

La Française de l'Energie

Buy → | Target 23.0 €

Price (23/09/2020) : 13.45 € | Upside : 71%

Revision	2020e	2021e
EPS	ns	ns

Short-circuit energy producer

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Sources : ODDO BHF Securities, SIX

Capital			
LFDE EN LFDE.PA			
Market Cap (€m)			69
Enterprise value (€m)			102
Extrema 12 months (€)	12.40		20.50
Free Float (%)			ns
Performance (%)			
	1m	3m	12m
Absolute	-14.3	-13.2	-19.5
Perf. rel. Country Index	-13.0	-11.3	-12.7
Perf. rel. Utilities	-11.9	-10.2	-20.3
P&L			
	06/20e	06/21e	06/22e
Sales (€m)	7.9	17.9	27.8
EBITDA (€m)	1.2	6.3	11.7
Current EBIT (€m)	0.0	3.8	6.8
Attr. net profit (€m)	0	3.0	4.5
Adjusted EPS (€)	0.02	0.58	0.88
Dividend (€)	0.00	0.00	0.00
P/E (x)	712.1	23.1	15.3
P/B (x)	1.6	1.2	1.1
Dividend Yield (%)	0.0	0.0	0.0
FCF yield (%)	ns	ns	ns
EV/Sales (x)	12.85	5.22	3.96
EV/EBITDA (x)	82.7	14.9	9.4
EV/Current EBIT (x)	ns	24.9	16.2
Gearing (%)	24	36	60
Net Debt/EBITDA (x)	ns	3.3	3.2

Next Events	
14/10/2020	FY Results
19/10/2020	Q1 Sales

La Française De l'Energie (LFDE) is the only company in France and Belgium that recovers gas trapped in disused coal mines to convert it into electricity. It benefits from renewable and recovered energy support measures. At the same time, LFDE is developing projects to produce gas and hydrogen from coal gas, photovoltaic and thermal solar energy. We are initiating LFDE with a Buy rating and a target price of € 23.0.

A unique business model in France

LFDE is an SME listed on the Euronext regulated market in Paris since June 2016. The group, labelled innovative by Bpifrance, is engaged in two main business lines: 1/ the capture and recovery of mine gas in France and Belgium, a business that contributes the bulk of the group's earnings at this stage; and 2/ a project to produce gas and hydrogen from coal gas. Mine gas accumulates naturally in abandoned mine galleries, where it can be pumped out from existing wells. This activity is particularly green, as it prevents strong pollution linked to the evacuation of this gas, mainly composed of methane, into the atmosphere. The group benefits from several other growth drivers, including: 1/ solar energy through partnerships (with Total Qadran) and solar thermal energy (with the local energy supplier in Creutzwald); 2/ possible acquisitions, particularly in Germany.

Mine gas, the biggest contributor to earnings

Since it acquired Gazonor in 2016, LFDE has been the only company that recovers mine gas in France and Belgium. Most of the extracted gas is used to produce electricity at co-generation units with a capacity of 1.5 MW each. The electricity produced in France (65% of revenues) benefits from a green label and a 15-year power purchase obligation agreement with the French government whereby the group supplies power at an average price of over € 70/MWh, while gas (26% of revenues) is sold at market price to Total under a one-year renewable contract. In Belgium, the group sells the electricity produced (9% of revenues) at two co-generation plants in Anderlues to EDF Luminus at market price, but the sale of the green certificates to be granted to the group should bring in a substantial price supplement of more than € 70/MWh once the certificates are received. This activity should turn in strong growth with co-generations set to be increased to 33 at end-2022 from eight currently and revenues expected to stand at >€ 35m at end-2022 vs € 8m currently. Thereafter, the business is expected to deliver >2% in growth on average per year.

Coal gas production: a medium-term growth driver

LFDE holds an exclusive exploration permit to extract gas from a coal basin in Lorraine, the richest region in France in terms of coalbed gas. To date, the project has cost the group € 41m, an amount incurred on studies and test drilling. After the technical and commercial aspects of this activity were cleared and independently certified in 2019, LFDE filed a concession application, currently under review by the French government, to convert coal gas into gas and/or hydrogen until 2040. As current market conditions are not optimal (sharp drop in gas prices), the group continues to make progress on the administrative aspects of its project while streamlining the options for developing this resource.

A 65% discount to the renewable energy sector in 2022e P/E

We are initiating LFDE with a Buy rating and a target price of € 23, based mostly on a DCF approach to the mine gas business at € 19 per share. We value the coal gas business at € 4 per share, putting the probability of recovering the capital employed at 50% amid uncertainties over progress in the rollout of the project. The electricity produced by LFDE from mine gas is considered to be a green source. For this reason, the group can be seen as somewhat comparable to renewable energy players. LFDE's current share price values the company at 7.7x in terms of EV/EBITDA and 11.4x in terms of 2022e P/E (rebased at end-December), i.e. a discount of 38% and 65%, respectively, compared to renewable energy companies.

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LA FRANÇAISE DE L'ENERGIE: SNAPSHOT

La Française de l'Energie (LFDE) is an SME company listed on the Euronext regulated market in Paris since 2016 with a market capitalisation of € 70m and labelled innovative by Bpifrance. It recovers gas from coal resources in France and Belgium. As a core business, the group captures and recovers mine gas in the form of gas, green electricity and heat. Most of the extracted gas is used to produce electricity at small CCGT plants with a capacity of 1.5 MW each. The electricity produced in France benefits from a green label and a 15-year power purchase obligation agreement with the French government while gas (only at the Avion site) is sold at market price to Total under a one-year renewable contract. In Belgium, the group sells the electricity produced at two co-generations in Anderlues to EDF Luminus at market price, but the sale of the green certificates to be granted to the group should bring in a substantial price supplement of around ~€ 70/MWh once the certificates are received.

In the coal gas segment (Lorraine Projet), LFDE holds an exclusive exploration permit to produce gas at a coal basin in Lorraine (the richest region in France in coalbed gas) and has spent to date € 41m on studies and test drilling as part of the project. Current market conditions are not optimal and are therefore holding back contribution from this activity to revenues.

Historic overview

Current structure

LFDE is a company listed on the Euronext regulated market in Paris since June 2016 with a market capitalisation of € 70m. LFDE recovers and develop mine gas through its two subsidiaries Gazonor SAS and Gazonor Benelux SA. The group also has an exclusive permit (a 20-year concession is in the process of being obtained) for the production of coal gas in Lorraine, directly held at this stage by Française de l'Energie. LFDE holds directly (coal gas) or through its two subsidiaries Gazonor SAS and Gazonor Benelux (mine gas) 100% of the group's various permits. The Béthune project is led by a dedicated entity wholly owned by LFDE and the solar thermal project in partnership with the local energy supplier in Creutzwald is led by Cellcius, a company 51% owned by LFDE.

Simplified corporate structure (excl. holdings and non-operational entities)

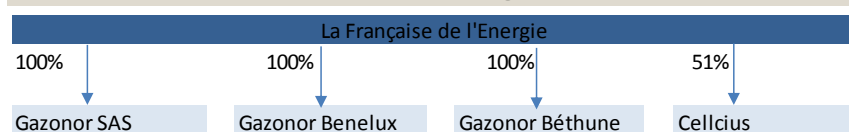


Chart 1 - Sources: LFDE, ODDO BHF Securities



From inception to the 2016 IPO

The group was formed in 2007 by European Gas Limited (EGL), an Australian company listed on the Australian Stock Exchange (ASX), which had historically been engaged in hydrocarbon exploration activities in Australia. EGL decided to focus on the acquisition, evaluation and exploitation of coal bed methane (CBM) and coal mine methane (CMM) deposits in Western Europe, particularly in France, starting in 2007. In response to requests from shareholders, largely made up of French industrial and financial families, the group began a series of reorganisations to repatriate the parent company to France, where its assets and development projects are located, at the initiative of its Chairman Julien Moulin. As a result of these changes, the company was renamed La Française de l’Energie in June 2015 and was listing on the Compartment C of the Euronext Paris Stock Exchange in June 2016, raising € 37.5m at € 27 per share. The company decided to go public to: 1/ finance the acquisition of Gazonor in the Nord-Pas-de-Calais region for ~€ 20m and the conversion of mine gas into electricity; and 2/ continue to finance the costs of bringing the coal gas activities in Lorraine into production.

LFDE's share price from June 2016 to date

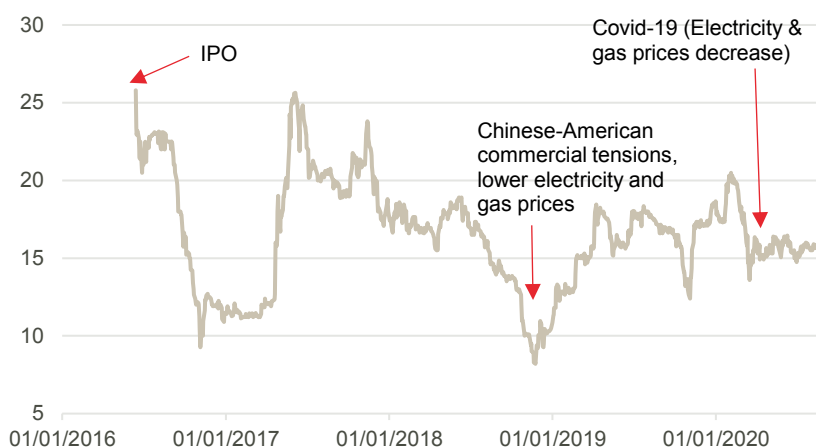


Chart 2 - Sources: FactSet, ODDO BHF Securities

A strong shareholder base

La Française de l’Energie’s ownership structure is split into three blocks: 1/ the historical shareholders who control nearly 49% of the company, including the Chalopin family and its bank, Deltec Bank & Trust (23%), the Salathe/Durr family (11%), the Michaud family (3%) and the Lorenceau family (3%); 2/ the employees and management who hold 12% of the share capital; and 3/ a 39% free float, which includes institutional investors such as Financière Arbevel (3.8%), Portzamparc Gestion (3%), Amundi (2.2%) and 11% individual shareholders.



Breakdown of LFDE's capital

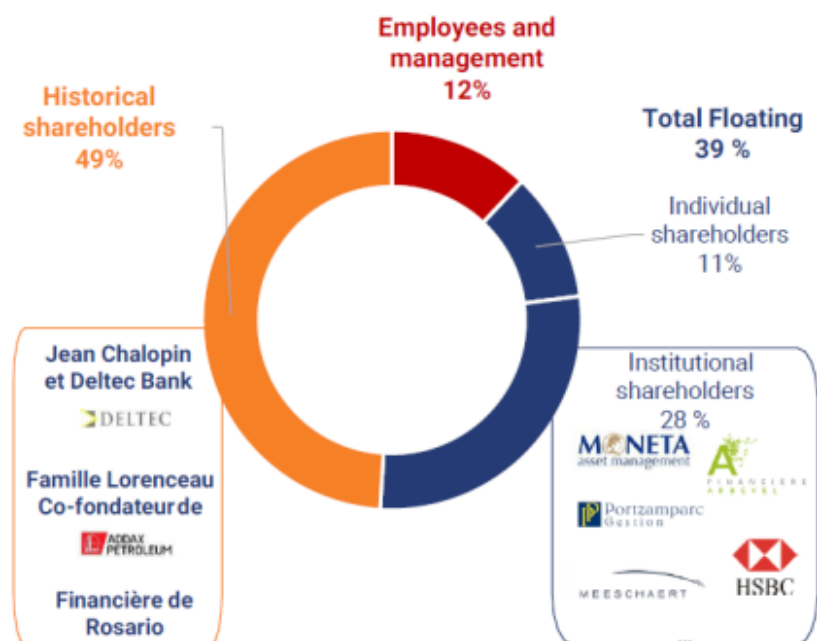


Chart 3 - Source: LFDE

A young and ambitious management team

Julien Moulin (43 years old, CEO): A French entrepreneur specialising in the energy industry, Julien Moulin has been at the helm of Française de l'Énergie since 2009. Julien Moulin was quick to show his entrepreneurial spirit after graduating from Paris Dauphine University. He worked for Barclays, UBS and Axis Capital before co-founding Maoming Investment Manager Ltd, an asset management company specialising in the energy sector and natural resources in Asia. Julien Moulin will continue to use his numerous contacts and in-depth knowledge of energy markets to expand La Française de L'énergie's activities over the next few years.

Antoine FORCINAL (38 years, Deputy CEO): since November 2015, Antoine Forcinal has held the position of Deputy Chief Executive Officer of La Française de l'Énergie. He is a graduate of a large French general engineering school and of the Imperial College (Royal School of Mines) in London. His career began in operations, as a production engineer on onshore and offshore fields in West Africa for Perenco. During his 10 years of international experience, Antoine Forcinal led multidisciplinary teams and acquired expertise in all the upstream and downstream branches of hydrocarbons.

Aurélié Tan (41 years, CFO): she joined LFDE in June 2020 as a Chief Financial Officer. She holds a Master's degree in Banking and Finance from the University of Paris-Dauphine and has a strong expertise in the Energy sector. She started her career in investment banking (BNP Paris, Standard Bank and Natixis, mainly in structured debt and as Industry Banker/Coverage) and then in the financial department of Seplat Petroleum, where she was in charge of Corporate Finance. During her 18 years of experience, Aurélié Tan has raised numerous bank and bond loans and worked on complex international acquisitions.

Yann Fouant (41 years, Project Manager): He is a Mechanical Engineer with 16 years of experience in industrial project management (Perenco, Total...).



Strong growth in the mine gas capture and recovery business

Capturing and recovering mine gas in the form of electricity in France and in Belgium

LFDE recovers and convert mine gas, commonly known as firedamp, into electricity in the Hauts-de-France region in France and in the Wallonia region in Belgium. Mine gas is found in the galleries of disused mines. Mine gas recovery and exploitation is considered as a green activity (recovered energy) since it prevents gas from venting into the atmosphere, averting heavy pollution. As it captures mine gas to convert it into electricity on its first 4 sites, LFDE is now the largest contributor to the reduction of the carbon footprint in the Hauts-de-France region, cutting 602,000 tons of CO₂eq emissions per year (Ineris 2019 study).

LFDE recovers mine gas either by re-injecting it directly into the GRT Gas network or by producing electricity at small CCGT plants with a capacity of 1.5 MW each.

Electricity produced from mine gas in France benefits from a green label and a 15-year power purchase obligation agreement at a French government-guaranteed price of € 76.6/MWh for the 1.5 MW sites and ~€ 67/MWh for Avion 3 MW site, which shields the activity from volatility in electricity market prices and gives significant visibility to the group’s forecast figures. Gas is sold under a one-year renewable contract to Total at market price.

In Belgium, the group sells the electricity produced at two co-generations in Anderlues to EDF Luminus at market price, but the sale of the green certificates to be granted to the group should bring in a substantial price supplement of around ~€ 70/MWh once the certificates are received.

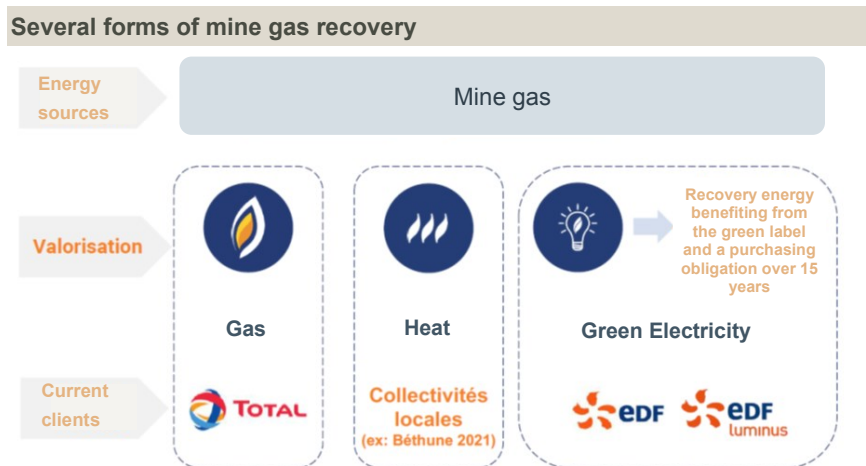


Chart 4 – Sources: La Française de l’Energie, ODDO BHF Securities

At end-June 2020, LFDE had six co-generation units with a unit capacity of 1.5 MW at its French sites in Avion (2), Divion (1), Lens (2) and Lourches (1). Avion is the group’s only capture site dedicated both to the sale of gas and the production of green electricity. The number of co-generations in France is expected to reach 27 units (ODDO BHF estimates) by 2022, i.e. an installed capacity of 40.5 MW vs. 9 MW currently.

In Belgium, Française de l’Energie has two co-generation sites (2x1.5 MW) in Anderlues. This number should increase to six units in 2022 (9 MW).



Mine gas sites in Hauts-de-France and Belgium

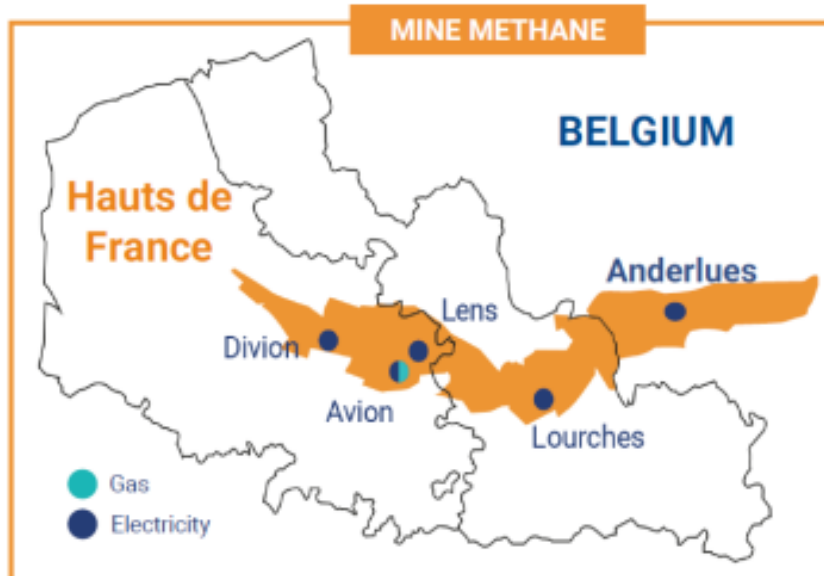


Chart 5 - Source: LFDE

The coal gas production project in full swing

In addition to its mine gas activities in the Hauts-de-France region, the group has a project in Lorraine to produce coal gas and convert it into gas to replace imported gas or hydrogen to help develop this sector. While mine gas is found in disused mining galleries, coal gas is found in coalbeds that were untapped because they were of poor quality or were not accessible. With 96% methane present in its composition, coal gas has a slightly better quality than conventional natural gas, which has only 93% methane.

To date, the group has invested € 41m in studies and test drilling as part of this project in Lorraine. After an initial certification obtained in 2016 from Beicip (Institut Français du Pétrole -Energies Nouvelles), LFDE obtained a new certification in October 2018 from MHA Petroleum, a US industry specialist, which upgraded the gas reserves and resources of this field to 2.1bn cubic metres vs. 0.79bn cubic meters in 2016. LFDE selected four of the most promising sites to start production and decided in early 2020 to pre-finance sales volumes with two traders. Unfortunately, the COVID-19 crisis and a sharp drop in gas prices since the beginning of the year brought talks to a standstill and the group is currently working on a second recovery option, which seems to be becoming increasingly promising, i.e. recovery in the form of de-carbonated hydrogen with re-injection of CO₂ into coal (see the group's growth drivers on page 26).

Before the health crisis broke out, the first site was scheduled to start production in 2022, but it seems reasonable not to include, for the time being, contribution from the project to the group's results amid uncertainty over gas prices in the medium term.



Coal gas sites in Lorraine

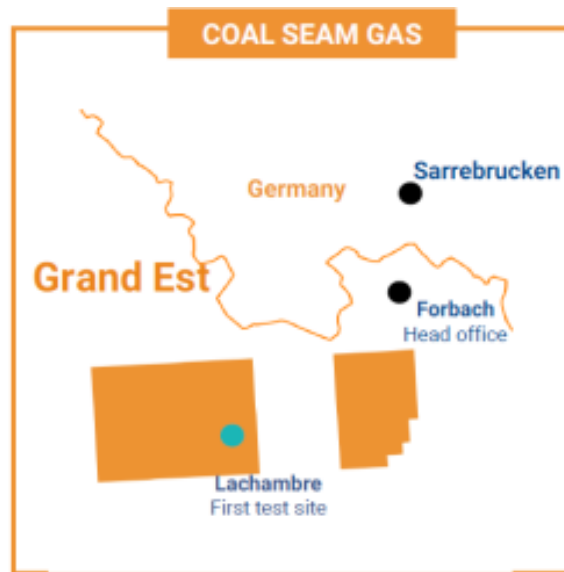


Chart 6 - Source: LFDE

An ambitious growth plan for end-2022

€ 7.9m in FY revenues at end-June, up 0.3%

LFDE generated € 7.9m in FY revenues (to end-June 2020), marking a slight 0.3% increase, of which € 5.9m (+20.6%) in electricity sales and € 2.0m (-32.7%) in gas sales (hurt by lower market prices).

We estimate the shortfall for 2020 at nearly € 2m, due to the drop in gas prices in France and electricity prices in Belgium, largely due to the COVID crisis. It should be noted that the group has not yet benefited from the sale of green certificates in Belgium for which it has been declared eligible.

In 2020, the group generated 65% of its revenues from the sale of electricity in France, an activity not exposed to market price because it benefits from a purchase obligation, 26% from the sale of gas in France (market price under a one-year renewable contract with Total) and the remaining 9% from the sale of electricity at market price in Belgium, where the activity is eligible for green certificates (from 2020-2021), leading to a significant price supplement (around € 70/MWh).

More than 75% of the group's revenues in 2020 are indeed eligible for the support scheme, which makes LFDE's results predictable and resilient. With electricity revenues expected to grow at a faster pace than gas revenues, revenues eligible for support should represent 90% of total revenues by the end of 2022.

Breakdown of LFDE's 2020 revenues

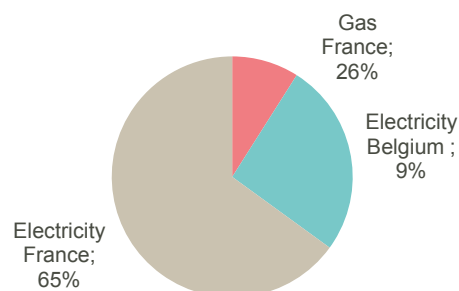


Chart 7 - Sources: Company, ODDO BHF Securities



Growth plan for end-2022: Revenues x4.5 vs 2020

In its growth plan, which was updated in the summer, the group targets 33 co-generation plants out to end-2022, representing an installed capacity of 49.5 MW, up 37.5 MW from end-June 2020, € 35m in full-year revenues (x4.5 vs 2020) and an EBITDA margin > 45% (vs ~15.5% estimated for 2020e). We expect EPS to work out at € 0.88 at end-June 2022 vs € 0.03 in 2020 and at € 1.72 at end-June 2023.

Our 2018-23 estimates							
€ m	June 2018	June 2019	June 2020 (rev. reported)	June 2021e	June 2022e (ODDO BHF)	June 2023e (ODDO BHF)	Growth plan for end-2022
Gas sales volume (GWh)	129	149	183	202	222	226	
Gas revenues	2.3	3.0	2.0	2.8	3.3	3.9	
Number electricity co-generations (1.5 MW)	5	6	8	16	33	34	
Installed capacity (MW)	7.5	9.0	12.0	24.0	49.5	51.0	49.5
Electricity revenues	4.4	4.9	5.9	15.0	24.4	34.6	
Group sales	6.7	7.9	7.9	17.9	27.8	38.4	>€ 35m
Growth (%)		19.0%	0.3%	126.0%	54.9%	38.6%	
Group EBITDA	-0.7	2.3	1.2	6.3	11.7	17.6	
Margin		28.8%	15.5%	35.1%	42.1%	45.7%	Margin > 45%
Attr. net profit	-1.3	0.8	0.12	3.0	4.5	8.9	

Table 8 - Sources: Company, ODDO BHF Securities

Buy recommendation, target price of € 23

We are initiating coverage of La Française De l'Énergie (LFDE) with a Buy recommendation and a target price of € 23, based on a DCF valuation for mine gas at a WACC of 7.7% and a valuation of coal gas factoring in 50% probability for the group to be able to recoup the capital employed (€ 41m), amid uncertainties over the development of this activity (see the chapters on coal gas and growth drivers).

Our sum-of-the-parts at € 23 per share

€ m	Value	%	Implied 2023e EV/EBITDA
Coal Mine Methane & Electricity - Haut de France & Belgium (DCF WACC of 7.5%)	114.0	85%	6.5x
Coal Bed Methane - Lorraine Project (50%*Capital employed)	20.6	15%	ns
Total	134.6		7.7x
- Net financial debt	-12.9		
- Pension provision & ARO	-4.5		
= Economic Net Debt	-17.4		
+ Financial Assets	0.9		
+ Tax loss carryforward	0.6		
= Total EV Adjustment	-15.9		
Equity value	118.7		
Value per share (€)	23.0		

Table 9 - Source: ODDO BHF Securities



SWOT analysis

SWOT analysis	
<p>Strengths</p> <ul style="list-style-type: none"> - Concessions and Exclusive Permits to explore the best sites - No competition - 15-year purchase obligation agreement for power production in France - Green certificates in Belgium (substantial price supplement) 	<p>Weaknesses</p> <ul style="list-style-type: none"> - Exposure to gas market price in France - Exposure to electricity market price in Belgium
<p>Opportunities</p> <ul style="list-style-type: none"> - Start of production at Lorraine Project - Support scheme for hydrogen production in France - M&A deals - International growth 	<p>Threats</p> <ul style="list-style-type: none"> - Regulatory changes - Delay or failure in the development of coal gas in Lorraine

Table 10 -Source: ODDO BHF Securities



CONVERTING MINE GAS INTO GREEN ELECTRICITY

Coal mine methane (CMM), also called firedamp, is a gas mainly made up of methane, which desorbs (migrates) naturally from coal seams at a pressure greater than 1 bar. It accumulates freely in old mine galleries where it can be pumped out. Mine gas recovery is considered a green activity (recovered energy), as it prevents the evacuation of mine gas into the atmosphere, thus avoiding the emission of large quantities of greenhouse gases.

Since the decree signed by Macron and Royal on 4 November 2016 was published, the development of this resource in the form of electricity has been supported by the French government. In 2016, LFDE became the only company to date that exploits mine gas in France and Belgium after it took over Gazonor, a former subsidiary of Charbonnage de France. The company operates in two concessions located in the former mining basin of Nord-Pas-de-Calais, called Désirée and Poissonnière, valid until 23 July 2042, and a single concession in Belgium valid until 2038. The 2P reserves developed by the group are estimated at 9,191m m3 in the Hauts-de-France region and at 277m m3 in Belgium.

A low-cost recovery process

Definition

Coal mine methane (CMM), also called firedamp, is a gas mainly made up of methane, which desorbs (migrates) naturally from coal seams at a pressure greater than 1 bar. It accumulates freely in old mine galleries where it can be pumped.

It is a gas qualified as "clean" because it contains no sulphur or sulphur components, but with a low calorific value that we estimate at 4 KWh for 1 m3 of gas. As a comparison, the calorific value of B gas (lower calorific value) transported in the network from the Netherlands only in the North of France is around 9 KWh/m3 and the calorific value of H gas (higher calorific value) from Algeria, North Sea and Russia is between 10.7 and 12.8 KWh/m3. In addition to direct conversion into gas, facilities producing electricity from mine gas may benefit from a feed-in tariff, under the terms set out under the decree issued on 19 October 2016 (see below).



Mine gas is extracted from existing wells

To exploit mine gas, cavities (i.e. the old mine tunnels) are made completely sealed, and some old down shafts are transformed into new exploitation shafts, where a depression is created with a pump. This depression allows the gas to be sucked up to the place where pressure is lowest and then pumped up through the shafts, making it possible to desorb the gas contained in the rock. No drilling is required to capture mine gas, as recovery is performed through existing wells. The extracted gas is injected into the GRT Gas network or transformed into electricity since October 2016.

Mine gas recovery is considered a green activity (recovered energy), as it prevents the evacuation of mine gas into the atmosphere, thus avoiding the emission of large quantities of greenhouse gases (methane).

As it captures mine gas to convert it into electricity on its biggest sites, LFDE is now the largest contributor to the reduction of the carbon footprint in the Hauts-de-France region, cutting 602,000 tons of CO₂eq emissions per year (Ineris 2019 study).

Power generation since October 2016

After a support scheme was introduced under a decree, issued on 19 October 2016, defining a feed-in tariff for the sector (see below), the production of electricity from mine gas became another economic outlet to ensure the sustainability of gas capture. Using gas combustion to produce electricity is a particularly attractive option in the fight against the greenhouse effect, as it replaces methane emissions with low CO₂ emissions, with greenhouse warming power 25 times less vs methane.

Converting mine gas into green electricity in short circuits

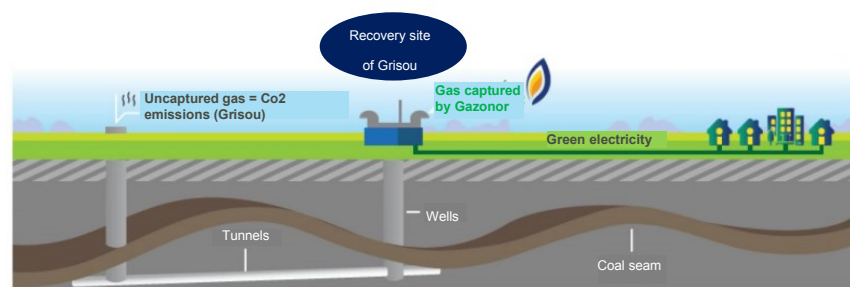


Chart 11 - Source: LFDE

Business model of a co-generation plant

Co-generation is the simultaneous production of heat and electricity by feeding gas to the engine. Mine gas drives the engine, which in turn sets an alternator in motion, producing electricity. The movement of the alternator generates heat. This heat is recovered by condensation and used to produce hot water for heating or sanitary facilities.

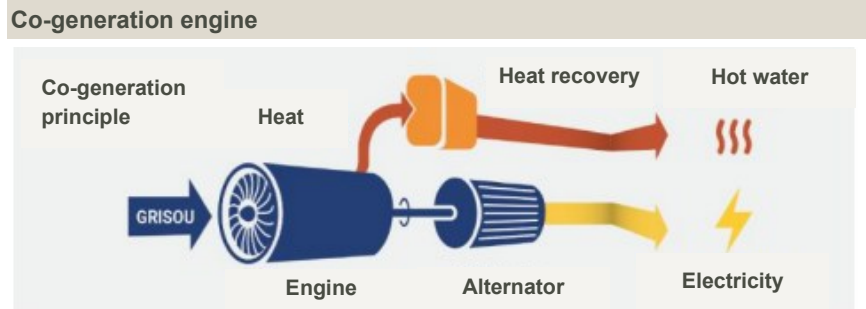


Chart 12 - Sources: ODDO BHF Securities

A 1.5 MW co-generation plant requires an investment of ~€ 1.4m with limited and controlled opex. The installation and commissioning of a cogeneration plant takes only six to eight months. A co-generation plant generates +€ 900k in revenues per year (€ 70/MWh on average), excluding heat recovery thanks to a high availability rate (94% on average in the case of LFDE).

Business model of a co-generation plant

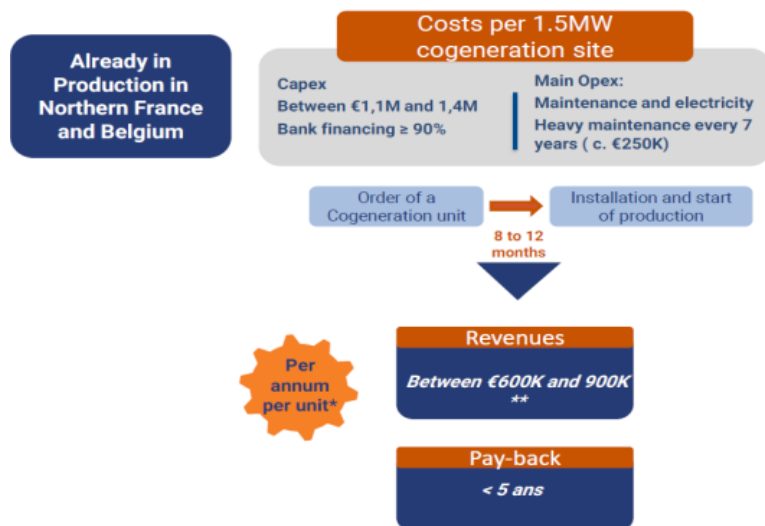


Table 13 – Source: LFDE

Support schemes for the industry in France and Belgium

An obligation to purchase tariff in France

In addition to direct conversion into gas, facilities producing electricity from mine gas may benefit from a feed-in tariff, under the terms set out under the decree issued on 19 October 2016. The purchase price varies according to the plant's installed capacity. Two prices are set for facilities with a capacity less than or equal to 1.5 MW and for facilities with a capacity greater than or equal to 4.8 MW. For plants with a capacity between these two values, the price is determined by linear interpolation.

Installed capacity (MW)	Tariff (€/MWh)
≤ 1,5 MW	76,6
≥ 4,8 MW	57,6

Table 14 – Source: ODDO BHF Securities



Each purchase contract includes provisions on the indexation of rates applicable thereto. This indexation is carried out annually on 1 January by applying a complex formula called coefficient L, calculated based on the revised hourly labour cost index in France and the French industrial producer price index for the French market.

This formula gives us the following prices for a 3 MW site and a 1.5 MW site from 2021.

Anticipated price trend incl. indexation (€/MWh)										
Year	1 (2021)	2	3	4	5	6	7	8	9	10
3MW	69.6	70.5	71.4	72.2	73.1	74.1	75.0	75.9	76.9	77.8
1.5MW	78.5	79.4	80.4	81.4	82.4	83.5	84.5	85.6	86.6	87.7

Table 15 – Source: ODDO BHF Securities

Green certificates awarded in Wallonia in Belgium

The production of electricity from mine gas was made eligible for the renewable energy production support scheme developed by Wallonia in 2019.

To meet the European and Walloon renewable energy production targets, Wallonia introduced a support system in favour of renewable energy producers. Under the system, green certificates are granted based on electricity production and the type of sector developed. Green certificates (GCs) have a commercial value. The system is intended to compensate producers for the extra costs incurred on the production of green electricity.

GCs are granted by SPW Energie (since 1 May 2019) to producers based on the production of green electricity declared in their meter readings.

Green electricity producers can sell their GCs to electricity suppliers (the companies that sell electricity to end-customers), since these are obliged to return to SPW Energie a GC quota in proportion to the amount of electricity they supply.

If they prefer, green electricity producers can also sell their GCs to Elia, the operator of the local energy transmission network, who is obliged to buy them at a guaranteed minimum price (€ 65/MWh).

It should be noted that LFDE is in discussion for their pre-financing with the main energy distributors of the country who are particularly demanding for green certificates) for the next three years at a price higher than € 70/MWh.

More than 200MW of installed capacity in Germany and the UK in 2015

More than 120MW of installed capacity in Germany in 2015

According to the public-private organisation GMI (Global Methane Initiative), Germany has deployed more than 40 abandoned mine methane “AMM” projects, all of which involve power generation or combined heat and power (CHP). In 2015, there were over 94 co-generation units fuelled by coal mine methane (a project typically involves multiple co-generation units) with an installed combined generating capacity of over 120 MW. Most of AMM projects in Germany started in the early 2000s, when an update of the national renewable energy policy created a special feed-in tariff for electricity generation from mine gas. Annual reported GHG emissions from abandoned mines have decreased from 5 Mt CO₂e in 2000 to only 18,000 t CO₂e in 2015 (UNFCCC, 2017).



More than 78MW of installed capacity in the UK

In the UK, nearly 80% of the underground coal mines closed in 1990. In 2010, a high proportion of the gas from abandoned mines had been emitted or used (Fernando, 2011). Mine gas extraction was not considered viable in small mines, low-gas content mines and mines that had been closed for more than 10 years and flooded. In 2018, 150 coal mining areas had been closed and nearly 30 projects for power generation and gas supply from mine gas had been developed. In October 2017, there were 13 AMM projects underway. Twelve of them generate electricity with a total installed capacity of 78 MW and one project involves injecting gas into a pipeline. Methane emissions from abandoned mines in the UK have decreased from 1.4 Mt CO2e in 2000 to 0.441 Mt CO2e in 2015 (UNFCCC, 2017).

LFDE the only player in France

In 2016, LFDE became the only company to date that exploits mine gas in France and Belgium after it took over Gazonor a former subsidiary of Charbonnage de France. The company operates in two concessions located in the former mining basin of Nord-Pas-de-Calais, called Désirée and Poissonnière, valid until 23 July 2042, and a single concession in Belgium valid until 2038. In addition to these regions, the group has exclusive exploration permits, including in Valenciennois (Hauts-de-France), extended out to 24 October 2022, and La Folie de Paris, extended out to 7 August 2021.

At end-June 2020, LFDE had six co-generation units with a unit capacity of 1.5 MW at its French sites in Avion (2), Divion (1), Lens (2) and Lourches (1). Avion is the group's only capture site dedicated both to the sale of gas and the production of green electricity. Co-generations in France are expected to total 27 units (ODDO BHF estimates, incl. Béthune) by 2022, i.e. an installed capacity of 40.5 MW vs. 9 MW currently.

In Belgium, Française de l'Energie has two co-generation sites (2x1.5 MW) in Anderlues. This number should increase to six units in 2022 (9 MW).

Current mine gas recovery sites in HdF and Belgium

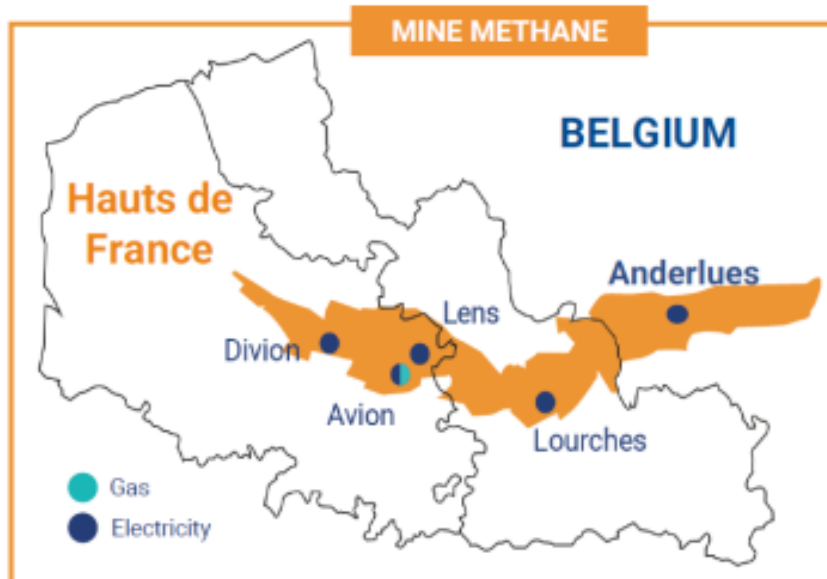


Table 16 – Source: LFDE



LFDE's mine gas reserves

The mine gas reserves in the Hauts-de-France region developed by LFDE, through its subsidiary Gazonor, are estimated at 9,191m m³, i.e. 130 years of operation at the current pace, and over 30 years of operation, assuming a production growth rate of 47% per year on average over 2019-22.

Reserves and gas production in 2019

Sites	Reserves (m m ³)	Estimated production in 2020 (m m ³)	In production since
Hauts-de-France	9 191 (2P) 277 (2P) and 450	84	2016
Belgium	(3P)	10	2019
Total	9 468	94	

Table 17 - Sources: company, ODDO BHF Securities

Competition limited by gas deposits

The number of potential producers is limited by the mine gas deposits in the French coalfields, where coal was extracted from 1720 to 1990. Apart from Nord-Pas-de-Calais, the region offering the most abundant mine gas deposits and exploited by LFDE, these basins are located in underground mines in Lorraine and in several basins in the Centre-Midi region. Future mine gas production in these regions is possible, although gas volumes are more limited and a faster rise of water in the mine cavities weakens economic profitability.

Map of mining basins in France

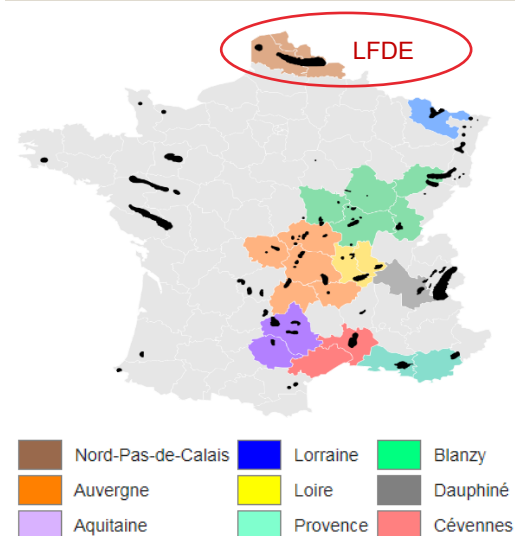


Chart 18 - Source: Wikipedia

Limited impact of the end of B-gas on LFDE

Natural gas consumers in the Hauts-de-France region are supplied with low calorific B-type natural gas from the Groningen field in the Netherlands. As production from this field is expected to decline, France will have to change its supply sources starting in 2029. From that date, the customers concerned will be supplied with so-called "H-gas", a high-calorific gas which already supplies 10 million customers throughout France.



To prepare for the end of B gas in the Hauts-de-France region, the French network operator GRT has begun to carry out a number of pipeline upgrading works. This has forced LFDE to stop injecting its mine gas into the network for several days in 2019, which impacted its gas sales volumes in 2019. These interruptions could continue in 2019-20 and 2020-21. The group hopes to obtain compensation for the loss incurred.

The disappearance of B gas in Hauts-de-France by 2029 will not prevent the group from continuing to inject its mine gas into the GRT network. As the quantities injected by LFDE are too small to influence the quality of the gas in the network, all the more so as it will be replaced by high calorific H gas.

Strong growth expected by June 2023

The Bethune contract: +€ 2m/year in sales from 2021

In 2017, the municipality of Béthune chose the solution proposed by Dalkia and built around the supply of clean energy by La Française de l'Energie as part of the public service delegation (for a period of 22 years) for its heating network serving the equivalent of 6,500 housing units.

This project which is non-dilutive for shareholders, represents an estimated € 2m per year in recurring revenues for the group over the duration of the contract. In fact, price levels are fixed and indexed at 100% for all energy sold, for gas, electricity and heat. As such, these contractual conditions protect the group against any fluctuations in market prices that may occur over the next few years.

Thus, as of 1 January 2021, LFDE will transport the production of mine gas captured on its Divion site as well as the heat from its two co-generation units (2.7 MW) which will be installed on the new Béthune site by the end of 2020 and which will benefit from the tariff set by the purchasing obligation, similarly to the other co-generation units currently operated by the group in the Hauts-de-France region.

Reaching cruising speed in gas sales

Our assumptions assume an average increase of 35% per year in mine gas production in France and Belgium over 2020-2023. This growth is in line with the group's electricity production development plan: 33 co-generation units by the end of 2022 or 49.5 MW of installed capacity, compared to 8 co-generation units by the end of June 2020 or 12 MW of installed capacity.

For the calculation of gas production expressed in GWh, we have used a conversion coefficient of 4 KWh for one m³ of gas. As detailed in our introduction, mine gas is less calorific than B-gas and H-gas. As such, we estimate the annual mine gas production in June 2022 at 810 GWh and 1,050 GWh at the end of June 2023 compared to ~386 GWh estimated at the end of June 2020.

The group sold 183 GWh of gas in 2020 vs only 149 GWh in 2019. This increase can be explained by the decrease in 2020 of the disruptions linked to GRT's works on the network to prepare the end of B-gas and the end of the replacement of the old oil-fired gas injection engines in the GRT network by new Siemens electric engines (25% more efficient for an investment of € 1.3m). The volumes of gas sold should reach a normative level of 220 GWh in 2022 and then grow slightly beyond that year (2% per year on average).



Our gas sales projections (2020-2023e)

	June 2018	June 2019	June 2020e	June 2021e	June 2022e	June 2023e
Production in millions of m3	<60	77.7	94	122	195	255
o/w France	-	72.2	84	102	165	225
o/w Belgium	-	5.5	10	20	30	30
Production (GWh)	-	316.3	386	508	810	1 050
o/w France	-	288.8	336	408	660	900
o/w Belgium	-	22.0	50	100	150	150
Gas volume sold (GWh)	129	149	183	202	222	226
Gas sales (€ m)	2.3	3.0	2.0	2.8	3.3	3.8

Table 19 - Sources: company, ODDO BHF Securities

Strong growth in electricity: 33 co-generation units at end-2022 vs 8 at present

The growth in revenue from the sale of electricity will be much more sustained than that of gas sales due to: 1/ the expected growth in installed capacity and the number of co-generation units and 2/ the very high contribution (€ 4.7m) expected to the 2021 revenue from the sale of green certificates, which the group is currently discussing to pre-finance them at a price close to € 70/MWh.

Our electricity production projections in GWh (2020-2023e)

	2018	2019	2020e	2021e	2022e	2023e
Number of co-generation units in France	5	5	6	12	27	28
Electricity production in France (GWh)	61.7	66.9	72.0	112.3	224.7	337.0
Electricity sales in France (€ m)	4.4	4.8	5.2	8.3	17.7	26.4
Number of co-generation engines in Belgium	0	1	2	4	6	6
Electricity production in Belgium (GWh)	0	3	24	50	62	75
Green Certificates (€m)				4.7	3.8	4.6
Electricity sales in Belgium (€ m)	0.0	0.13	0.72	6.7	6.7	8.2
Total electricity sales	4.3	4.9	5.9	15.0	24.4	34.6

Table 20 - Sources: company, ODDO BHF Securities



THE LORRAINE PROJECT: COAL GAS PRODUCTION

Since the beginning of 2010, there has been a renewed interest in natural gas such as coal gas. Most of the world's coal gas deposits are located in Canada, the US, Australia, Russia and China, but France also has reserves in Lorraine and the Nord-Pas-de-Calais basin. According to expert estimates, the coal gas deposits located in France could cover the country's gas needs for five to ten years.

Since its creation, La Française de l'Energie has taken a very close interest in the potential of coal gas in France. As a matter of fact, LFDE has no competition for the moment since it holds an exclusive research licence in the Lorraine coal basin (the richest zone in France in terms of coal gas). To date, the group has invested more than € 41m in studies and test drilling on this project in Lorraine.

After an initial certification obtained in 2016 from Beicip (Institut Français du Pétrole -Energies Nouvelles), LFDE obtained a new certification in October 2018 from MHA Petroleum, a US specialist in the field, which upgrades the gas reserves and resources of this field to 2.1 bcm vs. 0.79 bcm in 2016. LFDE selected four of the most promising sites to start production and decided in early 2020 to pre-finance sales volumes with two traders. However, the sanitary crisis linked to COVID-19 and the sharp drop in gas prices since the beginning of the year led to the suspension of talks. The group is currently working on the second recovery option, which seems to be becoming increasingly promising, i.e. recovery in the form of decarbonated hydrogen with re-injection of CO2 into coal (see the group's areas of development on page 27).

What is coal gas?

Definition

Among the hydrocarbons qualified as "unconventional", shale gas and oil have been the focus of media attention since 2010. Other resources requiring specific techniques to be extracted also show promising potential given the announced reserves. Alongside oil sands, oil shales and methane hydrates, there is coal bed methane (CBM). Coal gas is trapped in coal seams. It is composed of nearly 95% methane and can be exploited in gas-fired power plants or injected into gas distribution networks after treatment.

Coal gas formation

Coal is created by the decomposition of organic matter of terrestrial origin (mainly wood: wood and other plants), a process that takes several million years. The action of micro-organisms initiating this process and the thermal transformation due to the burial of organic matter create methane and other gases in smaller proportions (CO2, nitrogen, hydrogen, etc.) as well as water. The amount of gas produced varies according to deposits and temperature and pressure conditions.



It is estimated that about 150 to 200 m³ of methane are produced per tonne of coal formed (gas pressure < 5 MPa). The majority of this gas has now migrated out of the coal layer to the surface and the proportion of coal gas remaining per tonne of coal does not generally exceed 20 m³.

The coal gas remaining in the coal layers is present in three forms:

- In the free state in the fractures and the largest pores of the rock (above 50 nm, 1 nm being equal to 10⁻⁹ m);
- In the absorbed state in the smallest pores of the coal. It is in this form that coal gas is most abundant (up to more than 90% of the gas in the deposit). The gas molecules stick to the surface of the elementary coal grains within these micro-pores, which can be less than 2 nm in size;
- In the dissolved state in the water contained within the deposit.

Principle of coal gas extraction

Coal gas present in unmined coal seams can be pumped from the surface. Once a borehole is drilled, mining begins with a phase of extracting coal water (called "production water"). Extraction lowers the pressure in the coal until it reaches a point of gas "desorption" (pressure at which the gas escapes from the pores in the rock). Gradually, the proportion of water present in the extracted mixture decreases while that of gas increases until the extracted fluid is saturated with gas (with an irreducible proportion of water). Once extracted, the gas is dried and processed before being used as fuel in power plants or injected into distribution networks.

An industrial opportunity

Today, companies in the energy sector see this coal gas as a high-potential alternative to compete with shale gas, the exploitation of which is not authorised on French territory. Basically, the two gases are quite similar since they are mainly composed of methane. What makes the difference is the extraction technique. Where the exploitation of shale gas requires the use of hydraulic fracturing (a polluting and potentially dangerous method), the exploitation of coal gas requires only depressurisation to extract it from the veins of the rock. It is then simply recompressed to store it and inject it into a natural gas network.

Techniques used by LFDE

Drilling used for coal gas exploitation is nowadays mostly "horizontal" (also called "directional" drilling). This technique allows the drilling, which is vertical at its base, to bend back following the coal seam over several hundred metres. The productivity per well then increases sharply (10 to 20 times compared to vertical drilling) and the number of wells on the surface is reduced.



Technical illustration of coal-bed gas capture

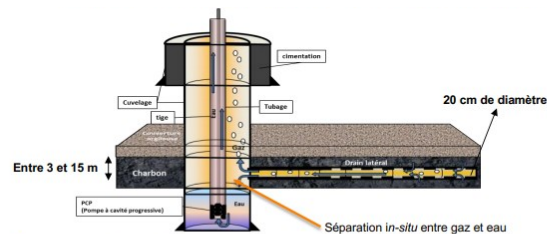
Focus on gas capture and valorisation

- Recovery of gas directly from coal seams
- An innovative drilling technique: "zero waste" sites

A very limited visual impact

During drilling

During test and production



- A molecule with a very high calorific value directly usable by the final consumer

1 well in production = Production of 50 to 100 windmills over 15 years

Chart 21 - Source: LFDE

Regions where the group is active in the world

Together, Canada, China and Russia hold nearly 80% of the world's coal gas resources. In 2018, however, Australia became the largest producer ahead of the US, which is the precursor to the exploitation of this resource. China is the other major coal gas producing country in the world along with Canada and the US. India is also developing a growing number of projects.

The world's main coal gas producing countries in 2018

Coal gas, a worldwide success to be replicated in Lorraine

A growing activity for more than 30 years in coal-mining countries

Australian example: exponential growth of coal gas production

Quasiment inexistante (2000) → 37Md m³/an (2018) → 2nd largest LNG exporter behind QATAR

Coal gas production in 2018		
Australie	Etats-Unis	Chine
37Md m ³ /an	26Md m ³ /an	11Md m ³ /an

Source : IAE – international Energy Agency

Chart 22 - Source: LFDE

37bn m3/year



France is one of the only European countries to have coal gas deposits

Since the beginning of 2010, there has been renewed interest in this naturally occurring gas. While most of the world's coal gas deposits are located in Canada, Russia and China, France also has significant reserves (see chart below). Since 2013, new experiments for the exploitation of coal gas have been conducted. According to expert estimates, the coal gas deposits located in France could cover the country's gas needs for five to ten years.

France is one of the only European countries to have coal gas at its disposal

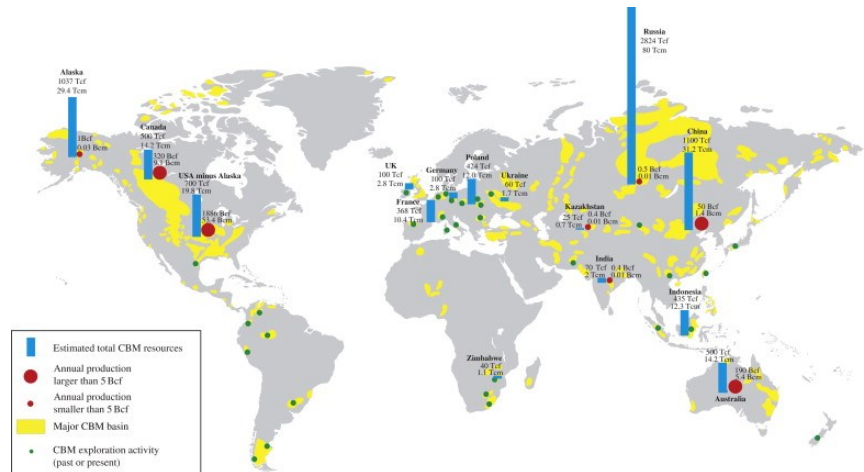


Chart 23 - Source: Sciencedirect 2014

In France, the coalfields with the greatest potential for coal gas resources are those located in the Nord-Pas-de-Calais and Lorraine regions and in the Alès region (deposits of Carboniferous age, period of between -360 and -290 million years).

Emmanuel Macron in favour of coal gas

On 24 May 2016, Emmanuel Macron, Minister of the Economy, spoke at the Cyclope symposium on raw materials to defend the exploitation of coal gas: "I am in favour of the continued exploitation of coal gas in Lorraine, whose reserves are promising and which is well accepted locally". He added: "coal gas deposits in France can be exploited without hydraulic fracturing, in an area with a favourable mining past. This is an industrial opportunity to be seized." An opportunity all the more crucial as gas reserves in the North Sea will gradually dry up. To meet its gas needs, France will therefore have to import gas from Russia or the Middle East, creating a situation of energy dependence. Coal gas is therefore proving to be an interesting energy palliative.



LFDE alone in the ranks...

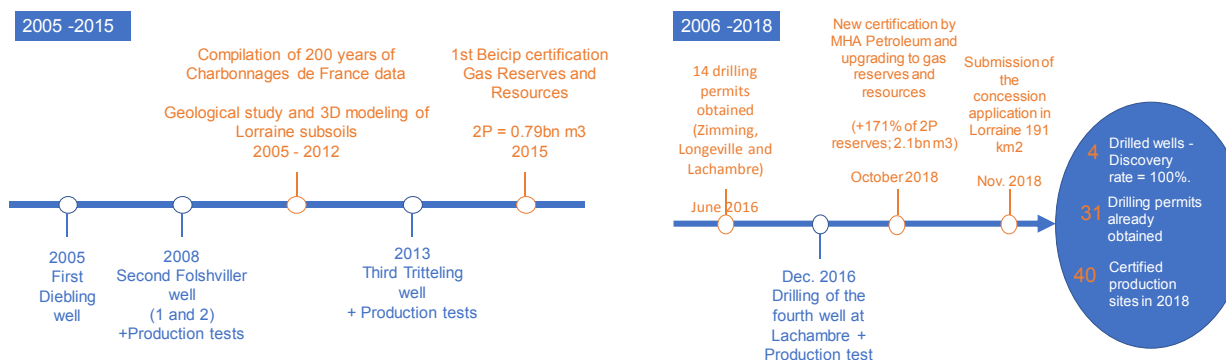
Since 2005, La Française de l'Energie has been closely interested in the potential of coal gas. Since the beginning of 2016, the company has stepped up a gear. It has launched an exploration drilling on the Lachambre site in Moselle. The well, which goes down nearly 1,500 metres below the ground, allows lateral drilling to explore the coal seam that has been identified by specialists. To date, the study carried out has shown that the seam has a methane content of more than 10m³, making it an excellent quality deposit.

LFDE has no competition for the moment since it holds an exclusive research licence in the Lorraine coal basin (the richest zone in France in terms of coal gas) granted by the Ministry of the Economy. This is a valuable asset that enables it to stay ahead of other energy companies. According to studies carried out in the field, La Française de l'Energie believes it will be able to produce 5% of France's annual gas consumption by 2025.

Key steps already taken...

To date, the group has invested € 41m in studies and test drilling on this project in Lorraine. In 2016, LFDE has been selected in the Lorraine State-Region Pact as one of the flagship projects for the development of a local industry for the short circuit development of this resource. In October 2018, the group obtained a new certification by MHA Petroleum which upgrades the gas reserves and resources of this field to 2.1bn m³ vs 0.79bn m³ in 2016. In November 2018, the group filed a concession application in Lorraine (191 Km²) until 2040. In 2019, LFDE obtained the stamp of admissibility of its concession application from the French General Directorate of Energy. On 10 September 2020, public inquiries were launched. The concession is expected to be awarded in November 2021.

Key steps of the Lorraine project



Charts 24 - Source: ODDO BHF Securities

An infrastructure conducive to the implementation of short circuits

The distance of LFDE installations from a gas pipeline or a gas distribution point is between 200m and 5km, which is favourable to the implementation of short circuits and limits investments for connection to the network.



Infrastructure conducive to the implementation of short circuits

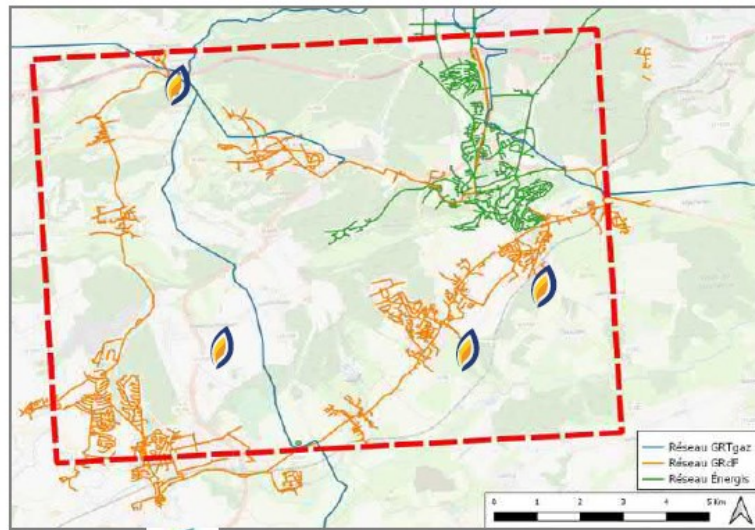


Chart 25 - Source: LFDE

Gas from Lorraine much greener than the French gas mix

The Lorraine gas has a greenhouse gas emission estimated at 3.4g of CO₂ per kWh while the French gas mix (LNG and pipeline gas) has an estimated emission of 32g of CO₂ per kWh.

Emissions 10 times lower than the French gas mix

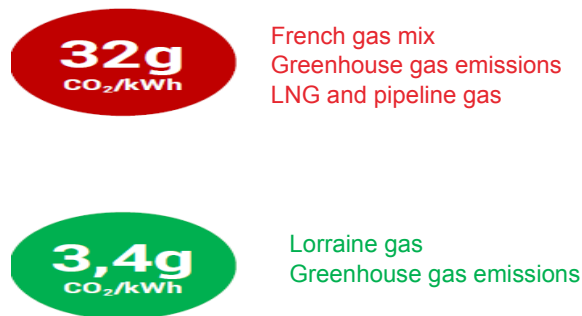


Chart 26 - Source: LFDE



...But the production start date has yet to be defined

LFDE has selected four sites, Lachambre, Grossetzel, Tritteling-2 and Pontpierre-2, sites that offer the best conditions of execution, financing and return on investment, to begin production.

The four selected sites

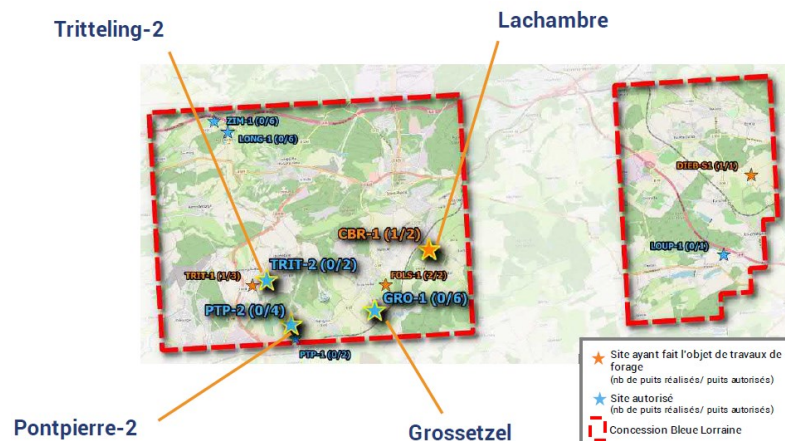


Chart 27– Source: ODDO BHF Securities

At the beginning of 2020, the group was about to opt for the solution of a pre-financing of sales volumes with traders to finance the € 25m necessary for the development of the first selected site (Lachambre), including drilling, construction and civil engineering. The group was counting on this step to start production as early as 2022 and at the same time materialise a small part of the value of the project, but the health crisis linked to COVID-19 and the sharp drop in gas prices have suspended discussions with gas buyers. The market price of gas does not allow the signing of volume pre-financing contracts under satisfactory conditions and we believe that the development of the group's first coal gas production site in Lorraine will not be possible until gas market conditions are less volatile. Nevertheless, we believe that this activity, openly supported by President Emmanuel Macron, could ultimately be much more promising if it were developed to produce decarbonated hydrogen (see next chapter). In any case, we do not envisage a contribution to the revenue of this activity for the short and medium term forecasts indicated in this report.



THE GROUP'S MAJOR AREAS OF DEVELOPMENT

In mine gas, in addition to organic growth through demand from other concessions, particularly in Belgium, the group is also considering external growth opportunities, mainly in Germany and Poland. Another area of development concerns the valuation of its gas into hydrogen, which is emerging as an extremely promising energy carrier, provided it is produced at a reasonable cost and under acceptable ecological conditions.

Partnerships in the solar and solar thermal sectors

LFDE has entered into an exclusive partnership with Total Quadran to develop and secure 100 MW. In the framework of this partnership, Total Quadran will be able to benefit from LFDE's territorial anchorage in the Hauts-de-France and Lorraine regions in exchange for a minority LFDE stake in these projects.

This partnership will enable the group to develop its land and build long-term alliances with partners in the renewable energy sector. The contribution of these activities to the group's earnings (consolidated by the equity method) is not expected to be significant in the medium term. We will integrate into our earnings sequence the contribution of LFDE's share in these solar projects as they are commissioned.

At the same time, the group has another partnership of the same type with the local energy supply company of Creutzwald for the installation of the largest solar thermal power plant in France connected to a heating network that will enter into production from the end of Q3 2020. This activity, in which LFDE holds a 51% stake, will contribute ~€ 80K per year to the group's revenue from the financial year June 2020-June 2021, which is included in our estimates.

M&A deals cannot be ruled out

In mine gas, in addition to organic growth in Belgium through demand for other concessions, the group is also studying external growth opportunities mainly in Germany for assets already in production or in Poland for the acquisition of concessions alone or with local partners. In the case of an M&A transaction, the group has not ruled out the possibility of having recourse to the market, although the option of financing through bank or corporate debt will be the preferred option.

It should be noted that Germany has many players in mine gas recovery and valorisation. In 2015 Germany already had more than 40 mine gas recovery projects.



Hydrogen to value coal gas?

The group is beginning to study internally other possibilities for the valuation of its coal gas, in particular by producing blue hydrogen.

Present in its natural state, particularly in water, hydrogen is the most abundant chemical element on earth. To produce it, it must be separated from the elements with which it is associated using an energy source.

There are several types of hydrogen depending on the production method:

- Green hydrogen = by electrolysis of water with electricity from renewable energy sources
- Blue hydrogen = steam methane reforming and CO2 capture
- Grey hydrogen = steam methane reforming with no CO2 capture
- Brown hydrogen = gasification of lignite
- Black hydrogen = coal gasification

Today, the production of "green" hydrogen with an electrolyser costs up to € 5 per kilo, according to the European Commission, compared to € 2.50 for "blue" hydrogen and only € 1.50 for "grey" hydrogen.

Grey hydrogen accounts for 80% of French hydrogen production but the French government intends to increase the share of green hydrogen in this mix through a € 7bn hydrogen plan by 2030 unveiled on 8 September which aims to reach 6.5 GW of electrolyser capacity to produce "de-carbonated" hydrogen by electrolysis by 2030 (for more details on this plan see the flash-note from our ISR team on 9 September, "With a € 7bn plan, France is scaling up its hydrogen industry").

Even if the hydrogen support plan in France is mainly focused on green hydrogen, we believe that the production of blue hydrogen, whose production cost is constantly decreasing, will have an increasingly important place over the next few years in the transition to green hydrogen.

In addition, other much less polluting processes are emerging. For example, the US-based company Monolith Materials is on the verge of producing hydrogen and carbon black using a revolutionary, low-polluting technology, with the help of the MINES ParisTech PERSEE centre. This solution enables methane to be cracked at very high temperatures to produce hydrogen and carbon black, a product that is highly popular in industry, particularly in the tire industry. Methane is injected into hydrogen plasma (hydrogen gas heated to 4,000 - 5,000°C, highly ionized) and decomposes into hydrogen gas and carbon black. This production of hydrogen emits no CO2 directly. Moreover, this method is less energy consuming than water electrolysis, since it requires six times less electricity for the same quantity of hydrogen produced. This new methane cracking process already seems interesting in the current economic conditions thanks to the production of carbon black, a highly sought-after product (market of nearly \$15bn per year).



VALUATION OF € 23 PER SHARE

We initiated La Française De l'Energie (LFDE) with a Buy recommendation and a target price of € 23 derived from a DCF for the mine gas activity with WACC at 7.7% which results in € 19.0/share and a coal gas valuation at 50% of the capital already employed (€ 41m), i.e. € 4.0 per share, given the uncertainties surrounding the development of this activity. Our estimates for 2022-23 are in line with the group's growth plan. The electricity produced by LFDE from mine gas is considered to be from a green source and benefits from a purchase obligation in France and green certificates in Belgium, which makes it relatively eligible for comparison with other renewable energy companies. LFDE's current share price values the company at 7.7x in terms of 2022e EV/EBITDA and 11.4x in terms of PE 2022e, i.e. a discount of 38% and 65% respectively compared to other renewable energy companies.

Summary of our estimates

Strong growth in mine gas activity in 2020-2023

As discussed at the end of the chapter on mine gas activity, we assume an average increase of 35% per year in mine gas production in France and Belgium over 2020-2023. The gas sales activity should gradually reach its cruising speed in 2022 with a volume sold of around 220 GWh, while the sale of electricity should grow strongly over 2020-2023 with 33 co-generation plants expected by the end of 2022 or 49.5 MW of installed capacity, compared to 8 cogeneration plants at the end of June 2020 or 12 MW of installed capacity.

Summary of our 2020-2023e sales estimates

	18	19	20	21e	22e	23e
Volume of gas sold (GWh)	129	149	183	202	222	226
Gas sales (€ m)	2.3	3.0	2.0	2.8	3.3	3.8
Number of co-generation plants in France (including Béthune)	5	5	6	12	27	28
Electricity production in France (GWh)	61.7	66.9	72.0	112.3	224.7	337.0
Electricity sales in France (€ m)	4.4	4.8	5.2	8.3	17.7	26.4
Number of co-generation engines in Belgium	0	1	2	4	6	6
Electricity production in Belgium (GWh)	0	3	24	50	62	75
Green Certificates (€m)				4.7	3.8	4.6
Electricity sales in Belgium (€ m)	0.0	0.13	0.72	6.7	6.7	8.2
Total electricity sales (€ m)	4.4	4.9	5.9	15.0	24.4	34.6
Total group sales (€m)	6.7	7.9	7.9	17.9	27.8	38.5

Table 28 – Sources: company, ODDO BHF Securities



The increase in the group's installed capacity and sales will enable it to better amortise its fixed costs and achieve an EBITDA margin > 45% at the end of 2022 in accordance with the group's plan (ODDO BHF at 45.7% in June 2023).

Simplified P&L June 2018 - June 2023e						
€ m	30/06/18	30/06/19	30/06/20e	30/06/21e	30/06/22e	30/06/23e
Sales	6.7	7.9	7.9	17.9	27.8	38.5
EBITDA	-0.7	2.3	1.2	6.3	11.7	17.6
Margin		28.8%	15.5%	35.1%	42.1%	45.6%
Operating profit						12.5
	-2.8	1.4	0.03	3.8	6.7	
Pre-tax profit	-3.2	0.9	-0.5	3.2	6.0	11.8
Attrib. net result						8.8
	-1.3	0.8	0.12	3.0	4.5	
EPS (€)	-0.25	0.16	0.02	0.58	0.88	1.72

Table 29 - Sources: company, ODDO BHF Securities

Coal Gas: uncertainty about development

Concerning coal gas, we included no contribution from this activity in our P&L at this stage. We believe that the development of the group's first coal gas production site in Lorraine will be possible only once gas market conditions become less volatile and more favourable again. However, we believe that this activity, openly supported by President Macron, could be much more promising if it were developed to produce de-carbonated hydrogen. Indeed, the use of coal gas to produce blue hydrogen could be of much greater interest to investors as well as to the political authorities, especially at a time when the latter aim to accelerate investment in de-carbonated hydrogen.

Valuation of € 23 per share

Sum-of-the-parts at € 23 per share

We initiated La Française De l'Énergie (LFDE) with a Buy recommendation and a target price of € 23 derived from a DCF for the mine gas activity with WACC at 7.7% which results in € 19.0/share and a valuation of coal gas at 50% of the capital already employed (€ 41m), i.e. € 4 per share, given the uncertainties surrounding the development of this activity.

Our sum-of-the-parts at € 23 per share

€ m	Value	%	Implicit 2023 EV/EBITDA
Coal Mine Methane & Electricity - Haut de France & Belgium (DCF WACC of 7.5%)	114.0	85%	6.5x
Coal Bed Methane - Lorraine Project (50%*Capital employed)	20.6	15%	ns
Total	134.6		7.7x
- Net financial debt	-12.9		
- Pension provision & ARO	-4.5		
= Economic Net Debt	-17.4		
+ Financial Assets	0.9		
+ Tax loss carry-forward	0.6		
= Total EV Adjustment	-15.9		
Equity value	118.7		
Value per share (€)	23.0		

Table 30 - Source: ODDO BHF Securities



Valuation of mine gas at € 19/share

The DCF for the mine gas activity is based on estimates up to 2050, the estimated date of depletion of the group's current 2P reserves in France. We have therefore not factored in a terminal value beyond 2050. Beyond the purchase obligation contracts with EDF, we have retained market prices that we estimate to be at around € 56/MWh. It should be noted that maintenance capex are included in the operating costs (major maintenance totals € 250K per co-generation every seven years).

Mine gas business DCF						
€ m	2021e	2022e	2023e	2024e	2025e...	...2050e
Revenues	17.9	27.8	38.5	40.7	42.0	35.5
Restated EBIT	3.8	6.8	12.5	13.5	14.0	9.4
Tax	-0.9	-1.7	-3.1	-3.4	-3.5	-2.4
NOPAT	2.8	5.1	9.4	10.1	10.5	7.1
depreciation	2.5	4.9	5.0	5.2	5.2	0.0
Capex	-12.2	-23.8	-1.4	-1.4	0.0	0.0
FCF	-6.8	-13.8	13.0	13.9	15.7	7.1
Discounted FCF	-6.3	-11.9	10.4	10.3	10.8	0.8

Table 31 - Source: ODDO BHF Securities

Our DCF assumptions take into account a beta asset at 0.8 reflecting the relatively average risk profile of LFDE thanks to the support mechanisms in France and Belgium which have partially offset the risk related to the development of the coal gas activity. Conversely, we have factored in our forecasts a market risk premium of 9.6% in line with the risk premium currently observed in France. The WACC of 7.7% that we have applied to our DCF derives from the assumptions presented in the table below:

DCF assumptions	
DCF assumptions	
Re	13.2%
Risk free	-0.45%
Country risk premium	0.0%
Beta Asset	0.8
Beta Equity	1.42
Mkt premium	9.61%
Tax rate	25.0%
D/E	50.0%
Rd	3.0%
WACC	7.7%

Table 32 - Source: ODDO BHF Securities

Sensitivity to the cost of capital and (K) and net debt (D)					
€	Valuation	Diff. (%)	Terms	Valuation	Diff. (%)
+50bp change in cost of capital	22.4	-2.6%	-50bp change in cost of capital	23.7	3.0%
+100bp change in cost of capital	21.8	-5.2%	-100bp change in cost of capital	24.3	5.7%
+150bp change in cost of capital	21.2	-7.8%	-150bp change in cost of capital	25.0	8.7%
+200bp change in cost of capital	20.7	-10.0%	-200bp change in cost of capital	25.7	11.7%
+50bp change in cost of debt	22.6	-1.7%	-50bp change in cost of debt	23.5	2.2%
+100bp change in cost of debt	22.1	-3.9%	-100bp change in cost of debt	24.0	4.3%
+150bp change in cost of debt	21.7	-5.7%	-150bp change in cost of debt	24.5	6.5%
+200bp change in cost of debt	21.2	-7.8%	-200bp change in cost of debt	25.0	8.7%

Table 33 - Source: ODDO BHF Securities



Valuation of coal gas at € 4/share

Taking into account the uncertainties surrounding the development of this activity we have factored in our central scenario a valuation of coal gas at 50% of the costs already employed (50% of € 41m) which is equivalent to a valuation of ~€ 4/share.

Discount to 2022 multiples

The electricity produced by LFDE from mine gas is considered to be from a green source (benefiting from support measures in France and Belgium) which makes it relatively comparable with independent renewable energy companies.

LFDE's current share price values the company at 7.7x in terms of EV/EBITDA and 11.4x in terms of PE 2022 (rebased at the end of December), i.e. a discount of 38% and 65% respectively compared to other independent renewable companies.

Valuation by peer group comparison (at 21 September 2020)

x	EV/sales		EV/EBITDA		P/E	
	2021e	2022e	2021e	2022e	2021e	2022e
EDP Renovaveis SA	7.6x	7.2x	9.7x	9.2x	34.9x	31.1x
ERG S.p.A.	4.9x	4.7x	9.3x	8.8x	24.5x	26.1x
Scatec Solar ASA	10.3x	9.5x	13.8x	11.6x	57.4x	47.5x
Encavis AG	11.4x	10.6x	14.9x	13.9x	26.8x	25.4x
Volitalia	6.9x	6.4x	13.7x	11.4x	38.8x	22.5x
Solaria Energia y Medio Ambiente, S.A.	21.8x	14.7x	28.0x	19.0x	52.1x	28.5x
Falck Renewables S.p.A.	6.3x	5.9x	11.5x	10.7x	37.3x	30.7x
Albioma	4.5x	4.5x	11.0x	10.4x	27.0x	24.1x
Neoen S.A.	13.8x	12.0x	17.8x	15.6x	ns	59.2x
Average	9.7	8.4	14.4	12.3	37.4	32.8
Mean	7.6	7.2	13.7	11.4	36.1	28.5
LFDE at current share price (rebased)	4.6x	3.3x	12.2x	7.7x	19.0x	11.4x
(Discount) / Premium	-52.4%	-60.4%	-15.1%	-37.8%	-49.1%	-65.1%

Table 34 - Sources: FactSet, ODDO BHF Securities



- **Valuation method**

Our target prices are established on a 12-month timeframe and we use three valuation methods to determine them. First, the discounting of available cash flows using the discounting parameters set by the Group and indicated on ODDO BHF website. Second, the sum-of-the-parts method based on the most pertinent financial aggregate depending on the sector of activity. Third, we also use the peer comparison method which facilitates an evaluation of the company relative to similar businesses, either because they operate in identical sectors (and are therefore in competition with one another) or because they benefit from comparable financial dynamics. A mixture of these valuation methods may be used in specific instances to more accurately reflect the specific characteristics of each company covered, thereby fine-tuning its evaluation.

- **Sensitivity of the result of the analysis/ risk classification:**

The opinions expressed in the financial analysis are opinions as per a particular date, i.e. the date indicated in the financial analysis. The recommendation (cf. explanation of the recommendation systematic) can change owing to unforeseeable events which may, for instance, have repercussions on both the company and on the whole industry.

- **Our stock market recommendations**

Our stock market recommendations reflect the RELATIVE performance expected for each stock on a 12-month timeframe.

Buy: performance expected to exceed that of the benchmark index, sectoral (large caps) or other (small and mid caps).

Neutral: performance expected to be comparable to that of the benchmark index, sectoral (large caps) or other (small and mid caps).

Reduce: performance expected to fall short of that of the benchmark index, sectoral (large caps) or other (small and mid caps).

- **The prices of the financial instruments used and mentioned in this document are the closing prices.**

- **All publications by ODDO BHF concerning the companies covered and mentioned in this document are available on the research site: www.securities.oddo-bhf.com**

Recommendation and target price changes history over the last 12 months for the company analysed in this report

Date	Reco	Price Target (EUR)	Price (EUR)	Analyst
23/09/20	Buy	23.00	13.45	Anis Zgaya

In accordance with Article 20 of European Regulation No. 596/2014 (Market Abuse Regulation), a list of all recommendations on any financial instrument or issuer that have been disseminated over the past twelve months is available by clicking on the following link www.securities.oddo-bhf.com

Recommendation split		Buy	Neutral	Reduce
Our whole coverage	(428)	47%	37%	16%
Liquidity providers coverage	(79)	54%	43%	3%
Research service coverage	(30)	60%	37%	3%
Investment banking services	(15)	53%	40%	7%

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Disclosure to Company		
Has a copy of this report ; with the target price and/or rating removed, been presented to the subject company/ies prior to its distribution, for the sole purpose of verifying the accuracy of factual statements ?		No
Have the conclusions of this report been amended following disclosure to the company/ies and prior its distribution?		No
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LFDE.PA | LFDE EN
Electricity & Gas | France

Buy
Upside 71.00%

Price 13.45 €
TP 23.0 €

	06/18	06/19	06/20e	06/21e	06/22e
PER SHARE DATA (€)					
Adjusted EPS	-0.25	0.16	0.02	0.58	0.88
Reported EPS	-0.25	0.16	0.02	0.58	0.88
Growth in adjusted EPS	-	ns	-85.6%	ns	50.9%
Net dividend per share	0.00	0.00	0.00	0.00	0.00
FCF to equity per share	-0.34	-0.43	-0.15	-1.28	-3.00
Book value per share	10.34	10.52	10.55	11.13	12.01
Number of shares market cap (m)	5.15	5.15	5.15	5.15	5.15
Number of diluted shares (m)	5.15	5.15	5.15	5.15	5.15
VALUATION (€m)	06/18	06/19	06/20e	06/21e	06/22e
12m highest price (€)	18.90	18.65	20.50		
12m lowest price (€)	8.20	11.30	13.30		
(*) Reference price (€)	18.79	14.13	16.71	13.45	13.45
Capitalization	96.8	72.8	86.1	69.3	69.3
Restated Net debt	9.8	12.3	12.9	20.7	36.9
Minorities (fair value)	0.0	0.0	0.0	0.0	0.0
Financial fixed assets (fair value)	0.0	0.0	1.5	0.9	0.9
Provisions	4.1	4.8	4.5	4.5	4.5
Enterprise Value	111	89.9	102	93.6	110
P/E (x)	ns	86.5	712	23.1	15.3
P/CF (x)	ns	28.8	35.2	12.4	8.3
Net Yield	0.0%	0.0%	0.0%	0.0%	0.0%
FCF yield	ns	ns	ns	ns	ns
P/B incl. GW (x)	1.82	1.34	1.58	1.21	1.12
P/B excl. GW (x)	ns	ns	ns	ns	ns
EV/Sales (x)	16.64	11.36	12.85	5.22	3.96
EV/EBITDA (x)	ns	39.5	82.7	14.9	9.4
EV/Current EBIT (x)	ns	64.4	ns	24.9	16.2
(*) historical average price					
PROFIT AND LOSS (€m)	06/18	06/19	06/20e	06/21e	06/22e
Sales	6.7	7.9	7.9	17.9	27.8
EBITDA	-0.7	2.3	1.2	6.3	11.7
Depreciations	-2.1	-0.9	-1.2	-2.5	-4.9
Current EBIT	-2.8	1.4	0.0	3.8	6.8
Published EBIT	-2.8	1.4	0.0	3.8	6.8
Net financial income	-0.4	-0.5	-0.5	-0.6	-0.8
Corporate Tax	1.9	0.0	0.6	-0.2	-1.5
Net income of equity-accounted companies	0.0	0.0	0.0	0.0	0.0
Profit/loss of discontinued activities (after tax)	0.0	0.0	0.0	0.0	0.0
Minority interests	0.0	0.0	0.0	0.0	0.0
Attributable net profit	-1.3	0.8	0.1	3.0	4.5
Adjusted attributable net profit	-1.3	0.8	0.1	3.0	4.5
BALANCE SHEET (€m)	06/18	06/19	06/20e	06/21e	06/22e
Goodwill	68.7	69.7	69.7	69.7	69.7
Other intangible assets	0.0	0.0	0.0	0.0	0.0
Tangible fixed assets	5.9	9.2	8.8	26.7	55.6
WCR	-3.5	-3.4	-1.6	-8.1	-16.3
Financial assets	2.2	2.2	1.5	0.9	0.9
Ordinary shareholders equity	53.3	54.2	54.3	57.3	61.8
Minority interests	0.0	0.0	0.0	0.0	0.0
Shareholders equity	53.3	54.2	54.3	57.3	61.8
Non-current provisions	10.4	11.1	11.1	11.1	11.1
Net debt	9.8	12.3	12.9	20.7	36.9
CASH FLOW STATEMENT (€m)	06/18	06/19	06/20e	06/21e	06/22e
EBITDA	-0.7	2.3	1.2	6.3	11.7
Change in WCR	0.9	-0.3	0.0	0.0	0.0
Interests & taxes	0.0	0.0	0.0	0.0	0.0
Others	-0.3	0.2	1.2	-0.7	-3.4
Operating Cash flow	-0.1	2.2	2.4	5.6	8.3
CAPEX	-1.6	-4.4	-3.2	-12.2	-23.8
Free cash-flow	-1.8	-2.2	-0.8	-6.6	-15.5
Acquisitions / disposals	0.0	-0.2	0.0	0.0	0.0
Dividends	0.0	0.0	0.0	0.0	0.0
Net capital increase	0.0	0.0	0.0	0.0	0.0
Others	3.0	0.7	0.0	0.0	0.0
Change in net cash	-3.8	-2.6	-0.6	-7.8	-16.2
GROWTH MARGINS PRODUCTIVITY	06/18	06/19	06/20e	06/21e	06/22e
Sales growth	-	19.0%	0.3%	ns	54.9%
Lfi sales growth	-	-	-	-	-
Current EBIT growth	-	ns	-97.7%	ns	80.5%
Growth in adjusted EPS	-	ns	-85.6%	ns	50.9%
Net margin	-19.1%	10.6%	1.5%	16.7%	16.3%
EBITDA margin	-10.9%	28.8%	15.5%	35.1%	42.1%
Current EBIT margin	-41.8%	17.6%	0.4%	21.0%	24.5%
CAPEX / Sales	-24.8%	-55.7%	-40.3%	-67.9%	-85.7%
WCR / Sales	-52.3%	-43.0%	-20.1%	-45.4%	-58.7%
Tax Rate	60.4%	4.2%	ns	6.2%	25.0%
Normative tax rate	25.0%	25.0%	25.0%	25.0%	25.0%
Asset Turnover	-	0.1	0.1	0.2	0.3
ROCE post-tax (normative tax rate)	-	1.4%	0.0%	3.4%	5.2%
ROCE post-tax hors GW (normative tax rate)	-	25.4%	0.4%	21.9%	17.6%
ROE	-	1.6%	0.2%	5.4%	7.6%
DEBT RATIOS	06/18	06/19	06/20e	06/21e	06/22e
Gearing	18%	23%	24%	36%	60%
Net Debt / Market Cap	0.10	0.17	0.15	0.30	0.53
Net debt / EBITDA	ns	5.42	ns	3.29	3.16
EBITDA / net financial charges	-1.9	4.6	2.5	11.0	15.3

Sources: ODDO BHF Securities, SIX