

Fourth Impact Evaluation of the Green OAT Evaluation Council: “Investments for the Future” Programme operated by ADEME

The Green OAT Evaluation Council is in charge of evaluating the environmental impact of eligible green expenditure financed by the Green OAT, the French sovereign green bond. This document summarises the opinion of the Green OAT Evaluation Council¹ on the assessment report on two initiatives in the “Investments for the future” programme, or *Programme d’investissements d’avenir* (PIA), operated by ADEME i.e. “Innovative pilot projects for the energy transition” and “Vehicles of the future”.

Main observations:

- ➔ The Green OAT Evaluation Council welcomes the evaluation, and notably the qualitative estimate of the contribution of PIA actions to climate change mitigation, pollution reduction and biodiversity protection and the quantitative estimate of the contribution of these two initiatives to climate change mitigation. The general study is rounded out by four case studies that present four of the funding projects in detail.
- ➔ This evaluation is part of the general effort to improve reporting practices in the green bond market. It provides an analysis of the PIA projects’ alignment with the European Taxonomy on the "climate change mitigation" objective and explores impact evaluation in the field of innovation, an area where very few impact reports have been published so far.
- ➔ The quality of the evaluation meets current academic standards. The Green OAT Evaluation Council is satisfied with the methodology of the report, despite sizable constraints in terms of data availability. The evaluation team used a set of up-to-date methodologies, notably using a study by Mines ParisTech, to assess as thoroughly as possible the environmental impact of the two initiatives. However, the Council took note of the lack of robustness of the data made available to the evaluation team: the validity of the data – collected ex-post and based on self-assessments by projects’ leaders – is limited, as they have not been verified and validated by ADEME. Consequently, the Council approves the important recommendations made by the evaluation team to ADEME, with a view to improving data quality in future PIA evaluations.
- ➔ The transparency and independence of the evaluation process were verified by independent experts.
- ➔ The Green OAT Evaluation Council endorses the main results of the PIA evaluation and notes in particular that the associated expenditure contributes to the achievement of France’s objectives in terms of climate change mitigation, pollution reduction and biodiversity protection.

1. Introductory remarks

The Council notes that France aims to reduce emissions by at least 40% by 2030 as compared with 1990 levels, and achieve carbon neutrality by 2050 to contribute to the objectives set out in the Paris Agreement. This is a demanding target that requires ambitious policies to reduce greenhouse gas emissions and accelerate research and innovation, with a view to developing the technologies and practices that will contribute to reducing France's emissions.

In 2010, the French government created the *Programme d’investissements d’avenir* (PIA) to drive innovation and investment. To date, the programme has granted €57 billion to companies or entities in three successive stages. The PIA has supported the innovation dynamic across economic stakeholders that are relevant to the energy and ecological transition, thereby demonstrating its ability to mobilise companies in innovative markets by acting as a real catalyst for green growth. The PIA funds innovative projects of all sizes in order to shape the industries of the future, support the emergence of new markets and pave the way for innovative economic models.

¹ Members of the Green OAT Evaluation Council: Manuel Pulgar-Vidal, WWF (chair); Mats Andersson, Global Challenges Foundation, PDC; Nathalie Girouard, OECD; Mike Holland, independent consultant; Karin Kemper, World Bank; Rana Roy, independent consultant; Thomas Sterner, University of Gothenburg; Eric Usher, UNEP-FI; Sean Kidney, Climate Bond Initiative (observer); Nicolas Pfaff, International Capital Market Association (observer).

Not all PIA initiatives are eligible for Green OAT funding. The evaluation report that the Council has reviewed analyses the impact of two initiatives: "Innovative pilot projects for the energy transition" and "Vehicles of the future", both operated by ADEME (the French agency for ecological transition). With €505m allocated in 2017 and 2018, these two initiatives account for half of the green OAT funding to the PIA over the period.

2. Main results of the evaluation provided to the Council

The study assesses the environmental impact for three environmental objectives defined in the Green OAT framework: climate change mitigation, pollution reduction and biodiversity protection.

It was possible to find that the two PIA actions analysed have a positive effect on:

- **Climate change mitigation.** 77% of the funded projects seem to be additional on this objective, since the project leaders state that the actions in question emit less GHG than a business-as-usual solution. Additionally, the objectives of the PIA follow the goals set out in the French National Low-Carbon Strategy. While it is not possible to fully assess whether projects are aligned with the EU Taxonomy, based on available data it can be considered that 79% of the PIA projects evaluated (151 projects) have an activity covered by the EU Taxonomy Delegated Act. The 21% remaining projects are not covered by the Taxonomy, which does not indicate that these projects cannot contribute to climate change mitigation, but rather that they are not related to the 88 economic activities responsible for 80% of the greenhouse gases covered by the EU taxonomy Delegated Act. Finally, due to a lack of data and lack of a reliability of the quantitative results obtained, it is difficult to analyse the extent to which the PIA as a whole is cost-effective. However, based on the small sample of projects for which quantitative data were available (11% of projects assessed), the forecasted average abatement cost (€72/tCO₂-eq) is lower than the national climate change mitigation reference value (250€/tCO₂-eq), i.e. the Value for Climate Action for 2030.
- **Pollution reduction.** 50% of the funded projects seem to be additional in terms of air quality. However, looking at the reduction in water pollution, even though the PIA objectives comply with French legislation, only 1/4 of the projects report a positive impact on this area. Finally, ADEME's choice of indicators in its survey did not permit an assessment of soil pollution caused by the projects.
- Lastly, the "Innovative pilot projects for the energy transition" action has a positive effect on **biodiversity protection**, as 27% of the funded innovative pilot projects for the energy transition are additional compared to a reference solution. Moreover, by construction, the action's objectives are consistent with the national Biodiversity Plan.

To achieve these results, the methodology used in this study is based on an assessment of the relevance, additionality and efficiency of the selected expenditure for each Green OAT criterion. This evaluation uses the data of the survey that ADEME conducted on the funded projects in 2019. They cover 57% of the PIA projects managed by ADEME included in the Green OAT's expenditure. However, in many projects, the date of completion of the development and marketing of the innovation is subsequent to the latest PIA funding flows. Therefore, a significant share of the data collected reflect the projects leaders' own statements and estimates of their potential future environmental impacts rather than an ex-post assessment. The study also identifies areas of improvement in the quality of data. Information, including the data required by the Taxonomy, should be collected by ADEME from the project leaders, and stored in an operable database. ADEME should provide guidelines to project leaders on the required information, such as: how to define the reference solution and how to define the "unit of innovation" that quantifies innovation achievements. A multi-criteria methodology to analyse at the same time the different environmental objectives should be defined. ADEME should also explore ways to ensure that quantitative impact data, and if possible independent data, are more systematically provided.

Additionally, Planète Publique and In Extenso, two independent consultancy firms, provided case studies on four of the funded projects. The four projects were chosen as a sample that can represent the variety of PIA projects in terms of economic sectors, total amount of the project and type of innovation. The results highlight the decisive impact of the "Investments for the Future" programme in the effective implementation of the projects. The case studies also note the truly innovative nature of each project, and the fact that projects always take more time than expected to deliver. In the end, as funding ended recently, the expected environmental impacts have still not completely materialised.

3. Quality of the evaluation

As complete independence is fundamental to the credibility of any evaluation, the Council considers the involvement of academic referees to be very important. To ensure alignment with best practices in this area, terms of reference were defined by the Council, with the support of the Secretariat, in order to frame the assessment. The impact assessment study was conducted by the General Commission for Sustainable Development. Two referees, Virginie Boutueil (LVMT)² and Patrick Criqui (CNRS)³, were appointed to closely monitor the evaluation process. An intermediate report was presented to the Council for review and comment. The Council endorsed the final version during its formal meeting on June 11th, 2021.

It is the Council's opinion that **the study meets the objectives** defined by the terms of reference providing quantitative and qualitative evidence on the relevance, additionality and efficiency of the PIA. In particular, the Council welcomes the analysis of PIA projects using the EU Taxonomy framework. The Council wishes to highlight the **innovative nature of the study, as it contributes to the development of impact reporting methodologies.**

The Council also notes some potential areas of improvement for future "Investments for the Future" programme ex-post surveys, by collecting better quality data.

Regarding the case studies, the Council welcomes the additional and complementary data they provide. They help readers of the macro-study to better ascertain what type of projects are effectively funded, and what diversity of fields, sectors, types of innovation or companies they encompass.

4. Conclusion and next steps

The Evaluation Council welcomes the results of the study on the PIA as it explores different methodologies for impact reporting on biodiversity protection, climate change mitigation and pollution reduction in the research & development sector.

The Council wishes to underscore the soundness of the evaluation process. The study meets current academic standards and was supervised by independent referees.

The Council is confident that this fourth impact evaluation will be useful to other green bond issuers and contribute to the advancement of evaluation best practices on the market. In particular, this study could be useful for sovereign issuers focusing on climate change mitigation, with an analysis of the PIA alignment regarding the European Taxonomy. Indeed, such impact studies and transparency are essential factors to foster the development of green finance.

The publication of this study confirms the important role of the Evaluation Council in ensuring the credibility and transparency of the Green OAT.

² *Virginie Boutueil* is a researcher at Ecole des Ponts ParisTech. Her research in the field of mobility socioeconomics focuses on innovative mobility solutions (including electric mobility solutions and shared mobility solutions), the digital transformation of mobility, and related public policies. Virginie Boutueil is the Deputy-director of City Mobility Transport Lab (LVMT), the Deputy-director of the Sustainable Mobility Institute Renault-ParisTech (IMD), and a Member of the US Transportation Research Board's Standing Committee on Alternative Transportation Fuels and Technologies.

³ *Patrick Criqui* is a senior researcher emeritus at CNRS, and works on the economics of energy transition and climate policies with the Grenoble Applied Economics Laboratory. He was a lead author in IPCC's Working Group 3 (collective Nobel Peace Prize in 2007). In the wake of the Paris Agreement, he is currently working on the monitoring of national Deep Decarbonisation Pathways. A member of the Economic Council for Sustainable Development by the French Minister of Ecology since 2008, he has been expert on Scenarios for the National Debate on Energy Transition (2013) and for the National R&D Strategy, on energy issues (2014). Since 2015, he has been a member of the Expert Committee for the Energy Transition, in charge of the monitoring of the National Low-Carbon Strategy (2015-2018) and Multi-Annual Energy Programme.