

## The leading edge open access piloting service provider



100+ years in green transition pioneering



# Timeline for mechanical refining in KCL



Era of TMP, CTMP, APMP

## How we got here?



- We have been following some drivers for mechanically refined wood: EU decrees (especially in building/interior sector), re-thinking the material usage, green energy optimization and client interests
- Idea materialized in the end of 2023 for the revival and need for HC refiner
  - Couple pans of coffee and long nights searching for equipment manuals, old documents, drawings and eventually climbing on the refiner gave a good insight to the machine itself
- Preliminary investigation results: *It's all good*
- Initial revival process of Sunds RGP 42 started in collaboration with Valmet from start of January 2024 and was completed by the end of January
  - Initial inspection followed by changing of oils, patching of seals, lots of electrical engineering and plain old trial & error
- Testing and further verifying and running the system during February

#### Successful client trials in March 2024

First test after the hiatus of Sunds Refiner

### Why Sunds refiner? It has it all

- Production / trial readiness
  - SD (up to 1500 rpm) / DD (up to 2400 rpm)
  - Up to 1000 kg/h production capacity
  - Adjustable blade gap
  - Possibility to pump chemicals between the fillings into the refining
- Digester (4 m3) & refiner tested up to 10 bar
- Supported by the mass system (pulping, screening, LC refining)
- Full data logging & further utilization of data
- Found 17 different filling options
  - Even an option for Conical fillings
- Full laboratory analysis capability for fibers
- As far as we know:

The only Sunds SD/DD 42 Refiner in the open access piloting market

### Projects KCL has done in the past



- Reduction of energy consumption in mechanical pulp production
  - Via operational excellence or pre-treatments
- Evaluation(s) of refining parameters to TMP quality & yield
- Chemical treatment within refining (e.g. bleaching or fire-retardant mixing)
- New filling geometry & material testing
- Downstream processing: Reject refining, screening, fiber recovery
- Testing & producing data for mass or wastewater system design
- Improving processes and implementing new process designs
  - TMP, RMP, CMP, CTMP, HT-CTMP, APMP..
- Refining of new raw materials
  - Oak barrels, annual plants, recycled materials, pulp, floor panels..
  - Comparison(s) of e.g. early and latewood in products via mechanical processes







## Future outlooks



- We see that legislation will probably be on the side of high yield mechanical pulp (energy, building, emissions)
- Healthy amount of development & contract manufacturing in the field
- New materials introduced to the established technology
- We can leverage our internal database in future applications
- Thanks to Business Finland, we have been able to realize our database efforts already

# Thank you for you attention



• Any questions?



### Further information

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