

St1 Nordic Oy Biorefining Business Development Minna Yamamoto

Bio4Fuels Days, October 12th 2018, Oslo

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St1 home market

ST1

Home market consists of Finland, Sweden and Norway. Headquarters in Helsinki. Employs more than 750 people. Operations are strengthened by strategic long-term partnerships in various areas.

STATION NETWORK

Total of ca. 1400 St1- and Shell-sites in Finland, Sweden and in Norway.

ENERGY PRODUCTION

Biorefineries producing wastebased advanced ethanol. Industrial wind power plants. Geothermal pilot heat plant under construction. Oil refinery in Sweden.



MARKET SHARES 2017		KEY FIGURES 2017
FINLAND		Net Sales, MEUR
Petrol	21.9%	6 5 4 0
Diesel	18.7%	0,540
Light fuel oil	23.2%	
SWEDEN		Profit for the period, MEUR
Petrol	19.0%	200 1
Diesel	14.6%	209.1
Light fuel oil	22.4%	
NORWAY		Return on Equity, %
Petrol	23.4%	
Diesel	21.5%	23.4
Marine gas oil	23.9%	



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Year 2017 in figures





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St1 advanced ethanol production - Development

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St1 Cellunolix[®] Kajaani plant site





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St1 Cellunolix[™] process is optimised for softwood

Raw material spruce or pine sawdust 10 ML (2.6 MG) bioethanol production 40 M€ (42.5 USD) investment





Saw mill dust



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St1 Cellunolix[®] hydrolysis lignin

- Annual production capacity 15 000 tonnes dry lignin
- Currently burnt at nearby boiler in Kajaani
- Dry matter content 45-50%
- Lignin content 70-80% on dm
- Residual cellulose 20-30% on dm
- Sugars, acids, degradation products
- Low ash (<0.5% on dm), low sulfur
- Condensed lignin structure, low reactivity
- Several projects ongoing on lignin utilization
 - Pelletizing lignin to replace coal
 - Biocrude from lignin through pyrolysis
 - Lignin biochemicals and biocomposites





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