



# ACCELERATING THE GREENING OF FINANCE: THE PARIS CLIMATE BOND

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**ACTION AREA:** Cross-cutting

**FOCUS AREA:** Financing

**COUNTRY:** France

## SECTORS

**INVOLVED:** Cross-sectoral

**TIMEFRAME:** 2015 - 2031

**CASE SUMMARY:** Right at a moment when international climate efforts were concentrated at COP21 taking place in Paris in 2015, the city issued the Paris Climate Bond (PCB)<sup>1</sup> to finance and re-finance projects in climate mitigation and adaptation. The PCB constitutes an innovative tool to reach the goals of the city of Paris' ambitious Climate Action Plan, which aims to make Paris a carbon-neutral and climate-resilient city by 2050. It functions in line with the 'Green Bond Principles', which are voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the green bond market (ICMA, 2018). The bond has a size of EUR 300 million, a term from 2015 to 2031, and targets private investors who are interested in seizing this investment opportunity while funding sustainable actions in the city of Paris. Investors receive a coupon of 1.75% per year (ClimateADAPT, 2016). The Paris Climate Bond aims to fulfil four main goals: Greenhouse gas (GHG) emission reductions, improvement of energy efficiency, renewable energy production, and climate change adaptation (Climate Bonds Initiative, 2015; ClimateADAPT, 2016).

<sup>1</sup> It is to be noted that there exist two 'Paris Climate Bonds'. While this case study showcases a municipal initiative from the city of Paris, the other PCB is an international refinancing structure for projects registered under the Clean Development Mechanism (CDM) of the United Nations Framework Convention on Climate Change (UNFCCC). More information on this bond is available here: <http://climatemundial.com/parisclimatebond/>

The case constitutes a good practice for a variety of reasons: The city of Paris has involved different knowledgeable stakeholders to secure a well-informed implementation of the bond. In addition, the political will to push for ambitious climate policies in Paris has been continuously strong, which helped to foster its burgeoning green bond market. Lastly, a transparent reporting structure has attracted investors as they can easily assess the impacts of their investments.





**BACKGROUND:** ————— The extreme heatwave in 2003 in most parts of France (with the most extreme weather anomalies occurring in the South (UNEP, 2004)) accounted for almost 15,000 heat-related deaths in France. Projections indicate that the summer of 2003 could become a regular one by 2050 (ClimateADAPT, 2016). Under a high emissions scenario, the mean annual temperature in France is projected to rise by about 4.9°C on average from 1990 to 2100 (WHO, 2016). Apart from increasingly extreme temperatures, flooding constitutes a second major climate change impact for France (ClimateADAPT, 2016).

The city of Paris is suffering from periods of extreme heat and urban heat islands (i.e. higher temperatures in urban areas as a result of increased anthropogenic heat production and materials such as concrete (Mohajerani et al., 2017)). These heat stressors can eventually lead to impacts such as health risks. Furthermore, the city is vulnerable to periods of drought which may inter alia result in a lack of water resources. Other climate hazards such as flooding might lead to interruptions in urban services amongst other impacts (City of Paris, 2018). In response to these climate change impacts, the city has taken concrete action: In 2007, the Council of Paris adopted its Climate Action Plan. The plan was updated in 2012 with the adoption of the Guidelines of the Paris Climate and Energy Action Plan. The aim was to reduce the overall emissions in Paris by 75% in 2050 (City of Paris, 2018). A revised version of the Climate and Energy Action Plan, the Paris Climate Action Plan, has been published in 2018. This even more ambitious plan outlines 'a common future for a carbon-neutral city by 2050, which is adapted to extreme climate events and resilient in response to crises and shocks' (C40 Cities, 2018). Inter alia, the aim of this revised plan is to lay out an action plan on how to decrease emissions by 40% by 2030 and solely rely on renewable energy for energy production by 2050 (City of Paris, 2018). The Climate and Energy Action Plan forms the legal and policy basis for the Paris Climate Bond (PCB) (ClimateADAPT, 2016).

The PCB was developed by the city of France through its Finance and Procurement Department (DFA) and the Parks and Environment Department of Paris. The project selection has been performed by the Finance Management Support Service (SGF) of the city. SGF collaborated with the Urban Ecology Agency of Paris (AEU) to that end. The selection process has been overseen by Vigeo Eiris, a non-financial sustainability rating agency. Three banks (HSBC, Société Générale CIB and Crédit Agricole) were selected through a tender process to accompany and support the city as lead managers, offering their expertise on topics such as network services (i.e. media relations etc.) and investor expectations (ClimateADAPT, 2016). A bond is a type of debt security that works according to the following principle: Investors become creditors of the bond issuer. They receive an interest rate (coupon) from the issuing entity, which returns the initial investment to the investor upon maturity of the bond. Bonds usually pay a fixed interest over the maturity period. Therefore, they are also called fixed-income securities. A green bond is a debt security that financially supports projects within the climate or environmental realm (World Bank and PPIAF, 2015).

Internationally, certain guidelines exist according to which green bonds can be designed. Among the most well-known are the Green Bond Principles, issued by the International Capital Market Association to provide a voluntary framework for green bonds. These principles recommend a clear process and disclosure regarding the use and management of proceeds, the process of project selection and evaluation, and reporting (ICMA, 2018).

The total size of the bond is EUR 300 million, with a term ending in May 2031. Investors receive an interest rate of 1.75 % per year (ClimateADAPT, 2016). EUR 120 million are expected to be allocated for the reduction of greenhouse gas emissions, EUR 115 million for energy efficiency, EUR 60 million for adaptation to climate change and EUR 5 million for the production of renewable energy. Investors can reinvest in the bond every year, allowing for new capital inflow (ibid.).

**ACTIVITIES:** ————— This section provides more detail on the selection of projects funded by the PCB and on its monitoring and reporting structure.

• **PROJECTS FUNDED BY THE PCB:** The SGF of the city of Paris manages the selection of projects funded by the PCB in collaboration with the AEU. The process is monitored by Vigeo Eiris, a non-financial rating agency (ClimateADAPT, 2016). Funding is allocated to projects whose socially responsible environmental approaches contribute to reaching the goals of the Paris Climate Action Plan (City of Paris, 2017):

**1. REDUCING GREENHOUSE GAS EMISSIONS:** The main focus within this first category is put on the development of low-carbon energy transport and public transport – such as the development of a clean-engine public transport line and the extension of a tramway line. In addition, alternative transport means are to be established, for example through a cycling plan for the city of Paris. Investments made to support the development of charging stations for electric vehicles also fall within this category (City of Paris, 2015a).

**2. REDUCING ENERGY CONSUMPTION:** Proceeds from the bond issued in this category will be used to fund projects aimed at energy renovation and reducing electricity consumption of (public) buildings. The goals include concrete performance goals, such as a 30 % reduction in energy consumption of the social housing stock by 2020 (City of Paris, 2015a).

**3. PRODUCING RENEWABLE AND WASTE ENERGY:** Within this category, bond proceeds are used to spur the city's transition from fossil energies to renewables. Paris has integrated mechanisms into its urban planning scheme to encourage the shift towards renewable energies and established a solar register, which helps the city to determine the solar potential of each of its buildings (City of Paris, 2016).

**4. ADAPTATION TO CLIMATE CHANGE:** In this category, bond proceeds financially support projects aimed at reducing the impacts of climate change – e.g. through the building of green spaces and the planting of trees. The city of Paris has planned to build about 30 hectares of green spaces by 2020, which are essential to combat the heat island effect and enhance the capacity for soil absorption in the case of heavy rainfall. Furthermore, Paris aims to build 20,000 additional trees over the territory of the city in the same period of time. Maintenance of the parks and trees will be provided by the city itself and is not covered by the climate bond investments (Climate ADAPT, 2016).

• **ANNUAL REPORTING ON PARTICIPATING PROJECTS:** The PCB has been established on the basis of a framework of the bond issue in line with the Green Bond Principles, in short Climate Bond framework, that was established by the City of Paris in 2015 (City of Paris, 2015a). The bond and its framework are designed to involve extensive reporting. In order to ensure transparency, the city of Paris must justify the allocation of money to projects through annual reporting. SGF oversees the selection of the projects (ClimateADAPT, 2016). Vigeo assisted the city in structuring the bond and reviewed the process, thus providing investors with certainty on how their funds are put to use (European Environment Agency, 2017). The agency certified the entire issuing process, using its Environmental, Social and Governance (ESG) criteria evaluation method and the recommendations of the Green Bond Principles. In congruence with the guidelines of the Green Bond Principles, the agency reviewed the PCB in terms of three components, including: i) the issuing entity and its ESG performance; ii) the project framework, including the project selection procedure and the identification of eligible project categories; and iii) the reporting framework, including the projects' environmental and social goals, the responsible management of the bond issue and an assessment of the reporting capacity (Vigeo, 2015). At the end of this process, the city of Paris was able to report to investors on the legitimacy of its approach by publishing the 'Second Party opinion' on the PCB established by Vigeo. The agency awarded a favourable verdict, matched with the best level of assurance (Vigeo, 2015).



**INSTITUTIONS**

**INVOLVED:** \_\_\_\_\_ City of Paris:

• **DEVELOPMENT OF THE PCB:**

Finance and Procurement Department (DFA) and the Parks and Environment Department of Paris

• **PROJECT SELECTION PROCESS:**

Finance Management Support Service and Urban Ecology Agency of Paris (AEU)

**COOPERATION WITH:** \_\_\_\_\_

• **SUPERVISION OF THE BOND ISSUING PROCESS:**

The non-financial sustainability rating agency Vigeo Eiris

• **JOINT LEAD MANAGERS OF THE PCB:**

Credit Agricole CIB, HSBC and Societ  Generale CIB

**FINANCE:** \_\_\_\_\_

The PCB has been issued by the city of Paris. Its total size is EUR 300 million, with a term ending in May 2031. The bond aims at investors from the private sector who consider the investment into the sustainability of the city of Paris as a secondary advantage. They will receive an interest rate of 1.75% per year (ClimateADAPT, 2016).

**IMPACT OF ACTIVITIES:** \_\_\_\_\_

The activities carried out in the context of implementing the PCB were successful in several regards, ranging from achieving concrete climate impacts to diversifying the investor base over time:

• **TANGIBLE CLIMATE IMPACTS:** According to the 2017 reporting of the city of Paris, the activities financed by the PCB have already led to a number of concrete climate impacts. For example, the creation of cycle paths has prevented around 5,700 tons of CO2 emissions per year since 2015. Another tangible impact stems from the renovation of social housing units financed by the PCB, which has saved around 10,323 tons of CO2 per year since 2015 (City of Paris, 2017). The creation of new green spaces has furthermore led to increased carbon storage illustrated in Table 1.

YEAR	NUMBER OF HECTARES CREATED	CUMULATED SURFACE	CUMULATED AMOUNT OF TONS OF CO <sup>2</sup>
2015	1.87	1.87	6.99
2016	4.01	5.88	21.99
2017	4.35	10.23	38.26
<b>TOTAL</b>	<b>10.23</b>	<b>17.98</b>	<b>67.24</b>

Table 1: Carbon storage as a result of the creation of green spaces in the years 2015-2017 (City of Paris, 2017)

• **ENHANCED OPPORTUNITIES TO REACH THE CITY’S AMBITIOUS CLIMATE GOALS THROUGH GREEN FINANCING:** The availability of sufficient financial means is crucial to realise ambitious climate strategies and goals, as can be observed in the case of the city of Paris: The PCB constitutes one of the key enabling factors to achieve the city’s climate goals laid out in the Paris Climate Action Plan. It has been instrumental to kick off adaptation and mitigation actions in several areas, including clean transportation and energy.

• **A FLOURISHING BOND MARKET:** Having issued its first green bonds in 2012, France now has the largest green bond market in Europe and the third largest globally. Since the first issuances, the market has provided for new opportunities and, thus, has allowed for diversification in terms of investors as

well as instruments (Climate Bonds Initiative, 2018). The PCB significantly contributed to the development and expansion of this market.

• **DIVERSIFICATION OF THE CITY'S INVESTOR BASE:** The PCB has been greatly successful in attracting investors. Whereas it is mainly funded by domestic investors (83%), the city of Paris has been able to diversify its investor base to international institutional accounts. These include Luxembourg, the Netherlands and Belgium (9%), Switzerland (3%) and the Nordics (3%). The bond's investors are primarily institutional investors such as insurers and pension funds (51%), followed by asset managers (acting on behalf of private investors) (49%) (ClimateADAPT, 2016).

## WHY IS IT

**GOOD PRACTICE:** ————— The following three criteria make the PCB a good practice:

• **TRANSPARENCY:** The PCB was established in an utmost transparent manner. The city of Paris commissioned the independent rating agency Vigeo to evaluate the performance of the bond in terms of sustainable development. Additionally, Vigeo assisted Paris in certifying the environmental and social goals of the projects selected as well as the responsible management of the bond issue using the Environmental, Social and Governance (ESG) evaluation method (City of Paris, 2015a). This enabled the city of Paris to certify the legitimacy of the process to their investors, now having a 'Second Party Opinion' by Vigeo. Adopting such a transparent approach, investors gain certainty on the environmental integrity of the outcomes of the projects selected and funded by the PCB.

• **STAKEHOLDER PARTICIPATION:** The participation of various stakeholders has secured the successful implementation of the PCB. Through the involvement of the private sector in the management of the bond, an independent rating agency in overseeing the implementation process, and the continuous teamwork within the city administration, diverse inputs and perspectives came together to realise the PCB project. This also increases ownership for the measures at these diverse levels.

• **POLITICAL BUY-IN:** The city of Paris is at the international forefront in pushing for innovative solutions to the issues arising from climate change. It has helped bringing about the Paris Agreement, the most ambitious international agreement on climate change yet. Paris has furthermore shown its commitment through its latest Climate Action Plan, in which it pledges, inter alia, to become a carbon-neutral city by 2050 through innovative solutions (see City of Paris, 2018). The PCB constitutes one of the financing means to realise this goal.

## SUCCESS FACTORS:

• **AN ATTRACTIVE MARKET FOR INVESTORS:** France has been a global forerunner in the green bond market (Climate Bonds Initiative, 2016). Also, the positive rating as a sectoral leader in climate bonds (1st among local authorities) by Vigeo enhanced the city's attractiveness to investors (ClimateADAPT, 2016; City of Paris, 2015b). The positive market conditions have significantly spurred the demand of investors to invest in green bonds.

• **STRONG COLLABORATION BETWEEN GOVERNMENT ACTORS TO BUILD THE REPORTING STRUCTURE:**

The process of building a reporting structure was time-consuming and required an extensive collaboration between city different departments. However, through the joint work of building the reporting structure, both technical and measurement experts had to familiarise with each other's work and also learn from external experts, thus substantially increasing mutual understanding and synergies and enhancing the capacity of the different departments to fully grasp the complex process of issuing a climate bond.



**OVERCOMING BARRIERS / CHALLENGES:**

**WHAT WERE THE MAIN BARRIERS / CHALLENGES TO DELIVERY?**

**FINANCIAL:** The city of Paris had long planned to invest in climate action – e.g. building parks and planting trees. However, the city was short of financial means to realise these plans (Climate ADAPT, 2016).

**INSTITUTIONAL:** The implementation of a green bond requires extensive human resources, time and expertise, which can represent a challenge for municipalities (European Committee of the Regions, 2017).

**HOW WERE THESE BARRIERS / CHALLENGES OVERCOME?**

The PCB opened up financial sources to fund green plans. For example, the planting of 20,000 trees costs around EUR 18 million in total, of which EUR 15 million are funded through the bond and EUR 3 directly through the greening budget of the city's Green spaces and Environment Department. The implementation costs of new parks amount to around EUR 67 million. EUR 45 million of this sum are expected to be funded through the proceeds of the PCB and the rest by other sources of funding of the City of Paris (ClimateADAPT, 2016).

The city of Paris has partnered up with three major banks to act as joint lead managers (Credit Agricole CIB, HSCBC and Société Générale CIB) and Vigeo Eiris to supervise and certify the project selection process. Paris can effectively tap into the expertise of these institutions to effectively complement the city's efforts (ClimateADAPT, 2016).

**LESSONS LEARNED:**

- **COLLABORATE WITH KNOWLEDGEABLE ACTORS FOR OPTIMISED RESULTS:** When issuing a green bond, governments should consider involving experts in the process to improve its overall quality and feasibility. For example, the private sector can give useful advice or even help in managing the bond. Independent rating agencies can oversee the issuing process and act as an additional source of quality assurance.
- **ESTABLISH A BOND FRAMEWORK:** When the PCB was issued, it was not common practice to publish a Climate Bond framework (that inter alia includes information on the use of proceeds, the project selection process as well as the management of reporting). Over the years, the Parisian experience with green and sustainable bonds (also apart from the PCB) has shown that establishing a framework helps investors to assess the impacts of the project measures and to manage their expectations (information gathered from interview).

**HOW TO REPLICATE THIS PRACTICE:**

- **SEIZE THE RIGHT MOMENT TO ISSUE A GREEN CLIMATE BOND:** The PCB has been issued at a time where the salience of climate change among the population was high. When COP21 took place in Paris at the end of 2015, it spurred a high level of attention among diverse stakeholders (including the private sector), who were thus sensitised to the issue. This helped to attract investors at that point, securing funds for the bond (information gathered from interview).
- **PUT IN PLACE A WELL-WORKING REPORTING STRUCTURE TO INCREASE TRANSPARENCY:** While building a proper monitoring and reporting structure for the use of proceeds of green bonds can be a time-consuming process, it is vital in order to secure that the implementation of the bond takes place in a transparent manner. Enhanced transparency will ultimately also attract investors, as they can stay up to date with regards to how their investments are put to use.

#### CONTACT FOR

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#### FURTHER KEY

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<https://www.paris.fr/municipalite/action-municipale/paris-pour-le-climat-2148>

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#### CASE STUDY

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