



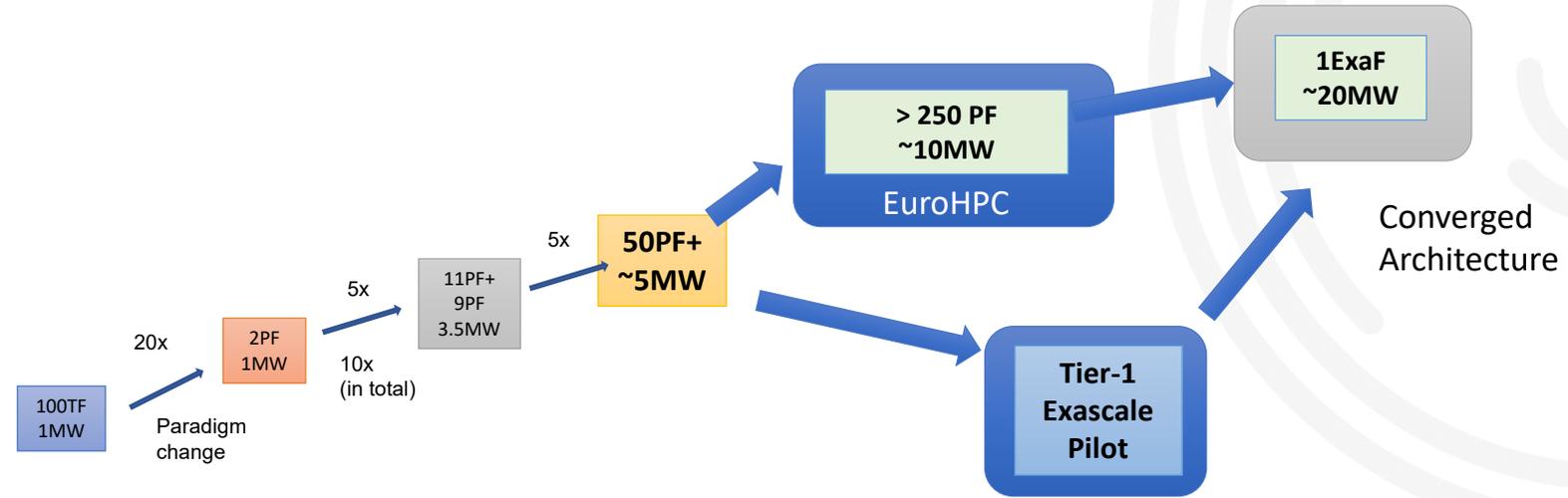
LEONARDO

Pre-Exa and Exascale Challenge

Carlo Cavazzoni, Cineca

Italy Austria Hungary Slovakia Slovenia

Italian exascale RoadMap



2009	2012	2016	2019/2020	2021	2023-2025	2025-2027
IBM SP6 Power6	Fermi IBM BGQ PowerA2	<i>Marconi</i> Lenovo Xeon+KNL	<i>Marconi</i> PPI4HPC ICEI - PPIHBP	<i>Leonardo</i> Pre-exascale With EuroHPC contribution	Post-Marconi Exascale pilot technology	Italian Exascale Post-Exa tech.

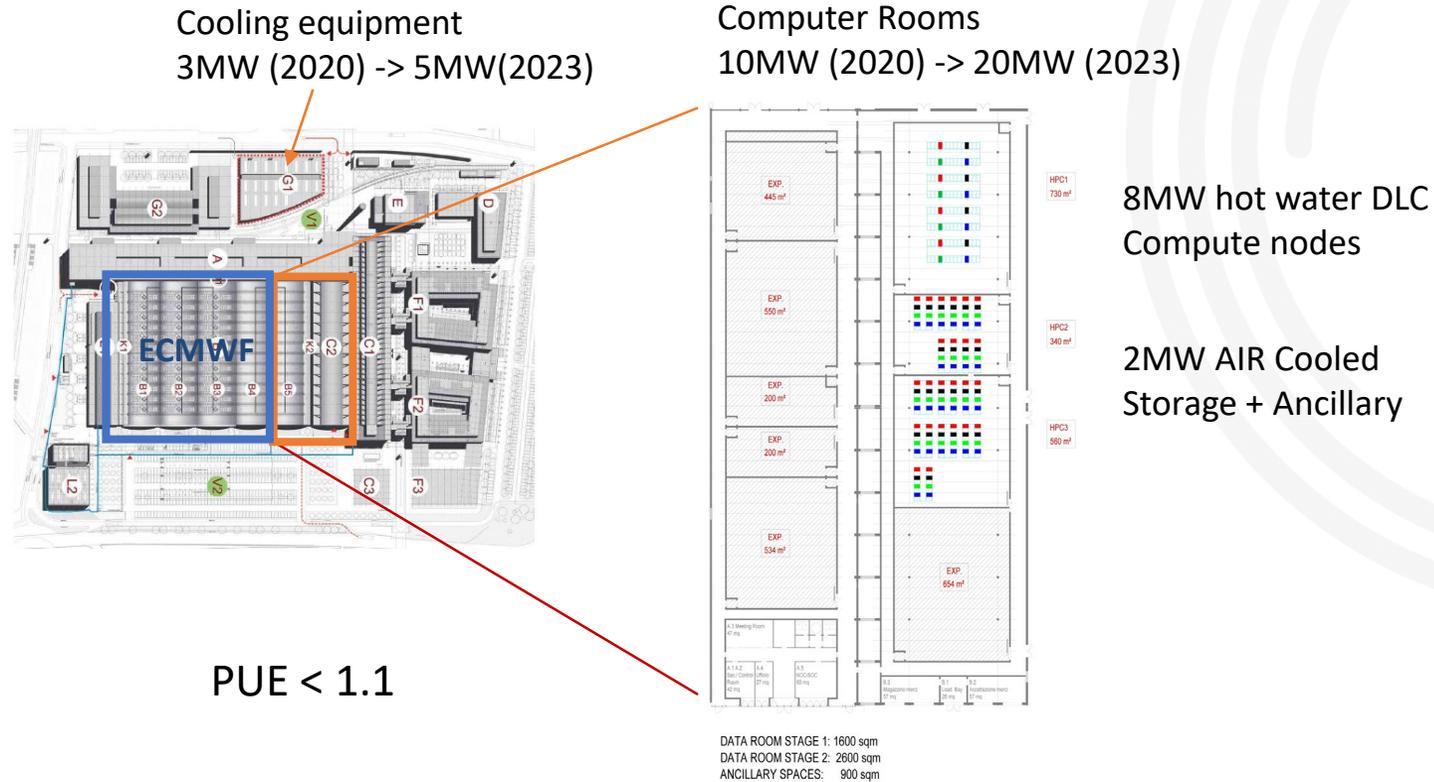
Bologna Science Park

Top Challenge to Exascale

- *Availability of space for new datacentre*
- *opportunity to re-use abandoned industrial plant...*
- *but a challenge too!*
- *Historically relevant, conservative refurbishment*
- *Complex authorization procedure*
- *High cost of Energy*
- *New high voltage power line*
- *High TCO*
- *Heat re-use infrastructure*



Leonardo @ Bologna Science Park



On overall the site should go to 70MW by 2025, for the expansion of ECMWF and our Exascale system... New high voltage backbone.

Heat re-use to lower the TCO

- the infrastructure to re-use the heat is not there
- Find an utility firm for a partnership to sell our heat



Sustainability...

Lower the TCO and Carbon footprint

1. Technical design → low PUE



2. Renewable energy

50% by
2030

3. Heat reusage

Build
infrastru
cture

Thank you!

