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**BEYOND THE “GRID-LOCK” IN  
GERMAN-POLISH ELECTRICITY  
INTERCONNECTORS**

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*Summary*

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## About the authors

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## Abstract

# BEYOND THE “GRID-LOCK” IN GERMAN-POLISH ELECTRICITY INTER-CONNECTORS<sup>1</sup>

*In March 2011 the European Council envisaged a common energy market already by 2014 so as to enhance economic performance, increase security of supply, and facilitate the transfer to a low carbon economy. However, the alignment of trading rules and system operations is not sufficient – for a real common market we also need a more robust electricity grid. This is emphasised in the EU infrastructure package – but the examples of borders between regional electricity markets, such as between France and Spain or Germany and Poland, show that trans-border interconnector expansion faces a number of challenges. What explains this apparent “grid-lock” – the visible stall in grid construction? Is it lack of money or trust? Do the stakeholders on both sides share interests, or do the ill-adjusted administrative procedures maybe block the investments? A closer scrutiny of the case of the Polish-German border helps us draw conclusions that have pan-European significance.*

A common European electricity market requires alignment of rules for trading, coordination of the systems and the physical *grids* in place. However, building new transmission lines and interconnectors proves to be problematic. The “grid-lock” is visible also on the German-Polish border which is the border between the two major market coupling zones, the North-West European and the Central-East European. While two electricity interconnectors (Vierraden-Krajnik and Mikułowa-Hagenwerder) are already in place, progress with the third is slow. The discussions between the transmission system operators (TSOs) on the construction of an interconnector between the German station at Eisenhüttenstadt (5-14 km from the Polish/German border) and the Polish one at Plewiska (ca. 270 km from the border into Poland) have been pending since 2009. The reasons for that stall are complex. However, one thing is apparent – the political incentive that stood behind the project of connecting Poland with the Western-European electricity system

after 1989 no longer holds up in the process of market-driven integration.

At the same time, not only the European Commission, but also the German and Polish governmental agencies and expert communities agree that interconnectors are both needed and mutually beneficial. The goal of a common energy market, as both a means of unlocking synergies of an integrated system and thus reducing the costs of power provisions, is widely acknowledged. From a long-term perspective, greater interconnectivity could also further enhance energy security across Europe. Moreover, expansion of intermittent renewables is envisaged, requiring better grid integration on both sides of the Oder River.

Yet, there is a visible problem of the politicisation of ‘loop flows’ – unplanned energy flows caused, among other factors, by German wind-parks, passing through Poland and other neighbouring countries, limiting the possibilities of trade and undermining grid stability. Some media and policymakers on both sides claim that loop flows come at a *cost*. In Germany, it is the cost of “sending electrons to Poland for free”, whereas in Poland it is the cost of “grid damage”. None of these are justified. What is important, however, is that technical solutions to unplanned ‘loop flows’ – phase shifters, an improved power market design (to ensure early information and effective grid management),

<sup>1</sup> This policy paper draws on the findings of research conducted by the members of Working Group “Governance and Policy Aspects of Climate Change” between June and October 2013. It included desktop research on publicly available data and energy databases, media and document analysis, as well as expert and stakeholder interviews conducted in Berlin and Warsaw. The framework for research and early results were consulted within the working group and with a wider circle of experts at three meetings in Berlin (in December ’12, March ’13, and August ’13). The summary is thus intended as a concise report and a basis for discussions at the 2013 Dahrendorf Symposium.

and the third interconnector, would minimize the risk of black-outs, and allow for further expansion of trans-border exchange capacity.

So what stops the investment in the third interconnector? Based on our research, the *funding* is not a major hindrance. Both TSOs have a stake in building new grids – with higher allowed rates of return recovered from consumer tariffs than on existing lines which constitutes a major source of income. However, constructing several major lines at the same time (the South-West corridor in Germany or the links to Lithuania in Poland) can cause a financial overstretch. As all these projects constitute strategic investments of EU-wide importance, they were all listed as Projects of Common Interest (PCIs)<sup>2</sup>. Additional funding coming from the EU could provide a further incentive to build.

Regarding *interests of stakeholders*, both TSOs have an interest in the construction of a new interconnector, provided that phase shifters (PS) are installed on the existing links first. A Memorandum of Understanding between the Polish TSO – PSE S.A., and the operator of the North-Eastern German system – 50 Hertz, signed in December 2012, opened the road for a final agreement. In late summer 2013 first steps were made in the tender procedures regarding the construction of PS at Vierraden and at Mikułowa. Both TSOs currently negotiate the management and cost sharing of these PS. The interests of other parties involved are much more difficult to assess. The current levels of wholesale electricity prices might sug-

gest that Polish industrial consumers could benefit from imports (provided that the problem of unplanned flows is tamed through improvements of the power market design), even more so after the decommissioning of several coal power stations in 2016 in Poland.

A major obstacle pointed out by different stakeholders is the lack of coordination in *governance* and the complex and time consuming *administrative processes*. While the centralisation of governance improves the strategic, system-wide planning of construction, entrenched interests at different governance levels constitute a major obstacle. Also, legal and administrative processes are lengthy and costly. On the one hand, centralisation helps push the investments forward. On the other hand, the questions of land tenure, compensation of the land owners, or environmental concerns remain on the grassroots level. Germany's 'Law Concerning Measures to Accelerate the Expansion of the Electricity Grids' is an attempt to reconcile centralised grid development with responsiveness to local dissent through mechanisms of democratic supervision, thus legitimising the grid investments.

Finally, the varying domestic perceptions of *national energy security* as well as *insufficient trust* between the two partners make negotiations more difficult. It can be noted that while in Germany, a country long relying on vast imports and exports of energy sources, energy – including electricity – is perceived as a commodity and thus remains largely in the realm of economy, in Poland, still largely self-sufficient and perceiving energy imports as dependency, electricity supply becomes securitized in the language of national security. The German 'energy as business' perception is further enhanced by the way domestic energy governance functions – with four generally private-owned (and in the case of 50 Hertz – owned by Australian and Belgian shareholders) TSOs, while in Poland, there is a single, all-national and state-owned TSO.

2 "On 14 October 2013, the European Commission has adopted a list of 248 key energy infrastructure projects. [...] Carrying the label „projects of common interest“ (PCI) they will benefit from faster and more efficient permit granting procedures and improved regulatory treatment. They may also have access to financial support from the Connecting Europe Facility (CEF), under which a €5.85 billion budget has been allocated to trans-European energy infrastructure for the period 2014-20. For a project to be included in the list, it has to have significant benefits for at least two Member States; contribute to market integration and further competition; enhance security of supply, and reduce CO2emissions." Quoted after: European Commission, 2013, *Energy Infrastructure*, available at: [http://ec.europa.eu/energy/infrastructure/pci/pci\\_en.htm](http://ec.europa.eu/energy/infrastructure/pci/pci_en.htm).

Learning from the above, some policy options and actions can be discussed:

- *Windows of opportunity open again.* The plans to phase out electricity production facilities, be it nuclear or coal, create the need for electricity imports or, more costly, new national generation facilities. These “gaps” should be used to develop trade, thus shifting the perception of cross border interdependencies, from “risk” to the “means to stabilize the system”.
- *The EU as a trigger.* The work of EU-level forums and institutions, namely the European Network of Transmission System Operators for Electricity (ENTSO-E), the Agency for the Cooperation of Energy Regulators (ACER), as well as the creation of the Projects of Common Interests legitimise and push forward the European energy market integration. In this process the Polish-German joint effort to receive financing under the Connecting Europe Facility should be prioritised. Moreover, not only the question of ‘loop flows’, but also the broader impact of intermittent RES on the system, including the question of electricity storage, should be investigated more broadly by the European Commission.
- *Effective market design.* The energy market is an entity on the border of market mechanisms and security, and because of this, it needs careful design and receptive oversight. Markets alone might not be able to deliver the infrastructural improvements needed, especially in the absence of clear signals leading there. Also, the European market zones should resemble the actual flow of electricity, with the optimal transactions based on the flow-based allocation.
- *Speedy completion of the phase shifters.* Meanwhile, in the absence of effective market design to ensure timely information on generation and load patterns and response capacity with TSO, unplanned loop flows remain a concern and can be limited through phase shifters. Their completion in 2015-16 will minimise the current burden on neighbouring systems but should not undermine efforts to capture synergies from an integrated system operation.
- *Trust-building measures and legislative best practice sharing.* Knowing the tensions in bilateral relations in the last years, increased contacts between partners at all levels should be promoted. While working out the legislative solutions to ease the administrative burden as well as to give the legitimacy to the projects, an increased Polish-German cooperation and best practice sharing is advisable. The Polish ‘Corridor Act’, which is still in the making, can draw important lessons from the German experience of the ‘Law Concerning Measures to Accelerate the Expansion of the Electricity Grids’.