



Original research article

Differentiation, materiality, and power: Towards a political economy of fossil fuels

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ABSTRACT

Current Political Science approaches to the role of energy and fossil fuels in international relations are overwhelmingly based on two widely disseminated, but unhelpful practices: *the artificial subsuming of other fossil fuels to oil*, and *the perception of energy power as state-centered influence*. The issue of the differences between various fossil fuels has not been dealt with explicitly, yet it has key implications for the way in which energy is translated into power. On the basis of a structured comparison between the three most commonly used fossil fuels — oil, natural gas and coal — this article compares their key physical characteristics in order to understand how these affect secondary features (such as those having to do with and transportability, obstructability, size and location of typical markets, type of processing required, cartel possibilities, and substitutability), all of which affect relationships between actors and the ability to use energy as means of constitutive and relational power.

1. Still hostages to oil?

Open many general textbooks on political economy, and the word “oil” will appear prominently. So prominently, that one would get the impression that “oil” and “fossil fuel energy” are synonymous. Yet they are not – and pretending they are is getting on the way of understanding how energy really works. I am not referring to the fact that, deep into the second decade of the twenty-first century, it is not possible to think of energy without considering renewable energy seriously. I am referring to something even more basic: we have been so overloaded with oil-related discussions, that we have forgotten oil is far from the only game in fossil energy town.

While there has been no dearth of literature on technical, economic, and logistic issues related to the entire variety of fossil fuels (and in particular its three most widely-used forms, coal, natural gas, and oil, including those extracted through unconventional means), this has been less so in the case of Political Science/International Relations research, which –especially in the US, as will be discussed below– has

concentrated largely on oil. While recent publications –especially in European journals– have paid attention to the power and coercion implications of natural gas supplies (among others [1–3]), the literature specifically on natural gas politics remains much smaller than that on oil, and focuses largely on the role of Russia as a supplier (see for example [4,5]). Much of this literature has been published in European journals or by European authors and has only had limited impact on US journals. The literature on the power implications of coal production is even smaller (see below).

In 2017 as in 1974, most US work dealing with energy and politics – including national security – focuses on oil, to the neglect of other types of energy [6].¹ Similarly, when energy issues have been discussed in International Political Economy (IPE) textbooks, this has been mainly from the perspective of oil and oil supply crises.² Key energy journals have focused overwhelmingly on petroleum resources (oil and natural gas); for instance, only 9.4% of articles published in *Energy Policy* between 1999 and 2013 focused on coal or clean coal technologies [7, p. 9, Table 5].³

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¹ See Hancock and Vivoda [6, p. 209] on some of the internal and external mechanisms keeping research on hitherto non-mainstream areas from being published in top International Relations and Political Science disciplinary journals. For additional information and an overall review of the types of articles on energy published in the top five US Political Science journals between 1972 and 2012, see Hughes and Lipsy [70].

² A sampling of the most popular textbooks used in advanced undergraduate IPE courses in US universities supports this view. In some (see Ref. [71–73]) natural gas and coal are not mentioned or only in passing, while dedicated sections and/or index entries are devoted to oil. For example, in the latest editions of Spero and Hart’s widely used textbook natural gas and coal are mentioned only in passing, while an entire chapter is devoted to Oil and Politics. See Spero and Hart [74]. For a critical assessment of the issue, see Keating et al. [75, pp. 1–2].

³ The trend worsened after 2013, with only 1.4% of articles published in *Energy Policy* in 2014–2016 focusing on coal or clean coal technologies. Author’s own calculations.

In addition, instances of research may implicitly or explicitly refer to various fossil fuels, but in reality subsume them under their authors' understanding of "oil," assuming all hydrocarbons function in a similar way as oil.⁴ While petroleum as a technical term includes both oil and gas, it is often used as a synonym for "oil." This has led to a situation where concepts such as "petrostate" are often used loosely to designate states whose hydrocarbon wealth basis goes above and beyond oil, but without a nuanced explanation, weakening the power of these concepts as well. Some of the confusion may also be the result of issues such as the long-standing (albeit recently under pressure) system of natural gas pricing based on oil prices and the assumption that natural gas only plays a subsidiary role to oil. The unspoken assumption has been that gas behaves the same way as oil; coal has been virtually ignored from a theoretical perspective.

The article proceeds as follows. After presenting the origins of this situation, Part 1 discusses why an overconcentration on oil is a problem and how it synergizes with a particular, influence-centered view of power, and surveys some existing approaches to the issue of how the distinct characteristics of various types of energy affect power relations around them. Part 2 presents a framework for systematically assessing these differences and their impact. Part 3 discusses the further research possibilities opened by this approach and its connection with the challenge of decarbonization.

How did we get here? Much of this has to do with a key formative moment in the energy history of the twentieth century: the 1973–1974 oil crisis and embargo. In October 1973, in the context of the Arab-Israeli war, the Organization of Arab Petroleum Exporting Countries (OAPEC) imposed an oil embargo as retaliation against those states supporting Israel in the conflict – initially the US but later expanded to also include the Netherlands, Portugal, and South Africa.⁵ Much of our current thinking about energy and politics can be traced back to this key period, which fundamentally shaped the ways we understand energy and power.⁶ But as much as the shock of 1973–1974 opened our eyes to the power of energy, it has fixated us on certain ways of looking at energy and power which limit our understanding of the issue. Perhaps its most problematic legacies have been the focus on oil and on a specific, state influence-centered perspective on power, which have synergized with each other to limit our understanding of the differences between types of energy and their impact on power relations.

1.1. The 1973–1974 crisis and the focus on oil

OAPEC's oil embargo and related crisis had a key formative impact on the field by mobilizing scholars and analysts to the power of energy. Indeed, it was in the immediate aftermath of this crisis that well-known IR theorists such as Stephen Krasner brought the issue to the pages of key journals [8].⁷ While the crisis had global implications, it is not surprising that some of its stronger academic impacts were in the US. The existence of an entire post-war way of life based on oil and the automobile was nowhere as conspicuous as in the US, making this type

⁴ For example, at the start of their book on the broader impact of foreign companies' involvement (or lack of) in energy exploration and production, Jones Loung and Weinthal state that "petroleum and oil are often used interchangeably to connote hydrocarbons more generally that can be separated into various forms of energy, including natural gas. Throughout this book, we conform to this common practice" [76, p. 1].

⁵ Licklider reminds us that the process usually referred to as OPEC embargo was actually one by the Arab oil producers (loosely organized as the Organization of Arab Petroleum Exporting Countries, or OAPEC, within OPEC). In addition, it was not an all-out embargo, but one where "[M]ost members of OAPEC reduced their total oil exports so that embargoed countries could not simply purchase oil from other importers, which led to an apparent oil shortage worldwide" ([77, p. 206]; see also Ref. [78, p. 100]).

⁶ On the importance of the 1973 crisis for the establishment of modern International Political Economy (IPE) studies, see also Hancock and Vivoda [6].

⁷ This is not to say that the issue had not been discussed earlier – sensitivity and vulnerability in a state's reaction to an (energy) dependency, for example, are central themes in Albert O. Hirschman's *State Power and the Structure of Foreign Trade* (Berkeley: University of California Press, 1945) (reprinted in 1980).

of energy type especially central in the daily lives of US residents – including IR scholars (see Refs. [9,10]). The common use of the word "gas" in the US to refer to gasoline, which is actually an oil derivative, adds to the confusion. Also, lacking a history of significant natural gas imports, the US has experienced dependency on imported energy first and foremost through the issue of crude oil imports. (While the US has imported natural gas from Canada, these imports have not been securitized in nearly the same way as crude oil imports from the Middle East have been.⁸) Thus the problem can be seen as related to the US's own historical background as affecting prevalent narratives and discourses and contributing to a conflation of the terms "oil" and "energy." At the same time, the agenda-setting role and power of US universities, journals, and media helped project these perceptions globally, adding to oil's already high visibility as a globally traded commodity and the twentieth century's fuel of choice for military operations.

1.2. A particular view of energy power as state- and influence-based

An additional legacy of the 1973 oil crisis has been a certain way of conceptualizing energy power. In a nutshell, the experience of the use of an oil embargo in an attempt to get Western states act in a particular way (to stop military support of Israel) contributed, at this formative moment in the study of energy and power, to analysts conceptualizing energy mainly in terms of its use as a possible weapon. Neo-realist approaches highlighting states' use of their control over the production and delivery of a strategic commodity as a means to exercise power vis-à-vis other states have dominated these debates [11–13]. Behind this can be seen a longer-term impact of the 1973 oil crisis, the conceptualization of energy power in terms of one particular type of power: power of a state (or group of states such as OAPEC) to get other state(s) to do something desired by another state; in other words, power "over" (another state or group of states). (Although the embargo was initiated by OAPEC as an organization and not an individual state, the association of OAPEC with, and the perception of, national oil companies (NOCs) as being behind the oil embargo also helped solidify a view of OAPEC's embargo as state energy power.) In this Dahlian conception of power, power is influence or "power over," "an attribute that an actor possesses and may use knowingly as a resource to shape the actions or conditions of action of others" [14].⁹

But limiting the framework to such a perspective limits our understanding of energy power. This article conceptualizes energy-related power as involving not only relational ("power over") but also constitutive ("power to") elements. A constitutive view of power emphasizes "how social relations define who the actors are and what capacities and practices they are socially empowered to undertake" ("power to") [115]; in an energy context, such a perspective pays attention to ways in which (control over) energy may both help constitute actors at a variety of levels (such as domestic-level political groups, firms, states, cartels, other international organizations) and affect relationships between them. Concerning the relational manifestations of this power ("power over"), this article uses a view of energy power based on the view that this power is not only economic but also political, and also that this power may be manifested in ways that go beyond coercion. This view of power builds upon the work of IPE theorists such as Strange, which considered power as going beyond coercion and also including an element of bargain.

The issue of the uniqueness of energy power has been analyzed by IPE specialists from a variety of perspectives, including those seeing it as a means of statecraft [111] and those arguing that both political and economic aspects and sources of this power are important, keeping in

⁸ The US has also imported natural gas from Mexico, but the amounts have been minimal. Over ninety-eight percent of US natural gas imports have traditionally come from Canada.

⁹ I thank Pami Aalto for this insight.

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