



VTT

# Development for Opportunities for Utilisation of Biomass Residues in the Renewable Sector of Ukraine

Result Seminar, Kyiv, Feb 05<sup>th</sup> and 06<sup>th</sup> 2020  
Mr Matti Virkkunen, VTT

10/02/2020 VTT – beyond the obvious



# The Schedule



Time	Topic	Speaker
Moderator of the event, Katarina Andrukonyte, FUFT Coordination Management Consultant		
09:00	Coffee and registrations	
10:00	Welcome, and introduction to the Project and program of the day	Matti Virkkunen, VTT
10:10	Introduction to the biomass to heat and power and biomass to gas and power market in Ukraine. Opportunities and challenges	Yuri Matveev/Yevhen Oliiomyk, SEC Biomass
10:25	Presentation from Finnish biomass combustion technology provider (equipment producer)	Henri Riihimäki/Teemu Koskela, KPA Unicon, Finland
10:45	Experience of the biomass boiler-houses and CHP-operation in Finland	Turo Valkama, Imatran Lämpö, Finland
10:55	Cleaning and heat recovery technology	Ilkka Haavisto, Condens, Finland
11:05	Presentation from biogas technology providers	Johanna Kalmari-Metener Oy, Finland
11:25	Biomass logistics in Finland and in company Szepaniak Yhtiö Oy	Karoliina Szepaniak, Szepaniak Yhtiö Oy Finland
11:45	Coffee-break	
12:00	Presentation from Ukrainian operator of biomass TPP (Kamianets-Podilska TPP)	Oleksii Sikora, Communal enterprise "Miskteplovodenergiya"
12:15	Presentation from Ukrainian operator of biomass boiler plants in Slavutych town	Roman Shved, Ukrteplo
12:30	Presentation from Ukrainian company Clear Energy	Company Clear Energy
12:45	Presentation from Ukrainian operator of biogas plant	Viktor Ilio, Company "Silhosproduct"
13:00	Wrap-up and discussion	
13:30	Lunch for participants	
14:30	Informal networking session, discussion with technology providers	
15:00	End of day 2	

# The Consortium «Development for Opportunities for Utilization of Biomass Residues in the Renewable Sector of Ukraine»



The Nordic Environment Finance Corporation,  
Project financing



Technical Research Centre of Finland,  
Project coordination



Project management and coordination



State Agency on Energy Efficiency,  
Project Beneficiary



Scientific Engineering Centre "Biomass" Ltd,  
Project Partner



Sulamaa Consulting Ltd.  
Project Partner

# VTT – beyond the obvious

VTT is one of the leading research, development and innovation organizations in Europe. We help our customers and society to grow and renew through applied research. The business sector and the entire society get the best benefit from VTT when we solve challenges that require world-class know-how together and translate them into business opportunities.

## Our vision

A brighter future is created through science-based innovations.

## Our mission

Customers and society grow and renew through applied research.

## Strategy

Impact through scientific and technological excellence.

Established in

**1942**

Owned by

Ministry of  
Economic  
Affairs and  
Employment

**268 M€**

Net turnover and  
other operating  
income (VTT  
Group 2018)

**2,049**

Total of personnel  
(VTT Group  
31.12.2018)

**31%**

Doctorates and  
Licentiatees  
(VTT Group  
2018)

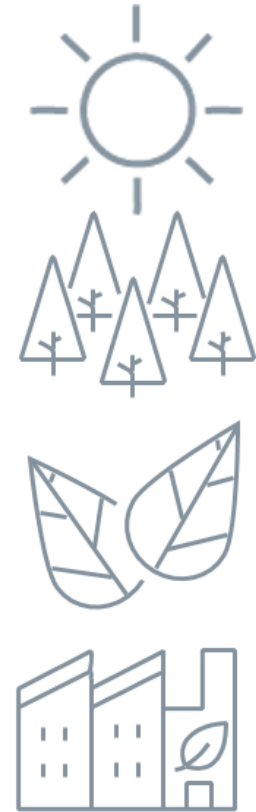
**44%**

From the net  
turnover abroad  
(VTT Group  
2018)

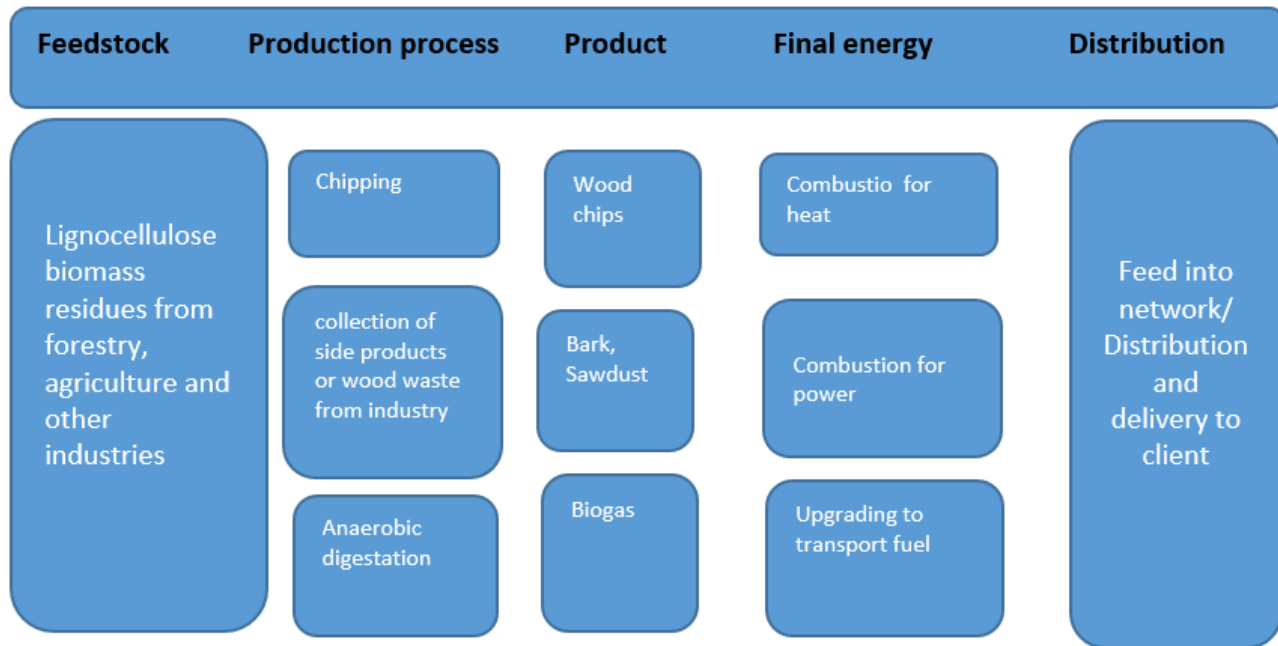
# Objectives of the project

- Make a value chain study for biomass-to-energy
- Select four relevant existing biomass-to-energy case studies both in Ukraine and in Finland
- Compare and analyze the mentioned four cases with similar in Finland
- Prepare Energy Policy Status Report
- Prepare a Roadmap for biomass-to-energy future market growth
- Study effect of increasing biomass deployment on climate emissions, evaluate the effect of increasing biomass deployment on increased energy self-sufficiency and perform a life cycle analysis on increased biomass deployment \*
- Evaluate the prospects for Finnish companies/organizations in the Ukrainian bioenergy market\*

\*Will be studied and reported after the workshop due to project scheduling



# Biomass-to-energy-value chain



# Objectives of the project – 4 Finnish and 4 Ukrainian case study installations

№	Case-1-UA/FIN	Case-2-UA/FIN	Case-3-UA/FIN	Case-4-UA/FIN
<b>Biomass source</b>	Biomass from forestry and other industries (e.g. forestry residues, saw)	Biomass from forestry and other industries (e.g. forestry residues, saw)	Biomass from agriculture and agro-industries (e.g. crop residues, straw, manure)	Biomass from agriculture and agro-industries (e.g. crop residues, straw, manure)
<b>Installation capacity</b>	<30MW	10MW to 30MW	1-3 MW	3-5 MW
<b>Process type</b>	Chipping wood/agri-residues	Traditional pellet mill	Dry fermentation / biogas installation	Wet fermentation / biogas installation
<b>Installation type</b>	UA=CHP, FIN=HOB	UA=HOB, FIN=HOB	UA=Biogas-CHP, FIN=biogas+HOB	UA=Biogas-CHP, FIN=biogas+HOB
<b>Energy outputs</b>	Heat and power, heat	Heat	UA=Heat and power, FIN=heat and transport fuel	UA=Heat and power, FIN=heat and transport fuel
<b>Installation (name/location) in Ukraine</b>	<i>Biomass-CHP installation of public utility Miskteplovodenergiya in Kamyanets-Podilskyi City, Khmelnytsky region. 15MWh Biomass based-CHP</i>	<i>Slavutych Boiler installation in Kiyv oblast, 10MW-HOB based on wood chips</i>	<i>Biogas installation of Gals-Agro holding, Varvinsk raion, Chernihiv region, 1.2 MWe. Substrate: pig and cattle manure, maize silage</i>	<i>Biogas installation of Rokytno sugar plant Ltd. in Rokytno town, Kyiv region, 2.4 MWe. Substrates: sugar beet pulp, poultry litter, cattle dung, poultry litter</i>
<b>Installation (name/location) in Finland</b>	<i>Imatran Lämpö Virasoja heating installation, 36 MW + 4 MW Biomass based-HOB</i>	<i>Imatran Lämpö Rajapatas, 4 MW Biomass based-HOB</i>	<i>Palopuron-Biokaasu Oy Ltd., Nivos Energia Oy Biogas installation / Metener / Grass and mixed manure / Dry fermentation / (2500 MWh transport fuel/a)</i>	<i>Jepuan-Biokaasu Oy biogas installation / Doranova / Pig and mixed manure &amp; crop residues / heat output 3-4 MWh (1-5000 MWh transport fuel/a)</i>



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