

EQUITY RESEARCH

FRANÇAISE DE L'ENERGIE ANALYSIS FOCUS

RITY

TP 70.0€ (vs 78.2€) Up/Downside: 131%

Strategy Overflowing With Energy

The group's transformation towards a low-carbon, multi-country and multi-energy platform has not been fully recognized, while its growth prospects are improving, favoured by high operational agility and a robust financial situation. Structuring the development model around multiple growth drivers and powerful operational levers constitutes the key to achieving the 2030 objectives.

Clear 2030 roadmap: objectives within reach, secured funding

The group's growth should resume in FY2025-2026, before accelerating from FY2026-2027 under the effect of the ramp up and diversification of its energy sources (bio-LNG, bio-CO2, solar PV and decarbonized hydrogen), and high margins to be supported by maintaining high operational efficiency.

Consequently, the 2030 objectives announced on May 30th on the occasion of the Capital Markets Day (revenues €m175, EBITDA €m85) seem realistic to us, especially since the group relies on a high-quality portfolio of assets, an extensive and diversified pipeline by business and by country, solid customer references and secure financing.

Value creation should increase over time

The same business model that has been proven in mine gas - enabling recurring cash generation and a step-by-step scale-up - will be replicated for the group's multiple diversifications. Our modelling of each growth driver at FDE reveals an overall ROCE greater than 20%, which highlights strong value creation over time.

Particularly attractive valuation - The Stock is in our 2024 Top Pick list

Although our reasoning is cautious, our expectations are generally in line with the company's 2030 guidance. We now value the group by DCF at ϵ 70/share (vs. ϵ 78.2 previously). This new TP takes into account positive impacts ($+\epsilon$ 18.3 due to the increase in our forecasts and $+\epsilon$ 3 linked to an upward revision of our infinite growth rate assumption) and negative impacts ($-\epsilon$ 21.9 due to the increase in WACC to 10.9% vs. 9.5% with the execution risks linked to the simultaneous launch of several activities, and $-\epsilon$ 7.1 by taking into account minority interests).

The stock, which offers an upside potential of more than 100%, is trading at EV/EBITDA multiples of 6.8x for FY 2026. We reiterate our BUY rating.

TP ICAP Midcap Estimates	06/23	06/24e	06/25e	06/26e
Sales (m €)	39.2	32.2	34.5	79-4
Current Op Inc (m ϵ)	24.8	15.9	15.6	33.1
Current op. Margin (%)	63.3	49.3	45.2	41.6
EPS (€)	2.45	2.14	2.04	4.45
DPS (€)	0.00	0.00	0.00	0.00
Yield (%)	0.0	0.0	0.0	0.0
FCF (m €)	5.1	2.6	-7.9	-83.4

Valuation Ratio	06/24e	06/25e	06/26e
EV/Sales	6.1	6.1	3.7
EV/EBITDA	10.3	10.4	6.8
EV/EBIT	12.3	13.6	9.0
PE	14.2	14.8	6.8
Source: TPICAP Midcap			

Research partially paid by the Issuer

Key data	
Price (€)	30.3
Industry	Utilities
Ticker	FDE-FR
Shares Out (m)	5.183
Market Cap (m ϵ)	157.0
Next event	CA FY 2023-24: : 23 07 24

Source: FactSet

Ownership (%)

Julien Moulin	15.3
Autres (>3% du capital)	25.0
Auto-contrôle	2.7
Free float	57.0

Source: TPICAP Midcap estimates

EPS (€)	06/24e	06/25e	06/26e
Estimates	2.14	2.04	4.45
Change vs previous estimates (%)	0.71	-38.52	-21.10

Source: TPICAP Midcap estimates

Performance (%)	1D	1M	YTD	
Price Perf	-3.8	-19.1	-40.8	
Rel CAC Mid&Small	0.2	-10.1	-39.8	



Source: FactSet

Consensus FactSet - Analysts:	4 06/24e	06/25e	06/26e
Sales	35.7	45.7	69.6
EBIT	16.5	20.2	34.8
Net income	10.0	13.5	24.1





STRATEGY OVERFLOWING WITH ENERGY	1
DESCRIPTION	3
SWOT ANALYSIS	3
THE COMPANY IN 3 PICTURES	4
FINANCIAL DATA	22
DISCLAIMER	23



Description

FDE combines a negative carbon footprint (3.5 million tons of CO2 equivalent avoided annually) with profitable growth across all its activities by: 1) establishing short supply chains for the valorization of gas from former mining basins in Hauts-de-France and Wallonia; 2) developing other low-carbon energy production projects such as solar, solar thermal, liquefied biogas, Bio-CO2, and potentially hydrogen in the future. With such a mix of activities, FDE positions itself at the heart of the ecological transition. FDE currently operates 15 cogeneration plants in France and Belgium with an installed capacity of 22.5 MW; 2 heat production sites, 2 gas injection sites, and 2 solar electricity production sites.

SWOT Analysis

Strengths

- The only French energy producer with a negative carbon footprint and a diversified portfolio of energy solutions from mine gas, Lorraine gas and solar energy
- Monopoly in the exploitation of mine gas in France thanks to the technical and financial skills recognised by the French state (which are reflected in the extension of concessions)
- Visibility and recurrence of the offering high revenue resilience
- No counterparty risk: diversified and solid customer base, large-scale partnerships

Weaknesses

- Administrative delays in obtaining the concession in Lorraine delaying this activity's implementation
- Lack of peers
- Electricity and gas price volatility

Opportunities

- M&A / International replication of the model
- Production of turquoise hydrogen from coal gas (from the Lorraine reserves).
- Entry into the biogas and bio-CO2 market through industrial synergies with Cryo Pur, supported by a strong pipeline (28 projects and 160 prospects)
- Significant potential for CO2 monetisation: substitution of fossil CO2 by renewable CO2 for industrial and agricultural uses

Threats

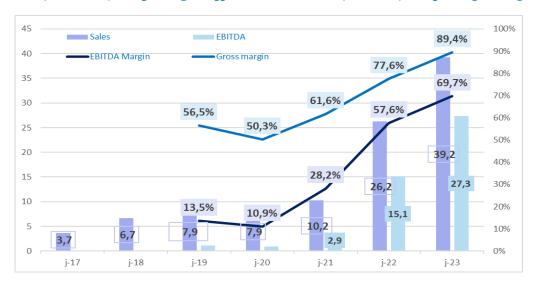
- Delays in processing concession applications not under control
- Competition from other European markets
- Capacity to implement Cryo Pur's extensive pipeline



The company in 3 pictures

CAGR (revenues) 2019-2023: +49%

CAGR (EBITDA) 2019-2023: +125%

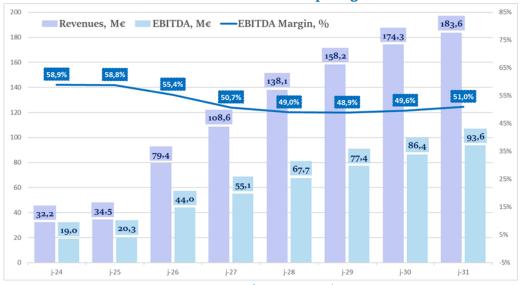


Revenue split by energy sources

CAGR 2024e-2030e = 32.5%



Revenues & EBITDA 2024e-2030e



Source: Company data, TP ICAP estimates



I. Strong foundations to fuel solid growth

1. Emergence of a leader in low-carbon multi-energies

- Since its IPO in 2016, the group has evolved from a player specializing in a single energy source (gas production) to a true low-carbon multi-energy platform.
- Its range of solutions now includes mine gas, bio-LNG, bio-CO2, electricity, heat and low-carbon hydrogen, while extending
 to several countries, including France, Belgium, Norway and Bosnia.
- And each of these activities is expected to be a powerful growth engine with high margins.

2. The strength of the model

- FDE has consolidated its managerial and technical skills as well as its operational agility and financial solidity to provide itself with **growth potential in low-carbon energies**.
- Value creation amplifying over time: the same business model that has proven itself characterized by a high level ROCE (>20%), a recurring high FCF generation and a rapid Pay-Back (2 to 5 years) will be replicated across all of its growth drivers. ROCE and IRR outperform WACC, highlighting strong value creation.
- These technology choices are characterized by relatively **short time-to-market cycles**, which range from 1-2 years (mine gas) and 3-5 years (solar, bio-gas) to 3-6 years (hydrogen).
- The impeccable track record of FDE's management in handling SPV projects and its intimate knowledge of the market and financing mechanisms are appreciable assets.
- In addition, all its activities, some of which have negative CO2 emissions, are well aligned with any ESG
 considerations. Also, the valorisation of local resources in short circuits provides a response to the problem of energy
 independence.

3. Ability to readjust the business model to future growth drivers

- The virtuous model is adjustable both on the pace of growth and on financing.
- This ability to replicate its model in different regions with controlled operational costs and increased efficiency could translate into sustained revenue growth and improved margins.
- By creating and penetrating new markets, particularly in the production of Bio-LNG and Bio-CO2, and in low-carbon hydrogen, as well as new countries (Norway, Bosnia), FDE is diversifying its revenue sources and reduces its overall risk.
- This geographic and sectoral diversification strategy should help stabilize cash flows and strengthen the group's financial resilience in the long term.
- Also, the common feature of all growth drivers is the standardisation and industrialisation of processes.



4. How does FDE manage its Simultaneously Launched Projects, With Much Higher Initial Capex Compared to Cogeneration?

It's not at all the same scale.

For cogeneration, the costs were between \in 1.5m and \in 2m, while future projects have capex per site ranging from \in 17m (carbon-free gas in Lorraine; a doublet) to \in 35m (for average sites of production of Bio-LNG and Bio-CO2 in Norway) and \in 37m (for the production of green hydrogen via electrolysis).

All growth drivers are also secured by top-tier clients and prospects over the long term.

- The group applies the same financing mechanism for all these projects, only the proportions vary between debt, equity and subsidies depending on the country and the project.
- The group recently issued a third tranche of Green Bonds with Rothschild for €6om (rate between 5.5% and 6%, that would drop to 5.5% once the threshold of €35m in EBITDA is reached), which allows it to advance the costs associated with projects, in particular those of Bio-LNG/Bio-CO2 in Norway, while awaiting the arrival of subsidies and senior debt.
- As a reminder, each site will be managed by an SPV.
- The Stavanger project is launched and FDE is discussing with international and local banks in Norway, who have a strong appetite to finance this type of project.

5. A newsflow auguring good prospects

- Bio-LNG and bio-CO2 projects in Norway: The group submitted the grant applications on 11th April. We understand that a response regarding the amount of subsidies could come shortly.
- Several announcements related to natural hydrogen in Lorraine:
 - o Regalor findings on research programs
 - Obtaining the exploration permit for natural hydrogen: FDE submitted its application in March 2023; the group won the competitive bidding, and therefore the next step would be publication in the official journal
 - Submission of a grant application file to the State for an amount of €8m (out of €12m)
 - We estimate that among the possible scenarios, the creation of an industrial consortium on the permit could be one of them, with FDE keeping 100% of the rights, in order to accelerate developments
- the steps taken to obtain **compensation for the damage suffered from GRT Gaz**: revenue lost following injection constraints into the network. We estimate it at €5-10m
- Compensation from the State linked to the delay in obtaining the Bleu Lorraine concession
- In the short-term, we expect a sharp decline in FY 2023-2024 revenue, penalized by the inability to inject gas into the GRT Gaz network, the unfavourable evolution of energy prices and administrative delays (impacting the installation of new cogeneration).

We also estimate that among the possible scenarios, a **spin-off**, **accompanied by capital increase or acquisition of stake of strategic partners, could be another**, thus providing a valuation. Notably, all the group's activities lend themselves perfectly to spin-offs.

Furthermore, we do not rule out the possibility of **dividend distribution on the mine gas activity**, particularly if we project its spin-off.



II. Renewed Growth prospects supported by robust margins

1. Objectives at a glance

During its CDM organized in Paris (end of May), management unveiled a 2030 roadmap:

- Revenue > €175m,
- EBITDA > €85m,
- 20 Mt/year of CO2 emissions avoided.

As a reminder, the intermediate stage is based on a 2026 road plan: revenue >€100m, EBITDA > €50m, >10 Mt/year of CO2 emissions avoided.

2. Some details on growth drivers

Management clearly expressed strong confidence in its ability to achieve its 2030 targets. In detail, these are broken down by type of energy as follows:

• **Electricity:** 3.6x increase in operating capacity to 300 MW in 5 countries.

This objective is 84% secured by a solid pipeline of cogeneration projects (21, or 31.5 MW, valued in OA leading to an estimated revenue of €18.9m) and PV power plants (123 MWp; ~€12m of revenue) distributed between France (48 MWp), Belgium (17 MWp), Norway (36 MWp), Bosnia (22 MWp).

We understand that international diversification could end in Poland as soon as the regulatory context becomes clear.

Gas: 4.3x increase in installed capacity to 950 GWh in 3 countries.

To achieve this FDE has a pipeline of 9 projects (bio-LNG and bio-CO₂), whose cumulative capacity makes it possible to secure 74% of the objective. We associate this with a cumulative revenue of ~€100m.

• **Low-carbon hydrogen:** the group is targeting production of 825 GWh in 3 countries, secured in particular by the project pipeline (570 GWh/a in Lorraine on 3 sites with CO2 injection and 255 GWh in Norway).



3. What assumptions are considered in our scenario?

We only took into account projects at an advanced stage, i.e. those for which either land or subsidies have already been communicated by the company. Therefore, the elements taken into account in our modelling are the following:

a) **Cogeneration** (mine gas: France and Belgium): we understand that the new machines will be valued in feed-in tariff at a price of €80-85 /MWh on the floor, which would allow the group to continue to generate high margins (its breakeven point being around €20/MWh).

We have retained our modeling on this activity, which involves 26 cogenerations in operation at the end of FY 2025-26 and 46 cogenerations at the end of FY 2029-2030.

The company has a pipeline of 48 cogeneration units to be deployed by the end of 2027, including 2 in Belgium. This represents an additional cumulative installed capacity of 72 MW (refer to the table).

With the AREHN now at €70/MWh, it seems prudent to us to take an electricity sales price of around €80/MWh over the forecast period.

	installed capacity, MW (nbr CHPs)											
	site	2024	2025	2026	2027	2028	2029					
France	ROUVIGNIES		4,5MW (3CHPs)									
France	ANGRES	3MW (2CHPs)										
France France	ESTEVELLES NOE-1			4,5MW (3CHPs) 1.5MW (1CHPs)								
France	WAZIERS				3MW (2CHPs)							
France	ESCAUDAIN				4.5MW (3CHPs)							
France	HULLUCH				3MW (2CHPs)							
France	ANZIN				3MW (2CHPs)							
France	undisclosed sites			6MW (4CHPs)	13.5MW (9CHPs)	13.5MW (9CHPs)	15MW (10CHPs)					
Belgium	PETRIA			3MW (2CHPs)								
total i	nstalled capacity, MW	3	4.5	15	27	13.5	15					
	nbr CHPs	2	3	10	18	9	10					
nbr CHPs	end of FY	17	20	30	48	57	67					
cumulated installed capacity, MW		25.5	30	45	72	85.5	100.5					
				-		Sour	ce: Company, TPICAP					

Our forecasts for revenue and number of installed cogenerations (more conservative than those of the company) are summarized in the following table:

	06/21	06/22	06/23	06/24	06/25	06/26	06/27	06/28	06/29	06/30	06/31	06/32
Nombre de jours	365	365	365	366	365	365	365	366	365	365	365	366
installed capacity	15,0	19,5	22,5	22,5	25,5	36,0	54,0	61,5	69,0	76,5	84,0	91,5
nbr cogenerations	10	13	15	15	17	24	31	36	41	46	51	56
o/w France	8	8	10	10	12	18	24	28	32	36	40	44
feed in tarif	8	8	4	4	6	12	18	22	26	30	34	38
PPA	-	-	6	6	6	6	6	6	6	6	6	6
o/w Belgium	2	5	5	5	5	6	7	8	9	10	11	12
revenues France	5,6	6,0	13,9	12,7	11,3	14,8	21,0	25,5	29,3	33,1	37,0	40,9
revenues Belgium	1,0	6,9	11,0	8,3	6,0	5,4	6,5	7,0	8,1	9,3	10,3	11,3
total revenues	6,5	12,9	24,9	21,0	17,3	20,2	27,5	32,5	37,4	42,5	47,3	52,2



b) **Gas at the Avion site:** Given the setbacks with GRT Gaz that penalized the 2023 and 2024 fiscal years ending on 30th June, we project production capacities of 220 GWh per year, whereas the site could rise to beyond 250 GWh per year, as was the case in 2022.

	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Revenues, mEUR	3.5	11.8	12.3	8.9	8.1	7.7	7.6	7.5	7.5	7.5	7.5	7.5
average price EUR/MWh	14.7	46.7	56.2	40.5	37.0	35.0	34.5	34.2	34.2	34.2	34.2	34.2
gas production, GWh	240.3	252.7	219.7	220	220	220	220	220	220	220	220	220

c) **Solar:** our forecasts include the contribution of the PV plant in France (€1.6m/year of revenue), a plant in Norway (€0.6m/year) and a plant in Bosnia (45 MW; €4.5m/year of revenue; price €105/Mwh). Note that the group has a geographically diversified pipeline: 48 MWp in France (COD 2026-2027), 17 MWp in Belgium (COD 2027), 36 MWp in Norway (COD 2025-2027), 22 MWp in Bosnia (COD 2025).

For a solar power plant with an installed capacity of 17 MW, management estimates around ϵ 10m in Capex (85% financed by debt), with electricity sales revenues of at least ϵ 1.6m per year. Opex, including maintenance, amounts to approximately ϵ 0.17m. The time to market would be 36 months, the project IRR at 8% and the NPV ϵ 1 (WACC 8%).

d) Bio-LNG and bio-CO2 (Norway, France)

Of the 9 projects in the pipeline, we only took into account the 3 most advanced projects in Norway (Stavenger, Bergen, Laerdal) with a cumulative production capacity of around 257 GWh. We understand that for these projects the following elements are already secured: inputs (LOI), identified offtakes under discussion and secured land.

The two projects in France are at an advanced stage in terms of authorizations, land, inputs and the methanizer. We understand that the company is in exclusive discussions at this stage nearing finalization, which confirms our choice to include them in the modeling.

The financing of these projects in Norway and France is provided by the Green Bond and senior financing, and should be supplemented by subsidies (in Norway in particular) for which FDE has submitted applications and the final amount of which has not yet been established. As a precaution, we have retained a subsidy rate of 15% for Norwegian projects (i.e. the bottom of the range, knowing that the top of the range could reach 70%) and for projects in France no subsidy. The entry of partners, who would themselves bear certain costs, in French projects, seems entirely possible to us. We have arbitrarily retained the weight of minorities within French projects at 20%.

Cryo Pur is one of the rare players to have demonstrated the effectiveness of its equipment, with two factories sold in 2018 in Northern Ireland and 2022 in Norway. Its first project is located near Stavanger and its size (1750 Normo m3/h of biogas) is 2.5x greater than that of the project developed in Stord (Norway). The plant will be able to produce up to 17 t/d of bioLNG fuel and 31 t/d of liquid bio-CO2 (vs. 8 t/d and 10 t/d at Renovo since 2022).

The setup of this project will take the form of an **SPV financed by grants, debt and equity**. FDE retains the majority of the capital, joining forces for the remaining 20% with the former founder and CEO of Renovo, taking advantage of his expertise and experience (in the management of biogas plants) as well as his local roots (facilitating searching for land, obtaining grants, etc.). We therefore deducted the minority share from our final valuation of the group, based on our DCF of Cryo Pur.

On this site, we assumed a revenue of ϵ_{15} m/year, divided between Bio-LNG (ϵ_{13} m) and Bio-CO2 (ϵ_{2m}); Capex of ϵ_{35} m. The Opex, including inputs ($\epsilon_{3.3}$ m), electricity ($\epsilon_{1.5}$ m) and maintenance ($\epsilon_{1.5}$ m), amount to approximately $\epsilon_{6.3}$ m, to which we have added structural costs (ϵ_{3} % of the revenue).



	juin-23	juin-24	juin-25	juin-26	juin-27	juin-28	juin-29	juin-30	juin-31	juin-32	juin-33	juin-34	juin-35
Sales	Capacity:	COD		41.0		60,1	60.0	6= 0	6	60.7	50.0		76,8
Sales	GWh/year	COD		41,9	57,9	00,1	63,2	65,3	67,5	69,7	72,0	74,4	70,0
STAVENGER - Norway	101	2025		14,4	15,3	15,9	17,0	17,6	18,2	18,8	19,4	20,0	20,7
BERGEN - Norway	101	2026		6,9	15,2	15,7	16,5	17,0	17,6	18,1	18,7	19,4	20,0
LAERDAL - Norway	55	2026		3,7	8,2	8,5	9,0	9,3	9,6	9,9	10,3	10,6	10,9
PROJECT #1 France	65	2025		8,8	9,7	10,0	10,4	10,8	11,1	11,5	11,9	12,3	12,7
PROJECT #2 France	65	2025		8,0	9,7	9,9	10,3	10,6	11,0	11,3	11,7	12,1	12,5
% chg					38,3%	3,5%	3,4%	3,3%	3,2%	3,1%	3,0%	2,9%	2,5%
EBITDA				16,8	24,0	27,0	30,3	33,6	37,1	38,3	39,6	40,9	42,2
EBITDA margin				40,0%	41,5%	45,0%	48,0%	51,5%	55,0%	55,0%	55,0%	55,0%	55,0%
EBIT				3,9	11,2	14,1	17,4	20,6	24,0	25,2	26,4	27,7	29,0
EBIT margin				9,4%	19,3%	23,5%	27,5%	31,6%	35,6%	36,2%	36,7%	37,2%	37,7%
NOPAT				3,0	8,4	10,6	13,0	15,5	18,0	25,2	19,8	20,8	21,7
Depreciation			3,1	12,8	12,9	12,9	13,0	13,0	13,1	13,1	13,2	13,2	13,3
as a % of sales				30,6%	22,2%	21,5%	20,5%	19,9%	19,4%	18,8%	18,3%	17,8%	17,3%
Capex			31,6	99,1	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
STAVENGER - Norway			8,9	20,8									
BERGEN - Norway			6,0	23,8									
LAERDAL - Norway			4,3	17,0									
PROJECT #1 France			5,0	20,0									
PROJECT #2 France			7,5	17,5									
as a % of sales				30,6%	22,2%	21,5%	20,5%	0,8%	0,7%	0,7%	0,7%	0,7%	0,7%
Change in WCR			0,0	3,4	1,6	0,2	0,3	0,2	0,2	0,2	0,2	0,2	0,2
Free cash flows			-28,5	-86,7	19,1	22,8	25,2	27,8	30,4	37,6	32,3	33,2	34,3
Discounted free cash flows			-25,7	-70,3	14,0	15,0	14,9	14,8	14,5	16,2	12,5	11,6	10,8
Sum of discounted FCF	28,30					Risk-free in	terest rate		3,2%			equity	15%
Terminal value	128,47					Equity risk p	premium		7,5%			debt	70%
Enterprise value	156,76					Project risk	premium		3,5%		sub	sidies Norway	15%
Net debt	89,6		26,0	81,6]	Beta			1,45		su	bsidies France	ο%
Equity value	67,2				ı	Return exp	ected on equ	ity	19,2%				
Diluted nbr of shares (m)	5,0					Interest rate	e on debt		6%	Sales	growth rate	to perpetuity	2,5%
						Tax rate			25,0%			Payback	6 years
Valuation per share (EUR)	13,32					WACC			11,1%			Project IRR	20%

Modelling the impact of all projects in the pipeline on valuation (for illustrative purposes)

Given the valuation obtained, we believe that this activity in itself could constitute a good candidate for a spin off.

Also, as we have already written, we do not exclude a possible entry of a strategic partner into the capital of Cryo Pur to accelerate the launch of projects, which would make it possible to indicate a valuation for this activity, currently not taken into account in the stock price.

	juin-23	juin-24	juin-25	juin-26	juin-27	juin-28	juin-29	juin-30	juin-31	juin-32	juin-33	juin-34	juin-35
Sales	Capacity:	COD		45.0		0= .	07.1	117,9	123,6	129,6	105.8		148,9
oales	GWh/year	COD		45,2	71,5	85,1	97,1	117,9	123,0	129,6	135,8	142,2	140,9
STAVENGER - Norway	101	2025		13,8	15,0	16,1	17,2	18,0	18,8	19,7	20,6	21,6	22,6
BERGEN - Norway	101	2026		6,3	15,0	15,8	16,5	17,3	18,1	19,0	19,9	20,8	21,8
IAERDAL - Norway	55	2026		3,4	8,2	8,7	9,2	9,6	10,1	10,5	11,0	11,5	12,1
PROJECT #1 France	65	2025		8,0	9,7	10,0	10,4	10,9	11,4	12,0	12,5	13,1	13,8
PROJECT #2 France	65	2025		9.7	9,7	10,1	10,6	11,1	11,7	12,2	12,8	13,4	14,0
PROJECT #4 Norway	60	2026		4,1	9,0	9,5	9,9	10,4	10,9	11,5	12,1	12,6	13,2
PROJECT #5 Norway	100	2027			5,0	15,0	15,8	16,5	17,4	18,2	19,1	20,1	21,0
PROJECT #6 Norway	60	2028					7,5	9,0	9.5	9,9	10,4	10,9	11,5
PROJECT #7 Norway	100	2029						15,0	15,8	16,5	17,3	18,1	18,9
% chg					58,0%	19,0%	5,0%	4,7%	4,4%	4,1%	3,8%	3,5%	2,5%
EBITDA			0,0	15,8	28,2	37,4	47,1	62,5	68,o	71,3	74,7	78,2	81,9
EBITDA margin				35,0%	39,5%	44,0%	48,5%	53,0%	55,0%	55,0%	55,0%	55,0%	55,0%
EBIT			-3,8	-0,4	10,6	16,3	22,3	37,6	43,0	46,1	49,5	53,0	56,5
EBIT margin				-0,9%	14,8%	19,1%	22,9%	31,8%	34,8%	35,6%	36,4%	37,2%	38,0%
NOPAT				-0,3	7,9	12,2	16,7	28,2	32,2	46,1	37,1	39,7	42,4
Depreciation			3,8	16,3	17,7	21,2	24,9	24,9	25,0	25,1	25,2	25,3	25,4
as a % of sales				35,9%	24,7%	24,9%	25,6%	21,2%	20,2%	19,4%	18,6%	17,8%	17,0%
Capex			35,9	116,1	13,3	32,6	34,6	0,8	0,8	0,8	0,8	0,8	0,8
STAVENGER - Norway			8,9	20,8									
BERGEN - Norway			6,0	23,8									
IAERDAL - Norway			4,3	17,0									
PROJECT #1 France			5,0	20,0									
PROJECT #2 France			7,5	17,5									
PROJECT #4 Norway			4.3	17									
PROJECT #5 Norway					13,3	16,2							
PROJECT #6 Norway						7,4375	13,8125						
PROJECT #7 Norway						8,925	20,825						
as a % of sales				35,9%	24,7%	24,9%	25,6%	0,7%	0,6%	0,6%	0,6%	0,5%	0,5%
Change in WCR			0,0	3,6	2,6	1,4	1,2	2,1	0,6	0,6	0,6	0,6	0,7
Free cash flows			-32,0	-103,8	9,7	-0,6	5,7	50,3	55,9	69,9	60,9	63,6	66,3
Discounted free cash flows			-28,8	-84,1	7,1	-0,4	3,4	26,7	26,8	30,1	23,6	22,2	20,9
Sum of discounted FCF	47,48							Risk-free ii	nterest rate		3%	equity	15%
Terminal value	248,76							Equity risk			8%	debt	70%
	-1-//-							Project risk			3,5%		,
Enterprise value	296,24							Beta			1,5	subsidies Norway	15%
Net debt	146,5		29,5	95,6	10,9	26,8	28,5	-	ected on eq	uity	19,2%	subsidies France	0%
Equity value	149,7					-		Interest rat		-	6%		
								Tax rate			25%		
Diluted nbr of shares (m)	5,04							WACC			11,1%	Payback	6 years
Valuation per share (EUR)	29,7								th rate to pe	rpetuity	2,5%	Project IRR	20%



e) **Gas in Lorraine:** In the construction of the revenue, we included only the 2 existing sites (Lachambre and Tritteling) with a cumulative production capacity of 270 GWh/year with 5 wells. The first site should generate a revenue of €5.5m at start-up. We understand that with the ramp up in expertise and with the size effect, other sites should achieve more revenue for the same capacities.

However, we did not include the third site mentioned by the group during the CDM, which is 2x larger in size compared to the 2 sites taken into account in our valuation. This site is located in Pontpierre and should be able to produce 250 GWh per year, or according to our estimates a full-year revenue of $\epsilon 12.7m$.

For a classic gas production site in Lorraine, management estimates around ϵ_{17} m in Capex, with sales revenue of around $\epsilon_{5.5}$ m. The costs, including electricity, maintenance and local taxes, amount to approximately $\epsilon_{2.5}$ m. Structural costs are estimated at 3% of revenue. For the sake of prudence, we have not taken into account possible subsidies.

Our modelling using the DCF method does not integrate the full potential of this activity (i.e. 42 sites identified by the company to date), analysing the impact of only 3 projects, currently in the commercial pipeline. Furthermore, given that these are the first sites, we considered the debt/equity weighting 75%/25%, without taking into account subsidies, which constitutes something of a floor in terms of valuation.

			jι	iin-27	juin-28	juin-29	juin-30	juin-31	juin-32	juin-33	juin-34	juin-35	juin-36	juin-37
Sales	capacity	eq GHw/y	of H2		5,5	15,4	25,7	27,1	28,4	29,8	31,1	32,4	33,7	35,0
LACHAMBRE (existing site)	125 GWh/y	38	2 production wells, 1 CO2	injector	5,5	5,9	6,3	6,7	7,2	7,7	8,3	8,8	9,5	10,1
TRITTELING (existing site)	145 GWh/y	44	3 production wells, 1 CO2	injector		6,4	6,7	7,0	7,3	7,6	7,9	8,1	8,4	8,6
PONTPIERRE (new site)	250 GWh/y	7 76	8 production wells, 1 CO2	injector		3,2	12,7	13,3	13,9	14,5	15,0	15,5	15,9	16,3
% chg						180,7%	5,0%	4,7%	4,3%	4,0%	3,6%	3,3%	2,9%	2,5%
EBITDA					2,0	6,5	11,0	12,4	13,9	15,3	16,0	16,7	17,3	18,0
EBITDA Margin					35,5%	38,5%	43,0%	46,0%	49,0%	51,5%	51,5%	51,5%	51,5%	51,5%
EBIT					-1,5	0,0	4,5	5,8	7,3	8,6	9,3	9,9	10,6	11,2
EBIT margin					-27,2%	-0,1%	17,5%	21,6%	25,6%	29,0%	29,9%	30,7%	31,4%	32,0%
NOPAT					-1,1	0,0	3,4	4,4	5,5	6,5	7,0	7,5	7,9	8,4
Depreciation				1,4	3,4	6,5	6,6	6,6	6,6	6,7	6,7	6,7	6,8	6,8
D&A as a % of sales					62,6%	42,3%	25,5%	24,4%	23,3%	22,4%	21,6%	20,8%	20,1%	19,5%
Capex				8,7	27,7	25,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5	0,5
LACHAMBRE (existing site)				3,4	13,6									
TRITTELING (existing site)					5,3	12,3								
PONTPIERRE (new site)					8,8	13,3								
net CAPEX as a % of sales					62,6%	42,3%	1,7%	1,7%	1,6%	1,5%	1,4%	1,4%	1,3%	1,3%
Change in WCR				0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Free cash flows				-7,3	-25,4	-19,0	9,5	10,5	11,7	12,7	13,2	13,7	14,3	14,7
Discounted free cash flows				-5,3	-16,7	-11,3	5,1	5,0	5,0	4,9	4,6	4,3	4,0	3,8
								Risk-free ii	nterest rate		3,2%			
Sum of discounted FCF	3,6							Equity risk	premium		7,5%		equity	25%
Terminal value	45,2							Project risk	premium		4,7%		debt	75%
Enterprise value	48,8							Beta			1,45		subsidies	ο%
Net debt	29,7			6,5	20,8	19,2		Return exp	ected on e	quity	20,9%			
Equity value	19,0							Interest rat	e on debt		6%			
Diluted nbr of shares (m)	5,1							Tax rate			25%			
								WACC			11,1%		Payback	.< 6 years
Valuation per share (EUR)	3,8							Sales grow	th rate to p	erpetuity	2,5%		Project IRR	.>15%



f) Green hydrogen (Norway): Generally speaking, there is a favourable energy dynamic in Norway. On green hydrogen, the group has very interesting and economically viable projects. It is currently developing two projects of 20 MW each. We understand that the land and authorizations are secured and FDE has received a grant from ENOVA covering 40% of the Capex. FDE owns one of the projects 100% and, for the other, it is associated with Neptune, supported by Prime Capital. These 2 projects should come into operation in 2027 and a pipeline of hydrogen projects has been acquired with Greenstat.

Strategic oceanfront location

Both projects benefit from the proximity to Kristiansand ports, ideal for supplying hydrogen to maritime customers, while Kristiansand is a logistics hub for many companies, making the location attractive for mobility segments.

Ability to build strategic partnerships with major industry players

The signing of a letter of intent (LOI) with Glencore Nikkelverk for the sale of oxygen is a notable step forward. Additionally, the completion of the concept study for an oxygen pipeline in June 2023 demonstrates a proactive and methodical approach to implementing complex projects. Furthermore, the potential valorization of excess heat in collaboration with Elkem Carbon could provide additional revenues.

For a classic hydrogen production site, the group estimates around €37m in Capex, with revenues of around €25m. The costs, including electricity, maintenance and local taxes, amount to around €15m. Structural costs are estimated at 1.5% of revenue.

	juin-23	juin-24	juin-25	juin-26	juin-27	juin-28	juin-29	juin-30	juin-31	juin-32	juin-33	juin-34	juin-35	juin-36
Sales	capacity		COD		8,3	25,0	43,4	78,1	81,1	83,8	86,5	88,9	91,3	93,6
AGDER phase 1	85	GWh/y	2 027		8,3	25,0	26,8	28,1	29,1	30,1	31,1	32,0	32,8	33,7
AGDER phase 2	170	GWh/y	2 029				16,7	50,0	52,0	53,7	55,4	56,9	58,5	59,9
% chg						200,0%	73,7%	79,9%	3,9%	3,3%	3,2%	2,8%	2,7%	2,5%
EBITDA					2,3	8,0	15,0	29,3	30,4	31,4	32,4	33,4	34,2	35,1
EBITDA Margin					27%	32%	35%	37,5%	37,5%	37,5%	37,5%	37,5%	37,5%	37,5%
EBIT					-0,2	3,6	7,6	21,8	22,9	23,8	24,8	25,6	26,4	27,2
EBIT margin					-2,6%	14,2%	17,5%	27,9%	28,2%	28,4%	28,6%	28,8%	29,0%	29,1%
NOPAT					-0,2	2,7	5,7	16,4	17,2	17,9	18,6	19,2	19,8	20,4
Depreciation				0,9	2,5	4,4	7,4	7,5	7,5	7,6	7,7	7,7	7,8	7,9
as a % of sales					29,6%	17,8%	17,0%	9,6%	9,3%	9,1%	8,9%	8,7%	8,5%	8,4%
Capex				7,8	14,4	17,8	26,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6
AGDER phase 1				7,8	14,4									
AGDER phase 2						17,8	26,6							
as a % of sales				0,0%	29,6%	17,8%	61,4%	0,8%	0,7%	0,7%	0,7%	0,7%	0,7%	0,6%
Change in WCR				0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Free cash flows				-6,9	-12,1	-10,7	-13,6	23,2	24,1	24,9	25,6	26,3	27,0	27,7
Discounted free cash flows				-5,6	-8,8	-7,0	-8,0	12,3	11,5	10,7	9,9	9,2	8,5	7,8
Sum of discounted FCF	40,6												equity	ю%
Terminal value	91,0							Risk-free ir	nterest rate		3,2%		debt	50%
Enterprise value	131,7							Equity risk	premium		7,5%		subsidies	40%
Net debt	35,0			6,5	12,0	14,8	22,2	Project risk	premium		2,5%			
Equity value	96,7							Beta			1,45		Payback	. 5 years
o/w AGDER phase 1	40,3							Return exp	ected on eq	uity	17,7%		Project IRR	.>20%
o/w AGDER phase 2	56,4							Interest rat	e on debt		6%			
Diluted nbr of shares (m)	5,0							Tax rate			25%			
Valuation per share (EUR)	19,2							WACC			11,1%			
o/w AGDER phase 1								Sales grow	th rate to p	erpetuity	2,5%			
o/w AGDER phase 2											.5	1		
, , ,														

Hidden value

We value Greenstat's hydrogen production activity at €94.6m, taking into account only 2 projects. Remember that FDE paid €15.5m for 56.35% of the capital of Greenstat (acquired at the beginning of February 2024), this amount being broken down into €2.3m for the repurchase of the minority stake of an existing shareholder and €13.2m for the subscription to a first capital increase. Based on our DCF (which does not include the solar PV project pipeline), we calculate an amount of €53.3m for this 56.35% of the capital. A 2nd and 3rd capital increase of a maximum of €13.2m each will be injected within 18 months, in order to benefit from the full value creation effect, subject to the achievement of certain operational and financial milestones.



III. Valuation: €70 / share

We are adjusting our TP from €78.2 to €70 taking into account the changes in the following parameters:

Positive elements	Negative elements
Strong upward revision of the medium and long term outlook. Given a commercial pipeline which should take off from 2026, our revenue modelling is therefore increased from FY2026-2027 as detailed in the table which follows. In our previous model, the 2030 revenue came out at €106m compared to €174.3m currently. This figure, close to the group's guidance (€175m), only includes projects that we considered sufficiently secure (notably in terms of land, inputs, financing, subsidies, customers).	Significant downward revision of the 2024-2026 revenue sequence (delay in launching projects for reasons external to society: extension of the deadlines for obtaining authorizations for the implementation of new cogeneration). Under these conditions, we expect FY 2025-2026 revenue of €79.4m, below the guidance (€100m).
 In detail, our modelling now includes the following additional activities: ✓ Bio-LNG and Bio-CO2 in Norway (Cryo Pur): 5 projects out of 9 in the company's pipeline ✓ Gas in Lorraine: only the 2 existing sites ✓ Green hydrogen in Norway: in a prudent approach, we have included 100% of phase 1 in Agder and 20% of phase 2. As a reminder, the company has already secured subsidies of 40%. 	We took into account the value of minorities present in certain structures in Norway: ✓ 20% on Bio-Gas activities ✓ 43.65% for the activity in Agder (Norway) – we took into account 100% of phase 1 of the project and 20% of phase 2 of the project in consistency with our model.
Modification of market parameters (+): ✓ Infinite growth rate Given the multiplication of growth drivers, we are increasing it to 2.5% instead of 2%	Changing market parameters (-): ✓ increase in beta to 1.45 compared to 1.3 before We considered that execution risk could increase given the simultaneous launch of several new activities in several countries which are not yet generating revenue. - Increase in the average cost of debt: now set at 5.5% instead of 4% - Increase in the risk-free rate (+0.2%) and the risk premium (+0.5%) This implies an increase in the WACC, which rises to 10.9% (vs 9.5%), which still remains lower than that calculated on the projects individually (gas in Lorraine, bio-CO2 and Bio-LNG and green hydrogen in Norway), to which we have added a specific premium risk. Given a more diversified portfolio at group level, its risk is therefore mitigated.
	Greater capital intensity than in the core business (mine gas).



Comparison between our old and new forecasts in terms of revenue and EBITDA

	juin-24	juin-25	juin-26	juin-27	juin-28	juin-29	juin-30	juin-31	juin-32	juin-33	juin-34
Sales (before)	36,9	53,6	82,1	91,0	96,0	101,1	106,1	110,2	114,3	118,4	120,8
Sales (after)	32,2	34,5	79,4	108,6	138,1	158,2	174,3	183,6	193,1	197,9	202,9
Δ	-4,7	-19,1	-2,6	17,6	42,1	57,1	68,1	73,4	78,8	79,5	82,1
EBITDA (before)	19,4	28,1	45,6	51,1	54,6	56,7	60,3	63,2	65,2	65,0	62,9
EBITDA (after)	19,0	19,8	44,0	55,1	67,7	77,4	86,4	93,6	98,4	100,9	103,4
Δ	-0,4	-8,3	-1,6	4,0	13,1	20,7	26,1	30,3	33,2	35,9	40,6

Note that we are retaining the ESG premium (10%; negative carbon footprint: 3.5 M TCO2 equivalent avoided per year), which we previously applied to the WACC.

We quantified the impacts of positive and negative elements to explain the transition from our old TP to our new TP.

Old target price	78.2	€/share
Impact of discount rate	-21.9	€/ share
Impact of growth rate to infinity	+3	€/ share
Minority impact	-7.1	€/ share
Long-term Impact	+18.3	€/ share
New target Price	70.4	€/ share



	juin-24	juin-25	juin-26	juin-27	juin-28	juin-29	juin-30	juin-31	juin-32	juin-33	juin-34	juin-35
Sales	32,2	34,5	79,4	108,6	138,1	158,2	174,3	183,6	193,1	197,9	202,9	208,0
			100		guidance		175					
% chg	-18%	7,1%	130%	37%	27,1%	14,6%	10,2%	5,4%	5,2%	2,5%	2,5%	2,5%
Gas - France	8,9	8,1	7,7	7,6	7,5	7,5	7,5	7,5	7,5	7,7	7,9	8,1
Cogenerations France	12,7	11,3	14,8	21,0	25,5	29,3	33,1	37,0	40,9	42,0	43,0	44,1
Cogenerations Belgium	8,3	6,0	5,4	6,5	7,0	8,1	9,3	10,3	11,3	11,6	11,8	12,1
Bethune heating	0,4	0,5	0,5	0,6	0,6	0,7	0,7	0,8	0,9	0,9	0,9	1,0
Cryo Pur = Norway & France	0,0	2,0	41,9	57,9	60,1	63,2	65,3	67,5	69,7	71,4	73,2	75,0
Solar PV = France & Norway & Bosnia	1,3	4,1	6,6	6,7	6,9	7,0	7,1	7,3	7,4	7,6	7,8	8,0
Greenstat / hydrogen - Norway	0,6	2,5	2,5	8,3	25,0	30,1	38,1	39,5	40,8	41,9	42,9	44,0
Gas (Lorraine)					5,5	12,3	13,0	13,7	14,5	14,9	15,2	15,6
EBITDA	19,0	20,3	44,0	55,1	67,7	77,4	86,4	93,6	98,5	100,9	103,5	106,1
			50		guidance		85					
EBITDA Margin	58,9%	58,8%	55,4%	50,7%	49,0%	48,9%	49,6%	51,0%	51,0%	51,0%	51,0%	51,0%
Operating profit	16,0	15,7	33,2	42,1	52,5	61,6	70,0	76,8	81,2	83,6	86,0	88,5
as a % of sales	49,6%	45,6%	41,8%	38,8%	38,0%	38,9%	40,2%	41,8%	42,0%	42,2%	42,4%	42,6%
Theoretical tax rate	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Theoretical tax	4,0	3,9	8,3	10,5	13,1	15,4	17,5	19,2	20,3	20,9	21,5	22,1
NOPAT	12,0	11,8	24,9	31,6	39,4	46,2	52,5	57,6	60,9	62,7	64,5	66,4
Depreciation	3,0	4,5	10,8	13,0	15,2	15,8	16,4	16,9	17,3	17,4	17,5	17,6
cogenerations			0									
Cryo Pur		3,1	12,8	12,9	12,9	13,0	13,0	13,1	13,1	13,2	13,2	13,3
Greenstat / hydrogen Gaz (Lorraine)		0,9	2,5	4,4	7,4	7,5	7,5	7,6	7,7	7,7	7,8	7,9
	0/	0/	CO/	1,4	3,4	6,5	6,6	6,6	6,6	6,7	6,7	6,7
as a % of sales	9,2%	13,2%	13,6%	12,0%	11,0%	10,0%	9,4%	9,2%	9,0% 8,8	8,8%	8,6%	8,4%
Capex cogenerations	8,9	31,6	124,4	44,6	43,7	12,5 12,5	11,3 12,5	10,0	12,5	1,7	1,7	1,7
Cryo Pur		31,6	17,5 99,1	17,5 0,5	12,5	12,5	12,5	12,5	12,5			
Greenstat / hydrogen		31,0	7,8	18,0	5,3							
Gaz (Lorraine)			7,0	8,7	25,9							
as a % of sales	27,6%	91,7%	156,6%	41,1%	31,7%	7,9%	6,5%	5,4%	4,5%	3,5%	3,5%	3,5%
WCR	0,8	-0,9	-6,3	-4,3	-2,7	-2,6	-2,4	-2,5	-2,6	-2,7	-2,8	-2,8
as a % of sales	2,5%	-2,7%	-7,9%	-4,0%	-2,0%	-1,7%	-1,4%	-1,4%	-1,4%	-1,4%	-1,4%	-1,4%
Change in WCR	4,1	-1,7	-5,4	2,0	1,6	2,7	-2,4	-0,1	-0,1	-0,1	-0,1	-0,1
Free cash flows	2,0	-13,5	-83,4	-2,1	9,2	46,8	60,0	64,6	69,6	78,4	80,4	82,3
Discounted free cash flows	2,0	-12,2	-67,8	-1,5	6,1	27,9	32,3	31,3	30,5	31,0	28,6	26,4
Sum of discounted FCF	106,1											
Terminal value	315,5							Risk-free inter	est rate			3,2%
Enterprise value	421,6							Equity risk pre	emium			7,5%
Fair value of minorities	36,0	7.1	€ per share				1	Beta				1,45
o/w Greenstat / hydrogen (43.65%)			€ per share	ACDEP phase	1 + 20% AGDER	phace a	+	Return expect	tod on oquity			14,08%
	22,5		€ per share			phase 2						
o/w Cryo Pur (20%)	13,4	2,7	e per snare	5 projects: NO	(3) + FR (2)			Interest rate or	i debt			5,5%
Fair value of financial assets	1,8							Tax rate				25%
Provisions	4,5							WACC				12,09%
Net debt	39,2									equivalent avoi	ded annually)	2,5%
Equity value	343,8							ESG premium				10%
Diluted nbr of shares (m)	5,04	_						WACC after E	SG premium			10,9%
Valuation per share (EUR)	68,2											
NPV (Solar PV)	11,3	100 K€/ 1 M	Wc ==> pipe	line 113 MWc	WACC 8%							
Valuation per share (EUR) for solar PV	2,2											
-												
Final Valuation per share (EUR)	70,4											

	EBITDA margin (%)							Long-term growth					th rate	
		47,0%	49,0%	51,0%	53,0%	55,0%				1,5%	2%	2,5%	2,75%	3%
	9,5%	86,8	91,1	95,4	99,7	104,1			9,5%	85,5	90,1	95,4	98,3	101,5
(%)	10,8%	63,9	67,3	70,7	74,1	77,5		(%)	10,8%	64,6	67,5	70,7	72,5	74,3
) ၁၁	10,9%	61,5	64,9	68,2	71,5	74,8)))	10,9%	62,5	65,2	68,2	69,8	71,6
WACC	11,4%	54,6	57,7	60,7	63,8	66,8		WACC	11,4%	56,0	58,2	60,7	62,1	63,5
	11,9%	48,5	51,3	54,1	56,9	59,7			11,9%	50,2	52,1	54,1	55,2	56,4
	12,9%	38,3	40,6	43,0	45,4	47,8			12,9%	40,3	41,6	43,0	43,8	44,6
	13,8%	30,7	32,8	34,9	37,0	39,1			14,1%	30,9	31,7	32,6	33,0	33,5



We tested the stock's potential for appreciation based on different sensitivity scenarios.

	EBITDA margin (%)						Long-term growth rate						
		47,0%	49,0%	51,0%	53,0%	55,0%			1,5%	2,0%	2,5%	2,8%	3,00
	9,5%	186%	201%	215%	229%	243%		9,5%	182%	197%	215%	225%	235
(%)	10,8%	111%	122%	133%	145%	156%	%	10,8%	113%	123%	133%	139%	145
22	10,9%	103%	114%	125%	136%	147%		10,9%	106%	115%	125%	130%	136
WACC	11,4%	80%	90%	100%	110%	120%	WACC	11,4%	85%	92%	100%	105%	110
	11,9%	60%	69%	79%	88%	97%		11,9%	66%	72%	79 %	82%	869
	12,9%	26%	34%	42%	50%	58%		12,9%	33%	37%	42%	45%	479
	13,8%	1,4%	8%	15%	22%	29%		14,1%	1,9%	5%	7%	9%	11%

For information purposes, we have estimated the additional value-added potential of the Group's activities in the table below

activity	€/action	comments
COGENERATIONS France /international	€ 14,9	Calculated on the basis of the NPV of the delta in the number of cogeneration units between our forecasts and the company's guidance (see page 8), i.e. a difference of 21 cogeneration units. WACC 10.3% (specific risk premium taking into account any delays in obtaining permits) – growth rate to perpetuity 2.5% EBITDA margin 65% Capex financing (2.5 M€ per cogeneration unit) 90% debt and 10% equity time to market 12-24 months project IRR >20% Payback < 3 years
BIO-GNL/BIO-CO2 France / Norway	€ 16,4	In our modeling, we have valued only 5 of the 9 projects in the Group's commercial pipeline. Here, the upside corresponds to the 4 projects. However, the potential of this business is not limited to the few projects in the pipeline.
GAS LORRAINE	€ 25,2	Management has identified 42 sites. Our model includes 2 sites, valued in the form of gas + CO2 injection. We have estimated the share price potential based on the NPV of 20 additional sites (assumption: gas production). It should be noted that Lorraine's reserves could also be valorized in the form of low-carbon hydrogen, in which case, according to our initial estimates, the upside on valuation would be even greater. Indeed, unlike gas, the sale of by-products (such as carbon black) would reduce hydrogen production costs.
GREEN HYDROGEN Norway	€ 12,0	Our basic model includes 100% of phase 1 hydrogen production at the Elkem industrial site and 20% of phase 2. The estimated upside would come from taking into account the 80% of phase 2.

IV. Bio-LNG + bio-CO2 = a model of success

1. The purchase of Cryo Pur stands out as an operation with strong value creation

FDE acquired Cryo Pur 2 years ago, which allowed it to standardize and industrialize production processes. Cryo Pur, which initially specialized in custom installations, now focuses on standardized installation sizes. Its know-how, protected by around ten patents, consists of taking waste and separating - via a cryogenic process - the different gases, bringing them to the best standard of purity, in order to recover them into Bio-LNG and Bio-CO2.

Like cogeneration, this standardization and industrialization of equipment by creating skids for Cryo Pur equipment would have a double beneficial effect: an increase in margins and a reduction of the cycle from 12 to 6 months. To produce modules, the group has signed partnerships with subcontractors who will supply certain components that it will assemble on site. In order to protect its know-how - which is the barrier to entry - FDE will divide the manufacturing of the equipment into several sub-assemblies and entrust them to different partners.

2. Robust project pipeline

The group has secured three projects (Stavanger, Bergen, Lærdal), with land secured and permit applications in progress, as well as grant applications. Norway was chosen for its favourable ecosystem, particularly in terms of fish waste, and its responsive licensing system. Norway, heavily dependent on the oil industry, is embarking on a transition towards decarbonization and offering attractive subsidies for renewable energy projects, covering between 30% and 70% of Capex. This obviously has a significant impact on the profitability of projects.

The permit process includes five steps in Norway for each permit, which can be a bit complex, but this one is relatively well managed. For Stavanger, FDE has advanced the various permits.

For bio-LNG, additional projects are currently under exclusive discussion in France to recover biogas at the digester outlet, purify it and liquefy it. In France, discussions generally focus on existing waste treatment facilities already producing biogas, which FDE will purify and liquefy. The objective is to have 2-3 projects in operation by the end of 2026, with a contribution from other projects expected by 2030.

Aside from the 5 projects mentioned above and integrated into our valuation, the group has a pipeline of 4 additional projects, all in Norway, including 2 of a size close to that of Stavenger (100 GWh/year) with commissioning (COD: 2028) and 2 others with a production capacity of 60 GWh/year each (COD: 2029). According to our estimates, the 4 projects represent a combined revenue of around €50m (EBITDA margin 58%).

3. Optimization of assets thanks to the proprietary trading platform

We understand that the group is talking to traders interested in bio-LNG and low-carbon hydrogen. Countries like Germany or specific sectors are demanding because, for example, the maritime sector has converted its fleet to LNG and must demonstrate that it uses at least 30% bio-LNG to access the emissions quota market. of the EU. In Germany, manufacturers have obtained certificates of origin.

The biogenic CO2 market is a rapidly evolving over-the-counter market. One of the reasons why FDE positioned itself on this was to be able to sell this CO2 to food manufacturers. Now, with the development of e-fuels, such as synthetic fuels for aviation and transportation, the demand for bio-LNG and bio-CO2 is significantly increasing. In this regard, the price is exploding, which is quite advantageous for FDE. Also thanks to the trader, hired at the end of 2023, FDE could play with market inefficiencies: the Germans pay much more for bio-LNG than the French. In France, the point of reference is biomethane, with injection into the network without addressing the subject of CO2. It is the reference price, with an obligation to purchase, while the Germans consider it as a replacement for fossil fuel.

To arrive at ϵ 15m in revenue for the production unit in Stavanger, the group has taken precautionary margins, in particular the assumption that the sales price of bio-LNG is approximately 40% below what the group thinks it can reach, and the price of CO2 at ϵ 140/t while today the prices are more than ϵ 250/t.



4. Valuation of by-products

The group uses the Cryo Pur process for the production of bio-LNG and bio-CO2. A byproduct of this process is digestate, residual organic matter that can be used as fertilizer. By selling the digestate, the group diversifies its revenue streams, which can improve its financial resilience and provide additional stability in the face of fluctuations in the bio-LNG and bio-CO2 markets.

5. Towards the conquest of new uses with high potential (purification of industrial fumes)

Industrial fume cleaning is another activity associated with Cryo Pur technology, which could become quite important in the future. The group has patents for technology to treat so-called industrial fumes, particularly emissions released by factories. Today, this is still allowed, but penalties will be applied in two years for these emissions. FDE has taken the lead on this subject and is already talking with major cement and steel manufacturers.

These are very large installations, approximately 100 times that of the 2000 nm3 unit in Stavanger (100 GWh). FDE, which intends to obtain aid from Europe for a unique project of its kind, will begin by setting up a pilot, with the long-term objective of treating all of these industrial fumes. At the same time, the group discusses with a main partner. As for the associated capex, it would be assumed by the client.

Although the transition from the pilot phase to industrialization scale will not take place before 2026, it is a very promising growth driver for FDE. The modularity of Cryo Pur's equipment puts the group in an advantageous position to create a new market.

Until now, FDE has positioned itself on low-carbon energies, but now it could broaden its value proposition towards the market for the elimination of CO2 emissions.



V. Several options for developing the Lorraine reserves

FDE does not exclude making gas to gas

This option, the most quickly implementable, became possible thanks to the regulations allowing the CO2 captured in the coal seams to be injected. It could be used while waiting for the valuation of reserves in the form of low-carbon hydrogen. Producing gas while sequestering CO2 leads to a negative carbon footprint over the entire life cycle.

2. Huge development potential

FDE has identified 42 production sites, a majority of which could be valued in the form of carbon-free hydrogen meeting local demand for low-carbon energy solutions. In particular, at a time when the hydrogen market is being structured locally, FDE's sites are located only 5 km from a MosaHYc pipeline and potential customers - in particular large users of natural gas (steel manufacturers, cement manufacturers, glassworks: Arcelor Mittal, Holcim, etc.) wishing to lower their carbon footprint in order to avoid heavy taxes - seem to be already connected there awaiting its hydrogen injection.

3. First sites in production by early 2027

Once various stages have been reached (start of construction mid-2025, commissioning end of 2026), having obtained drilling authorizations (applications currently being submitted) and validated the hydrogen production technology (as a member of the HECO2 consortium, FDE could use the technology to produce carbon-free hydrogen in Lorraine), the first sites should enter production by early 2027.

As a reminder, without the delay in obtaining the Bleu Lorraine concession (for administrative reasons) of around two years, the Loraine sites could have entered production in 2025, i.e. as many years of revenue and results lost. A request for compensation was filed by the group to repair this damage.

4. A "scalable" approach that is difficult to imitate

Although pyrolysis is not a hydrogen production technique mastered exclusively by FDE, the barriers to entry include the know-how required to integrate the standardized module (developed by pyrolysis) into a 40-foot container, as well as the ability to reproduce this industrial approach on several modules on the same site (like its cogeneration model in mine gas). Additionally, FDE's business model is competitive, as it benefits from the availability of abundant quantities of gas as an input, making extraction costs low compared to other players who must purchase the gas. at the market price (ϵ 30-40/MW).

5. Mastery of a negative carbon footprint process

To obtain carbon-free hydrogen (by steam reforming), it is essential that CO2 is not released into the atmosphere. The objective is therefore to reinject CO2 into the coal seams, an approach studied in collaboration with Schlumberger.

The technology that FDE currently favours is methane pyrolysis. This process, called plasmolysis, heats methane to produce hydrogen and carbon in solid form, known as carbon black. This solid carbon is used in industries such as printing and tire manufacturing, and can be valued as a by-product. The sale of derivative products (such as graphene, carbon black) would also reduce the costs of producing carbon-free hydrogen. Management aims to standardize and industrialize the model to be able to quickly deploy its installations.

In terms of carbon footprint over the complete cycle, the company estimates that with pyrolysis it could reach around 3.4 gr CO2/kWh, compared to 122 gr CO2/kWh for alternative methods. As CO2 is integrated into the process, FDE has fewer emissions, as the CO2 is transformed into carbon black. However, it all depends on the nature of the electricity used. The group could produce it on site with solar panels or compensate with green energy from the network.



6. Natural hydrogen: The next game changer?

The discovery of natural hydrogen in Lorraine is all the more interesting as it is considered a strategic energy vector for the energy transition.

To accelerate its developments in the field of natural hydrogen, we understand that the group could favour the creation of an industrial consortium. The latter could accommodate players from the automobile, aeronautics, industry (specialized in membranes), as well as a state player (as others have done with ADEME Investissement, to accelerate the acquisitions decisions). This approach would allow the group to both accelerate developments and complete its expertise in the exploitation of this natural hydrogen, separation of the hydrogen molecule from other molecules which are attached to hydrogen, i.e. water., or other gases.

We do not exclude the option of strategic partners entering the capital in this asset to externalize a valuation and also move into the industrialization phase of the valuation of hydrogen. Another possible option in our opinion would be a spin-off, for example from the natural hydrogen activity (once the PER has been obtained) to raise dedicated capital. As a reminder, the Lorraine basin deposit could, according to CNRS researchers, contain 46 Mt of native hydrogen (i.e. more than half of the world's annual production of grey hydrogen) at 96% concentration.

However, this does not seem to us at all to be reflected in the valuation of the group, while the American competitor Koloma has already raised more than \$400m with 6 of the world's biggest fortunes (Bill Gates, Jeff Bezos, etc.) in space of a few months.





FINANCIAL DATA

Income Statement	06/21	06/22	06/23	06/24e	06/25e	06/26e
Sales	10.2	26.2	39.2	32.2	34-5	79.4
Changes (%)	30.3	156.2	49.6	-17.9	7.1	130.3
Gross profit	6.3	20.3	35.1	28.7	31.2	65.3
% of Sales	61.6	77.6	89.4	89.1	90.3	82.3
EBITDA	2.9	15.1	27.3	19.0	20.3	44.0
% of Sales	28.2	57.6	69.7	58.9	58.8	55-4
Current operating profit	1.1	14.3	24.8	15.9	15.6	33.1
% of Sales	10.3	54.4	63.3	49-3	45.2	41.6
Non-recurring items	-0.1	-1.1	-8.1	0.0	0.0	0.0
EBIT	1.4	13.1	16.7	15.9	15.6	33.1
Net financial result	-1.2	-4.6	-1.8	-2.3	-2.3	-2.3
Income Tax	0.1	-2.5	-2.5	-2.7	-2.7	-7.7
Tax rate (%)	-32.1	25.7	17.0	20.0	20.4	25.0
Net profit, group share	0.3	7.3	12.7	11,1	10.6	23.1
EPS	0.50	1.41	2.45	2.14	2.04	4.45
Financial Statement	06/21	06/22	06/23	06/24e	06/25e	06/26e
Goodwill	0.0	5.8	4.6	18.1	18.1	18.1
Tangible and intangible assets	89.9	99.3	101.9	109.3	136.5	251.3
Right of Use	0.0	0.0	0.0	0.0	0.0	0.0
Financial assets	1.8	1.8	1.8	1.8	1.8	1.8
Working capital	-7.7	-3.7	-3.4	0.8	-0.9	-6.3
Other Assets	2.1	1.7	3.8	3.8	3.8	3.8
Assets	86.2	104.8	108.7	133.7	159.3	268.6
Shareholders equity group	55.3	63.3	74.0	85.1	96.1	118.7
Minorities	-0.0	-0.2	-0.3	-0.5	-1.0	-0.4
LT & ST provisions and others	4.4	3.5	3.2	3.2	3.2	3.2
Net debt	20.1	31.8	25.1	39.2	54.2	140.4
Other liabilities	6.4	6.4	6.7	6.7	6.7	6.7
Liabilities	86.2	104.8	108.7	133.7	159.3	268.6
Net debt excl. IFRS 16	20.1	31.8	25.1	39.2	54.2	140.4
Gearing net	0.4	0.5	0.3	0.5	0.6	1.2
Leverage	7.0	2.1	0.9	2.1	2.7	3.2
Cash flow statement	06/21	06/22	06/23	06/24e	06/25e	06/26e
CF after elimination of net borrowing costs and taxes	2.4	9.2	15.7	15.7	22.0	35.6
ΔWCR	4.4	-4.0	-0.3	-4.2	1.7	5.4
Operating cash flow	6.8	5.2	15.3	11.5	23.7	41.0
Net capex	-10.0	-10.9	-10.2	-8.9	-31.6	-124.4
FCF	-3.2	-5.6	5.1	2.6	-7.9	-83.4
Acquisitions/Disposals of subsidiaries	-0.1	-2.1	0.0	-13.5	0.0	0.0
Other investments	0.5	-3.2	1.7	-13.5	0.0	0.0
Change in borrowings	7.3	22.9	8.1	42.3	10.0	35.0
Dividends paid	0.0	0.0	0.0	0.0	0.0	0.0
Repayment of leasing debt	0.0	0.0	0.0	0.0	0.0	0.0
Equity Transaction	0.0	0.0	-3.2	0.0	0.0	na
Others	0.0	0.0	-0.1	0.0	0.0	0.0
Change in net cash over the year	4.5	14.0	11.6	31.4	2.1	-48.4
-						
ROA (%)	0.2%	5.1%	9.2%	6.5%	5.2%	5.4%
ROE (%)	0.5%	11.4%	17.2%	13.1%	11.7%	19.0%
ROCE (%)	3.0%	31.2%	25.7%	25.9%	27.9%	na



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Methodology

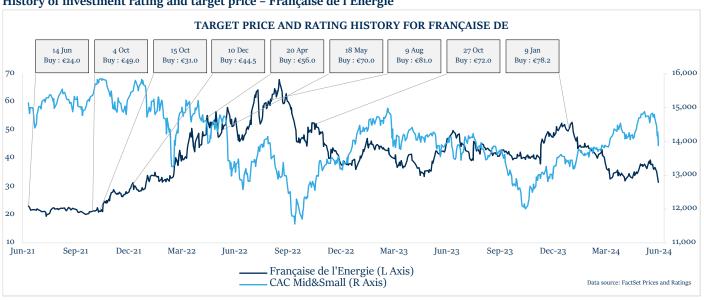
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- 1. DCF method: discounting of future cash flows generated by the company's operations. Cash flows are determined by the analyst's financial forecasts and models. The discount rate used corresponds to the weighted average cost of capital, which is defined as the weighted average cost of the company's debt and the theoretical cost of its equity as estimated by the analyst.
- 2. Comparable method: application of market valuation multiples or those observed in recent transactions. These multiples can be used as references and applied to the company's financial aggregates to deduce its valuation. The sample is selected by the analyst based on the characteristics of the company (size, growth, profitability, etc.). The analyst may also apply a premium/discount depending on his perception of the company's characteristics.
- 3. Assets and liabilities method: estimate of the value of equity capital based on revalued assets adjusted for the value of the debt.
- 4. Discounted dividend method: discounting of estimated future dividend flows. The discount rate used is generally the cost of capital.
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Rating	Recommendation Universe*	Portion of these provided with investment
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Hold	16%	58%
Sell	1%	o%
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