

# REPORT

## From challenge to opportunity

### Acting together for a successful energy transition

\_Catherine MacGregor

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# Introduction

2023 was the hottest year on record, and 2024 is already well on track to beat it. Heatwaves, floods, droughts, fires... The proliferation of extreme climate events is the evidence that we need to face a political emergency: building the necessary consensus for a successful energy transition.

The challenge is immense. Because even if the transition has hardly begun, it is already being criticized. We are not doing enough, but some think this is already too much. Major fossil fuel producers, anxious to preserve the world of yesterday, are going so far as to predict its failure. They question our ability to change our model, and even the very relevance of decarbonization. This is what the Anglo-Saxons call a “**green backlash**”: not a return to climate skepticism, but a more insidious trend towards “climate relativism”. A little music that, in the name of the economy and purchasing power, is calling for the energy transition to be slowed down, or at least, not prioritized.

**On the eve of elections that are decisive for the future of Europe, this temptation to turn back the clock worries me. Does this rhetoric reflect the reality on the ground? As an energy company whose purpose is to accelerate the energy transition and implement it at a local and regional level, we wanted to find out for ourselves. To do so, we asked the CSA institute to question the people who are most concerned: the citizens of Europe.**

The survey we conducted in ten countries<sup>1</sup> paints the picture of a Europe ready to act: 89% of those questioned want the energy transition to move ahead, while only 6% are considering back tracking. Asked whether it is possible today to halt the impetus

towards energy transition, the majority of Europeans answer in the negative. **A revolution is underway, which is reflected in action:** 64% say they have already taken action at an individual level in favor of the energy transition.

Unambiguous responses in favor of transition, but not without nuances. Among those who want to keep moving ahead, **45% advocate doing so cautiously.** Indeed, Europeans see many obstacles to implementation.

Some question its feasibility: for almost 30% of those asked, “clean” energies would require technological and innovative means that we do not control yet. Questions were also raised about its impact on employment, economic growth and business competitiveness. But above all, there were questions as to its cost: for the majority of Europeans, the first obstacle to the energy transition is the financial investment it represents. Our survey clearly shows this to be the case: energy transition is seen as a threat to purchasing power by almost a third of Europeans, with even greater reluctance among the French. If it is to be accepted and ultimately achieved, I am deeply convinced, the energy transition must leave no one behind.

**We must listen to and respond to these doubts, because making the energy transition a success requires the mobilization of everyone.** And that is where we have a key role to play. In the eyes of Europe’s citizens, after governments, it is the major industrial groups specializing in energy that are the most legitimate players in driving the energy transition forward. **ENGIE is up to the task. Our 97,300 employees, including 78,000 in Europe,** are mobilized on a daily basis to develop a low-carbon energy system and make it affordable – in

1. Survey conducted by CSA, in partnership with the Fondation Jean Jaurès and ENGIE, on a sample of 10,000 individuals aged 18 and over in Belgium, France, Germany, Italy, Netherlands, Poland, Portugal, Romania, Spain and the UK.

particular renewable energies (electricity and gas), as well as energy efficiency and sobriety solutions. With the support of the Fondation Jean-Jaurès, we are keen to counter skepticism with our knowledge of the reality on the ground.

I see it every day: we can make the energy transition a success. A transition that is a source of opportunity, that is affordable and socially just. We have the technical and financial resources, the expertise and the experience, and we have already come part of the way. But to succeed, we need a new impetus.

Europe was built on energy and industry, and today, through them, it can relaunch itself. Europe has led the way in energy transition, demonstrating its ability to project itself into the future. I am convinced that it can now provide the decisive drive to accelerate this transition. That is why, in the run-up to the European elections, I have decided to make a contribution by putting forward some recommendations for European decision-makers to consider.

**Transition is a challenge for Europe: it is up to us to make it an opportunity.**

# A successful energy transition is within our grasp: we hold all the keys to building a decarbonized, reliable and robust energy system

Europe is committed to achieving “carbon neutrality”<sup>1</sup> by 2050.

**This goal calls for transformations on an unprecedented scale, and within a very short timeframe. Almost one out of every two European citizens considers this goal to be unrealistic.** This pessimism is particularly strong among the Germans (68%), the Belgians (62%) and the French (55%). **One reason for this doubt is that for almost one in three Europeans (29%), we do not have the necessary solutions and technologies.** However, we already know the various levers we need to make the energy transition a success, even if some of them have yet to be deployed on an industrial scale.

Despite doubts about whether the goal of carbon neutrality can be achieved, Europeans are taking action for the transition

**Increasingly, Europeans are taking action at their own level, in particular by activating the**

**critical levers of energy efficiency and sobriety.**

64% of citizens surveyed said they had already taken action to reduce their energy consumption and, in so doing, their carbon impact. In France, 75% of citizens have already acted. Whether for ecological or economic reasons, more and more European citizens are adopting new habits to help drive the transition<sup>2</sup>.

We know the solutions  
we need to decarbonize  
our energy system

We need to build a European energy system that is low-carbon, affordable and guarantees security of supply. To achieve this, we need to rely, without being dogmatic, on all solutions and to develop, “with a no-regret approach” the decarbonized energy capacities that can be developed. This system will thus be underpinned by renewable energies (electricity and gas), nuclear power for those countries that make that choice, flexibility solutions (battery storage in particular, decarbonized thermal power plants), as well as energy efficiency and sobriety.

1. Carbon neutrality means balancing carbon emissions with the absorption of carbon from the atmosphere by carbon sinks such as oceans, forests and certain soils.
2. The latest figures from the ADEME barometer (2023) show that more and more people in France are making efforts to reduce their emissions, by consuming less (56%, +19pts since 2017), not flying (56%, +20pts since 2018), or lowering the temperature in their homes (70%, +9pts since 2018). In: ADEME (2023), Les représentations sociales du changement climatique - 24<sup>ème</sup> vague du baromètre, ADEME, Paris.
3. See appendix - Glossary of energies.

**First and foremost, we must begin by reducing our energy consumption. According to our decarbonization scenario for Europe by 2050, energy demand will have to fall by around 30%. This reduction has already begun<sup>1</sup>.** In France, the energy crisis has led to sobriety efforts: gas and electricity consumption fell by 12% during the winter of 2022-2023. For the vast majority of Europeans, limiting energy consumption is the first action to be taken at an individual level, and this is the case in all ten countries surveyed.

We are seeing **this progress on a global scale**. Efforts have been made all over the world, resulting in a 2% improvement in our global energy intensity in 2022<sup>2</sup>. A pace twice that of the past 5 years.

**At the same time, we can count on the deployment of clean energies, the vast majority of which have already proved their worth.** Renewable energies (solar and wind) will play a major role in achieving carbon neutrality by 2050. According to our scenario, by this horizon, we must increase our production of solar and wind energy by a factor of 6.

**Nevertheless, gas is essential to the transition** and will be lasting necessary for a number of uses - notably sea and air transport (e-fuels), steel and cement production. To do so, it must become renewable. Rather than electrification at any price, which would put the resilience of the energy system at too great a risk, we at ENGIE believe in the alliance of the electron and the molecule, the combination of decarbonized electricity and gas, because it ensures the reliability of the energy system as well as its competitiveness.

Molecules can be stored, transformed and transported. They bring resilience, flexibility and robustness to the system, compensating for the intermittency of renewable energies and helping meet peak demand, particularly in winter. In France alone, to meet these peaks in the event of extreme cold weather using electrical solutions alone today, we would need to build an additional 150 GW of capacity, i.e. the equi-

valent of 90 nuclear reactors, and double the existing network of transmission lines. Simply impossible!

Lastly, molecules can optimize the cost of the transition, as they can draw on existing infrastructures for transport and storage. However, biomethane, hydrogen and its derivatives still need to be deployed on a wider scale to become more affordable, and innovation must enable us to continue lowering the cost of the transition. For these solutions, which are still insufficiently mature, we need a pragmatic approach and public support to enable their development and reduce investment-related risks.

**The third element is flexibility solutions, which also help to cope with peaks in consumption and compensate for the intermittent nature of renewable energies.** These include battery storage, pumped storage, and decarbonized thermal power plants. We must support their development in Europe as they are **essential to ensuring the robustness of the energy system**.

On the ground, we have already begun building the decarbonized system

The best way to answer the doubts expressed concerning the achievement of this transition is to note that it is already underway. Renewable energies are now indispensable. Worldwide, 510 GW of installed renewable energy capacity was added between 2022 and 2023, representing a twofold increase. Yet 1 GW of renewable energies can produce the equivalent of the average annual electricity consumption of nearly 1 million people in France!<sup>3</sup>.

Even in the most fossil-fuel-dependent European countries, such as Poland, renewable energies accounted for a quarter of electricity generated. They have also exploded in China, which accounts for half

1. See appendix - Glossary of energies.

2. IEA (2023), Tracking Clean Energy Progress 2023, IEA, Paris <https://www.iea.org/reports/tracking-clean-energy-progress-2023>, License: CC BY 4.0

3. For reference, in 2023, average annual energy consumption per household was 5133kWh.

of the world's new renewable capacity installations and is set to meet its renewable electricity production targets five years ahead of schedule. Today, they have become a leading **energy source in Europe**. By 2023, more than half the electricity consumed by the Portuguese (61%) and Germans (52%) will come from renewable sources.

As tends to be the case with all sources of energy, their deployment in local areas is sometimes poorly accepted, particularly in the case of wind power in France. Hence the need to organize their deployment in close consultation with all stakeholders.

As far as green gas is concerned, biomethane production in Europe made a leap of 20% in 2022. The European Union has revised its ambitions upwards, announcing an annual production target of 35 bcm of biomethane by 2030. As for green hydrogen and its derivatives<sup>1</sup>, Europe is investing massively to accelerate the industrialization of this new sector<sup>2</sup>. **It is leading the technological race in this field,**

having filed more hydrogen production related patents than any other region in the last 10 years<sup>3</sup>.

**However, we must be both humble and realistic: the decarbonization of molecules will take longer than that of electrons**, which are benefiting from the rapid deployment of renewable energies. Numerous obstacles remain in terms of regulation, cost and reliability, particularly when it comes to building large-scale electrolyzers for hydrogen. To be credible, our trajectories must take these into account.

Today, for example, for sea transport, substitution technologies exist, such as e-fuels (e-ammonia, e-methane, e-methanol) and biofuels (biodiesel, bio-methane). But the cost difference with regard to conventional technologies is significant (from around 3.7 times more expensive for biomethane, to 5 times for e-methanol). Similarly, the cost of sustainable aviation fuels is two to four times higher than that of kerosene.

1. In addition to gases produced from biomass, it is possible to produce synthetic gases or e-fuels from renewable electricity: green hydrogen, e-methane, e-kerosene, e-methanol, synthetic ammonia, etc. Hydrogen and its derivatives are essential for decarbonizing many sectors where electrification is not possible, such as heavy industry and mobility: sea and air transport, fertilizer, aluminum, cement and steel production.
2. Europe is investing heavily to scale up the industrialization of green hydrogen. The Clean Hydrogen Partnership, a Public-Private Partnership for hydrogen research and innovation, has been allocated 1 billion euros in public funding for the period 2021-2027. In November 2023, the European Union also launched a specific bank, the European Hydrogen Bank, endowed with 3 billion euros. To encourage member states to develop their hydrogen projects, it has also authorized state aid beyond European regulations to subsidize Important Projects of Common European Interest (PIIEC). To date, France has more than 10 such hydrogen PIIEC projects representing aid of over 2 billion euros.
3. IEA (2023), Hydrogen Patents for a Clean Energy Future, IEA, Paris <https://www.iea.org/reports/hydrogen-patents-for-a-clean-energy-future>, License: CC BY 4.0

# The energy transition will be a source of opportunities for our economies

**The energy transition is seen as an economic opportunity by a majority of Europeans. However, it also raises fears among a significant proportion of the population.** Nearly a quarter of Europeans see it as a threat to growth (23%), business competitiveness (26%), employment (18%) and, above all, purchasing power (34%). Alongside the Germans, Dutch and Belgians, the French are among the most pessimistic: one in four believes that the energy transition will slow growth, and almost one in two fears that it will reduce purchasing power.

**These concerns are legitimate and must be taken into account. However, if it is carried out consistently, using all the decarbonization levers that we have at hand, the energy transition will open up numerous opportunities for our economy in the long term: lower energy costs, net job creation, improved living standards.**

## The energy transition requires major investment, but will improve our living standards

**The energy transition requires massive investment by private individuals, companies and governments alike. However, its economic impact will overall be positive in the long term.** Today, renewable energies are already cheaper than fossil fuels (gas, coal and oil). As the European Central Bank's Europe-wide tests have shown, **the transition should ease energy bills**, by replacing

these fossil fuels with renewables and improving energy efficiency. It will also have a positive impact on household incomes.<sup>1</sup>

## The energy transition will be a net creator of jobs

As far as employment is concerned, the energy transition is a real opportunity, even if it is not yet perceived as such. Indeed, it should enable the net creation of 150,000 jobs in France by 2030<sup>2</sup>. Most of these jobs will be local and non-relocatable, and will be needed in all regions and in many sectors: thermal renovation, renewable energies (gas and electricity), the rail industry, aeronautics, etc. On a global scale, the International Energy Agency (IEA) estimates that 17 million jobs could be created by 2030<sup>3</sup>.

**These jobs often involve new professions, which means we need to develop training opportunities at all levels.** Europe must provide massive training in the professions of the energy transition and the new skills it requires. New technologies, the impact of digital technology and artificial intelligence, challenges related to circularity, demand planning... **The far-reaching reconfiguration of certain sectors in terms of employment needs to be anticipated and supported as much as possible.** The Automotive, road-freight and industry sectors are those most impacted by these changes.

1. BCE (2023): <https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op328~2c44ee718e.en.pdf>.

2. General Secretariat for Ecological Planning: <https://www.gouvernement.fr/upload/media/content/0001/08/b39c3783c75b547f270ece5b182cb5bf92c7a53e.pdf>

3. IEA (2023), World Energy Employment 2023, IEA, Paris <https://www.iea.org/reports/world-energy-employment-2023>, License: CC BY 4.0



## We can make the transition an industrial adventure, without slowing down decarbonization nor compromising our competitiveness

The energy transition is bringing about profound changes in industry. It can be a source of innovation, driving manufacturers to develop the new technologies needed to deploy clean energies such as wind turbines, batteries and solar panels. It is pushing entire sectors to implement genuine revolutions, as we are seeing in the heavy mobility sector, for example in aviation. Although these changes and constraints can be costly and weigh on the competitiveness of certain sectors, decarbonization solutions can also create productivity gains<sup>1</sup>.

At a time when other countries are mobilizing unprecedented resources to finance decarbonized energies, we in Europe need strong policy that supports our industries. We need to strike the right balance between speeding up the transition and supporting European industries.

The energy transition is an opportunity to promote local industry and energy. The reform of the electricity market, the Net Zero industry law, the law on critical raw materials and the hydrogen bank are all steps in the right direction, but we need to be even more ambitious.

This means making choices. If we cannot support all our industries, we need to target those for which relocation in Europe makes most sense. In the case of photovoltaic panels, for example, it is difficult to compete with our international rivals, as European modules are currently around 2.3 times more expensive than imported ones. They account for around 60% of a solar plant's capital expenditure. Hence, the

use of European photovoltaic modules would make projects significantly more expensive, and would only be possible if the regulatory framework created a level playing field. The situation is different for the wind turbine industry, which is well established in Europe and can leverage recognized know-how and lower price differentials with its competitors. Finally, Europe has the capacity to build and develop a hybrid (gas and electricity) heat pump industry for heating in buildings.

## If we do not act to contain climate change, the bill will be more costly

**As numerous studies have demonstrated, from the Stern Review to the Swiss Re Institute's 2021 insurers' study, investing in the transition pales in comparison with the devastating cost of climate inaction.**

More frequent and more intense natural disasters, rising sea levels, heatwaves... An overheated world cannot function normally. The losses and damages caused by global warming already total several hundred billion dollars every year. If we continue with our current policies, we are heading for an average global temperature rise of between 2.6 and 2.9°C.<sup>2</sup> In the event of 2.6°C warming, the global economy (world Gross Domestic Product) could lose 14% of its overall value. This figure rises to 18% in the event of a 3.2°C warming.<sup>3</sup>

Even though the investment required to implement the energy transition is significant, it is far less than the cost of inaction: 66 billion euros of additional funding by 2050 for France, an effort that would be shouldered by both the public authorities and the private sector.<sup>4</sup>

1. McKinsey (2020). Net Zero Europe: Decarbonization pathways and economic implications, December 2020. Available at: [net-zero-europe-vf.pdf](https://www.mckinsey.com/net-zero-europe-vf.pdf) (mckinsey.com)
2. UNFCCC (2023). Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) Nationally determined contributions under the Paris Agreement. Synthesis report by the secretariat, November 14, 2023, <https://unfccc.int/documents/632334>.
3. Swiss Re Institute (2021) The economics of climate change: no action not an option, April 2021: <https://www.swissre.com/dam/jcr:e73ee7c3-7f83-4c17-a2b8-8ef23a8d3312/swiss-re-institute-expertise-publication-economics-of-climate-change.pdf>
4. Pisani-Ferry, J., Mahfouz, S. (2023). Les incidences économiques de l'action pour le climat : rapport à la première ministre, France Stratégie, mai 2023, Economic impacts of climate action | France Stratégie ([strategie.gouv.fr](https://strategie.gouv.fr))

# Our recommendations

**Europe's commitment to reach carbon neutrality by 2050 is non-negotiable:** it must establish a clear, long-term framework that provides the visibility required for investment. This framework must also enable us to monitor the allocation of resources and means to achieve these goals so that we can adjust them when we see delays. We need to be ambitious, yet also realistic and pragmatic.

**Let's speed up what is working, improve what needs to be improved and correct what is slowing us down.**

We hereby advocate five priorities for Europe, accompanied by examples and measures, in the aim of achieving an affordable transition that strengthens our competitiveness and sovereignty and that is implemented within a coherent framework, enabling the proper use of public and private funds.

## 1. Integrating cost optimization into European energy strategy

*The price of energy is a key factor for the competitiveness of companies and the purchasing power of European households. For the transition to be accepted, it must be carried out under the strictest possible cost control. Taking into account the impact of European public policies on the overall price of energy must become a natural European reflex.*

- **Guarantee the principle of “technological neutrality”** by driving a transition that activates all available decarbonization levers, electrons and molecules alike, as proposed by the European Commission in its communication on decarbonization objectives for 2040.
  - Optimize the costs of the energy transition by adopting an agnostic approach, considering the maturity and relative costs of different technolo-

gies, which are likely to evolve during the transition. A minimum carbon price would help to align investments.

- Be less restrictive regarding the molecule, taking into account the fact that its decarbonization is slower. In particular, for hydrogen: focus on its carbon content.

- **Generalize an integrated, optimized approach that considers the energy system as a whole.**

- Encourage energy sobriety and develop efficiency and low-carbon solutions, which are the primary levers for reducing greenhouse gas emissions and energy bills and which contribute to energy independence and job creation.
- Promote the development of the flexibility solutions needed by the system, including electricity storage, in particular to avoid the spiraling of electricity network costs.
- Capitalize on existing gas infrastructures and define a master plan for their conversion for the transport of low-carbon molecules.

- **Pursue a rapid and massive development of renewable energies**, which are needed to meet the growing demand for renewable electricity and gas and to respond to the urgency of the transition. For electricity, renewable energies have also demonstrated their competitiveness.

## 2. Filling the blind spots of tomorrow's energy system

*In addition to the investments required for the massive development of renewable energies in electricity and gas, several tens of billions of euros of investment will have to be mobilized each year for the deployment of the electricity grids and flexibility solutions essential to a low-carbon system.*

- **Accelerate the development of new electricity infrastructures, opening up all options to meet growing needs:** extend the financing of these infrastructures (distribution networks needed for the electrification of uses, lines located downstream of offshore wind farm connections, new transmission lines for the interconnection of production zones and consumption zones...) to public and private investors, set up public-private partnerships or concession regimes.

- **Establish the framework for the essential development of flexibility solutions in Europe.** Battery storage systems, pumped-storage power stations (PETS) and decarbonized thermal power plants will be needed to maintain the balance between electricity consumption and production at all times, as will demand flexibility through consumption management.

- Integrate the flexibility needs of each Member State and at European level define and implement appropriate support mechanisms, particularly for long-term flexibility.
- Systematize the use of CRMs (Capacity Mechanisms), which give visibility to private investors by remunerating the development and existence of flexibility capacities.
- Encourage policies and regulations that will shift demand, particularly off-peak.

- **Encourage the local production of low-carbon energy, notably by supporting the transformation and development of heating and cooling networks (biomass, recycled heat, geothermal, thalasso-thermal, etc.),** which enable rapid decarbonization of uses, with limited recourse to major national energy infrastructures.

- Simplify the use of European structural funds by setting up a European co-financing scheme for national systems inspired by the “heat fund” model already in place in France and a number of other Member States.
- Support the development of district cooling networks that meet higher energy efficiency standards than individual systems and avoid the creation of

heat islands, in anticipation of adaptation to climate change.

- Maintain a broad and inclusive definition of all installations likely to produce waste heat and recommend a *merit-order*<sup>1</sup> favoring its use.

### 3. Making the energy transition a lever for Europe's reindustrialization and competitiveness

*The European Union faces several challenges: accelerating decarbonization, strengthening its energy sovereignty and ensuring the competitiveness of its economy in the face of global competition. To achieve this, we need to strike a balance between the overall cost of the transition and the use of European industries, without slowing down decarbonization.*

- **Make choices and support energy transition value chains that are important for Europe**

- Target industries that we want to relocate to Europe, based on their competitiveness and strategic importance, in particular the wind turbine industry, where Europe has recognized expertise and know-how.
- Support the development of national extraction capacities for raw materials essential to the energy transition, such as lithium.
- Structure a European recycling industry for critical minerals and rare earths - in line with *the European Critical Raw Materials Act*, which sets a target of recycling 25% of its annual consumption of critical raw materials by 2030 and promotes the recycling of components needed for the energy transition, such as solar panels and wind turbine blades.

- **Include support for European industries in tender specifications**

- Ensure a level playing field for tenders by including non-financial criteria adapted to sectoral realities, in line with the initial measures of the Net Zero Industry Act (NZIA).

1. As electricity cannot be stored on a large scale, a given power plant is called upon to a greater or lesser extent depending on demand. The logic of “merit order” (economic precedence) consists in calling on the various electrical production units, as and when required, according to their increasing marginal costs.

- Introduce a “made in Europe” label applied to products (e.g. PV and wind turbine value chains) based on the proportion of key components manufactured in Europe.

#### 4. Building a coherent, simple, pragmatic regulatory framework

*This framework should provide a realistic outlook for Europe and enable us to build informed public policies, while ensuring that all stakeholders, especially industrialists, are consulted upstream.*

- **Simplify the administrative framework and ensure consistency of standards between European and national levels**

- Anticipate and give visibility to project developers on the planning of calls for tenders to accelerate the deployment of renewable energies.
- Without reducing greenhouse gas reduction targets, ensure consistency between the various European targets, adjusting them where necessary.
- Align the provisions of national and European texts, in particular by ensuring that the transposition of texts by States is fully consistent with the European framework, to avoid fragmented, multi-speed national legislation.

- **Review and modify certain provisions when necessary**

- Relax the rules governing the certification of renewable hydrogen (additionality and time correlation rules), which constrain investment decisions.
- Alongside renewable hydrogen, promote low-carbon hydrogen to support the decarbonization of high-emission industrial sites. Indeed, the 42% green hydrogen consumption target in industry by 2030 seems unattainable and all decarbonized hydrogen molecules must be able to play a role.
- Include a review date for the need to use biogenic CO<sub>2</sub><sup>1</sup> in synthetic fuels, to enable the sector to develop, and do not set an immediate date for banning CO<sub>2</sub> from other sources.

- **A proactive approach to the integration of the internal energy market**

- Review the framework for contracting cross-border PPAs (*Power Purchase Agreements*)<sup>2</sup>.
- Harmonize and strengthen the regulatory framework with regard to guarantees of origin and sustainability certificates to establish genuine, fluid cross-border trade in electricity, green gas and hydrogen.

#### 5. Better targeting transition supportive financing

*Whether in the form of European subsidies or national grants, public money is scarce. It must be used to accelerate the development and scaling-up of less mature technologies and to support changes in the usages and behaviors of European citizens, leaving no one behind.*

- **Support the development of less mature technologies with faster, better targeted funding**

- Support project leaders and orient them towards the most appropriate financial assistance.
- Accelerate the disbursement of financial support, redeploying aid where necessary, and redirecting it to the most promising and dynamic sectors.
- Set up simple support and compensation mechanisms to make up for price differences, following the example of the European Hydrogen Bank, which grants premiums to compensate for the difference between the cost of producing renewable hydrogen and grey hydrogen.

- **Make the transition accessible to as many people as possible**

- At national level, support should target those households most in need, with precise criteria related, in particular, to level of income, to enable them to access the energy transition (home renovation, purchase of electric vehicles).

1. Biogenic carbon is the carbon fixed by plants as a result of photosynthesis from CO<sub>2</sub> in the air.

2. Power Purchase Agreement (PPA) is a long-term contract for the delivery of electricity between two parties, usually a producer and a purchaser of electricity (consumer or trader). The PPA sets out in detail all the conditions for the sale of electricity (the quantity of electricity to be delivered, the prices negotiated, the method of accounting and the penalties for non-compliance with the contract).

# Conclusion

As climate reality shows us daily, the energy transition is no longer an option. Yet it is also an opportunity for citizens and a collective responsibility towards future generations. Governments must act swiftly, in concert with the private sector, to create a framework that supports this transition and that includes all stakeholders. No doubt adjustments will have to be made from time to time, when objectives prove unrealistic, or technology fails to keep pace. While the building of Europe is above all a human adventure,

it is also an industrial one. However, correcting our trajectory does not mean giving up our ambition. We must not lose sight of the ultimate goal, which is to achieve this transition through sobriety, energy efficiency and the substitution of decarbonized energies for fossil fuels, in a realistic and pragmatic way, at the best possible cost. It is not an easy path, but it is a necessary one, and we need the unstinting support of Europe's decision-makers if we are to rise to the challenge of climate change together.

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