Institut pour la Maîtrise des Risques
Sûreté de Fonctionnement - Management - Cindyniques

La résilience est-elle une mode durable?
Prise en compte de la réglementation (« sustainability »)

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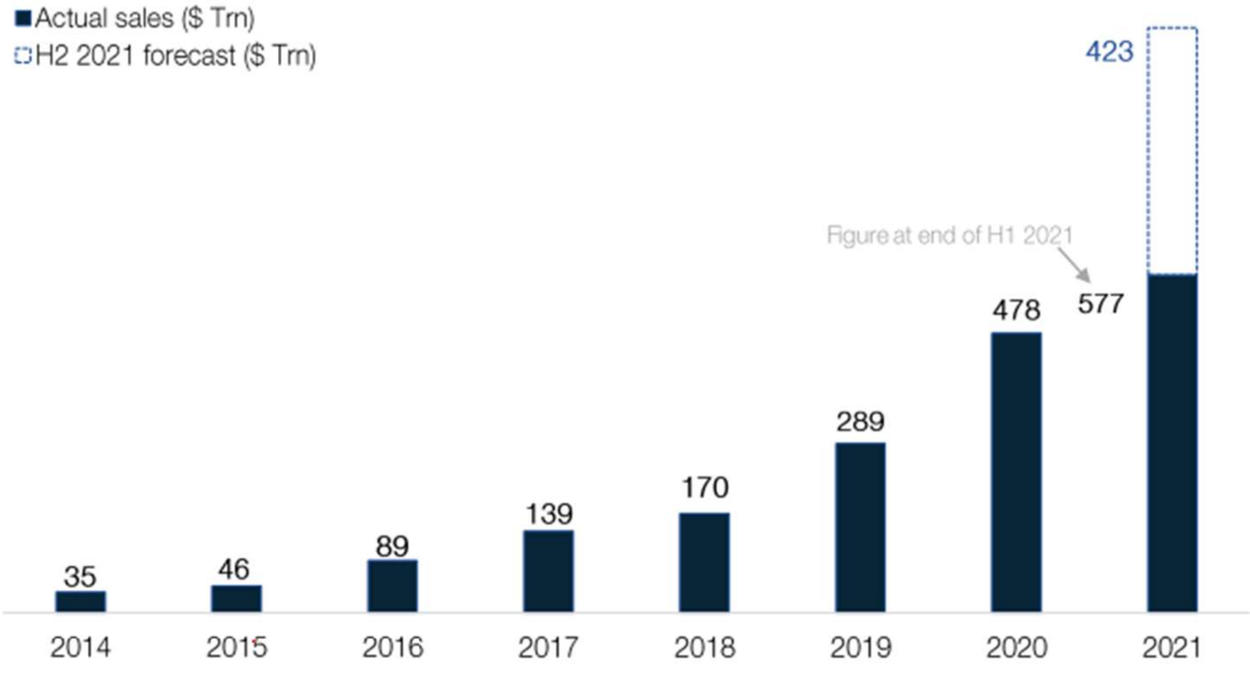
Agenda

- Context
- European Taxonomy
- Proces and examples
- Digital Twins
- Conclusions

Global issuance of ESG bonds is on exponential growth, especially in Europe where ESG is now 'part of every conversation with all corporate issuers' (Citi)

ISSUANCE OF ESG BONDS GLOBALLY (INCL. GREEN, SOCIAL, SUSTAINABILITY AND SUSTAINABILITY-LINKED BONDS)



September 2021
Europcar Mobility Group
Sustainability-Linked Bond
3% 5NC2
EUR 500,000,000
Joint Bookrunner

September 2021
AFD
Sustainable Bond
0.125% 09/2031
EUR 2,000,000,000
Joint Bookrunner
Sustainability Advisor

August 2021
Valeo
Sustainability-Linked Bond
1.000% 08/2028
EUR 700,000,000
Active Bookrunner

October 2020
AIRBUS
Margin tied to Climate rating and internal KPI
EUR 6,000,000,000
Mandated Lead A.

March 2020
engie
Green Bond
1.750% 2.125%
03/2028 & 03/2032
EUR 750m & EUR 750m
Joint Bookrunner
Green Struct Advisor

May 2021
Air Liquide
Green Bond
0.375% 05/2031
EUR 500,000,000
Joint Bookrunner

The multiplication of green labelling initiatives has however led to different levels of compliance and robustness, with some 'greenwashing' risks

OVERVIEW OF SELECTED LABELLING SCHEMES

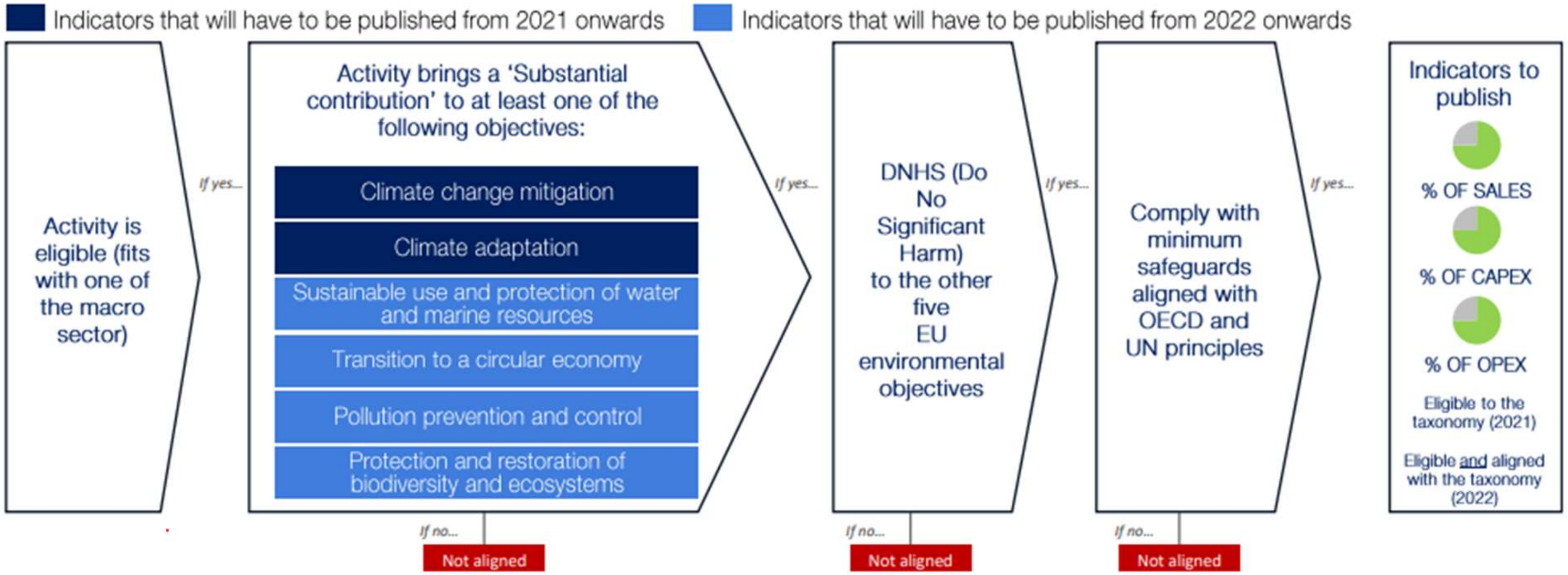
	By	Launch year	Considerations
Green Bond Principles	ICMA[1]	2014	Very broad, allowing many issuers and participants, but **leaving room for greenwashing and uncertainty**
Green Loan Principles	LMA[2] APAC LMA	2018	Broad standard like Green Bond Principles and **minimal process guidance increases opportunities for greenwashing**
Sustainability-linked bonds	ICMA[1]	2020	New opportunities for labelling general purpose bonds and offers real incentives for progress. **Room for greenwashing in bond structure**
Climate Bonds Standard	Climate Bonds Initiative	2011	Strict standard keeping total issuance much lower, but **upholding a high standard and rewarding true impact**
EU Green Bond Standard (EU GBS)	European Commission	2020	Limited to the European Union but could be a catalyst for other regions. Alignment with EU taxonomy to be demonstrated. **High level of initial requirements deters some issuers, but ensures integrity.**

Agriculture and Forestry
Afforestation
Rehabilitation, Reforestation
Reforestation
Existing forest management
Conservation forest
Growing of perennial crops
Growing of non-perennial crops
Livestock production
Manufacturing
Low carbon technologies
Cement
Aluminium
Iron and steel
Hydrogen
Carbon black
Disodium carbonate (soda ash)
Chlorine
Other inorganic basic chemicals
Fertilizers and nitrogen compounds
Plastics in primary form
Electricity, gas, steam and air conditioning supply
Production of Electricity from Solar PV
Production of Electricity from Concentrated Solar Power
Production of Electricity from Wind Power
Production of Electricity from Ocean Energy
Production of Electricity from Hydropower
Production of Electricity from Geothermal
Production of Electricity from Gas (not exclusive to natural gas)
Production of Electricity from Bioenergy (Biomass, Biogas and Biofuels)
Transmission and Distribution of Electricity
Storage of Electricity
Storage of Thermal Energy
Storage of Hydrogen
Manufacture of Biogas or Biofuels
Retrofit of Gas Transmission and Distribution Networks
District Heating/Cooling Distribution
Installation and operation of Electric Heat Pumps
Cogeneration of Heat/cool and Power from Concentrated Solar Power
Cogeneration of Heat/Cool and Power from Geothermal Energy
Cogeneration of Heat/Cool and Power from Gas (not exclusive to natural gas)
Cogen. of Heat/Cool and Power from Biomass, Biogas, Biofuels
Production of Heat/cool from Concentrated Solar Power
Production of Heat/cool from Geothermal
Production of Heat/Cool from Gas (not exclusive to natural gas)
Production of Heat/cool from Bioenergy (Biomass, Biogas, Biofuels)
Production of Heat/cool using Waste Heat
Water, sewerage, waste & remediation
Water collection, treatment and supply
Centralized wastewater treatment
Anaerobic Digestion of Sewage sludge
Separate collection and transport of non-hazardous waste
Anaerobic digestion of bio-waste
Composting of bio-waste
Material recovery from non-hazardous waste
Landfill gas capture and utilization
Direct Air Capture of CO2
Capture of anthropogenic emissions
Transport of CO2
Permanent Sequestration of captured CO2
Transportation and storage
Passenger Rail Transport (Interurban)
Freight Rail Transport
Public transport
Infrastructure for low carbon transport (land transport)
Passenger cars and commercial vehicles
Freight transport services by road
Interurban scheduled road transport
Inland passenger water transport
Inland freight water transport
Infrastructure for low carbon transport (water transport)
Buildings
Construction of new buildings
Building renovation
Indiv. renovation measures
Acquisition and ownership of buildings
ICT
Data processing, hosting and related activities
Data-driven climate change monitoring solutions

If a company has some eligible activities in its portfolio, it must follow a 3-step process to demonstrate their alignment with the taxonomy

To demonstrate the alignment of their activities with the taxonomy, some companies will seek support from 3rd parties (audit/consulting firms, SW solution developers…), with some of them having already structured their offer

THE 3-STEP PROCESS TO DEMONSTRATE ALIGNMENT WITH THE EU TAXONOMY



The taxonomy in practice (1): H2-supporting facilities will have to meet specific standards to demonstrate a 'Substantial contribution' to Climate change mitigation

EU TAXONOMY CONDITIONS OF APPLICATION REGARDING HYDROGEN'S PRODUCTION AND STORAGE

GREEN/LOW-CO2 ENERGY PRODUCTION	H2 PRODUCTION	TRANSPORT, STORAGE, DISTRIBUTION
• Facilities operating at life cycle emissions lower than **100gCO2e/kWh**, declining to **0gCO2e/kWh by 2050**, are eligible • This **threshold will be reduced every 5 years** in line with a net-zero CO2e in 2050 trajectory • Assets and activities must meet the threshold at the point in time when taxonomy approval is sought • For activities which go beyond 2050, it must be **technically feasible to reach net-zero emissions**	• Direct CO2 emissions from manufacturing of hydrogen: **5.8 tCO2e/t Hydrogen** in alignment with energy thresholds in the taxonomy • Electricity use for hydrogen produced by electrolysis is at or lower than **58 MWh/t Hydrogen** • Average carbon intensity of the electricity produced that is used for hydrogen manufacturing is at or below **100 gCO2e/kWh** • The thresholds cover **both direct and indirect emissions**	• The infrastructure is used to store **taxonomy-eligible hydrogen** • Infrastructure that is required for **zero direct emissions transport** is eligible under the transport section

The taxonomy in practice (2): A material impact for investors eager to obtain the EU Ecolabel that might translate in strong re-arbitrage in assets allocation

TAXONOMY IN PRACTICE: CRITERION(1) FOR EQUITY AND BONDS TO QUALIFY TO EU ECOLABEL

Bond – Illustrative portfolio composition

	Bond compliant with EU Green Bond Standards (which itself refers to the Taxonomy)?
Company A	Y
Company B	Y
Company C	Y
Company D	N
Total Portfolio	75%

>70%, thus bond fund eligible to proposed EU Ecolabel criteria

Equity – Illustrative portfolio composition

	(1) Green sales(€)	(2) Highest Green capex(2)	(3) Total sales	(4) Weight	(4)*[(1)+(2)]/(3) Contribution
Company A	40	20	100	30%	18%
Company B	30	15	100	30%	14%
Company C	20	0	100	40%	8%
Total portfolio					40%

<50%, thus equity fund not eligible to proposed EU Ecolabel criteria

As investors' appetite for Green bonds keep expands, companies with access denied to the Sustainable finance market may end up paying a premium on their interest rates

Many remaining questions

- How ESG requirements may be integrated in design and deployment of DT
- How DT of an industrial asset can be validated and certified from ESG point of view?
- Beyond sustainability features, how to measure social performances to be injected in DT?

Sustainability consequences

- Strong effect on industry roadmap, strategy, R&T, risk analysis activity…
- European Ecolabel to asign to vertuous activities or change initiatives
- → strongest action leverage of European Green Deal

Merci de votre attention

Questions ?