ESB Power Generation Review

Domestic Generation

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Overview

ESB Power Generation owns and operates generating stations in the Republic of Ireland with an installed capacity totalling 4,651MW.

Operational Review

Safety Performance

During 2007, Power Generation made a number of enhancements to its safety management processes, including securing OHSAS Safety Management System accreditation in five work locations, with remaining locations to secure the accreditation in 2008. While the level of accidents in Power Generation reduced in 2007, 21 Lost Time Injuries (9 staff, 12 contractors) compared to 23 in 2006 (13 staff, 10 contractors), this performance requires further improvement. Safety and health remains our number one priority and we are committed to creating an injury free workplace.

Customers and the Energy Market

Power Generation's 2007 Republic of Ireland market share was 47%. This is 5% lower than our 2006 market share reflecting continuing growth of the independent generation sector.

As in 2006, Power Generation secured its fuel, which accounts for approximately 50% of its total operating cost base, at or below market indices independently benchmarked by the Commission for Energy Regulation (CER), thus contributing to ensuring energy is delivered at least cost for the benefit of our customers.

Following extensive preparation, Power Generation had the necessary systems, processes and people capabilities in place to successfully enter the new Single Electricity Market (SEM) which opened on 1 November 2007, marking the end of its Regulated Bulk Power Agreement with Customer Supply. In support of the development of the SEM, Power Generation administered an auction process to sell 2.9TWhs of Contracts for Differences (CFDs) as directed by the CER and also auctioned a further 4 TWhs of Non-Directed CFDs, which had the effect of offering fixed price power to other players in the market. Since market opening, Power Generation's market share has been approximately 32% on an All-Island Market basis.

Capital Expenditure

Power Generation's 2007 capital expenditure programme amounted to €225 million. This primarily related to spend on the Moneypoint Environmental Retrofit Project (MERP) which is targeted for completion in 2008. This investment will provide major environmental benefits as outlined below.

Another major capital spend in 2007 was construction of the 430MW CCGT plant in Aghada, Co. Cork, which is on target for commercial operation in 2009. The technology chosen for this project is one of the cleanest, most environmentally friendly and efficient in the world.

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

Plant Performance

While most of Power Generation's stations performed to best international practice, plant availability outturn was 75% against a target 77% due to a higher forced outage rate than expected in 2007. Significant contributors to this outturn were "as found" conditions identified during the Aghada Combined Turbines scheduled overhauls, a generator failure in Turlough Hill and continued boiler corrosion problems in the peat plants. A long term solution for the Peat stations has been identified and is currently being finalised with the boiler manufacturer.

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Inside an ESB Powerstation.

Environmental Performance

Power Generation is fully committed to conducting its activities in an environmentally sensitive manner. During 2007 Power Generation proactively managed its environmental obligations.

Environmental Management System (EMS) certification to ISO 14001 was retained at all Power Generation stations and ESB Fisheries during their biannual 2007 audits.

In early 2007, Power Generation's 2006 CO_2 emissions were independently verified. 2006 CO_2 emissions were 13% less than in 2005 and there was a further reduction of 8% in 2007. ESB was actively involved in inputting to the consultation process for a 2nd National Allocation Plan (NAP2) required to implement the UN Kyoto Protocol over the period 2008-2012. It is anticipated that less than 70% of baseline CO_2 emissions in 2003/2004 will be allocated by the Environmental Protection Agency (EPA) as free allowances to the power generation sector in NAP2. As a potential contributor to CO_2 reduction, the use of biomass fuels was investigated for Power Generation's peat and coal fired power stations during 2007. A decision on pilot trials is anticipated during 2008. Energy audits were also conducted at a number of stations and further audits will be done in 2008.

The implementation of the EU European Pollutants Release & Transfer Register (EPRTR) Regulation on a coherent and consistent basis has been discussed with the EPA. A Europe-wide utility initiative resulted in the production of a reporting guideline at the end of 2007. First reporting is required for 2007 emissions at the end of March 2008.

Demolition of Lanesboro Power Station was completed during 2007 in compliance with its Integrated Pollution Prevention & Control (IPPC) licence, with site remediation work continuing during 2008. Site remediation works will be completed during 2008. Preparatory work for demolition of the retired Bellacorick Power Station also took place during 2007 which included demolition of the cooling tower. Main demolition works at Bellacorick are expected to commence in late 2008. All demolition and remediation activities continue to be independently monitored and audited.
The Moneypoint Environmental Retrofit Project (MERP) progressed in 2007. This project involves the installation of SO_x and NO_x emission controls on the three boilers in Moneypoint and is required to meet the requirements of the EU Large Combustion Plant Directive (LCPD). The Government agreed to implement the LCPD through a National Emissions Reduction Plan (NERP) approach. This is the most cost-effective way to achieve the requirements of the LCPD and will deliver a greater emission reduction.

ESB Shannonbridge.

Finally, during 2007, Power Generation investigated the biodiversity impacts of its activities, the conclusions of which were predominantly positive. Also, the EU Eels Regulation was adopted. This requires the development of national eel management plans and ESB will fully participate in the development of these plans.

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 invest in technologies to improve plant environmental performance.

> "Building on the energy audits conducted in 2007, Power Generation will continue to improve energy use with a view to reducing its carbon footprint."

Asset Strategy

On 27 April 2007, ESB entered into an agreement with the CER which committed ESB to close or divest certain ESB generation facilities and sites and committed CER to authorise the construction of Aghada CCGT.

This agreement provides for a significant reduction in Power Generation's market dominance (over 30% of capacity), making generation sites available to facilitate further independent market entry, as well as proceeding with the Aghada new build to renew its portfolio.

Pursuant to this agreement expressions of interest were sought for the following assets:

- Tarbert Station
- Great Island Station
- Peaking Stations at Tawnaghmore, Rhode and Aghada; and
- Sites in the former Lanesboro and Shannonbridge Generating Station.

Selected parties were then invited to submit indicative bids before 31 January, 2008 and the process is ongoing.

Looking Ahead

Looking forward to 2008 and beyond, key challenges for Power Generation include delivery of the Asset Strategy, continual repositioning of the business to successfully compete in the SEM and the need to continue to improve our environmental performance via the successful delivery of Power Generation's major projects (Aghada CCGT, peat plants and MERP) as well as other initiatives to protect our environment.

For 2008 Power Generation has set itself stretching targets including:

- Creating and sustaining a healthy and injury free workplace,
- Complete commissioning of the SO_x and NO_x emissions abatement systems at Moneypoint,
- Commencing a feasibility investigation of clean coal technologies and district heating,
- 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 All Island Market,
- Renewing our generation portfolio through advancing the construction of a new baseload CCGT plant at Aghada, Co. Cork,
- Progressing the reduction of our market dominance through a programme of closure / divestment of stations / sites as agreed with the CER,
- Continuing to support the structure of the SEM consolidating and enhancing the new processes, systems, and competencies implemented in 2007; and
- Continuing to secure Power Generation's long term financial viability by significantly reducing our cost base, whilst ensuring Power Generation remains committed to the social and environmental dimensions of the business.

ESB Group – Power Generation Portfolio

This map shows all the Power Generation in Ireland operated and managed by ESB Power Generation and ESB International.