**Substation standards - Customer Connections**

At EirGrid, that we plan, manage, develop and operate the national electricity transmission grid at 110, 220, 275 & 400kV across the island of Ireland, acting as a Transmission System Operator TSO.

EirGrid maintains and develops drawings and technical standards for connections to the Irish Transmission System. These standards govern the design and construction of new transmission assets namely Transmission substations, cables and overhead line feeder circuits.

The following documents contain useful technical information on 110 kV and 220 kV Transmission substations for demand and generation customer’s to consider when developing their connection projects and associated planning applications.

**Technical information on 110 kV and 220 kV Transmission substations**

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| **No.** | **Drawing Title**  | **Drawing Number** |
| **1** | Standard 110 kV AIS Customer SLD | XDN-SLD-STND-005 |
| **2** | 110kV AIS Loop Station – Initial C-shape build (Layout) | XDN-LAY-ELV-STND-H-001 |
| **3** | 110kV AIS Single Transformer Bay Tail Station Layout | XDN-LAY-ELV-STND-H-003 |
| **4** | 110 kV Single Bay Extendable to C-type station | XDN-LAY-ELV-STND-H-006 |
| **5** | 110kV AIS Station Typical Control Room Layout | XDN-CR-STND-H-001 |
| **6** | 110 kV GIS Station Layout (12 Bay) | XDN-LAY-ELV-STND-H-010 |
| **7** | 110 kV GIS Station Layout (8 Bay)  | XDN-LAY-ELV-STND-H-012  |
| **8** | 220 kV AIS Standard Layout | PG406-D020-123-001-000  |
| **9** | 220 kV and 110 kV GIS Station Layout  | XDN-LAY-ELV-STND-F-003 |
| **10** | 220 kV GIS Station Layout Design Standard  | XDN-LAY-ELV-STND-F-004 |

It should be noted that requirements can change based on new technologies, safe working standards or lessons learned during construction, operation and decommissioning. Customers are encouraged to always check that they are using the most up to date information.

It should be noted that there are a wide variety of potential transmission connection solutions. The layouts provided here are concept designs of the most commonly acceptable solutions and are provided for guidance only.

For contestable substations, EirGrid does not specify the substation technology type (AIS or GIS) to be built. AIS substations are open-terminal air –insulated, whereas GIS substations are metal enclosed gas-insulated. GIS substations are located indoors and AIS substation are generally located outdoors.

This is for the customer to decide based on their particular site constraints, planning considerations, cost of implementation and other project specific requirements.

Detailed project specific documentation will only be provided to applicants who have executed a connection offer with EirGrid.

For further information on the connection offer process please refer: [**http://www.eirgridgroup.com/customer-and-industry/becoming-a-customer/**](http://www.eirgridgroup.com/customer-and-industry/becoming-a-customer/)

For customers currently engaging with EirGrid in the connection offer process, further detailed specifications and standards can be made available on the EirGrid Extranet page. (Requests for access to the EirGrid extranet page for Transmission standards should be submitted to info@eirgrid.com.)