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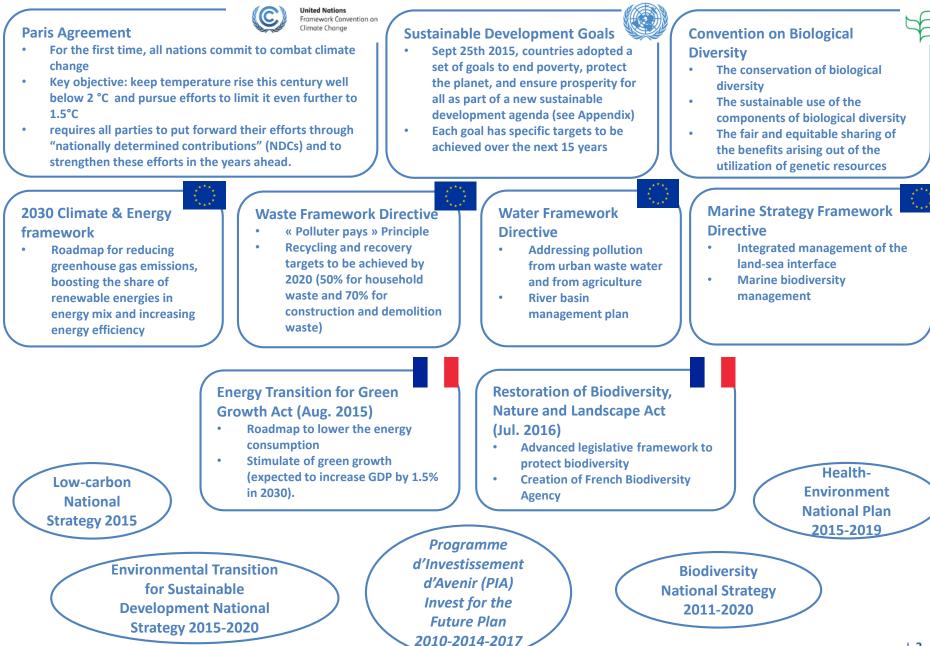
French climate and environmental policies

Presentation of the Green OAT Examples of Eligible Green Expenditures

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France's Main Environmental Policies



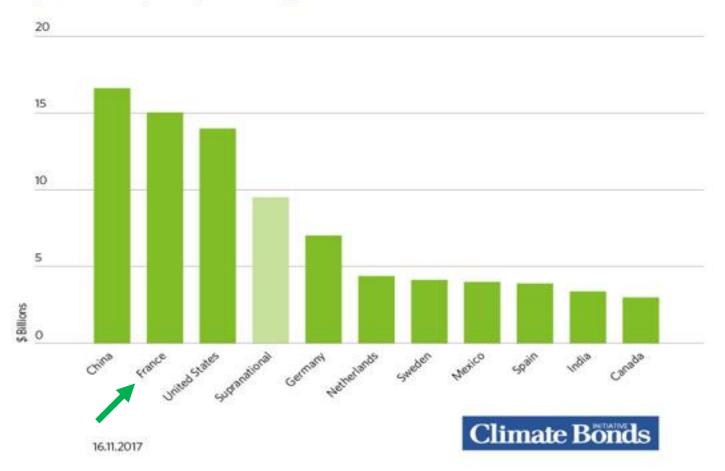


France's Main Environmental Commitments and Objectives



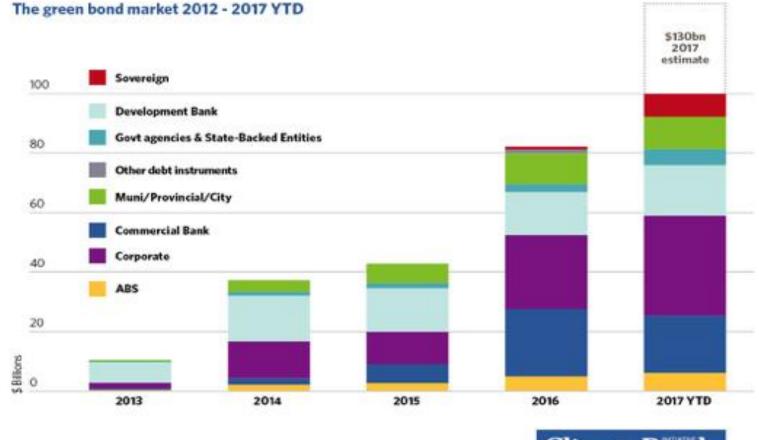






Top 10 countries plus supranational green bond issuance 2017 YTD





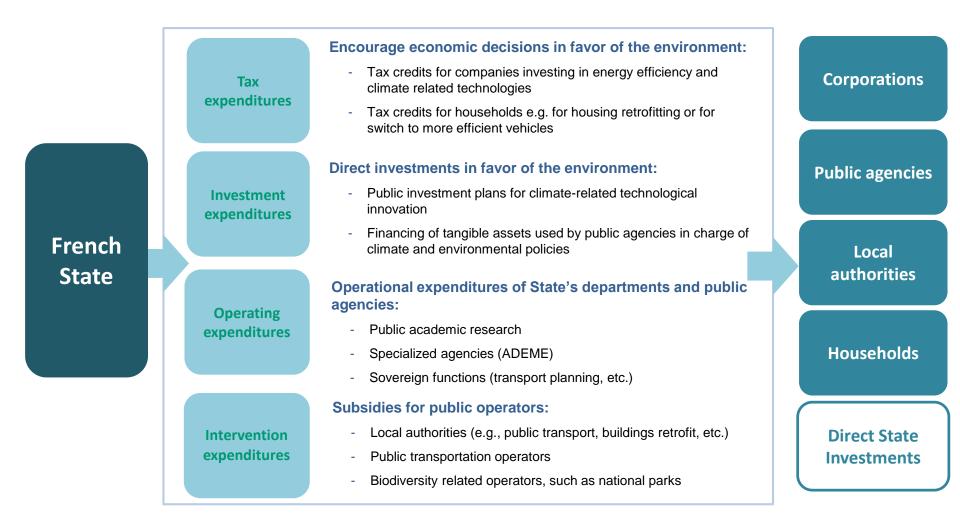
16.11.2017

Climate Bonds

Source : Climate bonds initiative



 Expenditures related to France's Climate and Environmental Policies fall into different categories and are deployed by different agents: public agencies, local authorities, corporations and households.





French climate and environmental policies Presentation of the Green OAT

Examples of Eligible Green Expenditures







The best of bond markets' liquidity

- Size of the inaugural Green OAT will be comparable to regular OATs
- France will ensure the liquidity of this Green OAT through regular taps based on investors' demand
- This transaction will provide more liquidity and depth to this market

The best of Green Bonds standards

- France will follow Green Bond Principles and current best practices in the Green Bond market
- The OAT will include a wide array of Eligible Green Expenditures contributing to its four environmental objectives
- France commits to publish an ex-post impact report



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• The strategic positioning of the forthcoming Green OAT is mapped against the Green Bond Principles

• Eligible expenditures related to a large number of assets, in line with the State's role, and targeting different beneficiaries: households, companies, local authorities, state agencies.

1 - Use of Proceeds

2 – Process for Project Evaluation and Selection

3 – Management of Proceeds

4 – Reporting

- Investments that other French agencies could refinance by Green Bond issues are excluded.
- French state investments financed by a dedicated resource (e.g., subsidies to renewable energies – CSPE € 5bn/year) are excluded.
- Inter-Ministerial Working Group undertakes Eligible Green Expenditure selection.
 - Selection has been done with the TEEC label as a guiding reference.
 - Each ministry is responsible for identifying Eligible Green Expenditure.
- An overlay in the selection process aimed at excluding selected activities (fossil fuel related, armament, nuclear; see page on selection process).
- Tracking of allocation will be done by the Ministry of Finance (cf. Appendix).
 - Green Eligible Expenditures from the previous year, the current year and potentially future years are included. More than 50% allocated to current and future investments.

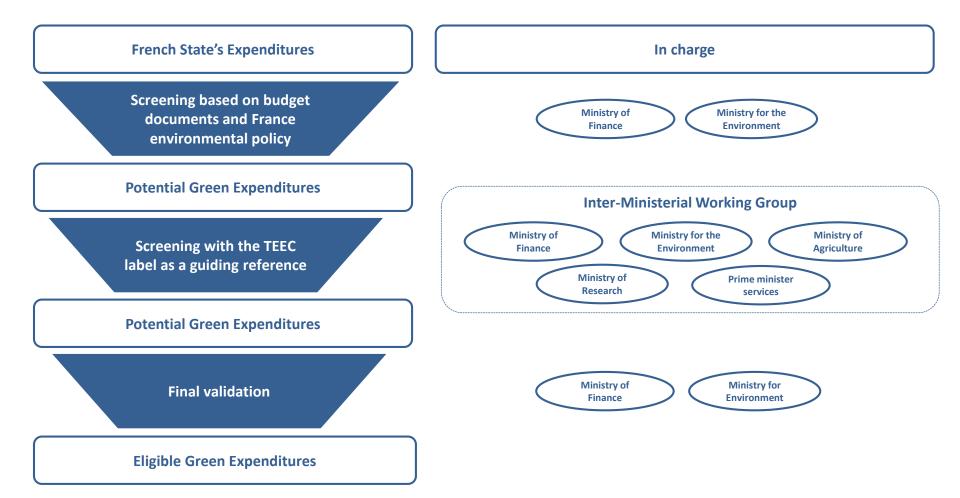
Three types of reporting:

- The allocation of bond proceeds, reviewed by an audit firm.
- The outputs of Eligible Green Expenditures, i.e., existing state performance indicators*.
- Ex-post environmental impacts of Eligible Green Expenditures, under the supervision of a high level Green Bond Evaluation Council.

* http://www.performance-publique.budget.gouv.fr/

Six sectors have been defined.

- The selection of Eligible Green Expenditures is managed by a Inter-Ministerial Working Group, coordinated by the Ministry of Finance and the Ministry of Environment, under the supervision of the Prime Minister.
- Each ministry holds the responsibility for identifying and reporting on Eligible Green Expenditures within its programmes. Each ministry leverages on existing budgetary processes and relies on its services and agencies.





Use of Proceeds: Details on Eligible Green Expenditures



	Examples of Eligible Green Expenditures	Available amount
Buildings	 Energy efficiency investments by households, social housing corporation (tax breaks, subsidized loans, etc.) 	€4,100m
Transport	 Support to rail and waterways operators Innovation in energy efficient transportation systems and technolog Investment in infrastructures triggering modal switch 	ies €2,450m
Energy (incl. Smart Grids)	 Research and innovation in renewable energy Investments in smart grids 	€1,700m
Living Resources	 Sustainable forestry management Certified organic farming Investment in protected areas Research on living resources and biodiversity protection 	€2,850m
Adaptation	Atmosphere, oceans and biosphere monitoring systems, incl. ships and satellites	€900m
Pollution control and eco-efficiency	 Research on adaptation systems and infrastructures Monitoring systems Research and innovation Promotion of the circular economy 	€300m
Contributing to several sectors	 Investments in Eco-Cities Eco-technology investment fund 	€700m
NB: The final breakdown of Eligib reported in the Green OAT report	e Green Expenditure may differ and will be ing.	

1:Total Eligible Green Expenditures for funds raised in 2017, based on the approach described on pages 22 and 23

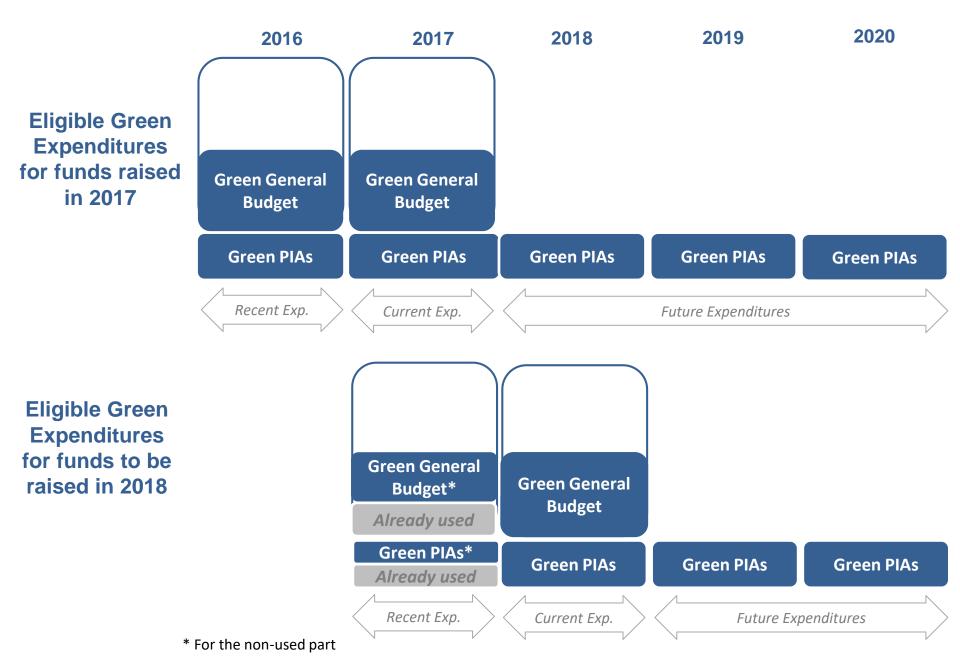
Management of Proceeds



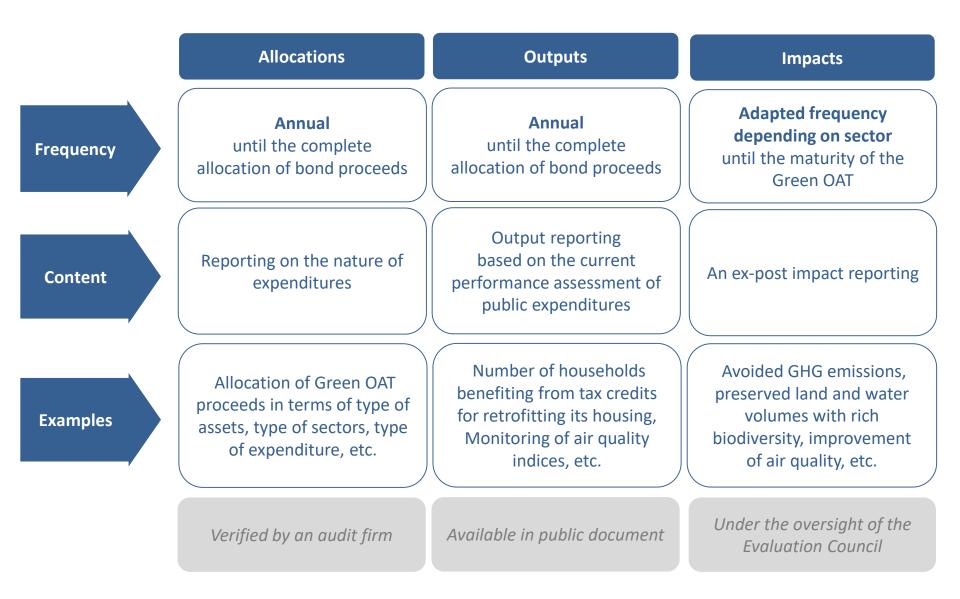
	Green Eligible Expenditures include:
Definitions	 <u>Recent Expenditures</u>: Green Expenditures from the general budget and the PIAs made in the previous year.
Definitions	 <u>Current Expenditures</u>: Green Expenditures from the general budget and the PIAs to be made in the current year.
	 Future Expenditures: Green Expenditures of the PIAs to be made in the coming years.
	Allocate any Green OAT to Recent, Current & Future Green Expenditures.
	 Minimize effect of uncertainties on Current & Future Green Expenditures on Green OAT issuance capacity.
Objectives	 Insure that Current & Future Green Expenditures represent more than 50% of the allocation of the Green OAT.
	 Provide full transparency to investors on the nature of allocations.
Approach	 Allocations are done in priority to Recent and Current Green Expenditures and then, if necessary, to Future Expenditures in chronological order.
	Tracking will be done by the Ministry of Finance.
	 At the end of each year, AFT will communicate on :
Communication	 The nature of allocations made during the given year, in terms of sector and nature of the expenditures (Current, Recent and Future) and,
	 The share of Current and Future Expenditures.

Management of Proceeds











VIGEO EIRIS' OPINION

Vigeo Eiris confirms that the bond intended by the French Republic represented by the Agence France Trésor is a "Green OAT" with positive footprint, aligned with the Green Bond Principles.

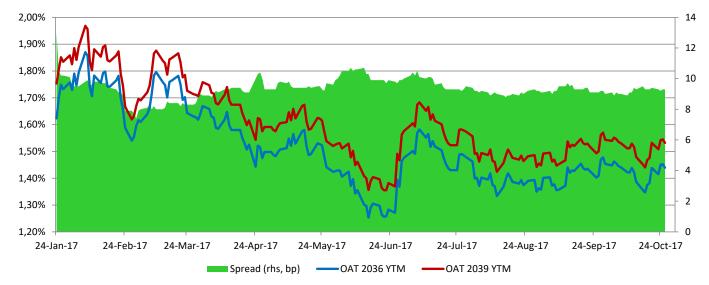
Vigeo Eiris reaches a reasonable level of assurance on the sustainability of the bond³:

- France overall sustainability performance is advanced³, with an advanced performance on the Environmental issues domain (see Part I).
- France's Green OAT framework is coherent with France's main Environmental Policies and is considered to be robust² (see Part II).
 - The net proceeds of the issuance will be used to finance and refinance Green Eligible Expenditures, which will contribute to climate change mitigation and adaptation, protection of natural resources and reduction of ecosystems' degradation, in line with seven UN Sustainable Development Goals.
 - The processes for categorisation, selection and evaluation of Green Eligible Expenditures are clearly defined and robust, and would enable documented and transparent governance of the bond.
 - The issuer's reporting commitments and process are robust, covering the fund allocation and environmental benefits of selected expenditures (outputs and impacts), reaching an overall reasonable level of assurance on its capacity to report on the Green OAT's use and impacts.

Green OAT launch : an AFT historical transaction

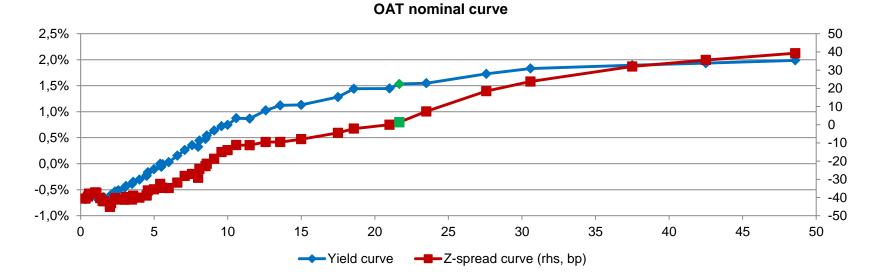


- Order books gathered 23.5 €bn a record amount for AFT syndicated transactions ;
- AFT has thus issued 7 €bn of this Green OAT on 24 January 2017 a level unseen in any of its previous bond inaugural launches ;
- Given the record demand gathered, the Green OAT issuance rate has been lowered throughout the syndicated transaction from [OAT 1,25 % 25 may 2036 + mid to high 10s] down to [OAT 1,25 % 25 may 2036 + 13 bp], with a final issuance rate pricing at 1,741 % fully coherent with the traditional OAT rate curve ;
- Since its inaugural launch on 24 January 2017, the green OAT has been performing well on secondary markets.



• The bond was tapped in June by auction for EUR 1.6bn.

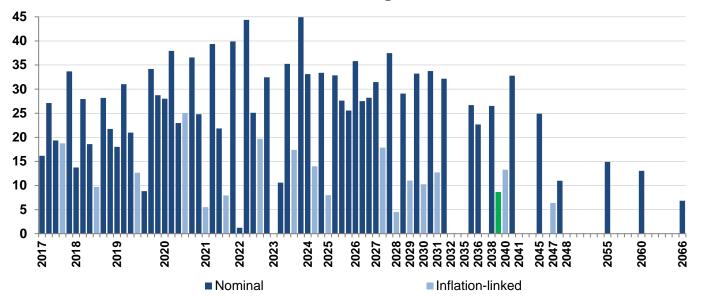
The Green OAT has been aimed to find its place in the OAT curve



AGENCE

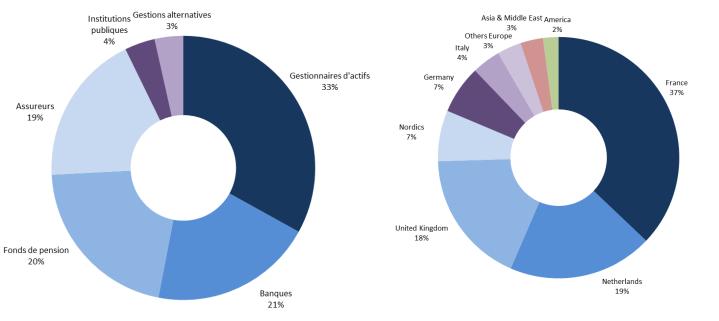
FRANCE TRÉSOR

OAT outstanding (in €bn)





Source : AFT



Final allocation breakdown by investor type and by geography

- Roughly 200 investors participated to the inaugural launch of the Green OAT ;
- The following investors requested their support to this landmark transaction to be publicly mentioned : Achmea Investment Management, Actiam, AG2R La Mondiale, Alecta, Amundi, APG Asset Management, Apicil, Aviva Investors France, AXA France, Barclays Treasury, BlackRock, BMO Global Asset Management, BNP Paribas, BNP Paribas Asset Management, BNP Paribas Cardif, Caisse Régionale du Crédit Agricole Mutuel de Paris et d'Ile de France, COVEA FINANCE, Crédit Agricole SA, DekaBank, Edmond de Rothschild Asset Management (France), ERAFP, GENERALI FRANCE, Groupama, Groupe BPCE, HSBC Assurances Vie (France), IRCANTEC, JP Morgan Asset Management, Kempen Capital Management N.V., Meeschaert Asset Management, MIF : Mutuelle d'Ivry (la Fraternelle), MIROVA, MN on behalf of PME, Nippon Life Insurance Company, NN Investment Partners, Nordea Asset Management, PGGM, PRO BTP, SCOR SE, Standard Life Investments, Stichting Pensioenfonds DSM Nederland, Sumitomo Mitsui Trust Bank Limited, WWF FRANCE.



- There is a real and growing demand for liquid green bonds, coming mainly from European investors.
- The current framework (GBP, CBI, use of a 2nd opinion) gives a solid basis for sovereign issuers, upon which to build in order to follow the best standards and contribute to the green bond asset class recognition.
- Use of proceeds: the "nominal equivalence" approach is very convenient and suitable for a sovereign issuer.
- Choice of eligible expense: a conservative approach is necessary to minimize the reputational risk; the coordination between different state ministries can be a challenge and take a lot of time. Tax credits were considered ok for most investors.
- Ex post reporting: existing official reporting can be used (output reporting in our case), but has to be completed with ad hoc reporting (allocation of proceeds, impact reporting) requiring external expertise.
- Marketing of the operation: several deal roadshows, featuring AFT and environmental specialists from the Ministry of Environment, were organized ahead of the deal.



French climate and environmental policies Presentation of the Green OAT

Examples of Eligible Green Expenditures

Energy Transition for Green Growth Act

Restoration of Biodiversity, Nature and Landscape Act

Example 1: Earth observation for climate adaptation



I – Identify the common objectives to achieve a successful energy transition, reinforce the France's energy independence and economic competitiveness, protect human health and environment, and fight against climate change

- France contributes to finance European Programs for Earth observation by satellites under European Spatial Agency (ESA) supervision.
- France dedicates more than € 250m annually to such projects.
- COPERNICUS aims to provide the European Union with an independent, continuous and reliable access to information from Earth observation. This information is used in various applications such as atmosphere and marine monitoring, which are key for climate change adaptation.
- COPERNICUS plans 6 satellite launch missions from 2014 to 2027 in order to develop European capacities in terms of radiometry (land and marine monitoring) and spectrometry (atmospheric chemistry analysis).



<u>Objective</u> : Adaptation <u>Sector</u> : Adaptation <u>Type of assets</u> : Systems and organization <u>Type of expenditures</u>: Intervention & operating <u>Operator</u>: Agency

Sentiel-2 B satellite (launch in the first half of 2017)



Potential outputs indicators

- Scientific production enabled by the program
- Potential impact indicators
- Adaptation-related indicators to be developed

Picture reference: Ministère de l'Enseignement Supérieur et de la Recherche

Example 2: Research on climate change



I – Identify the common objectives to achieve a successful energy transition, reinforce the France's energy independence and economic competitiveness, protect human health and environment, and fight against climate change

- Understanding the climate system and its future evolution is key for climate change adaptation.
- CliMERI-France is the national infrastructure for climate modeling. It serves as underlying for the IPCC reports.
- CliMERI-France includes human resources for the coding of climate models and the management of necessary IT infrastructures for the data processing.
- These data are available for commercial or academic utilization.
- 53 people are working for this project.
- CliMERI-France required a €8m initial investment and implies a €9m annual cost.

<u>Objective</u> : Adaptation <u>Sector</u> : Transversal to all sectors <u>Type of assets</u> : Scientific knowledge <u>Type of expenditures</u>: Operating <u>Operator</u>: Agency



Potential outputs indicators

- Volume of data storage and exchanges
- Quality of the climate predictions

Potential impact indicators

• Adaptation-related indicators to be developed

Picture reference: Ministère de l'Enseignement Supérieur et de la Recherche

Example 3: Tax incentives for buildings' energy efficiency

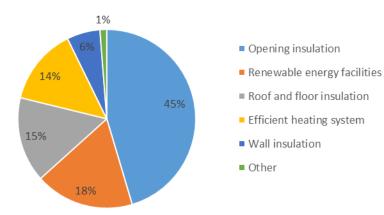


II – Better refurbishment of buildings in order to save energy, reduce energy bills and create jobs

- CITE (Crédit d'Impôt pour la Transition Energétique) is a tax expenditure for energy efficiency and renewable energy housing investments undertaken by households.
- Tax reductions are granted to households on the basis of invoices for a number of eligible technologies.
- CITE is increasing over time and represented € 1,670m in 2016 (€ 874m in 2015).
- Renewable energy production, efficient heating systems, insulation of openings (windows, doors, etc.), walls, roofs and floors are eligible.
- The objective of CITE is to enhance the energy and CO₂ efficiency of existing housing. This energy performance gain will be documented in Green OAT reporting: number of retrofitted housing, average energy efficiency label, etc.

<u>Objective</u> : Climate change mitigation <u>Sector</u> : Buildings <u>Type of assets</u> : Real estate <u>Type of expenditures</u>: Tax <u>Operator</u>: Households

Number of CITE expenditures in 2014 by type of assets



Potential outputs indicators		Potential impact indicators		
•	Greenhouse gas emissions per inhabitant	٠	Estimated energy savings	
		•	Estimated avoided CO ₂ emissions	

Example 4: Investing in Eco-Friendly Cities



II – Better refurbishment of buildings in order to save energy, reduce energy bills and create jobs

- *Eco-Cités* are innovative projects designed to promote the emergence of a new eco-friendly way to envision, build and manage cities.
- Eco-Cités projects can be categorized into various sectors and generally contribute to various environmental objectives.
- The General Commissariat for Investment finances Eco-Cités projects through PIA for a total annual amount of €668m in various cities.
- Example: ÉcoCité Grenoble–Alpes, €24.8m total investment in the following sectors:
 - Energy, including renewable energy
 - Building: retrofitting, and highly performing / very low energy buildings
 - Biodiversity protecting and energy efficient urban planning
 - Increase of zero carbon transportation systems

Potential impact indicators

- List of projects by activity sector/technology
- Number of beneficiaries

Potential outputs indicators

• Avoided CO₂ emissions

Reduction of emissions of pollutants

<u>Objective</u> : All objectives together <u>Sector</u> : All sectors together <u>Type of assets</u> : Infrastructure, land, systems and organization, real estate <u>Type of expenditures</u>: Investment and intervention Operator: Local authorities



Picture reference: Commissariat General à l'Investissement

Example 5: The first Solar Road



III – Develop clean transportation in order to improve air quality and protect human health

• The first *Solar Road* developed by Wattway is a innovative project launched and unveiled by the Minister for the Environment in 2016.



- The first Solar Road is 1-kilometer long and is covered with solar panels mainly produced at local level.
- The electricity production of the first Solar Road represents the public lighting of a town of 5,000 inhabitants.
- Each slab includes squared cells (15 cm per side) constituting a very thin layer of polycrystalline silicon that turns solar energy into electricity. It is treated in order to provide a similar grip than the one of conventional road bituminous mixes.
- A bus shelter with solar panels and a rapid electric charging stations completes the facilities of the first Solar Road.

<u>Objective</u> : Climate change mitigation <u>Sector</u> : Transport <u>Type of assets</u> : Infrastructure <u>Type of expenditures</u>: Investment <u>Operator</u>: Company



Potential outputs indicators

Installed capacity of solar roads

Potential impact indicators

- Electricity production
- Avoided CO₂ emissions

Picture reference: Ministère de l'Environnement, de l'Energie et de la Mer & Wattway



III – Develop clean transportation in order to improve air quality and protect human health

- ACTRIS-FR is the French component of ACTRIS, an European Initiative for the observation and exploration of aerosols, clouds and reactive gases and of their interactions.
- ACTRIS aims at improving our understanding of the past, current and future atmospheric composition.
- ACTRIS provides information on 4-D variability of short terms atmospheric components.

Objective : Pollution reduction Sector : Pollution control and ecoefficiency <u>Type of assets</u> : Scientific knowledge <u>Type of expenditures</u>: Operating Operator: Agency



The Puy de Dôme research station (PDD, 45 46N, 2 57E, 1465 m asl.) @ ACTRIS

- It operates several platforms, such as datacenters, and provide information to a large range of potential users working on atmospheric chemistry.
- 63 people are working for this project.
- ACTRIS required a €10m initial investment and implies a €2m annual cost.

Potential outputs indicators

• Scientific production enabled by the program

Potential impact indicators

- Indicators of air quality improvement
- Reduced atmospheric concentrations of pollutants

Picture reference: Ministère de l'Enseignement Supérieur et de la Recherche



III – Develop clean transportation in order to improve air quality and protect human health

- In order to support and develop the utilization of public transportation in general, and rail in particular, France has put in place a number of dedicated tax expenditures:
- <u>Sector</u> : Transports <u>Type of assets</u> : Infrastructure <u>Type of expenditures</u>: Tax & intervention <u>Operator</u>: Companies

Objective : Mitigation

- Reduced rate of CSPE (*Contribution au Service Public de l'Electricité* Tax on electricity consumption) for transportation by rail and cable: € 190m/year.
- Tax credits for companies promoting the use of mass transit among its employees: € 130m/year.
- France grants also subsidies to intermodality players in order to cover extra handling due to intermodality (around € 25m/year).





Potential outputs indicators

Share of intermodal transport

Potential impact indicators

- Estimated avoided tonnes.km per year
- Estimated avoided CO₂ emissions

Picture reference: Ministère de l'Environnement, de l'Energie et de la Mer



IV – Struggle against waste and promote the circular economy: from product design to recycling

- "Circular Economy" program of PIAs aims to finance innovative projects in the field of the waste recovery and recycling.
- It supports companies that developing innovative solutions (equipment, processes, systems, services and facilities) such as:
 - Eco-design, repair and maintenance, service-based economy (instead of ownership-based)
 - Recycling: waste collection and sorting, and preparation of materials produced therefrom
 - Transformation, use and reintegration of recycled materials into new products
- AB VAL COMPOSITES is a project aiming to develop and implement a recycling process of glass-fiber composites in particular from boat hulls that have reached end of life cycle. Products are marketed for construction and green spaces application.

Objective Pollution reduction Sector : Pollution control and ecoefficiency Type of assets : Infrastructure Type of expenditures: Investment & intervention Operator: Companies



Potential outputs indicators

 Number of financed projects by the "Circular Economy" program of PIAs

Potential impact indicators

- Estimation of global production (mid term)
- Avoided CO₂ emissions (long term)

Example 9: Applied research for renewable energy



V – Promote renewable energies in order to diversify our energy mix and develop resources of our territories

- PIA finances many innovation projects related to renewable energies, managed by private companies.
- Example : SABELLA D10 "Hydrolienne" test project
 - <u>Objective</u> : harness ocean's hydrokinetic energy for power production.
 - Technology is based on 10 meters high rotors with 6 blades. The turbine is set on the ocean floor, deep enough to have no impact on sailing and fishing activities. This simple, cost efficient and robust technology could be deployed in 25 to 50 meters deep marine areas in > 1,75 m/s tide streams.
 - This technology is promising to power small and midsize island. World estimated potential capacity is 50 GW. One third of the European capacity is in France, along Brittany and Normandy.
 - Test site is located in Brittany, close to Ushant
 - The test project is financed by PIA since 2009 (€ 3.7m on a total amount on €13.6m)

<u>Objective</u> : Climate change mitigation <u>Sector</u> : Energy <u>Type of assets</u> : Research and innovation <u>Type of expenditures</u>: Investment & intervention Operator: Company



Potential outputs indicators

Potential impact indicators

Project description, with forecasts

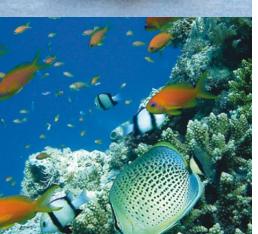
- Installed capacity of renewable energy
- Estimation of global production (mid term)
- Avoided CO₂ emissions (long term)





French climate and environmental policies Presentation of the Green OAT Examples of Eligible Green Expenditures Energy Transition for Green Growth Act

Restoration of Biodiversity, Nature and Landscape Act

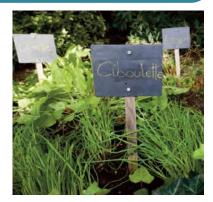


Example 10: Support to organic farming



I – Natural areas and protection of species

<u>Objective</u> : Biodiversity <u>Sector</u> : Living resources <u>Type of assets</u> : Land <u>Type of expenditures</u>: Tax & intervention <u>Operator</u>: Companies





France provide subsidies to support farmers who commit to develop organic farming.

- These subsidies can be complemented by dedicated tax expenditures:
 - Tax credits for farms using organic production methods: € 30m/year.
- In addition, France supports the structuration of organic production sector through the Avenir Bio fund:
 - More than € 22m invested since 2008 managed by the French Agency for Development and Promotion of Organic Farming.

Potential outputs indicators

Share of land managed in organic farming

Potential impact indicators

Biodiversity-related indicators to be developed

Picture reference: Ministère de l'Agriculture

Example 11: Development of certified forestry



I – Natural areas and protection of species

- The French Agency in charge of Forestry Management (Office National des Forêts – ONF) is committed in PEFC (Program for the Endorsement of Forest Certification Schemes) certification system for the sustainable management of public forests.
- ONF is member of PEFC France Association.
- All state-owned forests in mainland France and in Guyana are PEFC-certified (respectively ha 1.71m and 2.42m).
- PEFC-certified community-owned forests represent ha 1.64m in 2015.
- This Eligible Green Expenditure represents €291m/year.

<u>Objective</u> : Mitigation and Biodiversity <u>Sector</u> : Living resources <u>Type of assets</u> : Land <u>Type of expenditures</u>: Operating <u>Operator</u>: Agency



Potential outputs indicators

Potential impact indicators

- Share of forests managed in line with sustainable forestry labels
- Biodiversity-related indicators to be developed
- Estimated stored CO₂ emissions in carbon sinks

Picture reference: Office National des Forêts

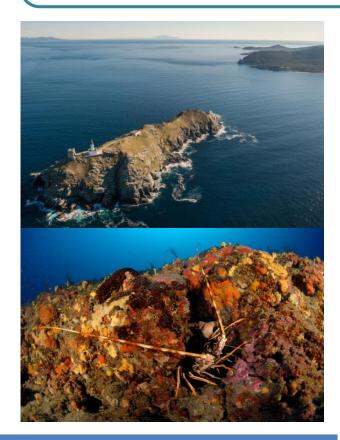
Example 12: National Parks



II – Landscape

- France spends more than €230m annually to protect environment and biodiversity.
- For example, the Cap Corse and Agriate Marin Natural Park, has been inaugurated by the Minister for the Environment in 2016.
- The creation of the Cap Corse and Agriate Marin Natural Park is made in the framework for action to protect the Mediterranean sea.
- This park is located in the "Pelagos" sancturary and is 6,830 square kilometers large. It protects exceptional marine natural ecosystems where many fishery resources took refuge, such as red spiny lobster or European lobster.
- This area is the place of exchanges between deep and costal water ecosystems and ensures the presence of migratory species, such as bluefin tuna, crowned amberjack, swordfish, and large cetaceans.

<u>Objective</u> : Biodiversity <u>Sector</u> : Natural resources <u>Type of assets</u> : Land <u>Type of expenditures</u>: Operating & intervention <u>Operator</u>: Agency



Potential outputs indicators

Potential impact indicators

Water volume in good state of preservation

Biodiversity-related indicators to be developed

Picture reference: Agence des aires marines protégées

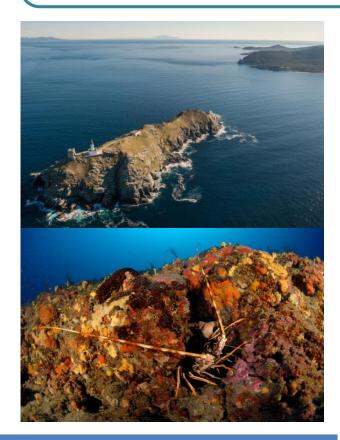
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Potential outputs indicators

Potential impact indicators

Water volume in good state of preservation

Biodiversity-related indicators to be developed

Picture reference: Agence des aires marines protégées



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