

“Green economic recovery: the France experience”

Introductory text and key questions

The effects of climate change are increasingly present in everyday life and are perceived in the heightened frequency of extreme meteorological events such as heat and cold waves, heavy, concentrated rainfall, prolonged drought, and other phenomena. In recent years, the climate crisis has been compounded by the Covid-19 pandemic shocks, which severely hampered world economies and the quality of life of populations. The convergence of those crises prompted different countries to come up with new development strategies, combining economic recovery with a transition to carbon neutrality.

In light of that, the organizations Instituto Democracia e Sustentabilidade (IDS), BEI/Por Quê?, Arq.Futuro and Insper, with the support of Itaú Unibanco, have come together to host the seminar cycle “Green economic recovery.” The initiative is designed to spread awareness in Brazil of ongoing experiences in four different countries that are implementing actions to transition to carbon-neutral economies. It will consist of detail-rich seminars featuring guests who are spearheading the green economic recovery processes in their own countries. Hopefully, the event will spark debate on more ambitious policies that could help Brazil effectively begin its transition to a carbon neutrality.

This document outlines France’s experience in building an agenda that straddles climate action and development strategies. It begins with a discussion of France’s role in global emissions, stressing the impact of its political conjuncture on emissions and its relationship with the European bloc. Next, it presents a number of French policies toward carbon neutrality. Lastly, it poses key questions to help steer discussions during the seminar.¹

France in numbers	
Population [millions]	67
GDP 2020 [USD billion]	2,630
Emissions 2018 [MtCO ₂ e]	361
Emissions per capita [tCO ₂ e]	5.4
Global emissions per capita [tCO ₂ e]	6.5
Per capita GDP 2020 [USD thousand]	39.2

¹ Sidebar chart sources: [World Bank](#) GDP and population data; [Climate Watch](#) emissions.

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The role of France in global greenhouse gas emissions

As one of the leading European Union countries and the host to COP21, which culminated in the Paris Agreement², France has displayed a solid commitment to addressing climate change. Nevertheless, as shown in Figure 1, it remains responsible for a significant part of global greenhouse gas emissions, with per capita emissions that match global averages. Such equivalence is observed when one disregards Land Use Change and Forestry (LUCF) emissions, which include emissions resulting from deforestation and changes in land use patterns.^{3,4} When LUCF is factored in, French per capita emissions fall below the world average, since carbon sequestration in this sector surmounts emissions in the country.

Chart 1: France emissions with and without LUCF

	Unit	LUCF Not Included	LUCF Included
Emissions 2018	MtCO ₂ e	423	361
Share of global emissions	%	0.89%	0.74%
Emissions per capita France	tCO ₂ e / inhabitants	6.3	5.4
Emissions per capita world	tCO ₂ e / inhabitants	6.3	6.5

Source: Climate Watch and United Nations Food and Agriculture Organization ([FAOSTAT](#)), 2022. Chart by the author.

Even though its per capita emissions are on par with global averages, France is succeeding in reducing its emissions in absolute values over the past few decades, as shown in Figure 1. Between 1990 and 2000, France's emissions were roughly 480 MtCO₂e per year, with minor

² The Paris Agreement is a watershed in international cooperation to address climate change. It was outlined in 2015 during the United Nations Climate Change Conference (COP21) and became effective in 2016.

³ Emissions data relating to land use change and forestry are compiled by the United Nations Food and Agriculture Organization ([FAOSTAT](#)) and made available by *Climate Watch*.

⁴ Land use changes can include: conversion of natural ecosystem into farming areas, abandonment of pasture and plantations, changes in cultivation type, wood harvesting etc.

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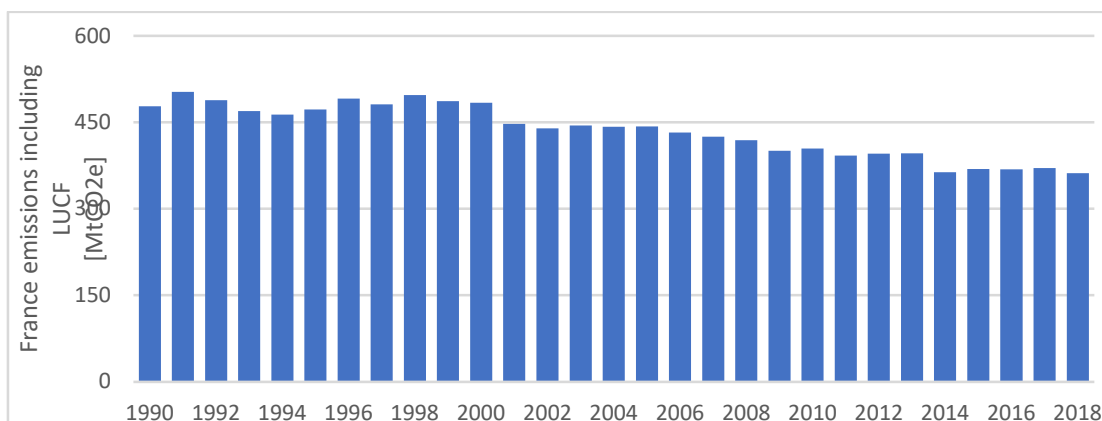


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variations, but since the turn of the century, the value started dropping each year, and from 1990 to 2018, emissions in France were down approximately 24%.

Figure 1: France emissions



Source: Climate Watch and United Nations Food and Agriculture Organization ([FAOSTAT](#)), 2022. Chart by the author.

France's emissions profile is slightly different than those of other developed countries, with agriculture accounting for nearly 20% of national emissions in 2018, second only to the transport sector at 30% (Figure 2). This profile is consistent with the role France plays in Europe, as it answered to nearly 20% of European agricultural output in 2019 and boasts the region's highest agricultural output.⁵ Other leading greenhouse gas emitting sectors in France are households, power generation, and manufacturing and construction, which account for respectively 15%, 15% and 9% of emissions.

⁵ European Commission. *Statistical Factsheet: European Union*. June, 2021. Available at: https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/farming/documents/agri-statistical-factsheet-eu_en.pdf. Accessed: May 24, 2022.

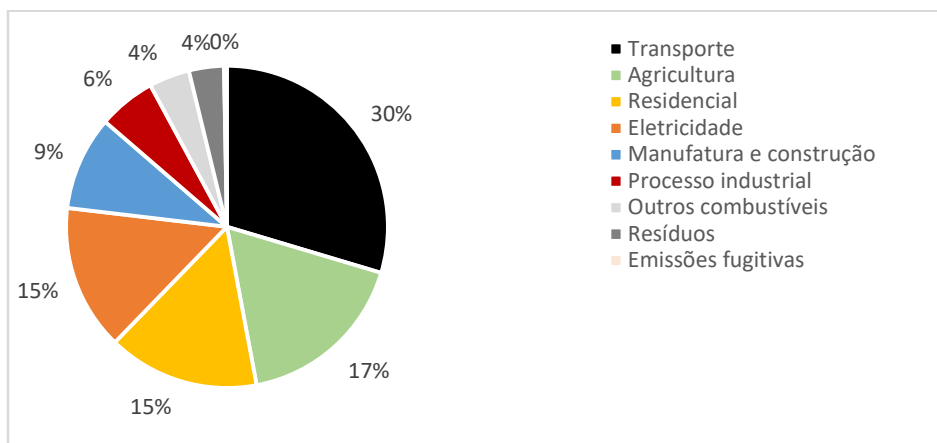
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Figure 2: Emissions by sector in France in 2018



Source: Climate Watch, 2022. Chart by the author.

Note: "Household" emissions include only the burning of fuel at households, i.e., electricity usage is included under "electricity." The classification does not factor in land use change and forestry.

The relatively low emissions from France's electricity sector are explained by the fact that the country relies heavily on nuclear energy generation, as shown in figures 3 and 4. Figure 3 shows that nuclear energy accounts for over a third of France's energy matrix. This decreased slightly in the past few years, yet nuclear power remains the most important source of energy in the country. Figure 3 also shows that the share of fossil fuels declined somewhat in the past few decades. Energy from the burning of coal, oil and natural gas accounted for 56% of the energy matrix in 2000. That dropped to 51% in 2020, i.e., down five percentage points in two decades. This was mostly due to a reduction in usage of coal and oil products, partly replaced by wind and solar power as well as natural gas, which, despite being less pollutant than coal, also plays a role in global warming. Figure 4 tracks power generation from each source and suggests a slight decline in overall power generation, particularly in 2020, the first year of the COVID-19 pandemic.

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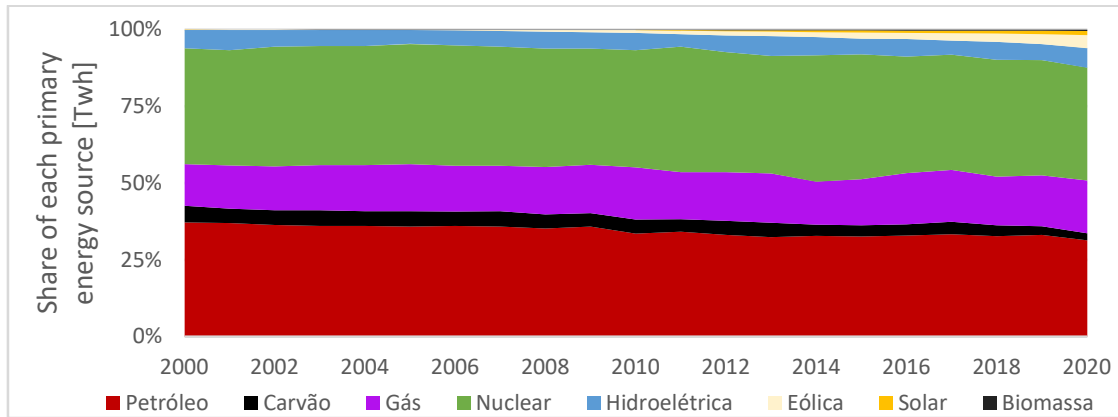


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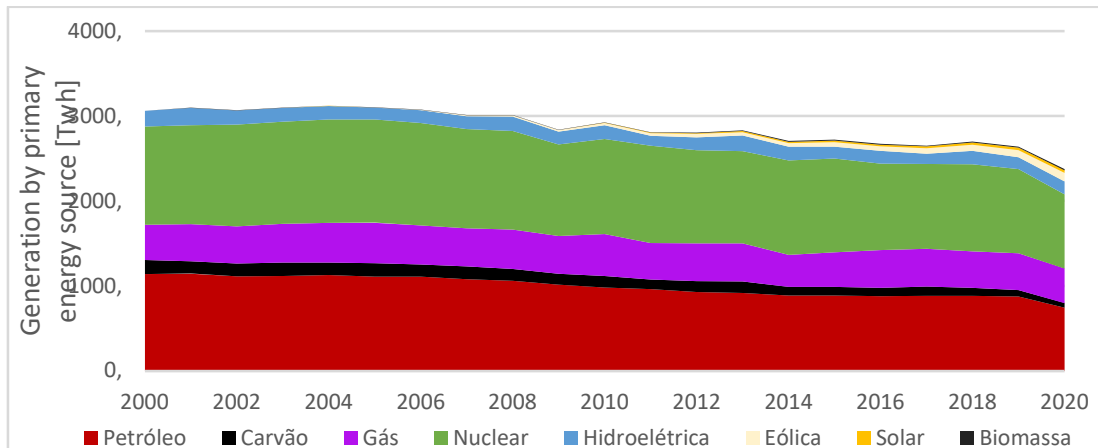


Figure 3: The share of each primary energy source in France in total power generation



Source: [Our World in Data](#), 2022. Chart by the author.

Figure 4: Primary energy generation by source



Source: Data structured by [Our World in Data](#) platform. Chart by the author.

National context and France's stance on the Paris Agreement

As a European Union member state in a leadership position, France complies with the European bloc's rules and provisions on climate. Those rules lay down distinct emission reduction targets for sectors covered or not covered by the European emissions trading market, the EU ETS (*European Union Emission Trading System*). The sectors covered by the EU ETS are mostly associated with electric energy generation and energy-intensive industries (refineries, iron and

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steel and others).⁶ The EU ETS sets regional emission limits that grow stricter over time, and sectors thus regulated are required to purchase and trade in emission licenses.⁷ Additionally, sectors not regulated by the EU ETS (transport, agriculture, some industries, waste management and others) are governed by a system known as effort-sharing regulation. This system sets specific emission reduction targets for each country, considering both the economic capability and ease of reducing emissions in each of the member-states.⁸

As a European Union member and the host to the United Nations Climate Change Conference 2015 (COP21) in Paris, France ratified the Paris Agreement in April 2016 alongside the 28 European Union member-states (now 27, since the United Kingdom's exit). The first Nationally Determined Contribution (NDC)⁹ presented by the European Union, and consequently by France, provided for a 40% reduction in greenhouse gas emissions between 1990 and 2030. However, the European bloc submitted a more ambitious climate target in 2020, whereby it aims for a 55% reduction in greenhouse gas emissions between 1990 and 2030 and pledges to achieve carbon neutrality in 2050.

France's president Emmanuel Macron, recently elected for his second term in office, stated that addressing climate change should be one of France's priorities in the next few years. Early on in his administration, he proposed to raise taxes on carbon in a bid to encourage a decrease in fossil fuel dependency. The move came under criticism, fueling discontent that led to what became known as "yellow vest" protests. The demonstrators argued that the carbon tax would disproportionately burden the lower- and middle-income working class. The wave of protests in France highlighted the political challenge posed by this type of stimulus to transitions to a carbon neutral economy.¹⁰

The "yellow vest" protests ultimately led the French government to conduct an experiment in participative democracy that saw 150 citizens from across the country randomly picked to join a Citizens Convention for Climate (CCC). The members of the CCC took different courses on climate change-related subjects and put forth 149 legislative changes to facilitate emission

⁶ European Commission. EU Emissions Trading System (EU ETS). Available at: https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_pt. Accessed: May 5, 2022.

⁷ The EU ETS adopts the regulatory model known as "cap and trade," where cap is the diminishing emissions ceiling, and trade concerns license sales and purchases.

⁸ European Commission. *Effort sharing 2021-2030: targets and flexibilities*. Available at: https://ec.europa.eu/clima/eu-action/effort-sharing-member-states-emission-targets/effort-sharing-2021-2030-targets-and-flexibilities_pt. Accessed: May 5, 2022.

⁹ *Nationally Determined Contributions* (NDC) are each country's agreed-upon contributions to addressing global warming under the Paris Agreement. The national targets put forth by each country in their respective NDCs are updated every five years.

¹⁰ Felix, B. France's Macron learns the hard way: green taxes carry political risks. *Reuters*, 02/12/2018. Available at: <https://www.reuters.com/article/us-climate-change-france-protests-idUSKBN1O10AQ>. Accessed: May 5, 2022.

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reduction in France. Although most of these measures did not come to pass, this citizen participation model is becoming increasingly relevant in national political debate.¹¹

Like elsewhere in the world, since the invasion of Ukraine, France has been ascribing higher priority to its energy security, with potentially detrimental consequences to its climate ambitions. The European Union as a whole is highly reliant on Russian natural gas. With the sanctions and the escalation of the fighting, countries began to tap into other fossil fuel sources to meet their energy needs. The work to become less reliant on Russian energy is part of a broader strategic ambition for the European bloc, and particularly the Emmanuel Macron administration in France, to reduce dependency on imported energy in decades to come.¹²

Paths in the transition to a carbon-neutral economy

The COVID-19 pandemic had a significant impact on the economy of France, which shrank by 8% in 2020 as case counts grew and social distancing measures were put in place to curb the spread of the coronavirus.¹³ Like other countries around the world, France implemented a bevy of social programs to address the economic and social impacts of the pandemic. One such action is “*Plan de Relance*,” an economic incentive program combining economic stimulus and climate action.¹⁴ Some 30% of the program’s funds (roughly €30 billion) are allocated to carbon neutrality-oriented programs.¹⁵ This plan includes direct investments in transport infrastructure, investments in energy-efficient buildings and green hydrogen technology development. Moreover, France created environmental requirements in return for relief to specific sectors. As a case in point, it conditioned the rescue of major enterprises like Air France and Renault to carbon neutrality-oriented actions.

Another sign that France is committed to climate action is the recently passed Climate Law, from 2021, which incorporates multiple points inspired by the proposals of the CCC. (Citizens Convention on Climate). The law sets out to reduce greenhouse gas emissions through policies involving financial incentives, the setting of standards and obligations, and the quest for an

¹¹ Phalnikar, S. “France’s Citizen climate assembly: A failed experiment?”. *Deutsche Welle*, February 16, 2021. Available at: <https://www.dw.com/en/frances-citizen-climate-assembly-a-failed-experiment/a-56528234>. Accessed: May 5, 2022.

¹² Mehring, L. France “Climate Concerns Have Been Usurped by Energy Security Concerns”. *Climate Scorecard*, May 8, 2022. Available at: <https://www.climatescorecard.org/2022/05/france-climate-concerns-have-been-usurped-by-energy-security-concerns/>. Accessed: June 4, 2022.

¹³ International Monetary Fund. 2021. *Policy Responses to Covid-19*. 02/07/2021. Available at: <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#U>. Accessed: April 10, 2022.

¹⁴ Green Economy Tracker. Available at: <https://greeneconomytracker.org/country/france>. Accessed: June 4, 2022.

¹⁵ France. Available at: <https://www.economie.gouv.fr/plan-de-relance>. Accessed: June 4, 2022.

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increasingly energy-efficient economy.¹⁶ In a bid to monitor and oversee the country's climate performance, the High Council on Climate (*Haut Conseil pour le Climat* – HCC) was created in November 2018 comprising specialists in climate science-related fields. This independent body advises the administration regarding climate policies and keeps track of the country's adherence to the emission targets it has agreed to.

Transport

The transport sector is one of the major culprits when it comes to emissions in France. A number of policies have been put in place to address that. The Climate Law provides that flights lasting less than two-and-a-half hours will be banned in the country whenever a train can be taken instead. Additionally, as of 2030, only vehicles emitting 95 g/km or less will be allowed to be sold. Subsidies will also be made available to drivers who switch out their internal combustion vehicles for cleaner options. In a bid to cut emissions and pollution levels at urban centers, the law also mandates the creation of low emission zones where high-emission vehicles will be prohibited in cities with populations of over 150,000 by the end of 2024.¹⁷

Energy

As mentioned earlier, France's energy policy was strongly affected by war in Ukraine. A champion of the European Union's energy independence even before the war, the country announced the construction of 14 new nuclear reactors to reduce its reliance on energy imports. The French trajectory indicates that nuclear power can be tapped into by the country as well as other European Union member-states as a path to achieving both carbon neutrality and energy independence. However, France's nuclear capacity falls short of meeting the entirety of demand (especially since sanctions on Russia were put in place), therefore fossil fuel power stations remain widespread. Presently, the country's wind and solar generation capacities do not suffice to meet its needs. However, president Macron has said that by 2030, he is aiming to increase land-based wind power production capacity twofold and solar power generation capacity tenfold.¹⁸ The Climate Law passed in 2021 also includes provisions designed to reduce energy sector emissions. These include prohibiting owners of properties with inadequate thermal

¹⁶ Breeden, A. "France Passes Climate Law, but Critics Say It Falls Short". *The New York Times*, 20/07/2021. Available at: <https://www.nytimes.com/2021/07/20/world/europe/france-climate-law.html>. Accessed: June 4, 2022.

¹⁷ Beaupuy, F. "France Cracks Down on Car, Home and Plane Emissions in New Law". *Bloomberg*, 20/07/2021. Available at: <https://www.bloomberg.com/news/articles/2021-07-20/france-cracks-down-on-car-home-and-plane-emissions-in-new-law>. Accessed June 4, 2022.

¹⁸ <https://www.climatecorecard.org/2022/05/france-climate-concerns-have-been-usurped-by-energy-security-concerns/>

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insulation from renting out their real estate starting in 2025. Besides, from mid-2022 on, fossil fuel advertisements will be banned in France.

Agriculture

Since France is the leading agricultural producer in the European Union, farming plays a key role in greenhouse gas emissions. The country pledged to reduce emissions from the sector and is rolling out policies to encourage low-carbon agriculture. In 2019, the government launched a low-carbon standard program whereby farmers employing such techniques can apply for an approved stamp. Approved farmers are eligible for financial incentives such as resources from enterprises looking to offset high emissions (carbon credits). The “*Plan de Relance*” program saw financial incentives given to farmers in exchange for getting their properties emission-tested (with up to 90% of test costs subsidized). These tests will enable bespoke strategies for each farm to achieve carbon neutrality.¹⁹

France’s recently approved Climate Law also includes measures to encourage low-carbon agriculture, including a proposed tax on nitrogen-based fertilizers that fail to meet certain standards, protection of forest areas, and encouragement of vegetable consumption with the adoption of vegetarian menus at public schools.²⁰

Key questions

1. What is the connection between “yellow vest” protests and the climate agenda, and how does that reflect the population’s expectations regarding climate policies?
2. What are the main mechanisms in France to support developing countries’ transitions to carbon neutrality? Are there specific agreements in place with Brazil, and what sectors show the greatest promise for bilateral cooperation between the countries?

¹⁹ Pistorius, M. “French farmers endorse carbon farming but highlight transition costs”. *Euractiv*, 18/11/2021. Available at: <https://www.euractiv.com/section/agriculture-food/news/french-farmers-endorse-carbon-farming-but-highlight-transition-costs/>. Accessed: June 4, 2022.

²⁰ Pistorius, M. “France’s climate law takes aim at fertilisers, meat on school menus”. *Euractiv*, 22/07/2021. Available at: <https://www.euractiv.com/section/agriculture-food/news/frances-climate-law-takes-aim-at-fertilisers-meat-on-school-menus/>. Accessed: June 4, 2022.

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