

ESB Power Generation Review



ESB Power Generation Review

Overview

ESB Power Generation owns and operates generation stations in the Republic of Ireland with an installed capacity of 4,391 MW at 31 December 2008. This includes the capacity of plant sold in early 2009.

Operational Review

Safety Performance

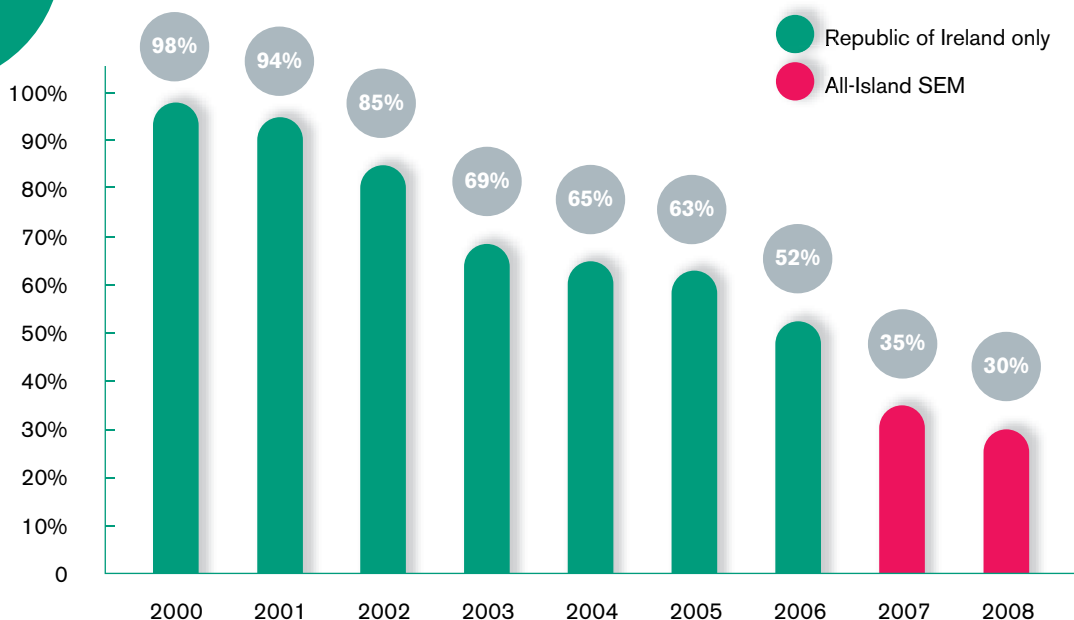
Whilst Lost Time Injuries (LTI) to staff members declined from 8 in 2007 to 6 in 2008, LTI to contractors increased from 11 in 2007 to 14 in 2008. Power Generation is embarking on a major contractor management initiative in 2009, which will include contractor safety management and expects to reverse the upward trend in contractor LTI through this initiative.

We have completed the implementation of OHSAS 18001 (Occupational Health and Safety Assessment Series) across all work locations in Power Generation during 2008 and maintaining this external accreditation is a key priority for 2009. Safety and health remains our number one priority and we are committed to creating an injury free workplace.

What is ESB Power Generation's market share?

30%

At the end of 2008 ESB Power Generation had 30% of total generation in the all-island Single Electricity Market (SEM)



Customers and the Energy Market

2008 was Power Generation's first full year of trading in the Single Electricity Market (SEM). In this market, Power Generation submits bids for each of its operating units per each half hour and the Independent Market Operator decides which generators actually run and at what price.

Power Generation had a 30% share of SEM generation in 2008, compared to 32% for the first two months of operation of the SEM in 2007, reflecting continuing growth of the independent generation sector.

Power Generation administered subscription processes to sell 3 TWhs of Contract for Differences (CfDs) to eligible suppliers as directed by the Commission for Energy Regulation (CER). In separate processes, a further 5 TWh of Non-Directed CfDs were

auctioned on a non-discriminatory basis. A further 5 TWh of Public Service Obligation (PSO) backed contracts were also sold. The total CfDs sold amounted to the bulk of Power Generation's in-merit plant running in the SEM, and had the effect of offering a substantial volume of fixed price power to other players in the market.

As in 2007, Power Generation secured its physical fuel, which accounts for approximately 50% of its total operating cost base, at or below market indices. Consistent with prudent energy price risk management, fuel swap derivative transactions were also executed.

Capital Expenditure

Power Generation's capital expenditure programme amounted to €263 million. This primarily related to the construction of the

430 MW Combined Cycle Gas Turbine (CCGT) plant in Aghada, Co. Cork, which is on target for commercial operation in late 2009. This plant will be a state of the art gas-fired CCGT plant using technology which is the most environmentally friendly and efficient in the world.

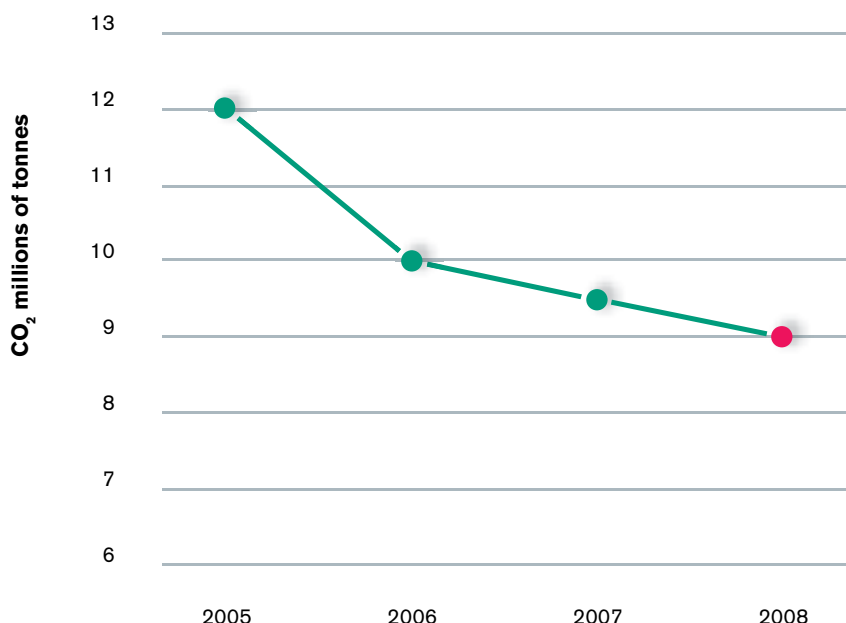
Another major capital spend in 2008 related to the Moneypoint Environmental Retrofit Project (MERP) which is due to be completed in 2009. This investment provides a significant reduction in emissions of Nitrogen Oxide (NO_x), Sulphur Dioxide (SO_x) and dust from the plant.

In addition to these major capital projects, Power Generation continues its planned maintenance programme to deliver a competitive portfolio of plant capable of successfully operating in the SEM.

How much has ESB Power Generation reduced its CO₂ emissions by?



ESB Power Generation has reduced its CO₂ emissions by 26% since 2005



Plant Performance

Power Generation's availability outturn was 79%, a 4% increase on the 2007 level. While this level of portfolio availability is still below best international practice, most stations in the portfolio performed to best practice. The underlying cause of lower than best practice portfolio availability in 2008 was a significant scheduled maintenance programme, combined with a higher than planned forced outage rate due to plant failure in a small number of locations. A long term solution for the boiler corrosion problems in the peat stations was finalised with the boiler manufacturer during the year.

Environmental Performance

Power Generation is fully committed to conducting its activities in an environmentally responsible manner. During 2008, Power Generation proactively managed its environmental commitments.

The verification process for 2008 CO₂ emissions has been successfully completed. Power Generation's CO₂ emissions were 9.04 million tonnes, a decline from 9.78 million tonnes in 2007.

Environmental exit audits were completed in those sites to be divested under an agreement with the CER as set out under the Asset Strategy below. Environmental Management Systems (EMS) in Ardnacrusha, Great Island, Lee, Lough Ree Power, West Offaly Power, North Wall, Moneypoint, Poolbeg and Tarbert were successfully re-certified to ISO 14001 in 2008. Re-certification work at all other locations will be completed in 2009. External surveillance audits were carried out in all locations as part of our existing ISO 14001 accreditation.

Following completion of the Moneypoint Environmental Retrofit, the plant will operate at best practice emission abatement performance, as will the new CCGT plant at Aghada and the recently constructed peat stations in their respective peer groups.

Going forward Power Generation will continue to take the steps necessary to protect our environment. This will be achieved by ensuring we operate our plants as efficiently as possible and continue to assess new techniques and technologies to improve plant environmental performance.

Sustainability

A Power Generation Sustainability Team was established in 2008 and focused on delivering the carbon reduction targets detailed in the 2020 Strategic Framework. The three main streams of activity are reducing carbon emissions through:

- 1 changing the way we work;
- 2 changes to the generation process; and
- 3 the use of new technologies and fuels in power generation. For example, the replacement of a single bypass valve in Aghada in 2008 will result in a carbon saving of 3,000 tonnes per annum.

The main areas of activity in 2009 will be driving further process efficiency, progressing biomass co-firing proposals for the peat stations and Moneypoint, participating in district heating as it develops and the ongoing development of a clean coal proposal.

Input into the Irish Economy

As outlined above, Power Generation has continued to invest heavily in its portfolio throughout 2008. Major capital works taking place in Aghada and Moneypoint, as well as ongoing maintenance of other plant, ensures that Power Generation is continuing to generate significant employment throughout the country. In addition, conclusion of an agreement to remedy the boiler problems in the peat stations will ensure that the significant level of employment in peat harvesting and related industries in the midlands will be sustained for the foreseeable future. These achievements, together with extensive procurement from companies across a wide range of goods and services, illustrate Power Generation's commitment to the Irish economy.

Asset Strategy

On 27 April 2007, ESB entered into an agreement with the CER which committed ESB to close or divest certain generation facilities and sites in exchange for an authorisation to construct a new CCGT at Aghada. This agreement provided for a 1,500 MW reduction in Power Generation's plant capacity and facilitated further independent generation market entry.

During 2008, Power Generation negotiated an agreement with Endesa to sell 1,000 MW of plant comprising Tarbert, Great Island, Rhode, Tawnaghmore and two sites in Lanesboro and Shannonbridge in accordance with the CER agreement. The transaction successfully concluded on 8 January 2009.

Looking Ahead

Looking forward to 2009 and beyond, key challenges for Power Generation include:

- ★ Continued focus on improvements in safety, aimed at delivering our target of creating and sustaining a healthy and injury free workplace;
- ★ Continuing to improve our environmental performance through the successful delivery of Power Generation's major projects (MERP, Aghada CCGT, peat station remediation and maintenance programme) as well as undertaking other initiatives to protect our environment;
- ★ Completing the agreed reduction in our generation plant capacity as per the CER agreement through the closure of Poolbeg thermal station and converting Marina station to open cycle;
- ★ Improving plant performance through best practice operations and maintenance within our stations, to deliver a portfolio of flexible plant capable of competing successfully in the SEM;
- ★ Continuing to support the structure of the SEM, including consolidating and further enhancing our trading strategies, processes, systems and competencies; and
- ★ Maintaining a strong and viable business by reducing our cost base, while ensuring Power Generation delivers on its social and environmental obligations.

ESB Group's Generation Portfolio in the all-island SEM

This map shows all the power generation in Ireland which was in operation by either ESB Power Generation or ESB International in 2008

