



# SECOND HALF AND FULL YEAR 2021

Henrik Badin, CEO Vow ASA  
Oslo, 23 February 2022

**VOW**

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# ABOUT US

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- › Provider of world leading technologies to **eliminate pollution**, enhance **circular economy** and mitigate **climate change**
- › Offering **patented unique solutions** that turn waste and biomass into **CO2 neutral** energy, **decarbonised** energy, **low-carbon** fuels and **biocarbon**
- › **Proven ability** to continually **develop and deliver** technology and equipment for complex **industry scale solutions** and applications, in close **co-operation with customers**
- › **Strong backlog** of orders and **large installed base** for leading players in a wide range of industries, providing **recurring business**



# KEY FEATURES

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**117**

**patents**  
within 17 families  
of patents

**450+**

**systems**  
installed<sup>1</sup>

**120**

**systems in backlog**  
to be delivered  
over the next 3-5 years

**35**

**proprietary technologies**  
and 25 proprietary technology  
applications

**181**

**employees**

**6**

**countries with operations**  
Norway, France, Poland, US,  
Canada and Italy

<sup>1</sup> Of which 290 systems are installed on 130 cruise ships, 60 systems within landbased waste and biomass valorisation and 100 systems with food processing



# **FINANCIAL AND OPERATIONAL HEADLINES**

**VOW**

# KEY TAKEAWAYS



- › Full year **revenues were 454 million** in 2021, on par with 2020, showing a significant improvement in the second half of the year. **EBITDA was NOK 43.5 million**
- › Profit before tax was **NOK 325 million**, reflecting the values created in the successful demerger of Vow Green Metals
- › **H2'21 revenues were 253 million**, up 25% compared with H1'21. EBITDA margin remained at **9.2%** level
  - **Projects Cruise** reported **145 million** revenues, unchanged from H1, and with EBITDA margin at 21.5%
  - **Aftersales** showed strong signs of recovery, and reported **34 million** of revenues in H2, up 84% from 18 million in H1, but still well below normal, and with a slim positive margin
  - **Landbased** revenues more than doubled from H1 to H2 21 to **74 million** with slim positive margin
- › Total **order backlog** including options leaped to an estimated record high **2.1 billion** at the end of December

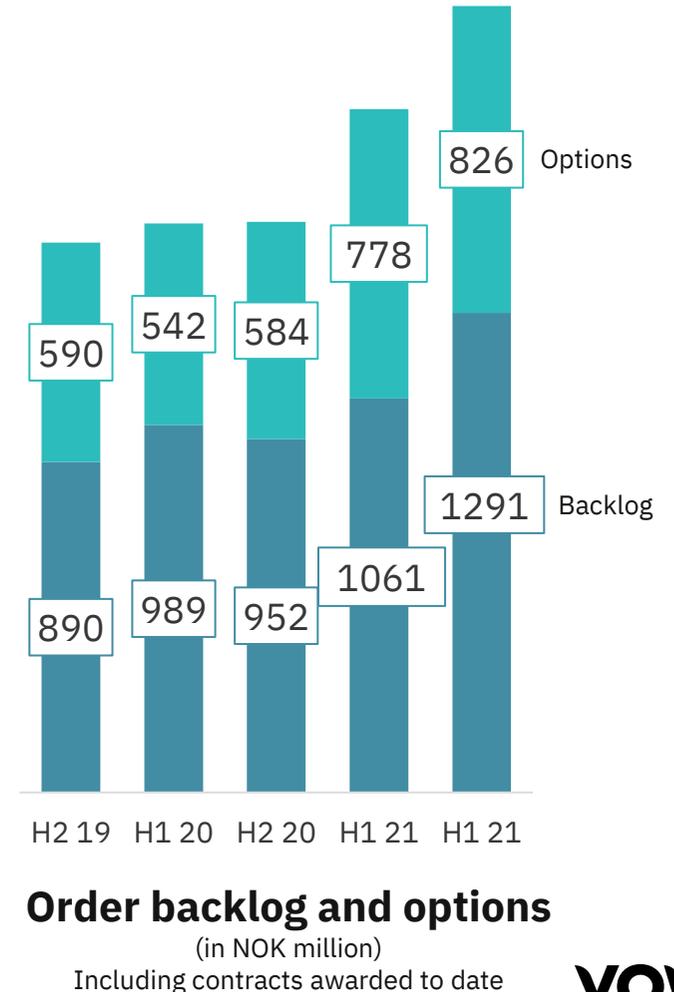
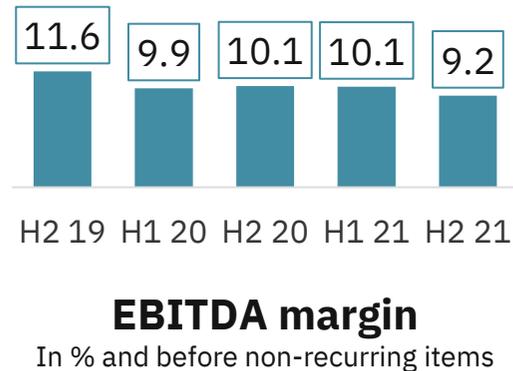
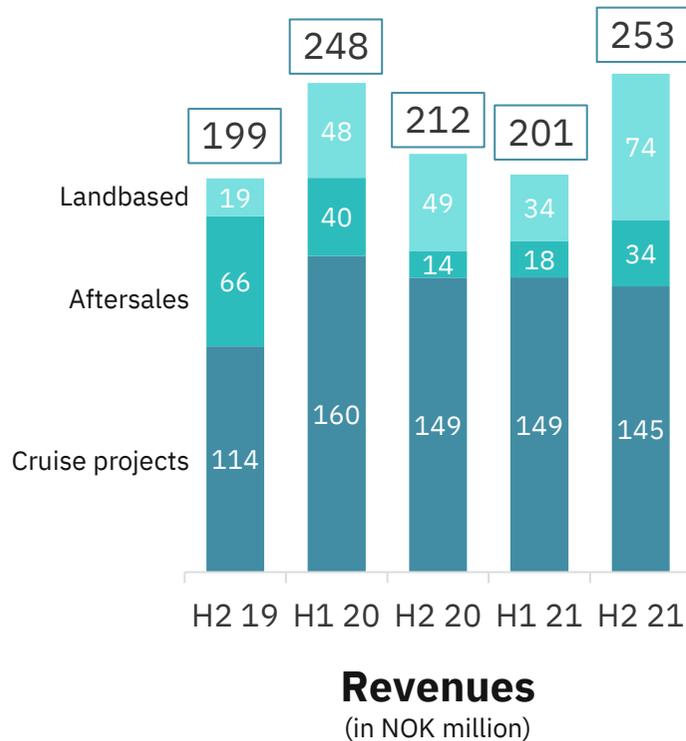
#### All amounts in NOK

<sup>1</sup> Before non-recurring items of NOK 9.8 mill related to the demerger and stock exchange listing process for Vow Green Metals AS and strategy processes and organisational build-up in the preparation for future growth

<sup>2</sup> Year-over-year (YoY) backlog as of 31 December

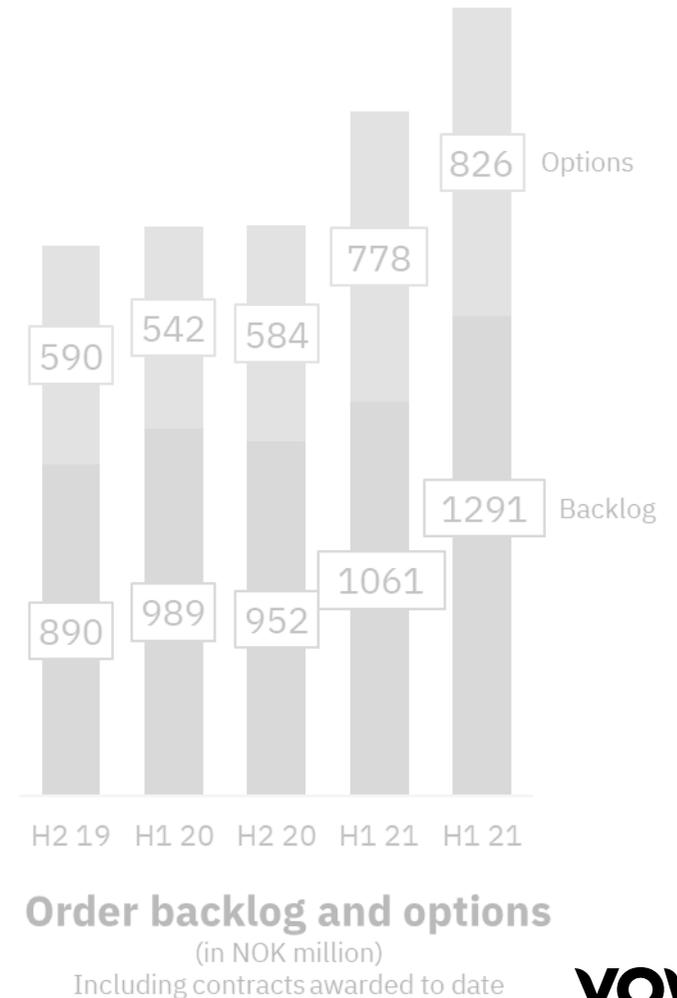
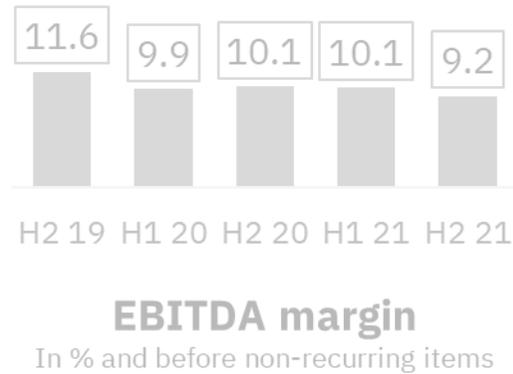
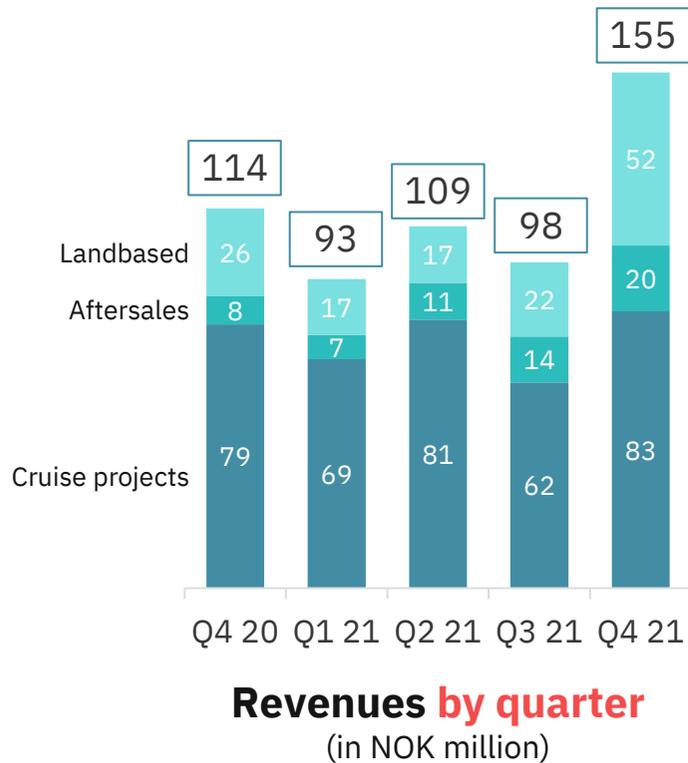
# KEY FINANCIALS | GROUP

Aftersales and Landbased gaining speed ...



# KEY FINANCIALS | GROUP

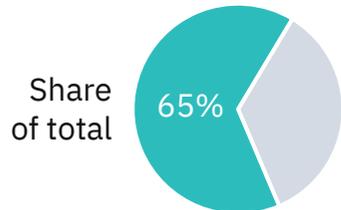
... and Q4 marks significant shift



# PROJECTS | CRUISE

- Continued strong performance and relatively stable EBITDA margin within the normal variance seen in projects.
- Whereas 2021 EBITDA margin was slightly better than 2020, we continue to look for opportunities to improve operational efficiency
- Newbuild and retrofit contracts worth 246 million were awarded in H2 (FY21: 370 million), confirming cruise operators' confidence and commitment to invest in new climate friendly and sustainable operations

294 million  
revenues in 2021



NOK million	H2 21	H2 20	FY2021	FY2020
Revenues	144.8	149.1	294.2	309.2
EBITDA	31.1	35.9	69.4	70.8
EBITDA margin	21.5%	24.1%	23.6%	22.9%
Backlog at end of period			1,012	924

Virgin Cruise's Valiant Sea delivered in 2021 as the second in a series of three with total clean ship solutions from Scanship inside

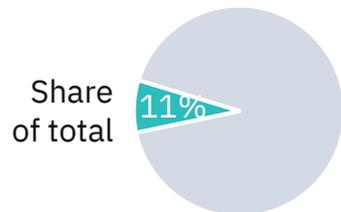


Photo: Ships@Sea

# AFTERSALES | CRUISE

- Cruise operations continued to resume as Covid-19 restrictions were eased in key markets. Consequently, revenues in H2 was 34 million, up from 14 million in H2 20, but still at around half of pre-covid level
- EBITDA returned to positive in H2, driven by the higher revenue base in the segment
- With more newbuilds coming into service, market for Aftersales is expected to grow, and likely surpass previous levels, since Vow's installed base has increased

52 million  
revenues in 2021



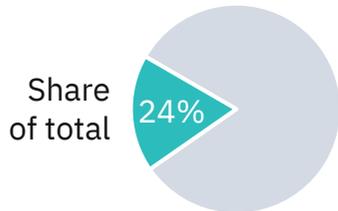
NOK million	H2 21	H2 20	FY2021	FY2020
Revenues	33.6	13.6	51.9	53.3
EBITDA	1.0	-5.0	0.4	-0.2
EBITDA margin	3.0%	na	0.8%	-0.4%



# LANDBASED

- Revenues in H2 increased 51% to 74 million YoY, and more than doubled from Q3 to 52 million in Q4, a result of several contracts being awarded through the year
- 215 million contract with Vow Green Metals confirmed for delivery in 2022. Production of equipment well underway
- More blue-chip industry partners confirm their climate roadmaps, with Vow technology as a central part
- Cooperation with Europe's second largest gas distributor and breakthrough for pyrolysis gas in European gas grid could accelerate roll-out of Vow technology

108 million  
revenues in 2021



NOK million	H2 21	H2 20	FY2021	FY2020
Revenues	74.2	49.2	108.0	97.2
EBITDA	2.0	-3.1	-7.1	-10.2
EBITDA margin	2.7%	-6.2%	-6.6%	-10.4%
Backlog at end of period			279	28

*EBITDA before non-recurring items*





**STRATEGY  
AND OUTLOOK**

**VOW**

# DRIVERS



Industry  
push for  
decarbonising



Economic  
realities



Circular  
economy



Policies and  
regulation

EU carbon  
emission cost  
2017-2022



**“Decarbonise  
or die!”**

Larry Fink  
CEO Blackrock

# INDUSTRY RESPONSE



# CRUISE NEWBUILDS AND RETROFITS

High activity and Vow well positioned and with order book far into 2025/26

Year of vessel delivery from yard	Current number of vessels <sup>1</sup> in cruise industry orderbook, excluding options	Scanship orders for waste management systems	Scanship orders advanced wastewater purification systems
<b>2022</b>	11	8	7
<b>2023</b>	14	8	8
<b>2024</b>	12	9	11
<b>2025</b>	12	6	7
<b>2026</b>	6	3	4
<b>2027</b>	3	2	2
<b>Total</b>	<b>58</b>	<b>36</b>	<b>39</b>

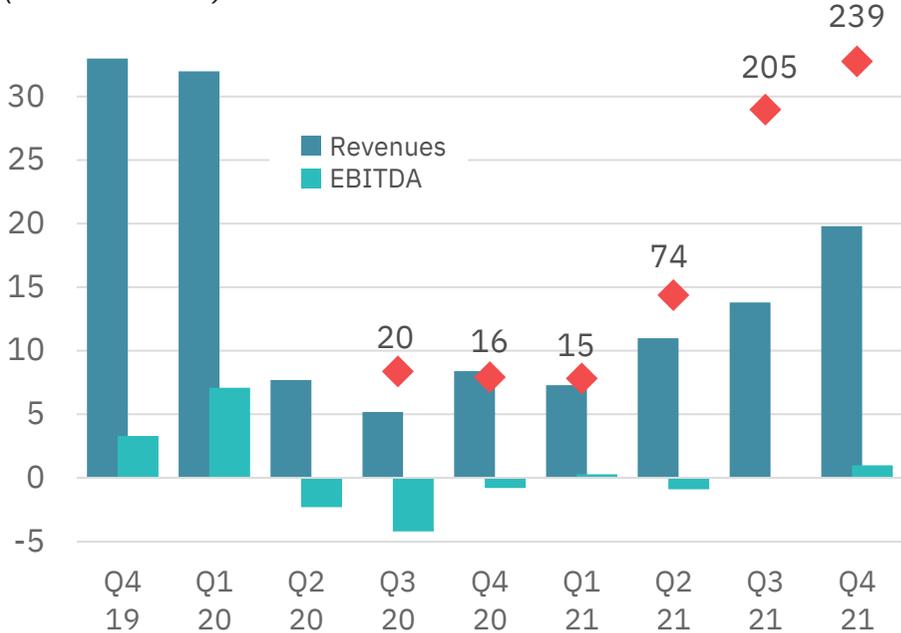
- Cruise operators are actively engaged in fleet renewal
- Vow subsidiary Scanship has earned a reputation as trusted partner
- Cruise operators report plans for retrofitting around 30 ships in the next 1-2 years
- Creating opportunities for Aftersales business

<sup>1</sup> Smaller ships with less than 600 pax capacity is not included in this overview.  
Source: Cruise Industry News.

# INCREASED MARKET FOR AFTERSALES

- In pre-pandemic 2019, Aftersales reported 126 million revenues and 22.5 million EBITDA
- Covid-19 hit Aftersales hard from Q2 2020
- Business is gradually coming back as cruise ships are returning to sea driving demand for chemicals, spares and service support
- 86 ships with Scanship equipment on board currently active
- Scanship’s installed based has increased by 13% during 2020-21

Aftersales revenues and EBITDA through the pandemic (in NOK million)

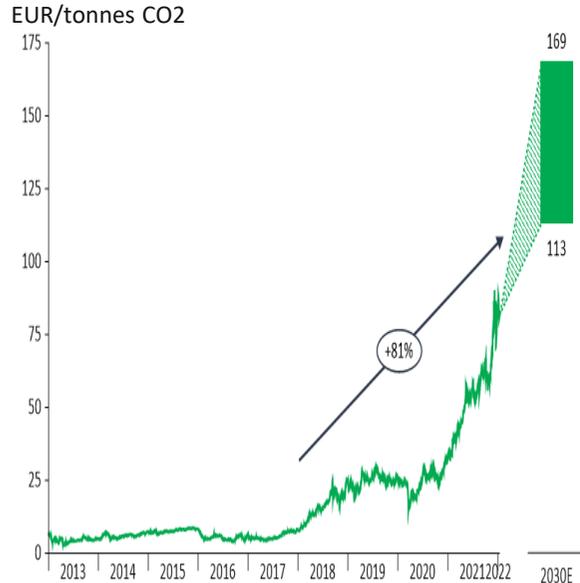


◆ Number of cruise ships in service at end of period.  
 Total global fleet approx. 350 ships  
 Source: Cruise Industry News

# RISING COSTS AND CARBON TAX

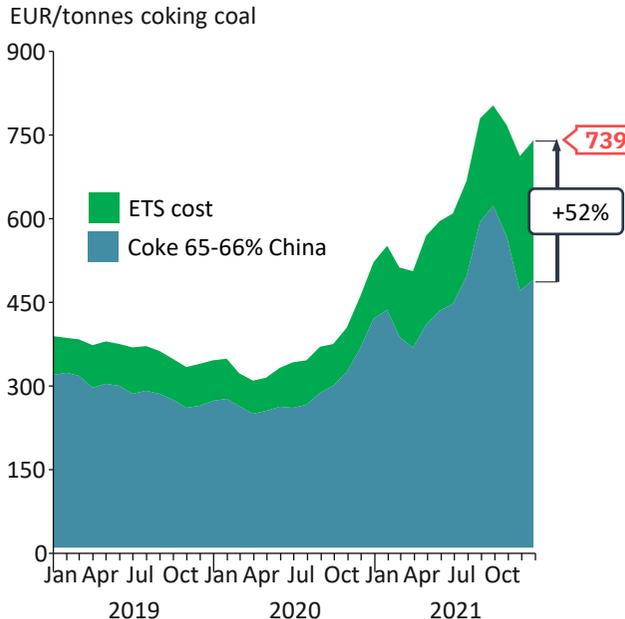
## Cost of CO2 emissions

EU CO2 emission cost (ETS) 2017-2022, and estimate 2030



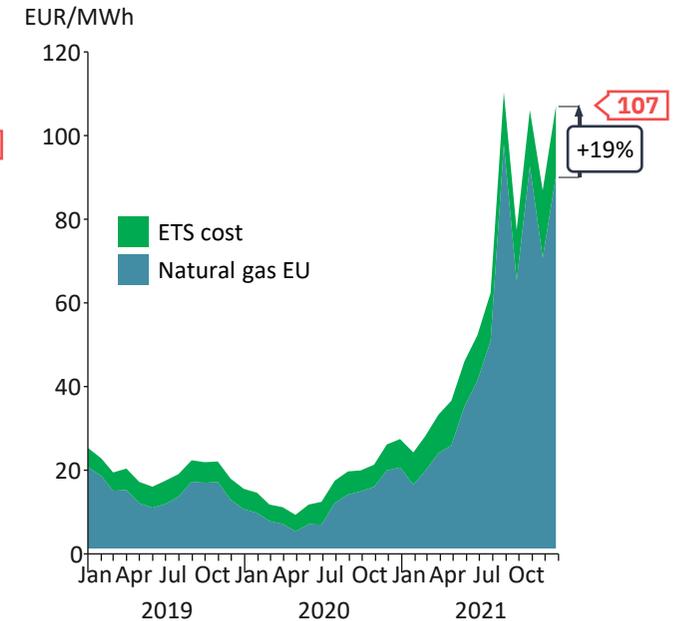
## Price for metallurgical coking coal<sup>1</sup>

Price for coking coal used in metallurgical industry. Included EU CO2 emission cost.



## Price for natural gas in EU for heating<sup>2</sup>

Price for natural gas in EU first day every month. Included EU CO2 emission cost.



17 <sup>1</sup> S&P Global Platts 2022, >3 tonnes CO2 is emitted from 1 ton carbon;  
<sup>2</sup> Eurostat, 200 g CO2/kWh natural gas for energy (>400 g CO2/kWh for electricity production)

# THE 50,000-TONNES PROJECT

Equivalent to 5x initial production capacity at Follum project and **EUR 85-100 million** worth of Vow technology  
Feeding a large European non-ferrous metal producer, LOI announced February 2, 2022

## Sustainable feedstock

- Forestry wood mass
- Biomass waste streams
- Wood materials



**50,000 tonnes**

CO<sub>2</sub> neutral biocarbon,  
replacing the equivalent of

**EUR 37 million**

of fossil coking coke

**300 GWh**

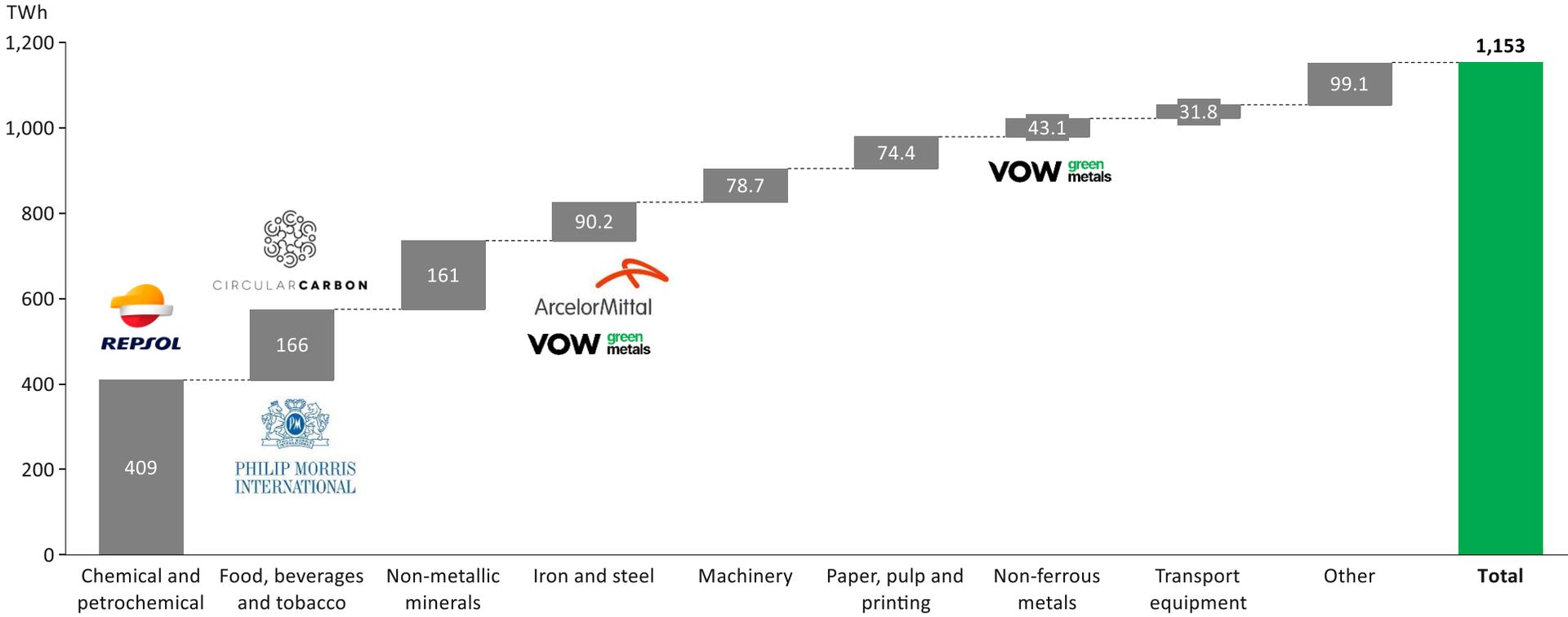
CO<sub>2</sub> neutral syngas,  
replacing the equivalent of

**EUR 32 million**

in fossil natural gas

# INDUSTRY USE MORE THAN 1,000 TWH NATURAL GAS TODAY

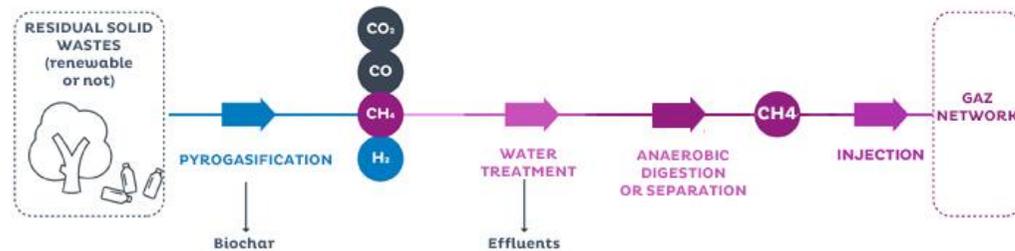
Pyrolysis gas is becoming available as a solution for the industry



Source: Eurostat - Supply, transformation and consumption of gas, EU 2019, 279 kWh/GJ

# UNLOCKING A NEW MARKET FOR PYROGAS

Qualifying pyrogas for the European gas grid



**GRTgaz**

Europe's second largest gas distributor

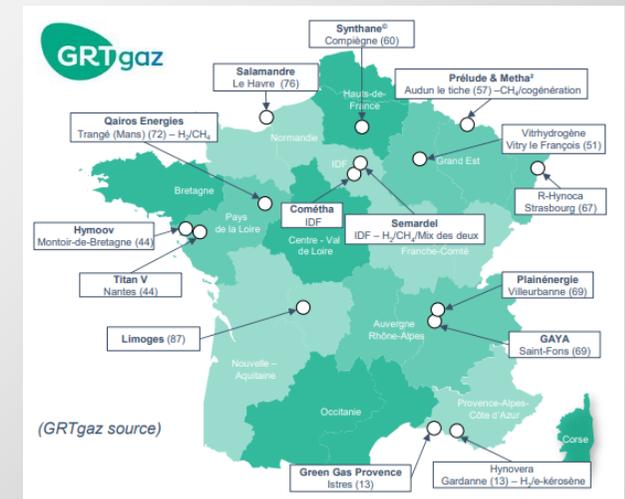
“Pyrogasification for injection has reached a level of technological maturity that means we can envisage the construction of the first industrial facilities in France from 2023.”

“By 2030, the network operators’ forecast assessment based on the goals set out in the regional plans shows that pyrogasification could represent 6 TWh of injected gas per year, i.e. up to 1 million tonnes of CO<sub>2</sub> avoided.”

“This technology of the future will thus contribute to achieving 100% renewable or low-carbon gas consumption in France by 2050.”

Overview of pyrogasification for injection in France

More than ten commercial projects and gas production demonstrators in France have already been made public.



# VOW IN THE CARBON ECONOMY

Powerhouse for **decarbonising** industrial process and energy production

Powerhouse for **carbon recycling** and enrichment

Powerhouse for **carbon sequestration**

## Renewable feedstock

- › Forestry wood mass
- › Waste wood
- › Biowaste
- › Biogenic waste streams

## Advanced circular carbon material

- › Biocoal as reduction agent (steel industry)
- › Graphite for batteries
- › Carbon black for industry
- › Soil enrichment (biochar)

## Climate neutral energy

- › Syngas for onsite energy production
- › Renewable Methane for the grid
- › Syngas to chemicals

# GAINING SPEED

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- › 2021 in brief: Delivered solid operational performance and significant value creation through the successful launch of Vow Green Metals
- › Record high order backlog provides good visibility for 2022. Revenues estimated to nearly double
- › Cruise is bouncing back as cruise operators continue to renew and upgrade their fleets, and demand for aftersales continues to increase
- › Ongoing investments as response to growing demand for sustainable and advanced carbon products, and climate neutral energy



**SECOND HALF AND  
FULL YEAR 2021**

**VOW**