



# Quarterly Review

OF THE IRISH ELECTRICITY SYSTEM

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## Foreword

EirGrid is pleased to present our Quarterly Review of the Irish Electricity System for spring 2009. This review covers important developments in the Irish and international electricity marketplace and provides key data on the Irish power system.

A significant development during the first quarter is the completion of EirGrid's purchase of its Northern Ireland counterpart, SONI. This is a very logical and practical step in the enhancement of the Single Electricity Market (SEM).

EirGrid was awarded a contract to design, manufacture and install the East-West Interconnector project to ABB. We also nominated a preferred route for each 400kV transmission project for further evaluation, following extensive study and consultation.

On the regulatory side, the CER has published an information paper on phase one of the Smart Metering project to provide an update on progress to date. The Regulatory Authorities (CER and NIAUR) have also published a study on the impact of high levels of wind penetration in 2020 on the SEM, rightly highlighting some important omissions such as constraints costs, ancillary services and network investment costs.

In Europe, the Council has adopted conclusions on the Second Strategic Energy Review and welcomed the energy security and energy efficiency package presented by the EU Commission in November 2008. The EU Commission has also released its benchmarking report on progress made in creating the internal electricity and gas market.

*Dermot Byrne*

**Dermot Byrne, Chief Executive**



### EIRGRID OPERATIONS

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## EirGrid completes purchase of SONI

EirGrid has completed the purchase of SONI from NIE. SONI is the Transmission System Operator in Northern Ireland and is responsible for ensuring the safe, secure and economic operation of the electricity transmission network in Northern Ireland. EirGrid, the independent Transmission System Operator in the south of Ireland, and SONI are already partners in the Single Electricity Market Operator (SEMO) joint venture which carries out the role of market operator for the all island wholesale Single Electricity Market. The transmission network in Northern Ireland will continue to be owned and maintained by NIE.

The sale, which was announced on 21 August 2008, is consistent with the agreement reached by NIE with the Department of Enterprise, Trade and Investment (DETI) and the Northern Ireland Authority for Utility Regulation (NIAUR) to divest SONI in order to further enhance the independence of the TSO in Northern Ireland in accordance with international best practice. Completion follows changes to the licences of both SONI and EirGrid which were approved by the regulatory authorities following a public consultation process.

*A more detailed report is available in the Features Section of this Review.*

## Second Strategic Energy Review

The EU Council adopted conclusions on the Second Strategic Energy Review in February of this year and welcomed the energy security and energy efficiency package presented by the EU Commission in November 2008. It outlined a number of short term priorities agreeing to support the intensification of the activities of the European Network of Transmission System Operators (ENTSO-E) on supply and generation adequacy outlooks and network development plans as envisaged in the third energy package. Barriers to investment need to be identified and removed, by streamlining planning and consultation procedures or appointing European coordinators, particularly for projects which improve interconnection. A coordinated approach between the EU Commission and Member States needs to be promoted to support the cost-effective deployment of large-scale offshore wind generation, while at the same time ensuring the reliability of the power system. The Council confirmed that it was necessary to promote renewables and tackle barriers to energy from renewable sources; promote environmentally



compatible development of the EU's indigenous fossil fuel resources and use through advanced technologies; and consider the development of a Community wide regulatory framework for nuclear safety and waste management. The Council also said it was important to develop long term priorities and to develop a policy agenda for 2030 and 2050 which would form an important part of the Energy Policy for Europe Action Plan from 2010 onwards.

The European Network of Transmission System Operators for Electricity (ENTSO-E) has also confirmed its support to the EU Commission's Second Strategic Energy Review and the Green Paper Towards a Secure, Sustainable and Competitive European Energy Network. ENTSO-E noted that the aims of sustainability, competitiveness and security of supply will require considerable reinforcement and development of Europe's transmission infrastructure to enable the connection of new generation from renewable sources and to increase the amount of cross-border interconnection. It will also be necessary to ensure that progress in developing the necessary infrastructure is not compromised by unnecessary delays in planning and authorisation/ permitting procedures.

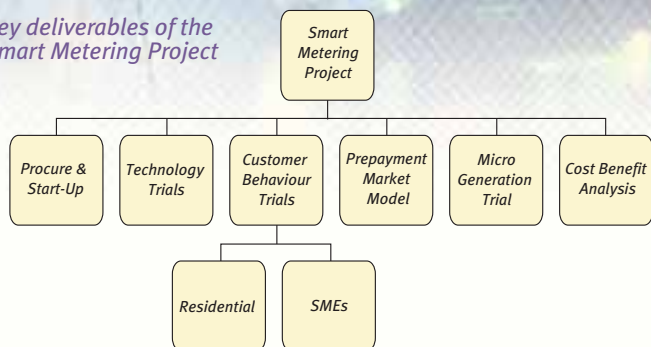
*A more detailed report is available in the Features Section of this Review.*

## Information Paper on Smart Metering Project Phase 1

The CER has published an information paper on phase one of the Smart Metering project to provide an update on progress to date. A Steering Group and Working Group have been established comprising the CER, Department of Communications, Energy and Natural Resources, Sustainable Energy Ireland, the Northern Ireland Authority for Utility Regulation and Irish energy participants. The work is divided into four work streams focusing on separate aspects of the Smart Metering Project Phase 1: Networks; Customer Behaviour; Tariffs; and Billing/Data. The final vendor consortia list selected in August 2008 to supply the electricity smart metering infrastructure includes: Elster & Energy ICT; Trilliant & Iskrameko; PRI & Aclara; and Sagem. The project is on target to recruit all 6,400 customers (c.5,500 residential and c.900 SME). Meter installation started in December 2008 with 200 meters installed and all 6,400 meters installed by May 2009. There will be a six month benchmark period from July-December 2009, a one-year test period from January-December 2010 with a findings report in February 2011. Technology trials will include various communication technologies with up to 10,000 smart meters installed with a findings report in June 2010.

*(See diagram opposite)*

### Key deliverables of the Smart Metering Project



## Update on 400 kV Transmission Lines

Following a review of all project documentation, including consultants' studies, reports, and consultation feedback, EirGrid has nominated one preferred route corridor for each 400kV power line project for further study.

The preferred route corridors are:

Route Corridor 3B for the Meath-Cavan project

Route Corridor A for the Cavan-Tyrone project

*A more detailed report is available in the Features Section of this Review.*

## Update on East-West Interconnector Project

EirGrid has awarded the contract for construction of the East West Interconnector to ABB. The Government has approved the development of the new electricity interconnector between Ireland and Wales, which is due to be constructed over the next three years, with an investment by EirGrid of approximately €600 million.

*A more detailed report is available in the Features Section of this Review.*

## Increased Competition in the Irish Electricity Market

CER has awarded ENDESA 20% of the generation assets of state utility ESB for €450 million, after a public tender process which began in November 2007. The assets awarded total 1,068 MW already on stream spread over five sites, and two further sites with an evacuation capacity of up to 300 MW, about 16% of Ireland's total installed capacity. ENDESA is committed to developing an industrial plan for repowering and improving the efficiency of the plants it has acquired, which will be finalised in the first half of 2012. It has started the solicitation process for the permits required to develop its industrial plan in Ireland which basically consists of replacing the old fuel powered plants in Tarbert and Great Island with new facilities that run on natural gas, which is a more efficient and flexible technology, which will reduce CO<sub>2</sub> emissions by 50%. Engineering contracts have been signed with Mott MacDonald and ERM, which will facilitate the presentation of all the documentation necessary to obtain the pertinent permits.

In parallel with this process, feasibility studies are being undertaken to study the various options for the construction of the new gas pipelines for both sites.

Bord Gáis announced in February that it intended to enter the residential electricity market. EirGrid Chief Executive, Mr. Dermot Byrne, welcomed the announcement outlining key issues facing Ireland's future energy supply needs and EirGrid's Grid25 strategy to overcome these issues with a €4 billion investment plan to double the capacity of Ireland's electricity transmission system which will help build a platform for economic growth and be a key enabler for regional development in the future. He said, "This announcement by Bord Gáis is a very positive development. It will boost competition and that will benefit consumers".

## Regulators study Impact of High Levels of Wind Penetration in 2020 on the Single Electricity Market (SEM)

The Regulatory Authorities (CER and NIAUR) have published a study to assess the impact of increasing wind penetration on the island of Ireland on the ability of the Single Electricity Market (SEM) to cope with this increase and continue to operate efficiently and effectively. Taking the five generation portfolio scenarios determined in the All-Island Grid Study published in January 2008 for 2020, the study assesses the impact of these portfolios on the system marginal price (SMP) and capacity payments. The regulators rightly highlight some important omissions which places significant limitations on the study. The cost-benefit analysis of increased wind on the system is limited in scope to the additional capital costs of increased wind penetration, displaced fuel and carbon costs; and displaced capital costs for conventional generation. It does not take on board crucial system operations issues which become more important as the level of wind penetration increases. Constraint costs associated with deviations between actual dispatch and the modelled dispatch with perfect foresight; the costs of ancillary services; network investment costs are all important omissions from the study. These limitations aside, the study finds that increased wind penetration would result in significantly lower wholesale energy prices (SMP) and a transfer of income from generators to consumers. The economic benefits of increased wind penetration are highly sensitive to fuel and carbon prices. The incentives on generation entry-exit is dependent on the portfolio with new and existing generation making substantial



economic rents when fuel prices are high but new wind generation needs financial support if fuel prices are low. Increased wind penetration tends to lower carbon emissions, particularly if accompanied by a balanced portfolio of conventional plant. Overall, the study concludes that the SEM should be robust enough to accommodate significant increases in wind penetration, however, the design would need to be kept under close review.

### *EU Commission reports on progress in creating the internal gas and electricity market*

In March this year, the EU Commission released its benchmarking report on progress made in creating the internal electricity and gas market. The report notes that although some progress has been made there are still a number of areas and Member States where the current legislation has not been properly implemented or the need for new legislation has become apparent. Compliance with the Electricity Regulation and Congestion Management Guidelines is improving but more needs to be done. The level of market concentration in generation remains quite high with the three largest generators controlling more than 70% of generation capacity in 15 Member States. In the retail market, the situation is even worse with the three largest companies controlling over 80% in 14 Member States. Some progress has also been made on network unbundling but more needs to be done. A number of Member States have gone beyond the minimum requirements of the current legislation of legal and functional unbundling. Full ownership unbundling is now implemented in 15 TSOs across Europe. Regulated prices remains quite common and more than half of the Member States have regulated prices and in most price regulation is not confined to household customers. The report stresses that according to the EU Commission's Second Strategic Energy Review and the International Energy Agency significant investment in transmission infrastructure will be required over the next twenty years to ensure security of supply. Overall, the report concludes that while there have been some developments in the more mature markets which are now beginning to show the benefits of liberalisation, several Member States still need to do a lot to create a fully functioning and efficient electricity market. Compliance with the existing electricity legislation needs to be implemented in full, in addition to any new requirements that will come out of the third energy package.

### *All Island TUoS Charging and TLAFs Workshop*

EirGrid and SONI held a workshop on All-Island Transmission Use of System (TUoS) Charging and Transmission Loss Adjustment Factors (TLAFs) on 3rd March 2009 in Dundalk. Participants were informed about the current RoI TUoS and All-Island TLAFs methodologies, explanation of reverse MW-mile approach and revenues required in 2009. The Transmission revenue requirement


for 2009 is €259 million. Network charges are divided 25:75 between generators and demand resulting in generators accounting for €48 million and demand €144 million of TUoS. For Demand TUoS 60% is based on capacity and 40% based on energy. For TLAFs the workshop outlined that there is a single All-island model, with Marginal Loss Factors calculated and converted into Transmission Loss Adjustment Factors and dispatch done by Plexos. The timeline from preparing the All-island TLAFs for the regulators by end August, to a consultation in September and decision in October and then subsequent submission to SEMO for application in settlement from 1st January was also discussed.

### *Renewables Facilitation Forum*

In line with EirGrid's policy to work proactively with all stakeholders to ensure that government targets in relation to renewable energy are achieved, EirGrid and SONI held a joint Facilitation of Renewables Forum at The Oval on the 18th February, 2009. The forum was designed as an opportunity to present an overview of on-going TSO facilitation of renewables studies to relevant stakeholders and generate further debate.

The central theme of the forum focused on current TSO research regarding the facilitation of renewable energy and the main presentation to stakeholders was divided in three related parts. The first section detailed the context and background of the research and reaffirmed the importance of the All-Island Grid Study as the first comprehensive assessment of the ability of the power system to absorb large amounts of energy from renewable sources. The second part of the presentation reviewed the areas and objectives of the facilitation study. The areas that the study considered included: dynamic stability; fault levels; congestion management; reactive power and voltage control; flexibility needs of the system and frequency response of the system. The objectives of the study ranged from increasing our understanding of the behaviour of the power system with large amounts of renewable generation, to identifying any potential related technical issues and developing measures to overcome these. The third part of the presentation provided a set of indicative time lines for the completion of the study. The tentative dates provided included: April 2009 for the completion and release of the Renewable Facilitation Proposal (RFP); June 2009 for the commencement of contracts; August 2009 for an interim report and December 2009 for the publication of the final report.

Overall, there was considerable interest in the TSO Facilitation of Renewables studies and the presentation was followed by a lively questions and answers session. Many questions centred on whether integration costs and estimates of future curtailment levels would be outputs of the study. It was explained that the primary objective of this study was to examine the fundamentals of operating a power system with large amounts of wind to better understand how issues such as dynamic stability and frequency control may impact on the operation of the power system. With an understanding of how the system may be



operated with future levels of wind, this will allow resultant costs and curtailment levels to be estimated in further studies.

The forum was well attended with representation from all sectors of the industry including generators, developers, consultants, regulatory authorities and research students. Feedback was very positive with many expressing the opinion that this event is a much needed forum where issues around renewables integration can be debated and discussed.

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## *ESRI outlines policy options for reducing Ireland's GHG*

In a recent policy paper the Economic and Social Research Institute (ESRI) outlined a number of possible options for reducing Ireland's green house gases. It noted that in the current economic downturn Ireland may well be on track to reduce its emissions to comply with its Kyoto commitments for 2008-2012. The paper recommends the following criteria and priorities:

- Regulatory certainty to guide investment decisions and other areas of government policy. The Government should initiate a consensus agreement on Ireland's target beyond 2020, indicative short-term implications and the policies to meet these targets;
- Clearly defined incentives with a credible long-term price for carbon charged to every emitter and not just those in the EU ETS;
- Transparent, dynamic and fair process with the Commission on Climate Change overseeing the formulation and implementation of the national climate change strategy. The Commission should also prepare a detailed ongoing survey of abatement opportunities across the economy to demonstrate possible options and their associated costs. It should also prioritise attaining public support for climate change measures across all sectors of the economy and society.

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## *EPA reveals Ireland's GHG Projections 2008 - 2012*

The Environmental Protection Agency (EPA) released in March 2009 projected emissions of Ireland's greenhouse gases up to 2020, as required under the National Climate Change Strategy. The EPA projections reflect the reduced activity due to the economic downturn, but even accounting for this economic downturn, and assuming all required plans and measures are implemented on time, there is still an ongoing challenge for Ireland to meet its obligations under both the Kyoto Protocol and under the EU 2020 binding targets. The projections are reported on a sectoral basis and as expected highlight that the key sectors contributing to greenhouse gas emissions in Ireland are agriculture, energy and transport. The EPA has two scenarios of future greenhouse gas emissions:

1. the 'with measures' scenario is based on existing and currently implemented policies and measures.
2. the 'with additional measures' scenario adjusts the 'with measures' scenario to account for all existing and currently planned policies and measures. Planned policies and measures include the renewable energy targets and energy efficiency targets as set out in the Energy White Paper and the revised Energy Efficiency Action Plan.

Emissions reductions under the 'with additional measures' scenario are projected to be delivered through policies and measures outlined primarily in the Energy White Paper and the revised Energy Efficiency Action Plan. The impact of these measures will be realised mainly in the period 2012 to 2020. Assumptions underlying these projections are that all relevant policies and measures outlined in current Government policy documents will be adopted and fully implemented on time and all relevant measures will achieve the full emissions reductions anticipated. Failure to deliver on any of these measures or a reduction in their environmental effectiveness will result in higher emissions levels than projected.

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## *Treatment of Small, Renewable & Low Carbon Generators outside the Group Processing Approach*

A number of issues have been raised with regard to the current Group Processing Approach: the public interest is not defined, the process is unwieldy and is complicated for smaller generators. To address these issues the CER has published a consultation paper to determine the criteria by which small, renewable and low carbon generators can be treated outside the Group Processing Approach. It also make proposals on the treatment of small conventional generation. Four options for processing qualifying applicants outside the Group Processing Approach are under consideration:

- **Option 1:** Process connection offer without examining interactions with those generators further ahead in the queue;
- **Option 2:** Access whether a party to be processed outside the Group Processing Approach interacts with a party within it. If there is no interaction, then the application is processed. If there is interaction then the party either buys out the interaction or remains in the Group Processing Approach;
- **Option 3:** Is effectively a hybrid of the first two options. Generators with a maximum export capacity (MEC) less than or equal to 1MW are processed under option 1 and those greater than 1MW are processed under option 2;
- **Option 4:** Is similar to option 3. Generators with an MEC less than or equal to 1MW are processed under option 1, those greater than 1MW are processed on a case by case basis.

The consultation paper does not propose to change the current procedure for processing small conventional generation (MEC less than or equal to 5MW).

## Secondary Fuel Obligations on Licensed Generation Capacity in Ireland

The CER has published its decision on Secondary Fuel Obligations on Licensed Generation Capacity in Ireland. These obligations will apply unless the CER grants a derogation to a generator due to exceptional circumstances. Generating units required to run on a secondary fuel must be capable of generating on its secondary fuel at no less than 90% of the unit's capacity on its primary fuel. The amount of fuel generators are required to store is based on the generating unit's running hours. Fuel stocks can be held on the generating unit's own site for its full requirement or can be held on the generating unit's own site equivalent to one-days running at full output if the remainder of the stocks can be stored by a third party for the generator's full requirement, subject to certain conditions. These fuel stocks will be examined by EirGrid who can perform up to two successful tests annually on each generating unit. The costs for testing the unit on its secondary fuel will be remunerated through the Ancillary Services Mechanism. It is expected that generators will meet all the obligations by 30th June 2009. Testing will begin once the testing procedures have been developed by EirGrid and once the harmonised ancillary services arrangements go-live, which is expected in October 2009.

## Northern Ireland Strategic Energy Framework 2009 – pre-consultation scoping paper

The Irish and British Wind Energy Associations (IWEA & BWEA) sent a joint submission to the Department of Enterprise, Trade and Investment in Northern Ireland on the Strategic Energy Framework 2009 pre-consultation scoping paper published in November 2008. Four key areas were identified where the Strategic Energy Review could enable the energy sector to realise the potential benefits of renewable energy:

1. Northern Ireland should adopt a target of 42% electricity from renewable sources by 2020, in line with the All-island Grid Study. Based on current market conditions, they say meeting this target would generate over £1.2 billion in private investment in wind generation in Northern Ireland;

2. A strategy for investment and development in the grid infrastructure should be developed. Further interconnection with Ireland and the UK would increase system flexibility while the enhanced integration of the Single Electricity Market should lead to greater price stability;
3. Consistent policy and strategy should be adopted across government. In particular energy and planning policy should be aligned. They consider a renewable energy planning strategy should be developed for each of the 11 new proposed super councils;
4. A roadmap for policy development should be introduced to provide greater investment confidence in the wind energy sector. They recommend the introduction of a formal process for policy development that provides clarity on its scope and likely timing.

## EirGrid publishes NCC brochure

EirGrid has published a brochure to help inform about the role and responsibilities of the National Control Centre (NCC). The NCC was originally opened in Fitzwilliam Street in April 1987, was replaced in 2004 and became operational in The Oval, Ballsbridge in July 2008.



The power system comprises major generation stations and windfarms, the transmission grid and the distribution system. The transmission system is operated at the voltage levels of 400kV, 220kV and 110kV and it is this system that is managed by the NCC. The NCC must ensure enough generation is produced to meet customer demand. The purpose of the transmission system is to transfer this bulk generation to the load centres. The transfer is done at high voltages to minimise transmission losses. This function must be carried out in a fair and transparent manner while the supply-demand balance must be maintained on an instantaneous basis in order to keep the frequency of the system at 50Hz.

The key objective of the NCC is to operate the generation and transmission system for maximum economy, consistent with safety, security, continuity, quality and environmental standards. It provides high quality delivery to all customers, through maintaining this essential service, 24 hours a day, every day of the year.

### RECENT EVENTS

- SEI Micro-Hydro Conference and Trade Mission, Ballsbridge Court Hotel, Pembroke Road, Dublin 4, 6-8 April 2009
- Planning Small-Scale Renewable Electricity Generation Systems, Lifetime Lab, Lee Road, Cork, 3 April 2009
- IWEA's Annual Spring Conference, IWEC '09, Four Seasons Hotel, Dublin, 25-26 March 2009
- All Island Transmission Use of System Charging and Loss Factors Workshop, Crowne Plaza Hotel, Dundalk, 3 March 2009
- Renewables Facilitation Forum, EirGrid Conference Centre, Dublin 4, 18 February 2009
- National Bioenergy Conference, Landmark Hotel, Carrick-on-Shannon, 6 February 2009

### SYSTEM RECORDS

	Value	Day of Week	Effective Date
Winter Night Valley	2754 MW	Friday	03-03-06
Summer Night Valley	1786 MW	Monday	04-08-08
Mid-day Peak	4368 MW	Friday	04-01-08
Evening Peak	4906 MW	Tuesday	18-12-07
Saturday Peak	4431 MW	Saturday	13-12-08
Sunday Peak	4152 MW	Sunday	14-12-08
Maximum Wind	940 MW	Saturday	07-03-09

As at 24 June 2009

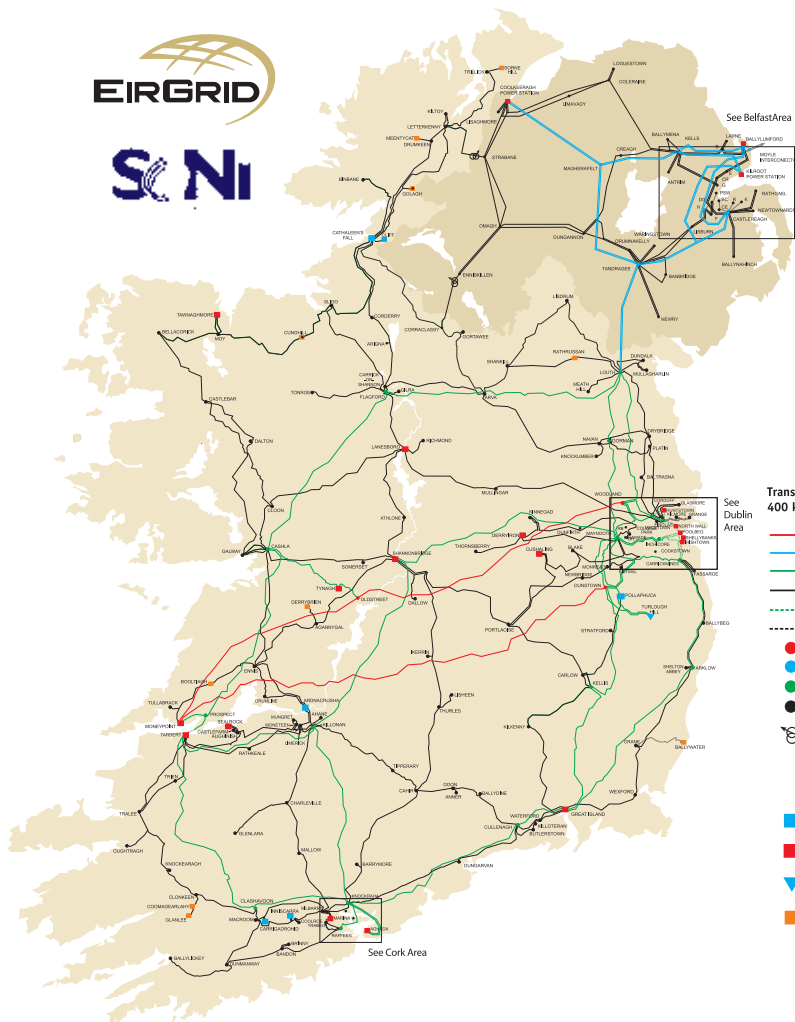
Please Note: Values are now reported in exported terms.

## EirGrid completes purchase of SONI

EirGrid has completed the purchase of SONI from NIE. SONI is the Transmission System Operator in Northern Ireland and is responsible for ensuring the safe, secure and economic operation of the electricity transmission network in Northern Ireland. EirGrid, the independent Transmission System Operator in the south of Ireland, and SONI are already partners in the Single Electricity Market Operator (SEMO) joint venture which carries out the role of market operator for the all island wholesale Single Electricity Market.

The sale, which was announced on 21 August 2008, is consistent with the agreement reached by NIE with the Department of Enterprise, Trade and Investment (DETI) and the Northern Ireland Authority for Utility Regulation (NIAUR) to divest SONI in order to further enhance the independence of the TSO in Northern Ireland in accordance with international best practice. Completion follows changes to the licences of both SONI and EirGrid which were approved by the regulatory authorities following a public consultation process.

### Transmission System



NIE will continue to own and maintain the electricity transmission and distribution network in Northern Ireland. SONI is authorised to perform its TSO and Market Operation functions under two separate licences granted by DETI:

- SONI's TSO Licence is a licence to "participate in the transmission of electricity" authorising SONI to carry out its TSO functions.
- SONI's Market Operator Licence allows it to act "as SEM Operator", a function it undertakes through the Single Electricity Market Operator (SEMO).

SONI's primary responsibility as TSO is to ensure the safe, secure and economic operation of the transmission system in Northern Ireland. This includes: the scheduling and dispatch of generating plant; the management of transmission network outages; the levying of transmission use of system charges and system support services charges; the operation of settlements and managing power flows on the NI transmission network and the Moyle interconnector with Scotland. NIE agreed with DETI and NIAUR to divest SONI in order to further the independence from generation and supply of the TSO and SEMO roles within the Single Electricity Market. SONI was owned by NIE which is part of a vertically integrated energy group which includes both generation and supply. The tariffs charged by SONI for carrying out its TSO functions are regulated by NIAUR. Its SEMO charges are regulated jointly by the SEM Committee comprising representatives from NIAUR, CER and an independent member.

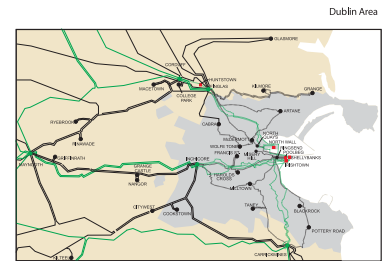
EirGrid believes this is a very logical and practical step in the enhancement of the SEM which builds upon the common work ongoing in relation to system operations and the SEM. EirGrid is committed to SONI and will provide the necessary investment and support to ensure SONI continues to deliver the quality of service and supply to the people of Northern Ireland.

Transmission System  
400 kV, 275 kV, 220 kV and 110 kV

- 400 kV Lines
- 275 kV Lines
- 220 kV Lines
- 110 kV Lines
- - - 220 kV Cables
- - - 110 kV Cables
- 400 kV Stations
- 275 kV Stations
- 220 kV Stations
- 110 kV Stations
- Phase Shifting Transformer

Transmission Connected Generation

- Hydro Generation
- Thermal Generation
- Pumped Storage Generation
- Wind



Dublin Area



Belfast Area



Cork Area

\* SONI is the licensed system operator for the Northern Ireland Transmission System.

## Progress on East-West Interconnector Project

In March 2009, the Government approved the development of the East West Interconnector and the contract for €600 million for construction of the interconnector was awarded to Swedish engineering firm ABB. An oral hearing of An Bord Pleanála for the planning application was held in March and on 14th May, An Bord Pleanála advised EirGrid that they would provisionally approve the proposed development subject to receipt of additional information from EirGrid. It is hoped that full planning permission will be received by the end of August. Construction is expected to commence first quarter of 2010. EirGrid are currently applying for a €110 million grant in EU Funding towards construction of the interconnector.

The new interconnector will have a capacity of 500MW and will be able to transport power in bulk and high quality in both directions. It will involve the construction of a 260km cable and other infrastructure linking Ireland and North Wales, which will enable power to be exported and imported, providing a market for the growing renewable energy sector in Ireland, as well as increasing competition to aid consumers, and supporting secure power supplies.

EirGrid Chief Executive Dermot Byrne said “The new Interconnector to the UK is absolutely vital for Ireland. It will help to ensure that Ireland has enough electricity to meet our needs into the future in a sustainable manner. Importantly, the interconnector will also support the energy sector in adapting to meet the challenges posed by climate change and fuel security.”

Swedish Engineering firm ABB has been awarded the contract to design, manufacture and install EirGrid’s East West Electricity Interconnector. It is understood construction of this project will involve specialist international construction staff,

and will also result in up to 100 jobs in Ireland during the construction period.

“We are delighted to partner Eirgrid for this project,” said Peter Leupp, head of ABB’s Power Systems division. “ABB’s HVDC Light technology will enhance the stability of both the Irish and U.K transmission grids, and also expand capacity for the use of renewable power.”

The proposed East West Interconnector is of strategic importance for Ireland and EirGrid has been progressing the Project as quickly as possible to deliver this critical infrastructure. The Project is currently awaiting planning approval following a recent oral hearing of An Bord Pleanála.

Michael G. Tutty, Chairman of the Commission for Energy Regulation (CER) has welcomed today’s contract signing and the progress being made on delivery of this vital piece of national infrastructure. Mr. Tutty said, “Increasing Ireland’s interconnection with our neighbouring electricity markets has been a priority for the CER, particularly from a competition and security of supply point of view. Reaching today’s milestone is a significant achievement and the CER now looks forward to overseeing the delivery of this interconnector and the benefits it will bring to Ireland.”

In the National Development Plan 2007 – 2013, the Irish Government has identified the need for a strategic energy link, in the form of an electrical High Voltage Direct Current (HVDC) interconnector, to be developed between Ireland and the UK. The interconnector is a major infrastructure initiative, which will involve the construction of approximately 260 km, 500 MW (HVDC) interconnector cable between Ireland and Britain. EirGrid, together with the Commission for Energy Regulation (CER) was appointed the task of arranging a competition to secure the construction of the East West Interconnector.

### East West Interconnector







## *Preferred Route Corridor for 400kV Transmission Infrastructure*

Following a review of all project documentation, including consultants' studies, reports and consultation feedback, EirGrid has nominated one preferred route corridor for each 400kV power line project for further study.

Detailed studies will now focus on Route Corridor 3B, for the Meath-Cavan line and Route Corridor A for the Cavan-Tyrone line. This move follows a review of all project documentation, including consultants' studies, reports and consultation feedback.

Each preferred route corridor strikes the best balance between the competing priorities of community concerns, environmental issues and the technical aspects of the project.

To get to this point, EirGrid carried out studies to assess the feasibility of line routes within each corridor. These line

routes will now be taken forward to the next phase of project development, involving discussions with landowners as a priority, further studies and stakeholder engagement. No decisions can be made on the final line routes until all studies have been completed. EirGrid will review its position regarding the best solutions for the projects, based on the outcome of this work.

Once all relevant studies, including those associated with the Environmental Impact Statement are complete, EirGrid will bring the preferred final line routes to An Bord Pleanála. An Bord Pleanála is the independent statutory body that will ultimately decide if the project can go forward.

*Cavan-Tyrone: Route Corridor A*



*Meath-Cavan: Route Corridor 3B*



## Second Strategic Energy Review



The Council of the EU adopted conclusions on the Second Strategic Energy Review in February of this year and welcomed the energy security and energy efficiency package presented by the EU Commission in November 2008. It outlined a number of short term priorities agreeing to support the intensification of the activities of the European Network of Transmission System Operators (ENTSO-E) on supply and generation adequacy outlooks and network development plans as envisaged in the third energy package. With regard to revising TEN-E, it noted the need to refine the criteria for the selection of infrastructure including interconnections, which should be based on EU energy policy goals and striking a balance between the cost of these projects and their contribution to security of supply. Barriers to investment need to be identified and removed, by streamlining planning and consultation procedures or appointing European coordinators, particularly for projects which improve interconnection. A coordinated approach between the EU Commission and Member States needs to be promoted to support the cost-effective deployment of large-scale offshore wind generation, while at the same time ensuring the reliability of the power system. The Council confirmed that it was necessary to promote renewables and tackle barriers to energy from renewable sources; promote environmentally compatible development of the EU's indigenous fossil fuel resources and use through advanced technologies; and consider the development of a Community wide regulatory framework for nuclear safety and waste management.

The Council also said it was important to develop long term priorities and to develop a policy agenda for 2030 and 2050 which would form an important part of the Energy Policy for Europe Action Plan from 2010 onwards. This policy agenda should include: developing low-carbon and energy efficient systems; speeding up the implementation of the Strategic Energy Technology Plan; securing timely deployment of Carbon Capture and Storage technologies; and speeding up the development of electric vehicles, hydrogen and alternative fuels to decrease our dependency on fossil fuels. In order to achieve these long-term priorities, the Council invited the EU Commission to identify the necessary legislative and non-legislative actions and appropriate financial resources; present a new EU Energy Security and Infrastructure Instrument; and prepare a Sustainable Energy Financing Initiative.

The European Network of Transmission System Operators for Electricity (ENTSO-E) has also confirmed its support to the EU Commission's Second Strategic Energy Review and the Green Paper Towards a Secure, Sustainable and Competitive European Energy Network. ENTSO-E noted that the aims of sustainability,

competitiveness and security of supply will require considerable reinforcement and development of Europe's transmission infrastructure to enable the connection of new generation from renewable sources and to increase the amount of cross-border interconnection. It will also be necessary to ensure that progress in developing the necessary infrastructure is not compromised by unnecessary delays in planning and authorisation/ permitting procedures. The requirements and objectives of the renewable energy and climate change package, the large combustion plant directive and the closure/ replacement of a considerable existing nuclear capacity all imply a period of significant change, which will require large-scale capital investment and the development of new approaches to the coordination of grid operation and management of the network. The creation of ENTSO-E and the proposed creation of the Agency for the Cooperation of Energy Regulators (ACER) should help address these issues. ENTSO-E notes that planning and authorisation/ permitting processes can be major impediments to necessary infrastructure development and welcomes the requirement placed on Member States to accelerate authorisation procedures for network infrastructure and to coordinate the approval of network infrastructure and the administrative planning procedures. It also supports the inclusion of European priority infrastructure projects within national strategic plans, which will enable local planning processes to determine the most suitable location or route. The Ten Year Network Development Plan will contribute to an improved consensus and better understanding of the need for energy infrastructure investments and where those investments are needed most.

ENTSO-E considers that the EU can contribute most to network development by setting strategic objectives for infrastructure developments and facilitating a stable investment environment. Stable, predictable, incentive-based regulatory regimes will result in infrastructure investment. It highlights the following ways the EU can support and facilitate infrastructure development:

- creating a stable investment environment with effective, flexible incentives for investment;
- facilitating the authorisation/ permitting process for priority projects;
- facilitating compatible and effective regulatory regimes;
- requesting Member States to review and revise existing authorisation procedures to reduce delays and set maximum time limits;
- addressing the regulatory gap for cross-border or multi-national projects; and
- developing and maintaining stable relationships with third countries.



## January

### EirGrid

- makes available 2009 Demand TUoS Charge Calculator to aid suppliers and demand customers
- publishes updated Statement of Charges for 1st January 2008 to 31st December 2008
- issues Grid Code Review Panel (GCRP) meeting minutes
- publishes Statement of Charges and Payments for Ancillary Services Providers 2009
- East-West Interconnector receives €100 million in funding from EU
- publishes Gate 3 Node Assignment list

### Single Electricity Market Operator (SEMO)

- Market Operator User Group took place on 13th January in the Hilton Hotel, Belfast

### Market

- Endesa finalises deal to purchase approximately 1,000 MW of ESB plant

### Government Departments

- Department for Communications, Energy and Natural Resources
  - announces Ireland has signed up as a member of the International Renewable Energy Agency (IRENA) at the Founding Conference in Bonn
  - announces the creation of new Distribution System Operator for electricity sector

### Irish Wind Energy Association (IWEA)

- IWEA and BWEA issue Joint Response on Northern Ireland Strategic Energy Framework Scoping Paper

## February

### EirGrid and SONI

- hold Renewables Facilitation Forum
- Parsons Brinckerhoff (PB Power) publishes report comparing the high voltage transmission options for the North East 400kV lines

### SEMO

- Issues 2009 Market Operator User Group (MOUG) Calendar

### Regulatory Authorities

- CER
  - publishes Strategic Plan 2010-2014
  - publishes information paper on Smart Metering project phase 1

### Government Departments

- Department for Communications, Energy and Natural Resources

- announces measures to encourage the on-site generation of electricity in homes and farms across Ireland
- publishes report on the security of Ireland's access to commercial oil supplies
- Department for Communications, Energy and Natural Resources and Department for the Environment, Heritage and Local Government
  - launch the national insulation programme for economic recovery

### Economic and Social Research Institute (ESRI)

- assesses impact of Government campaign to increase energy efficiency
- examines energy use and appliance ownership in Ireland

### Other

- Bank of Ireland launches €100 million fund on 23 February to support financing of Irish renewable energy projects

## March

### EirGrid

- completes acquisition of SONI

### EirGrid and SONI

- hold workshop on All Island Transmission Use of System Charging and Loss Factors
- publishes updated Gate 3 Node Assignment list
- receives approval for the East West Interconnector Project to proceed

### SEMO

- publishes System Release Plan 2009

### Regulatory Authorities

- CER
  - consults on Treatment of Small, Renewable and Low Carbon Generators outside the Group Processing Approach
  - announces 10% and 12% price decreases in electricity and gas prices

### Government Departments

- Department for Communications, Energy and Natural Resources
  - Minister Ryan announces €50 million Home Energy Saving Scheme is 'open for business'

### ESRI

- outlines policy options for reducing Ireland's GHG

### EPA

- reveals Ireland's GHG Projections 2008 - 2012

### IWEA

- hosts IWEA's Annual Spring Conference, IWEA '09, at the Four Seasons Hotel, Dublin on 25th and 26th of March 2009
- announces it is holding a Wind Energy Photo Competition

### Other

- Gaelectric announces plans to store energy from wind turbines as compressed air in salt caverns near Larne



## January

### Austria

- Verbund's Austrian Power Grid subsidiary warns of curtailments, particularly to wind generation, if a critical 380kV power line is not upgraded

### Europe

- EU Commission
  - Consults on the Inter-TSO compensation mechanism and harmonisation of transmission tariffication
  - proposes €500 million in investment for offshore wind through to 2010
- ETSO
  - publishes paper on firmness of cross-border capacities and compensation schemes in case of curtailments
  - responds to ERGEG/CEER Consultation paper Implementing the 3rd Energy Package
- Eurelectric responds to ERGEG Consultation on implementing 3rd Energy Package
- UCTE publishes System Adequacy Forecast 2009-2020

### International

- Delegates from 100 countries help create the new International Renewable Energy Agency on 26 January in Bonn

### Norway

- Statnett submits planning proposal for a new 600 MW electricity interconnector between Norway and Denmark

### UK

- Department of Energy and Climate Change says it
  - has shortlisted five total power projects for the Severn estuary between England and Wales
  - would add 5,000-7,000 offshore wind turbines through 2020 to ensure 25GW of offshore power
- Ofgem appoints financial advisors to find companies to develop a £10 billion offshore power grid

## February

### Europe

- EU Commission
  - publishes Final Report: Study of the interactions and dependencies of Balancing Markets, Intraday Trade and Automatically Activated Reserves
  - issues TEN-E-2009 call for proposals under the annual work programme for grants in the field of the Trans-European Energy Network
- EU Council outlines Conclusions on Second Strategic Energy Review
- ETSO publishes the ETSO-EuroPEX Final Report
- Eurelectric
  - calls on EC to launch proposed €3.5 billion energy infrastructure package
  - publishes position paper on 2nd EU Strategic Energy Review
- UCTE publishes 2008 Compliance Oversight report including Compliance Audit reports
- Other
  - a new regional coordination centre, Coreso (Coordination of Electricity System Operators), set up by RTE and Elia, begins operations in Brussels

### France

- Nicolas Sarkozy says France will build renewable sector equal to its nuclear sector and will increase focus on energy efficiency

### UK

- Ernst & Young study finds UK energy supply industry needs to invest over £230 billion in new infrastructure by 2025 to ensure security of supply and meet renewables targets

### US

- Obama signs stimulus bill (HR1) with \$45.2 billion on energy-related programmes and nearly \$20 billion in tax credits and grants
- Impact of Renewables on the Electric Grid study finds adding 5% wind to the system will require adding 10,000 miles of new EHV lines at a cost of \$50 billion

## March

### Canada

- Ireland-based Mainstream Renewable Power and Alberta Wind Energy plan 400MW of wind generation by 2013

### Europe

- EU Commission reports on progress in creating the internal gas and electricity market
- EU Parliament
  - Energy Committee vote that all new buildings in the EU should have 'net-zero' energy use from 2018
  - Reaches initial agreement with Council on the 3rd Package
- ERGEG
  - Publishes draft Guidelines for Good Practice on Electricity Grid Connection and Access
  - Issues ERGEG recommendations on the 10-year Gas Network Development Plan
- ETSO
  - responds to EC consultation on the ITC proposal
  - responds to ERGEG GGP-European Balancing Market Integration Consultation
- EWEA
  - holds annual conference from 16-19 March in Marseille
  - says wind accounted for 43% of new EU power installations in 2008
- Eurelectric
  - Poyry reports a flexible, trading-based approach to meeting 20% renewables target by 2020 could bring significant cost savings

### Finland

- Government plans long-term feed-in tariff of €83.50/MWh, starting in 2010

### France

- EIB announces it will lend €400 million to RTE

### Italy

- Enel completes sale of its high-voltage network to Terna for €1.152 billion
- Industry Ministry approves construction of a 43km transmission line linking the island of Sicily with Calabria

### Netherlands

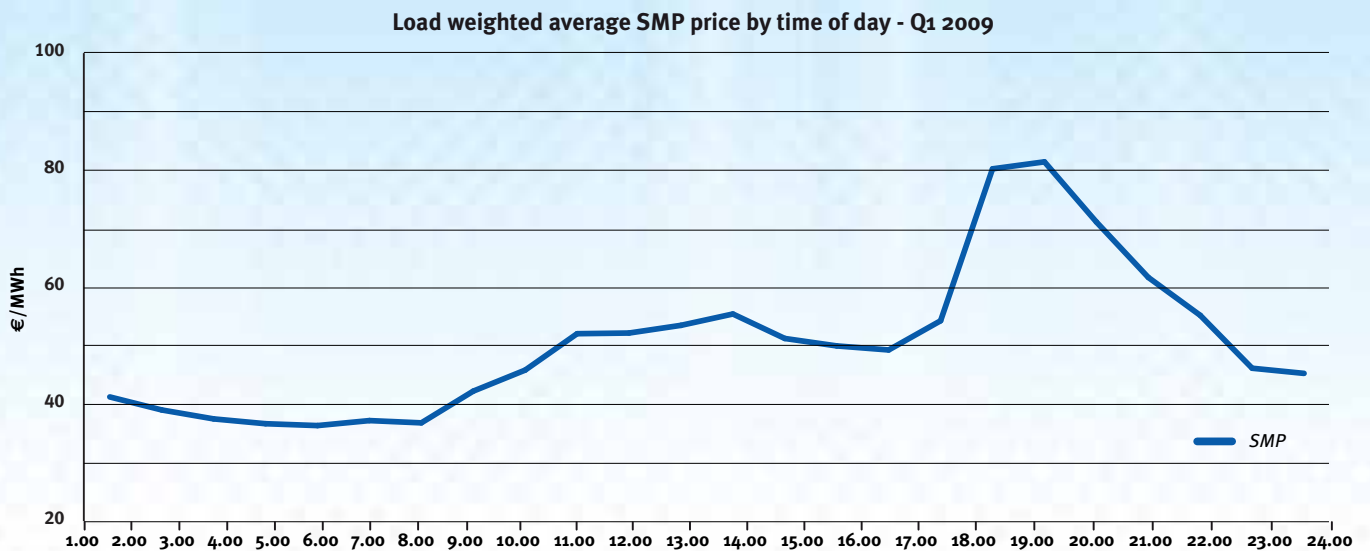
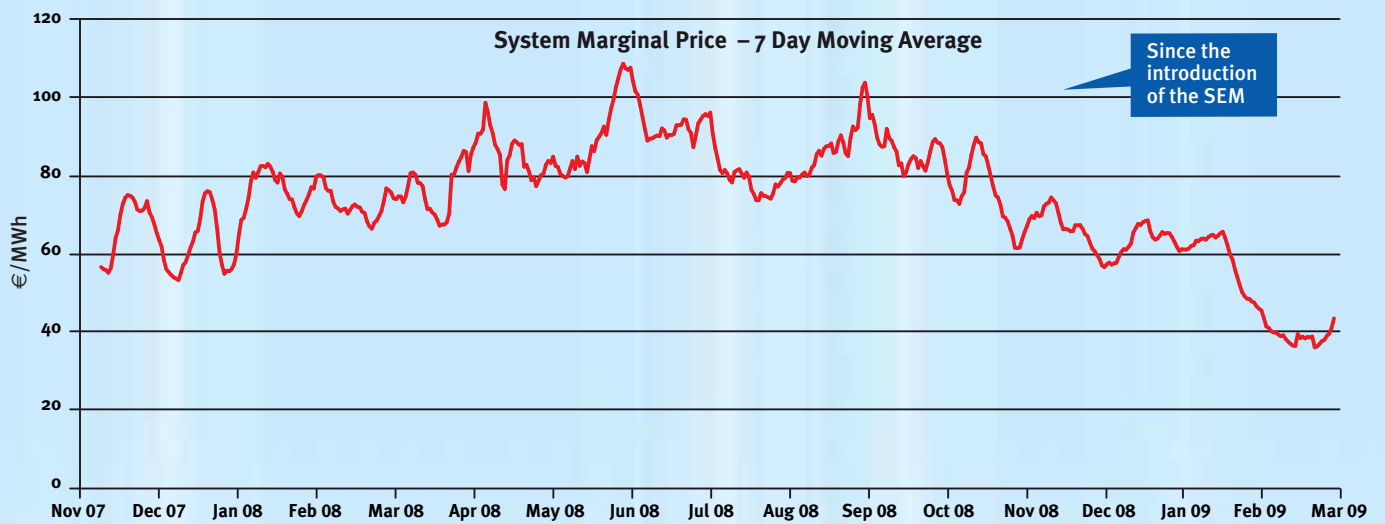
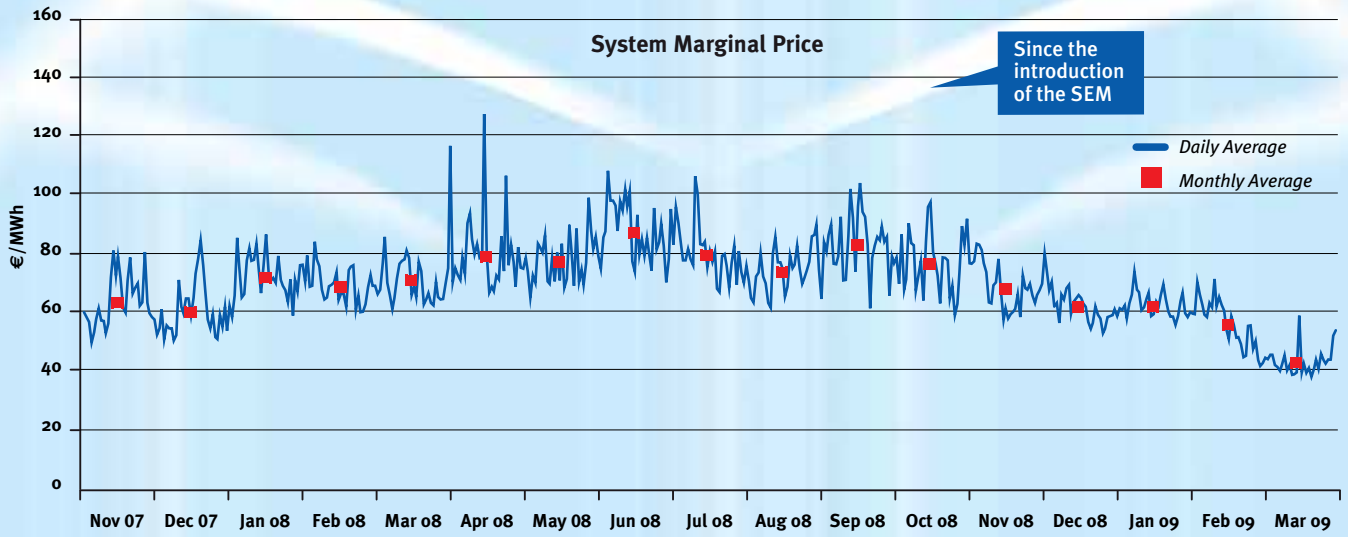
- TenneT acquires €356 million worth of high-voltage grids in the Netherlands from Enexis NV

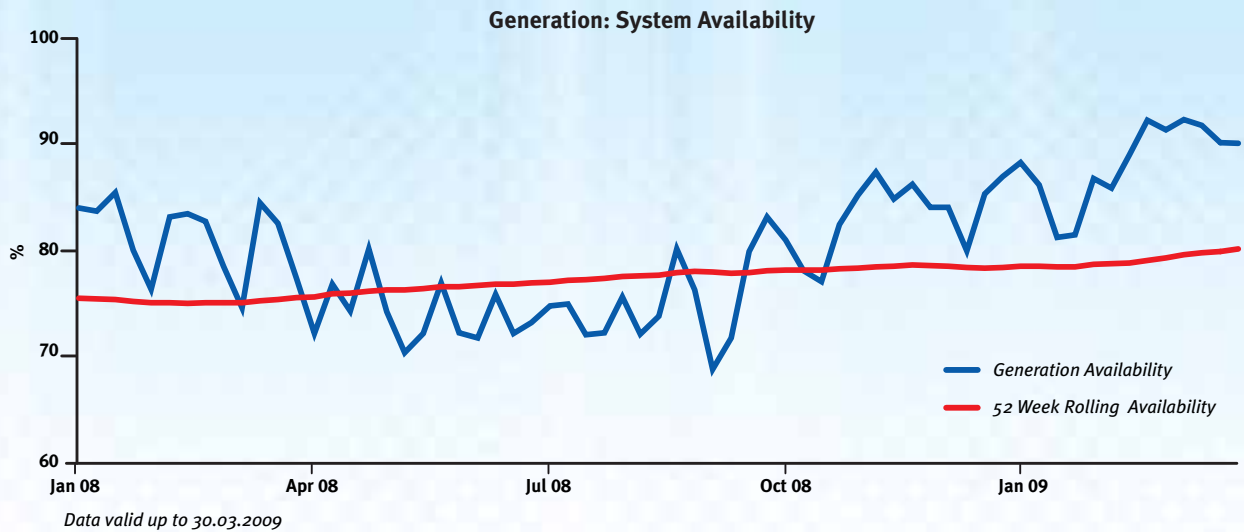
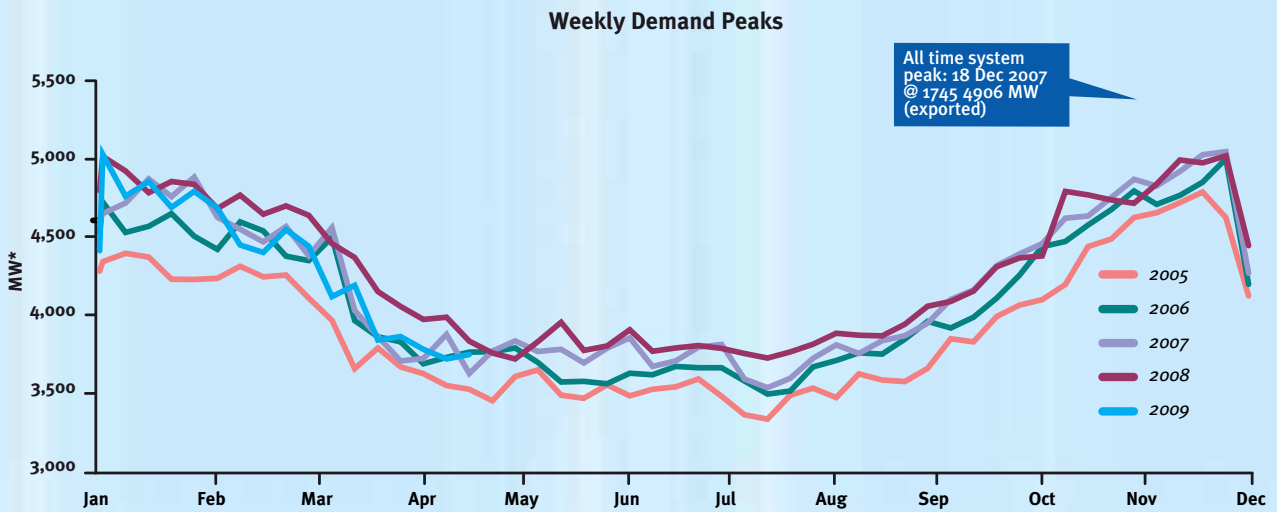
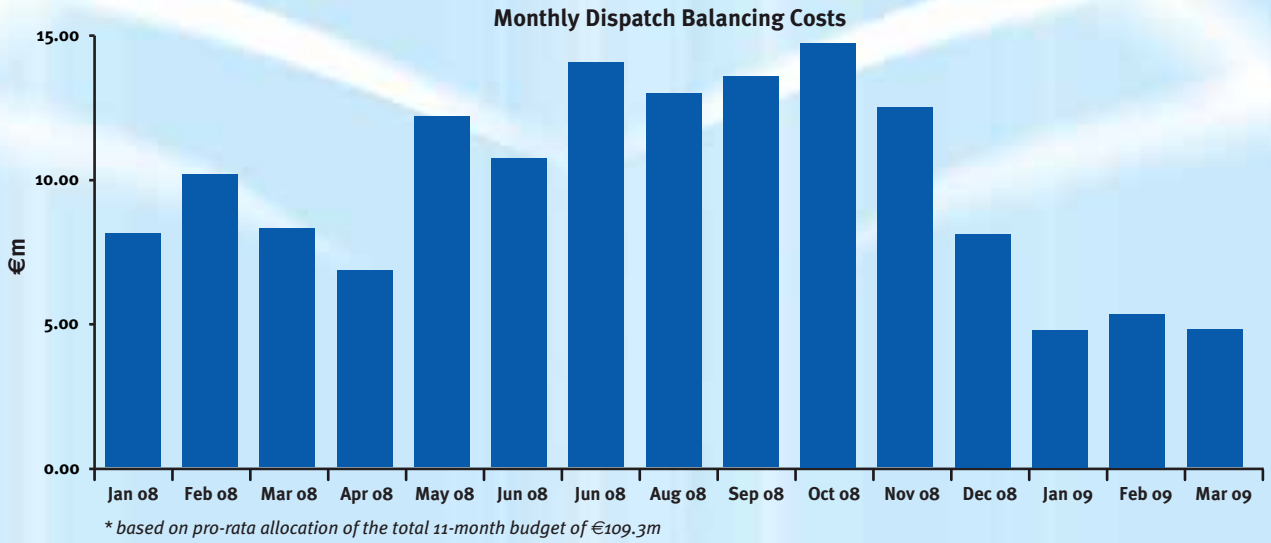
### UK

- University of Liverpool study says UK could meet 5% of its electricity requirements from northwest tidal barrages
- Electricity Networks Strategy Group reports investment of £4.7 billion is required to upgrade the network to accommodate new generation up to 2020

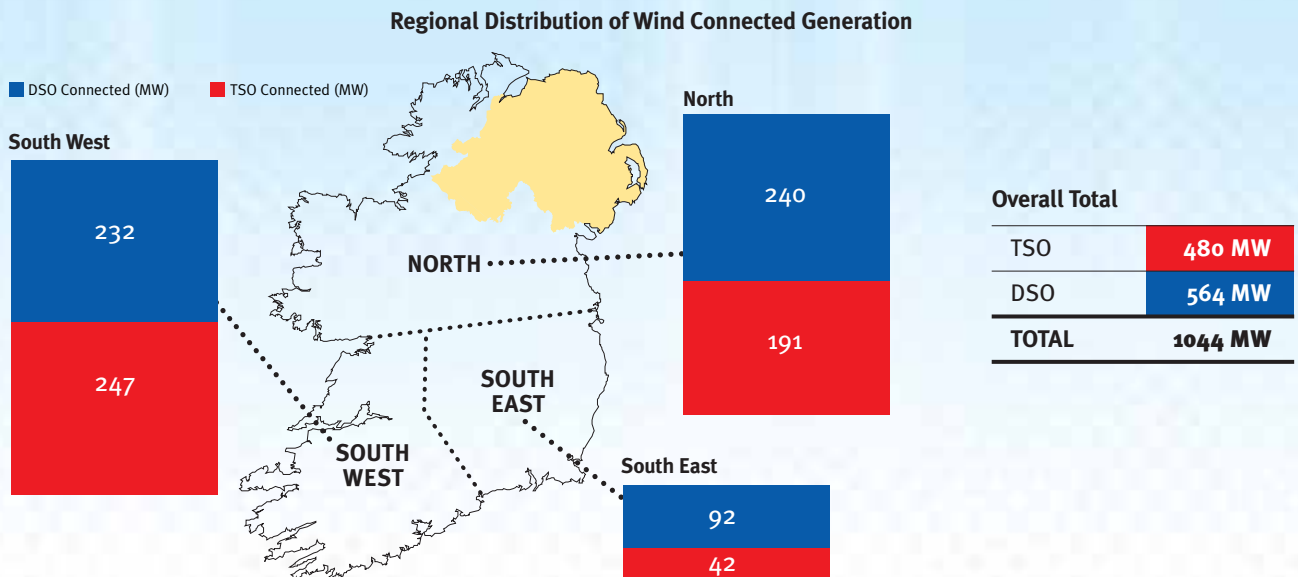
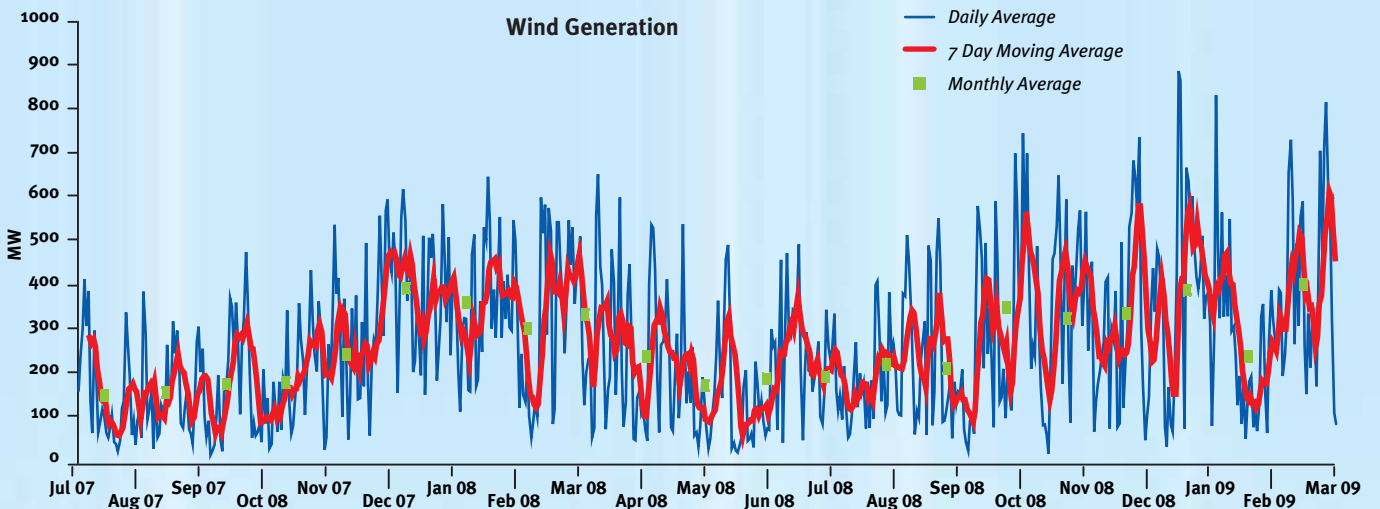
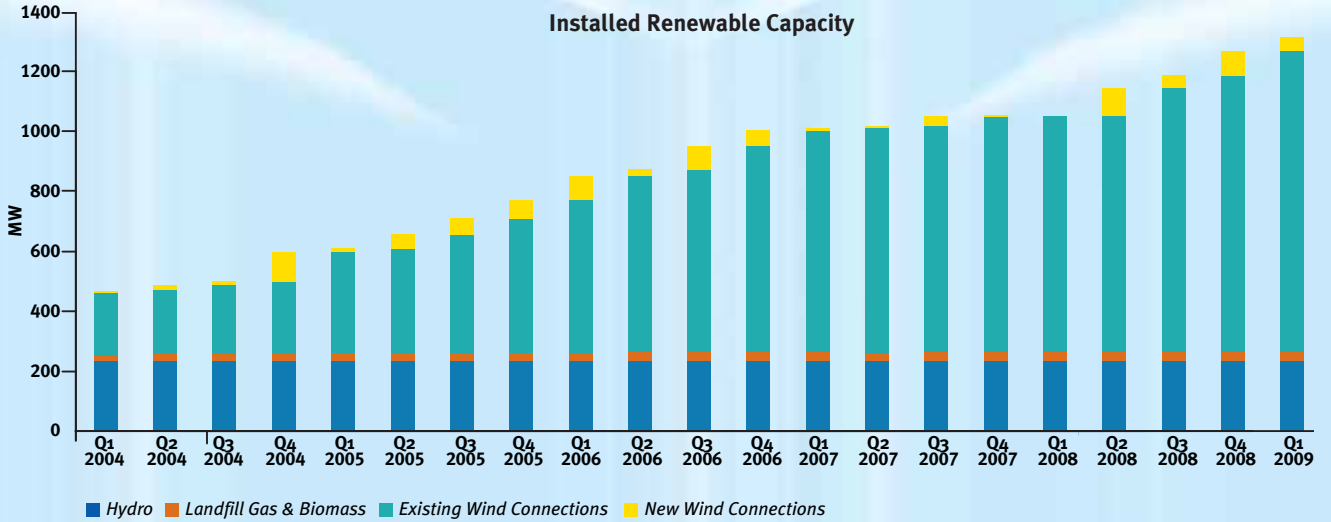
### US

- Joint Coordinated System Plan estimates Eastern Interconnection region will require up to \$80 billion in new transmission infrastructure to accommodate 20% of its energy from wind generation by 2024





# Renewables





**Transmission System**  
400 kV, 275 kV, 220 kV and 110 kV

- 400 kV Lines
- 275 kV Lines
- 220 kV Lines
- 110 kV Lines
- - - 220 kV Cables
- - - 110 kV Cables
- 400 kV Stations
- 275 kV Stations
- 220 kV Stations
- 110 kV Stations
- Phase Shifting Transformer

**Transmission Connected Generation**

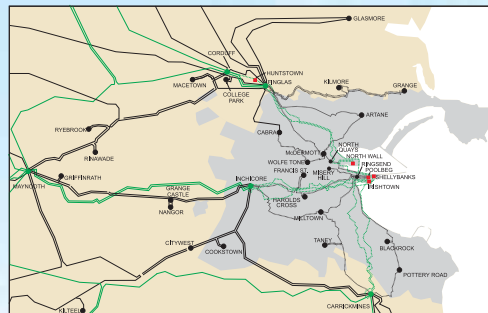
- Hydro Generation
- Thermal Generation
- ▼ Pumped Storage Generation
- Wind

See Belfast Area

See Dublin Area

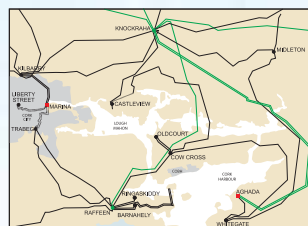
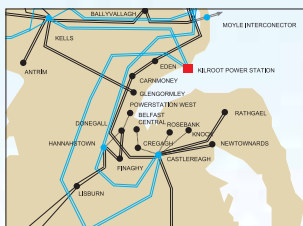
See Cork Area

Dublin Area



Belfast Area

Cork Area



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*While every effort has been made in the compilation of this quarterly review to ensure that the information contained herein is correct we cannot accept responsibility or liability whatsoever for any damage howsoever caused by reliance on the information presented here.*

\* SONI is the licensed system operator for the Northern Ireland Transmission System.