

Emergency Procedures

Coordination between Gas and Electricity Systems

CER/07/195

The Task Force on Emergency Procedures was established by the Commission for Energy Regulation in April 2005 to examine and report on the procedures to be followed in the event of an emergency on the electricity and/or gas networks. In particular the Task Force was tasked with looking at these procedures in light of the increasing interdependencies between the two systems.

The Task Force comprises representatives from the Commission for Energy Regulation, the Department of Communications, Marine and Natural Resources, Bord Gáis Networks, EirGrid and ESB Networks.

As background to electricity generation in Ireland, approximately 60% of electricity is produced using natural gas. Indigenous gas supplies have depleted over the years and 87% is now imported from Great Britain and continental Europe via two sub sea interconnectors. This has serious implications for the electricity system in Ireland in the event of a gas supply shortage or an incident.

The Task Force identified two serious potential sources for a gas supply emergency in Ireland:

- The first is any gas emergency in Great Britain that impacts on the supply of gas to Ireland.
- The second is an incident to the pipeline in Scotland that connects the Great Britain transmission system to the two sub sea interconnectors.

Analysis was carried out as to how long the supply of gas could be maintained within Ireland, in the event of an incident. The analysis shows that demand – excluding the electricity generation sector - could be supplied for 1 week under “typical winter” conditions or 48 hours during the statistically coldest winter in 50 years.

This assumes that:

- All power stations cease consuming gas within 5 hours of the incident occurring and
- The level of indigenous gas delivered to the Irish system is maintained at circa 4 million m³ per day, or higher, and at a pressure of 34 barg during the period of the supply emergency.

The Task Force also looked at the impact on the electricity sector in the event of either of these emergencies materialising. It was found that there may be a requirement for some load shedding in either event. However EirGrid has concluded that the integrity of the electricity system could be maintained. This is based on the assumption that the power sector could fuel switch to an alternative fuel, e.g. distillate or diesel.

The Commission is satisfied that the emergency arrangements for both the electricity and gas sectors are acceptable and mutually compatible.

Arrangements have now been put in place where EirGrid will manage curtailment of gas supply to power stations when advised by the Bord Gáis Networks of a problem or potential problem with gas supply.

The Task Force looked in detail at the arrangements in Great Britain in the case of a curtailment of gas supply from there. The Task Force understands that in this scenario gas supplies would be curtailed on a broadly pro-rata basis, with priority being given to residential customers. The Task Force has received assurances that residential customers in Ireland will receive the same priority as residential customers in Great Britain. However, supplies may be interrupted in the event of a Stage 4 emergency, i.e. in the event that firm load shedding is not sufficient to curtail an emergency in Great Britain. Bord Gáis Networks has secured a position on the Britain Gas Advisory Task Group (GATG) and will be able to keep abreast of emergency procedures pertaining to the Great Britain and impacts on gas supplies to Ireland. Details of how potential curtailment could be handled once the gas has left the Great Britain system needs to be put in place and the Task Force will oversee the implementation of these arrangements.

The electricity sector has a list of priority customers who are the last loads to be shed in the event of an electricity emergency. Bord Gáis Networks is currently establishing a priority customer list detailing the natural gas loads that would be the last to be shed in the event of an emergency in the gas supply in addition to domestic customers who are always for safety and logistic reasons the last group to be shed in the event of an emergency.

The Task Force has looked at the wider issue of communications in the event of a major curtailment of both electricity and gas supplies. It is considered that Bord Gáis Networks should investigate establishing communications systems which operate independently of the electricity or public telecommunications systems and that the coordination of communications between gas and electricity system operators is crucial.

This Task Force has made a number of key recommendations which are outlined below. The Task Force shall meet regularly to consider the implementation of the recommendations. In the longer term it is proposed that

the Task Force meet annually to review plans and to evaluate the plans in light of some other emergency scenarios over the coming year.

Summary Recommendations
Develop All island procedures for Gas emergencies
Consult on Eirgrid rights in relation to emergency stocks for generating stations
Implement Code of Operation changes on emergency procedures
Examine robustness of communication systems in event of electricity failure
Implement Grid Code changes on emergency procedures
Put in place procedures for strategic communications for short term emergency
Place an alternative fuel requirement on newly licenced generators. This requirement should include an actual storage capability for the alternative fuel