

Agenda

Comments to minutes

- Energy tracking for beam dump and other users - J. Pett & R. Schmidt
- Beam dump synchronisation - E. Carlier

AOB

- Interfaces to the PIC - B. Puccio
- LHC injection scenarios - J. Wenninger

Matters arising

- Brief report of Grenoble reliability meeting
- Collimation Day
- Interlocks for the SPS (J.Wenninger)
- Distribution of the Report “Machine Protection for the LHC - Architecture of the Beam and Power Interlock Systems” - has been published

Energy tracking

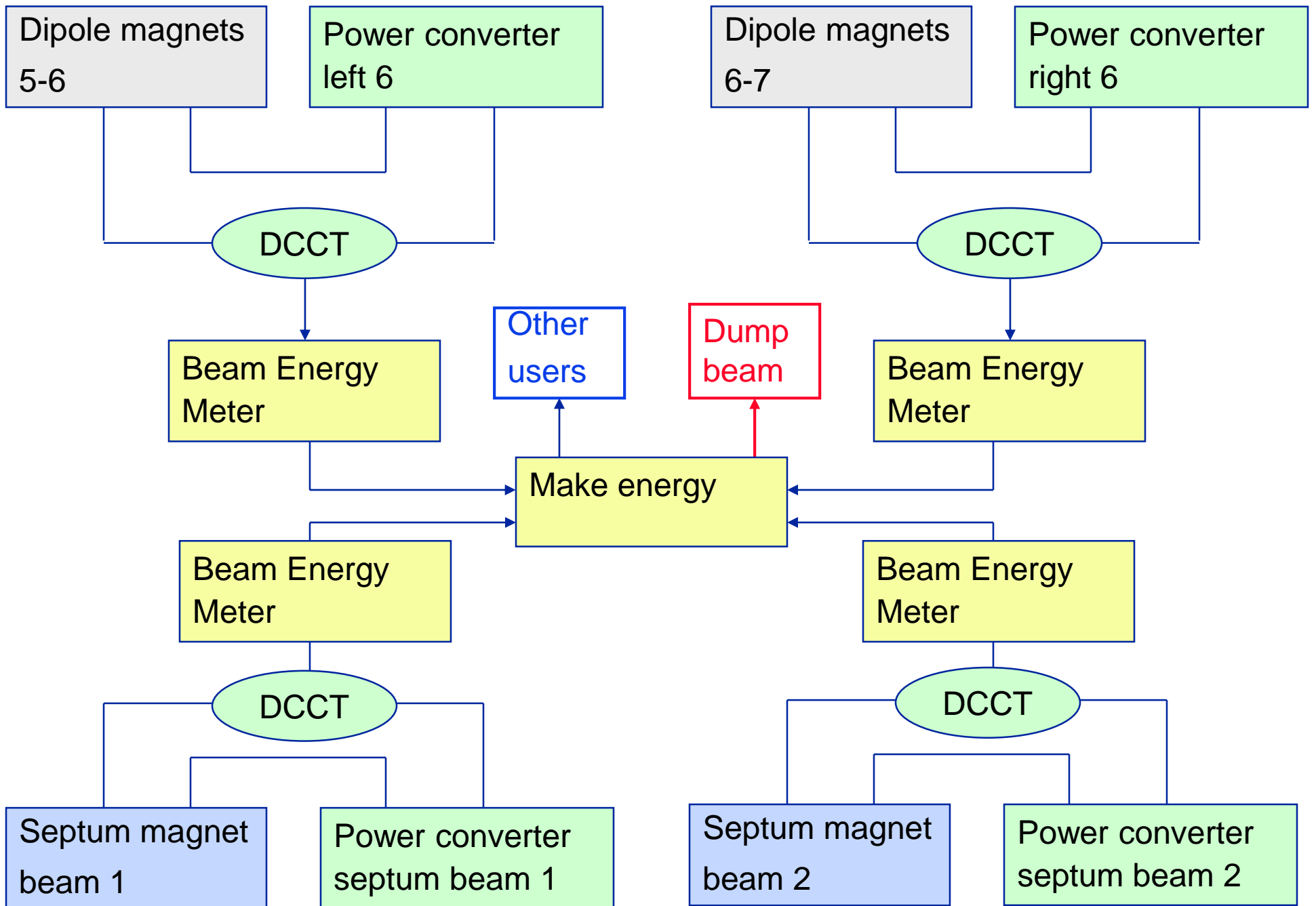
- Meeting of the MPWG on 11th May 2001
- subWG Meeting with all those involved in the issue on 8th June 2001
- Followed up in a Meeting of the MPWG on 13 July 2001
 - => work on a prototype Energy Meter by John Pett
- The field of the septa magnets needs to track the beam energy within about $\pm 0.5\%$
- The dump kickers need to track the beam energy with similar accuracy
- It is required to apply trims to the extraction trajectory (as suggested by J.B.Jeanneret and confirmed by M.Gyr)

Proposal for a safe tracking that allows trimming of the elements of the beam dump system in a limited range

Current for the magnet with **standard power converter** / standard **control electronics** with a current versus time function loaded into the controller

For the energy ramp, the current is ramped producing a **deflection angle** that is **constant during the ramp**. The non-linearity between current of the power converter and magnetic field is taken into account in the definition of the ramp function (as for all other magnets).

Reliable monitoring for safe operation is required



BEM

A prototype for the **BEM** that converts the current or another signal into a signal proportional to the beam energy is available => I.Barnett, J.Pett, et co.

Modern 8-bit RISC microcontroller and an independent 16bit ADC measures the DCCT output (+/- 10V), and converts into “corrected” value proportional to the energy derived from and internal look-up table stored in the microcontroller flash memory

- It has been shown that with a very simple “two chip” hardware such an energy meter can be made
- The cost of the hardware is very small
- SL-PO would not further continue this work - since they have no mandate for it - and it should be discussed and decided where the further development should be done

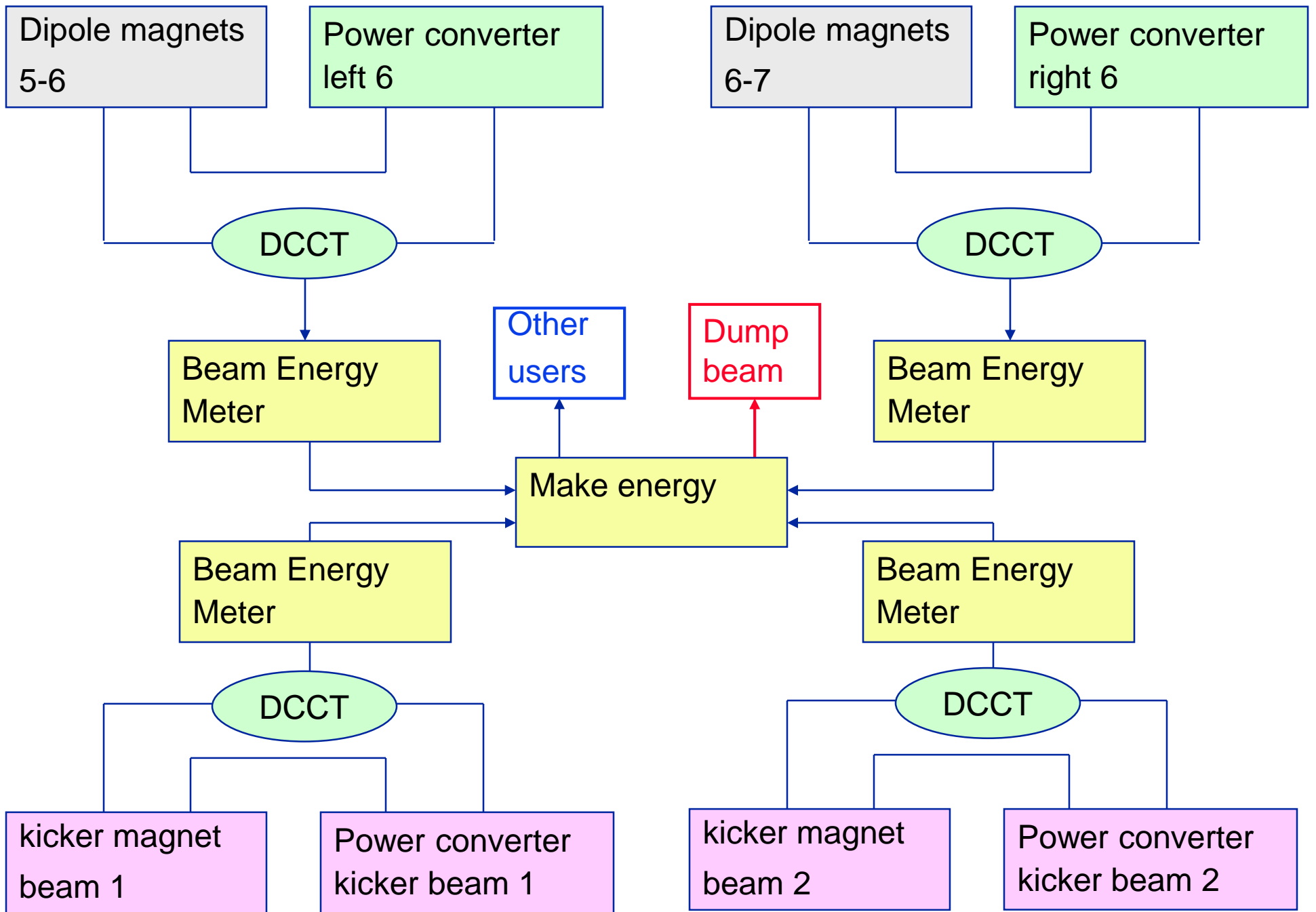
BEM and the beam dump system

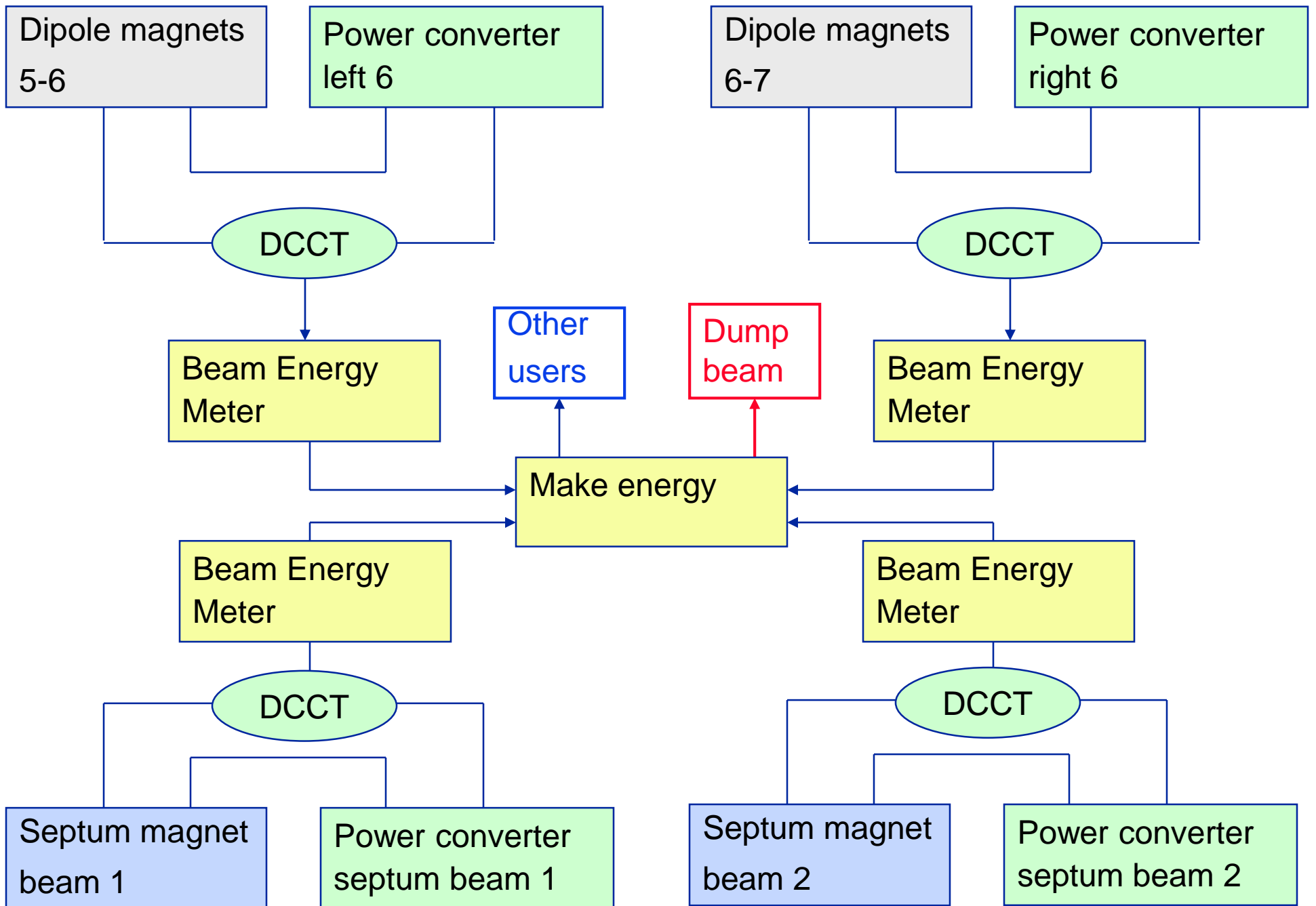
Energy tracking required for:

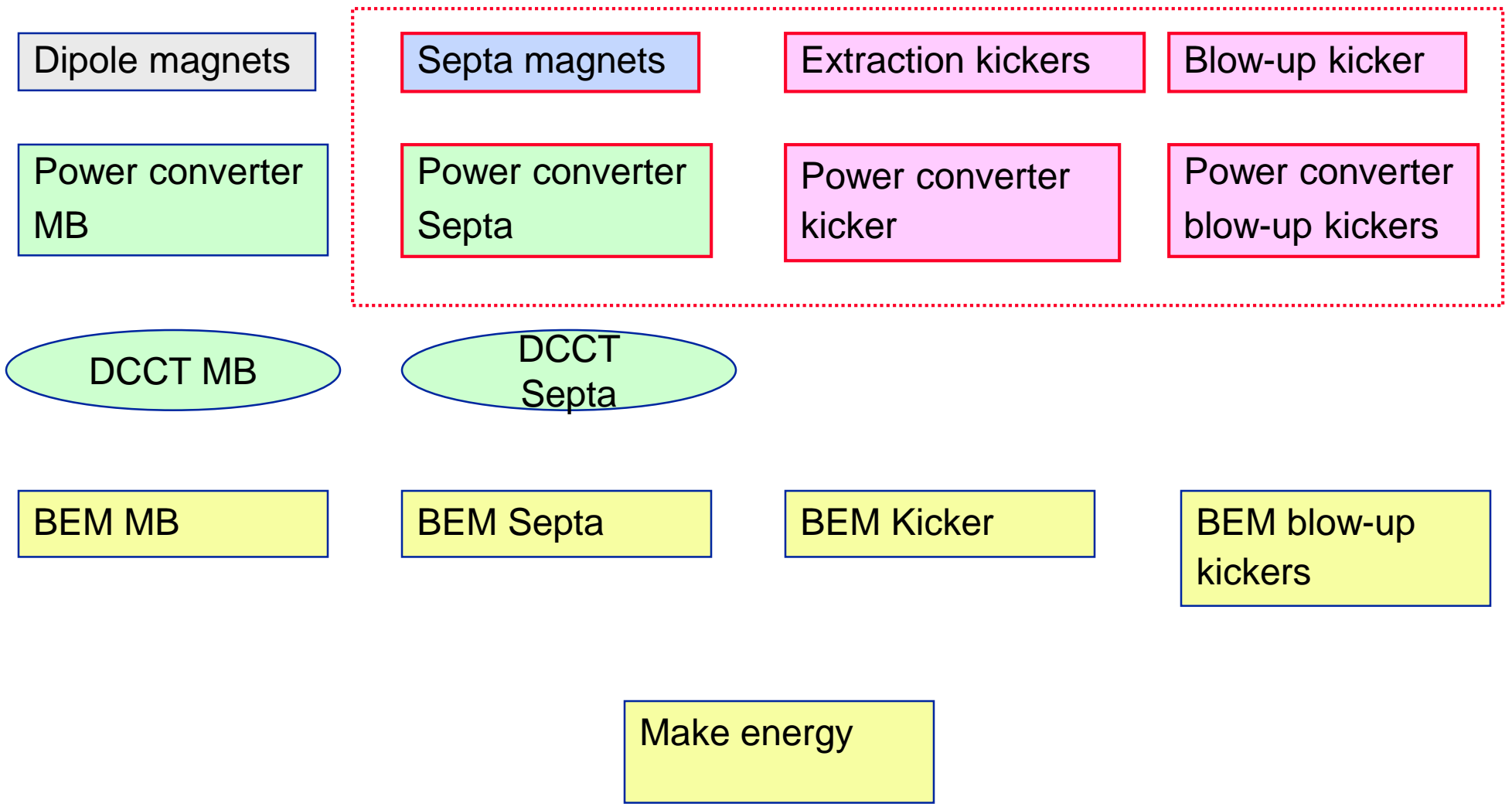
- Extraction kicker
- Septum magnets
- Blow-up kickers

- others inside Beam Dump System ?
- others outside Beam Dump System?

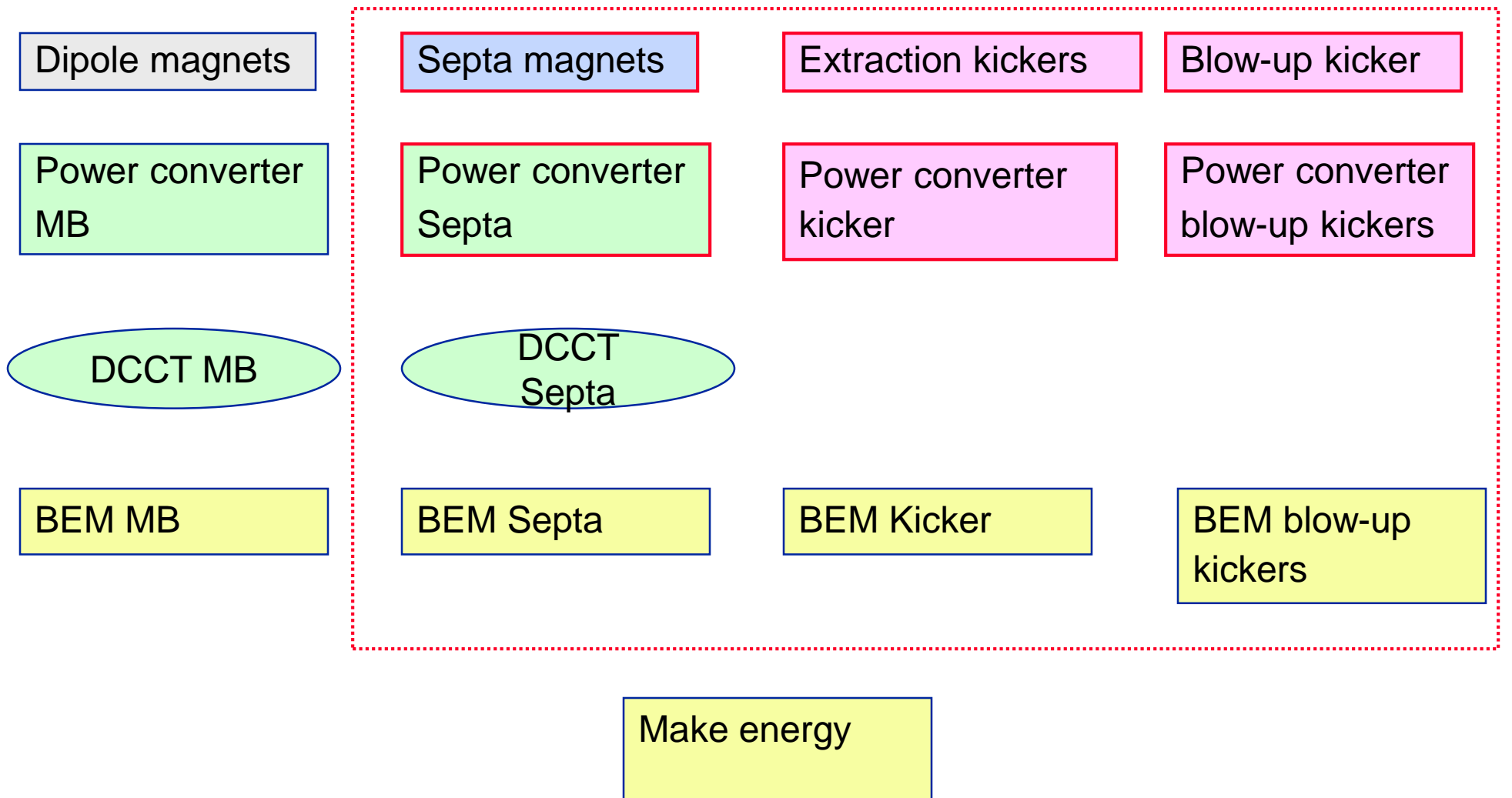
Proposal: System responsibility for the Beam Dump System is with SL-BT



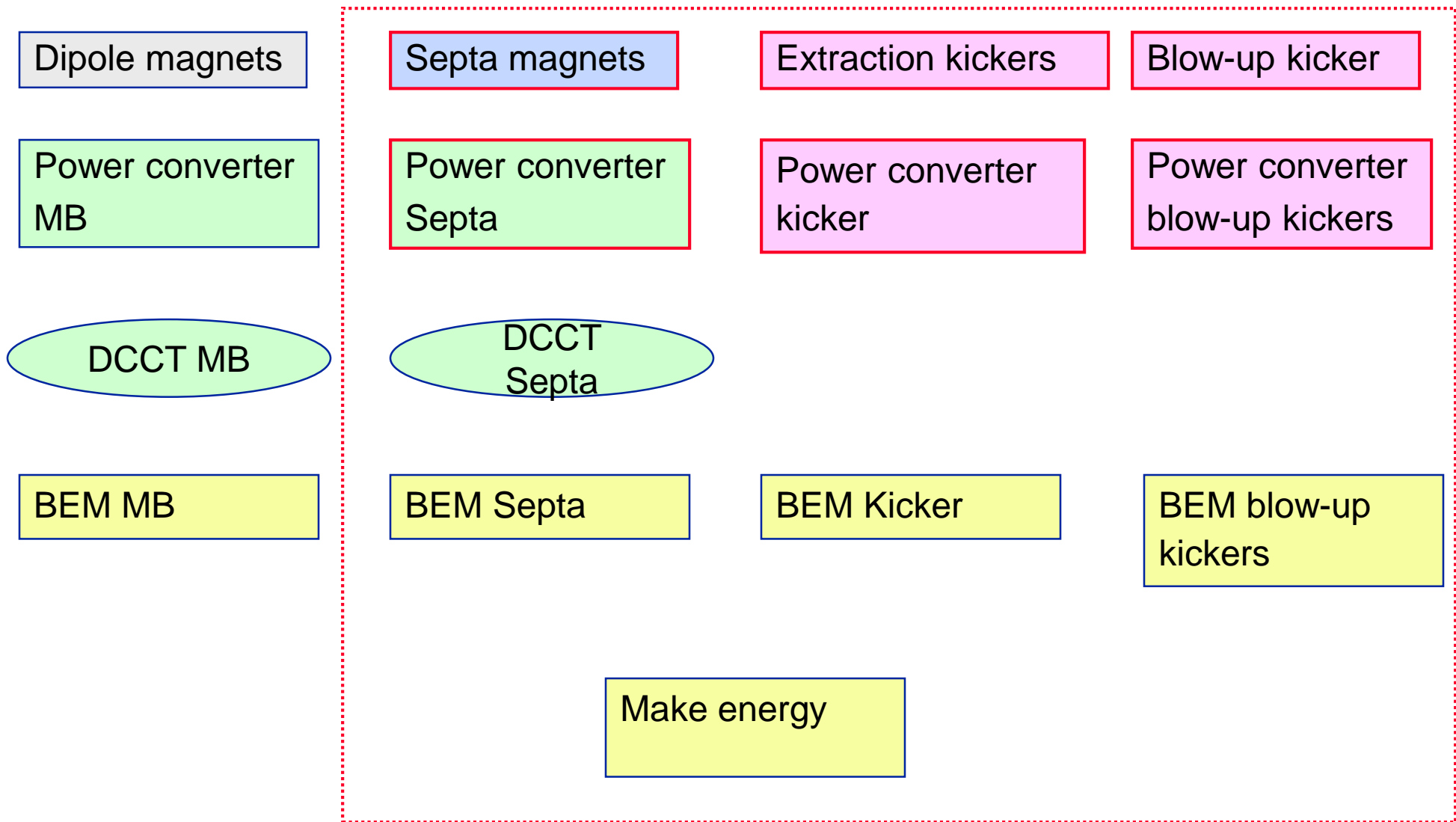




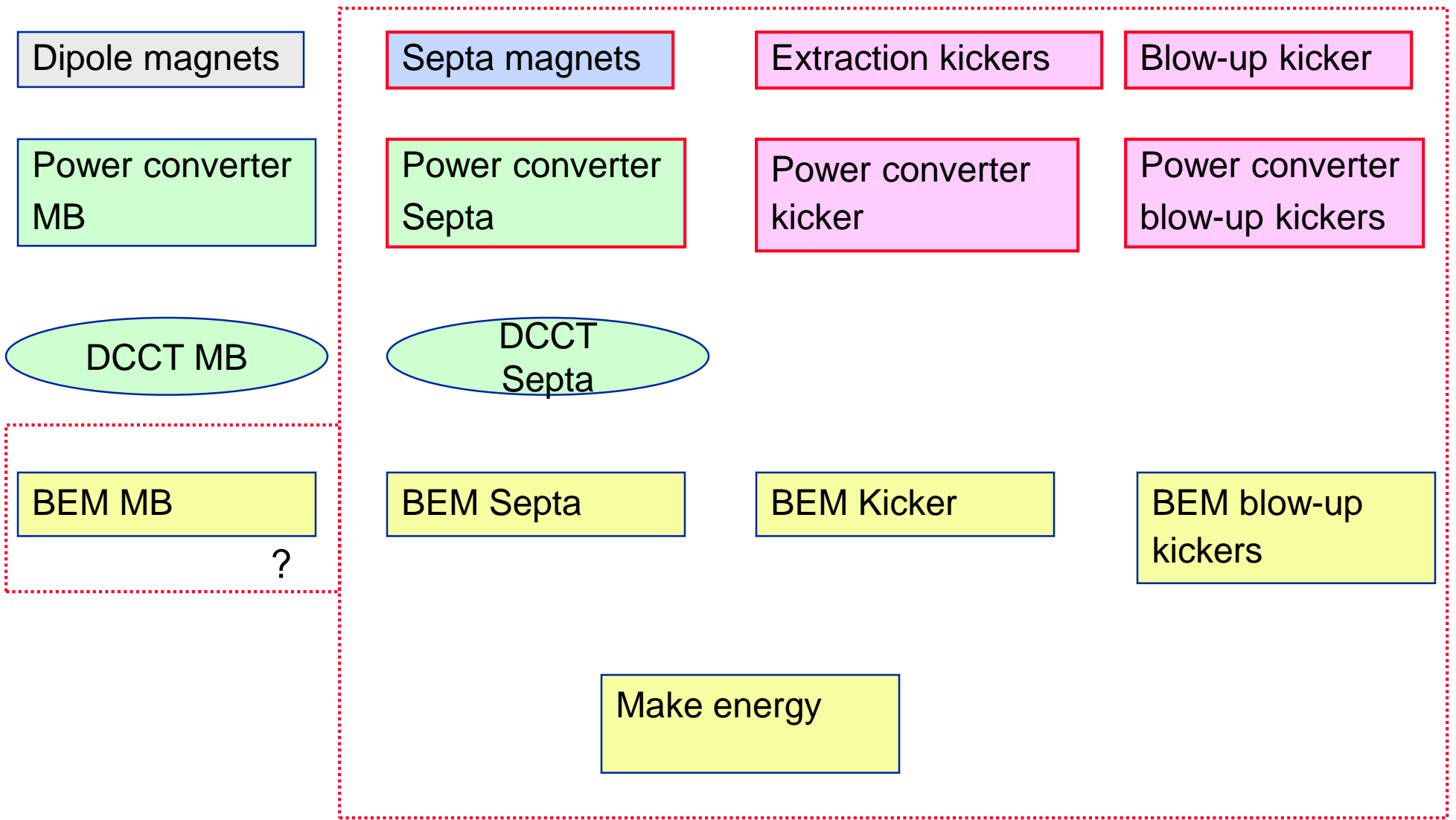
System responsibility



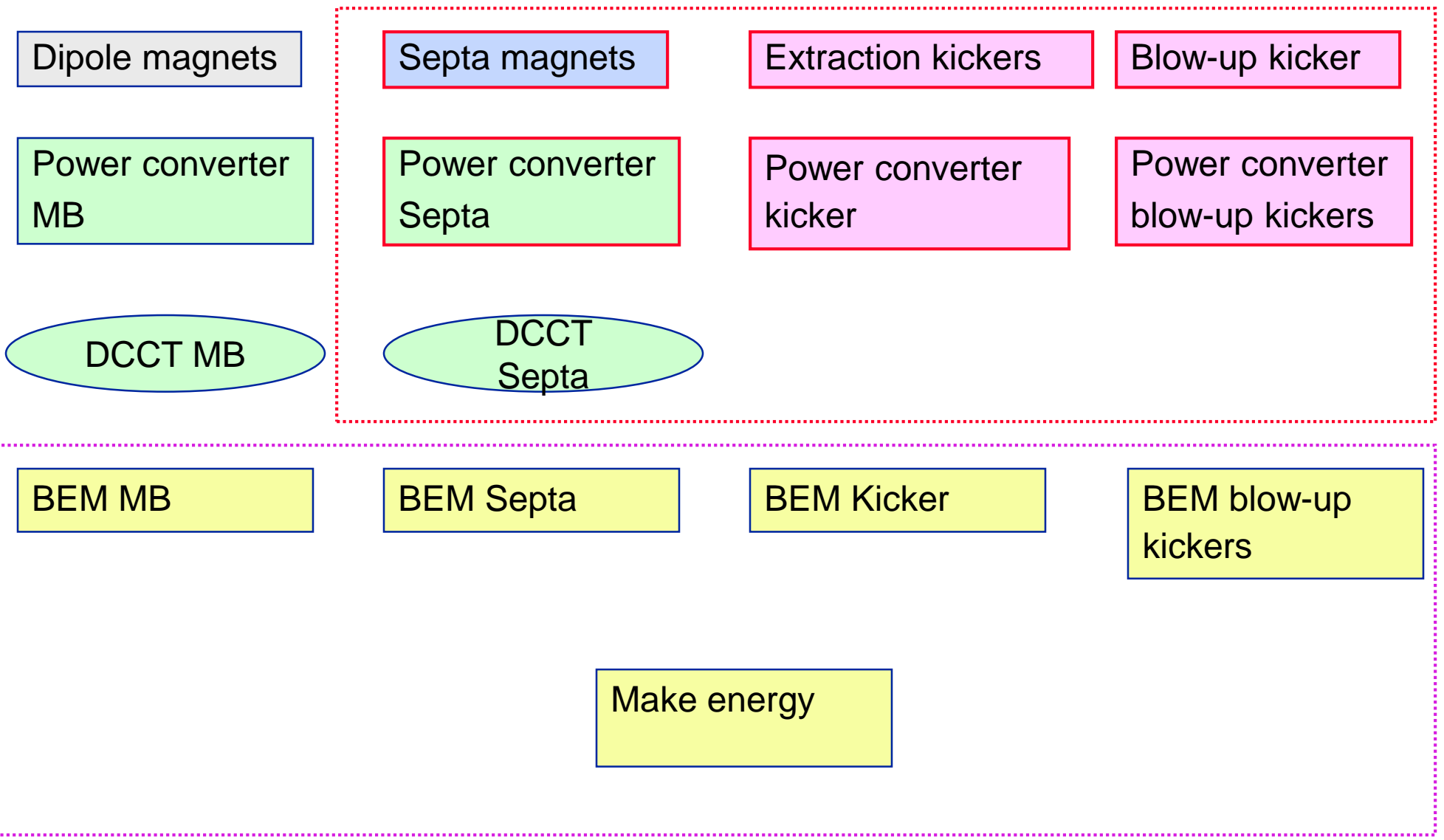
System responsibility



System responsibility



System responsibility



System responsibility

Beam dump system

Proposal: System responsibility for the Beam Dump System is with SL-BT with contributions from

- Power Converters: SL-PO
- Resistive magnets: SL-MS
- Controls, timing,....: SL-CO

Responsibility needs to be defined for

- **BEM**
- **Make Energy**

Who else wants the beam energy, and how?