VON green metals

Building a BioCarbon and Bioenergy industry

H1 2022

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About Vow Green Metals



Financials

Market drivers

3

1







We **recycle** biomass waste streams into:

BioCarbon as a reduction agent for the metallurgical industry

Climate neutral gas to replace fossil energy sources



About VGM

- We build, own and operate BioCarbon production plants at an industrial scale
- We will recycle waste, producing BioCarbon for metal production and climate neutral gas for energy intensive industries
- Very competent team with extensive experience from process industry
- Vow supporting with project and technology competence from 230+ people
- Building our first BioCarbon production plant at Follum, Norway
- Ownership of the industrial BioCarbon factory module, allowing for rapid growth







About Vow Green Metals





Market drivers







Key figures

	Unaudited	Unaudited	Audited
(Amounts in NOK)	1H-2022	1H-2021	FY 2021
Statement of Income			
EBITDA	(6,694,048)	(324,315)	(10,687,829)
EBIT	(6,711,036)	(324,315)	(10,692,130)
Profit for the period	(6,842,906)	(324,315)	(10,728,446)
Balance sheet			
Total non-current assets	60,651,870	968,859	74,856,917
Total current assets	76,839,145	149,994,129	69,441,115
Total assets	137,491,014	150,962,988	144,298,032
Total equity	134,320,664	149,675,685	141,163,570
Total non-current liabilities	433,607.25	-	92,979.88
Total current liabilities	2,736,743	1,287,302	3,041,483
Total equity and liabilities	137,491,014	150,962,988	144,298,032
Cashflow statement			
Result before income tax	(6,842,906)	(324,315)	(10,728,446)
Net cash flow from operating activities	212,329	1,287,302	3,042,562
Net cash flow from investing activities	(23,821,495)	(968,859)	(74,718,916)
Net cash flow from financing activities	38,357,477	149,970,000	150,507,577
Net change in cash and cash equivalents	7,905,405	149,964,129	68,102,777
Cash and cash equivalents at start of period	68,132,777	30,000	30,000
Cash and cash equivalents at end of period	76,038,182	149,994,129	68,132,777

Financial review 1st half 2022

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- EBITDA for 1st half 2022 negative of 6.7 MNOK
 - Employee expenses
 - Other operating expenses
 - Follum related expenses capitalised
- Total assets of 137 MNOK, of which
 - 58 MNOK is process equipment under construction for the Follum plant, net of Enova grant drawdown
 - 76 MNOK cash
- Fully financed for phase 1 at Follum
 - Cash and remaining 42.6 MNOK grant from Enova







2

About Vow Green Metals

Financials







Global trends backing the need for change





Significant energy scarcity and increasing prices in Europe

EU Natural Gas prices

Dutch TTF Natural Gas Futures



Electricity prices in Germany



Average monthly electricity wholesale price in Germany

Cost of CO₂ emissions



- Natural gas prices are back at >200 EUR/MWh spike to >220 EUR/MWh when Russia invaded Ukraine
 - $\,\circ\,$ We saw a spike when Russia invaded Ukraine, before stabalizing at around 100 EUR/MWh
 - $\circ~$ Climbed from 100 EUR/MWh to close to 250 during summer
- Cost of CO2 emissions had a drop from record high in February, but now reached new all time high 98 EUR/ton
- Electricity prices are increasing and the demand is expected to increase as several sectors are in a transition from fossil fuel to sustainable energy sources







2

About Vow Green Metals

Financials

3

4

Market drivers



Status Follum

Phase 1: 10,000 ton of biocarbon

- Equipment for a plant capable of producing 10,000-ton biocarbon annually ordered in October 2021
- Funded by equity and Enova grant
- Partnerships and LOI's in place
 - Biocarbon off-taker (Elkem)
 - Energy off-taker (Vardar)
 - Feedstock suppliers (Lindum and Viken Skog)



Exploring opportunities for expansion

- Since November 2021 when Vow Green Metals announced its plans to build Europe's largest biocarbon production plant at Follum, other companies have signaled interest to becoming part of this larger industrial complex
 - In March 2022, Billerud Korsnäs and Viken Skog in a joint venture, has announced plans to establish a BCTMP production plant at the site
- For Vow Green Metals this is an opportunity to:
 - At least double production capacity at its plant
 - Serve more customers in their efforts to decarbonise
 - Secure an energy efficient set up at the site
 - Significantly improve economy of scale
- Studies and analysis are ongoing, aimed at developing the best concept possible for Vow Green Metals' plant
 - This could impact the overall project scope, and result in a more efficient plant



International expansion with large scale factories

Recent, current and ongoing concept studies totalling 400,000 ton biocarbon

Norway

Sawmill company

- Potential: 30,000 ton biocarbon
- Concept study Q3 in 2022

Chemical processing company

- Potential: 25,000 ton biocarbon
- Concept study Q4 2022

Industrial park

- Potential: 20,000 ton
- Concept study Q4 2022 identifying partners and thermal energy demand

Central Europe

Paper company

- Replacing fossil energy sources
- Potential: 50,000 ton biocarbon
- Concept study due Q4

Building materials company

- Replacing fossil energy sources on several sites in Europe
- Potential: 30,000 ton biocarbon
- Concept study due Q4 2022



Nordics

Metallurgical company

- Potential: 50,000 ton biocarbon
- Feasibility study delivered Q2 2022

Metallurgical company

- Potential: 50,000 ton biocarbon
- Concept study delivered Q2 2022

Pulp and Paper company

- Looking for a partner capable of processing >500,000 ton feedstock annually
- Concept study delivered in August 2022

North America

Bioenergy company

- Potential: 20,000 ton biocarbon
- Concept study due Q4 2022



Expansion and efficiency

- Efficient set up for building up a new industry
 - Currently working on concept studies with a combined 400.000 ton biocarbon potential
 - Collaboration with Vow
- Expanding into Europe
 - Focusing on large sites with high energy efficiency
 - Reducing dependency of external energy sources makes Vow Green Metals a frontrunner in the need for sustainable materials and energy

Europe is ramping up green energy investments

- EU has initiated RePower EU to speed up the green energy transition
- Still we experience that authorities and regulators are not being prepared to follow through on EU's ambitions



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