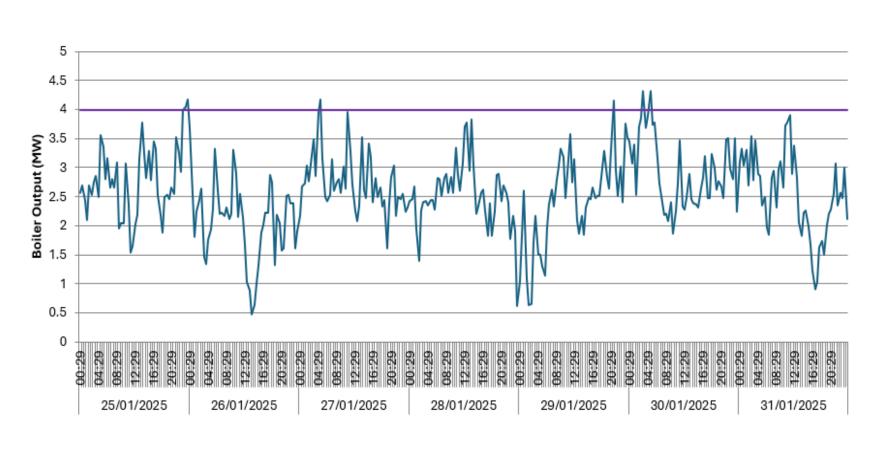


# Welcome to the AEE Ireland Webinar



# Does your process have a variable heat load?

#### Balcas Wood Pellet Steam Boiler - Peaky load - 24/7 operation





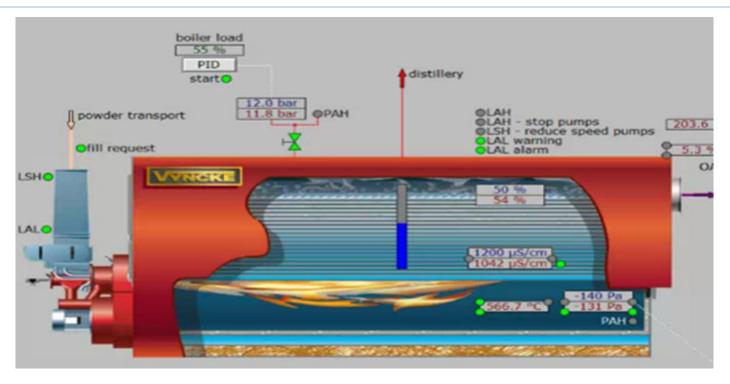
---- Balcas Wood Pellet Boiler Output

Boiler Capacity



# Wood Pellet Powder Burner system





- High efficiency heat output
- Horizontal flame like oil or gas, no moving grate
- Atomises the fuel like gas or oil, enables instant on/off modulation and temperature control



# Small footprint...more like a fossil fuel system than biomass



Powder feed from hammermill

Powder hopper

Burner

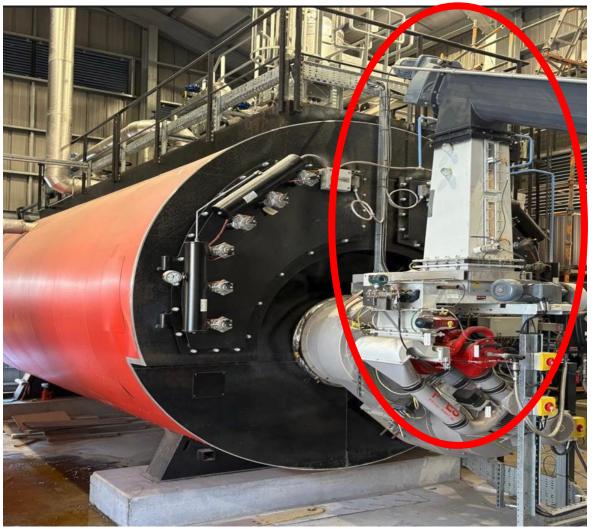
Powder feed to burner

Pneumatic cleaning tubes



# Hammer Mill and Powder Hopper

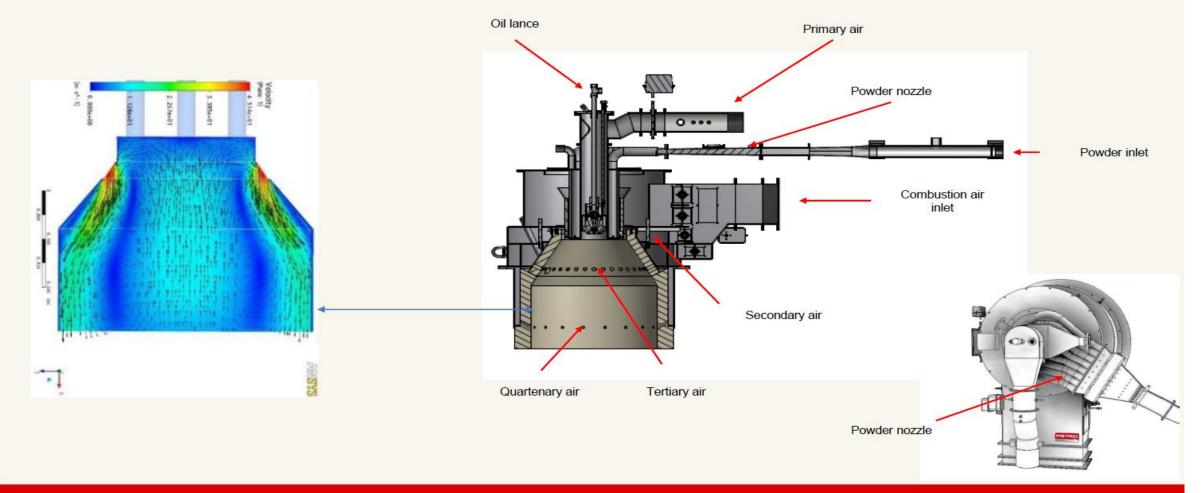






## Burner Technology

#### PETROBIO BURNER PRINCIPLE PARTS AND LAYOUT

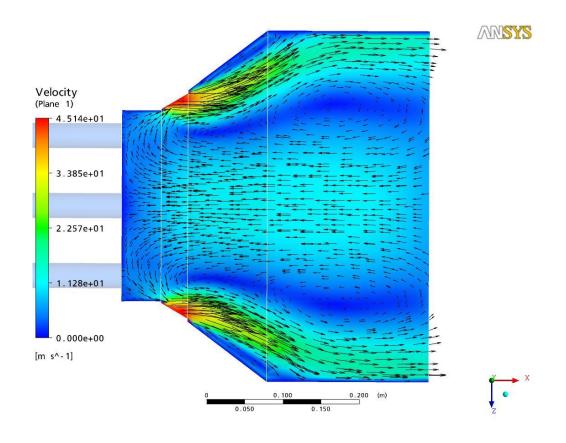








## **STAGE COMBUSTION / PARTICLE RECIRCULATION**





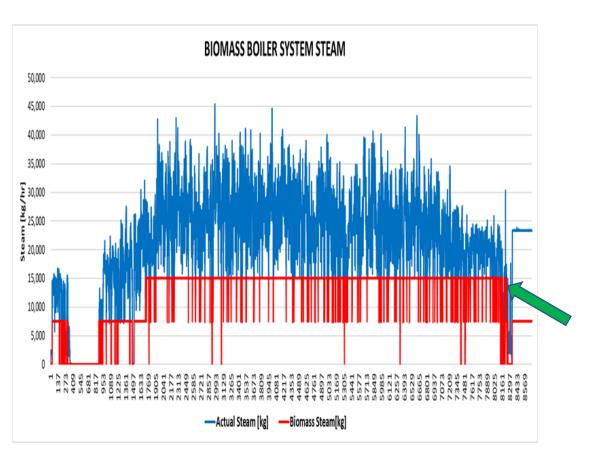




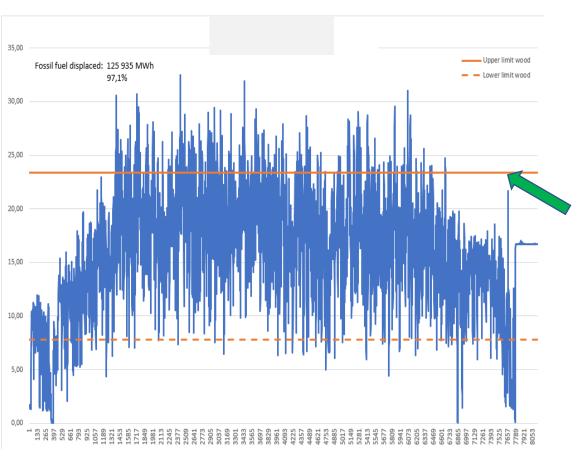


# Covers variable/peaky loads like a fossil fuel system

Wood Chip Boiler - **50%** reduction in fossil fuel use



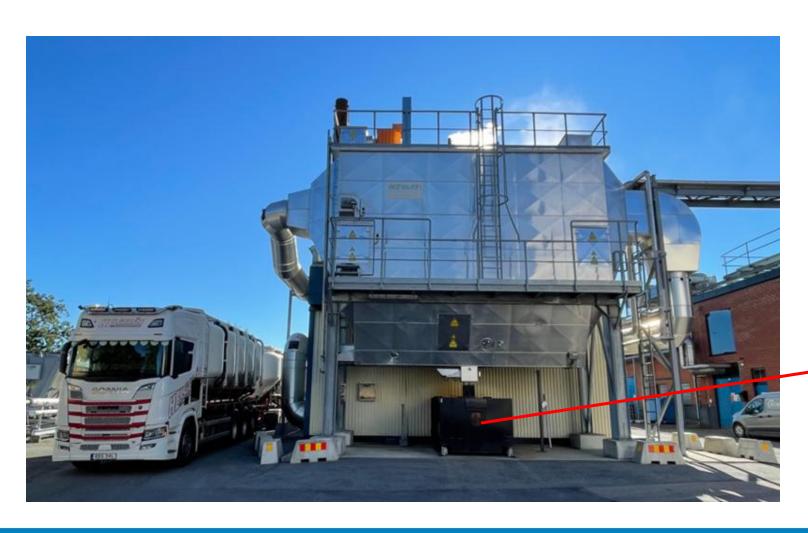
# Powder Burner – **97%** reduction in fossil fuel use



Difference – 14,000 tonnes of carbon per annum / €1.4m (@ €100 per tonne)



# Flue gas treatment - ESP



# Sized to guarantee compliance with MCPD

Sealed ash bin Emptied every 6 weeks

Balcas Energy wood pellets have a low ash content of 0.3%

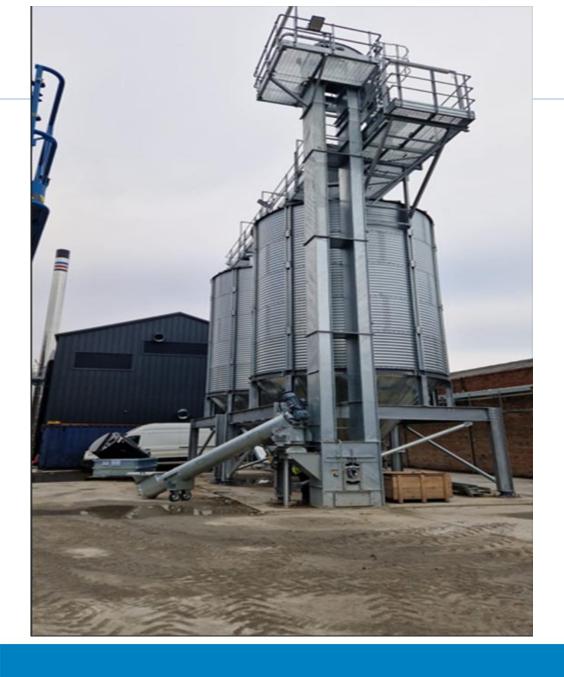


## Fuel silos



- Vertical fuel silos small site footprint
- We deliver in full load artic
- 20 30 mins to fully unload each delivery
- Fuel has high energy density. For a 5MW system typically 3 – 4 deliveries per week even with 24/7 usage.

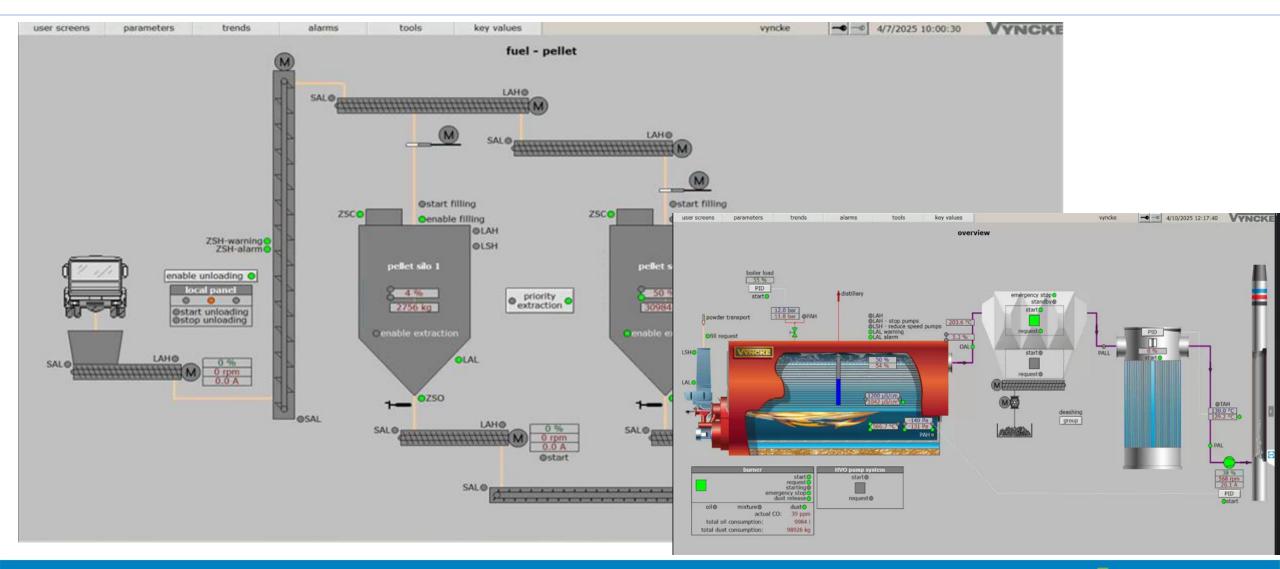






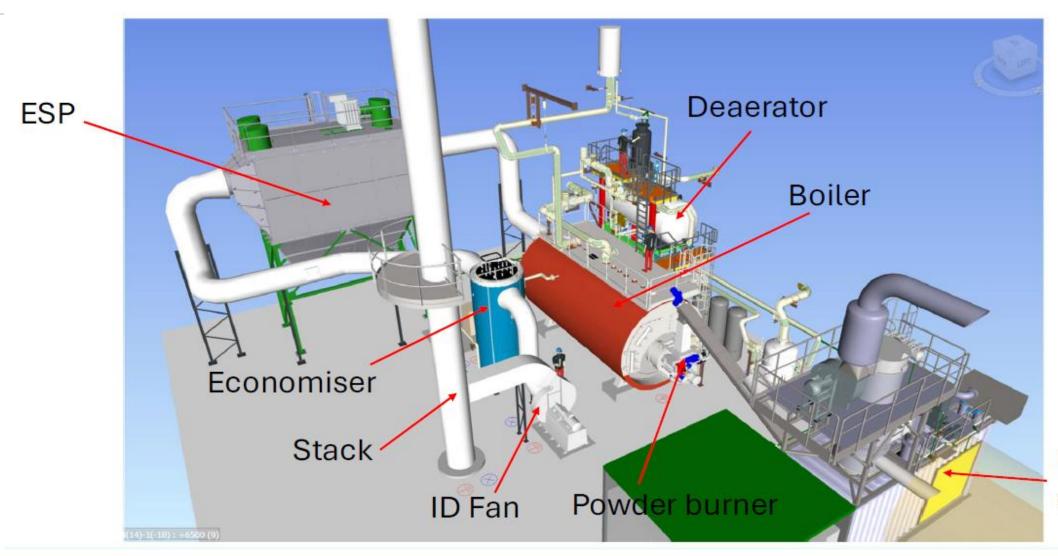


# Remote monitoring & technical support as well as automatic fuel ordering





## **Space optimisation**



Fuel Prep equip



### New installations - Scotland

- Whyte & Mackay Distillery Isle of Jura
  - 5MW Steam
  - Replacing medium fuel oil
  - Will provide 100% of distillery steam

- 2025
  - 3 x 6MW Steam
  - 3 distilleries in the Scottish Highlands







# System suitable for many different applications

- Dairy Processors
- Pharma
- Distilleries
- Food Production
- Meat Processors
- Breweries
- Malting plants
- Industrial Laundries
- District Heating
- Asphalt production

Direct flame in the drying drum

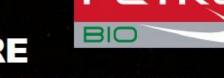




#### **INNOVATIVE BURNER TECHNOLOGY**



Bio powder burner 16 MW



# **FUTURE ENERGY SOLUTIONS**

#### **Business:**

- Energy solution provider
- Expertise within flame combustion
- Fuels: solid, liquid, gaseous

#### Deliveries:

- Burners with control systems, 2-50 MW
- Full turn key deliveries for energy plants, including fuel systems, boilers, flue gas treatment etc

The deliveries are tailor made and match the customer needs

#### Customers:

District heating, Waste to Energy plants, Manufacturing industry, etc

#### Location:

- Gothenburg and Floda, Sweden
- Harelbeke, Belgium
- Haapavesi, Finland 💴
- Service engineers located close to customers in Sweden

Grate fired technology from VYNCKE





# **NEWS**

# PETROBIO MOVES IN WITH THE VYNCKE GROUP!

1:st of Feb 2018

The Belgian company VYNCKE NV has been synonymous with high quality biomass boilers for more than a hundred years. Through the acquisition of Swedish PetroBio they expand their portfolio of solutions for their customers' energy needs.

PetroBio will continue to operate as an independent sister company within the existing group of VYNCKE companies.











### **PETROBIO** POWDER PROJECTS

60 installations with bio powder application

- 1/3 greenfield solutions
- 2/3 retrofits
- 4 56 MW
- HW and steam
- District heating and Industry

3 2						EN
CUSTOMER	LOCATION	COUNTRY	YEAR	INDU	e	
VYNCKE	Berlin	Germany	2020	District	7 LL	
DADMA VYNCKE	Suwalki	Poland	2023	Fum Produ	e	014
solørbioenergi	Jessheim	Norway	2023	District	<b>G</b> Göt	
nergia oy CI	Lappeenranta	Finland	2023	District	G Göt	
nergia oy CT	Lappeenranta	Finland	2023	District	Cl	
UX ENERGIE VYNCKE	Luxembourg	Luxembourg	2023	District		
LIX ENERGIE VYNCKE	Luxembourg	Luxembourg	2023	District he	eating	

CUSTOMER	LOCATION	COUNTRY	YEAR	INDUSTRY FUEL		THERMAL	OUTPUT	т					
HALLSTAHAMMARS KOMMUN	Halstahammar	Sweden	1987	District	heating	Pulverized wood	20	00					
e·on	Kalmar	CUSTOMER		LOCATION COUNTRY		YEAR INDUSTR		JSTRY	RY FUEL THERMAL OUTPUT				
Söderhamn NÄRA	Söderhamn	@@ ARCTIC PAPER			Grycksbo Sweden		2008			Pulverized woo	d 56.00		
VATTENFALL 😂	Drefviken	Hafslund	nd 🚳		uco	LOCATION	OH .	COUNTRY YEAR		INDUSTRY FUEL		THERMAL OUTP	
Sstockholm exergi	Upplandsväsby	Plyf	Plyfa Söderhamn			Söderha		Sweden	2016	District heating	Pulverized wood	12.00	
VATTENFALL 🍣	Drefviken	PANIFWO		VEIDEKKE*		Moss	oss Norway		2016	Asphalt	Pulverized wood	16.00	
ENA ENERGI	Enköping	BRANIEWO		т	VEIDEKKE"		Serii		Norway	2016	Asphalt	Pulverized wood	16.00
Söderhamn NÄRA	Söderhamn	The Jackson Liberatory			<b>⇒</b> SKANSKA		Karista	d	Sweden	2017	Asphalt	Pulverized wood	12.00
Sacriphakus Inorgi V Vittes	Smedjebacken	<b>€</b> VEOL			NSKA	Norrköpi	ing	Sweden	2017	Asphalt	Pulverized wood	12.00	
Sandvken ENERGI	Sandviken	Hafslund	160		<b>⇒</b> SKANSKA		Kalma	r	Sweden	2017	Asphalt	Pulvarized wood	12.00
Sandvikan ENERGI	Sandviken	a maine pr	ublic	^	A AKADEHISKA HUS		Chalmers Un	iversity	Sweden	2018	Research	Pulverized wood	6.00
e·on	Kalmar	Hafslund	180		IKEA	VYNCKE	Zbaszyn	ck	Poland	2018	Furniture	Pulverized wood	4.00
Luleá Energi	Luleá	VANTRA GOTALANDISES	EGIONEN	Τ	<b>⇒</b> SKAI	NSKA	Munked	ial	Sweden	2018	Asphalt	Pulverized wood	12.00
e·on	Saby	SPENDRU	PS <sup>37</sup>		<b>⇒</b> SKAI	NSKA	Hallsbe	rg	Sweden	2018	Asphalt	Pulverized wood	12.00
<b>G</b> Göteborg Energl	Rya	SKAN!	5KA	Т	<b>⇒</b> SKAN	15KA	Lidköp	oing	Sweden	2018	Asphalt	Pulverized wood	12.00
<b>Ġ</b> Göteborg Energi	Rya	Turku Ene	rgia		IL 🜈	.B	Eksjö		Sweden	2019	Asphalt	Pulverized wood	6.00
Cloetta	Ljungsbro	STEP	VEOLIA	T		MARTENS	Some	ren	Netherlands	2019	Food industry	Pulverized wood	5.00
ating Pulverized wood	8.00	SKAN:	SKA	U	solør <b>b</b> i	oenergi	Jesshei	m	Norway	2019	District heating	Pulvarized wood	6.00
		ATRI	A		solørbi	ioenergi	Jesshei	im	Norway	2019	District heating	Pulverized wood	4.00
					V	ELDE	Haugala	nd	Norway	2019	Asphalt	Pulvarized wood	12.00
					cap <b>W</b>	att <sup>©</sup>	Maia		Portugal	2020	District heating	Pulverized wood	16.00



## Balcas – who we are

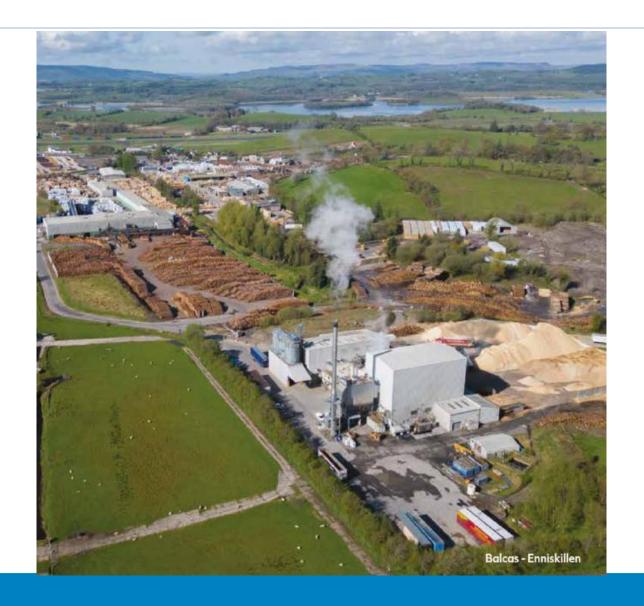


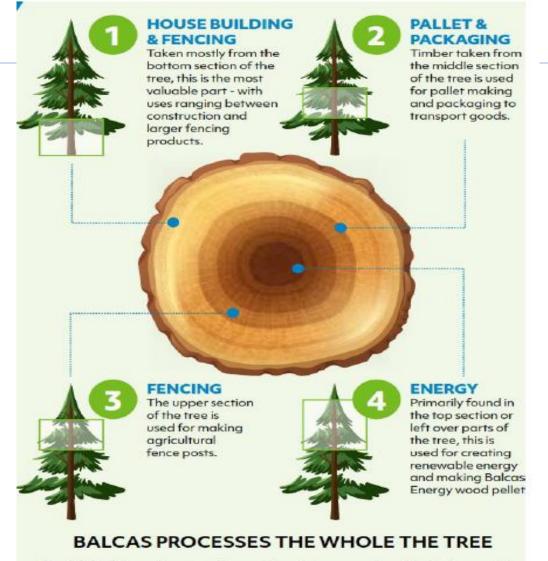


- Part of Glennon Brothers
- Irish family-owned business
- c. €450m p.a turnover
- Processing >2M tonnes of sustainably sourced wood fibre every year
- >3M tonnes transported by road & sea annually.
- 900 employee's
- Further 450+ people employed indirectly



### **Enniskillen Site**





**Optimisation** - At our mills each log is scanned multiple times using world class technology to extract the best value from each tree.



 In volume terms, about half of each log becomes sawn timber - posts, fencing, construction timber, pallet wood







## Volumes

• The other half becomes wood pellets, renewable electricity and heat (some remaining residues are sold to external parties)

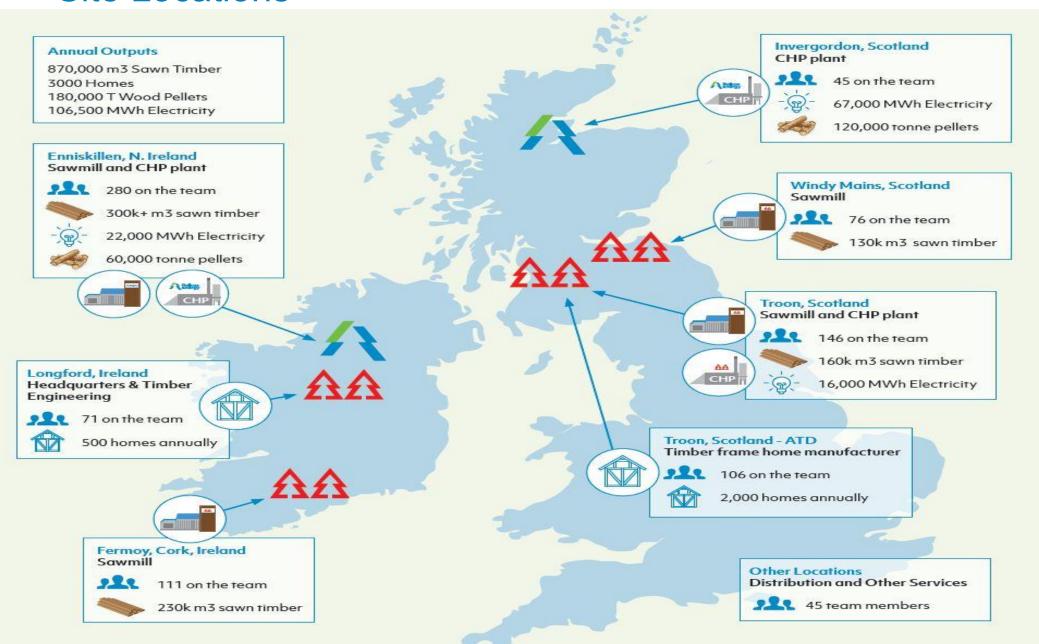


• Until 2005 all of this sawmill residue was sold without adding value





## **Site Locations**





## **Environmental Credentials - Group Energy Production**

- 3 CHP's producing renewable heat & electricity
- Total installed capacity

14MWe

40MWth





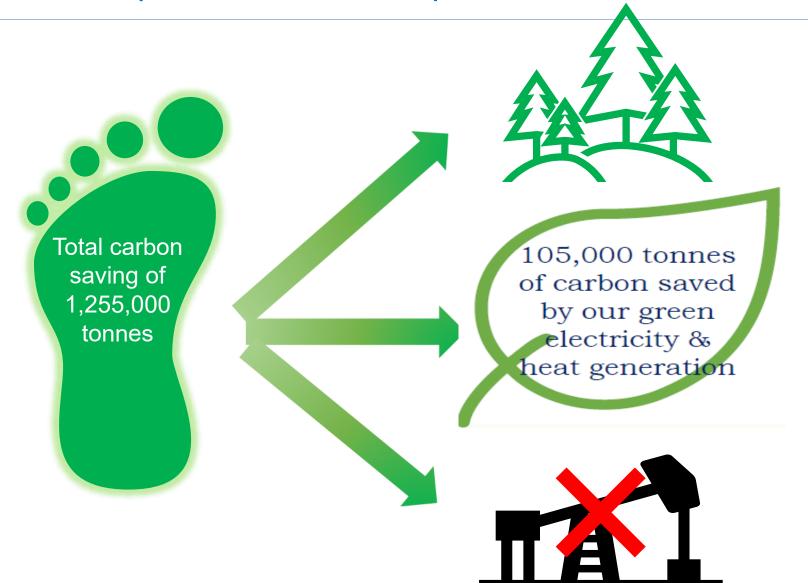
- Annual Production
  - Elec 106.5GWhe of which
    - 51GWh exported to grid
  - Heat 319.0GWh
- Annual Carbon saving 104,240 tonnes
- Electricity 21,300 tonnes
- Heat (vs oil) 82,940 tonnes







## **Group Annual Carbon Impact**



Our timber products store 850,000 tonnes of carbon.

Our wood pellets save 300,000 tonnes of carbon by displacing imported fossil fuel



### Wood Pellets Environmental Credentials



- Manufactured to consistent rigorous standards
- Balcas use sawmill residues
- We use renewable electricity and heat that we produce on site in our CHP plants
- Cost competitive with fossil fuels
- Vey much a home-grown product of the circular bio-economy.



# Renewable Energy Directive (EU 2018/2001)

Wood briquettes or pellets from wood industry residues	Case 1	1 to 500 km	75 %
		500 to 2 500 km	75 %
		2 500 to 10 000 km	72 %
		Above 10 000 km	67 %
	Case 2a	1 to 500 km	87 %
		500 to 2 500 km	87 %
		2 500 to 10 000 km	85 %
		Ahove 10,000 km	79 %
	Case 3a	1 to 500 km	95 %
		500 to 2 500 km	95 %
		2 500 to 10 000 km	93 %
		Above 10 000 km	88 %

Balcas'
manufacturing
process achieves the
highest possible GHG
reduction for wood
pellets



## **Our Certifications**













## Certification – Sustainable Biomass program https://sbp-cert.org/



#### Balcas Timber Ltd.

#### Certificate Information:

Certification Body: Preferred by Nature OÜ

Certificate Number: SBP-13-23

Status: Active

Date of Issue: 3 April 2025

Expiry Date: 2 April 2030

Certificate Type: Biomass Producer

#### Certificate Scope:

- · Does not include Supply Base Evaluation
- Includes RED II

#### Assessed & Certified in Accordance With:

Instruction Document 5E: Collection and Communication of Energy and Carbon Data, Version 1.5, 22 July 2021

SBP Standard 2. Verification of SBP-compliant

#### Contact:

Meave McCartney

t: +44 286 641 1001

e: meave.mccartney@balcas.com

w: https://www.balcas.com

#### Location:

Main Office: 75 Killadeas Road, Laragh. Ballinamallard, Enniskillen, BT94 2ES, United Kingdom

Production Office: 75 Killadeas Road, Laragh, Ballinamallard, Enniskillen, BT94 2ES, United Kingdom

#### **CB Public Summary Report:** Supply Base Report:

Main (Initial) audit (2024)

Main (Initial) audit (2024)





## Our EnplusA1 Quality Credentials

- Balcas energy wood pellets exceed the requirements of ENplusA1 quality standard.
- We have Pellet Producer and Pellet Distributor Certification
- Our pellets are tested on site during and after production to ensure quality standards are maintained
- Samples are retained from every bulk load for traceability
- Our pellets are also regularly tested by external independent laboratories







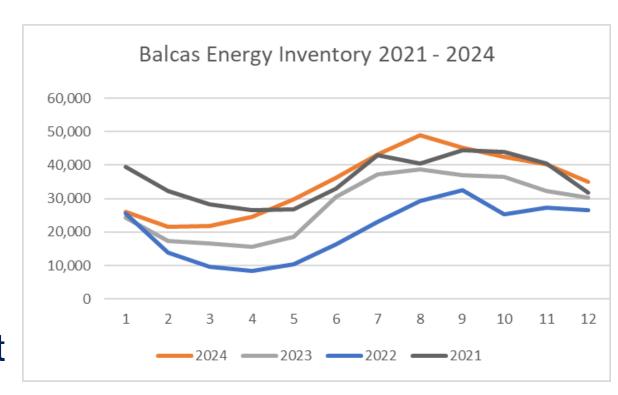


Wood Pellet Specifications								
Criteria	ENPlusA1 Standard	<b>Balcas Energy Woodpellets</b>						
Calorific Value	16.5 ≤ Q ≤ 19 MJ/kg	17.2						
	4.6kWh/kg	4.8kWh/kg						
Ash (A0.7)	≤ 0.70%	0.30%						
Ash deformation Temp. (DT1200)	≥ 1200 °C	1350°C						
Moisture (M10)	≤ 10%	7.50%						
Additives	≤ 2% of dry bases (natural)	≤ 2%						
Dimensions (D06)	Diameter 6mm ± 1.0mm	6mm ± 1.0mm						
	Length 3.15 ≤ L ≤ 40	3.15 ≤ L ≤ 40						
Sulphur (S0.03)	≤ 0.04%	0.03%						
Chlorine (CL0.02)	≤0.02%	0.01%						
Fines (F1.0)	≤.5%	0.24%						
Mechacinal Durability (DU97.5)	≥ 98%	98.90%						
Bulk Density	600 ≤ BD ≤ 750 kg/m3	672 kg/m3						



# Availability and security of supply

- We guarantee security of supply for our contracted customers.
- We have manufacturing plants
- We maintain unrivalled inventory within the industry
- We maintain our plants with a >99% availability
- Industry has an established, robust supply chain for over 20 years





# **Integrated Solution**

- Turnkey integration
- Fuel manufacture & supply
- Can supply on a cent per kWh basis
- Maintenance and technical advice
- Remote monitoring and automatic replenishment
- Long term energy pricing models available.







# Thank you and Stay Safe

Please follow @aeeireland on Twitter and Linkedin

