CIGRE – Substation Fundamentals Green Book Training Course
Engineers Ireland, 22 Clyde Road, Dublin D04 R3N2
29th - 30th September 2026

Registration link

The Green Books are CIGRE's flagship reference publications and they now exist for most study committee domains. Each brings together the output from multiple Technical Brochures into a definitive publication. As such they represent best practice from internationally recognised industry specialists. The SC B3 Substations Green Book was published in 2018. It covers a range of substation topologies: Air-Insulated, Gas-Insulated and Mixed Technology Switchgear Substations together with the essential secondary systems. Substations are described, starting from their design and construction. The description of the technology then extends to the maintenance and ongoing life management.

Unique among the green book series is a comprehensive Substation training course covering its content and including some updating. A working party from the B3 study committee developed 19 modules in 2022 and they are intended for presentation around the world by CIGRE approved trainers.

The Irish National Committee is delighted to offer a 2-day training event in Engineers Ireland for our local CIGRE community.

The 2 subject areas which will be covered are –

Substation Planning
Gas Insulated Substations (GIS)

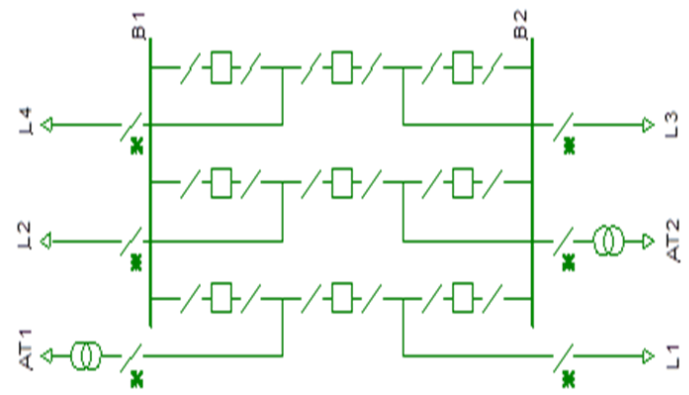
Trainers for this event will be –

John Finn (UK)
Colm Twomey (IRL)
Hugh Cunningham (IRL)
Jan Bednarik (IRL)

These trainers bring a vast amount of knowledge on substations and all are contributing authors to the Substations Green Book. John Finn was also a primary author of the material for this training course.

Details of the material which will be covered is highlighted below –

Planning Module 1
This module starts from the overall network planning and the identification of the need for a new substation or the extension of an existing one. The different types of substations and their functions are explained. Once the need has been established the essential system requirements for the substation are defined in terms of voltage, current, insulation coordination, protection etc. Once the key parameters have been defined the factors affecting the choice of location, layout and type of switchgear to be employed are considered. The module concludes with the factors affecting the choice of switching configuration to be employed at the substation



Planning Module 2
This module starts from the position of having defined the substation required and looks at the next steps namely how to specify exactly what is required. It runs through the main aspects which need to be included in a conventional specification. There is a brief mention of functional specifications. When the bids are received from the Solution Providers the different ways of evaluating the bids are considered taking into account economic evaluation and qualitative evaluation. Then the introduction of innovation into substations is discussed so that the innovation of today becomes the standard of tomorrow. Finally, the process of letting and managing the construction contracts is discussed.

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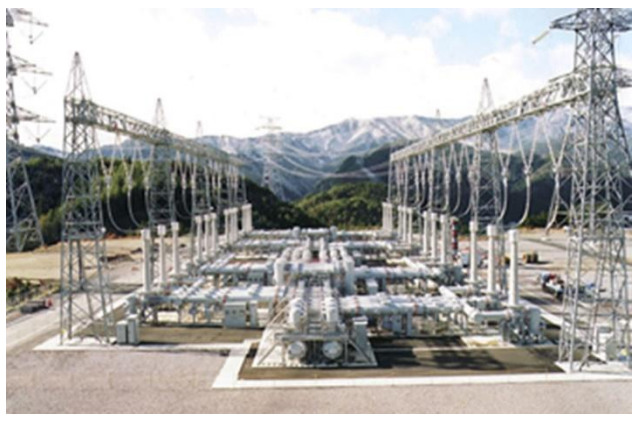
Gas Insulated Substations- Module 1

The opening slides of this presentation explain how this design is attractive. It has a smaller footprint, is safer and more reliable particularly for coastal sites. Substation configurations including insulation coordination are considered before moving onto the design of specific primary components. This starts with requirements for enclosures and gas zones. Details are included of GIS substations requirements and design of circuit breakers, disconnectors and earth switches. The module concludes with considerations for surge arresters and the connection of the GIS to other AIS systems.



Gas Insulated Substations- Module 2

This second module deals with the secondary aspects of GIS substations, the earthing systems including high frequency transients, the civil works and the testing. It starts with conventional and non-conventional low power instrument transformers. It then deals with the aspects of earthing which are different in a GIS substation from an AIS substation including the small area available, the induced currents flowing in the earthing system and the occurrence of high frequency transient ground potential rise (TGPR) and EMC. The civil works are illustrated by pictures of a typical build sequence. The module concludes by looking at the different types of condition monitoring applied, including UHF partial discharge monitoring, and the issues involved with testing GIS.

Note: Individual or collective CIGRE membership is required to attend this course (for membership information please visit CIGRE website).

Registration link

Early Bird Registration	€540	Until 7 August 2026
Standard Registration	€600	From 8 August 2026
Early Bird Registration (Group 10+ Discount)	€480 per person	Until 7 August 2026
Standard Registration (Group 10+ Discount)	€540 per person	From 8 August 2026
An additional discount of €60 per person is available to organisations with a collective CIGRE membership upon request. Please contact cigre@abbeyconferences.com for discount codes.		

Places are limited
– early registration is strongly recommended.

Registration includes –
Access to all training sessions, tea and coffee breaks and light lunch both days. PDFs of course material and a certificate of attendance (provided on request).

If you require assistance with registration or additional information, please contact – cigre@abbeyconferences.com