

The BioEnergy logo is displayed in a light green, 3D-style font. It is positioned on the left side of the image, overlaid on a large industrial silo. The background of the entire image is a photograph of an industrial facility with several tall, cylindrical silos and a network of metal walkways and pipes. White steam or smoke is rising from the facility against a blue sky with scattered white clouds.

BioEnergy

Bioenergiapäivät
Tampere 24.10.2022

Tuomas Saarinen, CEO
BioEnergy Oy



BioEnergy
BioFuels



BioEnergy background

MISSION

Bioenergo aims to limit global warming and CO²- emissions by offering alternatives to fossil fuels

VISION

To become a market leader in 2nd generation biofuels in Europe by 2030

MIILESTONES ACHIEVED



Environmental permit



Equity



Technology

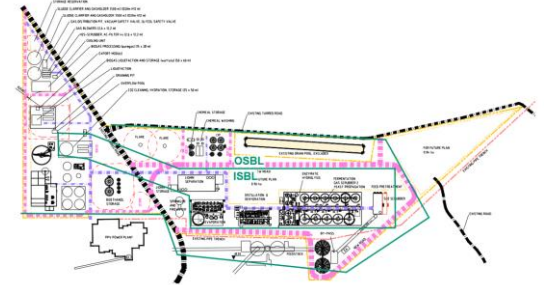


Site



CHG saving +100% vs. RED2

VTT



Site planning ongoing

BioEnergo focus



Sawmill side-streams are given a second lifecycle with modern and 100% sustainable way



And processed to 2G biofuels through enzymatic hydrolysis process



Reducing traffic borne CO₂-emission by 7% in Finland



BioEthanol



BioGas



Lignin



Bioethanol fuels 400 000 cars

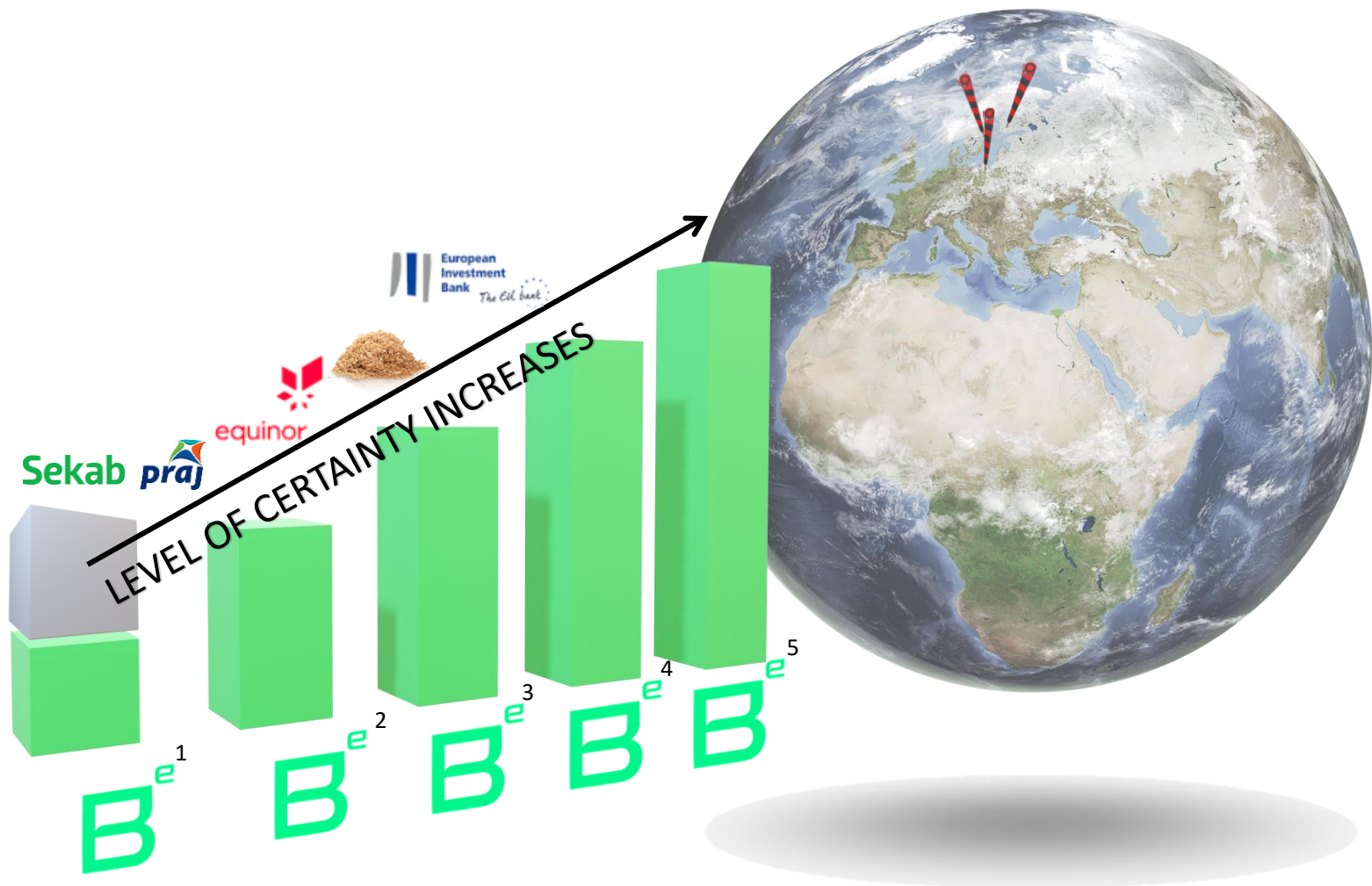


BioGas fuels + 200 trucks



Lignin replaces bitumen in tarmac

Multirefinery strategy with world leading partners



Technology



Local engineering support



Clients



Sustainability and fiscal impact



Long-term growth

300+ MEUR investment in Pori

Substantial domesticity %

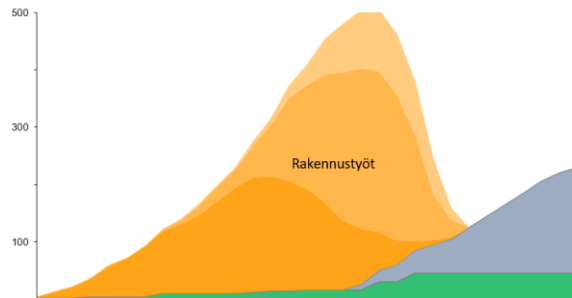


Emission reduction

Bioethanol fuels **400k cars**

Biogas fuels **15k cars**

Life span **30 - 50 years**



Employment

+ 500 jobs during construction

+ 250 new permanent jobs



Export surplus

Bioethanol ~1 500 MEUR

Lignin ~ 800 MEUR

Management



Timo Saini
Chairman & Founder



Soren M. Overgaard
Board member
CEO, Axiom Group Ltd.



Lara Pacheco
Board member
Legal Counsel, Axiom Group Ltd



James Murphy
Board member
CBDO, Axiom Group Ltd.



Kim Isosomppi
CFO



Tuomas Saarinen
Managing Director



Samuli Kyttälä
CTO

Biofuels for sustainable transportation



1st generation
bioethanol

Food & feed
crops

Cassava



Molasses



Corn



Sugar



Pretreatment

Hydrolysis

Fermentation

Distillation

EU 7% cap, road and rail
transport, 2030

BioEnergo
BioFuels

2nd
generation
bioethanol

Non-food and
waste-based
biomass

Sawdust



Rice & Wheat
straw



Sunflower
stalk



Corn
stover



Pretreatment

Hydrolysis

Fermentation

Distillation

EU Directives drive 2g market

Renewable
Energy
Directive



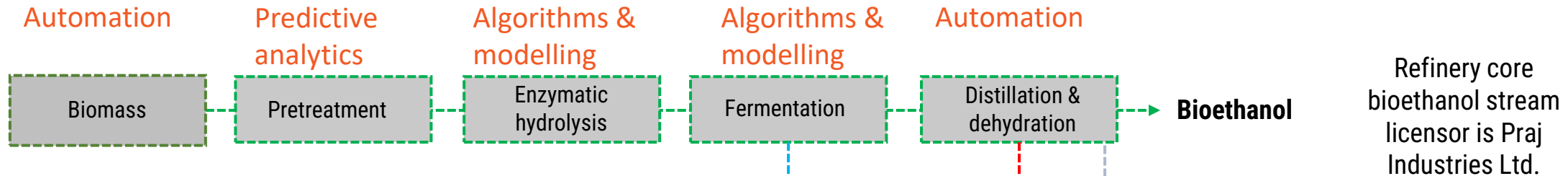
FuelEU Maritime



ReFuelEU Aviation



Process, technology and outputs

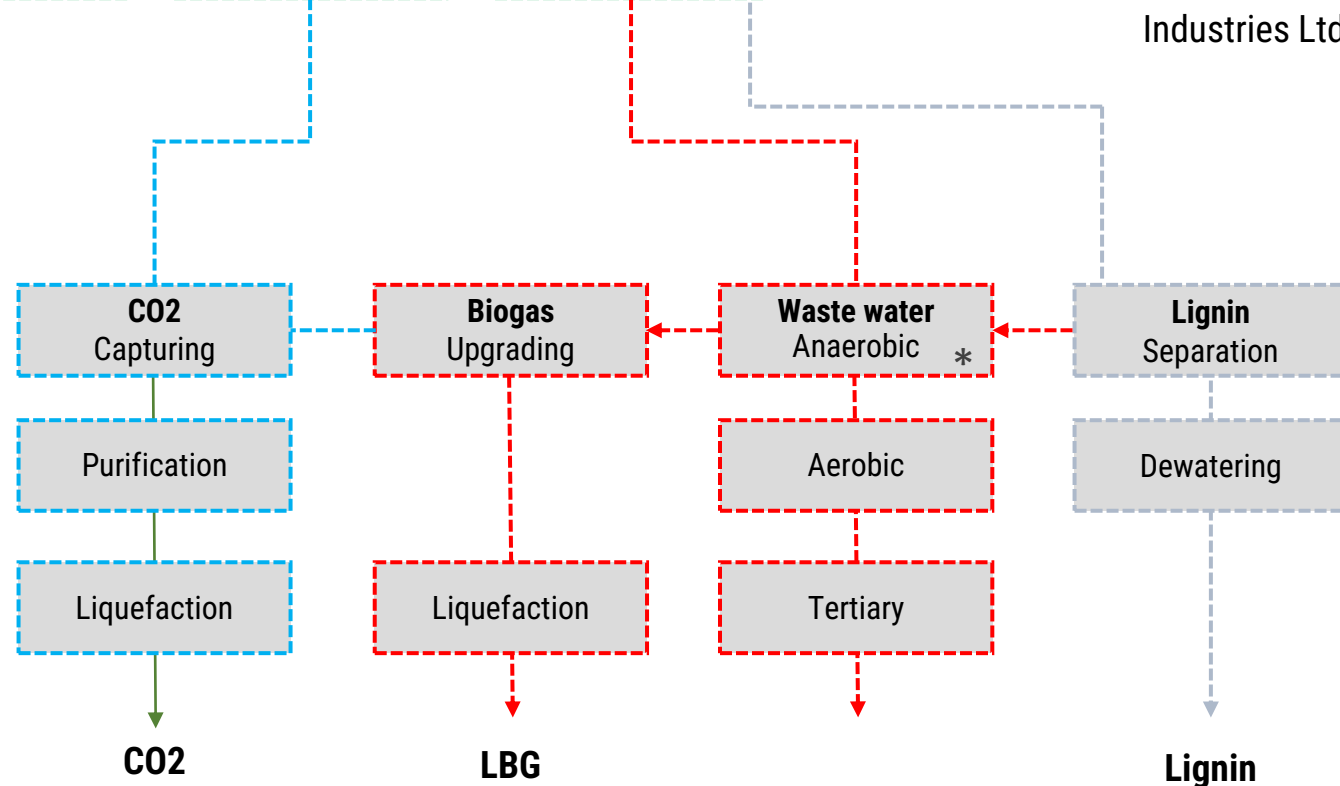


SIGNIFICANT DIRECT OPERATIONAL BENEFITS

1. Cost reduction
2. Up-time
3. Flexibility
4. Output optimization
5. Predictive maintenance

FUTURE PROOFING THE BUSINESS

1. Real-life data for R&D
2. Input optimization
3. End product specification



* Biogas Sludge

BioEnergo One



Location	Pori, Finland, Baltic Sea
Feedstock	Softwood sawdust, 200 000 dry tons
Capacity	60 000m ³ bioethanol
Fuels	Bioethanol, Biogas (LBG)
Other	Lignin, green CO ₂
RED2	Advanced biofuel from feedstock listed in Part A of Annex IX. Obligation: Min 3,5% by 2030.
GHG saving	Red 2 emission saving wi CCU of 100%, 3rd party CHP plant
Permit	Environmental permit <u>received</u> 12/2021
Offtakes	Negotiating with oil majors, global energy traders and others
Markets	Port access. Export to NW Europe.

