

Financing the transition to a green economy: their word is their (green) bond?

Responding to climate change involves the implementation of initiatives that require significant upfront capital investment. At a time when bank lending is squeezed, green bonds offer an alternative financing for initiatives with an environmental goal. Lately, the Ile-de-France Region's issuance of environmentally and socially responsible bonds on March 20th 2012 demonstrates that an increasing number of players are taking interest in this tool. But green bonds are not, however, the panacea to access to finance issues that mainly depend on the bond issuer's characteristics.

Background: green bonds, a large-scale financing tool

Bonds are tradable debt securities with repayment terms contractually set at issuance. This includes, for example, their maturity, interest rate, coupon, etc. Currently, the bond market is almost twice as large as the equity market: over US\$95,000 billion in bonds outstanding, compared with an equity market capitalisation of US\$54,900 billion in 2011 (TheCityUK, 2011). Institutional investors¹ are particularly active on the bond market, for three reasons: i) the appropriateness of risk-return profiles, ii) the transaction volume size, and iii) the very high level of bond standardisation that helps to reduce processing costs. These investors were believed to hold over US\$65,000 billion in assets in 2009 (Della Croce *et al.*, 2011), and to invest mainly in bonds (OECD, 2011).

The implementation of mitigation and adaptation to climate change actions requires substantial investments. According to the International Energy Agency's *World Energy Outlook* (2011), over US\$25,000 billion will need to be invested in renewable energies and low-carbon technologies between now and 2035, in order to limit the greenhouse gas concentrations in the atmosphere to 450 ppm. However, the current financial downturn has increased liquidity problems and made access to finance harder, particularly for corporate and infrastructure projects. One solution to solving these liquidity problems is to widen the range of potential lenders for low-carbon initiatives.

As such, a new concept, namely green bonds, has been developed, in order to encourage institutional investors to invest in initiatives with a climate component.

Green bonds, broadening the sources of financing for initiatives with an environmental goal

The term "green bonds" applies to bonds aimed at financing investments with an environmental benefit or a focus on reducing vulnerability to environmental changes. This definition also includes bonds known as "climate bonds", which focus on investments relating to mitigating or adapting to climate change. Green bonds differ from "conventional" bonds as

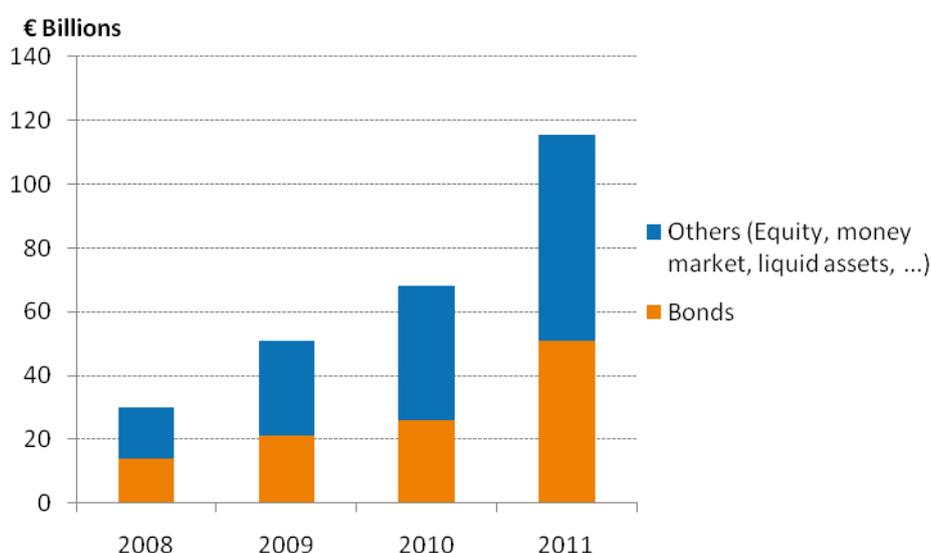
¹ Institutional investors include banks, savings funds, investment funds, insurance companies, or pension funds.

they are generally subject to a monitoring system to track whether the funds raised have indeed enabled the initiatives expected to be financed.

Using green bonds rather than conventional bonds enables the issuer to broaden their funding base by gaining access to “Socially Responsible Investors” (SRI), who include a broad range of non-economic criteria, including social, environmental and governance, in their investment choices².

In fact, the European SRI market increased of more than 20% between 2007 and 2009 and reached €1,2 trillion in 2009 (Eurosif, 2011). Figure 1 shows the significant expansion of SRI in France. After increasing at an average annual rate of 50% between 2008 and 2010, SRI funds posted a 69% rise in 2011 partly boosted by the conversion of conventional funds to SRI funds. Bonds are the larger asset class, accounting for around 42% on average of the SRI funds market since 2008.

Figure 1 - Increase in SRI funds on the French market (€ billions)



Note: This graph and the figures for the European market mentioned above correspond to what is called the core SRI. They bring together various practices of SRI from the exclusion of assets (sectoral or normative) to the selection of assets according to environmental, social and governance criteria.

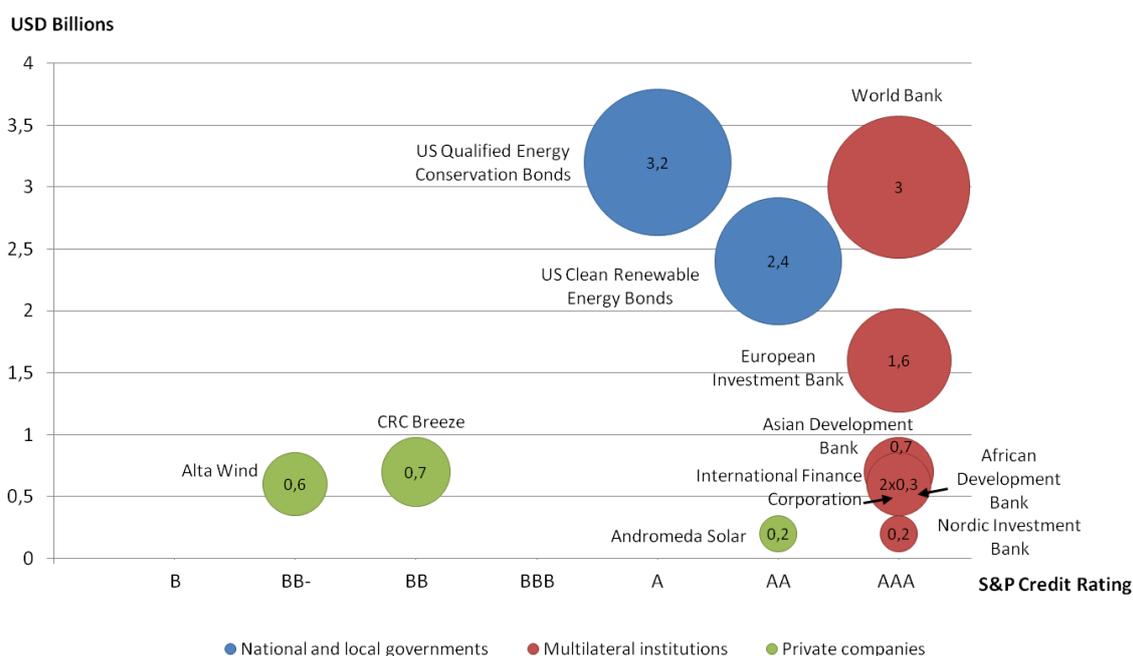
Source: Novethic (2012).

Moreover, the timing of green projects’ cash flows is generally compatible with bonds issuance. Most of projects financed thanks to green bonds require substantial upfront investment followed by regular returns, such as renewable energy or energy-efficiency initiatives.

Current State of Play

Since 2006, over US\$15 billion has been raised through green bond issuances (Della Croce *et al.*, 2011). As shown in Figure 2, three types of entities have managed to finance business activities thanks to their green bond issuances, namely multilateral institutions, private companies, and national and local government institutions.

² Responsible investment funds may vary according to investors’ point of view. Unlike French investors, who take account first and foremost of the issuer’s extra-financial ratings, other investors, such as Dutch or UK pension funds, are more inclined to be interested in theme-based funds, like environmental initiatives, in order to define an investment as responsible.

Figure 2 – Major green bond issuers since 2006

Source: Della Croce et al. (2011), updated based on World Bank (2012) data.

Multilateral institutions have issued some US\$7 billion in green bonds since 2006

A multilateral institution – to date usually a development bank – may issue green bonds in order to finance environmental initiatives by providing its own guarantee for these initiatives. The risk is then spread across all the institution’s activities. To date initiatives are mostly renewable energy and energy-efficiency initiatives.

The entities that issue the largest amount of this kind of bonds are the World Bank (almost US\$3 billion since 2008), and the European Investment Bank (EIB - which has issued US\$1.6 billion worth since 2007). In total, some US\$6.8 billion in green bonds have been issued by multi-lateral institutions since 2006 (Della Croce et al., 2011).

The issued bonds often offer a fixed rate of return, which is sometimes linked to LIBOR, or to “environmental” stock market indexes³. These bonds usually have a maturity of between three and ten years. They have mostly enabled the financing of a portfolio of initiatives drawn by the multilateral institution itself.

Lower use of green bonds by private companies

Like government players, private companies can issue bonds to finance their initiatives. Corporate bonds may be backed by assets (asset-backed bonds) when the production assets are pledged as a guarantee for the bonds. A bank may also securitise a loan that it has granted to a company, by backing that loan with assets. In this case, we describe it as a covered bond⁴.

In practice, however, these bonds are hampered by a less favourable reputation in the markets – as companies are often not rated as highly as government bodies, even when

³ For instance, the EIB has issued bonds linked to the performance of the FTSE4Good Environmental Leaders Europe 40 Index.

⁴ Depending on the country, the term “covered bonds” may be tightly regulated. This is the case with the *Pfandbriefe* in Germany, for instance.

their bonds are covered – as well as by lower issuance volumes, which restricts their liquidity.

Green bonds encounter the same constraints, with the additional risk of seeing a company reporting green investments without any direct control on the environmental or social benefit of these investments. Three solutions have been implemented in response to these dual issues of liquidity and monitoring:

- The first solution consists in using “Special Purpose Vehicles” (or SPVs). These funds invest in private initiatives and subsequently issue corresponding bonds on a centralized basis. In this way, the default risk is pooled at the SPV level. Therefore, it is the SPV’s financial rating that is taken into account when rating the bond. This system was used by the *CRC Breeze Finance* SPV, for instance, to finance wind power plants in Germany and France (Della Croce *et al.*, 2011). However, SPVs have been critiqued since the 2008 financial crisis as they do not enable an optimal vision of initiatives’ specific risks and thus have been accused of hiding “bad debt”.
- A second more traditional solution consists of enabling a private company’s bond issuance to benefit from a public guarantee. For example, this has already been the case in Europe for an Italian subsidiary of Sunpower to enable the financing of a solar power plant. In this case, the Italian export credit agency (SACE) provided a guarantee for a portion of the bonds.
- The last solution consists in awarding “green” or “climate” labels to the bonds that have been issued. This has been proposed by the Climate Bond Initiative, which has introduced the “Climate Bond Standard.” Verified by independent auditors, this label is designed to guarantee that the funds raised via the bonds actually finance climate initiatives. This label has the double objective of protecting investors against reputational risk as well as moving towards the standardisation of climate bonds in general.

Local authorities and the issuance of green bonds

Local authorities can tap the bond market in order to diversify their sources of funding and to find an alternative to bank financing. Green bonds are also a means for elected officials to communicate on their commitment to environmental issues and responsible investment. As sub-national authorities often benefit from regular source of income, they can offer an attractive risk profile to investors. They also meet the requirements of investors who are looking for long maturities.

A government-backed guarantee can be added to tax incentives in order to promote this form of financing. In the United States, for example, US Qualified Energy Conservation Bonds and US Clean Renewable Energy Bonds have enabled US\$5.6 billion to be raised since 2006. There are two kinds of practices: i) 0% loans, which allow the lender to benefit from tax credits⁵; ii) market interest rates combined with a Federal Government subsidy for the local authorities that are issuing the debt (Della Croce *et al.*, 2011).

News: the Ile-de-France regional council issued green bonds

In Europe, the Ile-de-France regional council’s environmentally and socially responsible bond issuance was a first for the European bonds market. Further, the majority of the funds raised have been principally earmarked for climate change-related initiatives.

⁵ The drawback of 0%-rate loans is that they are of no interest to pension funds, which are often exempt from Federal taxation.

A successful issuance, despite an unfavourable financial environment...

The Ile-de-France regional council's environmentally and socially responsible bond issuance in March 2012 is a success right out of the gate. The bond's subscription rate reached 175% in the space of half-an-hour. This meant that the Region, which was expecting a €200 million loan, saw its order book swell to around €620 million. Ultimately, €350 million was raised for energy, low-energy social housing, and dedicated biodiversity as well as social and solidarity economy initiatives (Ile-de-France regional council, 2012).

The specific features of this offering met investors' requirements in terms of risk (long maturity, high issuer rating, etc.), partly explaining the transaction's success. Moreover, the transparency of the initiatives financed along with the social and environmental nature of this bond issue appear to justify one third of the offers made by investors, according to Crédit Agricole CIB, which set up the transaction, alongside BNP Paribas CIB.

This strong demand from investors enabled the Ile-de-France Regional Council to borrow at 3.625%, which amounts to the lowest euro yield paid by a French local authority since the beginning of the year (Crédit Agricole CIB, 2012).

... thanks to increased demand for socially responsible investments

Investors are increasingly interested in extra-financial criteria where bond issuers are concerned. The Ile-de-France regional council was therefore able to use both the green aspects of its bonds to entice investors as well as its extra-financial rating: it is ranked as the top-ranked local authority among the 26 major European local authorities rated by Vigéo, in its capacity as a bond issuer (Ile-de-France Regional Council, 2012).

Analysis: a promising start that remains to be confirmed

Access to investors combined with a green premium?

In a period where offerings from the banking sector are decreasing, green bonds enable issuers to diversify their sources of funding, and provide an alternative to conventional financing by attracting investors tempted by their SRI aspects. This enables the funding of projects that would not get off the ground without this access to financial market and in particular to SRI investors. Further, projects may be able to gain access to lower interest rates due to the increased demand: in this case, there appears to be a "green premium".

However, this green premium must be kept in perspective, given the additional cost represented by the implementation of a monitoring system certifying that the funds raised have actually been used for the target project(s). For the Ile-de-France Region, the annual reporting system offered to investors is done internally and is not audited. Thus, the costs are limited. In the case of the Climate Bonds Standard, calling upon external auditors generates additional costs, which amount to around 0.001% of the value of the bond issuance (Climate Bond Standard, 2011). Apart from the latter case, reporting processes are rarely controlled and the investor therefore trusts the issuer's ability to follow-up with funded projects.

Moreover, the interest rate is set according to the rules of supply and demand. Although the first entities to issue green bonds – as in the case the Ile-de-France regional council – might be able to take advantage of the scarcity effect attached to this type of offering, and thus to benefit from a lower interest rate and a higher visibility. However, there is no guarantee that this will always be the case for future issuances. Indeed, the current and specific demand for such bonds is hard to evaluate, but must be limited, especially since the SRI market is not specifically looking to buy green bonds. Nevertheless, this demand could be supported, for instance, by regulatory or tax incentives.

The limitations of green bonds add to conventional investment barriers

It is important to note that the risk-return ratio remains the main investor selection criterion for any kind of financing. As such, the issuer or guarantor's profile is a determining factor for investors. This is also appears true for green bonds, where the main issuances involve highly-rated entities, like the World Bank, which is rated AAA. This phenomenon is reflected in the success of the Ile-de-France Region bond issuance, which currently benefit from a high financial rating.

This reasoning is all the more valid as prudential rules, like the Basel III reform, are tightening. These rules are encouraging the least risky investments as a result. Providing insurance or guarantees may be one way for private companies to get around some of these issues: the Climate Bonds Initiative currently calls upon governments to guarantee climate initiatives, in order to encourage investment.

Investing in green bonds also presents specific risks for investors, such as a reputational risk in the case where the initiative that has been financed does not meet the stated green targets. In some cases, the issue of resource fungibility may also raise economic effectiveness issues. Indeed, the funds raised via a green bond go towards the general budget; this means that the issuer's "conventional" bonds will no longer be earmarked for financing the initiatives targeted by the green bonds. An additionality issue primarily arises when the issuer's conventional bonds attract responsible investors⁶.

The issuer may also benefit of windfall profits by promoting, thanks to green bonds, initiatives that would have been led in any case. However, investing in green bonds may then be viewed as encouraging the development of best practices, and showing that there is a demand for such practices.

As summarised in Table 1, the factors limiting the development of green bond issuances mainly depend on the type of issuer or guarantor (public or private).

The success of bond issuances depends on the called volume and on issuers' borrowing capacity; these conditions are especially hard to meet for regional authorities. In France, a few authorities like the City of Paris, the Department of Essonne and the Ile-de-France and Pays de la Loire regions currently have a *Euro Medium Term Note* programme in place that enables them to gain easy and regular access to the bond market. In order to meet these challenges, a proposal to set up a local authority financing agency is currently under discussion (AEAFCL, 2011).

Lastly, liquidity still needs to be boosted on the green bond market. Up until now, the main issuers - the World Bank and the EIB - have used private placements⁷ for part of their issuances. This type of transaction does not really provide additional liquidity to the market, although that liquidity could be achieved via the generalisation of public bond issuances. One has estimated that in order to be sufficiently liquid, the green bond market requires "issuance upwards of USD 200-300 billion, made up of bonds rated BBB or higher" (IEA, 2012). That represents from 10 to 20 times the volume of issuances from 2006.

⁶ In fact, the investment choice would then be based on all the issuer's business activities – including those actions financed thanks to the green bonds -, while "conventional" will not finance the measures targeted as part of green obligations, but all other measures.

⁷ I.e. over-the-counter transactions, without going through the market.

Table 1 – Limitations and risks of a green bond, depending on the parties involved

	Limitations and risks	
	For the issuer	For the investor
Conventional barriers	<ul style="list-style-type: none"> - Borrowing capacity limitation 	<ul style="list-style-type: none"> - Liquidity requirements - Critical volume requirement - Risk that the initiative fails and/or that the issuer entity defaults, including: <ul style="list-style-type: none"> ▪ Operational and technological risks; (*) ▪ Country risk, currency risk, etc.; - Accounting and prudential rules (e.g.: Basel III)
Specific green investment barriers	<ul style="list-style-type: none"> - Ability to: <ul style="list-style-type: none"> ▪ implement green initiatives; ▪ monitor initiatives and reporting processes. 	<ul style="list-style-type: none"> - Reputational risk if the financed project does not succeed or does not meet environmental objectives - Regulatory risks (e.g.: reduction in repurchase rates) (*) - Need for internal expertise, particularly when the bond is backed by assets (*) - Lack of feedback (*)

Major limitations and risks when the issuer or the guarantor is:

Public entity

Private company

Note: The development of green bonds varies according to the type of issuer or guarantor. The left column includes limiting factors when the issuer or guarantor is public. When the issuer is a private company, predominant barriers are those seen by the investor, that is to say, the right column. In the second case, we need to distinguish between corporate bonds and those relating to an initiative or a project, which are often asset-backed as a result. The points marked with a star () mainly relate to project bonds. This type of bond is relatively rare, especially since the beginning of the financial downturn.*

Source: CDC Climat Research.

A promising and complementary tool to raise early-stage funding

Green bonds provide a promising solution to early-stage funding issues, and therefore complement existing climate tools as emissions trading systems or carbon offsetting. Thus, the first ones – the green bonds - help to finance the projects made profitable by the second ones – the climate tools.

Bonds are part of the preferred mechanisms envisaged for the operational implementation of the Green Climate Fund at the international level. The purpose of this fund is to manage a significant portion of the new additional funding from developed countries for developing countries' climate policies.

To find out more...

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- About the Climate Bonds Initiative:
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- About the local authority financing agency:
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