

J-PARC upgrade session

* Prospects on the beam power. (T. Koseki)

Status and operation summary:

- Achieved beam power in user operation :
 - 500 kW for MLF users
 - 360 kW and 33 kW for the T2K experiment and HD users, respectively.
- High power demonstration :
 - 1 MW eq. beam is achieved in the RCS
 - 132 kw eq. beam with two bunches in the MR (It corresponds 530 kW with 8 bunches)
 - It shows the MR has a capability to reach beam power ~ 1 MW with the high rep rate operation.

New β -tune area, RF & Inj. kicker improvement, ...

The MR mid-term plan :

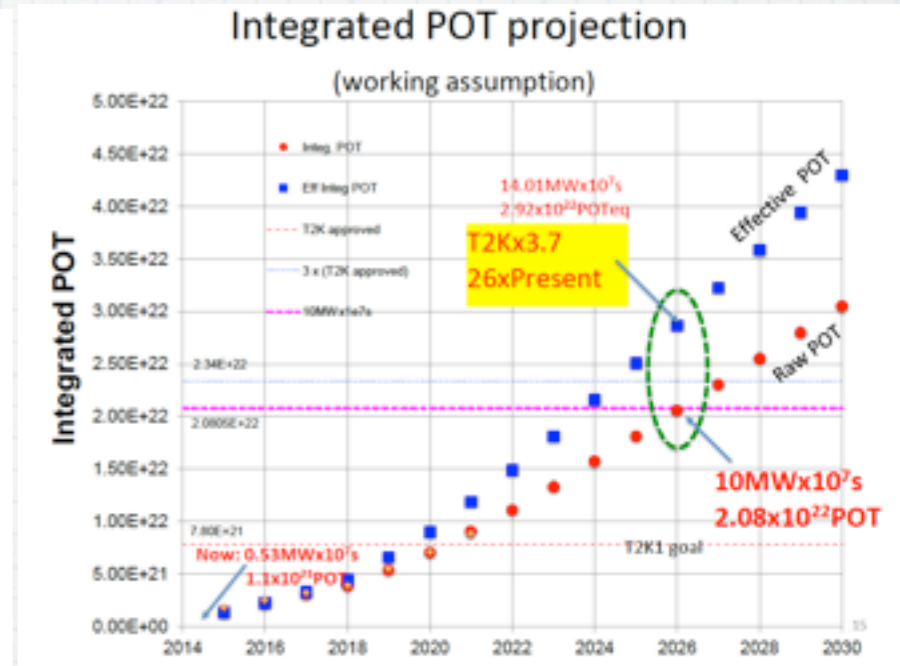
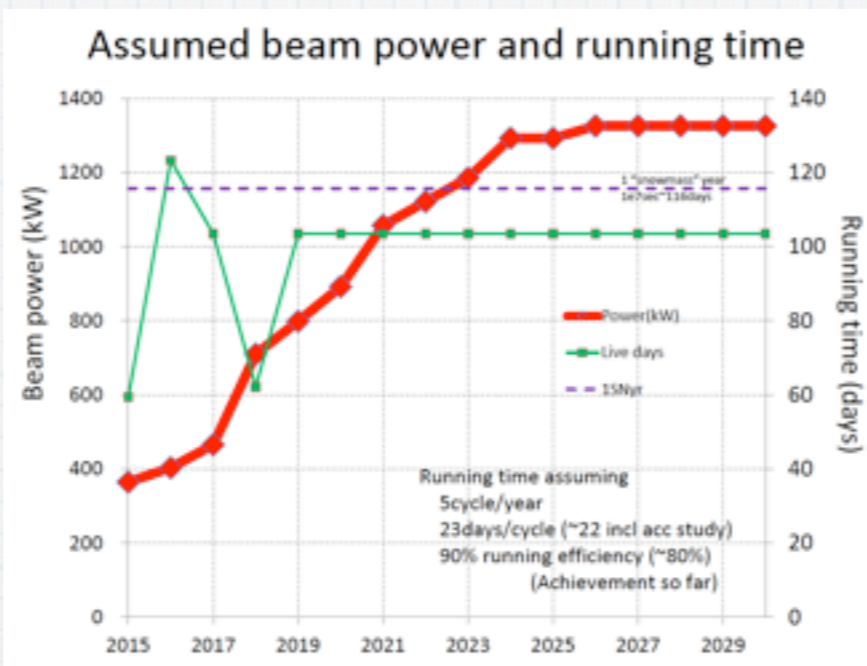
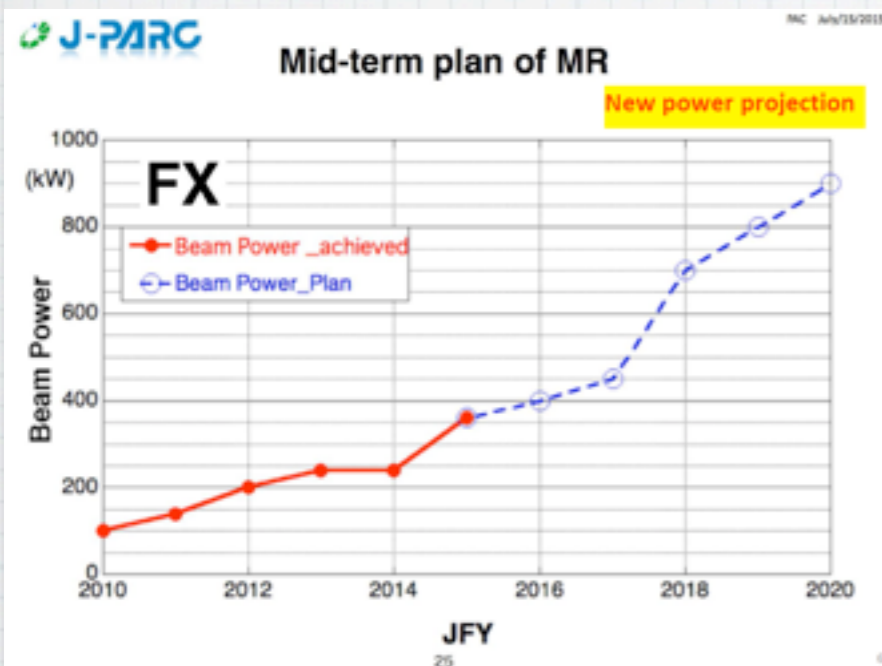
- The design power of 750 kW for the FX, and 100 kW for the SX will be achieved in 2018-2019 after the replacement of main magnet power supplies.
- The MR will reach 1 MW with the new power supplies after 2020.

Another β -tune area, RF reinforcement, ...

+ Continuous MR tuning to reduce beam loss (= acc. study time!)

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- * “Long-range objective (aim)” : (T. Kobayashi)
 - * Constant >5 month. NU-beam time / year, 90% running time eff.
 - * MR beam power : > 750kW
 - * ×1.45 improvement by Experiment. (Horn, Far detector FV,)



- * Comments, discussion point,
 - * Cooperation with CERN/FNAL/.... in neutrino beam power improvement.
 - * MR FX-SX simultaneous operation?