WORK STILL NEEDED ON ENGIE'S CLIMATE PLAN

EXECUTIVE SUMMARY

On 23 March, 2023, 15 investors submitted a resolution to ENGIE's AGM, asking the group to disclose more information about its climate strategy to enable investors to assess whether it is aligned with a 1.5°C scenario with no or low overshoot and a limited reliance on negative emissions technologies. The investors also asked ENGIE to submit its strategy to a vote every three years and its implementation to a vote every year. This resolution came a few days after ENGIE published its TCFD report[1].

This briefing aims to assess the relevance of the recent resolution, taking into account the progress reported in its TCFD report and the recent addendum made to its climate plan. It assesses ENGIE's climate disclosure and strategy on 11 topics :
_ Emissions disclosure;
_ Decarbonization targets;
_ Production forecasts;
_ Scenario used for strategic planning;
_ Coal assets phase-out date & strategy;
_ Gas phase-out milestones & strategy;
_ Biomethane, e-methane & green hydrogen;
_ Renewable and flexibility system targets / investments;
_ LNG strategy;
_ Short-term CAPEX and OPEX detail;
_ Negative emissions plan.

The main findings are:

_ ENGIE's disclosures are insufficient for 7 of the 11 topics assessed.

- Until last year, upstream emissions related to electricity trading were not included, yet they made up more than half of the company's GHG Protocol category 3.3 emissions (Fuel- and Energy-related activities), and 15% of its total emissions in 2022. Given that ENGIE does not explain how they select the scope, categories or sources that they disclose, other significant emissions sources could be missing.

- The group has not set absolute emissions reduction targets across all scopes for 2025 or 2030. It has not disclosed any targets for 2025, and 29% of its emissions are not covered by its absolute targets for 2030.

[1] ENGIE, Accélérer la transition énergétique. Rapport intégré 2023, Mars 2023.

- ENGIE's disclosures lack sufficient granularity. It should issue short- and medium-CAPEX and OPEX plans disaggregated by activity, type of energy, and the breakdown between growth and maintenance CAPEX.

- The group does not report its production or activity forecasts for the short-, medium- or long- term, nor its energy mix on the same timeframe. This prevents investors and stakeholders from understanding the details of ENGIE's transition strategy, and from estimating the impact of the group's climate strategy which partly relies on intensity targets[2].

- ENGIE's decarbonization strategy relies heavily on the production and consumption of so-called "Renewable gases", which includes biomethane, e-methane and green hydrogen as per ENGIE's terminology[3]. The group does not detail production or consumption targets beyond 2030, nor does it give details of the share of existing infrastructure that could be reused for "renewable gas". There are also no targets regarding CCS use, although this technology is part of ENGIE's "gas greening" strategy.

- ENGIE is making progress toward meeting its renewable capacity target in 2030, and has reported on its potential battery capacity in 2030. The group should increase its ambition or provide renewable targets beyond 2030, as well as formally committing to a battery capacity target and broadening the scope of the sustainable flexibility solutions[4] it envisions within power systems.

- The group does not disclose which scenario it uses to set its climate targets.

_ Beyond the comprehensiveness of its disclosures, doubts remain about the robustness of ENGIE's climate strategy:

- More than half of ENGIE's coal phase out before 2022 has been achieved through the sale of coal assets. This does not support the required GHG emissions reductions to align with a 1.5°C trajectory, yet ENGIE is still considering selling its share of the Safi coal plant in Morocco.

- ENGIE is still planning to build 1.1 GW of new fossil gas power plants, despite its ambition to achieve 100% "Renewable gases" by 2045. It has not yet explained how it aims to handle its gas fleet in the near future and has not developed an asset-by-asset plan specifying the assets' name, date of retirement or conversion to "renewable gases", and capacity involved.

- Despite reporting on its gas-greening strategy, ENGIE last year signed two new long-term contracts for fracked LNG from the US, and extended an existing LNG contract. Given the severe environmental consequences of fracking and its ban in France, ENGIE

[2] An intensity target is a target aiming for a given level of carbon intensity, which is the amount of GHG emitted per unit of activity or production. Without activity or production forecasts, it is not possible to assess the impact of such a target in terms of absolute emissions.
[3] ENGIE's terminology refers to biomethane, e-methane (also called synthetic methane), and green hydrogen (hydrogen produced through water electrolysis using renewable electricity). All subsequent mentions of 'renewable gas" refers to this terminology of ENGIE, and the 3 types of gas it covers.
[4] Flexibility solutions refers to any technology or system enabling to match electricity supply and demand in a renewable-based system, either through reduction of the demand or increase of supply. Gas peakers are just one potential solution among others, for instance batteries and pumped hydro storage to act on the supply, or demand-side management to act on the demand.

should explain how it reconciles these LNG contracts with its climate commitments, develop its gas procurement strategy, and detail how it applies exclusion criteria related to environmental, social and geopolitical issues.

SUMMARY

TRANSPARENCY TABLE

The table below aims to provide stakeholders with information regarding the transparency and information disclosed by ENGIE. ENGIE's strategy and TCFD report have been analysed under 11 topics. This section covers the transparency of the company on these topics.

Note that a good transparency score only means there is good access to the relevant information in the company's document. While the lack of disclosure is likely to reflect the lack of climate action, good disclosure does not guarantee a level of action sufficient for the company to meet its own targets or align with a 1.5°C trajectory.

Topic	Transparency	Missing elements
1_Emissions disclosure	Needs improvement (2/3)	Process applied by the group to select emissions categories disclosed in its annual report.
2_Decarbonization targets	Needs improvement (2/3)	Short-term (2025) absolute decarbonization targets across all scopes. Medium-term (2030) absolute decarbonization target across all scopes.
3_Energy-mix targets	Missing (0/3)	Forecast production volume for short-, medium- and long-term, as well as forecast activity levels for all activity related to GHG emissions such as gas sales and purchases and electricity purchases. Forecast energy mix for short- medium- and long-term.
4_Scenario used for strategic planning	Missing (0/3)	ENGIE should publish the scenario used to set its climate targets and how it applies the best available scientific knowledge
5_Coal assets phase-out date & strategy	Good (3/3)	
6_Gas phase-out milestones & strategy	Incomplete (1/3)	ENGIE does not make a commitment to an asset-by-asset gas phase-out plan. It does mention the progressive retirement of aging assets, but does not provide asset-level information such as assets' name, date of retirement or conversion to "renewable gas", capacity involved, or details of how they will be replaced with more sustainable alternatives where applicable.
7_Biomethane, e-methane & green hydrogen	Incomplete (1/3)	ENGIE does not detail: - what will be its own 2045 demand for "renewable gas", in relation to its own power production needs and the needs of its customers. - how it aims to scale up its "renewable gas" production capacity to meet its objective by 2045, with intermediary targets. This question also requires the company to quantify its future CCUS target, as this technology is part of ENGIE's strategy to develop its own e-methane production portfolio. - to what extent its existing gas assets can be converted to biomethane, e-methane, or green hydrogen, in a quantified way.

8_Renewable and flexibility system target	Needs improvement (2/3)	ENGIE has published its renewable power targets for 2030, but does not provide targets for a longer time-frame. ENGIE does not report communicate on the flexibility systems it will research and develop over the short-, medium- and long-term, nor does it seem to set targets over these time-frames, with an exception this year for the introduction of a quantified battery capacity estimate by 2030. It also does not publish the scope of the clean flexibility systems it will consider beyond gas plants.
9_LNG strategy	Missing (0/3)	The group justifies signing long-term LNG contracts in 2022 for energy security reasons, but does not mention whether these requirements have now been met, or whether it is likely to sign new gas – especially LNG – supply contracts. ENGIE should disclose the share of gas from fracking that is imported from Cheniere and that will be imported from NextDecade and Sempra. Given the serious environmental consequences of fracking and its ban in France, ENGIE should explain how it reconciles such contracts with its climate commitments. More broadly, ENGIE should develop its gas procurement strategy and provide details of how it fits with its ESG policies.
10_Short-term CAPEX and OPEX details	Incomplete (1/3)	ENGIE should provide: Short- and medium-term capital expenditure (CAPEX) plans disaggregated by activity[5], type of energy and by orientation between maintenance and development of the Company's assets. Short- and medium-term operation expenditure (OPEX) disaggregated by activity, type of energy and by cost item.
11_Negative emissions plan	Incomplete (1/3)	ENGIE should provide: Possible contribution of CCS to achieving each of

[5] At least, renewable energies, fossil gas, LNG-related infrastructures and all the levers identified as solutions to "decarbonize fossil gas" by 2040 - 2045 (capture, biomethane, e-methane, green hydrogen, etc.).

		the GHG emissions reduction targets with details of GHG volumes expected to be captured. Carbon offsetting approaches that may be implemented to complement the GHG emissions reduction targets.

1_EMISSIONS DISCLOSURE

What's new

ENGIE previously disclosed its emissions, covering scope 1 and 2 as well as some categories of scope 3. Scope 1 and 2 disclosure has not changed, but scope 3 disclosure has evolved.

Compared to last year, ENGIE has made three improvements to its emissions disclosure:

- An improved break-down for Scope 3 emissions: ENGIE previously gave details at the category level), but now goes one step further and provides a breakdown of the GHG emissions per source for some scope 3 emission categories (see table below, column "Source").
- Category 3.3 (Fuel- and energy-related activities) reporting has been enhanced to include the emissions from the electricity ENGIE buys for retail purposes, in addition to the upstream emissions related to the fuel ENGIE buys for its electricity generation and retail activity. ENGIE is active in trading in electricity markets. As a result, emissions for category 3.3 more than doubled, from 18 MtCO2e to 42 MtCO2e - with upstream emissions for purchased electricity amounting to 26 MtCO2e in 2022. This new emissions source accounts, in 2022, for more than half of the category 3.3 emissions and for 15% of ENGIE's total emissions (see table below, column "New in 2023 reporting).
- Category 3.15 (investments) includes a new source of emissions (see table below, column "New in 2023 reporting").

Scope 3 reporting evolution between 2022 and 2023

Scope 3 Category	*Source*	Emissions (MtCO2e)	New in 2023 reporting
Fuel- and Energy- related activities		42.0	
	Emissions from electricity bought for resale	*26.3*	*X*
	Emissions from other activities	*15.7*	
Investments		32.1	
	Emissions from energy production	*31.6*	
	Emissions from other activities	*0.5*	
Use of sold products		61.305	
	Fossil gas and LNG sales	*61.280*	
	Biomass and biomethane sales	*0.025*	*X*
Purchased goods and services		5.5	
Capital goods		2.8	

What impact

This enables stakeholders to have a more granular view of ENGIE's emissions per source, which is necessary to assess ENGIE strategy's impact in the near-term.

What's missing

Until last year, upstream emissions related to electricity trading were not included, yet they consist of more than half of the category 3.3 emissions (Fuel- and Energy-related activities) and 15% of its total emissions in 2022.

This casts doubt on the completeness of ENGIE's emissions disclosure given that ENGIE does not explain how they select the categories or sources that they disclose across the different scopes, and that other significant emissions sources could be missing.

2_DECARBONIZATION TARGETS

What's new

ENGIE did not review the ambition of previous targets but added new decarbonization targets, including these main two:

- Reduction of carbon intensity related to its energy consumption and generation (scope 1 & 2), of 66% by 2030 against a 2017 baseline (target 3).
- Absolute reduction of scope 1 methane emissions from gas networks, of 30% by 2030 against a 2017 baseline (target 5).

ENGIE also brought more clarity as to which emissions categories are covered by its existing targets. For targets 1, 2 and 4, we now know which scope 3 categories are included in each target.

OUR DECARBONIZATION TARGETS	Results 2017	Results 2020	Results 2022	Objectives 2030
Carbon footprint of energy production (Mt CO_2 eq.) (Scopes 1 and 3.15)	107	68	60	43 Mt CO_2 eq.
Carbon footprint of use of sold products (Mt CO_2 eq.) (Scope 3.11)	80	62	61	52 Mt CO_2 eq.
Carbon intensity related to energy generation and consumption (gCO_2 eq. / kWh) (Scopes 1 and 2)	331	212	156	-66% vs 2017 110 gCO_2 eq. / kWh
Carbon intensity related to purchases and production of energy for resale (Scopes 1 and 3.3 and 3.15)	348	270	221	-56% vs 2017 153 gCO_2 eq. / kWh
Methane emissions from gas networks (Mt CO_2 eq.) (Scope 1)	2.0	1.5	1.3	-30% vs 2017
Decarbonization of customers: emissions avoided through ENGIE products and services (Mt CO_2 eq.)	N/A	21	28	45
Decarbonization of the top 250 preferred suppliers (excluding energy): portion of suppliers SBT certified or aligned	N/A	15%	23%	100% of the top 250 suppliers
Decarbonization of our ways of working: GHG emissions (Mt CO_2 eq.) (Scopes 1, 2 and 3)	N/A	0.49	0.26	Net Zero

Source: ENGIE Integrated Report 2023, page 107.

Extra information from ENGIE's April Addendum to its climate notebook 2023 (climate plan):

ENGIE clarified that it has adopted a climate target that was not reported in its climate plan but which is part of its SBTi target to stay well below 2°C certification. According to the SBTi documents, this target covers scope 3 emissions from "purchased goods and services, capital goods, fuel and energy related activities, and use of sold product emissions related to gas distribution", with a 32.5% absolute emissions reduction goal by 2030 against a 2017 baseline.

However, ENGIE's Addendum shows emissions related to electricity bought for resale, which are part of the emissions related to "fuel- and energy-related activity" (category 3.3), are not covered by this new target. These emissions account for 15% of ENGIE's overall emissions in 2022.

This target is presented as Target 6 below.

What impact

The new targets do not significantly increase ENGIE's ambition as[6]:

- Target 3 covers emissions from scope 1 and 2. However, scope 1 emissions were already covered with an absolute target (target 1) and an intensity reduction target (target 4). Scope 2 emissions are now covered by target 3; however, as they represent less than 3% of scope 1 emissions, this increases the emissions coverage by an insignificant amount.

- Target 5[7], to reduce methane emissions by 30% by 2030, has already been reached: methane emissions from gas infrastructure were 35% lower in 2022 than in 2017.

Type of emissions reduction targets for emissions categories (as reported by ENGIE)

Scope		**1**	**2**	**3.3**	**3.11**	**3.15**	**Others 3**
2022 Emissions (MtCO2e)[8]		29.8	0.8	42.0	61.3	32.1	8.3
Decarb. targets	**Target 1 (Absolute)**	X				X	
	Target 2 (Absolute)				X		
	Target 3 (Intensity)	X	X				
	Target 4 (Intensity)	X		X		X	
	Target 6 (Absolute)			~	X		X

All of the group's emissions are covered by emissions reduction targets, but only 82 % of the group's scope 3 emissions and 85% of the group's total emissions are covered by absolute targets (targets 1, 2 and 6). Consequently, 15% of the group's emissions related to scope 2 and part of category 3.3 are not capped and will depend on the company's future volumes of activity.

Scope 2 and category 3.3 emissions are covered by intensity targets. While these targets do not guarantee a decrease in the absolute emissions, the lack of information provided by ENGIE on its production & activity forecasts does not allow an estimate of the real impact of its strategy for reducing emissions from scope 2 and category 3.3.

Moreover, target 4 - which includes, among other things, upstream emissions of bought energy products or fuels for consumption or resale - allows ENGIE to buy high-carbon LNG and to compensate for it by buying low-carbon electricity. Hence this target does not stop the company from developing or buying highly polluting products.

[6] See previous part "What's new" for new targets' presentation.
[77] Target numbering done accordingly to the target table shown in the previous part "What's new".
[8] ENGIE, Document d'enregistrement universelle 2022, page 122, March 2023.

What's missing

As mentioned above, intensity targets cannot be used to estimate the real-world impact of a strategy, as the resulting levels of absolute emissions inherently depend on production levels. For this reason the group should complement its existing targets to provide both :

- Short-term (2025) absolute emissions reduction targets across all scopes.
- Medium-term (2030) absolute emissions reduction target across all scopes.

- Short-term (2025) intensity emissions reduction targets across all scopes.
- Medium-term (2030) intensity emissions reduction target across all scopes.

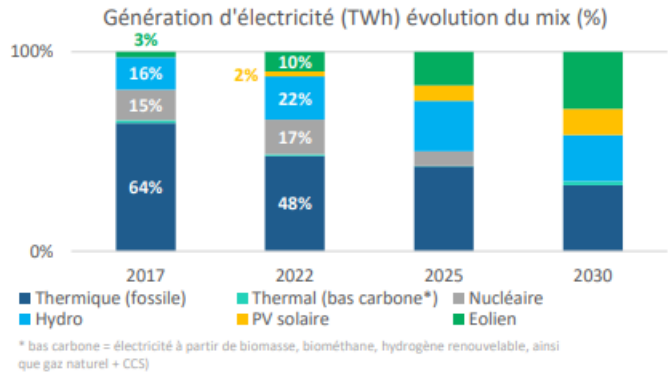
3_ENERGY-MIX TARGETS

What's new

ENGIE did not publish a production, activity forecast or energy mix target.

<u>Extra information from ENGIE's Addendum to its climate notebook 2023:</u>

ENGIE provides limited transparency about its envisioned electricity mix in 2025 and in 2030, as it does not include any accurate figures in the graph which it provides, shown below. Furthermore, the group does not publish its expected future volume of electricity generation.



What's missing

Target energy mix for short- medium- and long-term. If ENGIE went one step further in its addendum by providing an indicative representation of its future energy mix, it did not give or commit to specific targets. Nor does it share information beyond 2030.

Forecast production volume for short-, medium- and long-term, as well as forecast activity level for all activity related to GHG emissions such as gas sales and purchases and electricity purchases.

4_SCENARIO USED FOR STRATEGIC PLANNING

What's new

ENGIE published its internal scenario for greening gas in Europe, but has not disclosed any other information related to the scenario it uses to model its decarbonization strategy. While both the IEA Net Zero Emission and Announced Pledges scenarios are mentioned in its new Integrated Report, no clear information is provided regarding their importance in ENGIE's modelling.

What impact

Beyond pending questions on the interest of biomethanees for decarbonization, ENGIE does not say in its TCFD report how it used this scenario to set its biomethanees targets, i.e. how the group aims to fit in its European projection.

It also fails to provide the level of global warming associated with its internal scenario, as well as the compatibility of its decarbonization goals with globally recognized scenarios such as IPCC's or IEA's 1.5°C scenarii with low/no overshoot and a limited reliance on negative emissions technologies.

What's missing

Transparency on the hypotheses regarding future production, sourcing and technology evolution should be provided to enable stakeholders to assess the credibility and impact of ENGIE's plan.

If applicable, ENGIE should publish the public scenario used to set its climate targets and how it considers the best available scientific knowledge.

5_COAL ASSETS PHASE-OUT DATE & STRATEGY

What's new

Nothing - ENGIE coal phase-out by 2025 in continental Europe and by 2027 in the rest of the world has not changed. ENGIE still plans to close, convert, or sell its plants, in order of preference.

ENGIE still owns several coal assets:

- Mejillones, Chile: planned conversion to biomass of units CTA and CTH, to gas of unit IEM 1, and closure of units I, II;
- Safi, Morocco: potential sale.

What impact

To have a material effect, ENGIE should close, not sell, its coal assets. As for conversion, biomass and gas are not sustainable solutions for producing energy due to their emissions and the inherent difficulties in sourcing fuel in a clean and responsible manner. Rather than being transition assets, such projects are likely to turn into stranded assets in future.

What's missing

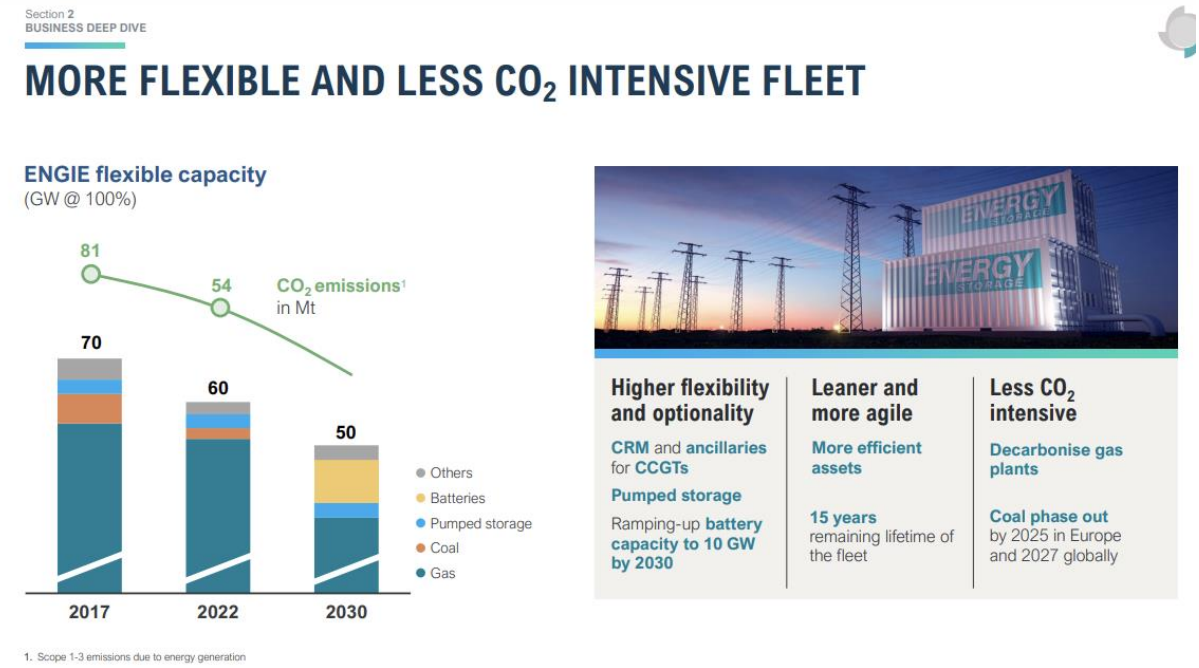
ENGIE's coal phase-out plan is aligned with the globally recognized date to phase-out coal in OECD countries and in the rest of the world. ENGIE's documents provide a clear vision of which assets it will retire, by when and how[9].

However, ENGIE lacks ambition in the way it plans to replace its retiring coal assets by turning toward gas and biomass. It should seize the opportunity to turn completely towards renewable energy sources and more flexible capacity. Selling plants should be a last resort, if engagement with other stakeholders to close the plant is not successful.

6_GAS PHASE-OUT MILESTONES & STRATEGY

What's new

ENGIE did not mention the future of its gas fleet in its TCFD report.[10] It did, however, give a few hints in its Market Update 2023. In this document, ENGIE provides a time series of the evolution of its flexible capacity, including its gas fleet.



Source: ENGIE Market Update 2023 presentation, February 2023.

[9] Aside from Safi power station, for which sale is likely given ENGIE's minority ownership but not confirmed.

[10] As of December 2022, ENGIE is involved in 70 operating gas plants representing a total capacity of 49,890 GW. Consolidated using ownership, ENGIE owns 22,578 MW of gas power capacity.

In this graphic, we can see ENGIE's gas fleet capacity, of around 50 GW in 2022, is halved by 2030. According to the Market Update 2023, this reduction - which is also mentioned in other places in ENGIE's documents - is the result of retiring assets as they reach the end of their lifetime.

In parallel to this progressive reduction in its gas fleet, ENGIE also refers to the greening of gas as a way to keep its gas fleet operational - as is clearly stated in the company's TCFD report. The group also plans to continue developing new gas power plants, betting on its ability to green its gas sourcing.

What impact

For the first time, ENGIE has projected how its gas fleet could evolve in the coming years. While this could provide an insight into ENGIE's decarbonization strategy, it lacks details, and cannot be taken as a commitment. There is insufficient detail regarding capacity and the assets involved, making it hard - and potentially misleading - to interpret this information usefully.

ENGIE's strategy carries risk: current levels of biomethane production and the lack of maturity of CCS create riskENregarding ENGIE's capacity to implement its strategy. Existing and new gas assets could become stranded assets or emit GHG emissions inconsistent with a 1.5°C trajectory and ENGIE's climate targets.

What's missing

ENGIE should issue a clear commitment or plan setting out how it aims to handle its gas fleet in the near future, in particular whether it aims to reduce it.

Such a commitment should include an asset-by-asset plan specifying assets' name, date of retirement or conversion to "renewable gas", and capacity involved, as well as details of how they will be replaced with cleaner alternatives if applicable.

ENGIE should also stop developing new gas plants, and look into other sustainable and flexible systems to provide an alternative business plan that does not rely on "renewable gas" for future power generation.

7_BIOMETHANE, E-METHANE & GREEN HYDROGEN

What's new

ENGIE didn't disclose any new information regarding its "renewable gas"[11] strategy.

The group had already committed to decarbonize its gas usage by 2040-2045, and to convert its gas power plants to green hydrogen or biomethane or e-methane, or to install CCUS devices. ENGIE has published objectives for 2030, which include the production of 4 TWh of

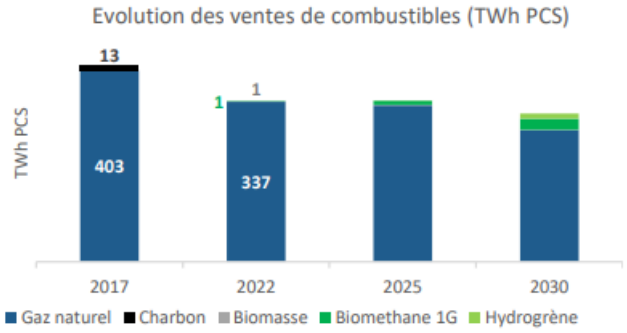
[11] ENGIE's terminology refers to biomethane, e-methane (also called synthetic methane), and green hydrogen (hydrogen produced through water electrolysis using renewable electricity).

biomethane in France and 4 GW of green hydrogen production capacity, as well as the development of 700 km of dedicated hydrogen networks.

However, ENGIE still does not report on targets beyond 2030, on the share of existing and developing fossil gas capacity affected by the conversion to "renewable gas". ENGIE only declared in its TCFD report that "A fair share of transportation and storage infrastructure is convertible to hydrogen."

Extra information from ENGIE's Addendum to its climate notebook 2023:

In Its Addendum, ENGIE provides visual information (see graph below) describing its gas-greening strategy by 2030.



What impact

ENGIE confirmed it will rely on "renewable gas" by 2045, while related technologies are not mature enough to prove their scalability and hence bring an inherent risk to the group's decarbonization strategy.

Given current levels of production of "renewable gas", a simple projection shows that the levels of "renewable gas" that ENGIE envisions is unrealistic: development prospects for these types of gas are currently limited; biomethane account for only 1% of the current gas production, and green hydrogen only represents 0.5% of the current global hydrogen production, which is about 0.03% of global gas production.

The new information provided by ENGIE in its Addendum is not precise enough. The graph gives a sense of the trajectory envisioned by the group, but no figures are provided to support it. Moreover, a visual reading gives a level of around 15% of "renewable gases" for ENGIE's sold gas in 2030. This weak "aim" highlights the lack of maturity of these technologies which, furthermore, imply the continued use of methane, a gas 84 more potent than CO2 over a 20-year timeframe.

What's missing

ENGIE should detail:

- what will be its own 2045 "renewable gas" demand to meet its own power production needs and its consumers needs
- how it aims to scale up its "renewable gas" production capacity to meet its objective by 2045, with intermediary targets. This question also requires the company to quantify its future CCUS target, as this technology is part of ENGIE's strategy to develop its e-methane production portfolio.
- to what extent its existing gas assets can be converted to biomethane, e-methane, or green hydrogen, in a quantified way.

8_RENEWABLE AND FLEXIBLE SYSTEM TARGETS / INVESTMENTS

What's new

ENGIE did not disclose any new information in its TCFD report regarding its renewable capacity targets for2025 and 2030 did not change: 50 GW by 2025, then 80 GW by 2030.

ENGIE has yet to adopt any targets related to sustainable dispatchable and flexible technologies. In its Market Update 2023 presentation however, ENGIE mentions the ramping up of 10 GW of battery capacity by 2030, but does not explicitly commit to reaching this aim.

What impact

On the renewable power side, there was no new information in the TCFD report. ENGIE's renewable capacity is growing in line with the group's target, with 7 GW added since 2022, and 12 GW left to commission by 2025.

On the flexibility side, ENGIE does not provide the information required to bring credibility to its aim to reduce its fossil dispatchable fleet.

Finally, with its 10 GW of battery capacity by 2030, ENGIE deals solely with short-term energy storage. However, a renewable-based power system requires the ability to store energy not only over a short time-frame, but also over longer time-frames such as 6 months. For such needs, ENGIE currently only envisions gas storage, according to its Market Update 2023. ENGIE quotes its current gas storage capacity, which is solely about methane, and does not detail other potential solutions such as renewable hydrogen storage. It therefore seems that ENGIE would mainly rely on biomethane and e-methane for that purpose; even if these fuels could be produced in a sustainable way, methane leakage across infrastructure would still have a significant impact on climate.

Source: ENGIE [Market Update 2023 presentation](), February 2023.

What's missing

As ENGIE is on a good path to meet its 2030 renewable energy targets, the group should take this opportunity to either upscale its ambition, or to adopt targets beyond 2030.

ENGIE should strengthen and explicitly state its objectives regarding flexibility systems that will contribute to the renewable power uptake:

- On the battery side, this includes publishing mid- and long-term targets.
- More globally, ENGIE should clarify the flexibility systems the company plans to rely on over short, medium and long-term, and set targets over these time-frames, starting with the shorter term. It should also broaden the scope of dispatchable and flexibility systems and develop sustainable solutions, as weekly and seasonal storage is dealt with only through a continued use of gas, which still comes from fossil sources at the moment.

9_LNG STRATEGY

What's new

ENGIE does not make new commitments regarding its LNG business[12] in its TCFD report, although it recently signed two new long-term contracts and one extension for LNG import from the US.

[12] ENGIE is active in the LNG market both as:
- an importer, buying LNG from third parties. As of December 2022, ENGIE has 5 long-term contracts for LNG imports running up to 2041 for the most recent, and totalling an annual volume of 3.5 Mt, according to EnerData Global LNG Database,
- as an import terminal owner: As of December 2022, ENGIE owns all or parts of 11 operating LNG

What impact

By sourcing gas from the US, ENGIE is probably sourcing gas produced through fracking, which is banned in France and imposes a heavy environmental cost.

As discussed in 3., ENGIE can source carbon-intensive products such as US gas since upstream emissions related to purchased products are covered in its decarbonization targets only with an intensity metric. It can therefore buy such LNG, while staying within the target boundary by sourcing less polluting products.

Moreover, as ENGIE is in the process of securing new gas provisioning[13], and given that different gas sources have different carbon intensity, ENGIE's short-term gas strategy impact on climate is hard to assess without knowledge of where ENGIE's gas is produced and imported from.

What's missing

ENGIE justifies the recent signing of LNG import contracts by the need to ensure France's and Europe's energy security and to secure fossil gas supplies until it can be all replaced by biomethane. But the group does not indicate to what extent these contracts will allow it to meet or exceed these requirements, and does not say whether it intends to sign new gas – especially LNG – supply contracts.

ENGIE should disclose the share of gas, mostly if not totally produced through fracking, that is imported from the US, through the contracts signed with Cheniere, and that will be imported following the contracts signed with NextDecade and Sempra.

Given the heavy environmental consequences of fracking and its ban in France, ENGIE should explain how it reconciles such contracts with its climate commitments.

More broadly, ENGIE should develop its gas procurement strategy and detail how it applies exclusion criteria related to environmental, social or geopolitical issues.

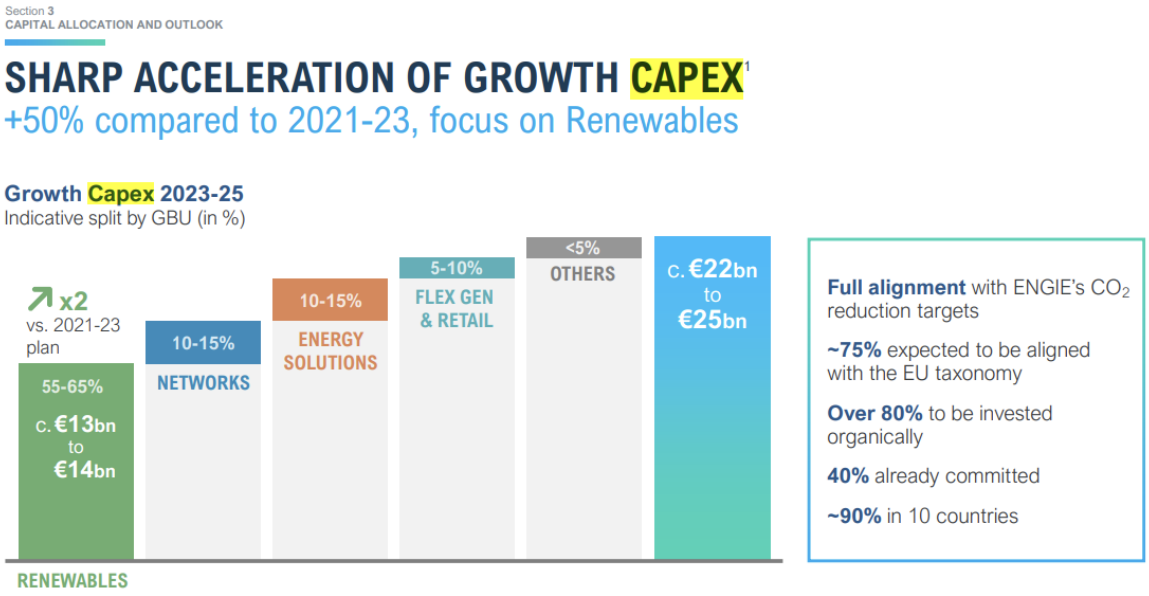
10_SHORT-TERM AND MEDIUM-TERM CAPEX AND OPEX DETAIL

What's new

ENGIE does not communicate on its CAPEX and OPEX allocation in the short-term and medium-term in its TCFD report. Sole information related to this is found in the Market Update 2023: it covers short-term growth CAPEX, but only at its business units level.

import terminals totalling 41 MTPA of import capacity, and of 3 LNG terminals projects at the planification stage totalling 6 MTPA, according to EnerData Global LNG Database.
- and as an operator through its Elengy subsidiary.

[13] Challenge, Suspension des livraisons de Gazprom : comment ENGIE pallie les coupures de gaz russe, August 2022.



Extra information from ENGIE's Addendum to its climate notebook 2023:

ENGIE confirmed it will increase its growth CAPEX, from 15-16 billion euros over 2021 – 2023 to 22-25 billion euros over 2023 – 2025, but fails to provide details of the energy type. ENGIE goes further than in its Business Unit breakdown, and provide growth CAPEX split in three categories. However, no further granularity is provided within each category. It is therefore not possible to distinguish CAPEX destined for hydro power from CAPEX for wind and solar, or to distinguish CAPEX for "renewable gases" from that for electric energy storage such as batteries.

What impact

Providing growth CAPEX at the business unit level is not precise enough for stakeholders to assess how ENGIE manages its transition. For instance, "Renewables" includes both renewable power technologies such as wind and solar, and "renewable gas", and "Networks" includes both gas and electricity networks. As a consequence, it is still hard to assess the activities the group is developing and the alignment of ENGIE's CAPEX with its objectives and strategy.

The new breakdown provided in ENGIE's Addendum to its climate notebook enables stakeholders to isolate CAPEX growth for renewable power, but still carries a lack of granularity as it is not possible to distinguish CAPEX per energy source. This is particularly problematic for the category combining "renewable gases" and batteries.

What's missing

Short- and medium-term capital expenditure (CapEx) plans disaggregated by activity[14], type of energy and by orientation between maintenance and development of the Company's assets.

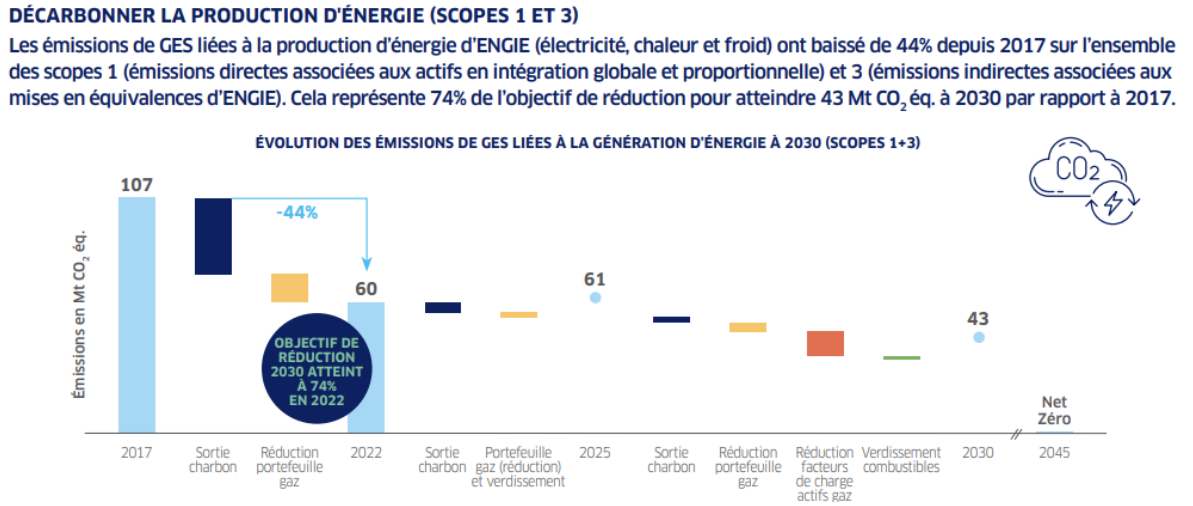
Short- and medium-term operation expenditure (OpEx) disaggregated by activity, type of energy and by cost item.

11_NEGATIVE EMISSIONS PLAN

What's new

ENGIE's strategy to reduce its GHG emissions is presented in the introduction of its TCFD report as "Reduce-Avoid-Sequestrate".

To reduce its GHG emissions related to power generation, ENGIE main levers consist in its coal phase-out, gas fleet reduction and the greening of its gas portfolio and of its fuels.



ENGIE [Market Update 2023 presentation]

The greening of its gas portfolio and of its fuels correspond to the development of Carbon Capture and Storage (CCS), biomethane, e-methane and green hydrogen. As a result, ENGIE confirms CCS is part of its solution, but fails to provide quantitative targets, although there is no guarantee at this stage that these technologies will be able to be mass-produced in the future.

The sequestration that ENGIE envisions then relies on carbon sinks. It states in its TCFD that its strategy relies on "In the first place, reduce indirect and direct emissions from ENGIE's activities by at least 90% by 2017. Then, increase carbon sinks to neutralise remaining and

[14] At least, renewable energies, fossil gas, LNG-related infrastructures and all the levers identified as solutions to "decarbonize fossil gas" by 2040 - 2045 (capture, biomethane, green hydrogen, etc.).

hard-to-abate emissions". However, as for CCS, ENGIE does not explicitly state the volume that will be required.

What impact

By confirming that CCS and carbon sinks will be part of its decarbonization plan, ENGIE increases the risk associated with this plan. Indeed, carbon sinks are often criticised for the lack of guarantee carbon has indeed been caught, while CCS still have to make its proof in the energy sector. According to the IEA's 2022 NZE report and as of its publication, only two CCS projects in the power sector have been developed over the past 5 years.[15]

It is however hard to estimate the risk brought on the company's plan as it does not disclose the volume of CCS and carbon sinks envisioned, nor does it state the extent to which these technologies will drive ENGIE's emissions down.

What's missing

Possible contribution of captured GHG volumes (through CCS) to achieving each of the GHG emissions reduction targets.

Carbon offsetting approaches that may be implemented to complement the GHG emissions reduction targets.

CONCLUSION & RECOMMENDATIONS TO INVESTORS

This analysis shows that despite its commitments to move away from fossil fuels by 2045, ENGIE has not yet clearly explained how it intends to reduce its carbon footprint at a rate compatible with its climate targets. In particular, uncertainties remain on ENGIE's capacity to deliver on its ambition to rely on green and renewable gas and hydrogen as well as on how it intends to reconcile its intent to develop new gas power plants and its current LNG purchase agreement with its net-zero target.

In view of the persistent shortcomings in ENGIE's climate plan, both in terms of transparency and in terms of credibility in meeting its climate targets - which are still insufficient in relation to the 1.5°C objective - it is recommended that investors send a clear message to the company at its next Annual General Meeting on 26th of April.

In particular, ENGIE's investors are called upon to:

- Vote in favour of the shareholder resolution filed by 15 shareholders with the aim of pushing the company to systematise its Say on Climate measure and to be more transparent in how it plans to align its strategy with its climate goals - *Resolution B.*

- Voting against the resolutions on the renewal of the mandates of the members of the Board of Directors (Marie-José Nadeau and Patrice Durand) - *Resolutions 6 and 7.*

[15] "Carbon capture technologies remain at an early stage of commercialisation. Two commercial power plants have been equipped with CCUS over the past five years, and there are currently 18 CCUS power projects in development worldwide. Completing these projects in a timely manner and driving down costs through learning-by-doing will be critical to further expansion".

- Voting against the resolution on the remuneration of the board of Directors, in particular that of Jean-Pierre Clamadieu (Chairman) and Catherine MacGregor (Executive Director), on the grounds that they have failed to meet investor expectations of transparency and dialogue on climate issues - *Resolutions 9 to 13*.

- Ask written and oral questions to seek the company's commitment to address the deficiencies raised in this note (see annex).

Beyond the coming AGM, investors are encouraged to adopt a robust policy on the power sector with clear expectations for portfolio companies and a detailed set of engagement and restriction measures articulated through a time-bound escalation strategy. More concretely, investors should push these companies to adopt a robust climate strategy, including the end of the development of new unabated fossil fuel and biomass power plants, and the investment of at least five dollars in sustainable power supply for every dollar of capex spent on the fossil fuel power sector.

ANNEX - WRITTEN AND ORAL QUESTIONS TO ASK

a. Transparency

When does ENGIE plan to publish a detailed transition strategy containing the following elements?

1. Short- and medium-term GHG emissions reduction targets on Scopes 1, 2, 3, expressed in both absolute- and intensity terms, encompassing all its activities;
2. Possible contribution of captured GHG volumes to achieving each of the GHG emissions reduction targets;
3. Carbon offsetting approaches that may be implemented to complement the GHG emissions reduction targets;
4. Targeted energy mix and production volume evolution for short-, medium- and long-term, and electricity storage targets for short-, medium- and long-term;
5. Short- and medium-term capital expenditure (CAPEX) plans disaggregated by activity, type of energy and by orientation between maintenance and development of the Company's assets[16];
6. Short- and medium-term operation expenditure (OPEX) disaggregated by activity, type of energy and by cost item;
7. Baseline scenario used to set the above-mentioned climate targets and how it considers the best available scientific knowledge. In addition, ENGIE should commit to publishing a progress report regarding the implementation of its climate strategy and to consulting annually its shareholders on this document.

b. Accounting practices

The inclusion of climate-related issues in a company's financial information is essential, both from an environmental and an investment perspective.

How does ENGIE consider climate-related matters?

- What are the useful lives and values of its carbon-intensive assets, both power plants and other gas – including LNG - infrastructures?
- How is it consistent with the company's 2045 net zero pathway?
- Under which scenario?
- What are the considerations of climate-related matters with respect to longterm provisions?

Which forecasted quantitative assumptions were used for ENGIE's 2025-2040 reference scenario and its impairment tests?

- Estimated costs of carbon capture, usage and storage or of other potential mechanisms (e.g., carbon offsets) used in impairment testing;
- Impairment assumptions and useful lives for ENGIE's carbon intensive PPE and intangible assets;
- Volume/production assumptions for its fossil outputs with the energy transition (Remaining estimated useful lives of assets, and calculations of residual values);
- Increased costs and changes in demand related to its renewable gas focused strategy.

[16] At least, renewable energies, fossil gas, LNG-related infrastructures and all the levers identified as solutions to "decarbonize fossil gas" by 2040 - 2045 (capture, biomethane, e-methane, green hydrogen, etc.).

Sensitivity of ENGIE's financial statements to a 1.5°C pathway:

- Has Carbon Price been used in the preparation of the accounts? Where? At what price? Has a sensitivity table been made?
- How did ENGIE assess the consistency between these assumptions and its decarbonization targets?
- What are the main inconsistencies/ risks that have arisen from this analysis?
- Will ENGIE disclose any reconciliation table?

c. Gas strategy

Overall gas strategy:

- What are the detailed and quantified factual elements (market and technological analyses, peer reviewed articles, group level past and future investments in each technology, etc.) substantiating the two "core belief" held by the group to keep betting on gas and to choose not to align on 1.5°C (namely, those beliefs are i) only thermal assets provide enough flexibility to guarantee energy security in a mix dominated by renewables; and ii) it will be possible to fully decarbonize fossil gas by 2040 - 2045, thanks to biomethane, e-methane and green hydrogen)?
- Does the group have a detailed asset-by-asset plan for the exit from fossil gas / for the conversion to renewable gas? Furthermore, what are ENGIE's current renewable gas production figures? Is it possible to have these figures by type of gas (green hydrogen, biomethane, e-methane, etc.)?

Gas supply sources and strategy:

- ENGIE justifies the recent signing of LNG import contracts by the need to ensure France's and Europe's energy security and to secure fossil gas supplies until its gas use can be fully decarbonized. Does the group consider that these requirements have been met or will it be likely to sign new gas – especially LNG – supply contracts?
- Could ENGIE disclose the share of gas that is imported from Cheniere and that will be imported from NextDecade and Sempra that is the product of fracking? Given the heavy environmental consequences of fracking and its ban in France, how does ENGIE reconcile such contracts with its climate commitments? More broadly, what is ENGIE's gas procurement strategy and does the company apply exclusion criteria related to environmental, social or geopolitical issues?

d. Other

Coal exit strategy:

- How does ENGIE explain the discrepancies between its strategic priorities (close first, then convert, then sell) and its actual phaseout record (heavily focused on selling assets)?