

## **A Study on the Optimal Placement and Control Scheme for Multi Terminal HVDC in Korea**

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**Abstract :** This paper deals about economics and control of optimal placement of multi-terminal HVDC in Korea. Currently, No.1 and 2 HVDC are installed in Jeju and Mainland, Dangjin Godeok HVDC starts operation in 2020. Jeju No.3 HVDC also starts operation in 2022. HVDC systems in Korea are expanding. Also, super grid projects with China, Japan, and Russia are under consideration. In this situation, it is necessary to study how to install optimal HVDC in Korea and how to control it. After initializing the Optimal Power Flow (OPF) procedure using lossless economic dispatch, global iteration will be set. And then, this will be formed as the Lagrangian function and linearized. We will also analyze the advantages and disadvantages of each operation mode for optimal operating conditions of voltage and current complex HVDC in Korea.

**Keywords :** economics, HVDC, multi terminal, optimal

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