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FCC Powering concepts

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For the success of the FCC, one of the key aspects is the energy efficiency. In particular, the magnet powering could represent an enormous power consumption from the AC network, therefore achieving an optimised and efficient design for all power converters is a primary concern.

In this presentation, the main concepts and requirements for the power converters for the dipole magnets of the FCC will be presented.

Firstly, the influence of the ramp-up shape on the power requirements of the converters will be analysed in detail, emphasizing that the duration of the ramp-up plays an important role in the power requirements.

Second, a brief description about the converter topology and the importance of the integration of energy storage will be given.

Third, the energy storage technology required for this application will be addressed, giving details of the type of technology that seems to be the most suitable for this application nowadays. A brief description about the practical implementation will be also given.

Finally, the presentation will finish with the main conclusions of this conceptual design of the magnet powering.

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