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JT03328762
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Introduction

1. This case study focuses on international regulatory cooperation within the EU with respect to the energy markets. It does not look at the cooperative arrangements in place in this domain between the EU and neighbouring countries.

2. EU policy with respect to energy has three key components: market competition, sustainability and security, enshrined in the Lisbon Treaty (Article 194 of the Treaty on the functioning of the European Union; EU Commission 2011a). Energy networks within the EU have historically been constructed and operated on a national basis by vertically integrated monopolies, usually in full or partial state ownership, with the state’s interest exercised either by central or regional governments. Energy policy has thus been primarily nationally based, with limited cross-border trading. Geographical barriers such as mountains and seas have also limited interconnections.

3. The EU’s interest in enhancing cooperation and integration of EU-wide energy networks has grown since the 1980s. EU policy was initially focused primarily on economic objectives of liberalization and the development of an efficient internal market. However, the objectives have broadened over the last ten years. Development of integrated network is now seen as critical to the attainment of environmental sustainability, by facilitating the connection of energy generated by renewable sources to the energy grids. It is also seen as necessary to ensure security of supply, by facilitating the movement of electricity and gas within the EU and between EU and neighbouring states. Finally, the Commission hopes that it will contribute to EU solidarity (e.g. EU Commission 2011b and 2011c; EU Commission 2008).

4. The fulfilment of these aims requires slightly different strategies in the electricity and gas sectors: in electricity the key is seen to lie in the development of an integrated grid and the connection of renewable energy sources; in gas, it is to increase diversification of supply (EU Commission 2008 and 2011c). However, in both cases international regulatory cooperation between EU member states (and indeed with neighbouring countries) is critical if the goals of competitiveness, security and sustainability are to be met.

1. Identification of the main characteristics of IRC

5. The actors involved currently comprise a cooperative grouping of national energy regulators (the Council of European Energy Regulators, or CEER), a new EU regulatory agency (Agency for the Cooperation of Energy Regulators, or ACER), and two approved associations of industry actors for the electricity and gas sectors: the Energy Network Transmission System Operators (ENTSOs), responsible for developing codes of practice for cross-border transmission within guidelines set by ACER.

6. In addition, the EU provides funding to support the development of the trans-European energy network (TEN-E), to the value of about Euro 20 million in 2008.¹

¹ In 2007, the European Commission published a priority interconnection plan (PIP) which set out the Commission’s priorities (EC, 2008). These included identifying the most significant missing infrastructure and ensure political support to address them, including appointing European coordinators to accelerate the development of particular projects. These were a high-voltage electricity connection between France and Spain; offshore wind connections in the Baltic and North Sea areas; northern Europe power link between Germany, Poland and Lithuania; and the natural gas axis linking the Caspian Sea countries and the Middle East to the European Union including the Nabucco gas connection project between Turkey and Austria.
7. The intended objectives of enhancing regulatory cooperation between EU member states are:

- **competitiveness** the development of a single integrated EU energy market by 2014 based on principles of liberalization and competition,
- **sustainability** - the development of sustainable energy supply based on renewable resources
- **security of supply** - to create a pan-European energy network in order to contribute to ensuring security of energy supply for individual member states and the EU as a whole.

8. The principal means to be used to achieve these ends are:

- development of effective internal market in electricity and gas based on principles of separation of ownership and / or control of electricity generators from transmission system operators, overseen by independent national regulatory agencies;
- setting minimum standards / regulatory harmonisation of technical provisions to enhance interoperability, the development of regional energy systems and the elimination of energy ‘islands’ within the EU, including rules on non-discrimination with respect to network access;
- enhancing cooperation between national regulatory authorities, in particular through the creation of ACER;
- enhancing cooperation between transmission system operators through the creation of formal associations charged with developing network codes to facilitate inter-operability and the development of regional, cross-border energy networks.

2. **Forms that the cooperation is taking**

2.1 **Formality**

9. International regulatory cooperation in the field of energy has become increasingly formalised over the last 10-15 years. Initial EU legislation focused on liberalisation and regulation of national energy markets. International cooperation was sought through a voluntary committee of national regulators (the Council of European Energy Regulators, CEER, established in 2000), deliberative Forums on gas and electricity comprising national regulatory authorities and other stakeholders, and voluntary agreements between national regulatory agencies (NRAs), industry associations and other stakeholders. Under the Third Energy Package 2009 (in force from 2011), international coordination between national regulatory agencies has been formalised by the creation of the Agency for the Coordination of Energy Regulation (ACER), based in Slovenia, though CEER continues to exist (see below).

10. The Third Energy Package also comprises a series of directives and regulations which provide for the enhancement of the efficient functioning of an internal market in energy, and for increased cooperation and coordination between network operators. The new laws provide for the formation of binding EU-wide Network Codes, which are to be formulated by newly created organisations of transmission system through Romania, Bulgaria and Hungary.

operators (European Transmission System Operators, or ENTSOs). The Network Codes have to conform to framework guidelines proposed by ACER and approved by the Commission (discussed further below), and are monitored by ACER.

11. The EU is the world’s largest energy importer, and so relations with third countries are also critical. The Commission estimates that the EU's energy import dependence will jump from 50% of total EU energy consumption in 2007 to 65% in 2030. Reliance on imports of gas is expected to increase from 57% to 84% by 2030, of oil from 82% to 93%. This dependence creates significant economic and political risks (EU Commission 2007). Member states have their own bilateral contracts with neighbouring countries, though the Commission has tried to encourage EU-level agreements instead, arguing that the EU as a whole has greater leverage to negotiate agreements than member states alone (EU Commission 2011a). There is a variety of separate agreements between the European institutions and neighbouring states relating to energy supply. These range from binding legal agreements, such as the Treaty establishing the Energy Community (2006) to multi-lateral non-binding agreements such as the Baku initiative, to bilateral dialogues, e.g. the EU-Russia dialogue (see Youngs 2007). IRC with non-EU countries is not covered in this case study, however.

2.2 Scope

12. The IRC covers the whole of the electricity and gas markets, partly through ACER and partly through a voluntary grouping of national regulatory agencies (CEER).

2.3 Mode of coordination

13. Managed networks of (i) national regulatory agencies to be coordinated by ACER and (ii) industry operators to be coordinated through the creation of ENTSOs under EU Regulations. The draft statutes, list of members and draft rules of procedure, including the rules of procedures on the consultation of other stakeholders, had to be submitted to ACER and the Commission for their opinion on them before the ENSTOs could be adopted, though no provision was made for them to have to be altered to conform to those opinions.

14. Market based – implementation through market operations, subject to provisions designed to contribute to the development of an effective internal market in energy. These include the provisions comprised in Network Codes.

2.4 Instruments of cooperation

15. There are three main sets of instruments of cooperation, itemised here and detailed further below.

2 Contracting parties are the EU, Albania, Bosnia-Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo pursuant to United Nations Security Council Resolution 1244 Republic of Moldova and, as of 1 February 2011, Ukraine: (European Council 2010).

3 Launched in 2004 in Baku by the European Commission and the Black Sea and Caspian Littoral States and their neighbours. The initiative aims to enhance the integration of the energy markets of participating countries with that of the EU to create transparent markets, encourage investment and enhance the security of energy supply (European Council 2010).

Formal – based in EU law and now overseen by an EU regulatory agency, ACER;

Informal – association of energy regulators which advises ACER and which coordinates on issues outside ACER’s remit (CEER); and deliberative forums in gas (Madrid Forum) and electricity (Florence Forum) which include regulators, the Commission, industry operators and other stakeholders;

Sector-based cooperative agreements (EU-wide Network Codes) produced by formalised industry associations (ENSTOs) within guidelines set by ACER and approved by the Commission.

2.5 Functions being coordinated / components covered in agreements?

Ex-ante exchange of information – under the Directives, national regulatory authorities (NRAs) are required to consult and cooperate, and to share such information with each other and with ACER as is necessary to the other perform their tasks5;

Agenda setting / setting goals – through the agreement of EU Directives and Regulations that comprise the Third Energy Package, viz: market liberalisation and competition, sustainability and security of supply;

Formulating rules / norms / standards – through the agreement of framework guidelines and associated Network Codes; ACER can also decide upon the terms and conditions for access to and operational security of cross-border infrastructure where member states cannot agree after 6 months; Guidelines formalising the decision can be proposed by the Commission and approved through the regulatory scrutiny procedure (which requires approval by advisory committee, Council and the European Parliament);

Monitoring, data collection – ACER is charged with monitoring the activities of NRAs and ENTSOs to ensure that the regulatory objectives are being achieved;

Supervision and enforcement – ACER has powers to notify the Commission where EU provisions are not being implemented and the Commission can take infringement proceedings;

Dispute resolution – if Member States cannot agree terms of network coordination after six months ACER may resolve the dispute. The decision is formalised in Guidelines recommended by the Commission (on ACER’s advice) and passed through the regulatory scrutiny procedure (involving the Council and Parliament);

Crisis management / emergency measures - Member States and gas companies are encouraged under EU legislation to coordinate their preventive actions and emergency plans at regional and European levels. Companies are required to be able to deliver gas for at least 30 days of average demand as well as in the case of an infrastructure disruption under normal winter conditions.

5 Directive 2009/72, a.38.
3. **Short history of the development of the IRC**

16. EU concern with energy markets dates back to its formation, with a common approach to energy at the core of the 1952 with the Coal and Steel Treaty and the 1957 Euratom Treaty. However, energy markets have historically been organized as publicly owned monopolies operating at national or regional level. To the extent that there was cross-border trade in electricity, this was confined to wholesale transactions between owners of the high-voltage grids, managed in accordance with rules of an industry association established in the 1950s (Vasconcelos 2005; Matlary 1997).6

17. In the mid 1980s, the Commission adopted a policy of liberalisation and independent regulation in a number of markets, including energy, to promote the single market agenda. It also determined to promote the development of a cross-border internal market for energy. These principles were enshrined in the Single European Act, adopted in 1987.

18. Within the EU, privatization and liberalisation of the energy market commenced in the UK in the 1980s but proceeded at very different rates in different member states. The first independent regulatory agency for electricity was established in the UK in 1989 (Offer), followed by the Nordic countries (Newbery 2002; Matlary 1997). By 1994, seven member states had introduced independent regulatory agencies.

19. The liberalization agenda was met with resistance by a number of member states, however, who were reluctant to liberalise their markets or to cede powers to the EU to regulate what many saw as a sector which was of key strategic geo-political and economic significance, and an important public service (Padgett 2011; Eberlein 2008). In many countries liberalization was therefore opposed by an alliance of national governments and powerful incumbents. In contrast to telecommunications, technological change and global competition were not powerful forces for change at the national level (Jabko 2006; Eberlein 2008; Bartle 2005).

**Liberalisation – the ‘first package’**

20. In 1996 the Commission nonetheless succeeded in negotiating two Directives aimed at ensuring the liberalization of national energy markets. These included provisions on minimum unbundling requirements applicable to vertically-integrated undertakings, minimum eligibility thresholds, and network access regimes. However, although these measures stimulated liberalisation in most member states, they allowed for considerable national discretion with respect to critical issues such as the unbundling of vertical integration, leading to a patchwork of national positions (Hancher 1998). Furthermore, the directives provided little guidance as regards cross-border energy trade or the supra-national integration of energy markets. They did not ensure either that the terms of liberalisation and regulation agreed within each member state be compatible with those in other member states. At the same time, developments in the ownership structure of the industry had led in some instances to the development of pan-European energy companies which were operating within a framework of essentially national supervision. Hence, as the head of CEER from 2000-5 commented, a “regulatory gap” emerged between national markets and the cross-border EU internal energy market (Vasconeles, 2005).

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6 Union for the Co-ordination of Transmission of Electricity, established in 1951.

7 UK, Hungary, Finland, Sweden, Spain, Portugal and Italy.
International coordination and the ‘regulatory gap’

21. Lacking direct powers to require member states to coordinate the regulation of their energy markets, and also lacking expertise in the energy markets, the Commission used ‘soft’ powers instead to establish cooperation between national regulatory agencies, both to facilitate integration and to provide a resource of expert knowledge on which it could draw (Eberlein 2008; Eberlein and Grande 2005). It facilitated the creation of two fora in which the national regulatory agencies (NRAs) could meet and begin to negotiate and cooperate both with each other, with the Commission and the European Parliament, and with network operators and users, including producers, consumers, traders and system operators. The European Electricity Regulation Forum was convened in Florence in 1998 and the European Gas Regulatory Forum convened in Madrid in 1999. Thereafter the groups met on average twice a year.

22. The Commission charged them with the task of gathering, or generating, relevant information and then developing and implementing voluntary rules for coordination. The most pressing concerns were essentially to enable customers at any point on the grid to get electricity or gas from any of the suppliers to the grids. This required, inter alia, the definition of common access rules, agreed pricing rules for transmission of the electricity or gas across the network, different parts of which are owned by different operators, and the development of mechanisms for technical coordination, including mechanisms to manage congestion, and for payments between transmission operators to compensate for cross-border trade (Vasconcelos, 2005; Eberlein, 2005 and 2008).

23. Progress was slow, however, largely because member countries had different interests, particularly in the pricing mechanism adopted for transmission, arising both from the different structures of their national industries, and from their geographical positions within the network and their roles as producers, consumers or transmission operators. In essence, countries which are predominantly producers or and consumers want electricity or gas to flow as cheaply as possible across the network but countries which are predominantly transmission countries want to ensure sufficient cost-recovery for the use of their network (Padgett 2011; Eberlein 2008). For example some countries, notably Germany, which would be significant transmission countries in any integrated European grid because of their geographical situation, were resistant to measures that would enable other producers’ electricity to flow across their grid without ensuring that the German networks were adequately compensated (the tariff issue) and potentially harming German electricity producers and suppliers by facilitating cheap access of electricity from other countries to German consumers (Eberlein, 2008).

24. The Florence and Madrid Fora gave impetus to the creation of organised groupings both of regulators and of system operators. In order to rationalize the industry operators with whom regulators and the commission had to negotiate and to encourage independence within their own national polities (Eberlein 2008), the Commission put in place the European Association of Transmission System Operators (one for gas, one for electricity) in 1999, formalising existing industry groupings. In 2000, the regulatory agencies decided to form their own cooperative group, the Council for European Energy Regulators (CEER). Initially based on an MOU between the initial ten NRAs, as membership expanded it was decided

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8 For those several countries that still did not have NRAs for energy, government representatives were sent instead.

9 Italian, Spanish and Portuguese regulators had already formed in informal cooperative arrangements through meetings, working groups and seminars (Vasconcelos 2005).

10 The very late adoption of an NRA for electricity in Germany was attributed by other members of the Forum to the capture of the ministry by powerful industry operatives: Vasconcelos 2005.
to create CEER on a more formal basis, and it was established as a non-profit association based in Brussels in 2003.

25. The Commission encouraged this development, mandating CEER to develop a system for cross-border trade within the Forum context, though on a non-binding basis. It developed a number of non-binding guidelines on pricing, access, and transparency, notably publication of available transmission capacity. However, voluntary agreements proved difficult to reach (agreement on transmission was not reached until 2003, for example). They were also difficult to implement and to monitor. This was partly because vertical integration between generators, traders, transmission system operators and end-user suppliers still existed in some countries, which created conflicts of interest within and between member states, particularly between those who had liberalized their markets and those who had not (yet were accessing the liberalized markets without opening their own, such as France) and also because two countries whose geographical position made them critical to the development of an EU internal energy market, Germany and Switzerland, did not have NRAs and so were not represented within CEER (Vasconcelos, 2005; Eberlein, 2005 and 2008).

The ‘second package’

26. The Commission therefore continued to use legal means to ensure coordination. It was helped by the fact that the development of an integrated energy market had received additional political impetus through its inclusion in the Lisbon agenda in March 2000. As a result, the ‘second package’ of directives and regulations was passed in 2003. Under these directives, member states were required to establish independent NRAs for the regulation of the electricity and gas markets, with certain minimum sets of powers. Member states were required to fully liberalise their markets by specified dates; stricter provisions were made with respect to network access regime and the unbundling of vertically integrated utilities, though a degree of national discretion was still allowed (Cameron 2005). In addition, the NRAs were required to cooperate both with each other and with the Commission.11 Under a separate regulation, the development of new rules related to cross-border issues was subject to negotiated comitology procedures, involving a specialist advisory committee and the EU institutions, rather than to agreement between regulators.12 The Commission also introduced a regulation on cross-border trade in electricity that formalised the agreement reached by Forum, providing it with a legal basis.

27. However, as member states were still reluctant to cede regulatory powers to the Commission, no institutional mechanism was created to coordinate regulation at the European level. Instead, the Commission established the European Regulators Group for Electricity and Gas (ERGEG) as an advisory


12 Regulation (EC) Nº 1228/2003. Comitology procedures is an umbrella term referring to decision making processes in which the Commission is advised by committees of representatives in exercising its powers to implement legislation. The procedures are set out in the legislation conferring powers on the Commission (Decision 1999/468/EC, amended in 2006. For details see http://ec.europa.eu/transparency/regecomitology/index.cfm?do=FAQ_FAQ#5). In the energy sector, the procedures currently used are termed ‘regulatory with scrutiny’ under which implementing measures have to be approved by the committee, the Council and the Parliament. However, some are sceptical as to their utility. Comitology processes in energy have been colourfully Analogised to ‘hanging two dozens colourful balloons to the Pisa Tower: it can be done, but clearly it does not fit the architecture and it does not improve the stability of the building.’ (Vasconcelos 2005).
body to the Commission, with the objective of facilitating ‘consultation, co-ordination, and cooperation of national regulatory authorities, contributing to a consistent application’ of Community legislation.\(^{13}\) The creation of ERGEG essentially formalised CEER’s role in the Fora, but CEER still continued to operate as a facilitator of national regulatory cooperation, and part to act as a bulwark against the Commission (Coen and Thatcher, 2008; Eberlein, 2010). CEER and ERGEG shared the same board, had joint taskforces and working groups and CEER’s secretariat provided support to ERGEG (ERGEG 2010a).

28. In 2006 the ERGEG embarked on a series of regional initiatives in electricity and gas based on a number of multi-country regional energy markets, in which it created 7 electricity and 3 gas regions as an interim step to complete the single energy market. The aim was to integrate national electricity and gas markets into coherent wider regional markets, and to promote convergence between these regions as a stepping stone towards the establishment of competitive single European markets (EU Commission 2008). The initiatives brought together energy regulators, the European Commission, EU Member States, companies and other interested parties, through Stakeholder Group and other meetings. ERGEG in turn reported to the Florence and Madrid Fora. Through these regions, specific barriers to trade and competition (such as a lack of transparency and different balancing regimes) were tackled by each country working with its neighbours, and solutions found so as to improve market integration, for example with respect to managing bottlenecks, calculating and allocating grid capacity, and making information (e.g. about capacity) available to the market.\(^{14}\)

29. The regional initiatives have been judged to have been successful in facilitating coordination in that they create a forum in which NRAs and TSOs can meet and develop the habit of interaction through discussion of common issues, in some cases changing relationships from one of mutual distrust to constructive communication (Everis and Mercados EMI 2010). They have also permitted regions to pursue integration at different speeds, and facilitated experimentation through the use of pilot projects, benchmarking and dissemination of best practice (ibid). However, the same study found that progress has been hindered by a number of factors, including lack of clear policy guidance and terms of reference as to what the initiatives are to achieve, inappropriate definition of the boundaries of the region in some cases, lack of leadership, lack of a clear role for national governments, duplication with other initiatives, variation in NRA powers, sub-optimal consultation mechanisms and poor project management (ibid).

30. Despite the introduction of legal measures, however, implementation still remained a significant problem. Lacking powers to intervene directly, the Commission used its competition law powers to conduct an inquiry into the energy markets which was aimed at assessing the prevailing competitive conditions and establishing the causes of the perceived market malfunctioning.\(^{15}\) The inquiry included within its scope the issue of lack of market integration including lack of regulatory oversight for cross border issues (EU Commission 2007a).

31. The inquiry found that, three years after the deadline for implementation of the directives had passed, wholesale level, gas and electricity markets were still national in scope, and ‘generally maintained the high level of concentration of the pre-liberalisation period’ (EU Commission 2007a). For example, new entrants lacked access to networks, even where liberalisation had formally occurred, raising suspicions of

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\(^{13}\) Decision 2003/796/EC.


\(^{15}\) Based on Article 17 of Regulation (EC) No 1/2003 on the implementation of the Treaty rules on competition.
discrimination. Incumbent suppliers were favoured by long term supply contracts, particularly in the gas markets. With respect to cross-border trading, insufficient or unavailable cross-border capacity and different market designs hampered market integration both in the gas and electricity markets, with capacity reservations still existing on certain national borders despite their being contrary to EU law. There was also insufficient transparency on generation capacity, gas storage and network availability.

32. The Commission argued that market deficiencies were due not only to anti-competitive practices, but to other more generic issues, notably, systemic conflicts of interest caused by insufficient unbundling of networks, lack of liquidity and transparency and a persistent gap in the regulatory structures, particularly for cross border issues, stating that ‘[t]he regulatory systems in place have loose ends, which do not meet’ (Commission 2007a). It argued for a strengthened regulatory framework, consisting of enhanced powers for independent national energy regulators, reinforced coordination between national energy regulators, forced cooperation between Transmission System Operators (TSO), and substantially enhanced consistency of regulation in cross-border issues, with a stronger role for Community oversight ‘to ensure the Internal Market interests’ (EU Commission 2007a).

33. On the basis of the inquiry the Commission initiated infringement proceedings against 21 member states. In parallel, it issued a Strategic Energy Review, which signalled a shift in energy policy from a pure market liberalisation and competition agenda to one which coupled competition with concerns for environmental sustainability and security of supply (EU Commission 2007b). With respect to regulatory coordination, the Review argued that national regulators needed to be charged with the task of promoting the development of the Internal Energy Market. It argued that the voluntary approach pursued to date had not provided the governance required and that progress had fallen far short of what was needed. In particular, most of the relevant technical standards remained different in each Member State, making cross-border trade difficult and often impossible (EU Commission 2007b). It used the threat of the creation of an EU level agency as an impetus to persuade national regulators to work together more closely (EU Commission 2007b). In addition, it argued that given the high degree of reliance of the EU as a whole on external suppliers of oil and gas, and the sole reliance of a number of countries on one gas supplier, effective mechanisms needed to be put into place ‘to ensure solidarity between Member States in the event of an energy crisis’ (EU Commission 2007b). Finally, a new regulatory approach was needed to enable the fulfilment of EU energy and climate policy goals by providing incentives to modernize energy infrastructures and facilitate the integration of renewable energy sources into the network.

The ‘third package’ – formalisation of coordination and the creation of ACER and ENTSOs

34. In 2007-8 the Commission proposed a ‘third package’ of energy measures. Most significantly, the package included the proposal for the creation of an EU regulatory agency to oversee market integration and cross-border regulatory coordination: the Agency for the Cooperation of Energy Regulators (ACER). The proposals were adopted in 2009. The third package comprises:

- two Directives laying down common rules for the functioning of the gas and electricity markets and for an enhancement of the powers and independence of national NRAs from government (which the Commission sees as vital to liberalization);
- two Regulations setting out the conditions for access to cross-border networks for cross border trading and formalising the role of the existing TSOs through the creation of two legally based European Network of Transmission System Operators (ENTSOs), one each for electricity and gas, whose role is to facilitate the cross-border trade in electricity and gas and to manage the transmission networks;
• a Regulation establishing the Agency for the Cooperation of Energy Regulators (ACER) to coordinate the work of the NRAs;

• a Regulation allowing for exceptional measures to be implemented to ensure security of gas supply within the EU, adopted as a late addition in 2010 a result of the gas crisis in January 2009, when Russia cut off supplies to Europe which travelled through Ukrainian pipelines.\textsuperscript{16}

35. ACER is essentially a formalization of ERGEG, and it became operational in January 2011. The chairman and president of ERGEG and CEER, Lord Rees Mogg, has become the chair of ACER, and another of its board members has become vice-chair. ERGEG was dissolved and its tasks distributed between ACER and CEER. ACER has continued ERGEG’s work in developing regional initiatives for cooperation and coordination, which has been given additional impetus by the Council of Ministers’ target date of 2014 for the completion of the internal energy market (European Council 2011). CEER will take on ERGEG’s responsibilities with respect to customers, and pursue cooperation and the development of common interests in areas outside ACER’s remit, including international energy issues (ERGEG 2010a).

**ACER’s governance structure**

36. ACER formalises the existing cooperative network of NRAs, and has therefore been described as a ‘network agency’ (Thatcher 2011; Lavrijssen and Hancher 2008).

37. Unusually for a European regulatory agency (but following the same model as the EU agencies for financial regulation) its governance structure consists of a Board of Regulators comprising a senior representative and one alternate of the EU Member States’ 27 national regulatory authorities (NRAs) and one non-voting Commission representative. It also has an Administrative Board comprising nine members and one alternate for each, of which two members (and their alternates) are appointed by the European Commission, two (and their alternates) by the European Parliament and five (and their alternates) by the Council. The Administrative Board appoints the Director and is responsible for the governance of ACER, including the development of its work programme. The work programme has to be approved by the Board of Regulators and the Commission. There is also a Board of Appeal.

**ACER’s role**

38. ACER’s core tasks are:

• Ensuring the cooperation of transmission system operators (ENTSOs), who are to develop binding Network Codes, formulated in accordance with Framework Guidelines of ACER and then evaluated by ACER, taking into account their compliance with the Guidelines and with the three objectives of EU energy policy: internal market, sustainability and security of supply.

ACER can then recommend them for adoption by the Commission through the regulatory scrutiny process, having consulted the Madrid Forum and Florence Forum17;

- Approving ENTSOs’ ten year development plans for the development of the energy networks and their annual programmes; monitoring progress on the implementation of projects to create new interconnector capacity, monitoring the security of the network and approving the compliance program of vertically-integrated transmission system operators (TSOs) cooperating within a joint undertaking covering two or more Member States for capacity allocation;

- Monitoring NRAs’ implementation of the energy directives and regulations and where, in its opinion NRAs are not compliant with the directives or with the Agency’s legally binding opinions or decisions, of reporting this to the Commission;

- Dispute resolution powers with respect to the terms and conditions for access and security applicable to cross-border infrastructure when the national regulatory authorities have not been able to reach an agreement within a period of six months or they have jointly requested it;

- Monitoring the internal markets in electricity and natural gas, in particular the retail prices of electricity and natural gas;

- Re-invigorating the Regional Initiatives process and using it as a basis to develop a pan-EU integrated energy market;

- Advising the Commission on the use of its powers to certify ENTSOs, to require the provision of information, to approve the Network Codes, and to determine details of investment incentive rules for interconnector capacity.

Role of ENTSOs

39. The third package also formalised the role of existing industry groups of transmission operators by requiring the formation of two bodies (ENTSOs – European Network of Transmission System Operators), one for gas and the other for electricity. These have a number of tasks, one of which is to develop Network Codes in accordance with ACER’s Framework Guidelines. In practice, the ENTSOs work with ACER and the Commission in developing the codes, which are subject to public consultation. They have to be approved by ACER and by the EU institutions before becoming legally binding (see e.g. ENTSO-E 2011). Codes are to cover cross-border issues including network security and reliability, network connection, capacity allocation and congestion management, trading rules relating to network access, balancing, transparency, third-party access, data exchange and settlement, interoperability, and emergency operation procedures. The aim is that the Codes will become the framework of consistent detailed rules needed for the development and implementation of a liberalized Europe-wide electricity market, and for the secure operation of European power systems. Both ENTSOs and ACER are responsible for monitoring the implementation and impacts of the Codes, once in place.

17 Thus far its work has in effect been to finalise and publish guidelines already formulated by ERGEG prior to its reformation as ACER (ACER 2011; ERGEG 2010a).
Continuing role for CEER

40. Finally, CEER continues to operate as a forum for the cooperation of national regulators and as an informal advisory body to ACER and the Commission, including preparatory work on the framework guidelines. ACER has a small staff of 50, so is likely to be heavily reliant on NRAs and CEER for expertise and advice. CEER will also continue NRA cooperation in areas which fall outside the ‘third package’, such as financial markets, sustainable development, retail market monitoring, quality of energy supply, promoting education and the cross fertilization of information and experience amongst regulators themselves in the Union and at the international level (CEER 2010; ERGEG 2010a).

Time period, main landmarks

1951 – Establishment of the European Coal and Steel Community – ECSC;
1957 – Establishment of the European Atomic Energy Community – Euratom;
1987 – Single European Act – SEA;
1989 – Creation of the first national energy regulator in Europe (Offer – UK);
1997 – Entry in force of the First Electricity Directive on internal electricity market\(^{18}\) / informal cooperation among national regulators begins (Italy, Spain and Portugal);
1998 – Entry in force of the First Gas Directive on the internal market of natural gas\(^{19}\) / 1\(^{st}\) meeting of the European Electricity Regulation Forum in Florence;
1999 – 1\(^{st}\) meeting of the European Gas Regulation in Madrid;
2000 – Approval of the “Lisbon Agenda”/ Establishment of the Council of European Energy Regulators (CEER);
2003 – New package of regulation is approved focusing on cross-border electricity trade\(^{20}\) / Establishment of the European Regulators Group for Electricity and Gas (ERGEG) / institutionalization of CEER with as a non-profit association under Belgian law;
2009 – Adoption of the “Third Package” of legislative proposals / Establishment of Agency for the Cooperation of Energy Regulators (ACER);
2011 - ACER becomes fully operational and ERGEG is dissolved.


4. Assessment (quantified when available)

4.1 Known benefits

41. The goals of IRC are to develop an integrated energy market within the EU which is competitive and efficient, which supports the goals of environmental sustainability, and which ensures security of supply. As yet, these benefits have yet to be fully realised. Although there is an impetus for coordination generated by a strong interdependence between countries which are producers, consumers and transit points, the different positions of countries in the EU energy market, and their different national patterns of liberalisation, generates a diversity of motivations and perceptions of benefits and challenges. Consequently, coordination has taken a long time to develop. It has been eventually enforced from the top through the supra-national prerogatives of the EU. It is difficult to find quantified estimates of the anticipated benefits of the third legislative package, however.

42. Nevertheless, it is widely recognised that there are two main areas in which coordination is needed if the objective of an integrated energy market is to be achieved. These relate first to economic coordination and market structure, and second to technical issues specific to energy.

43. With respect to economic coordination and the development of a single integrated market, in order to move to a market-based system of integration, rules have to be coordinated and harmonized with respect to the break-up of vertically integrated monopolies, which have historically been state-owned ‘national champions’, to open access to pipelines and wires (to facilitate new entrants) and to ensure fair and transparent terms of transit. Even if rules are agreed, however, there is considerable pressure within countries to defect to give ‘national champions’ hidden privileges (Padgett 2011; Youngs 2009), as the Commission’s competition investigations revealed (discussed above).

44. In addition, there are certain technical issues on which coordination is needed. These include: technical integration of transmission systems; economic integration of transmission systems (eg through common tariffs); effective systems of cost-allocation and compensation mechanisms for transmission operators; sufficient capacity of interconnectors; and effective systems of balancing and of congestion management (Vandenborre 2008, Kapff and Pelkmans 2010).

45. Regulatory cooperation through CEER and ERGEG attempted to address these issues and was partly successful, developing a number of regional initiatives to secure regional integration with different parts of the EU, and securing pan-EU agreements on cross-border exchange and trade. In the late 1990s, each Member State had different export, import and transit electricity tariffs, so cross-border trade was subjected to as many tariffs as Member States involved, and did not reflect the actual costs incurred. Different methodologies also existed for the allocation of cross-border capacities (Jones, 2006). ERGEG succeeded in producing consensus for a provisional cross-border tariff system involving the abolition of import or export charges and the adoption of a tariff scheme which compensated network operators for hosted flows, which became legally binding in the form of Regulation 1228/2003 on cross-border exchanges (Hancher and de Hauteclouque 2010) and has now been replaced with a permanent scheme on similar lines, following further negotiations through the Florence Forum.

46. However, in other respects, regulatory cooperation has been slow to develop, and has yet to produce positive impacts in dealing with cross-border issues (CEER 2010; EGREG 2010b; EU Commission 2007). The creation of ACER is meant to address these weaknesses. Indeed cooperation intensified once the ‘third package’ was introduced as a policy proposal, in anticipation of its adoption. In 2010, EGREG and CEER began an intensive process of formulating Framework Guidelines, using the same procedures as were being proposed for ACER, in order that these could be introduced as quickly as
possible after ACER’s powers formally coming into force. It also prepared the ground for the process through which the Network Codes have to be agreed in order to speed up coordination as much as possible (EGREG 2010a). This has had positive effects, and to date Framework Guidelines have been proposed for electricity with respect to capacity allocation and congestion management; grid connections; and system operation. With respect to gas, there are guidelines for capacity allocation mechanisms and for gas balancing in transmission systems. The Codes are not expected to be approved and implemented until 2013-14, however.

4.2 Challenges (and when they exist mechanisms to overcome them)

47. The core need is to create a stable framework which will meet the needs of consumers and producers, which will meet the EU’s objectives of security of supply and sustainability, and which will address the inherent investment risks (EU Commission 2011). However international regulatory cooperation with respect to energy has met with a number of challenges:

Entrenched regulatory path:

48. Historical differences in the ownership structures of the electricity and gas industries and of state involvement, combined with differences in national policies on liberalization, means that industry structure varies considerably between member states, with vertical integration persisting in some not others. Successive legislative packages combined with the Commission’s active use of its competition powers have been introduced to address these challenges.

Regulatory sovereignty

49. National governments have been unwilling to cede power either to national independent regulatory agencies or to the EU with respect to industries which are seen of high strategic importance and with an important public service role. This has had significant implications on the pace of IRC and on the institutional form which it has taken, in particular the interests of member states in retaining as much national control over their energy markets as possible, either directly through ownership or indirectly through regulation, whilst the EU seeks to coordinate member states actions and pursue policies in what it considers to be the interests of the EU and / or its institutions as a whole. This tension is an on-going characteristic of relations between member state and EU institutions in the EU’s system of multi-level governance.

Unequal distribution of risks, costs and benefits within and across countries

50. There are several distributional issues which have proved challenging to overcome. In particular, the market structure creates different distributions of risks, costs and benefits within and across countries (Vasconcelos 2005; 2008; Eberlein 2008; Padgett 2011; Youngs 2009; Stern 1998).

51. There are structural conflicts between countries depending on their position within the market. Risks arising from fluctuations in demand or prices are also differently distributed depending on the economic structure of the industry (Padgett 2011; Haghighi 2007, Youngs 2009; CERA 2007). In oligopolistic markets characterised by long-term supply contracts, which are common in the gas markets (where pipelines are expensive and static and so producers and pipeline operators want to ensure ‘lock-in’ supply contracts to make pipeline investment worthwhile), monopolistic behaviour of firms tends to prevent new market entries and set higher prices (at the expense of consumer surplus). Producer countries have thus resisted moves to market liberalisation, which would have threatened their national champions with the risk of new market entries – on the other hand, it would have meant lower energy prices for users.
By contrast, importing countries seek a reliable supply at lowest possible costs. Countries which are predominantly transit countries are concerned to ensure cost-recovery by users of the transmission system and to ensure that local generators and suppliers are not disadvantaged by the flow of electricity or gas from other countries to their consumers (Eberlein 2008). Furthermore, countries that develop cross-border transmission networks can find, paradoxically, that domestic energy prices are higher than they were when the country was isolated (eg France: Kapff and Pelkmans 2010).

52. Therefore depending on whether they are importers, transmitters or exporters of energy, on the structure of their industry, and the state’s ownership interests in it, national governments will favour one or the other form of market organisation and some market actors over others. They will consequently pull the negotiations within the EU in one or the other direction.

Interpretation of “national interest”

53. Different countries have different national interests, in part arising from the distributional effects noted above, and in part from their views on the benefits of a market-based model as opposed to alternative modes of coordination.

54. It has proved difficult for member states to act in the interests of the region or EU as a whole, where this would not also provide direct benefit to their own country (EU Commission 2011b). This is particularly pressing with respect to the investment needed to upgrade and maintain the network as a whole, in particular with respect to the interconnection systems, which are the key to the creation of an internal energy market. An overall increase of interconnection capacity by 40% up to 2020 will also be needed, with further integration after this point (ERGEG 2010b). The Commission estimates the needs for investment in EU energy transmission systems at around Euro 500 billion in the next decade to improve security and reliability and to enable energy from renewable to be incorporated into the transmission system, of which Euro 200 billion is needed for transmission networks alone (EU Commission 2011b). Further investment will be needed in power generation: currently, nearly 45% of European electricity generation is based on low-carbon energy sources, mainly nuclear and hydropower. Parts of the EU could lose more than a third of their generation capacity by 2020 because of the limited life-time of the installations (EU Commission 2011a). Overall, the Commission estimates that over one trillion Euro is needed in order to attain the Energy 2020 goals (EU Commission 2011a).

55. The bulk of the costs will have to be paid for through regulated tariffs and congestion charges. However, it has thus far proved difficult to get member states to set tariffs or charges at a level which covers full costs at the regional or EU level, as it would entail important issues of cost redistribution across borders. The third package creates an obligation for regulators to take into account the impact of their decisions on the EU internal market as a whole, and so not to evaluate issues solely on the basis of benefits in their own member state. Furthermore, the requirement for the ENTSOs and ACER to produce a European 10-year planning of infrastructure needs and development is intended to provide a longer term vision for investors and to create an environment conducive to attracting long term investment, and to promote regional cooperation in this area. In addition, the Commission has powers to determine compensation payments for transmission operators for costs incurred as a result of hosting cross-border flows of electricity on their networks. However, the system has still been criticised for failing to provide adequate incentives for investment either by national governments or the private sector (Kapff and Pelkmans 2010).
Technical challenges

56. There are a number of technical challenges in integrating the national systems of member states into one system, including the interoperability of transmission systems, the calculation and management of capacity including congestion management, the balancing of supply on a continual basis, and reliability. In addition, the electricity transmission systems as a whole need radically updating in order to be able to cope with the introduction of energy from renewable sources into the system. The broadening of EU membership to 27 countries has brought further technical coordination problems, requiring the integration of transmission systems and infrastructure into the network of the previous 15 member states, many of which need significant upgrading. A challenging aspect of further integration of the EU energy network is that failures at one point can affect a significant number of people and countries, illustrated by the electricity black outs in 2006 and 2009. The creation of EU-wide Network Codes is in part aimed at addressing these different challenges.

Differences in the organisation of regulatory structures and regulatory capacity at the national level

57. Differences in the organisation of ownership and regulatory structures have had an impact on cooperation (Everis and Mercados 2010). In particular, in the past, the lack of an independent regulator in Germany effectively meant that regulatory cooperation had to proceed in its absence, yet its geographical position in the network meant its participation was critical (Vasconcelos 2005). Further, the scope of authority and the instruments available to each regulator vary from country to country, which has led to different perceptions as to what competences can and should be shared, what initiatives should be carried out at supra-national level, which degree of harmonisation may be needed and how regulatory diversity should be accommodated. Through successive Directives the EU has tried to provide a minimum level of harmonisation for national regulatory structures, but difference in powers can still impede some areas of coordination. For example, although there is greater transparency and reporting of available network capacity, for example, some NRAs still lack the powers needed to gather the relevant data from system operators (ERGEG 2010b).

58. In addition, with respect to the regional initiatives, as noted above, challenges have included lack of clear policy guidance and leadership, lack of a clear role for national governments in the process, inappropriate definition of regional boundaries, and weak administrative processes particularly with respect to consultation and project management (Everis and Mercados 2010).

4.3 Costs of IRC

59. As noted above, it is difficult to find a clear cost-benefit analysis of the legislative measures adopted under the ‘third package’. The direct costs of maintaining the institutional infrastructure of regulatory coordination relate to ACER and CEER. ACER’s expenditure in 2011 was Euro 5,119,000 in 2011; its budget for 2012 is Euro 7,489,097 (ACER 2011). CEER’s budget is agreed in its General Assembly but is not published on its website. However, the costs relating to the substantive aspects of IRC, including investment, are much higher; ultimately it is the one trillion Euros estimated to be necessary to attain the Energy 2020 and 2050 roadmaps.

21 The black-out in 2006 was caused by transmission failure in Germany which left 10 million people in Germany, Belgium, France, Spain and Austria without electricity for half an hour. The black-out in 2003 left 50 million people in Italy without power for several hours, due to congestion in transmission networks from Switzerland and France.
4.4 Next steps envisaged

60. The next steps for coordination are the work programme needed to implement the ‘third package’ and the completion of the internal energy market by 2012 (ACER 2011). These include the formation of further Framework Guidelines, the creation of the Network Codes and their approval, the development and approval of the 10-year network development plans, cross-border congestion management, and the continued development of Regional Initiatives and Regional Workplans. ACER will also commence the preparatory work necessary in order to be able to fulfil its new responsibilities in monitoring wholesale energy trading.

4.5 Summary

61. International regulatory coordination in the EU energy sector has been a gradual process which has had three key characteristics:

- increasing legalisation,
- increased development of formal institutional structures for coordination, and
- a shift of power from national to the supranational level.

62. At the same time, EU policy on energy has moved from one focused almost solely on liberalisation and the development of an internal market to one focused in addition on climate change and sustainability, and on the security of energy supply. The EU’s current 20-20-20 policy - 20% of renewable energy; 20% reduction in carbon emissions compared with 1990 and a 20% cut in energy consumption by 2020 - was hard fought but encapsulates this broadening of the focus of energy policy.

63. Several factors have come together to move energy policy in this direction and to push it to the forefront of the EU policy agenda (EU Commission 2011a; Eberlein 2008). These include: first, continuing concerns to improve the competitiveness of the European economy, to which the energy markets are seen as key; second, the increasing political salience of climate change and the drive for sustainability; third, the EU’s security of supply and its vulnerability arising both from its dependence on oil and gas from neighbouring countries (illustrated by successive oil price spikes and the Russian-Ukrainian gas dispute in 2009), and from inter-EU dependence on energy supply (illustrated by the effects of the black-outs in 2003 and 2006).

64. Nonetheless, despite the cross-border impacts of domestic regulations and the need for management of cross-border risks, IRC has faced a number of challenges, both technical and political. In particular, the different interests of national member states arising from different patterns of state and non-state ownership, the structures of their industry and their positions in the energy supply chain, combined with a reluctance to cede powers over such a strategic industry to the EU level have meant that coordination has been slow to develop. Where IRC has developed, it has been through a combination of ‘bottom-up’ pressures from those member states that have liberalised and want others to open their markets in a similar way, and ‘top-down’ pressures from the Commission, looking to assert the interests of the EU as a whole into national policy making.

65. The result has been an increased formalisation of coordination at the EU level while developing and maintaining domestic institutional arrangements based around competitive markets regulated by independent national regulatory agencies. The EU institutions are now legally empowered to act as a network coordinator through a newly created regulatory agency, ACER. However, ACER and the
Commission will continue to rely on NRAs for advice and expertise, both through the continued existence of CEER and through the presence of NRAs on the Board of ACER. The model also includes considerable co-regulatory elements, with certified industry associations (ENTSOs) charged with producing codes and development plans to be approved by ACER and, with respect to the Codes, made binding by the Commission through the regulatory scrutiny process. There has been progress in cross-border coordination at regional level, within different areas of the EU, however pan-EU coordination, particularly on technical issues, is really only now getting under way and so its impacts (whether positive or negative) have still to be realised.
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