



System Operators,  
Transmission System Owners,  
Generators, Suppliers, Traders,  
Customers and Other Interested  
Parties

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*Promoting choice and value for  
all gas and electricity customers*

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Date: 28 March 2012

Dear Colleagues,

### **Open letter: Implementing the European Electricity Target Model in Great Britain**

The electricity market in Great Britain (GB) is changing, driven by major reforms internally and in Europe. The interactions between GB and EU reforms will shape the future GB market.

At the European level, the Third Package<sup>1</sup> is triggering far-reaching reforms to create a single European energy market. In particular, last Friday, draft legislation (Network Codes) setting out the functioning of the single market (the European Target Model)<sup>2</sup> was published. It is expected to enter into force in 2014.<sup>3</sup>

The impact on GB will be significant. Besides changes to existing arrangements to remove obstacles to cross-border trading, efficient implementation could require: development of liquidity in the day-ahead market leading to a robust and trusted reference price for GB; and consideration of appropriate price zones to manage internal constraints most efficiently. These changes could have material interactions with ongoing GB reforms, particularly the Department of Energy and Climate Change's (DECC) Electricity Market Reform (EMR), Ofgem's liquidity project and the potential reform of cash out arrangements.

We could proceed with the minimum necessary changes to remove obstacles to market integration so as to achieve compliance with EU legislation. However, we now have an opportunity to consider the impact of EU reforms in GB holistically and to assess how best to proceed.

This letter invites views on these issues from generators, traders, suppliers, network companies, consumers and their representatives and other interested parties. We welcome any responses on the content of this letter by 22 May 2012.

We are also hosting a workshop on 30 April 2012 to discuss with stakeholders the issues associated with the implementation of the Target Model in GB.

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<sup>1</sup> The term "Third Package" refers to a package of EU legislation on European electricity and gas markets that entered into force on 3 September 2009, see

[http://ec.europa.eu/energy/gas\\_electricity/legislation/third\\_legislative\\_package\\_en.htm](http://ec.europa.eu/energy/gas_electricity/legislation/third_legislative_package_en.htm)

<sup>2</sup> The European Target Model is set out in the Framework Guideline on Capacity Allocation and Congestion Management for Electricity (CACM FG) published by the Agency for the Cooperation of Energy Regulators (ACER) in July 2011. For more information on the Target Model see the Annex to this letter.

<sup>3</sup> The European Network of Transmission System Operators for Electricity (ENTSO-E) is currently consulting on the draft CACM Network Code. Once approved via Comitology they will be annexed to the Electricity Regulation and will be directly applicable in the UK. For more information on the ongoing consultation and an indicative timetable of the steps through to finalizing it in September 2012, see <https://www.entsoe.eu/resources/network-codes/capacity-allocation-and-congestion-management>

## **Challenges for GB market arrangements and ongoing reforms**

The GB energy market will face long term challenges in the coming years. Key objectives are tackling climate change by reducing greenhouse gas emissions and ensuring secure, clean and affordable energy as we become increasingly dependent on imported fuel.

DECC's EMR proposals are aimed at addressing these challenges. EMR will facilitate a paradigm shift in the generation mix from mostly controllable, predictable large scale generation to a significant proportion of intermittent renewable generation located farther from demand. The Feed in Tariffs with Contracts for Difference (FiT CfD) proposal is designed to encourage investment in low carbon generation by providing greater long term certainty for investors. The government also intends to legislate for a Capacity Market, to ensure adequate reliable capacity is available by providing sufficient incentives to invest in new capacity, and by providing sufficient incentives for existing capacity to remain operational.

Ofgem is also considering potential areas for reform to improve the operation of the current market and to support the Government's high level sustainability policies. These include consideration of a significant code review (SCR) of the cash-out arrangements<sup>4</sup> and a consultation on intervention measures to enhance liquidity in the GB power market.<sup>5</sup> They also include Project TransmiT, our ongoing independent review of transmission charging arrangements.<sup>6</sup>

The physical system and the wholesale market arrangements (British Electricity Trading and Transmission Arrangements, BETTA) were designed when the market was dominated by flexible, predictable generation and low levels of interconnection. Interconnection capacity is expected to increase from 2.5 GW at the end of 2010 to 4 GW at the end of 2012 and potentially rising to 8 GW in 2020.<sup>7</sup> To meet the UK's renewable and greenhouse gas emissions targets, approximately 30% of electricity will come from renewable sources by 2020. More intermittent generation, increased interconnection and a more integrated way to trade across borders with neighbouring countries will put stress on existing market arrangements and system operation unless they adapt.

We have already started seeing evidence of changes in the GB market. Some of these changes are particularly relevant for the implementation of the Target Model. For example, constraint costs have increased from £84 million in 2005/2006 following the introduction of BETTA to £170 million in 2010/2011. There have been several high profile incidences this winter of high constraint costs at times of high wind generation and low demand.<sup>8</sup> As the penetration of wind increases, more intermittent generation with low load factor will share network resources with thermal generation putting pressure on the way constraints are currently managed on the system.

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<sup>4</sup> Today we also published a letter notifying stakeholders of our decision to launch an electricity cash-out SCR in the summer.

<sup>5</sup> In our February 2012 consultation, we put forward a proposal to introduce a Mandatory Auction to create liquidity in key longer dated products which we consider is compatible with the ongoing changes to the near-term market outlined in this letter. However we will continue to consider the impact of market changes as we develop our proposal.

<sup>6</sup> We launched a Significant Code Review in July 2011 to consider whether there were any changes required to the electricity transmission charging arrangements. We put forward several options for change developed with industry in our consultation in December 2011. We expect to publish our final recommendations in spring 2012.

<sup>7</sup> National Grid has developed the 'Gone Green' scenario which represents a potential and plausible way forward to meet the climate change challenge for 2020. The scenario is revised annually with input from industry stakeholders and provides one picture of how the system could evolve in 2020. In this picture, GB could have 7.6 GW of interconnection capacity by 2020.

<sup>8</sup> For instance, National Grid spent about £5 million during the week of 23 to 30 November 2011 managing wind-related constraints in Scotland – one of the costliest such events last year. Cumulatively, National Grid spent £33 million from April to December last year in curtailing-off wind from the system.

Interconnectors can provide an important contribution to system management in lowering costs (for example by allowing export of excess wind) and increasing system resilience in case of generation outages.<sup>9</sup>

Against this backdrop of policy, regulatory and physical changes in the system, we need to consider how best to implement the Target Model.

### **European reforms affecting the GB electricity market**

The European Target Model is the main regulatory vehicle for achieving market integration. It establishes common rules to facilitate efficient use of cross-border capacity and to encourage harmonisation of European wholesale market arrangements. The main features of the Target Model are expressed in the timeframes in which electricity is traded.<sup>10</sup>

*Day-ahead market coupling.* Implementation of market coupling will mean that the GB day-ahead price will be calculated at the same time and through the same process as prices in neighbouring markets. Prices across borders will converge when sufficient cross border capacity is available. Across the market coupled area as a whole, consumers should benefit from lower prices as demand is automatically matched with the cheapest generation in Europe as long as there is sufficient cross-border transmission capacity.

*Continuous intraday trading.* Implementation will allow cross-border trading of electricity closer to real time. To the extent that cross-border capacity is available, market participants will be able to buy or sell energy to fine tune their positions to take into account changes in demand or outages. For intermittent generators, intraday trading provides an opportunity to manage their positions as the accuracy of their forecast generation improves closer to real time.

*Electricity balancing.* Following gate closure, the Target Model would require balancing between Transmission System Operators (TSOs) using any remaining available capacity. This would be initially through a bilateral sharing of balancing bids and offers (TSO-TSO common merit order), evolving to a multilateral concept.<sup>11</sup> Consumers should benefit from lower balancing costs and improved security of supply as this is expected to improve National Grid's access to cheaper balancing resources in neighbouring markets when available.

*Long-term transmission rights.* In the forward time frame, the Target Model mandates the development of cross-border markets based on increasingly harmonised long term rights to access capacity on interconnectors.<sup>12</sup> These changes are expected to enhance long term hedging opportunities for GB market participants.<sup>13</sup>

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<sup>9</sup> For example, the Moyle interconnector between Scotland and Northern Ireland went offline between June 2011 and February 2012 due to offshore cable faults. During the period, we experienced escalating constraint costs in Scotland due to inability to export excess wind generation on the system with National Grid spending an extra £20 million to manage constraints. Interconnection also played a key role in resolving the recent demand control incident on 11 February 2012. The network experienced a significant margin shortfall of 3,500 MW forcing National Grid to issue system warnings to industry and demand control instructions to distribution network operators. One of the key tools used by National Grid to maintain system security was cross border trading of balancing services and emergency assistance from RTE in France over the IFA interconnector.

<sup>10</sup> We previously consulted stakeholders on the details of the Target Model in our Electricity Interconnector Policy consultation, January 2010.

See: <http://www.ofgem.gov.uk/Europe/Documents1/Interconnector%20policy%20consultation.pdf>

<sup>11</sup> The Framework Guideline on Electricity Balancing which sets out the Target Model is currently being developed by ACER and NRAs. We expect ACER to publish it for consultation in Q2 2012.

<sup>12</sup> The Target Model provides a choice of long term financial or physical transmission rights with use-it-or-sell-it (UIOSI) provisions unless appropriate cross-border financial hedging is offered on both sides of an interconnector. Transmission rights will initially be allocated through regional trading platforms, evolving over time to a central platform.

<sup>13</sup> The Target Model also provides two choices for the calculation of capacity across borders – Flow-Based or an Available Transfer Capacity (ATC) method for capacity calculation, both making use of a detailed common grid model. The ATC methodology calculates capacity as the remainder available for further commercial activity over and above that already committed in each phase of the allocation process. Flow-Based methodology optimises market flows (i.e. the match of offer and demand) for a selected area subject to network topology and taking into account network security constraints. It matches the collective flows from a source (generation of power

### *Binding requirements and non-mandatory changes triggered by the Target Model*

Target Model implementation will require changes to the GB market to achieve compliance with binding European legislation. These have already included removing network charges on interconnector trades<sup>14</sup> and implementing market coupling over the IFA and BritNed. Changes may also be needed to integrate the GB market with the Single Electricity Market (SEM) operating in the Republic of Ireland and Northern Ireland.<sup>15</sup>

An example of a binding requirement is a mandate on National Grid to propose, and Ofgem to consider, the merits of separate price zones to manage internal constraints in GB more efficiently. The idea is that electricity is exported (or imported) across interconnectors only when there is a real surplus (scarcity) of generation in the relevant portion of our network (zone) connected to a neighbouring country.<sup>16</sup>

ACER's Capacity Allocation and Congestion Management (CACM) Framework Guidelines, sets out this requirement in detail. The associated CACM Network Code being developed should *'provide that TSOs [National Grid] propose the delimitation of zones for subsequent approval by the relevant NRAs [Ofgem in GB]. In cases where it can be shown that there is no significant internal congestion within or between control areas, one or several control areas may constitute one zone. The above-mentioned market efficiency principle and aspects such as system security must be reflected in the proposal and be assessed in a sound and comprehensive substantiation for either the proposed new delimitation or preservation of existing zones.'*<sup>17</sup>

Besides implementing binding legal requirements, additional changes may be needed to ensure that the adoption of the Target Model delivers secure and affordable electricity for GB consumers. For example, changes to GB market arrangements which are not mandatory but are important for the efficient and effective implementation of the Target Model include continued enhancement of liquidity at the day-ahead stage and the development of a robust and trusted reference price for GB. These are key requirements to achieve cross border flows which truly reflect the GB market's need to import/export energy from/to neighbouring markets. Implementation could also require some harmonisation of products traded via power exchanges, possibly product trading calendars, and of cross-border gate closure times.

The Target Model is less specific on other aspects of implementation. For example it does not preclude OTC trading, and does not require full harmonisation of gate closure times, settlement periods or products traded on power exchanges.

### **Interactions between European and GB reforms**

The Target Model may help the GB market to adapt to the future challenges we face. EU and GB reforms share common objectives such as the delivery of a well functioning market to ensure secure and affordable energy supplies. Compatibility in the details of their design will be crucial for the common objectives to be met.

The Target Model is silent on major aspects of domestic electricity policy. It does not mandate a specific design for renewable support schemes nor does it require or prevent a

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plants) to a sink (industry, households, etc). Electricity flows fan out across all available parallel paths in accordance with the laws of physics.

<sup>14</sup> In April 2010, we removed network charges (Transmission Network Use of System Transmission, TNUoS) from interconnector flows. There are currently two industry code modifications under consideration to remove system balancing charges (Balancing Services Use of System, BSUoS) from interconnector flows and to ensure interconnector flows are not adjusted to reflect GB transmission losses. A final decision for both proposals is expected later in the year.

<sup>15</sup> The Single Electricity Market Committee has recently published a consultation document to seek views on a number of options for implementing the European Electricity Target Model in Ireland and Northern Ireland: "Proposals for Implementation of the European Target Model for the Single Electricity Market", Consultation Paper SEM-12-004, 24 January 2012.

<sup>16</sup> For example, if we implemented price zone delimitation by splitting the GB market into Scotland and England & Wales, in case of congestion between Scotland and England & Wales, we would export to France only in case of surplus of generation in England and Wales.

<sup>17</sup> ACER, Framework Guidelines on Capacity Allocation and Congestion Management for Electricity, FG-2011-E-002, 29 July 2011.

capacity mechanism. EMR proposals are therefore broadly compatible with the Target Model. However, the implementation of EU legislation may have implications on the details of the design. For example, if price zones were considered, their impact on the design of supporting schemes and capacity mechanisms may also require consideration to ensure the effectiveness and efficiency of these mechanisms.

There are also important areas of interaction between the Target Model and Ofgem reforms. For example, the creation of a GB Hub and the wider process of coupling markets could support further improvements in near-term liquidity and the development of a robust reference price for GB. This in turn supports generation investment and the development of trusted reference prices for financial products, such as CfDs or Financial Transmission Rights. In addition, any cash-out reform carried out would need to be compliant with the relevant network codes.

Consideration of price zones could support the integration of renewable generation in the system keeping the costs of balancing and operating the system low for consumers. This could also support security of supply objectives; for example, by ensuring consistency between flows on interconnectors and the requirements of the internal system (i.e. energy is exported cross border when in excess and imported when the system is tight).

### **Next steps**

Implementation of the Target Model has already started at national, regional and European level. The Annex to this letter provides details on the ongoing implementation initiatives.

At the national level, the focus has been on achieving compliance with EU legislation by removing obstacles to cross border trade. Changes to industry codes have so far been considered on a case by case basis rather than as part of a holistic strategy on how best to implement the European Target Model in GB.

We invite stakeholders to comment on any of the issues raised in this letter, particularly with respect to the following questions:

- What are the key aspects of the Target Model for GB?
- What changes will be needed to GB market arrangements?
- Should we try and minimise change or consider holistically the best combination of GB and EU requirements?
- How can we deliver the best outcomes?
- What process is needed to take this work forward?

Comments on ENTSO-E's draft Network Code should be submitted to ENTSO-E directly (although UK stakeholders are welcome to copy such responses to Ofgem at the address below). Comments on the impact of the Target Model on the GB market should be sent by 22 May 2012 to [europeanwholesale@ofgem.gov.uk](mailto:europeanwholesale@ofgem.gov.uk).

We are planning a workshop on 30 April 2012, alongside the Ofgem workshop on electricity cash-out, to consider the issues associated with the implementation of the Target Model in GB. Please email us at the above address by 6 April 2012 to reserve your place or for further details.

If you have any comments or questions on the content of this letter, please contact Giuseppina Squicciarini (Head of Regulatory Economics, European Wholesale) at [giuseppina.squicciarini@ofgem.gov.uk](mailto:giuseppina.squicciarini@ofgem.gov.uk).

Kind regards

Martin Crouch  
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## **Annex: Overview of European electricity market integration**

This annex provides a more detailed overview and explanation of the regulatory framework and institutions established by the Third Package and how these relate to GB. In particular, the development of new legislation, the European Network Codes, and the ongoing process to integrate national electricity markets through the ACER Regional Initiatives.

The Third Package requires Member States, as well as NRAs, to cooperate with each other and to promote cooperation among TSOs, both at regional and EU level, for the purpose of integrating national markets towards the creation of a fully liberalised internal electricity market. This requirement was affirmed by the European Council commitment to complete the internal market for electricity and gas by 2014.

### **“Top-down” integration: the European Network Codes**

The Third Package established a mandate and process to develop more detailed legislation referred to as the European Network Codes. The European Network Codes will establish common technical and commercial rules governing access to energy networks, to create a level playing field and remove barriers to trade between Member States.

The Third Package also creates new institutions to integrate national markets and deliver a single internal market. These include the Agency for the Cooperation of Energy Regulators (ACER) and the European Network of Transmission System Operators for Electricity (ENTSO-E).<sup>18</sup> Ofgem represents the UK at ACER (in liaison with the Utility Regulator of Northern Ireland), chairs the Board of Regulators (BoR) for ACER and is co-chair of the Electricity Working Group (EWG).

#### *The network code development process*

The Third Package established the following process to develop the Network Codes. At each stage of the process, except comitology, stakeholder consultation is required:

- *Framework guideline*<sup>19</sup>: On the request of the Commission, ACER has six months to draft a framework guideline which establishes the scope and objectives for each subsequent Network Code. The final framework guideline is submitted to the Commission.
- *Network Code*<sup>20</sup>: On the request of the Commission, ENTSO-E has twelve months to draft a European Network Code. The final Network Code is submitted to ACER.
- *ACER opinion*: from receipt of the Network Code, ACER has three months to provide a reasoned opinion to ENTSO-E. ACER will assess the Network Code’s compliance with the relevant framework guideline. ENTSO-E may amend the Network Code in light of ACER’s opinion.
- *Comitology*<sup>21</sup>: ACER submits the Network Code to the Commission once it is satisfied that it is in line with the framework guideline. The Commission will then propose the Network Code for adoption via the comitology process.

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<sup>18</sup> Framework Guidelines set out clear and objective principles for the development of Network Codes and are developed by ACER with input from Ofgem and other NRAs. Network codes are a legally binding set of common technical and commercial rules and obligations that govern access to and use of the European energy networks.

<sup>19</sup> ACER’s website: [http://www.acer.europa.eu/portal/page/portal/ACER\\_HOME/Activities](http://www.acer.europa.eu/portal/page/portal/ACER_HOME/Activities)

<sup>20</sup> ENTSO-E’s website: <https://www.entsoe.eu/resources/network-codes/>

<sup>21</sup> DG Energy’s website: [http://ec.europa.eu/energy/gas\\_electricity/codes/codes\\_en.htm](http://ec.europa.eu/energy/gas_electricity/codes/codes_en.htm)



the framework guideline on balancing (EBFG). These framework guidelines describe the “European Target Model”, agreed by European regulators, for the integration of wholesale and balancing markets.

### **“Bottom-up” integration: the regional initiatives**

In 2006, the European Regulators Group for Electricity and Gas (EREG) launched seven electricity Regional Initiatives (RIs), aimed at bringing together NRAs, TSOs and electricity market participants on a voluntary process to advance electricity market integration on a regional basis<sup>23</sup> One of the regions is the France-UK-Ireland (FUI) region comprising of the UK, the Republic of Ireland and France. Ofgem is the lead regulator for the FUI region.

The RIs represent a bottom-up approach to the completion of the internal market. They bring market participants together to test solutions for cross-border integration, carry out early implementation of European legislation and support the development of best practice.

On 18 April 2011, the Commission invited ACER to coordinate the development of a “European Energy Work Plan 2011-2014” to identify key milestones to implement the European Target Model by 2014. To facilitate this, ACER requested lead regulators of each regional initiative to develop a regional roadmap as an input to the European Energy Work Plan.<sup>24</sup>

#### *The FUI region*

As lead regulator for the France-UK-Ireland (FUI) region, Ofgem coordinated the development of the FUI region roadmap to input to the European Energy Workplan.<sup>25</sup> The FUI region roadmap, submitted to the Commission and ACER in July 2011, set out the commitments and steps agreed by FUI regulators to contribute to the completion of the internal electricity market by 2014.

The roadmap was developed in discussion with relevant Member States and TSOs and subject to consultation with the FUI stakeholder group. The roadmap identified participation in the TSO-led North-West European (NWE) projects as a significant milestone for GB to completing the internal electricity market.

#### *North West Europe projects*

The NWE projects were established by a group of thirteen TSOs, covering nine countries<sup>26</sup>, with the objective of developing a common approach to cross-border capacity allocation and implementing a common enduring day-ahead market coupling solution and an interim intraday solution on cables across NWE countries by the end of 2012.

As explained in the FUI region input, the NWE projects will require implementation of day-ahead market coupling and intraday continuous trading on both the BritNed and IFA interconnectors. Ofgem is the lead regulator for the NWE intraday project.

#### *ACER and the cross-regional roadmaps to implement the European Target Model*

ACER’s European Energy Workplan 2011-2014 consists of four cross-regional roadmaps. The cross-regional roadmaps identify milestones and responsibilities to implement the

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<sup>23</sup> EREG for a list of the seven groups and which countries sit where, and the lead regulators for each region

<sup>24</sup> ACER, Regional Initiatives Status Review Report 2011, “Getting to 2014: The Role of Regional Initiatives”, 31 January 2012 [http://www.acer.europa.eu/portal/page/portal/ACER\\_HOME/Communication/Publications](http://www.acer.europa.eu/portal/page/portal/ACER_HOME/Communication/Publications)

<sup>25</sup> The final FUI region input is available here: [http://www.acer.europa.eu/portal/page/portal/ACER\\_HOME/Activities/Regional\\_Initiatives/Electricity\\_Regional\\_Initiatives/Regional%20Roadmaps](http://www.acer.europa.eu/portal/page/portal/ACER_HOME/Activities/Regional_Initiatives/Electricity_Regional_Initiatives/Regional%20Roadmaps)

<sup>26</sup> North West Europe brings together TSOs and regulators from Germany, France, Belgium, Netherlands, Sweden, Denmark, Norway, Finland and the UK.



European Target Model and achieve the internal market for electricity by 2014. The cross-regional roadmaps are:

- *Cross-Regional Roadmap on Day-Ahead Market Coupling* – led by BnetzA (Germany) and AEEG (Italy). The aim is to deliver a single European price coupling, thereby optimising the use of cross-border capacities, reducing day-ahead price volatility and improving confidence in organised price references.
- *Cross-Regional Roadmap on Continuous Intraday Trading* – led by Ofgem (UK). This aim is to implement a single European continuous implicit mechanism for cross-border intraday trade, with capacity pricing reflecting congestion. This will, facilitate balancing before the closure of the market and, possibly, short-term arbitrage. The intraday timeframe is seen as increasingly important in the context of growing intermittent generation.
- *Cross-Regional Roadmap on Capacity Calculation Method* – led by CREG (Belgium) and E-Control (Austria). This project focuses on implementing a Flow-Based Allocation Method for short-term capacity allocation in highly meshed networks. This aims to improve the network security and the level of capacity made available to the market, by taking into account the influence of cross-border flows on the congested lines in a more transparent and effective way.
- *Cross-Regional Roadmap on Long-Term Transmission Rights* – led by CRE (France) and EI (Sweden). The main focus is on establishing common European Long-Term Transmission Rights and establishing a single point of contact.

The cross-border projects are led by the respective lead regulators, supported by the NRAs Coordination Group and the ACER Electricity Stakeholders Advisory Group (AESAG) established in March 2011.<sup>27</sup>

Details of the cross-regional roadmaps, progress to date and the main challenges ahead to establishing a single internal electricity market by 2014 have been published by ACER.<sup>28</sup>

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<sup>27</sup> AESAG brings together the European Commission, the Council of European Energy Regulators (CEER), the European network of TSOs for electricity (ENTSO-E) and other relevant stakeholder organisations in the European electricity sector (Eurelectric, CEDEC, GEODE, EuroPEX, EFET, IFIEC, CEFIC) representing electricity companies, distributors, power exchanges, traders and consumers.

<sup>28</sup> ACER, Regional Initiatives Status Review Report 2011, "Getting to 2014: The Role of Regional Initiatives", 31 January 2012