



Operational Experience and
Technological Development
for Application Worldwide

Genova, Italy ■ May 29-30 ■ 2025

Tutorial

SET Plan IWG DC Technologies: First Practices and Challenges in MVDC/LVDC

Tutorial organisation: Eleonora Riva Sanseverino - *University of Palermo*, Angelo L'Abbate - *RSE – Ricerca sul Sistema Energetico*, Stefano Massucco - *University of Genoa*

Tutorial co-sponsoring: *University of Genoa*, *RSE – Ricerca sul Sistema Energetico*

Abstract:

This tutorial will provide a foundational understanding of the key technical concepts behind MVDC/LVDC technologies, with a particular emphasis on power networks, conversion systems, and related devices. The development of these technologies will first be placed within a broader European context, followed by a detailed technical explanation. Finally, real-world applications will be showcased through examples from projects and installations, with insights and commentary from industry experts.

Programme

Wednesday, May 28

14:30/18:00

14:30 Registration

15:00 Tutorial (1st part):

Welcome and Introduction

Eleonora Riva Sanseverino, Angelo L'Abbate - *Italy's representatives in SET Plan IWG DC Technologies*

LVDC Challenges and Opportunities: A Focus on Naval Applications

Federico Silvestro, Fabio D'Agostino - *University of Genoa*; Antonio Chiarelli - *Fincantieri/Cetena*

Q&A

16:00 Coffee break

16:15 Tutorial (2nd part):

MVDC: Theoretical introduction and main power converters topologies

Mauro Carpita - *Haute Ecole d'Ingénierie et de Gestion du Canton de Vaud*; Mario Marchesoni - *University of Genoa*

Semiconductor circuit breakers for protecting DC microgrids

Dejan Pejovski, Enrico Ragaini - *ABB*

LVDC/MVDC projects: the experience of Hyperride project

Massimo Cresta - *ASM Terni*

LVDC/MVDC projects: the case of LOV project

Giovanni Brunaccini - *CNR*

Q&A

Wrap-up, end