



## **EirGrid Policy for Prioritising Use of Outage Windows**

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## **1 INTRODUCTION**

EirGrid is responsible for coordinating a program of outages of transmission plant to facilitate works including maintenance and construction activities. The availability of outages is limited by the requirement to maintain operational security on the Transmission System. It is often the case that there are insufficient outage opportunities to carry out all of the work planned for the Transmission System. Whenever this arises EirGrid must decide which works are deferred and which should go ahead. This policy document outlines EirGrid's approach to assigning priority to projects competing for outage windows.

## **2 OBJECTIVE OF THE OUTAGE PLANNING PROCESS**

The objective of the transmission outage planning process is to maximise the amount of outage related work that can take place on the system whilst respecting system security criteria. Work on the transmission system that requires outages of plant can be broadly split into three categories; Safety/Fault repair, Maintenance and Capital Works. Safety and fault repairs are generally progressed as soon as possible and are normally given the highest priority when scheduling outages. EirGrid has a licence obligation to ensure the maintenance of the transmission system and executes this obligation by identifying maintenance requirements for each item of plant in accordance with existing maintenance policy and scheduling the required outages. Outages of transmission system plant are also required to deliver a wide range of projects known collectively as Capital Works Projects. These projects include connecting new equipment or stations to the system, uprating existing feeders and station equipment, upgrading control and protection systems and replacing equipment at the end of its life.

## **3 THE OUTAGE SEASON**

The outage season runs during Daylight Saving Time from the end of March to the end of October as this corresponds to a period of lower system demand when there is capacity in the network to take circuits out of service. It is for this reason that outages are generally confined to take place during the summer period. It should be noted that the transmission system planning criteria<sup>1</sup>, upon which the system is developed, are based on the system remaining secure for the loss of one item of plant and takes account of the fact that an item of plant may be out for maintenance during the summer period.

Notwithstanding this outages are scheduled for the winter period on plant where this can be done without adversely affecting the safe and secure operation of the meshed transmission system. This typically includes outages of plant such as couplers, busbar sections, duplicate protection, and telecommunications circuits.

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<sup>1</sup> [www.eirgrid.com/media/Transmission%20Planning%20Criteria.pdf](http://www.eirgrid.com/media/Transmission%20Planning%20Criteria.pdf)

## **4 TIMING OF OUTAGE PLANNING**

The outage planning process is a complex one which takes place annually and requires six months to complete. The process of preparing a detailed outage plan for Year 1 starts in September of Year 0 and completes in February of Year 1. Outages for future years (i.e., year 2, 3, etc). are not examined in detail, however, when determining the proposed capital works programmes for Years 1-3 a high level feasibility analysis is done to allow the programming take some account of known outage constraints.

Outages required for delivering the capital works program are scheduled in the first phase of the outage planning process (Sept – Dec) with maintenance outages scheduled in phase 2 (Jan – Feb). The aim of Phase 1 is to produce, by December of Year 0, a coordinated and technically feasible program of outages for Year 1. A key reason the capital works outage plan is prepared first is that on average these works require much longer duration outages than maintenance outages, and capital works tend to have many constraints on when they can take place. For example, the earliest start dates on these projects are often dependent on factors such as the availability of specialised resources, obtaining planning permission or the delivery of equipment that has long lead times. It is essential that scheduling outages for capital works takes account of these constraints and any risks associated with these factors.

It is important to ensure that during the scheduling of capital works in phase 1 that sufficient outage windows are left free to schedule the required maintenance outages in phase 2.

## **5 SECURITY STANDARDS**

All outages are scheduled on the basis that Operational Security Standards (OSS) are not breached for any outage or combination of outages<sup>2</sup>. That is not to say that just because an outage complies with the OSS that it is acceptable to proceed with the outage. Some outages inherently pose more risk to security of supply than others, where risk is measured in terms of the quantity of load that would not be served in the event of a fault. Where the level of risk can be reduced by scheduling the outage to take place at a different time, prudent utility practice would dictate that this should be done. The consequences of delaying work are taken into account when making such decisions.

## **6 PRIORITISING OUTAGES FOR CAPITAL WORKS PROJECTS**

As stated in section 2 above, outages required to affect repairs or manage a safety issue are typically given the highest priority. Furthermore, EirGrid ensures that sufficient outages are provided to implement the maintenance policy. Within the category of “Outages required for Capital Works”, it can

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<sup>2</sup> <http://www.eirgrid.com/media/Operational%20Security%20Standards.pdf>

often be the case that there are not enough outage windows available to complete all capital works projects. Where this happens EirGrid must make decisions about which works are to be postponed into the following year. The approach to dealing with this is based on prudent utility practice and attempts to ensure that the transmission system as a whole is operated, repaired, maintained and developed as efficiently as possible for the benefit of all users of the system. Where conflicts arise the following guide is used by EirGrid in determining which works should take precedence (i.e., which should take place and which should be postponed):

- Projects necessary to ensure safety of people, plant and equipment have the highest priority
- Projects required to ensure security of supply can be maintained within published standards are given the next level of priority
- Projects deferred or only partially completed in the previous season are given the next level of priority.
- Projects required to connect new generation, new industrial demand or new distribution system demand, are given a high priority but can be displaced in favour of an essential network upgrade which is required to supply that demand, or to allow an export from that new generation.
- Projects required to maximise the amount of generation that can be exported onto the transmission system are given the next priority e.g. busbar or feeder upgrades. In selecting between projects which achieve this objective priority is normally given to projects which deliver a greater amount of firm access as measured in MW.
- Projects required to improve the performance of the transmission system are given the next priority e.g. control and protection upgrades
- Priority for all other projects is subject to the following considerations (in no particular order)
  - Outages are aligned with generator and demand customer outages. This can dictate when an outage takes place and sometimes can cause an outage to be moved into another year.
  - Where an outage causes a significant increase in system constraint costs and this can be alleviated by moving the outage, possibly into the following year, then this will be considered.
  - Where an outage causes a significant increase in risk to system security and this can be alleviated by moving the outage into the following year then this will be considered. This could arise where the expected completion of another system reinforcement project will make this outage less risky to execute the following year.
  - Where an outage will be required again the following year for a different project the work may be moved into the following year so that all work can be done at once and to ensure that the overall availability of the transmission system across a number of years is maximised.
  - If a project can be done in parts, e.g. a line uprating, then it may be pragmatic to schedule half of the project in one year and the other half the following year
  - Projects where the outage durations are very uncertain, or where there is a known risk that materials or designs may not be available in time are given lower priority



**Note – In setting priorities EirGrid tries to ensure that, in addition to connecting new load or generation plant, a range of project types are delivered. For example, each year outages will be used to complete a number of line uprating, busbar uprating and protection and control projects across the system.**

## **APPENDIX 1 - BUSINESS PROCESS**

The business process supporting this policy is as follows.

During Year 0 EirGrid and ESB collaborate to produce an agreed programme of capital works that will be delivered in year 1. As part of this process all outage requirements for each project are identified by ESB Networks (ESBN). This list is completed in August of Year 0. In September of year 0 a series of formal face to face meetings are held with the relevant ESBN and EirGrid staff to gather a list of constraints around the timing and duration of the outage requirements. All customers are asked to submit any constraints on outage durations that are specific to year 1 including any dates that would suit them for outages of their connections assets. After the meeting a workshop is held in EirGrid to review the data and using a desktop approach identify which projects conflict with each other and therefore require prioritisation. Prioritisation proposals are reviewed by Operations, Commercial and Pricing, Transmission Access Planning, Transmission Network Planning and Project Management Office to ensure all relevant information is considered. In exceptional circumstances studies may be required to determine which projects maximise access to the transmission system. The decision as to which projects are to be postponed is taken by the end of September and analytical studies commence to develop a provisional capital works outage programme.

The provisional capital works outage programme is issued to ESBN in draft form in October and comments received back in November. A second set of ESBN-EirGrid meetings are held to approve the final version of the programme which is then issued to ESBN at the end of December. Maintenance outage requirements are also discussed at the November meeting. In January a draft maintenance outage plan is issued and a third and final set of meetings are held after which the complete annual outage plan is issued. If at any stage more capital works projects must be taken off the programme e.g. to accommodate critical maintenance, a second internal workshop is held to ensure that all relevant information is considered when selecting which projects are to be postponed.

Once the outage season gets underway in March of each year a fortnightly process is kicked off whereby all upcoming outages are reviewed and all parties confirm their readiness to take the outage and complete the scheduled work during the allotted outage period. This can result in further changes to the outage plan. There are a number of factors that can cause changes to the plan on a fortnightly and daily basis. These include factors such as:

- Forced outages of transmission plant arising either from a fault or from a serious condition detected during a planned outage,
- Forced extensions to scheduled outages whereby the work scheduled was not completed within the allotted outage time,
- Unplanned changes in generation availability (North and South) that render outages impossible or very expensive,
- Unplanned outages arising to provide clearance for other works,



Additional outages required to facilitate system testing (e.g. Blackstart testing) etc. where outage information was not available during the outage planning timeframe