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Institutions in European and Asian energy markets: A methodological overview

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HIGHLIGHTS

- Institutions include informal types and three formal types.
- The functions of institutions relate to transaction costs, order and ecology.
- Transaction cost reduction depends on order creating institutions.
- Ecological functions are the most difficult to realise regionally.
- Informal institutions are most influential in the EU and east Asian markets.

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ABSTRACT

This article introduces a methodological framework to study institutions in European and Asian energy markets with a comparative case study on the EU and east Asia. A distinction is made between informal and three types of formal institutions; and their transaction cost reducing, order creating and ecological/climatic functions. The operation of energy markets is explained through the structure of institutions, their types and functions. It is found that order-creating institutions guarantee enough stability, (mutual) trust and solidarity among EU Member States to support the competitive markets institution and supranational formal institutions as the underpinnings of trade in the internal energy market, which nevertheless retains some corporatist features. In the east Asian markets the nature of order-creating institutions sovereignty, energy diplomacy and great power management prevents the emergence of supranational formal institutions and a shared idea of trade. The prevailing structure has a large number of sub-regional organisations with overlapping tasks and few powers. In both markets the functions of institutions signify more than their number; transaction cost reducing institutions are dependent on order-creating institutions, while both of these functions are better realised on the regional level than ecological/climatic functions; ultimately informal institutions are most influential.

1. Introduction

In this Special Issue we examine the role of institutions in the operation of energy markets in Europe and Asia, in particular the European Union (EU) and east Asia. Institutions are crucial for three reasons.

First, economics in general and energy economics in particular, alongside the relevant public policy literature, show how market failures necessitate energy policies duly formulated and implemented by formal institutions. As the Editors of this Journal (Greening and Jefferson, 2013) recently noted, there may be several reasons for market failures, including the environmental externalities produced as side-effects of energy extraction, production, transport and use (Hammond and Jones, 2011, p. 23); or due to the energy trade bearing some features of a public good, such as the need for price stabilisation, spare capacity, secure sea

Abbreviations: APEC, Asia-Pacific Economic Cooperation; ASCOPE, ASEAN's Council of Petroleum; ASEAN, Association of South-East Asian Nations; DG, Directorate-General (of the European commission); EBRD, European Bank for Reconstruction and Development; ENTSOG, European Network of Transmission System Operators for Gas; ERIA, Economic Research Institute for ASEAN and East Asia; GHGs, greenhouse gases; HAPUA, The Forum of Heads of ASEAN Power Utilities; IFIs, international financial institutions; IPCC, International Panel on Climate Change; NEA, north east Asia; UNFCC, United Nations Framework Convention on Climate Change

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lanes offering transport routes for energy commodities, and certain features of energy infrastructure, such as electricity grids or gas pipelines. Alternatively, market failures may imply a lack of competition, for example when natural monopolies are involved (see e.g. Goldthau, 2012, pp. 67–68, 71–73; cf. Weymann-Jones, 2009, p. 770). Finally, energy market actors may lack the information needed to properly operate in the markets, given the widespread uncertainty in this realm (Foley and Lönnroth, 1981, pp. 6, 16, 19–21). In each of these instances energy policies, necessarily set up and enacted by formal institutions, can address the problems.

Second, in the case of government failures, institutions can be held responsible for problems such as distorting taxes, subsidies, regulations or constraints imposed on trade and investment (Bergstrom and Randall, 2010, p. 203). Such politicisation of energy may prompt references to 'resource nationalism' (Bressand, 2013, pp. 17–18). The external effects of such policies, and the foreign policy dimensions of energy, lead some international relations scholars to refer to 'energy geopolitics', 'energy imperialism' or 'petro-aggression' (e.g. Colgan, 2013; Molchanov, 2012). Although restraint in the analytical use of such terminology and in over-politicising energy are advisable (Aalto, 2012a, pp. 11–13; Zha, 2013, pp. 2–4), such studies serve to draw attention to economically inexplicable actions. Probably the most often mentioned actor in this context is Russia, which during the period 2000–2010 was involved in 31 instances of politicising energy (Orttung and Øverland, 2011, p. 77). Some OPEC members likewise receive attention. On the demand side, we find customer states' boycotts of fossil fuel commodities from certain producer states. All these problems can be addressed by developing institutions.

Third, alongside their qualities in containing market and government failures, institutions can shape the overall structure of energy markets. The role of OPEC in controlling production and pricing policies is a good example. On the demand side some other intergovernmental institutions can be mentioned, such as the Energy Charter Treaty, and institutions seeking to shape the new trends of energy markets such as the International Renewable Energy Agency and the International Partnership for Energy Efficiency Cooperation. More general organisations with some energy market related functions include the G7/8 and G20 (van de Graaf, 2013, pp. 48–61). As regards the multiple regional and global institutions, most of which have relatively weak capacities to mould energy markets (see Dubash and Florini, 2011; Florini and Sovacool, 2009; Lesage et al., 2010; van de Graaf, 2013), we also note reasons of prestige as well in order to explain their existence.

In short, there are several reasons, both economic and political, why energy policy decision-makers should be interested in the quality of institutions and energy analysts capable of assessing their operation. In this Special Issue we focus on the role of regional institutions in the energy markets of the EU and Asia, including the regional coordination among national institutions. This latter aspect of our task is especially pivotal for Asia, which lacks supranational institutions comparable to those of the EU. In the EU, market actors are questioning whether too many institutions regulate markets, or whether EU institutions are excessive in their pursuit of integration (Beckman and van Renssen, 2011). In the east Asian markets, which are the most dynamic in Asia and consequently in focus in this article, integration continues to be economic cooperation driven by multinationals (Fujita et al., 2011, p. 2). Institutional development is most advanced in south east Asia under the auspices of ASEAN, with many demonstrable benefits of regional energy systems (Shi and Kimura, 2014, pp. 18–19; Bhattacharya and Kojima, 2010; Aalto, 2014). North east Asia has also been found to need regional energy infrastructure (von Hippel et al., 2011), although the regional institutions capable of facilitating its building are few.

This article outlines a methodological framework for this Special Issue by answering two questions (1) how can institutions amend market failures, the over-politicisation of energy and in general shape energy markets? and (2) how can we explain the different institutional paths in the EU and east Asia?

The Section 2 sets out the methodological framework. To answer the first question, it is suggested that we need a typology of institutions and their functions in order to properly assess the extent to which institutions can provide a counterweight to the known problems in energy markets and energy policy, and to be able to compare the role of various institutions in the EU and east Asia. In Section 3 the results regarding the types and functions of institutions in the EU and east Asian markets are discussed. The Section 4 briefly initiates discussion on how the two market areas we examine are evolving in response to the global trends introduced in the Guest Editorial of this Special Issue (Aalto and Talus, 2014), to pave the way for the further contributions to this issue. The conclusions outline some general policy implications.

2. The methodological framework: how can we study institutions?

2.1. Case-oriented comparative method

A problem-solving, case-oriented comparative method will be proposed in this article. This first step in our methodological framework is natural in the study of international political economy in the absence of any large-*n* statistical data on such macroeconomic/political phenomena, or paradigmatic cases, as institutions in the EU and east Asian energy markets (see Odell, 2011, pp. 63–73).

The EU market is chosen for our comparison as a case of institutionally complex development which to a large extent characterises energy markets in Europe overall. EU institutions today are crucial for European energy policies owing to the Union's competences (shared with Member States) in this area since the Lisbon Treaty came into force in 2009. There are also attempts to export the EU rules to neighbouring states. The Union has an increasing role in supervising Member States' contracts for energy imports and in the building of European-wide infrastructure as well as in the dialogues with the Union's neighbours. Even though the EU must coordinate its actions with those of Member States and other actors in the European energy markets (see e.g. Aalto and Korkmaz Temel, 2014; Lee, 2013, p. 243; Talus, 2013, pp. 212–68), it offers a useful benchmark case study of regional energy market integration.

Although our methodological framework is generic enough to be applicable to several Asian sub-regions and beyond, in this article east Asian markets are chosen as a contrasting case due to the emerging demand for regional formal institutions. This makes the highly formalised EU structures a natural precedent, some aspects of which have already been compared to east Asia (Andrews-Speed, 2014; Dent and Thomson, 2013). The east Asian case, for its part, potentially offers insight into the role of informal institutions in integration (Söderbaum, 2012, p. 20). In this article the comparison of the institutional structure of the EU and east Asian energy markets is pursued further by scrutinising the similarities and differences across several types and functions of institutions (for the comparative method, see e.g. della Porta, 2008, pp. 204–208). More detailed aspects of institutions in the EU markets and of the greater sub-regional variation in east Asia are analysed in the articles of this Special Issue (see Aalto and Talus, 2014). Each new case to be examined is expected to be heuristic in terms of revealing new features by which institutions can impact energy markets and what constraining and enabling