities vary strongly from region to region: infrastructure, innovation, training, social inclusion

- Very minor funding in coal related technologies and actions

- But only a minority of funds is directly used to support a transition towards a future beyond coal.

Amount of EU Co-Financing
(Lusatia, Silesia, Western Macedonia - regional funds only)

- General structural support 70%
- Direct effect on coal transition 28%
- Ambiguous towards coal 0.8%
- Reinforcing coal 0.2%
- Unclassifiable 0.3%
Conclusions on use of ESI funds for transitions in coal regions

ESI funds can be used to support transition beyond coal – already today!

How could this objective be strengthened?

▶ An explicit funding priority within ESI funding:
   "support to phasing out high carbon infrastructure"

▶ Ring-fencing a certain percentage of funds under the ERDF
  to offer explicit support for a transition of the economy of a region

▶ Open question: criteria for environmental sustainability
  To manage eligibility and safeguard CO₂ mitigation
Thank you for your attention

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Focus on infrastructure (mainly roads) and labour mobility and employment

Western Macedonia
- social infrastructures (local support centers, e.g. elderly, homeless, gender)
- life-long learning and

Lusatia
- diversification of industry / the economy
- innovation and training

Aragon (planned)
- information and communication (ICT)
- social inclusion and training
Use of ESI funds with respect to coal transition

EU co-funding of analysed funds

分配在现资金分配期间

for three regions: Lusatia, Silesia, Western Macedonia

Direct effect on coal transition
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General structural support
In this category we classify projects which generally support structural development in the region but are neither direct support for a coal related economy nor do they explicitly support alternatives. This very broad category includes e.g. investments in transport infrastructure and primary education - both of which are necessary for regions to develop opportunities beyond coal, but would equally support regions, which plan to rely on coal.
Coal regions face heavy economic challenges

- but small compared to national economy (most relevant in Poland)
- it is less about substituting existing job in coal mining
  but about long-term regional development

ESIF funding

- priorities support structural change
  but detailed assessment difficult

Green economy

- Jobs in renewables
  can not fully substitute job losses in coal mining – in mining regions
- How can green economy be implemented even better in ESIF priorities?
Annex
The Wuppertal Institute

- Founded 1991
- Think tank dedicated to applied research and sustainability
- 250 staff members

Transition Research: from problem assessment to real world experiments
Coal fired power plants in Europe

Source: https://beyond-coal.eu/data/
Key Facts and Trends of selected European Coal Regions
# Spain - Aragon

## General Information

<table>
<thead>
<tr>
<th></th>
<th>regional</th>
<th>national</th>
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<tbody>
<tr>
<td>Population</td>
<td>1.326.000</td>
<td>46.450.000</td>
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<tr>
<td>GPD / cap</td>
<td>28.500 €</td>
<td>25.900 €</td>
</tr>
<tr>
<td>Industry</td>
<td>25 %</td>
<td>18 %</td>
</tr>
<tr>
<td>Unemployment</td>
<td>16 %</td>
<td>22 %</td>
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## Regional Coal Facts

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Output</td>
<td>1.3 million tonnes</td>
</tr>
<tr>
<td>Coal Type</td>
<td>Brown coal (sub-bituminous)</td>
</tr>
<tr>
<td>Employment</td>
<td>500</td>
</tr>
<tr>
<td>Companies</td>
<td>Compañía General Minera de Teruel, S.A., SAMCA, Endesa-Ene</td>
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<tr>
<td>Capacity</td>
<td>1100 MW</td>
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## National Electricity Production

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2015</th>
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<tbody>
<tr>
<td>Coal</td>
<td>36 %</td>
<td>19 %</td>
</tr>
<tr>
<td>REN</td>
<td>17 %</td>
<td>36 %</td>
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</table>

Source: Thinkstock / WI
## Germany - Lusatia

### General Information

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Population</td>
<td>1.100.000</td>
<td>81.198.000</td>
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<tr>
<td>GPD / cap</td>
<td>25.600 €</td>
<td>35.800 €</td>
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<tr>
<td>Industry</td>
<td>30 %</td>
<td>26 %</td>
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<tr>
<td>Unemployment</td>
<td>10 %</td>
<td>5 %</td>
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### Regional Coal Facts

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<table>
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<tbody>
<tr>
<td>Output</td>
<td>62.3 million tonnes</td>
</tr>
<tr>
<td>Coal Type</td>
<td>Brown coal (lignite)</td>
</tr>
<tr>
<td>Employment</td>
<td>8300 mining only: 5600</td>
</tr>
<tr>
<td>Companies</td>
<td>LEAG</td>
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<tr>
<td>Capacity</td>
<td>7200 MW</td>
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### National Electricity Production

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<tr>
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<tbody>
<tr>
<td>Coal</td>
<td>53 %</td>
<td>44 %</td>
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<tr>
<td>REN</td>
<td>8 %</td>
<td>31 %</td>
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Germany - Lusatia
Economic development

Shrinking region:

- Economic breakdown after reunification in 1990
- Sparsely populated with rather long distance to urban centres
- Job losses in all sectors led to migration out of the region

Jobs in lignite mining
 dropped from 80,000 to 8,000 within 10 years

Source: DIW 2012
## General Information

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<tbody>
<tr>
<td>Population</td>
<td>4,536,000</td>
<td>38,006,000</td>
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<tr>
<td>GPD / cap</td>
<td>20,600 €</td>
<td>19,800 €</td>
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<tr>
<td>Industry</td>
<td>35 %</td>
<td>26 %</td>
</tr>
<tr>
<td>Unemployment</td>
<td>7 %</td>
<td>8 %</td>
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## Regional Coal Facts

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<tbody>
<tr>
<td>Output</td>
<td>59,2 million tonnes</td>
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<tr>
<td>Coal Type</td>
<td>Hard coal</td>
</tr>
<tr>
<td>Employment</td>
<td>80,000 (only mining)</td>
</tr>
<tr>
<td>Companies</td>
<td>Polska Grupa Górnicza, Jastrzębska Spółka Węglowa, Tauron Wydobyć, Przedsiębiorstwo Górnicze Silesia</td>
</tr>
<tr>
<td>Capacity</td>
<td>9,000 MW</td>
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## National Electricity Production

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<th>2000</th>
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<tbody>
<tr>
<td>Coal</td>
<td>95 %</td>
<td>81 %</td>
</tr>
<tr>
<td>REN</td>
<td>3 %</td>
<td>14 %</td>
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### General Information

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<tbody>
<tr>
<td>Population</td>
<td>276,000</td>
<td>10,858,000</td>
</tr>
<tr>
<td>GPD / cap</td>
<td>18,200 €</td>
<td>19,600 €</td>
</tr>
<tr>
<td>Industry</td>
<td>47 %</td>
<td>13 %</td>
</tr>
<tr>
<td>Unemployment</td>
<td>31 %</td>
<td>25 %</td>
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### Regional Coal Facts

- **Output**: 35.7 million tonnes
- **Coal Type**: Brown coal (lignite)
- **Employment**: 6,000
- **Companies**: PPC
- **Capacity**: 3060 MW

### National Electricity Production

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2015</th>
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<tbody>
<tr>
<td>Coal</td>
<td>64 %</td>
<td>43 %</td>
</tr>
<tr>
<td>REN</td>
<td>9 %</td>
<td>29 %</td>
</tr>
</tbody>
</table>

Source: Thinkstock / WI
Commonalities

- Mining jobs decreased over past decades
- Mining jobs are often better paid
- Miners shape regional identity
- Lack of entrepreneurial spirit

Differences

- Remote, shrinking regions (often brown coal mining) face different challenges than
- Industrial centres often densely populated hard coal and steel manufacturing regions

Key Challenges

- Regional development more important than individual job losses / substitutes
- Diversification and greening of economy
- Coal mining links to important regional & national narratives