



Perspectives

Anatomy of a black sheep: The roots of the Czech Republic's pro-nuclear energy policy

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ABSTRACT

Nuclear energy is one of the cornerstones of the contemporary Czech energy policy. In the country of ten million people, six commercial reactors are on line and two to four new units have been envisaged by recent official documents. The Czechs seem to be committed to nuclear despite the contemporary trends in both the regional and European energy policies, which clearly favor renewable and/or more flexible conventional sources. In this article we examine the main drivers behind the Czech Republic's enduring interest in nuclear energy. The main line of reasoning is informed by Jack Snyder's strategic culture concept, which stresses cultural factors and factors related to the structural characteristics of a country's decision-making process in explaining how concrete policies come into existence. Since such a perspective is rather rare in the field of energy policy analysis, the broader aim of this article is to attract more scientific attention to explanations that go beyond standard techno-economical or systemic analyses.

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1. Introduction

In the aftermath of the Fukushima accident, the European Commission tightened nuclear safety rules and many European countries turned away from nuclear power. Belgium, Switzerland, Spain, and even France have all reconsidered their nuclear energy policies [1]. Germany, with its game-changing “Atomausstieg” decision, has finally officially joined Austria in its strong opposition of nuclear. At the same time, their common neighbor, the Czech Republic, introduced an ambitious plan to build as many as 14 new reactor units by 2060 in its 2011 draft of the State Energy Policy Update (SEPU) [2]. Despite the SEPU's final version, issued in 2014, reduced the number of new units to between two and four [3], it remains clear that the Czech energy policy is following a whole different direction to the ones of Germany and Austria. Remarkably, the pro-nuclear policy continues despite the constraining features of the nuclear power plants such as lengthy construction times, immense capital costs and little output flexibility, all of which make them increasingly difficult to build and operate profitably under the

current market conditions ([4]: 107–113). As the future markets of conventional sources are generally believed to demand flexibility for balancing the non-dispatchable renewable sources, a decision to build a country's energy policy around capital-intensive and inflexible nuclear power may be difficult to explain via standard techno-economic or systemic analyses. Hence, this paper focuses on cultural factors as well as factors related to the structural characteristics of the country's decision-making process. As such, it is significantly informed by Jack Snyder's strategic culture concept, through which he explains the different reactions of different decision-making systems to the same input information ([5,6]: 8). According to Howlett ([7]: 3), strategic culture is a product of a range of circumstances such as geography, history and narratives that shape collective identity, but one which also allows it a role in both enabling and constraining decisions about security. In accordance with Dellecker and Gomart [8], Kim [9] or Hadfield [10] we argue that the concept can also be utilized for guiding energy policy research. From this perspective, the specific energy policies are influenced and enabled/constrained by the factors that are specific to the cultural and structural environments in which the decision-making process is embedded [11]. We argue that the cultural and structural factors provide an additional layer of explanation of the current Czech energy policy as well as shed some light on more general questions such as: In a strongly asymmetric energy/economy relationship, why would the smaller country pursue energy policy

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that fundamentally diverges from that of the larger country? And why would a mid-sized European country lock itself in an energy policy that could eventually become incompatible with the regional and European market environments?

2. Strategic culture

The strategic culture concept was formulated by Jack Snyder in his 1977 paper on the specific features of the Soviet approach to strategic thought, in which he suggested that the American notions of limited nuclear war and intrawar deterrence may not be shared by the Soviet decision makers ([5,6]: ii). The idea that there might be alternative cognitive frameworks related to strategic decision-making, questioned the very basis of American thinking about national security – the assumption that there is a single, universal strategic rationality, which is adopted by any self-aware and perceptive actor, derived in the 1960s from abstract game theory by Thomas Schelling [12] ([13]: 3).

Snyder himself sees strategic culture as *“the sum total of ideas, conditioned emotional responses, and patterns of habitual behavior that members of a national strategic community have acquired through instruction or imitation and share with each other with regard to nuclear strategy”* ([5,6]: 18). He emphasizes that the specific strategic thinking of an individual or a group is a result of a socialization process, to which the individuals are exposed once they join the decision-making community. Furthermore, despite attitudes of the community may change as a result of changes in technology and the international environment, new problems are not assessed objectively. Rather, they are seen through the perceptual lens provided by the strategic culture ([5,6]: v). The core of strategic culture lies therefore in two concepts: the culture, e. g. the ideas and thinking/behavior patterns that are shared and perpetuated among the members of a decision-making community; and the structure, e. g. the way the community is structured, which shapes the way the socialization process affects the community members. We argue that the conceptual framework of strategic culture can provide useful insights also into fields other than strategic thinking, including energy policy.

The idea of applying the framework to energy-related issues is not new. Dellecker and Gomart [8] dwell on the concept when examining the role of energy policy within the renewed geopolitical ambitions of the Russian Federation, Kim [9] assesses the South Korean strategic nuclear energy culture in relation to Korea's ambitions to shape the new international non-proliferation regime, and, most recently, Hadfield [10] introduces a sector-specific strategic energy culture that stems from the range of bilateral EU-Russia energy security policies, suggesting that strategic culture may even be shared between diverse decision-making communities provided they operate in close contact. With this paper we intend to broaden the strategic culture-based energy literature by using the framework to introduce a non-techno-economical explanation for the profoundly pro-nuclear energy policy of the Czech Republic.

3. Nuclear energy in the Czech Republic

In the former Czechoslovakia, energy emerged as a national policy issue shortly after World War II in relation to the coal industry restructuring. As domestic coal production had mostly fueled the military industry (over which the Germans had taken control during the War), the postwar state energy strategy focused on optimization of coal reserves development and on establishing supply lines for the centrally planned development of heavy industry. Already in the 1950s it became apparent that coal alone could not provide enough power for booming industry, and the decision-makers started searching for additional sources of energy.

The country's tradition in uranium mining (see for example [14]) and advanced technological know-how made the country capable of manufacturing most of a nuclear plant's components. These were among the main reasons for developing nuclear energy as an addition to the coal-based generation portfolio (For more details see [15]: 116–123). Since Czechoslovak exports represented the backbone of the Soviet uranium supply, the Soviet Union was keen to assist Czechoslovakia with designing and building the new units. The first result of this cooperation was the A-1 plant. Its construction commenced in 1958 and in 1972 it came on line ([16]: 245–246). The cooperation then took off substantially as 24 reactor units were envisaged for the 1979–2010 period ([17]: 65). By 1991, when the Soviet Union collapsed, eight of them were completed: four units in Slovak Jaslovské Bohunice and another four in Czech Dukovany. Another eight were under construction: four in Slovak Mochovce and four in Czech Temelín [18]. Temelín's third and fourth reactor units, which were in the planning stage, were cancelled as early as 1990 and a debate over whether to write off the growing sunk costs or finish the construction of the first and second units accompanied each government until their grid connection in 2000 and 2003 respectively ([16]: 249–250). Already in 2004, the State Energy Policy document envisaged building another two or more large reactors, which started the discussion about further development of the nuclear sector that has continued ever since [19].

4. Cultural factors

In this section, we introduce three important cultural factors influencing the Czech energy policy articulation: the importance of energy self-sufficiency, the image of the external enemy, and the role that the issue of nuclear waste occupies in the Czech energy discourse.

4.1. Self-sufficiency as the core concept

The concept of self-sufficiency has played an important role throughout the 1990s' debate over the Temelín NPP completion. The idea of importing electricity is barely acceptable for 90% of Czech citizens [20] and this feeling is widely shared among the decision-makers. The most recent official documents such as the SEPU present “energy security” and “energy self-sufficiency” as interchangeable terms, even though its main line of reasoning is derived from the works of ENTSO-E which, instead of self-sufficiency, praises generation adequacy combined with trade-facilitating cross-border interconnections as a means of fostering security of supply [21]. Interestingly, the Update's Supplementary Analytical Material, in a rather Freudian manner, accidentally replaces “competitiveness” with “self-sufficiency” in a standard triangle depiction of energy policy goals (security, competitiveness, sustainability) ([22]: 8).

It is not the consensus on self-sufficiency that makes the Czech Republic unique – the vast majority of any state's citizens would probably support their state's self-sufficiency for any form of production. Rather, it is the idea that nuclear energy ranks among preferred domestic sources which makes the country unique. Despite the fact that Czech companies do not participate in the nuclear power's front cycle anymore and the options for nuclear fuel diversification are rather limited [23], the perception of nuclear as a domestic source remains an integral and unchallenged part of the Czech energy discourse. There are three reasons that could explain this perception. First, the technological characteristics of the nuclear energy front cycle make nuclear fuel an engineering product rather than a natural gas-like energy commodity ([24]: 487–491). Furthermore, its energy density allows

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