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FRANÇAISE

*Liberté  
Égalité  
Fraternité*



AGENCE  
FRANCE TRÉSOR



# GREEN OATs

ALLOCATION  
AND PERFORMANCE REPORT

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2022

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# PROGRESS REPORT FROM CYRIL ROUSSEAU

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*Chief Executive of Agence France Trésor*



**For us, having established our green bond framework almost seven years ago, recent developments in sustainable finance are a source of inspiration to further develop what we are doing.**

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**Last year saw yet another innovation from Agence France Trésor, following on from that of 2017 when you were one of the very first sovereign bond issuers to enter the sustainable finance market, with the issue, in May 2022, of the first ever inflation indexed green bond. How has this latest product been received by investors?**

Our analysis, based around discussions with investors and advice from our primary dealers, was that the re-emergence of inflation and the strong level of demand for green assets meant that the time was right to offer a bond product that could both provide protection against inflation at the same time as securing financial flows to help support the ecological and energy transition. These two concerns are however not completely unrelated, given the impact of climate change on agricultural raw materials, supply pressures on some of the key materials necessary for the success of the transition, and the move away from fossil fuels, all resulting in upwards pressures on prices. The Green OAT €i 0.1% 25 July 2038 is a product that meets the dual goals of many investors and savers, being both totally consistent with our programme of index-linked bonds and our programme of green bonds. The inaugural syndicated tap issue was greeted with great enthusiasm by investors, resulting in a book building in excess of €27 billion, a new record for an indexed bond, with €4 billion being met. There have been a number of further issues and as of the end of August 2023, the outstanding totalled €6.2 billion. Because of the

impact of inflation for the State with each new issue (corresponding with inflation accrued since the dated date), a higher level of green expenditure, at €6.8 billion, has been matched with this bond.

**What is the total outstanding for these bonds?**

As at the end of August 2023, the outstanding amount for the first Green OAT, OAT 1.75% 25 June 2039, had reached €32.9 billion, that for the second Green OAT, OAT 0.5% 25 June 2044, €19.3 billion and the third Green OAT, OAT€i 0.1% 25 July 2038, as we have seen, is already at €6.2 billion. The total is therefore €58.3 billion, reflecting France's ambitions in terms of its climate and environmental goals and helping support the development of green finance by providing secure assets. In 2022, green bond issues covered a total of €10.0 billion of Eligible Green Expenditure. This report covers the allocation of these funds, collectively, for the three bonds in question.

**The amount of Eligible Green Expenditure for 2022 had to be revised during the year. Can you explain the reasons behind this adjustment?**

At the beginning of the year, we identified, on the basis of the Initial Finance Law, an envelope of €15 billion of Eligible Green Expenditure, and this was the amount we communicated to the market in January. A significant proportion of this amount, at around €5 billion, corresponded with State support in the form of annual subsidies, for the production of renewable energy.

However, as a result of the Russian invasion of Ukraine and the subsequent rise in energy prices, these subsidies were no longer necessary: the production of renewable energy was, under these circumstances, profitable in its own right. Following consideration by the Commission de Régulation de l'Énergie, a reduction in the forecast amount of green expenditure in 2022 was decided at the inter-Ministerial level and we informed the market in August that the total of Eligible Green Expenditure, which represents the ceiling for our green bond issues for the year, would be €10 billion in 2022. And this, in the end was the level we achieved.

It is also worth noting that upstream of these events, the Green OATs Evaluation Council had undertaken a fundamental review and in-depth analysis of the environmental benefits of public finance in terms of renewable energy production. These benefits are enduring over time and the stimulus measures implemented by public policy in these areas extend well beyond the current specific situation in which we have found ourselves since February 2022. The value of this on-going work is therefore in no way being called into question, and the report on this matter will be published this autumn.

**Green finance is also evolving in response to the European framework which has been formed over a number of years. What is the position of AFT in this dynamic context?**

We welcomed with great satisfaction the conclusion, last February, of an agreement between the Council, the Parliament and the Commission on the European Union green bond standard. This is a very significant document, which was the subject of a great deal of work under the French Presidency of the European Union, in the first-half of 2022. We are very happy to see the accomplishment of this collective endeavour, with an agreement in principle, to be followed by the regulations themselves.

This is an ambitious standard, in particular insofar as it is closely based around the European Taxonomy for sustainable activities. Work on establishing the Taxonomy is still ongoing and we also welcomed the publication in June 2023 of new Delegated Acts, covering the environmental goals relating to pollution, biodiversity, the circular economy and water, which were not included in the first Delegated Acts which were specifically focussed on climatic challenges.

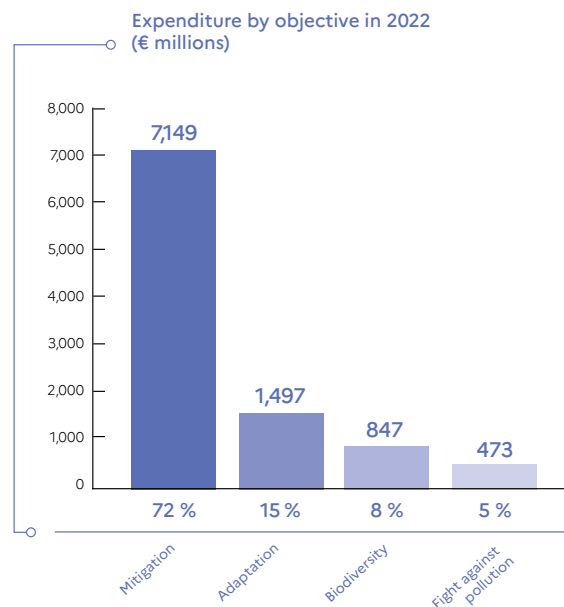
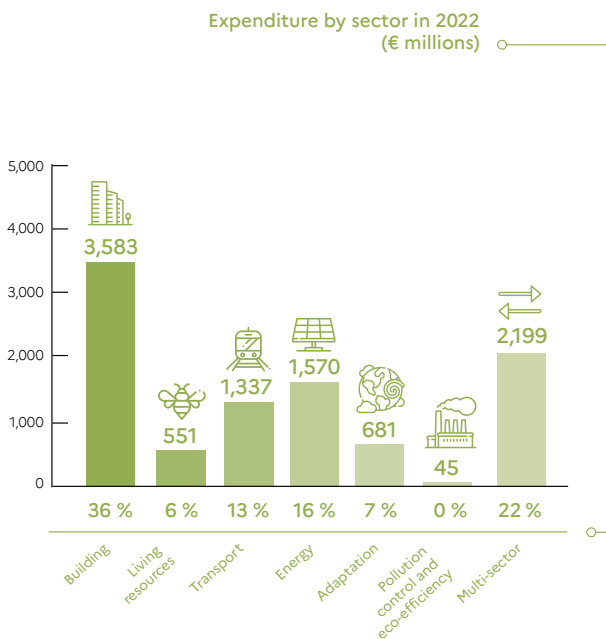
Green finance within the European Union therefore has a new common reference set. For us, having established our framework for green bond issues almost seven years ago, recent developments in sustainable finance are a source of inspiration to further develop what we are doing. This is why in particular this report continues the analyses started last year with the aim of determining a better understanding of the degree of convergence between our environmental policies and the technical criteria applied by the Taxonomy. This work is being carried out in partnership with the Ministries and agencies responsible for the various Eligible Green Expenditure, and it will be continued.

We cannot currently claim that we are in alignment with the European standard for green bonds, most notably because as an issuer of sovereign bonds, our eligible expenditure is highly specific relative to the usual range of activities financed in the context of sustainable finance, which has been identified as a priority in the context of the Delegated Acts of the Taxonomy. It does however enable us to position ourselves in relation to this standard, and fuel our ambition to provide ever better and more relevant information for investors in this regard.

# SUMMARY

This Report provides details of the allocation of the proceeds from the Green OATs raised in 2022, relative to the major economic activity sectors as defined in the Framework Document. It also covers the key challenges for the Eligible Green Expenditure and the associated achievements. The Report thus has two objectives:

- It reports on the role of Agence France Trésor in supporting France's environmental and climatic ambitions, in particular following on from the Paris Agreement.
- It evidences the high level of expectations of Agence France Trésor in terms of transparency and accountability, through which it contributes to structuring the green sovereign debt market.



## Documents accessible on the Agence France Trésor website

The reference documents describing how Agence France Trésor green sovereign bonds are structured are available on the Agence France Trésor website:

- Green OAT framework document (January 2017)
- Appendix to the Green OAT framework document (May 2022)
- Presentation for investors (May 2022)

Previous allocation and performance reports can also be found on the site, as well as the various reports and opinions of the Green OAT Evaluation Council (cf. 1.3 and 4.3 below).



01.

# AFT AND THE GREEN OATS

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# 1.1 PRESENTATION OF AFT

## ◆ TASKS

### MANAGING THE STATE'S CASH POSITION

Agence France Trésor (AFT) manages the State's cash position so that it can adhere to its financial commitments at all times, whatever the circumstances. Although it varies over the course of the year, this cash management role involves updating forecasts of the receipts and disbursements of the State and Treasury correspondents and monitoring the outturn of flows into and out of the account in order to be able to meet any temporary cash requirements on a day-to-day basis.

### MANAGING THE STATE'S DEBT

AFT is tasked with managing debt in the taxpayer's best interest.

In that context, its strategy is to take a long-term view, while tracking the market closely. It promotes liquidity across the full range of its debt issuances, while maintaining full transparency and a commitment to combining innovation and security.

## ◆ AN AUTONOMOUS, ACCOUNTABLE AGENCY WITH NATIONAL SCOPE

**Attached to the Directorate General of the Treasury and as such placed under the authority of the Minister of the Economy, Finance and Recovery, AFT is an agency with national scope (SCN). AFT has the required scale and resources to carry out all its activities, particularly when navigating complex financial markets and maintaining close relationships with all financial stakeholders.**

The fact that AFT reports to the French Ministry for the Economy and Finance means that it has access to the full range of information it needs to carry out its strictly defined tasks. It often works closely with the other structures of the Directorate General of the Treasury or the Ministry, such as the Budget Directorate and the Directorate General of Public Finances. AFT is staffed by civil servants with in-depth knowledge of the Government's financial procedures and by market

professionals contracted by the government. Staff members serve in operational (cash management, market transactions, risk management and back-office procedures, information technology), and analytical functions (modelling, economics and legal), as well as communication functions.

At the end of 2022, AFT had 47 staff members (20 women and 27 men, 21 contract employees and 26 civil servants). AFT's staff members are notable for the diversity of their educational backgrounds and career paths. They share the same values as those of the Directorate General of the Treasury, namely commitment, loyalty, openness and team spirit. All staff members adhere to strict commitments with regard to professional ethics.

# KEY FIGURES FOR 2022

At 31.12.2022

**8 years** 184 days  
AVERAGE RESIDUAL MATURITY  
OF DEBT

**€2,278bn**  
NEGOTIABLE DEBT SECURITIES  
OUTSTANDING

**1.43%**  
WEIGHTED AVERAGE YIELD  
OF MEDIUM-AND LONG-TERM  
FIXED RATE SECURITIES ISSUED  
IN 2022

**€286bn**  
MEDIUM-TO LONG-TERM GOVERNMENT  
SECURITIES GROSS ISSUANCE  
IN 2022

**50.1%**  
NON-RESIDENTS' HOLDINGS  
OF NEGOTIABLE DEBT  
SECURITIES BY MARKET VALUE



# 1.2 THE GREEN OATs, FRANCE'S SOVEREIGN GREEN BONDS

On 24 January 2017, Agence France Trésor launched its first sovereign green bond with a coupon of 1.75% maturing on 25 June 2039. The first country in the world to issue green bonds on such a scale, France has since issued a second Green OAT, the OAT 0.5% 25 June 2044, first released in 2021, and then a third green bond, in 2022 indexed on Euro Zone inflation, the OAT €i 0.10% 25 July 2038.

As with conventional OATs, to maintain the liquidity of this Green OAT, AFT uses successive tap issues after the initial issuance, enabling it to respond to a dynamic level of demand. Thus, as of end August 2023, the total outstanding Green OAT 2039 debt was €32.9 billion, that of the OAT 2044 stood at €19.3 billion and that of OAT €i 2038 at €6.2 billion. The total outstanding of the three bonds thus amounts to €58.3 billion.

A green bond is a bond where the proceeds are earmarked for a project or more generally a range of eligible expenditure with positive environmental impacts. It differs from a conventional bond with the detailed and specific reporting requirements on its allocation

and its “green” credentials, although the financial risk is the same for investors.

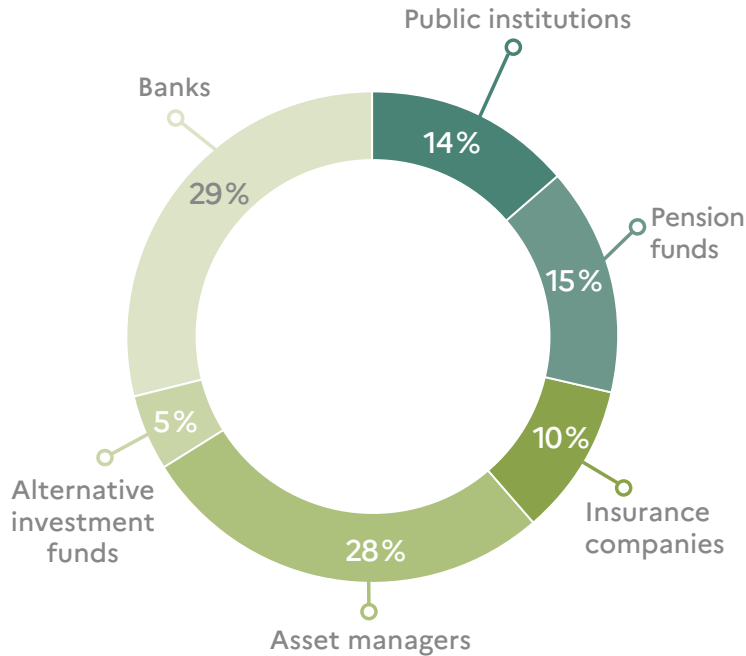
France's Green OATs are targeted at central government budget expenditure to combat climate change, adapt to climate change, protect biodiversity and fight pollution. Proceeds are managed in compliance with the general budget rules and finance an equivalent amount of Eligible Green Expenditure. In practice, the proceeds from the Green OATs are managed like those of a conventional sovereign bond, but with the allocations to Eligible Green Expenditure being tracked with the publication of allocation and performance reports and by impact reports.

Date	Type of issuance	Amount issued	Amount outstanding	Yield at issue (%)
		(€ bn)	(€ bn)	
<b>OAT 1.75% 25 june 2039</b>				
24/01/2017	Syndicated tap issue	7	7	1.74
01/06/2017	Auction sale	1.632	8.632	1.51
07/12/2017	Auction sale	1.065	9.697	1.27
05/04/2018	Auction sale	1.096	10.793	1.34
25/06/2018	Syndicated tap issue	4	14.793	1.46
07/02/2019	Auction sale	1.737	16.53	1.25
02/05/2019	Auction sale	2.471	19.001	1.04
05/09/2019	Auction sale	1.676	20.677	0.19
06/02/2020	Auction sale	1.982	22.659	0.38
02/04/2020	Auction sale	2.607	25.266	0.51
02/07/2020	Auction sale	2.109	27.375	0.31
04/02/2021	Auction sale	1.499	28.874	0.14
04/11/2021	Auction sale	2.067	30.941	0.44
04/05/2023	Auction sale	1.911	32.852	3.1
<b>OAT 0.5% 25 june 2044</b>				
16/03/2021	Syndicated tap issue	7	7	0.53
03/06/2021	Auction sale	2.28	9.28	0.74
02/09/2021	Auction sale	2.122	11.402	0.55
03/02/2022	Auction sale	2.784	14.186	0.85
07/07/2022	Auction sale	2.312	16.498	2.38
02/02/2023	Auction sale	2.775	19.273	2.94
<b>OAT €i 0.10% 25 july 2038</b>				
25/05/2022	Syndicated tap issue	4	4	-0.42
15/09/2022	Auction sale	0.549	4.549	0.15
16/02/2023	Auction sale	0.492	5.041	0.6
20/04/2023	Auction sale	0.702	5.743	0.63
17/08/2023	Auction sale	0.480	6.223	0.75

## ◆ SYNDICATION OF THE GREEN OAT €i 2038

On 25 May 2022, AFT successfully launched the first French green sovereign bond index-linked to the European Harmonised Index of Consumer Prices (excluding tobacco): the Green OAT €i 0.10% 25 July 2038.

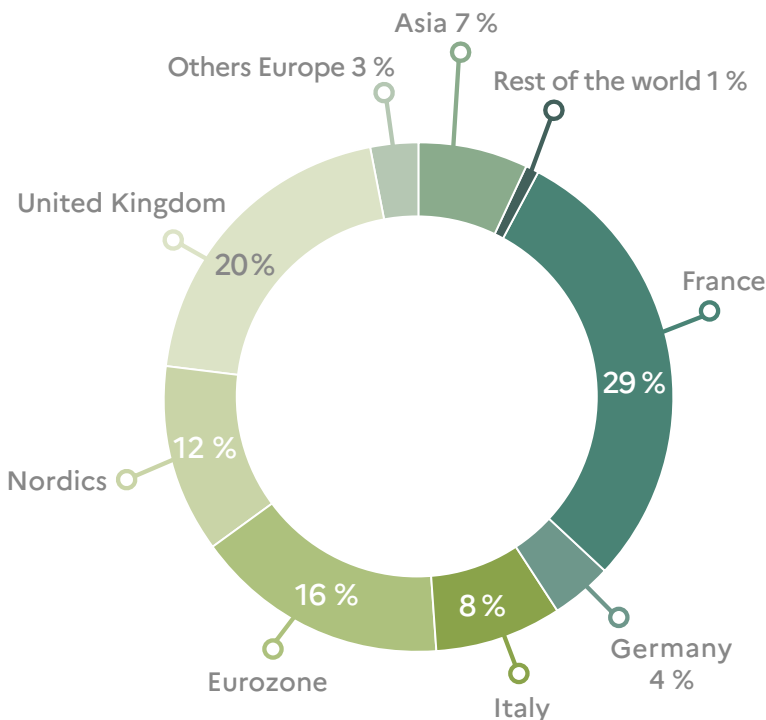
The lead banks for this operation were Barclays, BNP Paribas, Crédit Agricole CIB, Natixis and Société Générale. All the primary dealers were part of the syndicate. In terms of book building, total demand was in excess of €27 billion, of which €4 billion was met. The price was fixed at 108.62, corresponding with a real yield for the issue of -0.415%.



The allocation reflects the extremely diverse range of investors in term of geographic origin and their acknowledged quality.

There were more than 230 final investors in the operation. The syndicated amount was allocated at 29% to banks, 28% to asset managers, 15% to pension funds, 14% to public institutions, 10% to insurance companies and 5% to alternative funds. According to the lead banks, more than half of the bonds were placed with green investors.

In geographical terms the distribution reflected the sustained level of demand from French and international investors, in particular in Euro Zone countries which accounted for the majority of the allocation: French (29%), Italian (8%), German investors (4%) and those from other Euro Zone countries (16%). Other investors were from the United Kingdom (20%), the Nordic countries (12%), other non-Euro Zone European countries (3%) and Asia (7%).



The British monthly journal, "The Banker", selected this operation as the "European Sustainable Finance Deal of the year" in its awards published in May 2023.

## ◆ PERFORMANCES SINCE THE LAST REPORT

Between the previous report and end-August 2023, the 2038 and 2044 Green OATs were reissued six times (Twice in 2022 and five times in 2023):

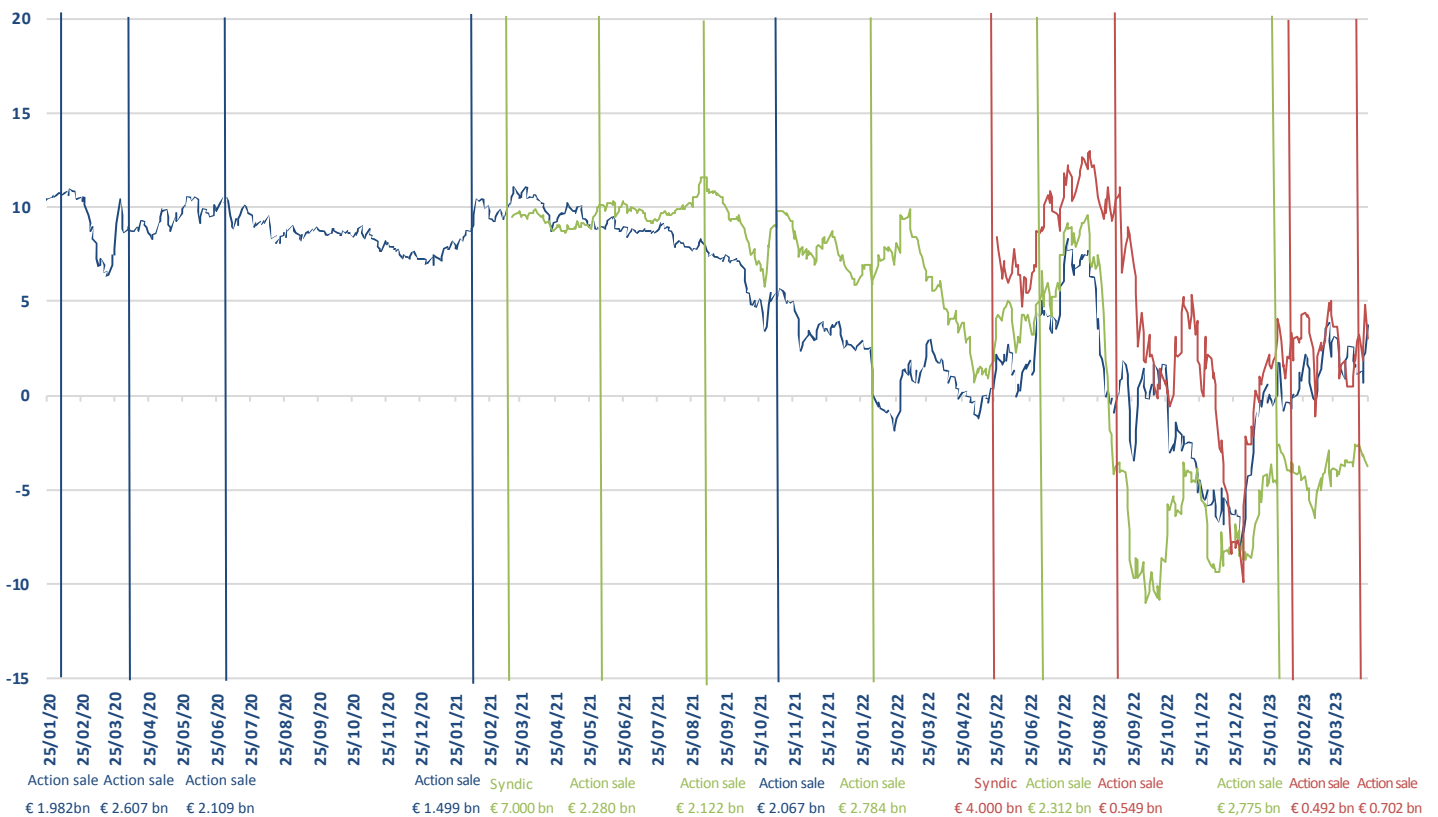
- On 7 July 2022, OAT 2044 for €2,312 billion at an average rate of 2.38%;
- On 15 September 2022 OAT €i 2038 for €0.549 billion at an average rate of 0.15%;
- On 2 February 2023, OAT 2044 for €2,775 billion at an average rate of 2.94%;
- On 16 February 2023 OAT €i 2038 for €0.492 billion at an average rate of 0.60%;
- On 20 April 2023 OAT 2038 for €0.702 billion at an average rate of 0.63%;
- On 4 May 2023, OAT 2039 for €1.911 billion at an average rate of 3.10%;
- On 17 August 2023, OAT €i 2038 for €0.480 billion at an average rate of 0.75%.

The outstanding amount was thus €58,348 billion at 31 August 2023.

As a general observation, what happens on the secondary market is that the difference in the rate between a green OAT and a conventional OAT with a close maturity tends to shrink after its launch (this had decreased by 11 bp for the 2044, by 9 bp for the 2039 and 6 bp for the 2038). Since the publication of the last report, the movement in green OAT rates has been more volatile than previously, but remains globally better than that of conventional OATs with a close maturity.

In a context of limited green OAT issues, as of summer 2022, following the downwards adjustment in the volume of Eligible Green Expenditure, green bond rates dropped to relatively low levels at the end of 2022. However, the tightening observed at the end of the year relative to nominal pars can mainly be explained as resulting from a flattening of the long end of the French curve. At mid-2022, relative yields on green OATs remain below those of mid 2022.

### INTEREST RATE DIFFERENTIALS BETWEEN Green OAT 2039 AND OAT 2036 ■ Green OAT 2044 AND OAT 2040 ■ Green OAT €i 2038 and OAT €i 2036 ■



The Interest rate differentials are measured in basis point (i.e.: hundreds of a percentage point)

# 1.3 AN INDEPENDENT EVALUATION COUNCIL

With the inaugural issue of the first Green OAT in January 2017, the French government committed to publishing reports on the environmental impact of Eligible Green Expenditure. An independent body was then created for this purpose.

Chaired by **Manuel Pulgar-Vidal**, former Minister for the Environment in Peru, President of the UNFCCC<sup>1</sup> COP20 and currently WWF Global Climate and Energy Practice Leader, the Green OATs Evaluation Council is comprised of independent experts of international reknown:

- **Mats Andersson**, Vice-Chairman of the Global Challenges Foundation, Chairman of PDC and former CEO of AP4, Sweden's fourth national pension fund;
- **Nathalie Girouard**, Head of the Environmental Performance and Information Division of the Environment Directorate at the OECD;
- **Mike Holland**, independent consultant;
- **Karin Kemper**, former Senior Director for the Environment and Natural Resources Global Practice at the World Bank;
- **Rana Roy**, independent consultant;
- **Thomas Sterner**, Professor of Environmental Economics at the University of Gothenburg;

There are also two observers:

- **Sean Kidney**, co-founder and CEO of the Climate Bond Initiative;
- **Nicholas Pfaff**, Senior Director and Secretary to the Green Bond Principles, ICMA (International Capital Market Association).

The Council held its inaugural session in December 2017 and has met on a regular basis four times a year.

The work supervised by the Green OAT Evaluation Council is analysed in separate reports. Chapter 4 of this report (pages 70 to 75) contains a summary presentation of the analyses carried out by the Evaluation Council. Each of these analyses is a dedicated examination of a specific programme or budget line, and these are designed with the aim to cover all Eligible Green Expenditure. These can be viewed on [the Agence France Trésor website: www.aft.gouv.fr/fr/oat-verte#Avis](http://www.agencefrance-tresor.fr)

## Council evaluation reports





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# GREEN OATS AND ENVIRONMENTAL PRIORITIES

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## 2.1 IDENTIFYING ELIGIBLE GREEN EXPENDITURE

Proceeds are managed in compliance with the general budget rule of universality and finance an equivalent amount of Eligible Green Expenditure. In practice, the proceeds from Green OATs are managed like those of a conventional sovereign bond, but with allocations to Eligible Green Expenditure being tracked and reported. The sectors of activity in which Eligible Green Expenditure will be funded and the associated eligibility criteria were defined and published prior to the first issuance in a Framework Document dated 10 January 2017, which is available on the AFT website<sup>1</sup>.

The “Greenfin” label is a factor in the selection process. Expenditure should also contribute to one of the four green objectives (combat climate change, adapt to climate change, protect biodiversity and fight pollution) and relate to one of the following six green sectors: buildings, transport, energy (including smart grids), living resources, adaptation, pollution control and eco-efficiency. Certain sectors have been excluded: Nuclear, weapons and all expenditure dedicated to fossil fuels.

Each ministry is responsible for identifying Eligible Green Expenditure within its budget programmes, on the basis of the initial Budget Act. The Eligible Green Expenditure is then validated each year, *ex ante*, by an inter-ministerial working group, under the aegis of the Prime Minister.

At the time of the inaugural issue, an independent verifier, Vigeo Eiris, certified the relevance of the approach used by the Government given the stated objectives and the compliance of Eligible Green Expenditure with the TEEC label, subse-

quently becoming the Greenfin label, and issued a “reasonable” level of assurance (its highest level of assurance) on the sustainability of the bond issue. Subsequently verified each year since then by Vigeo Eiris, now Moody’s ESG, this same level of assurance has been applied for the *ex ante* presentation of the Eligible Green Expenditure. In addition, in its evaluation of the “performance of France in terms of its social and environmental responsibility as a sovereign bond issuer”, Moody’s ESG stated that it was stable at an “advanced” level, this being the highest level in its rating scale, with an “advanced” level of performance in the environmental domain in particular.

The Green OATs allocation reports allow for *ex-post* verification of the expenditure realised, based on the Budget Settlement Act. Thus, for allocations in year 2022, the document is available in the summer of year 2023. This included a verification by Moody’s Investors Service of the environmental commitments and a specific audit, carried out by KPMG.

### Identifying Eligible Green Expenditure and reducing environmental risks:

Expenditure matched to Green OATs is selected, with reference to the TEEC (Energy and Ecological Transition for the Climate) label, for its positive impact on the environment. In line with this selection process, the Eligible Green Expenditure is, virtually entirely, favourably categorized within the meaning of the green budget (cf. section 4.2 of this report).

The green budget makes it possible to not only identify the positive impacts of State expenditure, but also includes within its categorizations those instances where public action is likely to have a detrimental impact on the environment. A review of the budget as a whole in this context enables, in particular, confirmation that the expenditure matched with the Green OATs does not have any direct deleterious effect on the environment and does not encourage behaviour that would have a harmful impact.

1 - [https://www.aft.gouv.fr/files/medias-aft/3\\_Dette/2\\_Framework\\_FR\\_cadre%20OAT%20Verte%20130117.pdf](https://www.aft.gouv.fr/files/medias-aft/3_Dette/2_Framework_FR_cadre%20OAT%20Verte%20130117.pdf)

## Monitoring the allocation of proceeds raised in 2022

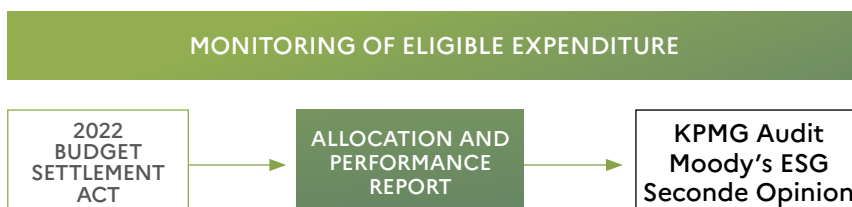
2021  
Preparation



2022  
Green OATs  
issuance



2023  
Verification  
and allocation



## 2.2 FOUR OBJECTIVES FOR MEETING TODAY'S ENVIRONMENTAL CHALLENGES

Green OATs expenditure must address four key national objectives, as defined in the issue framework document:

1. Mitigating climate change, or actions aimed at limiting global warming, including through the reduction of greenhouse gas emissions;
2. Adapting to climate change, or actions and strategies aimed at reducing the vulnerability of human and natural systems to the effects of climate change;
3. Protecting biodiversity;
4. Controlling and reducing air, ground and water pollution and fostering the circular economy.

### 1. MITIGATING CLIMATE CHANGE

Of the €10.0 billion allocated in 2022, 72% went to programmes dedicated to climate change mitigation, i.e., €7.1 billion, the biggest portion of eligible expenditure.

France is committed to becoming carbon neutral by 2050, which implies the balancing of its man-made emissions with the capacity of natural carbon sinks. In France, this target requires a six-fold reduction in greenhouse gas emission from the levels of 1990. In concrete terms, this implies a reduction in France's emissions to 80 MtCO<sub>2e</sub> from the levels of 458 MtCO<sub>2e</sub> in 2015 and 445 MtCO<sub>2e</sub> in 2018.

This objective requires a profound change in lifestyles, patterns of consumption and production, but also represents an opportunity for innovation and a reimagining of the French economic model.

The National Low-Carbon Strategy (SNBC) and the associated carbon budgets define specific reduction objectives for France over the coming years and across all sectors.

The reduction of carbon emissions must be accompanied by the preservation, restoration and development of carbon sinks: natural areas, living soils, forests, oceanic carbon pumps, posidonia meadows at sea, etc.

### 2. ADAPTING TO CLIMATE CHANGE

In 2022, 15% of green OAT expenditure was allocated to initiatives aimed at adapting to climate change, a total of €1.5 billion.

The impacts of climate change are already being felt in France, including: an acceleration of the 1.4°C increase in average temperatures registered since 1900, a threefold increase in the frequency of heatwaves over the last thirty years compared to the previous period, as well as more frequent meteorological phenomena (rainfall, storms, etc.) of greater amplitude.

Together with the mitigation already under way, policies for climate change adaptation also need to be further developed. These will be focussed at a more local level by targeting sectors with high levels of exposure as well as areas that are vulnerable to them, such as coastlines or urban centres.

The challenge is in measuring the vulnerability of systems, i.e., their susceptibility to damage from climate change, their exposure to climate change, as well as the climatic phenomena likely to occur in order to define an adaptation strategy to make systems more resilient.



### 3. PROTECTING BIODIVERSITY

**In 2022, 8% of green expenditure, or €0.8 billion, was directed into activities designed to protect biodiversity.**

Biodiversity, endangered by the negative effects of many human activities (overexploitation of resources, pollution, overuse of fragile areas, land artificialisation or degradation, invasive alien species and climate change), is today in serious decline. It is declining at such a rate that a “sixth mass extinction” is being talked of<sup>1</sup>.

Populations are highly dependent on the proper functioning of ecosystems and their biodiversity: these are known as «ecosystem services». Biodiversity contributes in particular to climate regulation, thanks to the oceans, wetlands and aquatic environments, forests and grasslands. It therefore plays a role in mitigating the effects of climate change. More generally, it is a cross-cutting theme for the other objectives of the Green OATs. The protection of biodiversity is also a challenge both for its heritage and scientific interest and for its potential applications that have not yet been explored in areas such as health, food and energy.

IUCN evaluations place France among the ten countries hosting the largest number of endangered species, in particular thanks to its Overseas Territories which are home to a huge diversity of species and ecosystems, and thanks to a vast and varied national maritime domain.

### 4. COMBATING POLLUTION

**In 2022, 5% of green OAT expenditure, or €0.5 billion, was allocated to the work to reduce water, air and soil pollution.**

Despite the progress made over the last twenty years, air, soil, water and oceans pollution remains a major concern in France and most particularly in densely populated urban areas or in busy mountain valleys and coastal areas.

Some pollutants, such as particulates, nitrogen dioxide and tropospheric ozone, even in small doses, are hazardous for health.

Pollution increases due to human activities: transport, heating of buildings, the massive production and consumption of synthetic products have a harmful impact in terms of the environment, including direct or indirect destruction of species, intoxication and degradation of soils or alteration of marine and aquatic ecosystems.

Air, soil and water quality thus need to be taken into account for town and rural planning and across all economic sectors, and need to be monitored effectively, so as to act both structurally and in crisis management (air pollution peaks for example).

<sup>1</sup> - See in particular Ceballos et al. (2020), *Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction*.

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## 2.3 GREEN OATs, REFLECTING FRANCE'S ENVIRONMENTAL AMBITIONS

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Improved patterns of production, consumption, housing and transport, the protection of our planet and helping the less well-off: France is working to remodel the economy and achieve the ecological transition.

This challenge, within France and on the international stage, has been a confirmed part of French Government policy for a long time.

Despite a highly charged geopolitical situation, 2022 saw a further strengthening of the environmental ambitions of France, in the context of European and international commitments. Major agreements were reached at the level of the European Union (EU) to accelerate cuts to greenhouse gas emissions: the reform of its carbon market, the imposing of a carbon tax at the borders, as well as the ending of sales of new internal combustion vehicles in 2035. The United Nations Conferences on biodiversity also adopted the historic principle of a Global Biodiversity Framework in December 2022, aimed at bringing biodiversity destruction to an end by 2030.

The eagerly waited Synthesis Report of the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) was published in March 2023. This reference document, a truly international collaboration, summarises the scientific knowledge acquired between 2015 and 2021 on climate change, the causes and the impacts of this and possible measures to mitigate and adapt to it. This will be the main scientific base for the first global stocktake to assess collective progress towards implementing the Paris Agreement, which will take place at COP28 in Dubai at the end of 2023.

### REDUCING GREENHOUSE GAS EMISSIONS

The signatory countries to the **Paris Agreement** committed themselves to limiting the increase in the average temperature to 2°C, and if possible, to 1.5°C. In line with the recommendations of the IPCC, the signatories agreed to achieve carbon neutrality in the second half of the 21<sup>st</sup> century.

With the first **National Low-Carbon Strategy (SNBC)** adopted in 2015, France made the commitment to cut its greenhouse gas emissions (GES) by 75% by 2050.

The SNBC, introduced by the **Green Growth Energy Transition Act (LTECV) of 17 August 2015**, provides the roadmap for France in combating climate change. This outlines the directions for the implementation across all sectors of the transition to a low-carbon, circular and sustainable economy. It defines a trajectory for the reduction of greenhouse gas emissions leading to 2050. In 2017, the Ministry for Ecological Transition and Solidarity announced in its **Climate Plan** a new objective for France: The achievement of carbon neutrality by 2050. The revised SNBC requires an almost complete decarbonisation of the transport, energy and building sectors by 2050.

This strategy has been incorporated into a number of planning and programming documents from regional authorities, the government and agencies, and sets short-to-medium term objectives: The Carbon Budgets. These latter are the emission ceilings that must not be exceeded, stated as annual averages per 5 year period in millions of metric tons of CO<sub>2</sub> equivalent (2019-2023, 2024-2028, 2029-2033). Each budget is apportioned both by economic sector and by greenhouse gas category. Whilst the objectives of the first carbon budget (2015-2018) were not achieved, those of the second (2019-2023) are being met so far.

#### Second carbon budget statement

	Objective defined (in Mt CO <sub>2</sub> e/year)	Actual emissions (in Mt CO <sub>2</sub> e/year)
2019	443	443
2020	436	393
2021	423	418 (estimate)
2022	410	Not available
2023	397	Not available

The National Low Carbon Strategy (SNBC) targets reflect the need to balance anthropic emissions with absorptions, in France. The LTECV also introduced multi-year energy programmes (PPE) which define the priority action areas for improving energy supply, energy savings, energy efficiency and renewable energies. Subsequent carbon budgets will be stricter and will soon be further tightened to bring these into line with the latest European Climate objectives for 2030.

The SNBC is subject to a cycle of complete revisions every five years. The strategy revisions make it possible in particular to adapt the reference scenario to the evolving context, in particular in knowledge (technical, economic, social and geopolitical).

## CIRCULAR ECONOMY

**The Law of 10 February 2020 relating to combating waste and developing the circular economy** is aimed at accelerating the speed of change in the models of production and consumption in order to reduce waste and protect natural resources, biodiversity and the climate. The Law encompasses a number of key priorities: Reducing plastic wastes and eliminating single-use plastics, improving information for consumers, actions to reduce waste, improved production processes and combating unlawful dumping. This Law reflects the directions defined by the European Waste Framework Directive.

## ADAPTATION TO CLIMATE CHANGE

Adaptation to climate change goes along with mitigation. This aims to limit the impact of climate change, which is already inevitable, and the damage associated with it on socio-economic activities. With the aim of defining tangible steps towards preparing the country for the changed climatic conditions, in 2011 France adopted its first **National Climate Change Adaptation Plan (PNACC-1)**, covering a 5 year period.

Following COP21, France started work on updating its policy in line with the Paris Agreement. **The current national plan (PNACC-2)**, adopted in 2018, focusses on the interconnections between the adaptation policies at the various regional levels, and with particular attention to the Overseas Territories. France is aiming, by means of this second Plan, to achieve an effective adaptation as of the middle of the 21<sup>st</sup> century to a climate consistent with the predicted average global temperature rises of 1.5 to 2°C above those of the 19<sup>th</sup> century.

## PROTECTING BIODIVERSITY

France has an abundant biodiversity. A collective heritage and an asset for the future, this biodiversity must be protected and even restored when necessary. Its ecosystems are in effect our essential allies in combating climatic disruption. Action must be at the core of public policy throughout the country and involving every stakeholder.

**The Law of 8 August 2016 on restoring biodiversity, nature and the landscape** includes the objective of reducing biodiversity loss to zero. The Biodiversity Plan adopted in 2018 provides for the realisation of this objective, by defining the levers for action. This approach covers six key elements, including, among others the restoration of biodiversity throughout the country, the protection of nature in each and every aspect and the development of an ambitious European and international roadmap.

**The National Biodiversity Strategy (SNB)** reflects the French commitments made at international level concerning the protection of biodiversity. The third SNB is now being drawn up with the objective of defining the ongoing trajectory required to ensure the protection of our ecosystems and species and to protect our health and quality of life for the next ten years.

The first section of the 2030 National Biodiversity Strategy in 2021 was the result of consultations over 18 months with all the stakeholders: Territories in Metropolitan France and in its Overseas, the scientific community, charities, consultative bodies, State agencies and operators. The strategy is based around three principles: Restraint in the use of natural resources, consistency of actions whether at the level of public policies and partnerships with the private sector or at the level of interventions, as well as at the operational level in generating effective initiatives. The second section will be finalised in 2023 after the conclusions of the 15<sup>th</sup> UN Biodiversity Conference, in order to integrate the quantified targets.

COP15, held in Montreal on 7 to 9 December 2022, resulted in an agreement on the Global Biodiversity Framework which was ratified by the Plenary session of 19 December. This Framework, welcomed by France, is ambitious, realistic and applicable, with detailed targets including the protection of 30% of land and 30% of oceans by 2030.

## COMBATING POLLUTION

The principal objectives and regulatory provisions have been set at international and European levels. The European Directives define the standards to respect (in terms of monitoring, increasing awareness, information to people, compliance with emission thresholds, etc.).

The **European Directive 2016/2284 (EU) of 2016** also defined the objectives for the reduction of pollutants against 2005, applicable for all Member States, aimed at reducing premature deaths linked with airborne pollution by 50%. Other European Directives have also defined sector-based objectives for reducing pollutants.

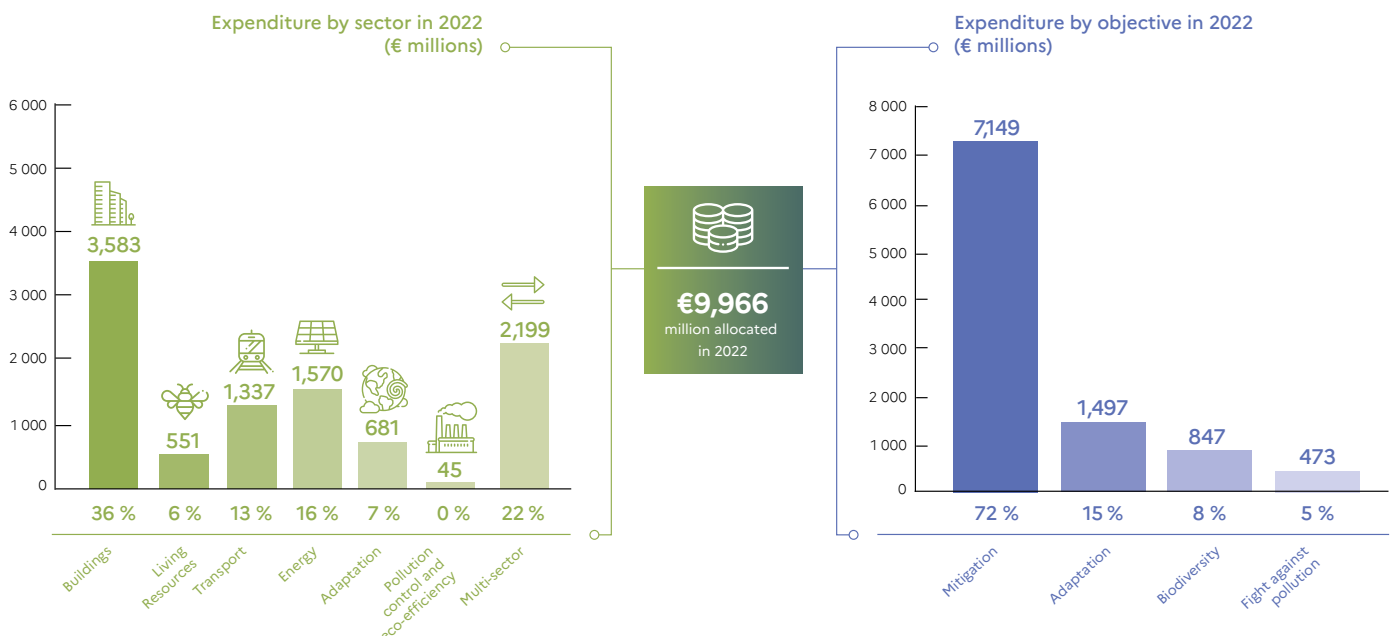
## 2.4 COVERING THE KEY CHALLENGES OF THE ECOLOGICAL TRANSITION

To comply with the four national objectives previously mentioned, programmes funded by the Green OATs fall into six major sectors: Buildings, Transport, Energy, Living Resources, Adaptation and Pollution and eco-efficiency.

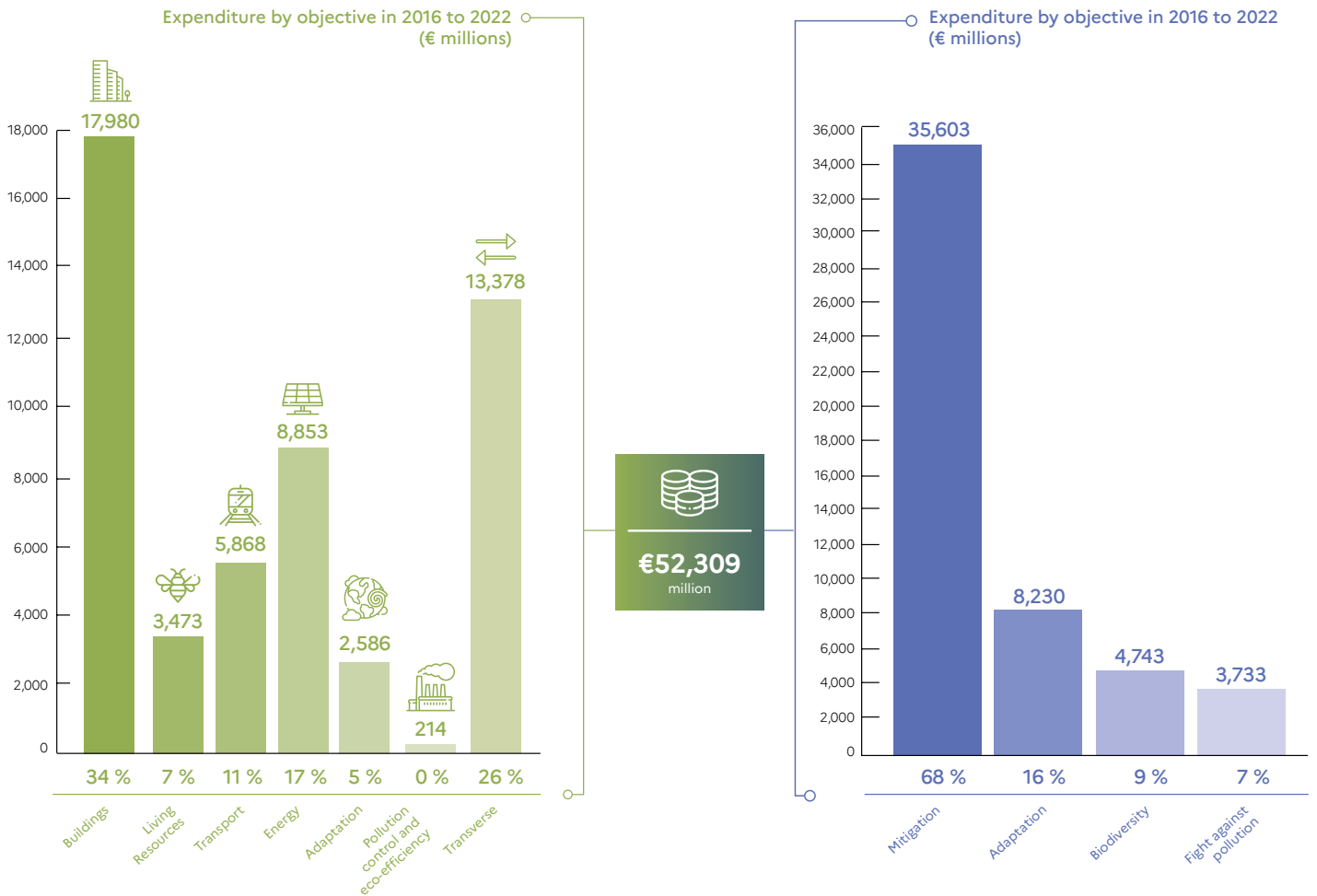
These sectors are defined in the Green OAT Framework, and encompass both those economic sectors that are heavy emitters of greenhouse gas (e.g., buildings, energy production, transport and agriculture), and those sectors linked with the other three Green OAT objectives (adapting to climate change, protection and preservation of living resources, and controlling and reducing pollution). Some State expenditure, such as for instance some investments in the "Invest for the Future" Programme (PIA), cover a number of sectors and are therefore considered as being "multi-sector" expenditure.

The expenditure for each sector is detailed in the following pages, together with the performance indicators for the programmes included in the Eligible Green Expenditure in 2021 and 2022 financed in 2022 by the Green OATs.

The following diagram summarises the expenditure financed in 2022, by sector as well as by environmental objective. As can be seen, the building sector accounted for more than a third of the €10 billion euros allocated in 2022.



The ambitions of Agence France Trésor are based on France's long-term environmental and climate related policies. The following graphs show the whole of this allocation for the first six years of the Green OATs programme.



03.

# PRIORITY SECTORS



# 3.1 SUPPORTING THE ENERGY TRANSITION IN EVERY SECTOR

The transition to low carbon energy is absolutely vital in reaching the 2050 national carbon neutral goal. In 2021, public expenditure in support of renewable energy (EnR) accounted for a significant proportion of the allocation of funds raised through Green OATs. It was a very different story this year: With the increase in energy prices following the Russian invasion of Ukraine and its repercussions, energy production from renewable sources became profitable, to the extent that there was no expenditure of this nature in 2022 and so does not appear in this allocation report. Other public expenditure in this field continued to received Green OAT support: This was around research aimed at the further development of these energy sources to expand and intensify their use.

## ◆ ELIGIBLE EXPENDITURE



1. Support for renewable energy in Metropolitan France
2. Support for the energy transition in non-interconnected zones (ZNI)
3. Regional hydrogen ecosystems
4. Research by CEA and IFPEN
5. Energy Transition Institutes

### Performance indicators

**0,6**

**Leverage effect** for funding energy transition Institutes

**302**

**Patents registered** by the CEA and IFPEN in the field of new energy technologies

**€53,1 M**

**Income generated** from marketing of research into new energy technologies (CEA, IFPEN)



## ◆ CHALLENGES FOR THE SECTOR

### EMISSIONS LINKED WITH ENERGY PRODUCTION IN FRANCE, REDUCING AS OF 1990

Energy production in France accounted for 10.4% of national greenhouse gas emissions in 2020.

The production of electricity has been historically low carbon because of the energy mix (large share of nuclear and renewable). These emissions have been covered by the European Emissions Trading System (EU ETS) and have fallen dramatically since 1990. Structural factors such as efficiency improvements, the closure of coal and oil powered power stations, as well as the growth of renewable energies have contributed to this reduction in emissions.

### A NUMBER OF LEVERS CAN BE USED IN ACHIEVING THE AMBITIOUS TARGETS SET BY THE SNBC...

The medium and long-term objectives of the National Low-Carbon Strategy (SNBC) include a 33% reduction in greenhouse gas (GHG) emissions in 2030 from those of 2015 and an almost complete zero-carbon energy production by 2050, focused on three main areas:

- 1 - The decarbonisation and diversification of the energy mix, which in order to meet the growing use of electrification, will require mass take-up of renewable energies and heat recovery;
- 2 - Managing energy demand through energy efficiency and well-designed power use;
- 3 - Determining long-term scenarios, enabling the anticipation of production needs.

Achieving these objectives requires the deployment of a range of available levers, such as improved energy efficiency through sobriety of use, greatly increased use of renewable energies and heat recovery as well as a gradual reduction of the level of dependence on fossil fuels.

### ... REQUIRING SIGNIFICANT FINANCIAL RESOURCES

**Achieving zero-carbon energy therefore requires the application of significant resources in order, firstly, to boost the production of low carbon energy, and secondly, to build the infrastructures for the mainstream use of these energy sources.**

The multi-year energy programme adopted in April 2020 defined the development trajectories for renewable energies, including additional funding of 30 billion euros over 20 years.

The Recovery Plan (Plan de Relance) defined in 2020 covered these two aspects, including for example the allocation of €2 billion for hydrogen research, alongside an electrification of uses by, for example, supporting the decarbonisation of industry. A significant amount of funding has been allocated to support the electrification of the private vehicle stock, as well as within the rail and public transport sectors.

The State is also providing critical support for renewable energies by compensating legacy power generators operating under certain obligations when the cost of production exceeds the feed-in tariff, which was not the case in 2022.

## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATs

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P345	Support for renewable electrical energies in Metropolitan France*	5,060.1	1,136	-	-	1,136	-	-	-	
		Support for biomethane injection*	496	111.4	-	-	111.4	-	-	-	
		Promoting renewable energies in non-interconnected zones (ZNI)*	628.2	141	-	-	141	-	-	-	
	P362	Regional hydrogen ecosystems	5	1.1	19.6	12.3	13.4	-	-	-	
Research and higher education	P190	Research by CEA and IFPEN (2020) into new energy technologies	171.2	38.4	172.2	107.7	146.1	Own resources generated from research valorization (in millions of euros)	341	305	302
								Income generated from marketing of the research (€ millions)	39.9	54.4	53.1
Invest for the Future Programme PIA	PIA 1	Energy transition institutes	37.9	8.5	20.6	12.9	21.4	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	1	0.6	0.6
<b>Total</b>			<b>6,398.4</b>	<b>1,436.5</b>	<b>212.4</b>	<b>132.8</b>	<b>1,569.3</b>				

\* Due to the evolving market energy prices, these subsidies are considered null for 2022.

## 1. SUPPORT FOR RENEWABLE ENERGIES IN METROPOLITAN FRANCE

Government policy to promote the energy transitions is based specifically on a range of measures aimed at boosting the development of renewable energies.

The historical suppliers (EDF and local companies) are required to sign contracts for the purchase of electricity generated using renewable energy sources by installations eligible for the obligation to purchase or winners of supply tenders. EDF is also required to sign contracts with companies in receipt of an additional remuneration. As of 1<sup>st</sup> January 2017, approved bodies can also manage feed-in contracts with producers of electricity from renewable sources.

The additional cost arising through these contracts corresponds with the difference between the purchase price of the electricity and the cost of production of equivalent quantities or the amount of the supplement in the case of additional remuneration. The measure is intended to offset this extra cost for the operators, by providing support for onshore wind power, photovoltaic solar power and bioenergy (the latter being excluded from the scope of Green OATs). The same compensation logic prevails for the biomethane injection support scheme.

With the higher energy prices resulting from the war in Ukraine, there is no expenditure matching these subsidies for 2022 in this allocation report. The production of energy from renewable sources during this period was profitable in its own right.

## 2. SUPPORTING THE ENERGY TRANSITION IN NON-INTERCONNECTED ZONES (ZNI)

The pricing equalisation ensures that the prices paid by consumers for their electricity in non-interconnected zones (ZNI) are comparable to those applicable in continental France, even though the cost of production in these zones is significantly higher. This means higher costs for the historic operators, EDF Systèmes énergétiques insulaires (EDF SEI), Electricité de Mayotte (EDM) and Eau et Electricité de Wallis et Futuna (EEWF). These costs are compensated by the State and, for the element relating to the energy transition, are eligible for Green OAT financing:

- Higher cost of generating electricity from renewable sources by an historic operator
- The additional costs arising from renewable energy purchase contract obligations
- Costs associated with managing energy demand
- Cost associated with developing storage solutions
- The cost of studies required in the multi-year energy programme

Similarly to expenditure in support of renewable energy in Metropolitan France, this expenditure was also deemed as zero for 2022 in the allocation of Green OAT funds

## 3. CARBON-FREE HYDROGEN SOLUTIONS FOR INDUSTRY AND MOBILITY

Assistance was provided for investments and equipment enabling the deployment, in the regions, of the infrastructures for the production of hydrogen by electrolysis for existing hydrogen needs for industry or for new mobility related applications.

## 4. RESEARCH INTO NEW ENERGY TECHNOLOGIES

This programme includes credits allocated to research carried out by two major organisations in the energy transition field:

- The Atomic Energy and Alternative Energies Commission (CEA) supports an integrated approach to future energy systems, integrating renewable energy production modes, alongside grids (storage, conversion, control). The key themes for the CEA include photovoltaic, storage (batteries), the hydrogen vector, energy management integrating a grid system approach (electricity, gas and storage solutions) and energy efficiency in industrial buildings and infrastructures.
- The French Petroleum and New Energies Institute (IFPEN), carries out applied research into key areas of climate change mitigation: electric mobility (such as the European H2020 "Modalis"<sup>1</sup> project which brings together the members of the battery alliance), connected mobility, the implementation of industrial bio-fuel businesses (such as the collaborative BioTfuel<sup>2</sup> project), the production of energy in the maritime milieu, etc.

1 - <https://modalis2-project.eu/>

2 - <https://www.total.com/fr/expertise-energies/projets/bioenergies/biotfuel-convertir-residus-vegetaux-carburant>

## 5. INVEST FOR THE FUTURE PROGRAMME (PIA)

Among the Green OAT eligible PIA expenditure is the applied research of the Energy Transition Institutes (ITEs), interdisciplinary platforms combining industrial and public research expertise in carbon-free energies in a joint investment approach aimed at developing competitive industrial sectors in France for future decarbonised energy needs. These bring together expertise from both industry and publicly funded research bodies within a context of joint public-private investment and involving close cooperation between all the parties, in order to further strengthen the ecosystems created within the competitiveness hubs.

These institutes primarily target high-potential impact sectors, including those with a proven positive impact on climate change, such as the energy efficiency of transport equipment, energy management tools, geothermal energy, renewable marine energies, solar power, energy storage and smart grids, etc.

## 6. ENERGY TRANSITION AND COMBATING CLIMATE CHANGE

This budgetary action is part of the fight against climate change through a range of expenses in support of the energy transition, some examples of which are given here. This expenditure relates to funding the system for managing energy efficiency certificates (CEE), requiring energy suppliers to take measures aimed at encouraging consumers to be more energy efficiency aware. The programme also funds checks on the quality of fuels and combustibles at service stations, in particular their sulphur content.

In specific terms of climate change mitigation policies, prospecting work is funded relating to energy and greenhouse gas emissions (carried out by DGEC or the CIREC), enabling the modelling of supply and demand, and thus satisfying the reporting obligations required at European and international levels. The programme also supports the work of the Environment Energy Technical Association (ATEE), which leads a network of experts responsible for proposing new standardised operations in the context of the CEE system and which is actively involved in promoting the system.

The programme also funds various initiatives, such as the promotion of the energy transition, by means for example of analyses of the emissions of classified installation for environmental protection (ICPE) in the context of the allocation of greenhouse gas quotas. Other actions also concern the reduction of vehicle emissions, such as the involvement of the DGEC in a study aimed at defining the requirements for the deployment of the electric vehicle charging infrastructure.

Photo credit: Freepik

## 7. FOCUS: HYDROGEN ECOSYSTEMS FUND: H2PRO AND H2 VITRY SEINE, SUCCESSFUL PROJECTS IN 2022

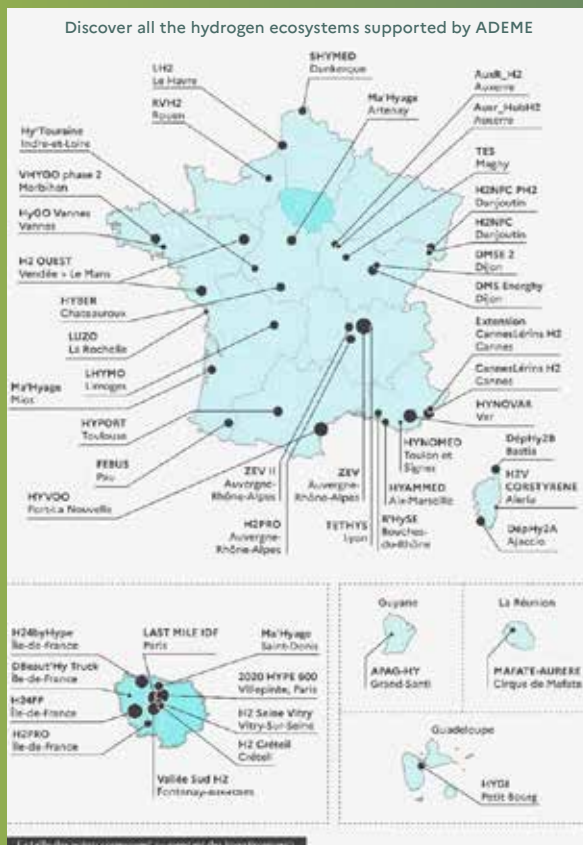
Managed by ADEME since 2018, the “Regional hydrogen ecosystems” project call offers financial support for projects covering the deployment of hydrogen vehicles and production and distribution installations, playing a part in the building of the French and European ecosystem.

Two project calls have been opened since 2018 to match initiatives by the government in developing the sector (the National Hydrogen Deployment Plan in 2018, followed by the National Hydrogen Strategy in 2020); 46 projects have been selected from these project calls.

Following the closing of the 2020 call opened in 2020, 14 new projects have been selected, including total grants of 126 million euros.

One of these projects is the “H2PRO” project, created by Watea and Fre2MoveLease, aimed at bringing to market a mobility solution for business users of hydrogen electric goods vehicles. As a result, more than 650 vehicles will be made available in France, namely in the Auvergne-Rhône-Alpes and Île-de-France regions.

The “H2 Seine Vitry” project, also selected in the second call, aims to increase hydrogen production by 2 MW in the Vitry-sur-Seine region, in Val-de-Marne. Coordinated by Hy-namics, the key objective of the project is the decarbonisation of heavy goods vehicle journeys, in particular 44 tonne vehicles, waste collection vehicles and mixing lorries.



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## 3.2 ACCELERATING BUILDING CONVERSIONS AND URBAN PLANNING

Buildings are a critical sector in terms of the energy transition and are covered by a large number of programmes aimed at reducing their greenhouse gas emissions. A significant part of the funding provided by Green OAT in 2022 was allocated to this sector, through programmes aimed mainly at accelerating the renovation of the residential and tertiary stocks, as well as through sustainable renewal initiatives covering all aspects of urban areas.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

**3,6**

Leverage effect of the PIA 1 **thermal renovation programme** (leveraging ratio of public and private funding to amounts contracted by the PIA)

**669,890**

**Energy renovation** to housing by ANAH

**96,736**

**Companies benefiting** from reduced zero rate VAT for work to improve energy efficiency

## ◆ CHALLENGES FOR THE SECTOR

### BUILDING SECTOR: THE BIGGEST CONSUMER OF ENERGY IN FRANCE

**Buildings (residential and tertiary) are the biggest consumers of final energy in France and account for 46% of consumption.**

The sector also produces 19% of the country's direct greenhouse gas emissions (scope 1), mainly from heating, a figure that increases to 28% if we consider emissions linked with the production of energy consumed in buildings (scope 2). The national low-carbon strategy (SNBC 2020) has set ambitious medium- and long-term emission reduction targets for the sector: 49% below 2015 by 2030 and full decarbonisation of the sector by 2050.

As buildings are part of the neighbourhoods and ecosystems of towns and urban areas, they cannot be considered in isolation. In effect, 40% of the carbon footprint in France is directly related to the technical choices in areas where people live<sup>3</sup>: buildings, as well as means of travel and infrastructures, etc. The levers for reducing emissions in the sector must therefore be the subject of systemic analyses in terms of regenerating its spaces.

### ENERGY RENOVATION: A KEY CHALLENGE IN ACHIEVING THE CLIMATE OBJECTIVES

**Achieving these objectives requires the use of the most powerful levers to accelerate what is still a low rate of property improvements: It is estimated that 500,000 residential sector renovations are needed every year until 2030 (370,000 high performance renovations completed a year as of 2022), and then 700,000 for the entire existing housing stock to be improved to meet the "low consumption building" (BBC) standard in 2050.**

The target also includes the elimination of all homes that "leak" heat in France by 2028, chiefly by means of the application of specific measures through the Climate and Resilience legislation. There are a number of benefits from renovations, including a reduced carbon footprint, the creation of several hundred thousand local jobs and reductions in household energy bills.

The ambitious nature of the renovation objectives mean that very significant institutional and financial resources must be committed, such as the Building Energy Renovation Plan (*Plan de rénovation énergétique des bâtiments*) (2018), and the 6.7 billion euros allocated in the Recovery Plan for investments to improve the energy efficiency of buildings.

## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATs

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Regional cohesion	P135	Residential thermal renovation - ANAH	170	38.2	163.2	102.1	140.2	See P174 MaPrime-Renov'	-	-	-
		Interest-free green loan	35	10.2	43	26.9	37.1	Number of beneficiaries of the interest free green loans	560	491	100
		Urbanism, territories and habitat improvement: "Sustainable city" plan management	2.4	0.5	2.7	1.7	2.2	-	-	-	-
		Reduced VAT for work to improve energy efficiency	1,760	682.1	1,910	1,194.5	1,876.6	Number of beneficiary companies	84,000	89,350	96,736
Ecology, sustainable transport and development	P174	Property tax exemptions for social housing agencies (HLM) and semi-public companies (SEM)	124	37.9	124	77.6	115.5	Number of HLM and SEM bodies benefiting from the exemption	7,951	7,422	7,325
		MaPrimeRenov'	709.9	159.4	1 283.7	802.8	962.2	Number of renovated properties	141,143	644,073	669,890
		Energy Transition Tax Credit (CITE)	308	75.4	100	62.5	137.9	Number of households benefiting from CITE	868,000	275,000	105,000
Recovery Plan	P362	Increase in the MaPrimeRenov' scheme*	500	112.3	-	-	112.3	-	-	-	
Public action and transformation	P348	Renovations in public buildings	90.3	20.3	279.4	174.7	195	-	-	-	
Invest for the Future Programme PIA	PIA 1	Residential thermal renovation (ANAH)	7.1	1.6	3.9	2.4	4	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	3.6	3.6	3.6
<b>Total</b>			<b>3,706.7</b>	<b>1,137.7</b>	<b>3,909.9</b>	<b>2,445.3</b>	<b>3,583</b>				

\*The amounts of eligible expenditures on this line have been allocated, in a lump-sum manner, partly to Green OATs and partly to NextGeneration EU.



### 1. ENERGY TRANSITION TAX CREDIT (CITE) AND MAPRIMERENOV'

Since 2020 the CITE has been gradually transformed into a payment, distributed by the Home Improvement Authority (ANAH). These grants, under the name "MaPrimeRénov'", help private home-owners to access more direct and easier to understand assistance for renovations to their homes, by means of a grant paid contemporaneously with the work. This work includes replacing heating systems, insulation (walls, attic spaces, windows), the installation of ventilation, and even overall renovation of the dwelling.

### 2. PROPERTY TAX EXEMPTIONS FOR SOCIAL HOUSING AGENCIES (HLM) AND SEMI-PUBLIC COMPANIES (SEM)

This finance gives an exemption, at 25%, on expenditure on energy efficiency, from the property tax on properties for more than seven thousand social housing organisations (HLM) and semi-public companies (SEM). The aim of this funding is, among others, to reduce the numbers of "heat leaking" dwellings within the social housing stock.

### 3. RESIDENTIAL THERMAL RENOVATION

This expenditure relates to the funding of the "Better Housing" programme, initiated by the ANAH and intended to support moderate income households during work to fully renovate their homes. This initiative covers all work that creates an increase in energy efficiency of at least 35% and the amount of the grant is proportional to the total cost of the work. Like MaPrimeRénov', this programme offers the bonus of eliminating "heat leak" homes for properties with an F or G energy efficiency rating before the work.

The Green OAT also finances residential thermal renovations through the Invest for the Future Programme (PIA 1).

### 4. INTEREST-FREE GREEN LOANS (ECO-PRÊT) AND REDUCED RATE VAT ON IMPROVEMENT WORK

Alongside the actions of the ANAH, fiscal tools to promote energy renovation in homes are also being used, and in particular the 5.5% reduced rate of VAT for renovation work on dwellings completed more than two years ago, as well as the interest-free green loan scheme. This latter is a zero-interest rate loan that enables home owners to finance work to improve the energy efficiency of their homes. It enables complete energy efficiency renovations of homes.

### 5. "SMART CITIES" ("VILLE DURABLE") PLAN MANAGEMENT

As well as the energy efficiency challenges, Green OATs are also playing a role in financing development and sustainable renewal projects submitted by regional authorities, developers and citizen groups, aimed at promoting new ways of thinking, building and managing urban landscapes. The "Smart City" plan includes actions relating to:

- The "EcoQuartier" approach, aimed at all types of project proposals, and supporting programmes for construction, regeneration and renovation of priority districts, applying the EcoQuartier reference criteria (incorporating all elements of sustainability);
- "EcoCités" approach, aimed at metropolitan areas, large conurbations and public regeneration agencies, in partnership with the private sector. This aims to promote sustainable and comprehensive urban strategies, taking the form of integrated urban projects.

### 6. RENOVATIONS IN PUBLIC BUILDINGS

In 2018 the Government launched a plan for the renovation of administrative complexes, intended to finance renovations in administrative complexes and other multi-occupant state-owned sites. This programme is contributing to the acceleration of the energy transition. Major renovation and rebuilding work provides an opportunity to improve the insulation of buildings and to invest in equipment that will help reduce the energy consumption of the public sector estate.

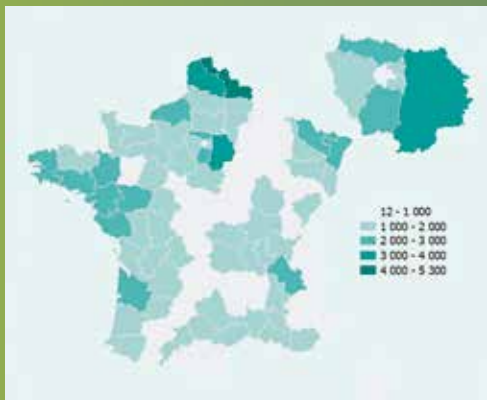


Photo credit: Freepik

## 7. FOCUS: MA PRIME RÉNOV', THE STATE FUNDED GRANT PAID FOR RENOVATIONS TO HOMES

Launched on 01 January 2020, Ma Prime Rénov' is a State funded grant paid to owner-occupiers or lessors for energy efficiency renovations to properties that are at least 15 years old. This replaces the Energy Transition Tax Credit (CITE) and the "Habiter mieux agilité" and "Habiter mieux sérénité" grants from the Agence Nationale de l'Habitat (Anah). The grant can also be obtained for homes built more than 2 years ago for replacing oil-fired heating installations.

This grant promotes ambitious renovations: Those applications that target the elimination of heat leaks, the achievement of a B or A energy rating, a total renovation or Project Management services are eligible for bonus grants.



© Regional distribution of projects funded by the Ma Prime Rénov' scheme by Département in 2022, ANAH

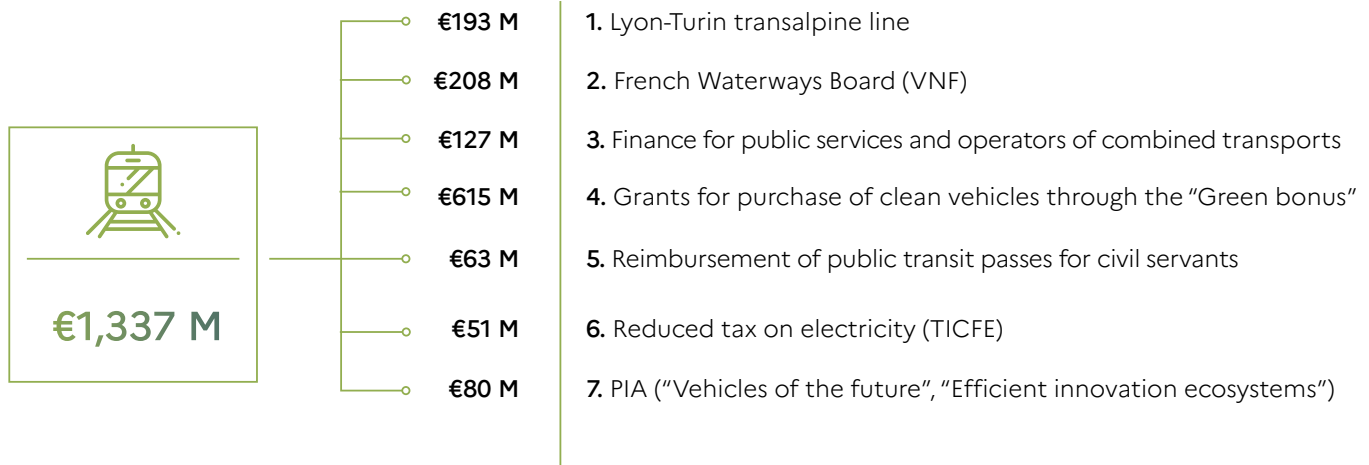
Since it was launched, the **Ma Prime Rénov' scheme has received more than 1,700,000 applications and accepted almost 1,400,000, awarding total grants of 5 billion euros.** Of these projects, 176,067 involved a total renovation, for 2 billion euros.

In 2022, the scheme enabled energy efficiency improvements in almost 670,000 homes (Ma Prime Rénov', Ma Prime Rénov' Sérénité and Ma Prime Rénov' Copropriété), for total grants worth 2.3 billion euros. 66.5% of these projects involved changes to the type of heating, mainly to air/water source heat pumps, and wood pellet stoves; 20% were for insulation improvements. The scheme has helped reduce average annual energy consumption per home by 6.89 MWh.

## 3.3 SUPPORTING THE DEVELOPMENT OF LOW-CARBON TRANSPORT

The transport sector is the sector with the highest greenhouse gas emissions in France and is therefore a priority challenge for the energy transition. The programmes funded must enable the development of zero or low emission transport solutions, such as rail and electric and hybrid vehicles. The modal shift to these modes of lower carbon footprint transport is one of the key objectives of Green OAT expenditure within the transport sector.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

**3.3**

**Leverage effect** effect of the PIA programs "Vehicles of the future" and "Efficient innovation ecosystems".

**97.5 %**

**Waterway availability** rate

**326,000**

**Green bonuses** allocated

**Modal shares:**

- . 10.7% of goods traffic is by rail
- . 2.1% of goods traffic is by waterway
- . 17.8% of passenger traffic is by public transport

## ◆ CHALLENGES FOR THE SECTOR

### TRANSPORT: THE SECTOR WITH THE HIGHEST EMISSIONS IN FRANCE, WITH AMBITIOUS DECARBONISATION TARGETS

The transport sector is the biggest emitter of greenhouse effect gas in France (29.9% in 2021<sup>2</sup>), of which 90% is from road transport.

The emissions by the sector as a whole still exceed the targets set in the first National Low-Carbon Strategy (SNBC) and the official European strategy, and the reasons for this are lower than expected energy efficiency gains and a slower modal shift compared to the initial ambitions.

### MANY LEVERS AVAILABLE TO ACHIEVE THESE OBJECTIVES

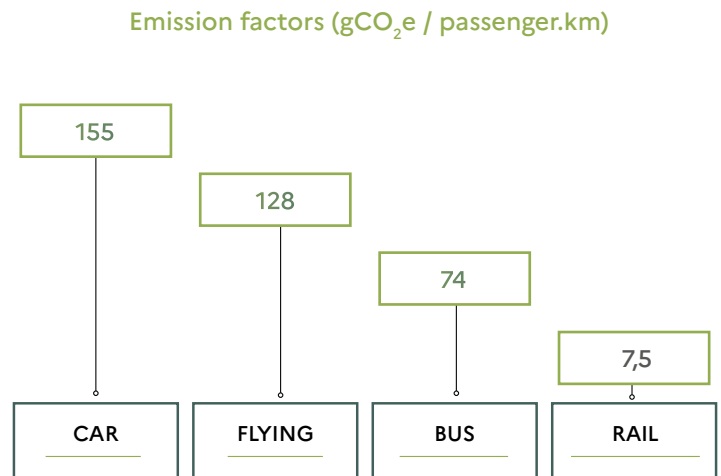
In order to achieve carbon neutrality in 2050, the revised SNBC objective in 2020 and the official European strategy, the decarbonisation of the transport sector needs to be achieved more quickly, for all transport and mobility modes and by mobilising all existing decarbonisation levers.

Major advances are therefore hoped for, such as the complete transformation of the vehicle stock, the shift towards highly decarbonised fuels, improvements in the energy performance of vehicles, managing growth in demand (in terms of passengers and goods), the acceleration of the modal shift towards lower emission modes and finally the optimising of vehicle use.

### IMPORTANCE OF THE MODAL SHIFT IN DECARBONISING THE SECTOR

Road transport produces very high levels of emissions (in second place after air transport) and accounts for 82% of journeys in France, which explains why total emissions linked with this mode of transport are so high.

The carriage of goods by HGVs, which has been increasing with the growth in international trade, accounts for 23.5% of road transport emissions. The modal shift, i.e.: the shift of a share of air and road transport to rail, waterways, sea and low-carbon modes, is a critical lever for the decarbonisation of the transport sector.



Source: Institut Louis Bachelier, chaire Énergie et Prospérité

## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATs

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P203	Financing French Waterways Board network maintenance	245.2	55	244.9	153.2	208.2	Waterway availability rate (%)	94.9	97.9	97.5
		Support for combined transport (rail, maritime and inland waterways)	111.7	25.1	162.1	101.4	126.5	Modal share (%) of public transport in land passenger transport	13.8	14.9	17.8
								Modal share (%) of rail transport in land goods transport	9.6	10.7	10.7
								Modal share (%) of water transport in land goods transport	2	2	2.1
	Reduced tax on electricity (TICFE) for operators of rail or cable transport or electric or hybrid buses	196	40.9	16	10	50.9	Volume of electrical consumption covered by the reduced TICFE rate (in TWh)	7.4	9.5	0.8	
P174	Green vehicle bonus	435.1	97.7	827.6	517.6	615.3	Number of bonuses allocated	117,000	270,000	326,000	
Recovery Plan	P362	Lyon-Turin rail link	195.7	43.9	238.3	149	193	-	-	-	-
Managing public finances and human resources	Multiple	Reimbursement of public transit season tickets for civil servants	72.5	16.3	74.7	46.7	63	-	-	-	-
Invest for the Future Programme PIA	PIA 1 and 2	Vehicles of the future	62.4	14	69.3	43.3	57.4	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	2.2	2.3	2.2
	PIA 3	Faster development of high-performing innovation ecosystems (sustainable transport and mobility)	19.2	4.3	29.2	18.3	22.6	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	3.3	4	5.9
<b>Total</b>			<b>1,337.8</b>	<b>297.2</b>	<b>1,662.1</b>	<b>1,039.5</b>	<b>1,336.7</b>				

## 1. LYON - TURIN TRANSALPINE LINE (RECOVERY PLAN)

The European rail link is a 57km long international tunnel through the Alps. It will offer an alternative to road freight which is endangering the environmental balance of the Alps. Currently nearly 3 million HGVs drive through the French-Italian Alps every year. For an equivalent journey, the global voyage by train (train + road for pre and post shipment) is 4 to 5 times less polluting than road transport, even if over twenty years HGVs have significantly reduced their greenhouse gas emissions. Eventually the Transalpine link will carry 40 million metric tons of goods a year and 5 million passengers, realising the objective of a more environmentally friendly modal shift. The Transalpine will also help to cut atmospheric pollution and the noise created by road transport, as well as the negative impacts on neighbouring communities.

The Transalpine link is phased over time and the line is scheduled for completion at the end of 2029. This new French-Italian tunnel has received tripartite funding, from the State in France and Italy and from the European Union. €200 million have been allocated under the France Relance plan to fund the project.

## 2. FRENCH WATERWAYS BOARD (VNF)

This action is aimed at supporting the policies of the VNF, including the expansion of the infrastructure of the network, thereby promoting a modal shift from the road carriage of goods to water based freight, thereby contributing to reducing the environmental impact of the sector. The Board manages a waterway system of 6,700 km of rivers, canals and canalised rivers, 4,000 civil engineering structures and 40,000 ha of public waterways domain. The Green OAT eligible expenditure covers the public service subsidy (SCSP) paid to VNF. These cover the maintenance work on the navigable waterways managed by the State.

## 3. FINANCE FOR PUBLIC SERVICES AND OPERATORS OF COMBINED TRANSPORT (RAILWAY, MARITIME, WATERWAY)

This Green OAT funded programme combines support for the development of alternative transport modes to roads, for carrying passengers and goods. This coordinated use of alternative modes is fostering a sustainable and organised shift throughout France. This involves in particular funds supporting the operation of transport services, strengthening infrastructures, the Alpine Rolling Highway and the sea highways.

## 4. GRANTS FOR PURCHASES OF ZERO-EMISSION VEHICLES THROUGH THE "GREEN BONUS"

This scheme, following on from the Grenelle de l'environnement and regularly enhanced since, is aimed at providing grants to buyers of new low CO<sub>2</sub> emission cars. A €1,000 reduction in the bonus scale for electric vehicles was initially scheduled for 01 January 2022. Taking into account the tensions in manufacturers' supply chains because of the semi-conductor shortages and the sharp upwards movement in fuel prices, the previous rate, with a grant of 27% of the cost of buying an electric vehicle, with a ceiling of €6,000 (€4,000 for a legal entity) was extended several times, first of all in a Decree on 29 December 2021, for six months (until 1 July 2022), and subsequently in a second Decree on 29 June 2022 for a further 6 months.

## 5. REIMBURSEMENT OF PUBLIC TRANSIT PASSES FOR CIVIL SERVANTS

This measure enables the partial funding of public transport season tickets for civil servants, covering their travel to and from work. The arrangement thus encourages a transport mode shift towards lower energy use modes, especially as the use of public bicycle rental services are also included in this system.

## 6. REDUCED TAX ON ELECTRICITY (TICFE)

The reduced rate of domestic consumption-tax on the supply of electricity applies to rail or cable transport and to electric and hybrid buses. By lowering the cost, it encourages a modal shift towards sustainable transport modes.

For 2022, the year in which the tariff shield came into force (as of 01 February), the fiscal expenditure cost mainly related to consumption in the month of January. During the rest of the year, the reference tariff was at the same level as the reduced tariff, resulting in the zero cost of the measure.

## 7. INVEST FOR THE FUTURE PROGRAMME (PIA)

In the context of the PIA, two initiatives funded by Green OAT in 2022 were aimed at boosting sustainable transport and mobility:

- “Vehicles of the Future” initiative, aimed at developing innovations to enable the speeding up of the deployment of more energy efficient terrestrial and maritime transport technologies, with a reduced impact on the environment and the climate. This programme is aimed at small and medium-sized enterprises (SME) proposing targeted, innovative research and development projects with significant potential for the French economy, in particular for creating jobs.
- “Faster development of high-performing innovation ecosystems” initiative, funding projects that will help accelerate the bringing to market of innovative technologies in terms of transport, logistics and mobility, from the industrial research phases to operational demonstrations: automated vehicles, zero-carbon and more efficient terrestrial vehicles, guided transport, integrated road infrastructures, etc.



8.

## FOCUS: THE ECOLOGICAL BONUS, STATE AID GRANTED FOR PURCHASES OF LOW EMISSION VEHICLES

The Ministry for the Ecological Transition and Regional Cohesion, on one hand, and the Ministry for the Energy Transition, on the other, have created an “Ecological Bonus”, a grant to any purchaser or leaser (with a leasing agreement of at least two years) of a low emission, electric, hybrid rechargeable or hydrogen vehicle, new or second-hand.

The amount of the grant is based on the price of the vehicle, the applicant (individual or business) and the reference fiscal income per person, for private individuals.

In 2022 the number of bonuses allocated came to 326,000, with 71% for new electric vehicles (including two or three wheeled motor vehicles and quad bikes), 8% for second-hand electric vehicles and 21% for new hybrid rechargeable vehicles. This was almost 20% higher than the 270,000 bonus grants made in 2021.

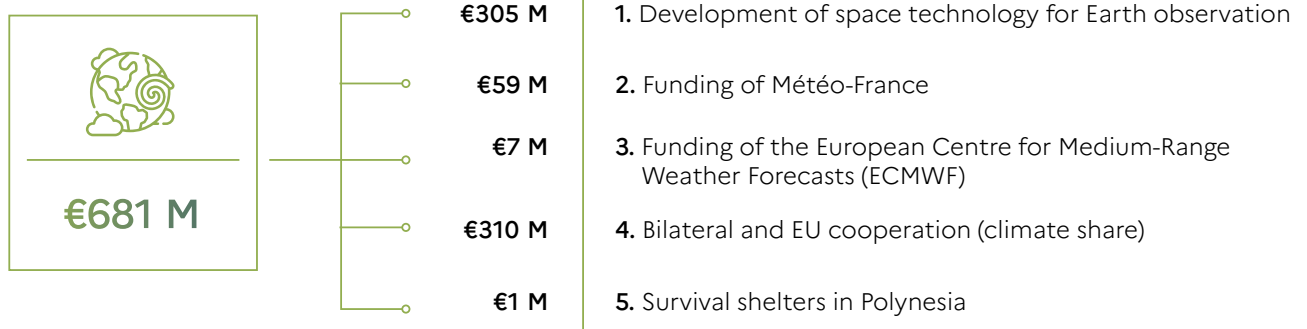
The scheme was carried over into 2023, with a change in the allocation rules, as, in terms of private cars, it applies only to vehicles using electricity, hydrogen or a combination of the two, and weighing less than 2.4 tonnes, with a grant still at the level of 27% of the purchase cost, but with a ceiling of €5,000 for private vehicles and €3,000 for legal entities.



# 3.4 BUILDING KNOWLEDGE FOR REGIONAL ADAPTATIONS TO CLIMATE CHANGE

France is one of most advanced countries in terms of planning for and adapting to climate change. The Second National Climate Change Adaptation Plan (PNACC), covering the period 2018-2022, targeted 58 actions contributing to effective adaptation to climate change. A new Plan is under preparation and should be published between now and the end of 2023.

## ◆ ELIGIBLE EXPENDITURE



### Performance indicators

**1.9 publications**

by Météo-France researcher

#### French research bodies produce:

- . 2.8 % of reference global publications on space research
- . 14.2 % of reference European publications on space research
- . 29.1 % of reference publications on space research in the France-Germany-United Kingdom zone

## ◆ CHALLENGES FOR THE SECTOR

### CLIMATE CHANGE REQUIRES ADAPTATION INITIATIVES ON A NATIONAL SCALE

**The changes in the climate are unprecedented: Climate change is already leading to impacts being felt by society as a whole and in a number of key economic sectors.**

In dealing with these impacts, two complementary strategies are needed: mitigation and adaptation. Mitigation helps limit the climatic phenomena by reducing greenhouse gas emissions; adaptation means building resilience into our society to cope with the inevitable climatic impacts. Adaptation is achieved through governance, planning and investment, by changing models and how we behave. This makes it possible to reduce the level of vulnerability of a system or socio-economic activities to climatic hazards.

France is at an advanced stage in planning for the adaptations for climate change and has, since 2011, launched two national adaptation plans (PNACC 1 and 2) with the objective of defining operational measures to help deal with a changed climate.

The second version of the PNACC (2018-2022) placed an emphasis, among others, on the interconnection between adaptation policies at various regional levels, with particular attention to the Overseas Territories most vulnerable to the impact of climate change. It was referenced against the hypothesis of a 1.5 to 2°C increase in global temperatures, compared to the 19th century. In the context of drawing up the new Plan, a pessimistic scenario of a 4°C temperature rise by 2100 needed to be factored in. A consultation exercise was launched in 2023 by the Ministry for the Ecological Transition and Regional Cohesion concerning the resources required to deal with the increased level of global warming. Alongside the measures already implemented, including in particular the water plan and green funds, deployed as of 2023, the Government has launched three initiatives: (i) the updating of various reference systems used for anticipating the effects of climate change, (ii) a plan to support local authorities and (iii) vulnerability analyses to enable adaptations in economic activities in the agriculture, tourism, construction, energy and telecommunications sectors.

In addition, the Climate and Resilience Law of 22 August 2021 placed regional planning at the heart of actions in anticipation of loss of coastal areas and remedial actions. 22% of the coastline of Metropolitan France is being lost to marine erosion and this natural phenomenon, aggravated by human activities, is accelerating with climate change. The focus is on understanding and anticipating the dynamics of this with the aim of reconfiguring the regions and gradually, and in stages, organising the movement of property and people. The challenges are all the more discernible in the, very popular, coastal regions, containing 9% of the population on 4% of the land. The State and its agencies, such as the CEREMA, BRGM and the Conservatoire du Littoral, have been mobilised in support of this new policy.

### BETTER UNDERSTANDING OF THE CHALLENGES, TO AVOID MALADAPTATION

**The complexities of the questions raised by climate change often lead to inappropriate adaptations, where the actions being implemented result in an increased vulnerability of the systems to climate change, instead of reducing it.**

This can be because of an inefficient use of resources or calibration errors, arising from the scale of uncertainties concerning present and future impacts of climate change. It can also involve actions that destroy or degrade biodiversity and ecosystems, reducing their ability to mitigate climate change, and thereby exacerbating its impacts.

One of the best ways of avoiding the risks of maladaptation lies in a better understanding of what the future risks are, through improved knowledge of the impacts of climate change, at the national and local levels. The second national adaptation plan led to the creation of a Climate Change Adaptation Resource Centre, giving access to operational information on the challenges of climate change, providing effective tools for everyone involved (lists of local stakeholders, tools and methods, project examples, etc.). In addition, a large number of free access databases are available to provide to climate projections and boost understanding: the DRIAS portal at Météo-France, the online Climat HD application, etc.

## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATs

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Recovery Plan	P362	Survival shelters in French Polynesia	1	0.2	0.6	0.4	0.6	-	-	-	-
Research and higher education	P172	European Centre for Medium Range Weather Forecasts (ECMWF)	7.8	1.8	8.4	5.3	7	-	-	-	-
	P193	Developing space research technology for improved Earth observation.	293	65.8	297.5	186.1	251.8	Percentage of publications by programme operators in global scientific output	3.3	3.1	2.8
								Percentage of publications by programme operators in European scientific output	12.9	13	14.2
								Percentage of publications by programme operators in the scientific output in the France - Germany - United Kingdom perimeter	28.5	29.1	29.1
	EUMETSAT	64.4	14.5	62.4	39	53.5	-	-	-		
Ecology, sustainable transport and development	P159	Funding allocated to Météo-France	68.4	15.4	69.4	43.4	58.8	Number of scientific publications, in peer-reviewed journals, by Météo-France researchers	2.2	2.1	1.9
Public development aid	P209	Bilateral cooperation: adaptation and mitigation to climate change	209.5	47	306.1	191.4	238.5	-	-	-	-
		EU community cooperation: adaptation and mitigation to climate change	85.7	19.2	83	51.9	71.1	-	-	-	-
<b>Total</b>			<b>729.8</b>	<b>163.8</b>	<b>827.4</b>	<b>517.5</b>	<b>681.3</b>				

## 1. DEVELOPING SPACE RESEARCH TECHNOLOGY FOR IMPROVED EARTH OBSERVATION

The purpose of the French Space Research Centre's (CNES) "Space research" programme is to ensure that both France and Europe master the technologies and space systems needed to meet the research, security, economic development, land and urban planning and environmental challenges facing them. The programme also funds France's contribution to the European Organisation for the Exploitation of Meteorological Satellites (Eumetsat), which develops and operates a fleet of European meteorological satellites in geostationary (Meteosat) and polar (Metop and EPS) orbit, and publishes the data. One of the major challenges of the programme is to improve knowledge of the major scientific issues in terms of sciences of the Universe and the functioning of the Earth system. The earth observation programmes have enabled in particular a better understanding of climate change by supplying researchers with the dynamic data essential in validating climate change models.

One of the leading five countries in the Shanghai global ranking for earth observation science, France decided, following COP21, to supplement its observation system with two satellites to precisely monitor the principal greenhouse gases. The Microcarb mission, launched in 2021, monitors carbon dioxide, and the Merlin mission, which will monitor methane, will be launched in 2028 in partnership with Germany. French scientific communities are playing a critical role at the global level and more specifically in Europe in the choice of programmes and their scientific exploitation. The CNRS, the CNES and their historic partners have established a dominant position in the context of space projects.

## 2. FUNDING ALLOCATED TO MÉTÉO-FRANCE

The work of the "Expertise, geographic and meteorological data" programme, run by Météo-France, is feeding the constant enhancements to the services offered by the agency, in response to the need to understand and predict complex phenomena that are themselves the origin of major challenges (storms, avalanches, torrential rainfall, etc.). In relation to adaptations to climate change, an understanding of past and future climates is another priority focus for Météo-France. Using its powerful climate models, Météo-France is responsible for forecasting the impacts of climate change and has a key role in decision aid for policy decisions, in an environment that is increasingly dependent on meteorological conditions.

## 3. FUNDING ALLOCATED TO THE EUROPEAN CENTRE FOR MEDIUM RANGE WEATHER FORECASTS (ECMWF)

Green OATs also contribute to funding the ECMWF, the world's most technically advanced body in terms of numerical meteorology. This has 23 affiliated member States, with a further 12 having signed cooperation agreements. This institution carries out research and development and operational output in the field of medium-term meteorological forecasts. Historically located in Reading, United Kingdom, the ECMWF has located its new data centre in Bologna, Italy, and relocated some of its teams to Bonn, Germany.

#### 4. BILATERAL AND EU COOPERATION - CLIMATE CHANGE ADAPTATION AND MITIGATION ASPECTS

Credits for climate, adaptation and mitigation amounted to 20.7% of bilateral credits in 2022, an increase on 2021 (18.3%). This increase is mainly in favour of the AFD, with the proportion of projects (covering all donations-projects eligible for public support for development) satisfying the “climate” criteria rising from 35.6% to 41.7%. France is firmly committed to its commitment to implement the Paris Agreement and to boosting its climate ambitions. More specifically, the new strategy of international cooperation for development, given effect by the International Cooperation and Development Interministerial Committee (CICID) 2023, retained a target of 6 billion euros a year for climate finance until 2025, as well as a billion euros a year for biodiversity.

Green OAT eligible expenditure in 2022 also contributed to the European Development Fund (EDF), the EU’s main foreign development initiative in 79 countries in Sub-Saharan African, the Caribbean and the Pacific (ACP), and the Over-Seas countries and territories (PTOM). A provisional estimate is that the proportion of EDF payments for climate change adaptation and mitigation in 2022 came to 17%, significantly above the target of 11.3%. Although the EDF instrument is scheduled to end, the overlapping of funding from the 11<sup>th</sup> EDF and the latest allocation from the *Neighbourhood, Development and International Cooperation Instrument – Global Europe* (NDICI) should make it possible to maintain the volume of European public sector support for development allocated to climate change adaptation and mitigation. In the context of this new instrument, an objective has been set for targeting climate change related actions (i.e.: a sum of 24 billion euros out of a total multi-year envelope of 79.5 billion euros).

#### 5. THE CONSTRUCTION OF SURVIVAL SHELTERS ON THE TUAMOTU ARCHIPELAGO IN FRENCH POLYNESIA.

Continuing the programme for the construction of survival shelters launched in 1984 in French Polynesia, new construction projects have been approved. The priority is to protect the local populations against major meteorological events that could strike the archipelago. Climate change forecasts for the coming years indicate that average sea levels will rise, that there is an increased risk of natural catastrophes and in the intensity of these. Based on these forecasts, significant and urgent measures need to be implemented to prepare for these events, including the construction of survival shelters.

À QUOI MA COMMUNE  
DEVRA-T-ELLE S'ADAPTER EN 2050 ?



Photo credit: Météo France

6.

## FOCUS: CLIMADIAG ENTREPRISE AND CLIMADIAG COMMUNE, TWO TOOLS AIMED AT IMPROVING CLIMATE AWARENESS IN THE REGIONS

Météo France has provided its “Climadiag” software, a self-diagnostic tool that can identify those climate changes for which adaptations will be required leading up to 2050, free of charge for Communes, Intercommunalités and companies. The information it produces is calculated on the basis of reference climatic forecasts at the regional level, compiled by Météo France.

For the Communes, “Climadiag Commune” produces a list of 21 climatic indicators specific to local regional characteristics. These indicators cover five key themes: the climate, natural risks, health, agriculture and tourism. The Commune is thus able to obtain a diagnosis of how these various indicators will evolve in its area, identifying the major natural risks as well as climatic challenges.

In terms of companies, “Climadiag Entreprise” makes it possible for a company to obtain a diagnosis of its vulnerability of critical importance in developing an adaptation strategy, based on its economic sector.

To do this, the company assesses the impact that climatic events have on it by means of an impact grid: this enables it to cross-reference various risk factors (heatwave, cold spell, extreme rainfall, etc.) with the various operations it needs to carry out (raw material supplies, production processes, etc.). The tool then cross-references this assessment with a scenario including the predicted effects of climate change and issues a diagnosis identifying the risks and possible future opportunities for the company.

## 3.5 PROTECTING BIODIVERSITY AND ECOSYSTEMS

The programmes relating to living resources cover three principal aims: Understanding biodiversity, protecting natural milieux and changing fishing, agricultural and forestry practices. Managing the nation's forestry resources and the forest products sector, is a key challenge for France, especially considering the significant contribution made by forests in maintaining biodiversity and sustaining local economies.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

**96.6%**

of public sector forests are managed

**4.2%**

of mainland France subject to stringent protection measures

**33.2%**

of the national territory is covered by a protected area

**11%**

of French agricultural area is designated as "organic"

## ◆ CHALLENGES FOR THE SECTOR

### THE WEALTH OF FRANCE'S NATURAL RESOURCES

France (Mainland and Overseas Territories) has extraordinarily rich and diverse natural resources.

These are hosts to 10% of all known species around the world, including endemic species, and 81% of European ecosystems are present in mainland France. This reflects the scale and variety of its maritime milieux as well as the wide range of habitats (alpine, Atlantic, continental, tropical).

There are three challenges in protecting this diversity, in terms of ecology, socio-economics and natural resources. As well as ensuring the functioning of the ecosystems themselves, biodiversity delivers many eco-systemic services for society, and explains the importance we assign to being able to pass on this natural heritage to future generations, making biodiversity protection a critical challenge, at the same level as the other priority issue of climate change, to which it is closely linked. It is estimated activities in France that are based on ecosystems (agriculture, livestock, wood, fish, etc.) annually generate more than 80 billion euros in turnover, as well as sustaining a large number of direct and indirect jobs.

France has very substantial forestry assets with forests in mainland France covering 17 million hectares, 31% of the land, together with 8.2 million hectares covered by forests in the Overseas<sup>4</sup>. Forests are also a treasure trove of biodiversity, containing a very large number of tree species (the forests of mainland France are home to 138 and over a thousand in the in Over-Seas Départements and regions) and diversity of forest milieux throughout France. French forests are also a critical vector in economic development: The sector accounts for nearly 400,000 jobs and €60 billion in turnover<sup>5</sup>.

France has a particular responsibility for marine biodiversity. With its overseas departments and regions, its overseas communities and its Southern and Antarctic Lands, it has a coastline of 18,450 km, of which 5,853 km are in mainland France. Its maritime domain is the second largest in the world, after that of the United States, with a surface area of more than 10.2 million km<sup>2</sup> if the territorial sea, the exclusive economic zone and the continental shelf are included.

### VARYING QUALITIES OF MAINTENANCE OF NATURAL HABITATS

These natural resources are endangered in France as just 22% of habitats are in a good condition, with habitats in the Alpine regions being in better condition than those in the Atlantic regions.

There are several factors involved in the erosion and destruction of biodiversity, with the main one being the transformation of natural milieux into artificial milieux. Other key factors in the loss of biodiversity are pollution, over-exploitation, climate change and invasive species.

### TOOLS FOR PROTECTING BIODIVERSITY

**A number of solutions are however being deployed to help prevent species extinctions and the degradation of ecosystems in France, and to restore natural habitats.**

These include the creation of protected areas, helping supporting sustainable activities and leisure pursuits based around these ecosystems. Examples include the Natura 2000 sites, National Parks and Natural Maritime Parks, covering a total of 21% of the landmass and 22% of French waters. There is also legal protection for 7,000 animal and vegetable species, prohibiting the exploitation and destruction of these. These initiatives have been defined and implemented in several national plans and laws, such as the Law of 8 August 2016 concerning the restoration of biodiversity, nature and landscapes, the Biodiversity Plan launched in July 2018 and the 2030 National Biodiversity Strategy, covering the period 2022-2030.

As well as protecting biodiversity, understanding biodiversity is also a major challenge and is the subject of many initiatives, supported by, among others leading research institutes, and in particular the National Biodiversity Observatory, the French National Natural History Museum and the Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER).



## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATs

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Agriculture, food industry, forestry and rural matters	P149	Sustainable forestry management and development of the timber industry	265.3	59.6	260.9	163.2	222,7	Percentage of managed forest areas in public ownership (%)	96.3	96.6	96.6
		Tax credit for organic farmers	75	21,5	89	55,7	77,2	Number of farming businesses benefiting from the tax credit	18,633	22,529	27,136
		“Organic future fund” (Fonds Avenir Bio)	5.2	1.2	10.2	6.4	7.5	Percentage of organic farms in total agricultural land area in use(%)	9.5	10.3	11
		Public subsidy of the Agence Bio	2.7	0.6	3.7	2.3	2.9	-	-	-	-
Ecology, sustainable transport and development	P113	Landscape, Water and Biodiversity programme to protect environments	231.5	52	301.2	188.4	240.3	Percentage of mainland France subject to stringent protection measures	-	1.9	4.2
								Percentage of the national territory covered by a protected area	23.5	23.8	33.2
<b>Total</b>			<b>579.7</b>	<b>134.8</b>	<b>665</b>	<b>415.9</b>	<b>550.7</b>				

## 1. LANDSCAPE, WATER AND BIODIVERSITY MANAGEMENT PROGRAMME

This Green OAT funded programme covers a number of initiatives aimed at ensuring the protection and sustainable use of water, natural areas, terrestrial and marine biodiversity, the countryside and natural mineral non-energy resources, with a high level of local territorialisation and the integration of environmental elements as far upstream as possible in regeneration and urban planning projects. The first initiative to be funded, "Sites, paysages et publicité" ("Sites, Landscapes and Publicity") is focussed on three policies: The maintenance of the diversity of landscapes at the national level, the protection of natural areas through the classified sites policy, and support for World Heritage classification. The second initiative, "Gestion des milieux et biodiversité" ("Managing milieux and biodiversity"), is aimed at applying European Directives relating to water and nature, the implementation of plans and laws at the national level (National Biodiversity Strategy, Biodiversity Plan, etc.), as well as combating biodiversity loss, in particular within sensitive areas.

## 2. FOSTERING GREENER AGRICULTURE

The programme encourages farm operations to stop using synthetic farm inputs, by supporting the growth of organic farming practices. There are three elements to the Green OAT funding: Support for the Fonds Avenir Bio, created in 2008 and aimed at fostering and supporting projects for expanding the French organic farming sector, Agence Bio subsidies, aimed at communicating and providing information on organic farming and facilitating coordination between stakeholders, and finally, a tax credit for organic farmers.

## 3. SUSTAINABLE MANAGEMENT OF FORESTS AND DEVELOPMENT OF THE FORESTRY SECTOR

This huge programme includes the regeneration and long-term management planning for private and public sector forests. There are two public sector stakeholders responsible for this strategy. Green OATs are financing part of the budget of the National Forestry Office (ONF), a public industrial and commercial body set up in 1964 with the principal roles of implementing the forestry policies and ensuring the management and operation of the public sector woods and forests.

Green OAT also contributes to funding the National Centre for Forest Owners (CNPF), which is tasked with promoting the management of privately owned forests (3.5 million owners) and improving their productivity by promoting sustainable forest management. This body also applies the key elements of the National Forest and Forestry Industries Programme:

- Improving the sustainable management of forests to bring more wood to market;
- Leading change through innovation, knowledge transfers and partnerships;
- Adapting the operation of the CNPF for its new organisation.



4.

## FOCUS: THE CREATION OF A ORGANIC HERITAGE SOFT WHEAT INDUSTRY, A PRIZE WINNING PROJECT FROM FONDS AVENIR BIO IN 2022

Through its project calls, **Fonds Avenir Bio** provides funding for economic operators with collective projects at various stages within the sector (upstream and downstream) and **working to expand the farmed area and production of organic agriculture in France**. 12 projects received support from Fonds Avenir Bio, as part of the Recovery Plan.

As part of the work to support the structuring of the French organic production sector, the 2022 round selected a project developed by the SARL Ferme des Trois Rois and EARL La Petite Beauce, aimed at **creating an “organic heritage soft wheat” sector in the Centre-Val-de-Loire region**. The support for the project includes the investment in storage, grading and processing of organic wheat from heritage varieties, with a focus on their organoleptic properties, in order to build a local organic wheat industry.

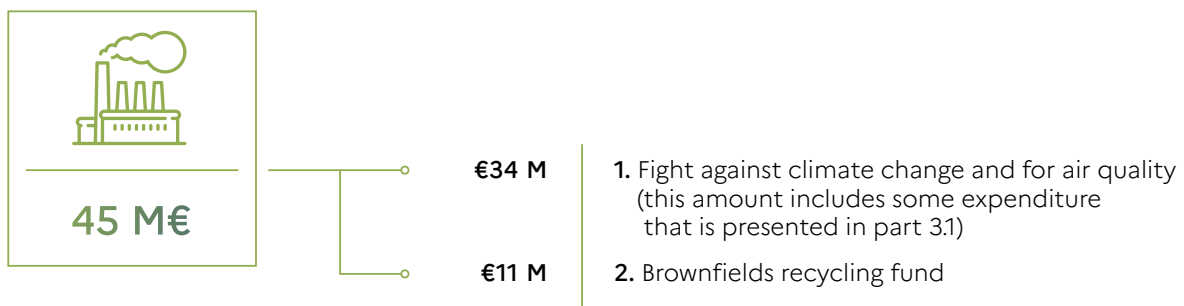
This will be built through committed partnerships, both upstream and downstream: the Association Moisson d’Avenir, together with the company Les Moulins Viron, will identify the wheat varieties based on downstream needs. Once these varieties have been identified, the Ferme des Trois Rois will supply the farmers with the wheat seed, which once harvested, will be ground into flour (through a partnership with la Petite Beauce) for use by artisans, bread bakers and pâtisseries, and shelled grain for Moulins Viron.

The Ferme des Trois Rois, project leader, has registered the “Trésors de Beauce” brand, which certifies vegetable proteins grown in ways that protect the environment and human health: the brand has been awarded the “100% Agriculture Biologique” and “Haute Valeur Environnementale” labels.

## 3.6 COMBATING POLLUTION

Pollution has significant impacts in terms of human health and quality of life. Air pollution in particular results in high levels of health-related and economic costs for society. European legislation sets threshold limits for certain atmospheric pollutants, meaning therefore that air quality monitoring and improvement programmes need to be financed at the national and local levels.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

Annual emissions of atmospheric pollutants (in kt) and reduction from 2021:

**NO<sub>x</sub>**

726 (-3.9%)

**NH<sub>3</sub>**

545 (-0.4%)

**VOCnm**

1,119 (-3.9%)

**PM2.5**

169 (-10.6%)

## ◆ CHALLENGES FOR THE SECTOR

### AIR POLLUTION ARISES FROM MANY ECONOMIC ACTIVITIES

There are many mechanisms behind changes in air quality, as they can result both from natural phenomena (fires, natural aerosols, etc.) and, in most cases, man-made phenomena.

Very many human activities are involved in producing atmospheric pollution: Road transport is the leading producer of nitrogen oxide (NO<sub>x</sub>) pollution, the residential and industrial sectors produce most particulate pollution PM<sub>10</sub> and volatile organic compounds, sulphur dioxide (SO<sub>2</sub>) results mainly from industrial activities, and agriculture is the leading cause of ammonia pollution (NH<sub>3</sub>). There are however significant geographic disparities, as well as very large seasonal components, pollution can be aggravated under certain meteorological conditions.

### AIR QUALITY IN FRANCE IS SUBJECT TO STRICT MONITORING

**Managing air quality is mainly the responsibility of and funded by the ministry of Ecological Transition and Territorial Cohesion, which installs the monitoring equipment: At the national level, air quality is monitored by the Central Air Quality Monitoring Laboratory (LCSQA) which provides the technical coordination for the air quality monitoring system.**

At the regional level, approved air quality monitoring associations (AASQA) constantly measure the levels of various atmospheric pollutants. There are a number of tools used that enable a real-time monitoring of air quality, thanks to observation maps and forecasting on a variety of scales, such as the Prev'air forecasting system, or the "Atmospheric Vigilance" tool. The monitoring of air quality is mandatory and regulated by European Directives.

### ATMOSPHERIC POLLUTION CAUSES HEALTH AND ECONOMIC HARM

**The impact of atmospheric pollution on health is very serious: In France, fine particulates lead to 40,000 premature deaths a year<sup>3</sup> and nitrogen dioxide, around 7,000.**

Particulates in outside air have been classified as carcinogenic since 2013, because the fine particles, in particular, can penetrate deep inside an organism and spread to all organs. Pollution is responsible for triggering illnesses such as asthma, and more generally respiratory and cardiovascular problems, that can lead to hospitalisation and, in more severe cases, death.

The economic and financial impacts of air pollution are also high and have been calculated in numerous studies. A Senate report in 2015 estimated that the social cost for France of air pollution was between 68 and 97 billion euros a year, with a very large percentage linked to health impacts. More recently, the first comparative analysis of the cost of pollution within major European cities, published by the European Public Health Alliance (EPHA) and carried out in France by the RESPIRE charity, suggested that the average annual cost of air pollution was €1,000 per person. According to this same analysis, the transport sector was the leading source of air pollution and thus the main generator of these socio-economic costs.

3 - Pollution de l'air ambiant : nouvelles estimations de son impact sur la santé des Français (santepubliquefrance.fr)

## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATs

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P174	Fighting climate change and promoting air quality	45.1	10.1	38.1	23.8	34	Annual emissions of atmospheric pollutants (kt):	-	-	-
								NOx	737	756	726
								NH <sub>3</sub>	560	547	545
								VOCnm	1.125	1.164	1.119
								PM2,5	172	189	169
Recovery Plan	P362	Brownfield regeneration	4	0.9	16.4	10.3	11.2	-	-	-	
<b>Total</b>			<b>49.1</b>	<b>11</b>	<b>54.5</b>	<b>34.1</b>	<b>45.1</b>				

## 1. FIGHT AGAINST CLIMATE CHANGE AND FOR AIR QUALITY

There are two major areas of work in implementing the international air quality standards: Firstly, an inventorying of the pollutants and their concentrations at relevant spatial and temporal levels, and secondly, the putting into place of effective measures to achieve the national targets for reducing pollutant concentrations.

The solutions in protecting air quality therefore seem highly comparable to those being mobilised in the fight against climate change. There is thus a synergy with the expenditure allocated to the five other Green OAT frameworks (buildings, living resources, transport, energy and adaptation) that also help reduce pollution.

### • Financing air quality protection plans

European Directive 2008/50/EC, or the “Air Quality” Directive, states that member States must implement action plans for zones in which the air quality threshold values are being exceeded. These “Plans de Protection de l’Atmosphère” (“Air Quality Plans”) (PPA), drawn up at local levels, apply to urban areas with more than 250,000 inhabitants or in towns in which the regulatory threshold values are being exceeded. The PPA defines the objectives designed to bring the pollutant concentrations in the ambient air down to levels that comply with the threshold values.

Atmosphere Protection Plans must be reviewed every five years and, as appropriate, revised, applying a procedure spread over three years. A number of regions are currently reviewing their PPAs to make them more ambitious; at the same time others are five years old and therefore need revising. On top of this, the downwards revisions of regulatory threshold values mean that the regions are having to intensify their initiatives to meet the latest WHO values.

Expenditure in 2022 covered the following elements:

- Revisions of PPAs;
- Environmental assessments of PPAs and some of the costs of the mandatory public inquiry;
- Support for the roll-out and monitoring of previously adopted PPAs;
- Support for DREAL for communication initiatives

### • Financing of air quality monitoring laboratories and associations (LCSQA, AASQA, etc.)

This funding provides support for the work of various organisations measuring air quality, including the French Interprofessional Technical Centre for Air Pollution Studies (CITEPA) and the Central Laboratory for Air Quality Surveillance (LCSQA), as well as local bodies. The LCSQA is a scientific interest grouping with responsibility, since 2011, for the technical coordination of air quality monitoring. The LCSQA continued its work in 2022 providing scientific, technical and strategic support to the ministry of the Environment. In particular it coordinated with stakeholders on the implementation of the National Air Quality Monitoring Plan. It also continued its work on the chemical characterisation of the sources of particulates and provided assistance to the official Associations Agréées de Surveillance de la Qualité de l’Air (AASQA), in order to provide the network with the data needed for analysing the contributions from the various fine particulate sources, as well as for the real-time forwarding of data during national scale pollution incidents.

The LCSQA also continued its coordination of the ongoing monitoring of the national pesticide exploration campaign (campagne nationale d’exploration des pesticides or CNEP) in all regions of France.

The approved Associations for monitoring air quality (AASQA) in turn monitor and analyse the ambient air quality in terms of regulated pollutants, providing daily forecasts and information to the regions and the public on observed and forecasted air quality.

## 2. AID FOR REGENERATION OF POLLUTED SITES

The “Anciens sites industriels pollués à responsable défaillant” (contaminated former industrial sites in default) envelope of the Fonds de recyclage des friches (Brownfield regeneration Fund), under the aegis of ADEME, is designed to support the restoration of contaminated brownfield sites in combating land take. This provides support for projects aimed at regenerating industrial or extraction industry brownfield sites where the local milieu is in need of rehabilitation or restoration.



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### 3. FOCUS: THREE EXAMPLES OF CONTAMINATED BROWNFIELD SITES IN THE PACA REGION

We can outline three examples of regeneration projects selected as part of the “Anciens sites industriels pollués à responsable défaillant” envelope of the Fonds de recyclage des friches:

- **Ensues-la-Redonne:** The creation of a 60 ha logistics hub on a brownfield industrial (quarrying, household waste incineration) and waste dumping site, including hydro-carbon and heavy metal contamination. The funding for the decontamination work is going to enable the implementation of a project for new generation logistical services and office buildings inserted in a landscape programme, creating 1,000 jobs over time.
- **La-Roche-de-Rame:** Reclassification of an industrial brownfield site classified for environmental protection, previously involving the production of magnesium and calcium, with residual mercury contamination in the soil and buildings. Funding for the preliminary surveys for the decontamination work provided assistance with the diagnostics, the drawing up of the management plan and the strategy for the work. Following this decontamination work, the Planet business zone can expand without further land loss, helping to satisfy increasing demand for land from local businesses.
- **Vitrolles:** Rehabilitation of red mud spoil heaps from alumina production. The funding given for the preliminary studies is going to enable the carrying out of the decontamination operations needed to restore the multi-use facilities of the neighbouring stadium for its cultural and other activities. The spoil heap, after its rewilding and phytoremediation will be available for edutainment purposes.



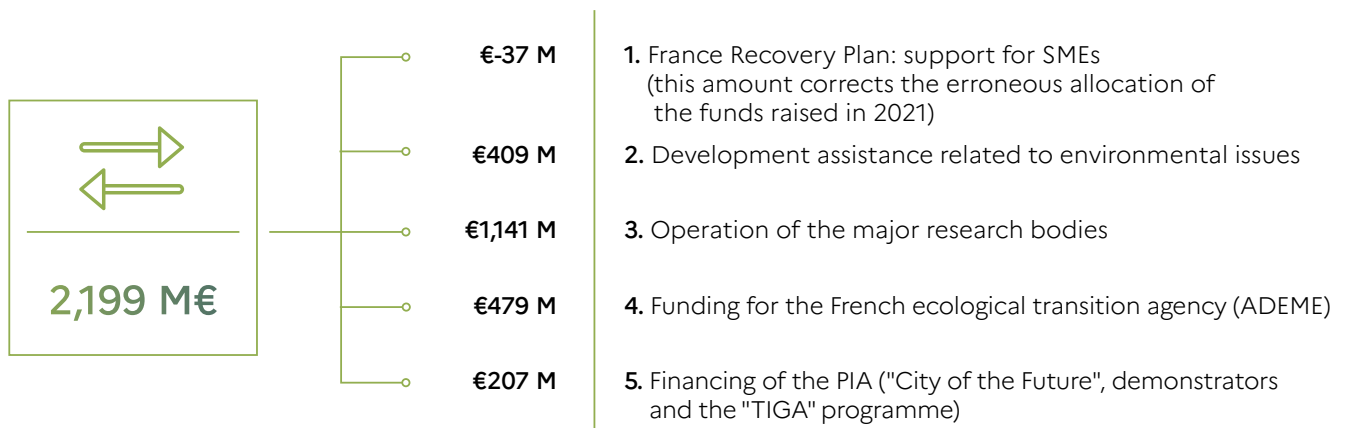
The Vitrolles Stadium site



## 3.7 SUPPORTING RESEARCH AND INNOVATION

The multi-sector expenditure under Green OAT is mainly concerned with research funding. The ecological transition implies innovations across all economic sectors, as well as adaptations to production and consumption modes. The research work thus enables France to respond to these new challenges and remain competitive on the markets of tomorrow by providing goods and services that are adapted for low carbon societies respecting biodiversity and natural environments. Official development assistance also covers a wide range of sectors.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

1.63

publication  
per CEREMA  
agent

#### Effectiveness of the ADEME Fonds Chaleur:

- . €896/TOE for the Industrial Biomass sector
- . €1,978/TOE for other Biomass sectors
- . €5,140/TOE for the Solar Thermal sector
- . €1,715/TOE for the Geothermal energy sector

#### French scientific production in the environmental science field represents:

- . 1.3% of international reference publications
- . 6.3% of European reference publications
- . 12.7% of reference publications in the France-Germany-United Kingdom space

#### PIA project leveraging ratio (public and private funding to amounts contracted by the PIA):

- . 8 for the City of the Future project
- . 3.1 for Green technologies Funds
- . 2.2 for the demonstrators and the «TIGA» programme

## ◆ EXPENDITURE AND PROGRAMMES FINANCED BY GREEN OATS

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2020	2021	2022
			2021		2022		Total				
			Eligible	Balance allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P159	Finance allocated to the French Research Centre on Environmental Risk, Transport and Planning (CEREMA)	89.9	20.2	88.8	55.5	75.7	Number of peer-reviewed scientific publications per researcher at CEREMA	-	-	1.63
		Funding allocated to Météo-France	68.4	15.4	69.4	43.4	58.8	Number of scientific publications, in peer-reviewed journals, by Météo-France researchers	2.2	2.1	1.9
	P181	Funding allocated to ADEME	Efficiency of the Renewable Heating Fund (euros/TOE)	-	-	-	-	-	-	-	-
			Industrial biomass sector	515	626	896					
			Other biomass sectors	1,311	1,222	1,978					
			Solar energy sector	6,756	4,942	5,140					
	Geothermal sector	1,161	1,030	1,715							
Recovery Plan	P362	Decarbonisation of industry*	1.6	-63.5	4.4	2.8	-60.7	-	-	-	
		Energy innovation and ecological transition for SME	24.3	5.5	30	18.8	24.2	-	-	-	
Research and higher education	P150	Alliance Allenvi**	240.6	54	-	-	54	-	-	-	
	P172	Operation of public environmental research bodies BRGM, CEA, CIRAD, CNRS, IFREMER, INRA, IPEV, IRD, IRSTEA	Percentage of publications by programme operators in global scientific output	1.4	1.4	1.3					
			Percentage of publications by programme operators in European Union scientific output (EU 28)	6.7	6.4	6.3					
			Share of the scientific output by programme participants in the France-Germany-United Kingdom perimeter	13.3	12.9	12.7					
P190	Funding allocated applied research at Gustave-Eiffel University and CSTB	21.3	4.8	21	13.1	17.9	Number of international publications per researcher	1.01	1.14	0.98	
Public development aid	P110	Multilateral economic and financial assistance	286.4	64.3	518.9	324.5	388.8	-	-	-	
		Bilateral economic and financial assistance	22.1	5	24.9	15.6	20.5	-	-	-	
Invest for the Future Programme	PIA 1	City of the Future	31.7	7.1	21.2	13.3	20.4	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	8.1	8.1	8
		Green technology fund (innovative SMEs)	12.4	2.8	16.5	10.3	13.1	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	3.5	3.6	3.1
	PIA 1,2 and 3	Demonstrators (including circular economy and smart grids) and TIGA	81.8	18.4	121.7	76.1	94.5	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	2.1	2.3	2.1
	PIA	Innovation competition (ADEME)	15.8	3.5	17.2	10.8	14.3	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	1.6	1.4	1.5
		Demonstrators and TIGA (CDC)	47	10.6	49.5	31	41.5	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	0.4	0.3	0.3
		Demonstrators and TIGA (First of a kind fund and state aid) (ADEME)	8.4	1.9	34.2	21.4	23.3	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	11.2	6.1
<b>Total</b>			<b>2,560</b>	<b>510.9</b>	<b>2,699.8</b>	<b>1,688.5</b>	<b>2,199.4</b>				

## 1. AID AND FUNDING UNDER THE FRENCH GOVERNMENT'S ECONOMIC RECOVERY PLAN

The French economic recovery plan, or "France Relance", is a programme created by the French Government with the aim of rebooting the French economy following the economic crisis caused by the Covid-19 pandemic, and in particular to help industry invest in decarbonised solutions. Despite a reduction in industrial emissions of more than 40% over the last twenty years, industry remains the source of nearly 20% of French greenhouse gas emissions. Further decarbonisation of industry is therefore essential if France is to meet the climate objectives it has set itself, whilst preventing the relocation of the highest CO<sub>2</sub> emitter industries to geographic zones less committed to the ecological transition.

Some of the expenditure within the Recovery Plan, and which is not refinanced by the European *Next Generation EU* programme, has environmental objectives matching those of the Green OAT framework document and these are therefore eligible expenditures.

### • Support for SMEs working on their ecological transition

This measure has two elements to it, one of which is to support companies offering ecological transition solutions (EETE Innovation) and the other to those companies looking for ecological transition solutions ("Tremplin pour la transition écologique des PME" (Springboard for SME ecological transition). The "EETE Innovation" element has enabled funding for 250 selected companies with awards of €100k per company to help them progress their innovations and accelerate the bringing to market. The "Tremplin pour la transition écologique des PME" programme helps small and very small companies through their initial ecological transition actions with tangible and quick outcomes. With almost 2,500 beneficiaries in a year, it has proven its effectiveness for ADEME in reaching a new target VSE and PME sector audience. The aim was both to massify and attract these targets towards more advanced solutions.

### • Funding for companies (VSE, SME, Mid-Cap and LC) involved in R&D projects aimed at improving the environmental performances of their products, services or processes.

The "PERFECTO" project call, supported by ADEME, aims to help create products with lower environmental impacts, using eco-design processes. This funds two types of projects:

- Eco-design feasibility studies, ahead of R&D investments.
- R&D projects including an eco-design element.

Following a relatively slow start-up phase, almost 1,000 projects have received funding between 2020 and 2022.

## 2. ECONOMIC AND FINANCIAL DEVELOPMENT AID FOR THE ENVIRONMENT

This programme is based on the principal objectives of France's economic and social development policy, and more specifically those relating to the protection of global public goods. It covers, in particular, in part the credits for international financial institutions (more specifically the Global Environment Facility (GEF), the Multilateral Fund for the Implementation of the Montreal Protocol, the Green Climate Fund (GCF), as well as contributions for the protection of tropical forests) and in part the bilateral credits of the French Global Environment Fund, a major instrument in French bilateral cooperation. This programme allows financial resources to be targeted at developing countries or those in transition, in order to support global environmental protection activities, linked with the fight against climate change, the protection of biodiversity, combating soil degradation and desertification and the fight against the degradation of inland water and the seas.

## 3. OPERATION OF THE MAJOR RESEARCH BODIES

This funding supports scientific and technological research within the leading French bodies involved in increasing our fundamental understanding of the environment and biodiversity, as well as in exploring new solutions. A significant share of public scientific research is focussed on environmental issues. This fundamental or more applied research, in support of the implementation of public policies in the territories, is a necessary condition for measuring the current challenges and developing organisational, economic, social, behavioural or technological solutions to address them.

For example, the work of the Intergovernmental Panel on Climate Change (IPCC) or the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is vital in increasing awareness among the public and decision-makers of the nature of the climate emergency. In addition, support for fundamental research is necessary for the development of mature and operational technologies.

Most of these research Institutes combine climatic issues with other relevant environmental dimensions with which they are closely related. In scientific terms, it is essential that the issue of climate change is dealt with together with air pollution, the management of water resources, biodiversity, etc. Many institutions include climate change within their strategic objectives, which means that in terms of funding allocations, it is not possible to distinguish between climate research and environmental research in general.

These major research bodies include the Geological and Mining Research Office (BRGM), the Alternative Energies and Atomic Energy Commission (CEA), the International Centre for Cooperation in Developmental Agronomic Research (CIRAD), the National Scientific Research Centre (CNRS), the French Oceanographic Research Institute (IFREMER), the National Agronomic Research Institute (INRA), the Paul-Émile-Victor Polar Institute (IPEV), and the Development Research Institute (IRD). These leading research institutes maintain strategic and programmatic links with academic institutions, fulfilling the objective to ensure the scientific excellence of French research in a context of increasing global competition. This excellence is essentially measured by the number, and above all, the quality of scientific publications, as well as of international prizes and the rate of success in European and International tender calls.

*Public service subsidy (SCSP)  
for the Alliance for the Environment (ALLENVI)*

This programme completes the above expenditure heading. These subsidies involve credits intended to cover the ongoing operating costs of the research members of the Alliance for the Environment (ALLENVI), which works to coordinate French research for a successful ecological transition and dealing with the major social challenges that are associated with it. The specific proportion from this Alliance in the funding of French research is no longer explicitly shown in the public budget documents for 2022. This is why the expenditure is only integrated in this allocation report as a balance of expenditure realised in 2021.

*Funding allocated to CEREMA and applied  
research at Gustave Eiffel University*

The French Research Centre on Environmental Risk, Transport and Planning (CEREMA) is a source of technical expertise in various fields (planning, transport, infrastructures, risks, buildings, environment, etc.) and acts as an integrator, mobilising its expertise to provide assistance to regions and their projects. It adds to public expertise in terms of planning, regional cohesion, ecological and energy transition and adaptation. CEREMA is also involved in disseminating its knowledge through its publications, training and technical sessions. Eligible expenditure under the Green OAT also includes the funding for applied research of Gustave Eiffel University.

#### 4. FUNDING FOR THE FRENCH ECOLOGICAL TRANSITION AGENCY (ADEME)

A key player in the ecological and environmental transition, ADEME plays a role in the implementation of public policies relating to the environment, energy and sustainable development. ADEME provides its expertise and advice to help companies, local authorities, public agencies and the general public bring their environmental initiatives to fruition. It also provides financial assistance to research, design work and investment projects for managing and the valorisation of waste recycling, protecting soils, energy efficiency, renewable energies, air quality, mobility, climate change impact mitigation and adaptation.

ADEME manages in particular funds for heating, air quality and mobility, as well as for the circular economy, and supporting the reduction of waste in the SME sector. This funding also contributes to the ADEME Circular Economy Fund which is a key lever in achieving the ambitious goals set by the green growth Law of 17 August 2017 and further extended by the anti-waste and circular economy Law of 10 February 2020.

## 5. FUNDING OF PIA (“CITY OF THE FUTURE”, DEMONSTRATORS AND THE “TIGA” PROGRAMME)

Green expenditure covers, in part, the Invest for the Future Programme (PIA) now integrated into the France 2030 plan, under the aegis of the General Secretariat for Investment (SGPI) and run, in particular, by the Caisse des dépôts et consignations public financial institution and by the ADEME. The progress is notably monitored in the quarterly report submitted to Parliament. The PIA was created by the State to finance innovative investments with significant growth potential, based on the principle of joint funding for each project.

### • City of the Future programme

This programme funds various projects for developing attractive and resilient cities that maintain the environment, social cohesion and the quality of life for their inhabitants: Industrial transformation, regeneration of brownfield sites, refocussing of cities towards the river, residential quality in densely populated zones, production of renewable energies linked with the construction of positive energy buildings, energy efficiency improvements, management of mobility and revitalisation of natural spaces, etc.

### • Demonstrators and Territoires d’Innovations Grande Ambition scheme (TIGA)

The role of these demonstrators is to develop tools that make it possible to give effect to the energy and ecological transition at the same time as modernising the economic infrastructure, by intervening in key sectors such as the circular economic, smart electricity grids, renewable energies, eco-efficient industry and agriculture, energy efficient renovations of buildings, bio-sourced products and bio-fuels.

### • ADEME Innovation Competition

The innovation competition run by ADEME helps with the joint funding of R&D and innovation projects submitted by start-ups and SMEs that have significant growth potential and involving costs of between €600,000 and €5 million. In 2021, the projects were focused on the circular economy, environmental performances of buildings, water and biodiversity, adaptation to climate change and hydrogen.



6.

## FOCUS: FONDS ECOTECHNOLOGIES: THE ERGOSUP AND SENCROP SMES, SELECTED IN 2022

In the context of the Programme d'investissement d'avenir (Future Programme) (PIA), the **Fonds Ecotechnologies** provide financial assistance for innovative SMEs operating in the decarbonised renewable energy and green chemical, intelligent electrical networks, smart grids, the circular economy and vehicles of the future sectors. It can act by means of equity financing or quasi-equity financing to take minority holdings in unlisted French SMEs.

The projects supported by the Fund include the **"Ergosup" company, founded in 2012**, which has developed a patented innovative process for the **direct production of hydrogen by high pressure electrolysis** and its safe long-term and large volume storage. This solution matches with the strong level of demand from all sectors of society, in particular in terms of "zero emission" mobility, through the **development of infrastructures to fuel various types of hydrogen based electric vehicles** (drones, lifting equipment, cycles, cars, etc.). It also targets other markets, such as **supplying decarbonised hydrogen** for industrial applications and static large scale energy storage solutions.

The fund was also able to provide financial support for **"Sencrop", the European leader in micro-climate technology, founded in 2016**. The data supplied by Sencrop enables farmers to reduce the risk associated with their crops (meteorological risks, water stress, diseases, crop pests), at the same time as making the best decisions in terms of yield (microclimate data, water stress, plant growth stages, etc.) and environmental impact (water use, optimised management of interventions and resources, etc.). The end objective of the collaborative solution is to make precision agriculture available to everyone. So far, more than 20,000 professional users are benefiting from the services offered by the application, in more than 20 countries.

04.

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# A REQUIREMENT FOR EVALUATION

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# 4.1 AN ANALYSIS OF ELIGIBLE GREEN EXPENDITURE IN TERMS OF THE EUROPEAN TAXONOMY

## THE EUROPEAN GREEN BOND STANDARD AND THE TAXONOMY

The European Commission action plan on sustainable finance<sup>1</sup> announced on 8 March 2018 included in particular the creation of an EU Green Bond Standard (EU GBS). Based on the recommendations of the Technical Expert Group published in June 2019, the Commission introduced draft regulations on 6 July 2021 dealing with the requirements to be complied with by a bond issuer in order to be covered by this standard. On the basis of this draft, the Council agreed its general orientation on 13 April 2022 and in June 2022 the Parliament confirmed the decision of the ECON Committee to open the trilogue negotiation phase. This was completed with the provisional agreement on 28 February 2023 between the Council under the Swedish Presidency, the Parliament and the Commission. Whilst the provisions have yet to be formally adopted by the Council and the Parliament, it can be seen from the stabilised draft that there will need to be an alignment between the Green OAT bonds eligible expenditure as labelled and the European Taxonomy of sustainable activities.

As a key element in the European Commission's action plan for a greener and cleaner economy, the European Taxonomy is a tool with multiple uses:

- A "dictionary" type tool, which clarifies what constitutes an economic activity that is "sustainable in environmental terms" (or "Green");
- A measurement tool, which evaluates the degree of sustainability of investments and business activities; it makes it possible to draw up comparable reports;

- A regulatory tool, covering the environmental objectives of the European Union and the goals of the Paris Agreement;
- A sustainable finance tool, helping direct the investment needed to build a low carbon economy.

According to the European Taxonomy, a sustainable activity is an activity that ...

1. ... is covered by the Delegated Acts of the Taxonomy – this eligibility principle can be verified by allocating it one or more NACE codes<sup>2</sup>
2. ... complies with the technical screening criteria drawn up by the Commission (TSC: Technical Screening Criteria, defined in Article 3), often detailed quantitatively, and which make it possible to ensure that the activity...
3. ... makes a substantial contribution to one or more of the 6 environmental objectives: Mitigating climate change (1), Adapting to climate change (2), Sustainable use and protection of aquatic and maritime resources (3), Transition to a circular economy (4), Prevention and reduction of pollution (5), Protection and restoration of biodiversity and ecosystems (6).
4. ... and does not cause any significant harm to any environmental objectives (DNSH: Do No Significant Harm)
5. In addition, the Taxonomy verifies that the activity is carried out in compliance with all minimum social safeguards (MSS: Minimum Social Safeguards)

1 - [https://ec.europa.eu/commission/presscorner/detail/fr/IP\\_18\\_1404](https://ec.europa.eu/commission/presscorner/detail/fr/IP_18_1404)

2 - Statistical nomenclature of economic activities in the European Community



The Taxonomy 2020/8523 regulations comes into force in several stages with the gradual publication of its Delegated Acts. In 2022, an “eligibility” reportage became mandatory at the level of entities for all companies subject to the Directive on the publication of non-financial information (NFRD), as laid down in the Delegated Act in Article 8 of the same Taxonomy Regulations. The “alignment” match, corresponding with compliance with the technical screening criteria, confirming that the elements of the activities are aligned with the Taxonomy, becomes applicable in 2023 for these companies. This reporting at the level of the entity is supplemented by a reporting at the level of the financial product (in the prospectus and then in periodic reports), which came into force as of 01 January 2022.

The first Delegated Act, concerning the climate objectives of the Taxonomy (mitigation and adaptation, 2021/2139), published on 9 December 2021, defines the applicable criteria, notably for the industrial and energy sectors (renewable electricity production, storage, heating systems). The definition of the criteria is however still an ongoing process: A supplementary Delegated Act on climate, covering in particular those activities linked with the nuclear sector, came into force at the beginning of 2023; on 13 June 2023 two further Delegated Acts were introduced: One amending and completing the Delegated Act on the technical criteria relating to the climate objectives, namely integrating activities linked with the manufacturing industry and transport, and the other covering the last four environmental goals (transition to a circular economy, preventing and reducing pollution, protecting and restoring biodiversity and ecosystems and sustainable use and protection of aquatic and maritime resources).

#### PRELIMINARY RESULTS OF THE ANALYSIS OF THE ALIGNMENT OF ELIGIBLE EXPENDITURE WITH THE EUROPEAN TAXONOMY

With the application of the Taxonomy, there are two distinctive stages for issuers: The identification of activities that are potentially eligible within the Taxonomy (included within its perimeter), then confirming the investments that are effectively aligned with the Taxonomy and that therefore comply with the technical screening criteria as defined in Article 3 of the Regulations.

Estimating the proportion of Eligible Green Expenditure that aligns with the Taxonomy is a complex operation. This is based on the NACE economic sector classification: Whilst this data can be considered as often being relevant for companies, it is generally not included in budget

descriptions. In addition, the State’s statistical data system is not targeted on systematically collecting all the parameters referred to by the technical screening criteria created in the Delegated Acts. This latter aspect also applies however to the private sector, with a great deal of new data being required for the Taxonomy reporting.

In addition, as the regulatory details are being published on an ongoing basis, it is as yet not possible to evaluate the alignment of certain expenditure, potentially eligible in the future, such as that associated with organic agriculture or the conservation of natural areas that could be included within future Delegated Acts. There is also scope for interpretation of these provisions when they have just entered into force and there is not as yet any established custom and practice. For instance, taking the forestry sector, a carbon footprint needs to be compiled and which gives rise to real methodological difficulties (area covered, counterfactual, etc.). Finally, the criteria relating to the adaptation objective refer to the “implementation of physical and non-physical solutions”, and these are difficult to define.

Despite the complexity of the exercise, AFT has this year coordinated a first exercise aimed at evaluating the alignment of eligible Green OAT expenditure with the European Taxonomy. This preliminary examination was carried out with the support of the Ministries and operators of funded projects and specifically the Commissariat général au développement durable (Sustainable Development Commission). Thus, given the provisions applicable to date, the alignment of Green OAT eligible expenditure with the Taxonomy would be between 20 and 25%. Public funding of development expenditure accounts for around 7% of the amount. These are subject to a degree of flexibility introduced by EU GBS Regulation, which allows the exempting of these from verification against the technical screening criteria. The scope of flexibility can also extend to activities that, whilst obviously contributing to an environmental objective, are not yet covered within the Delegated Acts of the Taxonomy. The European Green Bond Standard allows a flexibility pocket up to a limit of 15% of the allocation. We would therefore estimate that 25 to 30% of Green OAT eligible expenditure is currently probably aligned with the European Green Bond Standard.

This work will be extended and systematised in the future, and eventually refined with the interpretation based on the Taxonomy. A number of significant examples can however be mentioned here.

## EXPENDITURE THAT IS VERY LIKELY TO BE ALIGNED: THE EXAMPLE OF SUPPORT FOR RENEWABLE ENERGIES

This expenditure, allocated to economic sector 4 in the "Climate" Delegated Act, was analysed by the Evaluation Committee and its report will be published in autumn 2023. Without pre-empting the conclusions of this analysis, it is likely that this expenditure in the main complies with the eligibility alignment criteria of the Taxonomy. Particularly close attention will however be paid to the recycling of these technologies and their potential impact on biodiversity and ecosystems.

## ESSENTIAL ACTIVITIES NOT COVERED BY THE TAXONOMY: UNDERSTANDING THE ENVIRONMENT

The existing Taxonomy Delegated Acts in force, requiring further definition, leave out some activities that could legitimately be considered as having a favourable impact on the environment, and also of significance as part of the specific mission of the State because they are sources of positive externalities. This is specifically the case with fundamental research: Only those R&D activities at a high technology readiness level - (at least 6), i.e.: approaching market readiness -, are eligible within the context of the Taxonomy. France believes that advances in understanding climate change, ecosystems and biodiversity, for instance, are key elements for protecting the environment. This approach has allowed the inclusion of expenditure on research in the environmental field, including fundamental research, as Green OAT eligible expenditure.

Similarly, spatial information activities are critical in support of increasing our understanding of Earth systems. This also applies to meteorology which is at the root of increasing understanding and of the forecasts relating to climate change, feeding into the work of the IPCC Intergovernmental Panel on Climate Change. The Green OAT Evaluation Committee has examined these areas linked to meteorological forecasting and satellite Earth observation. Its report was published in July 2022. There is currently no entries in the Taxonomy that make it possible to include these research activities, often comparable to fundamental research, as contributing to environmental objectives within the meaning of the European regulations.

Expenditure financing innovation when this involves market-ready solutions and those at a high technology readiness level, are however clearly eligible. This means that the expenditure of the France 2030 programme implemented by Ade-me could be aligned provided that they comply with all the DNSH criteria.

## A LACK OF DATA AND A REGULATORY CONTEXT THAT DOES NOT ALLOW AN EVALUATION OF THE DEGREE OF ALIGNMENT: EXAMPLE OF DE MAPRIMERENOV' AND EXPENDITURE ON HOME IMPROVEMENTS.

Some Eligible Green Expenditure can be readily linked with sectors covered by the Taxonomy, but the characteristics of these are not well enough understood for their alignment to be ascertained. This is the case for instance with MaPrimeRenov', an emblematic expenditure for the Green OAT programme, as the Energy Transition Tax CITE which it replaces was the subject of the first impact report published by the Evaluation Committee, in 2018. In 2022, all measures relating to the energy efficiency of buildings accounted for almost 45% of the allocation.

MaPrimeRenov' is clearly covered by the Taxonomy, insofar as it funds the installation, maintenance and repair of equipment improving the energy efficiency of buildings (Activity 7.3 of the "Climate" Delegated Act). However, when this equipment comes within the scope of grants covered by the CITE or by MaPrimeRenov', the associated eligibility conditions under French legislation are not as restrictive as the criteria for activity 7.3 of the Taxonomy. According to the Taxonomy, for such work to improve the energy efficiency of buildings, the only equipment that can be installed is that rated in the highest two populated classes of energy efficiency as defined in Regulation (EU) 2017/1369. The information systems currently in use for submitting grant applications do not include these criteria.

Furthermore, concerning building renovation work, there are currently no effective regulations setting a rate for re-use, recycling or other formulas for the valorisation of non-hazardous construction and demolition waste materials. It is therefore not possible to evidence, for each approved renovation, that this requirement is being satisfied relative to the DNSH criteria relating to combating pollution. Similarly,

the requirement in the Taxonomy for an asbestos diagnosis prior to any work raises issues. This detection prior to starting work is not in effect systematic and is not designed as such, in so far as post-1997 buildings are unlikely to contain asbestos as its use was prohibited in France as of that date.

### **CLEARLY NON-ALIGNED EXPENDITURE: EXAMPLE OF THE FRENCH WATERWAYS BOARD (VNF)**

Voies Navigables de France (VNF) is the national operator tasked with fulfilling the waterways ambitions, with three major public service roles: To promote the inland waterways logistical use, to contribute to regional development, and to manage water resources, guided by the logic of sustainability. Considering the eligibility perimeter for economic activity 6.16 ("Infrastructure enabling low carbon transport") of the "Climate" Taxonomy Delegated Act, only the financing of transshipment infrastructures would be eligible. Maintenance operations of navigable waterways, Green OAT eligible, would only be eligible within the meaning of the Taxonomy in so far as the infrastructure in question is to be used by vessels with zero CO<sub>2</sub> emissions.

The financing of the VNF would not be eligible through activities 6.7 ("Inland passenger water transport"), 6.8 ("Inland freight water transport") or 6.9 ("Retrofitting of inland water passenger and freight transport") either, as these are only eligible in the context of the purchase, operation or upgrading of vessels or inland water transport equipment.

The Taxonomy is not exhaustive and does not cover, to date, all the levers for the decarbonisation of the economy. It does not cover, for instance, the reduction of demand, the modal shift, or other behavioural or organisational levers.

Nevertheless, the lack of conformity with the Taxonomy criteria should not minimise the favourable impact of the public service subsidy granted by the State to VNF. The report published by the Evaluation Committee in 2019 stated that the modal shift to inland water transport could prevent the emission of around 290 kilotons of CO<sub>2</sub> a year, equal to 1% of total annual emissions from freight transport in France. The report also showed, through examples, how maintaining the inland waterway network could be a vector for adapting to climate change.

- This preliminary analysis of the degree of alignment of Green OAT funded expenditure is still only partial. Much more work will be required as subsequent Delegated Acts are published, and once more in-depth analyses have been performed, in particular concerning the "environmental" Delegated Act of June 2023, which is still too recent for detailed analysis.
- It is possible however that some public expenditure, despite being favourable to the environment, turns out to be outside the restrictive Taxonomy specifications. This does not necessarily call the value of these into question, in particular if public action needs to integrate parameters relating to heterogeneous dimensions, and promote environmental goals whilst avoiding burdening households or companies with obligations requiring the allocation of disproportionate resources

## 4.2 GREEN OATs AND GREEN BUDGET

**Green budgeting is an approach aimed at fully integrating environmental factors into budget and fiscal choices, turning these into key action levers in the ecological transition.**

As of 2020, France will be publishing each year, as an appendix to the initial draft Finance law, a "Report on the environmental impact of the Government budget". Every item of expenditure is scored on the basis of its impact on six environmental objectives that match with the European Taxonomy: i) Combating climate change, ii) adapting to climate change and preventing natural risks, iii) managing water resources, iv) the circular economy, wastes, preventing technological risks, v) combating pollution, vi) protecting biodiversity and natural, agricultural and forestry spaces. The level of granularity for this analysis is the "action", taking the meaning this term has in the budgetary nomenclature.

A score from -1 to 3 is then allocated to each expenditure item based on its impact on each of the six relevant environmental dimensions: -1 for unfavourable expenditure, 0 for neutral expenditure, 1 for favourable but controversial expenditure (e.g. favourable in the short-term but potentially generating a technological lock-in risk in the long-term), 2 for expenditure that does not primarily serve an environmental purpose, but has a demonstrable indirect impact, and 3 for expenditure with an identified environmental objective or directly contributing to the production of an environmental good or service.

Almost all Green OAT eligible expenditure is scored favourably within the meaning of the Green Budget. There are four exceptions, expenditure constituting "sub-actions" within the meaning of the budget nomenclature, attached to budgetary "actions" considered as being

"neutral" for the environment:

- The public service subsidy for the major research infrastructures for the "Earth System and environmental sciences" sector (amounting to €97 million in 2022)
- The public service subsidy for the Agence Bio (€4 million in 2022)
- The support for the Fonds Avenir Bio (€10 million in 2022)
- The Public service subsidy paid to AllEnvi, the national environmental research alliance (which amount is no longer specifically recorded in the budget documents, and for which reason can only be included in the allocation of this year as a balance from 2021 expenditure).

In each of these cases, these are sub-actions in a budgetary sense for which it can legitimately be assumed that there is a favourable environmental impact within the meaning of the requirements of the Green OAT Framework Document. These sub-actions are however included within larger actions in which they are mixed with others that are not targeted on the environment, such that, globally the action is scored as being neutral, since it is at this level of granularity that the Green Budget is established. The scale of these four lines of eligible expenditure included for 2022 is small: barely 1%.

On the other hand, actions defined as favourable in the Green Budget, amounting to €38.2 billion in payment credits in the 2022 Budget (of which €5.7 billion were for the “Recovery Plan” mission, which is an exceptional contribution), are not all eligible within the meaning of the Green OAT Framework Document, or at least not in full. There are several explanations for the differences between the two sets of reference.

Government expenditure in favour of the environment is partly funded by earmarked resources, such as the climate element of the 0.2% tax on financial transactions, which goes to official development assistance, or the special equipment tax and the income from carbon quota auctions directed, at least in part, to the public land establishments and the National Housing Agency (ANAH) respectively, as part of the Cohesion mission, or the taxes earmarked for the water agencies. The funding for the “Agence de financement des infrastructures de transport de France” (AFITF) is also based on the allocation of earmarked resources. The sums in question amount to more than €3.5 billion, which will not be integrated with the Green OAT allocation.

Similarly, of the €5.7 billion of forecast expenditure scored favourably by the Green Budget in the Recovery Plan (Plan de Relance) mission, a majority is not eligible for the Green OAT because of its refinancing by the European Union, as part of the Next Generation EU programme. In this case as in that of the earmarked resources, any double counting is naturally prohibited.

In addition, the eligibility criteria adopted for the Green OATs are often more restrictive than those adopted in the Green Budget scoring. Thus, personnel expenditure is not included in the context of the Green OATs, whilst that of the Ministry of Ecological and Environmental Transition is positively listed in the Green Budget. This also applies for some support, audit and evaluation service expenditures. To give another example: In the agricultural sector, the Green OAT Framework Document only covers the organic farming sector, whereas the Budget also includes cultivated biodiversity, the sustainable and balanced management of land and the health and safety of animals. Similarly, the contribution to combating land take in some expenditure of the Regional Cohesion mission is scored favourably in the Green Budget whilst it is not integrated as such in the Green OAT Framework Document.

We could also mention the various forms of support for public transport: by reducing car traffic, they help to mitigate climate change and limit air pollution. However, they are only eligible under Green OATs when they involve electric vehicles. Public spending on nuclear energy (notably on research and risk prevention) receives a positive rating under the Green Budget, whereas the Green OAT Framework Document, as drafted in 2017, explicitly excludes it.

Finally, the selection of Green OAT eligible expenditure, such as that mentioned above, is subject to more detailed criteria than that used for the Green Budget. This approach means that only certain parts of some expenditure are included. This is the case specifically with the measures to accompany the energy transition, scored favourably as a whole by the Green Budget, whilst only expenditure on improving the energy efficiency of buildings (such as *MaPrime-Renov*) are eligible for Green OATs. Similarly, aid for the purchase of clean vehicles is taken into account for Green OATs under the ecological bonus, but not the conversion premium, which supports the purchase of internal combustion engine vehicles to replace older, more emitting vehicles.

## 4.3 WORK OF THE EVALUATION COUNCIL

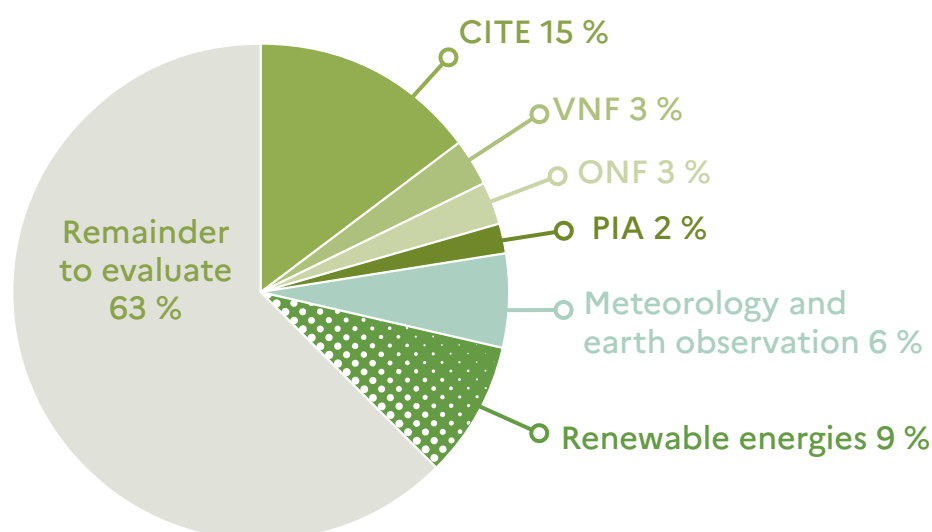
The evaluation of the environmental impacts is a fundamental question for the green bond market. The Green OATs Evaluation Council is responsible for evaluating the environmental impacts of the Eligible Green Expenditure. These evaluation reports analyse the effect of the expenditure in question on the environmental performances of the public policies with which they are associated.

The first report, in 2018, dealt with the tax credit for energy transition (CITE), the second, published in 2019, covered the environmental impact of the subsidy for public service expenditure granted to the French Inland Waterways Board (VNF). In 2020, the Council published its report on the environmental impacts of the public subsidy to the French Forests Office (ONF) and, in 2021, it analysed the environmental impact of the projects financed by the "Invest for the Future" programme (PIA). The work covering both meteorological forecasting and satellite earth observation was published in 2022. Finally, an evaluation of the environmental impact of public subsidies for renewable energy production will be published in autumn 2023. The expenditure evaluated for the period 2016 to 2022 in these six reports, amounted to a total of €19.5 billion, i.e., 37% of the total allocation.

The evaluations are carried out applying a counterfactual scenario, as the basis for the conclusions issued on the specific environment effect of the analysed expenditure. These make it possible to evaluate whether the funded actions go beyond the legal constraints, whether they actually have a favourable impact on the environment and whether they have been efficiently implemented by the bodies in charge.

The principal findings for these reports, and more specifically those relating to indicators and environmental impacts, which provide critical information on the performance of the of the OAT eligible expenditure, are presented successively within this section.

Share of evaluated expenditures  
in the total allocation at end of 2022



## ENERGY TRANSITION TAX CREDIT (CITE) (2018)



Income tax credit granted for work to improve energy efficiency carried out in homes and some investments in renewable energies, created in 2014.

- Residential housing accounted for 30% of final energy consumption in France in 2016.
- Most of the expenditure was on insulation.
- Alignment with the LTECV, SNBC and the Climate Plan.

**€1.69 billion**

For 1.66 million recipients in 2017.

Photo credit: Pixabay

### METHODOLOGY

A reference scenario, which assumes that there is no CITE, is compared to two scenarios: one **"one-off CITE"** scenario granted only in 2015 and 2016, and a **"permanent CITE"** scenario in which it remains in place until 2050.

The effects of each scenario are evaluated compared against the reference scenario, using the

**Res-IRF model** that enables the conversion of renovation costs into energy savings data applying a behavioural module that simulates renovation decisions on the basis of energy prices, the cost of renovation and subsidy schemes. **This allows a simulation of the dynamic evolution of the housing stock.**

### PERFORMANCE INDICATORS

Comparison with a scenario without CITE over the period 2015 - 2050	ONE-OFF CITE Applied for 2015-2016	PERMANENT CITE Applied permanently from 2015 to 2050
Total energy savings	- 43 TWh	- 286 TWh
Total reductions in CO <sub>2</sub> emissions	- 2.9 Mt	- 24 Mt
Total spending by households	- €1.6 billion	- €24 billion
Total number of renovations	+ 97,000	+ 1.3 million
Impact on number of low energy consumption households	+ 71,000	+ 1.5 million
Impact on average energy consumption of the housing stock linked to heating per m <sup>2</sup> / year	- 0.6 %	- 6.5 %

## FRENCH WATERWAYS BOARD (VNF) (2019)



- Maintenance, improvement, expansion of waterway network
- Hydraulic and water resources management
- Contribution to sustainable development and regional regeneration

**83% of French river system**  
is managed by the VNF.

**2.1% of domestic goods transport**  
by tonne.km.

**€244 million**  
in State subsidies which account for 56%  
of its annual budget.

*Photo credit: Pixabay*

### METHODOLOGY

**Mitigating climate change:** The report estimated CO<sub>2</sub> emissions avoided by using waterway transport compared with a scenario in which the State does not pay any subsidies and in which inland waterway traffic declines to virtually zero, because of the rocketing of unit prices to offset this loss of support.

**Protection of biodiversity and adaptation to climate change:** The report compared the actual situation with a situation in which VNF only took the measures that were required by the regulations to protect biodiversity and to adapt to climate change. This allows an evaluation of the actions of the VNF beyond its legal obligations.

### PERFORMANCE INDICATORS

#### ◆ MITIGATING CLIMATE CHANGE

##### CO<sub>2</sub> PREVENTED

- **1 %** of freight emissions for 2017 were avoided by using inland waterway transport, which represents **290 kt of CO<sub>2</sub> less** in 2017.
- in a scenario with no inland waterway traffic, **70 %** of actual traffic would switch to road transport.

##### SIGNIFICANT ROOM FOR PROGRESS

Traffic levels can be increased in many areas. This would notably reduce road traffic on parallel routes, in particular the Rhone corridor, highly used. VNF estimates show that traffic levels could be multiplied...

- **X2** for the Rhine
- **X3** for the Seine
- **X4** for the Rhône

**Investments would be needed to prevent the creation of bottlenecks.**

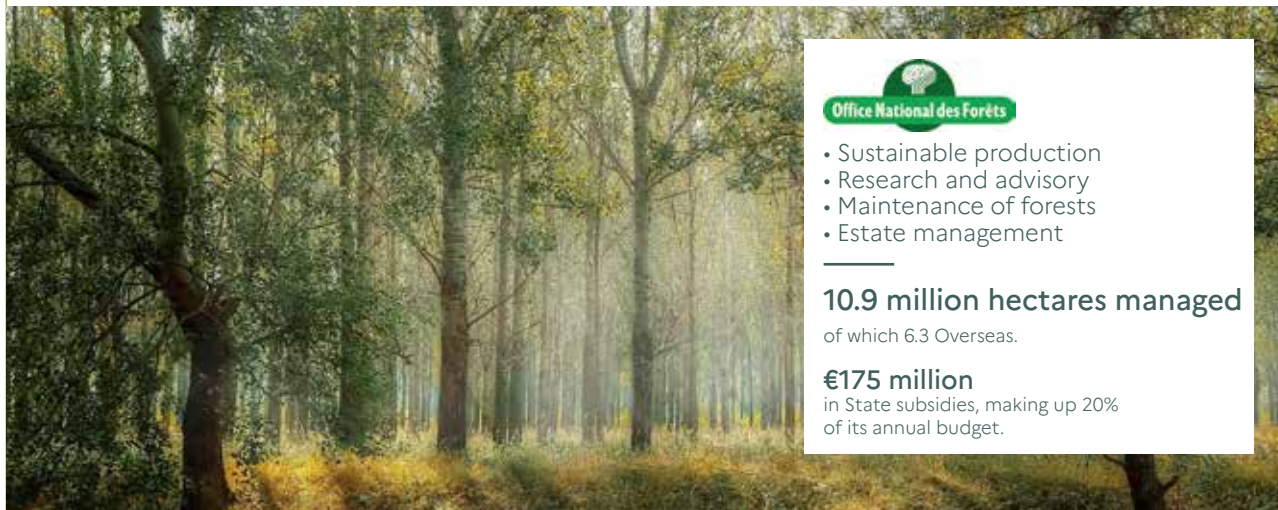
#### ◆ BIODIVERSITY AND ADAPTATION

##### VNF IS TAKING THE INITIATIVE WITH ACTIONS TO PROTECT THE BIODIVERSITY AND ADAPTATION THROUGH A VARIETY OF MEASURES ADDITIONAL TO CURRENT REGULATIONS

- **50 %** of dredging sediments are being recycled.
- **0** incidents linked with operations of unemployment of the waterways necessary for the maintenance of the network in 2016.
- **0** use of pest control products since 2013.
- **50 %** of riverbanks restored using vegetation.



## NATIONAL FORESTS OFFICE (ONF) (2020)



- Sustainable production
- Research and advisory
- Maintenance of forests
- Estate management

**10.9 million hectares managed**

of which 6.3 Overseas.

**€175 million**

in State subsidies, making up 20% of its annual budget.

### METHODOLOGY

The **evaluation approach** focused on evaluating the contribution made by ONF funding to the fight against, and adaptation to, climate change and protection of biodiversity.

For each of these objectives, the method consisted of identifying the challenges and evaluating the level of the environmental ambitions of the ONF. The Evaluation Council then analysed the actual achievement of these ambitions and looked

for evidence of the impact of the actions implemented on the domain in question. Based on the available data, this involves an evaluation of best practices and quantifying the impacts using biophysical indicators.

The evaluation is always based around a counterfactual scenario, in which forest management would be entirely privatised.

### PERFORMANCE INDICATORS

#### ◆ MITIGATING CLIMATE CHANGE

##### CARBON SINKS

- ONF management enables a **cross subsidisation of carbon sinks**, an essential element in the fight against climate change and the shift to a zero-carbon society.
- **25 %** : Share of ONF in the sequestration by French forests, i.e.: **57 Mt CO<sub>2</sub>eq** captured annually by the public sector forests.

##### SUSTAINABLE MANAGEMENT OF FORESTS

- Public forest management is recognised for its sustainability. **The PEFC label** guarantees forestry practices that are sustainable.
- **5 times more public sector forests** are PEFC certified than privately owned forests.
  - Felling practices and management of logging residues
  - Avoiding chemical inputs
  - Managing risks to maintain the sequestration capacities
  - Sequestration of carbon in the soils

#### ◆ BIODIVERSITY AND ADAPTATION

##### ACTIONS TO ADAPT ITS FORESTS TO NEW CLIMATIC CONDITIONS

- **1.8 % of the surface area is of critical concern in terms** of the death of managed trees:
  - Adaptation of forestry cycles;
  - Controlling existing risks;
  - Substitution of species;
  - Diversification of species.

##### A KEY ROLE IN PROTECTING ECOSYSTEMS

- **36% of public sector forests are protected**, either as biological reserves or as classified national parks. This status helps protect biodiversity.
- **2.9 times more common birds** in public sector forests than in private forests.

## INVEST FOR THE FUTURE PROGRAMME (PIA) (2021)



Photo credit: Aleksei Demitsev / Stock Adobe.com



- Financing innovative projects and stimulating green growth and job creation
- A series of strategic orientations including sustainable development and industrial sectors

**€57 billion**  
attributed since 2009 (PIA 1, 2, 3).

**€275.3 million allocated**  
by the Green OAT for innovative energy transition pilot projects.

**€229.2 million allocated**  
by the Green OAT for Vehicles of the Future projects .

### METHODOLOGY

Evaluating the contribution of the two PIA programmes to the 3 environmental objectives: **Mitigating climate change, Reducing pollution and Protecting biodiversity**. The evaluation is based on the data of the ADEME review of the financed initiatives carried out in 2019 and covering 151 projects.

The initiatives were classified into a typology to make it possible to assess their diversity and facilitate comparisons between projects.

Each project was evaluated on the basis of 3 criteria:

- **The relevance of the project for the national and European roadmaps** in terms of energy transition and the ecology (relative to the SNBC, the European Taxonomy and legislation on biodiversity, water and air).
- **The additionality delivered by the financed project** (environmental performance) relative to the reference situation (non-PIA project).
- **The effectiveness of the project**, using a cost-effectiveness analysis.

### PERFORMANCE INDICATORS

#### ◆ MITIGATING CLIMATE CHANGE

- The objectives of the PIA are aligned with those of the **National Low Carbon Strategy (SNBC)**.
- **79 %** of the PIA projects related to activities covered by the European Taxonomy.
- **77 %** of the projects were additional on this criteria.
- An analysis of 17 of the financed projects revealed an **estimated abatement** cost below the national reference value (72 €/tCO<sub>2</sub>eq compared to 250 €/tCO<sub>2</sub>eq).

#### ◆ REDUCING POLLUTION

- The objectives of the PIA are aligned with French legislation concerning air and water pollution.
- **50% of the financed projects were additional** in terms of air quality and ¼ had a positive impact on water pollution (the majority had a neutral impact).

#### ◆ PROTECTING BIODIVERSITY

- The objectives of the PIA are aligned with those of the **Biodiversity Plan**.
- **26 % of the projects were additional** on this criteria.

## METEOROLOGICAL FORECASTING AND EARTH OBSERVATION (2022)



Evaluation of Green OAT eligible French public spending on meteorological forecasting and Earth observation. This expenditure finances both two national bodies (Météo-France, CNES) and the French contributions to three European bodies (ESA, ECMWF, EUMETSAT).

Photo credit: Pixabay

### METHODOLOGY AND PERIMETER

The identification of the environmental impact was based on a review of existing literature and interviews with funded organisations and experts. The geographic scope of the evaluation for meteorological forecasting is limited to France and the international zones supervised by Météo-France. For Earth observation, it covers Europe and beyond.

### GENERAL RESULTS

The meteorological forecasting and Earth observation operations make a significant contribution to scientific knowledge in the field of the environment, and specifically for climate change. The related data are essential tools for political decision-makers. The expenditure associated with the activities of Météo France contributes to the achievement of the objectives defined by France in terms of mitigating climate change, protecting biodiversity, reducing pollution and adapting to climate change.

### SPECIFIC RESULTS

The meteorological forecasting and Earth observation operations have specifically a positive impact on:

#### ◆ MITIGATING CLIMATE CHANGE

- More efficient use of pest control and fertilizer products in agriculture leading to a **reduction in GHG emissions of between 1 and 18 MtCO<sub>2</sub>-eq per year**.
- Vital support for Civil Defence in preventing and controlling forest fires, making it possible to **avoid between 1,084 and 1,952 ktCO<sub>2</sub> emissions from fires**.

#### ◆ ADAPTING TO CLIMATE CHANGE

- Monitoring coastal erosion and the rise in sea levels.
- Analysis of urban heat islands for improved urban management.

#### ◆ PROTECTING BIODIVERSITY

- The optimising of agricultural treatments based on meteorological forecasts makes it possible to reduce harm to biodiversity, with a reduction in eutrophication. It is estimated that, every year, this optimisation **avoids the loss of species in 11 to 54 km<sup>3</sup> of water** (fresh water, coastal, subterranean water).

#### ◆ REDUCING POLLUTION

- The optimising of agricultural treatments and actions to prevent fires, as well as post-fire forest restoration, made possible thanks to Earth observation data, contribute to reducing air, ground and water pollution.

The Evaluation Council was also able to provide a preliminary analysis of the eligibility for the European Taxonomy of the activities of the bodies concerned. The analysis shows that the meteorological forecasting and Earth observation operations are not eligible as enabling activities. However, the operational climatic services delivered by Météo-France match with the eligibility criteria and could match with the alignment criteria.

A stack of several books is shown, with a green-to-blue gradient overlay. The books are stacked horizontally, and the text 'APPENDICES' is centered over them. Two short horizontal lines are positioned above and below the text.

# APPENDICES

# 1. ELIGIBLE EXPENDITURE AND ALLOCATION METHOD

## ◆ GENERAL ALLOCATION PRINCIPLES

The purpose of the 2022 allocation report is to justify, for each euro issued through a Green OAT, an equivalent amount of Eligible Green Expenditure. The analyses conducted in this report focus on the use of the funds raised. These analyses examine Eligible Green Expenditure as a whole, without distinguishing between allocations respectively under Green OAT 1.75% 25 June 2039, Green OAT 0.50% 25 June 2044 and Green OAT €i 0.10% 25 July 2038. This means we have hypothesised a distribution of all eligible expenditure between the different bonds in proportion to what each of them represents each of these represents in the funds raised through the green bonds during the year (0% for the OAT 2039 which was not reissued in 2022, 51% for OAT 2044 and 49% for the OAT €i 2038).

In fact, in 2022, Green OAT 1.75% 25 June 2039 was not tapped. In there were two auctions of the Green OAT 0.50% 25 June 2044 for a total of €5.096 billion. The Green OAT €i 0.10% 25 July 2038 was issued by syndication and then retapped once by syndication, for an allocated amount of €4.870 billion (in excess of the issued nominal value, which was €4.549 billion, because of the inflation supplement perceived by the issuer for an inflation-indexed bond).

In accordance with its commitments, AFT monitored the Eligible Green Expenditures identified by the interministerial working group in 2022, as well as the associated performance indicators. As prescribed by the Green OAT framework document, this expenditure was carried out in 2021 or 2022. In more general terms, it complies with the eligibility criteria set out in the Framework Document.

As presented in the Methodology section in the appendices hereto (p. 84), Eligible Green Expenditure has been tracked through budget documents (2021 and 2022 Annual Performance Reports), and data derived from the information systems of the tax authorities and Secretariat General for Investment, with their assistance. The associated

performance indicators are primarily those described in the French Organic Law on Finance Laws (LOLF), also available in the budget documents. In the other cases, they are available in documents published by the public authorities in charge of the associated expenditure.

In accordance with the budget schedule set out by the LOLF Budget Settlement Act for 2022, the draft Budget Settlement Act at the year-end setting the final amount of State expenditure and revenue and the financial results, was submitted to the Council of Ministers on 13 April 2023 and forwarded to Parliament.

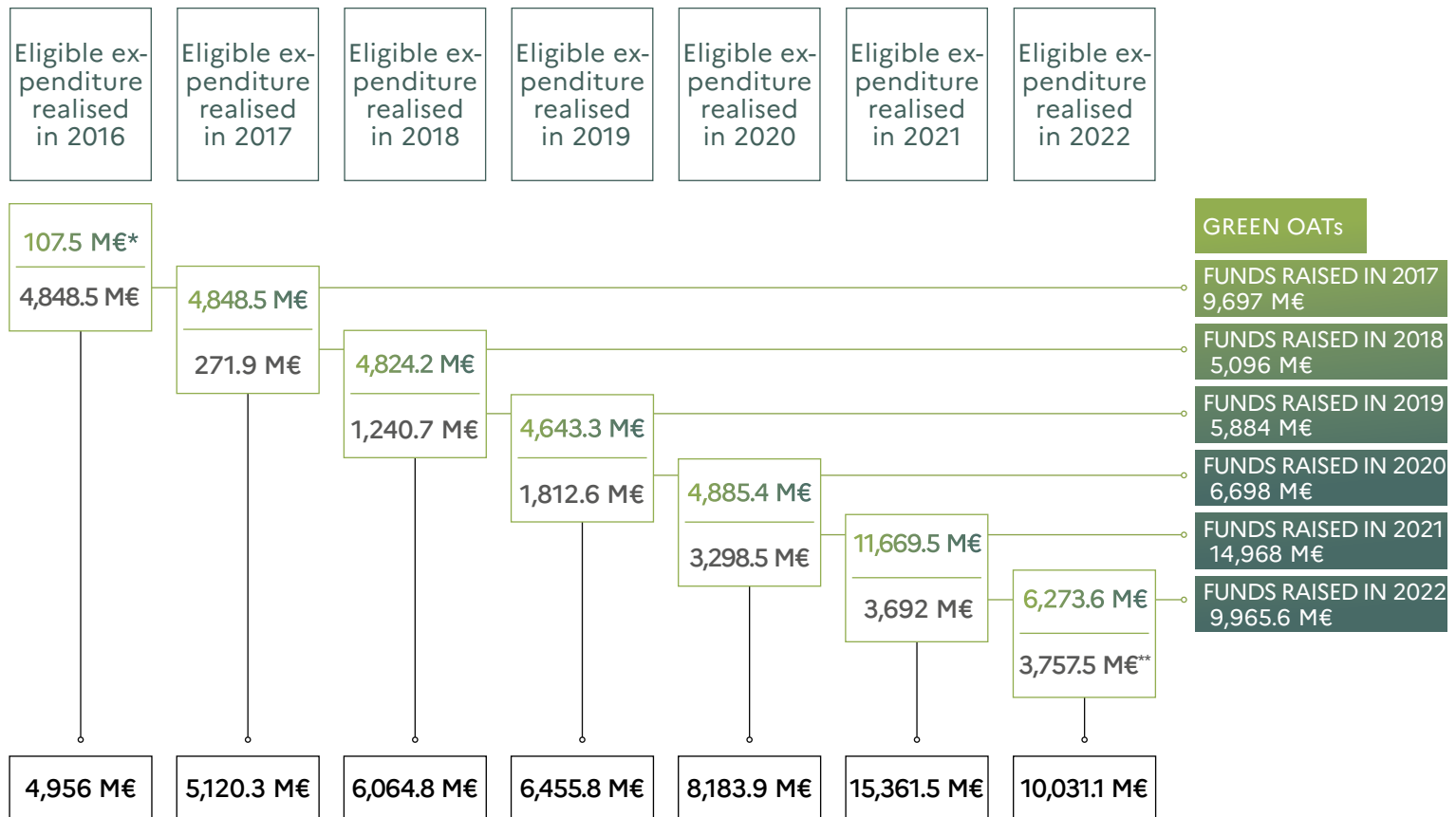
The statement on the statutory validity of the State's accounts issued by the National Court of Auditors is included in the appendices and published at the same time as the draft Budget Settlement Act, along with State budget and accounting data. Budget data cannot be changed as of the publication date.

## ◆ ALLOCATION OF 2022 BONDS

In application of the Green OAT Framework Document drawn up in January 2017, the bond issuances carried out during the year n are matched with expenditure realised in years n-1 and n. The balance of payment credits reported

for the year n that are not matched with Green OAT issuances during the same year then become available for backing new issues in n+1. This is the principle illustrated by the following diagram.

Allocation of Green OATs proceeds (in € millions)



\* Amount not matched with Green OATs bond issues.

\*\* Amount that can be matched with Green OATs issues 2022.

Thus, for 2022, the €9.966 billion raised through the Green OAT (taking into account inflation) were allocated in the amount of €3.692 billion to the balance of 2021 expenditure, and the rest, i.e.: €6.274 billion, to Eligible Green Expenditure in 2022. For each of these two years, the allocated amount was distributed in proportion to actually realised expenditure.

The budget accounting procedure evidenced that €10,031 billion was disbursed for Eligible Green Expenditure in 2021, with the balance of €3,758 billion that can be carried forward to back Green OAT issues in 2023.

It can be seen that in 2022, in compliance with the commitments given in the Green OAT Framework Document, the expenditure for the current year amounted to more than half of the amount of the Green OAT issues. It can also be seen that the future expenditure envelope of the PIA, the inclusion of which is authorised by the Green OAT Framework Document when the current expenditure or that of the previous year have been exhausted, has not been allocated.

## ◆ SPECIFIC AUDIT ARRANGEMENTS

Following the commitment made by France during the inaugural Green bond issuances, the expenditure is subject to auditing by an independent third party, recruited by public tender call. Thus, on the basis of its due diligence, KPMG has been able to issue its Assurance Report on the allocation of funds, which are referred to *in extenso* in this Report (p. 98).

The due diligence involved in this covers in particular the following points (see Appended Report for more detail):

- assessing the appropriateness of the Guidelines<sup>1</sup> in terms of relevance, completeness, reliability, neutrality and understandability;
- verifying the implementation of a process to collect, compile, process and control data to ensure completeness and consistency of the Verified<sup>2</sup> Information and gain an understanding of the internal control and risk management procedures used to prepare the Verified Information;
- verifying that procedures were properly applied and performing tests of details, using sampling techniques, in order to verify the calculations and reconcile data with the supporting documents, including:
  - annual performance reports appended to the French Budget Settlement Act,
  - statements of roles and responsibilities extracted from the tax expenditure tools used by the French Ministry for the Economy and Finance,
  - extracts of funding per project from the information systems of the Secretariat General for Investment for the years ended 31 December 2021 and 31 December 2022 under the “Invest for the Future” programme.

- ensuring that the Verified Information is consistent with other publications, including the Budget Settlement Acts and reports by the Court of Auditors;
- performing analytical review procedures on the Verified Information and checking its consistency with the information provided in the statement on Performance and Use of Proceeds.

Moody’s Investors Service, successor to Vigeo Eiris which had been mandated to provide a second party opinion prior to the inaugural OAT 2039 bond issue and which had been able to certify its sustainability, was also mandated as an independent third-party expert by the AFT to update its opinion on the application of the environmental factors and objectives in the design and management of the Green OAT. The full report is provided in the appendices to this document.

The performance indicators for State expenditure, as well as environmental quality monitoring indicators published by government agencies, have enabled a line-by-line analysis of the performance of the expenditure. The full set of performance indicators, also based on existing procedures, is also included in this report.


<sup>1</sup> - The Guidelines are defined by KPMG in its assurance report in the appendix, p. 102

<sup>2</sup> - “Verified Information” is defined by KPMG in its assurance report in the appendix, p. 102

## 2. ALLOCATION AND PERFORMANCE TABLE

Mission	Programme	Expenditure	Amounts (€ M)					Sector	Indicator	2020	2021	2022	Distribution by objectives (in €M)			
			2021		2022		Total						Mitigation	Adaptation	Biodiversity	Pollution
			Eligible	Balance allocated	Eligible	Allocated	Allocated									
Agriculture, food industry, forestry and rural matters	P149	Sustainable forestry management and development of the timber industry	265.3	59.6	260.9	163.2	222.7		Percentage of forest areas in public ownership (%)	96.3	96.6	96.6	-	111.4	111.4	-
		Tax credit for organic farmers	75	21,5	89	55,7	77,2		Number of farming businesses benefiting from the tax credit	18,633	22,529	27,136	-	25.7	25.7	25.7
		"Organic future fund" (Fonds Avenir Bio)	5.2	1.2	10.2	6.4	7.5		Percentage of organic farms in total agricultural land area in use(%)	9.5	10.3	11	-	2.5	2.5	2.5
		Public subsidy of the Agence Bio	2.7	0.6	3.7	2.3	2.9		-	-	-	-	1	1	1	
Regional cohesion	P135	Residential thermal renovation - ANAH	170	38.2	163.2	102.1	140.2		See P174 MaPrimeRenov'	-	-	-	140.2	-	-	-
		Interest-free green loan	35	10.2	43	26.9	37.1		Number of beneficiaries of the interest free green loans	560	491	100	37.1	-	-	-
		Urbanism, territories and habitat improvement: "Sustainable city" plan management	2.4	0.5	2.7	1.7	2.2		-	-	-	0.7	-	0.7	0.7	
		Reduced VAT for work to improve energy efficiency	1,760	682.1	1,910	1,194.5	1,876.6		Number of beneficiary companies	84,000	89,350	96,736	1,876.6	-	-	-
Ecology, sustainable transport and development	P203	Financing French Waterways Board network maintenance	245.2	55	244.9	153.2	208.2		Waterway availability rate	94.9	97.9	97.5	69.4	69.4	69.4	-
		Support for combined transport (rail, maritime and inland waterways)	111.7	25.1	162.1	101.4	126.5		Modal share (%) of public transport in land passenger transport	13.8	14.9	17.8	126.5	-	-	-
									Modal share (%) of rail transport in land goods transport	9.6	10.7	10.7				
									Modal share (%) of water transport in land goods transport	2	2	2.1				
Reduced tax on electricity (TICFE) for operators of rail or cable transport or electric or hybrid buses	196	40.9	16	16	50.9		Volume of electrical consumption covered by the reduced TICFE rate (in TWh)	7.4	9.5	0.8	50.9	-	-	-		



Mission	Programme	Expenditure	Amounts (€ M)					Sector	Indicator	2020	2021	2022	Distribution by objectives (in €M)								
			2021		2022		Total						Mitigation	Adaptation	Biodiversity	Pollution					
			Eligible	Balance allocated	Eligible	Allocated	Allocated														
Ecology, sustainable transport and development	P113	Landscape, Water and Biodiversity programme to protect environments	231.5	52	301.2	188.4	240.3		Percentage of mainland France subject to stringent protection measures	-	1.9	4.2	-	120.2	120.2	-					
									Percentage of the national territory covered by a protected area	23.5	23.8	33.2	-	-	-	-					
	P159	Finance allocated to the French Research Centre on Environmental Risk, Transport and Planning (CEREMA)	89.9	20.2	88.8	55.5	75.7		Number of peer-reviewed scientific publications per researcher at CEREMA	-	-	1.63	25.2	25.2	-	25.2					
									Funding allocated to Météo-France	68.4	15.4	69.4	43.4	58.8		Number of scientific publications, in peer-reviewed journals, by Météo-France researchers	2.2	2.1	1.9	29.4	29.4
	P174	Fighting climate change and promoting air quality	45.1	10.1	38.1	23.8	34		Annual emissions of atmospheric pollutants (kt):	-	-	-	-	-	-	-					
									NOx	737	756	726									
									NH3	560	547	545									
									VOCnm	1.125	1.164	1.119									
									PM2,5	172	189	169									
		Energy Transition Tax Credit (CITE)	308	75.4	100	62.5	137.9		Number of households benefiting from CITE	868,000	275,000	105,000	137.9	-	-	-					
		Property tax exemptions for social housing agencies (HLM) and semi-public companies (SEM)	124	37.9	124	77.6	115.5		Number of HLM and SEM bodies benefiting from the exemption	7,951	7,422	7,325	115.5	-	-	-					
	Green vehicle bonus	435.1	97.7	827.6	517.6	615.3		Number of bonuses allocated	117,000	270,000	326,000	615.3	-	-	-						
	MaPrimeRenov'	709.9	159.4	1 283.7	802.8	962.2		Number of renovated properties	141,143	644,073	669,890	962.2	-	-	-						
	P181	Funding allocated to ADEME	526.2	118.1	576.7	360.7	478.8		Efficiency of the Renewable Heating Fund (euros/TOE)	-	-	-	239.4	-	-	239.4					
									Industrial biomass sector	515	626	896									
									Other biomass sectors	1,311	1,222	1,978									
									Solar energy sector	6,756	4,942	5,140									
									Geothermal sector	1,161	1,030	1,715									
P345	Support for renewable electrical energies in Metropolitan France*	5,060.1	1,136	-	-	1,136		-	-	-	1,136	-	-	-							
								Support for biomethane injection*	496	111.4	-	-	111.4		-	-	-	111.4	-	-	-
								Promoting renewable energies in non-interconnected zones (ZNI)*	628.2	141	-	-	141		-	-	-	141	-	-	-

\*Due to the evolving market energy prices, these subsidies are considered null for 2022.

Mission	Programme	Expenditure	Amounts (€ M)					Sector	Indicator	2020	2021	2022	Distribution by objectives (in €M)			
			2021		2022		Total						Mitigation	Adaptation	Biodiversity	Pollution
			Eligible	Balance allocated	Eligible	Allocated	Allocated									
Recovery Plan	P362	Decarbonisation of industry**	1.6	-63.5	4.4	2.8	-60.7		-	-	-	-60.7	-	-	-	
		Lyon-Turin rail link	195.7	43.9	238.3	149	193		-	-	-	193	-	-	-	
		Regional hydrogen ecosystems	5	1.1	19.6	12.3	13.4		-	-	-	13.4	-	-	-	
		Energy innovation and ecological transition for SME	24.3	5.5	30	18.8	24.2		-	-	-	24.2	-	-	-	
		Brownfield regeneration	4	0.9	16.4	10.3	11.2		-	-	-	-	-	-	11.2	
		Increase in the MaPrimeRenov' scheme***	500	112.3	-	-	112.3		-	-	-	112.3	-	-	-	
		Survival shelters in French Polynesia	1	0.2	0.6	0.4	0.6		-	-	-	-	0.6	-	-	
Managing public finances and human resources	Multiple	Reimbursement of public transit season tickets for civil servants	72.5	16.3	74.7	46.7	63		-	-	-	63	-	-	-	
Public action and transformation	P348	Renovations in public buildings	90.3	20.3	279.4	174.7	195		-	-	-	195	-	-	-	
Research and higher education	P150	Alliance Allenvi****	240.6	54	-	-	54		-	-	-	9.7	21.1	21.1	21.1	
	P172	Operation of public environmental research bodies BRGM, CEA, CIRAD, CNRS, IFREMER, INRA, IPEV, IRD, IRSTEA	1,150.5	258.3	1,174.8	734.7	993		Percentage of publications by programme operators in global scientific output	1.4	1.4	1.3	177.8	388.7	388.7	37.9
									Percentage of publications by programme operators in European Union scientific output (EU 28)	6.7	6.4	6.3				
									Share of the scientific output by programme participants in the France-Germany-United Kingdom perimeter	13.3	12.9	12.7				
			European Centre for Medium Range Weather Forecasts (ECMWF)	7.8	1.8	8.4	5.3	7		-	-	-	-	7	-	-
P193		Developing space research technology for improved Earth observation.	293	65.8	297.5	186.1	251.8		Percentage of publications by programme operators in global scientific output	3.3	3.1	2.8	251.8	-	-	-
									Percentage of publications by programme operators in European scientific output	12.9	13	14.2				
									Percentage of publications by programme operators in the scientific output in the France - Germany - United Kingdom perimeter	28.5	29.1	29.1				
			EUMETSAT	64.4	14.5	62.4	39	53.5		-	-	-	-	53.5	-	-

\*\* A portion of this expenditure is refinanced by NextGeneration EU and had been erroneously included in the 2021 allocation. We are correcting this mistake here.

\*\*\* The amounts of eligible expenditures on this line have been allocated, in a lump-sum manner, partly to green bonds and partly to NextGeneration EU.

\*\*\*\* The breakdown of expenses corresponding to this alliance is no longer specified in the 2022 budget documentation.

Mission	Programme	Expenditure	Amounts (€ M)					Sector	Indicator	2020	2021	2022	Distribution by objectives (in €M)			
			2021		2022		Total						Mitigation	Adaptation	Biodiversity	Pollution
			Eligible	Balance allocated	Eligible	Allocated	Allocated									
Research and higher education	P190	Research by CEA and IFPEN (2020) into new energy technologies	171.2	38.4	172.2	107.7	146.1		Own resources generated from research valorization (in millions of euros)	341	305	302	146.1	-	-	-
									Income generated from marketing of the research (€ millions)	39.9	54.4	53.1				
		Funding allocated applied research at Gustave-Eiffel University and CSTB	21.3	4.8	21	13.1	17.9		Number of international publications per researcher	1.01	1.14	0.98	9	9	-	-
Public development aid	P110	Multilateral economic and financial assistance	286.4	64.3	518.9	324.5	388.8		-	-	-	173.5	157.6	39	18.7	
		Bilateral economic and financial assistance	22.1	5	24.9	15.6	20.5		-	-	-	5.1	5.1	5.1	5.1	
	P209	Bilateral cooperation: adaptation and mitigation to climate change	209.5	47	306.1	191.4	238.5		-	-	-	119.2	119.2	-	-	
		EU community cooperation: adaptation and mitigation to climate change	85.7	19.2	83	51.9	71.1		-	-	-	35.6	35.6	-	-	
Invest for the Future Programme	PIA 1	Residential thermal renovation (ANAH)	7.1	1.6	3.9	2.4	4		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	3.6	3.6	3.6	4	-	-	-
		Energy transition institutes	37.9	8.5	20.6	12.9	21.4		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	1	0.6	0.6	21.4	-	-	-
		City of the Future	31.7	7.1	21.2	13.3	20.4		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	8.1	8.1	8	5.1	5.1	5.1	5.1
		Green technology fund (innovative SMEs)	12.4	2.8	16.5	10.3	13.1		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	3.5	3.6	3.1	3.3	3.3	3.3	3.3
	PIA 1 and 2	Vehicles of the future	62.4	14	69.3	43.3	57.4		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	2.2	2.3	2.2	14.3	14.3	14.3	14.3
	PIA 1,2 and 3	Demonstrators (including circular economy and smart grids) and TIGA	81.8	18.4	121.7	76.1	94.5		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	2.1	2.3	2.1	23.6	23.6	23.6	23.6
	PIA 3	Innovation competition (ADEME)	15.8	3.5	17.2	10.8	14.3		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	1.6	1.4	1.5	7.2	-	-	7.2
		Faster development of high-performing innovation ecosystems (sustainable transport and mobility)	19.2	4.3	29.2	18.3	22.6		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	3.3	4	5.9	22.6	-	-	-
		Demonstrators and TIGA (CDC)	47	10.6	49.5	31	41.5		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	0.4	0.3	0.3	10.4	10.4	10.4	10.4
		Demonstrators and TIGA (First of a kind fund and state aid) (ADEME)	8.4	1.9	34.2	21.4	23.3		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	11.2	6.1	5.8	5.8	5.8	5.8
<b>Total</b>			<b>15,361.5</b>	<b>3,692</b>	<b>10,031.1</b>	<b>6,273.6</b>	<b>9,965.6</b>									

## 3. METHODOLOGICAL NOTE

Eligible Green Expenditure is State expenditure that complies with the eligibility terms set forth in the Green OAT Framework Document<sup>1</sup>. This memo sets out the method used to monitor disbursements and the associated performance indicators.

Expenditure is monitored exclusively using the State's existing tracking procedures and performance indicators, which provide the same level of reliability as those used for the State budget. Wherever possible, expenditure is monitored using online, publicly available documents, in which case access details are provided.

Eligible Green Expenditure includes tax, investment, operational and intervention expenditure required for the implementation of France's cli-

mate and environmental policies. Based on the Green OAT Framework Document, Eligible Green Expenditure is selected each year by an Inter-Ministerial Committee, which reports directly to the French Prime Minister. Each Ministry is responsible for identifying eligible expenditure in its scope of activity, while the final decision is taken by the Inter-Ministerial Committee.

Eligible Green Expenditure is monitored separately, depending on its type (budgetary, tax or Invest for the Future). Moody's investors Service verifies that eligible expenditure has been correctly identified based on the Green OAT Framework Document's eligibility criteria.

### ◆ BUDGETARY EXPENDITURE

Eligible green budget expenditure comprises investing, operating and intervention expenditure. Expenditure and the associated indicators are monitored through annual performance reports appended to the French Budget Settlement Act, the Finance Act that sets the final amount of State expenditure and revenue, and the resulting financial result.

The Finance Acts "determine, for a given reporting period, the nature, amount and appropriation of State revenue and expenditure, and the resulting budget and financial balance. [...] The reporting period is one calendar year. [...]" (Article 1, French Finance Act 2001-692 of 1 August 2001 (LOLF)<sup>2</sup>. All budget documents are available online: <https://www.budget.gouv.fr/>.

Each year, the National Court of Auditors issues a statement on the statutory validity of the State's accounts. In the statement, which is appended to the French Budget Settlement Bill for the prior budget reporting period, with a summary of the verification procedures performed, the National Court of Auditors rules on the accuracy and true and fair presentation of the State's accounts. The National Court of Auditors carries out its constitutional mandate to assist Parliament and Government in controlling the implementation of Finance Acts and, more specifically, the provisions (paragraph 5 of Article 58) of the aforementioned French Finance Act (LOLF).

The annual performance reports appended to the Budget Settlement Act are included in the budget documents verified by the National Audit Office, before being made public. They provide details of

expenditure and indicators for each mission, programme and initiative, as well as the associated budget categories. Data in the reports is tracked in CHORUS, a software application used by all public sector accounting stakeholders to manage all ministerial and other governmental service programmes. The annual performance reports provide an appropriate level of detail on each Eligible Green Expenditure selected.

In a very limited number of cases, the eligible expenditure corresponds with a targeted proportion of the amounts shown in the budget documentation. The relevant percentage relative to the criteria of the Green OATs framework document is then estimated on the basis of expert analysis.

Alongside this, expenditure in support of renewable energies is subject to constant regularisation as a function of changing market prices, such that there is a time lag between the estimates of the Commission de Régulation de l'Énergie and the budgetary expenditure. The logic behind these subsidies is that they cover the differential between the cost of production of renewable energy and the market price. As a result of the events of 2022, the high price levels meant that there were no subsidies paid to renewable energy producers. The decision was taken, to make it easier to understand the allocation of the funds raised through the Green OATs and no matter the accrued budget flow schedule, to directly enter zero expenditure in 2022 and this for as long as these same market conditions prevail.

<sup>1</sup> - <https://www.aft.gouv.fr/files/archives/attachments/25562.pdf>

<sup>2</sup> - <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000394028>

## ◆ TAX EXPENDITURE

Eligible Green Expenditure may also correspond to tax expenditure. Such expenditure is also tracked in budget documents, albeit with a time lag. The use of internal Ministry of the Economy and Finance documents enables quicker access to data, while providing for adjustments once the final figures are published.

In accordance with the European System of National and Regional Accounts (ESA 2010)<sup>3</sup>, refundable tax credits are recognised as State expenditure in the national accounts<sup>4</sup>. Tax credits are “refundable” when total credits exceed the taxpayer’s tax liability. As a result, certain tax expenditure items may be recognised as Eligible Green Expenditure.

Budgeted tax expenditure for a given year corresponds to rights granted to individuals and companies for their expenditure in the preceding year. The data obtained, including the amounts and performance indicators, is derived from software associated with each tax concerned (income tax for natural persons, corporate income tax, property tax and VAT). For each of these taxes, the data extracts serve as a basis for the national accounts.

The National Audit Office assesses the entire tax chain for each of these taxes when performing procedures to issue assurance on the validity of the State’s accounts.

## ◆ EXPENDITURE FOR “INVEST FOR THE FUTURE” PROGRAMMES

Green expenditure covers, in part, the Invest for the Future programme (PIA), integrated into the France 2030 plan, managed by the General Secretariat for Investment (SGPI). The monitoring of these is notably through the quarterly reports submitted to Parliament.

The PIA was created by the State to finance innovative investments with significant growth potential, based on the principle of joint funding for each project. The €77 billion allocated by the State to such investments was made available in three stages: €35 billion in 2010 (Invest for the Future programme 1 (PIA1), €12 billion in 2014 (PIA2), €10 billion in 2017 (PIA3) and €20 billion in 2020 (PIA4 with €11 incorporated into the recovery France Relance plan).

Management of the Invest for the Future programmes was entrusted to 12 operators (including the French Research Agency (ANR), Caisse des Dépôts et Consignations), with responsibility for managing national calls for projects. The Secretariat General for Investment (SGPI) is responsible for the overall management. Invest for the Future programmes provide funding for universities for their research structures, setting up entities to capitalise on research and funding collaborative, industrial projects in fields such as the digital economy, green biotechnology and chemistry, and marine technologies. The programme operators award selected beneficiaries grants or repayable advances (intervention expenditure) or acquire equity stakes (investment expenditure). Each project is assessed by independent experts and the decision to invest is made under the aegis of the Prime Minister.

The Secretariat General for Investment sends Parliament a quarterly report on Invest for the Future funding, presenting both commitments and disbursements, by type of funding, operator and initiative, and the percentage of joint funding provided. The Secretariat General for Investment also regularly publishes information on PIA<sup>5</sup>. A Supervisory Committee, which includes members of Parliament, provides an annual assessment of the programme’s performance. These documents enable Eligible Green Expenditure to be monitored, with the related performance indicators. The operators managing Invest for the Future programmes on behalf of third parties are audited by the National Audit Office which verifies the financial flows between the State and the operators.

The explicit identification of environmentally favourable projects in the management of the PIA 1, 2, 3 facilitate their integration into the envelope of Eligible Green Expenditure. The governing framework for PIA 4 is more flexible, allowing a gradual marking of expenditure which is currently ongoing, so that allocation of funds raised through the Green OAT bonds does not so far include expenditure that come within the scope of the fourth section of the PIA.

Under the Green OATs Framework Document, expenditure for Invest for the Future programmes can be Eligible Green Expenditure for current or past expenditure (if disbursements were made in 2020 or 2021 for 2021 issuances), or future expenditure, if it involves future disbursements. The Green OAT Framework Document prioritises current and past expenditure.

3 - <https://ec.europa.eu/eurostat/documents/3859598/5925793/KS-02-13-269-FR.PDF/cfd0cb42-e51a-47ce-85da-1fbf1de5c86c>, page 493 of the document

4 - <https://www.insee.fr/fr/statistiques/fichier/2832834/comptes-nationaux-base-2010.pdf>

5 - including, for example, the annual report of the SGPI: [https://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2021/06/mp\\_sgpi\\_ra2020\\_v1\\_def.pdf](https://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2021/06/mp_sgpi_ra2020_v1_def.pdf)

## 4. MOODY'S SECOND PARTY OPINION

SOVEREIGN AND SUPRANATIONAL

**MOODY'S**  
INVESTORS SERVICE

### ASSESSMENT

28 September 2023



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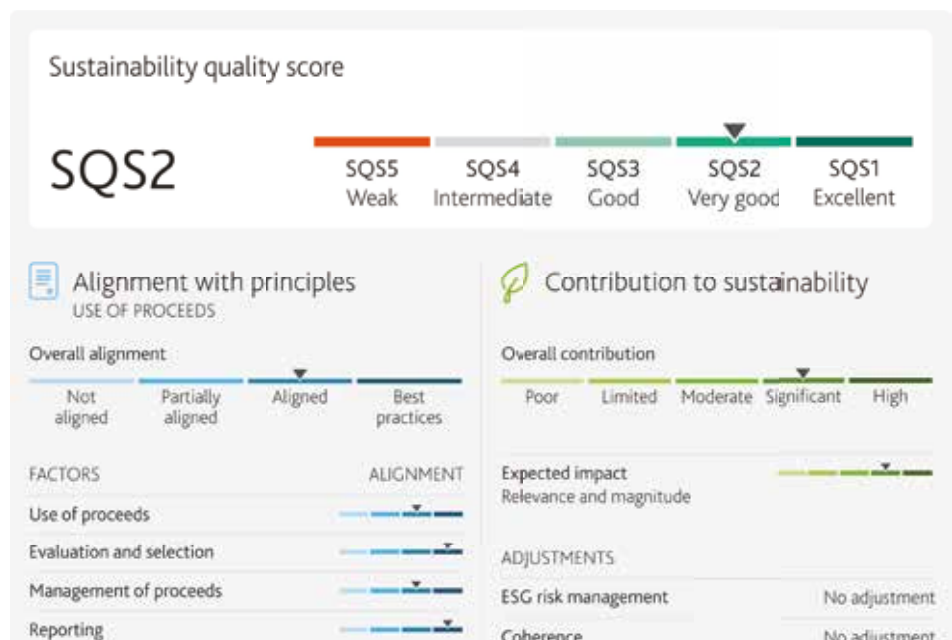
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## Government of France

### Second Party Opinion – Sustainability Bond Framework Assigned SQS2 Sustainability Quality Score

#### Summary

We have assigned an SQS2 sustainability quality score (very good) to the Government of France's Green OAT Framework dated January 2017. The sovereign has established its use-of-proceeds framework to finance projects across seven eligible green categories (buildings, transport, energy [including smart grids], living resources, adaptation, pollution and eco-efficiency, and transversal). France has shared the list of eligible expenditures financed for the 2021 and 2022 budget years covering the seven eligible categories. The framework is aligned with the four core components of the International Capital Market Association's (ICMA) Green Bond Principles 2021 (including the June 2022 Appendix 1). The framework also demonstrates a significant overall contribution to sustainability.



## Scope

We have provided a second party opinion (SPO) on the sustainability credentials of the Government of France's bond framework dated January 2017, including the framework's alignment with the four core components of the ICMA's Green Bond Principles 2021 (including the June 2022 Appendix 1). Under its framework, the French Republic issued three French sovereign green bonds respectively in 2017, 2021, and 2022, to finance projects across seven green categories, as outlined in Appendix 2. Moreover, to maintain the liquidity of this Green OAT through tap issues after the initial issuances, the AFT has carried out several re-issuances.

Our assessment is based on the last updated version of the Government of France's framework dated January 2017 and focuses on green bond issued in 2022, allocated to green eligible expenditures for the 2021 and 2022 budget years. Our opinion reflects our point-in-time assessment of the details contained in this version of the framework, and other public and non-public information provided by the issuer.

We produced this SPO based on our [Framework to Provide Second Party Opinions on Sustainable Debt](#), published in October 2022.

## Issuer profile

France has a population of around 67 million and ranks as the world's seventh-largest economy by nominal GDP. As a member of the European Union (EU), France steered and jointly endorsed the collective pledge to reduce greenhouse gas (GHG) emissions by 40% by 2030, from 1990 levels, a target that has since been strengthened to a 55% reduction by 2030. Because of its predominantly nuclear electricity generation capacity, France has one of the lowest carbon intensity values in the Organisation for Economic Co-operation and Development (OECD) group. Although air pollution is decreasing, it remains above World Health Organization (WHO) recommendations, and there is scope for improvement in energy intensity and for increasing the share of renewables in the electricity grid, which is only half the OECD average.

Compared with its OECD peers, France has an overall high proportion of sites that are important for terrestrial biodiversity. As of 2020, 80% of such sites are covered by protected areas.<sup>1</sup> However, the country's Red List Index has recorded a deteriorating trend over the last 20 years, ranking over this period as one of the highest indicated biodiversity losses observed among OECD countries<sup>2</sup>.

France's exposure to environmental risks is low across all risk categories, including physical climate risks, carbon transition, water management, natural capital, and waste and pollution. Wildfires have become more recurrent but remain concentrated in the south, limiting the country's overall exposure to physical climate risks. In 2022, France (like other European countries) experienced one of its warmest summers on record, with heat waves, droughts and wildfires. However, the credit impact of these climate events was minimal.

## Strengths

- » Several eligible categories intend to finance activities that potentially contribute to a significant reduction in GHG emissions and accelerate the transition of France to a low-carbon economy.
- » The environmental benefits associated with the eligible projects are clearly defined and relevant.
- » Comprehensive and transparent project evaluation and selection processes are in place, and include relevant expertise.
- » Sophisticated impact and allocation reporting, including independent verification, ensures a high level of transparency for investors.

## Challenges

- » Although the eligible green project list is accompanied by supplemental explanatory material, eligibility criteria can lack supporting thresholds in some categories.
- » There is no explicit provision for temporary placements with respect to GHG intensive activities or controversial activities.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody's.com> for the most updated credit rating action information and rating history.

## Alignment with principles

The Government of France's green bond framework is aligned with the four pillars of the ICMA's Green Bond Principles 2021 (including the June 2022 Appendix 1).

- Green Bond Principles (GBP)
- Social Bond Principles (SBP)
- Green Loan Principles (GLP)
- Social Loan Principles (SLP)
- Sustainability-Linked Bond Principles (SLBP)
- Sustainability-Linked Loan Principles (SLLP)

## Use of proceeds



### Clarity of the eligible categories – ALIGNED

The Government of France has established projects across seven eligible green categories and has shared a detailed list of expenditures financed via the 2022 Green OAT issuance, which provides clear visibility into the projects and activities financed with the bond proceeds. The list of expenditures is accompanied by publicly available documentation with detailed project descriptions. However, some projects lack granularity in terms of technical thresholds. The bond proceeds have been used exclusively to finance and refinance investments in accordance with applicable budgetary regulations and the eligibility criteria of the framework. The projects are predominantly based in mainland France, with a minority of projects in emerging countries.

### Clarity of the environmental or social objectives – BEST PRACTICES

The government has clearly outlined four environmental objectives associated with the projects, which are coherent with national and international standards, such as the French Green Fin label or the European Union (EU) taxonomy. These objectives are presented in Appendix 2. All financed projects are considered relevant for the respective environmental objectives.

### Clarity of expected benefits – BEST PRACTICES

The sovereign has identified clear expected environmental benefits for all the eligible categories. These benefits are measurable and will continue to be quantified in the reporting, and are considered relevant for all eligible categories. All the raised bond proceeds have been allocated to expenditures for the 2022 budget year. The government has transparently disclosed that the proceeds from issuance in 2022 have been allocated both to expenditures realized in 2021 (representing a maximum of 50% of the allocation) and to expenditures realized in 2022, where a small portion may be reserved for future allocation for a few expenditures under the category of "Invest for the Future" projects ("Programme d'investissements d'avenir" in French).

### Best practices identified

- » Objectives set are defined, relevant and coherent for all project categories
- » Relevant benefits are identified for all project categories
- » Benefits are measurable and quantified for most projects, either ex-ante with clear baselines or with a commitment to do so in future reporting
- » Commitment to transparently disclose the share of proceeds used for refinancing where feasible
- » Commitment to transparently communicate the associated lookback period(s) where feasible



## Process for project evaluation and selection



### Transparency and quality of the process for defining eligible projects – BEST PRACTICES

The Government of France has established a clear, structured process for evaluating and selecting eligible expenditures formalized in its publicly available framework. An inter-ministerial working group has been set up for collaboration between the ministries involved in Green OAT issuances. Each ministry is responsible for identifying eligible green expenditures within its programs, and the inter-ministerial working group is in charge of monitoring the continued fulfillment of eligibility throughout the life cycle of the bond. The monitoring of potential ESG controversies is performed before the selection of expenditures and during the reporting process throughout the life of the bonds. The environmental benefits of the Green OAT's expenditures are the subject of specific studies supervised by the Green OAT Evaluation Council, including an analysis of mitigation measures for the associated risks. Roles and responsibilities within the working group are clear and include relevant internal expertise, with support from external consultants.

### Environmental and social risk mitigation process – BEST PRACTICES

The environmental and social risk mitigation process is formalized and disclosed in publicly available documentation. As a general rule, when draft legislation is transmitted to parliament, it is accompanied by an impact study covering the economic, financial and social implications. In addition, and more specifically, the environmental benefits of the Green OAT's expenditures are the subject of specific studies supervised by the Green OAT Evaluation Council, including an analysis of mitigation measures for the associated risks.

#### Best practices identified

- » The roles and responsibilities for project evaluation and selection are clearly defined and include relevant expertise
- » There is evidence of continuity in the selection and evaluation process through the life of the financial instrument(s), including compliance verification and procedures to undertake mitigating actions when needed
- » The process for project evaluation and selection is traceable
- » Material environmental and social risks for most project categories are identified
- » Presence of corrective measures to address environmental and social risks across projects
- » ESG controversies are monitored

## Management of proceeds



### Allocation and tracking of proceeds – BEST PRACTICES

The government has defined a clear process for the management and allocation of bond proceeds in its publicly available framework, and this process falls under the responsibility of the Ministry of Finance. The proceeds are placed in a centralized account and tracked to ensure that the amount of green bonds issued during the year remains less than the estimated amount of green eligible expenditure. The proceeds are allocated within a maximum allocation period of one year.

### Management of unallocated proceeds – ALIGNED

The intended type of temporary placements are managed according to the state cash management strategy. Investments may take the form of unsecured loans or securities repurchase agreements, and will be publicly disclosed. In case of postponement or cancellation, proceeds will be reallocated to other green projects. However, there is no explicit provision for temporary placements with respect to GHG intensive activities or controversial activities.

#### Best practices identified

- » Broad disclosure of a clearly articulated and comprehensive management of proceeds policy to external stakeholders; bondholders or lenders at a minimum
- » Short allocation period, for example typically less than 24 months
- » Commitment to reallocate proceeds to projects that are compliant with the framework

## Reporting



### Transparency of reporting – BEST PRACTICES

The government will keep reporting annually on the bonds issued under its framework, and this reporting will continue to be made publicly available. The reporting is exhaustive and includes the description of financed projects, expected green benefits, the amount allocated across eligible expenditures, the share of refinancing and unallocated proceeds. The sovereign has identified relevant environmental reporting indicators for all seven eligible categories, which are publicly disclosed in the framework and supporting documentation. The methodologies and assumptions used to report on the environmental impact of eligible projects will continue to be publicly disclosed in the reporting. Additionally, with regard to annual reporting, a dedicated Green OAT Evaluation Council defines the specifications and schedule for evaluation reports on the environmental impact of green eligible expenditures financed by France's green sovereign bonds. The council also provides its opinion on the quality of the evaluation reports, and the impact and relevance of the findings. All of its work is publicly available. Finally, the government has committed to seek an independent verification of its proceeds allocation and impact on an annual basis until the maturity of the issued instruments.

### Best practices identified

- » Reporting until full bond maturity or loan payback
- » Reporting covers material developments and issues related to the projects or assets
- » Reporting on allocation of proceeds and benefits done at least at eligible category level
- » Exhaustive allocation reporting – balance or % of unallocated funds, types of temporary investments (e.g. cash or cash equivalent) and share of financing vs re-financing
- » Clear and relevant indicators to report on the expected environmental/social impact of all the projects, where feasible, or eligible categories
- » Disclosure of reporting methodology and calculation assumptions to bondholders or lenders at a minimum
- » Independent audit of the tracking and allocation of funds at least until full allocation and in case of material changes
- » Independent impact assessment on environmental benefits by a qualified third-party reviewer at least until full allocation and in case of material changes and/or case studies to report on the social impact/benefits

## Contribution to sustainability

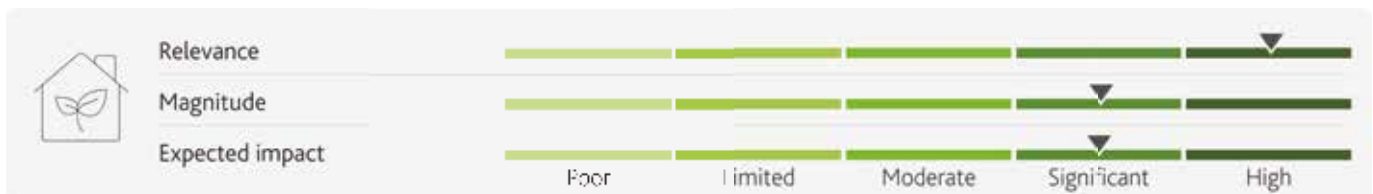
The framework demonstrates a significant overall contribution to sustainability.



## Expected impact

The expected impact of the eligible categories on the environmental objectives is significant. Based on the information provided by the issuer, we have weighted the categories according to the actual proceeds allocation for the 2022 budget year. The category with the highest share of proceeds for the 2022 budget year is buildings, followed by transversal, energy, living resources and transport. Adaptation and pollution and eco-efficiency make up relatively minor shares of total allocation.

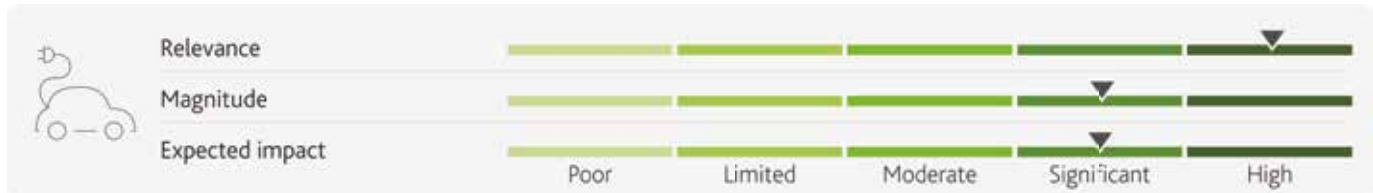
### Buildings



Real estate is the second-most polluting sector in France, accounting for 27% of carbon emissions and 45% of final energy consumption, making investment in energy efficiency retrofitting a key priority for the country<sup>2</sup>. Most of the proceeds within this category are allocated toward the financial incentivization of the MaPrimeRénov program, which is the nationwide retrofit implementation program for private houses and residential buildings. A minority of the expenditure is allocated to thermal renovation for administrative buildings. The requirement for EU countries to adopt a long-term renovation strategy is set out in the Energy Performance of Buildings Directive (2020/31/EU), and renovation of both public and private buildings has been singled out in the European Green Deal. Energy gains are pursued under the EU Renovation Wave strategy, which aims to double annual energy renovation rates between 2020 and 2030. France published its long-term strategy in 2020 in response to this directive. Under its Energy Transition law (2015), the country set the goal to achieve a level of energy performance in line with “low-consumption building” standards for the entire housing stock by 2050. The regional and national need to improve building energy efficiency and undertake retrofitting activities at scale results in a high relevance score for this category.

In terms of magnitude, the minimum thresholds put forward by the MaPrimeRénov program meet the substantial contribution criteria for the EU taxonomy on building renovations — specifically, a minimum energy efficiency gain of 30%. The work program principally targets energy consumption through the retrofitting of heating systems. The program also targets primary energy demand through the insulation of residential buildings. However, some lock-in effects result from the inclusion of gas boilers, even if the gas boilers to be installed are highly energy efficient and make up only a small share of allocation. Of note, gas boilers will no longer be supported by MaPrimeRenov' after 2023. Additionally, the work package includes the installation of pellet stoves, which are not considered best-in-class technology. Their effectiveness is contingent on the type of fuel used, and there is potential for environmental externalities in the sourcing of suitable fuel and land. All these factors lead to a significant magnitude score for the category.

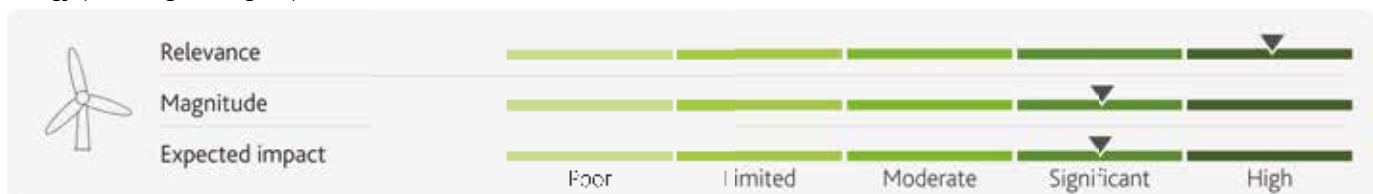
## Transport



The transport sector accounts for 29% of total GHG emissions in France and is the only sector whose emissions have not decreased<sup>4</sup>. The transportation projects to be financed are in rail (including the Lyon-Turin railway line, representing 14% of the allocation for this category and 2% of the total use of proceeds for the year 2022) and inland waterways, notably intermodal exchange hubs to support combined transport (road and rail, or road and inland water transportation) for freight. The financing also includes support for the acquisition of zero tailpipe vehicles (electric vehicles [EVs] and bicycles), for public transportation, and for research. Most of the expenditures are focused on incentivizing the acquisition of EVs through subsidies. In 2022, the share of low-carbon vehicles was 22% of the total car fleet in France, and the sale of internal combustion engine vehicles is scheduled to be banned by 2035<sup>5</sup>. In general, both rail and inland water transport for freight are considered to be important enablers of GHG reduction, as compared to road freight. The market share of rail transport for freight stood at only 9% in France in 2021, as compared to 18% in the EU as a whole<sup>6</sup>. These factors result in a high relevance score for the category.

In terms of magnitude of the category, the category finances a wide range of projects with different levels of impact. With regards to combined transport, the French government finances the installation of new intermodal hubs and the maintenance of existing ones for which the impact is considered significant. According to a study by the French government, shifting to multimodal freight transport reduces GHG emissions by up to 91% (for rail and road transport) and up to 59% (for road and inland waterway transport), as compared to pure road freight on a 760-km journey<sup>7</sup>. Moreover, in France, trains used for freight transport are mostly electrified (75% in 2018)<sup>8</sup>. To support the modal shift, the French government is financing the installation of a new electrified railway line between Lyon and Turin. However, the positive impact of this projects is reduced by the estimated negative externalities, many of which are irreversible (including biodiversity loss, 1,500 hectares of arable land destroyed and waste contamination). Furthermore, it is estimated to take between 25 and 50 years to fully compensate for the GHG emissions generated in the construction phase<sup>9</sup>. For public transportation, the category finances tramways (electric, and thus with zero tailpipe emissions), but also a small part of the allocation is going to hybrid buses with no specific thresholds identified. Finally, France has implemented an ecological bonus to support the purchase of EVs or bicycles, in line with the most stringent standards, which represents most of the expenditures under the category, leading to the overall significant magnitude score.

## Energy (including smart grids)

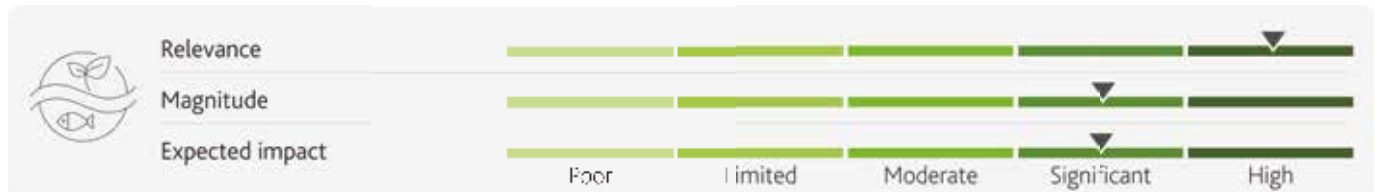


This category includes investments in renewable energy in France (mainland and islands), the promotion of the use of bio-methane for heat production, hydrogen use and research programs.

Although France has a low-carbon energy mix because of the central role of nuclear power, the share of renewable energy in the country's total power mix was only 25.5% in 2022<sup>10</sup>. France has pledged to increase the share of renewable energy consumption to 32% by 2030, whereby 40% of electricity production is intended to originate from renewable sources. In addition, the category finances the use of biomethane in district heating. Heat production represents 45% of final energy consumed in France, and 60% of heat energy continues to be derived from fossil fuels<sup>11</sup>. This indicates a particular need to move to cleaner sources of heat. The energy category also focuses on the production of hydrogen and aims to support the energy transition of small and medium-sized enterprises (SMEs) to improve their energy efficiency. It is relevant for the state to support SMEs on this path as they represent 30% of France's carbon footprint<sup>12</sup>. As all the subcomponents of the category are considered highly relevant, this results in an overall high relevance score.

In terms of magnitude, onshore wind farms and solar panels use best-in-class technologies. Additionally, the hydrogen production to be financed is using electrolysis, which results in few negative externalities due to France's low-carbon energy mix. Regarding biomethane, the French government has not established thresholds for carbon emission reduction using biomass products instead of fossil fuels. The sourcing of biomethane is mostly from agricultural residues, following best practices. However, biomethane derived from forest feedstock, which is not considered a best practice by the Climate Bond Initiative, is not explicitly excluded. For SMEs, while most funds are channelled into energy efficiency support, there is a lack of information on the specific actions taken. Overall, our assessment for the magnitude of the category, and its overall expected impact, is at the significant level.

### Living resources

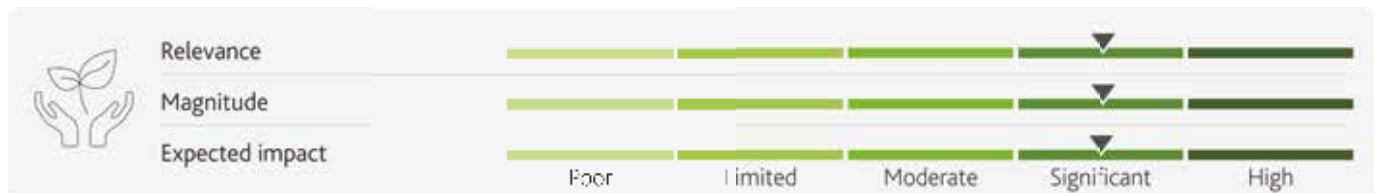


Most proceeds in this category are allocated to measures aimed at protecting specific habitats or protecting water quality. The former types of projects are principally concerned with increasing the scope of protected nature reserves in France, while the latter relate to subsidies allocated to relevant public entities. France set out its objectives for reducing anthropocentric pressures on nature in the 2030 National Strategy. As a key objective, France pledges to create a protected land and sea network of at least 30% of its territory, of which one-third should be under strong protection<sup>13</sup>. With regard to water, the most significant pressures on surface water bodies in France arise from diffuse agricultural pollution (nitrates and pesticides) and the recurrence and severity of droughts, which have increased significantly since 2017<sup>14</sup>.

A significant part of the proceeds have been allocated to the sustainable management of forests and to incentivize organic farming. Compared with its European peers, France scores less favorably in groundwater resources, bathing water and soil erosion<sup>15</sup>. Conventional agricultural practices amplify the pressures that drive this degradation. Despite an increase in forest coverage over the past decades, climate change threatens the health of French forests and their ability to act as a carbon sink, regulate water and conserve biodiversity. The state is the principal custodian of forestry, water and biodiversity assets, and has a key role to play in influencing agricultural production. The above-mentioned factors result in a high relevance score for this category.

In terms of magnitude, investments are made in nature conservation through the funding of organizations with suitable expertise and knowledge. However, there is a lack of granular information at project level on how the funds will be used, particularly with regard to ecosystem restoration and species recovery. In terms of agriculture, the best-available solutions are applied, which are likely to lead to the increased resilience of local ecosystems and an increase in the share of organic farming without significant associated negative externalities. The forest management plan is established for about 20 years, exceeding the best practice enshrined within the EU taxonomy, but there is a lack of information on the means through which this objective is pursued. Finally, with respect to water, expenditure is likely to facilitate the support of key infrastructure improvements that help address significant water issues. These factors combined result in a magnitude score of significant.

### Adaptation

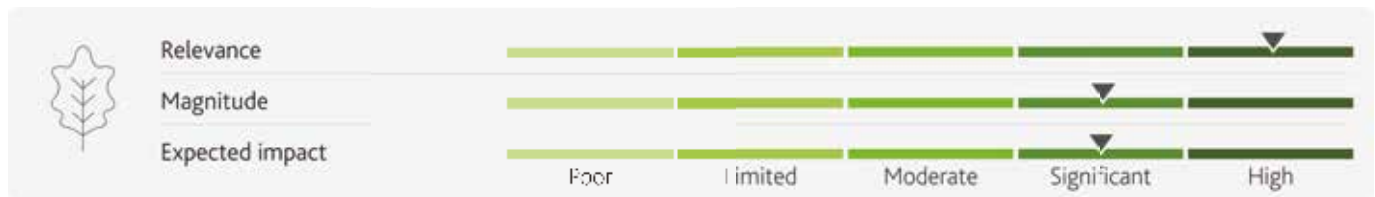


The category finances the development of spatial and meteorological technologies to better predict climate hazards and mitigate their consequences. The category also encompasses investments in international cooperation for climate change adaptation, which includes projects through French institutions (such as the Agence Française de Développement [AFD]) and international institutions (such as the UN and the World Bank), and the construction and maintenance of shelters in French Polynesia.

In France, between 2010 and 2019, average temperatures were above pre-industrial levels by 1°C, compared with 1.17°C for some southern European countries<sup>16,17</sup>. Investing in meteorological technologies improves the collection of specific climate change-related data to facilitate adaptation in the short term. The French government is also investing in shelters to protect the population from extreme climate events, more specifically from cyclones. As a developed country, we expect France to finance and invest in international cooperation to participate in climate change adaptation efforts in vulnerable areas. Overall, the relevance of this category is significant.

Funds are allocated to different institutions, such as the AFD, the UN, French-speaking organizations and the European development fund. These are recognized funds at the international level, which ensure thorough implementation of programs and projects. However, the lack of granular detail on the programs and projects financed limits visibility into their impact. This results in a significant magnitude score for the category.

### Pollution and eco-efficiency

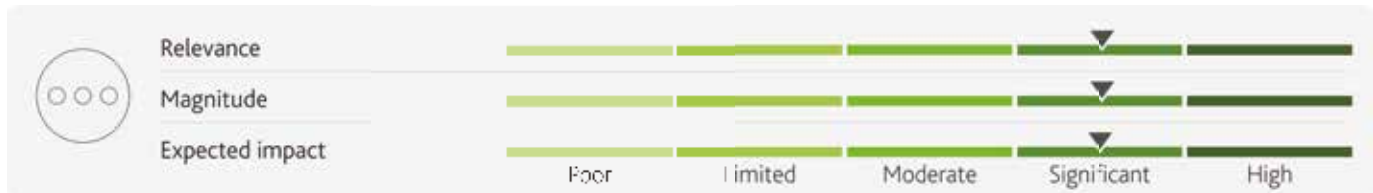


This category includes two projects that aim to improve the air quality level in France and to reduce soil artificialization through the decontamination and rehabilitation of brownfield sites.

In Europe, atmospheric pollution was responsible for 238,000 deaths in 2020<sup>18</sup>. In France, the number of early deaths attributable to atmospheric pollution is estimated at around 48,000 per year<sup>19</sup>. Not only does this pollution affect the population, it also negatively affects biodiversity, forests and cropland. As of 2022, France had not met European standards in this area. The Conseil d'Etat has imposed a €10 million penalty on the French State for each semester that it does not comply with European standards<sup>20</sup>. The French government is also tackling the challenge of soil artificialization and degradation. In 2019, on average, the degraded areas in France rose to 456 square meters (m<sup>2</sup>) per inhabitant, while in Germany this level was 323 m<sup>2</sup> per inhabitant. Up to 8,300 industrialized sites were mapped as brownfields to potentially reduce soil artificialization<sup>21</sup>. To address this issue, the government established the 2018 Biodiversity Plan. All these factors combined result in a high relevance score for the category.

In terms of magnitude, the measures taken to improve air quality rely on the implementation of atmospheric protection plans (APP). These enable local elected representatives to take action at the local level, which is relevant as atmospheric pollution is a local issue. These plans set specific targets and target the most polluting sectors (industry, transport, agriculture and so on). The APPs are assessed every year and are reviewed every five years. Additionally, the French government tackles the threat of soil artificialization by investing in the decontamination and rehabilitation of urban and industrial brownfield sites. In the past, dedicated funds have enabled the rehabilitation of 2,700 hectares of brownfield sites<sup>22</sup>. However, due to a lack of visibility on technologies and thresholds applied for the decontamination process, the magnitude score is considered significant overall.

## Transversal



This category encompasses a diverse range of subcategories, with the principal allocations being awarded to research, innovation and international aid. The importance of scientific research to deliver positive sustainability outcomes is underwritten in SDG 9.5, which stresses the role of enhanced scientific research and the upgrading of technological capabilities of industrial sectors. In addition, the relevance of multilateral aid is highlighted in Article 6 and 11 of the Paris Climate Accord, which emphasize the need for international cooperation on adaptation efforts. Taking into account the needs of developing countries is paramount, especially for those countries that are particularly vulnerable to the adverse effects of climate change. All these factors combined result in a significant relevance score for the category.

With regard to magnitude, the research outlined is conducted by relevant entities, which increases knowledge in the domain of environmental science. Environmental research has utility by informing policy and technological development. This knowledge-building is an important, albeit indirect, tool in combating climate change. In addition, the financing of multilateral aid builds capacity in locations that are less resilient and facilitates the climate transition in vulnerable economies, bringing a potential for long-term positive impact. Such expenditure helps bridge a sizable gap in climate finance for developing countries, which was \$16.7 billion in the year 2020 <sup>23</sup>. Nevertheless, there is a lack of visibility into the specifics of both research and aid funding. The above-mentioned factors combined result in a significant score for magnitude.

### ESG risk management

We have not applied a negative adjustment for ESG risk management to the expected impact score. France is a designated country under the Equator Principles. Also, it is a signatory of all the major UN Human Rights conventions (including the European Convention on Human Rights, and the UN Guiding Principles on Business and Human Rights) and adheres to the OECD Guidelines for Multinational Enterprises, which assure that the country is required to sufficiently address the management of most ESG risks. At the international level, France has published and updated its national determined contributions to the Paris Agreement. At the local level, in 2009 France introduced a law that requires authorities to conduct environmental impact assessments before the implementation of major projects. Ex-ante impact assessments ensure the implementation of the principles of prevention, integration, precaution and public participation. They also foster transparency on the government's decision process regarding environmental and social impacts.

### Coherence

We have not applied a negative adjustment for coherence to the expected impact score. The eligible categories of the framework align with the government's sustainability strategies, focusing on a transition to a net-zero economy that supports growth and energy security. France has adopted the National Low-Carbon Strategy, in line with the Paris Agreement, which drives a road map to reduce its GHG emissions by 40% by 2030 and to reach a net-zero target by 2050. These efforts are reflected in the allocation of proceeds, of which the largest shares are allocated to energy and buildings. These are also the two domains in which France lags the most.



## Appendix 1 - Mapping eligible categories to the United Nations' Sustainable Development Goals

The seven eligible categories included in the Government of France's framework are likely to contribute to six of the UN's Sustainable Development Goals (SDGs), namely:

UN SDG 17 Goals	Eligible Category	SDG Targets
GOAL 7: Affordable and Clean Energy	Renewable Energy	7.1: Ensure universal access to affordable, reliable and modern energy services
	Renewable Energy	7.2: Increase substantially the share of renewable energy in the global energy mix
	Green Buildings	7.3: Double the global rate of improvement in energy efficiency
GOAL 9: Industry, Innovation and Infrastructure	Clean Transportation	9.1: Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and
GOAL 11: Sustainable Cities and Communities	Clean Transportation	11.2: Provide access to safe, affordable, accessible and sustainable transport systems for all
GOAL 12: Responsible Consumption and Production	Living resources	12.2: achieve the sustainable management and efficient use of natural resources
GOAL 13: Climate Action	Adaptation	13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
GOAL 14: Life Below Water		14.2: Sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts
GOAL 15: Life on Land	Living resources	15.1: Ensure the conservation and sustainable use of terrestrial and inland freshwater ecosystems and their services
		15.2: Promote the implementation of sustainable management of all types of forests
	Pollution Control and Eco-efficiency	15.5: Reduce the degradation of natural habitats and biodiversity loss, and prevent the extinction of threatened species
GOAL 17: Partnerships to achieve the Goal	Transversal	15.3: Combat desertification and restore degraded land and soil

The mapping of the UN's SDGs in this SPO takes into consideration the eligible project categories (or key performance indicators) and associated sustainability objectives/benefits documented in the issuer's financing framework, as well as resources and guidelines from public institutions, such as the ICMA's SDG Mapping Guidance and the UN's SDG targets and indicators.

## Appendix 2 - Summary of eligible categories in the Government of France's framework

Eligible Category	Description	Sustainability Objectives	Main Impact Reporting Metrics
Green buildings	Improving building's energy efficiency Main Green Eligible Expenditures: - Energy efficiency investments by households, social housing corporation (tax credits, subsidized loans, etc.)	Climate Change Mitigation	- Number of households benefiting from tax credits for retrofitting its housing - Avoided carbon emissions
Clean transportation	Maintain, increase and promote public transportation and support multimodal transport solutions, and reduce use, improve energy efficiency and decrease carbon intensity of vehicles Main Green Eligible Expenditures: - Support to rail and waterways operators - Innovation in energy efficiency transportation systems and technologies - Investment in infrastructures triggering modal switch	Climate Change Mitigation	- Status of waterway network - Share of combined transport - Avoided carbon emissions
Renewable Energy	Develop renewable energies technologies and invest in assets (wind, solar, hydro, geothermal, marine), incl. their efficient integration in power systems (smart grids) Main Green Eligible Expenditures - Research and innovation in renewable energy - Investments in smart grids	Climate Change Mitigation	-Production of dedicated research activities -Innovation transfers to companies -Avoid carbon emissions
Living Resources	Promote organic farming, and enhance biodiversity and land environmental protection Main Green Eligible Expenditures: - Sustainable forestry management - Support to certified organic farming - Investment in protected areas - Research on living resources and biodiversity protection	Protection and restoration of biodiversity and ecosystems Sustainable use and protection of water and marine resources Climate Change Mitigation	-Number of Natura 2000 sites -Share of protected areas -Biodiversity-related indicators to be developed
Adaptation	Develop climate change extreme weather events observation systems and support adaptation related research, and develop adaptation related infrastructure Main Green Eligible Expenditures: - Atmosphere, oceans and biosphere monitoring systems, including ships and satellites - Research on adaptation systems and infrastructures	Climate Change Adaptation	-Performance of weather models in anticipation of extreme events -Biodiversity-related indicators to be developed
Pollution control and Eco-efficiency	Develop pollution monitoring and control systems and promote sustainable consumption and production modes (e.g., waste reduction and recycling, e.g., "circular economy") Main Green Eligible Expenditures - Monitoring Systems - Research and innovation - Promotion of the circular economy	Pollution Prevention and control Protection and restoration of biodiversity and ecosystems	-Monitoring of air quality indices -Pollution-related indicators to be developed -Recycling efficiency indicators to be developed

## Moody's related publications

### Second Party Opinion analytical framework:

» [Framework to Provide Second Party Opinions on Sustainable Debt](#), October 2022

### Topic page:

» [ESG Credit and Sustainable Finance](#)

## Endnotes

- 1 [Measuring distance to the SDG targets – France](#), OECD, 2022.
- 2 [Red List Index](#), OECD, August 2023.
- 3 [La rénovation énergétique](#), Government of France, July 2023.
- 4 [Greenhouse Gas Emissions and Carbon Footprint](#), France's Environmental Performance Review, 2021.
- 5 [Market share of electric and rechargeable vehicles in France from 2010 to 2022](#), Statista, May 2023.
- 6 [EU Rail freight transport in France](#), Internationales Verkehrswesen, October 2021
- 7 [The combined transport](#), French Minister for ecological transition March, 2023
- 8 [Le marché français du transport ferroviaire de marchandises](#), Autorité de Régulation des Transports, Décembre 2019.
- 9 [Infrastructure de transport de l'UE: accélérer la mise en oeuvre des mégaprojets pour générer l'effet de réseau dans les délais prévus](#), European Court of Auditors, 2020.
- 10 [Share of renewables in energy production](#), Enerdata, 2023.
- 11 [Chaleur renouvelable: la grande oubliée de la stratégie énergétique française?](#), Carbone4, November 2022.
- 12 [L'empreinte carbon des PME et ETI: le long chemin de la transition environnementale des entreprises](#), BPI, April 2023.
- 13 [Stratégie Nationale Pour Les Aires Protégées](#), Government of France, January 2021.
- 14 [Agriculture and Water Policies \(France\)](#), OECD, August 2023.
- 15 [International Environment Rankings](#), Government of France, February 2022.
- 16 [Changement climatique: quelle évolution des températures mondiales depuis l'ère préindustrielle?](#), Government of France, August 2021.
- 17 [Global and European temperatures](#), European Environmental Agency, June 2023.
- 18 [Bilan de la qualité de l'air en Europe](#), ATMO, France, Novembre 2022.
- 19 [Pollution de l'air: origines, situation et impacts](#), French Minister for ecological transition, February 2023.
- 20 [Pollution de l'air: le Conseil d'Etat condamne l'Etat à payer deux astreintes de 10 millions d'euros](#), State Council, October 2022.
- 21 [Cartofriches: plus de 8300 sites en friches répertoriés et caractérisés, l'API données foncières du Céréma en accès libre](#), Céréma, June 2023.
- 22 [Recyclage des friches: lancement de la 3e édition du fond friches](#), French Minister for ecological transition, May 2022.
- 23 [Climate Change Finance](#), OECD, August 2023.

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REPORT NUMBER 1377976

# 5. KPMG AUDIT REPORT



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## Agence France Trésor

**Moderate assurance report on the allocation, as at 31 December 2022 of the funds raised within the framework of the Green OAT by Agence France Trésor**

Year ended December 31th 2022  
Agence France Trésor  
139, rue de Bercy 75012

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A French company, member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a Private English company limited by guarantee.

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## Agence France Trésor

139, rue de Bercy 75012

### Moderate assurance report on the allocation, as at 31 December 2022 of the funds raised within the framework of the Green OAT by Agence France Trésor

Year ended December 31st 2022

To the Director General,

In our capacity, and appointed as, independent practitioner of Agence France Trésor (hereinafter the "**entity**"), and in accordance with your request, we have undertaken a limited assurance engagement on the following information (the "**Information**") presented in the 2022 Allocation and Performance Report (hereinafter the "**Report**"), available on the company's website:

- the correct allocation, as at December 31, 2022, of the funds raised by Agence France Trésor in connection with the bond issues using Green OAT between January 2022 and December 2022 ("**the Issue**") contained in the Report ;
- the total amounts allocated to each project ("**Eligible Projects**") in the allocation and performance table in the Report.

### Conclusion

Based on the procedures we performed, as described under the "Nature and scope of procedures" paragraph, and the evidence we obtained, nothing has come to our attention that causes us to believe that the Information is not prepared, in all material respects, in accordance with the Framework and in accordance with the basis of preparation set out in chapter " 3. Methodological note " of the Report, available on the entity's website.

### Preparation of the Information

The absence of a commonly used and generally accepted reporting framework or of a significant body of established practices on which to draw to assess and measure the Information allows for different, but acceptable, measurement techniques that can affect comparability between entities and over time.

Consequently, the Information needs to be read and understood together with the Framework and with the basis of preparation set out in chapter " 3. Methodological note " of the Report.

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## Responsibility of the entity

Management of the entity is responsible for:

- selecting or establishing suitable criteria for preparing the Information,
- selecting the Eligible Projects regarding the eligible criteria,
- preparing the Information in accordance with the “Framework” and with the basis of preparation set out in chapter " 3. Methodological note " of the Report, and
- designing, implementing, and maintaining internal control over information relevant to the preparation of the Information that is free from material misstatement, whether due to fraud or error.

## Responsibility of the independent practitioner

Based on our work, our responsibility is to provide a report expressing a limited assurance conclusion on the fact that the Information is free from material misstatement, whether due to fraud or error, and has been prepared, in all material respects, in accordance with the Framework and in accordance with the basis of preparation set out in chapter " 3. Methodological note " of the Report.

As we are engaged to form an independent conclusion on the Information as prepared by management, we are not permitted to be involved in the preparation of the Information as doing so may compromise our independence

However, it is not for us to comment on:

- the eligibility criteria defined in the Framework which gave rise to an opinion from Moody's before and after the green OAT issues in 2022, available on the Agence France Trésor website, and, in particular, to provide an interpretation of the terms of the Framework;
- the compliance, in all material respects, of the eligible projects selected in the Document, with the eligibility criteria set out in the Framework Document, which resulted in an annual Second Opinion Review by Moddy's ESG Solutions on 28 September 2023;
- the correct breakdown of the outstanding amounts in millions of euros of the eligible projects selected according to the green sectors of activity, based on the French Greenfin label<sup>1</sup>, as well as their climate objective;
- management of the net proceeds of the amount of bonds issued within the framework of the Green OAT before the funds are allocated;
- the effective use of the funds allocated to the selected eligible projects after their allocation;
- the performance indicators reported in the Document.

<sup>1</sup> <https://www.ecologique-solidaire.gouv.fr/label-transition-energetique-et-ecologique-climat>

## Agence France Trésor

Moderate assurance report on the allocation, as at 31 December 2022 of the funds raised within the framework of the Green OAT by Agence France Trésor

Year ended December 31st 2022

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## Applicable professional guidance

We performed the limited assurance engagement in accordance with the international standard ISAE 3000 (revised)<sup>2</sup>.

## Means and resources

Our work was carried out by an independent and multidisciplinary team including specialists in sustainable development and corporate social responsibility.

## Nature and scope of procedures

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Information is likely to arise.

To assess this risk, we took into account the entity's internal controls on the preparation of the Information in order to design appropriate assurance procedures, and not with the purpose of expressing a conclusion as to the effectiveness of the entity's internal control system.

The procedures we performed were based on our professional judgment. In carrying out our limited assurance engagement on the Information:

- be aware of France's sustainable development policies and the actions or programmes that flow from them;
- be aware of the procedures put in place by Agence France Trésor to determine the information contained in the Document;
- assess the appropriateness of the Framework in terms of its relevance, completeness, reliability, neutrality and understandability;
- verify the implementation of a collection, compilation, processing and control process aimed at ensuring the completeness and consistency of the Information and review the internal control and risk management procedures relating to the preparation of the Information;
- to take note of the sources of information used by Agence France Trésor to establish the amounts allocated in millions of euros to the selected eligible projects of the Green OAT on 31 December 2022;
- verify the correct application of procedures and carry out detailed tests on a sample basis, consisting of checking the calculations made and reconciling the data with supporting documents, in particular :
  - the annual performance reports annexed to the settlement law for budgetary expenditure,
  - general statements of roles extracted from the tools of the Ministry of Economy and Finance for tax expenditures,
  - extractions from the information systems of the General Secretariat for Investment of the project-based funding as of 31 December 2022 for the Programme d'Investissements d'Avenir.

<sup>2</sup> ISAE 3000 (Revised) - Assurance Engagements Other Than Audits or Reviews of Historical Financial Information

## Agence France Trésor

Moderate assurance report on the allocation, as at 31 December 2022 of the funds raised within the framework of the Green OAT by Agence France Trésor  
Year ended December 31st 2022



- ensure the consistency of the Information with other publications such as the settlement laws and the reports of the Court of Auditors;
- to take note of the external controls already carried out on the Verified Information, in particular those of the Court of Auditors;
- Perform analytical procedures on the Information and check its consistency and concordance with the information in the allocation and performance table of the Document.

The procedures performed in a limited assurance review are less in extent than for a reasonable assurance opinion, a higher level of assurance would have required us to carry out more extensive procedures.

This report has been prepared within the context described above and may not be used, distributed or referred to for any other purpose.

Paris la Défense, 29 septembre 2023

KPMG S.A.

Marie-Christine Jolys  
Audit Partner

Brice Javaux  
ESG Expert

**Agence France Trésor**

Moderate assurance report on the allocation, as at 31 December 2022 of the funds raised within the framework of the Green OAT by Agence France Trésor  
Year ended December 31st 2022

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