

Powered by waste

Pareto Securities Power & Renewable Energy Conference

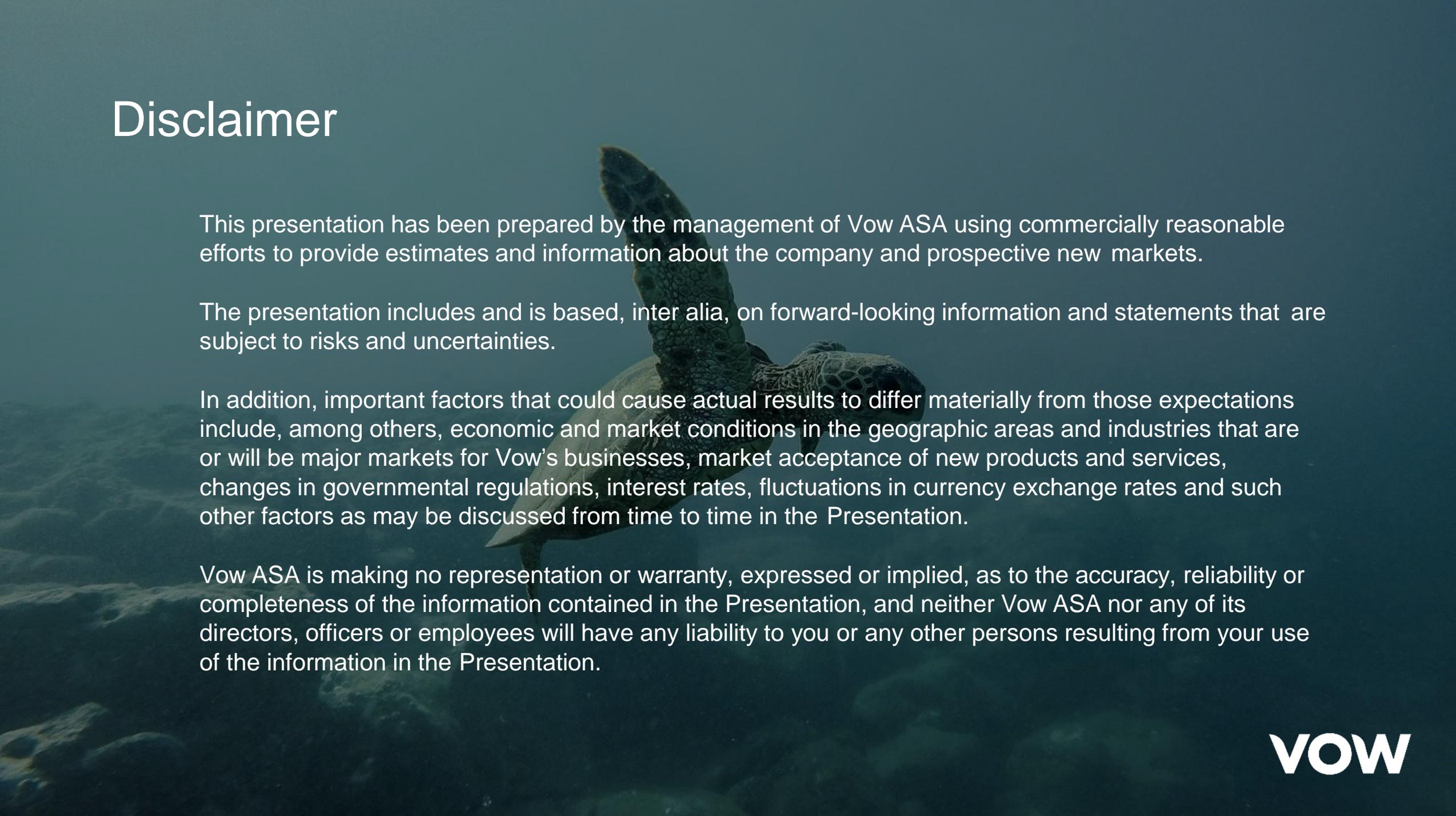
Oslo

16 January 2020

VOW



Disclaimer

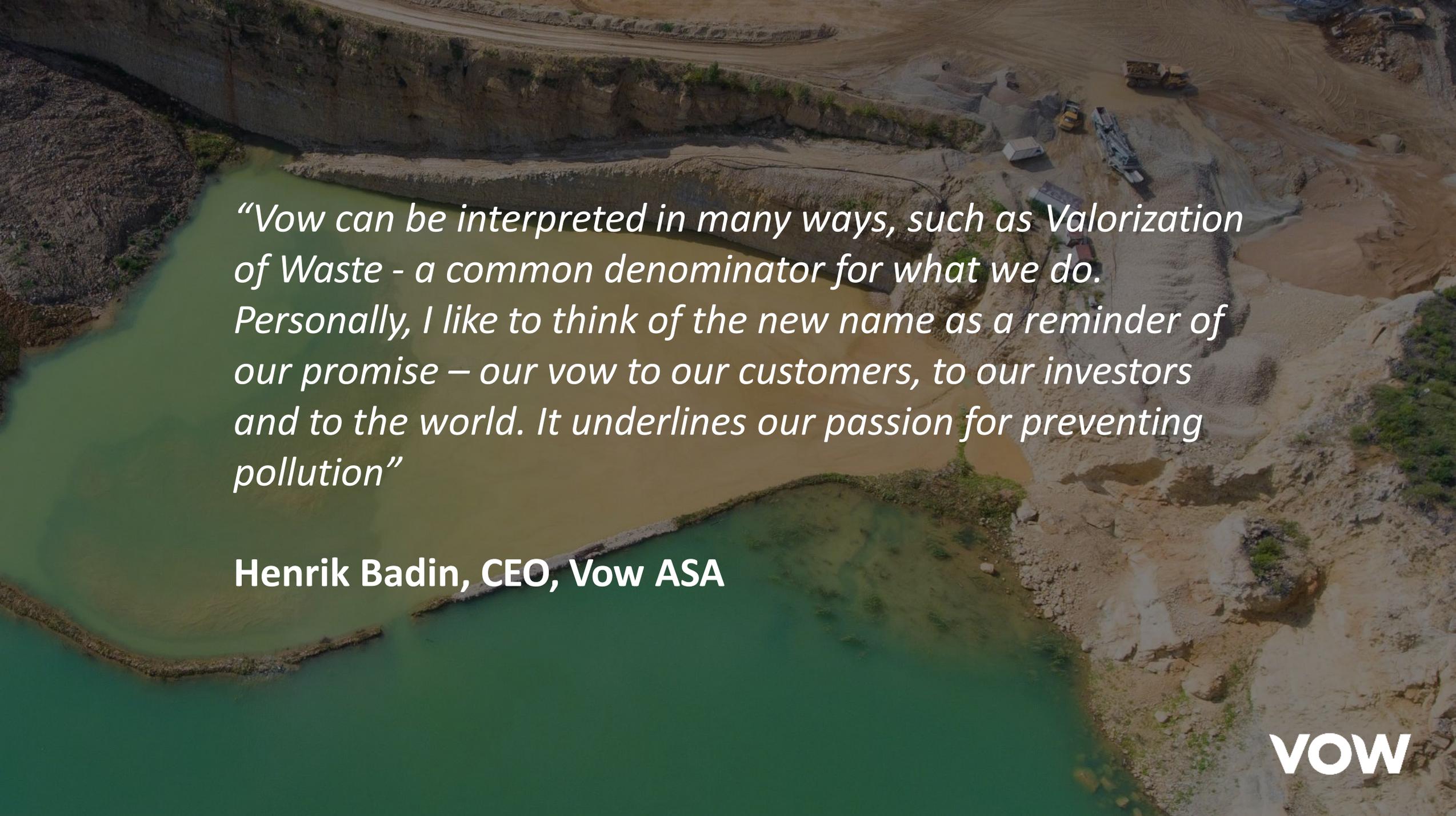


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An aerial photograph of an industrial site, likely a quarry or processing plant. In the foreground, there is a large, irregularly shaped body of water with a greenish tint. The water is bordered by a concrete or stone wall. To the right of the water, there is a large area of light-colored, sandy or silty material, possibly a waste pile or a processing area. Several pieces of heavy machinery, including a yellow truck and a blue truck, are visible in this area. In the background, there is a dirt road and a concrete wall. The overall scene suggests a large-scale industrial operation.

“Vow can be interpreted in many ways, such as Valorization of Waste - a common denominator for what we do. Personally, I like to think of the new name as a reminder of our promise – our vow to our customers, to our investors and to the world. It underlines our passion for preventing pollution”

Henrik Badin, CEO, Vow ASA

VOW

Vow at a glance

VOW
Solutions

Wastewater
purification and
organic waste
processing

Production
of biogenic
materials and fuels
(renewables)

Valorization of non
recyclable
plastic and polymers

Electrical high
temperature
processing and
advanced pyrolysis

- World leading technology and solutions that brings an end to waste, stops pollution and enhances sustainable circular economy
- Customers in cruise, aquaculture and a wide range of land-based industries
- Headquartered in Norway, with subsidiaries in US, France and Poland
- Listed on the Oslo Stock Exchange since 2014 under ticker VOW
- Revenues of NOK 430 million in 2018



VOW

The VOW logo graphic consists of four overlapping circles. The top circle is teal and features a sea turtle swimming. The middle-left circle is orange and shows a cruise ship at sunset. The middle-right circle is green and shows a landscape with a green pond. The bottom-right circle is light blue. The bottom-left circle is a solid light brown color.

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Scanship

Scanship Americas
Scanship Poland

Etia

Ecotechnologies

Ascodero Robotics

VOW

Key investment highlights

- Attractive market opportunities driven by multiple global mega trends
- Record-high order backlog of 126 systems for delivery 2020-2026
- 403 systems installed, generating recurring life cycle revenues
- Proven technology and scalable delivery model
- Strategic acquisition of technology and access to new markets in 2019
- Solid track-record of profitable growth
- Experienced management team, committed with large ownership



Solid client base with long term partnership in the Cruise Industry



leading position with 253 systems in operation and 119 systems on order

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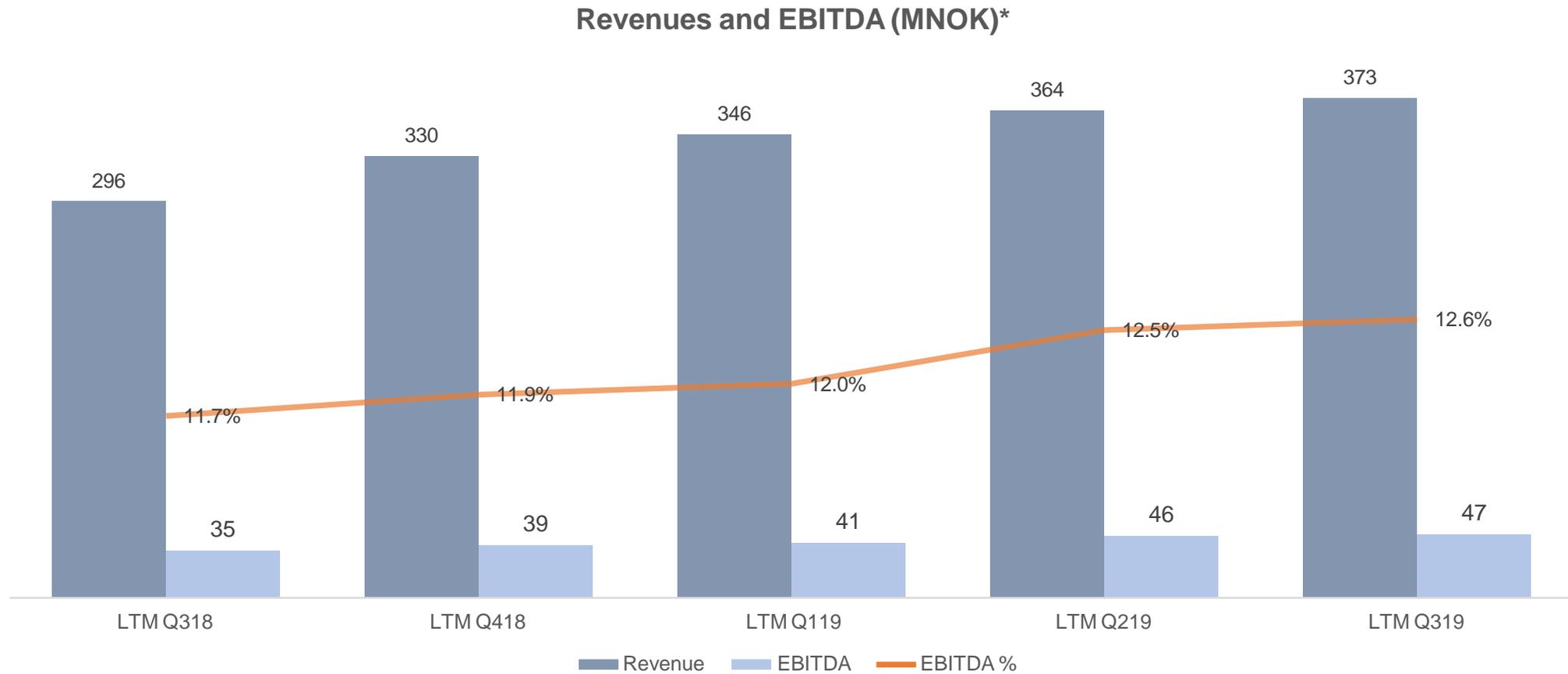
Solid client base in the land based Industry



leading position with 150 systems in operation and 7 systems on order

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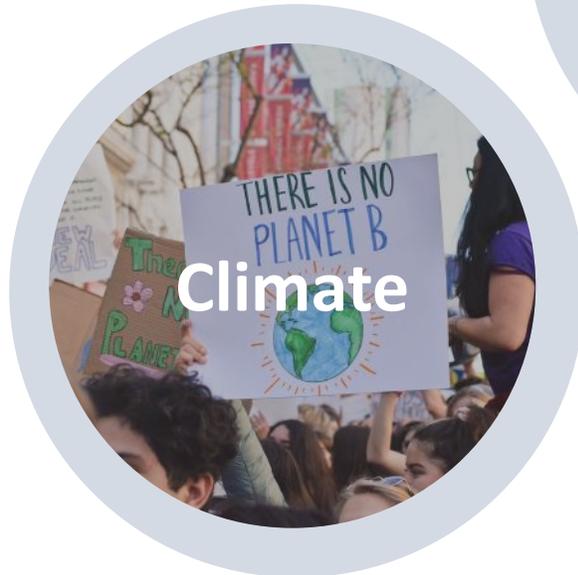
Profitable growth



*All numbers excluding ETIA



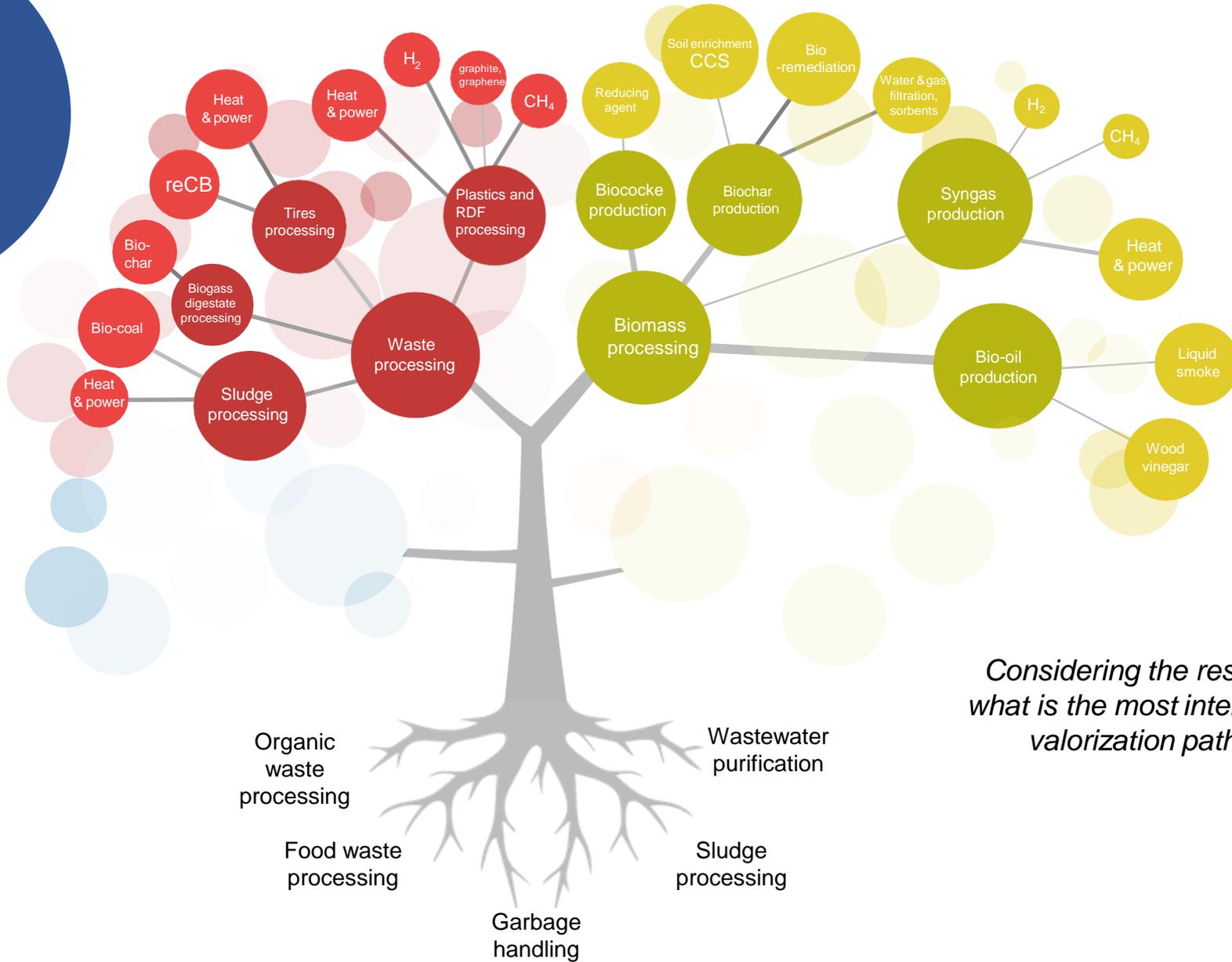
Global megatrends



Increasing carbon tax is a market driver



We create value from biomass and waste



Considering the residue, what is the most interesting valorization path?

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Solutions

Wastewater purification
and organic waste
processing

Production of
biogenic
materials and fuels
(renewables)

Valorization of non
recyclable
plastic and polymers

Electrical high
temperature
processing and
advanced pyrolysis

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Markets

Biogas and
Methane

Cruise

Metallurgy

Minerals

Plastic &
Composites

End-of-life
tires

Hydrogen

Power to heat

Waste

Sustainable
Agriculture

Aquaculture

Food

European biogas market

- Industry growth from current from 16.000 plants in 2019 to 24.000 in 2025, driven by EU renewable content target in gas grid (2030-32% and 2050-100%)
- Strong drivers for Vow technology in place to enable larger capacity, increased energy production and digestate valorisation
- Digestate disposal cost reported to give 5-8% profitability loss for plants, with increasing concerns around plastic content
- Scanship in high profile waste valorization project at Lindum AS in Norway with VEAS, SINTEF and NGI



Metallurgical industry

- ETIA delivers solutions to produce biocoke to replace fossil coal as reducing agent in metallurgic industry
- ETIA delivered pilot plant to Envigas in 2017, and will be delivering first large-scale plant in 1Q2020
- Envigas to built, own and operate advanced pyrolysis plants (SPV) to convert forestry residues to biocoke and energy
- Industry produces 1.7 billion tons of steel, consuming 1 billion tons of fossil coke, emitting up to 10% of global CO2 emissions
- Cost of metal will be driven by tax on CO2



Valorisation of non recyclable plastic and polymers

- ETIA in a 3-year PlasticHyC project in France awarded by CITEO, leader of circular economy initiatives in France collecting tax on all plastic packaging (0.35€/kg)
- Objective in project to demonstrate ultra-high temperature pyrolysis for the exploitation of plastic waste in the forms of hydrogen (fossil free energy) and pyrocarbon (graphite and graphene)
- Project cooperation with Symevad, a large waste-management company in Northern France, and Proviridis, a company specializing in the implementation of multi-energy stations and hydrogen



Biomass to
fuels and
biogenic
materials

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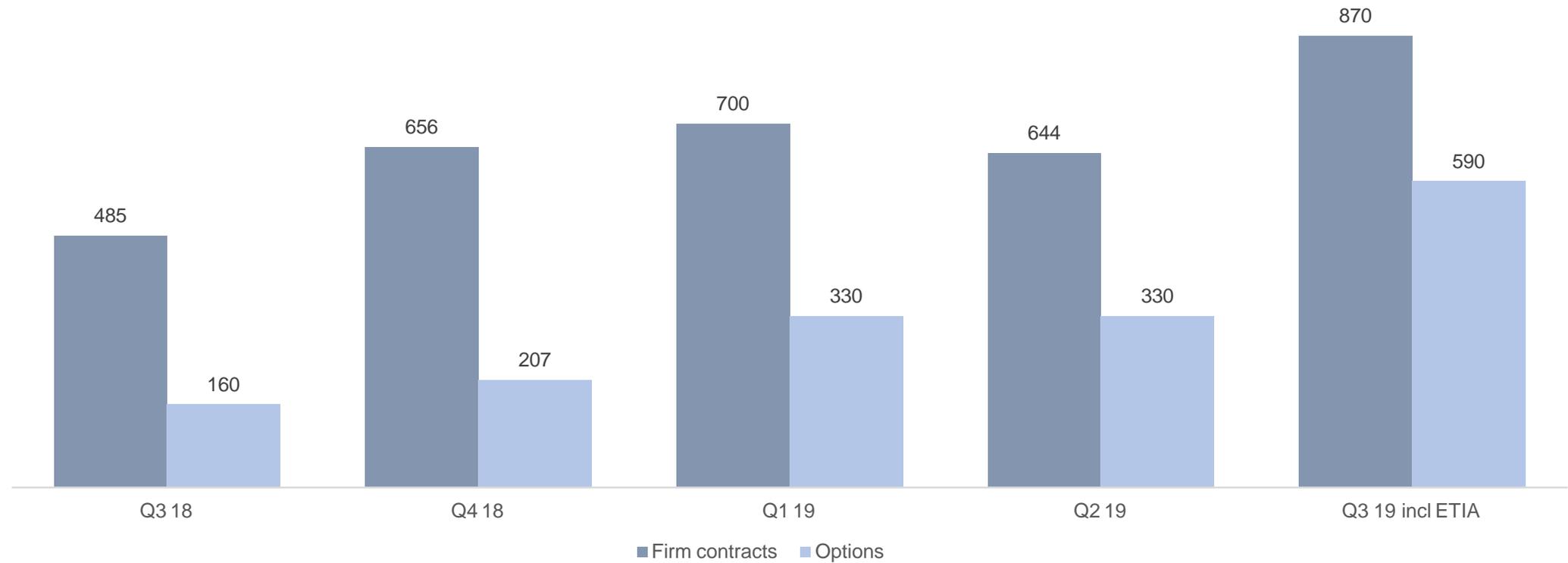
Plastic to
electricity



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Record-high order backlog

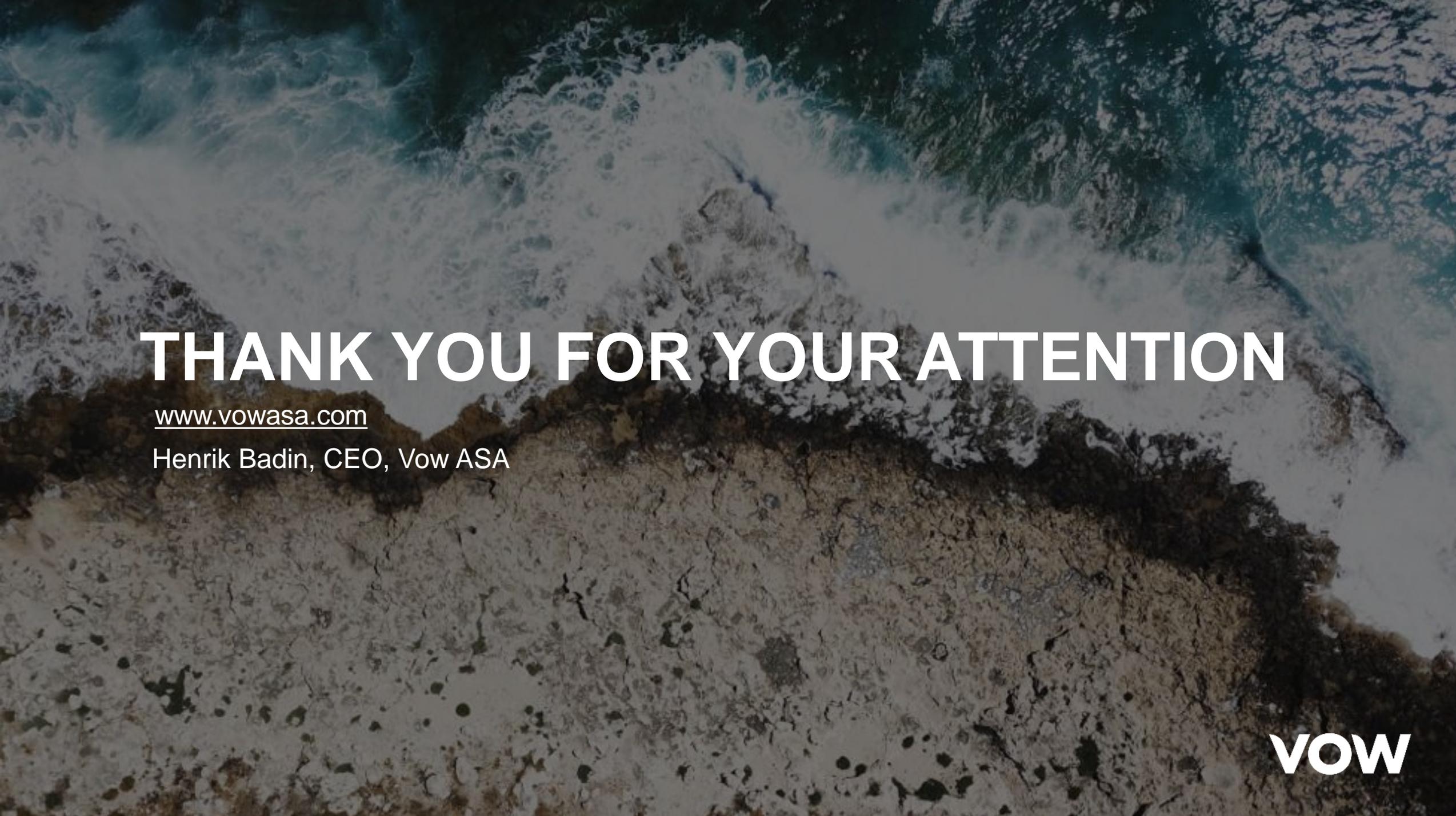
Backlog firm contracts & options (MNOK)



Concluding remarks

- Attractive market opportunities
- Relevant offering to meet global mega trends
- Large installed base and record-high order backlog
- Proven technology and scalable delivery model
- Solid track-record of profitable growth





THANK YOU FOR YOUR ATTENTION

www.vowasa.com

Henrik Badin, CEO, Vow ASA

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