

**2nd Stakeholders Plenary Meeting
22 Jan. 2009**

**Neste Oil – Stora Enso
BTL Joint Venture**

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STORAENSO 

NESTE OIL

refining the future

Background

- 50/50 Joint Venture “**NSE Biofuels Oy**” to develop technology and produce BTL products fom wood / forestry residues
- Investment decision for Demo 2 based on results from Demo1
- Strong development consortium



Research & piloting partner  Gasifer + reformer pilots

Gasification supplier  Multiple CFB biomass gasifiers

Process engineering **Neste Oil / Neste Jacobs**

Feedstock procurement  STORAENSO

Sustainability  STORAENSO

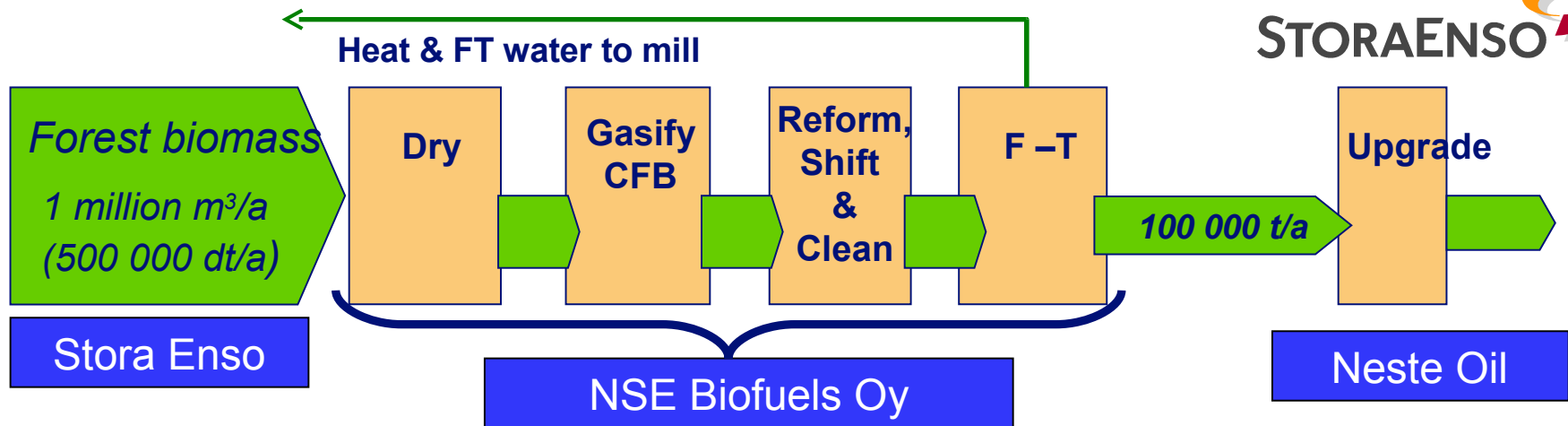
Upgrading, distribution **NESTE OIL**



Demo 2

NESTE OIL

STORAENSO



Phase 1 – "Demo 1" 12 MW

- Plant at Stora Enso's Varkaus mill, Finland, start up 2009
- Gasifier remains after tests to replace fossil fuel in lime kiln

Phase 2 – "Demo 2"

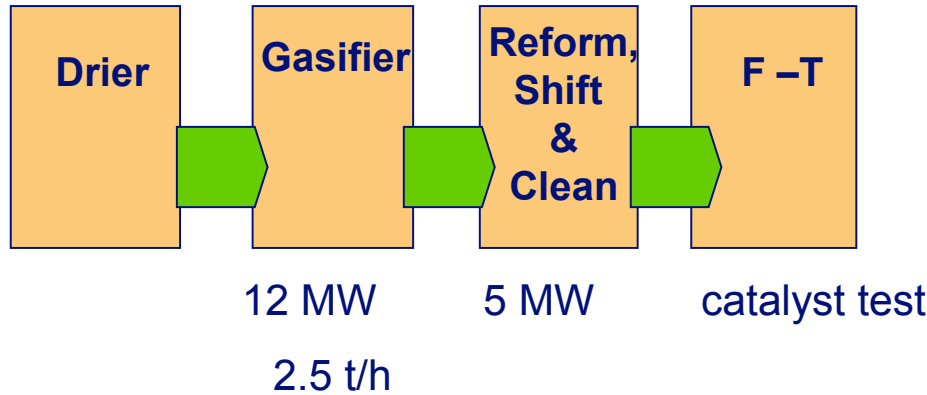
- Plant ~ 100 000 t/a wax
- Stora Enso site and upgrading at Neste Oil refinery

Phase 3 – Expansion

- Globally



Demo 1



	Drier	Gasifier	Reformer Shift & Clean	F-T
Critical Technologies	+	++	+++	+
Core Technologies	+	+	++	+
Maturity Level (biomass)	+++	++	+	+

Technology perspective: + = minor impact

Maturity level +++ = multiple references



NSE Biofuels Oy – Varkaus Demonstration Plant

Dec. 2008



Extra Slide 1

Neste Oil

Finnish refining and marketing company

Refining capacity ~ 14 Mt/a

Sales 2007 EUR 12.1 billion

Approximately 5,200 employees



Stora Enso

Integrated paper, packaging and forest products company

13.1 Mt/a paper and board

7.5 M m³ of processed wood products

Sales 2007 EUR 11.8 billion

36 000 employees in > 40 countries

