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Energy market integration and regional institutions in east Asia



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HIGHLIGHTS

- The structures of institutions explain East Asian energy market integration.
- Transaction costs are increased by statist trade institutions and bilateralism.
- Order-creating institutions are sub-optimal for energy market integration.
- Multi-level great power management offers limited leadership for integration.
- The environmental stewardship institution supports cooperation on green energy.

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ABSTRACT

This article assesses the case made for energy market integration in East Asia by comparing the role of institutions in South East Asia and North East Asia. The types and functions of institutions and their overall structure are examined in light of global energy market trends. In South East Asia, the shift attempted by ASEAN towards more competitive markets is hampered by the remaining statist variants of the trade institution and bilateral energy diplomacy, which, as regards transaction cost functions, are sub-optimal. As for institutions with order-creating functions, the unresolved status of sovereignty within ASEAN hampers regulatory harmonisation; the great power management institution has since ASEAN's establishment reduced conflicts without providing decisive leadership conducive to integration. North East Asia's dependence on global energy markets overshadows the regional integration potential of the diverse liberalisation efforts and interconnection projects. Bilateral energy diplomacies, new trilateral institutions combined with 'Track Two' institutions and remaining great power competition co-exist. In both regions the institutional structure allows for step-wise, technical infrastructure integration. The environmental stewardship institution co-exists with statist energy security and development objectives while it supports cooperation on green energy. The overall structure of informal institutions constrains deeper energy market integration in several ways.

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1. Introduction

In this article the integration of energy markets in East Asia is examined by assessing the different types and functions of regional

institutions, including regional cooperation among national level institutions, and by taking account of global energy trends.

Studies conducted under the auspices of the East Asia Summit (EAS) have proposed that energy market integration should comprise liberalisation of energy trade, investment and domestic energy markets, development of regional energy infrastructure and institutions together with energy pricing reforms. These measures would strengthen the region's economies, reduce development gaps, optimise the use of energy resources and improve energy security as well as environmental and climate policy (Shi and Kimura, 2014, p. 10; Bhattacharyay, 2010, pp. 1–2). Correspondingly, failure to integrate regional energy markets could become an obstacle to economic growth in East Asia (Horie, 2011, pp. 451–57). Furthermore, in a survey of over 3000 Asian opinion leaders in 2010, improving energy interconnections and other infrastructure was ranked as the most potent and urgent area of regional integration (Capannelli, 2011, p. 8).

Abbreviations: ACIA, ASEAN Comprehensive Investment Agreement; APEC, Asia-Pacific Economic Cooperation; APG, ASEAN Power Grid; ASCOPE, ASEAN's Council of Petroleum; ASEAN, Association of South-East Asian Nations; ATIGA, ASEAN trade in Goods Agreement; EAS, East Asia Summit; EIA, Energy Information Administration; ERIA, Economic Research Institute for ASEAN and East Asia; FTA, Free Trade Agreement; GHG, greenhouse house gas(es); HAPUA, The Forum of Heads of ASEAN Power Utilities; IEEJ, Institute of Energy Economics of Japan; IFIs, international financial institutions; NEA, North East Asia; NEA-3, China, Japan and South Korea; NOC, National Oil Company; SEA, South East Asia; TAGP, Trans-ASEAN gas pipeline; WTO, World Trade Organisation

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A compelling case therefore exists for energy market integration in East Asia. At the same time regional integration is inseparable from global trends owing to the region's heavy dependence on external supplies of fossil fuels. Only Australia, Indonesia, Myanmar, Malaysia and Vietnam have a positive ratio of domestic energy production to supply (Bhattacharya and Kojima, 2011). Some early signs suggest the regional cooperation facilitates the North East Asian states' energy dialogues with their Middle Eastern oil suppliers that have so far provided half of China's oil imports and some 80–90% of those of Japan and South Korea. New regional energy infrastructure also enhances competition by bringing Russian supplies onto the markets (Kanekiyo and Yoshikazu, 2013, pp. 77–84; cf. Motomura, 2014; Shadrina, 2014; Tabata and Liu, 2012, pp. 160–3).

East Asia is currently most dependent on external supplies of oil. In the IEA's New Policies scenario, oil demand in non-OECD Asia will increase by 2035 to 35.5 mb/d plus 2.8 mb/d in Japan. Production will only be 6 mb/d, plus 3.7 mb/d in Kazakhstan and 9.4 mb/d in Russia (IEA, 2013a, pp. 481, 505). These features indicate how East Asian regional integration is intertwined with the global trends discussed in this Special Issue: new interconnections; more competitive markets; new suppliers (including Russia); and the market entry of new sources of energy from the proliferation of LNG to unconventional fossil fuels and renewables (Aalto and Talus, 2014).

The role of institutions in actually facilitating the targeted positive outcomes in East Asian energy market integration remains under-investigated. The constraints imposed by the relative weakness of regional intergovernmental institutions on energy market integration, however, are frequently noted (e.g. Shi and Kimura, 2014, p. 19). In this situation, the operations of international companies, primarily of Japanese origin, have so far provided the impetus in the form of foreign direct investment and cross-border production and distribution networks. These, in turn, have been facilitated by decreasing transportation costs (Fujita, Kuroiwa and Kumagai, 2011, p. 2; Kim and Gokan, 2011; Capannelli, 2011; Dieter, 2012, p. 117; cf. Bhattacharyay, 2010). This predominant economic integration pattern returns us to the role of states and their mutual coordination as providers of transport, energy supply and other infrastructure to facilitate the regional operations of companies.

The lack of more detailed attention to how state institutions are actually involved in regional energy market integration is problematic given the centrality of state institutions in the economies of East Asia. The states' centrality is a natural consequence of the state capitalist, neo-mercantilist, developmental and markets socialist variations of how the institution of trade is often organised in East Asia (see e.g. Beeson, 2009; Bremmer, 2008; Dent, 2012a; García, 2011; Stubbs, 2012; Aalto, 2014; Shadrina, 2014). Moreover, insufficient attention has been paid to the order creating functions of states and other institutions vis-à-vis the provision of a firm enough structure for energy market integration. State sovereignty is a major order-creating institution in international relations and in particular in East Asia (Narine, 2012, p. 156). In fact, the existing studies of regional economic and energy market integration, and studies on how sovereignty shapes regional integration in East Asia, have explored very different questions (see Beeson and Stubbs, 2012, p. 5).

In order to fill some of these gaps in the existing research, in this article market and sovereignty issues, or transaction cost reduction and order creation problems are scrutinised systematically as parts of the same methodological framework alongside ecological/climatic problems. The research question is: to what extent do institutions support energy market integration in the sub-regions of South East Asia (SEA) and North East Asia (NEA)?

In the next section the comparative methodological framework and material utilised is introduced. In the third section the results

are discussed in the context of the global trends. The final section concludes the article and discusses some policy implications.

2. Methodological framework: institutions and energy markets in east Asia

2.1. Heuristic case study comparison

In this article the similarities and differences among regional level institutions in the SEA and NEA regions are compared vis-à-vis energy market integration (for the method, see Porta, 2008, pp. 204–208). These two East Asian case studies are heuristic or instructive with regard to the wider prospects of integration in representing the only Asian sub-regions with notable intraregional trade (see Capannelli, 2011, p. 5).

The two case studies will build on the comparison of the institutional structure of the EU and Asian mega-regions (Aalto, 2014), and other contributions to this Special Issue. Set against this wider background, the two sub-regional case studies are heuristic in the sense of 'serving to find out' further constraining and enabling institutional features on the basis of an additive logic or 'building-block' technique, where cases are examined one after another (see Eckstein, 2009, pp. 137 and 38). Each new case can help to reveal new context-specific features of institutional structures which, for their part, facilitate the assessment of the integration of Asian energy markets in more detail. The analysis builds on the finding that institutions need to be adapted to and examined in their relevant regional context (see Talus, 2014).

The SEA represents a maximalist case of regional level formal institutions so far in Asia in the form of the numerous bodies of ASEAN. The 'ASEAN way', which relies on wide consultation, avoidance of contentious issues, consensus-building and informal networking, underpins other regional fora in Asia not least due to ASEAN's outreach institutions embracing the NEA partners and others (Beeson and Stubbs, 2012, p. 3; see Section 3 below). The trends of competitive markets and new interconnections can well be scrutinised through this case. ASEAN Member States have jointly declared liberalisation targets and have ambitious regional energy infrastructure projects in natural gas (TAGP) and electricity (the APG). The Greater Mekong regional power trade is intended to link Cambodia, China's Yunnan and Guangxi provinces, Laos, Myanmar, Thailand and Vietnam. Yet, with the exceptions of the Philippines and Singapore, ASEAN lags behind Australia in energy market liberalisation (Shi and Kimura, 2014, pp. 14–21). On the whole, SEA can be compared to European energy market integration in the late 1980s and early 1990s. Regarding the building block technique it represents an Asian benchmark for our second case.

NEA is a minimalist case vis-à-vis regional formal institutions. While this region represents a more mixed pattern with regard to commitment to competitive energy markets, it has several new interconnection projects in oil, natural gas and electricity grids (see Aalto, 2014; Motomura, 2014; van de Graaf and Sovacool, 2014 and Shadrina, 2014). NEA is a pilot case regarding Russian supplies of oil and natural gas to Asia. Russian natural gas could also become economically viable for some ASEAN members by the 2020s (Chang and Li, 2014a, pp. 172–5). Further, NEA illustrates the trend of new sources of energy. China has globally the second highest potential in unconventional gas production. LNG use is expected to expand in China and South Korea, alongside new demand in the world's largest LNG market in Japan occasioned by the Fukushima nuclear accident. China and Japan have ambitious plans for developing renewable sources (see Table 4). NEA can be compared to Europe before the establishment of its first formal energy market institutions in the 1950s, and to the initiation of

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