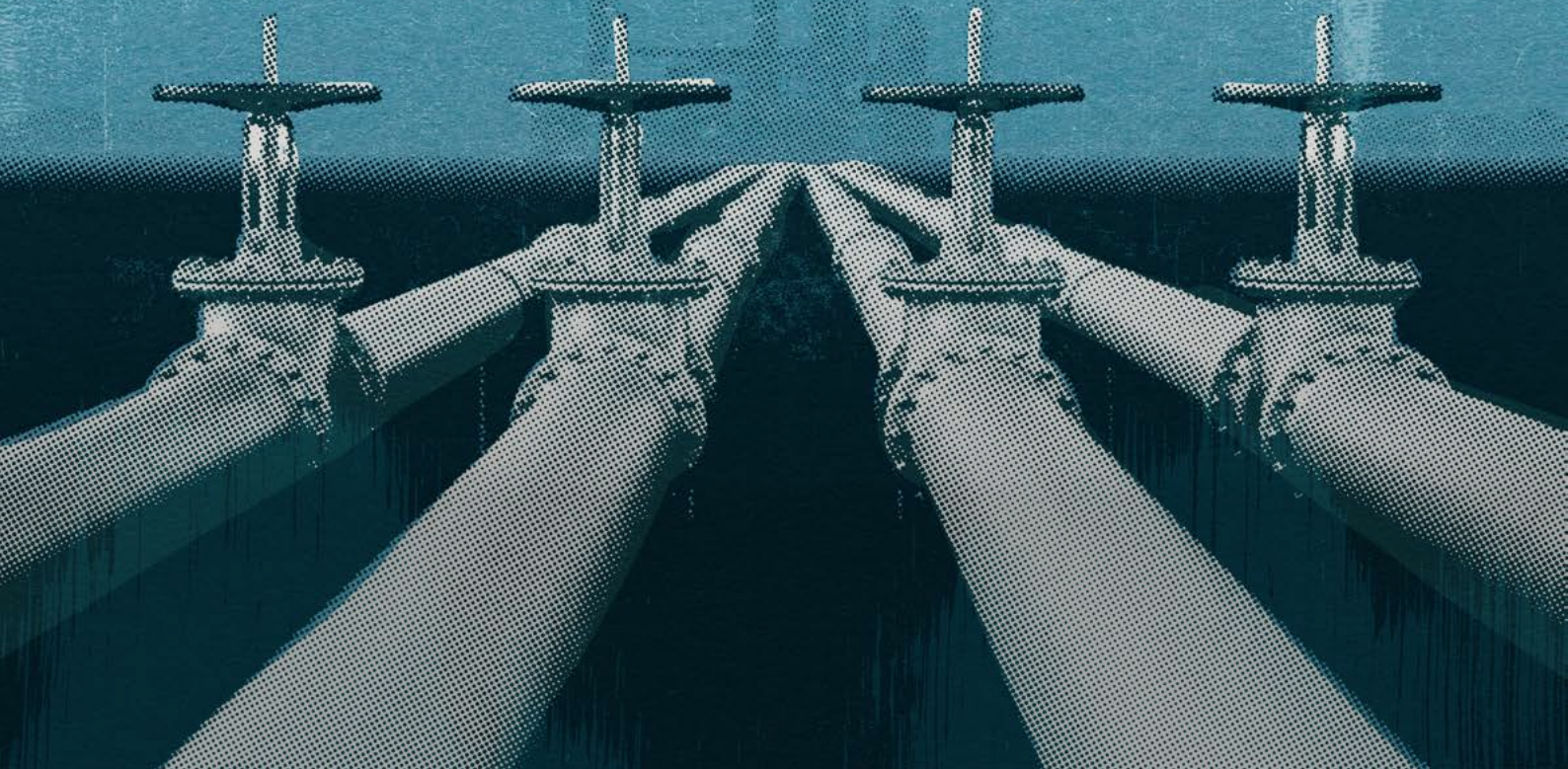


FOSSIL GAS

MANUFACTURING
ADDICTION

How the fossil fuel industry
and the French State are locking us
into an unsustainable energy model



Summary

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Executive summary

Falsely presented as a less dangerous energy source than oil or coal, fossil gas has been given a free pass in France's climate and energy policies.

An energy source bearing multiple costs

Yet fossil gas bears a **considerable climatic impact**, not least due to leakage of methane, a greenhouse gas with a greenhouse effect 84 times greater than CO₂. Affected by price instability and vulnerable to geopolitical shocks, fossil gas also carries **major economic and social costs**: in 2022, France devoted 46.7 billion € of its budget on gas imports, with cascading repercussions on households and businesses.

On top of this, the extraction and use of fossil gas has **harmful effects on health** (cancers occurring near extraction sites, children suffering from asthma because of emanations from gas stoves, etc.). Finally, contrary to the industry's narrative, fossil gas extraction does not foster economic development in the countries that own the resources, since gas extraction first and foremost **benefits the energy companies as well as a ruling minority**, while **directly affecting the rights of the people and communities** living near the projects.

Heavy dependence on gas

France is the **third largest consumer of fossil fuels** in the European Union. Many sectors of the economy are heavily dependent on it (39% of industrial energy consumption, 28% of residential energy consumption, 8% of the energy sector...). This dependence makes the energy system highly vulnerable to price increases and tensions in the supply system.

For several years, France's energy policy has failed to meet its agreed targets for reducing energy consumption. In view of the energy crisis that began in the spring of 2021 and was exacerbated by the war in Ukraine, demand for gas has fallen in 2022-2023, but the long-term lasting effect of such a decline

remains to be confirmed, given that part of it is due to a reduction in demand because of high prices.

The LNG boom and dependence on Russia

In 2022, following the Russian invasion of Ukraine, European countries sought to do without Russian gas, leading to an **80% increase in LNG (liquefied natural gas) imports for France**.

However, this dynamic actually masks two key elements. Firstly, the **LNG boom in France did not start in 2022**: gas imports had already doubled between 2018 and 2019, following the start of imports from the USA... and from Russia! This trend towards LNG raises questions, given its higher climate impact and economic cost.

Second, despite all the talk about phasing out Russian gas, **LNG imports from Russia actually increased in 2022** and remained high in 2023. This situation should alert us to our continued dependence on supply from authoritarian regimes, since **France has also been increasing its imports from Qatar over the past years**.

Manufacturing addiction

Our addiction to fossil gas is not inevitable, it is manufactured, the result of political choices, driven by the interests of the fossil fuel industry. For years, the **French government has reinforced our dependence on gas** in a variety of ways:

→ A **flawed energy policy** that is delaying the phasing-out of fossil gas: shortsightedness, absence of measures encouraging energy sufficiency before 2022, underestimation of the dangers of fossil gas, delay in the implementation of renewable energy sources, blind gamble

on nuclear power.... To quote but one example: if France had met its renewable energy development targets, it could have saved 60 TWh of fossil gas consumption, or 15% of its primary gas consumption in 2022 alone.

→ **Murky political games at European level:** in recent years, the French government has watered down or obstructed a number of texts in order to provide support to nuclear and gas power, thereby undermining the scope of the European Green Deal (taxonomy, renewable energy directive, regulation on energy transmission networks, etc.).

→ **Active support for international LNG development projects,** in association with banks and energy companies. The three case studies (Russia, USA, Mozambique) presented in this report document a similar pattern: French companies involved in the development of gas projects rely on financing from French banks with the protean support of the French State.

→ **The State fails in its role as a shareholder:** while the French state is a shareholder in key energy companies (Engie, EDF, Technip Energies), it does not use this important public lever to encourage, or even force, companies to implement an ambitious transition strategy. On the contrary, it turns a blind eye to the flawed and incomplete nature - or even absence - of gas exit strategies - as illustrated in this report with the case of Engie.

→ **Continued public funding for gas:** although France has put an end to international public support for gas projects, many **tax breaks** remain for fossil fuels. In particular, **the State still provides financing to companies in the energy sector** for projects aimed at reducing emissions at industrial sites or as aid in times of crisis - a problematic approach that does not take into account the company's overall strategy, or the monumental profits raked in by energy companies, which are reinvested in fossil fuels!

Getting out of the gas trap or staying addicted: a political choice

In the months and years ahead, France must make key political choices for its energy future. However, gas companies and their lobbies are pushing to keep us addicted to fossil gas. Several conditions are essential if we are to get out of this situation.

First of all, we must refrain from developing new gas infrastructures and instead plan to reduce existing ones. The war in Ukraine and the need to do without Russian gas are used as justification for the implementation of dozens of projects aimed at increasing LNG import capacity across Europe. In France, in addition to the floating terminal at Le Havre due to go into service in October 2023, **six projects** led by GRTgaz have quietly surfaced. These could increase **France's LNG import capacity to 57.3 bcm in 2030**, a 75% increase compared to 2021. This despite the fact that France has set a **gas consumption target of around 29 bcm** (342 TWh) for 2028 - a capacity that existing pipelines and terminals (excluding the Le Havre terminal) are more than sufficient to meet.

Another major risk of gas lock-in is the signing of **too many long-term import contracts**, potentially committing France to importing volumes that are too high for future demand. However, there is **no detailed, easily accessible official list of LNG import contracts to which France is a party**, and even less regarding the associated climatic and economic assessment of these contracts.

Today, players in the fossil fuel industry are pushing to keep or develop the use of gas in certain sectors and gas infrastructures, betting on the fact that so-called "green" gases should be available in abundance to replace fossil fuels. The great confusion surrounding the role of gas in the future energy system and the potential for producing "alternative" gases raises many questions and carries the risk of another lock-in. Since the quantities of "green" gas that can be produced in a sustainable and affordable way are very limited, it is necessary to sharply reduce the use of gas through careful planification.

Without this, we run the risk of:

- having to continue using a percentage of fossil gas,
- having to resort to non-developed, non proven and costly «alternative» gas production technologies, including burning fossil fuels to produce hydrogen,
- having to rely on imports of "green" gas or even of fossil gas which will weaken the resilience of our energy system.

Contrary to what the industry is promoting, hydrogen must have a much more marginal place in the future energy system. Indeed, only hydrogen produced by electrolysis using electricity from renewable energy sources (if this electricity is not already diverted to higher-priority uses) is compatible with sustainability objectives. It is therefore necessary to direct these uses of hydrogen towards sectors where there is no viable alternative.

Another path is possible: sufficiency and planning

Today's energy choices can enable us to move away from our dependence on fossil gas, to the benefit of the climate and of our energy bills.

Reducing demand is essential, and means **putting an end to unnecessary uses** of gas by transforming our agricultural systems to dispense with chemical fertilizers, and by reducing the use of plastics and the transport of goods. Implementing housing **energy renovation** must not only reduce the use of gas in the residential and tertiary sectors, but also lower the heating bill for households, at a time when 5.2 million people in France are in a situation of energy insecurity. We also need to **develop a 100% renewable energy system**, taking care not to reproduce the mistakes made by the fossil fuel industry (centralization, focus on profits to the detriment of ecosystems and disregard for community rights) as well as ensuring real democratic control. In December 2023, France announced that with six other European

countries, their joint ambition to 'decarbonise' their electricity system by 2035, as is recommended by the International Energy Agency. This commitment ought to result in the closure of fossil power plants and the deployment of renewable energies by following the principles detailed in [Part VI](#).

Finally, because moving away from fossil gas and radically transforming the energy system are bound to have consequences for employment in the industry, we need to anticipate these transformations and put in place policies and support measures to ensure a **just transition for workers**.

Recommendations

To guarantee a gas phase-out, Friends of the Earth France are making 17 recommendations to the French government, grouped into four categories:

1. Guarantee the conditions for a democratic and informed debate on fossil gas phase-out
2. Put science, social justice and respect for human rights at the heart of public policy
3. Stop the expansion of fossil gas
4. Plan and implement a coherent fossil gas phase-out policy

Lexicon

RE-GASIFICATION CAPACITY

Volume of LNG that an import terminal can convert from a liquid to a gaseous state, expressed in this report in billion cubic meters (bcm) per year.

COGENERATION

Cogeneration is the simultaneous production of electricity and heat from the same primary energy source, in the same plant. The production of electricity (via a heat engine or turbine) releases a large amount of heat, which is not reused in conventional thermal power plants.

PRIMARY ENERGY CONSUMPTION

Unprocessed energy consumption. Corresponds to the sum of final energy consumption and the net consumption of the energy sector.

FINAL ENERGY CONSUMPTION

The sum of energy consumption at the final stage (consumption of gas through combustion by all branches of the economy - with the exception of the energy branch and gas transformed into other products) and of final non-energy consumption (consumption of gas as a raw material (e.g. for the manufacture of plastics, hydrogen, etc.)).

DECARBONATION

Friends of the Earth France issues a warning regarding the use of this term. It refers to the action of reducing the carbon footprint, i.e. the net greenhouse gas emissions of an economic sector or industrial site. The term covers a wide range of possible actions: for example, improving energy efficiency, i.e. reducing the amount of energy required to achieve the same effect. In other cases, "decarbonizing" means electrifying fossil fuel uses. For

example, using electricity rather than gas to extract, compress or liquefy gas is considered decarbonization. There are already two problems here: on the one hand, the primary energy used to produce electricity may itself emit more or less greenhouse gases. On the other hand it does not make sense to "decarbonize" the fossil gas extraction process for the tapping of new gas fields, when expansion must cease and gas production must decline. This is nothing but greenwashing. Finally, in some cases, "decarbonizing" implies capturing and storing the carbon emitted, an immature and costly technology that only serves to justify the *status quo*.

On the whole, the term "decarbonization", used indiscriminately by industry and governments alike, is confusing and conceals realities that are often problematic. Ultimately, the mere concept of focusing solely on the carbon impact of a sector or site is already problematic.

OIL AND GAS SERVICE AND SUPPLY INDUSTRY

Companies involved in the oil and gas industry or trade. These companies have recently come to be known as "energy service companies". The French oil and gas-related sector mainly exports services (engineering, software, seismic data processing, logging borehole mud, etc.). Few manufacturing units are still located in France. For a detailed description of the sector, see our report [«Pour une transition juste»](#), February 2021.

HYDRAULIC FRACTURING

A hydrocarbon extraction technique for certain types of geological rock structures. This method consists in injecting a high-pressure liquid mixed with chemicals to "frack" the rock. This technique is used to extract non-conventional hydrocarbons, such as shale gas, trapped in rocks with low permeability.

HYDROTHERMAL GASIFICATION

High-pressure, high-temperature thermochemical process for transforming wet or liquid organic waste (digestates from methanization, industrial effluents and liquid residues, sludge from wastewater treatment plants, etc.) into methane-rich gas that can be injected into the gas grid. This technology is still under development.

"NATURAL" GAS

Fossil fuel formed from the decomposition of organic matter, composed mainly of methane (around 90%). We prefer to call it "fossil gas".

LNG (Liquefied Natural Gas)

Fossil gas converted to a liquid state by a **liquefaction process**, in order to facilitate its transport by sea (via an **LNG carrier ship**). This state is reached when the gas is cooled to a temperature of around -160°C. It can then be re-gasified (**re-gasification**) for transport by **pipeline**, depending on the consumption requirements.

"GREEN" OR "ALTERNATIVES" GAS

Terms used in this report for convenience to designate all the gases promoted by various players to replace fossil gas. It thus encompasses hydrogen, "bio"-gas, "bio"-methane, syngas... regardless of their production method (steam methane reforming/SMR or electrolysis for hydrogen production; methanization, methanation, pyrogasification, hydrothermal gasification for the others gases). Friends of the Earth France issues a warning regarding the use of the terms "green", "decarbonized" and "biogas" as used by industry and government. These positive connotations may conceal other environmental and socio-economic impacts, as well as widely varying levels of technical and economic maturity.

HYDROGEN

"Hydrogen" is the common name for "dihydrogen" (H₂). This gaseous molecule can be produced in several ways. The most widespread method is production from fossil fuels (over 90% of the produced quantities) - this is known as "grey", "brown" or "black" hydrogen. Hydrogen can also be produced by electrolysis of water. When the electricity is of renewable origin, one speaks of "green" hydrogen. When the electricity is produced in nuclear power plants, it's called "pink" hydrogen. Hydrogen can be used to replace certain uses of fossil gas, for example in industries requiring high temperatures. It can also be used to "store" electricity, or as a fuel source.

LNG TANKER

Tanker vessel with specially designed tanks to carry liquefied natural gas.

ENERGY MIX AND ELECTRICITY MIX

Distribution of the different primary energy sources consumed in a given geographical area. The **electricity mix** refers solely to the distribution of resources used to generate electricity.

PYROGASIFICATION

(or pyrolysis gasification)

Thermochemical process for converting dry organic matter such as wood or carbon-containing waste into gas (using high temperatures and in the absence of oxygen).

LNG TERMINAL

(import/export, onshore/ floating)

An industrial plant that can be offshore (floating) or onshore (in this case referred to as an LNG port) where LNG tankers dock. It can:

1. liquefy natural gas (export terminal) or re-gasify LNG (import terminal) for injection into the gas distribution network,

2. transship gas cargoes from one LNG tanker to another,
3. store gas.

TRANSSHIPMENT

Transferring LNG from one tanker to another without regasification. Transshipment therefore differs from re-export, where LNG is re-gasified, stored in terminals, then re-liquefied and exported. Transshipped gas is not counted in the flows transiting France, unlike gas that is imported and then re-exported.

Acronyms

IEA International Energy Agency

CRE Commission de Régulation de l'Énergie (French Energy Regulatory Commission)

ENTSOG The European Network of Transmission System Operators for Gas

FSRU Floating Storage and Re-gasification Unit, or floating LNG terminal

IEEFA Institute for Energy Economics and Financial Analysis

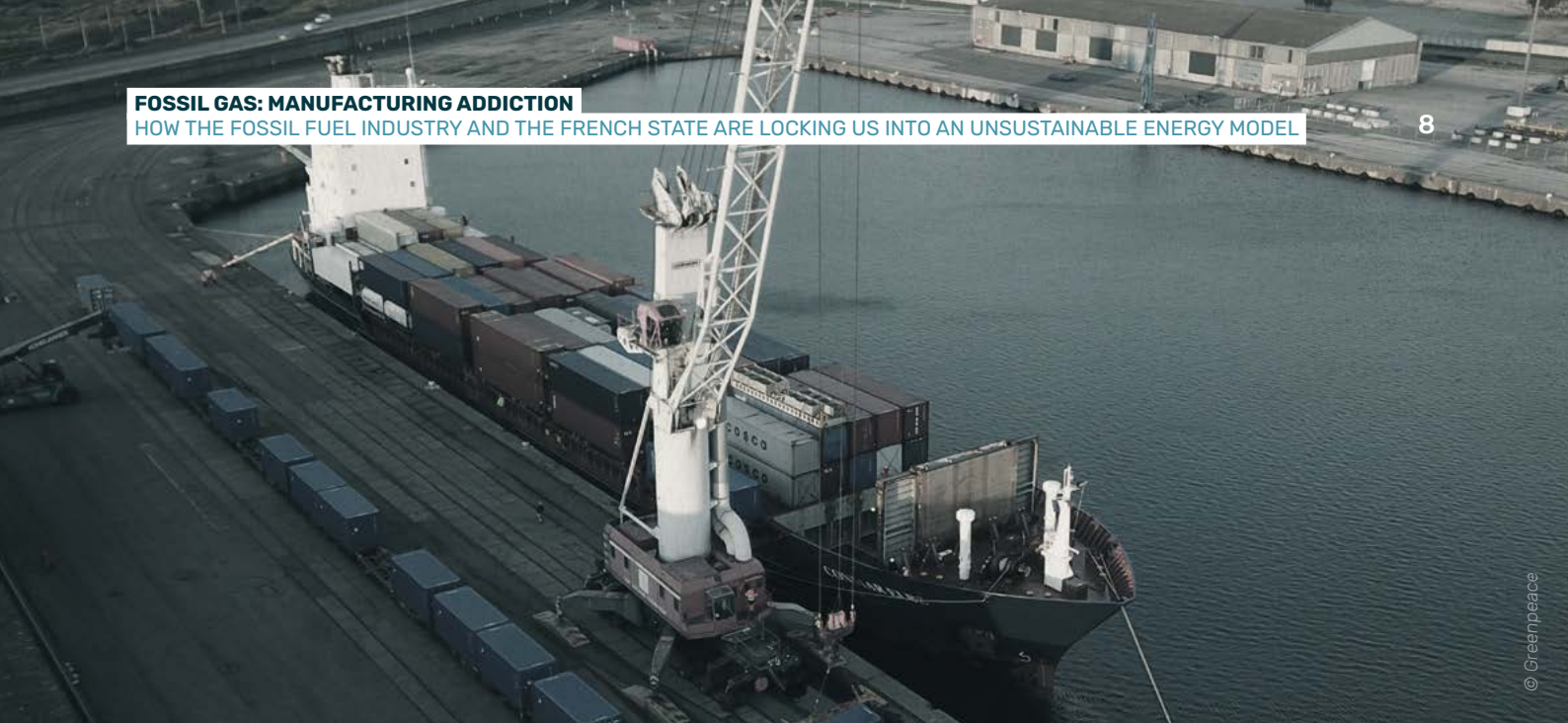
PPE Programmation pluriannuelle de l'énergie (Pluriannual Energy Program)

RTE Réseau de Transport d'Électricité (Electricity Infrastructure Agency)

SFEC Stratégie Française Énergie-Climat (French Energy-Climat Strategy)

SNBC Stratégie Nationale Bas Carbone (National Low Carbon Strategy)





Introduction

The energy crisis of 2021, intensified by the war in Ukraine since 2022, has put the spotlight on our **dependence on fossil gas and the resulting vulnerability of our economies**. In France, fossil gas is an important part of the energy mix in many sectors, but 98% of it is imported ([Part II](#)). This has **cascading consequences** in the event of a geopolitical shock and/or price hikes: higher electricity costs, higher production and transport costs, and therefore higher prices for goods, higher fertilizer prices, and therefore higher food prices, etc.

In addition to this extremely heavy economic and social cost, fossil gas has a **more serious impact on the climate** than the narrative of gas companies – and even of the French government, which has underestimated the dangers of gas in past policies – would have us believe.

This report examines the French State **political choices, influenced by the interests of the fossil fuel industry**, that have maintained or even increased France's addiction ([Parts III and IV](#)): a flawed energy policy, murky political games at European level, active support for the international development of LNG (liquefied natural gas), continued public financing, failure of the State to use its leverage as a shareholder.

At a time when the energy crisis is still unfolding, when the urgency of climate change is increasingly requiring us to phase rapidly out of fossil gas, and with the upcoming 3rd Pluriannual Energy Program (PPE) being due in 2024, **France and Europe are at the crossroads**.

If the deployment of new LNG import infrastructures driven by fossil fuel industry lobbies^{1,2} continues at the current pace and if future energy choices are not planned and coherent, **the risk of falling deeper into the trap of an addiction to gas is real** ([Part V](#)). On the opposite, another approach is possible ([Part VI](#)): weaning us from gas by eliminating superfluous uses and deploying renewable alternatives in a reasoned way.

Emmanuel Macron and his successive governments have repeatedly said they want to be the "first major country to move away from fossil fuels", and at the end of 2023 France pledged to "decarbonize" its electricity system by 2035³. **The choices we make over the coming years will be crucial**: they will decide whether we get locked into being dependent on a vulnerable, costly system, or whether we will establish a system that ensures access to affordable and safe energy for all.

I. Fossil gas: a dangerous and unfair energy source

1 A HIGH LEVEL OF DEPENDENCY THAT MAKES US VULNERABLE

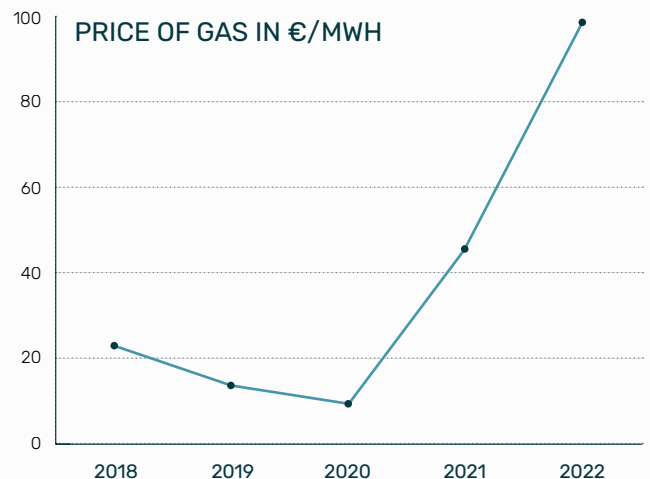


98 % of the fossil gas consumed in France is imported.

2 CATASTROPHIC ECONOMIC AND SOCIAL COSTS

Fossil gas is an expensive form of energy that is subject to high price volatility. In 2022, France paid 46.7 billion euros to import fossil gas, 3.4 times more than in 2021⁴.

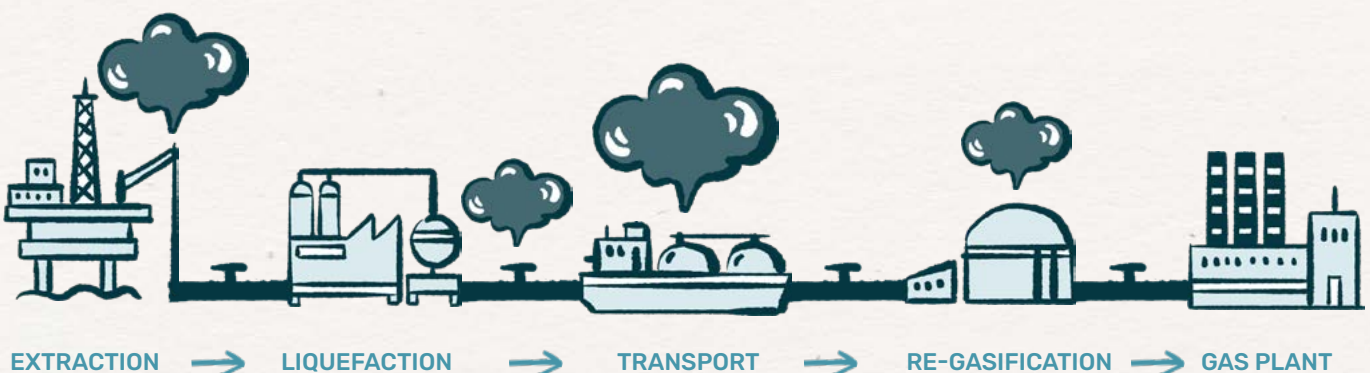
Meanwhile, in 2022, Total made a profit of USD 36.2 billion⁵.



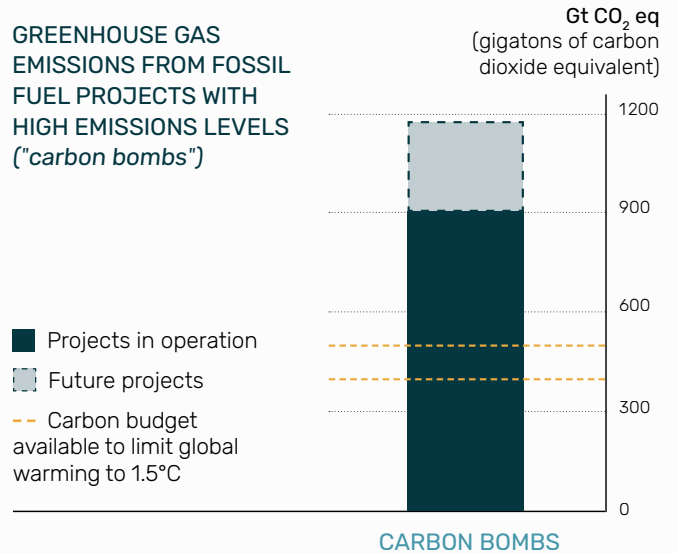
Service des Données et Statistiques du Ministère de la Transition Écologique

3 A FOSSIL FUEL WITH A CONSIDERABLE CLIMATE IMPACT

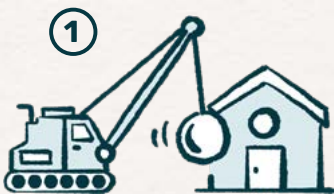
Natural gas consists primarily of methane (CH_4), a greenhouse gas 84 times more powerful than CO_2 over 20 years. Methane leaks throughout the supply chain. Although it emits less CO_2 than oil and coal when burned, fossil gas has an equally, if not more, catastrophic impact on the climate because of these leaks.



According to the IEA (International Energy Agency) and the United Nations, gas has no place in the transition, and no new gas extraction fields should be approved for development. While countries should be reducing the production and consumption of fossil fuels, they are far from meeting this objective. The oil and gas fields currently in operation are enough to put us over our carbon budget if we are not to exceed a temperature rise of 1.5°C. Meanwhile, majors like Total continue to develop catastrophic projects.



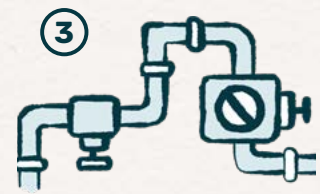
4 FOSSIL GAS UNDERMINES HUMAN RIGHTS



1 THE CONSTRUCTION OF GAS INFRASTRUCTURE RESULTS IN THE **EXPROPRIATION OF LOCAL POPULATIONS**



2 COMPANIES LIKE TOTAL EXTRACT GAS RESOURCES AND POCKET THE PROFITS, **PAYING AS LITTLE AS POSSIBLE TO THE PRODUCING COUNTRIES**



3 MOST GAS IS EXPORTED, WHICH MEANS THAT IT **DOES NOT HELP TO IMPROVE ACCESS TO ENERGY FOR PEOPLE IN GAS-PRODUCING COUNTRIES**

5 SERIOUS IMPACTS ON HEALTH

Gas extraction entails serious health risks for communities living near extraction sites. For example, hydraulic fracturing, which is used to extract shale gas, puts local populations at risk of cancer, asthma, heart disease, deformities, etc.

When the gas is used, it can also be dangerous to health. A child living in a home with a gas cooker is exposed to a risk of asthma comparable to that of a child living in a home with cigarette smoke⁶ !

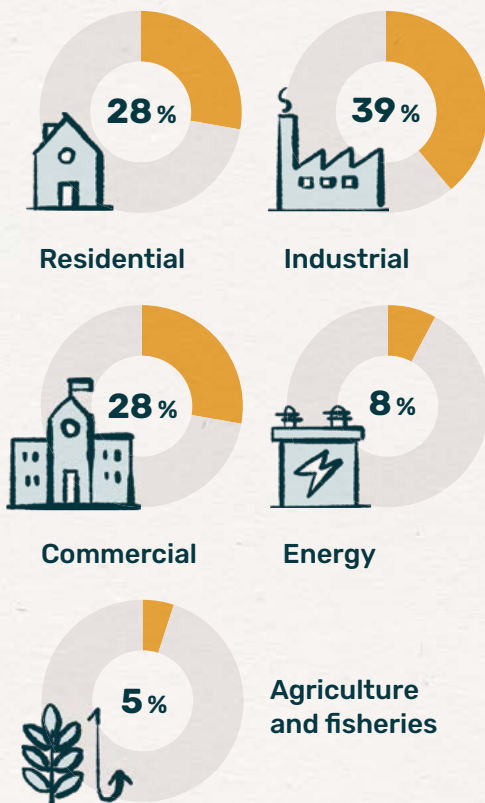


II. France's addiction to fossil gas

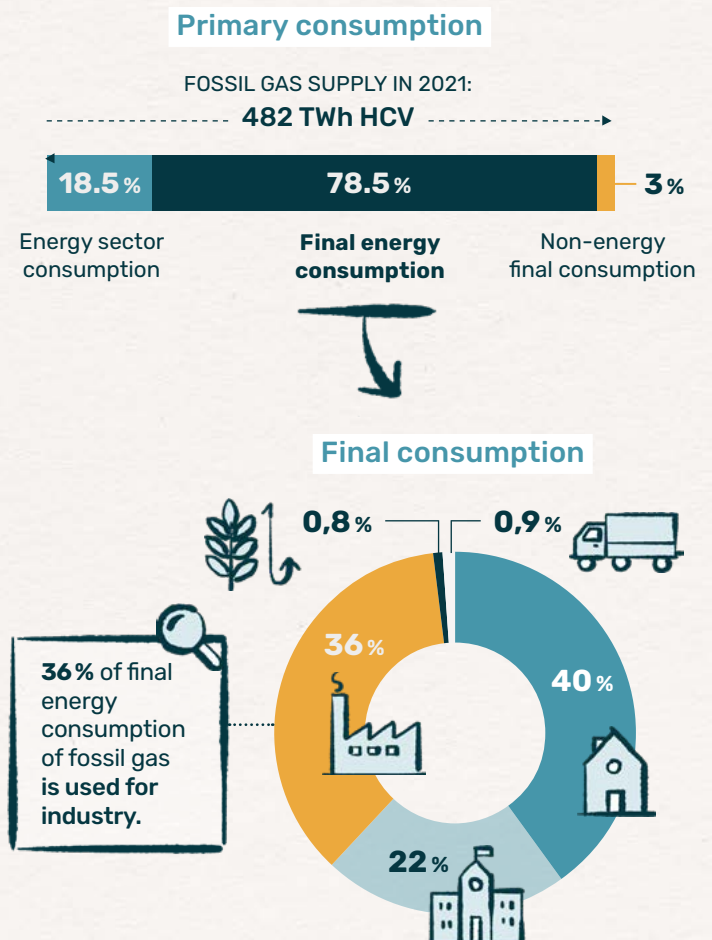
France's energy mix remains largely dependent on fossil fuels: in 2022, fossil gas will account for 18% of its final energy consumption, and oil for 39%⁷. France is the third largest consumer of fossil gas in the European Union, behind Germany and Italy⁸. It is lagging behind in reducing its gas consumption, failing to meet the targets it has set for itself⁹.

DEPENDENCY ON FOSSIL GAS: COMMON TO ALL ECONOMIC SECTORS

Degree of dependence on gas by sector in 2021



How is gas consumed in France?



Sources for both graphs: Service des Données et Études Statistiques du Ministère de la Transition Écologique¹⁰



PRIMARY CONSUMPTION

Raw, i.e. unprocessed, energy consumption.

ENERGY SECTOR CONSUMPTION

Consumption of gas to produce electricity and/or heat, losses from transport and distribution losses.

FINAL ENERGY CONSUMPTION

Consumption of gas by combustion in all sectors of the economy - with the exception of the energy sector and gas transformed into other products.

FINAL NON-ENERGY CONSUMPTION

Consumption of gas as a raw material (e.g. for the manufacture of plastics, hydrogen, etc.).¹¹



The energy sector uses gas to produce electricity, heat or both at the same time (cogeneration). Gas plays a special role in the energy system, since gas-fired power stations are used to manage peak consumption in winter - and increasingly in summer too: its level of consumption is therefore strongly correlated to the weather and the availability of other means of production. In 2022, for example, gas-fired power stations were operating at full capacity to compensate for the shutdown of half the French nuclear reactors.¹²



The residential and tertiary sectors consume gas for heating, domestic hot water and cooking.



Industry uses fossil gas as an energy source, particularly in industries that require very high temperatures. Industry also uses fossil gas as a raw material, particularly in the manufacture of plastics, hydrogen or ammonia for fertilisers - these quantities appear in the "non-energy final consumption" category.



The agricultural sector uses fossil gas to heat its greenhouses and livestock buildings.



Transport: fossil gas is used as a fuel (NGV - Natural Gas Vehicles) in the form of Compressed Natural Gas or Liquefied Natural Gas (LNG), increasingly for trucks and buses.

Insufficient and unstable reduction in consumption

Fossil gas consumption fell only slightly between 2012 and 2021 – less than what France had committed to – with significant variations depending on the year¹³ and the sector.

Consumption is even increasing in some sectors: it has almost tripled in the transport sector¹⁴, and increased by 17% in the agricultural sector¹⁵. With large variations from one year to the next, overall consumption rose by 34% in the energy sector for electricity and heat production¹⁶. The use of gas as a raw resource in industry also increased by 8% between 2012 and 2021¹⁷, a sector where demand could continue to grow in order to replace coal-fired systems, particularly in the field of steel production.

As it is not taken into account in France's energy balance reporting, it is important to mention that demand for fossil gas in the shipping industry is exploding: by 2030, a quarter of European ships could be running on LNG¹⁸. This growth is particularly worrying for cruise ships, since these vessels are equipped with a type of LNG engine that is responsible for the highest methane leaks¹⁹.

Faced with the energy crisis that began in the spring of 2021 and was exacerbated by the war in Ukraine, demand for fossil gas fell in 2022²⁰ and continued to do so in 2023²¹ but the permanent aspect of such a reduction remains to be confirmed, given that part of it is due to high prices.

France fails to meet its own targets

France has failed to meet its targets for the reduction of its gas consumption for several years. As a result, it has had to downsize its short-term targets²² and is expected to double the rate of reduction in consumption between 2023 and 2028²³. However, this cannot be achieved without major structural changes, which are neither planned nor implemented at present.

The absence of an exit strategy regarding our dependency on gas renders the energy system unstable in

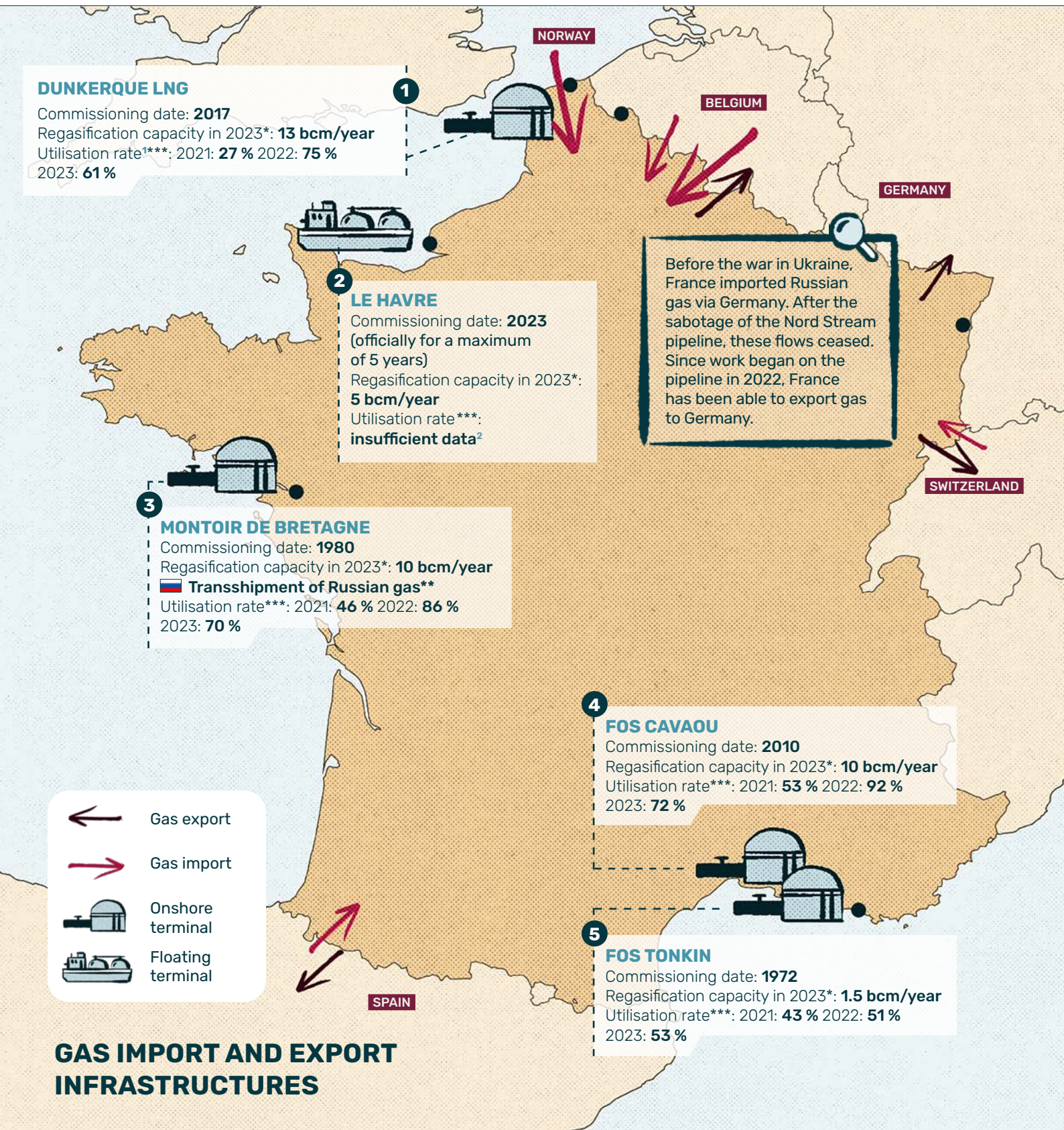
times of crisis, whether during electricity crises (as in 2022, with a significant reduction in the share of nuclear power in the energy mix) or drastic changes in gas and electricity prices (in an international context of supply tensions).

From pipeline supply to LNG boom

Historically, French fossil gas imports have mainly been via pipeline²⁴, notably from Norway, from the Netherlands via Belgium, as well as from Russia via Germany. Although France has been importing LNG since 1972, with that year's commissioning of its first terminal at Fos Tonkin, the share of LNG in French imports remained relatively low for several decades.

From 2018 onwards, LNG volumes arriving at French terminals rose sharply, with **imports doubling between 2018 and 2019**²⁵. This explosion coincides with the start of imports from Russia and the United States.

In 2022, following Russia's invasion of Ukraine and the need to do without Russian gas, France and its European neighbors switched to LNG on a massive scale. LNG imports increased by almost 80% compared with 2021²⁶. Paradoxically, **the race to free ourselves from Russian pipeline gas has resulted in a 45% increase in LNG imports from... Russia**²⁷.



1 Calculations by Greenpeace France using daily data from the ALSI database (Aggregated LNG Storage Inventory) put online by Gas Infrastructure Europe (GIE). For each terminal, these rates were obtained by correlating the sum of the daily quantities of gas regasified ("send-out") by the terminals to the sum of their daily regasification capacities ("DTRS", i.e. "declared total reference send-out" or "send-out capacity") - for each year X.

2 Le Havre terminal was commissioned in October 2023, but its use has only been recorded in GIE's ALSI database since 13 December 2023. The data is therefore insufficient to calculate a representative utilisation rate. For example, between 13 December 2023 and 31 January 2024, the terminal was used at 49% of its capacity.

* Please note: this is the annual nominal capacity according to Gas Infrastructure Europe (GIE)²⁹. Nominal capacity does not correspond to maximum regasification capacity, but to a minimum capacity guaranteed by the operator. In practice, French terminals can regasify larger quantities than their nominal capacity. According to operator declarations, French terminals had the capacity to regasify 46.96 bcm in 2022²⁹, compared with 34.5 bcm of official nominal capacity³⁰.

* Since the Russian invasion of Ukraine, the terminal's capacity has been increased. A floating terminal was commissioned at Le Havre in 2023. The capacity of the Fos Cavaou terminal has been increased from 8.5 to 10 bcm. At Dunkirk,

debottlenecking operations have increased maximum capacity from 16 to 18 bcm.

** At Montoir-de-Bretagne, Elengy is transferring Russian gas from ice-breaking vessels to conventional LNG carriers for re-export around the world: operations that have nothing to do with supplying France, but which make it possible to whitewash the origin of Russian gas!

*** In 2022, French terminals reached record levels of utilisation, with an average rate of 80.4%. Before this exceptional year, terminals were only used to 39.82% of their capacity. Utilisation fell again in 2023, with an average rate of 65.16%³¹.



WHO OWNS AND OPERATES FRENCH TERMINALS?



Three of the five French terminals are owned by ENGIE, of which the French state is the main shareholder (23%). Montoir-de-Bretagne, Fos Cavaou and Fos Tonkin are owned by GRTGaz, in which Engie is the majority shareholder (60%). They are operated by Elengy³², a subsidiary of GRTGaz.

The new Le Havre terminal has been promoted and is operated by Total³³.

The Dunkirk terminal is owned and operated by a consortium consisting mainly of Belgian company Fluxys, Axa and Crédit Agricole³⁴.



Which countries do we import from?

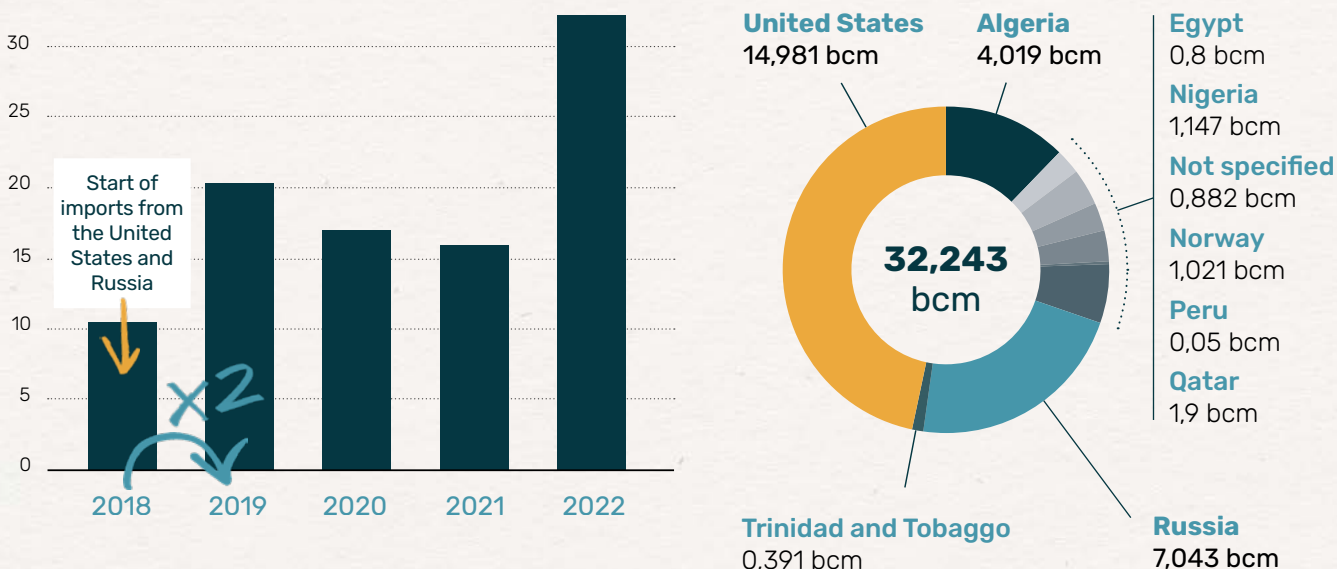
Since the war in Ukraine, Norway is the only country from which France still imports significant quantities of fossil gas by pipeline³⁵. For LNG in 2022 and 2023, the main exporters to France are USA, Russia, Algeria and Qatar³⁶.

The composition of France’s LNG imports has changed considerably in recent years. Algeria was France’s sole supplier of LNG until 2002, and its main supplier until 2018, when imports from Russia and the

USA began - after the French state and French companies had actively contributed to the development of extraction in these countries (see p.24-27). Russia was France’s main supplier from 2019 to 2021, and took second place when imports from the USA took off significantly in 2022 following the Russian invasion of Ukraine³⁷. In 2023, Russia held its position, accounting for 16% of French imports³⁸.

By 2022 and 2023, France was positioned as Europe’s biggest importer of LNG, ahead of Spain³⁹: a risky development that raises questions.

Evolution of French LNG imports and breakdown of imports in 2022 by country of origin (bcm)



Source: Enerdata (Reclaim Finance Analysis for Friends of the Earth France).

France re-exports gas

France's capacity for the re-treatment and storage of gas is far higher than the quantities it imports. While French terminals enjoyed record utilization, with an average utilization rate of 80.4% in 2022, they were only used to 39.82% of their capacity in 2021. Utilization was down again in 2023, to 65.16%⁴⁰.

With this overcapacity for re-gasification and terminal storage, France has long been re-exporting some of the LNG it receives. These re-exports accounted for up to 19% of its imports in 2016, mainly to countries outside the European Union⁴¹.

But, by 2022, these dynamics changed dramatically: France now hardly re-exports any LNG, despite increasing its pipeline exports to neighboring countries. These re-exports are nothing new: gas exchanges between European countries fluctuate according to the weather and the availability of power generation facilities⁴². In 2022, France became a net exporter to Belgium and Germany for the first time.

On the other hand, transshipment of Russian LNG, taking place since 2018 at Montoir de Bretagne (see box), has increased.

TRANSSHIPMENT: FRANCE, AN ESSENTIAL LINK IN THE RUSSIAN GAS MARKET

Since 2018⁴³, a French terminal has played a key role in the Russian LNG trade: the port of **Montoir-de-Bretagne transships⁴⁴ LNG from ice-breaking cargo ships hailing from Siberia to conventional LNG carriers⁴⁵**. Only a handful of terminals in Europe use this practice. These operations at Montoir are the result of an LNG sale and purchase agreement signed in 2015⁴⁶ as part of the Yamal LNG project in Russia. Initially established between Novatek and Engie, the agreement was transferred in 2018 to Total⁴⁷. Shell also has a transshipment contract at Montoir⁴⁸. The transshipment service is operated by Elengy.

Between 2018 and 2021, an average of 1.55 billion bcm of LNG were transshipped each year at Montoir⁴⁹. In 2022, despite the conflict in Ukraine, **transshipments increased by 50%** compared to 2021⁵⁰. In 2023, a further 1.68 bcm were transshipped at Montoir⁵¹.

Transshipping this gas has nothing to do with security of supply, but stems from a purely

financial logic, or even a terminal "survival" strategy, as demonstrated by the case study of the Zeebrugge terminal in Belgium. Following the expiry of its initial supply contract in 2007, and a decade of stagnating gas demand in Belgium, its operator Fluxys turned to Russian LNG transshipment, which boosted its sales growth⁵².

Today, the continuation of **this activity enables Russian gas to be "laundered" despite the fact that everyone claims to not want to use Russian gas anymore**. It also enables the Yamal LNG terminal to export more gas by allowing greater rotation of icebreakers, of which Yamal LNG has only a small number (16). In addition to having played an active role in the development of gas extraction in the Russian Arctic⁵³, Total, Engie through its subsidiary Elengy and France, with this transshipment activity, **have become an essential link in the Russian gas market that is financing the war in Ukraine**.



A costly gamble on LNG

Over the last fifteen to twenty years, the French government and French gas companies have played an active role in the LNG boom. The French government and companies have worked to develop supply chains to France:

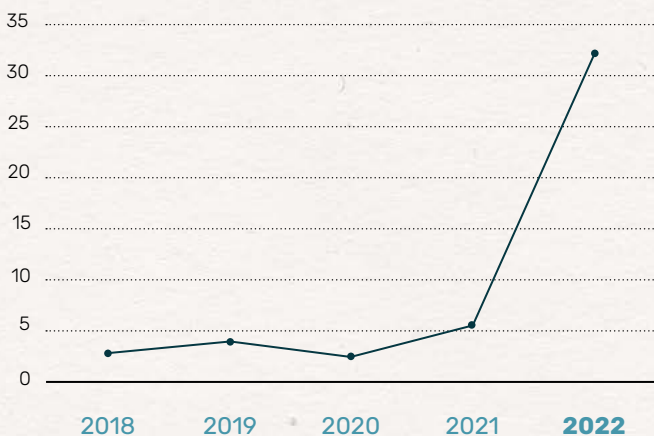
- Upstream, the French government actively supported the opening of new fossil gas fields in Russia⁵⁴ and the USA⁵⁵, in which French companies - and banks in the case of the USA - were involved, encouraging the start of LNG imports from these countries from 2018.
- At the same time in France, infrastructures enabling massive growth in LNG imports

have been developed: Fos Cavaou (2010), Dunkirk (2016)⁵⁶, Le Havre (2023). Between the commissioning of Fos Cavaou and the end of 2021, LNG imports will increase by 42%⁵⁷. Through its shareholding in Engie⁵⁸ and EDF (and its subsidiary Edison)⁵⁹, the French state has also been involved in the signing of numerous import contracts.

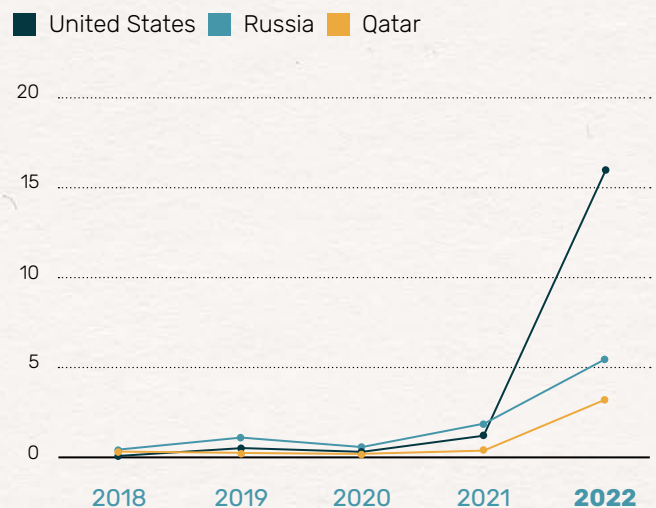
The LNG development strategy is all the more questionable when we consider the much higher economic costs of LNG compared to pipeline imports. **In 2022, LNG cost France 32 billion €, i.e. 2.5 times the budget of the late French Ministry of Energy Transition⁶⁰.**

Cost of French LNG imports (millions of €)

Overall cost



Top 3 sources of supply



Source: IEEFA from Eurostat⁶¹

III. Domestic and European policy: between failure and hypocrisy

In recent years, France has not sufficiently reduced its fossil gas consumption to combat climate change and strengthen its resilience and independence. We are still heavily dependent on gas, with major economic and ecological consequences.

This dependence is not inevitable; it didn't happen by itself. It is the result of **political choices, influenced by the interests of the fossil fuel industry**. The state has failed to put in place a domestic policy to prepare for the exit from fossil fuels. At the same time, it has in many ways supported the upstream and international development of gas extraction, to the detriment of human rights and the environment.

DOMESTIC POLICY: UTTERLY UNPREPARED FOR THE GAS PHASE-OUT

In February 2022, in his speech in the city of Belfort, Emmanuel Macron set the ambition of "*making France, within 30 years, the first major country in the world to emerge from its dependence on fossil fuels*"⁶². In the midst of a long-term energy crisis, and at a time when France must make decisive choices in terms of energy policy⁶³, a historical review of this policy reveals the multiple dimensions of its failure to prepare for the exit from fossil fuels, and from fossil gas in particular.

Short-term measures to reduce energy consumption

Significantly reducing our energy consumption is an essential prerequisite if we want to succeed the energy transition. Although France had set itself targets for reducing its consumption as early as 2015⁶⁴, it has not implemented the energy-saving policies that

would have allowed it to not only meet its targets, but also to reduce the cost to households and businesses as well as gain in sovereignty and resilience.

Consumption can be reduced in two ways: by improving energy efficiency (meeting the same need with less energy), or by reducing the uses themselves (energy sufficiency). While the French 2015 Energy Transition Act mentioned both approaches⁶⁵, the energy policy has failed to properly implement efficiency measures and has long ignored the sufficiency approach.

In terms of energy efficiency, for example, the French government has not provided sufficient resources to meet its targets for energy-efficient renovation of buildings, and has failed to reduce heating needs. Yet heating accounts for around 60% of final fossil gas consumption⁶⁶. Achieving the target of 500,000 energy-efficient renovations in the residential sector would save up to 10 TWh of gas each year, the equivalent of 10% of France's annual imports of Russian gas⁶⁷.

The government waited until 2022 and the advent of another major energy crisis to **embrace the notion of energy sufficiency**. The sufficiency plan put in place in October 2022 enabled France to reduce its energy consumption by 12%⁶⁸ (excluding weather effects) in just a few months, revealing the flagrant failure of successive governments to take the most accessible measures to reduce obvious areas of over-consumption. In the words of the French Minister for Energy Transition herself, the country has managed to "*do in*



three months what it hadn't been able to do in thirty years" ⁶⁹.

Unfortunately, the plan fails to put in place the necessary measures that will guarantee a long-term reduction⁷⁰. On the one hand, it focuses on "small gestures" aimed at the most blatantly unnecessary uses (e.g. heating temperature) – initiatives which are necessary but insufficient if not paired with structural transformation and support measures. For example, deploying public transport and rail freight to reduce oil consumption and avoid a switch to gas-fired plants.

On the other hand, the plan does not sufficiently take into account the most precarious households, while having no binding effect on the biggest polluters (only suggesting incentive measures). **Without taking into account social justice, such an approach to energy sufficiency is bound to produce only temporary results.** The drop in consumption observed over 2022 and 2023 can be explained⁷¹ in part by the sufficiency plan's measures, but also by consumer deprivation due to high prices and an increase in household economic precariousness – although we do not have the figures to distinguish between these two levers.

A chronic underestimation of the dangers of fossil gas

While the climate impact of fossil gas was already well documented in 2019⁷², the 2019-2028 PPE Pluriannual Energy Program (Programmation pluriannuelle de l'énergie) adopted that year contained **no specific measures to control gas consumption.** To achieve its targets for demand reduction, the government relied solely on the impact of energy efficiency measures implemented in the housing

sector in particular (themselves ineffective, as already mentioned)⁷³.

This was justified by the fact that gas is claimed to be a "less dangerous" fossil fuel and that "the temporary shift of some uses from coal or oil to natural gas is a relative improvement."⁷⁴ This narrative of gas as being a "transitional energy source" is **totally fallacious**⁷⁵. It has been touted by the industry for years to block any ambitious public policy and to justify the development of gas infrastructures as well as increased gas usage. But it goes against a clear scientific consensus and a growing body of proven research denouncing the danger it poses to the climate⁷⁶.

Furthermore, **existing targets for reducing fossil gas consumption were not sufficiently ambitious**⁷⁷ and did not put France on track to meet its fair share⁷⁸ of the challenge of keeping global warming to 1.5°C. Intermediate targets have not been met.

A lack of long-term thinking and no clear, coherent direction

Overall, the successive governments, right up to those under Emmanuel Macron's presidency, have failed to elaborate and implement a coherent policy, finding the proper balance between immediate measures and long-term ambitions. This point was raised in 2023 by the Commission of Inquiry on Energy Independence⁷⁹ and by the High Council for Climate: "*The PPE program is built on too short time horizons (...), leading to a lack of clarity on the strategy and trajectory of the electricity and energy mix.*"⁸⁰

In this respect, the sufficiency plan is highly revealing. It was drawn up in a hurry, and does not assess the compatibility of measures with medium and

long-term climate objectives⁸¹. It may achieve quick wins in the short term, but overlooks the need to sustain efforts in the medium and long term in order to stay on track and meet those objectives.

When its policies manage to envision a long-term horizon, the French government does not adopt the right approach, as in the case of industrial sites. The ecological transition contracts for the fifty highest-emitting sites signed in 2023 strongly favor a number of uncertain and non-proven technologies such as CCS (Carbon capture and storage)⁸². This highly technological approach, focused on "decarbonization", ignores essential levers of an industrial transition *policy*, such as the deployment of a circular economy and does not take into account demand-sufficiency scenarios, which are only mentioned in 3 of the 32 contracts⁸³.

Even worse, the policies that have been implemented lately, instead of articulating industrial and environmental objectives, have been to the detriment of environmental law. The French "Green industry" law is a case in point: its main effect is to speed up procedures by undermining consultation procedures, in order to set up new industries linked to technologies presented as being "clean" but whose environmental benefits are not always proven⁸⁴. The first announcements regarding a second law on the industrial sector are also worrying⁸⁵. As for public subsidies, they are still not subject to any Eco-conditionality (see p.30-31).

The industrial sector accounts for 36% of our gas consumption for energy purposes and 3% for non-energy purposes⁸⁶ (i.e. as a raw material), and it has been hit hard by rising gas prices⁸⁷. As it is considered a transitional energy, the share of gas in the energy mix of certain industries has increased⁸⁸. This is a sector in which there is an urgent need to reduce the dependency on fossil fuels.

The development of renewable energies is lagging behind

Despite significant potential, France is lagging behind in the development of renewable energies: it is the

only country in the European Union not to have met its renewable energy development targets. Despite the fact that it was supposed to reach a rate of 24.3%, only 20.7% of our gross final energy consumption came from renewable energies as of 2022⁸⁹.

This failure to meet our targets represents a deficit of around 60 TWh⁹⁰, which is as much energy as we import from fossil sources and at high prices, with a cost estimated by IDDRI at 6 to 9 Billion € for the year 2022 alone⁹¹. On the contrary, renewable energies contributed €13.7 billion⁹² to the state budget in 2022-2023, which enabled the financing of 50% of the energy tariff shield.

Renewable energies are demonstrating their strategic advantages, both economically and in terms of rapid deployment. Over the next 10 years, these are the only energies that can be added to our energy system to replace fossil fuels. However, the law passed last year to accelerate the development of renewable energies has failed to meet the primary requirements to support their development: an increase in human and financial resources to process applications better and faster, and to support their deployment throughout the country.

The draft law on energy sovereignty, which eliminates targets for the share of renewable energies in gross consumption, is very worrying in this respect. Clear support is needed from the government, to counter the misinformation and divisive strategies widely disseminated by certain detractors of renewable energies, and to reiterate the unapologetic choice of investing in this sector of the future.



An excessive and blind gamble on nuclear power

Successive governments have failed to anticipate the fragility of nuclear reactors, the numerous delays and shut-downs caused by maintenance operations and, above all, generic problems such as corrosion in tubing and systems⁹³. This has led to the shutdown of more than half of the reactors nationwide⁹⁴ smack in the middle of an energy crisis. Combined with the delay in the deployment of renewable energies, this has led to a higher demand for fossil fuels. By 2022, France's gas-fired power plants were operating at full capacity.

The French government gambled on a complex and costly new type of nuclear power plant, the EPR, which is still not producing electricity, even though it was scheduled to start up in 2012, and with an ever increasing cost that has risen from 3.3 billion to 19.1 billion €⁹⁵. The law stipulated that the EPR in Flamanville would have to be operational before any decision would be taken on whether or not to revive nuclear power, but this condition has not been respected and further increases the uncertainty surrounding the next two EPR projects that have been announced⁹⁶.

Far from admitting the inordinate cost, the unreliability and safety risks carried by nuclear power - particularly in a context of climate disruption and repeated droughts - the current government, led by Emmanuel Macron, is repeating the same mistakes by over-investing in nuclear power. **Nuclear power is too expensive, too slow to deploy, and too vulnerable to the risks of accidents and the impacts of climate disruption⁹⁷**: The next few years will be crucial in putting us on the right climate trajectory, while none of the new EPR power plants announced by

the French government will be ready before fifteen years at best. **New nuclear power is simply too slow to respond in time to the climate and energy crisis.**

Furthermore, the difficulties facing the French nuclear industry and the nuclear revival program are reflected in an active strategy on the part of the French government to defend the interests of its nuclear industry at European and international level, even if this means doing so at the expense of the deployment of renewable energies and the phasing-out of fossil gas.

EUROPEAN NEGOTIATIONS: HYPOCRISY AT THE HIGHEST LEVEL

In recent years, several key texts for the energy transition have been negotiated at European level. The French government has watered down or obstructed several texts in support of nuclear power and gas, thereby undermining the scope of the European *Green Deal*⁹⁸. In particular, it did so when in a position of strength during the French Presidency of the Council of the European Union (EU) in the first six months of 2022 - which coincided with the Russian invasion of Ukraine⁹⁹.

In 2021 and 2022, during negotiations on the EU's green taxonomy, France led an alliance with pro-fossil gas countries from Eastern Europe in order to have nuclear and fossil gas included in this taxonomy¹⁰⁰. The taxonomy classifies economic activities as "green", i.e. of interest to the energy transition, in order to encourage the alignment of financial flows with European climate objectives and the Paris Agreement. This tactic by France to support its ailing nuclear industry has turned the taxonomy into a tool

for greenwashing the nuclear and gas industries, and could divert billions of € in investments dedicated to the energy transition towards projects that are incompatible with our climate objectives.

This alliance with pro-gas countries also proved decisive in 2021 for the outcome of legislation on energy transport networks: France's vote tipped the balance and allowed for "blending" (mixing fossil gas and hydrogen in the same infrastructure) to eventually benefit from priority funding from the EU¹⁰¹.

Following Russia's invasion of Ukraine, the European Commission launched the RePowerEU plan to end Europe's dependence on Russian fossil fuels. As part of this plan, the Commission has proposed an unprecedented acceleration in the deployment of renewable energies, from 22% of the energy mix today to 45% by 2030. The majority of MEPs and several member states supported this acceleration, but France opposed it in 2023¹⁰².

France also sought to ensure that "low-carbon" energies such as nuclear power could be included in the calculation of renewable energy targets, but without success. France then blocked the adoption of the directive until the text was amended so as to be at least favorable to "low-carbon" hydrogen, which it achieved. As a result, hydrogen produced from nuclear electricity has been placed on an equal footing with renewable hydrogen from solar, wind or hydro power¹⁰³. In so doing, it increases financial opportunities for French nuclear power and diverts urgent investment from renewable energies.

These examples at European level are not isolated cases, but reflect France's general strategy with regard to the energy transition: declaring itself very vocally in favor of moving away from fossil fuels, but repeatedly and decisively supporting the gas and nuclear industries, while blocking the EU's ambitions on renewable energies.



IV. The State and the fossil fuel industry: long-standing and problematic relationship

As France has no significant hydrocarbon reserves, the French government introduced a policy to control access to energy resources after the Second World War. In close link with its colonial policy¹⁰⁴, the aim was to develop a national energy industry that would be competitive on a global scale¹⁰⁵. In parallel with the development of the nuclear industrial complex, the State aimed to create national **oil and gas production and supply companies**, which gave rise to companies such as Total and Gaz de France, now TotalEnergies and Engie, as well as "subcontracting" companies to support them: the **oil and gas service and supply industry**. These companies provide services and equipment for exploration, production, refining and petrochemicals. Numerous French companies are now well positioned throughout the oil and gas supply chain: geophysics (CGG), exploration and drilling (Schlumberger, Vallourec), engineering and construction (Technip), etc.¹⁰⁶

The French oil and gas industry, created and supported by the State to ensure France's security of energy supply, has become a powerful global player in the entire sector. It has far exceeded its original vocation, and today serves first and foremost its own interests, which it fervently defends vis-à-vis the government – and that the government defends just as much.

THE STATE-COMPANIES-BANKS, A TRIAD AT THE SERVICE OF GAS

An analysis of the cases of Russia, the USA and Mozambique shows how **the French state, private companies and banks are working actively and in a coordinated manner to strengthen the international gas industry**. This symbiotic working relationship between these players blurs the boundaries between public and private interests, and calls into question the objectives at work: is it to secure supplies for France's energy needs, or is to reinforce our dependency in order for the companies to ever increase their benefits?

« Our nationality exists (...). And our oil and gas industry is regarded by oil-producing countries as an area of national sovereignty. Total participates in and benefits from France's relations with these countries »

PATRICK POUYANNÉ,
Challenges magazine, 2016¹⁰⁷

In all three countries, (see p.25-26-27), the same pattern is repeated: :

1 French companies are involved in the development of gas projects:

→ Total acquires **exploration or extraction plots** (and is positioned throughout the supply chain): since 2016, the worldwide energy company has positioned itself in 77 new oil and gas exploration blocks in 24 countries, and has in 2024 upstream expansion projects in 53 countries¹⁰⁸.

→ Other companies **provide services or equipment** for project development (the oil and gas service and supply industry mentioned above). Technip Energies has been in charge of the engineering and construction of gas extraction and export infrastructure for Total's Yamal LNG and Arctic LNG 2 projects in the Russian Arctic¹⁰⁹, and Coral South FLNG in Mozambique¹¹⁰.

→ Finally, some of them sign **LNG purchase contracts**, which are crucial to the successful development of an export terminal and the achievement of a final investment decision (FID) for this type of project. Since 2012, Engie, Total and EDF have signed at least 11 contracts with US companies¹¹¹. Signing these contracts represents a key contribution by French companies to the achievement of these projects. The example of the Rio Grande LNG export terminal project carried out by NextDecade in Texas is a case in point. While this highly controversial project (which was even discredited in 2020 by the French government¹¹²) had been lagging behind for years¹¹³, Total's entry into the capital of NextDecade and of the project, as well as the signing of an import contract¹¹⁴ representing 33%¹¹⁵ of the LNG volume to be produced by Rio Grande LNG, validated the final investment decision¹¹⁶.



PROJECTS SUPPORTED BY FRANCE IN THE UNITED STATES

Extraction of **shale gas by hydraulic fracturing (fracking)**, a method banned in France, gas then exported in the form of LNG.

Companies Involved:



Banks involved:



Dozens of **extraction projects** and **export terminals** in operation or under development, including Rio Grande LNG.

Impacts:

- **On health** of local residents, earthquakes, violations of the rights of indigenous communities
- **Climate impact aggravated** by hydraulic fracturing, which is particularly methane-emitting.

2 French banks help finance gas projects:

→ By being mandated by the sponsors of a gas project to act as the **project's financial advisor**. In particular, the bank will be responsible for bringing together banks and investors to raise the necessary funding, to bring the project to a final investment decision (FID). This is a role that has been fulfilled on numerous occasions by major French banks for LNG terminal projects, and still is carried out

today by Crédit Agricole for ExxonMobil and for Eni's Rovuma LNG project in Mozambique as well as for Total's Papua LNG project in Papua New Guinea.

→ By financing gas projects directly, through dedicated loans. Major French banks, led by Société Générale, Crédit Agricole and Banque Populaire Caisse d'Épargne (BPCE), have played a major role in the development of LNG in the United States¹¹⁷, where 9 terminals are currently in operation and a further 36 are planned or under construction¹¹⁸. Société Générale and Crédit Agricole are also involved in Total's controversial Mozambique LNG project, having contributed to its \$14.9 billion financing package in 2020¹¹⁹. In 2023, Société Générale, Crédit Agricole and BNP Paribas all announced the end of their direct support for the development of new gas fields, but only Société Générale did the same for infrastructure projects linked to these fields, such as LNG terminals¹²⁰.

→ By financing companies that are developing new gas projects, via loans or share and bond issues on behalf of these groups. This is by far the most important lever used by banks to support the fossil fuel industry's expansion plans: corporate financing accounts for 96.7% of the financing provided by a bank like BNP Paribas to the fossil fuel sector, compared with 3.6% for project financing¹²¹. The major French banks are among the biggest financial agents of the most aggressive companies in hydrocarbon development, who entirely fail to meet their climate commitments¹²² such as Saudi Aramco¹²³ and Total¹²⁴ respectively the leading public and private group in short-term expansion projects.

In total, between 2016 and 2022, the major French banks granted \$405 billion to the fossil fuel sector (direct and indirect financing)¹²⁵.



PROJECTS SUPPORTED BY FRANCE IN RUSSIA

Arctic gas extraction and export (LNG) via the Northern Sea Route, which is now ice-free due to global warming.

Companies Involved:



Projects:

Yamal LNG (commissioned in 2017),
Arctic LNG 2 (in difficulty).

Impacts:

- Financing the Russian regime,
- Threats to the fragile Arctic environment, a sensitive ecosystem very strongly affected by climate change.

3 The French state actively supports companies and banks in many ways: through public financial support, by encouraging private financing, by applying its diplomatic weight, or by giving banks and companies free reign - even when the State is a shareholder.

Until 2022, a major support mechanism existed: export guarantees. France guaranteed loans from French banks for oil and gas projects - in the event of default, it was the State that repaid the bank. Between 2014 and 2022, it supported Total's projects through its subcontractors (Technip, Air Liquide...) in Yemen, the Russian Arctic, Mozambique but also other companies for a total of 2.6 billion €¹²⁶. After years of pressure from civil

society, the French government finally put an end to this mechanism for this types of projects in 2022¹²⁷. While this is a significant commitment to moving away from fossil fuels, it would be wrong to think that these State-funds are the only means of supporting the deployment of fossil fuels.

As it does for oil projects like the ones Total is carrying out in Uganda¹²⁸, the French state deploys the full power of its diplomatic apparatus to support gas projects. In Russia in 2016–2018, Emmanuel Macron, then Minister of the Economy, and his successor Bruno Le Maire rallied support to try to circumvent the American sanctions imposed on Russian companies following the annexation of Crimea, and to enable French banks to finance Total's Arctic projects. Emmanuel Macron was also present alongside Vladimir Putin, the Total CEO Patrick Pouyanné and the Novatek CEO, when Total joined the Arctic LNG 2 consortium¹²⁹. This type of diplomatic visit in the presence of business leaders was repeated in the USA, for example: Emmanuel Macron visited Louisiana together with business leaders including Patrick Pouyanné¹³⁰ just six months before Total joined the much-maligned Rio Grande LNG project. In Mozambique, in addition to diplomatic visits with fossil fuel companies and the reopening of its embassy's economic department, the French government opened a defense mission in 2018 with the aim of increasing military cooperation with Mozambique to ensure security in the region, where Total's project were starting to be threatened by an armed insurgency¹³¹.

In addition to this active support, the State contributes to the development of the gas sector through its failure to regulate the companies - particularly those in which it is a shareholder (see p.29) - as well as the banks involved (see box p.28).



PROJECTS SUPPORTED BY FRANCE IN MOZAMBIQUE

Extraction of gas in ultra-deep waters

off the coast of Cabo Delgado province. Export in the form of LNG from onshore or floating infrastructures.

Companies involved:

(among others)¹³² :



Banks involved :



Projects:

Coral South FLNG (commissioned in 2023), 3 other projects are under development: Mozambique LNG¹³³, Rovuma LNG¹³⁴, Coral North FLNG¹³⁵

Impacts:

- Biased consultation process,
- Deprivation of access to means of subsistence (fishing, agriculture),
- Aggravation of armed conflict,
- Country locked into financial debt.¹³⁶



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GOVERNMENT AND BANKS SUPPORT FOR FOSSIL FUELS

France's pro-gas policy is also reflected in the government's absolute "laissez-faire" attitude towards the heavy involvement of French banks in the fossil fuel industry. Indeed, while the French finance minister Bruno Le Maire sent a first positive signal in 2020¹³⁷ and again in 2021¹³⁸ by publicly calling on French financial players to implement an exit strategy from non-conventional oil and gas, the Ministry then let this call go unheeded. Attempts - notably in the context of debates surrounding the Climate Act in 2021 - to establish a framework for the activities of banks, investors and insurers in fossil fuels have been blocked by the government and the presidential majority¹³⁹.

Since then, while the Paris financial center ranks first among European financial players¹⁴⁰ - and holds third place worldwide - for the financing of fossil fuel expansion, the government has even gone so far as to apply pressure in order to prevent regulations from being imposed on the sector.

The latest offensive is France's maneuvering to exempt the financial sector from the EU Corporate Sustainability Due Diligence directive (CSDDD). Throughout the negotiations, the government played a leading role in unraveling this crucial text¹⁴¹. These undermining efforts paid off, as the Directive now excludes the "downstream" activities - i.e. all the financial services they provide - of the banks from the general obligation of due diligence. The latter requires companies to prevent and stop human rights violations and environmental damage in their value chain¹⁴².

This is an incomprehensible exclusion given that these services are covered by French Due-Diligence legislation. For instance, the French bank BNP Paribas is the subject of legal action for its support for oil and gas expansion - a court case brought by Friends of the Earth France, the CSO "Notre Affaire à Tous" as well as Oxfam France¹⁴³.

The result of this symbiotic relationship between French companies, French banks and the French state is a manufactured dependency that pays no regard to the serious environmental and social impacts it causes on the other side of the world. Since

2018, France is heavily dependent on Russia and the United States: if state resources had instead been devoted to implementing an effective energy policy in order to reduce gas consumption, we would today be far less dependent on LNG imports.

A PASSIVE OR COUNTER-PRODUCTIVE PUBLIC SHAREHOLDER

The French state is a reference shareholder in Engie (23%¹⁴⁴) and an indirect shareholder, via the French Public Investment Bank ("Banque Publique d'Investissement"), in Technip Energies (7%, with the declared aim of becoming a reference shareholder¹⁴⁵). It is also a 100% shareholder in the public energy company EDF, which operates gas-fired power plants and concludes import contracts, notably through its subsidiary Edison¹⁴⁶. This role as state shareholder gives it considerable leverage to encourage, or even compel, companies to implement an ambitious transition strategy. However, the state is not making full use of this major industrial policy tool, and is turning a blind eye to gas activities and to the fact that these companies lack a fossil fuel exit strategy.

The case of Engie: a catastrophic strategy validated by the State

Through Elengy, its subsidiary company, Engie owns and operates several LNG terminals in France, for which it is promoting expansion projects despite the fact that these are incompatible with the fight against climate change and the commitment to a resilient and sustainable energy model (see p.38). In Germany, Engie is participating in the development of a second offshore terminal at Wilhelmshaven¹⁴⁷. Engie is also signing very long-term import contracts¹⁴⁸ that raise questions and risk locking us into a model of gas consumption (see box p.39).

Engie is also the second largest producer of gas-fired power in Europe¹⁴⁹, is not committed to stopping the development of new power plants and is actively involved in the development of one in the Netherlands¹⁵⁰. These could come into play after 2035, despite the fact that wealthy countries committed themselves to phase out gas-fired power generation by that date - a commitment also made by the French government¹⁵¹.

Engie has no plans to close and dismantle its gas infrastructures, and justifies this by claiming that all of its gas will be "green" by 2045¹⁵² through the

conversion to green hydrogen, bio-methane and the installation of a Carbon capture, Storage and Utilization (CCUS) infrastructure - even though all these so-called "solutions" are actually false solutions¹⁵³... Not to mention the fact that Engie does not provide any details on how it intends to achieve this "green" objective¹⁵⁴.

Despite such a catastrophic strategy, the French State voted against greater accountability regarding Engie's environmental efforts. In April 2023, a resolution was presented to Engie's General Meeting calling for an annual review of the gas giant's environmental efforts. On the recommendation of the Board of Directors, on which three representatives of the French State sit¹⁵⁵, the French State rejected this resolution¹⁵⁶ even though it only holds 33% of the voting rights¹⁵⁷. Furthermore, the financial report of the French government shareholding agency (APE) makes no mention of Engie's strategy to develop fossil gas-fired power plants¹⁵⁸ - a blind spot that validates the energy company's strategy of opacity.

In recent years, however, one episode starkly illustrates government interventionism in the Engie's gas activities. In 2020, the government representatives within Engie's Board of Directors, blocked the signature of a \$7 billion LNG purchase contract - that would have run from 2025 to 2045 - with the company NextDecade and its Texas Rio Grande LNG project¹⁵⁹. The reason given: concerns about the environmental impact of the project¹⁶⁰. Unfortunately, this one-day decision, which led to the abandonment of the contract, did not translate into a long-term political commitment: Engie quietly signed similar contracts with Cheniere in 2021¹⁶¹, followed by NextDecade¹⁶² and Sempra¹⁶³ in 2022.

The case of the 2020 decision proves that the French state can have a decisive influence on the company's choices, and the contracts that followed bear witness to a new climate failure on its part. The French government must assume its responsibilities as principal shareholder and counter Engie's strategy of opacity and headlong rush.

PUBLIC FUNDING

Although France has withdrawn almost all international public financial support for oil and gas projects¹⁶⁴, a large amount of public funding still goes to the sector.

Numerous tax breaks for fossil fuels

At the domestic level, certain uses or stakeholders benefit from reductions or exemptions as far as domestic taxes on fossil fuel consumption (TICPE, TICGN, TICC) are concerned. On average, these tax exemptions cost the State 15.2 billion € per year in lost tax revenue for the period between 2019 and 2023¹⁶⁵.

With regard to fossil gas, 77% of tax expenditure on domestic consumption tax is linked to the reduced rate applied to energy-intensive facilities (470 out of 612 million € in 2022)¹⁶⁶.

Gas also accounts for 138.4 million € of the State's operating expenses¹⁶⁷. Delays in the deployment of renewable energies in the overseas territories are also costly: the mechanism that ensures the same price for electricity throughout all territories under French authority costs the French state 1.7 billion €, 70% of which is linked to the additional cost of electricity generated from fossil fuels¹⁶⁸.

Ongoing financing for companies in the oil and gas sector

In addition to this, France also provides one-off financing to fossil fuel companies in order to help them decarbonize their production sites. At first glance, this may seem positive, but the logic is limited. **Granting financing for isolated decarbonization projects without taking into account the company's climate plans is tantamount to validating their strategies, which are incompatible with the fight against climate disruption.** Secondly, it turns a blind eye to the monumental profits raked in by the energy companies, which could be used for decarbonization but are instead reinvested in oil and gas development.

For example, in 2022, during the COP 27 summit, the French president Emmanuel Macron welcomed the management of Total and ExxonMobil at the Élysée Palace, despite the fact that these companies rank among the fifty industrial companies with the highest CO₂ emissions in France. Instead of pointing the finger at the irrelevance of their transition strategies, the French President announced a public aid package of 5 billion € to subsidize the decarbonization of their French industrial sites¹⁶⁹ - but without imposing any conditionality regarding an improvement of their climate plans, and setting no requirements for an end to the development of oil and gas, which is still at the heart of Total's strategy¹⁷⁰.

In 2023, ADEME - the French government's environmental agency - granted 5 million € to Total for a heat pump and recovery project at the Le Havre refinery¹⁷¹. This is a technical approach to the transition, which shows its limits, since it allows Total to roll out its strategy: "greening" its activities in France as a showcase for its so-called transition efforts, and continuing to expand its production internationally. Moreover, this "greening" involves activities that are not compatible with the transition, for instance the Grandpuits refinery¹⁷². Two months after receiving public funds from ADEME, Total announced that¹⁷³ it would be increasing its fossil fuel production by 2 to 3% each year by 2028¹⁷⁴ - this going against all scientific recommendations.

The French government's important support for companies in the gas sector is justified by the fact that these companies must "play a key role in the transition". However, none of them have a coherent strategy for moving away from fossil fuels - Total and Engie's strategies are even based on increasing hydrocarbon production and gas-fired power plants respectively¹⁷⁵.

A company should not receive public subsidies if it does not implement an ambitious and coherent transition strategy, and in particular if it does not renounce the development of fossil fuels.

Gas companies don't need public money

Many companies in the fossil fuel industry, led by the Big Energy companies¹⁷⁶ generate substantial profits, all the more so since the war in Ukraine and the rise in the price of gas on world markets. The major part of these profits are not used for corporate transition, but are instead redistributed to shareholders and reinvested in fossil fuels and gas extraction and production projects.

According to Bloomberg NEF, the profits generated in 2022 resulted in an increase in investment in oil and gas development of up to \$880 billion in 2023, an increase from \$501 the previous year, when it had stagnated since the pandemic¹⁷⁷. Of its \$21.4 billion in profits in 2023, Total distributed \$16.6 billion to shareholders and reinvested \$24.9 billion. 64% of these investments went into oil and gas exploration and extraction, as well as LNG development. Only 22% of these profits went to the "integrated power"-division, which includes renewable energies as well as... gas-fired power plants¹⁷⁸.

Crisis plans: a short-term vision

In the event of a crisis (pandemic, energy crisis, economic crisis...), the State reacts with urgency and fails to reconcile short-term needs with long-term coherence in all areas, including dependence on fossil gas.

In response to the economic impact of the Covid global pandemic, the government granted numerous subsidies to companies, without any ecological or social compensation. While the pandemic and the recovery plans ("build back better") would have represented an opportunity to set a course for big business and change their strategies, many of them were able to rely on a new windfall of public money without calling into question either their social plans or their climate-change projects. This is largely the result of intense lobbying by the private sector during the pandemic¹⁷⁹.

One-fifth of the stimulus package - 20 billion € - was devoted to reducing production taxes¹⁸⁰. This measure primarily benefited sectors whose carbon intensity is 20% higher than that of the average economy¹⁸¹. Previous corporate tax reduction policies have rarely favored useful investment, and have mainly served to bolster shareholder profits.

The relevance of the tariff shield introduced in 2022 to limit the effects of rising energy prices on households is also questionable: these costs total 45 billion € (33.8 billion for electricity and 11.1 billion for gas) by 2023¹⁸². The tariff shield was unequal, and primarily benefited the most affluent households, whereas it is these households that are best placed to adapt their behavior towards greater sufficiency¹⁸³. The French Environment and Energy Management Agency (ADEME) has estimated that the tariff shield "encourages CO₂ emissions and maintains energy dependency"¹⁸⁴.

Subsidizing fossil fuels in the short term will not help us getting out of the repeated crises that we will inevitably have to face if we continue depending on fossil energy sources. Of course, there is no doubt that we need to protect families, especially the most vulnerable, by targeting this type of subsidies at those who need it most, but we also need to create the structural conditions to avoid falling back into these crises and define strategies to protect households in the long term: by planning the phase-out of fossil gas and investing in a fair and sustainable energy system (see Part III).



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LE HAVRE FLOATING TERMINAL: HOW THE FRENCH GOVERNMENT GAVE IN TO THE GAS LOBBY

The Le Havre floating import terminal was commissioned in October 2023¹⁸⁵ following a fast-track procedure that disregarded environmental law, safety risks and without any clear demonstration of its usefulness.

Intense lobbying

The terminal was hastily approved in August 2022¹⁸⁶ after intense lobbying by private players with an interest in the project. The French Agency for Public Transparency (HATVP) keeps a record of lobbying actions and it clearly shows the coordinated strategy carried out by Total, GRTgaz (a subsidiary of Engie), and Haropa Port, the public establishment that administers the port of Le Havre. Their efforts, aimed at the French Prime Minister and the Ministry for Ecological Transition, were intended to "encourage the simplification of procedures to accelerate the building of an LNG terminal [...] given the seriousness of the energy crisis"¹⁸⁷.

At the heart of the 2022 energy panic, Total was the most aggressive in its lobbying, which was based on three pillars: promoting extraction and export projects in Africa, promoting import projects in Europe and weakening EU climate policies aimed at reducing demand^{188,189}.

"À la carte" rationale

Initially, the French authorities explained the need for the Le Havre terminal by the need to respond to the stop in Russian gas imports - but the usefulness of this terminal for supply has not been demonstrated.

Subsequently they changed arguments and justified the project because of the risk of that the "Franpipe" gas pipeline, which links France to Norway¹⁹⁰ could become unavailable. Finally, in the legal document provided in response to the legal appeal, the government suddenly (and for the first time ever) made reference to the need to "rapidly secure natural gas transit capacity to Germany, Belgium and Switzerland" - not necessary in view of the import capacity deployed and the drop in demand from the said neighbors in 2023.

An opaque and dangerous decision

The process of setting up this terminal was accelerated and carried out under opaque conditions¹⁹¹. Yet the security risks of such a project are not minimal, as revealed by a secret Total memo obtained by the watchdog media "Disclose"¹⁹².

The use of this floating terminal is officially limited to five years, until 2028.

V. Avoiding getting locked-in

LNG TERMINALS INCREASE THE RISK OF A FOSSIL FUEL LOCK-IN¹⁹³

Since the start of the Russian invasion of Ukraine, 29 projects to build or extend LNG import terminals in Europe¹⁹⁴ have been set in motion, in addition to the 29 terminals already operational before 2022. 8 terminals have already been built and 4 expanded in 2022 and 2023. These already represent an **increase of 53.5 bcm in European LNG import capacity** compared with 2021 (+20%)¹⁹⁵ despite the fact that the **demand for gas has fallen by 106 bcm (-19%)¹⁹⁶**.

In addition to these already implemented projects, others are still in the pipeline, representing an increase in import capacity of 94 bcm of re-gasification capacity, according to the IEEFA institute, raising Europe's LNG import capacity to 405 bcm¹⁹⁷. And these are only the most advanced projects. If we take into account all the projects mentioned by their promoters in reports or press articles, the re-gasification capacity could increase by 205 bcm¹⁹⁸.

In France, in addition to the floating terminal at Le Havre due to go into service in October 2023, several projects to extend existing terminals have quietly surfaced ([see map p.38](#)).

The proliferation of new projects for terminals, floating terminals and terminal extension has been presented as a **necessity in order to replace Russian gas imports and thus secure European supplies**. But an analysis of flows in 2022 and 2023 and projections of future demand tend to invalidate this argument.

Europe can do without Russian gas in the short term without needing new infrastructure

By November 2022, the European Union had already sharply reduced its imports of Russian gas into Europe compared to pre-crisis levels¹⁹⁹. This fall continued in 2023: while they imported 157 bcm of fossil gas from Russia in 2021, EU countries imported only 45 bcm in 2023 - 17.6 of which via LNG²⁰⁰.

The same phenomenon can be observed in France - for which the quantities of Russian gas to be replaced are much smaller than for some of its European neighbors. The quantities imported by pipelines by Germany in 2022 have fallen sharply (only 1.46 bcm in 2022²⁰¹) and have ceased since the end of August 2022. This represents a negligible quantity to be replaced. The rest of the gas from Russia was imported as LNG - but this quantity has risen from 4.96 bcm²⁰² in 2021 to 7.18 bcm in 2022²⁰³. **Replacing Russian gas is therefore not a problem of LNG infrastructure.**

With its existing terminals, France was already in a position in 2022 to import enough LNG to satisfy its domestic consumption, so much so that it would have re-exported 17.41 bcm of gas, or 26% of its total fossil gas imports²⁰⁴.

By increasing the number of new import terminals, Europe is manufacturing overcapacity, an issue which will become even greater as demand falls.

THE FLAWED ARGUMENT OF EUROPEAN SOLIDARITY

In order to justify the building of the Le Havre terminal, the gas industry as well as the government have put forward the argument of European solidarity²⁰⁵, i.e. the need to help our neighbors meet their energy needs, particularly Germany.

But France's neighbors are also massively developing their own import capacities. With multiple projects underway, Germany will soon reach a LNG import capacity of 38.7 bcm by 2026²⁰⁶. Including its pipeline import capacity from Norway and the Netherlands²⁰⁷, it will already have an import capacity that is 26.4 bcm greater than its consumption in 2023²⁰⁸. Belgium has also developed excess LNG import capacity, and will also be able to export to Germany²⁰⁹. While the usefulness of the Le Havre terminal for European

solidarity was already questionable²¹⁰, the claim that France's neighbors will need French re-exports is therefore highly doubtful.

In reality, each government focuses on its own supply-security and uses the argument of European solidarity to justify the excessive aspect of its projects. Germany, for example, which according to Total and the government needs to import LNG via Le Havre, has indicated that up to 7 bcm of gas imported via its numerous terminal projects could be re-exported to the Czech Republic, Slovakia, Austria, Ukraine and Moldavia²¹¹. By proceeding in this way, Europe is moving at full speed towards import overcapacity.

Gas demand set to fall

In the medium term (2030) and long term, gas demand is set to decline. In 2023, for the first time, all International Energy Agency (IEA) scenarios forecast a peak in European gas demand by 2030, to the extent that the IEA speaks of the "end of the Golden Age of Gas"²¹². The exact scale will depend on the policies implemented to achieve the targets set by governments: but if they meet their commitments, demand could fall by 30% compared with 2022²¹³.

It should be noted that since 2019, the IEA has revised its gas demand projections downwards every year because of, among other things, the exponential growth of renewable energies. In the scenario published in 2023, Europe accounts for $\frac{3}{4}$ of the decline compared with the 2022 forecasts²¹⁴.

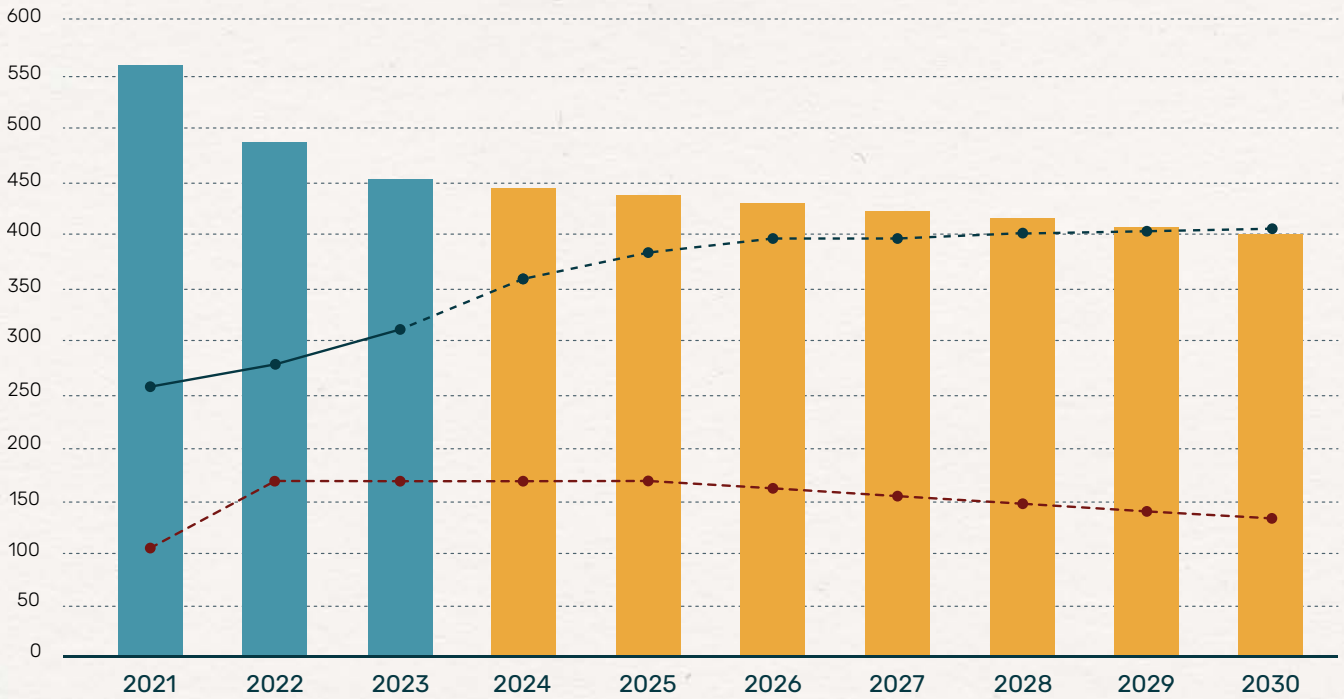
This drop in demand further calls into question the plans to expand European import capacity. For example, while the IEA forecasts a global gas demand of 390 bcm in 2030 in Europe²¹⁵, LNG demand in 2030 will not exceed 135 bcm according to IEEFA²¹⁶. Based on current plans to increase LNG import capacity, this means that 265 to 270 bcm of capacity would remain unused²¹⁷.

In France, the PPE 2020 set a gas consumption target for 2028 of 342 TWh²¹⁸, representing a volume of around 29 bcm. Pipeline import capacity and existing terminal capacity would be more than sufficient to meet this demand in 2030²¹⁹.

However, the expansion projects (see p.38), if implemented, would increase France's LNG import capacity to almost 58 bcm and this would lead to them quickly becoming stranded assets.

Import capacity is oversized in relation to future gas demand

■ Historical gas consumption ■ Gas consumption forecast
 ■ LNG Capacity ■ 2024 LNG demand forecast

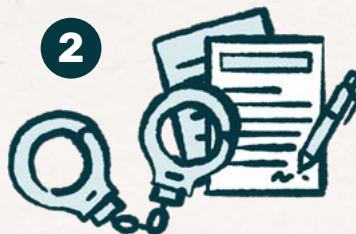


Source: Institute for Energy Economics and Financial Analysis (IEEFA)²²⁰

Risks of being locked-in



1
 INVESTING IN UNNECESSARY INFRASTRUCTURE THAT REQUIRE A RETURN ON INVESTMENT



2
 COMMITTING TO LONG-TERM IMPORT CONTRACTS FOR VOLUMES OF GAS THAT WE WILL NO LONGER NEED



3
 FAILING TO PLAN THE ENERGY TRANSITION COHERENTLY AND IN ADVANCE

Import overcapacity creates risks of lock-in and stranded assets

A high level of overcapacity, at French or European level, could have two consequences:

- Either the infrastructure will be used to the full so as to make them profitable, posing an obstacle to achieving our climate objectives. This is the notion of "lock-in".
- Or they will not be used to the extent of the investment required, and will become stranded assets (see box). According to IEEFA's analysis, France is one of the countries most at risk:

14 bcm of re-gasification capacity in France could become stranded²²¹, a risk that also worries the French High Council for the Climate²²².

So who will foot the bill? In the case of the coal phase-out, for example, RWE and Uniper have taken the Netherlands to court to obtain heavy compensation for the forced early closure of their coal assets - mines and power plants - as part of the implementation of climate policies²²³. These lawsuits, based in particular on the Energy Charter Treaty (ECT), foreshadow a scenario that could be repeated for fossil gas. European states and citizens must not bear the future burden of large-scale investments that are already anachronistic today.

STRANDED ASSETS: A RISK FOR THE FINANCIAL SYSTEM

Stranded assets - also known as irrecoverable assets - are assets whose economic value has been depreciated by external causes (changes in legislation, environmental constraints or technologies, etc.). In other words, they are an investment that will not pay off, a loan that will not be repaid to a bank, etc. An LNG import terminal, for example, will become a stranded asset if legislation imposes and organizes a drop in the demand for gas to meet its climate objectives.

The risk of fossil infrastructures becoming stranded assets is systemic. A report published in 2021 by the Institut Rousseau, Friends of the Earth France and Reclaim Finance revealed that the 11 leading banks in the euro-zone have accumulated 530 billion € in fossil fuel assets - equivalent to 95% of their total equity capital²²⁴. In the event of a rapid fall in the value of these assets, they could find themselves in serious

difficulty, with insufficient capital to cover their losses. A crisis in the inter-bank market and a run on the banks would then be likely, as was the case after the real estate (and then financial and economic) crisis of 2008. At that time, governments and central banks bore the brunt of the fall in the value of banking assets. Will we once again be forced to collectivize the cost of bank assets stranded in fossil fuel investments?

The European Central Bank (ECB) also warned of this risk in a January 2024 report. It analyzes that 90% of banks in the euro-zone are not aligned with the objectives of the Paris Agreement, and that some of them have an exposure that constitutes a significant proportion of their CET1 (their most accessible capital), which means a high risk in the event of losses²²⁵.

Gas Terminal expansion projects in France

Since the start of the war in Ukraine, gas players have been quietly pushing for a deleterious increase in import capacity, reviving previously buried projects.

In France, import capacity has already been increased in 2022 and 2023 through optimizations in the planning²²⁶ and technical debottlenecking processes²²⁷ at Fos Cavaou (+ 1.5 bcm)²²⁸, as well as the commissioning of the floating terminal at Le Havre (+ 5 bcm). At Dunkirk, the maximum capacity was increased from 16 bcm to 18 bcm²²⁹.

In addition to these optimizations and debottlenecking in order to rapidly increase imports in response to the crisis, gas players are pushing for expansions of existing terminals, or even the creation of new ones.

Two projects are in a particularly advanced stage²³⁰: an increase in the re-gasification capacity of 2 or 6.5 bcm at Fos Cavaou by 2030, and of 2.5 bcm at Montoir-de-Bretagne by 2027. Should they be carried out, these expansion projects could increase France's nominal re-gasification capacity by 26%, compared to 34.5 bcm at the end of 2022. Fos Cavaou's capacity would double from pre-war levels (8.5 bcm in 2021). These projects would cost over 2 billion €²³¹.

GRTgaz's ten-year plan²³² contains even greater ambitions: at **Fos Tonkin**, Elengy "notes" that the site could accommodate a Floating Storage and Regasification Unit (FSRU) to complement the existing terminals²³³. At **Le Havre**, where French Parliament has approved the construction of a floating terminal for a provisional period of five years, GRTgaz is thinking even bigger. Two land terminals and another floating terminal are planned²³⁴:

→ an LNG terminal with a capacity of 300 GWh/d (9.4 bcm) in the town of Antifer, to eventually replace the temporary FSRU in Le Havre, at a cost of 450 million €;

→ a second floating terminal with a capacity of 150 GWh/d (4.7 bcm) at Antifer to complement the FSRU at Le Havre, also at a cost of 450 million €;

→ an LNG terminal to complement the floating terminal at Le Havre (capacity unspecified), with a budget in excess of 700 million €.

Cumulatively, these six expansion projects could increase **France's re-gasification capacity to 57.6 bcm** (assuming that the current Le Havre floating terminal will be decommissioned after the 5 years as stipulated in the law) per year, compared with 33 bcm before the Ukraine war - **an increase of 75% compared with 2021!** For a total cost of at least 3.6 billion €²³⁵.

None of the above-mentioned extension projects was **identified as useful** by the Commission de Régulation de l'Énergie (CRE) in its report on the future of gas infrastructures²³⁶. In the multi-annual energy program for 2019-2023, a reduction in the use of existing infrastructures due to the forecast fall in consumption was envisaged²³⁷, and the draft new Pluriannual Energy Program estimates that no new projects are needed and that the Le Havre floating terminal will "no longer be necessary" in 2028²³⁸.

After peaking in 2022, utilization rates for existing terminals are falling, and are low enough to raise questions about the usefulness of any new re-gasification capacity²³⁹. If these figures continue to fall, what would be the utilization rates for the new Le Havre terminal and other extensions?

The already advanced replacement of Russian gas in the energy mix and the expected decline in demand over the coming years do not justify such infrastructure.

DUNKERQUE LNG

Type: **Debottlenecking***
 Date: **unknown**
 Project sponsor: **Dunkerque LNG**
 Estimated cost: **unknown**
 Added capacity: **0.8 bcm¹**
 Proposed regasification capacity in 2030: **13 bcm** (18.8 bcm at maximum capacity)

1
 n/year
 %

2
LE HAVRE
 Commissioning (officially for a r of 5 years)
 Regasification ca
5 bcm/year
 Utilisation rate**
insufficient data

Type: **1 floating terminal (FSRU), 2 new onshore terminals**
 Date: **unknown**
 Project sponsor: **GRTGaz**
 Estimated cost: **€1.6 billion €²**
 Added capacity: **from 14.1 bcm³**
 Proposed regasification capacity in 2030: **14.1 bcm**
 (Assuming that the floating terminal currently in service will have been decommissioned, in accordance with the law)

3
MONTOIR DE BRETAGNE
 Commissioning date: **1980**
 Regasification capacity in 2023
 Transshipment of Russian
 Utilisation rate***: 2021: **46 %** 2023: **70 %**

Type: **Extension**
 Date: **2027**
 Project sponsor: **Elengy**
 Estimated cost: **€500 million⁴**
 Added capacity: **2.5 bcm⁵**
 Proposed regasification capacity in 2030: **12.5 bcm**

Type: **Debottlenecking* and extension**
 Date: **2028 or 2030**
 Project sponsor: **Elengy**
 Estimated cost: **€1 571 millions⁶**
 Added capacity: **2 to 6.5 bcm⁷**
 Proposed regasification capacity in 2030: **12.5 to 16.5 bcm**

4
FOS CAVAU
 Commissioning da
 Regasification cap
 Utilisation rate***: 2023: **72 %**

***DEBOTTLENECKING**
 Process of identifying specific areas of the plant equipment or of the workflow configuration that restrict product flow. Optimizing plant operations improve overall capacity and quality.

Type: **Floating terminal (FSRU)**
 Date: **unknown**
 Project sponsor: **Elengy**
 Estimated cost: **unknown**
 Added capacity: **unknown**
 Proposed regasification capacity in 2030: **minimum 1.5 bcm**

5
FOS TONKIN Co
 Regasification cap
 Utilisation rate***: 2023: **53 %**

EXTENSION PROJECTS

1 "The capacity of the outlet at the interconnection point between transmission and the Dunkirk LNG terminal has been increased from 520 GWh/d to 575 GWh/d and could be increased to 600 GWh/d". GRT Gaz, « Bilan prévisionnel pluriannuel et Plan décennal de développement 2022 - 2031 », March 2023, p.64

2 According to GRTGaz: €450 million for the onshore terminal at Antifer with a capacity of 300 GWh/d; €450 million for the second FSRU at Antifer with a capacity of 150 GWh/d; €700 million to reinforce the network. GRT Gaz, « Bilan prévisionnel pluriannuel et Plan décennal de développement 2022 - 2031 », March 2023, p.62.

3 In its ten-year plan, GRT Gaz mentions a 300 GWh/d (9.4 bcm) onshore terminal and a 150 GWh/d (4.7 bcm) floating terminal. GRT Gaz mentions "an LNG terminal to complement the FSRU currently under construction" [commissioned since then], but without specifying its capacity. GRT Gaz, « Bilan prévisionnel pluriannuel et Plan décennal de développement 2022 - 2031 », March 2023, p.62.

4 ENTSG - Ten Year Network Development Plan. Updated TYNDP 2022 List of Projects, "Investment Project Main Infos", October 21, 2022.

5 This extension project "to increase the terminal's capacity from 10 to 12.5 bcm/year in 2027" is cited in ENTSG's development plan and GRT-Gaz's ten-year plan. See ENTSG - Ten Year Network Development Plan. Updated TYNDP 2022 List of Projects, October 21, 2022. And GRTGaz, Ten Year Development Plan 2022-2031, p.63. It is reported in the Enerdata database (for 2024) and the Global Energy Monitor's Europe Gas Tracker.

6 ENTSG - Ten Year Network Development Plan 2020 - Annex A - Projects Tables.

7 This extension project "to reach 12 to 16.5 bcm/year by 2028" is cited in ENTSG's development plan and GRTGaz's ten-year plan. See ENTSG - Ten Year Network Development Plan. Updated TYNDP 2022 List of Projects, October 21, 2022. GRTGaz, Ten Year Development Plan 2022-2031, p.63. This project is reported in the Enerdata and GIE databases as a 2 bcm/year expansion project.

LONG-TERM CONTRACTS: OPACITY AND LOCK-IN RISKS

Several long-term import contracts (10 to 20 years) signed before 2022 have been the subject of warnings concerning their environmental and economic risks²⁴⁰. These contracts have **multiplied with the energy crisis²⁴¹**, the crisis being used as a rationale to justify them.

However, signing too many long-term contracts **risks committing us to importing volumes of gas that are much too high** in relation to future gas demand and our climate objectives for 2030, 2040 and 2050. Instead of guaranteeing the resilience of the energy system by securing supplies, this strategy risks weakening it by locking us into a gas-dependency.

There is **no detailed, easily accessible official list of LNG import contracts to which France is a signatory²⁴²**, and even less of their associated climatic and economic assessments.

Each contract must be assessed with **the utmost vigilance and transparency. This is why the French government must make available the list of gas import contracts** (volumes, duration, cost, origin) to which France is linked, in order to calculate the climate impact of our supply chains and integrate it into France's climate objectives.

ALTERNATIVE GASES: DECISIVE CHOICE OF USES AND PRODUCTION METHODS

Depending on its use, fossil gas can be replaced in a number of ways (see Part III). For some uses, it may be appropriate to replace it with another gaseous form of energy, such as "bio"-methane or hydrogen. **However, it will be impossible to produce enough of these so-called "green" gases in a sustainable way to replace all current fossil gas consumption.** It's not a simple game of substitution.

It is therefore necessary to prioritize the uses for which a gas vector remains the most suitable, by considering which usages are superfluous and should disappear, and which usage it would be more suitable to electrify. It is also necessary to take into account the production capacity of gas alternatives to fossil gas under sustainable environmental and economic conditions.

Otherwise, we run the risk:

- of having to retain a significant proportion of fossil gas,
- of using immature and costly production technologies, including fossil fuels for hydrogen,
- of relying on imports of "green" or fossil gas and weakening the resilience of our energy system.

At present, many uncertainties persist regarding the energy mix for the period 2030 to 2050 as well as the role that gas energies will play within it. **Many key political choices remain to be made - and it will all be a question of balance, and therefore of planning.**

The challenges of prioritizing and planning uses

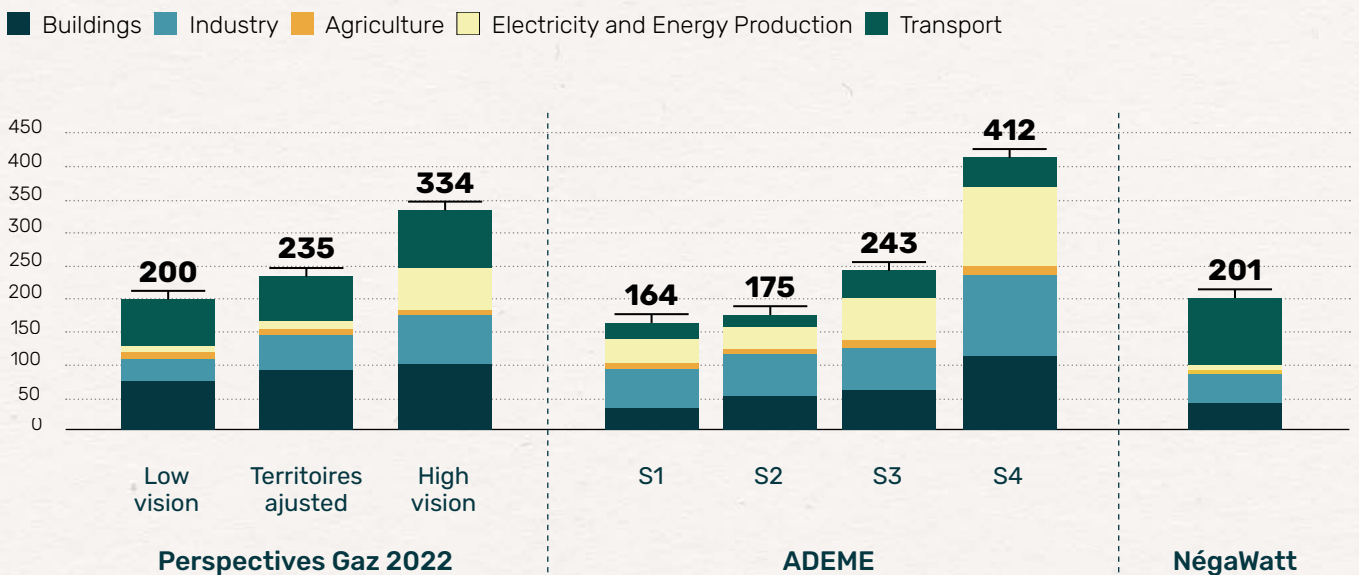
Several energy system options are possible, each based on specific balances:

→ a balance in the distribution of energy carriers by use, which implies a balance between the gas and electricity systems,

→ a balance between consumption and production, and therefore energy production technologies,

→ a balance between the energy and agricultural systems: satisfying energy needs cannot be achieved at the expense of food and water requirements.

Comparison of methane (CH₄) consumption scenarios in 2050 - TWh PCS



Source: GRT Gaz²⁴³

For example, for the same volume of overall consumption, the gas industry’s "low" scenario calls for more gas to be used in buildings, while the NegaWatt scenario calls for more gas to be used in transport. The first two ADEME scenarios give greater prominence to industry and power generation. On their own, each of these models could work, but only if they remain coherent and balanced.

On the one hand, we can’t just cherry-pick what suits us best in each scenario, at the risk of arriving at total consumption volumes that are too high - with mirrored consequences for the way we produce and

supply methane to meet this demand (see below). On the other hand, the priority uses of gas will determine the physical architecture of the future energy system. For example, whether methane is used in industry, mobility or buildings will have a different impact on factors such as changes to the gas pipeline network, the number of gas-fired power plants²⁴⁴ to be retained or converted (and therefore the architecture and balance of the electricity system), the type of heating to be installed in buildings, the deployment of CNG refueling stations, etc.



At a time when there is an urgent need for planning and orientation by the State, the government is reluctant to undertake this work of quantifying and aligning objectives and measures, dividing planning into a series of separate energy-related texts and following a problematic chronology (nuclear revival before the adoption of the PPE program, itself delayed).

The challenges linked to the "green" gas supply options

Each scenario has its own coherence between demand levels and supply methods. It is estimated that anaerobic digestion, the most mature and developed methane production technology as of today (but not without its problems, [see box p.42](#)) will only be able to produce a maximum of 130 TWh of methane in 2050²⁴⁵, a level already insufficient to satisfy the lowest demand projections (136 TWh).

The higher the demand forecast, the more likely it is that imports or unproven, costly technologies will be used. These are technological or economic gambles at a time when we have no more time to explore dead-ends and wrong solutions, and when the investments that are needed to achieve the energy transition are so high that we cannot afford to mis-invest a single Euro.

For example, the gas industry's adjusted "Territoires" scenario calls for 87 TWh of methane produced by pyrogasification and hydrothermal gasification²⁴⁶. ADEME's Scenario 3 forecasts a significant proportion of production through pyrogasification from biomass

and carbonaceous waste²⁴⁷. Other scenarios²⁴⁸ consider a significant reliance on imports of renewable and even fossil gas, with the aim of offsetting this through carbon capture and storage (CCS) mechanisms. These scenarios suggest methane consumption in excess of 400 TWh in 2050, very close to current levels.

Pyrogasification and hydrothermal gasification are still immature and costly technologies²⁴⁹. Pyrogasification requires the mobilization of significant wood resources. Yet France's forests are already under considerable pressure to produce timber and energy through wood-fuel, not to mention the fact that climate change is accelerating forest dieback and weakening forests, calling into question their role as carbon sinks²⁵⁰. In addition to this unacceptable environmental price tag, the technologies mobilized to produce "green" gases will have an impact on consumer-costs.

Another key cost factor is the distribution network. If gas demand is expected to fall sharply, the distribution network will become increasingly expensive per customer as the number of customers declines. This raises the question of how to plan for the decommissioning of part of this network. If, on the other hand, relatively high gas demand is forecast, we may have to resort to expensive technologies or imports, which would increase the price of gas²⁵¹.

What's more, **planning to maintain a proportion of fossil gas imports is unacceptable** and goes against all scientific recommendations. To believe that fossil gas imports will be compatible with the fight against

climate change by relying on capture and storage technology is to ignore the fact that this technology has been in development for 40 years, with results that do not live up to its promise, and remains far more expensive than alternatives to fossil gas²⁵².

Finally, **betting on a high proportion of "green" gas imports is also dangerous.** While a completely self-sufficient energy system is not feasible, it is necessary to reduce consumption as much as possible to avoid over-dependency on variable or unsecured imports. At present, it is impossible to predict which countries will be able to produce enough "green" gas under the right conditions to export to France, or to guarantee that other countries will not adopt a policy based on massive gas imports, creating unsustainable pressure on resources.

What's more, investments based on projections of high gas consumption fail to anticipate the need to reduce gas infrastructures, and run the risk of locking the system into an increased gas dependency. Despite this the arguments of the gas industry are built on these assumptions²⁵³.

THE INTERTWINED CHALLENGES OF ENERGY AND AGRICULTURAL TRANSITION: THE ISSUE WITH METHANIZATION

Methanization is central to all scenarios for an energy mix that maximizes renewables. Producing energy from unused organic resources (agricultural waste, liquid manure, etc.) is interesting in itself, but the current development of anaerobic digestion raises questions.

The issue of feeding organic matter into biogas plants creates the risk of competition between land use for energy and land use for food production. There are also perverse effects on the price of agricultural land, and therefore its accessibility to young farmers²⁵⁴.

The current development of methanization mainly benefits the agro-industrial system, with the associated risk of locking in the system. The size of some units demands profitability that forces the hand of the operator, he needs to produce gas to pay off the debts, thus limiting the

freedom to choose to grow crops or raise livestock, as well as hindering the farmer's conversion to sustainable production methods²⁵⁵.

The development of methanization and other alternative energy sources must not be at the expense of farmers' autonomy, food sovereignty and the necessary transformation of the agricultural system.

Methanization projects must be adapted and sized to the resources available in the local geographical area. As a result, the role of methane produced by anaerobic digestion in energy objectives must be limited to the strict minimum, with priority given to policies to reduce consumption (see Part VI).



The risk of a Hydrogen lock-in

The other option of increasing the use of hydrogen is also very popular and actively promoted by gas companies as well as by the government as a possible substitute for fossil gas. At European level, the gas companies' strategy is to anticipate the massive development of hydrogen in order to justify the development of new infrastructures and secure outlets for their fossil gas by maintaining the status quo, rather than preparing an exit from fossil gas²⁵⁶.

The problem is the same as with "green" gases. By overestimating future uses in relation to the very low production capacities that it is reasonable to anticipate, this strategy runs the risk of leading manufacturers to produce hydrogen using coal, gas or nuclear power as a primary source, while at the same time promising compensation through so-called CCS compensation methods.

Only hydrogen produced by electrolysis from electricity generated from renewable sources, and in the absence of competition for higher-priority uses of this electricity, is compatible with sustainability objectives. It is therefore necessary to target these uses to very specific sectors where there is no viable alternative (certain industries, for example)²⁵⁷.

VI. Another approach is possible

In France, fossil gas is used for a wide range of purposes: heating, electricity generation, as a raw material in industry, transportation... So how can we do without it?

For each of these usages, fossil gas can be replaced by other forms of energy: electricity, alternative gases, biomass...

However, there are several important parameters to bear in mind:

1. Each of these alternatives has its advantages and limitations. **No alternative is perfect or a silver bullet.** We will never be able to produce enough energy from renewable sources to entirely meet the whole of our current energy consumption. It is therefore essential to **reduce our global energy consumption, avoid over-sizing uses, and closely monitor the deployment of these energies** so as to ensure that these solutions are not counter-productive.
2. Energy transition planning must take into account the fact that the world climate is already changing, **bearing consequences on the availability of certain resources**, particularly water and biomass. Water is needed to cool nuclear reactors, and droughts are already limiting electricity production²⁵⁸. Biomass must remain as intact as possible to preserve its ecological and carbon sink functions, so its use must be limited. Soil must also retain its primary function as a source of food.
3. **The transition must be fair.** Given that we won't be able to sustainably produce the same quantities of energy we currently

consume, the first thing to do is to consider which uses are necessary and which are superfluous. From there, we can ensure that everyone has access to the energy they need to live in dignity.

4. The vast majority of alternatives to fossil gas are already mature, proven and profitable. **It is these reliable alternatives, which will rapidly reduce greenhouse gas emissions, that should be deployed as a priority**, rather than over-investing in costly and uncertain technologies.

To reduce our consumption, we have two levers at our disposal: reducing absolute demand and improving energy efficiency.

REDUCE DEMAND AND UNNECESSARY USE

Transforming our agricultural systems so that we can do without chemical fertilizers

Fossil gas is used to manufacture ammonia²⁵⁹, which is used to produce fertilizers which are the main driving engine of an agricultural system that destroys the environment and does not adequately remunerate producers²⁶⁰. In 2014, ammonia and fertilizer production accounted for 7% of global industrial fossil gas consumption²⁶¹.

The dependence of the industrial agricultural system on fertilizers, and therefore on gas, has significant consequences. The cost of fertilizers is one of the main drivers of current global inflation²⁶², and therefore of food insecurity and precariousness for farmers. Moreover, synthetic nitrogen fertilizers are responsible for 1 tonne of greenhouse gases (GHGs) out of every 40 emitted worldwide²⁶³, which is more than the GHG output of commercial aviation! Because of the multiple forms of pollution they cause (water, air, biodiversity, climate), fertilizers cost society more money than they generate²⁶⁴. Il est pourtant possible de se passer d'engrais chimiques²⁶⁵. Yet it is possible to do without chemical fertilizers. But it requires a transformation of our current agricultural model²⁶⁶.

Drastically reduce plastic use...

Gas is also used in **plastics manufacturing**. Gas consumption for plastics manufacturing in France in 2020 corresponded to **9% of France's final gas consumption** and 22% of its industrial energy consumption. Which is the equivalent of the combined final consumption in 2020 of Denmark, Finland and Sweden²⁶⁷.

The petrochemical industry is a major factor in the growing demand for oil and gas worldwide²⁶⁸. For example, plastic packaging production could quadruple by 2050 if the industry's plans go ahead unimpeded²⁶⁹.

Yet it is possible to drastically reduce plastic production by substituting other materials and recycling²⁷⁰ but above all by reducing certain uses, such as unnecessary packaging, which accounts for 40% of the plastic produced²⁷¹! For many goods containing plastic, it is possible and necessary to give preference to renting, sharing, repairing, etc. rather than ownership.

Reduce transport flows

In the transport sector, where fossil gas consumption has almost tripled in the last ten years²⁷², it will not be enough to simply replace the current car fleet with electric vehicles and "sustainable" fuels. Here too, it will be necessary to reduce flows, particularly of

goods, by reducing the quantities of goods produced and consumed. According to the ADEME Agency, it is possible to reduce domestic traffic by 45% and international shipping by 33%²⁷³.

Of course, this also means regional planning, relocation, freezing new road building projects and **massive development of the railway infrastructure**.

Ban imposed, climate-changing advertising

Reducing the consumption of goods means drastically limiting the role of advertising, which fuels of over-consumption. This means banning climate-change advertising, as has already been done for tobacco and alcohol advertising, an idea favored by French public opinion²⁷⁴.

EFFICIENT HOUSING RENOVATION AND DEPLOYMENT OF ALTERNATIVES TO GAS HEATING

Fossil gas is the main heating energy source in France: 42% of French people rely on it²⁷⁵. Simply replacing gas-fired boilers with alternative technologies would, however, be a reductionist vision of the solutions required.

In addition to relying heavily on gas, the heating system is inefficient, with millions of households unable to heat their homes properly: 5.2 million homes (17% of the total number of primary residences) are "thermal sieves" and in dire need of energy-efficient renovation. However, the pace of energy-efficient renovations is far too slow²⁷⁶ and should reach 700,000 renovations per year by 2030²⁷⁷ compared with 50-100,000 today²⁷⁸.

These renovations must be consistent and efficient²⁷⁹ (insulation of walls, roofs, floors, replacement of joinery, ventilation...²⁸⁰). Once the renovation has been completed, is it worth changing the heating system to meet the remaining needs? Otherwise, there's a risk of over-sizing the equipment.

To accelerate the pace of renovation, major investments are needed. However, the main public subsidy for energy-saving work, the State energy renovation subsidy program "Ma Prime Rénov", whose budget was increased at the end of 2023 by the Finance Act, has been cut by 1 billion of the 1.6 billion that were to have been allocated to it by 2024²⁸¹, a bad signal concerning the government's priorities. The implementation of a genuine policy of initial and ongoing training in high-performance renovation²⁸² is also an essential lever for ensuring the effectiveness of the work carried out.

DEVELOPING A TRULY SUSTAINABLE ELECTRICITY SYSTEM

Increasing electricity production capacity from renewable energies helps reduce dependence on fossil fuels, both directly (by reducing the use of gas-fired power plants) and indirectly through the electrification of certain uses currently dependent on fossil fuels.

France continues to lag behind in the development of renewable energies, with only a 20.7% share of gross final energy consumption instead of the 24.3% forecast in the PPE trajectory²⁸³. This failure to meet the defined target represents **a shortfall of around 60 TWh²⁸⁴, which represents the equivalent of the energy we import from fossil sources at a high price.**

By 2021 and 2022, the European Union has added almost 90 GW of photovoltaic and wind capacity²⁸⁵. The increase in renewable electricity production has helped EU countries increase underground gas storage levels²⁸⁶, avoiding gas consumption equal to Belgium's total annual consumption²⁸⁷.

Developing an electricity system tending towards 100% renewable energy would be feasible with the right policies, as shown by scenarios from RTE²⁸⁸, ADEME²⁸⁹ and NegaWatt²⁹⁰. The French territory is well suited to the development of solar and wind power, with a very large potential capacity²⁹¹. The fact that France is lagging behind in renewables was not inevitable but is the direct result of problematic political choices (see p.21) including a blind faith in nuclear

power generation, which the government is refusing to recant and steadily pushes forward.

A truly sustainable electricity system can only be implemented under certain conditions:

→ **Prioritize sufficiency:** in addition to a significant reduction in energy consumption and superfluous uses already mentioned - the keystones of a sustainable system - energy sufficiency also applies to the question of materials. As far as critical materials are concerned, a 100% renewable scenario should not entail any risk of resource depletion²⁹², provided that there is good recycling and sufficiency measures in other consumer sectors (mobility with a limit on the deployment and size of electric vehicles²⁹³, reducing purchases of new electronic devices²⁹⁴, connected objects...).

→ **Paradigm shift:** avoid reproducing the practices and paradigms of the destructive fossil fuel and nuclear industries²⁹⁵: a truly sustainable electricity system cannot be achieved by substituting energy sources while maintaining the same centralized, profit-driven logic, to the detriment of ecosystems and biodiversity, and in violation of people's rights. In particular, the transformation of the North's energy infrastructure must not impoverish and endanger workers and communities in the South (land grabbing, extractivism of critical materials, plans to import hydrogen or electricity from Maghreb countries...). Because the climate, biodiversity and water crises are interdependent and just as serious, renewable energy projects must not cause deforestation or forest degradation, artificialize land or threaten food sovereignty or water resources.

→ **Democratic control and involvement of local authorities and communities:** decisions on energy production and consumption must be the subject of democratic deliberation, with a real concern for everyone's involvement, including regarding the needs. The system must be monitored by democratic and transparent bodies, and encourage greater citizen involvement²⁹⁶.

METHANE AND HYDROGEN: MATCHING USE TO PRODUCTION CAPACITY

For certain uses, it may be appropriate to replace fossil gas with another gaseous form of energy, such as "bio"-methane or hydrogen. However, it will be **impossible to produce enough of these so-called "green" gases in a sustainable way to replace all current fossil gas consumption.**

Given the complex issues involved in balancing the energy system, the many problems associated with methanization, the lack of maturity and cost of other "green" gas production technologies, and the risks of blockages detailed p.39-43, methane uses will have to be prioritized collectively and sized according to production capacities under acceptable social, environmental and economic conditions.

Similarly, while hydrogen may represent a solution for reducing the climatic impact of certain industrial sectors, particularly those requiring very high temperatures, it cannot be a sustainable substitute for fossil gas in most applications.

Only hydrogen produced by electrolysis from electricity generated by renewable energies is compatible with sustainability objectives, on one important condition: that hydrogen production does not compete with higher-priority uses of this electricity. Consequently, as with other alternatives to fossil gas, future uses must not be overestimated and encouraged in relation to the very low production capacities that it is reasonable to anticipate.

ORGANIZE THE TRANSITION FOR WORKERS IN THE GAS INDUSTRY

Organizing the move away from fossil gas across all sectors of the economy means anticipating the profound transformation of the energy sector, and in particular the future of gas workers. Employment is an essential part of the energy transition. Although the transition will create a net number of new jobs²⁹⁷, it will result in job losses or profound transformations

in certain sectors, and first and foremost the oil and gas industry.

Workers in these sectors, which are destined for profound change, are well aware of this. Our survey of employees in the oil and gas sector in 2021²⁹⁸ revealed that a vast majority (79%) of respondents said they were ready to retrain, but faced numerous obstacles to do so²⁹⁹. They noted that retraining was mainly the result of individual initiatives, and a lack of anticipation and collective organization. In addition, 38% of respondents felt that their company did not take climate change seriously, and criticized its focus on short-term profitability and lack of long-term anticipation.

A number of conditions for a just transition emerge from these observations: anticipation, retraining measures at company and individual level, involvement of those primarily concerned, and coherence of industrial and energy policy. These recommendations, which also take into account the local context, correspond to the key principles for organizing the conversion of this type of sector identified by the Réseau Action Climat and the Veblen Institute in a case study on the closure of mines and coal-fired power plants³⁰⁰.

Indeed, there are many lessons to be learned from past major economic and industrial transformations, and many policy mistakes to be avoided.

Recommendations for the French government

In the midst of a major energy crisis that is taking hold well into the future, several key legislations³⁰¹ for the energy transition are scheduled in France for 2024 - one year late. These, including the third Pluriannual Energy Program (PPE) covering the period 2024-2033, are intended to define our trajectory for the next decade, which will be so crucial for climate action and the phasing out of fossil fuels.

Decisions about France's energy future will determine our ability to guarantee secure, affordable access to energy for all, and will affect tens of thousands of jobs. With such major climatic, societal and economic issues at stake, these choices should be the subject of democratic and informed debate involving everyone. However, the conditions for rapidly and fairly organizing the end of our dependence on fossil gas are not in place, and are slow to be put on the political agenda. Numerous measures need to be taken by the French State, notably in the context of the PPE.

ENSURING THE CONDITIONS FOR A DEMOCRATIC AND INFORMED DEBATE ON FOSSIL GAS PHASE-OUT

Access to information on fossil gas is complex and fragmented. Some information, such as contract details, is only available in paid-for databases, or is not communicated by the industry. To enable a democratic and informed debate on the exit from fossil gas, it is necessary to:

→ **Make available and update annually the list of gas import contracts** - via LNG terminals and pipelines - to which France is party. At a minimum, this diagnosis should specify the volume, duration and cost of each contract, as well as the precise source of the gas - export terminal but also upstream extraction site. It will show the guaranteed flows of fossil gas over the coming years (and decades), in the

light of the projected decline in demand as well as the French and European climate objectives.

→ **Carry out and publish an annual assessment of the climate impacts of these fossil gas supply chains**, covering the entire life cycle, greenhouse gas emission scopes, and taking into account methane leakage - which is all the more significant in the case of LNG supplies.

→ **Evaluate and publish anticipated French LNG terminal utilization rates for 2040 and 2050, and the associated risk regarding stranded assets.**

→ **Demand transparency from terminal companies on private revenues associated with re-exports, and in particular transshipment of Russian LNG.**

→ **Commission and publish a report by the Commission de Régulation de l'Énergie (CRE) summarizing Total's use of the floating terminal in Le Havre - the source of the incoming gas, associated costs and benefits - as well as its utility for French and European supply by the end of 2024.**

PLACE SCIENCE, SOCIAL JUSTICE AND RESPECT FOR HUMAN RIGHTS AT THE HEART OF PUBLIC POLICIES

Companies and the highest levels of government present fossil gas as a "cleaner" and less problematic energy than oil and coal. They are also making dangerous bets on the future development of today's still immature technologies making them a key element of the energy transition strategy, justifying our continued reliance on fossil gas. These approaches are skewing the debate, delaying action and increasing the risk of lock-in. It is therefore imperative to:

→ **Stop presenting fossil gas as a transitional energy in public debate and public policy, and take into account its true climatic, economic and geopolitical costs.** In particular, use the term "fossil gas" rather than "natural gas"³⁰² to distinguish it from so-called "green" alternative gases, so as to reflect the true climatic impact of fossil gas, as documented by science.

→ **Staying on course to reduce greenhouse gas emissions in the short term.** On the one hand, **avoid betting on unrealistic assumptions about the deployment of immature and very costly technologies**, notably Carbon Capture and Storage, which would delay action in favor of concrete and immediate reductions in greenhouse gas emissions. On the other hand, we need to **prioritize the most effective solutions** for the climate in the coming years - see the detailed recommendations in [the Part. III](#) of this report.

→ **When it comes to choosing fossil gas supplies, focus on environmental and climate impacts; social impacts and impacts on human rights; geopolitical risks and instrumentalization for geopolitical purposes of the countries on which we depend; economic risks and high costs for households, given the high variability of gas prices and LNG prices in particular.**

→ **Put an end to Russian gas imports**, which help finance the war in Ukraine and position France as a laundering hub for Russian gas: ban re-export activities and the transshipment of Russian LNG at Montoir-de-Bretagne today; support the implementation of a European embargo on Russian fossil gas.

→ **Take into account the differentiated impact that certain measures can have on precarious households or the most vulnerable actors** - small businesses, farmers, etc. Make sure to target aid and investments in such a way as to protect these social groups, through stable support mechanisms.

STOPPING THE EXPANSION OF FOSSIL GAS

The Russian invasion of Ukraine and the energy crisis have highlighted the fragility of our economy due to our dependence on fossil gas, an addiction which has been manufactured for years by companies in the sector as well as by the French banks and the French State. Instead of drawing appropriate conclusions from our vulnerability, the first two players are engaged in a headlong rush to continue developing fossil gas, and the State is not making full use of the powers at its disposal to halt such an expansion. The government needs to:

→ **Halt the development of any new fossil gas import infrastructure or any plans to extend the existing infrastructure** - floating or onshore LNG terminals, pipelines. Existing infrastructures are and will be sufficient to meet declining gas demand.

→ **Oppose the signing of new purchase contracts or the extension of existing contracts that would lock France into its dependence on fossil gas** - i.e. contracts that provide for the import of fossil gas into France over the long term and/or for volumes that are incompatible with falling demand and meeting our climate objectives.



→ **Make full use of the powers of the State as shareholder to compel Engie, EDF and Technip Energies to adopt and implement an exit strategy for fossil gas compatible with the objectives of the Paris Climate Agreement, starting with an end to gas expansion - participation in new exploration, extraction, storage and transport projects, including LNG, and gas-fired power plants.**

→ **Regulate the activities of French private financial institutions and prohibit the granting of new financial services to fossil fuel expansion - in particular for banks via financing dedicated to new projects or directed towards the companies behind them.**

PLAN AND IMPLEMENT A COHERENT PHASE-OUT POLICY FOR FOSSIL GAS

Because a sustainable energy system has important consequences for infrastructure and jobs, it is vital to plan the exit from fossil gas, and in particular the decommissioning of infrastructure, in a coherent and fair way. In addition to the recommendations on the development of alternatives detailed in [Part. III](#) of this report, this requires to:

→ Translate France's commitment to "decarbonize" its electricity system by 2035³⁰³ by organizing the **closure of gas-fired power plants by 2035, with an early retraining plan**

for employees. Employees must be consulted and actively involved in drawing up this plan. Drawing lessons from the difficulties and failures of the closures of coal-fired power plants³⁰⁴ by accelerating the deployment of renewable energies in line with the recommendations described in part III of this report, and by putting in place appropriate support and retraining measures for employees.

→ **Anticipate without delay a plan for the closure and/or transition of import terminals as part of a planned industrial policy, with a retraining and capacity building plan for employees.**

→ If the terminal in Le Havre is shown to not contribute in a useful manner to the French or European energy supply, then **decommission it.**

Notes

- 1** At European level, see Fossil Free Politics, Corporate Europe Observatory, "[Cold homes, hot profits: how polluters persuade politicians to put profits before people](#)", October 2023. And Deb Kelly, "[Majors' Lobbying Efforts In Focus](#)", Energy intelligence, 4 September 2023.
- 2** In France, see Greenpeace France, "[Terminal méthanier flottant du Havre: symbole d'une politique climatique et énergétique à la dérive](#)", June 2023. (in French).
- 3** Statement by Ministers of the Pentalateral Energy Forum on a joint vision for a decarbonized electricity system, December 18, 2023.
- 4** Ministère de la transition écologique, Données et Études Statistiques, "[Chiffres clés de l'énergie - Édition 2023](#)", 28 september 2023.
- 5** Reuters, "[TotalEnergies net profits double to record \\$36.2 bln in 2022](#)", February 2023.
- 6** Hiroko Tabuchi, "[Study Compares Gas Stove Pollution to Secondhand Cigarette Smoke](#)", New York Times, 17 June 2023.
- 7** Data can be downloaded from the website of the « Ministère de la transition écologique », Données et études statistiques, "[Chiffres clés de l'énergie - Édition 2023](#)", September 28, 2023.
- 8** Eurostat, "[Final energy consumption by product](#)", Last update: January 2024.
- 9** "[Updating of PPE monitoring indicators \(2021 indicators\)](#)", January 2023 (French PDF).
- 10** Calculated by Friends of the Earth France from Service des Données et Études Statistiques (SDES), Tableaux de synthèse du bilan énergétique de la France pour 2021 and Séries longues annuelles du bilan énergétique, downloadable from Ministère de la transition écologique, Données et études statistiques, "[Bilan énergétique de la France pour 2021](#)", 31 mars 2023.
- 11** These definitions are a simplification of these complex concepts as defined by the SDES. See the complete glossary on Ministère de la transition écologique, Données et Études Statistiques (SDES), "[Tous les concepts](#)".
- 12** 44 TWh in 2022. See RTE, "[Bilan électrique 2023](#)".
- 13** Primary consumption of natural gas fell by just 3% between 2012 and 2021, and in 2021 stood at the same level as in 2013. It reached record levels between 2016 and 2020 (between 440 and 454 TWh). Final fossil-gas consumption for all uses fell by 8% between 2012 and 2021, with a rebound in 2018 and 2021. Friends of the Earth France's calculation based on data from "Séries longues annuelles du bilan énergétique", downloadable from "Ministère de la transition écologique, Données et études statistiques "[Bilan énergétique de la France pour 2021](#)", March 31 2023.
- 14** It has increased by 180%. Friends of the Earth France's calculation based on data from "Séries longues annuelles du bilan énergétique", downloadable from "Ministère de la transition écologique, Données et études statistiques, "[Bilan énergétique de la France pour 2021](#)", 31 mars 2023.
- 15** Friends of the Earth France's calculation based on data from "Séries longues annuelles du bilan énergétique", downloadable from "Ministère de la transition écologique, Données et études statistiques, "[Bilan énergétique de la France pour 2021](#)", March 31 2023.
- 16** To offset the gradual closure of coal-fired power plants. Friends of the Earth France's calculation based on data from "Séries longues annuelles du bilan énergétique", downloadable from "Ministère de la transition écologique, Données et études statistiques, "[Bilan énergétique de la France pour 2021](#)", March 31 2023.
- 17** With a net drop in 2020 and a rebound in 2021. Friends of the Earth France's calculation based on data from "Séries longues annuelles du bilan énergétique", downloadable from "Ministère de la transition écologique, Données et études statistiques "[Bilan énergétique de la France pour 2021](#)", March 31 2023. This puts us at 12.9 TWh in 2021, compared with 13.7 TWh in 2017 and 11.9 TWh in 2012.
- 18** Transport & Environment, "[Quarter of EU shipping will run on LNG by 2030 locking in fossil fuels for decades](#)", February 2022.
- 19** In order books as of February 20, 2024, 25% of container ships and 45% of cruise ships are built to run on LNG. Transport & Environment analysis based on Clarkson's Research Database data for Friends of the Earth France (February 2024). Note that this increase on cruise ships is very worrying, since these ships are equipped with a type of LNG engine that emits the most methane leakage (3.5% of fuel according to the International Maritime Organization, 3.1%, according to the European Union, but some researchers have indicated that this leakage rate could rise to 6-8% of fuel - see Paul Balcombe, Total Methane and CO2 Emissions from Liquefied Natural Gas Carrier Ships: The First Primary Measurements, Environ. Sci. Technol. 2022, 56, 9632-964, available [online](#). See also Bryan Comer et al., "[Fugitive and Unburned Methane Emissions from Ships \(FUMES\): Characterizing methane emissions from LNG-fueled ships using drones, helicopters, and on-board measurements](#)", International Council on Clean Transportation, January 25 2024.
- 20** -3% in primary consumption, -10% in final consumption for all uses combined. In particular, gas use dropped significantly in industry (-20%), agriculture (-17%) and transport (-40%). Friends of the Earth France's calculation based on "Ministère de la transition écologique, Données et études statistiques "[Bilan énergétique de la France en 2022](#) -

Données provisoires», April 28 2023.

21 GRTGaz, [Tableau de bord de la consommation de gaz en France pour la période 2023 - 2024](#) (in French).

22 Voir les graphiques sur [Observatoire Climat Énergie, Consommation primaire de gaz naturel](#), consulté le 19 février 2024.

23 See Ministère de la Transition Écologique, «[Mise à jour des indicateurs de suivi de la PPE \(indicateurs 2021\)](#)», January 2023. France needs to achieve double the reduction in the period 2023 - 2028 to the tune of 50 TWh more than what is supposed to be achieved in 2023 (however, the 2023 target does not appear to be met at present - to be confirmed with figures to be released) (in French).

24 Fossil gas imports by pipeline reached 526 TWh/year in 2014. See Institute for Energy Economics and Financial Analysis (IEEFA), «[Le paradoxe du GNL en France. Le développement des infrastructures se poursuit malgré une consommation en déclin](#)» (The LNG paradox in France. Infrastructure development continues despite declining consumption), October 2023 (in French).

25 Increase of 94%. LNG's share of fossil gas imports was 22% and gas 78% in 2018. By 2021, these shares have risen to 35% and 65% respectively. In 2022, LNG's share rises to 58% of imports. Friends of the Earth France calculation based on data from [Séries longues annuelles du bilan énergétique](#), downloadable from Ministère de la transition écologique, [Données et études statistiques, «Bilan énergétique de la France pour 2021](#)», March 31 2023 (in French).

26 +78.6%: 19.09 bcm in 2021, 34.09 bcm in 2022. Institute for Energy Economics and Financial Analysis, [European LNG Tracker](#), February 2024.

27 4.96 billion cubic meters in 2021, 7.18 in 2022. Keplr figures reported by Institute for Energy Economics and Financial Analysis (IEEFA), [European LNG Tracker](#), updated October 2023.

28 Based on GIE, [LNG Database](#), November 2022, updated for 2023 with extensions and debottleneckings declared by operators and the commissioning of the Le Havre floating terminal.

29 Calculations by Greenpeace France using daily data from the [ALSI](#) (Aggregated LNG Storage Inventory) database put online by GIE. These maximum capacities are consistent with those reported by Total for French terminal capacities. in the project document the company submitted to the French Energy Regulatory Commission - See TotalEnergies LNG Services France, "Dossier de demande d'exemption pour l'unité flottante de stockage et de regazéification (FSRU) du Havre", application submitted on October 20, 2022, analyzed by Greenpeace France, «[Terminal méthanier flottant du Havre : symbole d'une politique climatique et énergétique à la dérive](#)», June 28 2023.

30 Total capacity indicated by terminal on the basis of GIE, [LNG Database](#), November 2022, November 2022, updated for 2023 with extensions and debottlenecking declared by operators and the commissioning of the Le Havre floating terminal.

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rate in 2021: 39.82% (Total daily emissions over the year: 18.64 bcm / Total daily DTRS over the whole year: 46.8 bcm). Utilization rate in 2022: 80.4% (Total daily emissions over the year: 37.75 bcm / Total daily DTRS over the year: 46.96 bcm). Utilization rate in 2023: 65.16% (Total daily emissions for the year: 31.78 bcm / Total daily DTRS for the whole year: 48.77 bcm).

32 At Fos Cavaou, the official operator is Fosmax LNG, a 100% subsidiary of Elengy. See Elengy, [The Fos Tonkin LNG terminal](#), n.d. Elengy, [Le terminal méthanier de Fos Cavaou](#), n.d. Elengy, [Notre histoire](#), n.d. Elengy, [Organisation](#), n.d.

33 The [Cape Ann](#) is owned by SRV Joint Gas Two Ltd, a joint venture between Norwegian shipowner Hoëgh LNG (50% in 2022) and Japanese companies Mitsui OSK Lines and Tokyo LNG Tanker. SRV Joint Gas Two Ltd is registered in the Cayman Islands. TotalEnergies leases this vessel. TotalEnergies' charter contract with SRV Joint Gas Two Ltd runs until 2030, and can be extended for up to two five-year periods. It is carried out through a group subsidiary: TotalEnergies Gas & Power (head office in England, branch in Geneva), "in charge of LNG trading". See Vincent Rondreux, «[CO₂ et paradis fiscaux, la face cachée du terminal méthanier flottant du Havre](#)», [Mediapart](#), February 4 2023.

34 61% owned by a consortium comprising the gas infrastructure group Fluxys, Axa Investment Managers - Real Assets, and Crédit Agricole Assurances, and 39% owned by a consortium of Korean investors led by IPM Group in cooperation with Samsung Asset Management. See Fluxys, «[About Dunkerque LNG](#)», n.d.

35 See downloadable data at Ministère de la transition écologique, [Données et études statistiques, Bilan énergétique de la France en 2022 - Données provisoires](#), April 28 2023 (in French).

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37 IEEFA, «[Le paradoxe du GNL en France. Le développement des infrastructures se poursuit malgré une consommation en déclin](#)», October 2023 (in French).

38 Of the 29.31 bcm of LNG imported into France in 2023, 4.68 bcm came from Russia, i.e. 15.9% of imports. IEEFA, [European LNG Tracker](#), updated February 2024.

39 IEEFA, [European LNG Tracker](#), updated February 2024.

40 Calculations by Greenpeace France using daily data from the [ALSI](#) (Aggregated LNG Storage Inventory) database put online by GIE... Average utilization rate in 2021: 39.82% (Sum of daily emissions over the year: 18.64 bcm / Sum of daily DTRS over the whole year: 46.8 bcm). Utilization rate in 2022: 80.4% (Sum of daily emissions over the year: 37.75 bcm / Sum of daily DTRS over the whole year: 46.96 bcm). Utilization rate in 2023: 65.16% (Sum of daily emissions over the year: 31.78 bcm / Sum of daily DTRS over the whole year: 48.77 bcm).

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42 *Idem*.

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- 44** A transshipment operation differs from re-export in that the LNG is transferred from one vessel to another, without being blended or stored in the terminal's tanks.
- 45** Institute for Energy Economics and Financial Analysis (IEEFA), «[Le paradoxe du GNL en France. Le développement des infrastructures se poursuit malgré une consommation en déclin](#)», October 2023 (*in French*).
- 46** International Association of Liquefied Natural Gas Importers (GIIGNL), [ENGIE and Novatek sign LNG SPA from Yamal](#), June 2015.
- 47** GIIGNL, [ENGIE and Novatek sign LNG SPA from Yamal](#), June 2025. This contract was transferred to Total in 2018 as part of Total's acquisition of Engie's upstream LNG business. Total, ["Total Closes the acquisition of Engie's Upstream LNG Business And Becomes World #2 LNG Player"](#), July 13 2018.
- 48** GIIGNL, [Annual report 2023](#), p.28.
- 49** See chart p.21. Institute for Energy Economics and Financial Analysis (IEEFA), «[Le paradoxe du GNL en France. Le développement des infrastructures se poursuit malgré une consommation en déclin](#)», October 2023 (*in French*).
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- 53** «[Comment l'appétit français pour le gaz soutient le régime autoritaire russe](#)», Friends of the Earth France, April 2024.
- 54** *Idem*.
- 55** «[États-Unis et gaz de schiste : histoire d'une hypocrisie française](#)», Friends of the Earth France, April 2024.
- 56** Dunkerque LNG was created on the initiative of the French power company Électricité de France (EDF) (96% owned by the French state), as well as TotalEnergies and Fluxys following the final investment decision in 2011. Dunkerque LNG - EDF Group, [LNG TERMINAL KEY POINTS](#), January 2016.
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- 59** See volumes committed as of December 31, 2022 on the website of Ministère de l'Économie et des Finances, Agence des Participations de l'État, [Rapport Financier 2022-2023](#), October 2023, p. 120 (*in French*).
- 60** 13 billion € in 2023. [Budget de l'État - Dépenses par ministère 2023](#), consulted January 13 2024 (*in French*).
- 61** IEEFA, «[Le paradoxe du GNL en France](#)».
- [Le développement des infrastructures se poursuit malgré une consommation en déclin](#)», October 2023 (*in French*).
- 62** Transcript of the Belfort speech, «[Reprendre en main notre destin énergétique !](#)», Elysée Palace, February 10, 2022. This commitment was renewed by Elisabeth Borne after the Russian invasion of Ukraine, during her general policy statement. [Déclaration de politique générale de M^{me} Élisabeth Borne](#), Vie publique, delivered on July 6, 2022 (*in French*).
- 63** At the date of publication of this report, the Pluriannual Energy Program (PPE) is still being drawn up.
- 64** With the [loi de transition énergétique pour la croissance verte](#) (Energy transition act for green growth) (*in French*).
- 65** The 2015 Energy Transition Act amended Article L.100-2 of the Energy Code, which states that "The State (...) shall take care to control energy demand and promote energy efficiency and sufficiency."
- 66** The residential sector accounts for 40% and the tertiary sector 22% of final fossil gas consumption, mainly for heating and domestic hot water, and to a lesser extent for cooking. See section [Dependance on fossil fuels](#).
- 67** IDDRI, «[Sortir de la dépendance au gaz naturel russe : quelles stratégies pour l'UE et la France ?](#)», March 2022 (*in French*).
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- 69** [Plan de sobriété énergétique. Acte 2](#), Press kit, June 20, 2023 (*in French*).
- 70** For a detailed analysis and critique of the energy sufficiency plan, see Réseau Action Climat, «[Plan sobriété : un amuse-bouche qui nous laisse sur notre faim](#)», October 7, 2022 (*in French*).
- 71** It can also be explained by the greater availability of nuclear power plants, which has returned to the levels observed in 2015-2019, and by significant renewable energy production, which has led to a significant drop in the demand on gas-fired power plants (-42%) compared to the 2018-2019 reference year. GRT Gaz, [Tableau de bord de suivi de la consommation de gaz](#) (*in French*).
- 72** Paulina Jaramillo et al. [Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG, and SNG for Electricity Generation](#), *Environ. Sci. Technol.* 2007, 41, 17, 6290-6296. Robert W. Howarth, [Methane and the greenhouse-gas footprint of natural gas from shale formations](#), 2011. Robert W Howarth, [A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas](#), Cornell University, 2014.
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[l'Énergie](#) (in French).

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76 AR6 Deborah Gordon et al, [Evaluating net life-cycle greenhouse gas emissions intensities from gas and coal at varying methane leakage rates](#), 2023 *Environ. Res. Lett.* DOI 10.1088/1748-9326/ace3db ; Kemfert, C., Präger, F., Braunger, I. et al. [The expansion of natural gas infrastructure puts energy transitions at risk](#), *Nat Energy* 7, 582-587 (2022) ; Andrew Moseman, [Why do we compare methane to carbon dioxide over a 100-year timeframe? Are we underrating the importance of methane emissions?](#), MIT Climate Portal, January 4 2024. ; See the part played by fossil fuels, including gas, in methane emissions: International Energy Agency, [Global Methane Tracker 2023 - "Understanding methane emissions"](#), February 2023. Intergovernmental Panel on Climate Change, [CLIMATE CHANGE 2023 Synthesis Report](#), p.95.

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81 *Ibid.*, p.75.

82 See Ministère de la Transition Écologique, [Signature des contrats de transition écologique des 50 sites industriels les plus émetteurs](#), November 22, 2023 (in French).

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89 See [Observatoire Climat Énergie - Part d'énergie renouvelable dans la consommation d'énergie](#), and Ministère de la transition écologique, Données et études statistiques, «[Les énergies renouvelables en France en 2022 - Suivi de la directive \(UE\) 2018/2001 relative à la promotion de l'utilisation des énergies renouvelables](#)», May 9, 2023 (in French).

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192 According to a [Total memo](#) (in French) obtained by

Disclose, the risks associated with operating the floating LNG terminal are far from trivial. In it, Total anticipates no less than "15 feared loss-of-containment events" that could cause "151 dangerous phenomena", but no details are given. This document has never been made public by the prefecture. The terminal's location, behind a lock, also prevents it from being rapidly evacuated into the open sea, as is the case for all other floating terminals worldwide. See Disclose, «[Port du Havre : malgré les risques industriels, TotalEnergies impose son terminal méthanier en toute opacité](#)», June 28, 2023 (in French).

193 **Methodological note:** all capacity and volume unit conversions were done with the [online converter of the Belgian gas company Fluxys](#), assuming a gas calorific value of 11.63 kWh/m³, or 41.87 MJ/m³. As the calorific value of gas depends on where it comes from and where it is measured, **Friends of the Earth France cannot guarantee the accuracy of the conversions. They serve only to indicate orders of magnitude.** Different calorific value hypotheses were tested: they did not change the orders of magnitude and validated the arguments made in this section.

194 In this section, Europe covers the 27 members of the European Union, the United Kingdom, Norway, Albania and Turkey, making it a relevant geographical area for potential gas flows.

195 Historical import capacity was 256.85 bcm. At the end of 2023, import capacity was 310.35 bcm. IEEFA, [European LNG Tracker](#), last update: February 2024.

196 IEEFA, [European LNG Tracker](#), last update: February 2024.

197 IEEFA only takes into account projects that have been officially integrated into the GIE database. In this sense, the can be considered conservative. IEEFA, [European LNG Tracker](#), last update: February 2024.

198 Analysis by Friends of the Earth France based on the Global Energy Monitor database, [Global Gas Infrastructures Tracker](#), database, updated in October 2023. With the same scope Europe as described in note 194.

199 Russia supplied only 12.9% of the continent's gas in November 2022, compared with 40.5% in November 2021. Council of the European Union, [Infographic - Where does the EU's gas come from?](#), February 7 2023.

200 Friends of the Earth France calculations based on Bruegel data: [European natural gas imports data set](#), updated February 2024.

201 With an almost total halt to imports from the end of August 2022, corresponding to the end of Nord Stream's use. [ENTSOG Transparency Platform](#), data on physical flow into the EU27. See Greenpeace France, «[Terminal méthanier flottant du Havre : symbole d'une politique climatique et énergétique à la dérive](#)», June 2023 (in French).

202 IEEFA, [European LNG Tracker](#), updated February 2024.

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GIE's ALSI database and the ENTSOG Transparency Platform, as well as the natural gas import balance from the French Ministry of Ecological Transition. Greenpeace France, «[Terminal méthanier flottant du Havre : symbole d'une politique climatique et énergétique à la dérive](#)», June 2023, pp.10-11 (in French).

205 See Disclose, «[Au Havre, l'installation d'un nouveau terminal méthanier repose sur un mensonge d'État](#)», June 28, 2023. Also: "The balance between gas supply and demand is therefore formed a minima over the geographical area made up of French, Belgian, Dutch, German, Italian and Spanish territories, an area in which France plays a pivotal role." TotalEnergies LNG Services France, Dossier de demande d'exemption pour l'unité flottante de stockage et de regazéification (FSRU) du Havre, transmitted to the Minister of Energy Transition on October 20, 2022 (p.23) cited Greenpeace France «[Terminal méthanier flottant du Havre : symbole d'une politique climatique et énergétique à la dérive](#)», June 2023 (in French).

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208 In 2023, Germany consumed 810412 GWh of gas. Bundesnetzagentur, [Rückblick: Gasversorgung im Jahr 2023](#), January 2024. A volume of around 70 bcm (in German).

209 IEEFA, [European LNG Tracker](#), updated February 2024.

210 Greenpeace France, «[Terminal méthanier flottant du Havre : symbole d'une politique climatique et énergétique à la dérive](#)», June 2023 (in French).

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217 *Idem*.

218 Observatoire Climat Énergie, [Gaz naturel](#) (in French).

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- 261** Data reported on p.29 of Commission de Régulation de l’Énergie, «Avenir des infrastructures gazières aux horizons 2030 et 2050, dans un contexte d’atteinte de la neutralité carbone», (in French), April 2023. Worldwide, the ammonia manufacturing process accounts for 5% of global coal demand, and 20% of global industrial gas demand. International Energy Agency, “Ammonia Technology Roadmap: Towards More Sustainable Nitrogen Fertiliser Production”, October 2021, p.8.
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FOSSIL GAS

MANUFACTURING ADDICTION

How the fossil fuel industry
and the French State are locking us
into an unsustainable energy model

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Friends of the Earth France is a non-profit environmental and human rights network, independent from any religious or political influence. Created in 1970, Friends of the Earth France helped to build the French ecological movement and was one of the founding organisations of Friends of the Earth International, with groups in 75 countries and over two million supporters around the world.

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