GREEN-DEFAULT SWAP

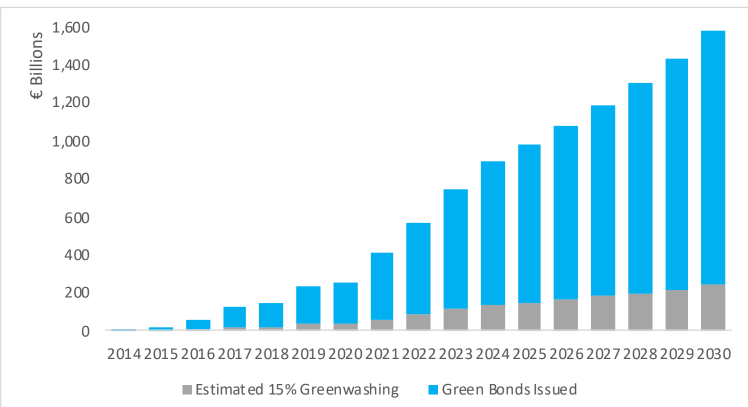
Orient capital flows towards sustainable investments.

SITUATION

Global emissions must drop 50% over the next decade for the world to have a chance of staying at 1.5 degrees of pre-industrial temperatures, thus avoiding the most catastrophic consequences of climate change.[1] The United Nations estimates $35 trillion cost to decarbonize the world.[2] To achieve emission reductions, capital flows must be oriented towards investments targeting the expansion of the sustainable economy. Green bonds are a key financial tool to realize this transition.

OPPORTUNITY

According to Bloomberg, there are close to € 800bn worth of green bonds outstanding. In the last two years, an average of € 200bn were issued in several countries and currencies. The European market accounts for 40% of new issues of green bonds. We anticipate that new bonds starting next year will be issued under the recently published European Union Green Bond Standard (EU GBS). The new standard together with the EU's decision to issue a significant part of their COVID-19 recovery package in green bonds points to a substantial growth of the green bond market in the next few years, hitting a total outstanding amount of € 2T by 2023.[3]



The rapid growth also poses significant challenges as investors worry that the proceeds of the bonds contribute to sustainable goals, such as the transition to a low-carbon, climate resilient, and resource-efficient economy. According to experts' assessments, close to 15% of green bonds could be linked to greenwashing practices.[4] We see an opportunity in creating an instrument that helps investors monitor and encourage compliance of the bond issuers' green commitments.

GEOGRAPHICAL FOCUS

We concentrate on the European market, particularly issuers that value the green bonds to carry the EU GBS label. The EU GBS was developed to respond to barriers in the green bond market development, including reputation risks and standardization for green definitions. It builds on the EU Taxonomy to define and standardize the green verification process. Currently, 46% of the world's green bonds have been issued in Euros and registered in a member country of the EU.

1 | https://www.ipcc.ch/sr15/
2 | https://www.bloomberg.com/news/articles/2020-11-30/bonds-aimed-at-heavy-corporate-emitters-set-to-roll-out-in-2021
3 | https://www.nnip.com/en-INT/professional/insights/global-green-bond-market-set-to-hit-eur-2-trillion-in-three-years-says-nn-ip
4 | (https://www.nnip.com/en-INT/professional/insights/global-green-bond-market-set-to-hit-eur-2-trillion-in-three-years-says-nn-ip)

INVESTMENT THESIS

Rapid growth of the green bond market has raised concerns among market participants on whether the proceeds of the bonds contribute to sustainable goals, such as the transition to a low-carbon, climate resilient, and resource-efficient economy. To address these concerns, we propose the development of a Green-Default Swap (GDS) with a twofold purpose of a) to hedge the risk of greenwashing or issuers not meeting their environmental commitments, and b) as a market-based indicator of an institution's credibility as a sustainable agent.

Target Investors

On the purchasing side of the GDS are green bondholders such as institutional investors and pension funds. On the selling side, the agents buying the green/default risk are insurance and reinsurance companies.

Size

We estimate that 30% of all new green bonds issued in the EU in 2022 will have the EU GBS tag, thus the size of our target market is € 66B of new bonds. In addition, we estimate 10% of current outstanding bonds will migrate to EU GBS: € 20B. Thus, a total of € 86B bonds would be available to be hedged with a GDS. Market penetration, or those that will be willing to purchase a GDS in 2022 is 1%: € 800M.

Scalability

The U.S. green bond market currently comprises 27% of the market and is 5-6 years behind the EU. GDS could extend to other sustainable and social impact bonds. In addition, the EU Taxonomy and EU GBS could be a first step towards a global standard that would inevitably bring some version of it to the United States.

HOW IT WORKS

The functioning of the GDS is very similar to a Credit Default Swap (CDS), the buyer has the right to sell the underlying bond at par value to the seller, allowing the holder to take the non-performing green bond off its books. The exchange will be triggered when a Green Default Event (GDE) occurs. A GDE is defined within the terms of the GDS contract and would include the loss of the EU GBS tag. Failure to present required reports stated on the Green Bond Framework (GBF) or a material deviation of the use of proceeds would also qualify as triggers for the default event. As in a CDS, a cash settlement can replace a physical settlement as the default mechanism for settling the GDS contracts upon the occurrence of a GDE.

Required Regulation

The EU GBS is built on best practices and based on four core components: (1) Alignment with EU Taxonomy. (2) Production of a GBF, which confirms alignment with the environmental objectives. (3) Mandatory Reporting on use of proceeds (allocation report) and on environmental impact. (4) Mandatory verification of GBF and final allocation report by an external reviewer.

THE EU TAXONOMY

A tool to help investors, companies, and issuers navigate the transition to a low-carbon, climate resilient and resource-efficient economy. EU GBS allows issuers to launch EU Taxonomy-aligned green bonds contribute to at least one of the six environmental objectives of the EU Taxonomy Regulation.

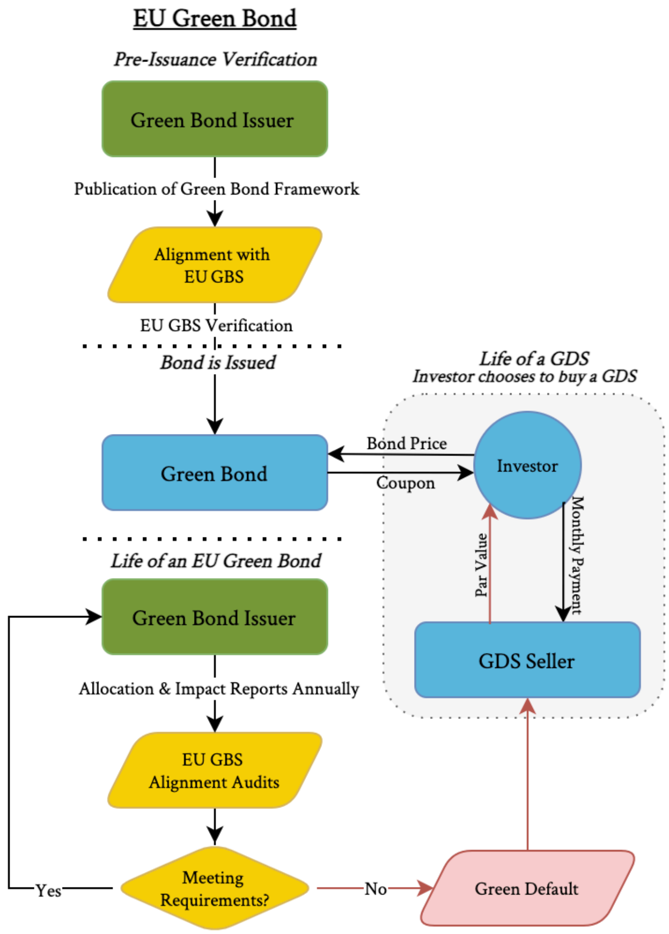
EU Taxonomy Environmental Objectives

IMPACT

This instrument offers protection to investors who care about the sustainable impact of their investments and want to mitigate their investment against green default risks. Broader availability of protection against greenwashing encourages lending to green projects, which then enables the achievement of the EU's sustainability goals. GDS spreads can help lenders and investors as they consider ways to improve the measurement of greenwashing risk, becoming a more dynamic indicator than ratings agencies' scores, second opinions, verification results, etc.

In addition, a GDS helps increase the size of the green bond market by reducing its inherent risk, it also increases efficiency in the allocation of capital by market pricing the risk of a bond being greenwashed. Institutional bondholders can hedge from the risk of greenwashing and not meeting their environmental, social, and governance (ESG) goals. Similarly, other stakeholders can buy protection against the risk of non-compliance of a project that was financed through green bonds.

INVESTMENT DIAGRAM



DUE DILIGENCE

RISKS	MITIGATIONS & ASSUMPTIONS
Force Majeure Natural disasters could reduce or prevent green bond issuer from executing.	• Green commitment default event is clearly defined. • Insurance provided for green project.
Government Regulation/Legal Infrastructure Reversal or relaxation of existing climate commitments and regulations.	• European Green Deal - EU is committed to being climate neutral by 2050. • European Commission Action Plan on Financing Sustainable Growth including EU's Taxonomy Regulation & Green Bond Standard.
Erosion of Trust Investors uncertain of green bonds' climate/sustainability commitments.	• EU Bond Standard standardizes green definitions and verification process.
Reliability of Green-Default Swap Seller GDS Seller is financially able and willing to provide par value if green default occurs	• European Securities and Markets Authority will supervise clearinghouses that provide GDS. This assumes the GDS institutional framework will be the same as a credit default swap.
Market Attractiveness Is there an existing and future market for GDS's?	• The GDS target audience are investors that require accountable and transparent performance. • ESG Investors, Corporate Treasury, and other environmentally focused investors that need demonstrable and reliable green returns.

GDS PAY-OUT EXAMPLE

Green Bond Face Value: € 100

Life of Green Bond: 5 years

GDS Quarterly Payments: (100bp) € 1

	Seller	Buyer
If No Green Default *(85% probability)*		
100bp quarterly x 5 years	€ 20	-€ 20
If Green Default *(15% probability)*		
100bp quarterly x 5 years	€ 20	-€ 20
Bond Value at Par	-€ 100	€ 100
Recovery Price of Bond*	Unknown	--
Total If Default	*< -€ 80*	€ 80
Expected Revenue	> € 5	-€ 5**

** Dependent on market and credit conditions of the issuer.*
*** Price of protection against green default.*