



EXECUTIVE SUMMARY

This report was commissioned by French Prime Minister Élisabeth Borne. It aims to develop a clearer understanding of the macroeconomic impacts of the climate transition, with a view to “better-informed decision-making”.

The report was prepared with input from around 100 experts from government bodies, economic institutes and the academic community. The work was carried out in the new institutional environment resulting from the creation of the General Secretariat for Ecological Planning (SGPE), and as the revised National Low-Carbon Strategy (SNBC 3) was being prepared. Issues raised in the November 2022 interim report¹ were explored in greater depth, and new questions were addressed. Eleven thematic reports, prepared as part of this exercise and under the sole responsibility of their authors, are published at the same time as this summary report.² The analyses and recommendations that follow draw on these contributions.³

The key messages are as follows:

1. Climate neutrality is achievable, but it will require a transformation on a scale comparable to an industrial revolution. Yet unlike past industrial revolutions, this transformation will be global, it will be faster, and it will be primarily driven by public policies rather than technological innovations and markets.
2. This transformation will be based on three economic mechanisms:
 - a. The redirection of technological progress towards green technologies
 - b. Sufficiency (i.e. reducing energy consumption over and above what would result from energy-efficiency gains)

¹ Pisani-Ferry J. and Mahfouz S. (2022), “L’action climatique : un enjeu macroéconomique”, *La Note d’analyse*, No. 114, France Stratégie, November.

² The 11 thematic reports are available (in French) [on the France Stratégie website](#). They cover the following themes: Well-being, Competitiveness, Loss and Damage and Adaptation, Indicators and Data, Distributive Issues, Inflation, Capital Markets, Labour Markets, Modelling, Productivity, and Sufficiency. See [Appendix 2](#).

³ However, the conclusions and recommendations contained in this report are the sole responsibility of its authors.

c. The substitution of capital for fossil fuels

3. There is no permanent trade-off between growth and climate. In the long term, redirecting technological progress could even lead to rates of green growth that are higher than past – or potential future – rates of fossil fuel-centred growth. The falling cost of renewables suggests that this new type of growth is a possibility.
4. In order to achieve our emissions-reduction targets by 2030, and thus reach climate neutrality by 2050, we need to achieve in 10 years what has barely been achieved in 30. This sudden acceleration implies that all sectors will have to contribute. To avoid slippages, the targets set for 2030 and 2050 should be supplemented by binding carbon budgets, at both the European and national levels.
5. In the coming years, emissions reductions will rely mainly on substituting capital for fossil fuels. Sufficiency will contribute to reducing emissions, but only by around 15%, or 20% at most. Sufficiency does not necessarily lead to lower growth. It can also be a source of well-being.
6. Decarbonisation will require significant additional investment in the next decade (more than 2 percentage points of GDP in 2030, or €70 billion, in comparison to a scenario without climate action). Despite recent progress, we are not yet on the path to climate neutrality.
7. Financing these investments will likely entail an economic and social cost between now and 2030, since they do not increase the growth potential. Of course, the extra investment will have a positive effect on growth by stimulating demand. But the transition away from fossil fuels will likely result in a temporary slowdown in productivity, estimated at one quarter of a percentage point per year. This is due to the redirecting of investment towards reducing reliance on fossil fuels rather than towards expanding production capacity or increasing its efficiency. It will also bring labour reallocations.
8. More broadly, the transition will affect well-being in ways that are inadequately measured by conventional indicators such as GDP. Regulations are no less painful than carbon pricing in this regard.
9. Understanding the effects of the climate transition requires the combination of different levels of analysis: technical, microeconomic (within relevant sub-sectors) and in some cases spatial, as well as macroeconomic (to understand overall trends) and international (given competitiveness and coordination issues). The tools used to assess the economic implications of climate action in all these dimensions require further improvement.
10. The climate transition is inherently a source of inequality. Even for a middle-class household, it costs the equivalent of around one year's income to renovate a house

and change the heating system, or to replace a conventional vehicle with an electric one. Even if the investment is cost-effective, thanks to the energy savings it delivers, it may not be affordable without government support. To be accepted politically and socially, the economic cost of the climate transition must be distributed fairly.

- 11.** Households and businesses will require substantial support from the public purse. Considering new expenditures and the temporary decline in revenue due to slower economic growth, the risk to public debt is approximately 10 percentage points of GDP in 2030, 15 percentage points in 2035 and 25 percentage points in 2040, assuming that the decline in energy-related revenue is offset in order to maintain a constant aggregate tax and social security contribution rate.
- 12.** Delaying mitigation efforts to keep a lid on public debt would be counter-productive. Absent technology breakthroughs, such a delay would only increase the cost to public finances and require even greater effort in subsequent years in order to achieve our climate targets. Public debt is not the main instrument for financing the climate transition. However, excessively restricting its use could further complicate the task for policy-makers.
- 13.** Beyond the necessary reallocation of expenditures (including of fossil fuel-related budgetary and tax expenditures), and in addition to public debt, a temporary increase in aggregate tax and social security contributions will likely be required in order to finance the climate transition. This could take the form of a one-off levy on the financial assets of the most affluent households. The magnitude of this one-off levy would depend on the anticipated public finance cost of the climate transition.
- 14.** The climate transition poses a risk of inflationary pressure over the next decade. Amid uncertainty over how inflation is measured, central banks will need to clarify their policy approach and spell out how they intend to respond to the price pressures induced by the transition. At the very least, they will need to take a cautious approach to monetary policy, and will likely need to temporarily raise their inflation targets.
- 15.** The U.S. Inflation Reduction Act (IRA) shows that, although climate ambitions may be converging, the same is not necessarily true of climate policies and strategies, which will likely remain divergent for some time to come.
- 16.** The EU faces competitiveness problems on several fronts, with high energy prices, an imperfect Carbon Border Adjustment Mechanism (CBAM) that limits carbon leakage but does not fundamentally address competitiveness concerns, and a challenge to the bloc's industrial strategy in the shape of the IRA. The EU cannot remain competitive while being all at once a champion of the climate, a champion of multilateralism and a champion of fiscal virtue.

- 17.** The division of labour between EU and domestic policies must be revisited. Currently, the EU sets the objectives but leaves a large part of the corresponding political and financial costs to Member States, while relying on soft coordination whose effectiveness is uncertain. The EU cannot afford to put forward a grand climate strategy while remaining vague about its actual implementation. It needs to define and implement a new climate governance framework that matches its ambition.
- 18.** The best approach to navigating the transition is to strike the right balance between subsidies, regulation and carbon pricing. The EU and France currently have a better blend of these three instruments than the United States and China. Despite the political and social challenges, it is important not to give up on price signals, which enable decentralised decision-making.