Paris Session 2022



Need and application of CFC's

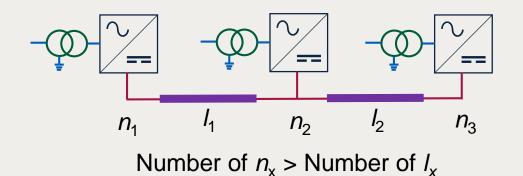
B4 PS1.10

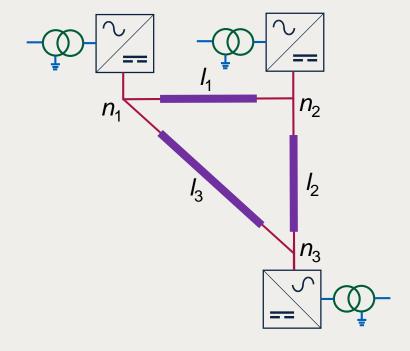
Power flow control in large DC networks will require new technologies to control the power flow. What control options are available for DC grid power flow? What is the best control method to manage power flow in DC Grids from operational and planning perspectives?

Carl Barker, UK



Need and application of CFC's

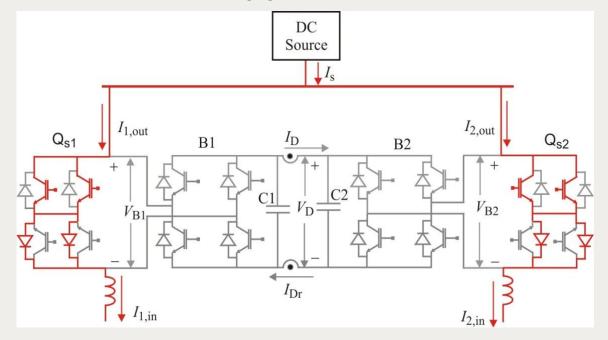




Number of n_x = Number of I_x

A meshed grid requires an additional mechanism to control the current in each line Group Discussion Meeting

Need and application of CFC's



DC Source $I_{1,\text{out}}$ R_{1} Q_{s1} Q_{s1} Q_{l1} Q_{l2} Q_{l2}

Bypass with transistors

Bypass with thyristors

Dynamic control to bypass the CFC when not required or to protect from overcurrent

Group Discussion Meeting

Need and application of CFC's

- Additional device required to remove the CFC for maintenance
- Could be DCCB or commutating switch
- As the CFC only generates a few kV between terminals the switching devices required only need to be capable of switching a few kV

DCCB Surge arrestor Cable 2 core O Cable 2 screen DC Source B₁ Cable 1 screen Surge arrestor Cable 1 core **DCCB**

Group Discussion Meeting