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FRANÇAISE

*Liberté  
Égalité  
Fraternité*



AGENCE  
FRANCE TRÉSOR

2020

# GREEN OAT

ALLOCATION  
AND PERFORMANCE REPORT

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# FIVE QUESTIONS FOR ANTHONY REQUIN

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*Chief Executive of Agence France Trésor*



France has further confirmed its position as one of the world's leading issuers of Green Bonds, reflecting its driving role in the implementation of the ambitions of the December 2015 Paris Climate Agreement.

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**In 2020, the total outstanding volume of the Green OAT exceeded €30 billion. In addition to this, a new Green OAT, OAT 0.5% 25 June 2044, was issued for the first time in the first quarter 2021. Is there a specific demand among investors for these assets?**

On 24 January 2017, Agence France Trésor launched its first Green OAT with a coupon of 1.75% maturing on 25 June 2039 for an initial issuance amount of €7 billion. France was thus the first country to issue a benchmark size sovereign green bond. Following several successive tap issues, the amount outstanding for the Green OAT has steadily grown to exceed the total of €20 billion in 2019, reaching €28.9 billion in February 2021. This green bond is currently the one with the largest outstanding amount on the market.

As you pointed out, in March 2021 AFT also issued a second Green OAT, with a maturity in 2044. This inaugural issue was syndicated and was for a total of €7 billion, as was the 2039 OAT. The 2044 OAT has already been the subject of a tap issue by auction, thereby taking the volume, at mid-June, to nearly €9.3 billion. Thanks to these two bonds, France is now one of the world's leading green bond issuers, confirming its role as a driving force for the achievement of the goals set in the December 2015 Paris Climate Agreement.

To answer your question, the dynamic of these green bond issues is a response to demand from investors, very keen on these types of assets, in particular because some of them apply investment criteria explicitly focussed on sustainable investments. We have also chosen to prioritise

them and during the syndication of the OAT 2044, we allocated them €4 billion of the €7 billion issued. The existence of this demand for Green OATs, as well as its implications in terms of the growing significance of green finance, is a positive thing for taxpayers because the loans are available under slightly more favourable conditions. We have seen, compared to what would happen with conventional OATs with equivalent maturities, an average differential in the rates of 2 to 3 basis points.

**Following the example of France, other sovereign debt issuers have entered the green bond market, in particular in Europe. Since September 2020, Germany has been issuing sovereign green bonds, based on an original model of twin bonds. Does AFT have any plans to use this specific approach in structuring its Green OATs?**

The particular problem faced by issuers of sovereign green bonds is that issues are limited to the volume of eligible green expenditure, itself in turn determined by the corresponding budget envelopes. We have resolved the liquidity concerns this can lead to by choosing relatively long initial maturities, more than twenty years, for these bonds for which, bearing in mind the volume of eligible expenditure, we would be able to meet the demand thanks to regular tap issuances. These long maturities at issuance also have the advantage that the bonds are not competing with private sector green bonds. This year, the fact that we have been able to extend the scope for eligible expenditure, thanks to the inclusion of public subsidies for renewable energy which were previously financed from taxes, was a necessary

condition for us to be able to create a new bond, subject to satisfying liquidity conditions.

In trying to resolve this same problem, the German debt agency, the Deutsche Finanzagentur, has created its own specific system: Every green bond is twinned with a conventional bond with the same characteristics and the agency can exchange the green bond at any time for its conventional twin. This does however assume that it has sufficient reserves of the conventional bond, at least equal to the outstanding green Bund in the market. This approach is consistent with the practices of the Finanzagentur, which is very active in managing its bonds on the secondary market and has a trading portfolio to do so. But not all agencies are structured in the same way and do not have the same approach. AFT ensures the same liquidity for its green securities as for other OATs. The same result can be achieved by different means.

### **The European Union is getting ready to issue its own green bonds. How will these fit in with the AFT bond issues?**

The Commission has announced its wish to issue green bonds worth approximately 30% of the €750 billion of its Next Generation EU programme, i.e.: €225 billion. This will involve using these funds to refinance national recovery plans, for their climate related elements. In practice, the challenge here is to avoid any double counting, so that only certain green expenditure within the environmental components of the France Relance recovery plan, those that are not being refinanced by the European Union, will be eligible for the Green OAT.

### **Due to the health emergency, 2020 saw a very rapid growth in the social bond market. Is AFT considering issuing these sorts of bonds?**

The social aspects are closely linked in most public policy objectives. AFT does not want to increase the number of specifically targeted bond issues, which would lead to excessive fragmentation of State debt, probably to the detriment of the liquidity. However, a number of stakeholders in the financing of the French Social Security system have now opted to use this format. AFT, which has been mandated by agreement to carry out bond issues on behalf of CADES (Caisse d'Amortissement de la Dette Sociale), proposed to CADES' Board of Directors, which approved the proposal, the implementation of a social bond issue programme as part of the debt assumption operations voted for in the summer of 2020, which will result in CADES taking over

€136 billion in debt from the French social security system (Acoss). Thus, since September 2020, CADES has been issuing social bonds. The degree of transparency inherent to this decision, which requires the publication of specific reports, has been well received by investors.

### **One of the key commitments given by France in the Green OAT Framework Document, was the carrying out of an environmental evaluation of eligible green expenditure, supervised by the Green OAT Evaluation Council. Did this work continue in 2020?**

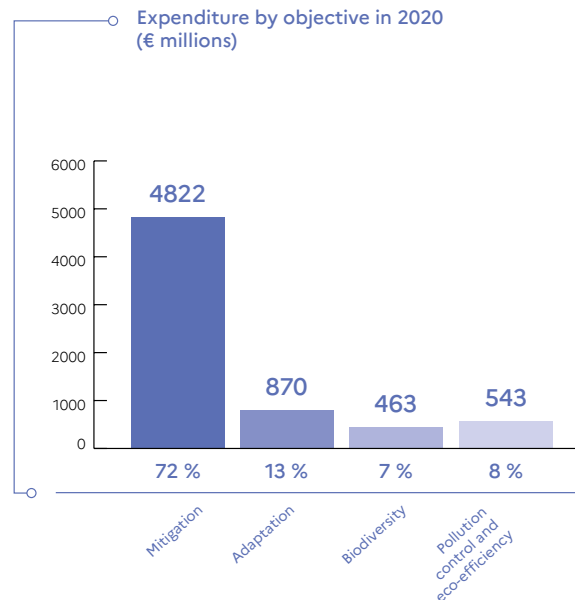
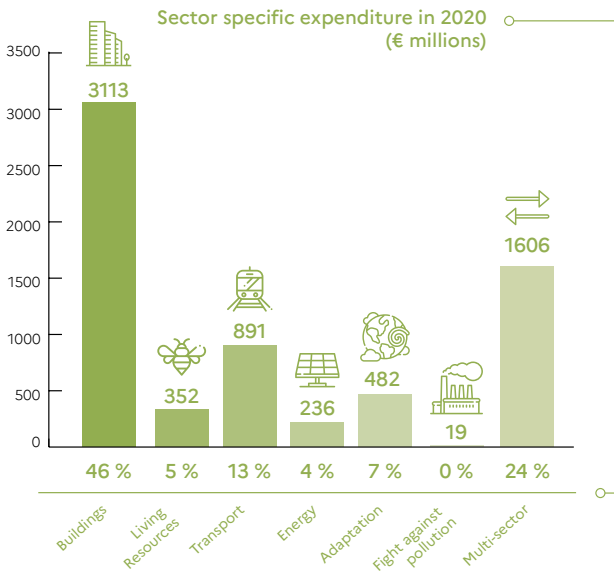
The Council has been able to continue meeting despite the health crisis, thanks to video-conferencing. It also welcomed two new members at the beginning of 2020, Mike Holland and Rana Roy, both independent consultants, as replacements for Ma Jun, who resigned. I have noted that the levels of expectations and transparency existing within this body have been the subject of considerable interest, with visits to the Council, in recent months, by several representatives of sovereign or supranational debt issuers, wanting to understand how it works. They were all impressed by the quality of the discussions that were held.

The Council published last November a survey focussed on the French Forestry Commission (Office National des Forêts). This report was highly innovative in that, like its predecessor which focused on the French Waterways Board (Voies navigables de France), it covered, in addition to the question of climate change mitigation, elements that are often overlooked such as biodiversity and adaptation to climate change. In addition, the Council is committed to including within its methodology the taxonomy of the sustainable activities of the European Union.

# SUMMARY

This document describes the Green OAT use of proceeds in 2020, across seven major activity sectors, and outlines the environmental impacts generated through this expenditure. The Report has two objectives:

- It reports on the driving role played by Agence France Trésor in giving effect to the climatic ambitions of France under the Paris Agreement and in the structuring of the sovereign green debt market.
- It gives effect to the focus by Agence France Trésor on transparency and accountability, by evaluating the environmental benefits of the budget programmes supported by green OATs.







01.

**AFT  
AND THE  
GREEN OATS**



# 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 2020, AFT had 47 staff members (19 women and 28 men, 20 contract employees and 27 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.

## ADAPTABILITY AND SECURITY IN TIMES OF CRISIS

In 2020, the COVID-19 health crisis obviously impacted on AFT which was able to demonstrate its reactivity and flexibility in this unprecedented context. In ensuring the continuity of its essential operations, including in particular the management of the 2020 financing programme, the start of the assumption of

the €136 billion of social debt by CADES and the preparation for the 2021 financing programme, AFT successfully implemented all necessary measures taking into account all health and social distancing recommendations to ensure complete safety during its operations.

# KEY FIGURES FOR 2020

At 31.12.2020

**8 years** <sup>73 days</sup>

AVERAGE RESIDUAL MATURITY  
OF DEBT

**€2,001 bn**

NEGOTIABLE DEBT SECURITIES  
OUTSTANDING

**-0.13%**

WEIGHTED AVERAGE YIELD  
OF MEDIUM AND LONG-TERM  
FIXED RATE SECURITIES

**€260 bn**

MEDIUM- TO LONG-TERM GOVERNMENT  
SECURITIES ISSUES

**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 the first Green OAT with a coupon of 1.75% maturing on 25 June 2039 for an issuance amount of €7 billion. By becoming the first country to issue a benchmark green bond, France confirmed its role as a driving force for the achievement of goals set at the December 2015 Paris Climate Agreement.

As with conventional OATs, to maintain the liquidity of this Green OAT, AFT uses subsequent tap issues after the initial issuance, enabling it to respond to the dynamic level of demand. Thus, as of mid-June 2021, the total outstanding Green OAT debt was €28.9 billion, representing the largest green bond issue in the world, with the proceeds being systematically matched to Eligible Green Expenditure.

In addition, a second green OAT, the 0.5% 25 June 2044 OAT, was issued for the first time on 16 March 2021, by syndication. It is governed by the same principles as OAT 2039. Following a first tap issue in June 2021, the outstanding amount was €9.3 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 impact reports.

Date	Type of issuance	Amount issued	Amount outstanding	Yield at issue (%)
		(€ billions)	(€ billions)	
<b>OAT 1.75% 25 June 2039</b>				
<b>24/01/2017</b>	Syndicated tap issue	7	7	1.74
<b>01/06/2017</b>	Auction sale	1.632	8.632	1.51
<b>07/12/2017</b>	Auction sale	1.065	9.697	1.27
<b>05/04/2018</b>	Auction sale	1.096	10.793	1.34
<b>25/06/2018</b>	Syndicated tap issue	4	14.793	1.46
<b>07/02/2019</b>	Auction sale	1.737	16.53	1.25
<b>02/05/2019</b>	Auction sale	2.471	19.001	1.04
<b>05/09/2019</b>	Auction sale	1.676	20.677	0.19
<b>06/02/2020</b>	Auction sale	1.982	22.659	0.38
<b>02/04/2020</b>	Auction sale	2.607	25.266	0.51
<b>02/07/2020</b>	Auction sale	2.109	27.375	0.31
<b>04/02/2021</b>	Auction sale	1.499	28.874	0.14
<b>OAT 0.5% 25 June 2044</b>				
<b>16/03/2021</b>	Syndicated tap issue	7	7	0.53
<b>03/06/2021</b>	Auction sale	2.28	9.28	0.74

## ◆ PERFORMANCE SINCE THE LAST REPORT

Since the previous report, the Green OAT 2039 has been tapped twice, once in 2020 and once in 2021: 2 July 2020 for €2.109 billion at an average rate of 0.31%, and 4 February 2021 for €1.499 billion at an average rate of 0.14%. The outstanding amount was thus €28.874 billion at 31 May 2021.

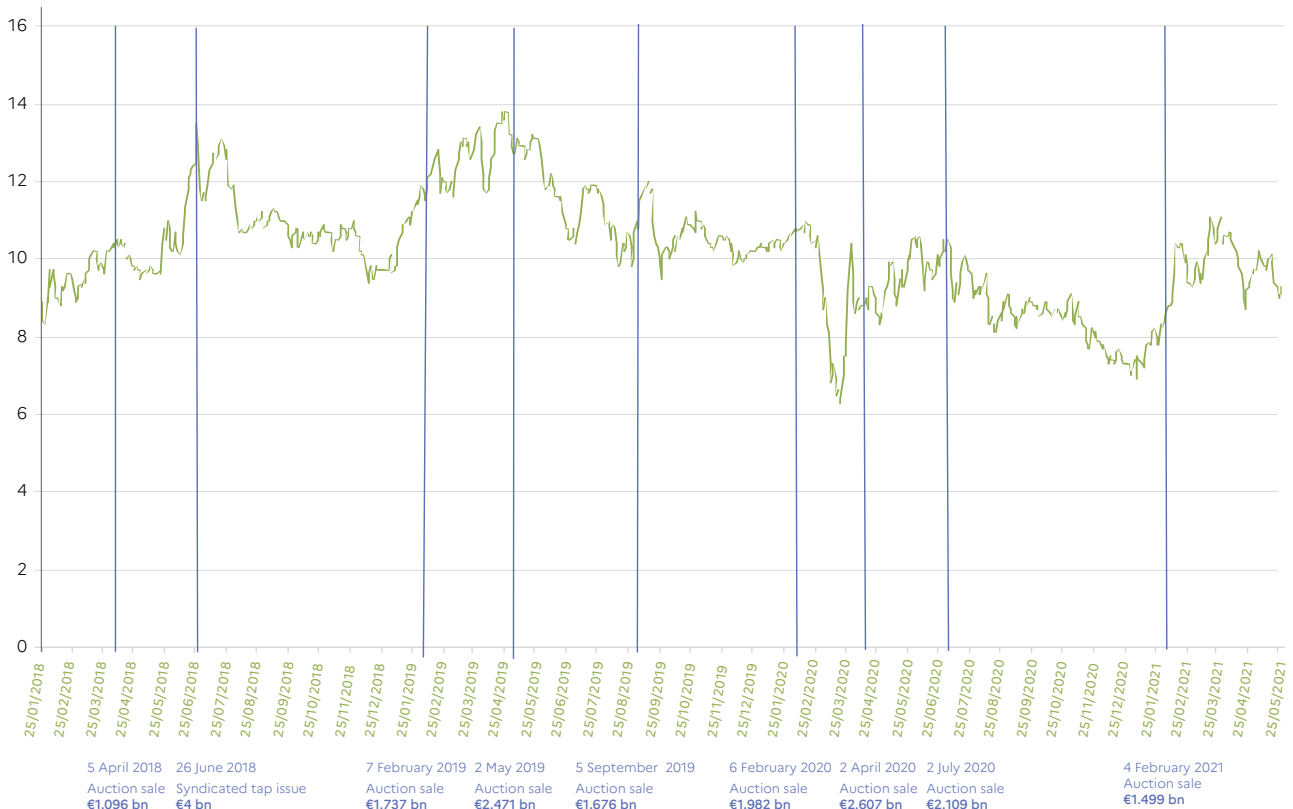
On the secondary market, this OAT's performance since the publication of the last report has been consistent with the rest of the French yield curve. The spread between the Green OAT and the Treasury bond used to determine its issuance price, namely the May 2036 OAT, therefore remained stable compared with the previous year. The yield spread currently fluctuates around 10 basis points and the bond tap issues were based on a yield spread approximating these levels.

As announced by Bruno Le Maire, the Minister of the Economy and Finance, at the end of November 2020 during the Climate Finance Day,

and detailed in the indicative 2021 finance programme, AFT issued its the second Green OAT, maturing in 2044, on 16 March 2021, for an amount of €7 billion and at an average rate of 0.53%. On creation, it was valued at 18 basis points above the 2039 Green OAT. AFT launched a further tap issue for this Green OAT on 3 June 2021 for an amount of €2.280 billion and at an average rate of 0.74%. The rate for this bond was 0.70% on 14 June 2021 (0.74% end of May), i.e.: 20.7 basis points above the 2039 green bond (20 bp end of May) and is the best valued State bond thanks to its green premium, known as a "greenium".

### YIELD SPREAD BETWEEN GREEN OAT 2039 AND OAT 2036

The yield spread is measured in basis points (hundredths of a percentage point)





## 1.3 THE GREEN OATs 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**, 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;
- **Eric Usher**, Head of the Secretariat of the United Nations Environment Program Finance Initiative.

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).

Mike Holland and Rana Roy joined the Council at the beginning of 2021, following the resignation of Ma Jun.

The Council held its inaugural session in December 2017 and has met on a regular basis four times a year. Initially this consisted of two physical meetings in Paris and two video-conferences. The health emergency has led to this being changed to all video-conferences since 2020.

The Secretariat of the Green OATs Evaluation Council is performed jointly by the General Commission for Sustainable Development and the Directorate General of the Treasury. The Green OATs Evaluation Council sets the specifications and schedule of the studies it oversees. It also issues an opinion on the quality of the reports and the relevance of findings. The work of the Evaluation Council is presented in separate publications, summaries of which are provided in Chapter 4. Each of these reports is dedicated to the examination of a specific programme or budget line, and the Council intends to provide details of all Eligible Green Expenditures over time.

Virtual meeting of the OAT Evaluation Council on 11 June 2021.



1 - The UNFCCC is the United Nations Framework Convention on Climate Change

A green-tinted photograph of a modern building and a bridge over water. The building is on the left, and the bridge is in the background. The water is in the foreground.

02.

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# A USE OF PROCEEDS REFLECTING ENVIRONMENTAL PRIORITIES

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## 2.1 IDENTIFYING ELIGIBLE GREEN EXPENDITURE

Proceeds are managed in compliance with the general budget rules 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, which replaced France’s “TEEC” label in 2019, is a factor in the selection process. The “TEEC” label was created in 2015 by the Ministry for Environment, Ecology and the Sea to recognise investment funds that promote the ecological and energy transition. 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 Finance 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.

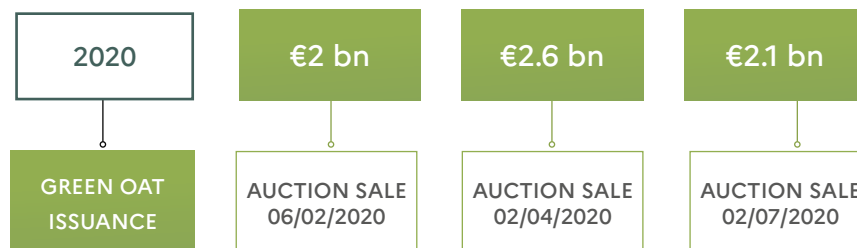
At the time of the inaugural issue, Vigeo Eiris had certified the relevance of the approach used by the Government given the objectives stated and

compliance of Eligible Green Expenditure in 2017 with the TEEC label - which subsequently became the “Greenfin” label. They subsequently delivered a “reasonable” level of assurance (its highest level of assurance) on the sustainability of the bond issue. Vigeo Eiris has confirmed each year since then that this same level of assurance applied for the ex-ante presentation of the eligible green expenditure. In its evaluation of the “performance of France in terms of its social and environmental responsibility as a sovereign bond issuer” Vigeo Eiris stated that it was stable at an “advanced” level, this being the best level in its rating scale, with an advanced level of performance in the environmental domain in particular.

The Green OAT allocation reports enable the ex-post verification of the expenditure realised, based on the Budget Settlement Act. Thus, for allocations in year n, the document is available in the summer of year n+1. This is subject to verification by Vigeo Eiris and a specific audit, carried out by KPMG.

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

## Monitoring the allocation of proceeds raised in 2020

2019  
Preparation2020  
Green OAT  
issuance2021  
Verification  
and allocation

## ◆ ELIGIBLE GREEN EXPENDITURE LATEST

**On 25 January 2021, Agence France Trésor announced that the amount of Eligible Green Expenditure covered by the Green OATs would be €15 billion in 2021, compared to €8 billion the previous years.**

A significant part of this increase was accounted for by the inclusion in eligible expenditure of public funding for renewable electrical energy and biogas. These areas of funding were previously financed by the allocation of an earmarked tax through the “Energy Transition” appropriation account (CAS TE). With the removal of this on 01 January 2021, in the 2020 Finance Act, these subsidies became eligible for the Green OAT.

The extension of the scope of eligible expenditure was also an indirect consequence of the green budget exercise carried out in autumn 2020. This involved a systematic analysis of the environmental content of all State expenditure; resulting in

the identification of certain budget lines that had not previously been included as being eligible for financing through Green OATs. This was the case for instance with expenditure on development aid, as well as the reduced level of VAT on energy efficiency improvement work. This expenditure has already been included in the allocation of proceeds raised in 2020.

In line with a recommendation from Vigeo Eiris, these newly identified expenditure lines were presented to the Evaluation Council, which confirmed their fit with the environmental objectives governing the Green OAT Framework Document.



## 2.2 FOUR KEY ENVIRONMENTAL OBJECTIVES

Green OAT expenditure must address four key national objectives, as defined in the Green Bond Framework Document:

1. Mitigate climate change, or facilitate actions aimed at limiting global warming, namely through the reduction of greenhouse gas emissions;
2. Adapt to climate change, or facilitate actions and strategies aimed at reducing the vulnerability of human and natural systems to the effects of climate change;
3. Protect biodiversity;
4. Reduce air, ground and water pollution and foster the circular economy.

### 1. MITIGATING CLIMATE CHANGE

Of the €7.6 billion allocated in 2019, 72%, or €4.8 billion, was allocated to programmes for climate change mitigation, and was the highest percentage of eligible expenditure.

France is committed to becoming carbon neutral by 2050, with the balancing of its man-made emissions with the capacity of natural carbon sinks. In France, this target requires a reduction in greenhouse gas emission by a factor of 6 compared to 1990. In practical 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 life styles, consumption and production, but also represents an opportunity for innovation and the reimagining of the French economic model.

The National Low-Carbon Strategy (SNBC) and the associated carbon budgets define specific reduction objectives for France for the coming years, and across all sectors. This path for instance implies the complete decarbonisation of the energy sector by 2050, as well as the reduction in energy consumption in all sectors by half.

### 2. ADAPTING TO CLIMATE CHANGE

In 2020, 13% of Green OAT expenditure was allocated to actions to adapt for climate change, amounting to €870 million.

The impacts of global warming are already being felt in France, including: A 1.4°C increase in average temperatures since 1900, three times more heatwaves over the last 30 years than in the previous period, as well as an increase in precipitations.

Alongside the mitigations already under way, policies for climate change adaptation also need to be developed. These will be at a more local level by targeting sectors with high levels of exposure to climatic events.

The challenge for adaptation is to measure the vulnerability\* of systems and their exposure to climate change, as well as potential climatic phenomena, to adopt an appropriate adaptation strategy and build resilience into the systems.

\* Vulnerability: Predisposition of a system to suffer damage associated with climate change

### 3. PROTECTING BIODIVERSITY

**In 2020, 7% of green expenditure, or €463 million, was directed into activities relating to protecting biodiversity.**

Threatened by the impacts of human activities (overexploitation of resources, pollution, artificialisation of soils, etc.) and the effects of climate change, biodiversity is today in decline. Biodiversity is in fact declining at such a rate that some studies are referring to a "sixth mass extinction"<sup>1</sup>.

Biodiversity has an absolutely essential role to play in regulating the climate, through the oceans and forests, and thus in mitigating the effects of climate change. In addition, its populations are heavily dependent on its correct operation and its "systemic services". At the same time many of the global pressures, such as pollution and climate change, are endangering biodiversity and thus closely tied with the other Green OAT objectives.

France is in 8<sup>th</sup> place as the country hosting the largest number of endangered species, in particular in its Overseas Territories which are home to an incredible diversity of species and ecosystems.

### 4. COMBATING POLLUTION

**In 2020, 8% of Green OAT expenditure, or €543 million, was allocated to the reduction of water, air and soil pollution.**

Despite the progress made over the last twenty years, air and water pollution remains a major concern for people in France, in particular in densely populated urban areas and in certain mountain valleys.

Some pollutants, even in tiny amounts, are hazardous for health, these include particulates, nitrogen dioxide and tropospheric ozone.

Pollutants are mainly the result of human activities: Transport, heating buildings, agriculture, industry, etc. and have harmful consequences in terms of the environment including the degradation of soils and imbalances in aquatic milieux.

Air and water quality also need to be taken into account in town and regional planning across all economic sectors, together with constant monitoring in order to make appropriate action possible, for instance during pollution peaks.

1 - Ceballos et al. (2020), "Vertebrates on the brink as indicators of biological annihilation and the sixth mass extinction", *Proceedings of the National Academy of Sciences*

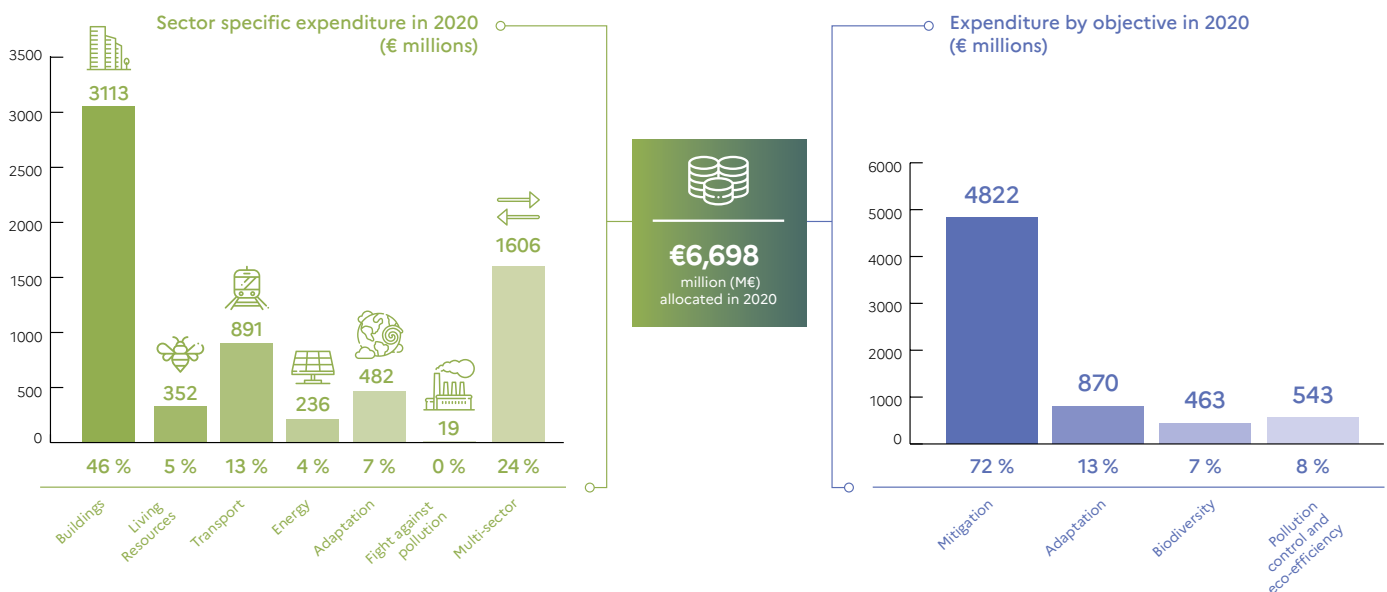
## 2.3 COVERING THE KEY CHALLENGES OF THE ECOLOGICAL TRANSITION

To comply with the four national objectives previously mentioned, programmes funded by the Green OAT 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 (e.g., 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.

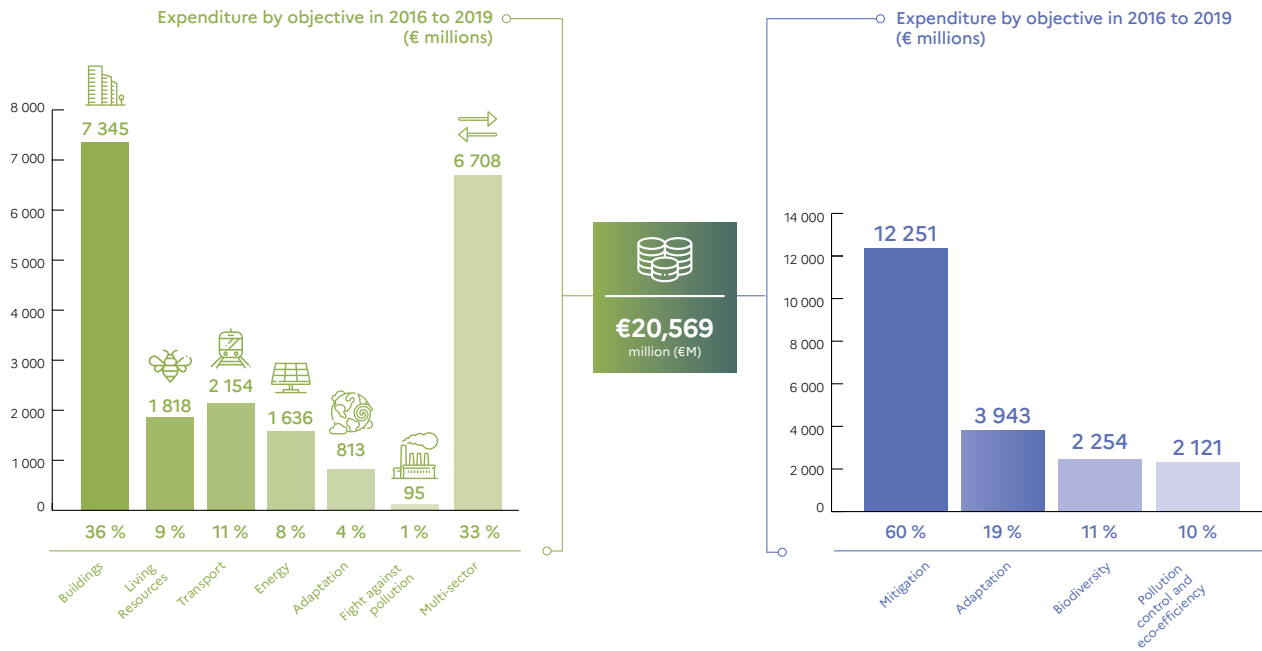
The expenditure for each sector is detailed in the following pages, together with the performance indicators for the programmes included in the Eligible Green Expenditure in 2019 and 2020 financed in 2020 by the Green OAT.

The following diagram summarises the expenditure financed in 2020, by sector as well as by environmental objective. It can clearly be seen that buildings and multi-sector programmes accounted for almost three-quarters of the €6.7 billion of allocated expenditure in 2020.





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 three years of the 2039 Green OAT issues.



03.

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# EFFECTIVE SECTOR BASED TARGETING

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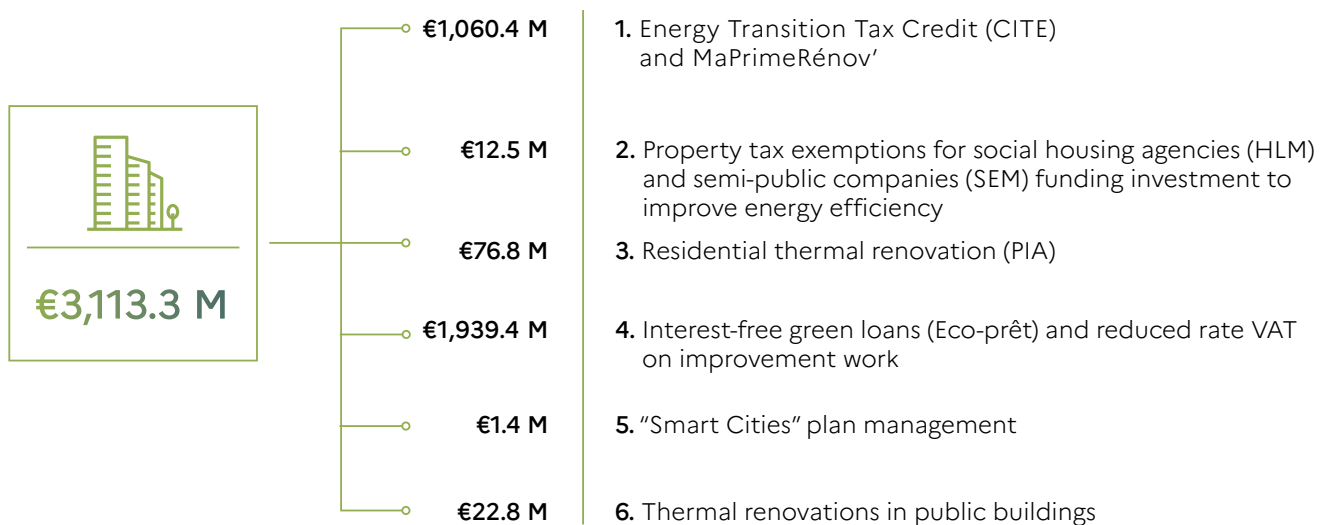


# 3.1 BUILDINGS AND PLANNING

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The Buildings sector is a critical one in terms of the energy transition and is covered by a large number of programmes aimed at reducing its greenhouse gas emissions. Most of the funding provided by the Green OAT in 2020 was allocated to this sector, through programmes aimed mainly at accelerating the renovation of the residential and tertiary stock, 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)

**209,510**

**Energy renovations to housing** by ANAH ("Better Housing" programme and MaPrimeRenov')

**42,107**

**Number benefiting** from interest-free green loans



## ◆ CHALLENGES FOR THE SECTOR

### BUILDINGS: 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.**

Buildings also produce 19% of the country's direct greenhouse gas emissions (scope 1), mainly from heating, a figure that increases to 28% if we consider emission 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% in 2030 compared with 2015 and full decarbonisation of the sector by 2050.

In addition, buildings are part of neighbourhoods, the ecosystems of towns and urban areas and must not be considered in isolation. In effect, 40% of the carbon footprint in France is directly related to the technical planning choices in areas where people live: buildings, as well as means of travel, infrastructures and public impact, etc. The levers for reducing the emissions of the sector must therefore be the subject of systemic analysis in terms of regenerating spaces.

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

**The achievement of these objectives requires the use of powerful levers to accelerate the still too slow rate of renovations.**

It is estimated<sup>1</sup> that 500,000 renovations every year in residential buildings (370,000 high performance renovations completed a year as of 2022), then 700,000 as of 2030, are needed to transform the entire existing housing stock to an average level similar to that of the "low consumption building" ("Bâtiment basse consommation" or BBC) standard by 2050. The target also includes the elimination of all homes that leak heat in France, in particular by means of the application of specific measures through the Climate and resilience law. There are several benefits to renovations, such as a lowered carbon footprint, the creation of several hundred thousand local jobs and reductions in household energy bills.

The ambitious renovation objectives require the bringing to bear of significant institutional and financial resources, such as the deployment of the Building Energy Renovation Plan (Plan de rénovation énergétique des bâtiments) (2018), or the €6.7 billion allocated to improve the energy efficiency of buildings in the recovery plan for the 2020-2022 period.

1 - BBKA Quartier study – Association pour le développement du bâtiment bas carbone (2018)

## ◆ GREEN OAT ELIGIBLE EXPENDITURE AND PROGRAMMES

Mission	Programme	Expenditure	Amounts (€ M)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P174	1. Energy Transition Tax Credit	1 132	115.4	1 080	664.9	780.3	Number of households benefiting from the CITE tax credit	1 419 100	911 000	n. d.
		2. Property tax exemptions for social housing agencies (HLM) and semi-public companies (SEM) funding investment to improve energy efficiency	110	12.5	-	-	12.5	Number of HLM and SEM bodies benefiting from the exemption	8 349	8 439	n. d.
		1. Energy transition support (MaPrimeRenov')	-	-	455	280.1	280.1	Number of renovated properties	-	-	141 143
Regional cohesion	P135	3. Residential thermal renovation - ANAH	110.4	11.6	88.4	54.4	66.1	Number of renovated properties («Better Housing» programme)	62 345	116 995	68 367
		4. Interest-free green loan	39	-4.9	32	19.7	14.8	Number of individuals benefiting from interest free green loans	18 755	35 574	42 107
		4. Reduced VAT for work to improve energy efficiency	1 235	1 235	1 120	689.5	1 924.5	Number of beneficiaries of the reduced rate of VAT	315 000	315 000	n. d.
		5. Urbanism, territories and habitat improvement: "Smart City" plan management	-	-	2.2	1.4	1.4	-	-	-	-
Public action and transformation	P348	6. Renovations to public buildings	11.9	1.3	35	21.5	22.8	-	-	-	-
PIA	PIA 1	3. Residential thermal renovation	25.8	2.7	13	8	10.7	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	3.5	3.6
<b>Total</b>			<b>2 664.1</b>	<b>1 373.6</b>	<b>2 825.6</b>	<b>1 739.6</b>	<b>3 113. 3</b>				

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

As of 2020 the CITE has been gradually transformed into an incentive, distributed by the National Home Improvement Authority (ANAH). This allowance, "MaPrimeRenov'" helps private householders to access more direct and understandable assistance for renovations to their homes, by means of a grant paid contemporaneously with the work. This work includes replacing heating systems, insulation (walls, gaps, windows), the installation of ventilation, or the overall renovation of the home.

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

This is a partial exemption from the tax assessment on built-up properties, on up to 25% of the expenditure on energy-saving work, covering more than six thousand social housing organisations (HLM) and semi-public companies (SEM). The aim of this funding is, among others, to reduce the number of heat leaking dwellings within the social housing stock.

## 3. RESIDENTIAL THERMAL RENOVATIONS

This expenditure relates to the funding of the "Better Housing" programme, initiated by the ANAH and intended to support moderate income households during complete home renovations. 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 has the additional benefit of helping to eliminate "heat leak" homes for dwellings 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 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 buildings completed more than two years ago, as well as the interest-free green loan. This latter is an interest-free loan that can be used to finance work to improve the energy efficiency of a home and facilitates comprehensive energy renovations to homes.

## 5. "SMART CITY" PLAN MANAGEMENT

As well as the energy efficiency challenges, the Green OAT is also playing a role in supporting and facilitating 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 comprises actions including namely:

- 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);
- The "EcoCités" approach, aimed at metropolitan areas, large conurbations and public regeneration agencies, in partnership with the private sector. It is designed to promote sustainable and comprehensive urban strategies, leading to integrated urban projects across the country.

## 6. RENOVATIONS IN PUBLIC BUILDINGS

In 2018 the Government launched a plan for renovating administrative complexes, intended to finance renovations of 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.

*Cf. Focus 6*





## 6. FOCUS: PUBLIC BUILDING RENOVATION PROJECT | Rouen Administrative Complex

The project for the renovation of the Saint-Sever Administrative Complex, managed by the Préfecture de la Seine-Maritime and supported by the DDTM, is the most ambitious project in programme 348 (€96 million). This will include the total upgrading of the building, removal of asbestos and the restructuring of the offices enabling a significant increase in the occupancy ratio with the inclusion of some fifteen new departments within the complex (nearly 500 additional jobs).

The complex is undergoing an advanced energy upgrade. The current complex, built in the 1960s, no longer satisfies today's energy efficiency standards, having never had any major renovation work carried out before. For example, the 2,800 windows have never been renewed. The work also includes insulation, heating and ventilation. The objective is to improve the energy efficiency and achieve a 'BBC rénovation' (Low Energy Building) standard, resulting in a minimum 70% reduction in real energy consumption.

The renewal of the complex is also an opportunity to improve its environmental performance in liaison with the city. The work on the external spaces and roof areas will help promote growth of fauna and flora, fitting in with the Quai de Seine gardens. The production of energy will also be a major factor with a large percentage of the roofs being covered in PV cells, helping to meet some of the electricity requirements of the complex.

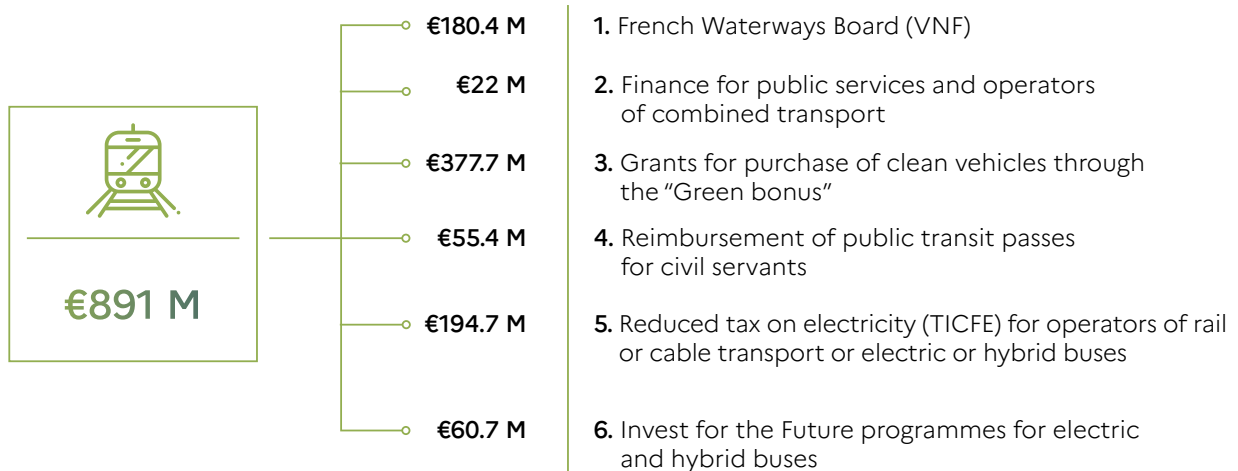
This project is the first in the programme to enter into the operational phase, with the signing, in mid-December 2019, of the design-construction contract with a consortium led by Bouygues Construction, for an amount in excess of €80 million, following a competitive tendering process between three candidates. The work within the complex started in the 4<sup>th</sup> quarter 2020 with the start of the asbestos removal.

## 3.2 TRANSPORT AND MOBILITY

Photo credit: Pixabay

The transport sector is the sector with the highest greenhouse gas emissions in France and is therefore a priority challenge for the energy transition. This was the second largest expenditure item for the Green OAT in 2020. The programmes funded must enable the development of zero or low emission transport solutions, such as rail and electric or hybrid vehicles. The modal shift towards 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

**5.5**

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

**7.1 TwH**

**of power were distributed** to electric transport operators at the reduced TICFE rate

**94.9 %**

**Waterway availability** rate

**117,000**

**Green bonus** allocated

**Modal shares:**

- . **7.9%** of goods traffic is by rail
- . **1.9%** of goods traffic is by waterway
- . **15.1%** of passenger traffic is by public transport

## ◆ CHALLENGES FOR THE SECTOR

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

The transport sector is the largest emitter of greenhouse effect gas in France (31% in 2019), of which 93% is from road transport.

The emissions by the sector as a whole exceed the targets set in the first French National Low-Carbon Strategy (SNBC) and the official European strategy, which can be explained, among others, by the low cost of fossil fuels, below expectation improvements in energy efficiency, and a modal shift too low relative to the initial ambitions. The revised SNBC is now targeting a 28% reduction in the sector's emissions in 2030 compared to 2015, and complete decarbonisation by 2050.

### A NUMBER OF LEVERS TO REACH THESE OBJECTIVES

In order to achieve carbon neutrality in 2050, which is the objective of the SNBC revised in 2020 and of the official European strategy, the decarbonisation of the transport sector must be speeded up, for all transport and mobility modes and with the mobilisation of all existing decarbonisation levers.

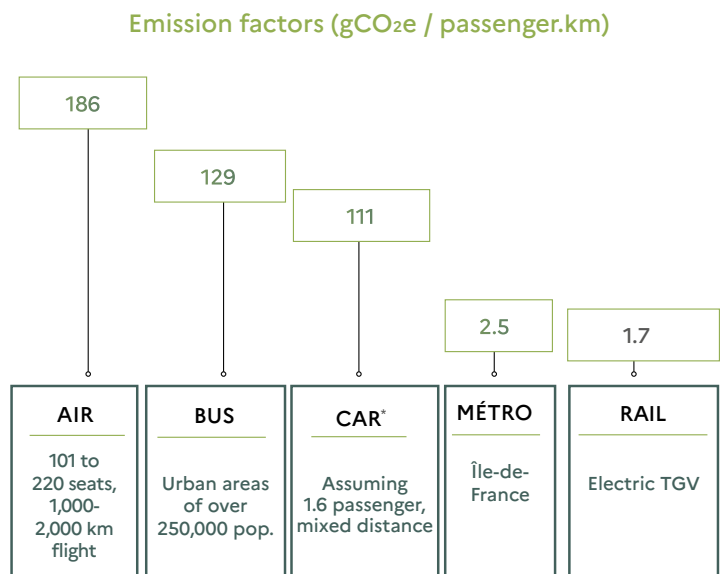
Significant progress therefore needs to be made, including a complete transformation of the vehicle stock, a shift into highly decarbonised fuels, improvements in the energy performance of vehicles, the management of demand growth (passengers and goods), an acceleration of the modal shift towards lower emission modes and finally an optimisation of vehicle use.

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

Road transport has a very high emission factor (in second place after air transport) and accounts for 82% of travel 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 constantly 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, inland waterway, sea and low-carbon modes, is a critical lever in the decarbonisation of the transport sector.

The graph below shows the emission factor per passenger and km for the main passenger transport modes:



\* Average family car

Source: ADEME Carbon base, 2018-2019 data

## ◆ GREEN OAT ELIGIBLE EXPENDITURE AND PROGRAMMES

Mission	Programme	Expenditure	Amounts (€ bn)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P203	1. French Waterways Board. Financing network maintenance	241.6	25.4	251.8	155	180.4	Waterway availability rate	96.1	97.5	94.9
		2. Finance for public services and operators of combined transport	27	2.8	31.2	19.2	22	Modal share of goods transport by rail of all interior terrestrial transport	9	9	7.9
								Modal share of goods transport by inland waterway of all interior terrestrial transport	1.9	2	1.9
								Modal share of passenger transport by public transport of all interior terrestrial transport	17.4	17.8	15.1
	5. Reduced tax on electricity (TICFE) for operators of rail or cable transport or electric or hybrid buses	232	64.8	211	129.9	194.7	Volume of electrical consumption covered by the reduced TICFE rate (in TWh)	8.9	8.5	7.1	
P174	3. Grants for purchase of zero-emission vehicles: "Green bonus"	-	-	613.6	377.7	377.7	Number of bonuses allocated	-	61 000	117 000	
Managing public finances and human resources	Multiple	4. Reimbursement of public transit passes for civil servants	83	8.8	75.8	46.7	55.4	-	-	-	-
PIA	PIA 1 & 2	6. Vehicles of the future	99.9	10.5	74.9	46.1	56.6	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	2.2	2.2
	PIA 3	6. Faster development of high-performing innovation ecosystems (transport and sustainable mobility)	1.8	0.2	6.3	3.9	4.1	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	1.2	3.3
<b>Total</b>			<b>685.3</b>	<b>112.5</b>	<b>1 264.6</b>	<b>778.6</b>	<b>891</b>				



## 1. FRENCH WATERWAYS BOARD (VNF)

This action is aimed at supporting the policies of VNF, including the strengthening of the network infrastructure, thereby promoting a modal shift from the road carriage of goods to the waterways, thus contributing to a reduction in the environmental impact of the sector. The board manages a waterways 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. It relates in particular to the maintenance work on the navigable waterways managed by the State (the principal investments have focussed on Marseille sea port, the rivers of Guyana and the canals on Annecy, Leman and Bourget Lakes).

## 2. 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 the transport services, developing infrastructures, the Alpine rolling highway and the sea highway services.

## 3. GRANTS FOR THE PURCHASE OF ZERO-EMISSION VEHICLES THROUGH THE "GREEN BONUS"

This system, following on from the Grenelle de l'Environnement and regularly improved since, is aimed at providing grants to buyers of new low CO2 emission cars. The green bonus was increased in 2020, during the health pandemic, and helped finance the purchase of almost 120,000 vehicles (family cars, light utility vehicles and two or three-wheeled vehicles and motorised quad bikes).

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

This measure enables the partial funding of season tickets for public transport 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 a public bicycle rental service is also included in this system.

## 5. REDUCED TAX ON ELECTRICITY (THE TICFE) FOR OPERATORS OF RAIL OR CABLE TRANSPORT OR ELECTRIC OR HYBRID BUSES

This measure is aimed at reducing the cost of electricity for sustainable modes, and thus encourages a shift to electric transport modes.

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

In the context of the PIA, two actions were funded in 2020 by the Green OAT in the fields of transport and sustainable mobility:

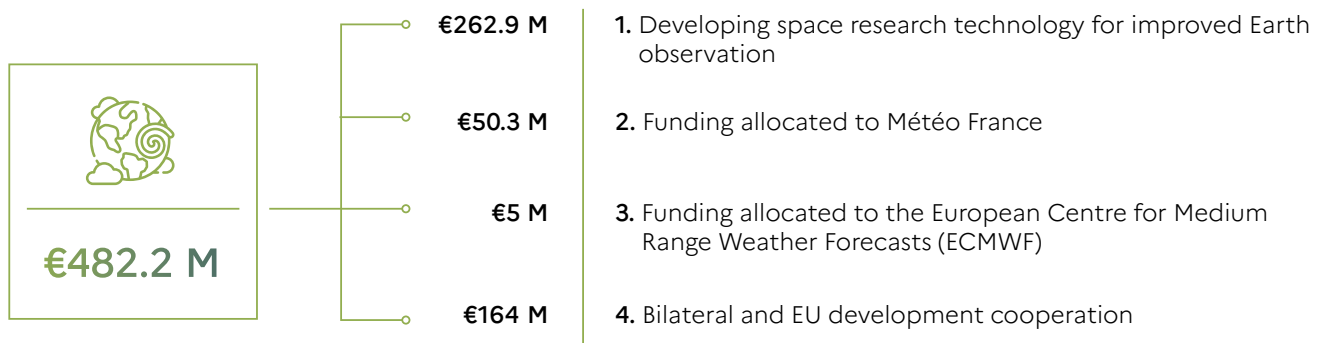
- The "Vehicles of the Future" initiative, aimed at developing innovations to enable the speeding up of the deployment of more energy efficient terrestrial and maritime transport technologies, with a reduced impact on the environment and the climate. This programme is targeted at small and mid-sized enterprises (SME) proposing targeted, innovative research and development projects with significant potential for the French economy, in particular for creating jobs.
- The "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.

## 3.3 ADAPTING TO CLIMATE CHANGE

Photo credit: Pixabay

France is one of the most advanced countries in terms of planning for and adapting to climate change. Finalised in 2018, the second national plan for adapting to climate change highlighted 58 initiatives that make contributions to an effective adaptation, consistent with the probable hypothesis of a 1.5 to 2°C rise in temperatures by 2050.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

#### 2.2 publications

by Météo-France researcher

#### French research bodies produce:

- . 3.3 % of reference global publications on space research
- . 13.3 % of reference European publications on space research
- . 28.8 % 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 many key economic sectors.**

In dealing with these impacts, two types of complementary measure are needed: Mitigation and adaptation. Mitigation is about limiting the climatic phenomena by reducing greenhouse effect gas; adaptation means building resilience into our society to cope with the inevitable impacts of climate change. 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 of socio-economic activities to climatic hazards.

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

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

**The level of complexity of the problems raised by climate change often leads to maladaptation, where the actions being implemented result in an increased vulnerability of the systems to climate change, instead of a reduction in it.**

This can be because of an ineffective use of resources, or calibration errors, arising because the scale of uncertainties surrounding present and future impacts of the changing climate.

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 scales. 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 (local climate projections, lists of local stakeholders, etc.). In addition, a large number of free access databases are available to boost understanding: the DRIAS portal at Météo-France, the on-line Climat HD application, etc.

### SUBJECTS COVERED AT THE STATE LEVEL

**In France, the National Climate Change Adaptation Strategy summarises the objectives and roadmap for the State.**

It was drawn up based on the National Observatory on the Effects of Global Warming (Observatoire National sur les Effets du Réchauffement Climatique - ONERC), thus ensuring the involvement of all activity sectors and stakeholders in civil society. This is the strategy that guides the operational actions through the PNACCs. The latest national plan, published in 2018, focusses on, among others, the interconnection between the adaptation policies at the various regional levels, with particular attention on the Overseas Territories.



## ◆ GREEN OAT ELIGIBLE EXPENDITURE AND PROGRAMMES

Mission	Programme	Expenditure	Amounts (€ bn)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P159	2. Funding for operations and investments allocated to Météo-France	69.2	7.3	69.8	43	50.3	Number of publications per researcher at Météo-France	1.6	1.6	2.2
	P172	3. Funding allocated to the European Centre for Medium Range Weather Forecasts (ECMWF)	-	-	8.1	5	5	-	-	-	-
Research and Higher Education	P193	1. Developing space research technology for improved Earth observation	390.7	41.1	360.3	221.8	262.9	French share of international reference publications relating to space research in global production	3.7	3.5	3.3
								French share of international reference publications relating to space research in European Union production (EU 28)	13.6	13.3	13.3
								Share of the scientific production by programme participants in the France-Germany-United Kingdom space	29.5	28.9	28.8
Official development assistance	P209	4. Bilateral development cooperation: climate change adaptation and mitigation share	-	-	181.2	111.6	111.6	-	-	-	-
		4. EU development cooperation: climate change adaptation and mitigation share	-	-	85.1	52.4	52.4	-	-	-	-
<b>Total</b>			<b>459.9</b>	<b>48.4</b>	<b>704.6</b>	<b>433.8</b>	<b>482.2</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, 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 findings. One of the crucial challenges of the programme is to improve knowledge of the major scientific issues regarding 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.

France, which is one of the leading five countries in the Shanghai global ranking for earth observation science, 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 2025 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, with the CNES and their historic partners, have established themselves in a dominant position in space projects.

## 2. FUNDING ALLOCATED TO MÉTÉO-FRANCE

The "Expertise, geographic and meteorological data" programme run by Météo-France is further boosting the constant enhancements to the services offered by the agency, in response to the need for understanding and predicting 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. With its powerful cli-

mate 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)

The Green OAT also contributes to funding the ECMWF, the world's most technically advanced body in terms of numerical meteorology. It has 18 member States cooperating in research, development and operational production in the field of medium-range weather forecasting. Currently located in Reading, United Kingdom, the ECMWF is going to be re-locating to Bonn, Germany.

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

Credits for climate, adaptation and mitigation amounted to 20.3% of bilateral credits in 2020, strongly up on 2019. This was largely due to increased work by the French Development Agency (AFD) to boost its "climate" tagging. France is actively working to give effect to the Paris Agreement and in raising its ambitions as of 2020. Specifically, the Inter-Ministerial Committee on International Cooperation and Development (CICID) has raised its funding allocated to climate change to €1.5 billion a year as of 2020, from €1 billion previously, with a priority focus on Africa, the Least Developed Countries (LDC) and those countries most vulnerable to climate change.

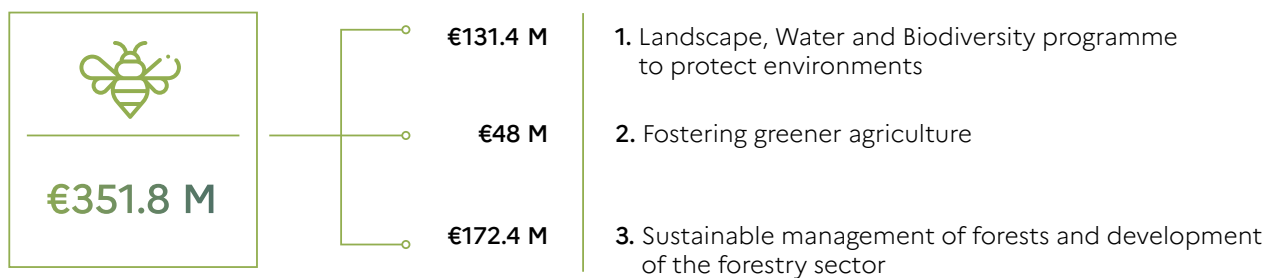
Green OAT funding in 2020 also contributed to the European Development Fund (EDF), the EU's main foreign development initiative in 79 countries in sub-Saharan African, the Caribbean and the Pacific (ACP), and the Overseas Countries and Territories (OCTs).

## 3.4 LIVING RESOURCES

Photo credit: Pixabay

The programmes covering living resources have three core elements: Understanding biodiversity, protecting milieux, and changes to agricultural and forestry practices. Managing the nation's rich forestry resources, as well as the forest products sector, is a key challenge for France, especially considering the significant contribution from forests to maintaining biodiversity and sustaining local economies.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

**96.3%**

of public sector forests are managed

**1.5%**

of mainland France subject to stringent protection measures

**30%**

waters under jurisdiction included in the maritime areas under protection

**10.3%**

of French agricultural area is designated as "organic"



## ◆ CHALLENGES FOR THE SECTOR

### THE WEALTH OF FRANCE'S NATURAL HERITAGE

France (Mainland and Overseas Territories) possesses 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 is thanks to the scale of its maritime zones and the significant diversity of habitats (Alpine, Atlantic, continental, tropical, etc.).

The protection of this diversity represents three challenges - ecological, socio-economic and natural heritage. Together with maintaining the functioning of the ecosystems themselves, biodiversity provides many eco-systemic services for society, as well as the importance we assign to being able to pass on this natural heritage to future generations, making the protection of biodiversity a fundamental challenge. It is estimated that in France, more than €80 billion in turnover and very many direct jobs are created each year within activities based around ecosystems (agriculture, grazing, wood, fishing, etc.).

France's forestry heritage is particularly large: Forests in mainland France cover 16.9 million hectares, 31% of the land, together with 8.2 million hectares covered by forests in the Overseas territories<sup>1</sup>. These forests are a treasure trove of biodiversity, with a large number of tree species (138 in mainland France and over a thousand in the DROM) and forest milieux throughout France. French forests are also a crucial vector in economic development, generating nearly 400,000 jobs and €60 billion in turnover<sup>2</sup>.

1 - IGN Forestry Inventory – 2019 memorandum

2 - ONF - Forests, a key vector for economic development

### POORLY MAINTAINED NATURAL HABITATS

These natural resources are however endangered in France as just 22% of habitats are in a positive condition, with habitats in the Alpine regions being in a 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. The other leading reasons for loss of biodiversity are pollution, overexploitation of resources, climate change and invasive species.

### TOOLS FOR PROTECTING BIODIVERSITY

**There are however a number of solutions, and these are being applied to prevent species extinctions and the further degradation of ecosystems in France, and for restoring natural habitats.**

Among these, there is the creation of protected areas, helping support sustainable activities and leisure pursuits that make use of these ecosystems. Examples include the Natura 2000 sites, national and natural parks, with these covering a total of 21% of the landmass and 22% of French territorial waters. There is also legal protection for 7,000 animal and vegetable species, prohibiting the exploitation and destruction of these.

These initiatives are detailed and applied through a number of national plans and laws, such as the national biodiversity strategy, the law for restoring biodiversity and landscapes, and the biodiversity Plan. Alongside protection, improved understanding of biodiversity is also a major challenge and is the subject of many initiatives, supported, among others by leading research institutes, and in particular the National Biodiversity Observatory and the National Natural History Museum.

## ◆ GREEN OAT ELIGIBLE EXPENDITURE AND PROGRAMMES

Mission	Programme	Expenditure	Amounts (€ bn)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P113	1. Landscape, Water and Biodiversity programme to protect environments	149.5	15.7	188	115.7	131.4	Percentage of mainland France subject to stringent protection measures	1.4	1.5	1.5
								Percentage of waters under jurisdiction included in protected maritime areas	22.9	23.6	30
Agriculture, food industry, forestry and rural matters	P149	2. Fonds Avenir Bio (Organic Future Fund)	4	0.4	5	3.1	3.5	Percentage of organic farms in total agricultural land area in use	7.5	8.5	10.3
		3. Sustainable management of forests and development of the forestry sector	226.7	23.9	241.2	148.5	172.4	Percentage of publicly owned forests being sustainably managed	95.8	96.1	96.3
		2. Subsidies to the Agence Bio	-	-	2.1	1.3	1.3	-	-	-	-
		2. Tax credit for organic farmers	53	5.6	61	37.6	43.2	Number of farming businesses benefiting from the tax credit	14 851	17 011	n. d.
<b>Total</b>			<b>433.2</b>	<b>45.6</b>	<b>497.3</b>	<b>306.2</b>	<b>351.8</b>				

## 1. LANDSCAPE, WATER AND BIODIVERSITY PROGRAMME TO PROTECT ENVIRONMENTS

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 landscape and natural non-energy mineral resources, through a high degree 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, landscapes and Advertising" is focussed around 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, "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 adoption 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 sector, subsidies to the Agence Bio, whose mission is to communicate and provide information on organic farming and facilitate 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. The Green OAT funds some of the budget of the National Forests Office (ONF), a public industrial and commercial body created in 1964. Its core missions are the implementation of the forestry regime and guaranteeing the management and capabilities of state-owned forests.

The Green OAT also contributes to funding the National Centre for Forest Owners (CNPF), which is tasked with promoting the sustainable management of privately owned forests (3.5 million owners) and improving the productivity of these.

This body also applies the key elements of the National Forest and Forestry Industries Programme:

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

*Cf. Focus 3*



Photo credit: Pixabay

### 3. FOCUS : ONF | Protecting ecosystems

The National Forests Office manages 10.9 million hectares of forests, approximately 40% of French forests, including 4.6 million hectares in mainland France and 6.3 million Overseas. The mission of the ONF is to apply sustainable management practices, combining the production of wood with the protection of biodiversity and the integrity of the natural forest heritage, and welcoming visitors.

State owned forests in the Overseas Territories (French Guyana, Martinique, Réunion, Mayotte, Guadeloupe) are a major part of the work of the ONF because of their sheer size (60% of the forests managed by the ONF and 24% of French forests), the types of habitats they host (both exceptional and highly endangered globally) and the pressures they are under (poaching, illegal mining activities,

illegal deforestation, etc.). The ONF protects these forests from illegal felling and manages their harvesting (very limited), thus maintaining the level of carbon stored.

The challenge of protecting the Overseas milieu, accounting for 80% of French biodiversity, is critical. In the context of this challenge the ONF is involved in applying national action plans, such as that aimed at protecting endangered marine turtles. The work of the ONF protecting biodiversity also involves actions against exotic invasive species, one of the biggest threats to some forests in these regions. The ONF is actively combating illegal mining and helping prevent the pollution it produces.

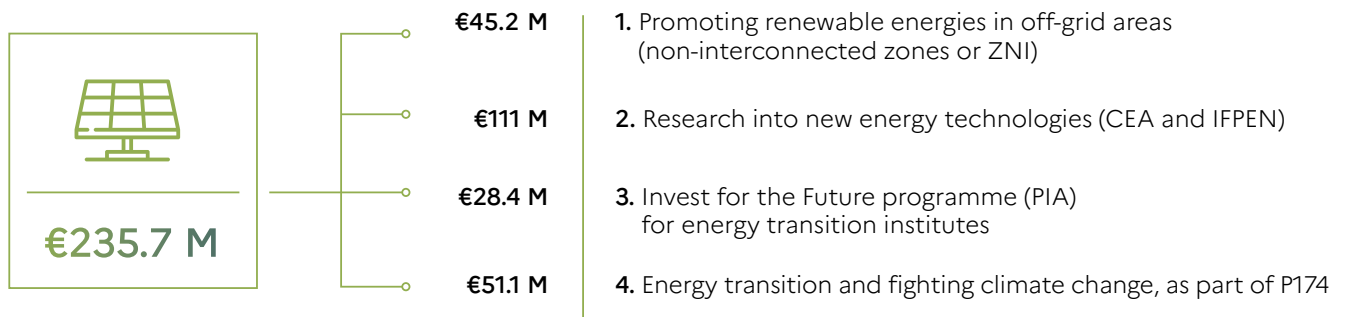


## 3.5 ENERGY

Photo credit: Pixabay

The production of zero carbon energy is vital in achieving the national carbon neutrality target by 2050. The expenditure funded by the Green OAT relates mainly to research into developing renewable energies. This is supplemented by expenditure to promote these new energies, in particular within isolated territories.

### ◆ ELIGIBLE EXPENDITURE



### Performance indicators

1

**Leverage effect** (leveraging ratio of public and private funding to amounts contracted by the PIA) for funding energy transition institutes

341

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

€39.9 M

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

## ◆ CHALLENGES FOR THE SECTOR

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

Energy production in France accounted for 11.7% of national greenhouse gas emissions in 2019.

The production of electricity has been historically low carbon because of the energy mix (large share of nuclear and renewable). These emissions are 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.

### SEVERAL LEVERS FOR REACHING THE AMBITIOUS TARGETS SET BY THE SNBC...

**The medium and long-term objectives of the SNBC: A 33% reduction in GHG emissions in 2030 compared to 2015, and an almost complete zero-carbon energy production by 2050, which can be summarised in three main sections:**

1. Cutting out carbon emissions and diversifying the energy mix, and thus the production of electricity, through a massive extension of renewable and recovered energies, in order to accompany a wider electrification of uses.
2. Managing energy demand through energy efficiency and moderate, mindful power use.
3. Determining long-term scenarios, enabling the anticipation of production needs.

Achieving these objectives requires the deployment of several levers, such as improved energy efficiency and moderation in its use, increased use of renewable energies and heat recovery or the gradual limiting of the 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 defines the development trajectories for renewable energies. **New commitments of €30 billion have therefore been scheduled.**

The recovery plan defined in 2020 covers these two aspects, with for example the allocation of €2 billion to hydrogen research, as well as the electrification of uses by supporting the decarbonisation of industry, for example. A significant amount of aid has been dedicated to the electrification of the vehicle stock, as well as to the rail and other public transport sectors.

## ◆ GREEN OAT ELIGIBLE EXPENDITURE AND PROGRAMMES

Mission	Programme	Expenditure	Amounts (€ bn)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P174	4. Energy transition and fighting climate change	56.4	5.9	73.5	45.2	51.1	-	-	-	-
	P345	1. Promoting renewable energies in off-grid areas (ZNI)	31.3	3.3	68.1	41.9	45.2	-	-	-	-
Research and higher education	P190	2. Support for new energy technologies (CEA and IFPEN)	51	5.4	171.5	105.6	111	Number of patents registered	288	310	341
								Income generated from marketing of the research (€ millions)	51.1	51.8	39.9
PIA	PIA 1	3. Energy transition institutes	24	2.5	42.1	25.9	28.4	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	0.3	1
<b>Total</b>			<b>162.7</b>	<b>17.1</b>	<b>355.2</b>	<b>218.7</b>	<b>235.7</b>				

## 1. PROMOTING RENEWABLE ENERGIES IN OFF-GRID AREAS (ZNI)

Off-grid areas (ZNI), regions not connected to the mainland France grid, produce most of their electricity using imported fossil fuels (gas, oil and coal) and supplement this with locally produced renewable energy. The transition from this carbon-based system to a mix based on renewable energies, in order to meet the objectives set in the green growth energy transition act (LTECV), faces both technical and economic obstacles (technological maturity, intermittent supplies, recent investments in power plants, etc.) and therefore require the application of deliberate actions to manage electricity consumption. The Energy regulation Commission (CRE) therefore has a number of roles, calculating the annual public service subsidy for the energy, analysing the appropriateness of the renewable energy support mechanisms and evaluating the level of compensation for the production facilities and storage installations.

## 2. RESEARCH INTO NEW ENERGY TECHNOLOGIES

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

- The Alternative Energies and Atomic Energy Commission (CEA) supports an integrated approach to future energy systems, including renewable energy production modes, as well as grids (storage, conversion, control). The key themes within the CEA include photovoltaic, storage (batteries), the hydrogen vector, energy management integrating a network system approach (electricity, gas and storage means) and energy efficiency in industrial buildings and infrastructures.
- The French Petroleum and New Energies Institute (IFPEN), with applied research into the principal 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 maritime milieux.

## 3. 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. These institutes primarily target high-potential 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.

*Cf. Focus 3*

## 4. ENERGY TRANSITION AND COMBATING CLIMATE CHANGE

This vast programme includes a range of actions linked with supporting the energy transition as well as the fight against climate change, some examples of which are presented here. This expenditure relates to funding the system for managing energy efficiency certificates (CEE), requiring energy suppliers to take measures aimed at consumer energy efficiency. CEE inspections were strengthened in 2020 to prevent any fraudulent use of the system by companies. 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 CIREN), enabling the modelling of supply and demand, and thus satisfying the reporting obligations required at the 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.

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

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





Photo credit: McPhy Energy

### 3. FOCUS: PIA | McPhy

#### Energy transition

The Green technologies Fund, managed by Bpifrance Investissements as part of the Invest for the Future programme, is a long-standing strategic shareholder of McPhy.

A pioneer in the use of hydrogen for the energy transition, McPhy has been, since 2008, an industry leader in the zero-carbon hydrogen production and distribution equipment sector. With a full range of industry specific products (mobility and energy), McPhy offers its customers solutions matching their applications for industrial raw material supply, for charging fuel cell

electric vehicles and for the storage and sale of surplus renewable energy. A designer, manufacturer and integrator of hydrogen fuel products, McPhy operates in Italy, France and Germany.

McPhy works with its industry, mobility and energy customers as they transition to business models based on zero carbon hydrogen, reconciling economic performance and social responsibility.



Photo credit: Haffner Energy

### 3. FOCUS: PIA | Haffner Energy

#### Energy transition

Haffner Energy, an SME in the “2017 SME Accelerator” programme run by Bpifrance, works in the renewable energy sector as a specialist in the recycling of biomass into zero-carbon energy.

The company has developed a technological disruptor known as HYNOC<sup>®</sup> (Hydrogen No Carbon), protected by 14 patent families, that enables the production of renewable and affordable hydrogen from biomass using thermolysis.

Hydrogen, currently used mainly as a consumable in the petroleum and chemical industries, is a future energy vector. When used it produces only water vapour without CO<sub>2</sub> and it can be used for mobility as easily as liquid fuels. Whilst 95% of global production currently comes from fossil energy, scientific, environmental and economic challenges are behind the drive to the emergence of zero-carbon solutions, in response to the requisites of the energy transition.



Photo credit: Spirec

### 3. FOCUS: PIA | Projet RETIS

#### Green Tech

Spirec designs, audits, advises on and develops thermal solutions (condensers, evaporators, exchangers, conditioning batteries, etc.) to meet energy efficiency requirements. With the application of its solutions, Spirec helps its customer achieve energy savings.

The RETIS project (i-Nov prize\*), funded by the PIA, aims to develop (design - production) then industrialise an innovative hot water production sub-station powered by a primary zero carbon energy source. This project offers a rational use of energy by limiting calls for power and by creating real-time production monitoring tools for more efficient maintenance.

\* Winner of the Wave 3 of i-Nov innovation competition (ADEME theme)

## 3.6 POLLUTION

Photo credit: Pixabay

Pollution has significant impacts in terms of health and the quality of life. Air pollution in particular results in high levels of health related and economic costs for society. With European legislation setting limit thresholds for certain atmospheric pollutants, there is therefore a need for air quality monitoring and improvement programmes to be financed at the national and local levels.

### ◆ ELIGIBLE EXPENDITURE



€19 M

1. Fight against climate change and for air quality

#### Performance indicators

Annual emissions of atmospheric pollutants (in kt) and reduction from 2019:

**NO<sub>x</sub>**  
651 (-8%)

**NH<sub>3</sub>**  
588.8 (-1%)

**VOC<sub>nm</sub>**  
932 (-3%)

**PM<sub>2.5</sub>**  
111.8 (-16%)



## ◆ CHALLENGES FOR THE SECTOR

### MANY ECONOMIC SECTORS POLLUTE THE ATMOSPHERE

There are many mechanisms behind air pollution, because pollution results both from natural phenomena (fires, natural aerosols, etc.) and, in most cases, from man-made phenomena.

Very many human activities are involved in producing atmospheric pollution: Road transport is the leading producer of nitrogen oxide (NOx) pollution, the residential and industrial sectors produce most of PM<sub>10</sub> particulate and volatile organic compounds pollution, 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, as pollution can be aggravated under certain meteorological conditions.

### AIR QUALITY IN FRANCE SUBJECT TO STRICT MONITORING

**Managing air quality is in principle the responsibility of the Ministry for Ecological transition, which implements monitoring equipment: at the national level, the Central air quality monitoring laboratory (LCSQA) provides the technical coordination of the air quality monitoring system.**

At the regional level, authorised 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 consequences of air pollution are very serious: in France, it causes 40,000 premature deaths a year<sup>1</sup>.**

Particulates in outside air have been classed as carcinogenic since 2013, because the fine particles, in particular, can penetrate deep inside an organism and spread to all organs. Pollution leads to illnesses such as asthma, or more generally, respiratory and cardiovascular problems, that can result in hospitalisation, and death in more severe cases. Public Health France reports that the falls in pollution levels in the first lockdown in spring 2020 was associated with 2,300 fewer deaths, confirming that intentional actions to reduce fine particulate emission can have significant impacts in terms of deaths.

The economic and financial consequences of air pollution are also high and have been calculated in several studies. A report to the Senate in 2015 estimated that the social cost for France of air pollution was between €68 and €97 billion, of which a large part linked with health problems. More recently, at the end of 2020, 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 the same analysis, the transport sector was the leading source of air pollution and thus the main generator of these socio-economic costs.

<sup>1</sup> - *Estimates of Santé Publique France (2021) - Pollution de l'air ambiant : nouvelles estimations de son impact sur la santé des Français*

## ◆ GREEN OAT ELIGIBLE EXPENDITURE AND PROGRAMMES

Mission	Programme	Expenditure	Amounts (€ bn)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P174	1. Fight against climate change and for air quality	25.2	2.6	26.6	16.4	19	Annual emission of atmospheric pollutants	-	-	-
								NOx	812	774	651
								NH <sub>3</sub>	606.5	592.7	588.8
								VOCnm	979	956	923
								PM2.5	125.8	121.3	111.8
<b>Total</b>			<b>25.2</b>	<b>2.6</b>	<b>26.6</b>	<b>16.4</b>	<b>19</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 pollutants and their concentrations at the levels of relevant spatial and temporal levels, secondly, the putting into place of effective measures to achieve the national targets for reducing pollutant concentrations.

The solutions in combating pollution therefore seem 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 sectors (buildings, living resources, transport, energy and adaptation) also helping reduce pollution.

### • Plans to protect the atmosphere

The European 2008/50/EC Directive, or “Air Quality” Directive, states that member States must implement action plans for zones in which the air quality threshold values are being exceeded. These atmosphere protection plans (PPA), drawn up at the local level, are applicable in 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 atmosphere down to levels that comply with the threshold values. The PPA must be evaluated every five years and, as appropriate, revised. On 31 December 2020, 39 PPA and local air quality improvement plans (PLQA) had been approved. On average, 8 PPA will need evaluating and revising every year until 2022.

The 2020 expenditure covered the following elements:

- evaluation and revision of PPAs;
- support for the roll-out and monitoring of previously adopted PPAs;
- support for the DREAL in particular for communication initiatives.

### • Air quality monitoring laboratories and associations (LCSQA, AASQA, etc.)

The State funds the activities of various organisations measuring air quality, including 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. In 2020, the LCSQA continued its work providing scientific, technical and strategic support with the Ministry of the Environment. In this context, the LCSQA also continued its work into the chemical characterisation of the sources of particulates in order to provide the network with the information it needs for analysing the contributions from the various sources of fine particulates, as well as for the real-time forwarding of data during pollution episodes.

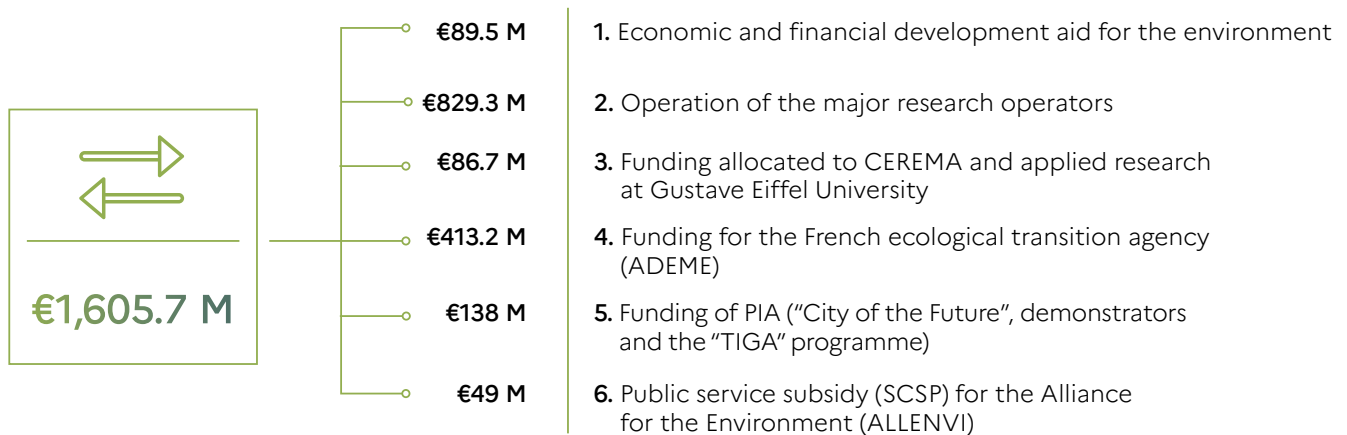
The approved Associations for monitoring air quality (AASQA) monitor and analyse the ambient air quality for the regulated pollutants, providing daily forecasts and information to the regions and the public on observed and forecast air quality.

# 3.7 MULTI-SECTOR

Photo credit: Pixabay

Multi-sector expenditure is mainly concerned with research funding. The energy transition will require 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.

## ◆ ELIGIBLE EXPENDITURE



## Performance indicators

**0.58**

publications intended for public authorities per CEREMA agent

### Effectiveness of the ADEME Fonds Chaleur:

- . €515/TOE for the Industrial Biomass sector
- . €1,311/TOE for other Biomass sectors
- . €6,756/TOE for the Solar Thermal sector
- . €1,161/TOE for the Geothermal energy sector

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

- . 1.4% of international reference publications
- . 5.5% of European reference publications
- . 13% of reference publications in the France-Germany-United Kingdom space

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

- . 8.1 for the City of the Future project
- . 3.5 for Green technologies Funds
- . 2.1 for the PIA 1 and 2 demonstrators
- . 0.4 for the PIA 3 demonstrators



Mission	Programme	Expenditure	Amounts (€ bn)					Indicator	2018	2019	2020
			2019		2020		Total				
			Eligible	Re-remainder allocated	Eligible	Allocated	Allocated				
Ecology, sustainable transport and development	P159	3. Funding allocated to the French Research Centre on Environmental Risk, Transport and Planning (CEREMA)	93.8	9.9	99.7	61.4	71.3	Number of publications intended for public authorities per CEREMA agent	0.53	0.58	0.58
	P181	4. Funding allocated to ADEME.	583.8	61.3	571.5	351.8	413.2	Efficiency of the energy fund (euros/TOE)	-	-	-
								Industrial biomass	741	470	515
								Other sector biomass	849	650	1 311
								Solar heating	5 480	5 740	6 756
Geothermal energy	930	1 350	1 161								
Research and Higher Education	P150	6. SCSP Allenvi	-	-	79.6	49	49	-	-	-	
	P172	2. Scientific and technological research in the environmental field. Operations of public research bodies: BRGM, CEA, CIRAD, CNRS, IFREMER, INRAE, IRD, IPEV	1 146.3	120.5	1 151.2	708.7	829.2	Share of international reference publications by French programme participants in global scientific production.	1.6	1.5	1.4
								Share of international reference publications by French programme participants in European Union production (EU 28).	5.8	5.6	5.5
P190	3. Université Gustave Eiffel - Funding of applied research into technologies available in the short to medium-term	20.9	2.2	21.4	13.2	15.4	Share of the scientific production by programme participants in the France-Germany-United Kingdom space Research produced by the research bodies in the programme: number of publications per researcher	13.6	13.1	13	
Official development aid	P110	1. Funding for global environment, Contributions for protection of tropical forests, Green Climate funds, multilateral funds for the Montreal Protocol	-	-	127.9	78.7	78.7	-	-	-	
		1. French Global Environment Fund	-	-	17.5	10.8	10.8	-	-	-	
PIA	PIA 1	5. City of the Future	50.3	5.3	33.1	20.4	25.7	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	8.3	8.1
		5. Green technologies Funds (innovative SMEs)	17.7	1.9	30.7	18.9	20.8	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	2,9	3,5
	PIA 1, 2 and 3	5. Demonstrators (including circular economy and smart grids)	97	10.2	64.6	39.8	50	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	2	2.1
	PIA 3	5. Innovation competition (ADEME)	10.6	1.1	18.7	11.5	12.6	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	1.3	1.6
		5. Demonstrators and TIGA - TIGA (CDC)	5.1	0.5	43.3	26.7	27.2	Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	1.4	0.4
		5. Demonstrators and TIGA – TIGA (First of a kind fund)	-	-	2.7	1.7	1.7	-	-	-	
<b>Total</b>			<b>2 025.5</b>	<b>212.9</b>	<b>2 261.9</b>	<b>1 392.8</b>	<b>1 605.7</b>				

## 1. ECONOMIC AND FINANCIAL OFFICIAL DEVELOPMENT AID FOR THE ENVIRONMENT

This programme is based on the principal objectives of the five-year presidential term 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 Fund (FEM), the multilateral fund giving effect to the Montreal Protocol, the green fund for the climate, as well as contributions for the protection of tropical forests) and in part the credits of the French Global Environment Fund (FFEM), 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.

*Cf. Focus 1*

## 2. OPERATION OF LEADING RESEARCH OPERATORS

This funding supports scientific and technological research within the leading French operators involved in growing fundamental knowledge on the environment and biodiversity, as well as in exploring new solutions. This includes in particular, 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 establish strategic and programmatic links with higher education and research bodies, 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.

## 3. FUNDING ALLOCATED TO CEREMA AND APPLIED RESEARCH AT UNIVERSITÉ GUSTAVE EIFFEL

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 applied research of Gustave Eiffel University.

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

This relates in particular to the Heat, Air quality and Mobility Funds (Fonds chaleur, qualité de l'air et mobilité), as well as the circular economy, and support for reducing 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 LTECV and expanded by the "anti-waste law for a circular economy". This funding is used to support the policy of preventing and recycling waste and promotes the development of the circular economy. It finances research and development, communications operations as well as support for establishing prevention and investment plans and programmes.

## 5. FUNDING OF PIA ("CITY OF THE FUTURE", DEMONSTRATORS AND THE "TIGA")

Green expenditure covers, in part, the Invest for the Future programme (PIA), managed by the General Secretariat for Investment (SGPI) and run by the Caisse des Dépôts et Consignations public financial institution. 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 protect the environment, social cohesion and the quality of life for their inhabitants: industrial conversions, 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 renovations, management of mobility and revitalisation of natural spaces.

- **Demonstrators and the highly ambitious innovative regions scheme (D TIGA)**

The aim of these demonstrators is to develop the tools enabling the realisation of the energy and ecological transition together with the modernisation of the economy, by intervening in key sectors such as the circular economic, smart electricity grids, renewable energies, eco-efficient industries 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 2020, the projects were focused on the circular economy, environmental performances of buildings, adaptation to climate change and hydrogen.

*Cf. Focus 5*

## 6. PUBLIC SERVICE SUBSIDY (SCSP) FOR THE ALLIANCE FOR THE ENVIRONMENT (ALLENVI)

This programme supplements expenditure 2 above funding the operation of the leading research operators. These subsidies consist of credits intended to cover the ongoing operating costs of the research members of ALLENVI, which works to coordinate French research for a successful ecological transition and dealing with the major social challenges that are associated with it.



Congo River – Photo credit: MONUSCO / Abel Kavanagh

## 1. FOCUS: FRENCH GLOBAL ENVIRONMENT FUND (FFEM)

### Living Resources

The French Global Environment Fund (FFEM) finances innovative environment-focussed projects in developing countries. The FFEM concentrates on areas such as the climate, biodiversity, international waters, soil degradation, chemical pollutants and stratospheric ozone.

Created in 1994 by the French government, it has already supported 333 projects in more than 120 countries, of which two-thirds are in Africa. In 2019, its new strategy for 2019-2022 focussed on activities financed by the FFEM (€120 million over the period) relating to five subject areas: Protecting and promoting biodiversity, forests and sustainable agricultural land, resilience of aquatic ecosystems, energy transition and resilient cities, as well as product life cycles, pollution and waste.

FFEM is currently funding a project in the Congo River basin (2020-2024). This basin is central to the economies of the countries that share it. The Congo River basin, which is the world's second largest tropical forest, is a major carbon sink and host to 60% of African biodiversity. To improve the management of this ecosystem and the natural resources it contains, FFEM is supporting the Congo International Commission (CICOS) with €1,000,000 out of its total budget of €3,300,000. The purpose of this project is to strengthen the hydrometeorological and environmental monitoring capacities, the water information systems at the regional and national levels, as well as their operational applications such as navigation, monitoring climate change and the protection of biodiversity.





## 5. FOCUS: PIA | Carbios

### Green Tech

Carbios is a green chemical company that works in the design and development of enzymatic processes for alternative plastic and textile end of life practices.

Current plastic recycling processes have limitations: Only clear plastic can be recycled, with a loss of quality in each cycle, resulting in problems of obtaining new products using 100% recycled PET\*. Composite plastics are thus very often difficult or impossible to recycle. The innovation developed by Carbios allows the infinite recycling of all types of PET waste, as well as the production of 100% recycled and recyclable PET products and this without any loss of quality.

Plastic and textile waste is now a valuable raw material that will help turn the circular economy into a reality. In January 2019, Carbios obtained €4.1 million in funding from the PIA operated by ADEME to support the scaling up of its industrial and commercial project, over a 39-month period.

\* PET: Polyethylene Terephthalate, very widely used plastic material for packaging and textile applications.



Crédit photo : Polyloop

## 5. FOCUS: PIA | Polyloop

### Ecological transition

Polyloop was selected for its “Smart Factory” concept for processing of waste flexible composite PVC\*. Polyloop adapts to the specifics of each industrial facility to process the post-industrial/consumption wastes with extremely high-quality solutions, guaranteeing the purity of the regenerated materials, which can be reused immediately.

The recycling of plastic materials is major concern across all of industry. PVC is one of the most widely used plastics on the planet. 35 million tonnes of it are sold around the world every year, with 5.5 million tonnes in Europe.

At the moment there are cost and technical barriers preventing the recycling and reuse of these wastes and end of life products. The Polyloop solution could allow these wastes, for which there has not to date been a recycling solution, to be reused.

\* PVC: polyvinyl chloride, widely consumed thermoplastic polymer





04.

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# ENVIRONMENTAL EVALUATION FOR THE LONG TERM

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## 4.1 TOWARDS A GRADUAL ALIGNMENT WITH THE EUROPEAN TAXONOMY

The European Commission's Action plan on sustainable finance<sup>1</sup>, announced on 8 March 2018, takes effect through the creation of an EU taxonomy for sustainable activities, enabling the definition of the details and criteria by which each activity can be classified as "environmentally sustainable" (or "green"). On the basis of this classification, financial and non-financial stakeholders must state the green proportion of the activities<sup>2</sup>. The purpose of this new tool is to guide investment towards the most environmentally sustainable technologies and companies. The technical evaluation criteria recently defined by the European Commission (cf. next paragraph) are in part inspired by those drawn up in 2020 by the Technical Experts Group (TEG) on sustainable finance; this work was supplemented with an in-depth consultation with the stakeholders and discussions with various European political institutions.

In line with the environmental ambition of the Green OATs, it is intended that they will be aligned with the EU Green Bond Standard (or EU GBS), a labelling system still being compiled. This alignment assumes in particular that the eligible expenditure will comply with the requirements of the European Taxonomy. The six environmental objectives identified by the Taxonomy Regulation are: Climate change mitigation (1), Climate change adaptation (2), Sustainable use and protection of water and marine resources (3), the Transition to a circular economy (4), Pollution prevention and control (5), and Protection and restoration of biodiversity and ecosystems (6). These objectives are consistent with those established for the Green OAT: Objectives (1), (2), (5) and (6) correspond with those of the AFT Framework Document published in January 2017, whilst the circular economy is explicitly mentioned in the sector-based approach

of that same document, associated with the prevention of pollution. The question of water is not directly addressed in it, but it is partly dealt with under the sections on pollution and biodiversity.

The Taxonomy classifies an activity as "environmentally sustainable" if it makes a substantial contribution to at least one of the six objectives and if it does not cause any significant harm in terms of the other objectives (the principle of "do not significantly harm" or "DNSH"). Its application must also respect the basis of the fundamental social principles. The first delegated regulations, covering the climatic objectives of the taxonomy (Climate change mitigation and adaptation), give details in its appendix of the technical evaluation criteria, namely for those activities in the industrial and energy sectors (renewable energy production, storage, heating systems).

On the basis of this technical appendix, an analysis of Green OAT financed expenditure was carried out. In 2020, 65% of expenditure went to sectors covered by the technical appendix and for which it will be possible to analyse their substantial contributions to mitigating or adapting to climate change within the meaning of the European Regulations. These 65% could thus be considered as being eligible for inclusion in the Taxonomy. Of the remaining Eligible Green Expenditure, 27% was into research, combining, in often poorly defined proportions, applied and fundamental research. This latter, generally predominant in public bodies eligible for the Green OAT, has not yet been included in the technical appendix of the delegated Taxonomy regulations.

Research expenditure has however been included within the eligible Green OAT expenditure. Environmental sciences, to the extent that they enable, for example a better understanding of

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

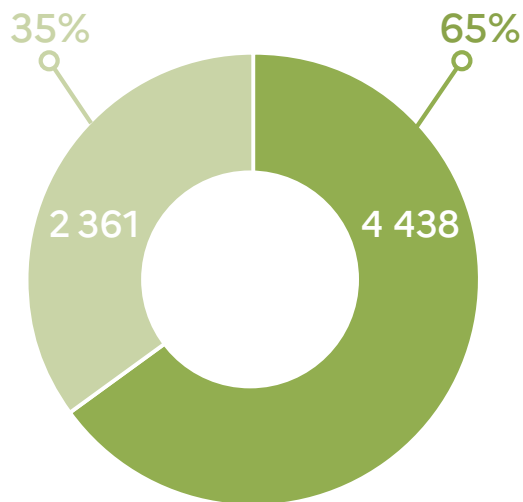
2 - The type of indicators used for each stakeholder typology (financial and non-financial) is currently being defined by the European Commission



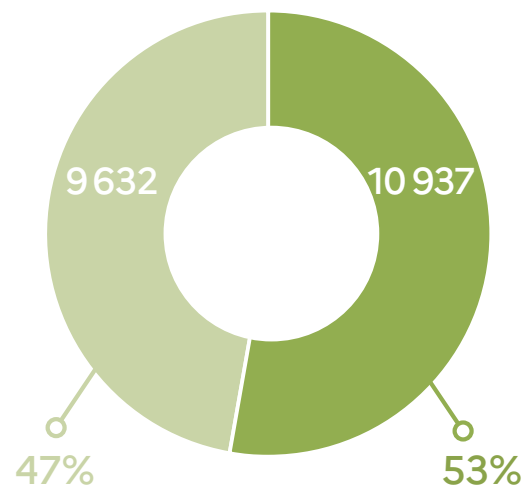
ecosystems or climate change, produce a priori favourable outcomes for the environment, even if mostly indirectly. They would appear, therefore, to be “enabling activities” within the meaning of the Taxonomy, and essential for the ecological transition as a whole. It is possible that in future evolutions of the Taxonomy, this element will be considered by the platform on sustainable finance (the “technical” successor to the TEG from September 2020). Lastly, 8% of Green OAT eligible expenditure covers activities that are difficult to assign to the sectors covered by the technical appendix, in many cases because they are


multi-sector and include an element of support for innovation. A more precise understanding of the financed projects could enable an improved analysis in terms of the first two objectives (mitigation and adaptation to climate change) in order to determine the eligibility, and compliance, of the Green OAT with the requirements of the European Taxonomy.


**Total expenditure 2020  
in €M**



**Accumulated expenditure  
2016 to 2019 in €M**



 Expenditure aligned with the European Taxonomy

 Expenditure for which the Taxonomy is not applicable at this stage mainly because of its incompleteness

Source: Calculations I Care & Consult based on Agence France Trésor figures

## 4.2 WORK OF THE EVALUATION COUNCIL

The evaluation of the environmental impacts is a fundamental question for the green bond market. The OAT 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.

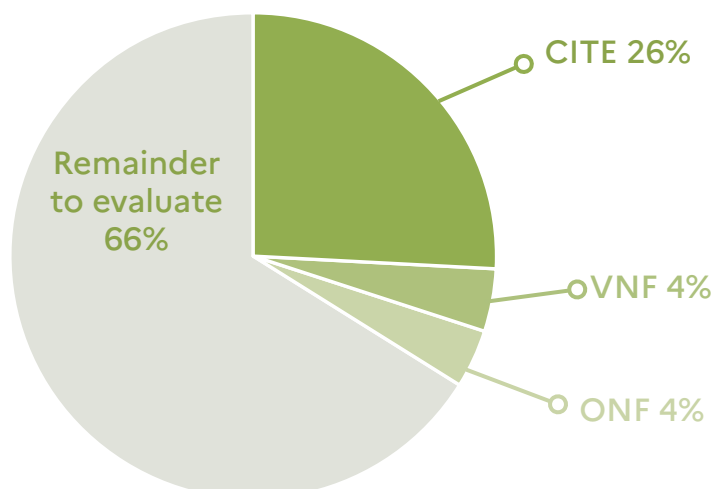
The first report, in 2018, dealt with the tax credit for energy transition (CITE), the second, published in 2019, with the environmental impact of the subsidy for public service expenditure granted to the French inland waterways office (VNF), and the latest, in 2020, reports on the environmental impacts of the public subsidy to the French Forests Office (ONF). At the end of 2021, the Council will publish a report evaluating the environmental impact of some innovative projects funded by the Invest for the Future Programme (PIA).

In terms of the total amounts for the period 2017 to 2020, expenditure evaluated in the context of these first three reports amounted to €9.3 billion. This is 34% of the total outstanding amount which was covered by the evaluations at the end of 2020: 26% for CITE, 4% for the VNF and the same for the ONF.

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 responsible bodies.

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 green expenditure financed by the Green OAT, are presented successively within this section.

Share of evaluated expenditures  
in the total allocation at end of 2020



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



Crédit d'impôt sur la Transition Énergétique

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 %

## 2019 EVALUATION: FRENCH WATERWAYS BOARD (VNF)



- 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.**

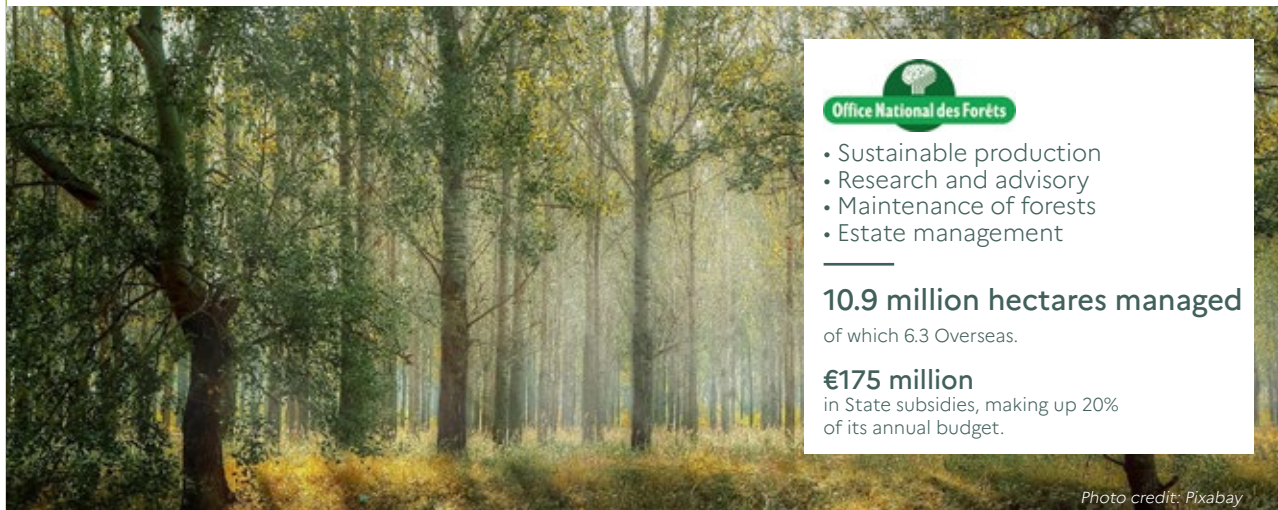
#### ◆ BIODIVERSITY AND ADAPTATION

##### 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.



## 2020 EVALUATION: NATIONAL FORESTS OFFICE (ONF)



- 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.

*Photo credit: Pixabay*

### 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 achieve-

ment 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

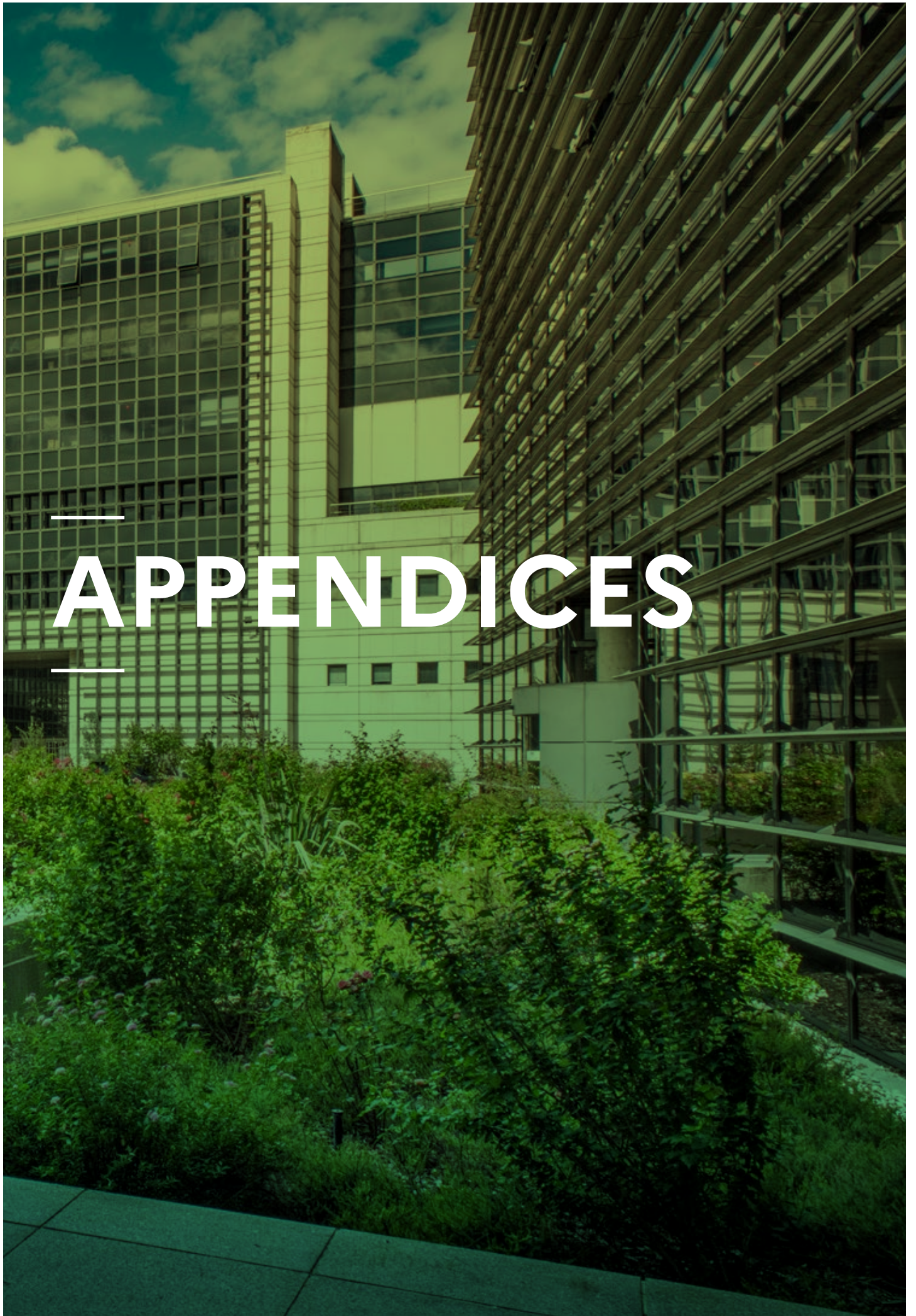
##### ACTIONS TO ADAPT ITS FORESTS TO NEW CLIMATIC CONDITIONS

- **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.





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# APPENDICES

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# 1. ELIGIBLE EXPENDITURE AND ALLOCATION METHOD

## ◆ RELIABILITY OF THE DATA USED

In 2020, the Green OAT 1.75% 25 June 2039 was tapped three times: on 6 February, for €1,982 million, on 2 April for €2,607 million and on 2 July for €2,109 million. A total of €6,698 million was thus raised in 2020 through the Green OAT 2039. The purpose of the allocation for 2020 is to evidence an equivalent amount of eligible expenditure.

In line with its commitments, in 2020 AFT tracked Eligible Green Expenditure identified by the inter-ministerial working group, as well as the associated performance indicators. This expenditure, as stated in the Green OAT Framework Document, was incurred in 2019 and 2020 and meets the eligibility criteria set out in the Framework Document.

As presented in the Methodology section in the appendices hereto (p. 71), Eligible Green Expenditure has been tracked through budget documents (2019 and 2020 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, the Budget Settlement Act for 2020, the budget act that sets the final amount of State expenditure and revenue at the year-end and the resulting financial result, was submitted to the Council of Ministers on 14 April 2021. It was transmitted to Parliament on the same day for enactment during the summer of 2021 and made public.

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 Budget Settlement Act for 2020, along with State budget and accounting data. Budget data cannot be changed as of the publication date.

## ◆ INCLUSION OF NEW GREEN EXPENDITURE

The drawing up of the Green Budget by the State in 2020 allowed for an exhaustive examination of all public policies in terms of their environmental impacts. This classification enables the identification of the State's green expenditure that had not previously been included in the list of Eligible Green Expenditure. Submitted for the scientific opinion of the Green OAT Evaluation Council, these have been assessed as complying with the criteria of the Framework Document. The Inter-Ministerial group, under the aegis of the Prime Minister, with responsibility for validating

the list of Eligible Green Expenditure, has duly taken these into account and was able to include these in the 2020 allocation.

These expenditures include, in particular, relating to research, the funding of the Allenvi alliance, for environmental sciences. This is in addition to the funding of operating costs of public research operators in this field already included in the Green OAT expenditure. Eligible Green Expenditure was also extended to the environmental element of official development aid, which has been

more systematically identified by the responsible stakeholders. The Inter-Ministerial group made sure that there is no double-counting relative to the green bond issues of the Agence française de développement.

Of the newly identified eligible expenditure, the reduced VAT rate for energy improvement work represents significant amounts, in excess of €1 billion a year. The previous objectives of this scheme were not strictly environmental, as it applied to a much wider range of improvement work, and this is why it was not considered as being eligible for the Green OAT. The scheme's regulations have been changed so that now only work that effectively results in improved energy efficiency, and thus is environmentally favourable, is covered.

Insofar as this fiscal expenditure could have been deemed as being eligible in 2019, it was decided to include it retrospectively in the allocation.

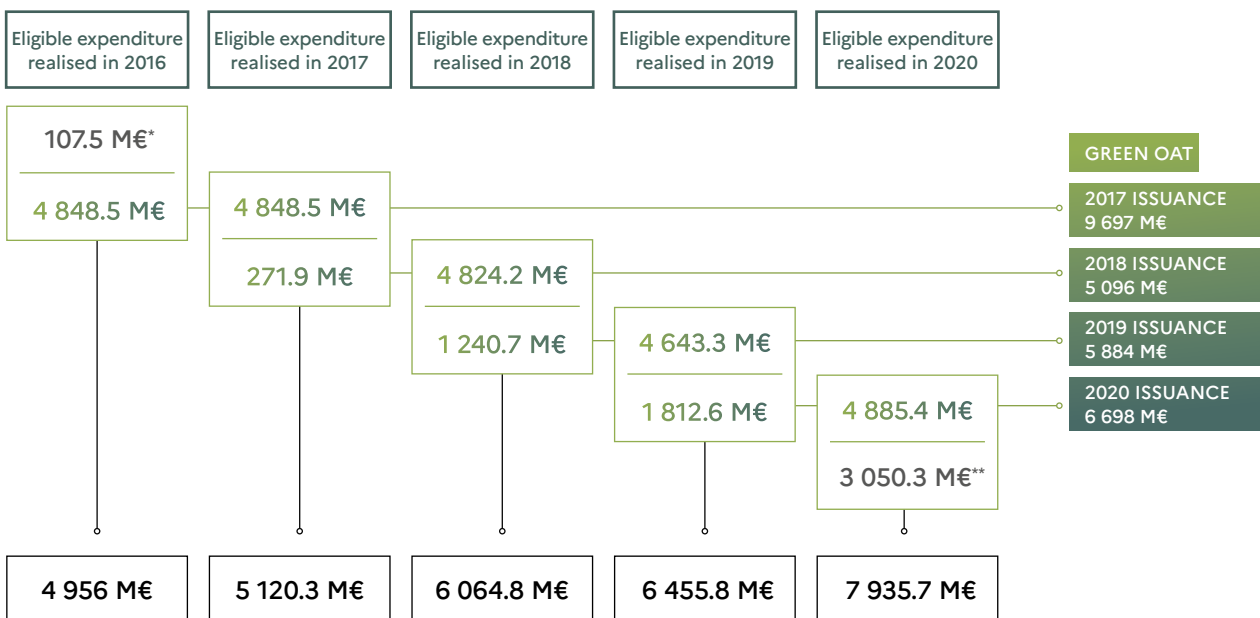
Lastly, two schemes benefiting households applicable in 2020 have very significantly contributed to the amount of green expenditure compared to 2019: Firstly, the car bonus and secondly, MaPrimeRenov', designed to follow on from the CITE. The combined expenditure relating to these two schemes amounted to more than €1 billion in 2020.

## ◆ ALLOCATION OF 2020 PROCEEDS

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 OAT proceeds (in € millions)



\* Amount not matched with Green OAT bond issues. \*\* Amount that can be matched with Green OAT issues 2021



Thus, for 2020, the €6,698 million of the Green OAT were allocated as follows: €1,812.6 million to the balance of expenditure for 2019 and the rest, €4,885.4 million, to Eligible Green Expenditure in 2020. The budget accounting procedure evidenced that €7,935.7 million was disbursed for Eligible Green Expenditure in 2020, with the balance of €3,050.3 million that can be carried forward to back Green OAT issues in 2021. It can be seen that, in compliance with the commitments given in the Green OAT Framework Document, the expenditure in 2020 for the current year amounted to more than half of the amount of the Green OAT issuances. 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 is exhausted, has not been used.

To summarise, this Allocation Report covers €6,698 million, the total amount of the Green OAT issuance in 2020. These €6,698 million have been allocated to expenditure partly in 2019, in the amount of €1,812.6 million, and in 2020, for the remainder in the amount of €4,885.4 million. For each of these two years, the amount allocated was distributed in proportion to the actual expenditure, other than for the reduced VAT expenditure for the energy efficiency work in 2019, which had not been included in the allocation of the 2019 issues (because not previously identified), and is consequently included here for its total amount.

## ◆ 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. 84).

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 2019 and 31 December 2020 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.





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 social responsibility and environmental factors and objectives in the design and management of the Green OAT. Vigeo Eiris renewed its reasonable level of assurance (the highest level of assurance) on the sustainability of the bond issue, on the green credentials of Eligible Green Expenditure funded by the tap issues executed in 2020 and on adherence to the commitments made for bond tap issuance. 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 document.

<sup>1</sup> - The Guidelines are defined by KPMG in its assurance report in the appendix, p. 85

<sup>2</sup> - “Verified Information” is defined by KPMG in its assurance report in the appendix, p. 85

## 2. ALLOCATION AND PERFORMANCE TABLE

Mission	Programme	Expenditure	Montants (en M d'€)					Sector	Indicator	2018	2019	2020	Distribution by objectives (in €M)			
			2019		2020		Total						Adaptation	Mitigation	Biodiversity	Pollution
			Eligible	Balance allocated	Eligible	Allocated	Allocated									
Agriculture, food industry, forestry and rural matters	P149	"Organic future fund" (Fonds Avenir Bio)	4	0.4	5	3.1	3.5		Percentage of organic farms in total agricultural land area in use	7.5	8.5	10.3	1.75	-	1.75	-
		Sustainable management of forests and development of the forestry sector	226.7	23.9	241.2	148.5	172.4		Percentage of publicly owned forests being sustainably managed	95.8	96.1	96.3	86.2	-	86.2	-
		Public subsidy of the Agence Bio	-	-	2.1	1.3	1.3		-	-	-	-	0.65	-	0.65	-
		Tax credit for organic farmers	53	5.6	61	37.6	43.2		Number of farming businesses benefiting from the tax credit	14 851	17 011	n. d.	21.6	-	21.6	-
Regional cohesion	P135	Residential thermal renovation - ANAH	110.4	11.6	88.4	54.4	66.1		Number of renovated properties ("Better Housing" programme)	62 345	116 995	68 367	-	66.1	-	-
		Interest-free green loan	39	-4.9	32	19.7	14.8		Number of individuals benefiting from interest free green loans	18 755	35 574	42 107	-	14.8	-	-
		Reduced VAT for work to improve energy efficiency	1 235	1 235	1 120	689.5	1 924.5		Number of beneficiaries of the reduced rate of VAT	315 000	315 000	n. d.	-	1 924.6	-	-
		Urbanism, territories and habitat improvement: "Sustainable city" plan management	-	-	2.2	1.4	1.4		-	-	-	-	-	1.4	-	-
Ecology, sustainable transport and development	P203	French Waterways Board. Financing network maintenance	241.6	25.4	251.8	155	180.4		Waterway availability rate	96.1	97.5	94.9	-	180.4	-	-
		Support for combined transport (rail, maritime and inland waterways)	27	2.8	31.2	19.2	22		Modal share of goods transport by rail in interior terrestrial transport	9	9	7.9	-	22	-	-
									Modal share of goods transport by water in interior terrestrial transport	1.9	2	1.9				
									Modal share of passenger transport by public transport in interior terrestrial transport	17.4	17.8	15.1				
Reduced tax on electricity (TICFE) for operators of rail or cable transport or electric or hybrid buses	232	64.8	211	129.9	194.7		Volume of electrical consumption covered by the reduced TICFE rate (in TWh)	8.9	8.5	7.1	-	194.7	-	-		












Mission	Programme	Expenditure	Montants (en M d'€)					Sector	Indicator	2018	2019	2020	Distribution by objectives (in €M)											
			2019		2020		Total						Adaptation	Mitigation	Biodiversity	Pollution								
			Eligible	Balance allocated	Eligible	Allocated	Allocated																	
Ecology, sustainable transport and development	P113	Landscape, Water and Biodiversity programme to protect environments	149.5	15.7	188	115.7	131.4		Percentage of mainland France subject to stringent protection measures	1.4	1.5	1.5	65.7	-	65.7	-								
									Percentage of waters under jurisdiction included in protected maritime areas	22.9	23.6	30	-	-	-	-								
	P159	Operational and investment funding allocated to Météo-France	69.2	7.3	69.8	43	50.3		Number of publications per researcher at Météo-France	1.6	1.6	2.2	25.15	25.15	-	-								
									Funding allocated to the French Research Centre on Environmental Risk, Transport and Planning (CEREMA)	93.8	9.9	99.7	61.4	71.3		Number of publications intended for public authorities per CEREMA agent	0.53	0.58	0.58	23.7	23.7	-	23.7	
	P174	Grants for purchase of zero-emission vehicles: "Green bonus" Ecological Bonus	-	-	613.6	377.7	377.7		Number of bonuses allocated	-	61 000	117 000	-	377.7	-	-								
									Energy Transition Tax Credit (CITE)	1 132	115.4	1 080	664.9	780.3		Number of households benefiting from CITE	1 419 100	911 000	n. d.	-	780.3	-	-	
									Property tax exemption for social housing agencies (HLM) and semi-public companies (SEM) funding investment to improve energy efficiency	110	12.5	-	-	12.5		Number of HLM and SEM bodies benefiting from the exemption	8 349	8 439	n. d.	-	12.5	-	-	
									Energy transition support (MaPrimeRenov')	-	-	455	280.1	280.1		Number of approved applications	-	-	141 143	-	280.1	-	-	
									Fight against climate change and for air quality	25.2	2.6	26.6	16.4	19		Annual emissions of atmospheric pollutants	-	-	-	-	-	-	-	-
																NOx	812	774	651					
																NH3	606.5	592.7	588.8					
	VOCnm	979	956	923																				
	PM2.5	125.8	121.3	111.8																				
	Energy transition and fighting climate change	56.4	5.9	73.5	45.2	51.1		-	-	-	-	51.1	-	-										
	P181	Funding allocated to ADEME	583.8	61.3	571.5	351.8	413.2		Efficiency of the heat fund	-	-	-	-	206.6	-	206.6								
									Industrial biomass	741	470	515												
									Other sector biomass	849	650	1 311												
Solar heating									5 480	5 740	6 756													
Geothermal energy									930	1 350	1 161													
P345	Cross-subsidisation for non-interconnected zones (ZNI)	31.3	3.3	68.1	41.9	45.2		-	-	-	-	45.2	-	-										

# Appendices.

Mission	Programme	Expenditure	Montants (en M d'€)					Sector	Indicator	2018	2019	2020	Distribution by objectives (in €M)			
			2019		2020		Total						Adaptation	Mitigation	Biodiversity	Pollution
			Eligible	Balance allocated	Eligible	Allocated	Allocated									
<b>Managing public finances and human resources</b>	<b>Multiple</b>	Reimbursement of public transit passes for civil servants	83	8.8	75.8	46.7	<b>55.4</b>		-	-	-	-	55.4	-	-	
<b>Public action and transformation</b>	<b>P348</b>	Energy efficiency renovations in public buildings	11.9	1.3	35	21.5	<b>22.8</b>		-	-	-	-	22.8	-	-	
<b>Research and higher education</b>	<b>P150</b>	Subsidy for Allenvi	-	-	79.6	49	<b>49</b>		-	-	-	12.2	12.2	12.2	12.2	
	<b>P172</b>	European Centre for Medium Range Weather Forecasts (ECMRWF)	-	-	8.1	5	<b>5</b>		-	-	-	5	-	-	-	
		Scientific and technological research in the environmental field. Operations of public research bodies: BRGM, CEA, CIRAD, CNRS, IFREMER, INRAE, IRD, IPEV	1 146.3	120.5	1 151.2	708.8	<b>829.3</b>		Share of international reference publications by French programme participants in global scientific production.	1.6	1.5	1.4	207.3	207.3	207.3	207.3
									Share of international reference publications by French programme participants in European Union production (EU 28).	5.8	5.6	5.5				
	Share of the scientific production by programme participants in the France-Germany-United Kingdom space	13.6	13.1	13												
	<b>P193</b>	Developing space research technology for improved Earth observation. Space based tools intended to be used for drawing up French and European policies	390.7	41.1	360.3	221.8	<b>262.9</b>		French share of international reference publications relating to space research in global production	3.7	3.5	3.3	262.9	-	-	-
									French share of international reference publications relating to space research in European Union production (EU 28).	13.6	13.3	13.3				
Share of the scientific production by programme participants in the France-Germany-United Kingdom space									29.5	28.9	28.8					
<b>P190</b>	Support for new energy technologies (CEA and IFPEN)	51	5.4	171.5	105.6	<b>111</b>		Number of patents registered	288	310	341	-	111	-	-	
								Income generated from marketing of the research (€ m)	51.1	51.8	39.9					
	Université Gustave Eiffel. Funding of applied research into technologies available in the short to medium term	20.9	2.2	21.4	13.2	<b>15.4</b>		Research produced by the research bodies in the programme: number of publications per researcher	1.06	1.06	1.01	7.7	7.7	-	-	



# Appendices.

Mission	Programme	Expenditure	Montants (en M d'€)					Sector	Indicator	2018	2019	2020	Distribution by objectives (in €M)			
			2019		2020		Total						Adaptation	Mitigation	Biodiversity	Pollution
			Eligible	Balance allocated	Eligible	Allocated	Allocated									
Official development assistance	P209	Bilateral development cooperation: climate change adaptation and mitigation share	-	-	181.2	111.6	111.6		-	-	-	55.8	55.8	-	-	
		EU development cooperation: climate change adaptation and mitigation share	-	-	85.1	52.4	52.4		-	-	-	26.2	26.2	-	-	
	P110	Funding for global environment, Contributions for protection of tropical forests, Green Climate funds, multilateral funds for the Montreal Protocol	-	-	127.9	78.7	78.7		-	-	-	19.6	19.6	19.6	19.6	
		French Global Environment Fund	-	-	17.5	10.8	10.8		-	-	-	2.7	2.7	2.7	2.7	
PIA	PIA 1	City of the Future	50.3	5.3	33.1	20.4	25.7		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	8.3	8.1	6.4	6.4	6.4	6.4
		Green technologies Funds (innovative SMEs)	17.7	1.9	30.7	18.9	20.8		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	2.9	3.5	5.2	5.2	5.2	5.2
		Residential thermal renovation	25.8	2.7	13	8	10.7		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	3.5	3.6	-	10.7	-	-
		Energy transition institutes	24	2.5	42.1	25.9	28.4		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	0.3	1	-	28.4	-	-
	PIA 1, 2 et 3	Vehicles of the future	99.9	10.5	74.9	46.1	56.6		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	2.2	2.2	14.1	14.1	14.1	14.1
		Demonstrators (including circular economy and smart grids)	97	10.2	64.6	39.8	50		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	2	2.1	12.5	12.5	12.5	12.5
	PIA 3	Innovation competition (ADEME)	10.6	1.1	18.7	11.5	12.6		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	1.3	1.6	-	6.3	-	6.3
		Demonstrators and TIGA - TIGA (CDC)	5.1	0.5	43.3	26.7	27.2		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	1.4	0.4	6.8	6.8	6.8	6.8
		Demonstrators and TIGA – TIGA (First of a kind fund)	-	-	2.7	1.7	1.7		-	-	-	-	0.4	0.4	0.4	0.4
		Faster development of high-performing innovation ecosystems (transport and sustainable mobility)	1.8	0.2	6.3	3.9	4.1		Leverage effect (leveraging ratio of public and private funding to amounts contracted by the PIA)	-	1.2	3.3	-	4.1	-	-
<b>Total</b>			<b>6 455.8</b>	<b>1 812.6</b>	<b>7 935.7</b>	<b>4 885.4</b>	<b>6 698</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>3</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). Vigeo Eiris 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>4</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)<sup>4</sup>.

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.

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

4 - <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>5</sup>, refundable tax credits are recognised as State expenditure in the national accounts<sup>6</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), 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 (interven-

tion 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>7</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.

Under the Green OAT Framework Document, expenditure for Invest for the Future programmes can be Eligible Green Expenditure for current or past expenditure (if disbursements were made in 2019 or 2020 for 2020 issuances), or future expenditure, if it involves future disbursements. The Green OAT Framework Document prioritises current and past expenditure.

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

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

7 - including, for example, the annual report of the SGPI: [https://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2021/06/mp\\_sgpi\\_ra2020\\_v11\\_def.pdf](https://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2021/06/mp_sgpi_ra2020_v11_def.pdf)

## 4. V.E SECOND PARTY OPINION



### ANNUAL REVIEW

Of the Second Party Opinion on the sustainability  
of the French Republic's Green OAT

V.E expresses a reasonable level of assurance on the green credentials of the Green Expenditures associated with all the issuances made in 2020.

#### Key findings

##### Contextualization

*In January 2017, the French Republic issued the first French sovereign green bond (green OAT 1.75% 25 June 2039) (hereafter referred to as the "Green OAT"), dedicated to finance expenditures in line with the commitments that France made for the implementation of the Paris Climate Agreement under the terms of the Energy Transition and Green Growth Act. Agence France Trésor (AFT), tasked with managing the government's debt and cash positions had mandated V.E as an independent expert to deliver a Second Party Opinion on the Green OAT<sup>1</sup> Framework and its implementation. Since then, to maintain the liquidity of this Green OAT through tap issues after the initial issuance, as for conventional benchmark OATs, AFT has proceeded to eleven reissuances, bringing the total outstanding volume of this first Green OAT to €29billion as of February 4<sup>th</sup>, 2021. In addition, a second Green OAT (OAT 0.50% 25<sup>th</sup> June 2044) was issued on March 16<sup>th</sup>, based on the same Framework and backed against the same pool of Green Eligible Expenditures. After the inaugural syndication and a first tap issue, its outstanding amount was brought to €9.3billion as of June 3<sup>d</sup>, 2021.*

*During the same period, AFT kept its commitment to set up the Green OAT Evaluation Council, which met for the first time on December 17<sup>th</sup>, 2017. In 2021, the AFT plans to publish an allocation and performance report, and the Council continues its work on impact reports.*

We express a reasonable level of assurance on the green credentials of the Green Expenditures associated with all the issuances made in 2020 and on the compliance with the commitments made at the time of the issuance concerning these tap issues.

##### Use of proceeds

- ▶ To date, selected expenditures appear consistent with the six Green Sectors initially defined by the issuer in the "Framework for the Green OAT". We express a reasonable level of assurance on the issuer's capacity to use the Green OAT proceeds for projects contributing to climate change mitigation and adaptation, protection of natural resources and reduction of ecosystems degradation, in line with seven UN SDGs, and in accordance with its initial commitments.

##### Evaluation and selection

- ▶ We consider that the overall level of implementation of the issuer's commitments is advanced, with regards to the process for project evaluation and selection, the application of eligibility criteria and allocation of proceeds from the OAT.

##### Reporting

- ▶ We express a reasonable level of assurance on the issuer's capacity to report on the funds allocation and on the environmental performance of Green Expenditures.

<sup>1</sup> OAT: « Obligations Assimilables au Trésor »: government bonds, issued by the French Treasury



June 2021



ASSURANCE & PERFORMANCE EVALUATION LEVELS				
USE OF PROCEEDS	Weak	Moderate	Reasonable	
EVALUATION AND SELECTION	Weak	Limited	Robust	Advanced
REPORTING	Weak	Moderate	Reasonable	



## SCOPE

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V.E was commissioned to update its opinion (thereafter “Second Party Opinion” or “SPO”) on the sustainability credentials and management of the Green OAT issued by the French Republic (the “Issuer” or “France”) in January 2017, in compliance with the Green OAT Framework (the “Framework”) created to govern their issuance.

Our opinion is established according to V.E’s exclusive social responsibility performance and risk assessment methodology (Environmental, Social and Governance Factors - ESG) of sovereign issuers and to the latest version of the ICMA’s Green Bond Principles (“GBP”) - edited in June 2021.

Our opinion is built on the review of the following components:

- Green Expenditures 2020: verification of the existence of environmental benefits from the Green Expenditures that have been financed over the year 2020.
  - ▶ Use of proceeds: document-based review of the correspondence of these 2020 Green Expenditures with the six Green Sectors defined in the “Framework for the Green OAT”.
  - ▶ Process for Expenditures’ evaluation and selection: review of the transparency and implementation of Agence France Trésor’s (AFT) commitments regarding the evaluation and selection of Green Expenditures and the application of the eligibility criteria initially defined by AFT.
  - ▶ Reporting: assessment of AFT’s ability to report on the allocation, performance and impact of Green Expenditures 2020, and the compliance of the processes put in place and AFT’s reporting with the commitments made at the time of the inaugural issuance.
- Issuer : evaluation of the issuer’s sustainability performance with regards to its contribution to the sustainable development goals.
  - ▶ Comparative analysis, as of November 2020 (date of the last rating cycle), of the level at which the Issuer commits to integrate into its legislative and regulatory framework and into its public policies the sustainable development principles and goals as they are broadly defined by international public law conventions, as well as by the guidelines and recommendations formulated by public international organisations.

Our sources of information are multichannel, combining data (i) gathered from public sources, press content providers and stakeholders, (ii) from V.E’s exclusive ESG rating database, and (iii) information provided from the Issuer, through documents.

We carried out our due diligence assessment from June 10<sup>th</sup> to June 25<sup>th</sup>, 2021. We consider that we were provided with access to all the appropriate documents and interviewees we solicited. Reasonable efforts have been made to verify data accuracy.

## Contact

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## ISSUANCE

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We express a reasonable level of assurance (V.E’s highest level of assurance) on the green credentials of Expenditures associated with all the issuances made in 2020, those of the inaugural issuance and the tap issues subsequent to it, and on the compliance with the commitments made at the time of the issuance concerning these tap issues.

### Use of proceeds

To date, selected expenditures are consistent with the six Green Sectors initially defined by the issuer in the “Framework for the Green OAT”. We express a reasonable level of assurance on the issuer’s capacity to use the Green OAT proceeds for projects contributing to climate change mitigation and adaptation, protection of natural resources and reduction of ecosystems degradation, in line with seven UN SDGs.

To date, 49 expenditures have been financed by the three tap issues made in 2020, corresponding in their entirety to the six Green Sectors initially defined by the issuer in the “Framework for the Green OAT”, namely:

- Buildings
- Transport
- Energy
- Living resources and biodiversity
- Adaptation
- Pollution control and Eco-efficiency

### Contribution to the Sustainable Development Goals

We express a reasonable level of assurance on the Issuer’s capacity to use the OAT proceeds to finance projects contributing to climate change mitigation and adaptation, protection of natural resources and reduction of ecosystems degradation, in line with seven of the 17 United Nations’ Sustainable Development Goals (UN SDGs).

We consider that the Green Sectors targeted by the Green OAT – and associated tap issues – are likely to contribute to the following UN SDGs: Goal 7. Affordable and clean energy, Goal 9. Industry, innovation and infrastructure, Goal 11. Sustainable cities & communities, Goal 12. Sustainable consumption & production, Goal 13. Climate action, Goal 14. Life below water and Goal 15. Life on land.





## Evaluation and selection

We consider the overall level of implementation of the Issuer's commitments to be advanced, in terms of the project evaluation and selection process, the application of eligibility criteria and the allocation of proceeds from the OAT.

The process for projects evaluation and selection obeys to a structured and controlled process, in line with France's environmental policies.

- The selection and validation of Green Expenditures was ensured via an inter-ministerial working group, put in place by the Prime Minister's cabinet and involving the concerned ministries (Ministry of Ecological and Solidarity Transition, Ministry of Economy and Finance, Ministry of Public Accounts Action, Ministry of Higher Education, Research and Innovation, Ministry of Territorial Cohesion and Relations with Territorial Collectivities, Ministry of Agriculture and Food and Ministry of Europe and foreign affairs).
- All Eligible Expenditures were publicly documented, and a record of decisions was established for inter-ministerial working group meetings, enabling the traceability of selection decisions.
- Selection and exclusion criteria, notably based on the Greenfin label (previously named the "Energy and Ecological Transition for Climate" label), appear to have been appropriately applied during the evaluation and selection of Green Expenditures.

To be noted that the Expenditures selected as eligible for 2021 were presented and approved by the Evaluation Council, composed of international experts.

- As a general rule, when draft legislation is transmitted to Parliament, it is accompanied by an impact study covering their 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. After publishing reports on the Energy Transition Tax Credit (CITE), on Voies navigables de France and on the National Forestry Office, the Council intends to address the various Eligible Expenditures one after the other.

## Reporting

We express a reasonable level of assurance on the issuer's capacity to report on the funds allocation and on the environmental performance of Green Expenditures.

The issuer produces a report combining allocation reporting and performance reporting. This report will be supplemented by the publication of an ex-post evaluation report, carried out under the supervision of the Green OAT Evaluation Council.

### Issuer's capacity to report

Indicators on funds allocation are reported. In addition, the issuer provides information on the environmental performance of the Green Expenditures. These are based solely on existing State's expenditures indicators and mainly on performance indicators identified in existing government budget documentation, specifying calculation methodologies. The AFT has selected 45 performance indicators, whose relevance was assessed by an independent third party.

### External reviews

In addition to the audits carried out by the Court of Auditors, France has committed to have its report on the funds allocation reviewed by an independent auditor, covering:

- All operational processes leading to the allocation of eligible Green Expenditures backed by OAT issuances in 2020.
- The proper implementation of eligible Green Expenditures.



## ISSUER



### Level of the Issuer's sustainability performance

According to the Sovereign Sustainability Rating © last updated by V.E (Vigeo Eiris) in November 2020, France received a rating of 82/100 which indicates an overall advanced sustainability performance. France ranks 4th out of 178 countries rated in our global sovereign sustainability index, and also 4th out of 37 OECD countries<sup>2</sup> rated by V.E<sup>3</sup>.

V.E's assessment of the Issuer's sustainability performance is based on publicly available information and statistics derived from sources that have been agreed for use in the data collection and rating methodologies for the Sovereign Sustainability Rating.

France has an advanced performance across all three pillars: Environmental Responsibility (75/100), Social Responsibility (81/100), and Governance Responsibility (89/100).

DOMAINE	COMMENTAIRES	OPINION
Environment	<p>France has an advanced performance in the Environmental Responsibility pillar, however its score of 75/100 is the lowest across the three pillars of sustainability. The country ranks in the top quartile in V.E's rated sovereign universe (10<sup>th</sup> out of 178).</p> <p>France has ratified all the international environmental conventions included in our rating framework, including the Paris Agreement, the Convention on Biological Diversity, the United Nations Framework Convention to Combat Desertification, the Stockholm Convention on persistent organic pollutants and the Aarhus Convention on access to environmental justice.</p>	Advanced
	<p>As a member of the European Union (EU), France steered and jointly endorsed the collective pledge to reduce GHG emissions by 40% by 2030, compared to 1990 levels.<sup>4</sup> France has the fifth lowest carbon intensity per unit of economic output (0.11 kg per PPP USD of GDP<sup>5</sup>) in the OECD group. However, the country needs to strengthen its efforts to reduce consumption-based and transport emissions.</p>	Robust
	<p>France performs well in addressing air pollution. The country's urban pollution levels fare below the OECD average – e.g. the annual mean levels of fine particulate matter (PM2.5) in cities (population weighted) was 11.7 microgram/m<sup>3</sup> in 2016.<sup>6</sup> However, energy efficiency and transition to renewable energy are areas that need improvement. The country has the seventeenth highest energy intensity (3,692 kg of oil eq./capita<sup>7</sup>) and the eight lowest production of electricity from renewable sources excluding hydropower (6.2%<sup>8</sup>) in the OECD group.</p> <p>Areas related to biodiversity protection, green growth and the transition to a circular economy also need improvement. Regarding biodiversity, France has a mixed performance on ecosystem management. The country has developed a reasonable coverage of protected areas aimed to safeguard its rich terrestrial and marine biodiversity.</p>	Limited

<sup>2</sup> There are 37 countries that are members of the Organization for Economic Cooperation and Development (OECD): Australia, Austria, Belgium, Canada, Chile, Colombia, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. Source <https://www.oecd.org/about/members-and-partners/>. All these countries are covered by V.E in the Sovereign Sustainability Rating.

<sup>3</sup> Note: The Issuer has not been subject to a review of its ability to mitigate sustainability risks based on the review of stakeholder opinion.

<sup>4</sup> EU's First INDC, 2015 <https://www4.unfccc.int/sites/indcstaging/PublishedDocuments/Italy%20First/LV-03-06-EU%20INDC.pdf>.

<sup>5</sup> <https://data.worldbank.org/indicator/EN.ATM.CO2E.PP.GD>

<sup>6</sup> <http://unstats.un.org/sdgs/indicators/database/?indicator=11.6.2>

<sup>7</sup> <https://data.worldbank.org/indicator/EG.USE.PCAP.KG.OE>

<sup>8</sup> <https://data.worldbank.org/indicator/EG.ELC.RNWX.ZS>



	<p>Compared to its OECD peers, France has an overall high proportion of sites that are important for terrestrial biodiversity which are covered by protected areas (80% in 2019<sup>9</sup>).</p> <p>However, the country's Red List Index has recorded a deteriorating trend over time (0.87 in 2020 from 0.93 in 2000), which indicates that the rate of biodiversity loss is increasing.</p> <p>Similarly, room for improvement lies in the transition towards green growth, notably in terms of the nuclear waste production per GDP, fertilizer consumption and the allocation of public funds for environmentally related R&amp;D.</p>	Weak
Social	<p>France has an advanced performance in the Social Responsibility pillar with a score of 81/100. The country ranks in the top quartile in V.E's rated sovereign universe (6<sup>th</sup> out of 178).</p>	Advanced
	<p>Like most OECD peers, France has high enrolment rates for both primary and secondary education. The government spending on education, which amounted to 5.5% of GDP (2017), is the ninth highest in the OECD group.<sup>10</sup> Income equality is moderate, with a Gini coefficient of 0.3 (2017), which is the fifteenth lowest within the OECD economies. Unemployment is high, in particular youth unemployment, which amounted to 19.5% in 2020, the sixth highest in the OECD group.<sup>11</sup> Poverty levels have been stable over the last ten years to reach a rate of 0.08 in 2017, the seventh lowest in the OECD group. The working population enjoy fundamental rights such as freedom of association and collective bargaining. However, according to International Trade Union Confederation (ITUC), France has faced repeated violations of workers' rights in 2019.<sup>12</sup></p>	Robust
	<p>Compared to OECD peers, France fares well in areas such as accessibility of healthcare and gender equality. With 11.5 nurses &amp; midwives and 3.3 physicians per 1,000 people,<sup>13</sup> the density of medical staff in France is well above the WHO estimates of 2.5 medical staff per 1,000 people needed to provide adequate coverage with primary care interventions.<sup>14</sup> France has good rates of women in political life and in the labour force.<sup>15</sup> Increasing women's access to education and the labour market is identified as a determinant for change by the Sustainable Development Goals (SDGs) in tackling world poverty.</p>	Limited
	<p>France has an overall moderate performance in the promotion of healthy lives and access to a balanced nutrition for the areas where there is reported data available to assess performance. Moderate scores are recorded in areas linked to the reduction of infectious diseases and the harmful use of alcohol. There is inadequate data available for France to determine the country's efforts to prevent child malnutrition &amp; stunting.</p>	Weak

<sup>9</sup><https://unstats.un.org/sdgs/indicators/database/>

<sup>10</sup><https://data.worldbank.org/indicator/SE.XPD.TOTL.GD.ZS>

<sup>11</sup><https://data.worldbank.org/indicator/SL.UEM.1524.ZS>

<sup>12</sup>ITUC Global Rights Index 2020 <https://www.ituc-csi.org/ituc-global-rights-index-2020>

<sup>13</sup>Nurses & midwives per 1,000 people <https://data.worldbank.org/indicator/SH.MED.NUMW.P3>; Physicians per 1,000 people <https://data.worldbank.org/indicator/SH.MED.PHYS.ZS>

<sup>14</sup>As per the definition of medical staff shortage in the 2006 World Health Report [https://www.who.int/whr/2006/whr06\\_en.pdf?ua=1](https://www.who.int/whr/2006/whr06_en.pdf?ua=1)

<sup>15</sup>Labor force participation rate, female <https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS>; Proportion of seats held by women in national parliaments (%) <https://data.worldbank.org/indicator/SG.GEN.PARL.ZS>



Governance	France's performance in the Governance Responsibility pillar is assessed as advanced with a score of 89/100. The country ranks in the top quartile in V.E's rated sovereign universe (11 <sup>th</sup> out of 178).	Advanced
	France has ratified fundamental conventions relating to human rights, children's rights, and labour rights such as forced labour, freedom of association and collective bargaining. However, France has not endorsed international conventions related to occupational health and safety or the rights of migrant workers. The country abolished the death penalty for all crimes. <sup>16</sup>	Robust
	France scores high in all the areas related to the promotion of rule of law, public governance, control of corruption and democratic accountability that are measured by the Worldwide Governance Indicators. However, the country's performance has recorded deteriorating trends over the last ten years in areas that measure the ability of elected politicians to ensure political stability and the participation of citizens in matters of public governance and accountability. <sup>17</sup>	Limited
	France ranked as the 66 <sup>th</sup> most peaceful country in 2019 in the Global Peace Index (GPI) – throughout the year, the country was embroiled in near constant civil unrest and demonstrations by the Yellow Vests movement over rising fuel taxes and the government's tax reforms. <sup>18</sup> According to Coface, France's political and economic governance environment posed a moderate risk for domestic companies of defaulting on their financial commitments in 2019, however this risk is likely to be amplified by the negative economic repercussions of the Covid-19 pandemic. <sup>19</sup> France's adjusted net savings, including damage from particulate emission pollution (% of GNI) have steadily decreased over the last ten years, indicating a consistent run down in the country's overall resources and wealth. <sup>20</sup>	Weak



# METHODOLOGY

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In V.E' view, Environmental, Social and Governance/Institution (ESG/I) factors are intertwined and complementary. As such they cannot be separated in the assessment of ESG management in any organisation or activity, including the issuance of bonds. In this sense, V.E writes an opinion on the Issuer's sustainability performance as an organisation, and on the Issuance's objectives, management and reporting of the expenditures (re)financed by this transaction.

Our independent opinions (SPOs) are subject to quality checks (consultants in charge of the mission, production manager, and validated by a senior supervisor). The rights of claim and appeal are guaranteed to companies at three levels: first with the team (relationship manager or production team), next with Director of methods, Innovation and Quality and then with V.E's scientific council. All V.E's employees are signatories of V.E's Code of Conduct and all consultants have also signed its addendum regarding the financial rules of confidentiality.

## ISSUANCE

In the initial opinion, our analysis included:

### Use of proceeds:

The use of proceeds requirements is defined to ensure that the funds raised are used to finance and/or refinance an Eligible Projects and are traceable within the issuing organisation. Each project endorsed shall comply with at least one of the Eligible Project Category definition in order to be considered as an Eligible Green Project. V.E evaluates the relevance, visibility, and measurability of the associated environmental and/or social objectives. The sustainability purpose of the Green OAT's associated Eligible Green Expenditures has been precisely defined, with regard to the Issuer's commitments, and assessed based on the described and estimated benefits of Eligible Projects. The contribution of Eligible Projects to Sustainable Development is evaluated based on the United Nations Sustainable Development Goals.

### Process for expenditure evaluation and selection:

The process for expenditure evaluation and selection has been reviewed by V.E regarding its transparency, responsible management and efficiency. The relevance and completeness of the selection criteria in addition to the process 'coherence have been analysed with regard to the projects 'challenges and V.E' methodology.

We have updated our initial opinion on the Green Expenditures identified by the inter-ministerial working group and that would be financed by potential future tap issues over the year 2021.

The update concerns the transparency and implementation of AFT's commitments regarding the correspondence of these Green Expenditure 2021 with the six Green Sectors and the evaluation and selection process for Green Expenditure, as well as the application of the eligibility criteria initially defined by AFT in the "Framework for the Green OAT" dated 10 January 10, 2017.

## LEVEL OF THE ISSUER'S SUSTAINABILITY PERFORMANCE

V.E has revised its sovereign rating research, resulting from a continuous improvement process and based on permanent monitoring of international normative developments as well as stakeholder expectations and debates. This enhanced version includes 69 new factors to meet market needs. The 172 indicators are put into perspective with the UN Sustainable Development Goals and are organized into 56 criteria, 17 sub-domains and 3 rating domains. Of note, the new methodology leads to a decrease in the absolute scores of the majority of countries.

Our methodology, the Sustainability Sovereign Rating©, measures and compares the levels of integration of international public law and soft law frameworks, including for the recent period the Sustainable Development Goals (SDGs), and the action programmes of Agenda 21, adopted by 173 countries at the Rio Earth Summit in 1992. We pay particular attention to the commitments, policies and impacts of public policies in terms of respect of fundamental human rights, access to economic, social, cultural and environmental rights, quality of governance, as well as international solidarity and cooperation. Based on the analysis of a universe composed of 178 countries, the results provide a comparative view of risks and performances, with regard to universally acknowledged sustainability objectives.





The sustainability performance of the French Republic was evaluated by V.E in November 2020 based on three rating domains, all equally weighted in the model: Environment (i.e. environmental protection), Social (i.e. social protection and solidarity) and Institutions (i.e. rule of law and governance). These three domains are analysed through 56 criteria, which bring together 172 indicators of two types:

- Commitment indicators: reflecting the state's level of commitment to the goals and principles set by major international agreements: Conventions, recommendations and statements of the ILO; UN Charters and treaties; guiding principles of the OECD; regional instruments (assuming their full compliance with the United Nations Charter); the Universal Declaration of Human Rights and its related protocols and treaties.
- Result indicators: measuring the efficiency of the country's sustainable development actions.

V.E gathers information from diversified sources including international organisations such as intergovernmental organisations, international trade unions and NGOs.

The review of stakeholders' feedbacks is not included in our evaluation of Sovereign Bond Issuers.

## V.E'S ASSESMENT SCALES

Performance evaluation		Level of assurance	
Advanced	Advanced commitment; strong evidence of command over the issues dedicated to achieving the objective of social responsibility. Reasonable level of risk management and use of innovative methods to anticipate emerging risks	Reasonable	Able to convincingly conform to the prescribed principles and objectives of the evaluation framework
Robust	Convincing commitment; significant and consistent evidence of command over the issues. Reasonable level of risk management	Moderate	Compatibility or partial convergence with the prescribed principles and objectives of the evaluation framework
Limited	Commitment to the objective of social responsibility has been initiated or partially achieved; fragmentary evidence of command over the issues. Limited to weak level of risk management	Weak	Lack or unawareness of, or incompatibility with the prescribed principles and objectives of the evaluation framework
Weak	Commitment to social responsibility is non-tangible; no evidence of command over the issues. Level of insurance of risk management is weak to very weak		



# DISCLAIMER

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Transparency on the relation between V.E and the Issuer: V.E has carried out 4 audit missions for France until now. No established relation (financial or commercial) exists between V.E and the Issuer. V.E conflict of interest policy is covered by its Code of Conduct, which can be found at <http://vigeo-eiris.com/wp-content/uploads/2018/07/Code-of-Conduct-Vigeo-Eiris-EN.pdf>.

This opinion aims at providing an independent opinion on the sustainability credentials and management of the French OAT, based on the information which has been made available to V.E. V.E has neither interviewed stakeholders out of the Issuer's employees, nor performed an on-site audit nor other test to check the accuracy of the information provided by the Issuer. The accuracy, comprehensiveness and trustworthiness of the information collected are a responsibility of the Issuer. The Issuer is fully responsible for attesting the compliance with its commitments defined in its policies, for their implementation and their monitoring. The opinion delivered by V.E neither focuses on the financial performance of the OAT, nor on the effective allocation of its proceeds. V.E is not liable for the induced consequences when third parties use this opinion either to make investments decisions or to make any kind of business transaction.

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## Agence France Trésor

**Limited Assurance Report on the allocation at 31 December 2020 of  
proceeds from the Green OAT issued by Agence France Trésor**

Agence France Trésor  
139, rue de Bercy  
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*This report contains 6 pages*

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### Limited Assurance Report on the allocation at 31 December 2020 of proceeds from the Green OAT issued by Agence France Trésor

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*This is a free English translation of the Assurance report issued in French and is provided solely for the convenience of English-speaking readers. This report should be read in conjunction with, and construed in accordance with professional standards applicable in France.*

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To the Director General,

In response to your request, we hereby present our moderate assurance report on the allocation, as at 31 December 2020, of the funds raised within the framework of the **Green OAT**, including all the bond issues carried out by Agence France Trésor within this framework (the **Verified Information**), appearing as total amounts allocated in the allocation and performance table on pages 67 to 70 of the "2020 Allocation and Performance Report" (the **Document**), in accordance with the Reference Document referred to below.

The **Benchmark** is composed of the following documents:

- the Green OAT Framework Document of 10 January 2017, in particular the principles indicated in § IV, developed by Agence France Trésor for bond issues carried out within this framework and included in the *Second Party Opinion* issued by Vigeo Eiris prior to the Green OAT, which is available on Agence France Trésor's website<sup>1</sup>; and
- the reporting procedures developed by Agence France Trésor for the production of the Document, details of which on the methodologies for collecting and calculating the Verified Information are presented in the methodological note available on pages 71 and 72 of the Annexes to the Document.

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<sup>1</sup> <https://www.aft.gouv.fr/en/green-oat>





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## **Management's Responsibility for Audited Information**

Agence France Trésor's management is responsible for preparing the Document including the Audited Information, in accordance with the methods and processes described in the Standards, based on:

- the sources of information used by Agence France Trésor to establish the amounts allocated to the eligible projects of the Green OAT;
- The Board of Directors has assessed the effectiveness of the internal control procedures it considers necessary to ensure that the information is free from material misstatement, whether due to fraud or error.

The management is also responsible for:

- the prevention and detection of fraud and the identification of and compliance with laws and regulations applicable to its activities;
- ensure that the personnel involved in the preparation and presentation of the Document are properly trained and that the information systems are properly updated for all entities and activities involved in the preparation of the Document.

## **Independence and quality control**

We apply the International Standard on Quality Control (ISQC)<sup>12</sup> and as such have implemented a quality control system including documented policies and procedures to ensure compliance with ethical rules, professional standards and applicable laws and regulations.

We have complied with the ethical and independence requirements of the *Code of Ethics for Professional Accountants* issued by the *International Ethics Standards Board for Accountants*.

## **Our responsibility**

Our responsibility is to express a conclusion on the audited information based on our work. We conducted our work in accordance with the International Standard on Auditing (ISAE) 3000<sup>3</sup>. This standard requires us to plan and perform our work so as to obtain moderate assurance that the information has been prepared, in all material respects, in accordance with the Framework.

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<sup>2</sup> ISQC1 - Quality control for firms performing audit, review and other assurance and related services engagements

<sup>3</sup> ISAE 3000 - *International Standard on Assurance Engagements other than audits or reviews of historical financial information.*



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However, it is not for us to comment on:

- the eligibility criteria defined in the Framework Document which gave rise to an opinion by Vigeo Eiris prior to the Green OAT, and, in particular, to provide an interpretation of the terms of the Framework Document;
- the compliance, in all material respects, of the eligible projects selected in the Document, with the eligibility criteria defined in the Framework Document, which gave rise to an *annual Second Opinion Review* issued by Vigeo Eiris on 3 February 2021;
- 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<sup>4</sup> Greenfin label, 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 actual use of the funds allocated to the selected eligible projects after their allocation;
- the performance indicators reported in the Document.

Our work relates only to the allocation of funds and not to the overall information contained in the Document.

### **Nature and scope of the work**

The procedures selected depend on our professional judgment, including the assessment of the risks of material misstatement of the audited information, whether due to fraud or error.

In making this risk assessment, we considered Agence France Trésor's internal control over financial reporting in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

We conducted interviews with the persons responsible for the preparation of the audited information, with the management and various departments in charge of the information gathering processes and, where appropriate, with the persons responsible for the internal control and risk management procedures.

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<sup>4</sup> <https://www.ecologique-solidaire.gouv.fr/label-transition-energetique-et-ecologique-climat>



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Our work consisted of :

- 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 Benchmark 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 Audited Information and review the internal control and risk management procedures relating to the preparation of the Audited 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 2020;
- 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 at 31 December 2020 for the Invest for the Future program.
- ensure the consistency of the audited 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 Audited Information and check its consistency and concordance with the information in the allocation and performance table of the Document.

We believe that the sampling methods and sample sizes we have selected in the exercise of our professional judgment allow us to provide a moderate level of assurance; a higher level of assurance would have required more extensive audit work.



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Because of the use of sampling techniques and other limitations inherent in the operation of any information and internal control system, the risk of not detecting a material misstatement in the audited information cannot be completely eliminated.

### **Conclusion**

We believe that the evidence gathered is sufficient and appropriate to provide a basis for our conclusion.

Based on our review, nothing has come to our attention that causes us to believe that the proceeds from the Green OAT is not presented in the allocation and performance table on pages 67 to 70 of the Document, in all material respects, in accordance with the Standards.

Paris La Défense, 15 July 2021

KPMG S.A.

Anne Garans  
*Associate  
Sustainability Services*



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Bloomberg : TREX <GO>

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