



## EEAC Working Group on Energy and Climate Change

**Subject:** Outcome letter of the EEAC seminar, entitled 'The social-economic consequences of the phase out of old energy regimes'

The Hague, The Netherlands, December 2018

Dear colleagues,

A successful energy transition not only involves developing new low-carbon-based economies and societies, it also involves phasing out old energy regimes, which is just as important. An orderly phasing out of obsolete energy regimes will involve redundancies in sector value chains, e.g. coal and lignite or refineries both upstream and downstream. Structural changes in these sectors will inevitably have socio-economic consequences. These consequences range from job losses to redefining the social structures in local societies.

Decarbonisation, and therefore the process of phasing out coal, will not be driven primarily by market forces, as is the case in the usual dynamics of structural change in market economies (i.e. mobile phones).<sup>1</sup> Political decisions are required to enhance and guide the phase-out process.

---

<sup>1</sup> German Advisory Council on Global Change (2018): Just & In-Time Climate Policy: Four Initiatives for a Fair Transformation. WBGU Policy Paper nr 9. Berlin: WBGU via [https://www.wbgu.de/fileadmin/user\\_upload/wbgu.de/templates/dateien/veroeffentlichungen/politikpapiere/pp\\_2018-pp9/wbgu\\_policypaper\\_9.pdf](https://www.wbgu.de/fileadmin/user_upload/wbgu.de/templates/dateien/veroeffentlichungen/politikpapiere/pp_2018-pp9/wbgu_policypaper_9.pdf)



The EEAC Working Group on Energy and Climate Change organised a seminar in which the socio-economic consequences and the role of government in the coal phase-out process were highlighted.

This letter summarises the insights and messages resulting from the seminar. I also recommend visiting the EEAC working group website. The uploaded presentations given during the seminar contain interesting additional graphs, cartographic and numeric information.<sup>2</sup> This letter is based on that material and the discussions held.

In the first part of the letter, I will touch upon the general situation regarding the role of coal and the coal phase-out process. Special attention will be paid to countries like Germany, the United Kingdom and Poland. In the second part of the letter, the situation surrounding terminated coal mining in the Netherlands is described and lessons learned are shared. The third part of the letter includes several preliminary recommendations with regard to a timely and just coal phase-out process.

### The role of coal and coal mining: Germany, Poland and the United Kingdom<sup>3</sup>

Looking at the global picture, coal is used to generate 41% of global electricity and is used in 70% of global steel production.<sup>4</sup> Coal is an important element of the European energy mix and has a crucial role in steel making. The established position of coal and lignite is historically based. The EU was, after all, established as a European coal and steel community.

Recent figures show that there are 625 coal plants in the EU, producing 162 Gigawatt Hour (GWH).<sup>5</sup> Furthermore, coal is responsible for 39% of total EU ETS emissions.<sup>6</sup> However, the importance of coal and coal-fired power stations is expected to shrink.<sup>7</sup> Policy measures will put further pressure on the

---

<sup>2</sup> European Environment and Sustainable Development Advisory Councils Network, Via <http://eeac.eu/thematic-focus/energy/>

<sup>3</sup> If not otherwise specified all claims are based on the presentation by by Dr. Oei of DIW Berlin via <http://eeac.eu/wp-content/uploads/2018/10/Presentation-by-Dr.-Pau-Yu-Oei.pdf>

<sup>4</sup> C. Le Quéré et al. (2015): Global Carbon Budget. Via <https://www.earth-syst-sci-data.net/7/349/2015/>

<sup>5</sup> Sandbag (2016); via <https://sandbag.org.uk/coal/>

<sup>6</sup> P. Buckley (2017): State of the EU Emissions Trading System 2017: Asking questions of the numbers: leaders and laggards. London: Sandbag via <https://sandbag.org.uk/wp-content/uploads/2017/11/State-of-EU-ETS-2017-by-Sandbag-2.pdf>

<sup>7</sup> European Commission, Joint Research Council (2018): EU coal regions: opportunities and



competitiveness of coal. Despite the expected decline, coal-fired power stations still produce CO<sub>2</sub>, NO<sub>x</sub> and SO<sub>2</sub> emissions and the need to reduce emissions – to remain within the guardrails of the Paris Agreement – is still very present.

In this part of the letter, I will deal with the situation regarding coal-fired energy production and the role of coal mining in Germany, the United Kingdom and Poland.

### **Germany**

Coal and lignite production and consumption is of major importance in several parts of Germany. To feed its 49 GWh of coal-fired capacity, Germany is the biggest hard coal importer in the EU, importing 45% of the total amount of coal used on an annual basis. When it comes to the production of lignite, Germany is the biggest producer worldwide.<sup>8</sup> The stable position of coal and lignite is partly due to the successful lobbying of major electricity corporations and unions against, for instance, the climate levy and for continued financial support for both coal and lignite. This established position might change over time. With the introduction of a special commission on the phase-out of coal, the process has started. The date of a final phase-out, however, remains a subject for debate in Germany.

Historically, hard coal mining has been tremendously important to Germany. A change came about from the seventies onwards. Both the number of people employed, as well as the amount of coal coming from mining activities in Germany, declined for economic reasons.<sup>9</sup> Domestic hard coal became increasingly more expensive compared with imported hard coal. As a consequence, economic considerations ensured a fall in demand for German coal. However, the change from domestic to

---

challenges ahead. Via: <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/eu-coal-regions-opportunities-and-challenges-ahead>

<sup>8</sup> German Advisory Council on the Environment (2017) Start coal phase out now. Berlin: SRU via [https://www.umweltrat.de/SharedDocs/Downloads/EN/04\\_Statements/2016\\_2020/2017\\_10\\_statement\\_coal\\_phaseout.pdf?blob=publicationFile&v=4](https://www.umweltrat.de/SharedDocs/Downloads/EN/04_Statements/2016_2020/2017_10_statement_coal_phaseout.pdf?blob=publicationFile&v=4)  
[https://www.umweltrat.de/SharedDocs/Downloads/EN/04\\_Statements/2016\\_2020/2017\\_10\\_statement\\_coal\\_phaseout.pdf?blob=publicationFile&v=4](https://www.umweltrat.de/SharedDocs/Downloads/EN/04_Statements/2016_2020/2017_10_statement_coal_phaseout.pdf?blob=publicationFile&v=4)

<sup>9</sup> Herpich, P., Brauers, H. & Oei, P.-Y. An historical case study on previous coal transitions in Germany. Paris: IDDRI Via: <https://coaltransitions.files.wordpress.com/2018/07/2018-historical-coal-transitions-in-germany-report1.pdf>



imported coal did not proceed as rapidly as it would have done if only economic factors had played a role. A total of €330 billion was spent on direct and indirect coal subsidies in Germany. Most of this money was spent on older workers and was hardly invested in re-education or innovation. In retrospect, it seems that fewer subsidies and more restructuring funds would have benefited the sector more in the long run. However, a change from subsidies to restructuring took place at the last minute and left a sector without any innovation potential.

## **Poland**

Poland has 27 GW of coal-fired capacity and produces more than it consumes, leaving the country with a coal production surplus of 8%. This makes Poland the largest hard coal and second largest lignite producer in the EU. However, Poland has poor mining conditions that are inefficient from a cost point of view. As a consequence, domestic coal is more expensive than imported coal. Regardless of the market situation, expansion plans for coal mines and coal-fired power stations are still very much alive in Poland. This attitude is the result of strong relations between the state and corporations and powerful trade unions. Whereas the debate about a coal phase-out has started in Germany, the same does not seem to be the case in Poland. However, dwindling resources and growing resistance to air pollution might accelerate the decline of coal.

As in Germany, the Polish mining tradition is deeply rooted in society, particularly in certain areas of the country. Mining provides a livelihood for a large part of the labour force and local communities, which explains the support of the Polish government for coal and lignite production. According to the European Commission's Joint Research Centre, the share of the labour force that works in either coal mining or coal-fired plants in Poland is the highest among EU countries.<sup>10</sup> Consequently, the phase-out of coal in Europe, combined with the inability of Poland to produce coal for the global market, is expected to have severe social and economic consequences.

---

<sup>10</sup> European Commission, Joint Research Council (2018): EU coal regions: opportunities and challenges ahead. Via: <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/eu-coal-regions-opportunities-and-challenges-ahead>



## **United Kingdom**

Having been a major emitter of CO<sub>2</sub>, particulate matter, NO<sub>x</sub> and SO<sub>2</sub> for quite some time, the United Kingdom is the first country to have initiated a coal phase-out. A Carbon Price Floor and Emission Performance Standards were successful tools in forcing coal out of the market. Consequently, coal consumption fell from 39% in 2012 to 2% in 2017, making an expected phase-out possible by 2025.<sup>11</sup> Regardless of the positive trend evident in the United Kingdom, a cautionary note should also be sounded. The coal phase-out was based on a simple switch to natural gas. To ensure an energy transition in the long term that will keep the EU and the rest of the world within the guardrails of a temperature raise well below 2 degrees, a switch from coal to natural gas is simply a switch to a transition fuel in the pursuit of a carbon-neutral energy system. Having – successfully – reduced coal-fired energy production and coal mining, the United Kingdom, just as the Netherlands, is a source for peer-learning.

## **Socio-economic effects of a coal phase-out process: the case of Limburg, the Netherlands<sup>12</sup>**

In this part of the letter, I will focus on the lessons that can be learned from a region that has already experienced the phase-out dynamics of coal mining. Forty years ago, the mines in the Dutch Province of Limburg were closed. What was the reason, what were the drivers and what were the effects? What principles were introduced to ensure a just phase-out process, what happened in practice and what lessons can be learned from this experience when preparing a phase-out elsewhere in Europe? These issues also apply to other regions facing a phase-out of coal mining.

### **Reasons for closing the Dutch coal mines**

---

<sup>11</sup> Europe Beyond Coal (2018) Overview: National coal phase-out announcements in Europe via <https://beyond-coal.eu/wp-content/uploads/2018/06/Overview-of-national-coal-phase-out-announcements-Europe-Beyond-Coal-June-2018.pdf>

<sup>12</sup> If not otherwise specified all claims are based on the presentation by Mr. F. Teeuwissen, in Berlin. Via <http://eeac.eu/wp-content/uploads/2018/10/Presentation-by-Mr.-Frank-Teeuwisse.pdf>



Until the 1960s, coal mining was regarded as vital to the reconstruction of the Netherlands. Miners were considered heroes and the Limburg region was among the richest in the Netherlands. However, seven reasons forced the closure of the mines: (1) imports of cheaper coal; (2) the European Coal and Steel Community's objective of reducing overcapacity; (3) increasing imports of oil; (4) the discovery of natural gas stocks in the Netherlands; (5) the increasing efficiency in energy consumption; (6) the lack of a labour force; and (7) growing awareness of mine-related health risks. These seven arguments were broadly recognised and accepted by all parties involved.

The region had to face major challenges during and long after the closure of the mines. Whereas 45,000 people were directly employed in coal mining, only 17% got a new job. Many people took early retirement (37%) and the majority of the labour force (46%) were given sheltered work or had to participate in welfare programmes or became unemployed. Overall, the closure of the coal mines in Limburg transformed the region from a rich, mono-industrial economy to a poor, service-oriented economy in which challenges still remain.

### **The theoretical principles of a just phase-out process**

Seven principles were introduced to ensure a just transition. These principles were vital to the acceptance of the closure of all mining activities in Limburg. These principles included the agreed proposal that the mines were responsible for the closing process, with coordination and support being provided by the government. In addition, the principles of a gradual closure, transition and alternative employment were introduced. Consequently, no negative social effects were expected to occur due to the anticipated success of these principles. However, not all principles materialised as planned.

### **What happened in practice I**

The phase-out process faced quite substantial setbacks. Firstly, it lacked a detailed vision. Unions, companies and state actors all had their own reasons for supporting closure. In some cases, however, support was only temporary and the various stakeholders all had different aims. A typical example of this was the gradual transition period promised by the government, while in practice Limburg and its society faced accelerated closure. These different – and sometimes conflicting – aims hampered the transition process.



In addition, problems occurred with regard to training or re-training the workforce. Production sites and government institutions that opened as part of the transition process required different educational profiles and ages than those available among former mine workers. The lack of educational demand and supply figures – to arrange the required training or re-training of workers – did not help. In addition to inadequate training, traditional social support structures disappeared (mining companies, social/sports clubs and churches) and new structures were not quickly in place. This added pressure to the already decreasing levels of liveability in the region.

Substantial support schemes were expected to bring relief and to curb the economic and social impact of the phase-out process. Major sums of money were made available to subsidise and support weak and outdated enterprises. However, the economic condition of these companies ensured almost immediate bankruptcy when subsidy flows stopped and actual job-creation fell short as a result. Furthermore, most of these subsidies were not properly targeted. Over 50% of the approximately €500 million was handed out without proper allocation or earmarking ensuring ineffective and ad hoc compensatory policies rather than contributing to a grand transition scheme.

Examples of ineffective investment also occurred in the regional infrastructure fund. Roads, theatres, hospitals, an airport, a university and conference centre were all built throughout the province, while the original mining areas got limited support. A lack of planning, vision, coordination and lobby activity left the areas facing the most grim consequences empty handed.

### **What happened in practice II**

Nevertheless, there are also several examples of practices and policies that contributed to a just phase-out of coal mining in Limburg. For instance, effective cooperation between mining companies, unions and authorities took place in general terms. Furthermore, the specially created LIOF development bank and the state mine companies did create new jobs (approximately 45,000) and attracted new activities, e.g. DAF cars, Macintosh textiles and Curver Plastics. In addition, the relocation of governmental agencies and the setting up of social and shelter programmes also made a contribution to softening negative employment impacts in the region. To conclude, a very effective informal lobby by the



provincial governor and the then Prime Minister of the Netherlands is still considered to be one of the main drivers for these successes.

### **Lessons learned**

The phase-out of coal mining requires a well-defined, comprehensive and realistic plan with a proper time horizon. Such a plan should be enforced effectively. No scope changes should occur along the way (timing, criteria for success, subsidies).

In terms of process and process management, it is vital to include preliminary aspects (goal definition, developing options, stakeholder consultation, freezing scope, guaranteed resources). Furthermore, a central project management should be established, which is chaired by a representative who has a proper mandate and who is – preferably – accepted by the relevant stakeholders.

It is also important to develop and implement sufficient monitoring instruments. Independent progress reviews can help to ensure accountability, transparency and possibly also well-targeted action. To conclude, investments in time and money should be directed towards sustainable ventures and innovation to avoid ineffective spending.

## **A just and in-time phase-out process: a general perspective**

The transition needed to remain within the guardrails of the Paris Agreement sparked a debate about justice issues, as well as the requirement to respond in-time to the major challenges climate change presents. In this third part, I will touch upon several general elements of and preliminary recommendations with regard to a just and in-time phase-out process.

The transition required to implement the Paris agreement should include just solutions for all those affected. Although the seminar focused on the socio-economic consequences of a coal phase-out, the overall concept of a just transition entails more than justice for those who might lose economic and social stability because of the required transition. It should also include people who are on the receiving





end of climate change, as well as future generations.<sup>13</sup> Furthermore, the transition – and coal phase-out process – needs to be in-time. From a techno-economic point of view, an in-time transition requires a clear time path that allows for a more gradual transition and time at the end of the process to take the final, often more complex, leap of the transition process.<sup>14</sup> From a social process-based perspective, an early, transparent and inclusive transition overcomes lock-ins and should include alleviation of social repercussions, support for those affected by structural change and an inclusive process for shaping the future.<sup>15</sup>

To ensure the alleviation of social repercussions, the establishment of national transformation funds is recommended. Such funds should invest in, for instance, mobility and energy supply system infrastructure, innovative energy technologies and areas where private sector markets cannot secure sufficient funding. These transformation funds could be financed by revenues from – preferably international – GHG emission pricing mechanisms, supplemented by revenues from national taxation schemes. To ensure a long-term orientation of such funds, governance structures needs to be put in place to avoid the often short-term political interests involved in budget negotiations.

Furthermore, the transition should not be a negotiated process among sectoral representatives, but a community effort. This entails an early, transparent and participatory approach that features all stakeholders to find a common understanding on future-oriented options for development models. In addition, transition processes should take the cultural identify loss of coal mining areas into account.

---

<sup>13</sup> German Advisory Council on Global Change (2018): Just & In-Time Climate Policy: Four Initiatives for a Fair Transformation. WBGU Policy Paper nr 9. Berlin: WBGU via [https://www.wbgu.de/fileadmin/user\\_upload/wbgu.de/templates/dateien/veroeffentlichungen/politikpapiere/pp\\_2018-pp9/wbgu\\_policypaper\\_9.pdf](https://www.wbgu.de/fileadmin/user_upload/wbgu.de/templates/dateien/veroeffentlichungen/politikpapiere/pp_2018-pp9/wbgu_policypaper_9.pdf)

<sup>14</sup> Presentation by Dr. Oei of DIW Berlin (slide 8) via <http://eeac.eu/wp-content/uploads/2018/10/Presentation-by-Dr.-Pau-Yu-Oei.pdf>

<sup>15</sup> German Advisory Council on Global Change (2018): Just & In-Time Climate Policy: Four Initiatives for a Fair Transformation. WBGU Policy Paper nr 9. Berlin: WBGU via [https://www.wbgu.de/fileadmin/user\\_upload/wbgu.de/templates/dateien/veroeffentlichungen/politikpapiere/pp\\_2018-pp9/wbgu\\_policypaper\\_9.pdf](https://www.wbgu.de/fileadmin/user_upload/wbgu.de/templates/dateien/veroeffentlichungen/politikpapiere/pp_2018-pp9/wbgu_policypaper_9.pdf)



Arguments that jobs can easily shift from the mining to the renewable energy sector should be used cautiously, as this transfer is not as unambiguous as it sounds.<sup>16</sup>

To conclude, the periods of time covered by phase-out processes – such as was the case in the Netherlands – are too long to be governed by elected statesmen. Furthermore, the complexity of the transition process requires a centralised and well-organised support and management mechanism that is politically independent. Establishing an organisation that is politically independent and that is governed by a representative with a strong mandate is therefore recommended. By doing so, complexities such as path dependencies, political pressure and vested interests can be better dealt with.

## To conclude

I would like to extend special gratitude to the experts who shared their insights with us. Furthermore, I wish to thank the colleagues of the EEAC member councils for their contributions during the session.

A handwritten signature in blue ink, appearing to read 'Folmer de Haan', is written over a light blue circular stamp or watermark.

Folmer de Haan

Chairman of the EEAC Working Group on Energy and Climate Change

Deputy Director of the Dutch Council for the Environment and Infrastructure (Rli)

---

<sup>16</sup> Presentation by Dr. Oei of DIW Berlin (slide 8) via <http://eeac.eu/wp-content/uploads/2018/10/Presentation-by-Dr.-Pau-Yu-Oei.pdf>