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Original research article

# Down the black hole: Sustaining national socio-technical imaginaries of coal in Poland

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## ABSTRACT

This paper explores the socio-technical imaginaries surrounding infrastructures of coal mining and coal combustion in Poland. Contemporary policy makers in Poland mobilise a national imaginary inherited from communist times – encapsulated in the slogan ‘Poland stands on coal’ – that fuses infrastructures of coal extraction and combustion with the fate of the nation. This socio-technical imaginary provides support for coal futures, even in the face of contradictory evidence for domestic resource depletion, poor regional air quality, and global climate change. To examine this process, the paper brings research on socio-technical imaginaries into conversation with work on resource materialities. It highlights how certain materialities of coal (abundance, accessibility, energy density, location) were integral to the emergence of a national socio-technical imaginary of modernisation via coal; and how other materialities (declining resource quality, effects of emissions on respiratory health, coal as CO<sub>2</sub>-in-waiting) now collide with the political strategies of a government determined to reassert ‘black gold’ as a bedrock of national development for years to come. The paper considers how contemporary political efforts to rehabilitate coal and secure its future in Poland draw selectively upon a socio-technical imaginary of coal-fuelled national modernisation.

## 1. Introduction

In a public speech celebrating the traditional “Barbórka” Miners’ Day in December 2016, Poland’s former Prime Minister, Beata Szydło, called for Polish coal “to be a synonym of development and modernity” arguing that “there will be no strong Polish economy without a strong mining industry” [1]. The Prime Minister was speaking in the town of Jaworzno in Silesia (southern Poland), a location loaded with social meaning as the cradle of Poland’s hard coal mining industry [2]. On the same day of Barbórka celebrations, the former Polish Minister of Defence, Antoni Macierewicz, also gave a speech at the country’s largest lignite mine in Bełchatów (central Poland). “Poland stands on coal” (*Polska węglem stoi*) he proclaimed, praising the hard work of Polish coal miners whose labours gave the country economic development and national security, adding “and this will not change” [3]. Not to be outdone, the Polish Minister of Energy, Krzysztof Tchórzewski, expanded on this theme of coal-as-continuity in his own Miners’ Day speech: he championed a vision of Poland as “the leader in modern coal-fired power generation” and “the first in Europe in terms of clean coal technologies” [1].

The vision expressed by the Polish political elite of the relationship

between past and future was striking in at least two ways. First, it fused nothing less than the fate of the nation with a continuation and modernisation of the country’s extensive (and ultimately banal) infrastructure for digging, transporting and burning coal which, in Poland, is commonly referred to as “black gold” (*Czarne złoto*). A combustible rock embodied both the nation’s past achievements and its future hopes for prosperity, security and a place in the world: by continuing to mobilise the country’s coal resources, Poland would secure its destiny. Second, the Barbórka speeches made scant reference to growing concerns that existing mines will shortly become exhausted, or to Poland’s status as a major emitter of greenhouse gases (Poland is Europe’s second highest emitter, after Germany, of CO<sub>2</sub> from fuel combustion in the energy sector). While many countries are moving away from coal in the power sector, Poland’s ambition to maintain coal as a dominant source of energy until at least 2050 [4] places it at odds with direction of European and global climate and energy policy. But unless new mines are opened, the country faces resource depletion, deteriorating coal mining infrastructure and rising costs, or the necessity of importing coal (from Russia, for example).

Historically Poland has had abundant resources of both hard coal and lignite, and their extraction and combustion have played an

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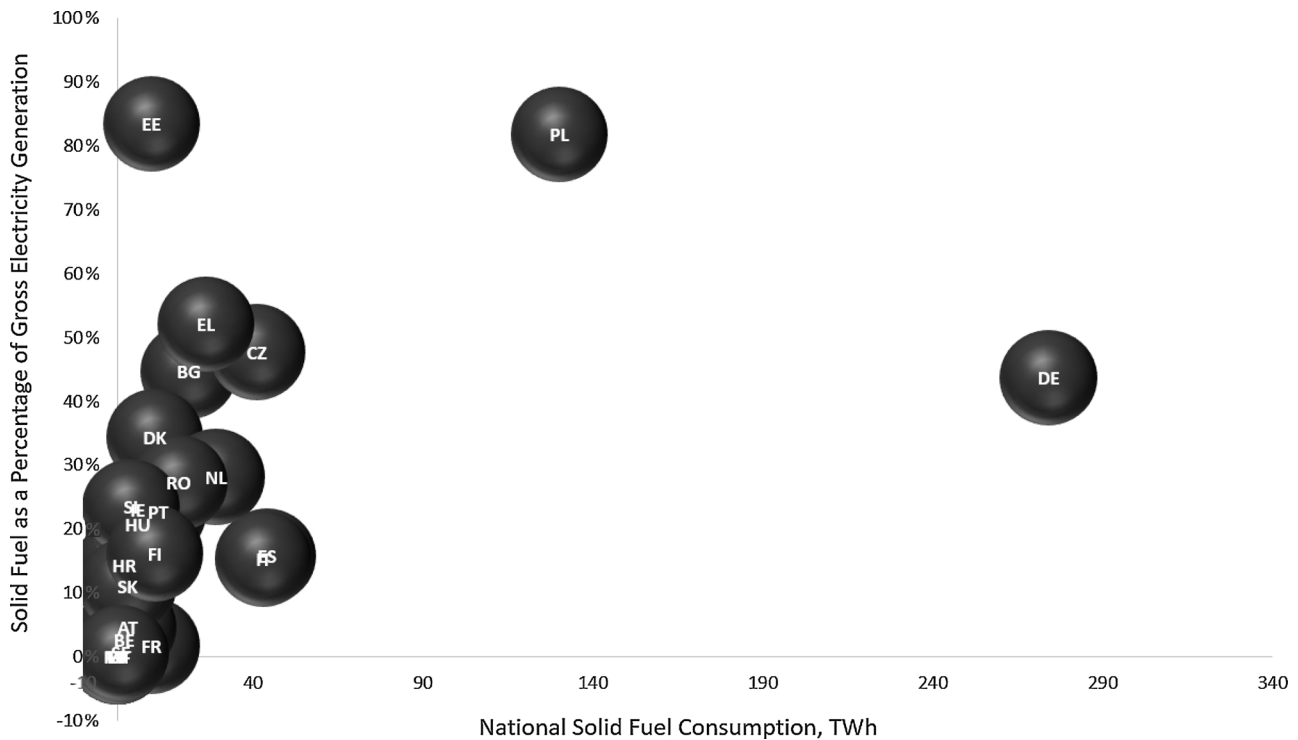


Fig. 1. Solid Fuel Consumption, EU 28 (2014).

Source: Drawn by authors from data in EU Energy in Figures – Statistical Pocketbook [5].

important role in building modern Poland. Today hard coal and lignite retain a dominant position in the country's power sector: over 80% of electricity is generated by burning coal (for Europe as a whole the figure is around 25%), and Poland burns more coal than any other European country apart from Germany (see Fig. 1). In this paper, we explore coal's material grip on the political imagination in Poland and its consequences for energy and climate policy. Our objective is to bring research on sociotechnical imaginaries into conversation with literature on resource materialities, with two goals in mind. First, we show in historical outline how the potency of a contemporary national socio-technical imaginary of a country that "stands on coal" has been enabled and fuelled by specific materialities of black gold and its related infrastructure. Second, we examine how contemporary energy and development policies in Poland maintain this coal-based sociotechnical imaginary as part of the country's energy future, despite being on a collision course with the material constraints of resource depletion, and poor air quality and greenhouse gas emissions associated with coal combustion. Rather than attempting to gradually move away from coal in the future, policy-makers are seeking strategies to rebrand black gold as a "clean" and "modern" source of energy by improving, cleaning or concealing material properties of coal and its associated infrastructures. These strategies are problematic, we suggest, because the deeper the country travels down the black hole, the harder it will be for Poland to attain low-carbon energy transition in the future. The paper's wider provocation is that the significance of coal extends beyond its extraction and material use in electricity generation to include the shared understandings of national progress and promises of modernisation that coal infrastructures enable. The common national saying "Poland stands on coal", repeated by the former Minister of Defence in his Barbórka speech, reflects the particular way in which coal has become important to economic and political life in Poland during the 20th century. It also tightly fuses subterranean geology, national territory and the 'body politic' in ways that naturalise, and make seemingly inevitable, these historically specific relations.

## 2. Sociotechnical imaginaries and materialities of energy infrastructure

In this section, we briefly introduce two bodies of social science literature on the relationship between natural resources, infrastructures and social order that frame our concern with the role of coal in the socio-political imagination in Poland and its implications for energy and climate policy. The first of these draws from science and technology studies and revolves around the concept of sociotechnical imaginaries; the second emerges from work in anthropology and human geography and concerns resource materialities. Both are rich bodies of work and we make no claim here to be comprehensive in our review: instead, we identify key strands of thought within each of these literatures that are relevant to our examination of Poland's (coal-based) energy infrastructure, paying particular attention to the research space in which imaginaries and materialities come together. We then briefly consider a few pieces of work that have mobilised these (and related) ideas in relation to coal, before summarising the key points from this review for the analysis that follows in Sections 3 and 4.

### 2.1. Sociotechnical imaginaries

The term 'imaginary,' as used in contemporary social science, refers to shared conceptions of the world and the social meanings that attach to it [6]. It also points to the cultural and political work of these meanings, and how "the capacity to imagine futures is a crucial constitutive element in social and political life" [7: 122]. Jasanoff and Kim [7] coined the term 'national socio-technical imaginary' to refer to the "collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-specific scientific and/or technological projects" [7: 121]. In their comparison of nuclear power in the United States and South Korea, they show how imaginaries about nuclear power "articulate feasible futures...and activ(ate) collective consciousness...(helping) create the political will or public resolve to attain them." (p. 123). As this quotation suggests, Jasanoff and Kim's research highlights the capacity of socio-technical systems for imagining

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