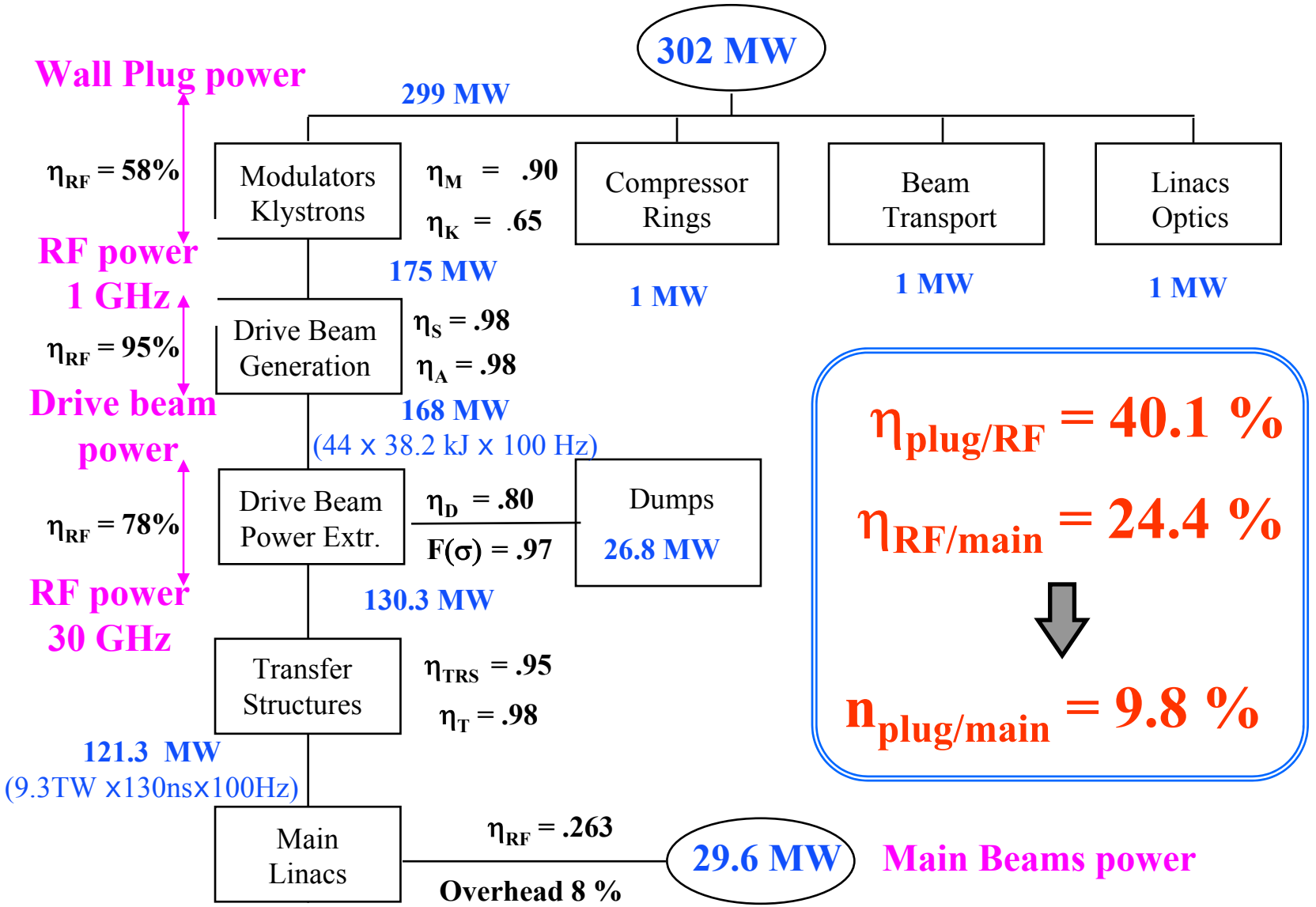
Power flow in a 3 TeV CLIC complex (Target parameters)



Technological/design challenges

- Ranking of R&D topics according to ILC TRC 2nd report
- R1: R&D needed for feasibility demonstration
- R2: R&D needed to finalize design choices
- R3: R&D needed before starting production
- R4: R&D desirable for technical/cost optimisation

CLIC technological challenges (1)

- Damped RF structures at design gradient and pulse length (R1, energy) -> CTF3

- Drive beam generation with a fully loaded linac (R1, energy & efficiency) -> CTF3

- Design and test of damped ON/OFF power extraction structures (R1, reliability) -> CTF3

CLIC technological challenges (2)

- Drive beam protection system (R2, energy) ->CTF3
- Test of a main linac sub-unit (R2, energy) -> CTF3
- Design and test of Final Focus magnet stabilization system -> CLIC Study (R2)
- *Validation of multi-beam klystron performance -> CLIC Study (R2)*

(Long-term) aim of the study on Beam Losses

- **Overview**
  - **Get everybody aware of the problem**
  - **Possible damages?**
  - **Acceptable beam losses?**
- **Develop theoretical understanding and simulation tools:**
  - **Of beam to estimate losses and minimize them (beam stability, overall scheme)**
  - **Of the effect of losses on material and minimize effects by redesign of components**
  - **Simulation in CLIC and CTF3**
- **Optimize CLIC and CTF3 design in respect with beam losses**
- **Study in CTF3 (2008)**
  - **Dedicated experiment and beam diagnostics in CTF3, Integration into Control system**
  - **Extrapolation to CLIC**
- **Define a strategy for a Machine Protection System**
  - **Reliable operation**
  - **Strategy of start-up and tuning**
  - **Tests in CTF3**
- **Validate CLIC technology as a possible candidate for a Linear Collider**