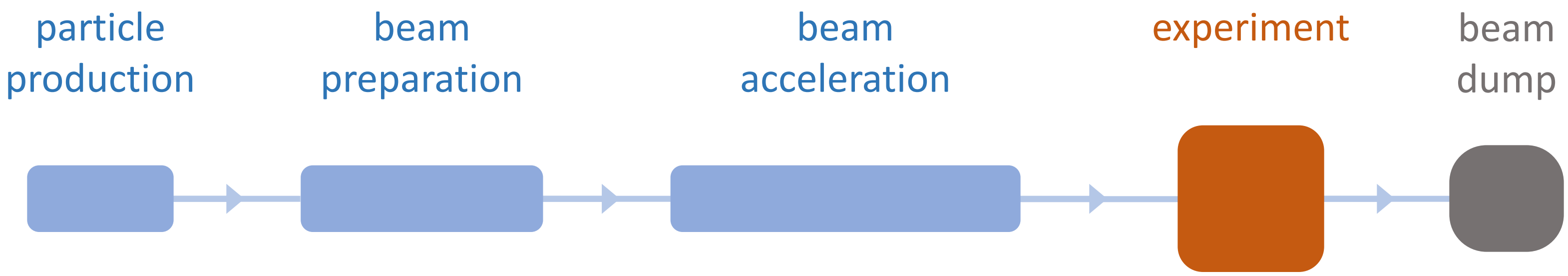
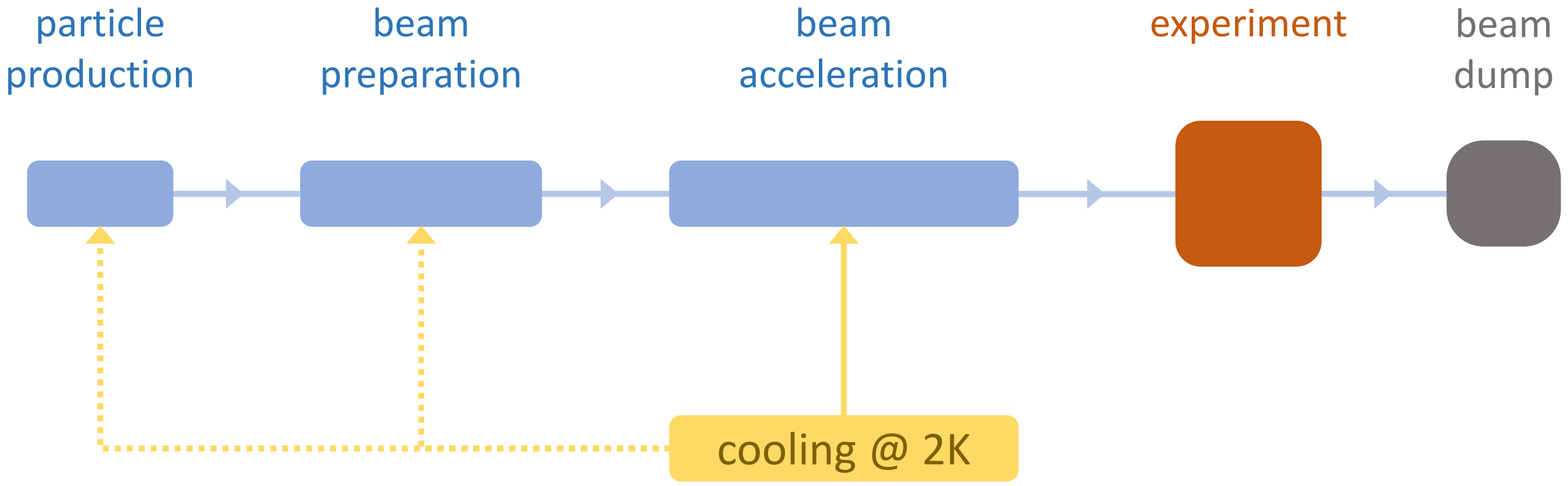
Where do accelerators use power ?

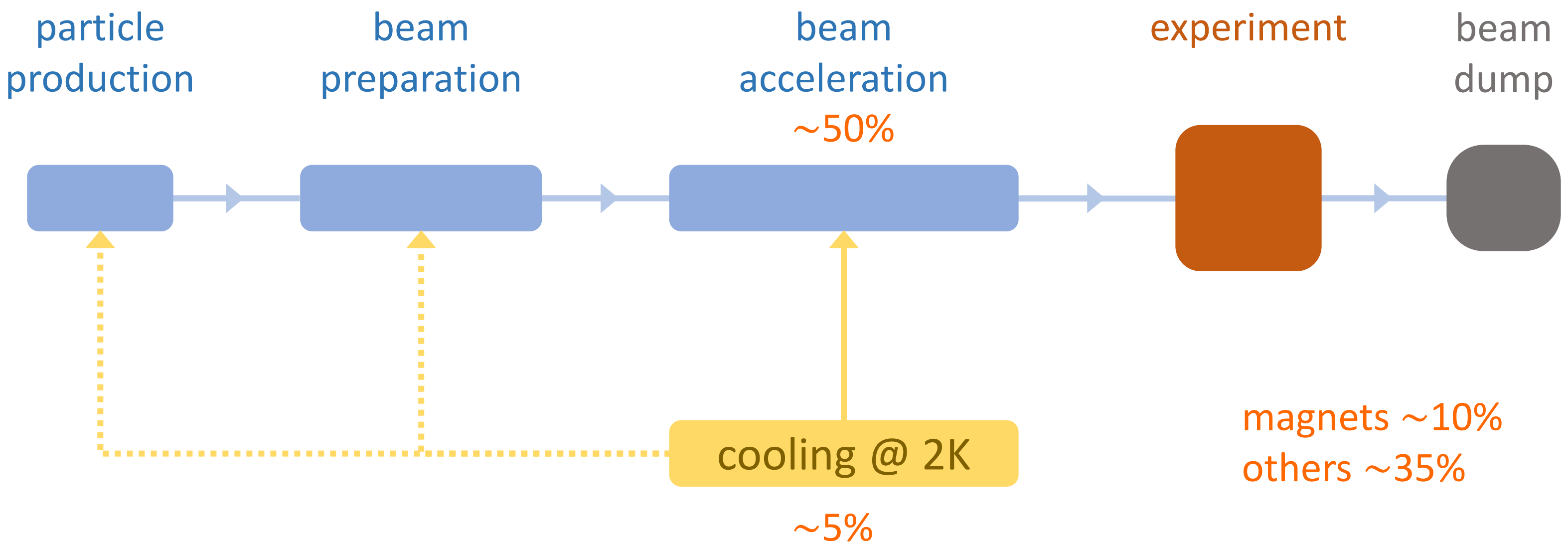
Basic structures of a particle accelerator



Basic structures of a particle accelerator



Basic structures of a particle accelerator

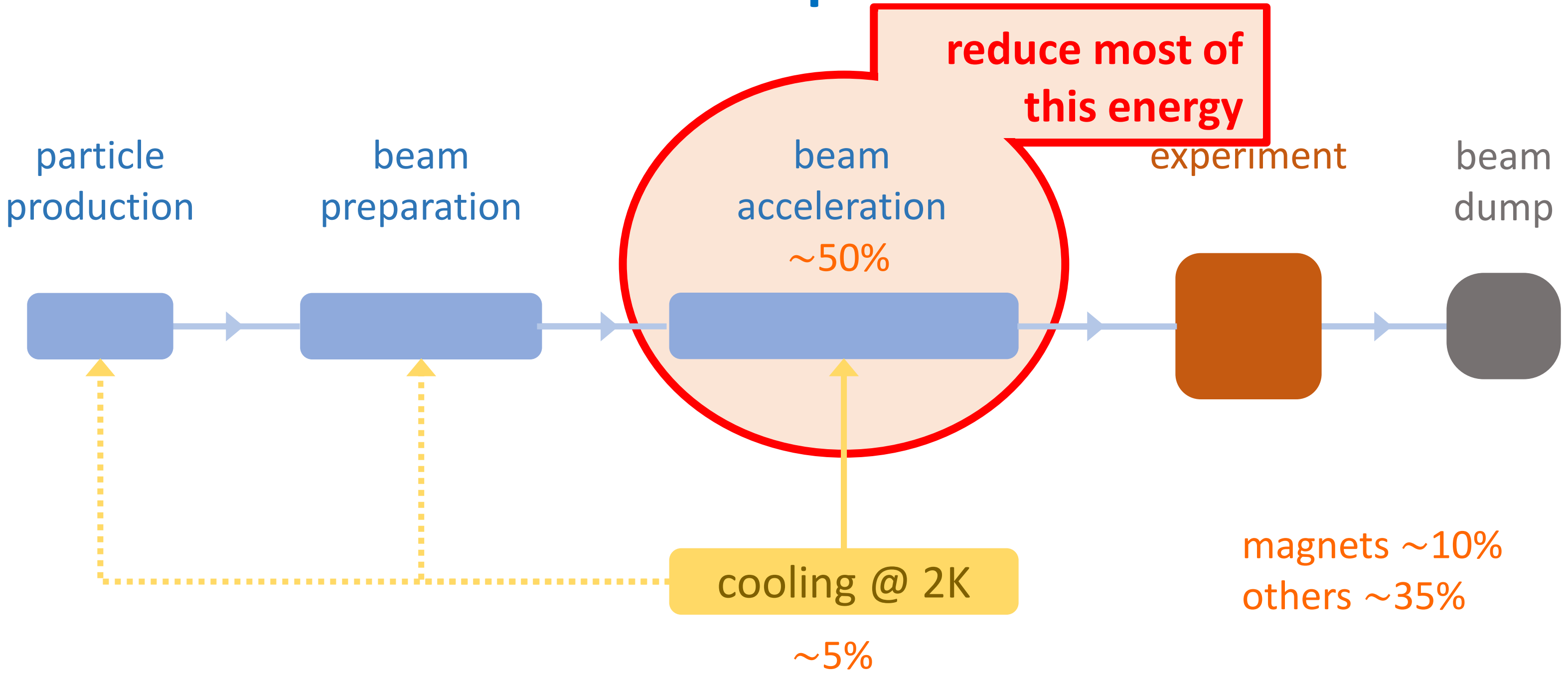


Example: typical power consumption for an electron-positron Higgs Factory

the highest priority next collider for particle physics

example FCC@250GeV

Basic structures of a particle accelerator



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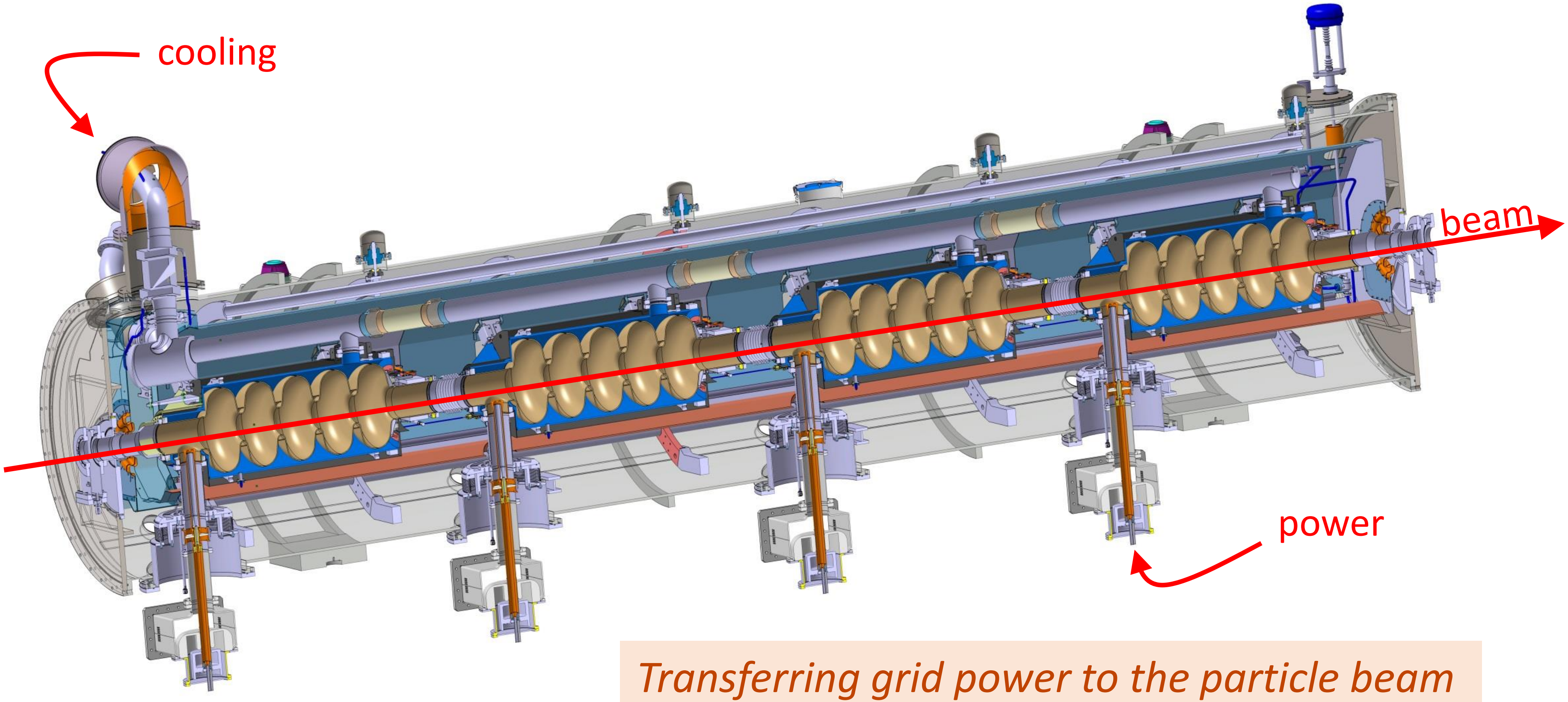
Key building block for beam acceleration: the SRF cryomodule



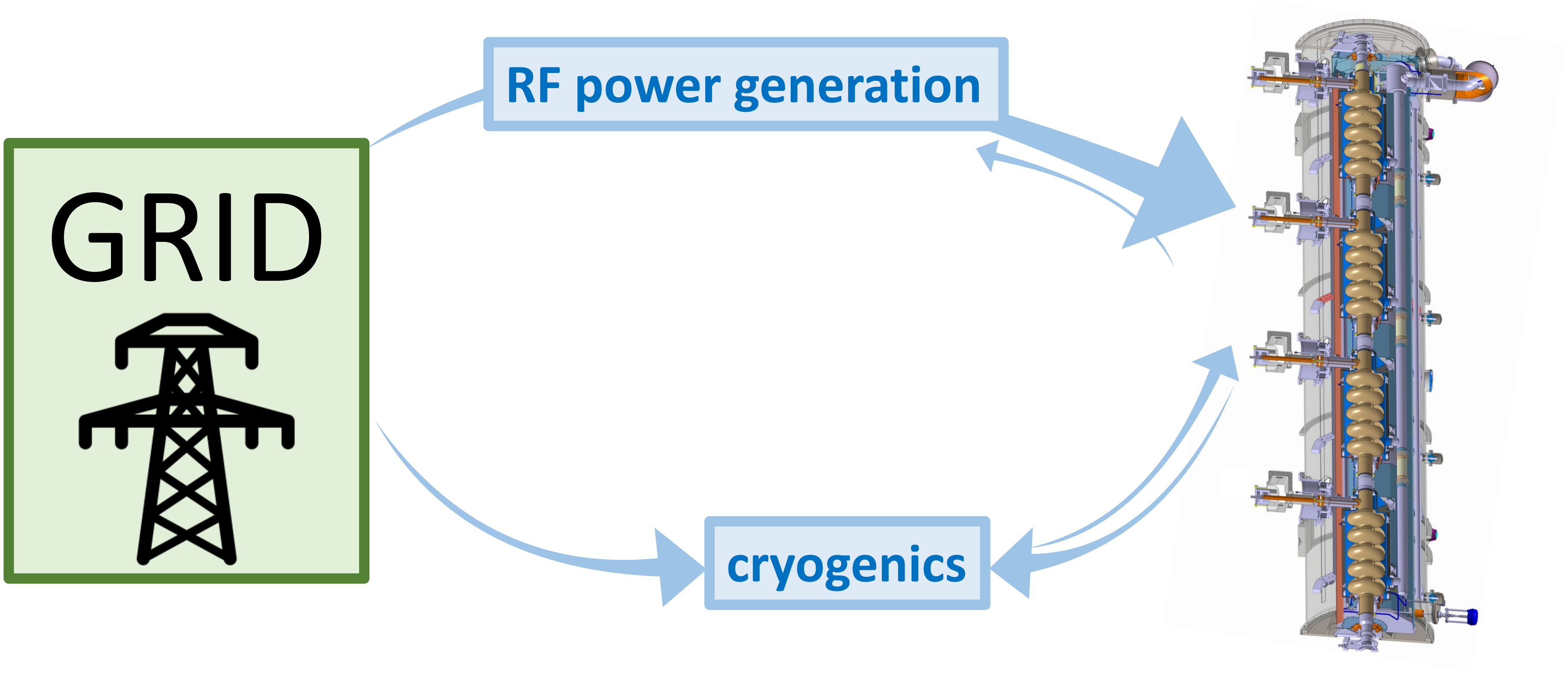
Transferring grid power to the particle beam

Superconducting Radio Frequency (SRF) is the enabling technology for modern accelerators

The main energy-saving technologies are universally applicable across SRF cryomodules and accelerators

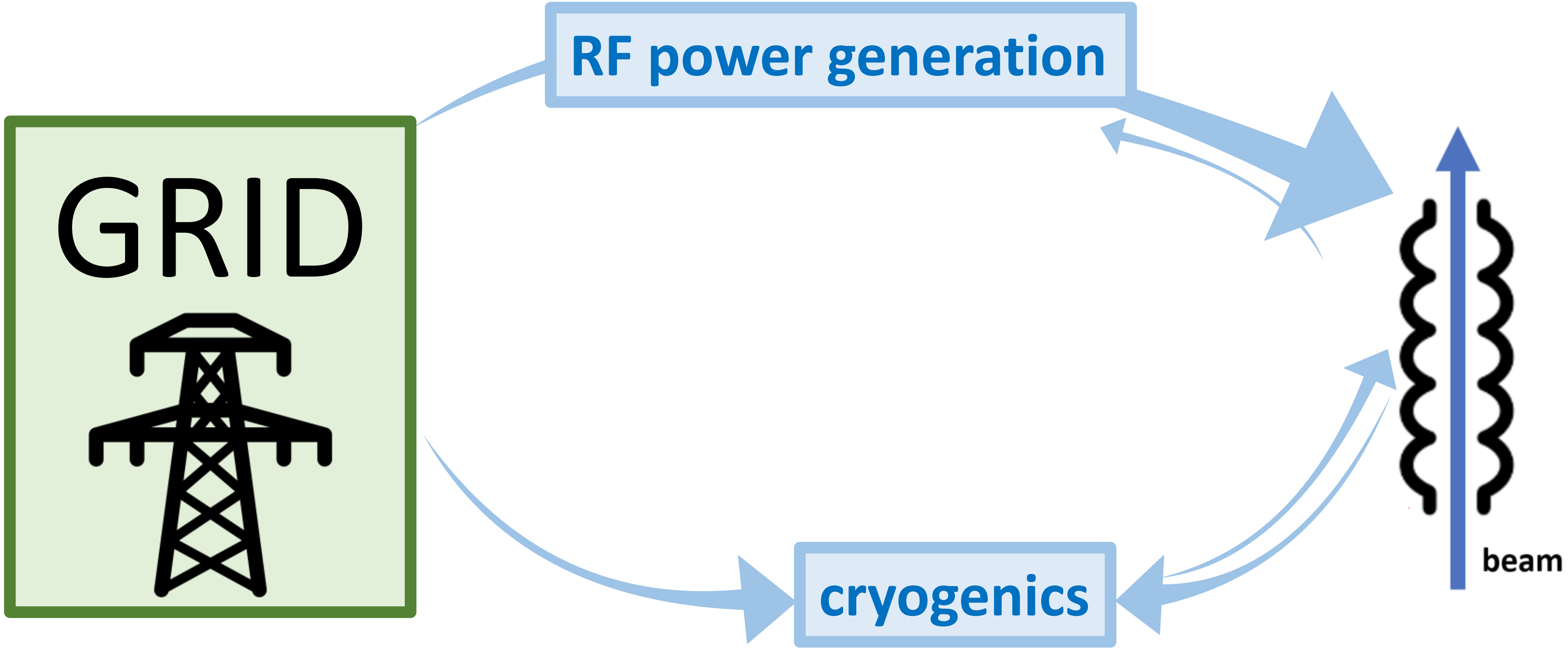
(e.g., ESS, EuXFEL, HL-LHC, …)

From Grid to Beam



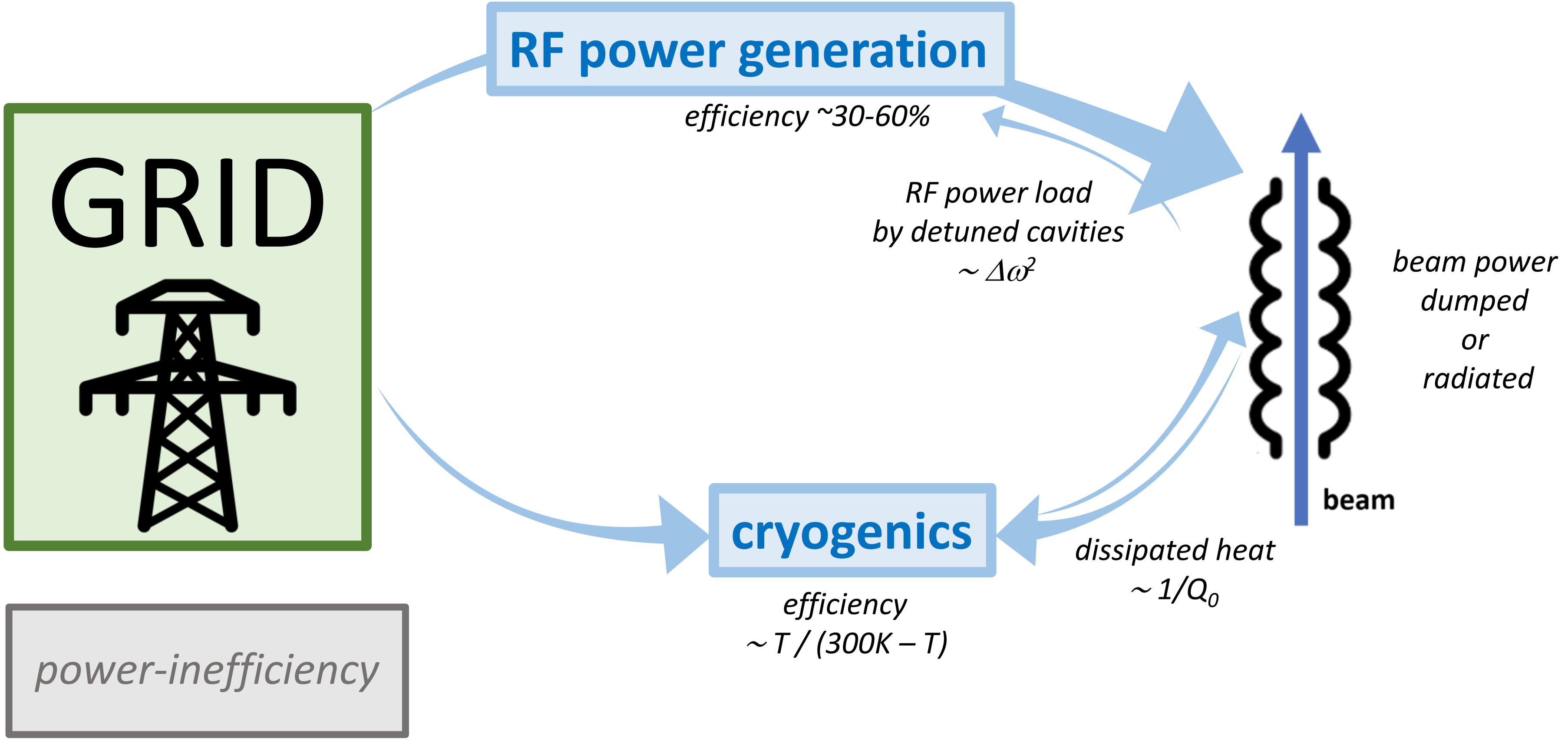
Picture adopted from M. Seidel (IPAC 2022)

From Grid to Beam

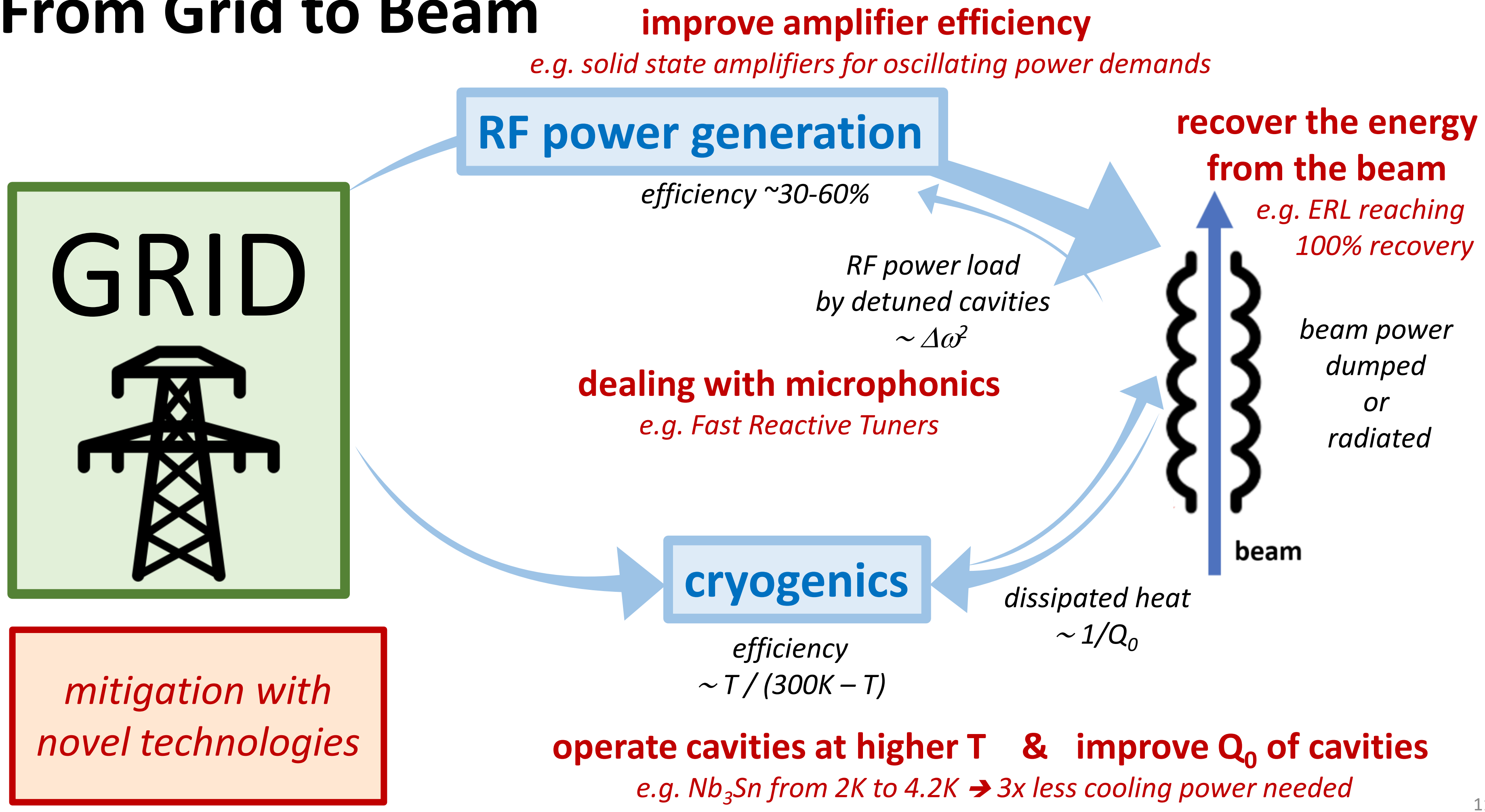


Picture adopted from M. Seidel (IPAC 2022)

From Grid to Beam



From Grid to Beam



Three main iSAS Technology Areas