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Report on the Environmental Impact of the Central Government Budget

#PLF2022

SEPTEMBER 2021

General Introduction

This report has been prepared in accordance with Article 179 of the 2020 Budget Act 2019-1479 of 28 December 2019, which stipulates that the government submit to Parliament, as an appendix to the budget bill, **a report on the environmental impact of the budget**. It was prepared by the Sustainable Development Agency (CGDD) of the Ministry for the Ecological and Inclusive Transition and the Budget Directorate (DB), Tax Policy Directorate (DLF) and Directorate General of the Treasury (DGT), which report to the Ministry for the Economy, Finance and the Recovery (MEFR).

Starting with the 2021 budget bill, this document has replaced the ecological transition financing report (*Financement de la transition écologique : les instruments économiques, fiscaux et budgétaires au service de l'environnement et du climat*), which resulted from the merger of three budget documents produced pursuant to Article 206 of the 2019 Budget Act 2018-1317 of 28 December 2018. As a consolidated document, it provides an exhaustive overview of the resources dedicated to environmental policies.

Part I of this report presents the central government's environmental budgeting (or "green budgeting") exercise, in which budget appropriations and tax expenditures under the budget bill are tagged to show their environmental impacts. This section presents the main results, both on the whole and mission by mission. The tagging is done using a methodology developed jointly by the Inspectorate General of Finance and the General Council for the Environment and Sustainable Development (presented in a report dated 25 September 2019 entitled *A proposed methodology for green budgeting in France*).

Part II applies a different methodology than that used for the environmental budgeting exercise in Part I to provide a consolidated view of all public and private funding for the ecological transition.

Part III presents an overview of environmentally related public resources and tax measures, using an expanded version of the internationally recognised definition adopted by Eurostat and the OECD. This section also looks at the impacts of energy taxes on households and businesses, using models developed by France's Sustainable Development Agency (CGDD).

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PART I
Green Budgeting at the Central Government Level

Introduction

Origins and purpose of green budgeting

Implementation of green budgeting follows a two-track process.

The process is part of the **OECD initiative, the "Paris Collaborative on Green Budgeting," launched at the One Planet Summit with France's support and participation in December 2017**. France's contribution consists of using "green budgeting" to assess the alignment of the central government budget with France's international commitments, and the Paris Agreement in particular. Under the terms of the Agreement, France made a commitment to reduce its greenhouse gas emissions by 40% by 2030 (compared to the 1990 level), with the aim of achieving carbon neutrality in 2050. The Joint Taskforce from the Inspectorate General of Finance and the General Council for the Environment and Sustainable Development set up by the government submitted its report on green budgeting in September 2019. The government then decided to apply the proposed green budget tagging method to the central government budget, starting with the budget bill for 2021. The first green budget was published in September 2020. It laid the groundwork, presenting the tagging of budget appropriations and tax expenditures as favourable, neutral or unfavourable for the environment and their share of total central government expenditure. France has been one of the first countries to implement **this innovative practice of green tagging the central government budget**, which testifies to the aggressiveness of its green policies.

This novel process is also **a response to the demand for more transparent environmental information expressed by Parliament, civil society and citizens**. More particularly, the great national debate in 2019 revealed major expectations for improving access to environmental information and enhancing its usability. This determination was shared by Parliament, which insisted on the need for better accounting of the environmental impact of the central government budget. France's first green budget gave rise to many reactions and observations, testifying to the strong interest of elected officials and civil society in the process. These observations have been taken into considerations in this second edition in order to continue refining this tool.

Green budget tagging is a major step in making environmental information more usable and enhancing the transparency of fiscal information. France has been a standout in this area since its Constitutional Bylaw on Budget Acts came into force. Green budget tagging analyses the environmental impact of the central government budget and will inform law-makers prior to the budget debate. It is destined to become a decision-making tool, in keeping with the government's goal of greening the central government budget.

Improvements in the second report

This document uses the same green budget tagging methodology as the first report for the sake of stability and comparability. **This second edition includes some methodological refinements and new analyses.** The 2022 report has been supplemented and enriched with finer tagging of certain expenditures and clearer differentiation between expenditures tagged as neutral and the year's expenditures that have not been tagged because of methodological difficulties. It also includes a performance review, along with a presentation of the 2020 outturn.

Green budgeting is spreading internationally and at the local government level

More than ten countries now practice green budgeting.[1] France has received many requests for information from the European Union and other countries and international organisations since the publication of the first green budget, underlining the keen interest in French methodology.

Green budgeting is also used increasingly to bolster local governments' green policies. Local governments at all levels are increasingly seeing this practice as a means of objectively assessing the consistency of their fiscal choices with their goals. Some are inspired by the model used by the central government, while others develop their own models. Some local governments have expressed their need for support to develop a robust methodology that is adapted to local government budgets.

[1] OECD (2020). *Green Budgeting in OECD countries,* OCDE Publishing, Paris.

A. Green Budgeting Methodology

1. Methodological Principles

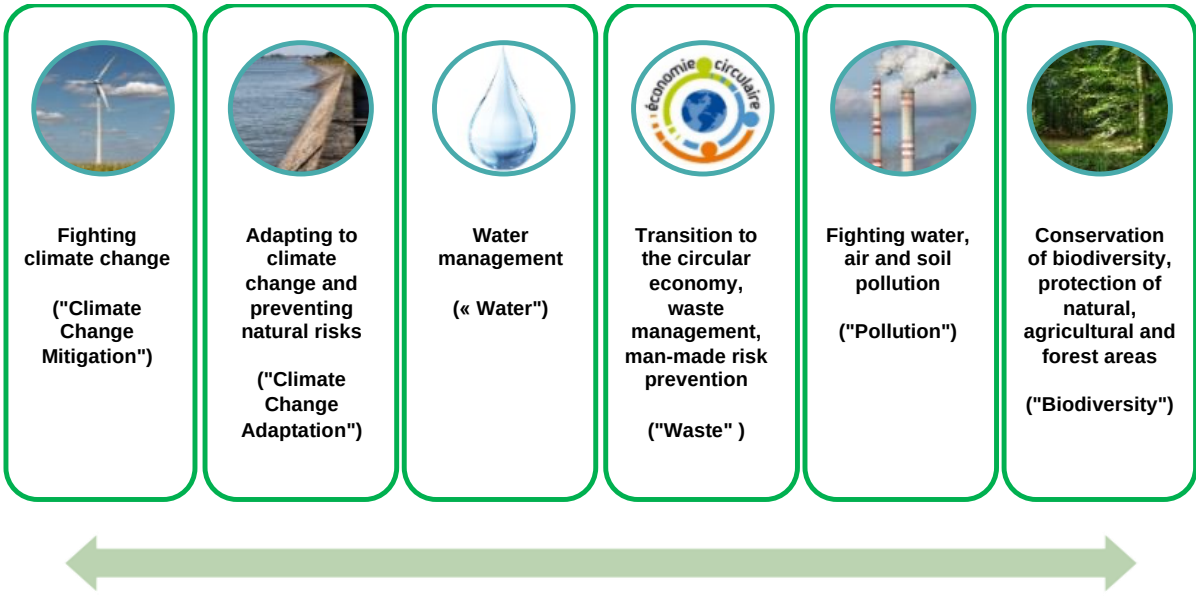
For its first green budget, the government applied the methodological fundamentals put forward in the Joint Taskforce's report dated 25 September 2019 (*A proposed methodology for green budgeting in France*). This second green budget follows the methodology used in the first and incorporates some changes in response to the observations made about the first green budget with regard to assessing some expenditures that are more complicated to tag.

1.1 Green tagging based on the classification of expenditures by purpose

The appropriations, earmarked taxes and tax expenditures for each mission under the central government budget were analysed and tagged using the **classification for presenting appropriations by purpose and by action and sub-action, where appropriate. This classification has been in use since the Constitutional Bylaw on Budget Acts came into force**. **This methodological choice determines the outcome** and may explain why changes in the classification lead to changes in tagging. Green budget tagging is therefore presented by action, or by sub-action where appropriate, for each programme and mission under the budget according to the six environmental objectives set out in Part C of this report (*Green Tagging of Government Expenditures by Mission*).

1.2 Environmental impact assessed for six environmental objectives

The classification method considers the multidimensional aspect of the environment by identifying the **impact of expenditures on six environmental objectives** that were inspired by the European taxonomy of activities: **Climate Change Mitigation. Climate Change Adaptation, Water, Waste, Pollution and Biodiversity**.

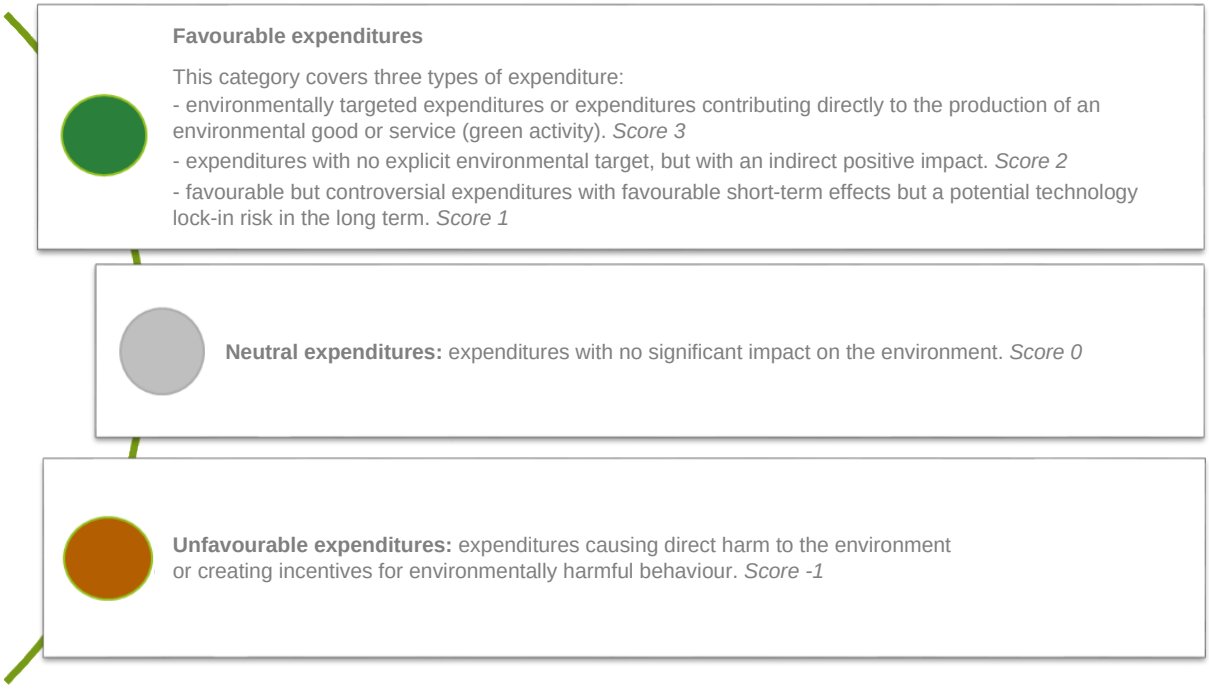


1.3 The overall tag for each expenditure may be favourable, unfavourable, neutral or mixed

A score of -1 to +3 is given to each expenditure for each of the environmental objectives according to the environmental impact of the expenditure (see below). For visual impact, this report only uses coloured dots to indicate unfavourable (brown dot), neutral (grey dot) or favourable (green dot) expenditures. The detailed numerical scores are not shown in this report, but they can be consulted on the open data portal of the Ministry for the Economy, Finance and the Recovery (data.economie.gouv.fr).

The scorecards for each mission include an estimate of "untagged" expenditures (see below) represented by a grey and white striped area in the expenditure ring charts.

Tags and colours for expenditures according to their environmental impact



An overall tag is then given to expenditures by action or sub-action depending on the total scores for all six objectives. Therefore, an expenditure may be tagged as:

- **favourable overall:** if impacts are favourable, or favourable and neutral, for all objectives;
- **unfavourable overall:** if impacts are unfavourable, or unfavourable and neutral, for all objectives;
- **mixed overall:** if impacts are simultaneously favourable and unfavourable and even neutral for different objectives;
- **neutral overall:** if impacts are neutral for all objectives. These expenditures are counted in the results and show in the expenditure ring charts on the scorecards for each mission under the budget (expenditures "with no impact") However, such expenditures are not tracked here to ensure greater usability of this report.

A clearer distinction between neutral expenditures and untagged expenditures

After the first green budget was published, some stakeholders expressed the need for clearer differentiation between expenditures with a neutral impact and those that were referred to as "neutralised" in the first green budget for lack of data or sufficient scientific understanding to assess their environmental impact. The first green budget tagged both types of expenditures with a grey dot.

The 2022 green budget makes a clearer distinction between:

- **expenditures tagged as "neutral"**, where the environmental impact is objectively deemed to be neutral (e.g. social transfers to households, most expenditure on central government payrolls and retirement pensions, sovereign expenditures, see below), which are still represented as grey in the report;

- **"untagged" expenditures,** meaning expenditures where environmental impacts cannot be assessed reliably or no consensus can be reached, given the current state of scientific knowledge or a lack of available data. At this point, such expenditures are digital technology expenditures, the levy on revenue paid to the European Union, most of the financial support given to local governments, support for electricity-intensive industries exposed to international competition, some operating expenditure (see below), some property expenditures and some of the expenditures for the "Invest for the Future" Mission. These expenditures are identified by the grey and white striped area in the budget mission ring charts.

Generally speaking, the principle of prudence governed the green budgeting exercise. Expenditures were not tagged when there were no sufficiently reliable or explicit data on their favourable or unfavourable impact.

1.4 Counterfactual green budget scenarios

In its report, the Joint Taskforce assessed the environmental impact of central government budget and tax expenditures for each of the six environmental objectives compared to a counterfactual scenario where the expenditures are not made or are reduced. The assessment relies mainly on budget documents and public reports. The purpose of this simple and operational approach is to propose an easily reproductible method and tagging that can be put to a debate without needing complex models or knowledge beforehand.

The interministerial working group responsible for drafting the green budget then applied the Taskforce's methodology to the entire central government budget. The Working Group reached a consensus on tagging expenditures to reflect the environmental and climate impact of an expenditure compared to a counterfactual scenario where the expenditure is not made (such as investment expenditures or incentives in the form of tax expenditures) or is reduced (such as expenditures on a public institution, assuming, for example, a cut in resources or in full-time equivalent employees). In the case of tagging the car-scrapping bonus, for example, it would be tagged as favourable for the Pollution Objective, since the counterfactual scenario would include the potential absence of this expenditure, which would lead to the vehicles causing the most pollution remaining on the road. The Working Group also used the more specific counterfactual scenarios drawn up by the Joint Taskforce when appropriate. In the case of expenditures on transport infrastructure, for example, the counterfactual scenario considered the diversity of modes of transport and the various energy sources used (the use of decarbonised energy or modes of transport with lower emissions than road transport led to tagging as favourable for the Climate Change Mitigation and Climate Change Adaptation objectives), along with the life cycle of infrastructures. Thus, all of the induced effects, including emissions, were considered during the production phase. In the case of some public policies, such as sovereign missions, the counterfactual scenario considers the possibility of substituting greener resources for the implementation of the public policy in question. In this respect, investment expenditures by the armed forces are deemed to be neutral, since current technologies do not enable greener investments to produce the same level of service. The working group used budget documents and existing research to tag expenditures under

the counterfactual scenarios, including academic research, research by the Sustainable Development Agency, inspectors' reports and social and economic assessments of infrastructure projects.

Other options that could be considered for baseline scenarios run up against objections in principle or feasibility problems, raising the risk of being unintelligible or less reliable for green budgeting. More specifically, it would be impossible to use an international environmental convention or quantified national environmental objectives as a benchmark. In the case of the climate objectives and the National Low-Carbon Strategy (SNBC), it would be impossible to consider green budget tags as indicators of sufficient expenditures on the strategy, since this convention does not define the required or desirable level of public investment, especially by the central government, to meet the carbon budgets. This means that assessing the compatibility of an expenditure with the National Low-Carbon Strategy would be the same as modelling the emissions induced by the expenditure to see if it is ultimately compatible with meeting the carbon budget of the sector in question. This would also require coming up with assumptions about infra-sector trajectories, and then about the contributions of different sources of public financing, which the strategy has not defined. Such a change in methodology would also run the risk of methodological inconsistency, since several counterfactual scenarios would coexist and have to be used for all six environmental objectives, even though national and international environmental agreements generally address one or two of these objectives. This would undermine the initial aim of balanced consideration of the environmental impacts for all six objectives.

In future green budgeting reports, Part II, which provides an overview of all public and private financing to promote ecological transition, including all of the climate investments and their adequacy with regard to the needs derived from the National Low-Carbon Strategy in a number of key areas, could be supplemented with a more specific estimate of the adequacy of *public* financing with regard to the country's climate objectives. The third part on environmentally related taxation presents effective carbon prices, using the OECD methodology. This part could also be supplemented to assess the differential between this price level and the value of climate action, as determined in accordance with the National Low-Carbon Strategy[2].

[2] CGDD (2020). *La tarification du carbone est-elle alignée avec nos objectifs climatiques ?*, Thema Essentiel. https://www.ecologie.gouv.fr/sites/default/files/Thema%20-%20La%20tarification%20du%20carbone.pdf

1.5 An innovative tagging and assessment methodology, supplemented as of this edition by a performance review

Green budget tagging is a new approach for analysing public policies. Public policy assessment is by nature a complex task, depending on the objectives of the policies analysed, since these objectives may be more or less explicit and are sometimes contradictory. The findings also depend on the timeframe of the assessment.

This means that tagging an expenditure as unfavourable is not enough to conclude it needs to be eliminated; it may respond to the requirements of another policy deemed to be a priority, such as public safety, balanced local development, equitable access to public services, or the availability of basic necessities. The value of green budget tagging is that it highlights such priorities, raises questions about the right policy tools and, if environmentally unfavourable expenditures need to be maintained, it may lead to efforts to mitigate their impact. In most cases, mixed expenditures are investment expenditures that have a favourable impact in the medium term with regard to climate goals, even though construction may harm the environment in the short term. This is the case for major mass transport infrastructure projects, for example.

The performance review in this second green budgeting report, covered in part D, presents a series of indicators showing the environmental performance of certain favourable, unfavourable and mixed expenditures. This provides a complementary dimension of the green budget for evaluation purposes. In addition to green tagging certain expenditures, the indicators can be used to assess their environmental effectiveness.

2. Scope of Green Budget Tagging

Box 1 – Spotlight on the Total Central Government Expenditures Target (ODETE)

The Total Central Government Expenditures Target stands at €495.1bn in the 2022 budget bill. This total includes the expenditures governed by the **discretionary expenditures rule** (€302.5bn in the 2022 budget bill in nominal terms) and the **levies on revenue paid to the European Union** and **transfers to local governments**. The latter include levies on revenue paid to local governments, earmarked accounts for local governments and the VAT revenue appropriated to region governments. The target also covers **expenditures under the Invest for the Future Programme** (PIA), along with expenditures on debt service, debt reduction and pensions (Policy Programmes 741 and 742), and other earmarked accounts. Expenditures for the "Pandemic Emergency Plan" Mission established in 2020 and continued in 2021 are also covered by the target. **Since the 2021 budget bill, the scope of the target has also included the "Recovery Plan" Mission.**

The scope of the budget appropriations and earmarked taxes is the same as the one used for the Total Central Government Expenditures Target (ODETE) in order to be consistent with the figures presented in the Budget Bill. These expenditures stand at €495.1bn in the 2022 Budget Bill in nominal terms. Earmarked taxes are for central government agencies. It is the impact of these expenditures that is examined. The scope of the green budget is broader than that stipulated in Article 179 (6) of the 2020 Budget Act, which called for assessment of the environmental impact of general budget expenditures. By applying the broader scope of the Central Government Expenditure Target, the government goes above and beyond the legal requirements.

Some budget programmes, primarily special appropriation accounts for financial transactions (such as loans), are excluded from the scope of Total Central Government Expenditures, which means they are not subject to green budget tagging.[3] This means that equity holdings are not covered. However, in this second edition of the report, they are explained in a box, with a view to promoting greater understanding and transparency.

In contrast to the analysis of the general budget missions by the Joint Taskforce, **the analysis of Total Central Government Expenditures Target leads to the tagging of new expenditures**, including levies on revenues paid to the European Union and to local governments, along with earmarked taxes, which have been included under the discretionary expenditures rule. On the other hand, **some of the expenditures identified by the Joint Taskforce have not been considered in the same way. With regard to central government agencies, only funds that pass through the central government budget**, meaning subsidies for public service obligations and earmarked taxes, have been tagged, whereas the Joint Taskforce's plan of work made it possible to tag some of the agencies' final expenditures.

All 471 tax expenditures have been tagged. These expenditures came to €91.4bn. Only tax expenditures with environmental impacts are included in "Mission Scorecards" (see below). There were 122 such tax expenditures representing a total of €11.44bn. Such tax expenditures are different from environmental public resources (see Part III), which come from taxes where one or more of the parameters (taxable goods and services, assessment procedures, taxable population) relate specifically and directly to one or more of the six environmental objectives cited above (e.g. royalties for use of government property or revenue from carbon quota auctions).

Furthermore, some of the tax arrangements that the Joint Taskforce counted as tax expenditures do not really correspond to that category because they do not constitute deviations from standard tax rules. Therefore, they are not included in the Green Budget. This methodological choice has no bearing on the assessment of the desirability of changing such tax arrangements, since their classification as tax expenditures has no effect on their environmental impact. It reflects the incompleteness of a green tax policy based solely on a review of tax expenditures, since it fails to account for the overall impact of all tax provisions (see Part III-A on using taxation as an ecological and energy strategy tool and Part III-B-3 on the more specific issues relating to energy taxes).

[3] The excluded special appropriation accounts are: Contribution on property transfers to reduce central government debt (Policy Programme 721); Central government equity holdings; Pensions (Policy Programme 743); Road traffic and parking enforcement (share appropriated to reduce central government debt); International monetary agreements; Advances to various central government agencies or bodies managing public services; Advances to local governments; Loans to foreign countries; Loans and advances to private individuals and organisations; Renewal of hydroelectric concessions; Hedging central government financial risks; Central government debt and cash management; Launch of certain aeronautical materiel and certain complex weapons and materiel; Commercial activities on government property; Financial support for foreign trade; Central government and military supplies of oil products and related goods and services; Industrial operations of central government aeronautics facilities; Prison canteens and labour; Prison industry agency; Mint; Transactions with the International Monetary Fund; Currency translation gains and losses; Loans and advances to private individuals and organisations; Advances to various central government agencies or bodies managing public services;

3. Methodological Conventions

3.1 Methodological conventions maintained for the 2022 Budget Bill

More specifically, the following methodological conventions have been maintained for the 2022 Budget Bill. Many of them were defined by the Joint Taskforce and had been used to tag budget and tax expenditures in the 2021 Budget Bill.

- **Expenditures that have an impact on income only are considered neutral.** Social transfers to households, which account for a large share of the central government budget, have been tagged as neutral. On the other hand, tax arrangements aimed at influencing households' behaviour and changing their environmental footprint have been green tagged. An example is the reduced VAT rate of 5.5% on energy efficiency improvements.

- **General transfers to businesses with no environmental requirements have been classified as neutral.** This is the case for the Research Tax Credit, for example. This does not mean that this tax expenditure does not ultimately finance some projects that have an impact on the environment. On the other hand, specific subsidies for businesses with a negative environmental impact have been tagged as unfavourable. This is the case for certain subsidies for the agricultural sector and the transport sector. In addition, tax arrangements aimed at influencing businesses' behaviour and changing their environmental footprint have also been green tagged (e.g. reduced rates of domestic consumtion tax on energy products for certain business sectors).

- **Payroll expenditures have also been tagged as neutral.** An exception is made for the payroll expenditures of agencies and administrative authorities with explicit environmental objectives, which are tagged as favourable for the objective in question. This primarily concerns some payroll expenditures under Policy Programme 217 "Conduct and Oversight of Ecology, and Sustainable Development and Mobility Policies", under the responsibility of the Ministry for the Ecological Transition, along with some payroll expenditures under Policy Programme 206 "Food Safety and Quality" and Policy Programme 161 "Civil Security".

- **It is not possible to tag the levy on revenue paid to the European Union this year, but it should be tagged in the third edition of the Green Budget**, following publication in late 2021 or early 2022 of the European Commission's report on changes to its green tagging methodology. The information in the report could then be used for accurate tagging of the levy (see Box 5 "Environmental Impact of the European Union Budget").

- **The levies on revenue paid to local governments and the grants recorded as part of the "Relations with Local Government" Mission have not been tagged this year.** Generally speaking, financial support for local governments cannot be tagged using the green budget methodology since, for the most part, it comprises block grants that local governments can use at their own discretion. By way of an exception, research was done for this second edition of the Green Budget for the purpose of defining a tagging methodology for grants recorded as part of the "Relations with Local Government" Mission. These grants include the Local Investment Support Grant (DSIL), the Infrastructure Grant to Rural Areas (DETR), the *Département* Investment Grant (DSID) and the Urban Policy Grant (DPV). The use of these grants must comply with the objectives set out in national circulars and they are distributed by the *Préfets*. The findings of this research concluded that the multitude of projects financed by these grants means that they cannot be attributed to a specific action or sub-action in the budget (see Box 4 "Central Government Financial Support for Local Government").

- A set percentage of budget and tax expenditures supporting construction of new housing is tagged as unfavourable, as proposed by the Joint Taskforce. A **"land take" share is defined to account for the unfavourable impact of expenditures on new housing in terms of loss of land to soil sealing**, which is unfavourable for the Biodiversity Objective. An unfavourable tag is also attributed for the **Climate Change Mitigation Objective** to account for the emissions

from new construction, along with the emissions linked to land take itself, which releases carbon trapped in the soil, and the emissions generated by the resulting travel, which are deemed to be greater than the emissions prevented by energy efficiency improvements. However, the impact on climate change mitigation will also be attenuated by the greater environmental efficiency of new buildings, especially after the new 2020 environmental regulations come into force. Further research is planned to improve quantification of the overall impact of these different effects and to assess the specific impact of new housing construction. **On the other hand, the "non-land take" share, which means the remainder, is neutralised for all the other objectives.**

- **The "land take" share for each incentive differs depending on the type of operation financed** (e.g. 35% for zero-interest loans, 20% for most other tax expenditures to finance multi-family dwellings), depending on the type of housing being financed (single-family, multi-family), and based on the report by the Sustainable Development Agency and the Data and Statistical Research Department (2017). The Joint Taskforce had already used this report, which provides average land take shares for each type of building. This share may be revised in the future, depending on changes to the incentives. The unfavourable "land take" share of the tax expenditure on zero-interest loans has diminished since 2017, and will continue to do so in the coming years. This smaller share is the result of reforms that came into force in 2018 and reduced the tax breaks in zones B2 and C (medium-sized towns and rural municipalities). The reforms changed the distribution of zero-interest loans between single- and multi-family dwellings with a larger share financing the latter and reducing land take for new housing.

- **The central government agencies subjected to green budget tagging are those funded out of the central government budget** via subsidies for public service obligations, transfers and earmarked taxes. This scope corresponds to that of the green budget stipulated in Article 179 of the 2020 Initial Budget Act and, more generally, to the scope of the data on the agencies included in the reports appended to the Budget Bill. It is also based on technical reasons, such as the timeline for adopting the agencies' initial budgets, which are not available when the Budget Bill is presented to Parliament, and the risk of double counting arising from the consolidation of all of certain agencies' funding and reciprocal payments between agencies. This convention also means that the amounts presented are consistent with those presented in the Budget Bill and in the Annual Performance Plans (PAPs).

- For lack of any consensus on the environmental impact of digital technology at this point, expenditures on computerisation of services and processes, such as the roll-out of e-documents, or the construction of new networks, including the "High-Speed Broadband Plan", are not tagged. Research into the environmental impact of digital technology as part of the "Digital Technology and Environment" roadmap overseen by the Ministry for the Ecological Transition and the Ministry of State for the Digital Transition and Electronic Communications, will enable the Interministerial Green Budget Working Group to refine its analysis in the coming years and may lead to a revision of this convention if appropriate (see Box 8 "Digital Technology Expenditures").

3.2 Tagging enhancements and changes for the 2022 Budget Bill

The Interministerial Working Group's work and performance meetings with the ministries in the first half of 2021 made it possible to refine budget green tagging with adjustments to several methodological conventions that were temporarily adopted for the 2021 Budget Bill. All of the tagging changes made between the 2021 Budget Bill and the 2022 Budget Bill are shown in Appendix E ("Table of Tagging Changes between the 2021 Budget Bill and the 2022 Budget Bill"), **to ensure traceability from one year to the next**.

Enhanced tagging

- All operating costs were neutralised in the first green budgeting exercise because they are difficult to identify under the classification by purpose used to present the budget. However, the 2019 outturn data were analysed and presented using the central government chart of accounts (PCE) and the tags proposed in the Joint Taskforce's Green Budgeting report. The 2022 Green Budget has maintained this method and refined it. The outturn totals and tags for each category of each ministry's current operating expenditures are presented in Box 2 "Operating Expenditures".

- The first Green Budget tagged expenditures on property under certain specific Policy Programmes and actions (renovation expenditures on administrative buildings under Policy Programme 348, expenditures for thermal insulation of public buildings under the Recovery Plan Mission under Policy Programme 362, along with certain actions under Policy Programme 135, Policy Programmes 145, 174 and 123). It was feasible to tag these expenditures using the green budgeting methodology because they represented the total appropriations for the tagged actions. This edition of the Green Budget tags expenditures under the earmarked account for Government Property Management (Policy Programmes 721 and 723). On the other hand, further methodological research will be done to tag the rest of property expenditures in future editions where possible. These untagged expenditures are distributed over some fifty policy programmes and, like operating expenditures, they are scattered between many actions, where they often represent only a small fraction of the expenditures on those actions.

Other tagging changes

The other changes proposed for green tagging the 2022 Budget Bill will refine the tagging of some actions or use simplified methodology:

- In the case of action 174-03 "Subsidies for the Procurement of Clean Vehicles" under the "Ecology and Sustainable Development and Mobility" Mission, this edition differentiates the tagging between two incentives (car-scrapping bonus and automobile bonus) under the action. This differentiation refines the tagging of this expenditure, which was originally tagged as favourable for the Climate Change Mitigation, Climate Change Adaptation and Pollution Objectives and neutral for the other three objectives. The main changes are the neutral tags for these two incentives with regard to the Climate Change Adaptation objective. Even though they help make the cars on the road greener, there is no research into their impact on behaviour that would make them compatible with climate change adaptation. The car-scrapping bonus is also tagged as unfavourable with regard to the Waste objective, because of the resulting increase in the number of vehicles scrapped and the shorter average lifespan of vehicles. This means the overall tagging of the car-scrapping bonus is mixed.

- Action 159-12 "Geographical and Cartographical Information," under the "Ecology and Sustainable Development and Mobility" Mission, was not previously tagged. It is now tagged as favourable in consideration of its favourable contributions to certain objectives, such as research on forestry inventory or its documentation of water networks.

- Action 159-13 "Meteorology" under the "Ecology and Sustainable Development and Mobility" Mission covers expenditures on subsidies for the public service obligations of the national weather office, Météo-France. This expenditure is tagged as favourable for the Pollution Objective to give a better account of the contribution the office makes to improving knowledge about air quality.

- Action 134-23 "Manufacturing and Services" under the "Economy" Mission was previously tagged as neutral for all objectives. It is now included in the "untagged" category in view of the scale of the appropriations under this action for carbon offsets (€487.5m in the 2022 Budget Bill, out of a total of €489.8 in payment appropriations for this action). Even though the Inspectorate General of Finance Taskforce had tagged this expenditure as unfavourable, the tag given last

year was neutralised ("untagged") for several reasons, such as the use of lower-carbon energy sources and protection against carbon leakage.

- By reducing the relative price of electricity, this budget expenditure enhances policy incentives for electrification of industrial processes, thereby reducing their carbon footprint compared to processes relying on fossil fuels owing to the energy mix used to produce electricity. Furthermore, in the absence of such measures to reduce the cost of electricity, which is one of the main factors of competitiveness in electricity-intensive industries, production might be moved offshore to countries such as China, where electricity is less expensive but generally produces more carbon emissions. This reasoning considers the indirect impact of the measure.

- This conservative approach has been maintained for the second edition of the Green Budget. The European Commission's recent assessment of these State aid measures[4] does not find empirical proof of a positive impact on climate change from such carbon offsets and highlights the growing risk of carbon leakage. Therefore, the tax expenditures to support electricity-intensive industries are classified as "untagged".

- Action 206-08 "Food Health and Safety" under the "Agriculture, Food, Forests and Rural Affairs" Mission were previously tagged as neutral for the Water and Waste objectives. They are now tagged as favourable because of the purpose of the expenditures (support for short food distribution channels and for locally produced food for school lunches).

- Sub-Action 110-01-39 "Subsidised Loans to International Institutions and Funds" under the "Official Development Assistance" Mission were tagged as neutral for all objectives in the first edition of the Green Budget. This edition tags the expenditure as favourable for all objectives so that the subsidies are tagged the same way as the funds that they go to, which are mostly aimed at supporting sustainable development. Sub-action 110-02-21 "Trade subsidies for developing countries" was previously tagged as neutral for all objectives. It is now tagged as favourable for all objectives. All of the projects financed focus on sustainable development and 50% of them have a direct environmental objective.

- Action 1 "Support for the nuclear activities of the Alternative Energies and Atomic Energy Commission" under Policy Programme 190 "Research on energy and sustainable development and mobility" was tagged as favourable for the Climate Change Mitigation objective, but unfavourable for the Waste objective in the first edition of the Green Budget. The tag for the Waste objective was revised from unfavourable to neutral in view of the activities financed under this action and to incorporate the findings of the European Commission's Joint Research Centre report by independent experts published in March 2021 under the title of "Technical assessment of nuclear energy with respect to the DNSH criteria of the Taxonomy Regulation".

- This edition simplifies the tagging method for the "Research and Higher Education" Mission used in the first Green Budget. The tag in the first edition had been determined by applying percentages to the subsidies for public service obligations paid to research agencies, based on the agencies' own estimates of the purposes of their research expenditures. The estimate was based on sampling that is not reproduceable from one year to the next. This second edition of the Green Budget relies on the Research and Higher Education Mission's own tagging of the action in order to provide a more exact accounting of the environmental impact of certain expenditures (see the Mission Scorecard and Appendix E "Table of Tagging Changes between the 2021 Budget Bill and the 2022 Budget Bill").

[4] European Commission (2020). *Impact assessment on Guidelines on certain State aid measures in the context of the system for greenhouse gas emission allowance trading post 2021*, 21 September 2020, Brussels. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020SC0194&from=SV)

The green tagging methodology for the central government budget in this second Green Budget, as in the first, follows a set of conventions. Some of these conventions are conservative or provisional pending further research. The methodology also relies on the presentation of the central government budget by purpose, which means that an action may be tagged as neutral because it is too complex and expenditures on it may lead to contradictory environmental impacts. These are some of the reasons for the large share of expenditures tagged as neutral.

Furthermore, the quality of the tagging may change over time and be refined based on feedback from Parliament and other stakeholders, think tanks, agencies and specialised institutions dealing with environmental issues.

Changes in the make-up of government expenditure itself could also lead to a review of the green tagging of certain actions, as is the case for increasingly stringent environmental requirements attached to certain measures.

Therefore, the findings of this second Green Budget, like those of the first, need to be considered in light of these methodological caveats, and as one step in a changing and traceable process of improvement over the years. The purpose of Appendix 1 of this report is to provide a transparent account of the year-to-year changes in classifications and tagging methods.

B. Summary of Green Tagging of the 2022 Central Government Budget (Expenditures Covered by the Total Central Government Expenditures Target (ODETE))

The expenditures covered by the Total Central Government Expenditures Target (ODETE) set out in the 2022 Budget Bill stand at €495.1bn. **The expenditures in that total that have an environmental impact came to €42.0bn, or €53.4bn if we include tax expenditures**, out of a total of €586.6bn in budget and tax expenditures analysed.

Budget appropriations and earmarked taxes that are tagged as neutral or not tagged came to €453.1bn, or 92% of the expenditures covered by the Total Central Government Expenditures Target. Most of these items are neutral expenditures, with €354.7bn tagged as neutral and €98.5bn not tagged. Tagging of tax expenditures shows that 86% are tagged as neutral (€78.4bn), and 2% are not tagged (€1.6bn).

Expenditures that have an environmental impact can be broken down into three categories:

First, "green" expenditures, meaning expenditures that are favourable for the environment with regard to at least one environmental objective, without being unfavourable to any of the others. **With the exception of appropriations for the "Recovery Plan" Mission, green expenditures have increased steadily, rising from €29.8bn in 2020 to €31.4bn in 2021 and will stand at €32.5bn[5] in 2022** (see chart).

The *France Relance* recovery plan exceptionally added €6.6bn in expenditures in 2021 and €5.7bn in 2022 under the "Recovery Plan" Mission.

The budget appropriations that are favourable for the environment mainly concern:

- expenditures on developing renewable energy sources (€6.9bn in the 2022 Budget Bill), green technologies (€1.0bn under the "Recovery Plan" Mission and decarbonisation of industry (€0.3bn under the "Recovery Plan" Mission);

- expenditures to support energy transition (€2.2bn in the 2022 Budget Bill) and, more particularly, the energy renovation bonus;

- earmarked taxes for water agencies €2.2bn) and special appropriations for conserving biodiversity and fighting land take (€0.5bn under the "Recovery Plan" Mission);

- expenditures on scientific and technological research on the environment and energy (€2.0bn), and financing for the National Research Agency (€0.9bn);

- a share of Official Development Assistance (€2.0bn);

- expenditures for the development of green infrastructures and mobility (€1.4bn under the "Recovery Plan" Mission) and the €0.8bn share of earmarked taxes for the Agency for Transport Infrastructures Funding directed to the most environmentally-friendly projects (including rail and mass transport operation);

- expenditures for sustainable management of agriculture, forestry and land (€0.7bn outside of the "Recovery Plan" Mission and €0.7bn under the "Recovery Plan" Mission);

[5] This is less than the amount shown by the first edition of the Green Budget in the 2021 Budget Bill. The main reason for this is the tagging changes summarised in Appendix E "Table of Changes to Green Budget Tagging between the 2021 Budget Bill and the 2022 Budget Bill". Furthermore, the tagging in this second Green Budget refers to the 2021 Initial Budget Act and not the 2021 Budget Bill.

- the subsidy for public service obligations paid to ADEME, the French Environment and Energy Management Agency (€0.6bn).

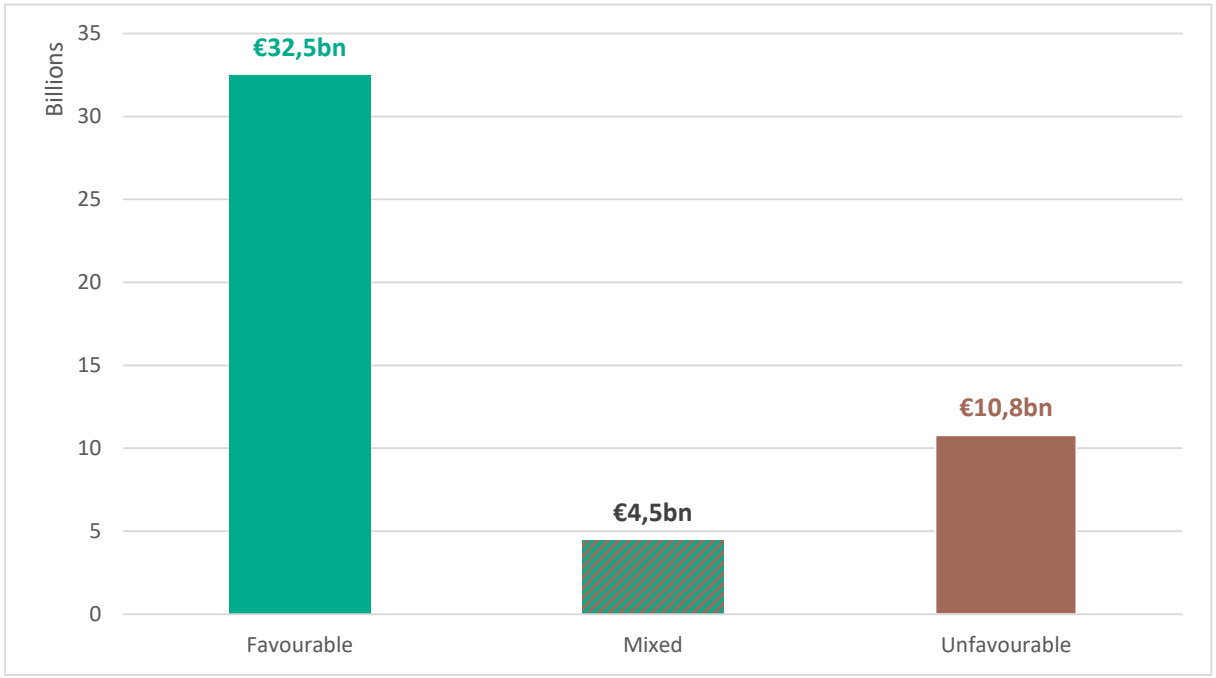
Tax expenditures accounted for €3.4bn in "green" expenditures. The largest of these expenditures concern the reduced VAT rate of 5.5% for energy efficiency improvements (€1.5bn); tax breaks on existing housing stock (€0.3bn); lower rates of the domestic tax on diesel oil consumption (€0.2bn), along with lower electricity prices (€0.2bn) for mass transport.

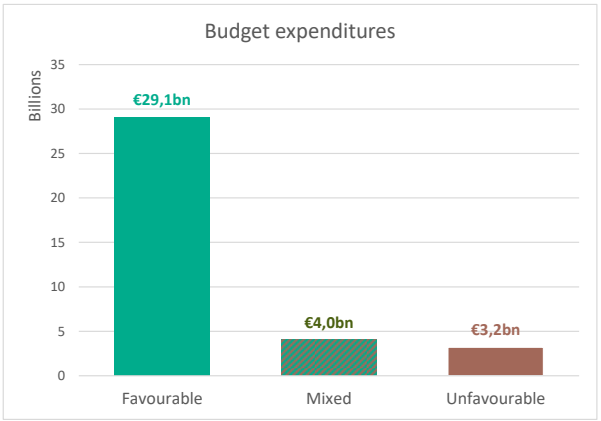
The next category concerns €4.5bn in "mixed" expenditures, which are favourable for the environment with regard to at least one of the objectives, but have negative effects for one or more other objectives. This category mainly covers expenditures on transport infrastructures included in the general budget or paid by agencies. This includes earmarked taxes for major infrastructure projects, such as the *Société du Grand Paris* (€0.8bn in the 2022 Budget Bill) or the share of tax revenue earmarked for the Agency for Transport Infrastructures Funding for major rail and waterway projects, such as the Seine-Nord Europe Canal (totalling €0.5bn in the 2022 Budget Bill). These projects cause land take and produce waste, but they are also favourable for the reduction of greenhouse gas emissions in the medium term by promoting means of transport that produce less pollution. Investment expenditures for rail transport stand at €2.6bn.

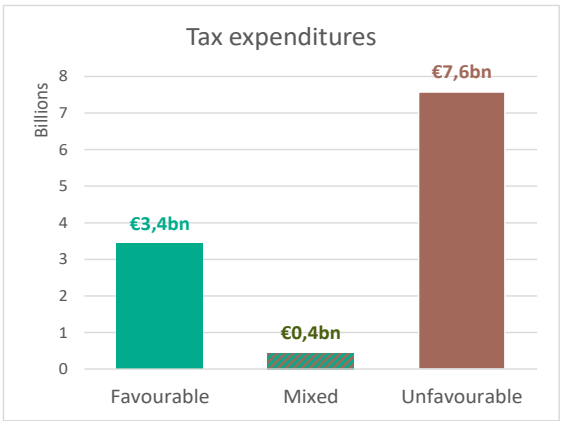
This brings the 2021 expenditures that are favourable for at least one environmental objective up to €42.7bn.

The last category concerns €10.8bn in expenditures with an unfavourable impact on at least one of the environmental objectives and no favourable impact on any of the others, which is virtually stable compared to €10.6bn in the 2021 Initial Budget Act. This category mainly concerns tax expenditures (€7.6bn), such as exemptions or reduced rates for domestic taxes on the consumption of energy products (€6.4bn) or else tax breaks on new housing stock, which accounts for some land take (€0.9bn). In budget terms, a distinction is made between expenditures to support energy production in areas that are not connected to the national grid (€1.5bn) or investment expenditures for aviation financed out of the specific budget for "Aviation Control and Operations" (€0.3bn).

Summary of the "Green Budget Tagging" of the Central Government Budget (excluding the "Recovery Plan" Mission)







C. Green Tagging of Government Expenditures by Mission (2022 Budget Bill)

1. Environmental Impact Summary by Mission

Methodological explanation about budget appropriations and earmarked taxes:

Some of the figures from the 2020 budget outturn and the 2021 Initial Budget Act have been restated and are estimates. This has been done to make them comparable to the figures presented in the 2022 Budget Bill format. This means adjusting for the main changes in scope and transfers made between 2020 and 2022, as well as restating cost-sharing contributions in accordance with the 2020 budget outturn data.

For example, the €62.3m in expenditures on postage subsidies for print media have been transferred under the 2022 Budget Bill. They had been charged to Action 4 of Policy Programme 134 “Business Development and Regulation” in the 2021 Initial Budget Act, but they are now charged to Action 2 of Policy Programme 180 “Support for Print Media”. The amount in the 2021 Initial Budget Act shown on the Mission Scorecard for “Media, Book Publishing and Cultural Industries” includes this transfer, making it €62.3m greater than the amount shown in the format used for the 2021 Initial Budget Act.

Actions and sub-actions that are not tagged are shown by the grey and white striped areas in the ring charts. These actions consist mainly of expenditures that cannot be tagged during the budget-making process and include digital technology, property management and operating expenditures. These three types of expenditures also occur under many other actions. The actions selected only represent an estimate of these expenditures.

Methodological explanation about tax expenditures:

The cost of measures in 2020, 2021 and 2022 is the cost presented in Volume 2 of the Ways and Means appended to the current Budget Bill. This is the actual cost for 2020, the cost forecast adjusted for the new legislation passed since the previous Budget Bill for 2021, and the forecast, including the provisions set out in the Initial Budget Bill for 2022. When the 2022 figure has not been determined, the cost shown is the most recent figure known from 2020 or 2021.

*: The cost shown is not the total cost of the tax expenditure. A set percentage is applied to account for the “land take” share of expenditures on new housing.

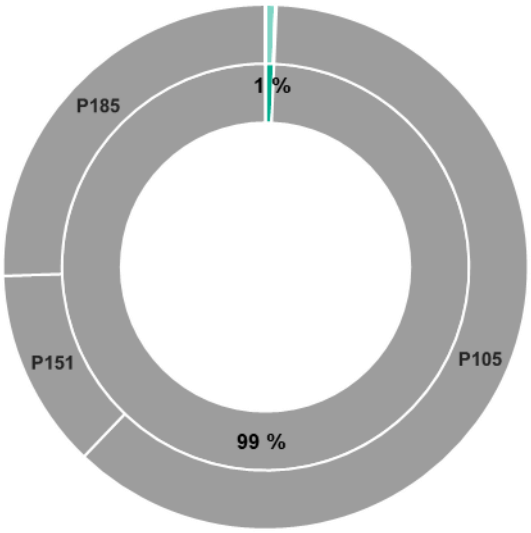
EXTERNAL AFFAIRS

Ministry for Europe and Foreign Affairs

Resources in 2022

Budget appropriations: €2.82bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations :

Favourable : €0.02bn

Mixed : -

Unfavourable : -

Neutral : €2.80 bn

Not tagged : -

The environmental impact of the "External Affairs" Mission is mainly neutral. The only appropriations tagged as favourable for all environmental objectives are those for foreign policy actions relating to sustainable development and fighting climate change, along with international contributions towards attaining environmental objectives (€19.2m in the 2022 Budget Bill).

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P105	International contributions towards attaining environmental objectives	€17.0m	€16.1m	€16.8m	●	●	●	●	●	●	Favourable
P185	Sustainable Development Goals	€1.5m	€3.2m	€2.4m	●	●	●	●	●	●	Favourable

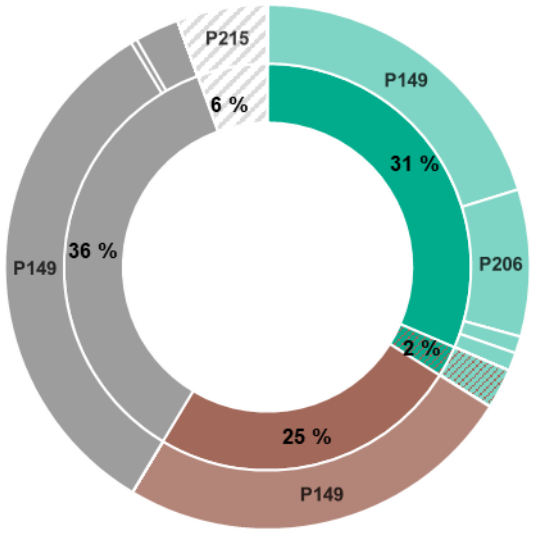
AGRICULTURE, FOOD, FORESTS AND RURAL AFFAIRS

Ministry for Agriculture and Food

Resources in 2022

Budget appropriations: €2.89bn
Earmarked taxes: €0.41bn
Tax expenditures: €2.48bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €1.44bn

Mixed : -

Unfavourable : -

Neutral : €1.53 bn

Not tagged : €0.32bn

Tax expenditures :

Favourable : €0.38bn

Mixed: €0.14bn

Unfavourable: €1.43bn

Neutral: €0.54bn

Not tagged: -

Some 44% of the appropriations and earmarked taxes for the "Agriculture, Food, Forests and Rural Affairs" Mission have an environmental impact. The appropriations, earmarked taxes and tax expenditures with a favourable environmental impact (€1.82bn in the 2022 Budget Bill) are primarily for preserving the biodiversity of crops and supporting the ecological transition of agriculture, including more environmentally-friendly production methods. This category mainly covers measures to promote sustainable forest management (€0.3bn in the 2022 Budget Bill) and measures to promote balanced and sustainable land management (€0.4bn in the 2022 Budget Bill). The latter action finances support for agricultural transition, such as agri-environmental and climate measures to offset the added costs of environmentally-friendly practices and to support organic farming. Furthermore, the "Food Quality and Food Supply" action has been retagged as favourable for the Water and Waste objectives. Several tax expenditures, such as the 20% exemption from local property tax on land used for farming (€106m) and the tax credit for agricultural businesses using organic production methods (€69m) also promote environmentally-friendly actions and practices. However, in absolute terms, tax expenditures relating to this mission are mainly tagged as unfavourable for the environment because of the unfavourable impact of the reduced rate that farmers pay for the domestic tax on the consumption of energy products (€1.4bn in the 2022 Budget Bill).

Green Tagging in Detail

Budget appropriations		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P206	Cross-cutting actions	€75.8m	€83.1m	€86.7m	○	○	○	○	●	●	Favourable
P775	Development and transfer	€60.4m	€60.0m	€60.4m	●	●	●	●	●	●	Favourable
P206	Disposal of animal carcasses and by-products	€2.9m	€4.0m	€4.0m	○	○	○	○	●	●	Favourable
P775	Support mission	€0.1m	€0.1m	€0.1m	●	●	●	●	●	●	Favourable
P776	Support mission	€0.1m	€0.3m	€0.5m	●	●	●	●	●	●	Favourable
P149	Sustainable forest management and development of the wood industry	€241.7m	€249.0m	€276.2m	●	●	○	○	●	●	Favourable
P149	Balanced and sustainable land management	€381.6m	€445.9m	€451.7m	●	●	●	○	●	●	Favourable
P206	Implementation of the policy on food health and safety	€233.4m	€243.5m	€250.9m	○	●	○	○	●	○	Favourable
P206	Food quality and food supply	€3.8m	€4.5m	€4.9m	○	○	●	●	○	○	Favourable
P776	Applied research and innovation	€66.6m	€65.6m	€65.0m	●	●	●	●	●	●	Favourable
P206	Animal health and protection	€90.8m	€111.0m	€112.3m	○	○	○	○	●	●	Favourable
P206	Plant health, quality and protection	€30.0m	€35.9m	€36.7m	●	●	○	○	●	●	Favourable

Earmarked Taxes		Outturn 2020	2021 Initial Budget Act	2022 BB							
P149	Additional contributions to premiums and fees related to certain insurance agreements	€60.0m	€60.0m	€60.0m	○	●	○	○	○	○	Favourable
P206	Annual tax for the assessment and regulation of the release of plant protection products and additives	€15.0m	€15.0m	€15.0m	○	○	○	○	●	●	Favourable
P206	Annual tax on authorisations of veterinary medicines and authorisations of veterinary pharmaceutical institutions	€4.5m	€4.5m	€4.5m	○	○	○	○	●	●	Favourable
P206	Sales tax on plant protection products granted marketing authorisation	€4.2m	€4.2m	€4.2m	○	○	○	○	●	●	Favourable
P206	Tax on applications relating to veterinary medicines or veterinary pharmaceutical institutions	€4.0m	€4.0m	€4.0m	○	○	○	○	●	●	Favourable
P149	Veterinary inspection fee (financing for issuance of certificates and documents)	€2.0m	€2.0m	€2.0m	○	●	○	○	●	●	Favourable

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P149	Income tax reduction for investment and insurance premiums relating to wood and forests up until 31 December 2022	€4.0m	€4.0m	€4.0m	●	●	●	○	●	●	Favourable
P149	Tax reduction for membership fees paid to authorised industry associations dedicated to forest fire prevention work in listed forests	ε	ε	ε	●	●	●	○	●	●	Favourable
P149	Income tax credit for forestry work and compensation paid for the execution of wood and forest management contracts up until 31 December 2022.	€7.0m	€7.0m	€7.0m	●	●	●	○	●	●	Favourable
P149	Tax exemption for interest received on deposits on forest insurance savings accounts opened on or before 31 December 2013	€0.0m	€0.0m	€0.0m	●	○	●	○	○	●	Favourable
P149	Tax credit for agricultural businesses using organic production methods	€61.0m	€69.0m	€69.0m	●	●	○	○	●	●	Favourable
P149	Tax credit for agricultural businesses not using plant protection products containing glyphosate in 2021 and 2022	Unknown	Unknown	€45.0m	○	○	●	○	●	●	Favourable
P149	Tax credit for agricultural businesses certified as high environmental value holdings with valid certificates on 31 December 2021 or certificates issued in 2022.	Unknown	Unknown	€30.0m	○	○	●	○	●	●	Favourable
P149	One-off depreciation of 50% of sums paid to subscribe shares in forestry savings companies	ε	Unknown	Unknown	●	●	●	○	○	●	Favourable
P149	Partial exemption for woods and forests, shares in Forestry Groupings, rural properties let under long-term leases and shares in agricultural land groupings (GFA)	€36.0m	€36.0m	€36.0m	●	●	●	○	●	●	Favourable
P149	Partial exemption from transfer taxes for lands and forests, sums deposited on forestry and insurance investment accounts, shares in forestry groupings, rural properties let under long-term leases, shares in agricultural land groupings and the fraction of rural forest groupings shares representing forestry assets and the agricultural assets.	€50.0m	€50.0m	€50.0m	●	●	●	○	●	●	Favourable
P149	Reduced 10% VAT rate applied to feed for animals that produce food products for human consumption, fertilizers, liming material and plant protection products suitable for organic farming and to fertilizers or crop supplements made from organic agricultural products.	€25.0m	€27.0m	€28.0m	●	●	○	○	●	●	Favourable
P149	Reduced 10% VAT rate on fuelwood deliveries	€123.0m	€135.0m	€143.0m	●	●	○	○	●	○	Mixed

P149	Reduced rate (refund) for diesel oil, heavy fuel oil and liquified petroleum gas used for farming and forestry	€1,420.0m	€1,420.0m	€1,420.0m	●	○	○	○	●	○	Unfavourable
P149	Reduced rate for natural gas used to dry vegetables and aromatic plants, other than potatoes, mushrooms and truffles, by undertakings consuming more than 800 watthours per euro of value added	€1.0m	€1.0m	€1.0m	●	○	○	○	●	○	Unfavourable
P149	Reduced rate (refund) for natural gas and methane used for farming and forestry	€4.0m	€4.0m	€4.0m	●	○	○	○	●	○	Unfavourable
P149	Exemption from up to 20% of the municipal and intermunicipal share of property tax on farmland.	€107.0m	€106.0m	€106.0m	●	●	●	○	○	●	Favourable
P149	Exemption for land planted with trees	€1.0m	€1.0m	€1.0m	●	●	●	○	●	●	Favourable
P149	Full exemption for farmland located in Corsica	€2.0m	€2.0m	€2.0m	●	●	●	○	○	●	Favourable

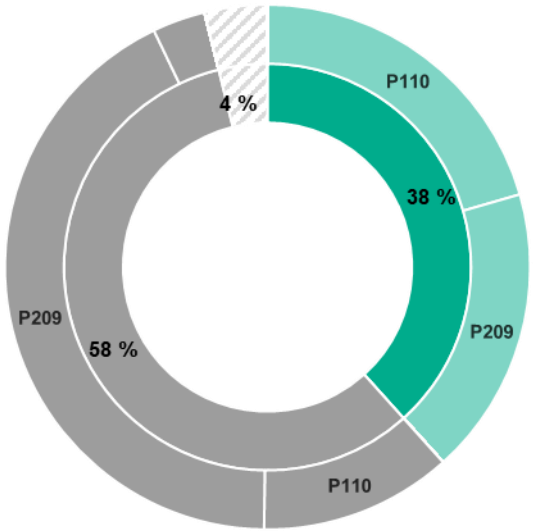
OFFICIAL DEVELOPMENT ASSISTANCE

Ministry for Europe and Foreign Affairs, Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €5.09bn
Earmarked taxes: €0.74bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €2.23bn

Mixed : -

Unfavourable : -

Neutral : €3.37 bn

Not tagged : €0.23 bn

Expenditures tagged as favourable for the environment under the "Official Development Assistance" Mission (ODA, including taxes earmarked for the Solidarity Fund for Development) stand at €2.23bn. As was the case in 2020, the large increase compared to the previous year stems from both a "volume" effect, with a big jump in ODA in 2022, and a "composition" effect, with a larger share of appropriations for this function funding expenditures that are favourable for the environment. This change is consistent with the Planning Act for Inclusive Development and Fighting Global Inequalities that included climate change as one of the priorities for France's ODA, following the decision by the Interministerial Committee on International Cooperation and Development in February 2018. For example, France doubled its contribution to the Green Climate Fund in order to meet the objectives set out in the Paris Climate Agreement. This contribution stands at €1.5bn over the period from 2020-2022, including €653m in 2022.

Expenditures tagged as favourable for the environment primarily include France's contributions to multilateral environmental funds (Green Climate Fund, Global Environment Fund, and the Tropical Forest Alliance) as well as France's contributions to general-purpose funds (European Development Fund, concessional funds of multilateral development banks, etc.) for actions to fight climate change. In this edition of the Green Budget, this includes the appropriations under Policy Programme 110 to cover the interest rebates for the loans granted to these funds.

Expenditures that are favourable for the environment also include appropriations for the French Development Agency, in keeping with the commitment to ensure that its activities and those of its group are 100% compatible with the Paris Agreement.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P110	French Development Agency (AFD) (Overseas France)	€5.5m	€4.3m	€3.5m	●	●	●	●	●	●	Favourable
P110	French Development Agency (AFD) interest rebates	€95.5m	€110.0m	€130.0m	●	●	●	●	●	●	Favourable
P110	Agriculture (IFAD)	€4.0m	€3.9m	€9.3m	●	●	●	●	●	●	Favourable
P110	Trade subsidies for developing countries	€4.5m	€4.5m	€6.0m	●	●	●	●	●	●	Favourable
P110	International Development Association	€107.4m	€140.7m	€138.0m	●	●	●	●	●	●	Favourable
P110	Interest rebates for loans to international institutions and funds	€13.9m	€13.5m	€25.0m	●	●	●	●	●	●	Favourable
P209	Bilateral cooperation – climate share	€522.1m	€802.8m	€984.4m	●	●	●	●	●	●	Favourable
P209	Community Cooperation – climate share	€85.1m	€78.5m	€53.6m	●	●	●	●	●	●	Favourable
P110	Environment Climate	€127.9m	€239.7m	€521.7m	●	●	●	●	●	●	Favourable
P110	EXPERTISE FRANCE	€7.2m	€11.2m	€15.7m	●	●	●	●	●	●	Favourable
P110	African Development Fund	€65.5m	€64.2m	€72.7m	●	●	●	●	●	●	Favourable
P110	Asian Development Fund	€4.1m	€4.1m	€3.7m	●	●	●	●	●	●	Favourable
P110	Environment – bilateral action	€17.5m	€25.1m	€30.0m	●	●	●	●	●	●	Favourable
P110	Compensation for the French Development Agency (AFD)	€3.9m	€7.0m	€7.0m	●	●	●	●	●	●	Favourable

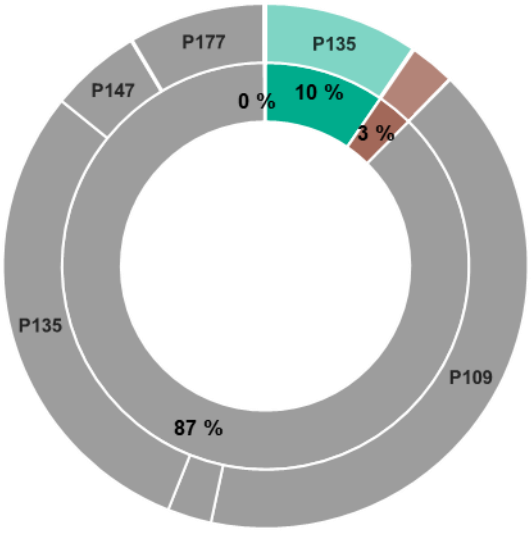
Earmarked Taxes		Outturn 2020	2021 Initial Budget Act	2022 BB							
P209	0.2% tax on financial transactions – FSD (P209) climate share	€85.5m	€0.0m	€0.0m	●	●	●	●	●	●	Favourable
P110	0.2% tax on financial transactions – climate share	€0.0m	€238.7m	€234.1m	●	●	●	●	●	●	Favourable

TERRITORIAL COHESION

Ministry for Regional Cohesion and Relations with Local Authorities, Ministry for the Ecological Transition and the Prime Minister's Office

Resources in 2022
Budget appropriations: €17.12bn
Earmarked taxes: €0.86bn
Tax expenditures: €14.28bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €1.27bn

Mixed : -

Unfavourable : €0.00bn

Neutral : €16.68 bn

Not tagged : €0.03 bn

Tax expenditures :

Favourable : €1.82 bn

Mixed : -

Unfavourable : €0.92 bn

Neutral : €11.55 bn

The environmental impact of the vast majority of the "Territorial Cohesion" Mission is neutral, because of the scale of the budget appropriations funding housing benefits, emergency housing and urban policies, which have been tagged as neutral. The appropriations and earmarked taxes tagged as favourable for the environment stand at €1.3bn and include funding for land take reduction and remediation of polluted land (government property management agencies' actions financed by the special infrastructure tax) and expenditures to reduce greenhouse gas emissions and energy consumption with thermal insulation improvements (appropriations for the National Housing Agency (ANAH) funded by a share of the proceeds from carbon quota auctions).

The tax expenditures tagged as unfavourable for the environment stand at €0.9bn, and mainly concern the land take caused by a share of new housing. A set percentage of housing support schemes, such as the "Pinel" tax deduction and interest-free loans (PTZ) has been applied to these tax expenditures to represent the unfavourable impact of new housing construction on land take. The land take attributed to new housing construction is also tagged as unfavourable for the Climate Change Mitigation Objective to account for the emissions from new housing construction and emissions caused by the location of the new housing, as well as the emissions stemming from the land take itself. The different types of operations financed by tax expenditures (new construction/renovation, multi/single family) are each assigned a different "land take" share (for example, the land take share for interest-free loans (PTZ) is 35%, based on work by the Sustainable Development Agency (CGDD) and the Directorate for Housing, Town Planning and Landscapes (DHUP). The impact is neutral on balance.

Another €1.8bn in tax expenditures have been tagged as favourable. These include tax reductions and tax credits for renovation of existing housing stock, and work to improve thermal insulation in particular.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P162	Water – Agriculture in Brittany	€6.4m	€2.0m	€2.0m			●		●	●	Favourable
P162	Coastline 21 Plan	€3.1m	€4.4m	€4.4m		●	●			●	Favourable
P162	Waterway clean-up in Pays de la Loire	€4.6m	€0.7m	€0.7m			●		●	●	Favourable
P135	Regulations, technical policies and construction quality	€120.1m	€217.4m	€217.4m	●	●					Favourable
P147	Urban renewal and quality of life improvements	€25.0m	€15.0m	€15.0m	●	●					Favourable
P162	Fire and rescue service in Wallis et Futuna	€0.0m	€1.3m	€1.3m	●	●	●	●	●	●	Favourable
P135	Support for first-time homebuyers – land take share	€2.1m	€2.1m	€2.1m	●					●	Unfavourable
P135	Town planning and development	€58.6m	€238.6m	€246.3m					●		Favourable
P162	Local activities under the National Chlordecone Action Plan	€5.9m	€5.1m	€4.3m					●	●	Favourable

Earmarked Taxes		Outturn 2020	2021 Initial Budget Act	2022 BB							
P135	Special infrastructure tax - TOTAL	€453.9m	€312.8m	€295.1m					●		Favourable
P135	Proceeds of carbon quota auctions	€481.0m	€481.0m	€481.0m	●	●					Favourable
P135	Housing Action (compensation for the “threshold” measure in the Business Growth and Transformation Bill (PACTE))	€238.0m	€0.0m	€0.0m	●	●					Favourable
P135	Tax on vacant housing	€0.0m	€0.0m	€0.0m	●	●					Favourable
P135	Special infrastructure tax (Government-owned shoreline zone in Martinique)	€€1.3m	€0.8m	€1.2m					●		Favourable
P135	Special infrastructure tax (Government-owned shoreline zone in Guadeloupe)	€1.3m	€0.8m	€1.2m					●		Favourable

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P135	Income tax reduction for investment in furnished rental housing by non-professional lessors	€26.4m	€18.4m	€18.4m	●					●	Unfavourable
P135	Income tax reduction for investment in rental housing made between 1 January 2009 and 31 December 2012 and, subject to conditions, until 31 March 2013 in areas with tight housing markets (subject to rent caps): SCELLIER scheme	€110.2m	€74.0m	€60.0m	●					●	Unfavourable

P135	Enhanced income tax reduction for investment in rental housing made between 1 January 2009 and 31 December 2012 and, subject to conditions, until 31 March 2013 in areas with tight housing markets, with a specific deduction for the rental income (subject to stricter rent caps and tenant income requirements): SCELLIER INTERMÉDIAIRE scheme	€71.4m	€48.0m	€40.0m		Unfavourable
P135	Income tax reductions for investment in intermediate rental housing (Duflot and Pinel schemes)	€193.2m	€239.0m	€276.6m		Unfavourable
P135	Income tax reductions for investment in renovated intermediate rental housing (Denormandie scheme)	ε	€1.0m	€2.0m		Favourable
P135	Deduction for repairs and improvements	€255.0m	€255.0m	€255.0m		Favourable
P135	Deduction from rental income on new housing rented as a primary residence: PERISSOL scheme	€7.0m	€6.0m	€5.0m		Unfavourable
P135	Deduction from rental income on new housing rented as a primary residence for investments made between 3 April 2003 and 31 December 2009	€21.8m	€14.0m	€6.0m		Unfavourable
P135	Deduction from rental income on new housing rented as a primary residence (subject to rent caps and tenant income requirements as of 1 January 1999)	€5.0m	€3.0m	€1.0m		Unfavourable
P135	Deduction from rental income on new housing rented as a primary residence in Rural Renewal Zones: ROBIEN ZRR scheme before 2009 and SCELLIER ZRR scheme after 2009	€1.8m	€1.8m	€1.8m		Unfavourable
P135	Specific deduction from rental income on new housing rented as a primary residence (subject to rent caps and tenant income requirements): BORLOO populaire scheme	€7.0m	€6.0m	€5.0m		Unfavourable
P135	Specific deduction on rental income on housing let under the terms of a National Housing Agency agreement	€55.0m	€50.0m	€45.0m		Favourable
P135	Specific deduction on rental income on housing let under the terms of a National Housing Agency agreement: COSSE scheme	€16.0m	€20.0m	€25.0m		Favourable
P135	Extraordinary capital gains allowance of 70% or 85%, subject to conditions, on the sale of vacant building lots or buildings for demolition followed by housing construction in Zones A and A bis, concluded between 1 January 2018 and 31 December 2022.	Unknown	Unknown	Unknown		Unfavourable
P135	Temporary exemption for capital gains from the sale of air rights by private individuals to buyers building housing	Unknown	Unknown	Unknown		Favourable
P135	“Zero-interest loan” and “enhanced zero-interest loan” tax credits	€397.3m	€372.1m	€321.3m		Unfavourable
P135	“Eco zero-interest loan” tax credit	€32.0m	€32.0m	€30.0m		Favourable
P112	Exemption for travel inside the national shipping area for passenger and goods transport by air or sea to and from Corsica	€3.0m	€4.0m	€4.0m		Unfavourable
P135	Reduced 10% rate for work on social housing that is not eligible for the 5.5% rate	€177.0m	€177.0m	€177.0m		Unfavourable
P135	Reduced 5.5% rate for work to improve the energy efficiency of housing units completed more than two years ago and for related work	€1,310.0m	€1,390.0m	€1,460.0m		Favourable
P112	Reduced tax rate on E5 petrol (SP98 and SP95) sold in Corsica	€1.0m	€1.0m	€1.0m		Unfavourable

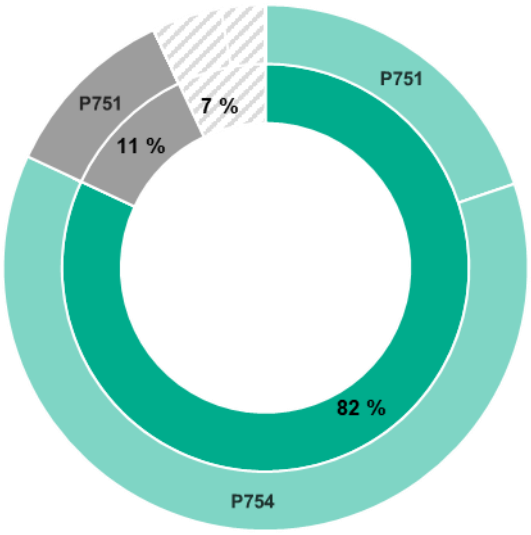
ROAD TRAFFIC AND PARKING ENFORCEMENT

Ministry of the Interior, Ministry for Territorial Cohesion and Relations with Local Government, Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €0.97bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.79 bn

Mixed : -

Unfavourable : -

Neutral : €0,11 bn

Not tagged : €0.07 bn

The expenditures funded out of the earmarked account for "Road Traffic and Parking Enforcement" on modernising road traffic regulation devices, financed by Policy Programme 751 and standing at €192m in 2022, are tagged as favourable for the Climate Change Mitigation, Climate Change Adaptation and Pollution Objectives. These expenditures help enforce speed limits on the roads, which means they have a positive impact on greenhouse gas emissions and air pollution. Payments to local governments for improvements to mass transport and road traffic and safety that are funded out of the earmarked account for "Road Traffic and Parking Enforcement" stand at €601m in 2022 and have also been tagged as favourable.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P754	Contribution to local governments for the improvement of mass transport and road traffic and safety infrastructures	€655.8m	€643.3m	€600.5m	●	○	○	○	●	○	Favourable
P751	Enforcement devices	€173.9m	€186.9m	€191.7m	●	○	○	○	●	○	Favourable

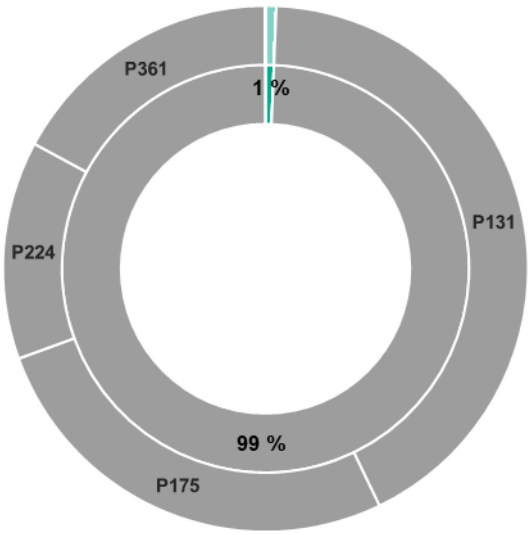
CULTURE

Ministry of Culture

Resources in 2022

Budget appropriations: €3.27bn
Earmarked taxes: €0.01bn
Tax expenditures: €1.09bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

- **Favourable : -**
- **Mixed : -**
- **Unfavourable : -**
- **Neutral : €3.28 bn**
- **Not tagged : -**

Tax expenditures :

- **Favourable : €0.03 bn**
- **Mixed : -**
- **Unfavourable : -**
- **Neutral : €1.06 bn**
- **Not tagged : -**

The majority of expenditures relating to the "Culture" Mission have an environmental impact that is virtually entirely neutral. The only exceptions are the income tax reductions for expenditure on restoring buildings on Outstanding Heritage Sites, or in old rundown neighbourhoods, or in the districts covered by the New National Urban Renewal Programme (NPNRU). These tax expenditures are part of the new "Malraux" scheme, named after Charles de Gaulle's Minister of Culture, André Malraux, and they are tagged as favourable for the Climate Change Mitigation Objective. They amount to €29m and contribute to the fight against substandard housing, as well as improving the energy efficiency of renovated sites and buildings.

Green Tagging in Detail

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P175	Income tax reductions for expenditure on restoring buildings on Outstanding Heritage Sites, or in old rundown neighbourhoods, or in the districts covered by the New National Urban Renewal Programme (NPNRU): New “Malraux” scheme	€30.0m	€29.0m	€29.0m	●						Favourable

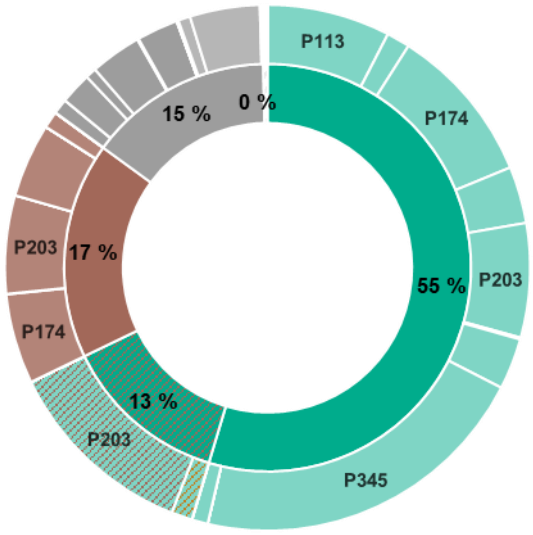
ECOLOGY AND SUSTAINABLE DEVELOPMENT AND MOBILITY[6]

Ministry for the Ecological Transition, Ministry for the Economy, Finance and the Recovery, Ministry of Marine Affairs

Resources in 2022

Budget appropriations: €22.81bn
Earmarked taxes: €5.33bn
Tax expenditures: €4.63bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €16.95 bn

Mixed : €4.03 bn

Unfavourable : €2.31 bn

Neutral : €4.74 bn

Not tagged : €0.11 bn

Tax expenditures :

Favourable : €0.96 bn

Mixed : €0.30 bn

Unfavourable : €3.32 bn

Neutral : €0.06 bn

The "Ecology and Sustainable Development and Mobility" Mission covers most of the expenditures relating to the environment and climate. The proposed appropriations for this function (including the relevant earmarked account and the specific budget) stand at €22.8bn in 2022 under the Total Central Government Expenditures Target.

Most of the expenditures under this mission are favourable for the ecological transition. They stand at €17.9bn in the 2022 Budget Bill. They consist primarily of expenditures on renewable energy sources (€6.9bn), earmarked taxes for water agencies (€2.2bn), expenditures to promote the ecological transition, especially the energy efficiency bonus and grants (€2.2bn), and the Ministry's payroll and operating expenditures related to ecological policies. Two tags have been changed in this edition of the Green Budget. The appropriations for the subsidies for public service obligations for the National Geographical and Forest Information Institute (€86m) were tagged as favourable for the Climate Change Mitigation, Climate Change Adaptation, Biodiversity and Water Objectives. The action for the French

[6] Mission supplemented by the earmarked account for « Financing Grants to Local Governments for Rural Electricity Service" and the specific budget for "Air Traffic Control and Operations".

*Meteorological Office (€181m) was tagged as favourable for the Pollution Objective, in addition to its favourable tags for the Climate Change Adaptation, Climate Change Mitigation and Water Objectives. The relative reduction in environmentally favourable tax expenditures since 2021 stems from the elimination of the Energy Transition Tax Credit in order to make this expenditure more efficient. This tax credit was abolished in 2021 and replaced by the energy efficiency bonus (*MaPrimeRénov'*). The bonus is a fiscal arrangement used to pay direct subsidies to households. It started to replace the tax credit in 2020.*

This mission also concerns expenditures with mixed impacts on the environment, stemming from the ambivalent effects of certain expenditures with regard to the different environmental objectives. Most of the mixed expenditures are those for new transport infrastructures, especially for rail transport (€3.8bn in the 2022 Budget Bill). In the medium term, these expenditures reduce the carbon footprint of mobility and transport, but their construction results in excavation waste in the short term and land take in natural areas that has a negative impact on biodiversity. These expenditures in the 2022 Budget Bill include €2.6bn for rail, €0.8bn in earmarked taxes for the Société du Grand Paris *and €0.4bn for the share of expenditures on rail and waterway projects in the budget of the Agency for Transport Infrastructures Funding (AFITF). Tax expenditures resulting from the reduced rate of the domestic tax on the consumption of energy products applied to biofuels (€0.3bn in 2022) were tagged as unfavourable for the Biodiversity Objective and favourable for the Climate Change Mitigation Objective. In contrast to the 2021 Budget Bill, the tagging of the support for the purchase of green vehicles is differentiated between the two financing arrangements for this action. The ecological bonus (€378m, excluding the Recovery Plan) is still tagged as favourable expenditure, whereas the car-scrapping bonus (€128m, excluding the Recovery Plan) is tagged as mixed: favourable for the Climate Change Mitigation and Pollution Objectives, but unfavourable for the Waste Objective. However, the car-scrapping bonus is governed by regulations requiring scrapped vehicles to be delivered to approved centres for scrapping and crushing for recycling. This enhances the role of legal treatment of scrapped vehicles (see "Other Tagging Changes" in section 3.2 above).*

Some €5.6bn of the expenditures under this mission in the 2022 Budget Bill have an exclusively unfavourable environmental impact. This concerns tax expenditures totalling €3.3bn in the 2022 Budget Bill to boost the competitiveness of certain business sectors. The main environmentally unfavourable tax expenditures relate to the reduced rate of the domestic tax on the consumption of energy products for goods transport by road (€1.4bn) and reduced rates for natural gas and methane used in energy-intensive industries (€0.5bn). Some budget appropriations are also tagged as unfavourable for the environment. These include solidarity expenditures for areas that are not connected to the national electricity grid (€1.5bn), since they finance electricity generation with higher-than-average carbon emissions. Investment expenditures funded out of the specific budget for "Air Traffic Control and Operations" are tagged as unfavourable for the Climate Change Mitigation and Climate Change Adaptation Objectives, as well as the Pollution Objective, since they promote the expansion of air transport, as do expenditures on air transport funded under Policy Programme 203 (€430m in payment appropriations). Expenditures on operations funded out of the specific budget are deemed to cover operation of existing capacities and, consequently, are not tagged.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P174	Support for energy transition	€1,492.4m	€1,494.6m	€2,227.5m	●	●	○	○	○	○	Favourable
P205	Interministerial ocean action	€13.7m	€13.1m	€28.8m	○	○	●	●	●	●	Favourable
P181	Environment and Energy Management Agency	€571.5m	€547.9m	€598.6m	●	●	●	●	●	●	Favourable
P174	Grants for the purchase of green vehicles	€613.6m	€378.0m	€378.0m	●	○	○	○	●	○	Favourable
P174	Scrapping subsidies for dirty vehicles	€643.6m	€128.0m	€128.0m	●	○	○	●	●	○	Mixed
P794	Call for innovative projects	€0.0m	€1.0m	€1.0m	●	●	●	●	●	●	Favourable
P217	Airport Noise Nuisance and Air Pollution Supervisory Authority (ACNUSA)	€1.6m	€1.8m	€1.8m	○	○	○	○	●	○	Favourable
P217	Energy Regulation Commission	€21.3m	€20.7m	€20.8m	●	●	○	○	○	○	Favourable
P217	National Public Debates Commission	€1.7m	€3.3m	€3.3m	●	●	●	●	●	●	Favourable
P181	Nuclear safety and radiation protection supervision	€49.8m	€56.9m	€57.9m	○	○	●	●	○	●	Favourable
P793	Declaration of public utility (extra high voltage)	€0.1m	€0.5m	€0.5m	○	●	○	○	○	○	Favourable
P793	Underground grid and façade integration	€39.9m	€41.7m	€40.0m	○	●	○	○	○	○	Favourable
P159	Sustainable development research and consulting	€213.2m	€192.4m	€189.0m	●	●	●	●	●	●	Favourable
P612	Aviation operations and innovation	€269.0m	€331.9m	€337.8m	●	●	○	○	●	○	Unfavourable
P203	Railway	€2,437.0m	€2,466.0m	€2,564.2m	●	○	●	●	●	●	Mixed
P181	Major Natural Risk Prevention Fund	€137.0m	€205.0m	€235.0m	○	●	●	○	●	○	Favourable
P345	Sundry expenses	€50.7m	€72.4m	€117.5m	●	○	○	○	○	○	Favourable
P181	Post-mining management and work on the safety, indemnification and expropriation of closed mines	€35.5m	€39.8m	€40.3m	○	○	●	●	●	○	Favourable
P113	Environment and biodiversity management	€177.6m	€218.9m	€232.2m	○	○	●	○	●	●	Favourable
P159	Sustainable development governance, assessment, research and forecasting	€13.6m	€15.2m	€15.2m	●	●	●	●	●	●	Favourable
P159	Geographical and cartographic information	€86.8m	€89.2m	€85.6m	●	●	●	○	○	●	Favourable
P794	Local power plants in areas off the national grid	€0.4m	€3.0m	€3.0m	●	●	●	●	●	●	Favourable
P181	National Industrial Environment and Risk Institute (INERIS)	€2.0m	€29.8m	€29.8m	○	○	●	●	●	●	Favourable
P793	Adverse weather	€9.6m	€7.0m	€12.7m	○	●	○	○	○	○	Favourable
P174	Fighting climate change and air pollution	€100.1m	€57.0m	€47.7m	●	○	○	○	●	○	Favourable
P794	Energy demand management	€0.1m	€0.5m	€0.5m	●	●	●	●	●	●	Favourable
P159	Meteorology	€188.6m	€185.1m	€181.3m	●	●	●	○	●	○	Favourable
P217	Payroll for personnel working on sustainable development and on the “Consulting, Geographical and Meteorological Information” Policy Programme	€19.6m	€35.6m	€35.8m	●	●	●	●	●	●	Favourable
P217	Payroll for personnel working on the “Energy, Climate and Post-Mining” Policy Programme	€44.2m	€41.7m	€43.6m	●	●	○	○	●	○	Favourable
P217	Payroll for personnel working on the “Landscape, Water and Biodiversity” Policy Programme	€199.9m	€185.9m	€189.8m	○	○	●	○	○	●	Favourable
P217	Payroll for personnel working on the “Risk Prevention” Policy Programme	€184.0m	€174.8m	€182.4m	●	○	●	●	●	●	Favourable
P217	Steering, support, audit and assessment	€246.3m	€535.7m	€550.1m	●	●	●	●	●	●	Favourable
P174	Energy policy	€74.8m	€89.5m	€112.0m	●	●	○	●	●	○	Favourable
P203	Ports	€95.4m	€99.9m	€99.9m	●	○	○	○	●	○	Favourable
P181	Natural risk and flood prevention	€39.0m	€35.9m	€37.2m	○	○	●	●	●	○	Favourable

P181	Man-made risk and pollution risk prevention	€99.0m	€63.5m	€63.5m		Favourable
P793	Strengthening networks	€137.9m	€164.0m	€170.0m		Favourable
P793	Securing bare wires	€0.0m	€98.0m	€97.0m		Favourable
P794	Remote sites	€0.2m	€1.0m	€1.0m		Favourable
P113	Sites, landscapes, advertising	€5.1m	€6.5m	€6.5m		Favourable
P174	Support	€4.0m	€1.5m	€1.5m		Favourable
P345	Support for natural gas cogeneration and other thermal generation means	€748.5m	€677.6m	€646.1m		Favourable
P345	Support for biomethane injection	€217.5m	€543.8m	€712.9m		Favourable
P345	Support for renewable electric energy sources in mainland France	€5,256.9m	€5,684.5m	€4,738.4m		Favourable
P794	Energy transition	€0.0m	€1.0m	€1.0m		Favourable
P203	Air transport	€30.6m	€40.9m	€92.0m		Unfavourable
P203	Mass transport	€315.9m	€314.6m	€316.4m		Favourable
P203	Combined transport	€31.2m	€197.7m	€182.7m		Favourable
P203	Inland waterways	€246.4m	€248.2m	€248.2m		Favourable
P345	Support for energy transition in zones off the national grid (ZNI)	€500.0m	€678.6m	€670.3m		Favourable
P345	Solidarity mechanisms for areas off the national grid	€1,583.0m	€1,458.2m	€1,493.3m		Unfavourable
P345	Support for load shedding	€5.3m	€6.0m	€40.0m		Favourable

Earmarked Taxes		Outturn 2020	2021 Initial Budget Act	2022 BB		
P113	Water rights royalty	€2,197.6m	€2,197.6m	€2,197.6m		Favourable
P203	Water royalty	€127.5m	€127.5m	€127.5m		Favourable
P174	Surcharge on the tax on nuclear power plants for research	€55.0m	€55.0m	€55.0m		Favourable
P203	Tax on airport noise nuisances	€55.0m	€55.0m	€55.0m		Favourable
P113	Annual Vessel Registration and Navigation Duty (DAFN)	€38.5m	€38.5m	€40.0m		Favourable
P203	Flat tax on energy and transport network operators	€75.0m	€75.0m	€76.0m		Mixed
P203	Special infrastructure tax	€117.0m	€67.1m	€67.1m		Mixed
P203	Annual tax on premises used for offices, trade, storage and parking in the Ile-de-France region (TSB)	€544.0m	€593.9m	€601.0m		Mixed
P203	Regional surcharge of 15% on the tourist tax in the Ile-de-France region	€10.0m	€16.0m	€30.0m		Mixed
P203	Tax on parking areas	€30.0m	€30.0m	€28.0m		Mixed
P205	Passport fee for large pleasure craft	€4.0m	€4.0m	€4.0m		Favourable
P205	Vessel Registration and Navigation Duty (DAFN)	€4.0m	€4.0m	€4.0m		Favourable
P203	French Agency for Transport Infrastructures Funding – Rail maintenance and rolling stock	€474.8m	€444.4m	€429.3m		Favourable
P203	French Agency for Transport Infrastructures Funding – mass transport running on right of way	€237.4m	€218.8m	€224.9m		Favourable
P203	French Agency for Transport Infrastructures Funding – waterway transport maintenance	€71.2m	€76.3m	€81.8m		Favourable
P203	French Agency for Transport Infrastructures Funding – ocean transport	€47.5m	€37.3m	€40.9m		Favourable
P203	French Agency for Transport Infrastructures Funding – road building	€451.1m	€399.7m	€388.4m		Unfavourable

P203	French Agency for Transport Infrastructures Funding – railway building	€593.5m	€452.2m	€429.3m	●	○	●	●	●	●		Mixed
P203	French Agency for Transport Infrastructures Funding – new waterway transport infrastructures	€47.5m	€95.0m	€102.2m	●	●	○	●	●	●		Mixed

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P174	Energy Transition Tax Credit	€1,084.0m	€300.0m	€150.0m	●	●	○	○	○	○	Favourable
P113	Income tax reduction for expenditures on certain natural areas for the purpose of maintaining and protecting natural heritage sites	ε	Unknown	Unknown	●	○	○	○	○	●	Favourable
P174	Tax credit for the purchase and installation of electric vehicle charging systems	Unknown	Unknown	€2.0m	●	●	○	○	○	○	Favourable
P113	Deduction for expenditures on improving unbuilt land	ε	ε	ε	●	○	○	○	○	●	Favourable
P174	Exemption of proceeds from the sale of solar electricity	€1.0m	€1.0m	€1.0m	●	○	●	●	●	○	Favourable
P174	Extraordinary deduction for the purchase of vehicles of 3.5-tonnes or more running exclusively on natural gas, biomethane, ED95 or B100 fuel, or 1 A dual fuel.	€7.0m	€14.0m	€21.0m	●	○	○	○	○	○	Favourable
P174	Extraordinary 40% deduction for businesses investing in refrigeration and climate control equipment that does not use hydrofluorocarbons (HFC)	€1.0m	€1.0m	€2.0m	●	○	○	○	●	○	Favourable
P174	Zero interest loan (tax reduction) for the purchase of low emission light vehicles	Unknown	Unknown	Unknown	●	●	○	○	○	○	Favourable
P205	Extraordinary deduction for ships, boats and equipment that respond to ecological challenges	Unknown	ε	ε	●	●	○	○	○	○	Favourable
P203	Exemption from capital gains on the sale of boats for inland waterway transport of goods	ε	ε	ε	●	○	○	○	●	○	Favourable
P174	Tax reduction for providing a fleet of bicycles	ε	ε	ε	●	○	○	○	●	○	Favourable
P217	Exemption for gifts and legacies granted to environmental protection and animal protection non-profits recognised as serving the public interest	€1.0m	€1.0m	€1.0m	○	○	○	○	○	●	Favourable
P113	Exemption, subject to certain requirements, from taxes on property transfers without valuable consideration, up to three quarters of the tax amount, for legacies and donations concerning unbuilt land that are not NATURA 2000 sites by nature, central areas of national parks, nature reserves, listed sites or outstanding natural coastline areas	€8.0m	€8.0m	€8.0m	●	○	●	○	●	●	Favourable
P174	Reduced 5.5% VAT rate on the supply of energy from renewable sources	€72.0m	€72.0m	€72.0m	●	○	●	●	●	○	Favourable
P181	Reduced 5.5% rate on waste sorting and collection services, collection at recycling centres, and household waste sorting and recovery	Unknown	€82.0m	€83.0m	○	○	○	●	○	○	Favourable
P203	Exemption for energy products used as fuel for inland waterway vessels, other than private pleasure craft	€40.0m	€42.0m	€44.0m	●	○	○	○	●	○	Favourable
P203	Exemption for various types of gas (coal gas, lean gas, water gas and similar gases)	Unknown	Unknown	Unknown	●	○	○	○	●	○	Unfavourable
P203	Exemption for aviation and marine fuels when they are used for construction, development, tuning, testing or maintenance of aircraft and vessels and their engines	€18.0m	€20.0m	€22.0m	●	○	○	○	●	○	Unfavourable
P174	Reduced rate for diesel oil for non-road uses other than farming	€1,040.0m	€1,150.0m	€1,150.0m	●	○	○	○	●	○	Unfavourable

P174	Reduced rate of the domestic consumption tax on liquified petroleum gas (butane, propane) used as non-road fuel	€19.0m	Unknown	Unknown		Mixed
P203	Reduced rate (refund) for diesel oil used for stationary engines on goods vehicles or special purpose vehicles (breakdown lorries, mobile cranes, etc.)	€0.0m	€0.0m	€0.0m		Unfavourable
P174	Reduced rate for energy products (excluding natural gas and coal) used in energy-intensive facilities and subject to the greenhouse gas emissions quotas of the Emissions Trading Scheme	€8.0m	€9.0m	€9.0m		Unfavourable
P174	Reduced rate for energy products (excluding natural gas and coal) used in energy-intensive facilities deemed to be exposed to a significant risk of carbon leakage	€2.0m	€2.0m	€2.0m		Unfavourable
P174	Reduced rate for E10, petrol blend containing up to 10% ethanol	€95.0m	€95.0m	€95.0m		Mixed
P203	Reduced rate for ED95 fuel, diesel fuel containing between 90% and 95% ethanol	€1.0m	€1.0m	€1.0m		Mixed
P174	Reduced rate for B100, diesel fuel synthesised from fatty acids	€7.0m	€7.0m	€7.0m		Mixed
P174	Reduced rate for E85, petrol blend containing between 65% and 85% ethanol	€193.0m	€193.0m	€193.0m		Mixed
P203	Reduced rate (refund) for fuel used by taxis	€61.0m	€49.0m	€61.0m		Unfavourable
P203	Reduced rate (refund) for diesel oil used by goods vehicles of 7.5 tonnes or more	€1,510.0m	€1,408.0m	€1,408.0m		Unfavourable
P203	Reduced rate (refund) for diesel oil used as fuel for public passenger transport vehicles	€200.0m	€197.0m	€220.0m		Favourable
P203	Reduced rate (refund) for diesel oil used to groom ski slopes and plough public roads	Unknown	Unknown	Unknown		Unfavourable
P203	Reduced rate for diesel oil used to transport passengers and goods on the national rail network	Unknown	Unknown	Unknown		Favourable
P174	Reduced rate for diesel oil used for stationary and earthmoving equipment for certain types of extractive activities subject to strong international competition	Unknown	Unknown	Unknown		Unfavourable
P174	Reduced rate for diesel oil used for stationary and earthmoving equipment for dock work in ocean ports and some inland ports subject to international competition	Unknown	Unknown	Unknown		Unfavourable
P203	Reduced rate for electricity consumed by rail and road mass transport (trains, métros, trams, cable cars, rechargeable hybrid and electric buses, trolley buses)	€158.0m	€200.0m	€230.0m		Favourable
P203	Reduced rate for electricity consumed by operators of public airports where total electricity consumption for operational purposes is greater than 222 watthours per euro of value added	€4.0m	€4.0m	€4.0m		Unfavourable
P203	Reduced rate for electricity supplied directly to docked fishing vessels, government vessels and commercial vessels	Unknown	Unknown	Unknown		Favourable
P174	Exemption for biogas that is not mixed with other energy products and used for fuel	€15.0m	€15.0m	€15.0m		Favourable
P174	Reduced rate for natural gas and methane used in energy-intensive facilities subject to the greenhouse gas emissions quotas of the Emissions Trading Scheme	€437.0m	€467.0m	€470.0m		Unfavourable
P174	Reduced rate for natural gas and methane used in energy-intensive facilities deemed to be exposed to a significant risk of carbon leakage	€104.0m	€121.0m	€122.0m		Unfavourable
P174	Exemption from the domestic tax on coal consumption for undertakings recovering biomass where purchases of fuel and electricity used for recovery processes represent 3% or more of their turnover.	€13.0m	€13.0m	€13.0m		Unfavourable

P174	Reduced rate for coal used in energy-intensive facilities subject to the greenhouse gas emissions quotas of the Emissions Trading Scheme	€38.0m	€38.0m	€38.0m		Unfavourable
P174	Reduced rate for coal used in energy-intensive facilities deemed to be exposed to a significant risk of carbon leakage	ε	ε	ε		Unfavourable
P203	Exemption from the axle tax on heavy vehicles for those used by government services and bodies serving the general interest for national defence, civil protection, fire-fighting, rescue, public order and roadway maintenance	Unknown	Unknown	Unknown		Unfavourable
P203	Exemption from the axle tax on heavy vehicles for collection vehicles	Unknown	Unknown	Unknown		Unfavourable
P203	Exemption from the axle tax on heavy vehicles for those used for carnival games and rides, circuses, riding centres and harvesting	Unknown	Unknown	Unknown		Unfavourable
P203	Exemption from the tax on the mass in running order of passenger vehicles for vehicles running exclusively on electricity, hydrogen or a combination of the two	Unknown	Unknown	Unknown		Mixed
P203	Exemption from the tax on the mass in running order of passenger vehicles for hybrid vehicles with an all-electric range of more than 50 km	Unknown	Unknown	Unknown		Mixed
P203	Reduction of the mass in running order of 400 kg for tax purposes for vehicles with at least eight seats belonging to legal entities	Unknown	Unknown	ε		Favourable
P203	Reduction of the tax on the mass in running order for passenger cars so that, when combined with the CO_2 penalty, it is not greater than the maximum penalty amount	Unknown	Unknown	Unknown		Unfavourable
P174	Reduction of up to 40% of CO_2 emissions or the engine rating counted towards the penalty for certain passenger vehicles where the energy source includes super E85 ethanol	Unknown	ε	ε		Unfavourable
P174	Reduction of emissions, or of the engine rating, counted towards the penalty, of up to 20 grammes per kilometre or one horsepower per dependent child or foster child for households with 3 or more dependent children	Unknown	€10.0m	€10.0m		Unfavourable
P203	Reduction of emissions, or of the engine rating, counted towards the penalty, of up to 80 grammes per kilometre or four horsepower for vehicles with at least eight seats belonging to legal entities	Unknown	Unknown	Unknown		Favourable
P203	Cap at 50% of the vehicle price	Unknown	Unknown	Unknown		Unfavourable
P174	Deduction for the “airborne emissions” component of any contributions or donations made to approved non-profits monitoring air quality	Unknown	Unknown	Unknown		Unfavourable
P181	Reduced rate for the “waste” component for receiving waste with high calorific value from high-performance sorting operations at energy recovery facilities where the yield is greater than 0.7	Unknown	Unknown	Unknown		Favourable
P181	Reduced rate for the “waste” component for overseas local governments covered by Article 73 of the Constitution	€10.0m	€10.0m	€10.0m		Unfavourable
P181	Exemption for waste co-incineration plants receiving non-hazardous waste	Unknown	Unknown	Unknown		Favourable
P181	Expenditures on work to prevent man-made risks	ε	ε	ε		Favourable
P174	Relief equal to one quarter of expenditures on energy efficiency improvements from property tax on buildings for low-income housing bodies	€111.0m	€111.0m	€111.0m		Favourable
P113	Exemption for wetlands	€0.0m	€0.0m	€0.0m		Favourable
P113	Exemption for NATURA 2000 sites	€1.0m	€1.0m	€1.0m		Favourable

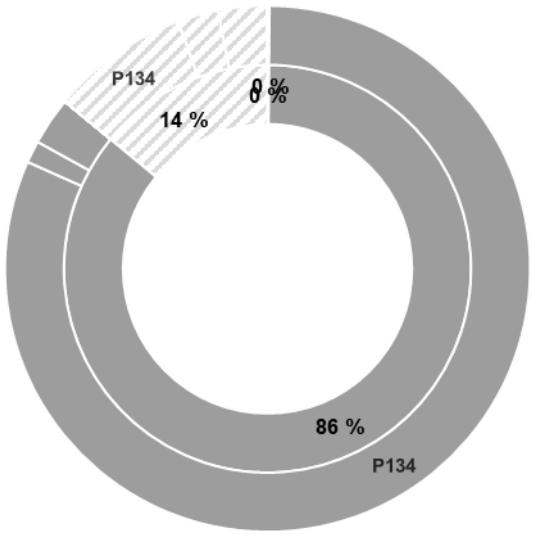
THE ECONOMY

Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €3.63bn
Earmarked taxes: €1.16bn
Tax expenditures: €20.01bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

- Favourable : -
- Mixed : -
- Unfavourable : -
- Neutral : €2.94 bn
- Not tagged : €1.86 bn

Tax expenditures :

- Favourable : €0.02 bn
- Mixed : -
- Unfavourable : €0.01 bn
- Neutral : €18.36 bn
- Not tagged : €1.62 bn

The environmental impact of most of the expenditures under the "Economy" Mission is either neutral or not tagged, given the current state of knowledge. Following on from the 2021 Green Budget, subsidies granted to businesses with no ecological requirements are tagged as neutral. Under the convention regarding expenditures related to digital technology, appropriations for the programme to finance very high speed internet (€622m in the 2022 Budget Bill) are not tagged. Expenditures for the development of electronic communications service (Action 134-04 "Development of postal services, telecommunications and digital technology") are not tagged either (€763m in the 2022 Budget Bill). As there is no scientific consensus about the environmental impacts of the carbon offset arrangements that are primarily financed by appropriations for action134-23 "Manufacturing and Services", this expenditure is not tagged (€487.5m in the 2022 Budget Bill). For the sake of consistency, the tax expenditures that finance reduced electricity rates for electricity-intensive facilities (€1.6bn in the 2021 Budget Bill) are not tagged at this time.

The only expenditures with an environmental impact are tax expenditures, which are currently estimated to be very small. Several tax expenditures have a favourable environmental impact, including the extraordinary deduction for businesses that invest in non-road equipment using alternative energy sources or businesses that replace their equipment that burns non-road diesel oil with greener equipment that meets certain emission limits. These expenditures are tagged as favourable for the Climate Change Mitigation and Pollution Objectives. On the other hand, the extraordinary deduction for small and medium-sized retail businesses selling non-road diesel oil for their investment in storage facilities and equipment for handling and distributing diesel oil is tagged as unfavourable for the Climate Change Mitigation and Pollution Objectives because it tends to lower energy prices and increase pressure on fossil fuel resources.

Green Tagging in Detail

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P134	Income tax reduction for work to renovate listed tourist accommodation	€1.0m	€1.0m	€1.0m	●						Favourable
P134	Tax credit for SMEs for expenditures on energy efficiency renovations of their office and retail buildings	Unknown	€20.0m	€20.0m	●						Favourable
P134	Extraordinary deduction for simulators used to teach driving	ε	ε	€1.0m	●				●		Favourable
P134	Extraordinary deduction for investment by businesses using equipment that burns non-road diesel oil for the purchase of equipment that burns alternative fuels	€0.0m	ε	ε	●				●		Favourable
P134	Extraordinary deduction for small and medium-sized enterprises (SMEs) that are retail sellers of non-road diesel oil for their investment in storage facilities and in equipment for handling and distributing diesel oil	€0.0m	ε	ε	●				●		Unfavourable
P134	Reduced 19% rate on capital gains from the sale of professional premises or building lots located in areas with the tightest markets to certain companies, on the condition that the buyer undertakes to transform the buildings into housing or to build housing on the lots within four years, with a possible one-year extension, renewable once, granted at the purchaser's request	€13.0m	€10.0m	€8.0m	●					●	Unfavourable

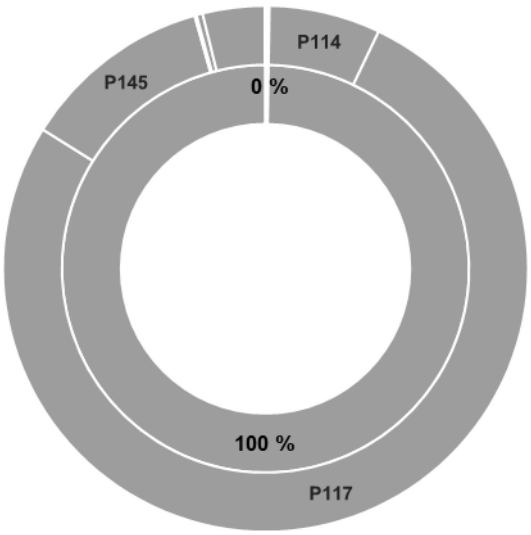
GOVERNMENT FINANCIAL LIABILITIES

Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €43.06bn
Earmarked taxes: €0.00bn
Tax expenditures: €5.81bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.06 bn

Mixed : -

Unfavourable : -

Neutral : €43.00 bn

Not tagged : -

Tax expenditures :

Favourable : €0.06 bn

Mixed : -

Unfavourable : -

Neutral : €5.75 bn

The environmental impact of the vast majority of expenditures on the "Government Financial Liabilities" Mission is neutral. The expenditures related to home-ownership savings accounts connected to Policy Programme 145 "Savings" have been tagged as favourable for the Climate Change Mitigation Objective, since the incentives on home-ownership savings accounts vary according to the energy efficiency of the home. The 2022 Budget Bill includes €60.1m in appropriations for this action. The same budget policy programme includes an exemption for interest paid on sustainable development savings accounts, which has been estimated at €56m in 2022. This tax expenditure is also tagged as favourable for the Climate Change Mitigation Objective since it helps channel savings towards financing innovative small businesses and projects that are favourable for the environment and energy transition. Efforts to "green" export guarantees and insurance have given rise to the bold climate plan strategy for export financing submitted to the government in October 2021. As mentioned in the Box about export guarantees, the central government budget is used only to offset any failings in the procedure, that is, if the indemnities for claims are greater than sum of insurance premiums and recovery of old claims. The credit insurance

procedure has been structurally profitable for many years, which means that budget expenditures, which are often zero, are not the right metric for analysing export financing policy. Estimated appropriations could be made for Policy Programme 114 "Claims on central government guarantees" only to offset a potential deficit of the procedure if major loan losses are incurred, which has never happened in recent years. However, such expenditures would be tagged as neutral if the guarantees paid do not relate to projects with a clear favourable or unfavourable environmental impact.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P145	Home-ownership savings accounts	€57.7m	€61.5m	€60.1m	●	○	○	○	○	○	Favourable

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P145	Exemption for interest payments on sustainable development savings accounts	€75.0m	€54.0m	€56.0m	●	○	○	○	○	○	Favourable

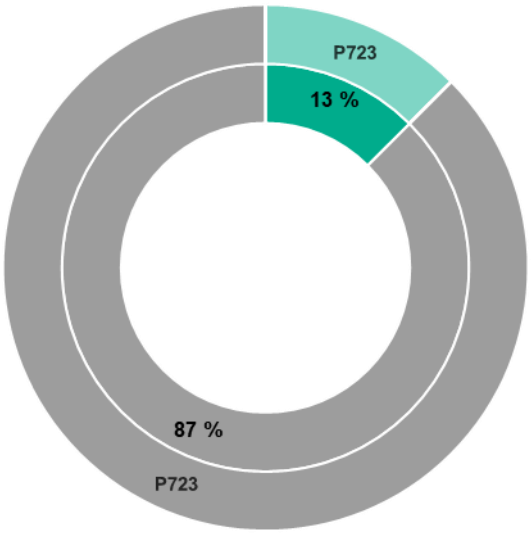
Government Property Management

Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €0.42bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.05 bn

Mixed : -

Unfavourable : -

Neutral : €0.37 bn

Not tagged : -

This second edition of the Green Budget includes tagging of the "Government Property Management" Mission. No appropriations have been made for Policy Programme 721 in 2022.

Under Policy Programme 723, actions 723-12 and 723-13 have been tagged as neutral for all six environmental objectives.

A set percentage of 15% of expenditures on actions 723-11 and 723-14 has been tagged as favourable for the Climate Change Mitigation Objective. These actions are tagged as neutral for the five other objectives. Structural work to upgrade existing buildings (reconstruction or renovation, possibly to repurpose the building) and major maintenance work to ensure the long-term usability of a building are tagged in the same way. Such work is tagged as neutral for the Water and Biodiversity Objectives since it does not result in new buildings that increase land take. The neutral tags for the Climate Change Adaptation, Waste and Pollution Objectives reflect the balance between energy use and waste engendered by the work and the improvement of buildings resulting from the work in terms of energy consumption and the use of greener building materials. The certification of structural work on property financed under Policy Programme 723 specifically involves consideration of the ecological transition as one of the key criteria. Major maintenance work is also carried out with a view to ecology. The Central Government Property Directorate encourages project managers to prefer energy-saving solutions and the use of sustainable materials.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P723	Major maintenance, restoration, retrofitting and repairs	€13.4m	€14.7M	€13.6m	●						Favourable
P723	Structural transactions and disposals	€54.4m	€16.5m	€39.0m	●						Favourable

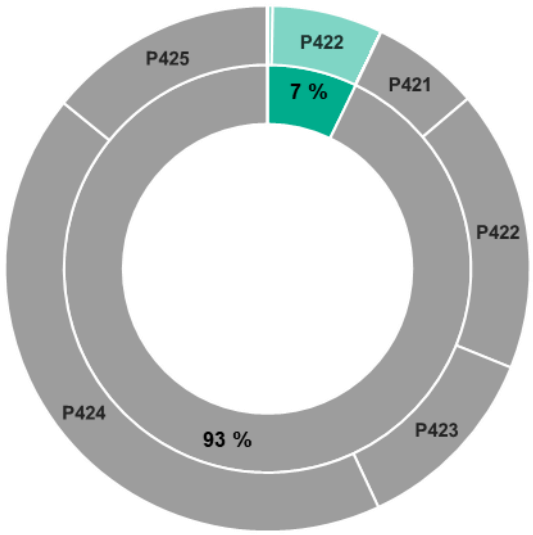
INVEST FOR THE FUTURE

Prime Minister's Office

Resources in 2022

Budget appropriations: €3.51bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.25 bn

Mixed : -

Unfavourable : -

Neutral : -

Not tagged : €3.26 bn

The appropriations in 2022 for the "Invest for the Future" Mission include €250m for projects tagged as favourable for the environment and energy transition under the third "Invest for the Future" Programme.

A set percentage of 25% is applied to the total budget of €45m for priority research under Policy Programme 421, resulting in €11m in expenditures in 2022 Budget Bill tagged as favourable for the environment, since they finance calls for projects, in the same vein as the "Ocean of Solutions" project, which promote research into the well-being of living beings and societies and other topics.

Expenditures under Policy Programme 422 fund the "Technology Demonstrators" scheme run by the Environment and Energy Management Agency ("Technology Demonstrators and Local Innovation Clusters" action). These expenditures account for payment appropriations of €155m in the 2022 Budget Bill and have been tagged as favourable for all of the environmental objectives. In 2022, they will finance calls for projects relating to technological bricks, decarbonised hydrogen demonstrators and other schemes. The calls for projects will be carried out as part of the third Invest for the Future Programme, in preparation for the "decarbonised hydrogen" strategy under the fourth Invest for the Future Programme. An additional €84m in appropriations in the 2022 Budget Bill for the "Tomorrow's Nuclear Energy" dimension of the "Technology Demonstrators and Local Innovation Clusters" action has been

tagged as favourable for the Climate Change Mitigation and Climate Change Adaptation Objectives. These appropriations will finance the completion of the Jules Horowitz reactor, critical models and structural elements.

The other appropriations for the "Invest for the Future" Mission made for the third Invest for the Future Programme, along with the appropriations for the fourth programme, cannot be tagged at this time. So this year, they have been put in the "not tagged" category. The impact of the expenditures under the third Invest for the Future Programme is now being analysed using the Green Budget methodology. Not all of the amounts for each acceleration strategy under the fourth Invest for the Future Programme have been determined and most of the winning projects have yet to be announced, since the fourth programme was launched in 2021. If good progress is made on deploying the fourth programme, the expenditures involved may be tagged in the 2023 Budget Bill.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P422	Technology Demonstrators and Local Innovation Clusters – Environment and Energy Management Agency	€100.0m	€210.0m	€155.0m	●	●	●	●	●	●	Favourable
P422	Technology Demonstrators and Local Innovation Clusters – Nuclear Energy	€50.0m	€0.0m	€84.0m	●	●					Favourable
P421	Priority research programmes	€13.8m	€11.3m	€11.3m	●	●	●	●	●	●	Favourable

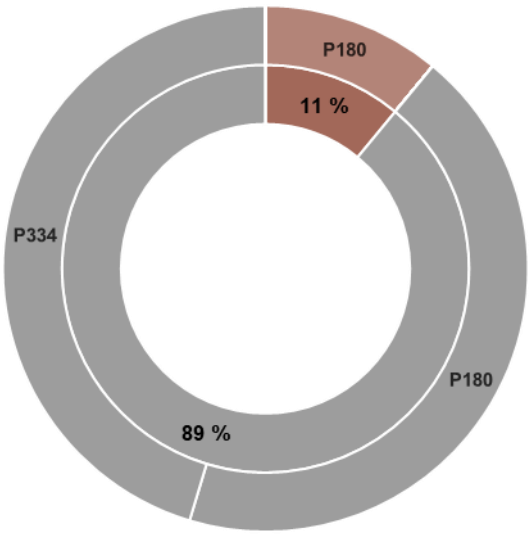
MEDIA, BOOK PUBLISHING AND CULTURAL INDUSTRIES

Ministry of Culture

Resources in 2022

Budget appropriations: €0.68bn
Earmarked taxes: €0.05bn
Tax expenditures: €0.90bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

- **Favourable : -**
- **Mixed : -**
- **Unfavourable : €0.18 bn**
- **Neutral : €0.55 bn**
- **Not tagged : -**

Tax expenditures :

- **Favourable : -**
- **Mixed : -**
- **Unfavourable : -**
- **Neutral : €0.90 bn**

The vast majority of appropriations for the "Media, Book Publishing and Cultural Industries" Mission have a neutral impact on the environment, with the exception of support for print media, which totals €179.2m in the 2022 Budget Bill.

Support for print media includes subsidies for postage (formerly part of Policy Programme 134, Action 4 and tagged as neutral, since these subsidies accounted for a minority of the expenditures under the action). These subsidies are paid to the Post Office as compensation for reduced postage rates (€62.3m) and have been transferred to Policy Programme 180, Action 2. Other support includes distribution subsidies of €39.4m for home delivery to subscribers, exemptions from employers' social security contributions and subsidies of €55.5m for modernisation. The latter expenditure primarily takes the form of subsidies for distribution of national news media printed on paper. The expenditures also include support for pluralism (€22m), which is mostly paid to publications on the basis of their cover price, circulation, and average print runs, as well as the percentage of advertising revenue in their total revenue.

Support for the print media is mostly paid on the basis of the distribution of paper copies of publications. This means that the support subsidises activities that generate CO_2 emissions, such as the transport of

paper copies and paper manufacturing. These activities also have a negative impact because they generate water consumption, waste production and incineration and forest harvesting.

Given the predominance of support for distribution and modernisation, all of the expenditure on support for print media has been tagged as unfavourable for the environment. This tagging could change in the future with regard to recent regulatory changes in the industry. The Act of 10 February 2020 on fighting waste and promoting the circular economy bans the use of plastic wrappers for shipping printed publications starting in 2022 and bans the use of mineral oils in ink starting in 2025.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P180	Support for print media	€304.2m	€179.2m	€179.2m	●	○	●	●	●	●	Unfavourable

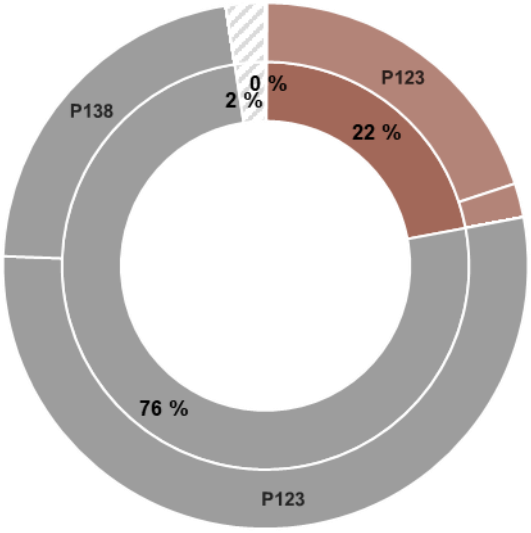
OVERSEAS FRANCE

Ministry for Overseas France

Resources in 2022

Budget appropriations: €2.41bn
Earmarked taxes: €0.00bn
Tax expenditures: €6.66bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : -

Mixed : -

Unfavourable : €0.09 bn

Neutral : €2.11 bn

Not tagged : €0.22 bn

Tax expenditures :

Favourable : €0.01 bn

Mixed : -

Unfavourable : €1.90 bn

Neutral : €4.74 bn

Not tagged : -

The main environmentally unfavourable expenditures for the "Overseas France" Mission are tax expenditures. This is particularly the case of the special consumption tax in Mayotte, Guadeloupe, French Guyana, Martinique and Réunion, where this tax is applied instead of the domestic tax on the consumption of energy products. The estimated cost of this expenditure is €1.7bn in 2022. Certain products, commodities and petroleum products are also exempted from taxes in Guadeloupe, Martinique and Réunion, representing tax expenditures of €190m. Some of the budget appropriations for the "Overseas France" Mission have also been tagged as unfavourable for the environment. This is the case for expenditures on housing and on territorial continuity. However, in keeping with the methodological convention applied for new housing, only €40m of expenditures on housing have been tagged as unfavourable for the Biodiversity Objective, compared to €161m tagged as neutral.

In this second edition, Actions 123-02 Spatial Planning and 123-08 Special Investment Fund are not tagged because of the very complex nature of the projects financed under convergence and transformation contracts, project and development contracts and projects financed by the Special Investment Fund.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P123	Territorial continuity	€31.5m	€41.3m	€44.9m	●	●			●		Unfavourable
P123	Housing – land take share	€35.9m	€35.4m	€40.2m	●					●	Unfavourable

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P123	Tax reduction for investment in social housing in Overseas France	€6.8m	€6.2m	€6.2m	●					●	Unfavourable
P123	Income tax reduction for investment in overseas rental housing before 31 December 2012 or, subject to requirements, before 31 March 2013: SCELLIER OUTRE-MER scheme	€0.2m	€0.2m	€0.2m	●					●	Unfavourable
P123	Income tax reduction for investment in intermediate overseas rental housing before 31 December 2012 or, subject to requirements, before 31 March 2013: SCELLIER INTERMEDIAIRE OUTRE-MER scheme	€0.2m	€0.2m	€0.2m	●					●	Unfavourable
P123	Corporate income tax reduction for new productive investment and investment in intermediate and social housing in overseas France and New Caledonia	Unknown	Unknown	Unknown	●					●	Unfavourable
P138	Tax exemption on certain products, commodities and petroleum products in Guadeloupe, Martinique and Réunion	€150.0m	€170.0m	€190.0m	●				●		Unfavourable
P123	Tax exemption on deliveries of goods to cruise passengers in certain municipalities in Guadeloupe and Martinique	Unknown	ε	€1.0m	●				●		Unfavourable
P123	Reduced rate of 2.10% applied to certain transactions relating to overseas social housing that are eligible for loans for social rental housing or for the corporate income tax credit for investment in new housing overseas	€6.8m	€6.4m	€6.4m	●					●	Unfavourable
P123	Special consumption tax in Mayotte, Guadeloupe, French Guyana, Martinique and Réunion applied instead of the domestic tax on the consumption of energy products with lower rates and a narrower base	€1,375.0m	€1,600.0m	€1,700.0m	●				●		Unfavourable
P123	Partial tax exemption for farmland located in the overseas *départements*	€9.0m	€9.0m	€9.0m	●		●			●	Favourable

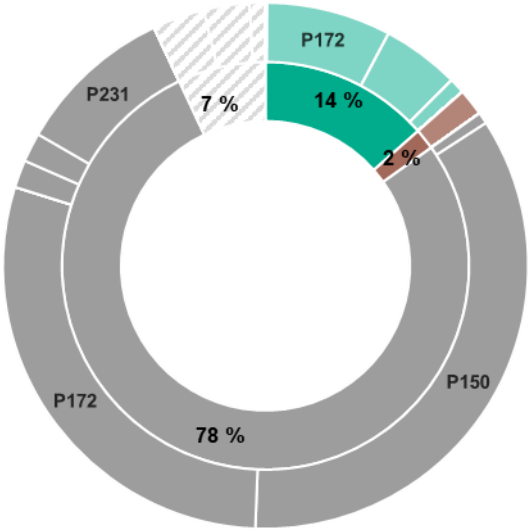
RESEARCH AND HIGHER EDUCATION

Ministry of Higher Education, Research and Innovation, Ministry for the Economy, Finance and the Recovery, Ministry for the Ecological Transition, Ministry for Agriculture and Food, Ministry for the Armed Forces and Ministry of Culture

Resources in 2022

Budget appropriations: €29.04bn
Earmarked taxes: €0.23bn
Tax expenditures: €8.30bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €5.07 bn

Mixed : -

Unfavourable : €0.62 bn

Neutral : €20.95 bn

Not tagged : €2.62 bn

Tax expenditures :

Favourable : -

Mixed : -

Unfavourable : -

Neutral : €8.30 bn

Not tagged : -

The green-tagging method used for the "Research and Higher Education" Mission in the first Green Budget has been simplified in this edition. The previous method applied set percentages to the subsidies for public service obligations paid to research agencies based on an annual survey. This survey proved to be nonreproducible from one year to the next. This second edition of the Green Budget relies on tagging expenditures under the mission by action and by sub-action.

Expenditures with a favourable impact on the environment under the "Research and Higher Education" Mission represent payment appropriations of €5.07bn in the 2022 Budget Bill, including €2.9bn for Policy Programme 172 "Multidisciplinary Scientific and Technological Research", €0.4bn for Policy Programme 193 "Space Research" and €1.7bn for Policy Programme 190 "Energy and Sustainable Development and Mobility Research".

Expenditures under this mission related to launch vehicle programmes have been tagged as unfavourable for the environment. Expenditures to support the nuclear activity of the French Atomic Energy Agency are tagged as favourable for the Climate Change Mitigation and Climate Change Adaptation Objectives and neutral for the Waste Objective. The latter tag was revised this year in view of the findings of the European Commission's Joint Research Centre report by independent experts published in March 2021 under the title of "Technical assessment of nuclear energy with respect to the DNSH criteria of the Taxonomy Regulation". The long-term nuclear facility decommissioning expenses of the French Atomic Energy Agency are tagged as favourable for the Waste Management Objective.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P190	National Agency for Food, Environmental and Occupational Safety (ANSES)	€1.5m	€1.6m	€1.6m	○	○	○	○	●	●	Favourable
P172	National Research Agency	€714.8m	€753.0m	€884.4m	●	●	●	●	●	●	Favourable
P190	Scientific and Technical Centre for Construction (CSTB)	€15.6m	€16.2m	€16.2m	●	●	●	●	○	○	Favourable
P190	Long-term nuclear expenses for the French Atomic Energy Agency's facilities	€740.0m	€740.0m	€740.0m	○	○	○	●	○	○	Favourable
P193	Development of technology for earth observation	€316.1m	€298.0m	€301.4m	●	●	●	○	●	○	Favourable
P193	Development of weather satellites	€44.2m	€69.0m	€61.5m	●	●	●	○	●	●	Favourable
P190	Equipment manufacturers	€9.1m	€14.5m	€14.0m	●	○	○	○	●	○	Favourable
P190	Institute for Radiation Protection and Nuclear Safety (IRSN)	€166.5m	€170.5m	€170.8m	●	●	●	●	●	○	Favourable
P190	National Industrial Environment and Risk Institute (INERIS)	€6.3m	€6.4m	€6.4m	○	○	●	●	●	●	Favourable
P193	Management of space access	€748.4m	€607.0m	€623.9m	○	○	○	●	●	○	Unfavourable
P142	Research, development and technology transfer	€35.5m	€39.3m	€39.5m	●	●	●	●	●	●	Favourable
P190	Upstream research	€179.1m	€96.8m	€101.0m	●	○	○	○	●	○	Favourable
P172	Scientific and technological research on energy	€772.6m	€815.7m	€840.4m	●	●	○	○	○	○	Favourable
P172	Scientific and technological research on environment	€1,113.2m	€1,136.4m	€1,153.5m	●	●	○	○	●	●	Favourable
P190	Support for the French Atomic Energy Agency's nuclear activities	€444.2m	€449.2m	€419.2m	●	●	○	○	○	○	Favourable
P190	Support for new energy technology (Atomic Energy Agency)	€51.0m	€51.0m	€51.0m	●	●	○	○	○	○	Favourable
P190	Support for new energy technology (IFPEN)	€120.5m	€122.3m	€123.3m	●	●	○	○	●	○	Favourable
P190	Gustave Eiffel University	€86.1m	€86.9m	€85.7m	●	●	○	●	○	○	Favourable

Earmarked Taxes		Outturn 2020	2021 Initial Budget Act	2022 BB							
P190	Annual contribution for the French Institute for Radiation Protection and Nuclear Safety	€61.3m	€61.1m	€61.1m	●	●	●	●	●	○	Favourable

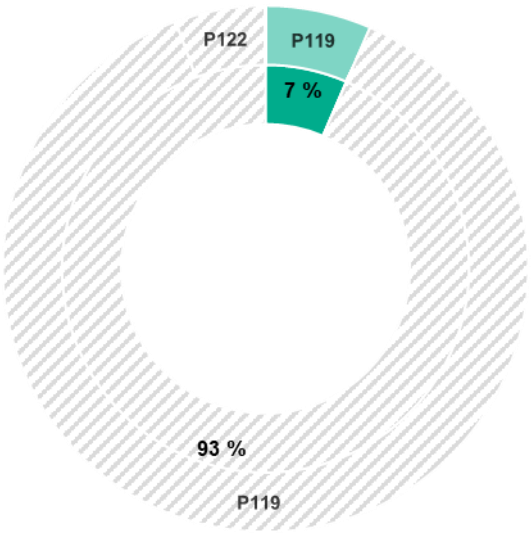
RELATIONS WITH LOCAL GOVERNMENT

Ministry for Regional Cohesion and Relations with Local Authorities

Resources in 2022

Budget appropriations: €4.24bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.28 bn

Mixed : -

Unfavourable : -

Neutral : -

Not tagged : €3.96 bn

The vast majority of the actions receiving grants under the "Relations with Local Government" Mission are not tagged since the recipients are free to use these appropriations as they see fit.

Only grants under the Special Investment Support action are tagged as favourable for all environmental objectives. These appropriations are earmarked for the resilience of local health systems, renovation of government properties and the ecological transition. The projects relating to the ecological transition use the subsidies to finance green mobility projects (building bicycle paths and greenways, etc.), energy-saving renovation of public buildings and community amenities (parks and green areas, planting greenery in urban centres, etc.)

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P119	Special Local Investment Support Grant	€9.5m	€100.0m	€276.1m	●	●	●	●	●	●	Favourable

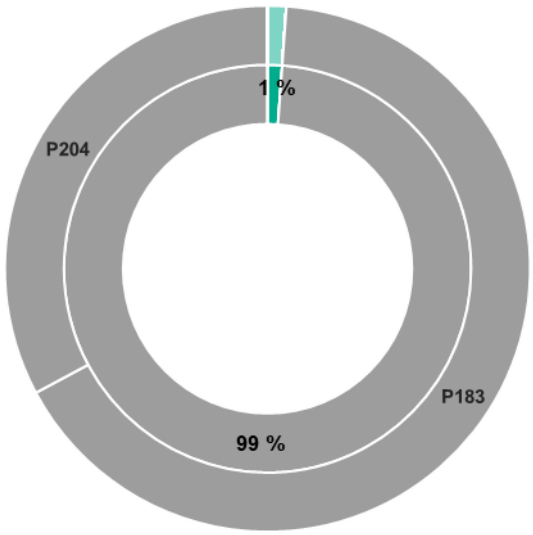
HEALTH

Ministry for Solidarity and Health

Resources in 2022

Budget appropriations: €1.30bn
Earmarked taxes: €0.01bn
Tax expenditures: €1.11bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.03 bn

Mixed : -

Unfavourable : -

Neutral : €1.28 bn

Not tagged : -

Tax expenditures :

Favourable : -

Mixed : -

Unfavourable : -

Neutral : €1.11 bn

The vast majority of the expenditures under the "Health" Mission are neutral for the environment, however the expenditures on prevention of environmental and food-related risks under Policy Programme 204 "Prevention, Health Safety and Healthcare" have been tagged as favourable for all of the environmental objectives except Climate Change Mitigation. The amount financing health and environment actions stands at €27.9m. These funds finance actions implemented under the interministerial asbestos action plan or the national strategy against endocrine disruptors, as well as research into environmental exposures (€0.9m), particularly exposure to pesticides. Appropriations of €0.5m finance policies to preserve the quality of water for home use or public use.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P204	Prevention of environmental and food-related risks	€25.5m	€26.2m	€27.9m	○	●	●	●	●	●	Favourable

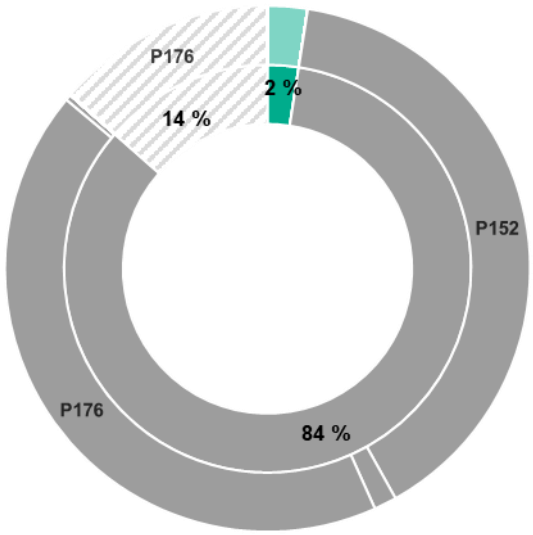
SAFETY

Ministry of the Interior

Resources in 2022

Budget appropriations: €14.74bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.08bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.36 bn

Mixed : -

Unfavourable : -

Neutral : €12.37 bn

Not tagged : €2.00 bn

Tax expenditures :

Favourable : -

Mixed : -

Unfavourable : -

Neutral : €0.08 bn

The "Safety" Mission expenditures that have a favourable impact for all environmental objectives include funds for crisis prevention and management (Action 11 of Policy Programme 161 "Civil Security), representing payment appropriations of €34m in the 2022 Budget Bill (excluding T2CAS). These appropriations are used to finance the identification of potential risks and threats, whether emerging or confirmed (nuclear, radiological, biological and chemical threats in particular) and anticipation of crises, particularly natural disasters. They also finance monitoring of civil security events and the mobilisation of appropriate operational resources in response to crises. Furthermore, they finance national solidarity, which includes back-up resources (deployed for major disasters) and emergency appropriations tapped to help disaster victims. These appropriations also finance operational prevention and civil protection, particularly in support of forest fire prevention services. Furthermore, expenditures on preparations and specialised intervention of national resources (Action 12 of Policy Programme 161), which represent payment appropriations of €330m in the 2022 Budget Bill (excluding T2CAS), have been tagged as favourable for all of the environmental objectives. These appropriations cover expenditures on maintenance and deployment of national resources committed by the central government on a day-to-day basis or during major disasters, whether natural or man-made, to provide aid and protection to the population. Examples include the deployment of personnel to fight forest fires.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P161	Preparations and specialised interventions using national resources	€307.6m	€293.4m	€330.5m	●	●	●	●	●	●	Favourable
P161	Crisis prevention and management	€27.0m	€31.6m	€33.6m	●	●	●	●	●	●	Favourable

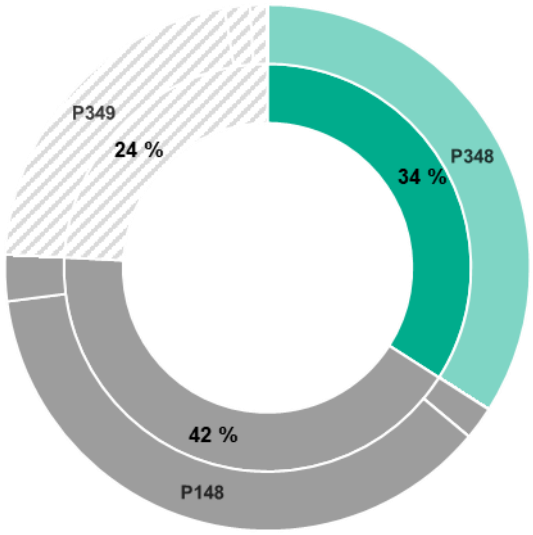
GOVERNMENT TRANSFORMATION AND THE CIVIL SERVICE

Ministry for Government Transformation and the Civil Service, Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €0.79bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €0.27 bn

Mixed : -

Unfavourable : -

Neutral : €0.33 bn

Not tagged : €0.19 bn

Most of the appropriations for the "Government Transformation and Civil Service" Mission have a neutral impact on the environment, with the exception of expenditures under Policy Programme 348 "Renovation of Administrative Buildings and Other Government Properties with Multiple Occupants". In keeping with the objectives of the policy on central government properties, this policy programme aims to help administrations acquire properties that are better suited to their missions, optimised, less costly and more energy efficient. Other actions focus on densifying, optimising and sharing properties, which may also produce energy savings. This policy programme contributes to the success of the "Energy Transition" section of the Great Investment Plan.

As part of the major renovation plan for administrative buildings initiated in 2017 with a grant of €1bn, renovation projects were launched for 38 central government administrative buildings in 2018, following a call for projects. Renovation work continues and the 2022 Budget Bill calls for payment appropriations of €266m, as was the case in 2021. These appropriations will finance major renovations and restructuring to improve insulation, renew equipment to reduce utilities consumption and to install renewable energy sources, such as solar panels.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P348	Acquisitions, construction	€13.4m	€112.0m	€116.9m	●						Favourable
P348	Design	€7.1m	€48.6m	€9.8m	●						Favourable
P348	Major renovations and maintenance by owner	€14.4m	€105.8m	€139.7m	●						Favourable

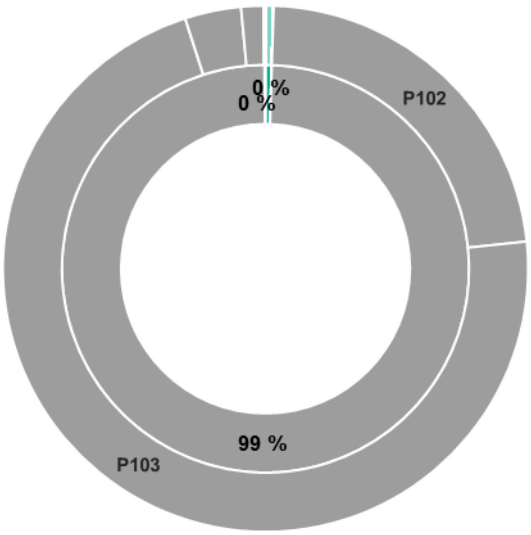
LABOUR AND EMPLOYMENT

Ministry of Labour

Resources in 2022

Budget appropriations: €13.24bn
Earmarked taxes: €9.48bn
Tax expenditures: €9.57bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

- **Favourable : -**
- **Mixed : -**
- **Unfavourable : -**
- **Neutral : €22.70 bn**
- **Not tagged : €0.02 bn**

Tax expenditures :

- **Favourable : €0.16 bn**
- **Mixed : -**
- **Unfavourable : -**
- **Neutral : €9.41 bn**

Most of the expenditures under the "Labour and Employment" Mission have a neutral impact on the environment. The only exception is the partial tax exemption for the share of transport fares that employers, local governments and job centres pay for commuters (€160m in the 2022 Budget Bill), which was tagged as favourable for the Climate Change Mitigation and Pollution Objectives. This tax expenditure covers a share of the cost of transport passes purchased by employees. This provides an incentive to use mass transport, which has a smaller environmental impact than individual vehicles. The tax expenditure also calls for some or all of employees' costs for fuel and for charging electric vehicles, rechargeable hybrids or hydrogen to be covered, making it an incentive for the use of cleaner individual vehicles.

Green Tagging in Detail

Tax Expenditures		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P111	Partial exemption for share of transport fares that employers, local governments or job centres pay for commuters	€160.0m	€160.0m	€160.0m	●	○	○	○	●	○	Favourable

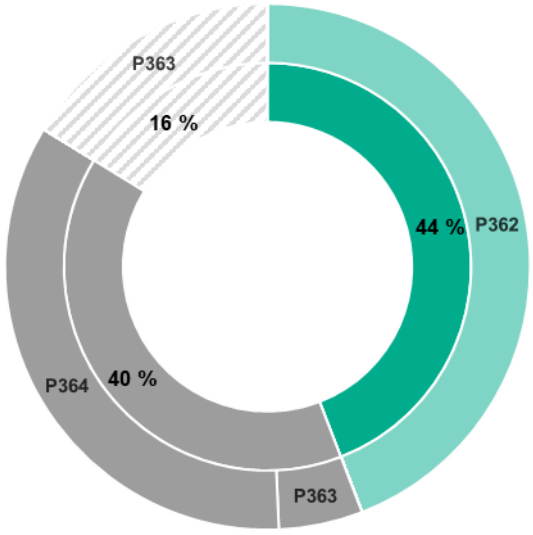
RECOVERY PLAN

Ministry for the Economy, Finance and the Recovery

Resources in 2022

Budget appropriations: €12.91bn
Earmarked taxes: €0.00bn
Tax expenditures: €0.00bn

Green Budget Tagging



Budget appropriations and earmarked taxes :

Favourable : €5.70 bn

Mixed : -

Unfavourable : -

Neutral : €5.11 bn

Not tagged : €2.10 bn

The amounts shown in this scorecard concern the share of the €100bn France Relance *recovery plan that is financed by budget appropriations.*

The payment appropriations of €12.9bn in the 2022 Budget Bill for the "Recovery Plan" Mission include €5.7bn in expenditures with a favourable impact on the environment. These appropriations cover all of the actions under Policy Programme 362 "Ecology". More specifically, this includes expenditures of €1.5bn for "Energy Efficiency Improvements". These expenditures are tagged as favourable for the Climate Change Objectives since they help reduce the energy consumption of the renovated buildings. The appropriations to support biodiversity are also tagged as favourable for all of the objectives, especially actions on urban densification and renewal, risk prevention and modernisation of water supply networks and sewage treatment plants). Expenditures of €1.0bn on "Green Energy Sources and Technologies" actions are all tagged as favourable for the environment. These actions include "Decarbonising Industry" (€0.3bn), "Circular Economy and Short Distribution Channels" €0.1bn), "Agricultural Transition" (€0.7bn) and "Oceans" (€0.1bn).

Appropriations for "Green Infrastructures and Mobility" (€1.4bn) are tagged as favourable for the Climate Change Mitigation and Pollution Objectives. They mainly finance measures to support the purchase of green vehicles (€0.5bn) and to promote the rail sector (€0.3bn) for freight, branch lines and overnight passenger service. No set percentage of expenditures on this policy programme has been tagged as unfavourable in view of the minor proportion of "mixed" expenditures, which are those to support the Lyons-Turin tunnel project in this instance.

All of the other actions under the other two budget policy programmes concerned by the France Relance *recovery plan ("Cohesion" and "Competitiveness") are deemed to have a mostly neutral impact overall. Some minor expenditures for different actions under the 2022 Budget Bill are not subject to a set percentage to be tagged as favourable even when they are deemed to have a positive impact on the environment under the €100bn recovery plan. This is the case of some of the expenditures on renovation of buildings financed under the "Culture" Action of Policy Programme 363 "Competitiveness".*

The appropriations for this Policy Programme that are not tagged correspond to expenditures for upgrading central government, local government and private digital equipment, along with expenditures under the "Technological Sovereignty and Resilience" Action.

Tagging of some actions may be adjusted in the 2022 budget outturn documents, based on the projects that actually received financing.

Green Tagging in Detail

Budget appropriations:		Outturn 2020	2021 Initial Budget Act	2022 BB	Climate (Mitigation)	Climate (Adaptation)	Water	Waste	Pollution	Biodiversity	Tag
P362	Biodiversity and land conservation	€0.0m	€416.5m	€528.2m	●	●	●	●	●	●	Favourable
P362	Decarbonisation of industry	€0.0m	€281.0m	€288.0m	●				●		Favourable
P362	Regional Investment Grant	€0.0m	€323.8m	€47.5m	●	●					Favourable
P362	Circular economy and short distribution channels	€0.0m	€84.0m	€129.8m	●			●	●		Favourable
P362	Green energy and technology	€0.0m	€898.7m	€1,008.3m	●				●		Favourable
P362	Infrastructures and green mobility	€0.0m	€1,299.9m	€1,363.8m	●				●		Favourable
P362	Oceans	€0.0m	€44.8m	€95.2m			●		●		Favourable
P362	Energy efficiency improvements	€0.0m	€2,825.3m	€1,505.8m	●	●					Favourable
P362	Agricultural transition	€0.0m	€390.0m	€730.3m	●	●			●	●	Favourable

2. Summary of Missions with a Neutral Impact on the Environment

The central government budget includes 15 missions that do not have a separate “Mission Scorecard” since the environmental impact of the relevant expenditures is completely neutral, for the purposes of the methodology set out above. The missions with a neutral impact on the environment are:

- The central government’s general and local administration;
- Veterans affairs, memory and links to the nation;
- Advice and supervision of central government;
- Undistributed appropriations;
- Defence;
- Government policy management;
- Education;
- Immigration, asylum and integration;
- Justice;
- Pensions (Policy Programmes 741 and 742);
- Emergency Plan for the Pandemic;
- Public authorities;
- Social security and retirement schemes;
- Solidarity, inclusion and equal opportunities;
- Sports, youth and non-profits.

Box 2 – Ministries' Operating Expenditures (excluding payroll and property expenditures)

The operating expenditures discussed here are those for the consumption of goods and services by the central government (but not central government agencies) in the performance of its missions. They are classified, with a few minor adjustments[1], using the list of accounts in the Central Government Chart of Accounts selected for the Joint Taskforce's 2019 Green Budgeting Report. The expenditures mainly concern the following items and expenses: fuel purchases, official travel, heating, purchases of vehicles (from the Public Procurement Directorate data). The scope of this analysis does not include expenditures on property, or information systems, which are tagged differently (see the relevant boxes and explanations).

Not all operating expenditures can be tagged on the basis of the budget, since many are not all identified under the action/sub-action classification used for green budget tagging. These expenditures are spread over many actions and often represent only a small fraction of the expenditures on those actions. This means that the tagging presented in this box are not added into the aggregate tagging of actions and sub-actions to avoid double counting.

The outturn data for operating expenditures in 2019 were presented summarily and tagged in the first edition of the Green Budget. The second edition includes some very substantial changes. The outturn data on operating expenditures in 2019 and 2020 are tagged and presented by type of expenditure and by ministry.

The method follows the tagging established by the Joint Taskforce, with a few adaptations. **Therefore, all of the expenditures charged to the Central Government Chart of Accounts items under consideration have been tagged as favourable, unfavourable or neutral, with the exception of a few expenditures that cannot be tagged**, because the items they are charged to cover excessively heterogeneous expenditures. This is the case for the "Bicycles and motorcycles" and "Other energy sources" items. Consequently, the favourable and unfavourable tags attributed by the Joint Taskforce were changed to not tagged. Furthermore, the addition of the Central Government Chart of Accounts "Goods Transport" item this year has broadened the scope of the analysis.

The total operating expenditures identified and analysed stood at €2.3bn in 2019 and were little changed at €2.1bn in 2020. The pandemic caused some expenditures to decrease and others to increase.

In 2020, €0.4bn in operating expenditures had a favourable impact on the environment. This mainly concerns expenditures on mass transport for employees by rail or sea (€136m). **In contrast, €1.2bn in operating expenditures in 2020 have an unfavourable environmental impact.** These mainly concern expenditures on motor fuel (€669m), gas and fuel oil (€160m) and road and air transport of employees and goods (€117m). These two modes of transport produce the most emissions and are classified as unfavourable. The Ministry for the Armed Forces accounts for 60% of the 2020 operating expenditures analysed, primarily expenditures on motor fuel, which are indispensable for operational readiness and the armed forces' domestic and external operations.

The scorecards for each mission include an estimate of operating expenditures, along with other "untagged" expenditures, represented by a grey and white striped area in the expenditure ring charts.

1 The Central Government Chart of Accounts items "Other energy sources" and "Bicycles and motorcycles" were retagged. The environmental impact of the Central Government Chart of Accounts item "Goods transport" is now assessed.

Operating Expenditures Paid in 2019 and 2020 by Expenditure Category (€ millions) [7]

Expenditures	2019	2020	Mitigation	Adaptation	Water	Waste	Pollutions	Biodiversity	Tagging
Other energies	5,4	5,2	NC	NC	NC	NC	NC	NC	Not tagged
Fuels and oils	744,6	669,2							Unfavourable
District heating and cooling networks	43,3	42,2							Favourable
Water	92,1	86,8							Unfavourable
electricity	399,3	417,0							Neutral
Fuel oil	40,0	33,4							Unfavourable
Gas	149,1	126,9							Unfavourable
Waste collection and treatment	57,1	60,8							Favourable
Maintenance of green areas	68,5	66,4							Favourable
Bicycles and motorcycles	2,4	3,4	NC	NC	NC	NC	NC	NC	Not tagged
Vehicles rental	102,8	100,7							Unfavourable
Public transport of people									
of which air	16,0	31,1							Unfavourable
of which railway	178,4	132,0							Favourable
of which maritime	4,0	4,0							Favourable
of which road	15,2	12,0							Unfavourable
of which medicalized/disabled	3,6	18,4							Neutral
of which not identified	82,1	41,4	NC	NC	NC	NC	NC	NC	Not tagged
Goods transport									
of which air	47,4	51,7							Unfavourable
of which railway	21,2	17,3							Favourable
of which maritime	1,9	2,4							Favourable
of which road	37,2	22,1							Unfavourable
of which multimodal	42,3	52,7	NC	NC	NC	NC	NC	NC	Not tagged
of which not identified	36,5	24,4	NC	NC	NC	NC	NC	NC	Not tagged
Vehicle purchases (DAE data)	104,5	125,4							
of which electric	5,0	41,7							Favourable
of which plug-in hybrid	0,0	1,3							Favourable
of which thermal	99,5	82,4							Unfavourable
Total	2 295,2	2 147,0							

[7] The operating expenditures in the "Expenditures" column refer to Central Government Chart of Accounts items or to groups of goods identified in the Chorus invoicing system. The names have been adapted to make this report more comprehensible. The data on vehicle procurement come directly from the Public Procurement Directorate. The figures do not include expenditures on certain operational vehicles procured under specific contracts between the ministries and the Public Procurement Union (UGAP). The "Rechargeable Hybrid" item refers only to procurement of rechargeable hybrid vehicles that are tagged as favourable for the Climate Change Mitigation Objective. Non-rechargeable hybrid vehicles are classified as "internal combustion" vehicles, alongside vehicles burning petrol or diesel oil.

Operating Expenditures Paid in 2019 and 2020 by Ministry (€ millions)[8]

	2019			2020		
Ministère	**Favorable**	**Défavorable**	**Neutre**	**Favorable**	**Défavorable**	**Neutre**
Agriculture et alimentation	1,1	1,5	0,8	1,2	1,1	0,6
Armées	299,6	854,5	178,0	215,7	787,4	194,9
Cohésion des territoires et relations avec les collectivités territoriales	0,0	0,1	0,0	0,0	0,0	0,0
Culture	3,7	1,9	3,3	3,3	1,7	3,1
Economie, finances et relance	10,8	38,7	39,0	12,9	30,9	38,9
Éducation nationale, jeunesse et sports	2,5	9,7	7,2	2,4	7,5	6,4
Enseignement supérieur, recherche et innovation	0,6	0,2	0,3	0,5	0,1	0,2
Europe et affaires étrangères	4,9	12,1	9,5	5,0	23,0	24,1
Intérieur	36,3	271,5	94,7	87,9	234,8	97,6
Justice	13,5	77,8	46,9	14,6	72,5	46,9
Mer	0,5	2,4	0,9	0,3	1,9	0,9
Outre-mer	1,2	3,2	1,6	1,2	2,7	1,7
Services du Premier ministre	4,3	7,9	4,0	3,1	3,7	4,2
Solidarités et santé	0,7	1,4	1,6	0,8	11,5	1,6
Transformation et fonction publiques	0,0	0,0	0,0	0,0	0,0	0,0
Transition écologique	20,4	40,5	14,9	19,1	37,4	14,3
Travail, emploi et insertion	0,0	0,2	0,2	0,0	0,0	0,0
Total général	**400,1**	**1 323,4**	**402,9**	**368,1**	**1 216,4**	**435,4**

The difference between the totals in the table titled “Operating Expenditures Paid in 2019 and 2020 by Expenditure Category” (page 77) and the totals in the table titled “Operating Expenditures Paid in 2019 and 2020 by Ministry” stems from the untagged expenditures, which are not shown in the latter table.

[8] Excluding expenditures that are not tagged.

Box 3 – France's Green Bond

The green bond market was created in 2007 at the initiative of supranational issuers, such as the European Investment Bank and the World Bank and it has grown rapidly in recent years. Issuance stood at USD290bn in 2020 (source: Climate Bonds Initiative). France has contributed to the growth of the green bond market. Its initial issue of a sovereign green bond, the Green OAT 1.75% 25 June 2039, raised €7bn. This made France the first country to issue a benchmark green bond. Since then, other euro area countries have followed suit, including Belgium, Ireland, the Netherlands, Lithuania, Germany, Italy and Spain. France launched a second sovereign green bond in March 2021 with initial issuance of €7bn, the Green OAT 0.5% 25 June 2044. These two bonds have been tapped and their outstanding amounts at the end of August 2021 stood at €28.9bn and €9.3bn respectively.

Each year, green bond issuance is matched to a set of expenditures selected by an interministerial working group in accordance with the criteria set out in the green bond framework document and with the work done on the Green Budget. These budget and tax expenditures meet some requirements that are specific to the green bond market. This means that expenditures, such as those financed by earmarked taxes, which could result in double counting, are excluded.

France's green bond provides sustainable finance with a risk-free liquid asset that enables green investors to diversify their portfolios. It also exemplifies a transparent approach that could provide an incentive for corporations and other French green bond issuers to follow market best practices as well. When it launched its first Green OAT, France made a commitment to evaluate the environmental impact of the eligible green expenditures. This work is overseen by the Green OAT Evaluation Council and results in the periodic publication of reports about each of the budget items concerned. The Secretariat of the Evaluation Council is provided jointly by the Sustainable Development Agency and the Directorate General of the Treasury.

Box 4 – Central Government Financial Support for Local Government

Central government financial support for local government, excluding transfers of tax revenues, is made up of €43.2bn in levies on revenue in the 2022 Budget Bill and €4.2bn in expenditures on the Relations with Local Government Mission in the 2022 Budget Bill.

As was the case for the first Green Budget, the levies on revenue paid to local government are not tagged in this edition because it is impossible to identify the expenditures that they finance precisely. The principle of free administration means that local governments are free to use these grants, including the main one, the General Operating Grant, as they see fit.

The Relations with Local Government Mission is made up of Policy Programme 119 "Financial Support for Local Government", which covers investment support grants and decentralisation grants, and Policy Programme 122 "Special Support and Administration", which covers special grants for local government, such as grants for local governments in Overseas France. As is the case for levies on revenue, the recipients are free to use these appropriations as they see fit and they are not tagged in this Green Budget.

By way of an exception, work was done in the first half of 2021 to develop a methodology for tagging local investment grants, meaning the Infrastructure Grant for Rural Areas, the Local Investment Support Grant, the *Département* Investment Support Grant and the Urban Policy Grant. These grants are allocated at the local level in accordance with objectives set out in national circulars. The work concluded that it is impossible to come up with a reliable tagging methodology, because the very large number and wide diversity of the subsidised investment projects make it impossible to tag by action and sub-action, or to find an appropriate tagging methodology that is reliable and reproduceable from one year to the next. Nonetheless, central government support for local investment does finance many green projects. In 2020, green projects accounted for 22.5% of the projects financed by the Local Investment Support Grant and the Investment Support Grant for Rural Areas (Indicator 1.2 in the Annual Performance Plan).

As part of the Recovery Plan, an exceptional "Green and Health" allocation of €950 was made to the Local Investment Support Grant in 2020 for local health resilience, renovation of public properties and the ecological transition. The 2021 Budget Act also allocated €950m for grants to local government for insulating public buildings. These expenditures have been tagged as favourable in the relevant Recovery Plan Mission Policy Programmes.

Box 5 – Environmental Impact of the European Union Budget

The levy on revenues paid to the European Union represents France's annual contribution to the EU budget. This levy was not tagged in the first Green Budget and will not be tagged in this second edition either, because there is no green budgeting method for the European Union budget that is similar enough to the French method.

The levy should be tagged in the third edition of the Green Budget appended to the 2023 Budget Bill. The European Commission plans to publish a report on changes to its accounting methodology for green expenditures by the end of 2021 or in early 2022 (see below). The information in the report regarding granularity, correcting for bias and overestimates, application to the 2021-2027 payment appropriations, etc. should make it possible to track the payments made by the Commission and financed by the levy, which would make tagging possible. The current lack of visibility about the outstanding commitments of previous annual payments, which accounted for 60% of payments in 2020, creates an obstacle to using the Green Budget methodology, based on the purpose of expenditures, to tag the levy on revenues paid to the European Union.

The European Union budget finances green expenditures in many areas (agriculture, research, transport, energy efficiency of buildings, etc.) Monitoring of the environmental impact at the European level focuses on the climate. The European Union committed itself to a target of devoting at least 30% of its 2021-2027 budget to fighting climate change, compared to 20% of its 2014-2020 budget. The National Recovery and Resilience Plans (NRRPs) financed under the European Recovery Plan should also devote at least 37% of their investments to climate transition.

The European Commission's method for recognition of expenditures in favour of the climate since 2014 has been based on the OECD's "Rio Markers". This scoring system attributes coefficients of 100% to financing that makes a principal contribution to climate objectives; 40% to financing that makes a significant contribution and 0% to financing that makes no contribution or a negligible contribution. The European Commission currently looks at expenditure plans, rather than ex-post expenditures, and does not consider the negative climate impact that certain expenditures may cause.

The European Commission also uses this methodology to monitor expenditures favouring biodiversity, which accounted for €85bn, or 8%, of the European Union budget between 2014 and 2020. However, expenditures favouring the climate and biodiversity are not cumulative. The European Commission counts certain expenditures as favourable for both the climate and biodiversity.

The European Commission will continue to apply its methodology based on the Rio Markers in the period from 2021 to 2027, but seek to refine it through better application of the climate coefficients and closer scrutiny of expenditures of certain European Funds, in keeping with the recommendations of the European Court of Auditors. In addition, it will start tracking expenditures favouring air quality starting in 2022. Each year, the Commission reports on its monitoring of environmental expenditures in its Annual Management and Performance Report for the EU Budget and in its Draft General Budget.

Box 6 – Central Government Equity Holdings (1/2)

Transactions relating to the central government equity holdings are financed under Policy Programme 731 of the earmarked account "Central Government Equity Holdings". In 2020, the Policy Programme 358, "Exceptional Increase in Central Government Equity Holdings" under the Pandemic Emergency Plan Mission and covered by the Total Central Government Expenditures Target was created to boost the revenues of the earmarked account by up to €20bn. This added funding was intended to provide equity financing, near-equity financing, and debt financing support for the strategic businesses hardest hit by the economic consequences of the pandemic. It is also intended to finance sector plans by setting up investment funds to support sectors that have been weakened by the pandemic.

Since Policy Programme 731 is not covered by the Total Central Government Expenditures Target, the appropriations are not tagged in the Green Budget. In any case, green tagging would have been very difficult since the central government funds provided to businesses in this way often take the form of capital increases or shareholder loans, which are used interchangeably with the businesses' other internal resources (cash flow) and external resources. This means it is impossible to link central government financing to the businesses' green expenditures. Nevertheless, some of the beneficiary businesses are already evaluated and tagged by third parties.

As part of its involvement in the governance of the businesses in its portfolio, the French Government Shareholding Agency does define its expectations concerning social and environmental responsibility, particularly with regard to climate change under the terms of the Ministry for the Economy, Finance and the Recovery's Climate Action Plan. Furthermore, Article 66 of the third 2020 Supplementary Budget Act stipulates that major corporations receiving equity financing from the exceptional appropriations for the Emergency Plan must make a commitment to reduce their greenhouse gas emissions in line with the National Low-Carbon Strategy.

By 2022, the EU "taxonomy" reporting will be mandatory for businesses and will provide a means for assessing the sustainability of the central government equity holdings concerned.

<u>Procedures for the Environmental Commitments of Businesses in which the Central Government is a Shareholder</u>

The Government Shareholding Agency updated the Charter of Social and Environmental Responsibility for the businesses in its portfolio. This charter sets out the central government's environmental priorities for its shareholdings: transition to a low-carbon economy and mitigation of the environmental impact of the businesses' activities (reduce CO_2 emissions and waste, promote the circular economy, conserve biodiversity, manage water responsibly, etc.)

With regard to climate change, the Government Shareholding Agency defined guidelines for the businesses in its portfolio in order to meet the Paris Agreement objectives. The guidelines comply with Article 66 of the third 2020 Supplementary Budget Act and require businesses to:

- measure their direct and indirect carbon footprint (GHG inventory scopes 1 and 2, as well as scope 3);
- set emission reduction targets in the case of the largest emitters, ensuring that the targets are ambitious and consistent with the Paris Agreement;
- define a plan of action to meet these targets;
- present the carbon inventory, targets met and the plan implemented to their boards every year.

Box 6 – Central Government Equity Holdings (2/2)

Spotlight on recent acquisitions

Recipients of the central government's equity investments in major corporations weakened by the pandemic that are financed by the €20bn in exceptional appropriations made under the second 2020 Supplementary Budget Bill have to commit to reducing their GHG emissions in line with the sector carbon budgets under the National Low-Carbon Strategy. The Government Shareholding Agency verifies compliance after each transaction.

The French railway operator (SNCF) is subject to this requirement because of the capital increase it received in December 2020. The SNCF group's commitment to reduce its GHG emissions in line with the National Low-Carbon Strategy was increased. The group has committed to a 30% reduction of its emissions stemming from its transport activities by 2030, compared to its emissions in 2015, and to a 50% reduction in emissions stemming from its properties.

The French government's support for Air France – KLM came with renewed environmental commitments from the airline group for a large and rapid reduction in its CO_2 emissions that is consistent with the sector carbon budgets, the National Low-Carbon Strategy and legal requirements:

- a 50% reduction in CO_2 emissions per passenger/km by 2030, compared to 2005
- a 50% reduction in the volume of emissions from flights within mainland France to and from Orly airport and between regional airports by the end of 2024

Box 7 – Government Export Guarantees (1/3)

Government export guarantees are provided through Bpifrance Assurance Export on behalf of and in the name of the central government. They constitute a major means of government support for exports.

The outstanding amounts covered by export credit insurance, which range between €60bn and €90bn, make it the primary means[9] of government support. This insurance covers banks' medium- and long-term exposure to losses on loans to foreign public and private-sector buyers of French exports. It also covers exporters against the risk that their export contracts will be rescinded, particularly for political motives. The central government's intervention is intended to bolster the private insurance market by covering risks that are beyond the latter's capacity and incurred in risky international deals that generally involve very large amounts.

Coverage is provided at the discretion of the Minister for the Economy, acting on the advice of the Foreign Trade Guarantees and Credit Commission, which is chaired by the Directorate General of the Treasury. The other members of the Commission include the Budget Directorate and representatives of the Ministry of Foreign Affairs and the Ministry of Ecology.

The central government budget is used only to offset any failings in the procedure, that is, if the indemnities for claims are greater than the sum of insurance premiums and recovery of old claims. The credit insurance procedure has been structurally profitable for many years, which means that budget expenditures, which are often zero, are not the right metric for analysing export financing policy. Estimated appropriations could be made for Policy Programme 114 "Claims on central government guarantees" only to offset a potential deficit of the procedure if major loan losses are incurred, which has never happened in recent years. However, such expenditures would be tagged as neutral if the guarantees paid do not relate to projects with a clear favourable or unfavourable environmental impact.

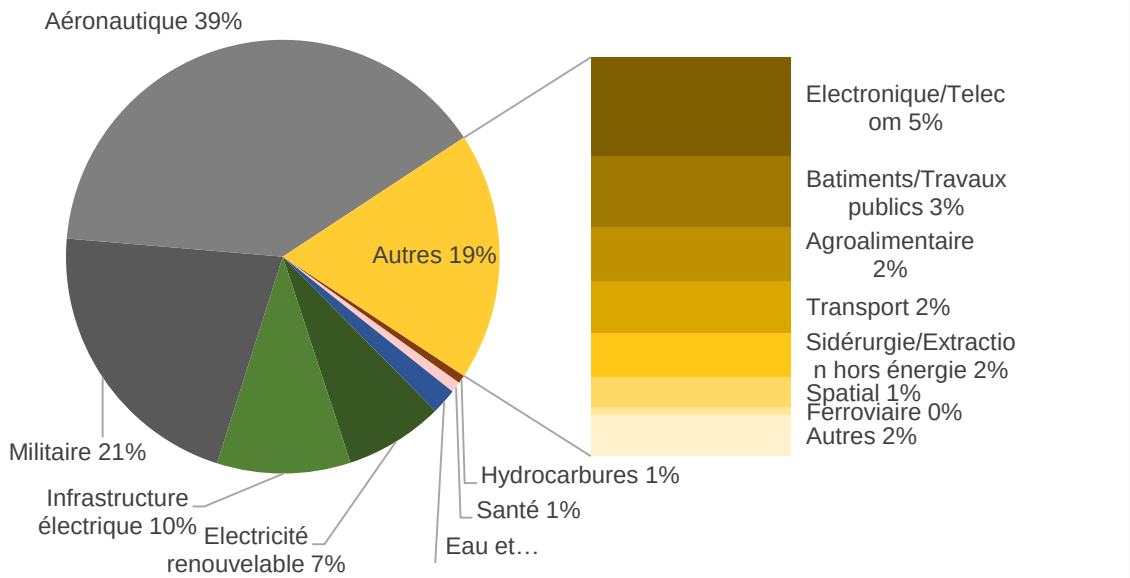
On the other hand, the annual flows of applications for government guarantees, even though they do not result in any appropriations and, consequently are not tagged in the Green Budget, provide a more appropriate reflection of export financing policy and its contribution to environmental policies.

As of 2022, the sustainability of the export support policy will be assessed and tagged following a methodology that is in line with the "European Taxonomy, meaning the European Union's classification system for "sustainable" activities (with regard to climate and environmental criteria), which is currently being finalised. Pending this more granular taxonomy, the breakdown by sector provides an overview of the export financing policy with regard to the ecological transition objectives.

In 2020, 192 applications for a total of €12.7bn in government guarantees (including €10bn for civilian deals), were accepted. The breakdown by economic sector was as follows:

[9] The other government export guarantees, such as prospecting insurance, foreign exchange insurance and insurance on deposits and prefinancing, cover much smaller amounts, totalling some €2bn. These guarantees are mainly intended to help small and intermediate-sized businesses, which are generally less familiar with export financing, to develop their international sales.

Box 7 – Government Export Guarantees (2/3)

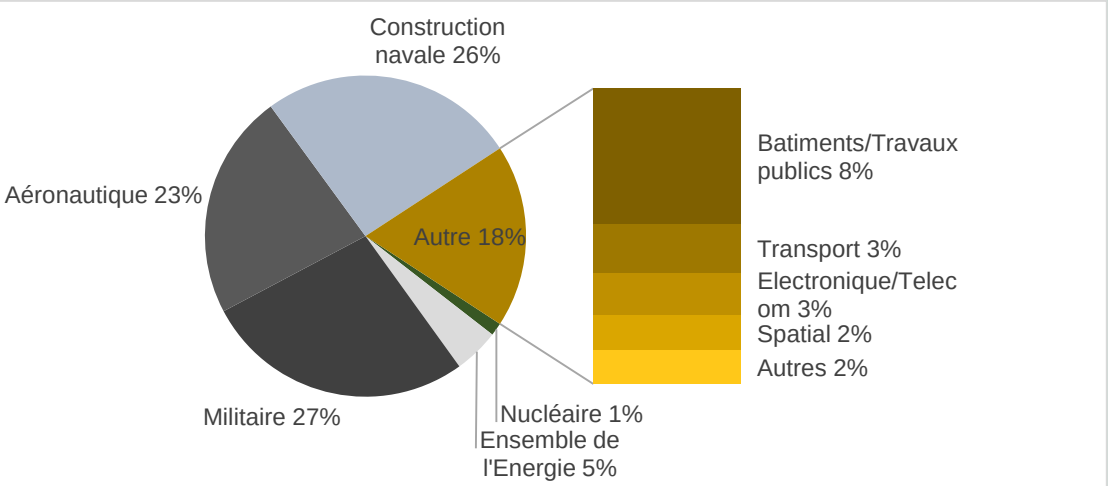


Flux - Répartition des promesses de garanties délivrées en 2020

Activities that contribute to the ecological transition, such as electricity production using renewable energy sources, electricity, water and sanitation infrastructures for waste treatment and landfill aftercare, accounted for €2.5bn, or 25% of the credit insurance coverage provided for civilian deals, whereas support for hydrocarbons accounted for €80m, or less than 1% of the coverage provided in 2020.

It should be noted that the coverage provided does not necessarily correspond to the projects that are ultimately carried out with government guarantees, since not all of the guaranteed projects are completed.

The outstanding amount of central government guarantees at the end of 2020 stood at €60bn and broke down as follows:



Stock - Répartition de l'encours en gestion (fin 2020)

Box 7 – Government Export Guarantees (3/3)

Export Financing Climate Policy

The Export Financing Climate Plan was the subject of a report to Parliament in October 2020. Following the report, the 2021 Budget Act included a ban on support for the dirtiest types of oil (extra-heavy oil, shale oil, tar sands) starting in 2021, a halt to support for new oil deposit exploration and extraction projects starting in 2025 and an end of support for new gas deposit exploration and extraction projects by 2035. Financing for fossil-fuelled power stations that increase the carbon intensity of the country's electricity mix has been banned since 1 January 2021.

A "climate bonus" has also been introduced as an incentive to increase the credit insurance coverage available for projects with a positive impact for the ecological transition. This increased coverage also concerns Treasury loans. In addition, a line of concessional Treasury loans totalling €100m was created in 2021 to finance projects that are favourable for the ecological transition.

The Minister for the Economy, Finance and the Recovery launched the Export Finance for the Future coalition in April 2021 for the purpose of working with a growing number of countries to promote the end of export financing for fossil fuels at the international level and to change the multilateral framework to create greater incentives to support sustainable projects.

Box 8 – Digital Technology Expenditures

Expenditures for "digital technology" procurement take many forms. They may consist of investment expenditures for projects to computerise central government services (e.g. TECH.GOUV Programme), financing for infrastructures or for building new networks (e.g. the Very High-Speed Internet Plan). They also include some administrative operating expenditures, such as expenditures relating to computer work stations, and to developing, modernising and maintaining custom applications. They can also include expenditures on grants to businesses for the computerisation of their production and activities.

These expenditures were not tagged in the first Green Budget. This decision was made because of the lack of robust data or any real consensus among experts on their environmental impact. The investigations and consultations carried out in preparation for this second Green Budget have once again led to the conclusion that there is still no consensus about the environmental impact of digital technology. Therefore, these expenditures are still not tagged for the second time, pending the results of several moves by the government that could lay the groundwork for tagging digital technology expenditures in future editions of the Green Budget.

The Ministry for the Ecological Transition and the Ministry of State for the Digital Transition and Electronic Communications published a "Digital Technology and Environment" roadmap in February 2021. The first step set out in the roadmap concerns increasing our knowledge about the environmental footprint of digital technology, based on the finding that there is a "need for a consensus on precise, clear and objective data and for recognised methodologies relating to the real impacts of digital technology on the environment (both positive and negative)". The Environment and Energy Management Agency and the Electronic Communications and Postal Regulatory Authority were commissioned to conduct an assessment. The findings of this assessment are expected by the third quarter of 2022, with the preliminary results in 2021.

The government has also planned several other innovative initiatives. The Ministry for the Ecological Transition will calculate the environmental impact of digital technology. This will provide the basis for establishing a standardised methodology applicable to other ministries and public sector bodies. An inventory of the environmental impacts of digital technology expenditures is also being drawn up, starting with a drive to measure the impacts of three digital technology products (the datacentre of the Ministry for the Ecological Transition, the central government web-conferencing tool, the SECHEL application).

D. Environmental Performance Indicators

Performance indicators improve the assessment of the environmental impact of expenditures under the central government budget.

This report includes a new "Performance" section, as defined by the Constitutional Bylaw on Budget Acts. This new section adds and will continue to add another dimension to the Green Budget. In addition to green tagging expenditures, the indicators in this section, which come from the 2022 Annual Performance Plans, can be used to qualify their environmental effectiveness, instead of relying solely on appropriation amounts. The research work for this purpose focused on expenditures that were tagged as favourable, unfavourable or mixed in the Green Budget.

The performance dimension can be used to evaluate the effectiveness and efficiency of public expenditures and the quality of public services with respect to the resources allocated. It can also be used to identify the fiscal resources deployed, along with the other means used to optimise the effectiveness of public expenditures. The goal is to draw the attention of decision-makers, managers and government agents to the actual design of the policies financed by the central government budget and to ways of making the best choice of policy tools, instead of focusing solely on increases and reductions of resources.

The indicators covered in this section account for 6% of the indicators in the 2022 Annual Performance Plans. They mainly relate to expenditures that have been tagged as favourable in the Green Budget, since the indicators focus less on unfavourable expenditures and tax expenditures. Other expenditures tagged in the Green Budget do not have corresponding performance indicators. Examples of expenditures that are not covered by performance indicators include some appropriations for public service electricity subsidies allocated to green energy sources and technologies under the Recovery Plan, or appropriations for research on clean energy and sustainable mobility and urban systems.

Central government operating and property management expenditures in 2020 are tagged in this report. The Eco-Friendly Public Services Plan launched by the Ecological Defence Council on 12 February 2020 supplements the information provided by the performance indicators. The plan is based on twenty measures that mainstream ecological concerns into the day-to-day operations of public services and mobilise civil servants to take initiatives appropriate to their missions and their environment. The measures concern such matters as sustainable mobility for civil servants, responsible procurement and reducing the energy consumption of government buildings[10]. Joint work is currently underway by the Budget Directorate and the Ministry for the Ecological Transition on the complementarity of the Annual Performance Plans and the green indicators with the aim of presenting performance indicators for the Eco-Friendly Public Services Plan in the 2023 Budget Bill. The green tagging of the central government's operating expenditures in this edition of the Green Budget could also be linked to the results published in the 2021 report on the implementation of the Eco-Friendly Public Services Plan.

All of the environmental performance indicators identified in the 2022 Annual Performance Plans are presented below. The Green Budget now provides a comprehensive view of environmental performance indicators across all ministries. Thirteen of these indicators are presented in more detail, with long series of outturn data, where available, along with explanatory information taken directly from the 2020 Annual Performance Reports and the 2022 Annual Performance Plans. The first indicators presented are those relating to the "Recovery Plan" Mission, followed by the indicators by mission, in the same order as in the Green Budget.

[10] The central government's commitments to eco-friendly public services are set out in detail in a circular from the Prime Minister dated 25 February 2020 (NOR : PRMX2005931C) : https://www.legifrance.gouv.fr/download/pdf/circ?id=44936

The Annual Performance Plans and the Annual Performance Reports contain all of the outturn and forecast details about these indicators, along with the entire central government performance measurement system. They are available from the Budget Directorate's website[11].

The data and documentation about the performance indicators presented below are taken directly from the Annual Performance Plans and the Annual Performance Reports. The forecasts for 2021 were presented in the 2021 Annual Performance Plans and the forecasts for 2022 were presented in the 2022 Annual Performance Plans. The targets for 2023 were set in 2020, when drafting the 2021 Annual Performance Plans.

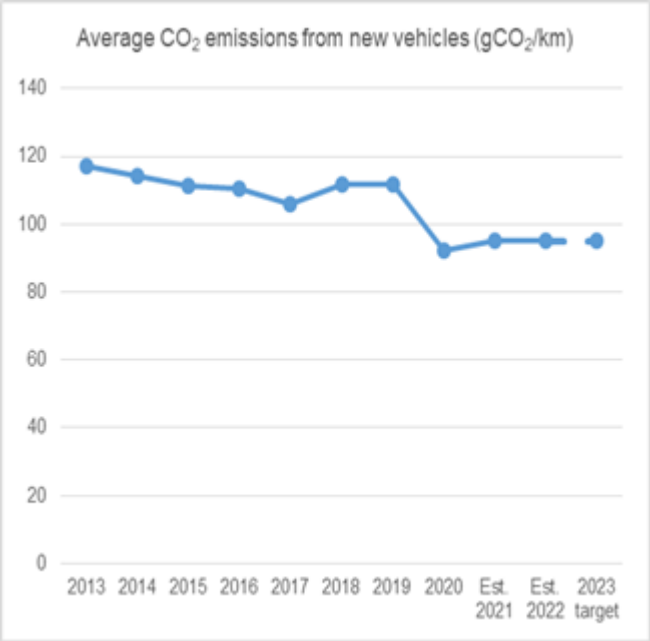
1. Recovery Plan Mission – Reducing CO_2 Emissions in France

Back in 2020, the government deployed unprecedented emergency measures to protect businesses and their employees, and then to support economic activity, consumption, businesses and households in the face of the COVID-19 pandemic and its economic and social impact. On 3 September 2020, the Prime Minister extended these measures with the announcement of the *France Relance* recovery plan. This plan is a response to the three structural challenges facing the French economy: accelerating the ecological transition, improving the competitiveness of its businesses, enhancing local powers and development throughout the country. The Ecology Policy Programme 362 records the appropriations that contribute to the ecological transition of the economy to create sustainable and equitable growth. For this purpose, it includes a major renovation of buildings to improve energy efficiency that targets public buildings, private homes, social housing and the business premises of very small, small and medium-sized enterprises.

Changing modes of transport is another core issue. Unprecedented resources have been deployed for actions relating to green infrastructures and mobility, as well as green technologies, with infrastructure investments, support for the transformation of rail, road and air transport and support for the demand for green vehicles. This Policy Programme drives renewed ambition to limit the ecological impacts of human activity on oceans, biodiversity and land take, and to decarbonise industry and accelerate the agricultural transition.

[11] https://www.budget.gouv.fr/documentation/documents-budgetaires

2. Recovery Plan (Policy Programme 362 – Ecology) and Ecology, Sustainable Development and Mobility (Policy Programme 174 – Energy, Climate and Post-Mining) – Average CO_2 emissions of new vehicles



France's objective is to reduce its greenhouse gas emissions by 40% between 1990 and 2030, and to achieve carbon neutrality in 2050. Success requires improving the environmental and energy efficiency performance of automobiles. Transport accounts for the largest share of greenhouse gas emissions in France (31% of the emissions in the 2019 national inventory). Road transport accounts for 91% of the emissions from this sector.

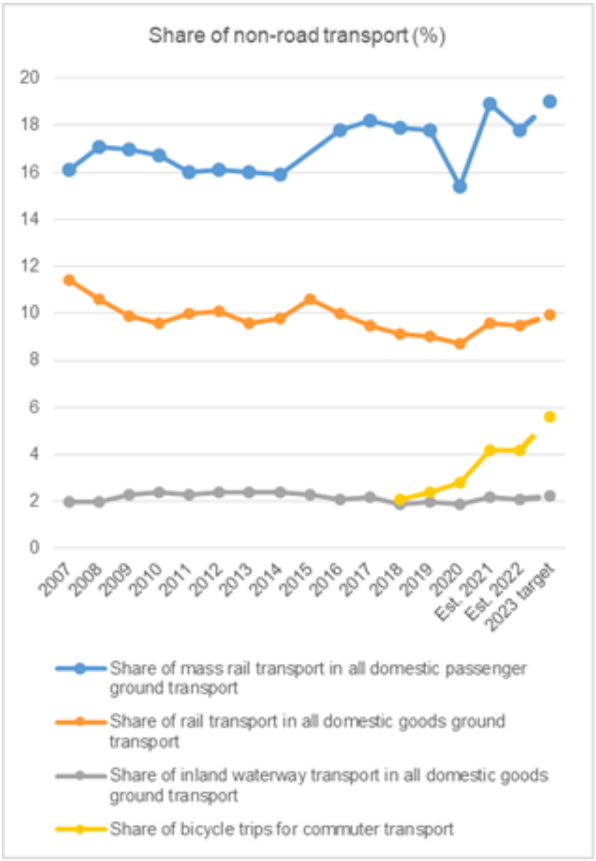
France has set several objectives for private cars and light commercial vehicles:

- An annual greenhouse gas emissions target of 69.8 MtCO2e in 2030, compared to 92.6 MtCO2e in 2019 (National Low-Carbon Strategy);

- Capping the proportion of new private cars sold in 2030 that emit more than 123g of CO_2/km WLTP (Climate and Resilience Act) at 5%;

- Ending the sale of new private cars and light commercial vehicles burning fossil fuels by 2040 (Mobility Reform Act).

3. Recovery Plan (Policy Programme 362 – Ecology) and Ecology, Sustainable Development and Mobility (Policy Programme 203 – Transport Infrastructures and Services) – Share of Non-Road Transport `



This indicator is used to measure each year the share of bicycle and (urban and interurban) mass transport of passengers, as well as the share of rail and inland waterway transport of goods. It is also a way of measuring the progressive shifts from individual modes of transport to mass transport of passengers and the shift from road transport of goods to inland waterways and rail, since these modes of transport are more energy efficient and emit little pollution, in accordance with the objectives of the Energy Transition and Green Growth Act.

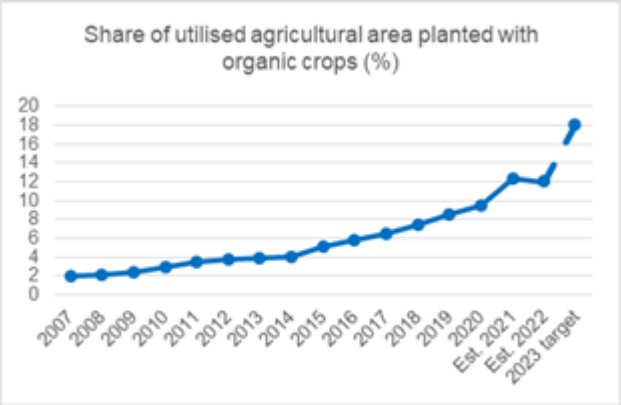
The share of mass transport in all domestic passenger ground transport could return to its pre-pandemic level in 2022 to stand at 17.8%.

The share of rail transport and inland waterway transports for goods could return to their pre-pandemic levels by 2021 to stand at 9% and 2% respectively.

In 2022, the resumption of the growth of their shares seen before 2020, should enable them to stand at 9.5% and 2.1% respectively.

The growth of the share of bicycle transport is lagging one year behind in terms of the initial objectives set in 2018. On the other hand, the renewed growth seen after the lockdowns should lead to a significant increase in coming years, meaning that the estimated shares are lagging one year behind: 4.2% in 2022.

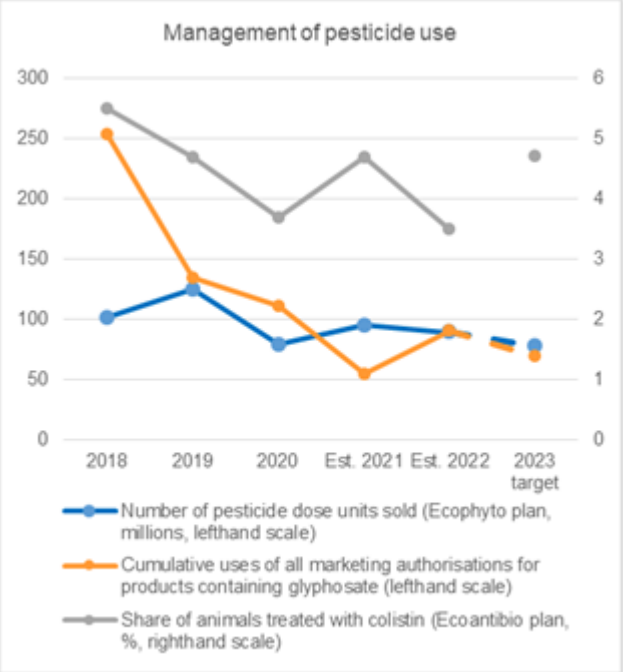
4. Agriculture, Food, Forests and Rural Affairs (Policy Programme 149 – Competitiveness and Sustainability of Agriculture, Agri-Food Industries, Forests and Fisheries) – Share of Organic Crops in Utilised Agricultural Area.



The promotion of a quality enhancement and branding of agricultural products policy is a major means of increasing the value added of domestic agricultural production. This policy has been in place for many years and is based on enhancing the value of agricultural, forest and food products.

The Ambition Bio 2022 Programme initiated in 2018 has given new impetus to the balanced growth of all types of organic agricultural production. This programme will continue and grow under the upcoming 23-27 CAP, with the objective of reaching 18% of utilised agricultural area devoted to organic crops by 2027.

5. Agriculture, Food, Forests and Rural Affairs (Policy Programme 206 – Food Safety and Quality) – Management of Pesticide Use



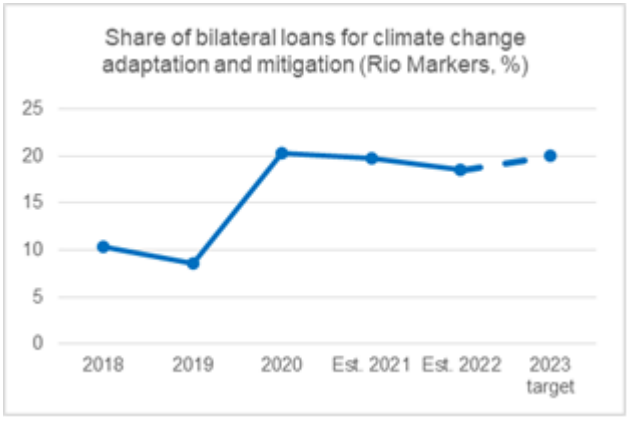
The number one objective of Policy Programme 206 is to promote changes in practices in all areas to protect public health and the environment.

The first indicator relates to the Ecophyto Plan which aims to reduce the use of plant protection products in France in both agricultural and non-agricultural zones. The goal is to reconcile ecological and economic performance, as well as to protect public health.

The second indicator relates to the glyphosate exit plan. The government has undertaken a process to end glyphosate use, with a new objective of reducing its use in France by 50% by 2022, but without leaving farmers with no solutions.

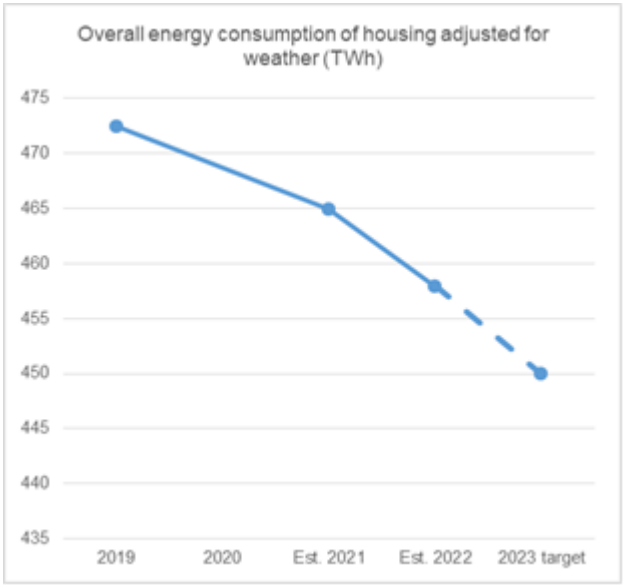
The third indicator relates to the Ecoantibio Plan, which is a plan to reduce the risks of antibiotic resistance in veterinary medicine.

6. Official Development Assistance (Policy Programme 209 – Solidarity with Developing Countries) – Share of Bilateral Loans under the Programme and Taxes Dedicated to the Priorities of the Interministerial Committee for International Assistance and Development.



This resources indicator highlights France's determined commitment to the irreversible implementation of the Paris Agreement and greater climate ambitions in the run-up to COP26. At the 2018 meeting of the Interministerial Committee for International Assistance and Development, the government made an undertaking that the volume of financing that has climate action co-benefits would account for at least 50% of the AFD Group's commitments and that it would be backed up by climate change adaptation financing of €1.5bn per year by 2020. The AFD Group's activity is "100% compatible with the Paris Agreement": its actions are consistent with low-carbon and climate resilient development pathways for the partner countries.

7. Territorial Cohesion (Policy Programme 135 – Urban Planning, Land and Housing Improvement) – Overall Energy Consumption of Housing

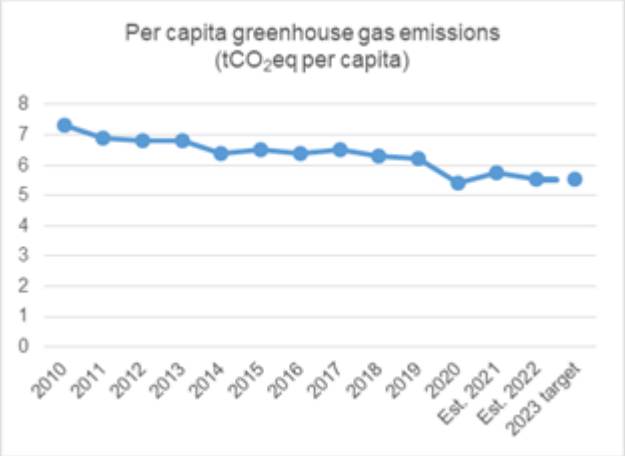


France aims to reduce overall final energy consumption by 50% by 2050, compared to 2012, with an intermediate objective of 20% less in 2030, and a new intermediate objective of 7% less in 2023, compared to 2012, in the construction, transport and circular economy sectors set out in the Energy and Climate Act. The new 2019-2028 Multiyear Energy Plan also sets intermediate objectives of 6.3% less in 2023 and 15.4% less in 2028, compared to 2018.

The latest version of the Multiyear Energy Plan sets the annual target for 2023 at 450 TWh. This means that the target for 2022 should be set at 458 TWh by interpolation.

The projected reductions should be greater given the strong incentives in 2020 and 2021 for renovating existing buildings to make them more energy efficient, which have led to a big increase in the volume of applications for the energy transition bonus.

8. Recovery Plan (Policy Programme 362 – Ecology) and Ecology, Sustainable Development and Mobility (Policy Programme 174 – Energy, Climate and Post Mining) – Per Capita Greenhouse Gas Emissions

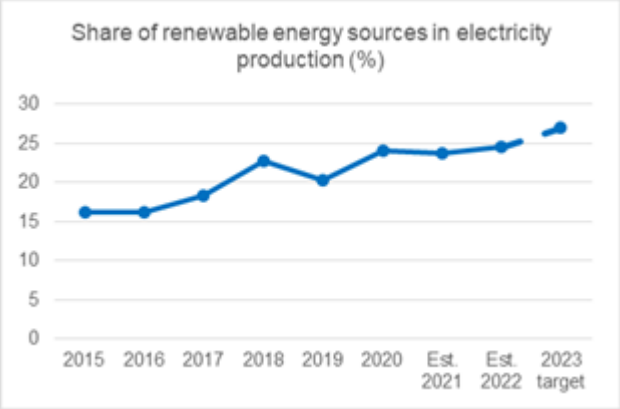


Since the adoption of the Climate Plan in 2017, France's energy and environmental policies have been driven by the objective of achieving carbon neutrality by 2050.

Compared to 1990, per capita emissions in 2020, excluding the land, land use and change of land use sector, are down by 37.4%, or by 39.8% including that sector.

National greenhouse gas emissions, excluding the land sector, were estimated to be down by 9.23% between 2019 and 2020, according to the Technical Reference Centre for Air Pollution and Climate Change (CITEPA). Most of the very large reduction can be attributed to the health measures introduced to fight the Covid-19 pandemic and, to a lesser extent, a particularly mild winter.

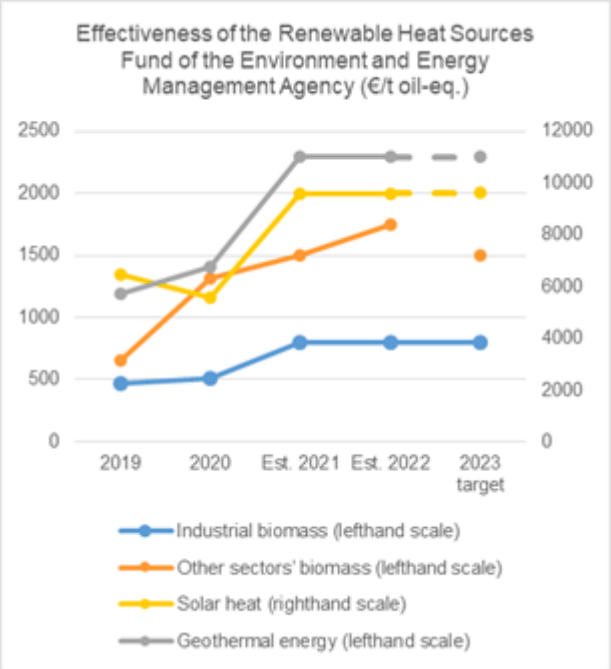
9. Ecology, Sustainable Development and Mobility (Policy Programme 345 – Public Energy Service) – Share of Renewable Energy Sources in Electricity Production



Support for the development of renewable energy sources is a major facet of energy policy. It was reinforced under the 2019 Energy and Climate Act, which sets the objective of increasing the share of renewable energy sources to at least 33% of final energy consumption by 2030.

The objective for electricity production is to increase the share of renewable energy sources to 40% by 2030. For this purpose, the legacy suppliers are required to sign purchase contracts for electricity produced from renewable energy sources by power plants that are eligible for required purchases or by successful bidders in a call for tenders where the support is allocated in the form of the purchase price.

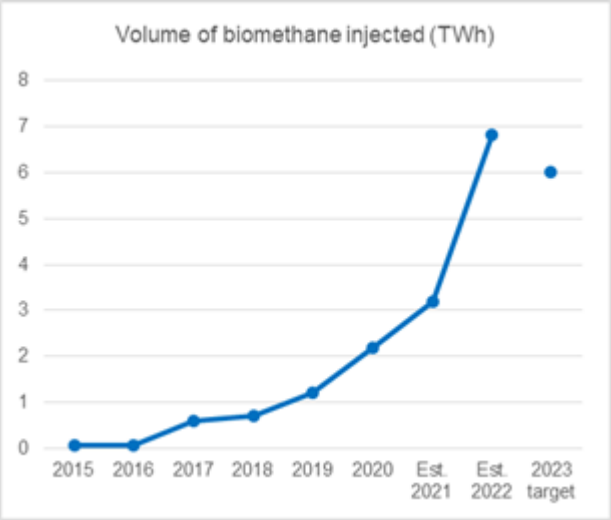
10. Ecology, Sustainable Development and Mobility (Policy Programme 174 – Energy, Climate and Post-Mining – Effectiveness of the Renewable Heat Sources Fund of the Environment and Energy Management Agency



The central government gave the Environment and Energy Management Agency the task of financing operations to achieve energy savings and support the development of renewable energy sources for heat in particular. The purpose of the heat fund is to finance projects to produce heat from biomass, geothermal sources, the sun and waste heat recovery, while ensuring that the price is lower than that of heat produced from conventional energy sources. The other purpose is to support the creation or expansion of district heating that relies primarily on renewable sources or recovery of waste heat.

The heat fund has accelerated renewable heat production projects. In the period from 2009 to 2019, more than 5,355 investment operations were concluded with total production of some 31.3 TWh of renewable and recovered energy and total investments of €7.92bn.

11. Ecology, Sustainable Development and Mobility (Policy Programme 345 – Public Energy Service) – Volume of Biomethane Injection

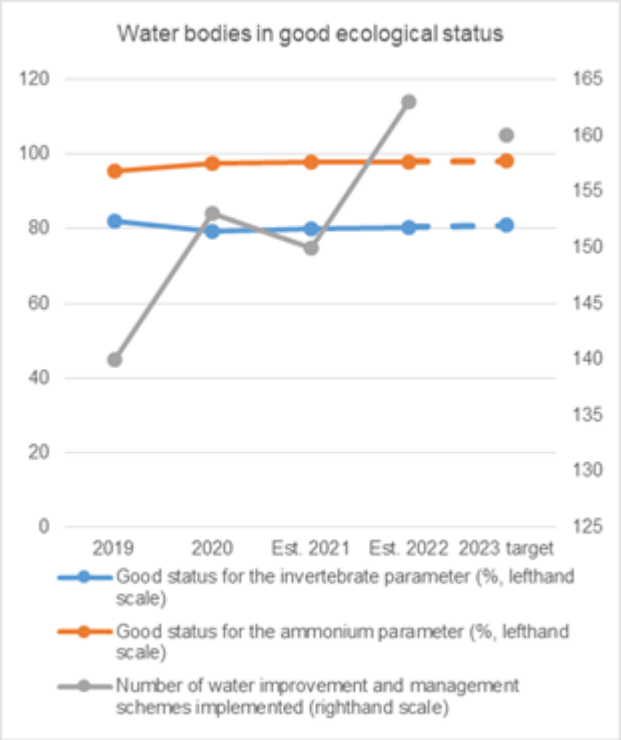


Support for the development of renewable energy sources is a major facet of energy policy. It was reinforced under the 2019 Energy and Climate Act, which sets the objective of increasing the share of renewable energy sources to at least 33% of final energy consumption by 2030.

The objective for electricity production is to increase the share of renewable energy sources to 40% by 2030.

The objective for natural gas set in the Energy Code is to increase the share of renewable energy sources to 10% of consumption by 2030. Achieving this objective will require biomethane injection into natural gas transport and distribution networks. The added costs that natural gas suppliers will incur for the purchase of biomethane will be offset on the basis of the average price on the wholesale natural gas market.

12. Ecology, Sustainable Development and Mobility (Policy Programme 113 – Landscapes, Water and Biodiversity) – Water Bodies in Good Ecological Status



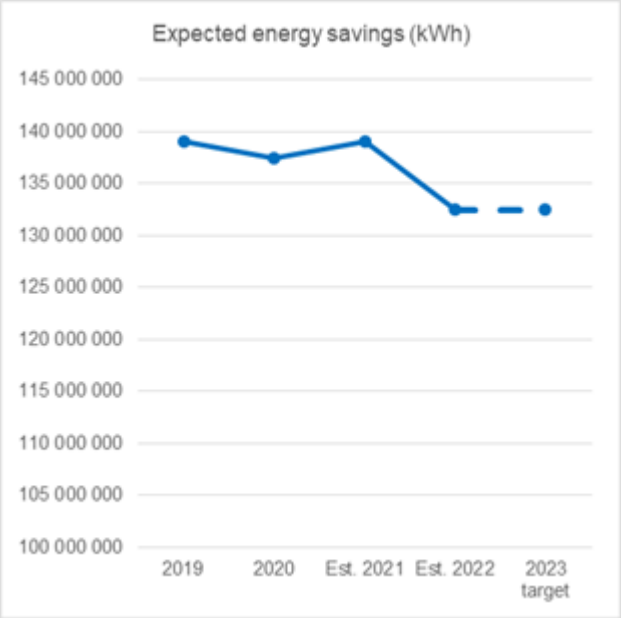
Water resources are subject to major pollution pressures. For example, nearly 19,900 wastewater treatment plants treat a pollution load representing 79 million "population equivalents". There are 90,000 identified facilities on France's waterways that could have an impact on the ecological continuity of ecosystems. And several tens of millions of hectares have been identified as suffering from a water deficit.

The status of a water body is assessed using several biological, physicochemical and hydromorphological parameters depending on the failing parameter criteria (one failing parameter is enough to fail the entire water body).

Integrated water resource management is primarily organised through the action of the programme agencies (water agencies in mainland France, water boards in Overseas France, along with the French Biodiversity Board).

An environmental police force with appropriate powers and recognised technical skills is required to maintain or restore the good ecological status of water bodies and to achieve the objectives set out in sector directives (e.g. nitrates, rehabilitation).

13. Government Transformation and Civil Service (Policy Programme 348 – Renovation of Administrative Buildings and Other Government Properties with Multiple Occupants) – Expected Energy Savings in Administrative Buildings and Other Government Properties with Multiple Occupants



The renovation or reconstruction of the 38 central government administrative buildings will reduce their energy consumption by overcoming their obsolescence in accordance with the central government property management policy and the master plans for regional property management. These buildings symbolise the presence of the central government at the local level. Two types of energy savings are involved in the project:

1) Energy cost savings for the buildings selected for work that has a direct positive impact on their energy performance (external and internal insulation, new heating systems, construction of new low-consumption buildings, new lighting systems, etc.);

2) Energy savings from the elimination of energy costs by vacating rented premises and government properties that are currently occupied by staff who will move into the selected administrative buildings, when the work is completed, thereby optimising the occupancy of government properties.

List of Environmental Performance Indicators in the 2022 Annual Performance Plans

Mission	Policy Programme	Objective	Indicator	Sub-indicator	Unit	2019	2020	Est. 2021 (2021 APP)	Est. 2022	2023 target (2021 APP)	Action (tag colour)
Recovery Plan	-	Support and transform the French economy	Reduce CO_2 emissions in France	Reduce CO_2 emissions in France	tCO_2	-	-	-	-	57,000,000	*Miscellaneous*
	P362	Achieve the energy transition of government buildings	Expected energy savings	Renovation of thermal insulation for central government and central govt. agencies	kWh	-	-	-	235,000,000	235 000,000	Energy efficiency improvements
				Renovation of thermal insulation in public higher education and research institutions and the university social services network	kWh	-	-	-	165,000,000	165,000,000	
		Energy efficiency improvements of housing stock	Number of housing units no longer classified as “heat sieves” by means of the energy efficiency bonus	Number of housing units no longer classified as “heat sieves” by means of the energy efficiency bonus	Number	-	-	80,000	20,000	-	
External Affairs	P105	Promote multilateralism and act for a sovereign, united and democratic Europe	Promote environmental objectives at the international level	Share/volume of international contributions towards attaining environmental objectives	%	4	4.31	4.25	3.95	4.35	International contributions
Agriculture, Food, Forests and Rural Affairs	P149	Combine the economic and environmental performance of agriculture, agri-food industries and forests	Share of utilised agricultural area planted with organic crops	Share of utilised agricultural area planted with organic crops	%	8.5	9.5	12.4	12	18	Balanced and sustainable land management
			Wood harvested as a share of natural production	Wood harvested as a share of natural production	%	53.8	53.6	55.5	56.3	57	Sustainable forest management and development of the wood industry
		Invest in rural areas and industries of the future	Share of forest area under sustainable management	Share of public forests under management	%	96.1	96.3	98	97	98	
				Number of hectares of private forests	ha m	3.43	3.45	3.46	3.48	3.52	
			Rate of converted timber from national forests	Percentage of converted timber from national forests	%	50.9	54	50	54	56	
	P206	Encourage changes to practices to protect public health and the environment	Manage the use of pesticides and antibiotics	Number of pesticide dose units sold (Ecophyto plan)	m	124.7	78.6	95	88.9	78	Implementation of the policy on food health and safety
				Cumulative uses of all marketing authorisations for products containing glyphosate	Number	135	111	55	90	69	
				Share of animals treated with colistin (Ecoantibio plan) colistin ALEA x 100	%	4.7	3.7	4.7	3.5	4.7	
Official Development Assistance	P110	Contribute to implementation of the SDGs by concentrating assistance on priority countries and French strategic priorities	Share of subsidised resources for multilateral funds allocated to the priorities of the CICID	Climate	%	30	37	46	45	46	*Miscellaneous*

		Ensure effective and rigorous management of development assistance loans	Capacity of multilateral funds to carry out successful projects that are compatible with their development goals	Share of AFD Group's loans with climate co-benefits	%	52	51	50	50	50	*Miscellaneous*
	P209	Contribute to the implementation of SDGs by strengthening the bilateral component and by concentrating assistance on priority countries	Share of bilateral loans under the programme and taxes earmarked for the priorities of the CICID	Share of bilateral loans for climate change adaptation and mitigation (Rio Markers)	%	8.6	20.3	19.8	18.5	20	Bilateral cooperation
		Promote France's strategic priorities in ODA through European channels	Share of EDF payments for France's strategic priorities	Share of EDF payments for climate change adaptation and mitigation (Rio Markers)	%	11.88	10.1	11	11.32	10	European cooperation
Advice and supervision of central government	P126	Ensure proper functioning of the institution	Environmental management of the institution	Carbon footprint of official travel	tCO_2	1,335	618	1,150	1,000	1,140	-
				Annual gas consumption	m3	140,000	115,000	123,000	140,000	123,000	-
				Electricity consumption	kWh	1,724,568	1,700,000	1,700,000	1,700,000	1,700,000	-
				Water consumption	m3	4,683	4,180	4,250	4,250	4,250	-
Aviation Control and Operations	P612	Manage the environmental impact of air traffic	Horizontal flight efficiency (differential between flown trajectories and the shortest trajectories)	Average differential between flown trajectories and the shortest trajectories	%	3.24	3.01	3.33	2.83	2.83	Aviation operations and innovation
	P614	Mitigate the environmental impacts of air transport	Compliance with the carbon markets applied to air transport	Proportion of emissions by French airlines that give rise to payment for carbon externalities (CORSIA + EU ETS)	%	-	-	70	70	70	-
				Proportion of emission allowances purchased by French airlines (EU ETS)	%	-	-	>13.17	>13.17	>13.17	-
			Compliance with environmental regulations	Number of infractions examined by the Airport Noise Nuisance and Air Pollution Supervisory Authority	Number	336	239	<=450	<=450	<=450	-
				Percentage of flights from the 11 largest airports with the quietest aircraft	%	91.6	90	>=92.5	>=92.5	>=92.5	-

Agricultural and Rural Development	P775	Direct the action of agricultural extension and development structures in accordance with the main objectives of the National Agricultural and Rural Development Plan	Number of farmers involved in agri-ecological transition groups (GIEE- 30 000)	Number of farmers involved in agri-ecological transition groups (GIEE- 30 000)	Number	-	19,000	-	60,000	70,000	-
Government Policy Management	P359	Run a sustainable Presidency of the European Union	Greenhouse gas emissions	Greenhouse gas emissions	kg CO2e	-	-	-	72,000	-	-
Ecology and Sustainable Development and Mobility	-	Mitigate exposure of persons, assets and the environment to man-made hazards and reduce the impact of industrial and agricultural pollution	Total number of inspections of classified facilities/inspection personnel (in FTE)	Total number of inspections of classified facilities/inspection personnel (in FTE)	ratio	15.9	15.7	19	21	21	Technological and pollution risk prevention
	-	Reduce greenhouse gas emissions	Per capita greenhouse gas emissions	Per capita greenhouse gas emissions	MtCO2e/capita	6.2	5.41	5.73	5.52	5.53	Fighting climate change and air pollution
	P113	Integrated water resource management	Water bodies in good ecological status	Good status for the invertebrate parameter	%	82	79.4	80	80.5	81	Environment and biodiversity management
				Good status for the ammonium parameter	%	95.4	97.4	98	98	98	
				Number of water improvement and management schemes implemented	Number	140	153	150	163	160	
		Conserve and restore biodiversity	Protection of ordinary biodiversity	Changes in the abundance of common birds, category of birds requiring specific habitats	%	69	69	73	73	75	Sites, landscapes, advertising
			Protection of land and marine natural areas	Percentage of protected area in national territory	%	23.4	23.5	23.8	30	30	Environment and biodiversity management
			Protection of land and marine natural areas	Percentage of highly protected area in national territory	%	-	-	1.8	10	10	Environment and biodiversity management
			Compliance outcomes for water and nature policing	Percentage of successful compliance outcomes for infringements identified by administrative inspections	%	30	49.5	50	60	65	Environment and biodiversity management
	P159	Météo France: a high-performance weather forecasting and weather risk alerts system	Performance of digital weather forecasting models and weather watch procedure	Percentage of events detected more than 3 hours in advance	%	95	85	>86	>86	>87	Meteorology
				Accuracy of digital forecasting with the AROME fine-mesh model	%	80.9	78.6	>80	>79	-	

		Mobilise government and civil society for the ecological transition	Contribute to public information about the environment and sustainable development	Page views on the Sustainable Development Agency websites	Number	2,085,916	2,600,000	3,200,000	3,000,000	3,850,000	Sustainable development governance, assessment, research and forecasting
	P174/P362	Reduction of average CO_2 emissions by new vehicles	Average CO_2 emissions by new vehicles	Average CO_2 emissions by new vehicles	gCO2/km	111.5	92.1	95	95	95	Grants for the purchase of green vehicles
	P174	Manage energy by reducing consumption and developing the use of renewable energy sources	Effectiveness of the Renewable Heat Fund of the Environment and Energy Management Agency	Manufacturing sector biomass	€/toe	470	515	800	800	800	Energy policy
				Other sectors biomass	€/toe	650	1,311	1,500	1750	1,500	
				Solar heating	€/toe	5,740	6,756	11,000	11000	11,000	
				Geothermal heating	€/toe	1,350	1,161	2,000	2000	2,000	
	P181	Mitigate the human, property and environmental impact of waste and products	Effectiveness of the Circular Economy Fund	Effectiveness of the Circular Economy Fund	kt/year	-	1,530	1200	1200	1200	Environment and Energy Management Agency
		Mitigate human, property and environmental vulnerability to major natural risks and flood risks	Flood prevention	Percentage of high flood-risk areas covered by a Flood Prevention Action Programme	%	-	77	81.5	85	89	Natural risk and flood prevention
				Accuracy of the flood watch map	%	86	84	85	85	85	
		High performance monitoring of nuclear safety and radiation protection and improved public information	Manage the publication lags for decisions by the Nuclear Safety Authority	Decisions by the French nuclear safety authority made on schedule	%	92	88	92	92	92	Nuclear safety and radiation protection supervision
	P203/P362	Improve regulation of road transport and increase the share of non-road alternatives	Share of non-road transport	Share of mass rail transport in all domestic passenger ground transport	%	17.8 (prov.)	15.4 (est.)	18.9	17.8	>19	Rail
				Share of rail transport in all domestic goods ground transport	%	9 (prov.)	8.7 (est.)	9.6	9.5	>9.9	
				Share of inland waterway transport in all domestic goods ground transport	%	2 (prov.)	1.9 (est.)	2.2	2.1	> 2.2	-
				Share of bicycle trips for commuter transport	%	2.4	2.8 (est.)	4.2	4.2	> 5.6	-
	P205	Improve marine safety and environmental protection	Rate of identification of sources of illegal discharges of pollutants into the ocean	Rate of identification of vessels causing polluting and illegal discharges into the ocean	%	5.1	14	>=10	>=10	>=10	Interministerial ocean action
			Vessel inspections	Pollution enforcement: rate of criminal charges following environmental inspections of vessels	%	0.63	>1.3	>1.3	1.6	>1.3	

	P345	Contribute to increasing the share of renewable energy sources to 40% of electricity production in 2030	Share of renewable energy sources in electricity production	Share of renewable energy sources in electricity production	%	20.3	24.1	23.7	24.5	27	Support for renewable electric energy sources in mainland France
		Contribute to annual injection of biomethane of 6 TWh by 2023	Volume of biomethane injected	Volume of biomethane injected	TWh	1.2	2.2	3.2	6.8	6	Support for biomethane injection
	P348	Energy transition as part of the government property management policy	Expected energy savings	Expected energy savings	m kWh	139	137.5	139	132.5	132.5	Major renovations and maintenance by owner
		Effectiveness of projects being financed	Energy efficiency – Cost of kwh oil-eq. saved	Energy efficiency – Cost of kwh oil-eq. saved	€/Kwh	7.1	7.2	7.1	7.5	7.5	Acquisitions, construction
	P135	Improve and adapt private housing stock	Performance of the National Housing Agency schemes for private housing	Average energy gain for Live Better (*Habiter mieux*) scheme	%	42	-	42	45	42	Town planning and development
		Promote sustainable development in housing and in construction more generally	Overall energy consumption of housing	Overall energy consumption of housing adjusted for weather	TWh	472.5	-	465	458	455	Regulations, technical policies and construction quality
	P147	Improve housing quality in areas covered by urban renewal programmes	Monitor quality improvements in social housing as part of the New National Urban Renewal Programme	Share of housing units certified “BBC 2009”	%	-	25	40	30	40	Urban renewal and quality of life improvements
	P162	Improve water quality in Brittany	Average concentration of nitrates in waterways in bays covered by the Green Algae Plan	Average concentration of nitrates in waterways in bays covered by the Green Algae Plan	mg/L	36.1	36.1	33.1	31.8	30.5	Water – Agriculture in Brittany
		Reduce human exposure to chlordecone in Martinique and Guadeloupe	Human exposure to chlordecone in Martinique and Guadeloupe through food products consumed or sold on the market	Percentage of non-compliant plant product analyses under surveillance plans	%	1.46	2.55	2.22	2.15	1.91	Local activities under the National Chlordecone Action Plan
				Percentage of non-compliant animal product analyses under surveillance plans	%	1.97	2.40	1.68	2.00	0.84	
				Percentage of non-compliant seafood product analyses under surveillance plans	%	3.16	5.18	2.07	4.5	1.38	
Justice	P310	Optimise the quality and effectiveness of support functions	Energy efficiency of premises occupied in previous year	Final energy consumption per square metre of floor space	kWh/ m²	184	172		175	147	-

Loans to Foreign Countries	P851	Commit at least 55% to climate financing each year	Percentage of projects that meet a climate objective (climate change mitigation or adaptation) according to the Rio Markers (% of total financing, excluding military projects)	Percentage of projects that meet a climate objective (climate change mitigation or adaptation) according to the Rio Markers (% of total financing, excluding military projects)	%	-	-	55	55	55	-
Official Publications and Administrative Information	P623	Optimise data production and dissemination	Improve productivity and mitigate environmental impact	Paper waste as a percentage of total paper consumption	%	10.1	9.5		7	6	-
Research and Higher Education	-	Increase scientific output and growth of research agencies in line with national research priorities	Performance of France's scientific output measured as the share of the Top 10% most-cited publications dealing with the 6 clusters of Pillar II of Horizon Europe Framework Programme	Climate, Energy and Mobility	%	2.1	1.8	1.5	1.2	2.1	-
				Food, Bioeconomy, Natural Resources, Agriculture and Environment	%	3.2	2.9	2.6	2.2	3.2	-
	P150	Improve the efficiency of agencies	Quality of property management	Energy consumption	kWh/ m^2	-	154		152	151	*Miscellaneous*
	P190	Support civil aviation R&D with the priority on the ecological transition of aviation	Percentage of appropriations for technological preparation and the development of zero or ultra-low emission transport aircraft	Percentage of appropriations for technological preparation for future generations of zero or ultra-low emission transport aircraft, along with their systems and equipment	%	-	-	75	75	75	-
Relations with local government	P119	Promote local development projects by balancing maximum leverage and concentration of funds on structural projects	Percentage of projects financed by the Infrastructure Grant to Rural Areas and by the Special Local Investment Support Grant that contribute to the ecological transition	Percentage of projects financed by the Infrastructure Grant to Rural Areas and by the Special Local Investment Support Grant that contribute to the ecological transition (including thermal insulation of local government buildings, renewable energy development, recycling, transport)	%	25.09	22.48	35	27.5	35	Special Local Investment Support Grant

E. Tables of Tagging Changes between the 2021 Budget Bill and the 2022 Budget Bill

Tables of Action and Sub-Action Tagging Changes between the 2021 Budget Bill and the 2022 Budget Bill

Tagging Changes between the 2021 Budget Bill and the 2022 Budget Bill (1/3)				
Mission	Policy Programme	Action, sub-action or tax expenditure	Tag in 2021 Green Budget	Tag in 2022 Green Budget
Agriculture, Food, Forests and Rural Affairs	206 Food safety and health quality	206-08 Food quality and food supply	This action is tagged as neutral.	This action is tagged as favourable (+2) for the Water and Waste Objectives
Official Development Assistance	110 Economic and financial development assistance	110-01-39 Interest rebates for loans to international institutions and funds	This action is tagged as neutral for all Objectives	This sub-action is now tagged as favourable (+2) for all Objectives
		110-02-21 Trade assistance for developing countries	This action is tagged as neutral for all Objectives	This sub-action is now tagged as favourable (+2) for all Objectives
Ecology and Sustainable Development and Mobility	159 Expertise, geographical and meteorological information	159-12 Geographical and cartographical information	This action is said to be neutralised	This sub-action is now tagged as favourable (+2) for four Objectives: Climate Change Mitigation, Climate Change Adaptation, Biodiversity and Water, and as neutral for the Waste and Pollution Objectives.
		159-13 Meteorology	This action is tagged as favourable for the Climate Change Mitigation (+3), Climate Change Adaptation (+3) and Water (+2) Objectives and neutral for the other Objectives.	This sub-action is now tagged as favourable for four Objectives: Climate Change Mitigation (+3), Climate Change Adaptation (+3), Water (+2), and as neutral for the two other Objectives
	174 Energy, climate and post-mining	174-03 Grants for the purchase of green vehicles	The two schemes under this action: the ecological bonus (Sub-Action 174-03-01) and the car scrapping bonus (Sub-Action 174-03-02), are tagged as favourable (+2) for the Climate Change Mitigation, Climate Change Adaptation and Pollution Objectives. They are tagged as neutral for the other Objectives.	The two schemes under the Action are tagged differently. The ecological bonus is tagged as favourable for the Climate Change Mitigation (+3), Pollution (+2) Objectives, and neutral for the Climate Change Adaptation, Water, Waste and Biodiversity Objectives. The car scrapping bonus is tagged as favourable for the Climate Change Mitigation (+1) and Pollution (+2) Objectives, but unfavourable (-1) for the Waste Objective. It is tagged as neutral for the Climate Change Adaptation, Water and Biodiversity Objectives. This means the overall tag is mixed.

Tagging changes between the 2021 Budget Bill and the 2022 Budget Bill (2/3)				
Mission	Policy Programme	Action, sub-action or tax expenditure	Tag in 2021 Green Budget	Tag in 2022 Green Budget
Economy	134 Business Growth and Regulations	134-23 Industry and services	This action is tagged as neutral.	This action is not tagged.
		Tax Expenditure 820201 Reduced electricity rates for consumption by electricity-intensive industrial facilities exposed to high carbon leakage risk because of the costs of indirect emissions	This tax expenditure is tagged as neutral.	This tax expenditure is not tagged.
		Tax Expenditure 820202 Reduced electricity rates for consumption by hyper-electricity-intensive facilities		
		Tax Expenditure 820203 Reduced electricity rates for consumption by electricity-intensive industrial sites with manufacturing facilities and for consumption by electricity-intensive manufacturing businesses operating industrial facilities		
		Tax Expenditure 820206 Reduced electricity rates for consumption by datacentres		
Government Property Management	721 Contribution on property transfers to reduce central government debt	721-01 Contribution to reduce central government debt	This action is said to be neutralised.	This action is tagged as neutral.
	723 Property transactions and maintenance of central government buildings	723-11 Structural transactions and disposals	This action is said to be neutralised.	Actions 723-12 and 723-13 are tagged as neutral for all six Environmental Objectives. A set percentage of 15% of expenditures on Actions 723-11 and 723-14 is tagged as favourable for the Climate Change Mitigation Objective, and tagged as neutral for the five other Environmental Objectives.
		723-12 Regulatory inspections, audits, assessments and diagnostics		
		723-13 Maintenance by owner		
		723-14 Major maintenance, restoration, retrofitting and repairs		
Overseas France	123 Overseas living conditions	123-02 Spatial planning	This action is tagged as neutral.	This action is not tagged.
		Action 123-08 Special Investment Fund		

Tagging changes between the 2021 Budget Bill and the 2022 Budget Bill (3/3)				
Mission	Policy Programme	Action, sub-action or tax expenditure	Tag in 2021 Green Budget	Tag in 2022 Green Budget
Research and higher education	150 Higher education and academic research	17 Research	The public service subsidies for the energy research alliance (ANCRE) and environmental research alliance (ALLENVI) are tagged as favourable	The entire action is tagged as neutral
	190 Research on energy, and sustainable development and mobility	11 Risk research	Expenditures for the industrial risk institute (INERIS) and nuclear safety institute (IRSN) are tagged as favourable.	The entire action is tagged as favourable.
		12 Transport, construction and infrastructure research	Expenditures for the construction science and technology centre (CSTB) and Gustave Eiffel University are tagged as favourable	The entire action is tagged as favourable.
		13 Research partnerships for sustainable development and spatial planning	Expenditures for the national food safety and health agency (ANSES) are tagged as favourable	The entire action is tagged as favourable.
		14 Civil aviation research and development	Expenditures for upstream equipment manufacturers and research schemes are tagged as favourable	The entire action is tagged as favourable.
		15 Long-term nuclear expenses for the French Atomic Energy Agency's facilities	Expenditures for the long-term expenses of the Atomic Energy Agency's facilities are tagged as favourable.	The entire action is tagged as favourable.
		16 Nuclear energy research	Expenditures for support for new energy technology (Atomic Energy Agency) are tagged as mixed	The entire action is tagged as favourable. Expenditures are now tagged as neutral for the Waste Objective, instead of unfavourable.
		17 New energy technology research	Expenditures on IFPEN and support for new energy technology (Atomic Energy Agency) are tagged as favourable.	The entire action is tagged as favourable.
	193 Space research	2 Development of space technology for earth observation	The share of public service subsidies for earth observation paid to the National Space Research Centre is tagged as favourable.	The entire action is tagged as favourable.
		4 Management of space access ESA subsidy (launch vehicles)	The share of public service subsidies for launch vehicles paid to the National Space Research Centre is tagged as unfavourable	The entire action is tagged as unfavourable.
		7 Development of weather satellites	The share of public service subsidies for satellites for monitoring weather and climate paid to the operator EUMATSAT is tagged as favourable.	The entire action is tagged as favourable.
	172 Multidisciplinary scientific and technological research	2 National Research Agency	Expenditures on National Research Agency calls for projects on biodiversity, ecosystems, bioeconomy, etc., industrial innovation and infrastructures, and health and development are tagged as favourable.	The entire action is tagged as favourable.
		17 Scientific and technological research on energy	The shares of public service subsidies for the relevant agronomic, development, agricultural and oceanographic research agencies and institutes are tagged as favourable.	The entire action is tagged as favourable.
		18 Scientific and technological research on the environment	The shares of public service subsidies for the relevant agronomic, development, agricultural, oceanographic and polar research agencies and institutes are tagged as favourable.	The entire action is tagged as favourable.
Relations with local government	All programmes			With the exception of the Special Investment Fund, the entire mission is not tagged.

Table of Tags for New Actions in the 2022 Budget Classification

Tagging of New Actions the 2022 Budget Bill (1/2)			
Mission	Programme	Action, sub-action or tax expenditure	Tag in 2022 Green Budget
Central Government's General and Local Administration	216 Domestic policy implementation and oversight	216-07 Religious and secular affairs	This action is tagged as neutral.
Veterans Affairs, Memory and Links to the Nation	169 Domestic policy implementation and oversight	169-08 Armed forces youth outreach	This action is tagged as neutral.
		169-09 Memory policy	
Defence	146 Armed forces equipment	146-10-88 Perimeter security, central government security, national security, civil security – munitions dumps	This sub-action is tagged as neutral.
		146-10-89 Protection of armed forces and sites – anti-drone protection	
	212 Support for defence policy	212-66-06 Oversight, support and communication – General Secretariat for Defence and National Security	This sub-action is tagged as neutral.
Economy	367 Financing the equity transactions planned for 2021 and 2022 on the earmarked account for "Central Government Equity Holdings	367-01 Provide sufficient revenue for the account for the equity transactions planned for 2021 and 2022.	This action is not tagged.
Government Financial Liabilities	369 Redemption of the increase in debt related to the Covid-19 crisis	369-01 Redemption of the increase in debt related to the Covid-19 crisis	This action is tagged as neutral.
Pandemic Emergency Plan	356 Cover the cost of the exceptional short-time working scheme during the pandemic	356-01 Promote short-time working to prevent redundancies	There are no appropriations for the "Emergency Plan" Mission in the 2022 Budget Bill. However, the Actions under this mission were not tagged retrospectively in the analysis of 2020 to 2022.
		356-02 Compensation for paid leave	
		356-03 Exceptional bonus for permanent intermittency workers	
	357 Pandemic solidarity fund for businesses	357-01 Support for businesses eligible for the solidarity fund	
	358 Exceptional increase in central government equity holdings during the pandemic	358-01 Exceptional increase in central government equity holdings during the pandemic	
	360 Compensation paid to Social Security for cuts in contributions for the most vulnerable businesses during the pandemic	360-01 Support businesses for their recovery	
	366 Healthcare equipment for the pandemic	366-01 Masks	
		366-02 Other equipment	

Tagging of New Actions in the 2022 Budget Bill (2/2)			
Mission	Programme	Action, sub-action or tax expenditure	Tag in 2022 Green Budget
Solidarity, Inclusion and Equal Opportunities	137 Gender equality	137-24 Access to rights and professional equality	This action is tagged as neutral.
		137-25 Preventing and fighting violence and prostitution	
	304 Social inclusion and protection	304-21 Social benefits and expenditures	This action is tagged as neutral.
Government Transformation and the Civil Service	349 Government Transformation	349-02 Support for government action reform	This action is tagged as neutral.
	368 Implementation and oversight of the civil service transformation	368-10 Support for human resources transformations (DG Civil Service/HR data centre)	This action is tagged as neutral.
		368-20 Oversight of modernisation actions (Interministerial Government Transformation Directorate)	This action is not tagged.
Labour and Employment	103 Support for economic changes and employment growth	103-05 Special apprenticeship grant	This action is tagged as neutral.
	111 Improve job quality and labour relations	111-06 Enhance prevention in occupational health	This action is tagged as neutral.

Table of Tagging Changes for Operating Expenditures Presented in the Box on Operating Expenditures

Tagging changes for expenditures presented in Box 2 – Ministries' Operating Expenditures (excluding payroll and property expenditures)		
Central Government Chart of Accounts Item	Tagging of operating expenditures in 2019, published in the 2021 Green Budget	Tagging of operating expenditures in 2020, published in the 2022 Green Budget
"Other energy sources"	Expenditures charged to the "Other energy sources" item correspond to the "Other energy sources" item in Appendix IX of the Green Budgeting report (taken from the box on operating expenditures in the first Green Budget). These expenditures are tagged as unfavourable (-1) for the Climate Change Mitigation Objective	The expenditures charged to this item in the Central Government Chart of Accounts are not tagged.
Cycles	Expenditures charged to the "Cycles" item correspond to the "Bicycles and motorcycles" item in Appendix IX of the *Green Budgeting* report (taken from the box on operating expenditures in the first Green Budget). These expenditures are tagged as favourable (+2) for the Climate Change Mitigation, Climate Change Adaptation and Pollution Objectives.	The expenditures charged to this item in the Central Government Chart of Accounts are not tagged.
Goods transport	The environmental impact of the expenditures on various groups of goods charged to the "Goods transport" item is not analysed.	Expenditures on groups of goods charged to the Central Government Chart of Accounts "Goods transport" item are tagged in accordance with the tagging of groups of goods charged to the "Mass passenger transport" item. Expenditures on air and road transport of goods are tagged as unfavourable (-1) for the Climate Change Mitigation, Climate Change Adaptation and Pollution Objectives. Expenditures on transport of goods by rail or sea are tagged as favourable (+1) for the Climate Change Mitigation and Pollution Objectives. Expenditures on multimodal transport of goods are not tagged, as is also the case for the share transport of goods where the means of transport is not identified.
Acquisition of vehicles (Central Government Procurement Directorate data)	The environmental impact of expenditures on the purchase of vehicles is not assessed.	The environmental impact of expenditures on the purchase of vehicles is assessed according to the type of motor. Expenditures on internal combustion vehicles are tagged as unfavourable (-1) for the Climate Change Mitigation, Climate Change Adaptation and Pollution Objectives. Expenditures on the purchase of rechargeable hybrid vehicles are tagged as favourable (+1) for the Climate Change Mitigation Objective. Expenditures on the purchase of electric vehicles are tagged as favourable (+2) for the Climate Change Mitigation and Climate Change Adaptation Objectives.

Part II
Financing the Ecological Transition

A. Evaluation of public and private financial resources for climate action

The public and private financial resources allocated to climate actions, and how they compare to the estimated financial requirements, can be analysed in detail with reference to the common foresight scenario[12] that informs the National Low-Carbon Strategy (SNBC) and Multiyear Energy Plan, both adopted in April 2020.

These analyses help place central government budget expenditures in a wider financial context that takes account of local and regional authorities, infrastructure operators, social landlords, businesses and households.

The analyses provide an early indication of whether central government and government-funded institutions have sufficient financial resources to meet energy and climate targets set down by the Act referred to in Article L. 100-1 A of the Energy Code, although it is also important to note that this Act does not determine the choice of public policy instruments in each area that affect how budgetary resources are apportioned between the various entities, in particular central government.

The Landscape of Climate Finance report, published by the Institute for Climate Economics (I4CE), identifies items of climate investment expenditure in France and gauges whether their levels are enough to meet national targets[13]. Since 2018, the study has measured the negative climate impact from investment projects, which can then be used as a basis for comparison with expenditure items included in this document. While the study takes a broader perspective by looking at all public- and private-sector economic agents, it addresses a narrower range of expenditure items than is the case for the central government expenditure programmes discussed above which, in some cases, includes operating and payroll expenditures. The "Landscape" study only looks at investment in equipment (capital investment) and certain durable goods (e.g. new vehicles).

The figures presented below are taken from the 2021 Landscape of Climate Finance report, which is due to be published by the end of the year and will be available on the I4CE website (www.i4ce.org). The latest edition contains a number of methodological changes from last year's report, which accounts for the discrepancies in the figures contained in previous editions of this report (see box below).

[12] https://www.ecologie.gouv.fr/scenarios-prospectifs-energie-climat-air
[13] https://www.i4ce.org/go_project/landscape-climate-finance-france/

1. Financial resources allocated to climate transition

According to the Landscape of Climate Finance report, €44.7bn of public and private investment was allocated to the climate transition in France in 2020. Investment in this area has increased every year since 2015, with a sharper rise (21%) between 2018 and 2020.

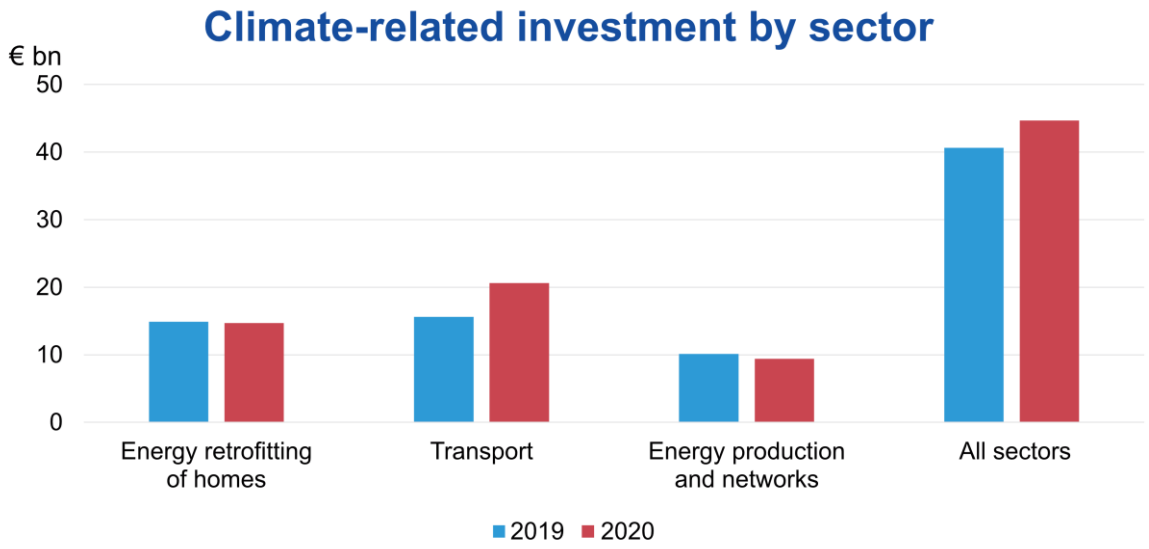
The breakdown of investment expenditures by project holder is as follows:

(€ bn)	**2019**	**2020**
Local and regional authorities	2.8	3.5
Infrastructure operators	9.5	9.2
Social landlords	1.0	0.8
Businesses	11.4	13.2
Households	15.8	18.0
Total	**40.6**	**44.7**

Central government was not included, due to a lack of complete and reliable figures in relevant investment areas, in particular energy retrofitting of government buildings and energy performance for newbuilds. As a result, a number of recent changes were made to the definition and/or scope of investment items (see box below). Complete figures are also unavailable for investment in the low-emission vehicle fleet.

However, it should be noted that the climate expenditure items in the central government budget as listed in Part I do not represent investment projects delivered directly by central government, which takes a more active role in co-financing projects delivered by local and regional authorities, households and businesses. Central government also subsidises home energy retrofitting works and local and regional authority mass transport infrastructure projects, as well as underwriting past investments by third parties, including support for renewable energy projects and load management initiatives under Policy Programme 764.

Households invest overwhelmingly in energy-retrofitting their homes and, to a lesser extent, in transport (e.g. to purchase private vehicles). Businesses invest primarily in renewable and nuclear energy generation and in gas and electricity networks. Public project holders direct most of their investment to transport in order to build and maintain infrastructure. The breakdown of climate investment by economic sector is as follows:



- Households invested €13.9bn to energy-retrofit their homes, while social landlords spent €0.8bn to energy-retrofit the social housing stock. In 2020, investment in residential energy-retrofitting fell by 1% on its 2019 level. As halted construction projects resumed after the first lockdown, the level of investment reached close to its pre-crisis level.

- Transport was the largest investment category; low-carbon investment projects reached €20.6bn in 2020. Half of this investment was directed to infrastructure development projects, while the other half went to low-carbon vehicles and non-motorised mobility. In 2020, infrastructure operators (e.g. *SNCF Réseau*, RATP, *Société du Grand Paris*) and local and regional authorities reduced their level of investment in public transport infrastructure, in large part due to the Spring lockdown. Sales of low-emission vehicles account for the higher investment levels in transport. Investment in private vehicles in 2020 increased three-fold on their 2019 levels.

- Investment in energy production fell between 2019 and 2020. 45% of investment in this sector went to nuclear energy projects, 42% to renewable energy production, and 13% to gas and renewable heating production. In 2020, investment in renewable electricity generation capacity fell by 6%, while investment in gas and renewable heating held steady. With respect to nuclear energy, EDF slightly reduced its level of investment in its extensive overhaul of existing generation capacity and the EPR project in Flamanville. The pandemic in part accounts for the lower level of investment in energy generation. During the first lockdown, renewable energy generators were forced to defer investment projects, leading to delays in network connections and disruption to delivery of materials. In relation to nuclear generation capacity, restrictions and preventive measures resulted in a slowdown in project works.

2. Adequacy in view of financing requirements

(€bn per year)	Earlier years	Investment requirement				Additional investment required for 2021-2023 over the average for 2019 and 2020*	
	2019-2020 average	2nd carbon budget, 2019-2023		3rd carbon budget, 2024-2028			
		Low	High	Low	High	Low	High
Energy retrofitting of homes	14.8	13.7	13.7	17.0	17.0	Investment is close to or in line with requirements	
Transport	17.4	20.4	20.5	33.6	34.6	5.0	5.1
Energy (excl. nuclear)	3.8	7.9	8.9	8.4	13.5	6.9	8.5
Total	**36.0**	**42.0**	**43.0**	**58.9**	**65.0**	**11.9**	**13.6**

**including reversing the 2019-2020 deficit*

The table above gives required investment ranges for the next two carbon budgets, with investment levels inferred using the baseline "with additional measures" scenario used in the 2020 National Low-carbon Strategy. These values are primarily based on scenarios and projections used in national strategies and planning. Whilst the figures have been adapted to the I4CE's own methodology, they are broadly consistent with those used in national strategies and planning.

It is important to note that investment requirement estimates were only produced for sectors that provide scenarios that I4CE can quantify as trend values for investment; for this reason, agriculture, industry and nuclear energy were not included. The above estimates should not therefore be compared with total investment observed for 2019-2020 (approx. €43bn per year), but with the average annual total of €36bn.

When the shortfall for 2019 and 2020 is taken into account, an extra €11.9-13.6bn per year would be required to achieve the objectives under the second carbon budget, over and above the average annual figure of €36bn. For the third carbon budget, investment will need to be almost twice the level recorded in past years.

For energy retrofitting of homes, current investment is close to the levels required under the National Low-carbon Strategy. However, retrofitting works have to date mostly involved an "itemised" approach, despite the need identified in the SNBC for more comprehensive energy retrofitting works than those being undertaken by households at present, in order to achieve greater energy savings and reductions in greenhouse gas emissions. The investment requirement for transport has increased considerably under the third carbon budget, with the annual requirement for low emission vehicles alone increasing to €20bn, up from €7bn in the second carbon budget. Expenditure on electric vehicles and NGVs has increased, alongside a gradual reduction in expenditure on motor-powered vehicles. Growth in this segment accounts for the change in transport investment requirements, and not the change in requirements for infrastructure. In energy production, onshore wind (€6bn), offshore wind (€8bn) and solar energy (€11bn) account for most of the annual investment requirement in the third carbon budget.

Investment in fossil fuels

According to the Landscape of Climate Finance, €45.3bn was invested in fossil fuels that are harmful to the climate in 2020. The vast majority (92%) of this investment went into motor-powered vehicles, while the remainder went into airports, fossil fuel production and distribution, and low-efficiency fuel oil and gas boilers. In 2020, unfavourable climate investment fell by 32% from its 2019 level. The pandemic was one explanatory factor in this considerable reduction, as were new regulatory measures such as reward/penalty ("bonus-malus") incentives, vehicle distribution regulations and restrictions on fuel-oil boiler installation.

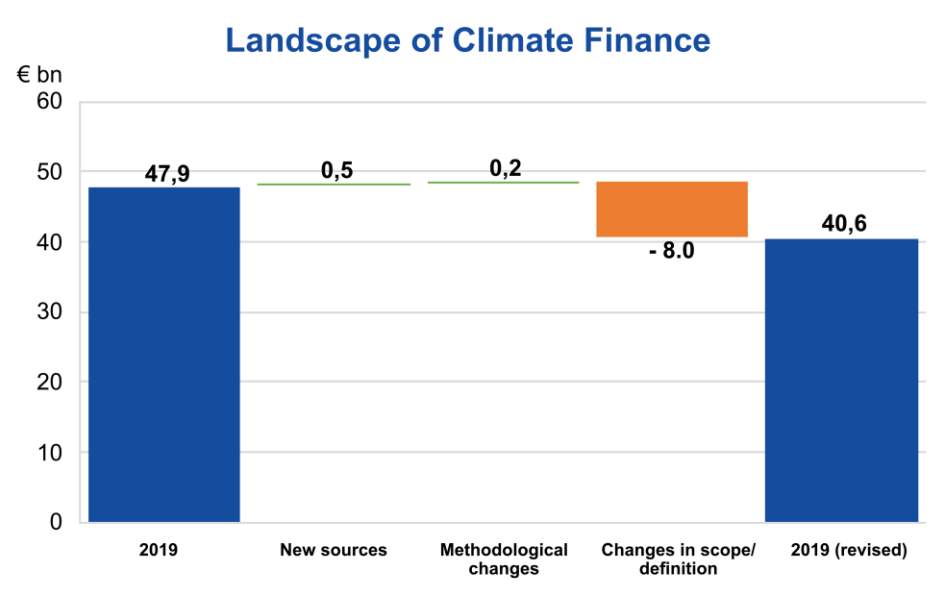
Focus – Changes to the Landscape of Climate Finance methodology

The 2021 Landscape of Climate Finance report contains a number of changes to its methodology in comparison to previous editions.

Changes have been made to the breakdown of investment by sector. Under the new methodology, investment in renewable energy installations in multi-family dwellings as well as industrial, agricultural and office buildings are included within renewable energy generation and is no longer broken down by sector.

What is counted as investment has also been revised. Some categories of investment included up to the 2020 report have been dropped, because year-on-year changes are hard to capture due to a lack of detailed data. The lack of adequate data makes comparisons with investment requirements difficult. Categories that have not been retained include the energy performance of newbuilds, wood construction, energy retrofitting of office buildings, river and maritime transport, electricity networks, and energy efficiency in industry and agriculture. I4CE is undertaking additional efforts to include these items in subsequent editions.

As a result of changes in the scope of the investment definition, the investment levels included in the latest report are lower for the whole time series, resulting in a reduction of €8 billion on the 2019 figure featured in the previous Landscape report:



3. Measures to promote renewable energy sources

Financial support for the development of renewable energy capacity is one of the mechanisms identified in the analysis above. The government has three main support measures at its disposal:

- "On-tap" financial support packages, available for all eligible installations. These support packages are only allocated in support of small-scale renewable energy generation projects;

- Tenders: Under Article L.311-10 of the French Energy Code, the Minister for Energy can launch competitive tender processes in pursuit of targets set in the Multiyear Energy Plan (PPE);

  Financial support measures may be implemented through an obligatory purchase agreement (Art. L.314-1 of the Energy Code) or a top-up payment agreement (Art. L.314-18 of the Energy Code). Under this arrangement, renewable energy producers are paid a bonus in addition to the market price they receive for electricity produced;

- The Heat Fund, administered by the Environment and Energy Management Agency (ADEME) since 2009, which funds projects in multi-family dwellings, the service sector, agriculture and industry, initiatives to increase the use of biomass (e.g. forestry, agriculture, biogas), geothermal energy (directly or through pumps), solar thermal energy, energy recovery, and the development of district heating that uses energy from these sources. Over the period 2009-2020, ADEME provided €2.58bn in support to 6,007 operations, generating €9.38bn of investment and 35.5 TWh per year in energy production. The public authorities incurred a very cost-efficient €5/MWh to achieve this production. The Heat Fund generates investment levels three times higher than the level of support.

Decarbonising industry under the *France Relance* recovery plan

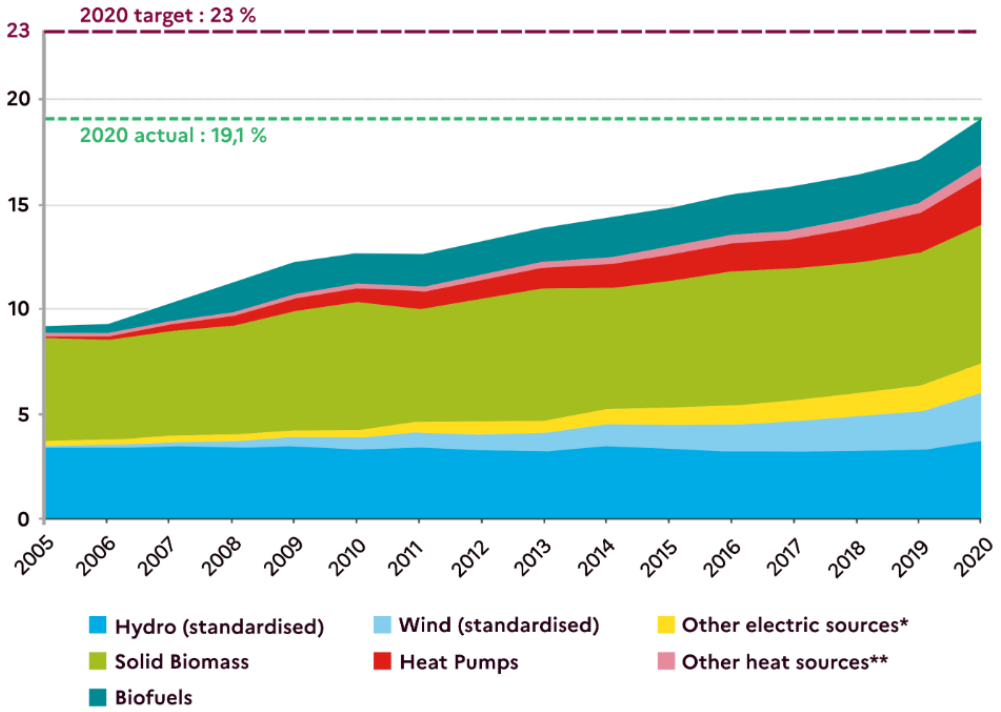
The recovery plan sets out an ambitious and pro-active €1.2bn support package to be delivered over the period 2020-2022. The package includes setting up operating supports to strengthen incentives as part of the ADEME's call for projects in relation to Biomass, Heating, Industry, Agriculture and Services (BCIAT), to bridge the gap in competitiveness between renewable and fossil fuel heating. A budget of €500m has been allocated for 2020-2022. The first call for projects ended in October 2020. A further call for projects will take place for 2021 and 2022, with two closing dates each year.

After the first call for projects in 2020, 38 projects received support under the scheme, which will facilitate €365m in investment by industry nationwide. The projects will receive a combined €110m in investment aid from the Heat Fund and Decarbonisation Fund, in addition to €187m of operating support from the Industry Decarbonisation Fund. The projects are expected to prevent more than 646 ktCO2 per year in greenhouse gas emissions from burning fossil fuels and generate 2.7 TWh per year in biomass heat production.

The most recent round of the BCIAT call for projects closed on 17 May 2021, and proposals are currently under review by ADEME. In all, 23 new project proposals were submitted for a total biomass heat generation capacity of 2,740,182 MWh per year and biomass energy output of 424.5 MW. Total eligible investment stands at €488.7m, along with €181.9m of investment aid and €5.6m per year in requested operating supports (€85m in total).

14 submissions not approved in the first call for projects in 2020 were resubmitted and approved in 2021, covering biomass heat generation capacity of 684 GW/h per year and biomass energy output of 453 MW. These 14 projects account for €42 million in investment by industry across the country. They will receive investment aid of €15 million, as well as operating support of €52 million paid over 15 years. The projects are expected to reduce greenhouse gas emissions by more than 137,000 tonnes of CO2eq per year.

The 52 projects that receive support under this scheme will facilitate investment of €422m by industry across the country. They will receive financial support totalling €125m from the Heat Fund and Decarbonisation Fund, as well as €234m in investment aid from the Industry Decarbonisation Fund. *France Relance*-backed projects are expected to prevent 783,000 tCO2eq per year in greenhouse gas emissions from burning fossil fuels.



P: provisional data subject to change
*Solar photovoltaic, marine energy and electricity from biomass and geothermal energy
** Solar thermal, geothermal and biogas
Note: Under Directive 2009/28/EC, France aims to achieve a proportion of renewable energy sources in gross final energy consumption of 23% by 2020. This proportion was 19.1% in 2020. Hydro and wind energy production figures are standardised by smoothing over fifteen and five years respectively.
Source: SDES figures

Renewable energy sources as a proportion of gross final energy consumption by sector
Source: Datalab, Key figures for renewable energy, 2021, SDES

Renewables were France's fourth-largest energy source in 2019 after nuclear (39%), oil (28%) and gas (17%)[14].

Renewable energy sources accounted for 19.1% of gross final energy consumption in 2020, 10 percentage points higher than in 2005.
Gross final renewable energy consumption in 2020 stood at 307 TWh, in the following forms:

- 156.8 TWh (51%) as heating, down 0.4% on 2019; an increase in the consumption of biogas (up 0.9 TWh) and heat pumps (up 3.6 TWh) was offset by a reduction in the consumption of heat generated from solid biomass and renewable household waste (down 7.4 TWh);

- 119.9 TWh (39%) as electricity, an increase of 5.3% on 2019, driven largely by growth in onshore wind and solar energy generation, up 3.7 TWh and 1.4 TWh respectively;

- 30.8 TWh (10%) as fuels, a reduction of 17% on 2019, largely as a result of reduced fuel consumption in the transport sector due to the pandemic.

Quarterly key indicators collected by the Ministry for the Ecological Transition's statistics unit closely track movements in installed generation capacity for solar, wind, biogas injection (for electricity generation) and biomethane injection (for gas networks).

[14] Key figures for renewable energy, 2021, SDES.

Assessing incentive schemes for hydroelectricity generation

Hydroelectric power is a key driver towards meeting France's renewable energy generation targets. In 2019, generation capacity stood at approximately 25.6 GW, while 65.1 TWh of hydroelectricity was produced in 2020 by around 2,500 hydroelectric stations, of which 2,100 were "mini stations". The vast majority of electricity was generated by the largest plants with a capacity of over 10 MW.

The scope for expanding hydroelectric power generation overall (small and large facilities) is relatively limited, given the existing level of infrastructure in metropolitan France. The Multiyear Energy Plan (PPE2) approved in April 2020 sets a target to increase total plant capacity by 200 MW to 25.7 GW by 2023 and by 900-1,200 MW to 26.4-26.7 GW by 2028. This capacity level is based on observed load factors and should facilitate an increase in generation of 3-4 TWh for small and large hydroelectric stations, 60% of which will be achieved through efficiency gains at existing facilities.

Facilities with a gross maximum generation capacity above 4.5 MW are subject to generation licensing arrangements, while those under 4.5 MW are subject to single environmental authorisation, issued by the *Préfet*.

For facilities subject to authorisation:

These facilities are generally operated by individuals, small enterprises or local and regional authorities. They must obtain environmental authorisation from the *Préfet* for a fixed period. The applicable operating rules and restrictions vary depending on the environmental factors relevant to the site in question. Applications for authorisation are reviewed by the water protection authority.
MTE, a central government support scheme overhauled in 2016, assisted facilities to expand production and includes:

- regulated tariffs (Order of 13 December 2016) for new or renovated facilities with a generation capacity below 1 MW;

- competitive tendering processes for proposed new hydroelectric facilities on new or existing sites, with a generation capacity of 1-4.5 MW.

In accordance with the Multiyear Energy Plan, a total generation capacity of 35 MW per year is subject to tender processes. Between 2018 and 2020, 35 major projects covering a generation capacity of 93.6 MW have been allocated as a result of competitive tendering.

EDF OA holds approximately 2,000 purchase obligation contracts covering a total generation capacity of 1.9 GW eligible for government support, and an annual production of 5.5 TWh per year.

Discussions are also ongoing about introducing a support scheme for renovating existing facilities with a capacity of 1-4.5 MW. These facilities are not economically viable without tariff supports, but do have a long service life if regular investments are made for upgrades. However, as this is a new State Aid measure, the scheme will be subject to European Commission approval. The scheme will be developed in consultation with the sector.

For facilities subject to licensing:

These facilities are state-owned and built and operated by a licence holder on the government's behalf. For plants rated between 4.5 MW and 100 MW, licences are awarded by the *Préfet*, while the Minister for Energy issues licences to plants rated above 100 MW. The term of licences must be long enough for licence holders to recoup their initial investment before facilities are handed back to the government when the term expires.

The European Commission has initiated dispute proceedings regarding the absence of competitive tendering for the renewal of expired licence agreements. The government operates under the terms of renewal for the licences in question. Pending a resolution to the dispute and their renewal, licences that are due to expire are set to be rolled over and remain subject to the former terms in accordance with Article L. 521-16 of the Energy Code, under a "rolling term" arrangement. At present, only one extension application – for the Rhône licence – is under review.

To date, no semi-public hydroelectric companies have been created. No decision has been made to establish a semi-public hydroelectric company with a view to renewing the licence.

4. Changes to the public-service energy obligations

Scope

Public-service energy obligations are defined in Articles L.121-7, L.121-8, L.121-8-1 and L.121-36 of the Energy Code and are derived in part from the renewable energy support measures outlined in the previous section.

Successive budgets, beginning with the Supplementary Budget Act for 2015 (Act of 29 December 2015), instituted major reforms to how public-service energy obligations are funded.

The CSPE, a contribution paid by consumers on their electricity bills as a means of financing public-service obligations, is no longer linked to financing for renewable energy in the electricity sector. Reforms have been made to the contribution's legal and regulatory framework. Its successor, the domestic consumption tax on electricity for end users, now directly finances the general budget. Since the reforms to energy service obligations in 2016, the tax has remained fixed at €22.50/MWh. Likewise, the domestic consumption tax on natural gas for end users is no longer linked to the public-service gas obligations, and its proceeds now also go straight into the general budget. The contribution to the special gas solidarity tariff has been abolished.

All public-service energy obligations are now financed out of the central government budget. As a result of this reform, changes in the cost of supporting renewable energy development now impact on the central government budget, and not on the electricity bills of the end user as before. It is important to note that increases in wholesale electricity prices are reflected in higher consumer electricity bills and reductions in the cost of measures to support renewable energy, paid by the taxpayer (and vice-versa, where wholesale electricity prices fall). The same applies to gas. In economic terms, renewable energy support measures act as a stabiliser on payments to renewable energy producers.

In particular:

- 2016-2020: Measures to support the development of renewable energy for electricity, biomethane injection and load management were paid for by central government out of the earmarked "Energy Transition" account (CAS TE), funded by taxes on energy products with the highest greenhouse gas emissions, namely the domestic tax on the consumption of energy products (TICPE), levied on fossil fuels including petrol and diesel; and the domestic tax on consumption of coal (TICC). Public-service energy obligations relating to tariff equalisation with areas off the national grid, a range of social measures, and public supports for natural gas cogeneration, were funded directly out of the central government general budget (Policy Programme 345: "Public-service energy").

- 2021 onwards: Under Article 89 of the Budget Act for 2020, the earmarked energy transition account has been abolished as of 1 January 2021. Expenditure commitments under this earmarked account, funded by a portion of TICPE and TICC, will now be funded out of the central government general budget. Under the new arrangement, all costings for public-service energy obligations by the Energy Regulatory Commission (CRE) are included under a single programme item, "Public-service energy" (Policy Programme 345).

Public-service obligations are costed annually by the Energy Regulatory Commission for the following year to 15 July. Public-service energy obligations for 2022 have been costed at €8,810.3m, 1% higher than for 2020 (€8,715.7m)[15]. The cost of obligations appears to be holding steady, due to a number of offsetting factors:

- The reduction in renewable energy in electricity in metropolitan France stands at €640.5m. This is explained in large part by the expected sharp increase in market prices, which led to a fall of

[15]https://www.cre.fr/Documents/Deliberations/Decision/evaluation-cspe-2022

almost €1.4bn on 2020. The ongoing development of the generation portfolio, leading to an increase in capacity of 4.1 TWh (6%), has offset this reduction.

- The increasing number of biomethane injection facilities and the volume of gas injection has resulted in a sharp increase of €512.5m (approx. 260%) in charges linked to biomethane purchases.

- The €170.4m increase in charges in areas off the national grid (ZNIs), driven primarily by the numbers of new renewable facilities in these areas.

However, the government makes provision in the initial Budget Act in year N for the best forecast of charges that operators will pay each year, i.e. this year, using CRE estimates of charges for year N and the most recent outlook for market prices. The downward forecast of €415.4m has been distributed across action 09, "Renewable energy generation support in metropolitan France", which is the most sensitive to market prices. €8,449.4m has been allocated in the initial Budget Act for 2022.

The public-service electricity obligations management committee (CGCSPE)[16], established under the Energy Transition Act of 17 August 2015, informs citizens and Members of Parliament as to the multi-year commitments undertaken in relation to contributions. It published its first annual report in June 2019[17], its second in August 2020[18], followed by a third in September 2021. In the third annual report, the committee estimated the total cost of central government undertakings between the early 2000s and late 2020 in support of renewable energy generation and gas cogeneration in mainland metropolitan France and financed by public-service energy contributions to be between €153-172bn (including biomethane injection). Of this amount, €108-126bn is set to be paid in future years (around 70% of total undertakings) on a timescale which, in view of the dates of the undertakings and the duration of contracts, extends out to 2047 under the adopted market price scenario. The amount already paid between the early 2000s and the end of 2020 – approximately €45bn – accounts for just over one quarter of the total cost of these commitments. Moreover, the committee reviewed the public-service energy contributions component in the impact study for the multiyear energy plan for metropolitan France and is also expected to provide input on the proposed multiyear energy plans for areas off the national grid.

[16] https://www.ecologique-solidaire.gouv.fr/comite-gestion-des-charges-service-public-lelectricite
[17] https://www.ecologie.gouv.fr/sites/default/files/Rapport%20annuel%20du%20CGCSPE.pdf
[18] https://www.ecologie.gouv.fr/sites/default/files/Rapport%20annuel%20du%20CGCSPE%20n%C2%B02.pdf

Evaluation

Expenditures by payment appropriation (PA) for the earmarked "Energy Transition" account (CAS TE) and for Policy Programme 345, "Public-service energy" (SPE) for recent years, the current year and next year, are as follows:

PAs (€m)	**2017**	**2018**	**2019**	**2020**	**2021 forecast**	**2022 forecast**
Total SPE charges for year N, based on CRE estimate[19]	6,964.3	7,145.0	8,032.9	8,715.7	9,135.4	8,810.3
Payments from February/March in year N to early year N+1:						
Total SPE charges offset for year N (with adjustments) based on CRE estimate[20]	9,705.0	8,449.9	8,970.0	8,422.1	10,561.3	7,591.9
Payments for financial year N:						
CAS TE (observed and projected)[21]	*6,388.6*	*6,571.2*	*6,704.0*	*6,732.1*	CAS TE discontinued on 1 January 2021 and included within PP 345	CAS TE discontinued on 1 January 2021 and included within PP 345
Policy Programme 345 (observed and projected)[22]	*2,543.9*	*2,976.7*	*3,248.6*	*2,974.1*	***9,149.4***	***8,449.4***
Total CAS TE and PP 345	**8,932.5**	**9,547.9**	**9,952.6**	**9,706.20**		
of which SPE charges	*8,554.7*	*9,100.7*	*9,227.1*	*9,323.5*		

[19] Source: Schedule 7 of the CRE's public-service energy charge time series in the CRE decision of 15 July 2021
[20] Sources: CRE decisions on SPE charges of 13 July 2016, amended decision of 21 December 2017, decision of 12 July 2018, amended decision of 30 October 2019, decision of 15 July 2020 and the deliberation of 15 July 2021.
[21] Sources: Annual report for 2017, 2018, 2019 and 2020 on the performance of the energy transition earmarked account (Policy Programmes 764 and 765)
[22] Sources: Annual report for 2017, 2018, 2019 and 2020 on the performance of Policy Programme 345 and the annual plan for 2021 and 2022 for the performance of Policy Programme 345

5. Evaluation of energy demand management initiatives

The main energy demand management initiatives are:

- The Energy Saving Certificates (CEE) scheme, under which energy providers make a binding commitment to public authorities to achieve energy savings; energy providers are encouraged to actively promote energy efficiency among their customers and other energy users (e.g. households, local authorities and businesses). In the fourth cycle (2018-2021), with an obligation of 2,133 TWhc, €16bn will be put towards CEE initiatives over four years, which will enable consumers to save more than €150bn on their energy bills (€10bn each year, or 92 TWh, over 15 years). Half of the CEE volumes will directly benefit households in fuel poverty. The fifth cycle starts on 1 January 2022 and runs for four years, with an energy savings obligation increased to 2,500 TWhc, 17% higher than for the previous cycle. These expenditures are extra-budgetary and thus not accounted for in this report;

- Heating regulations applicable to new buildings in metropolitan France (RT 2012, which sets down a standard consumption level for new buildings of 50 kWh per sq. m per year, which will be replaced by RE 2020 in 2021 with more stringent but as yet undefined requirements), for new buildings in overseas territories (applicable heating, noise and ventilation regulations – RT DOM) and, for existing buildings in metropolitan France (requirements applicable to building renovation, complete or phased, see Order of 3 May 2007 amended by the Order of 22 March 2017 regarding the heating properties and energy performance in the existing building stock and Decree 2017-919 of 9 May 2017 for "embedded" works that require insulation work to be carried out alongside major works on the building);

- Energy saving obligations for office buildings in 2030, 2040 and 2050 (Decree 2019-771 and Order of 10 April 2020 regarding obligations to achieve reductions in final energy consumption in office buildings);

- The energy transition tax credit (CITE) for energy efficiency improvements to the private housing stock (e.g. insulation, installation of renewable heating generation appliances or gas boilers with very high energy performance, etc.). In 2020, the CITE became a fixed-rate credit in order to take account of household income, energy savings and heating production from renewable sources. Meanwhile, in 2020, the CITE was replaced with *Ma Prime Rénov'*, a one-off payment on completion of works for low and very low-income households, administered by the National Housing Agency (ANAH; see Part III-C). In 2021, middle and high-income households also switched over from CITE to *Ma Prime Rénov'*;

- The eco zero-interest loan (*éco-PTZ*) available to individual owner-occupants and landlords to finance retrofitting works (comprehensive or single-action – see section on taxation), the eligibility requirements for which were relaxed in 2019 with the removal of the work volume condition;

- National Housing Agency supports, including *Habiter Mieux* (Live Better), an initiative to combat fuel poverty introduced in late 2010, in which households in fuel poverty receive financial support and social, technical and financial assistance to complete energy retrofitting works. Since the programme was introduced, more than 430,000 homes had been retrofitted by the end of 2019, including 117,000 homes in 2019 alone and 62,000 in 2018. The programme is aimed at low and very low-income occupants, owner-landlords who enter into an agreement with the ANAH to regulate rental conditions, and co-ownership organisations in a precarious position or facing difficulties;

- Reduced-rate VAT (5.5%) for works to improve the energy performance of dwellings completed more than two years earlier (see Part III – Environmentally-related Taxation);

- The reward/penalty (bonus-malus) scheme for vehicle purchases, to reward those who purchase new vehicles with the lowest CO_2 emissions and penalise those who purchase models

with the highest emissions, in addition to the car-scrapping bonus, an extra payment where the purchase or leasing agreement involves withdrawing an older vehicle with high emissions from use for the purpose of scrapping. Since 1 January 2018, the car-scrapping scheme has been used to upgrade more than 840,000 vehicles, and the aim is to issue one million bonus payments over the five-year presidential term. More than 117,000 received the bonus in 2020, while the share of electric and rechargeable hybrid vehicles grew significantly, by 11% (3% in 2019);

- The EU Emissions Trading Scheme for the industry and energy production sectors (see box below).

Emissions Trading Scheme (ETS)

The ETS (EU Directive 2003/87/EC amended by Directive 2018/410) applies to more than 11,000 facilities and airlines across Europe. In France, 23% of greenhouse gas (GHG) emissions and 84% of industry emissions are covered by the scheme. Since 2012, it has covered the industrial sectors (electricity generation and sectors such as cement, steel, chemicals and refining) and the aviation sector.

The GHG emissions trading scheme began on 1 January 2005 and will be implemented in four phases. The guiding principles remain the same across all phases; companies are required to measure their emissions and return allowances equal to their confirmed volume of emissions. Some allowances are subject to free allocation to protect the competitiveness of industries faced with carbon leakage, while others are sold at auction. Allowances are tradable and prices are determined by supply and demand.

In the context of higher targets for Phase IV (2021-2030) under the revised Directive, the Market Stability Reserve, established in 2017, has facilitated an increase in the price of allowances from €5 in September 2018 to €25 in September 2019. Since then, the price has mostly fluctuated within the €25-30 range, despite a sharp but temporary fall in the early stages of the Covid-19 pandemic in Spring 2020. At the end of 2020, the price began to rise once more, reaching €55 in May 2021 in anticipation of reforms under the Green Deal.

As part of the EU Fit for 55 package, the European Commission has proposed new legislation to facilitate a stronger market for emissions (with a target of achieving a 61% reduction on 2005 levels by 2030, up from 43% at present), fewer free allowances as the Carbon Border Adjustment Mechanism is phased in, extending the emissions trading scheme to cover maritime transport, and a separate carbon market for the transport and construction sectors.

The proceeds of allowances sold at auction are allocated to ANAH up to a limit of €420m.

All of these arrangements may be reviewed in impact studies and in *ex-ante*, *in itinere* or *ex-post* analyses on their specific effect on the energy consumption patterns of the target group. In terms of final energy consumption and final energy intensity, the overall position is as follows:

Primary energy consumption in 2020 was 2,571 TWh (real figures, not adjusted for climate variability), down 10% on its 2019 level.

Between 2019 and 2020, the downturn was sharpest in the service and industry sectors (-15.8% and -7.6% respectively).

In 2020, final energy consumption was 1,562 TWh (figures adjusted for climate variability), lower than in 2019 (-5.6%)[23]. Consumption was concentrated primarily within transport (443 TWh), residential and office buildings (767 TWh, with the pandemic having notably little impact on consumption), industry (302 TWh) and agriculture (51 TWh).

When viewed over a longer period, only the industrial sector has sharply reduced its final energy consumption (by more than 15%) since 2000. Other sectors have, to varying degrees, seen increases in their final energy consumption between 2000 and 2019. The impact of the pandemic may make it difficult to compare 2020 figures with those for previous years.

[23] SDES source data: Overall energy statement for France in 2020 – Provisional figures

6. Trends in the environmental impact of energy consumption

The CO_2 emission levels in this section are derived from burning fossil fuels. These account for more than 93% of total CO_2 emissions and approximately 69% of greenhouse gas emissions in France.

Unless stated otherwise, the analysis below uses data provided by CITEPA (Interprofessional Technical Centre for Atmospheric Pollution Studies) in the "Climate Plan" section of the SECTEN report[24]. The analysis covers metropolitan France, overseas departments and Saint Martin (Kyoto terms of reference).

Initial estimates of CO_2 emissions from energy combustion for 2019 point to a fall in emissions of approximately 2% on 2018. These volumes are 16% lower than in 1990.

Sectoral analysis:

- Transport: this sector is the leading source of emissions, with almost 43% of direct emissions from energy combustion. Emissions in 2019 have held steady, up 0.3% on 2018, but remain 8.8% higher than 1990 levels.

- Residential and office buildings: this sector accounted for 21% of emissions from energy combustion in 2019, down 2.7% on 2018. This reduction, also observed between 2017 and 2018, was in part due to the milder winter, and may also be explained by improvements in the energy performance of appliances and the retrofitting of buildings.

- Industry: this sector accounted for more than 16.5% of emissions from energy combustion. Emissions by this sector fell 3.7% between 2018 and 2019 and have fallen 27.5% since 1990.

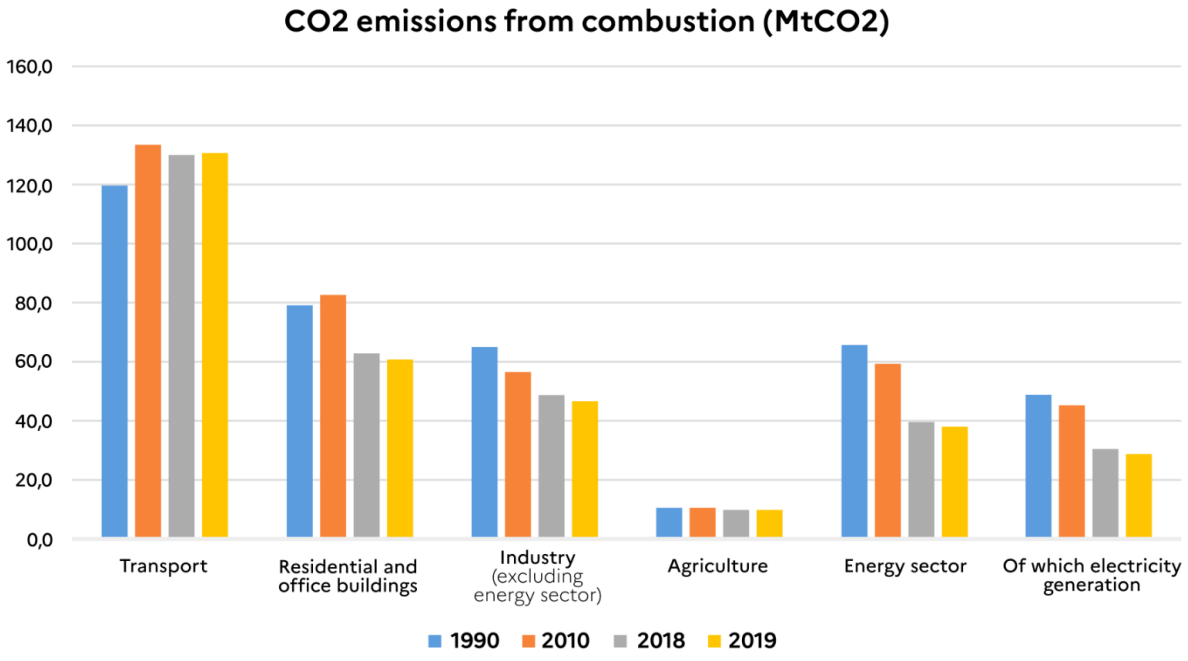
- Energy: emissions in this sector fell almost 5% between 2018 and 2019 and have fallen 42.4% since 1990. This is a considerable reduction, largely driven by changes in the energy mix for electricity generation, albeit with some upward movements due to the severity of winter and the availability of plant for low-carbon electricity.

- Agriculture: emissions (from energy combustion) remained stable between 2018 and 2019 and now account for 3.5% of emissions from energy combustion.

[24] https://www.citepa.org/fr/activites/inventaires-des-emissions/secten

CO_2 emissions from energy combustion ($MtCO_2$)

$MtCO_2$	1990	2010	2018	2019	Change 1990-2019 (%)	Change 2018-2019 (%)	Sector as a proportion of the total in 2019 (%)
Transport	120.2	133.5	130.4	130.8	8.8%	0.3%	45.6%
Residential and office buildings	79.4	82.5	62.9	61.2	-22.9%	-2.7%	21.3%
Industry excluding energy sector	65.2	57.1	49.0	47.2	-27.5%	-3.7%	16.5%
Agriculture	11.2	11.2	9.9	9.9	-11.7%	-0.4%	3.5%
Energy	65.8	59.3	40.0	37.9	-42.4%	-5.2%	13.2%
of which electricity generation	*49.2*	*45.4*	*30.8*	*28.8*	-41.4%	-6.6%	10.0%
Total	341.9	343.6	292.3	287.0	-16.1%	-1.8%	
Source: DGEC calculations based on UNFCCC survey, April 2021, Kyoto terms of reference							



Source: DGEC calculations based on CITEPA 2019, SECTEN survey, Kyoto terms of reference and UNFCCC survey, Kyoto terms of reference, 2019 data: estimates as of 31/07/2020"

B. Evaluation of public and private financial resources for transition (excluding climate)

Methodological note

Financial resources committed by economic agents in the public and private sectors to protect and sustain the environment and natural resources can be inferred from environment-related expenditure. This expenditure is calculated using national and European accounting methods (see box): items of public funding (from central government, public agencies and/or local authorities) included in this expenditure are not therefore identical to those described in Part I of this report. It also does not include climate expenditure, which is set out in the previous section using the I4CE methodology. The most recent available figures are for 2017.

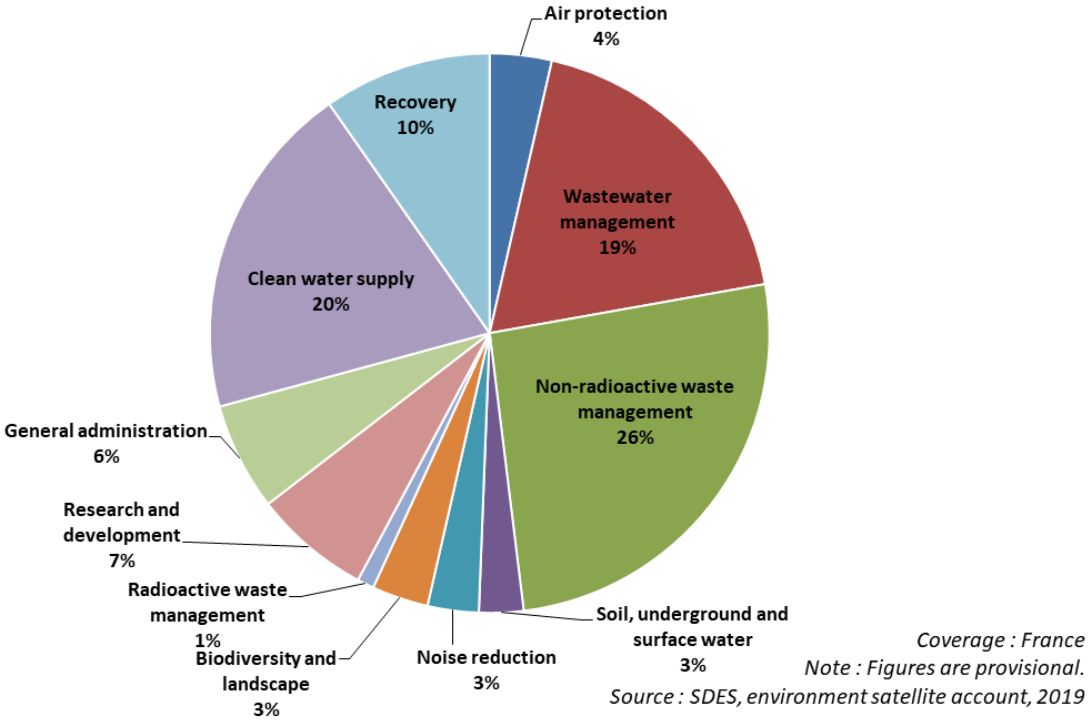
In 2018, public and private expenditure for the environment totalled €70.5bn, of which €51.0bn was spent on environmental protection (Classification of Environmental Protection Activities – CEPA) and €19.5bn on natural resource management (Classification of Resource Management Activities – CReMA)[25].

Expenditure on the environment can be broken down into capital expenditures (€14.8bn), which account for 21% of total expenditures, and ordinary expenditures (€55.8bn), 79% of total expenditures. Ordinary expenditures include final household and public-sector consumption of environmental goods and services, and intermediate business consumption. In some areas, capital investments can have a knock-on effect on ordinary expenditures, with at least some degree of lag. For example, where a local authority or a company with a public-service remit invests in a wastewater treatment plant, the capital investment can place upward pressure on water charges, thereby increasing household ordinary expenditures.

Businesses are the main source of finance for environmental expenditures (€34.2bn, or 49%) ahead of households (€18.7bn, or 26%) and the public sector – central government, local authorities, public agencies – (€16.8bn, or 24%). The EU's financial contribution remains marginal (€0.8bn, or 1%) and mostly takes the form of subsidies under the European Agricultural Fund for Rural Development (EAFRD).

[25] These amounts only cover two CReMA categories (water management and recovery). Expenditures linked to combatting climate change (energy generation from renewable sources, energy savings) will be accounted for as environment-related expenditures in subsequent years.

Breakdown of environment-related expenditure, 2017



Coverage : France
Note : Figures are provisional.
Source : SDES, environment satellite account, 2019

The main expenditure items relate to waste and wastewater treatment by public treatment providers, special treatment actions by businesses, and water management (clean water supply)[26].

1. Trends in total environment-related expenditures

Environmental spending has narrowly outpaced gross domestic product (GDP). Between 2000 and 2018, expenditure increased on average by 2.8% per year, compared with annual GDP growth of 2.6%. The annual inflation rate averaged 1.4% over the same period.

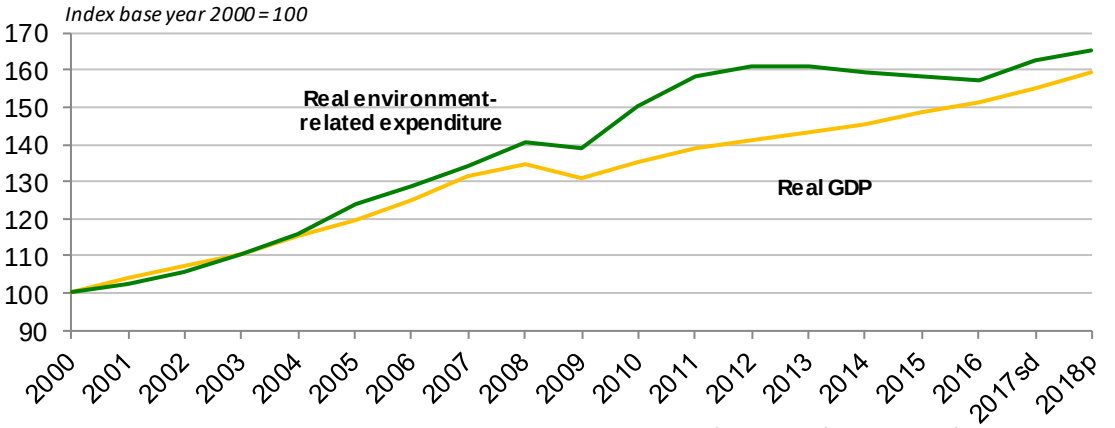
The largest increases in expenditure occurred between 2000 and 2010 (4.1% per year on average); waste and water accounted for most of this increase. During that period, upgrades were made to water treatment facilities under the EU Water Framework Directive (WFD), along with improvements to separated waste collection and increased investment in household waste treatment facilities (UTOMs). Since 2012, average growth in expenditures slowed to 0.4% per year, with a slight downturn in 2016 as upgrade works to wastewater treatment facilities were scaled back and expenditure in waste recovery fell (due in large part to the lower price of secondary raw materials (SRMs)). The trend began to reverse

[26] At present, this amount corresponds to expenditures to clean water supply. However, under the EU Classification of Resource Management Activities (CReMA), this amount will eventually be replaced by an estimate of expenditure on activities and facilities geared towards the sustainable use of water, i.e. helping to reduce extraction and loss, as well as increase reserves. Expenditure on public water provision (e.g. pipes, treatment, services) will no longer be included in this category, which will bring its level down considerably.

from 2017 onwards, with growth of 1.6% between 2017 and 2018, and a minor rebound in ordinary and capital expenditures, in particular in waste management.

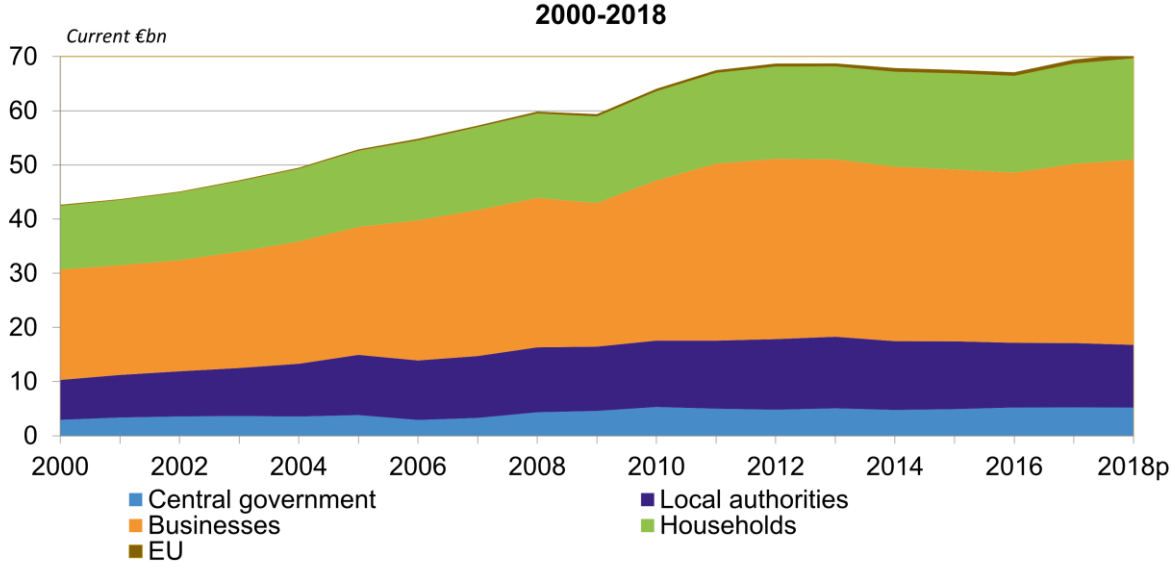
The main source of finance for environmental expenditure was business (€34.2bn, or 49%), followed by households (€18.7bn, or 26%) and the public sector (€16.8bn, or 24%). Their respective shares have largely held steady over this period. The increase in overall expenditures was largely driven by increases in expenditures on waste management and, to a lesser extent, clean water supply and wastewater management.

Total environment-related expenditure and GDP, 2000-2018



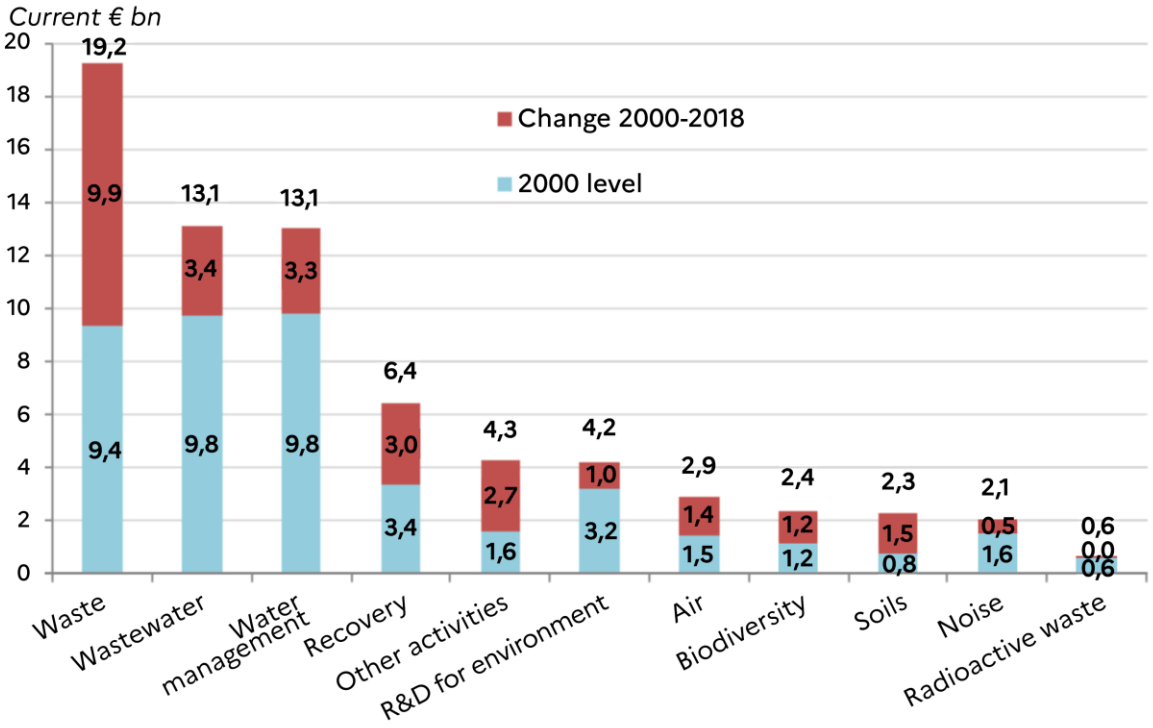
Note: 2017 figures part-finalised; 2018 figures provisional.
Source: SDES, environment satellite account, 2020

Environment-related expenditure by financing source, 2000-2018



Coverage: France
Note: 2017 figures part-finalised; 2018 figures provisional.
Source: SDES, environment satellite account, 2020

Environment-related expenditure by activity area, 2000-2018



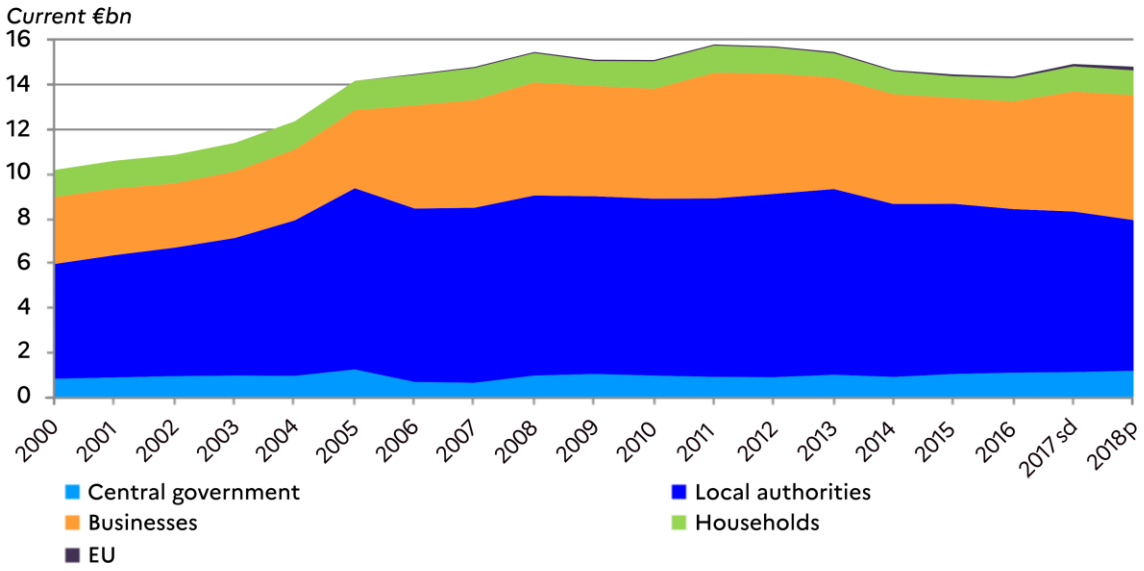
Coverage: France
Note: 2017 figures part-finalised; 2018 figures provisional.
Reading note: 2018 totals for each area of activity are given at the top of each bar (2000 level + 2000-2018 difference)
Source: SDES, environment satellite account, 2020

In the three environmental sectors that account for the majority of expenditures (i.e. wastewater, clean water, waste), the public sector (local authorities in particular) were the largest contributors in terms of capital investment. Businesses and households were the largest contributors to ordinary expenditures.

2. Trends in environment-related capital expenditures

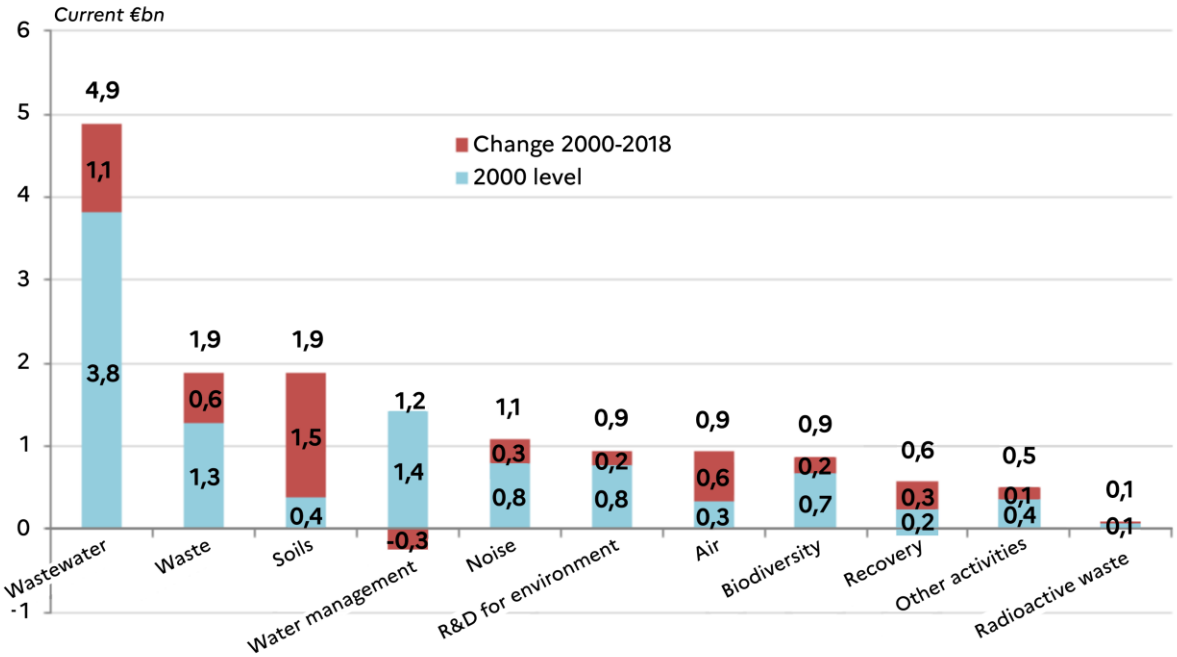
Capital expenditures (or investment) is made up of expenditures allocated to land purchases, specific construction projects, retrofitting or major equipment purchases, in order to produce more environmentally friendly goods and services.

Environment-related expenditure by financing source, 2000-2018



Coverage: France
Note: 2017 figures part-finalised; 2018 figures provisional.
Source: SDES, environment satellite account, 2020

Environment-related investment expenditure and trend by activity area, 2000-2018



Coverage: France
Note: 2017 figures part-finalised; 2018 figures provisional.
Reading note: 2018 totals for each area of activity are given at the top of each bar (2000 level + 2000-2018 difference)
Source: SDES, environment satellite account, 2020

€14.8bn of investment was allocated to environment-related initiatives in 2018. The central government sector[27] were the largest financial contributors, in particular local and regional authorities, which provided almost 46% of total capital expenditures. Investment was channelled primarily to wastewater, waste, surface water and groundwater projects, which are more capital intensive. The slowdown in wastewater management expenditures from 2012 onwards was in part due to the completion of upgrades to urban water treatment plants. Relatively high levels of investment in waste infrastructure over a prolonged period have funded the development of composting and sorting facilities, as well as acquisition of new equipment to improve waste recovery rates[28]. Investment in soil protection, surface water and groundwater projects saw sharp increases in line with the growth of expenditures towards the decontamination of polluted sites and soils through actions to prevent pollutants from infiltrating the natural environment. These initiatives are financed as part of agro-environmental programmes such as the farm competitiveness and adjustment plan. Increases in expenditures on biodiversity and landscape conservation projects (34% growth between 2010 and 2018) are linked to projects undertaken by water boards to restore aquatic environments, under targets set in their 10th action programme (2013-2018). Water agencies assist local authorities with their ecological, hydrological and sedimentary sustainability projects, for example by acquiring or restoring wetlands and bogs.

Investment by businesses is concentrated on protecting soils, ground water and surface water, air and climate protection and wastewater management. Business expenditures on wastewater management have outstripped those of households since 2006, largely due to investment by companies with a public-service remit in collective wastewater treatment and investment by companies in their own water treatment facilities.

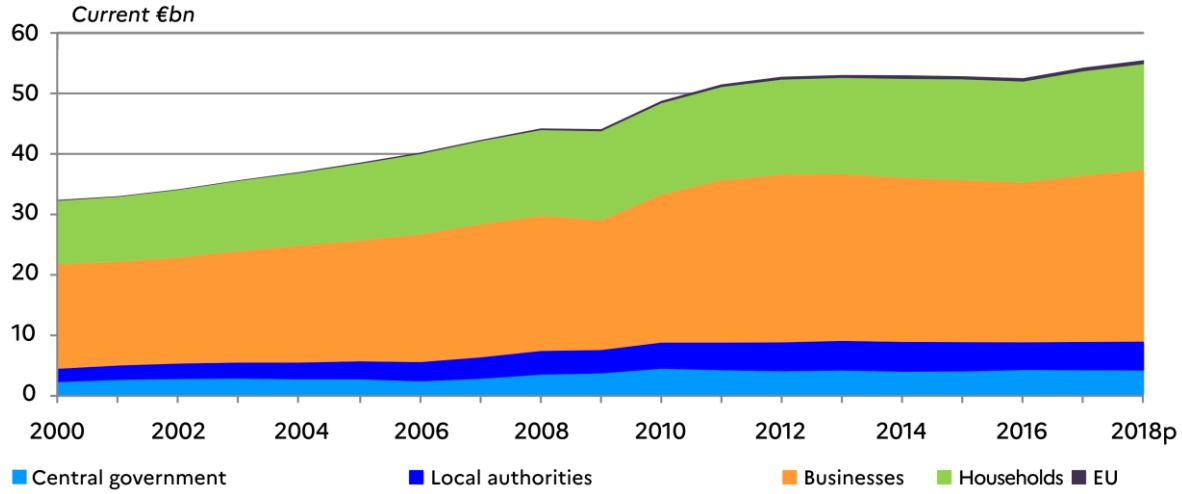
Households also contribute to capital investment, albeit to a lesser extent. Investment mostly takes the form of purchases of windows offering heat and sound insulation in new and existing housing stock. However, only the home sound insulation component is included within environmental expenditures in this case – as a noise reduction item – and accounted for more than €0.6bn in 2018.

[27] Central public authorities and agencies (central government and central government bodies) and local public authorities and agencies (local and regional authorities and authority groupings, water boards).
[28] Ademe (2020), "Waste – key figures".

3. Trends in environment-related ordinary expenditures

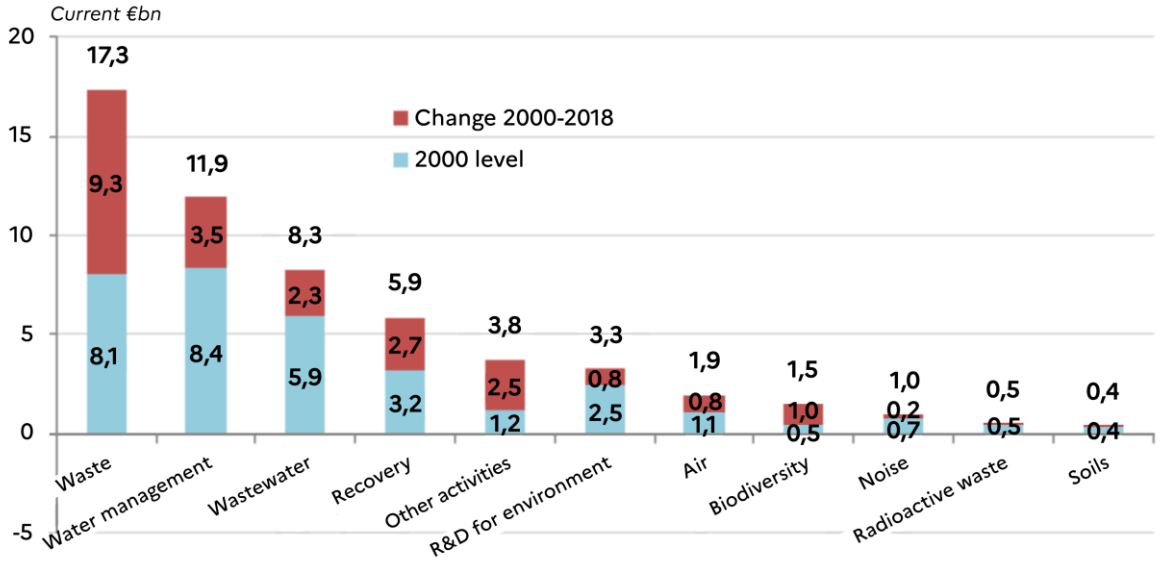
Ordinary expenditure measures spending by economic agents on market and non-market goods and services and may include water bills, operating costs of public and private establishments (including staff costs), equipment repair and maintenance costs, among others.

Environment-related expenditure by financing source, 2000-2018



Coverage: France
Note: 2017 figures part-finalised; 2018 figures provisional.
Source: SDES, environment satellite account, 2020

Ordinary environment-related expenditures by activity area, 2000-2018



Coverage: France
Note: 2017 figures part-finalised; 2018 figures provisional.
Reading note: 2018 totals for each area of activity are given at the top of each bar (2000 level + 2000-2018 difference)
Source: SDES, environment satellite account, 2020

At €55.8bn, ordinary expenditures account for most environment-related expenditure. Businesses (51%) are the largest contributors to this expenditure, which mainly consists of water charges (clean water supply and wastewater treatment) and waste management charges (collection and processing). Whilst some companies have their own internal waste management systems, most use specialist waste collection and processing companies.

Businesses, mainly producers of steel and other metals, paper, cardboard, glass and plastics, also contribute financially to the waste recovery sector. Expenditure linked to the use of secondary raw materials (SRMs) in the production process increased in 2018. This expenditure is heavily dependent on the volumes – which have been increasing as recycling capacity has expanded – as well as the price, of SRMs. Furthermore, the primary and secondary raw material markets are also closely correlated (alignment of market prices). The fall in the price of primary raw materials between 2012 and 2016 placed downward pressure on the price of SRMs. This trend began to reverse from 2017 onwards, as expenditures on recovery increased.

Households are another financial contributor to environment-related ordinary expenditure, through payment of water charges and the refuse collection tax/levy (TEOM/REOM)[29] used to finance waste collection and processing. These expenditure items have grown consistently since 2000, in order to finance investment by local and regional authorities (directly managed) or companies (under public-service remits) to introduce separated waste collection.

Public sector contributions to ordinary expenditures are principally used to cover general administration costs (e.g. staffing costs, training, management and decision-making supports, etc.) and a variety of subsidies towards projects such as biodiversity protection. This expenditure has remained stable over the period, increasing by just 2% between 2010 and 2018. Local and regional authorities were the largest contributors to this expenditure.

[29] Refuse collection tax (TEOM) and refuse collection levy (REOM)

Methodological note

Environment-related expenditure accounts are prepared in accordance with the EU framework. SERIEE[30] provides Member States with a common framework for collecting, processing and presenting information. The sharing of data with Eurostat, the European Union's statistics office, is subject to Regulation (EU) 538/2014 of the European Parliament and of the Council of 16 April 2014. These accounts cover specific activities and actions and are presented under the Classification of Environmental Protection Activities (CEPA), or based on agents' contributions to natural resource management activities (Classification of Ressource Management Activities (CReMA)). The framework for this accounting practice is defined at EU level and is therefore different from that generally discussed in documents used to inform budget bills.

The areas of environmental expenditure are:

- Protection of ambient air and climate (CEPA 1);
- Wastewater management (CEPA 2);
- Waste management (CEPA 3);
- Protection and remediation of the soil, groundwater and surface water (CEPA 4);
- Noise and vibration abatement (CEPA 5);
- Protection of biodiversity and landscapes (CEPA 6);
- Protection against radiation (CEPA 7);
- Research and development (CEPA 8);
- Other environmental protection activities (CEPA 9);
- Management of water (CReMA 10);
- Recovery and recycling (CReMA 14).

A disaggregated list of activities included under each item is available on the Eurostat website[31]. These encompass a range of actions such as installation of air monitoring systems, construction of water treatment facilities, soil and water remediation, development of crossings for animals, or research and development projects concerning pollution prevention.

Figures used to calculate public sector expenditure are mainly provided by the Public Finance Directorate-General (DGFiP), although other sources are also used (e.g. surveys, budget documents, etc.). The number of data sources, and the longer reporting time frames for some of these sources, explain why data is updated with a two-year lag. 2018 data was included in a Eurostat report, published at the end of 2020, while data for 2019 will be included in a report to be published at the end of 2021. This time frame is set at EU level and is the same for all Member States.

Additional efforts are ongoing to meet requirements under new EU environmental economic accounting regulations. They will result in a number of changes in methodology and the framework, including measurements of sustainable water management (CReMa 10) and the inclusion of energy generation from renewable sources (CReMA 13A), as well as energy savings (CReMA 13B) falling under environment-related expenditure.

[30] The European system for the collection of economic information on the environment (SERIEE) defines the methodology for environmental economic accounting in accordance with internationally agreed environmental accounting standards.

[31] https://ec.europa.eu/eurostat/documents/1798247/12177560/CEPA+and+CReMA+explanatory+notes+-+technical+note.pdf/b3517fb9-1cb3-7cd9-85bd-4e3a3807e28a?t=1609863934103

Part III
Environmentally related Taxation

A. Taxation as an ecological and energy strategy tool

The definition of a public environmental strategy leverages and balances a set of legal and economic resources to pursue one of the many related goals variously stated, including under Title I of Book I of the French Environmental Code and the introductory title of Book I of the French Energy Code, and actionable by multiannual policy acts such as the Multiyear Energy Plan referred to in Article L. 141-3 of the same code.

All types of taxes, as mentioned in Article 34 of the French Constitution, are among the instruments that can be combined with others to contribute to these environmental strategies. Under Article 13 of the 1789 Declaration of the Rights of Man and the Citizen (DRMC), tax is a common contribution levied to finance public spending, including for the ecological transition (see Part II). Over and above this fundamental tax yield purpose, and sometimes in spite of it, tax can also contribute to environmental strategies by means of a variety of processes, each with their own legal constraints.

- First of all, **tax breaks can be granted in the public interest**, including for the abovementioned purpose of ecological transition, provided that the criteria chosen are objective and rational from the point of view of the goals pursued and that the tax break is not disproportionate to the expected incentivizing effect.[32] Sub-section A in Part I of this report on green tagging government expenditures extensively analyses the environmental impact of these breaks, which can concern all nature of taxes.

- Any tax, due merely to the fact that it deprives an economic player of a sum of money, is liable to alter that player's behaviour and consequently the impact of the player's activity on the environment. This is more particularly the case when **the ways of calculating the tax are based explicitly on elements that are directly and specifically associated with the environment** – such as a tax on the volume of petroleum products – rather than on an income. Such calculation methods may appear to be at variance with the very letter of Article 13 of the DRMC, which states that tax must be shared among all the citizens according to their ability and not any other criterion. Nevertheless, the French Constitutional Council accepts that, where a contributory ability has been identified to justify the establishment of a tax, such as holding an asset, there is considerable leeway to determine the tax calculation method. It may therefore, as long as it does not make the sum levied punitive, have no direct connection with the taxpayer's contributory capacity and may, subject to the abovementioned criteria of objectiveness and rationality, target an environmental purpose in addition to the prime objective of yield.

  Example: Tax on company cars is levied on the ownership or use of a vehicle by a company. The introduction of an increase on this tax, based on the year the vehicle was first registered and its engine specification, although intended primarily to increase the yield, was ruled acceptable, even though it is not related to the value of the vehicle or the earnings of its owner or user, on the grounds that it was intended, "in addition [to] incentivize companies to renew their fleet of vehicles with vehicles emitting fewer atmospheric pollutants."[33] Alternatively, nothing would prevent, from this point of view, the calculation method from being based on the

[32] See, for example, Conformity Decision No. 07-555 DC of 16 August 2007 (preamble points 3 and 20).
[33] Conformity Decision No. 13-685 DC of 29 December 2013 (preamble point 51).

costs for the company represented by the taxable matter, which is a way of applying the polluter pays principle provided for in Article L. 110-1 of the French Environmental Code ("Pigovian" taxes).

- Thirdly, it is possible to use "purely behavioural" taxes intended, independently of any consideration concerning the taxpayer's contributory capacity, to "incentivi[ze] taxpayers to adopt conduct which complies with objectives of general interest."[34] Constitutionally speaking, the use of this option, which departs entirely from the principles enshrined in Article 13 of the DRMC, is particularly strictly controlled in the form of two particular requirements. The first is that the legislator clearly and precisely explains the tax's objectives – which derive not so much from the legal measure itself as from contextual elements such as the motives expressed (preambles, summaries and oral debates) – and the adoption process.[35] The second is the requirement for virtually systematic consistency between each of the tax's parameters and the objectives explained, over and above the consistency normally required for yield taxes.[36]

  Example: The incentivizing tax on biofuel blending is levied on fuels released onto the market at a rate equal to the difference between a renewable energy blending objective and the percentage of renewable energy actually in the blend.

The purpose of this report is therefore to objectively present the tools, especially the taxation instruments, available to the government and their specific constraints to inform the development and implementation of government-defined strategies. In this regard, this Part III presents, as provided for in point c of paragraph 6 of I of abovementioned Article 179:

- In sub-section B, a list of the taxes directly and specifically related to the environment as well as other similar legal revenue-generating tools (fees, fines and auction devices), with details on the main data in their regard, especially in terms of revenue;

- In sub-section C, an analysis of the impacts of these tools on economic players.

Although these elements present a useful summary for consistent decision-making, they in no way enable the identification of guidelines for action. Only a case-by-case analysis can decide on the relevance and effectiveness of a given tax tool in terms of the environmental objectives, since this will depend not only on the tool's intrinsic characteristics, but also on the other means already or able to be deployed, which may complement, compete with, conflict with or be independent of these tools.

[34] See, for example, Conformity Decision No. 2013-666 DC of 11 April 2013.
[35] See, for example, Conformity Decision No. 11-644 DC of 28 December 2011, whereby the Constitutional Council concluded that the tax on sugary drinks was not a behavioural tax due exclusively to the decision to simultaneously adopt another tax on drinks containing sweeteners.
[36] Such is the case, for example, when a bonus-malus on electricity intended to control grid power generation and distribution costs applies solely to domestic consumption, excluding business consumption (see above-mentioned Conformity Decision No. 2013-666 DC).

B. Environmental public resources

1. Introduction

As mentioned in sub-section A above, the list of environmental public resources forms a tool that can be used, among other possible instruments, to define and implement a strategy targeting an ecological transition goal. To this end, this list is based on a different definition of environmental public resources to those used for European statistical purposes (see box on Regulation 691/2001 at the end of this introduction) in that it adopts a broader definition of the link with the environment and a more neutral definition of the environmental concern associated with each tax.

Environmental public resources consist of levies charged by the public authorities whereby one or more of the parameters (calculation methods, taxpayer coverage, and products or services concerned) specifically relates to one or more elements directly associated with one of the following areas, selected in keeping with the associated manifest environmental concern:[37] **energy, transport, natural resources (including soil), products discharged into the environment, and impact of human constructions on the soils.**

Consequently, environmental public revenue sums are not comparable with expenditure tagged as "favourable" in the central government budget. Responding to environmental concerns with a tax says nothing about the use to which that tax will be put, pursuant to the general budget rule. This also holds true for consumption duty on tobacco and alcohol, and housing-related revenues. Moreover, the "environmental" nature of a levy does not rule out the pursuit of other objectives or concerns (e.g. national highway maintenance funded by the domestic consumption tax on energy products). Neither does it say anything about the actual impact of what are called environmentally related taxes on the environment itself (see below), since these levies can sometimes have a tenuous link with the environment (e.g. the energy distribution contribution, which finances the National Pension Fund for the Electricity and Gas Industries). Lastly, expenditures tagged as "favourable" cover exclusively spending incorporated into the central government budget, whereas environmental revenues take in levies allocated to other sub-sectors, in particular local government. The two scopes are therefore quite different.

Example: A general consumption tax for an amount in proportion to the price of the goods sold, such as VAT, is not an environmental resource. Neither is a specific tax on earnings from digital services an environmental resource. However, the following are environmental resources:

- A tax based on airline turnover, since it is directly related to the transport sector;

- A general consumption tax calculated on the basis of the environmental performance of the product or service consumed.

Environmental public resources include levies classified in legal terms as all types of taxes (hereafter "environmentally related taxation"). They also include levies that go by another name, such as certain public property user fees. However, they do not include fees for services provided such as the use of infrastructures, which may constitute public resources when the infrastructure is not operated as a concession and where, economically and legally, they take the form of an actual price rather than a levy *per se*;[38][39] the same holds true for regulated rates imposed by the government such as the public electricity grid use tariff (TURPE).

[37] Special arrangements derogating from a given tax, including those referred to as tax expenditures, are not taken into account to classify it.
[38] For example, non-concession motorway tollgates.
[39] The sum of fees for services provided cannot factor in costs associated with impacts not directly related to the service provided the user, which rules out the costs of impacts on the environment, save rare exceptions.

Example: Taxes on the consumption of energy products, the malus on the first registration in France of a passenger vehicle based on its level of carbon emissions, and the proceeds from the auctioning of emission allowances are all environmental resources.

These resources may consist of instruments designed to serve an ecological policy (see sub-section A above). They may also be instruments that pursue another policy without any environmental objective, but which proves to be related to the areas identified as presenting a manifest environmental concern.

Example: A tax on the registration of vehicles in proportion to the engine rating for administrative purposes and a fixed charge for issuing a vehicle registration certificate are environmental resources.

Consequently, the term of environmental resource gives no indication of the actual impact on the environment of the levy on which it is based. This impact may be neutral, positive, negative or even ambivalent.[40] A thorough assessment of the impact of a levy would call for an in-depth study of all levy-induced treatment differences, including each of its tax expenditures and all the elements not within the scope of the tax that are therefore advantaged. Moreover, a tax can have an impact on the environment even if none of its parameters has a direct or indirect connection with the environment.

Example: The main general government taxes (value-added tax, customs duties, corporation tax and income tax) have an impact on the environment when they have an effect on the economy and some of their terms can be changed to encourage certain behaviour.[41] However, a fixed €12 charge for issuing a car registration certificate will probably have a negligible impact, but will constitute an environmental resource. Similarly, taxes on goods and services that can be considered as to be encouraged and which are therefore likely to be counterproductive when it comes to incentives, such as a tax on rail companies or taxes on renewable energy means of electricity generation, will also constitute environmental resources.

The levy's yield has nothing to do with the appraisal of environmental impact.

Example: the incentivizing tax on biofuel blending has a zero yield when all operators meet the renewable energy blending percentage set by the tax.

Environmental public resources may or may not be intended for environmental purposes, subject to certain provisos.[42] Conversely, public expenditure on the environment may or may not come from environmental resources.

Example: The civil aviation duty, which funds airport security, is an environmental resource. Conversely, the surcharge on property tax and residence tax, called the tax for the management of aquatic environments and flood prevention (GEMAPI), is not an environmental resource since its coverage and calculation methods are not specifically related to the environment, even though its proceeds are allocated to managing aquatic environments and flood prevention. More generally, a large part of the state's environmental expenditure is funded by the general budget. These elements are presented in Part II and not in this Part III.

As seen below, environmental public resources will total an estimated €64.85bn in 2021. They cover environmentally related taxes, with estimated revenues of €60.78bn in 2021 (including €33.1bn from the domestic consumption tax on energy products (TICPE), €8bn from the domestic consumption tax on electricity for end-users (TICFE) and €2.4bn from the domestic consumption tax on natural gas (TICGN)). Added to this are €4.1bn in other environmental public resources, which cover revenues from speeding fines (estimated at €2bn in 2021), the auctioning of emission allowances (€0.7bn), and extended producer responsibility (EPR) sector eco-contributions (€1.4bn).

[40] A tax with positive impacts on the climate may have negative impacts in terms of polluting emissions.
[41] Reduced rate or adjustment of the tax base for certain environmentally friendly products or activities.
[42] A tax on the national consumption of a product cannot be specifically allocated to the national production of similar environmentally friendly products, since it would risk constituting a tax equivalent to a customs duty or discriminatory taxation prohibited by European law.

EU Regulation 691/2011 of the European Parliament and the Council of the European Union of 6 July 2011 on European environmental economic accounts defines an environmentally related tax as a tax:

- whose tax base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment, and,
- which is identified in ESA 95 as a tax.

The OECD defines environmentally related taxes as all taxes, fees and charges that have a tax base targeted to a pollutant or, more generally, a product or service that causes environmental damage or depletes natural resources.

The definition of environmental public resources takes the same approach and is based on these two definitions. However, it is more specific since it incorporates national legal considerations:

- A clear distinction between all types of taxes and other levies;
- The expression “tax base” denotes, under national law, the amount by which a tariff or rate is multiplied and reflects the taxpayer’s contributory capacity. It is differentiated from the other parameters used in the tax calculation or those relating to its scope. Taxation whose tariff or rate varies depending on environmental parameters and taxation that only applies to taxpayers who exceed certain thresholds defined by environmental parameters are intended to raise environmental public resources, even if their tax base has no direct or indirect connection with the environment.
- The list of areas concerned (energy, transport, natural resources (including land) and pollution) is detailed by categories used by France to meet its obligations under the abovementioned regulation. Additions could be made to this list if other areas of concern are identified.
- It includes taxes on mineral and fossil resource extraction and taxes on land use and changes in use, which Eurostat recommends excluding for reasons of international comparison, but which can be relevant nationally.

2. List of environmental public resources

List of environmentally related taxes					
Name	**2021 Estimate (€M)**	**2022 Estimate (€M)**	**Beneficiary**	**Legal basis (Act/Code; Article)**	
Energy/Climate					
Domestic consumption tax on energy products (TICPE)	31,624	32,953	Multiple (general budget/regions-*départements*/ French Agency for Transport Infrastructures Funding (AFITF) and Ile de France Mobilités	Customs Code	265
Domestic consumption tax on natural gas (TICGN)	2,346	2,441	-	Customs Code	266 *quinquies*
Domestic consumption tax on coal, lignite and coke (TICC)	8	9	-	Customs Code	266 *quinquies* B
Special consumption tax on fuels in Overseas France	502	502	-	Customs Code	266 *quater*
Incentivizing tax on biofuel blending (TIRIB)	1	1	-	Customs Code	266 *quindecies*
Payment for services rendered to the Professional Committee for Strategic Oil Stocks	384	384	Professional Committee for Strategic Oil Stocks	Energy Code	L. 642-6
Domestic consumption tax on electricity for end-users (TICFE)	7,645	7,953	-	Customs Code	266 *quinquies* C
Municipal consumption tax on electricity for end-users (TCCFE)	852	852	Communal sector (*bloc communal* – This encompasses communes and intercommunal bodies)	Local Authority Code	L. 2333-2
Département tax on electricity for end-users (TDCFE)	677	677	*Départements*	Local Authority Code	L. 3333-2

Contribution payable by public electricity distribution corporations (funding FACÉ)	376	376	FACÉ – Local Government Aid Fund for Rural Electrification	Local Authority Code	L. 2224-31 - I *bis*
Energy distribution contribution	1,670	1,643	National Pension Fund for the Electricity and Gas Industries	Act 2004-803 of 9 August 2004 on the public electricity and gas service and electricity and gas corporations	18
Tax on nuclear power plants	568	560	-	Act 99-1172 of 30 December 1999, Budget Act for 2000	43 - II to IV
Surcharge on the tax on nuclear power plants for research	64	65	ANDRA - National Agency for Radioactive Waste Management	Act 99-1172 of 30 December 1999, Budget Act for 2000	43 - V
Surcharge on the tax on nuclear power plants for support	57	58	Communal sector, public interest groups	Act 99-1172 of 30 December 1999, Budget Act for 2000	43 - V
Surcharge on the tax on nuclear power plants for disposal	3	3	Communal sector	Act 99-1172 of 30 December 1999, Budget Act for 2000	43 - VI
Annual contribution for the French Institute for Radiation Protection and Nuclear Safety	61	61	IRSN - French Institute for Radiation Protection and Nuclear Safety	Act 2010-1658 of 29 December 2010, Supplementary Budget Act for 2010	96
Special contribution for radioactive waste management	149	81	ANDRA - National Agency for Radioactive Waste Management	Act 2013-1279 of 29 December 2013, Supplementary Budget Act for 2013	58
Tax on offshore wind turbines	n/a	n/a	National Compensation Fund for Offshore Wind Farm Energy (Municipalities, National Committee for Fisheries and Maritime Activities)	General Tax Code	1519 B
Flat-rate tax on pylons	294	294	Communal sector	General Tax Code	1519 A
Flat-rate tax on wind turbines and underwater turbines	116	116	Communal sector	General Tax Code	1519 D

Flat-rate tax on nuclear and conventional thermal electricity generation	247	247	Communal sector	General Tax Code	1519 E
Flat-rate tax on solar and hydraulic electricity generation	118	118	Communal sector	General Tax Code	1519 F
Flat-rate tax on power transformers	197	197	Communal sector	General Tax Code	1519 G
Flat-rate tax on natural gas networks and oil pipelines	n/a	n/a	Communal sector	General Tax Code	1519 HA
Flat-rate tax on geothermal electricity generation	n/a	n/a	Communal sector	General Tax Code	1519 HB
Municipal mining tax	21	21	Communal sector	General Tax Code	1519
Département mining tax	11	11	*Départements*	General Tax Code	1587
Oil exploration tax	ε	ε	*Départements*	General Tax Code	1590
	Transport				
Fixed charge for issuing a vehicle registration certificate	126	110	Regions/ANTS - National Secure Credentials Agency	General Tax Code	1012
Regional vehicle registration tax	2,091	2,091	Regions	General Tax Code	1012 *bis*
Malus on the first registration of a passenger vehicle based on its level of carbon emissions	n/a	n/a	-	General Tax Code	1012 *ter*
Annual tax on carbon emissions (e.g. tax on company cars)	-	n/a		General Tax Code	1010 to 1010 *septies*
Annual tax on emissions of atmospheric pollutants (e.g. tax on company cars)	805	793	National Family Allowance Fund (CNAF)	General Tax Code	1010 to 1010 *sexies* and 1010 *octies*
Stamp duty on issuing a driving licence in the event of loss, theft or deterioration	10	10	ANTS - National Secure Credentials Agency	General Tax Code	1628 *ter*
Surcharge on issuing registration certificates for commercial vehicles	63	63	AFT – Association for the Development of Vocational Training in Transport	General Tax Code	1012 *quater*

Annual axle tax	0	185	-	General Tax Code	1010 to 1010 *sexies* and 1010 *nonies*
Tax payable by motorway operators	567	567	AFITF - French Agency for Transport Infrastructures Funding	General Tax Code	302 bis ZB
Tax for roadworks inspections payable by motorway operators	9	9	-	General Tax Code	302 *bis* ZB *bis*
Urban tollgate tests	0	n/a	Authorities concerned	General Tax Code	1609 *quater* A
French vessel registration and navigation duty (DAFN) and passport duty	44	45	State, Corsica; French Coastal Protection Agency (CELRL), and sea search and rescue bodies	Customs Code	Art. 222 to 226 and 238 to 240
Fixed duty for issuing a pleasure boat licence	0	n/a	-	General Tax Code	963 - IV
Examination fee to obtain the coastal, inland, open sea and large pleasure boat options	0	n/a	-	General Tax Code	963 - V
Airport tax	453	725	Large aerodrome operators	General Tax Code	1609 *quatervicies*
Airport tax surcharge	0	n/a	Aerodrome operators	General Tax Code	1609 *quatervicies* - IV *bis*
Civil aviation duty	246	325	Special air traffic control and civil aviation operation budget and general budget	General Tax Code	302 *bis* K
Air ticket levy	210	301	FSD – Solidarity Fund for Development managed by the French Agency for Development (AFD)/AFITF (French Agency for Transport Infrastructures Funding)	General Tax Code	302 *bis* K - VI

CDG-Express special contribution	-	-	CDG-Express operator	General Tax Code	1609 *tervicies*
Tax on noise pollution caused by aircraft (TNSA)	17	26	Airports	General Tax Code	1609 *quatervicies* A
Local solidarity tax on rail transport	16	16	-	General Tax Code	302 *bis* ZC
Tax on railway earnings (TREF)	n/a	n/a	-	General Tax Code	235 *ter* ZF
Flat-rate tax on rolling stock on the national rail network	0	0	*Département*	General Tax Code	1599 *quater* A
Flat-rate tax on rolling stock on the Paris area metro network	74	75	*Département*	General Tax Code	1599 *quater* A *bis*
Municipal tax on ski lifts	49	49	Communal sector	Local Authority Code	L. 2333-49
Département tax on ski lifts	16	16	*Départements*	Local Authority Code	L. 3333-4
Tax on sea passengers boarding for protected natural areas	4	4	Public bodies managing the protected natural space concerned, French Coastal Protection Agency (CELRL)	Customs Code	285 *quater*
Département duty on crossing permanent structures connecting the mainland to islands	33	33	*Départements*	Environmental Code	L. 321-11
Tax payable by public air and sea transport companies on passengers boarding or disembarking in Corsica	23	23	Corsican authority	General Tax Code	1599 *vicies*
Tax payable by public air and sea transport companies on passengers boarding or disembarking in Guadeloupe, Martinique, French Guiana, Mayotte and Réunion	25	25	Overseas authorities	Customs Code	285 *ter*

	Pollution/Natural resources				
Pollution tax (TGAP)	756	870	-	Customs Code	266 *sexies* - I-1 and 2
Tax on waste received by a disposal facility or household waste incinerator	18	18	Municipalities	Local Authority Code	L. 2333-92
Incentivizing refuse collection tax	5,911	5,485	Communal sector	General Tax Code	1522 bis
Tax for non-connection to the main sewer	1	1	Municipalities	Public Health Code	L. 1331-8
Tax for obstacles on watercourses, tax for storing water during water shortages, tax for the protection of the aquatic environment, charge for diffuse pollution (except French National Agency for Water and Aquatic Environments (ONEMA) fraction), charges for water pollution and charge for the modernisation of the collection networks	2,216	2,198	Water boards	Environmental Code	L. 213-10-2 and L.213-14-2
French Guiana gold surcharge	n/a	n/a	Region of French Guiana	General Tax Code	1599 *quinquies* B
Flat-rate tax on precious metals, jewellery, works of art, collectors' items and antiques	85	90	-	General Tax Code	150 - VI
Hunting permit authentication duty	n/a	n/a	Water boards/*Département* federations of hunters	General Tax Code	1635 *bis* N
Hunting permit examination enrolment duty	1	1	OFB – French Office for Biodiversity	Environmental Code	L. 423-6
Hunting fees	52	n/a	Water boards	Environmental Code	L. 423-19
Health inspection fee on the first purchase or reception of fishery and aquaculture products	ε	ε	-	General Tax Code	302 *bis* WA

Health inspection fee on processing fishery and aquaculture products	ε	ε	-	General Tax Code	302 *bis* WB
Local tax on outdoor advertising	163	163	Communal sector	Local Authority Code	L. 2333-6
Annual tax on parking space collected on behalf of the Ile-de-France Region	16	28	IDF Region /Société du Grand Paris	General Tax Code	1599 *quater* C
Special Paris area annual surcharge on parking space	3	3	Ile-de-France Region	General Tax Code	1599 *quater* D
Construction tax	1,669	1,669	Municipalities/ Public establishments for intermunicipal co-operation (EPCIs) - *Départements* - IDF Region	Town Planning Code	L 331-2 -> L 331-4
Rescue archaeology fee	147	147	-	Heritage Code	L. 524-2
Tax on the sale of land that has become suitable for building	n/a	n/a	Municipalities or EPCIs (Public establishments for intermunicipal co-operation with tax-raising powers) – municipal share	General Tax Code	1529
Tax on the sale of bare land that has become suitable for building	23	24	French Services and Payments Agency (ASP) – funding young farmers setting up	General Tax Code	1605 *nonies*
Property tax surcharge on undeveloped land	78	78	Communal sector	General Tax Code	1519 I
Tax on vacant residential premises	94	94	ANAH – National Housing Agency	General Tax Code	232
Tax on commercial wasteland	13	13	Communal sector	General Tax Code	1530
TOTAL	**64114**	**65995**			

Examples of other environmental public resources (non-exhaustive)					
Annual charge on liquid and gaseous hydrocarbon deposits (on land or at sea up to the continental shelf)	15	15	State (inc. mining social security fund) or State/Region (at sea)	Mining Code	L.132-16
Proportional charge on hydraulic installations operated as concessions	159	159	*Départements*/Municipalities	Energy Code	L. 523-1 and L.523-2
Revenues from the auctioning of emission allowances	708	1428	National Housing Agency (ANAH)/General budget	Act 2012-1509 of 29 December 2012, Budget Act for 2013	Art. 43
Traffic police fines	522	614	General Budget	Highway Code	L130-1 to L130-9-2
Refuse collection levy (incentivizing portion)	34	34	Municipalities/EPCIs	Local Authority Code	Articles L.2333-76 to L.2333-80 of the Local Authority Code
Annual charge on deposits other than liquid and gaseous hydrocarbons (at sea (continental shelf or EEZ))/ex. “aggregates” charge	n/a	n/a	French Office for Biodiversity (OFB)	Mining Code	L.132-15
Extended producer responsibility (EPR) sector eco-contributions	1,400	n/a			
TOTAL	**2,838**	**2,250**			

TOTAL environmental public resources	**66,952**	**68,245**			

3. Energy taxation challenges

Energy taxation covers a multitude of different tax arrangements (nearly one hundred) in the form of normal rates, special rates and reduced rates (which can go as far as total exemption). Given the definition of tax expenditures, only a minor fraction of these arrangements can be termed tax expenditures, methodologically speaking, and are therefore covered in Part I of this report (see Part I-A-2).

For example, diesel and petrol or electricity and natural gas are taxed at different, separately set normal rates despite the fact that these products may be used for the same purposes. The resulting tax differentials are not tax expenditures, since their rate cannot be considered as the benchmark standard. Likewise, the standard tax arrangement for aviation fuel (primarily kerosene) is to apply a zero rate in keeping with international law with taxation reserved for special, highly minority uses; the non-taxation cannot therefore be termed tax expenditure.

Nevertheless, these tax arrangements are a key element of environmental policy management debates. It is therefore useful, for the purposes of this exercise, to provide information on the impacts of these different arrangements in terms of revenues. Appended to this report is the list of tax bases corresponding to each of the tax arrangements, i.e. energy consumption broken down by normal, reduced and special rates (including exemptions). These data are freely available on the French Ministry for the Economy, Finance and the Recovery open data portal (data.economie.gouv.fr).

C. Impacts of environmentally related taxation on economic players

This section addresses the economic impacts of the main environmentally related taxes by player. It looks first of all into the effects on households of environmentally related taxation (1), mainly energy taxation, and household support measures (2): energy voucher, tax credit for the energy transition, subsidies paid by the National Housing Agency (ANAH), including *MaPrimeRénov'*, and the car-scrapping bonus. It then presents the effects of energy taxation in industry (3). This section concludes with an overview of energy taxation (4), with figures presenting the situation by player, sector and tax arrangement with the trends in recent years.

Taxes on energy consumption are the main environmentally related taxes in terms of their amount. Taxes on motor and fossil fuels totalled €30.7bn in revenues in 2020 (€35.7bn in 2019), including €6.6bn in 2020 (€7.6bn in 2019) for the carbon component charged since 2014. In 2020, 66% of these taxes were paid by households, with 34% billed to businesses and administrations. The ratios for the carbon component charged since 2014 were 71% and 29% respectively (67% and 33% for the domestic tax on the consumption of energy products (TICPE).

1. The effects of environmentally related taxation on households

1.1 Energy taxation paid by households in 2019

Households pay specific taxes on their home energy consumption and their motor fuel consumption. Home energy refers to the energies used by households in their housing, mainly for heating, but also for domestic hot water, cooking and household appliances. These home energies cover mainly network gas, electricity, fuel-oil, wood and district heating. Motor fuels are essentially diesel and petrol consumed by households' light vehicles.

The energy taxation paid by households in 2019 and analysed in this section therefore covers:

- Domestic consumption taxes on energies (TIC): the domestic tax on the consumption of energy products (TICPE) on motor fuels and fuel-oil, and the domestic consumption tax on natural gas (TICGN) on network gas.[43] Domestic consumption taxes on energies are broken down into:
    - The carbon component charged since 2014 (CC[44]), whose cumulative unit amount was priced at €44.6/tonne of CO_2 in 2019;
    - The proportion of the tariff corresponding to that applied in 2014 and increases since that date, excluding the carbon component (TIC excluding CC).
- Other domestic consumption taxes on energy products or on electricity, here mainly the domestic consumption tax on electricity for end-users (TICFE) and local consumption taxes on electricity for end-users (TLCFE)

This energy taxation paid by households in 2019 also included the incentivizing tax on biofuel blending (TIRIB),[45] which is not covered by the analysis.

[43] The domestic consumption tax on coal, lignite and coke (TICC) is not included here as the amounts concerned are negligible compared with the TICPE (energy products) and the TICGN (natural gas).
[44] For the sake of readability, this sub-section C (households and business) uses the abbreviation CC to designate the mechanism introduced in the 2014 Initial Budget Act to raise the rate of the domestic consumption taxes in line with the taxed products' average carbon emissions.
[45] The incentivizing tax on biofuel blending, resulting from the 2019 reform of the motor fuel pollution tax (TGAP), which is a domestic consumption tax on energy products surcharge, is not included in the figures presented because its fiscal yield is negligible (€2.8 million in revenues in 2019) compared with the domestic consumption tax on energy products. However, its impact on motor fuel prices and the inclusion of renewable energy in motor fuel blends is considerable.

Energy taxation for all households in 2019

In 2019, the average annual household energy taxation bill stood at €900 (ex. VAT):[46] €730 in domestic consumption tax on energy products (including €180 for CC) and €170 in taxation on electricity.

This energy taxation represented 29.7% of the annual household energy bill, or the equivalent of 2.1% of total annual household income (see the methodological box).

Table 1: Average energy taxation paid by households in 2019

	Totals in €			% of total income
	Home energy	Motor fuels	Total	
Total energy taxation (ex VAT)	**235**	**665**	**900**	**2.1%**
TIC	65	665	730	1.7%
Carbon component (CC)	60	120	180	0.4%
TIC ex CC	10	545	555	1.3%
Taxation on electricity	170	0	170	0.4%
Total VAT on the energy bill	220	255	480	1.1%
VAT on energy-specific taxes	15	135	150	0.3%
VAT on the ex-tax energy bill	205	125	330	0.8%

Interpretation: In 2019, households paid an average of €900 in total energy taxation, comprising €235 on home energy and €665 on motor fuels.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

[46] Aside from where otherwise stated, all amounts are given excluding VAT, which is applied to the entire bill, including to the energy taxes, but is not itself an environmentally related tax.

Households pay an annual average of €670 in energy taxation on motor fuels and €235 on home energy. The carbon component charged since 2014 represents an average of €120 for motor fuels and €60 for home energy.

Therefore, two-thirds of the total energy taxation paid by households is motor fuel taxation and one-third is home energy taxation. The carbon component charged since 2014 amounts to the same proportions for these two items.[47]

Behind these averages lie considerable disparities by household characteristics: the sums of taxation paid vary with income and household area of residence, for example.

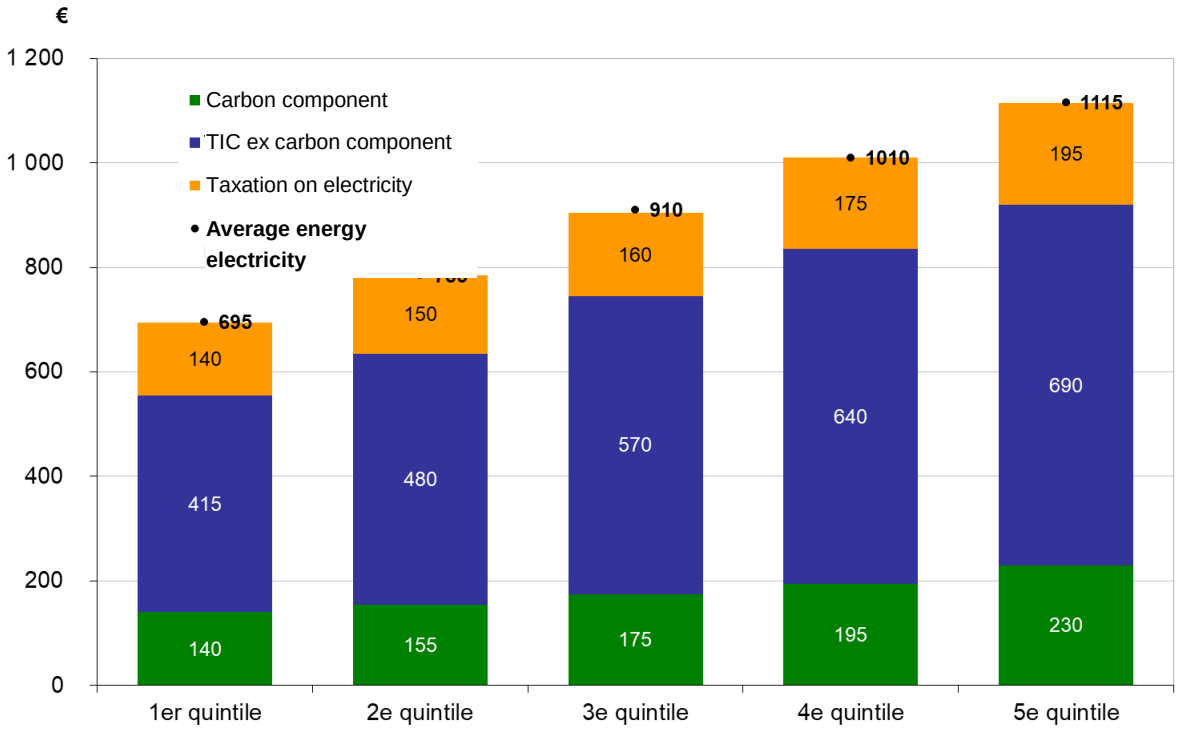
Energy taxation by household income in 2019

In 2019, the 20% lowest-income households (households in the first quintile of total income per consumer unit, see the methodological box) paid an average of €695 in energy taxation, whereas the 20% highest-income households (households in the last quintile) paid €1,115. However, as a percentage of their income (ratio of energy taxation to income), households in the first quintile spent 4.5% of their total annual income on energy taxation as opposed to 1.1% on average for households in the last quintile.

The wealthier the households, the greater the number of vehicles and the more spacious their homes, so the higher their energy bills in monetary terms and also in the amounts of energy taxation they pay. However, when compared with their income, the share of the household budget is higher for the lowest-income households in terms of both energy taxation and the bill itself, even after taking into account the fact that the majority of them are energy voucher beneficiaries.

[47] Higher taxation on motor fuels than on home energy can be justified economically, since there are more externalities involved in the case of road traffic than in the case of heating: in addition to carbon emissions and air pollution, road traffic is a source of congestion, noise, accidents, and wear and tear on infrastructures.

Figure 1: Energy taxation amounts paid by households in 2019, by household income

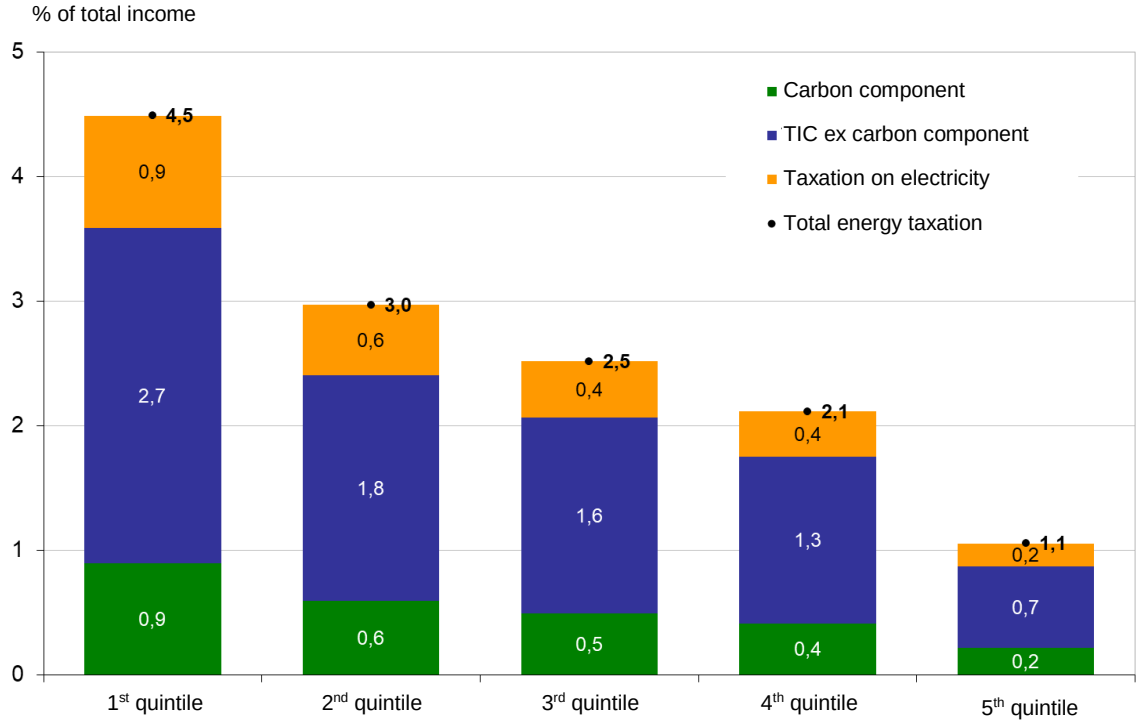


Note: Households are ranked by their total income per consumer unit (CU). The quintiles divide them into five groups of equal population numbers: the first quintile corresponds to the 20% lowest-income households while the fifth and last quintile corresponds to the 20% highest-income households.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Interpretation: Households in the first quintile of total income per CU paid an annual average of €695 in energy taxation in 2019, including €140 for the carbon component charged since 2014, €415 for the residual fraction of the domestic consumption taxes on energies (TIC) and €140 in taxation on electricity.

Figure 2: Household ratio of energy taxation to income in 2019, by household income



Interpretation: Total energy taxation represented on average 4.5% of the total income of the 20% lowest-income households in terms of total income per CU (first quintile) in 2019.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Table 2: Sums of TIC (excluding electricity) paid by households in 2019, by household income (in €)

Quintiles of total income per consumer unit	TIC including carbon component (ex. VAT)		
	Home energy	Motor fuels	Total
Q1	55	500	555
Q2	60	575	635
Q3	60	685	745
Q4	65	770	835
Q5	90	825	920
Average	**65**	**665**	**730**

Interpretation: The 20% lowest-income households in terms of total income per CU (first quintile) paid on average €555 in domestic consumption taxes on energies (TIC), including the carbon component charged from 2014 to 2019, with €55 of this sum for home energy and €500 for motor fuels.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Energy taxation by household area of residence in 2019

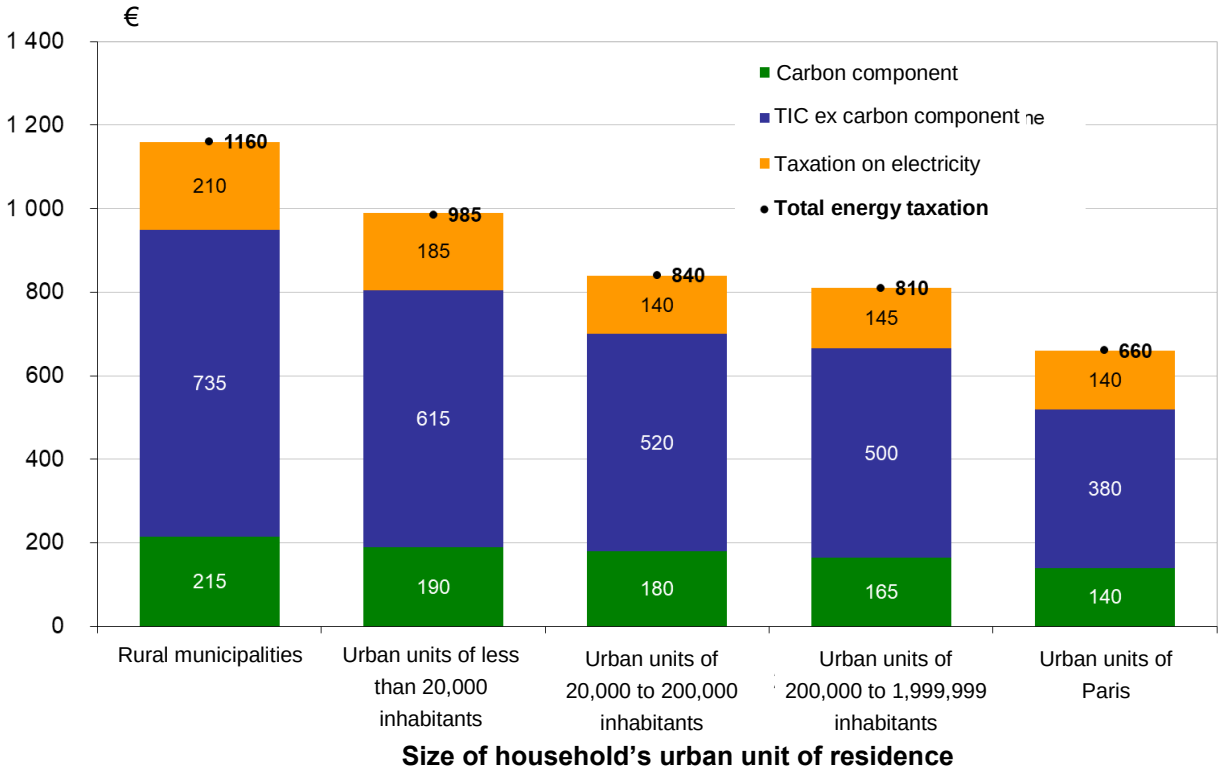
In 2019, households living in a rural municipality[48] paid an annual average of €1,165 in energy taxation. At the opposite end of the spectrum, households living in the urban unit of Paris paid less energy taxation on average over the year (€660). The average ratio of energy taxation to income, defined by energy taxation expenditure as a percentage of total household income, stood at 2.8% for households living in a rural municipality as opposed to 1.3% for households in the urban unit of Paris.

The more rural an area of residence, the greater the distances travelled and the larger the surface areas to be heated on average. Energy taxation expenditure and the corresponding ratios of energy taxation to income decrease on average with urban unit size. Nevertheless, behind these findings lie wide disparities between households in a given urban unit: energy bills and the sums of energy taxation paid by certain households can be as high on the outskirts of urban units as in rural areas.[49]

[48] Area of residence is studied here in terms of the notion of urban unit size. The urban unit notion is based on the continuity of built-up land mass: an urban unit is a municipality or group of municipalities in a continuously built-up area (no break of more than 200 metres between two constructions) with at least 2,000 inhabitants. The urban unit of Paris corresponds to what is commonly called the Greater Paris Area, which is much larger than the city of Paris itself, counting 412 municipalities and nearly 10 million inhabitants.

49 For more detailed analyses of these disparities, see "Environmental taxation in the face of the climate emergency", Conseil des Prélèvements Obligatoires (Council of Mandatory Contributions), September 2019, and focus report No. 5 "*Les effets économiques de la fiscalité environnementale sur les ménages et les entreprises*".

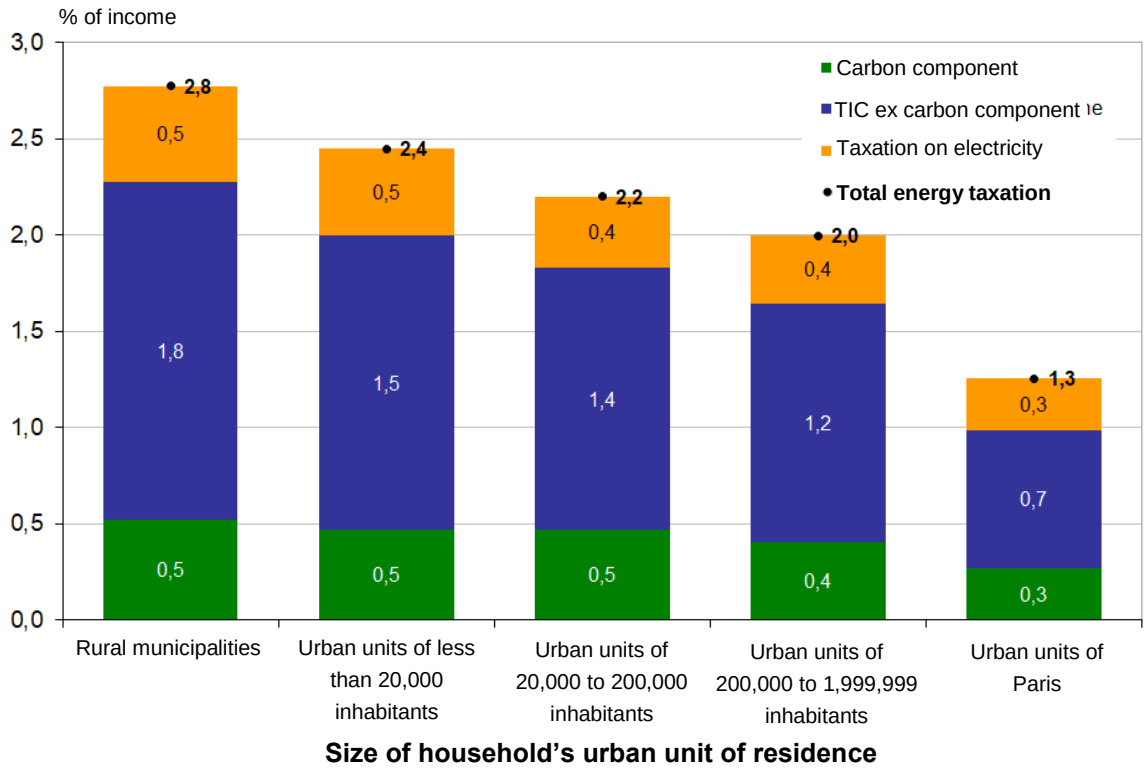
Figure 3: Energy taxation amounts paid by households in 2019, by area of residence



Interpretation: Households in rural municipalities paid an annual average of €1,160 in energy taxation in 2019, including €215 for the carbon component, €735 in TIC excluding the carbon component, and €210 in taxation on electricity.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Figure 4: Household ratio of energy taxation to income in 2019, by area of residence



Interpretation: Total energy taxation represented on average 2.8% of the total income of households living in rural municipalities in 2019.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

The average amounts of domestic consumption taxes on energies (including the carbon component charged since 2014) paid by households in rural areas on motor fuels totalled €885 as opposed to €455 for households in the urban unit of Paris. Average amounts of domestic consumption taxes on energies (TIC) paid by households on home energy stood at €65 to €75 in all areas.

Households in rural areas pay on average more TIC on motor fuels than households in urban areas due to the greater distances travelled in a motor vehicle. However, home energy taxation accounts for little in the differences in average amounts of TIC paid on the consumption of home energy products (fuel-oil and network gas) between different sizes of urban unit: households living in rural municipalities may well be consumers of fuel-oil more often than others (22.7% use this energy to heat their home compared with 11.0% on average), but households living in urban units are connected to network gas much more often (e.g. 52.6% of households in urban units of 20,000 to 200,000 inhabitants have gas heating as opposed to 7.5% of households living in rural municipalities).

Table 3: Average amounts of TIC on energies (ex. electricity) paid by households in 2019, by area of residence (€)

Size of urban unit	TIC including carbon component (ex VAT)		
	Home energy	Motor fuels	Total
Rural municipalities	70	880	950
Urban units of less than 20,000 inhabitants	65	740	800
Urban units of 20,000 to 200,000 inhabitants	75	625	700
Urban units of 200,000 to 1,999,999 inhabitants	65	600	665
Urban unit of Paris	65	455	520
Average	**65**	**665**	**730**

Interpretation: Households in rural municipalities paid on average €950 in TIC including the carbon component charged from 2014 to 2019 (ex VAT), comprising €70 for home energy and €880 for motor fuels.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Household income, household energy consumption and energy price trends in 2020

Economic activity plummeted in 2020, but household purchasing power held up well.[50] Gross household disposable income grew +1.0% (compared with +3.4% in 2019) and purchasing power rose +0.4% (as opposed to +2.6% in 2019). In terms of consumer units, purchasing power was stable on average in 2020 at 0.0% (compared with +2.0% in 2019).

Household energy consumption dropped sharply by 7.3% in 2020. The decrease was greater for energy consumption for transport than for housing.[51] Household expenditure on motor fuels and lubricants fell 14.9% in real terms. Spending on heating and lighting dropped 3.2% following a mild winter. Given that taxes on energy are mostly excise taxes, the amount of taxation on energy paid by French households is expected to have dipped over 2020.

The price of energy also posted a sharp drop of 4.2% in 2020. Petroleum product prices slumped in spring 2020 due to particularly depressed global economic activity.[52] They then gradually returned to their previous level, reflecting the global economic upturn. Given the pre-eminence of petroleum products for transport, the price of transport energies posted a much sharper drop (10.7% plunge in the price of motor fuels and lubricants) than housing energies (1.0% decrease for the price of heating and lighting). The household energy bill is predicted to post a decrease in 2020 driven by the dual impact of the downturn in energy consumption in volume and the drop in the price of energy.

[50] "French GDP fell dramatically, but households' purchasing power remained resilient", INSEE Première, May 2020, https://www.insee.fr/en/statistiques/5394818.
[51] "In 2020, household consumption falls, while purchasing power holds up", INSEE Première, June 2021, https://www.insee.fr/en/statistiques/5425961?sommaire=5355165.
[52] "The price of petroleum products in 2020: prices pushed down by health crisis", French Sustainable Development Agency (CGDD), March 2021, https://www.statistiques.developpement-durable.gouv.fr/les-prix-des-produits-petroliers-en-2020-la-crise-sanitaire-tire-les-prix-la-baisse and "Energy balance for France in 2020 - Provisional data", CGDD April 2021, https://www.statistiques.developpement-durable.gouv.fr/bilan-energetique-de-la-france-en-2020-donnees-provisoires-0.

Methodology for the estimates presented

The findings were estimated by the French Sustainable Development Agency (CGDD) using the Prometheus microsimulation model, which draws on data from the French National Institute of Statistics and Economic Studies (National Housing Survey, Population Census, National Accounts, and Taxable and Social Income Survey), from the French Ministry for the Ecological and Inclusive Transition (National Transport and Travel Survey, Housing Account, Transport Accounts, Energy Balance Sheet, database on energy prices produced by the Directorate General for Energy and the Climate (DGEC) and the Statistical Data and Studies Department (SDES), and six-monthly survey on the transparency of gas and electricity prices in Europe), and from the Centre for Economic Studies and Research on Energy (CEREN).

The coverage is private households living in mainland France. Home energy expenditure covers that spent on the household's main residence, while motor fuel expenditure covers households and unincorporated entrepreneurs.

The energy prices (for the calculation of the bill and VAT) are the average prices observed for 2019. Taxation corresponds to that in force in 2019. The amounts of taxes paid by households were estimated by applying the rates or tariffs in effect to the energy consumption. The carbon component charged since 2014 was estimated in the same way, based on the carbon content of the energies and the carbon component rate in €/tCO_2.

The energy consumption estimated corresponds (latest available figures) to home energy consumption and the 2019 housing and heating stock, mobility, and unit consumption of vehicles and the 2019 stock of vehicles in use. Home energy consumption is weather-adjusted for "normal" weather.

Estimated incomes concern 2019. When the findings are studied by household income, the income taken into account includes all the earnings and benefits received by households (total income) before redistribution by tax and social security contributions (not available in the data used). Households that declared negative incomes and student households are excluded from the analyses by income (Prometheus cannot assess students' levels of income since transfers of resources from the family, for example, are unknown).

The use of these more recent data could explain the slight differences in findings compared with those presented last year, which were based on older data (2018 consumption and 2018 incomes).

1.2 Non-energy taxation paid by households in 2020

Aside from energy, the main environmentally related taxes concern waste and water. Households paid an average of €155 for the collection and treatment of their refuse in 2020 in the form of the refuse collection tax (TEOM) and the refuse collection levy (REOM).

Among the levies collected by the water boards, households pay a levy for domestic pollution, a levy for the modernisation of the collection networks and a charge based on volumes of water withdrawn for the supply of drinking water and wastewater treatment. The charges paid by households hence account for approximately 70% of water board levies, or nearly €1.5bn, for an average sum of approximately €50 per household in 2019.

2. Household support measures

A raft of support measures are available to households, either to help them pay their energy bills or to help them retrofit their homes or change vehicle to reduce their energy bill. The energy voucher can be used by low-income households to pay their energy bill or carry out energy-smart retrofits. It represented a total of €840 million in 2019. In energy-smart housing retrofits, the energy transition tax credit (CITE) and *Habiter Mieux Agilité* (Live Better Agility) programme – merged into the MaPrimRénov' bonus in 2020 – accounted for €1,132 million and €265 million respectively in 2019 and the *Habiter Mieux Sérénité* (Live Better Serenity) measure accounted for €493 million. A total of €823 million was paid in car-scrapping bonuses in 2019 to upgrade the vehicles on the road and a good half of the €326 million in automobile bonuses was paid to households (with the rest being paid to businesses). These measures distributed a total of €3.7bn to households in 2019.

2.1 The energy voucher

The energy voucher in 2020 and developments in 2021

The energy voucher is a benefit introduced to help pay energy expenditure. It targets low-income households. The voucher was rolled out nationwide in 2018 to replace subsidised energy rates in order to reduce non-take-up.

Eligibility is based on the tax return,[53] with the voucher sent automatically to beneficiaries' homes between late March and early April of each year. The energy voucher is not a banker's cheque. It can only be used to pay for energy expenditure related to housing or energy retrofitting works. Beneficiaries can therefore use their energy voucher to pay for any home energy expenditure, such as their electricity or natural gas bill or the delivery of fuelwood or fuel-oil, and rent in the case of tenants in rent-capped private-sector rental housing paid in part by housing benefit.

The amount of each energy voucher depends on the household's base taxable income (BTI) and composition, defined in terms of consumer units (CU). The energy voucher scales changed from the 2018 to the 2019 campaign following the measure's nationwide roll-out in 2018: €50 increase in sums and extension of the measure to households with a base taxable income per consumer unit (BTI/CU) of less than €10,700. Energy voucher face values ranged from €48 to €277 (Table 4). With the advent of the health crisis in spring 2020, the validity of 2019 campaign energy vouchers was extended to mid-September in accordance with Ordinance 2020-306 of 25 March 2020 on the extension of expiry dates and changes to procedures during the health emergency. The expiry date of the 2020 campaign energy vouchers, however, remained 31 March 2021.

[53] Based on the income tax return for year Y-2, even in the case of low or zero income. Eligibility is also conditioned by living in housing liable for residence tax, even if the beneficiary is exempt.

Table 4: Energy voucher face values in 2020 by base taxable income (BTI) and number of consumer units (CU)

Number of CUs	BTI/CU < €5,600	€5,600 ≤ BTI/CU < €6,700	€6,700 ≤ BTI/CU < €7,700	€7,700 ≤ BTI/CU < €10,700
1 CU	194 €	146 €	98 €	48 €
1 < CU < 2	240 €	176 €	113 €	63 €
2 CU or +	277 €	202 €	126 €	76 €

In 2020, 5.5 million households benefited from the energy voucher measure, for an equivalent of €812 million. The average value of vouchers issued was €148.

The average rate of use of each 2020 energy voucher stood at 80.46% nationwide in June 2021, for a total of 4.43 million 2020 energy vouchers used. This figure is not definitive due to the extension of the length of validity of certain vouchers, especially reissued vouchers.

In terms of use, the energy voucher is used for the most part for gas and electricity expenditure (93.48%, or 4.14 million vouchers). The other areas of expenditure are more marginal: 3.61% for domestic fuel-oil, 1.39% for wood, 0.88% for rent on rent-capped private-sector rental housing paid in part by housing benefit, 0.61% for domestic LPG and 0.03% of vouchers used directly for energy-smart retrofits.

Box: Energy voucher developments in 2021

The 2021 energy voucher campaign was marked by the extension of the measure to households with a base taxable income per consumer unit (BTI/CU) of less than €10,800 in view of the increase in the consumer price index for households in the first income quintile observed in 2019 (the year for which BTIs are measured for households eligible in 2021).

A number of adjustments were made to the measure to make it easier to use the energy voucher and its protective benefits. Subletters in guaranteed rent housing may now qualify for the measure provided they meet the income requirements and their application is made by the operator managing the guaranteed rent housing. 2021 was also the year of the introduction of an option to request the pre-allocation of the energy voucher to be deducted automatically from gas or electricity bills instead of using the paper voucher. The effects of this new service will be observable as of the 2022 campaign. The energy voucher can now be used by all recipients living in a retirement home for dependent elderly people (EHPAD), a residential home for the elderly (EHPA), sheltered housing, a long-term care home (ESLD) or a long-term care unit (USLD). In 2021, 5.8 million households received an energy voucher, representing a total of €866 milliion. The average value of vouchers issued was €148.

The average rate of use of each 2021 energy voucher was 55.81% nationwide as at June 2021, for a total of 3.25 million 2021 energy vouchers used. This figure is still highly provisional given the length of the campaign launched in April 2021, whereby 2021 campaign energy vouchers are valid until 31 March 2022.

In order to help the lowest-income households cope with the sharp rises in energy prices, especially for gas and electricity, the 5.8 million households qualifying for the energy voucher will receive an additional €100 in December 2021.

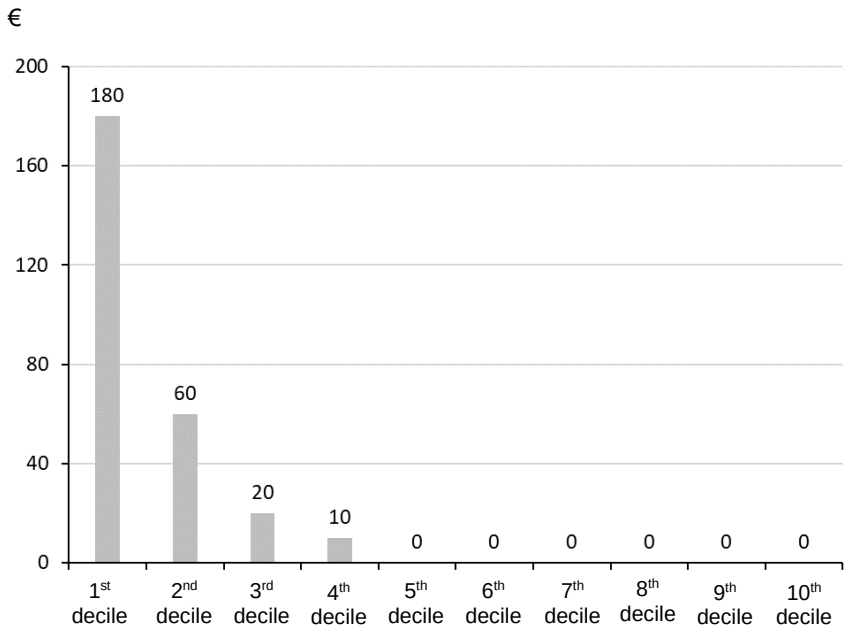
The energy voucher by household income in 2019

The average energy voucher amount received by households in 2019 decreases sharply with total income[54] per household CU (see Figure 5). Based on this definition of income, households in the first decile received €180 on average and those in the second decile received €60.

The proportion of households receiving an energy voucher also decreases sharply with total income per CU (see Figure 6). Nearly all the households in the first decile and 60% of the households in the second decile are eligible for the measure. Eligibility for the vouchers with the highest face values decreases even more sharply with total income per CU. A total of 43% of households in the first decile received from €200 to €300, compared with 8% of households in the second decile.

[54] The income taken into account includes all earnings and benefits received by households before redistribution by direct tax and social security contributions (not available in the data used). Total income therefore differs from base taxable income (BTI).

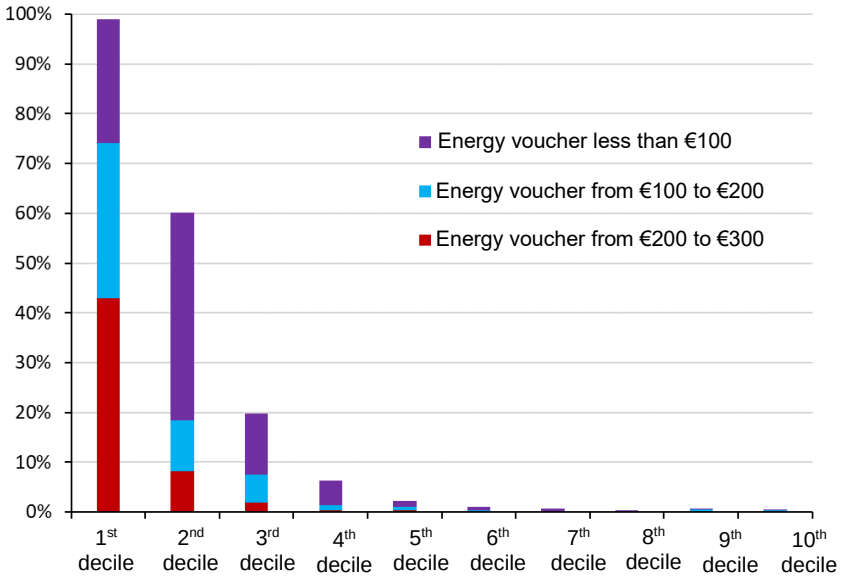
Figure 5: Energy voucher amount received by households in 2019, by income



Interpretation: The average amount received by households in the second decile of total income per consumer unit, which may or may not have qualified for the measure, was €60.

Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Figure 6: Proportion of households receiving an energy voucher in 2019, by voucher value and income bracket



Source: French Sustainable Development Agency (CGDD) Prometheus model, June 2021.

Interpretation: 60% of households in the second decile of total income per consumer unit received an energy voucher, of which 42% received a voucher for less than €100, 10% a voucher for €100 to €200 and 8% a voucher for €200 to €300. 40% of households in the second decile of total income per consumer unit did not receive an energy voucher.

2.2 Support for energy-smart housing retrofits: energy transition tax credit, *Habiter Mieux* programme and *MaPrimeRénov'* bonus

The energy transition tax credit (CITE) in 2018

The energy transition tax credit (CITE)[55] is designed for households – whether homeowners, tenants or rent-free occupants – to deduct from their income tax part of their expenditure on work to improve the energy performance of their main residence. Expenditure has to respect certain criteria, particularly in terms of energy efficiency, and a variable cap applies to eligible spending based on household composition.

A total of 900,000 households declared energy-smart housing retrofits in their income tax returns for 2019 in order to claim the tax credit. This number is very similar to the year before (930,000 households in 2018), but is much lower than in previous years (1,419,000 households in 2017) due mainly to restrictions placed since 2018 on the list of eligible work (fuel-oil boilers, windows, doors and rolling shutters, front doors, and thermal shutters).

The total cost of retrofits paid by these households was €5.7bn, slightly higher than in 2018, but also much lower than in 2017 (€5.2bn in 2018, but €7.7bn in 2017). Average retrofit expenditure per tax household was €6,310 (Table 5). The total cost of the tax credit came to €1.132bn in 2019.

The group of retrofit work most frequently declared in 2019 concerned heating and hot water: 53% of CITE beneficiary households declared this group, which represented 51% of the total cost of retrofits. Nearly one-third of the households insulated doors and windows and one-quarter insulated walls, roofs and floors for 28% and 21% of expenditure respectively.

[55] For an analysis of the different housing retrofit support for households, see also the 2021 report by the French Energy Retrofits Observatory (ONRE) on energy-smart housing retrofit work and support from 2016 to 2019, available in French only at/ https://www.statistiques.developpement-durable.gouv.fr/la-renovation-energetique-des-logements-bilan-des-travaux-et-des-aides-entre-2016-et-2019.

Table 5: 2019 energy transition tax credit beneficiary households and retrofit expenditure by type of work

Type of work	Beneficiary households		Retrofit expenditure		Average retrofit expenditure per household (€)
	Number	Distribution	Amount (€M)	Distribution	
Heating and hot water	477,000	53.0%	2,882	50.7%	6,040
Wall, roof and floor insulation	222,000	24.7%	1,194	21.0%	5,380
Door and window insulation	285,000	31.6%	1,587	27.9%	5,570
Energy performance certificate & energy audit	11,000	1.3%	9	0.2%	750
Electric vehicle charging socket	3,000	0.3%	3	0.1%	1,120
Work eligible for CITE in French overseas territories	4,000	0.4%	8	0.1%	2,100
Total	900,000	100.0%	5,683	100.0%	6,310

Source: Public Finances Directorate General – 2019 POTE database – French Sustainable Development Agency - Statistical Data and Studies Department (CGDD-SDES) calculations.

Coverage: France

Note: The total does not correspond to the total of the rows since one household may declare more than one type of work.

As with previous years, the main beneficiaries of the energy transition tax credit (CITE) in 2019 were the wealthiest households: 59% of the expenditure on energy-smart retrofits declared by households for the energy transition tax credit were declared by the two highest quintiles of disposable income per consumer unit, i.e. as per this definition, the 40% wealthiest households. The tendency to conduct and declare energy-smart retrofits increases markedly with income: households in the first quintile of disposable income represented 7% of the energy transition tax credit beneficiary households, households in the second quintile accounted for 14%, those in the third quintile represented 21%, those in the fourth quintile accounted for 27% and those in the fifth quintile represented 32% (Table 6). Average expenditure per household varied little by income quintile. It was slightly higher for the first and fifth quintiles.

Table 6: 2019 energy transition tax credit beneficiary households and retrofit expenditure by quintile of household disposable income per consumer unit

Quintile of household disposable income per consumer unit	Beneficiary households		Retrofit expenditure		Average retrofit expenditure per household (€)
	Number	Distribution	Amount (€ millions)	Distribution	
1st quintile	53,000	6.6%	342	7.0%	6,410
2nd quintile	112,000	13.8%	691	14.0%	6,190
3rd quintile	171,000	21.1%	1,012	20.5%	5,910
4th quintile	219,000	27.0%	1,266	25.7%	5,780
5th quintile	255,000	31.5%	1,613	32.8%	6,320
Income unknown	89,000	-	759	-	8,510
Total	900,000	100%	5,683	100.0%	6,310

Sources: Public Finances Directorate General – 2019 POTE database-2020 residence tax database-2019 FIDELI database – French Sustainable Development Agency - Statistical Data and Studies Department (CGDD-SDES) calculations.

Coverage: France

Note: The total does not correspond to the total of the rows per quintile since there is no information available on the disposable income per CU of 10% of the households.

Interpretation: Among the 20% lowest-income households (first quintile), 53,000 benefited from the energy transition tax credit, representing 6.6% of all beneficiary households. Their expenditure on energy-smart retrofits totalled €342 million, accounting for 7.0% of all expenditure by CITE beneficiary households.

The National Housing Agency's *Habiter Mieux* programme in 2019

The *Habiter Mieux* (Live Better) programme launched by the National Housing Agency (ANAH) in 2010 for owner-occupants in fuel poverty was rounded out in 2013 by special support for owner-landlords and co-ownership organisations in need. In 2017, it was extended to what are called potentially vulnerable co-ownership organisations. In 2018, the measure was split into two with *Habiter Mieux Sérénité* (Live Better Serenity) for multiple retrofit jobs and *Habiter Mieux Agilité* (Live Better Agility) for single retrofit jobs. In 2020, *Habiter Mieux Agilité* was replaced by *MaPrimeRénov'*.

Habiter Mieux is a means-based programme for low-income and very low-income households.

Habiter Mieux Sérénité introduced in 2018 funds multiple retrofits, which may include: replacing a boiler when changing heating system, insulating external and internal walls, insulating lofts, and changing windows and doors to fit double or triple glazing. The measure can be combined with other programmes

and financial aid, including the energy transition tax credit (CITE), the interest-free energy efficiency loan (*éco-PTZ*) and local aid offered by regional councils and *département* councils. It cannot, however, be combined with energy saving certificates (ESCs).

The *Habiter Mieux Agilité* programme, in operation from March 2018 through 2019, was designed for low-income and very low-income households that did not necessarily want to carry out a range of work. It helped finance one of the following: change of boiler or heating system, external and/or internal wall insulation, and the insulation of converted lofts or lofts suitable for conversion.

A total of 44,400 households received the *Habiter Mieux Sérénité* aid in 2019 (Table 7), slightly fewer than in 2018 (45,900), and 68,400 households received the *Habiter Mieux Agilité* aid in 2019 (Table 8) in a very steep increase over 2018 (8,900).

The majority of owner-occupant *Sérénité* beneficiaries in 2019 were in the first two quintiles of disposable income per consumer unit: 27% in the first quintile and 38% in the second quintile. The same applies to *Agilité*: 25% in the first quintile and 40% in the second quintile. The breakdowns of subsidies per quintile are similar. Average *Sérénité* retrofit expenditure per home was much higher, more than double the *Agilité* expenditure, due to the range of work required to benefit from the aid: €22,200 as opposed to €9,240. The average subsidy per home, naturally higher for *Sérénité*, was also proportionally higher for *Sérénité* as it covered 48% of owner-occupant expenditures as opposed to 40% for *Agilité*.

The vast majority of *Habiter Mieux Sérénité* beneficiaries were owner-occupants. Nevertheless, 8% were owner-landlords (3,400), most of whom were social landlords. Average expenditure per home for these owner-landlords was higher and more than double on average (€54,430). Nearly two-thirds of the housing in this case was rundown and benefited from additional National Housing Agency aid.

Table 7: 2019 *Habiter Mieux Sérénité* beneficiary households, retrofit expenditure and subsidies by quintile of household disposable income per consumer unit

Quintile of disposable income per consumer unit	Beneficiary households		Retrofit expenditure		National Housing Agency subsidies		Average retrofit expenditure and subsidies per beneficiary household		
	Number	Distribution	Amount (€M)	Distribution	Amount (€M)	Distribution	Average retrofit expenditure (€)	Average subsidy (€)	Percentage of subsidy in retrofit expenditure
Owner-occupants In the 1st quintile	6,500	27.1%	116	27.6%	62	29.6%	17,870	9,560	53.5%
Owner-occupants in the 2nd quintile	9,200	38.4%	155	37.0%	79	37.8%	16,890	8,600	50.9%
Owner-occupants in the 3rd quintile	5,800	24.1%	101	24.1%	47	22.3%	17,510	8,080	46.1%
Owner-occupants in the 4th quintile	2,000	8.2%	36	8.7%	17	7.9%	18,510	8,410	45.5%
Owner-occupants in the 5th quintile	500	2.2%	11	2.6%	5	2.3%	20,520	9,070	44.2%
Owner-occupants not found in the residence tax database	17,000	-	380	-	174	-	22,310	10,200	45.7%
Total owner-occupants	41,000	-	800	-	383	-	19,510	9,340	47.9%
Total owner-landlords	3,400	-	186	-	70	-	54,430	20,410	37.5%
Total	44,400	-	988	-	453	-	22,200	10,190	45.9%

Sources: National Housing Agency - Public Finances Directorate General – 2019 POTE database-2020 residence tax database-2019 FIDELI database – French Sustainable Development Agency - Statistical Data and Studies Department (CGDD-SDES) calculations.

Coverage: France

Note: Not all households were found in the residence tax and FIDELI databases due to inaccurate addresses. *Habiter Mieux Sérénité* was also paid to approximately 4,200 co-ownership organisations for a total of €40 million in aid in 2019 (source: National Housing Agency), not included in this table.

Table 8: 2019 *Habiter Mieux Agilité* beneficiary households, retrofit expenditure and subsidies by quintile of household disposable income per consumer unit

Quintile of disposable income per consumer unit	Beneficiary households		Retrofit expenditure		National Housing Agency subsidies		Average retrofit expenditure and subsidies per beneficiary household		
	Number	Distribution	Amount (€M)	Distribution	Amount (€M)	Distribution	Average retrofit expenditure(€)	Average subsidy (€)	Percentage of subsidy in retrofit expenditure
1st quintile	12,000	25.1%	103	25.1%	47	27.4%	8,540	3,930	46.0%
2nd quintile	19,400	40.4%	160	39.1%	68	39.7%	8,270	3,530	42.7%
3rd quintile	11,900	24.8%	103	25.2%	40	23.0%	8,670	3,330	38.4%
4th quintile	3,800	7.9%	35	8.5%	14	7.9%	9,210	3,590	39.0%
5th quintile	900	1.8%	9	2.1%	4	2.1%	10,060	4,060	40.3%
Not found in the residence tax database	20,500	-	223	-	93	-	10,870	4,540	41.8%
Total	68,400	-	632	-	265	-	9,240	3,880	42.0%

Sources: National Housing Agency - Public Finances Directorate General – 2019 POTE database-2020 residence tax database-2019 FIDELI database – French Sustainable Development Agency - Statistical Data and Studies Department (CGDD-SDES) calculations.

Coverage: France

Note: Not all households were found in the residence tax and FIDELI databases due to inaccurate addresses.

The *MaPrimeRénov'* measure in 2020

On 1 January 2020, the new *MaPrimeRénov'* (MPR) measure was launched by the National Housing Agency to partially replace the energy transition tax credit (totally replacing it in 2021) and the National Housing Agency's *Habiter Mieux* Agilité subsidy. *MaPrimeRénov'* finances insulation, heating and ventilation work and energy audits for private houses and flats. The measure was initially introduced for owner-occupants' main residences. It was extended on 1 October 2020 to all owners, irrespective of their income or whether they live in the housing or rent it out.

MaPrimeRénov' can be combined with energy saving certificates, Housing Action aid and local government subsidies for the same retrofit work. It cannot be combined with the other National Housing Agency support or with the energy transition tax credit (still in effect in 2020).

Whereas middle- and high-income households qualified solely for the energy transition tax credit from 1 January to 1 October 2020, they were entitled to choose between these two aid measures as of the latter date. The amounts concerned are the same in most cases, but the formalities are different.

In the measure's first year in 2020, the National Housing Agency approved over 140,000 retrofit applications for *MaPrimeRénov'* (MPR) subsidies, representing €570 million in aid. The *Habiter Mieux Sérénité* programme disbursed an equivalent sum, for a total of €1.16bn in aid for the two measures.

A total of 96% of the 52,500 *MaPrimeRénov'* subsidies paid in full to beneficiary households in 2020, and for which the information required for analysis is available, related to heating and hot water work and 9% concerned wall and roof insulation work. However, as the average cost of wall and roof insulation work is double that for heating, this item represented 15% of the total expenditure, although heating still accounted for 82% of all expenditure (Table 5).

Table 9: 2020 *MaPrimeRénov'* beneficiary households and retrofit expenditure by type of work

Type of work	Beneficiary households		Retrofit expenditure		Average retrofit expenditure per housing unit (€)
	Number	Distribution)	Amount (€M)	Distribution	
Heating and hot water	50,300	95.9%	377.6	81.8%	7,500
Wall and roof insulation	4,500	8.6%	67.5	14.6%	14,870
Door and window insulation	2,500	4.7%	14.5	3.1%	5,850
Ventilation	300	0.6%	1.7	0.4%	5,190
Energy audit	100	0.3%	0.1	0.0%	500
Total	52,500	100.0%	461.4	100.0%	8,790

Sources: National Housing Agency - French Sustainable Development Agency - Statistical Data and Studies Department (CGDD-SDES) calculations.

Coverage: France

Note: The total does not correspond to the total of the rows since one household may declare more than one type of work.

The leading beneficiaries of the *MaPrimeRénov'* measure in 2020 were middle-income households: 37.5% were in the second quintile of disposable income per consumer unit and 30% were in the third quintile, although low-income households in the first income quintile still represented 19% of *MaPrimeRénov'* beneficiaries (Table 10).

Average retrofit expenditure - €8,790 on average – varied little from one quintile to the next. *MaPrimeRénov'* subsidies covered on average one-third of the expenditure, with slightly more for the first quintile (38%) and the second quintile (35%).

Table 10: 2020 *MaPrimeRénov'* beneficiary owner-occupant households, retrofit expenditure and subsidies by quintile of household disposable income per consumer unit

Quintile of disposable income per consumer unit	Beneficiary households		Retrofit expenditure		National Housing Agency subsidies		Average retrofit expenditure and subsidies per beneficiary household		
	Number	Distribution	Amount (€M)	Distribution	Amount (€M)	Distribution	Average retrofit expenditure (€)	Average subsidy (€)	Percentage of subsidy in retrofit expenditure
1st quintile	10,100	19.2%	91.5	19.8%	34.7	21.9%	9,090	3,450	37.9%
2nd quintile	19,700	37.5%	173.8	37.7%	60.2	38.0%	8,820	3,060	34.6%
3rd quintile	16,000	30.4%	137.2	29.7%	44.7	28.2%	8,590	2,800	32.6%
4th quintile	5,500	10.5%	47.7	10.3%	15.2	9.6%	8,620	2,750	31.9%
5th quintile	1,100	2.1%	9.8	2.1%	3.1	2.0%	9,040	2,910	32.2%
Income unknown	100	0.3%	1.4	0.3%	0.5	0.3%	10,130	3,590	35.4%
Total	52,500	100.0%	461.4	100.0%	158.5	100.0%	8,790	3,020	34.3%

Sources: National Housing Agency - Sources: Public Finances Directorate General – 2019 POTE database-2020 residence tax database-2019 FIDELI database – French Sustainable Development Agency - Statistical Data and Studies Department (CGDD-SDES) calculations.

Coverage: France

Note: The total does not correspond to the total of the rows per quintile since some residences in the MPR data were not found in the residence tax data.

2.3 Car-scrapping bonus (PAC)

The car-scrapping bonus is an incentive measure for households and businesses to replace their old polluting vehicles with recent vehicles that consume less fuel, pollute less and emit less CO_2. This measure therefore generates environmental gains: reduction in carbon emissions and local pollutants such as fine particles and nitrogen oxides.

This measure was initially introduced in 2015 to round out the *bonus-malus* system. The car-scrapping bonus has since seen numerous adjustments to increase the measure's environmental effectiveness and social nature. These changes concern in the main tightening the conditions governing the eligibility of vehicle purchases and introducing additional bonuses for the lowest income households. In August 2020, the car-scrapping bonus was included in the recovery plan launched in response to the health crisis, making the measure accessible to a larger number of households.

The car-scrapping bonus balance for 2020 is set out in Table 11: number of bonuses granted in 2020, amount corresponding to the payment of these bonuses, total investment by beneficiaries (total vehicle purchase costs) and the remainder paid (purchase costs net of bonuses granted).

Table 11: Car-scrapping bonus balance for passenger vehicles

Balance for France in 2020	
Number of bonuses granted	167,100
Bonus payment total (A)	€492 million
Vehicle purchase cost (B)	€2,630 million
Remainder paid (C=B-A)	€2,138 million

Source: French Services and Payments Agency data, French Sustainable Development Agency (CGDD) calculations

The vast majority of car-scrapping bonus beneficiaries were households in the first three income quintiles, i.e. tax households with a base taxable income per unit of €0 to €16,100 (see Table 12). This is explained by the eligibility conditions. Among these first three income quintiles, those in the first quintile made less use of the measure than those in the second and third quintiles. Nevertheless, they were granted a larger average bonus payment as the lowest income households qualify for an additional bonus. Businesses represented just 0.7% of beneficiaries.

Table 12: Car-scrapping bonus beneficiary characteristics and average bonus amounts

Bonus beneficiary characteristics and average bonus amounts in 2020		
Category	**Percentage**	**Average bonus (€)**
Households in the first income quintile	**17.7%**	3,230
Households in the second income quintile	**33.3%**	2,740
Households in the third income quintile	**31.5%**	3,030
Households in the fourth income quintile	**10.0%**	3,180
Households in the fifth income quintile	**2.0%**	2,490
Households for which income data are not available	**4.7%**	2,430
Businesses	**0.7%**	3,400
Total	**100%**	**2,950**

Note: Where income data are available, tax households are broken down by base taxable income per unit:

- 1st quintile: BTI per unit less than €6,400.
- 2nd quintile: BTI per unit from €6,400 to €11,600.
- 3rd quintile: BTI per unit from €11,600 to €16,100.
- 4th quintile: BTI per unit from €16,100 to €22,700.
- 5th quintile: BTI per unit over €22,700.

Source: French Services and Payments Agency data and French Sustainable Development Agency (CGDD) calculations.

A little over half (55%) of the households bought new vehicles using the 2020 car-scrapping bonus (Table 13). These new vehicles cost on average €7,000 more than the second-hand vehicles bought using the measure. Electric vehicles represented 15% of purchases in a sharp increase over 2019 when electric vehicles accounted for a mere 1.8% of purchases using the bonus.

Table 13: Characteristics of vehicles purchased using the car-scrapping bonus

Characteristics of vehicles purchased in 2020	
Purchased vehicle's energy type	Diesel: 11.6% Petrol: 69.2% Electric: 15.0% PHEV: 1.3% Others: 3.0%
Type of vehicle	New: 55.3% Second-hand: 44.7%
Average purchase price	€15,780
Average second-hand cars	€12,010
Average new cars	€18,820

Source: French Services and Payments Agency data and French Sustainable Development Agency (CGDD) calculations.

The majority of car-scrapping bonus beneficiaries (67%) scrapped diesel vehicles (see Table 14), which are dirtier than their petrol counterparts.

Table 14: Characteristics of vehicles scrapped under the car-scrapping bonus scheme

Characteristics of vehicles scrapped in 2020	
Scrapped vehicle's energy type	Diesel: 68.6% Petrol: 31.3% Others: 0.1%
Scrapped vehicle's average age	18 years

Source: French Services and Payments Agency data and French Sustainable Development Agency (CGDD) calculations.

Box: Methodology for the estimates presented

These indicators were estimated using data provided by the French Services and Payments Agency (ASP). The data concern the bonuses granted under the car-scrapping bonus scheme in 2020. Bonus amounts may have been set by one of three scales: the car-scrapping scale in force starting on 1 August 2019, the readjusted scale introduced by the recovery plan in June 2020, and the scale set in August 2020.

The study covers car-scrapping bonuses granted to replace passenger vehicles in France. The car-scrapping bonus can also be used for light commercial vehicles and mopeds.

This study follows on from the French Sustainable Development Agency study published in late 2019: *Prime à la conversion des véhicules particuliers en 2018, une évaluation socio-économique ex post*[56] (available in French only).

[56] https://www.ecologique-solidaire.gouv.fr/sites/default/files/2019_10_15_PAC_THEMA.pdf.

3. Effects of energy taxation on industry in 2019

3.1 Domestic consumption taxes on energies (TICPE, TICGN and TICC, excluding TIRIB) paid by industry in 2019

The ratios of domestic consumption taxes on energies (TICPE, TICGN and TICC) paid by businesses, net of refunds, as a percentage of turnover, value-added and intermediate consumption are presented by type of industrial sector in Table 15. These ratios depend on energy consumption and the rates of taxation applied, which themselves depend on ETS (European Union Emissions Trading System) coverage. Certain sectors are covered in part by domestic consumption taxes on energies (TIC) and in part by the ETS.

The lowest ratios concern the manufacture of computer, electronic and optical products; manufacture of transport equipment; manufacture of electrical equipment; and the pharmaceutical industry; as well as the other manufacturing industries; repair and installation of machinery and equipment. The highest ratios concern the extractive industries.

Table 15: Percentage of domestic consumption taxes on energies (TICPE, TICGN and TICC) in turnover, value-added and intermediate consumption for different industrial sectors in 2019

Industrial sectors	TIC/Turnover	TIC/Value-added	TIC/Intermediate consumption
Extractive industries	0.22%	0.80%	0.32%
Manufacture of food products, beverages and tobacco products	0.07%	0.37%	0.09%
Manufacture of textiles, apparel industries, and leather and footwear industry	0.02%	0.06%	0.04%
Wood manufacture and paper and printing industries	0.16%	0.62%	0.22%
Chemical industry	0.11%	0.42%	0.15%
Pharmaceutical industry	0.01%	0.05%	0.02%
Manufacture of rubber and plastic products and other non-metallic mineral products	0.03%	0.11%	0.05%
Metallurgy and manufacture of metal products except machinery and equipment	0.08%	0.33%	0.11%
Manufacture of computer, electronic and optical products	0.00%	0.02%	0.01%
Manufacture of electrical equipment	0.01%	0.05%	0.02%

Manufacture of machinery and equipment not elsewhere classified	0.02%	0.06%	0.02%
Manufacture of transport equipment	0.01%	0.05%	0.01%
Other manufacturing industries; repair and installation of machinery and equipment	0.01%	0.04%	0.02%

Sources: EACEI, ESANE, Outlines of Profiled Enterprises (CEP) and French Customs Code.

Note: Based on the 2019 tax arrangements, 2018 energy consumption and the Annual Survey on Industrial Energy Consumption (EACEI). The rates estimated are based essentially on the French Customs Code. The value-added, turnover and intermediate consumption figures are 2018 statistics taken from the Elaboration of Annual Statistics of Companies (ESANE) database.

Interpretation: For the manufacture of food products, beverages and tobacco products sector, domestic consumption taxes on energies (TIC) paid, net of refunds, represented 0.07% of turnover. For the same sector, TIC paid, net of refunds, represented 0.37% of value-added and TIC paid, net of refunds, came to 0.9% of intermediate consumption.

The ratios of domestic consumption taxes on energies (TICPE, TICGN and TICC) paid by businesses, net of refunds, as a percentage of turnover, value-added and intermediate consumption are presented by business size in Table 16. The lowest ratios concern large businesses while the highest ratios concern mid-tiers and, for turnover and intermediate consumption, small and medium-sized enterprises.

Table 16: Percentage of domestic consumption taxes on energies (TICPE, TICGN and TICC) in turnover, value-added and intermediate consumption by business size in 2019

Business category	TIC/Turnover	TIC/Value-added	TIC/Intermediate consumption
SME	0.06%	0.18%	0.08%
Mid-tier	0.07%	0.27%	0.09%
Large business	0.03%	0.14%	0.03%

Sources: EACEI, ESANE, Outlines of Profiled Enterprises (CEP) and French Customs Code.

Note: Based on the 2019 tax arrangements, 2018 energy consumption and the Annual Survey on Industrial Energy Consumption (EACEI). The rates estimated are based essentially on the French Customs Code. The value-added, turnover and intermediate consumption figures are 2018 statistics taken from the Elaboration of Annual Statistics of Companies (ESANE) database.

Interpretation: For small and medium-sized enterprises with over 20 employees, domestic consumption taxes on energies (TIC) paid, net of refunds, represented 0.6% of turnover. For the same sector, TIC paid, net of refunds, accounted for 0.18% of value-added and TIC paid, net of refunds, came to 0.08% of intermediate consumption.

3.2 Domestic consumption tax on electricity for end-users (TICFE) paid in industry in 2019

The ratios of domestic consumption tax on electricity for end-users (TICFE) paid by businesses, net of refunds, as a percentage of turnover, value-added and intermediate consumption are presented by type of industrial sector in Table 17. These ratios depend on electricity consumption and the tax rates applied.

The lowest ratios of TICFE as a percentage of turnover concern the manufacture of transport equipment, the manufacture of textiles, apparel industries, and the leather and footwear industry, as well as the other manufacturing industries; repair and installation of machinery and equipment. The highest ratios concern wood manufacture and the paper and printing industries.

Table 17: Percentage of domestic consumption tax on electricity for end-users (TICFE) in turnover, value-added and intermediate consumption for different industrial sectors in 2019

Industrial sectors	TICFE/Turnover	TICFE/Value-added	TICFE/Intermediate consumption
Extractive industries	0.07%	0.25%	0.10%
Manufacture of food products, beverages and tobacco products	0.11%	0.58%	0.13%
Manufacture of textiles, apparel industries, and leather and footwear industry	0.03%	0.09%	0.05%
Wood manufacture and paper and printing industries	0.16%	0.61%	0.22%
Chemical industry	0.09%	0.33%	0.12%
Pharmaceutical industry	0.06%	0.25%	0.10%
Manufacture of rubber and plastic products and other non-metallic mineral products	0.08%	0.29%	0.12%
Metallurgy and manufacture of metal products except machinery and equipment	0.07%	0.28%	0.09%
Manufacture of computer, electronic and optical products	0.06%	0.18%	0.08%
Manufacture of electrical equipment	0.06%	0.21%	0.07%
Manufacture of machinery and equipment not elsewhere classified	0.05%	0.19%	0.07%
Manufacture of transport equipment	0.03%	0.16%	0.03%
Other manufacturing industries; repair and installation of machinery and equipment	0.03%	0.09%	0.05%

Sources: EACEI, ESANE, Outlines of Profiled Enterprises (CEP) and French Customs Code.

Note: Based on the 2020 tax arrangements, 2018 energy consumption and the Annual Survey on Industrial Energy Consumption (EACEI). The rates estimated are based essentially on the French Customs Code. The value-added, turnover and intermediate consumption figures are 2018 statistics taken from the Elaboration of Annual Statistics of Companies (ESANE) database.

Interpretation: For the manufacture of food products, beverages and tobacco products sector, TICFE paid, net of refunds, represented 0.11% of turnover. For the same sector, TICFE paid, net of refunds, accounted for 0.58% of value-added and TIC paid, net of refunds, came to 0.13% of intermediate consumption.

The ratios of domestic consumption tax on electricity for end-users (TICFE) paid by businesses, net of refunds, as a percentage of turnover, value-added and intermediate consumption are presented by business size in Table 18. The lowest ratios concern small and medium-sized enterprises while the highest ratios concern, for value-added, large businesses and mid-tiers.

Table 18: Percentage of domestic consumption tax on electricity for end-users (TICFE) in turnover, value-added and intermediate consumption by business size in 2019

Business category	TICFE/Turnover	TICFE/Value-added	TICFE/Intermediate consumption
SME	0.05%	0.16%	0.07%
Mid-tier	0.07%	0.30%	0.10%
Large business	0.06%	0.34%	0.08%

Interpretation: For small and medium-sized enterprises with over 20 employees, domestic consumption tax on electricity for end-users (TICFE) paid, net of refunds, represented 0.05% of turnover. For the same category, TICFE paid, net of refunds, accounted for 0.16% of value-added and TICFE paid, net of refunds, came to 0.07% of intermediate consumption.

Note: Based on the 2020 tax arrangements, 2018 energy consumption and the Annual Survey on Industrial Energy Consumption (EACEI). The rates estimated are based essentially on the French Customs Code. The value-added, turnover and intermediate consumption figures are 2018 statistics taken from the Elaboration of Annual Statistics of Companies (ESANE) database.

Sources: EACEI, ESANE, Outlines of Profiled Enterprises (CEP) and French Customs Code.

4. Overview of energy taxation

4.1 Effective carbon rates as defined by the OECD

There are two types of incentivizing economic instruments used to reduce carbon emissions that have the quantity of energy products consumed as their tax base: three of the domestic consumption taxes on energies (TIC)[57] and the ETS allowances. These instruments, which put a price on carbon emissions per tonne of CO_2 emitted by these energy products, together form the effective carbon rate as defined by the OECD.[58] This effective carbon rate is designed to combat climate externalities, but also other environmental externalities such as air and noise pollution and non-environmental externalities such as road accidents and wear and tear on infrastructures.

In this methodological framework defined by the OECD, one tonne of CO_2 is priced on average at €113.5, including €83.4 for the non-carbon component share of domestic consumption taxes on energies (TIC), €23.7 for the TIC carbon component and €6.4 for the ETS carbon price. These rates are presented by type of economic player (households or businesses and administrations) and by sector in Table 19. The most highly priced category is household-related transport, in keeping with the number of environmental and non-environmental externalities involved. The table also presents sector details by category of taxation ("full" when the normal TIC price is applied, "reduced" when a rate below the normal price is applied, and "exempt" when the rate is zero) and by whether emissions are covered by the EU ETS. Lastly, the table shows the percentage of carbon emissions concerned.

[57] TICPE, TICC and TICGN.

[58] The incentivizing tax on biofuel blending (TIRIB), which is a surcharge on the domestic consumption tax on energy products (TICPE) , but which is not intended to generate revenues (less than €1 million in revenues in 2020), is not taken into account. By definition, neither does this effective carbon rate include taxes that are unrelated to the quantity of products consumed (e.g. carbon *malus*, company car tax, etc.).

Table 19: Effective carbon rate in 2020

Players	Sectors	Taxation	ETS coverage	Share of emissions	Effective carbon rate			
					Non-CC TIC	TIC CC	ETS carbon price	Total (TIC and ETS carbon price)
				%	euros/tCO_2			euros/tCO_2
Households				**38.4**	140.7	43.9	0.0	184.5
	Residential			**14.4**	4.7	42.7	0.0	47.4
		Full	Non-ETS	**13.1**	5.2	44.6	0.0	49.8
		Reduced	Non-ETS	**1.2**	0.1	22.2	0.0	22.3
	Transport			**24.0**	222.0	44.6	0.0	266.6
		Full	Non-ETS	**20.5**	216.4	44.6	0.0	261.0
		Reduced	Non-ETS	**3.5**	255.0	44.6	0.0	299.6
Businesses and administrations				**61,6**	47,7	11.1	10.4	69.3
	Agriculture			**3.6**	12.8	0.9	0.0	13.7
		Full	Non-ETS	**0.1**	13.3	44.6	0.0	57.9
		Reduced	Non-ETS	**3.5**	12.8	0.0	0.0	12.8
	Energy sector			**18.4**	0.7	0.0	21.6	22.3
		Exempt	ETS	**14.3**	0.0	0.0	24.8	24.8
			Non-ETS	**2.4**	0.0	0.0	0.0	0.0
		Reduced	ETS	**1.6**	8.4	0.0	24.8	33.2
			Non-ETS	**0.0**	7.9	44.6	0.0	52.5
	Industry			**12.5**	13.3	6.5	16.4	36.1
		Exempt	ETS	**1.9**	0.0	0.0	24.8	24.8
			Non-ETS	**0.8**	0.0	0.0	0.0	0.0
		Full	ETS	**0.1**	9.8	44.6	24.8	79.2
			Non-ETS	**0.2**	12.6	44.6	0.0	57.2
		Reduced	ETS	**6.3**	7.7	0.2	24.8	32.7
			Non-ETS	**3.3**	34.9	20.7	0.0	55.6
	Services			**8.4**	17.6	43.3	0.0	60.9
		Full	Non-ETS	**7.1**	8.8	44.6	0.0	53.4
		Reduced	Non-ETS	**1.3**	67.7	36.1	0.0	103.7
	Transport			**18.9**	136.1	12.7	2.2	151.0
		Exempt	ETS	**1.7**	0.0	0.0	24.8	24.8
			Non-ETS	**3.7**	0.0	0.0	0.0	0.0
		Full	Non-ETS	**4.9**	206.5	44.6	0.0	251.1
		Reduced	Non-ETS	**8.6**	181.7	2.4	0.0	184.2
Total				**100.0**	83.4	23.7	6.4	113.5

Note: The TIC rates given in the table are net of refunds. All emission allowances are represented, whether allocated by auction or free of charge. The two sectors that benefit from free allowances are industry (allowances allocated free of charge for 80% of emissions according to a benchmark prior to the health crisis) and aviation for flights covered by the EU Emissions Trading System (allowances allocated free of charge for 50% of emissions according to a benchmark prior to the health crisis). The transport sector covers consumption associated with transport use. International aviation and marine bunker consumption is included in this category.

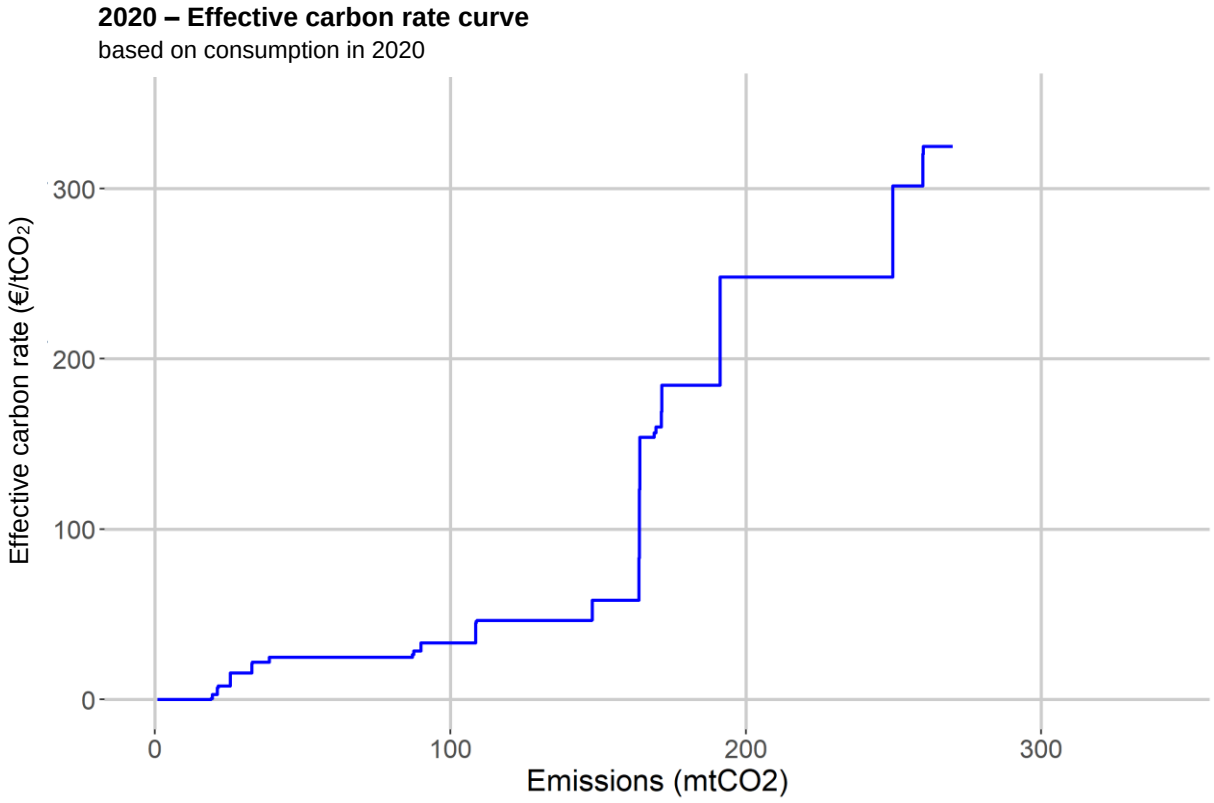
Interpretation: Residential energy consumption subject to the full TIC rate, but not covered by the ETS, is priced at €49.8 per tonne of CO_2 on average. This price is made up of €5.2 for the share of the rate excluding the carbon component charged since 2014, €44.6 for the carbon component and €0 for the ETS carbon price. The associated carbon emissions represent 13.1% of total energy-related carbon emissions.

Source: ELFE Model/French Sustainable Development Agency (CGDD), June 2021.

Effective carbon rate curve in 2020

The effective carbon rate stood at an average of €113.5/tCO_2 in 2020. Behind this average level lies a wide range of situations seen from the different rate levels classed in ascending order on the curve presented in Figure 7. A full 61% of emissions are priced at less than €100/tCO_2 while 29% are priced above this level. Each incremental step depends on the type of energy product concerned, whether any exemptions or a reduced TIC rate applies, and whether ETS coverage applies. This wide array of rate levels ranges from a zero rate for untaxed emissions not covered by the ETS to the rate for petrol, which remains the most highly priced fossil fuel at €325/tCO_2.

Figure 7: Effective carbon rate curve in mainland France in 2020

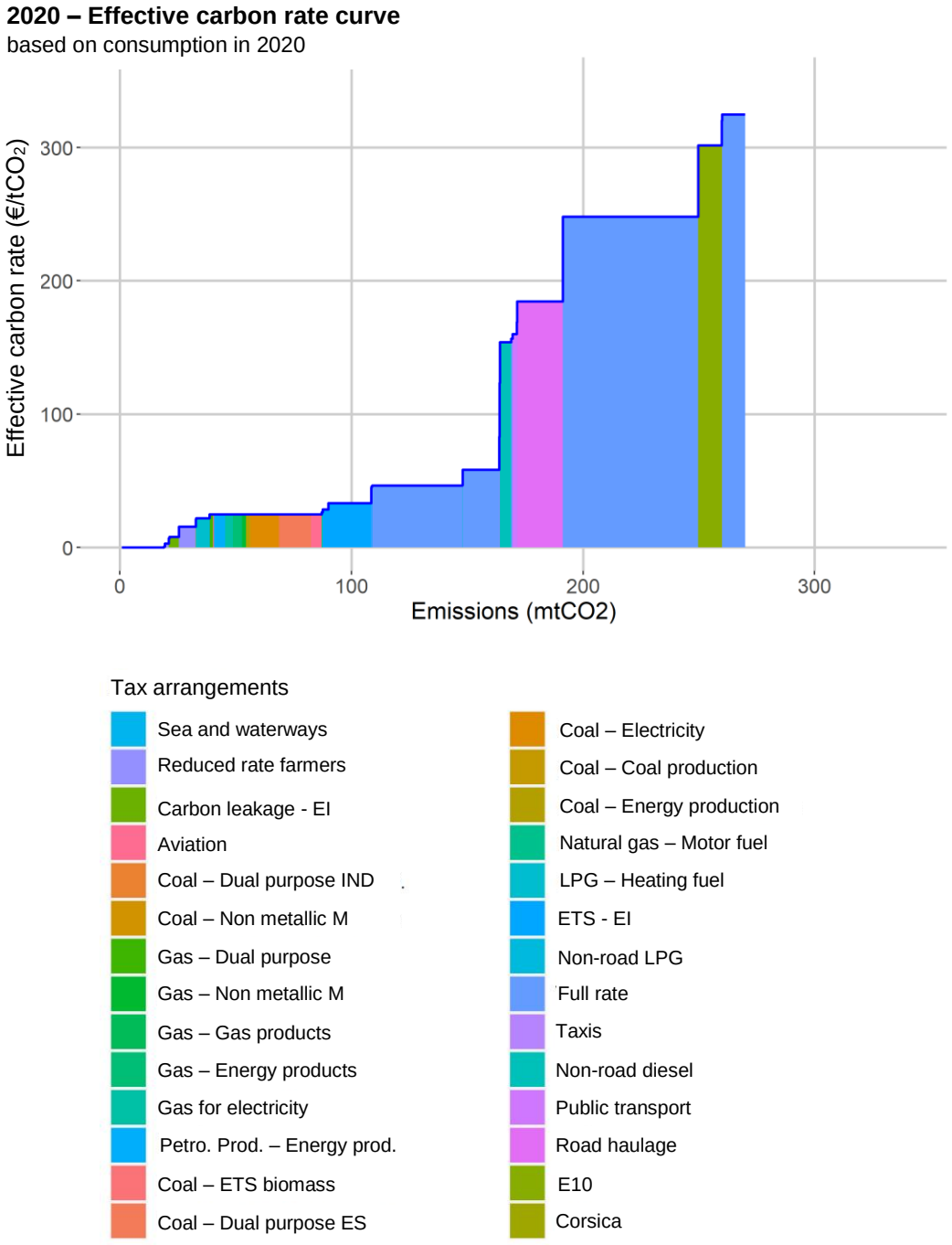


Interpretation: In mainland France in 2020, 164 million tonnes of CO_2, or 61% of carbon emissions from fossil fuel combustion, were priced at €100/tCO_2 or less, while 106 million tonnes of CO_2, or 39% of emissions, were priced at more than €100/tCO_2.

Source: ELFE Model/French Sustainable Development Agency (CGDD), June 2021.

Figure 8: Effective carbon rate curve in mainland France in 2020 by tax arrangement

Effective carbon rate curve in 2020 by tax arrangement



Note: EI: Energy-intensive company; IND: Industry: ES: Energy sector: M: Minerals; Petro: Petroleum; Prod: Products; ETS: EU emissions trading system.

Interpretation: In mainland France in 2020, road haulage emitted 20 million tonnes of CO_2 priced at an effective rate of €185/tCO_2.

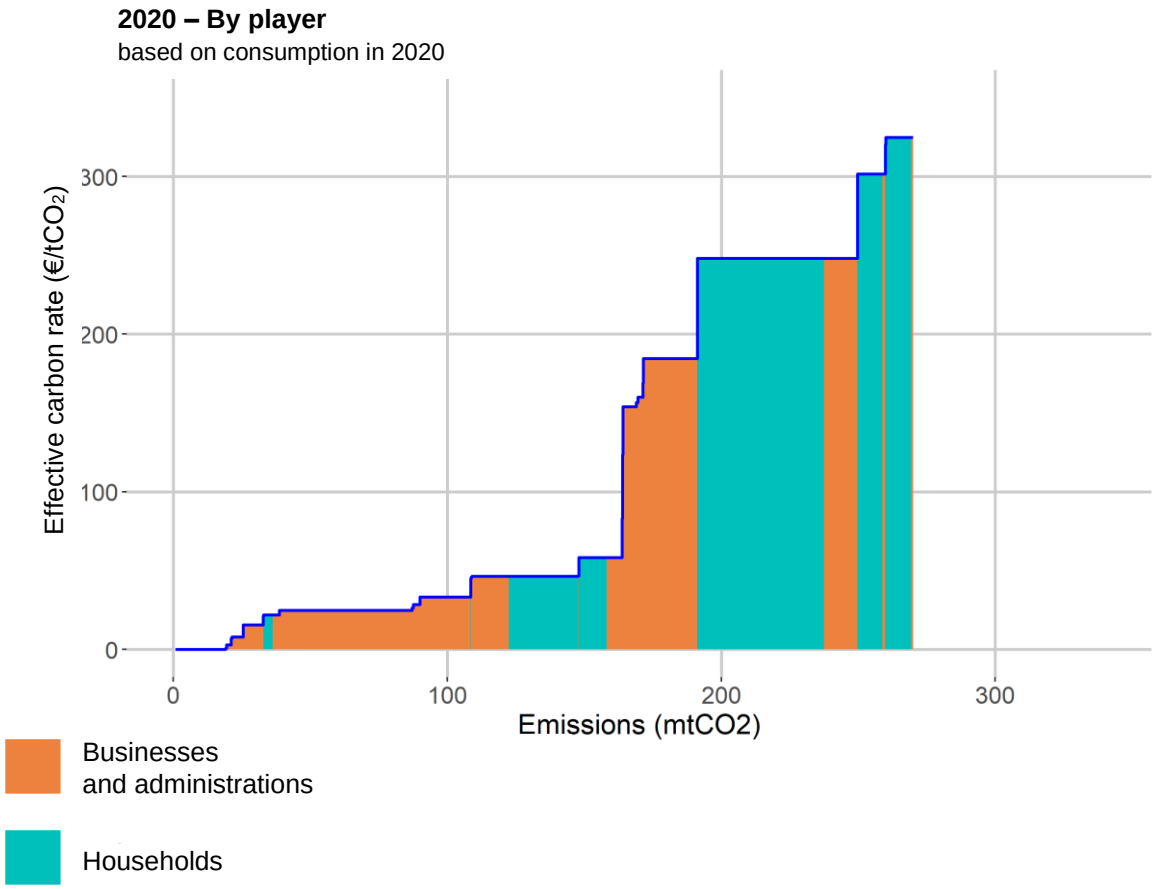
Source: ELFE Model/French Sustainable Development Agency (CGDD), June 2021.

Effective carbon rate curve for carbon emissions in 2020 by economic player

Figure 9 represents the breakdown by player between households and businesses and administrations. On the X axis, the orange area associated with business and administration emissions is larger than the turquoise area relating to household emissions.

The numerical interpretation of this graphic illustration is that the effective carbon rate in 2020 was €184.5 for households (accounting for 38% of emissions) while one tonne of carbon emitted by businesses was priced at €69.3 on average (whereas they account for 62% of carbon emissions).

Figure 9: Effective carbon rate curve in mainland France in 2020 by economic player

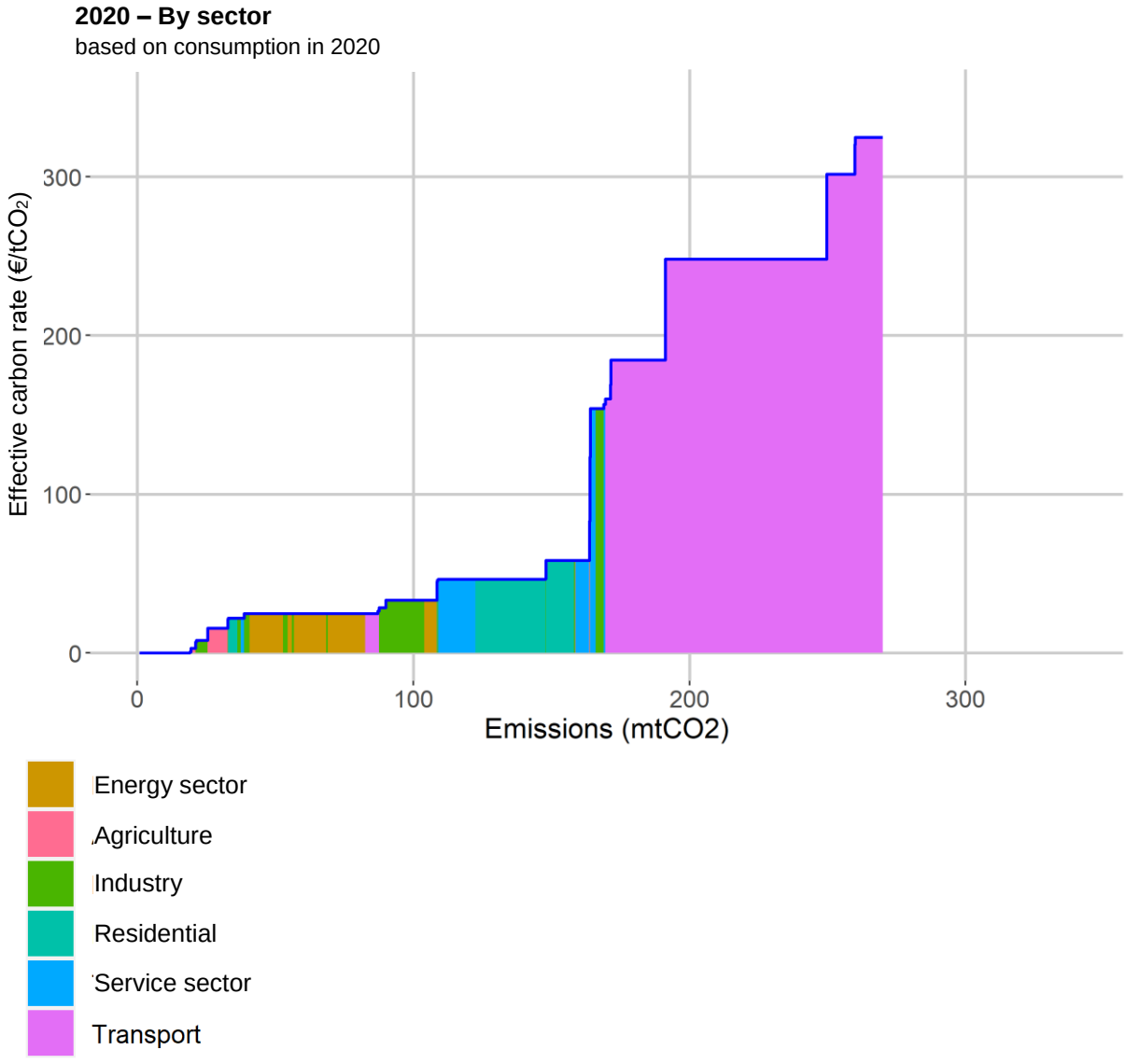


Source: ELFE Model/French Sustainable Development Agency (CGDD), June 2021.

Effective carbon rate curve for carbon emissions in 2020 by sector

The levels of effective carbon rates for the different sectors were, in decreasing order of emissions, €215/tCO_2 for transport, €22/tCO_2 for the energy sector, €47/tCO_2 for the residential sector, €36/tCO_2 for industry, €60/tCO_2 for the service sector and €14/tCO_2 for agriculture.

Figure 10: Effective carbon rate curve in mainland France in 2020 by sector



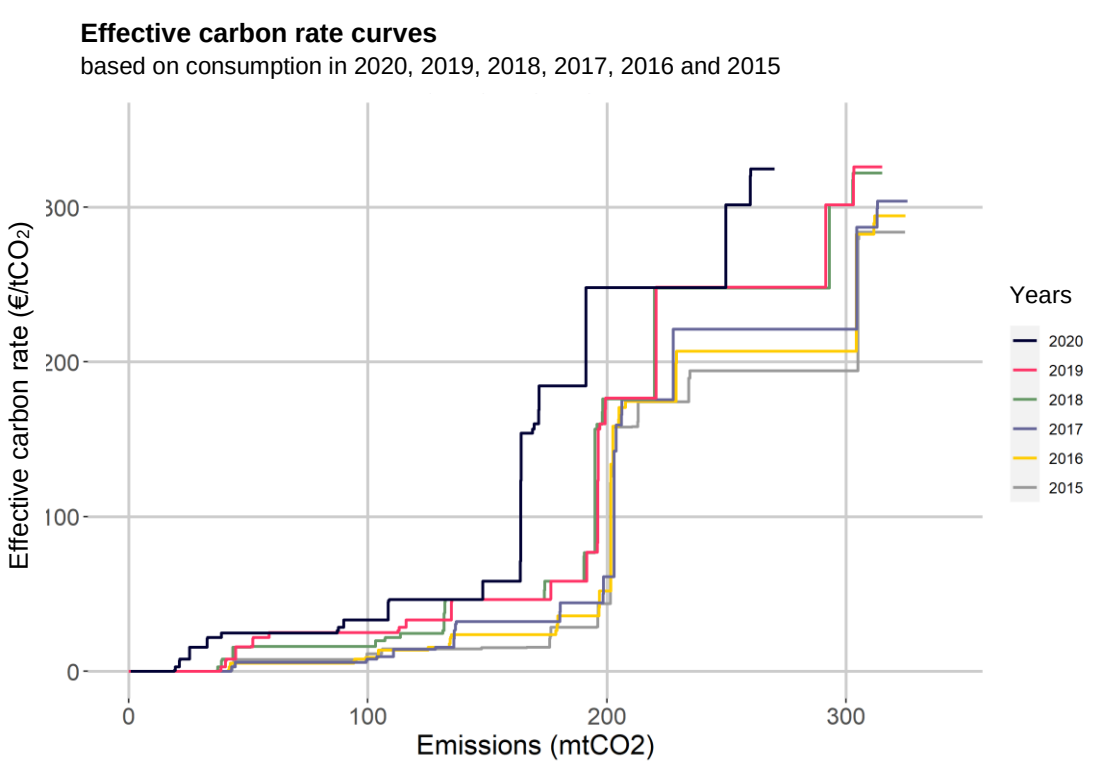
Source: ELFE Model/French Sustainable Development Agency (CGDD), June 2021.

Effective carbon rate trends from 2015 to 2020

The effective carbon rate rose sharply on the whole from 2015 to 2018. This is illustrated graphically by a rising curve (see Figure 11). This increase was driven by two factors: 1) the different policies put in place over the period, in particular the upward trend in the carbon rate (from €14.5/tCO_2 in 2015 to €44.6/tCO_2 in 2018) and the phasing out of certain tax expenditures such as liquefied petroleum gas (LPG) whose use became taxable on 1 April 2018 (thus reducing the share of unpriced emissions from 12% to 10%); and 2) the increase in the carbon price under the emissions trading system from €8/tCO_2 in 2014 to €16/tCO_2 in 2018.

The increase in the effective carbon rate slowed sharply after 2018 due to the carbon rate freeze, illustrated graphically by virtually juxtaposed carbon rate curves for 2018 and 2019. Nevertheless, the increase in the price of the emission allowance from €16/tCO_2 in 2018 to €25/tCO_2 in 2019 drove an equivalent increase in the effective carbon rate on the emissions tax bases covered by the trading system. In 2020, the sharp reduction in carbon emissions following the health crisis measures is illustrated by the horizontal shortening of the curve.

Figure 11: Effective carbon rate curves in mainland France from 2015 to 2020



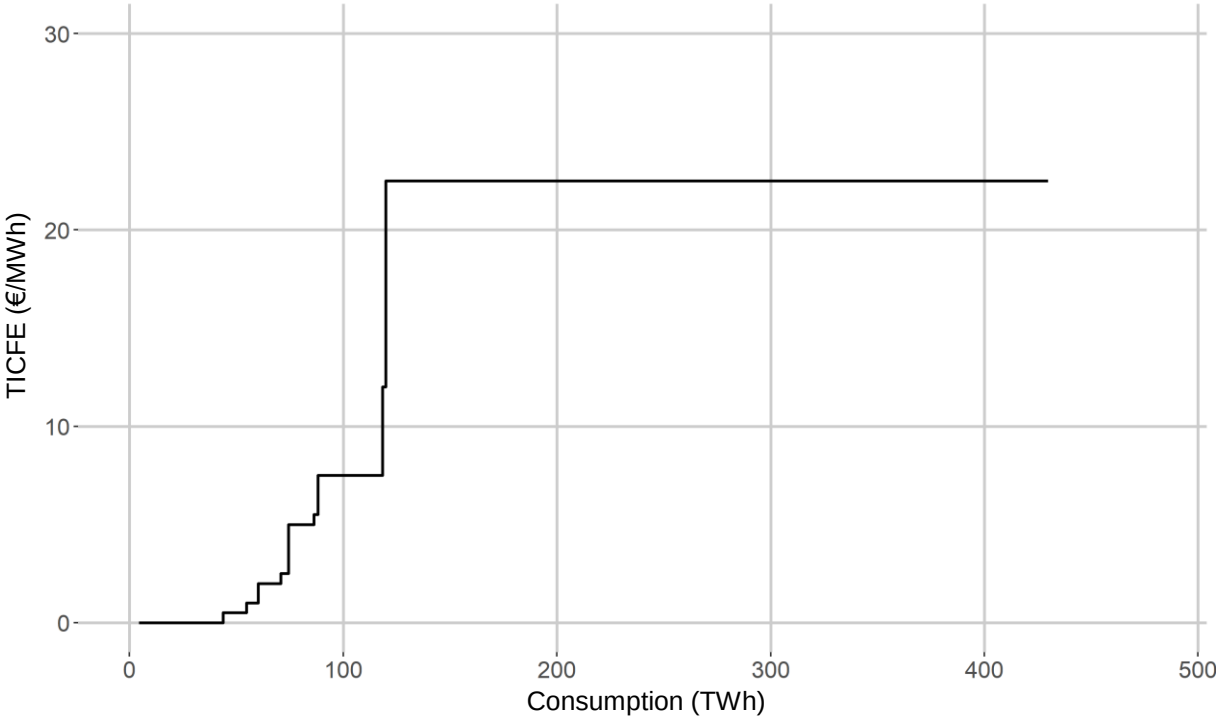
Interpretation: From 2015 to 2020, the amount of carbon emissions priced at €30/tCO2 or less fell from 194 million tonnes of CO2 to 90 million tonnes of CO2. The curves for 2018 and 2019 are virtually juxtaposed due to the carbon rate freeze.

Source: ELFE Model/French Sustainable Development Agency (CGDD), June 2021.

4.2 Domestic consumption tax on electricity for end-users (TICFE)

The domestic consumption tax on electricity for end-users (TICFE) is the main tax on the end use of electricity. The normal tax rate is set at €22.5/MWh. There were 17 different tax arrangements in 2020: the normal rate and 16 tax arrangements granting certain businesses a reduced rate or exemption from taxation.

Figure 12: Electricity taxation curve in 2020

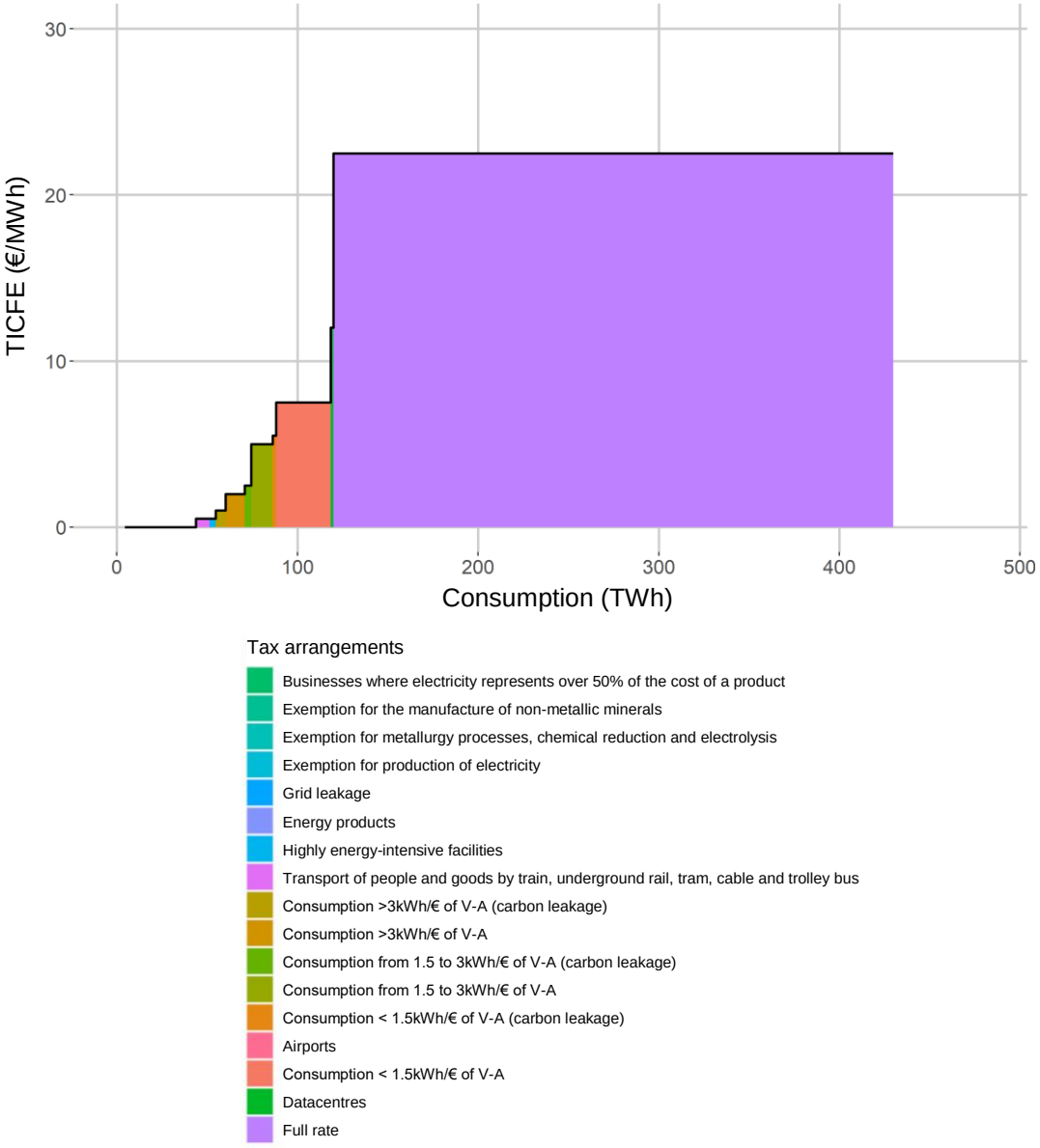


Source: Directorate General of Customs and Excise (DGDDI) data processed by the French Sustainable Development Agency (CGDD).

Note: The rates and tax bases relate to 2020.

The 2020 taxation rates by relevant electricity consumption tax bases are represented in Figure 12. Total electricity consumption metered for collection of the TICFE was 430 TWh. A full 72% of total consumption (i.e. 310 TWh) was charged at the full TICFE rate and 28% (i.e. 120 TWh) was subject to a reduced or zero rate.

Figure 13: Electricity taxation curve by tax arrangement in 2020

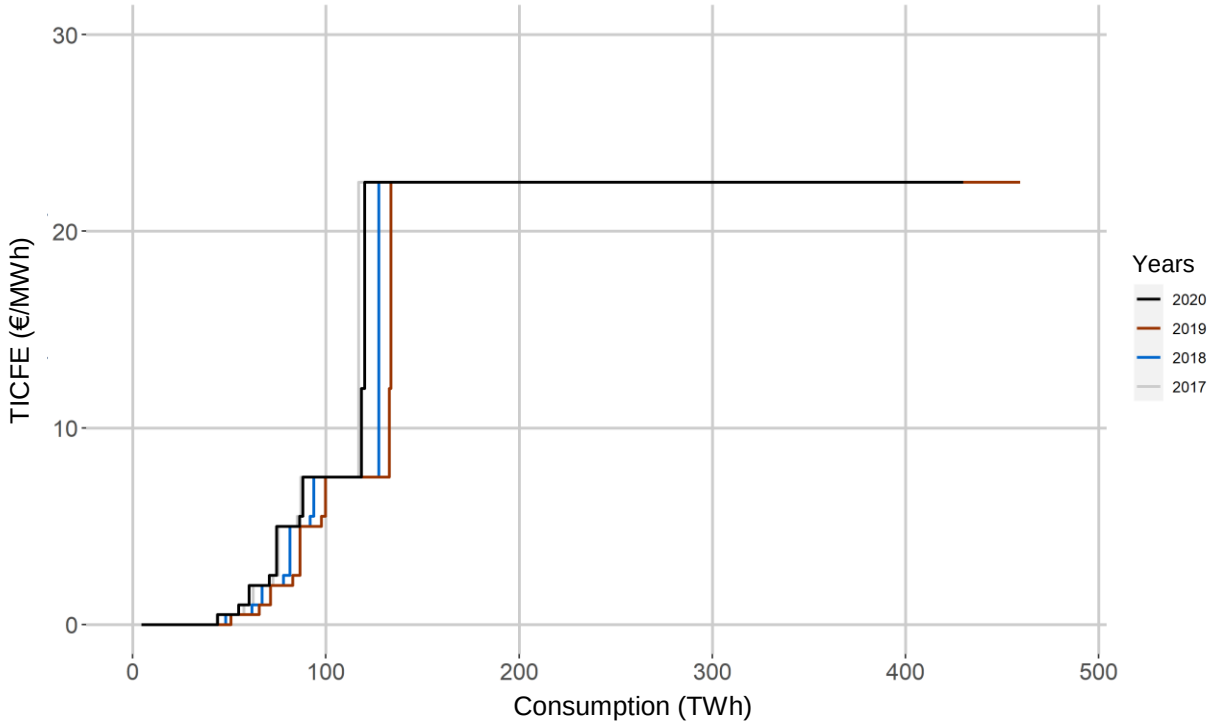


Source: Directorate General of Customs and Excise (DGDDI) data processed by the French Sustainable Development Agency (CGDD).

Note: The rates and tax bases relate to 2020.

The 17 tax arrangements in place in 2020 are represented in Figure 13. The number one reduced rate tax arrangement in terms of tax base was the arrangement for businesses consuming less than 1.5 kWh of electricity per euro of value-added. This consumption was charged at a TICFE rate of €7.5/MWh. This tax arrangement concerned 7% of total electricity consumption. The number one zero rate tax arrangement in terms of tax base was the exemption for metallurgy processes, chemical reduction and electrolysis. This tax arrangement concerned 5% of total electricity consumption.

Figure 14: Electricity taxation curve trend from 2017 to 2020



Source: Directorate General of Customs and Excise (DGDDI) data processed by the French Sustainable Development Agency (CGDD).

Note: The rates and tax bases relate to each separate year from 2017 to 2020.

The TICFE electricity taxation curve shows little change from 2017 to 2020 (Figure 14), which explains the closely superimposed taxation curves. The variations in the curves are due mainly to annual variatiions in electricity consumption by use. In 2020, the reduction in electricity consumption following the health crisis measures is illustrated by a horizontal shortening of the curve.