

Fostering the Coal Consensus

The Contribution of Transformative Sustainability Research

The development of a framework for the reduction of coal-fired electricity generation that addresses the interests of all involved parties over the longer term is a focal point of current energy policy debate. Transformative sustainability research can make a valuable contribution to the efforts of policymakers and society to resolve a key conflict of the energy transition.

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Fostering the Coal Consensus. The Contribution of Transformative Sustainability Research | GAIA 25/2 (2016): 142–144 | **Keywords:** energy transition, societal conflicts, transformative research

The energy transition necessitates more than a fundamental transformation of technology; rather, it is accompanied by processes of significant social, political, and economic change. This societal transformation goes along with a broad reorganisation of energy systems and a shift in global investment trends that is favouring renewable energies and delivering substantial social and economic co-benefits while contributing to climate protection (Mayrhofer and Gupta 2016, Helgenberger 2016a).

However, the energy transition is not without conflict, as current debate on the future of coal shows. The transition to a new energy paradigm has brought disruption to professional biographies and existing business models and will continue to do so. The adoption of the *Paris Climate Agreement* and the growing public pressure for an end to coal-based power generation in Germany have intensified the conflicts around the energy transition (Helgenberger 2016b).

The Big Coal Controversy

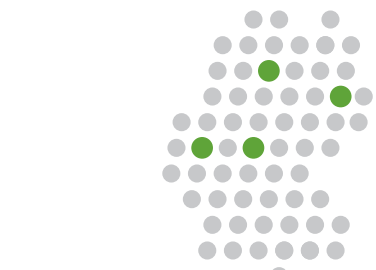
With its goals to reduce greenhouse gas emissions and expand renewable energy generation by 2050, the German government has implicitly declared its intention to phase out coal-based power generation in Germany. The details of and the timeline for the exit from this important fossil-based component of Germany's energy system have emerged as a major stumbling block for efforts to advance the energy transition. And there is a clear need for action: while in recent years electricity generation from renewable sources grew dynamically, an increase in electricity exports has seen little change in the level of carbon-intensive, coal-based power generation in Germany, which accounts for nearly one third of the country's total greenhouse gas emissions (UBA 2015).

The mining and generation of power from hard and lignite coal have long played a central role in the German energy market, and this is reflected in industrial and employment policy. But if the transition to a climate neutral and environmentally sustainable energy system is to succeed by the middle of the century, this particular chapter of German industrial history will have to come to an end – and rather sooner than later.

Phasing out Coal in Consensus

But how can this conflict at the heart of the energy transition be resolved so as to facilitate the swift, socially responsible, and climate-friendly transformation of the energy sector in line with the vision of the energy transition as a “collaborative effort” (“Gemeinschaftswerk Energiewende”, Bundesregierung 2011).

Scientific institutes like the Institute for Advanced Sustainability Studies (IASS) and the German Advisory Council on the Environment have highlighted the necessity of achieving a broad consensus on the termination of coal-based power generation, which is a necessary step towards fulfilling Germany's commitment to climate protection (Töpfer 2015, SRU 2015). The term “coal consensus” underscores the need for the political decisions necessary for this trans-



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formation to be taken in consultation with the relevant stakeholders. Klaus Töpfer, the founding director of the IASS, has emphasised that a coal consensus will not emerge without a committed and substantial effort (Töpfer 2015). To this end, the political processes necessary to foster solutions to phasing out coal must be oriented both towards a firm commitment to the climate protection targets to which Germany has subscribed, and to achieving a fair balance of interests across societal stakeholders.

In keeping with our transdisciplinary approach, which seeks to integrate non-scientific knowledge in the research process, we have collaborated with relevant stakeholders from the policy and energy sectors who are engaged in this debate to identify key issues and topics that could provide important insights for efforts to build a consensus on the future of coal. On this basis the IASS has identified as part of its current scientific work on the coal consensus the following lines of research:

kohlerückstellungen und zur Umsetzung des Verursacherprinzips (Financial Precaution in the Lignite Industry. Options for Securing Provisions for Lignite Mining and for Implementing the Polluter Pays Principle) (Wronski et al. 2016) examines the risk of mining operators defaulting on their legal obligation to maintain sufficient financial reserves for the remediation of mining impacts such as the rehabilitation of opencast-mining sites and associated environmental impacts, including the restoration of the water bal-

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Coal Conflicts in Focus

Transdisciplinary research at the IASS has shown how transformative research (Helgenberger 2013, Schneidewind and Singer-Brodowski 2014) can play a helpful and constructive role in building consensus by shifting debate away from confrontation and towards mutual understanding:

- Transformative research can address emerging issues arising from specific conflicts that have not been sufficiently studied and/or which have been neglected in discussions.
- By providing scientific analyses of proposals with a high potential for transformation, researchers can help stakeholders overcome policy blockades and promote debate focused on solutions.

In the context of the debate on the future of coal, transformative research could support efforts to overcome the significant challenges presented by the energy transition by supporting the various participating stakeholders from the fields of politics, industry, and the media as well as citizens to engage in an informed and considered debate (Wissenschaftsrat 2015, p. 23). The objective in this context is not the achievement of a “society without conflict (...) but rather [to facilitate] the rational debate of legitimate conflicts” (Renn 2013, p. 53).

In the debate on a coal consensus it remains unclear who exactly should conclude a consensus with whom, in relation to which specific issues, when this should occur – and to what precise effect. But the clarification of these issues is critical for the development of a process that enjoys broad support. We are therefore currently investigating the prospects and conditions for a national coal consensus and developing proposals on the design of appropriate political processes and procedures. As part of this work we are analysing experiences gained in connection with similar undertakings in Germany such as the nuclear exit and the decision to end subsidies for hard coal mining. The role of consensus circles, expert committees, and negotiations will also be considered as part of this research.

In collaboration with the *Forum Sozial-Ökologische Marktwirtschaft (FÖS)*, IASS researchers have investigated an issue that has not been the subject of sufficient study or political debate but which must be taken into consideration in organising the exit from coal: namely, financial precautions to address the follow-up costs of lignite coal mining (Wronski et al. 2016). The research study *Finanzielle Vorsorge im Braunkohlebereich. Optionen zur Sicherung der Braun-*

ance and the drinking water supply. In addition to this, the study proposes various policy measures at the federal and state level to minimise these risks.

In a highly polarised debate that has been driven by strategic interests, stakeholders have been unwilling to seek compromise, hampering efforts to establish a constructive conversation focused on developing solutions. The highly promising proposal to establish a “lignite foundation” that would be tasked with organising the exit from lignite mining has so far received little attention in policy debates.¹ An in-depth analysis of this option would contribute to the debate and is being undertaken as part of the current research programme at the IASS.

Outlook

Beyond its technological implications, greater consideration should be given to the energy transition as an object of social science and humanities research (Brand et al. 2013). Research in this field should consider options for socio-technological transformation within the context of broad-

¹ Policymakers have already opted to establish a foundation to supervise the exit from hard coal.

er societal objectives and visions of our future (see also Renn 2015). The comparative analysis of experiences gained in countries and regions in which measures to reduce or phase out coal-based power generation have already been implemented (for example in the United Kingdom and Ontario, Canada) could also provide valuable input. In doing so, consideration should be given not simply to the relevance of knowledge, but also to its perceived *ownership* by relevant interest groups as an indicator of its

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relevance and societal impact. *Co-designed* research and co-creative knowledge generation among science and society using real-world laboratories (Schneidewind and Singer-Brodowski 2014, Wagner and Grunwald 2015) to identify opportunities for the structural transformation of mining regions offer promising transformative research approaches.

We thank *Damian Harrison* from IASS for the translation of this contribution.

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GAIA ECOLOGICAL PERSPECTIVES
FOR SCIENCE AND SOCIETY

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PUBLISHER

oekom verlag – Gesellschaft für ökologische Kommunikation mbH | Waltherstr. 29 | 80337 Munich | Germany | www.oekom.de | Partners and shareholders: Jacob Radloff, Feldafing, 77 percent, and Christoph von Braun, Munich, 23 percent

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FREQUENCY Four times a year.

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ISSN 0940-5550

Printed on
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