

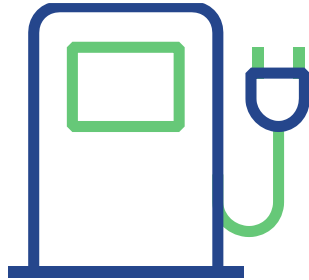
Embedding Climate & Environmental Risk drivers into the business model: at what stage is the journey for Banks?

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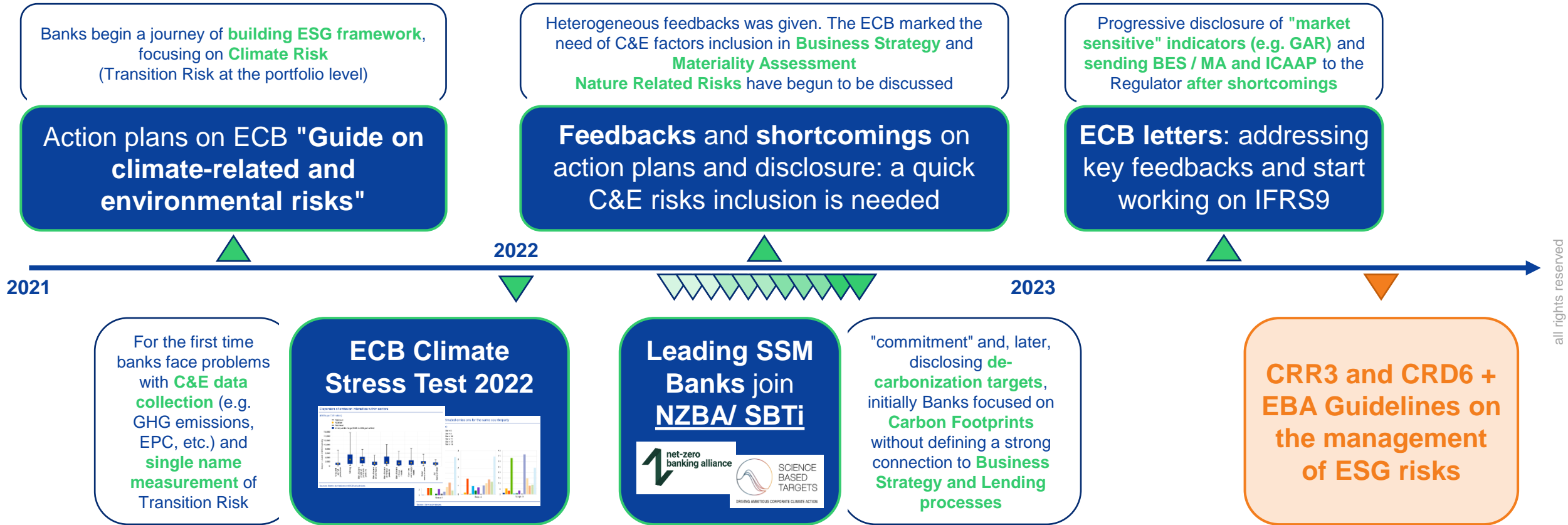




- **Climate & Environmental Risks, regulatory context and related challenges**
- At what stage is the journey for Banks?
- What's new?

A short "history" of Climate & Environmental risk and opportunities

We started in 2019, today we are supporting more than 30 Banks in EU (and outside EU)



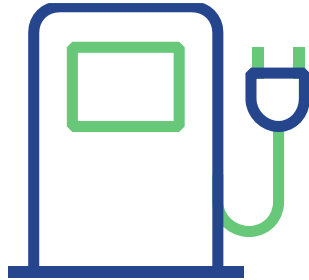
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Facing last activities for addressing Letters / OSI findings on MA, BES and IFRS9 enhancement represents today the key challenge for SSM Banks across Europe on C&E risks. CRD6 and EBA Guide the next ones

Transition plans' challenges and opportunities: the relevance of customized climate scenarios

Challenges...

- Conduct C&E risk analysis over medium to long term horizons, including **dynamic balance sheet simulations**
- Develop a **flexible and comprehensive approach** to address the multiple and heterogeneous C&E risk transmission channels
- Use models that estimate C&E risks at a **higher level of granularity**, avoiding sector-specific approaches
- Monitor and estimate the carbon footprint associated with financing/investment activities using the most **granular sector-specific decarbonization scenarios available**
- Incorporate the latest **climate scenarios** into planning and stress testing exercises, with a NetZero target for 2050
- Incorporate **physical risk with maximum granularity**, considering more severe scenarios than under current policy



- Climate & Environmental Risks, regulatory context and related challenges
- **At what stage is the journey for Banks?**
- What's new?

At what stage is the journey for Banks? (1/2)

Use case POV

	The journey so far...	...upcoming challenges
Materiality Assessment & ICAAP	<ul style="list-style-type: none"> MA: from sectoral to granular and multi-period approaches, from vulnerabilities to potential financial impacts ICAAP with Credit Risk assessment and dynamic balance-sheets Enhanced data availability and quality (GHG, NFCs) 	<ul style="list-style-type: none"> Increasing coherence across C&E risk identification processes (TCFD, ESG P3, ...) Widening risk drivers and covered asset classes (Nature-related risks, Transition Risk for individuals) Measuring RepRisk Action plans challenging and sensitivities – EBA
RAF & Business Environment Scan	<ul style="list-style-type: none"> Developed KRI and KPIs with focus on the risk side for RAF enhancement and for BES (ECB letters) Focus on climate-sensitive clusters, aggregated targets, monitoring purpose 	<ul style="list-style-type: none"> Cascading on business processes of RAF KRIs Measuring impacts on NII and NFCI within the Business Environment Scan – C&E does not mean ECL only!
Credit Risk Models	<ul style="list-style-type: none"> First (few) overlays on provisioning – top-down approaches considering mostly indirect impacts First trial of inclusion of C&E drivers into IRB (LGD) models 	<ul style="list-style-type: none"> IFRS9 framework to be "contaminated" by C&E risk drivers considering asset class / transmission channel peculiarities (e.g. PD Pit or forward-looking curves?)
Business Opportunities and lending processes	<ul style="list-style-type: none"> Credit policies acting on top-polluting sectors First credit strategies cascading NZBA targets Haircuts on new collateral values due to PR and TR (wip – under discussion) 	<ul style="list-style-type: none"> Strategic Plans including measured C&E levers Optimization of credit portfolios considering mitigation and adaptation finance risk-adjusted profitability

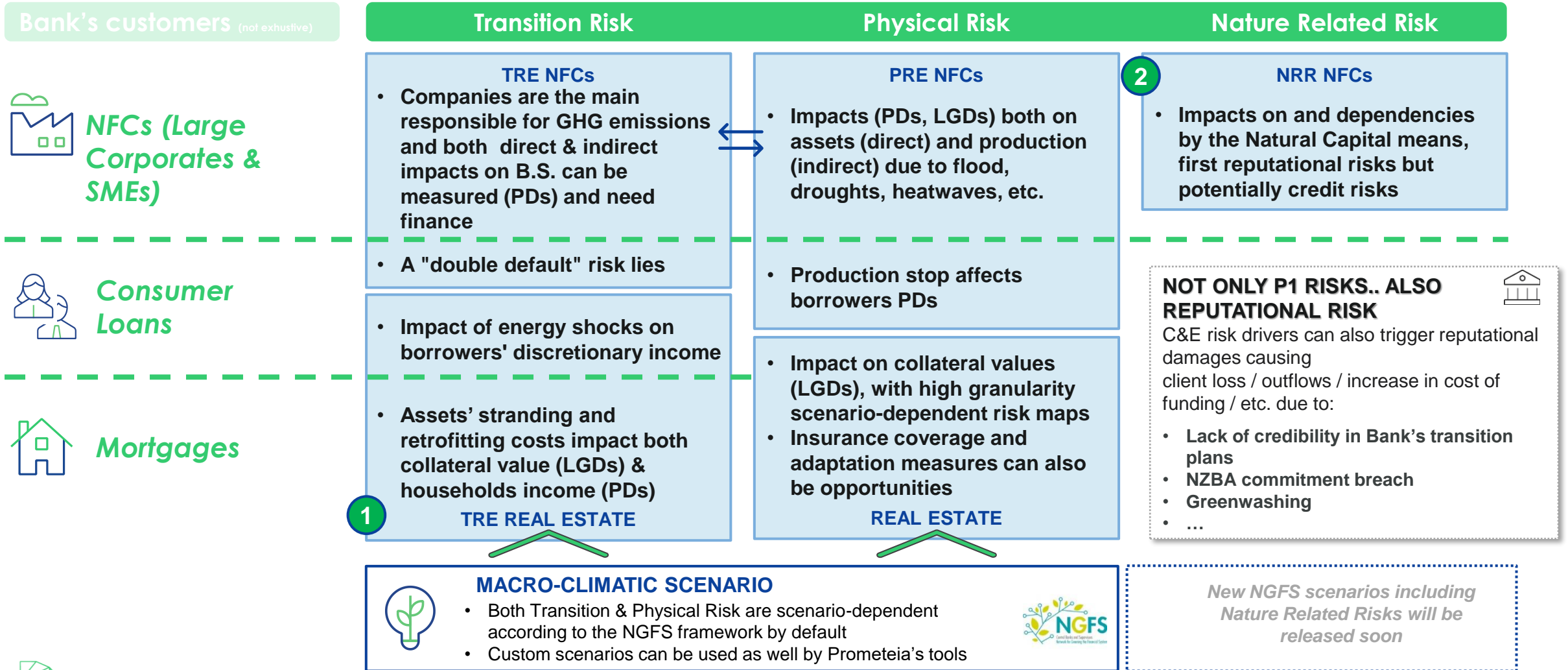
Not exhaustive view of our offer, other key elements are related to mortgages portfolio, nature-related risks, etc.

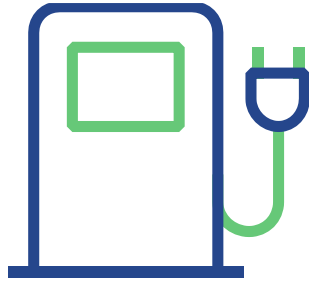


At what stage is the journey for Banks? (2/2)

Transmission channels POV

n Focus next slides





- Climate & Environmental Risks, regulatory context and related challenges
- At what stage is the journey for Banks?
- **What's new?**

1 Transition Risk Engine: Real Estate

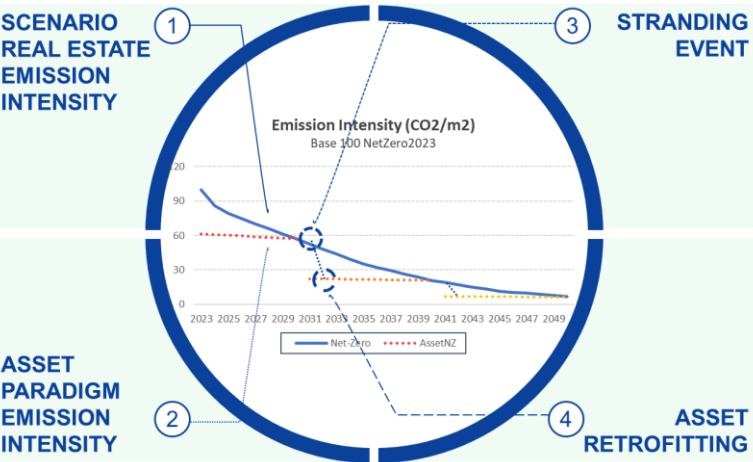
Risks and opportunities measuring for low energy-performance mortgages



The **Transition Risk RE Engine** combines **scenario variables** with projections of **energy efficiency costs** of buildings, generating **impacts** on the **market value** of assets (**LGD** channel) and the **disposable income** of individuals (**PD** channel)

Scenario and stranding events

1. **Target emission path** driven either by a **Net Zero** commitment or by a **Policy Action**
2. **Each property path** encloses energy sectors decarbonization actions
3. **For each stranding event a retrofit is triggered**, and the asset moves to the lower emission level



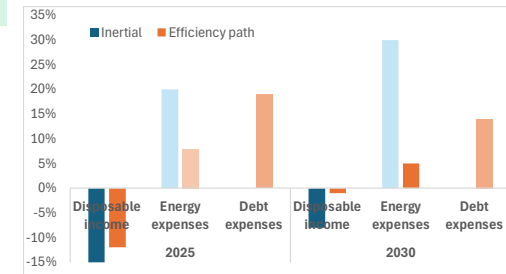
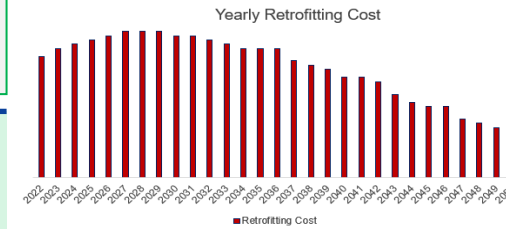
Retrofitting costs projection

- **Stranding means interventions** (or not interventions) **leading retrofitting costs** and a **remix of the energy sources**, which, combined with **energy commodity prices**, allows to estimate real estate management costs year by year

Paradigm ITF12AG	Sample Valorization
Climatic Zone	F
Country	Country X
Surface Area	Between 100 and 200 sq.m
House Type	Apartment
EPC class	G
Energy consumption (Electricity)	605.12 KWh/y
Energy consumption (Gas)	6120.76 m ³ /y
CO ₂ Emission	73.995 Kg/m ²
Opaque building shell costs (sq.m)	883,27 €/sqm
Opaque building shell numerosity	459
Transparent building shell costs (sq.m)	367,54 €/sqm
Transparent building shell numerosity	232
Winter climate control costs	11.520,00 €
Winter climate control numerosity	65
Summer climate control costs	7.200,00 €
Summer climate control numerosity	0

Calculating impacts

Future costs could impact the value of real estate Energy prices and financial expenses affect the **discretionary income** of individuals



LGD Impact
Property Value
Transition Finance

PD Impact
Disposable income



2 Nature-related risks

Risks and opportunities measuring for low energy-performance mortgages



TNFD proposes an **assessment process** for **managing nature-related risks and opportunities**: the **LEAP** approach, a 4-step process aimed at supporting the **internal assessments** (*Locate, Evaluate, Assess and Prepare*). **Prometeia's** tools reflects this approach

Locate Activities & Sector Materiality

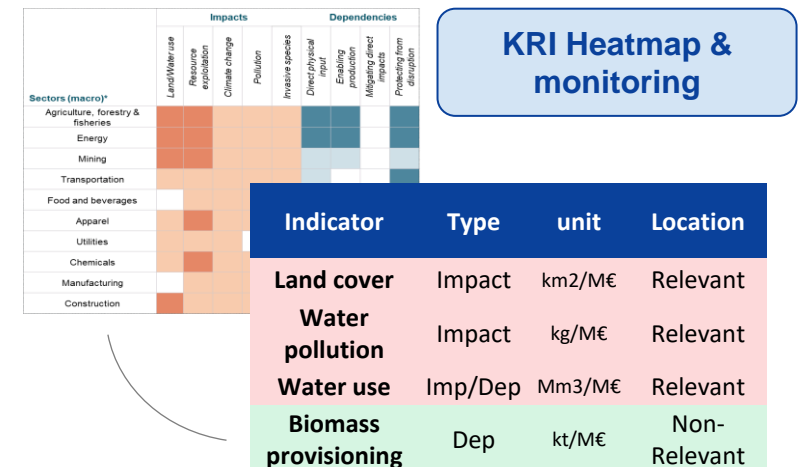
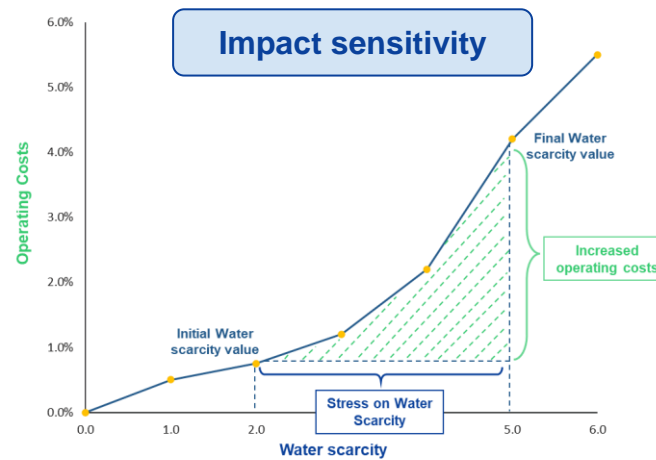
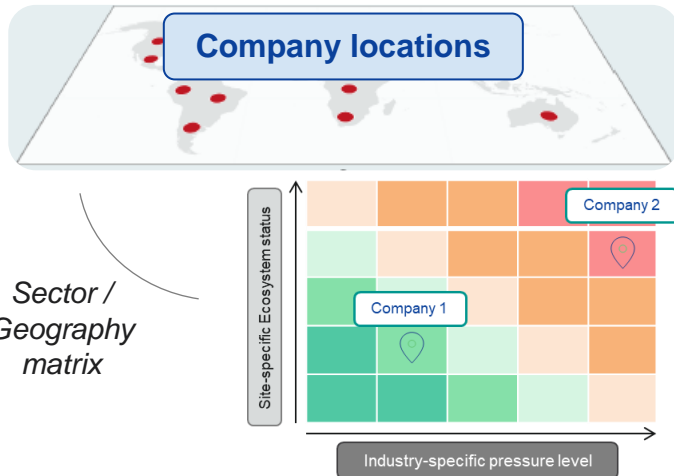
1. Companies' Headquarters and local production sites are geolocated
2. Natural-capital Maps provides the basis for analyzing ecosystem services and pressures on biodiversity
3. The sectoral materiality of the dependency or impact is evaluated taking into account the sector's specificity and value chain

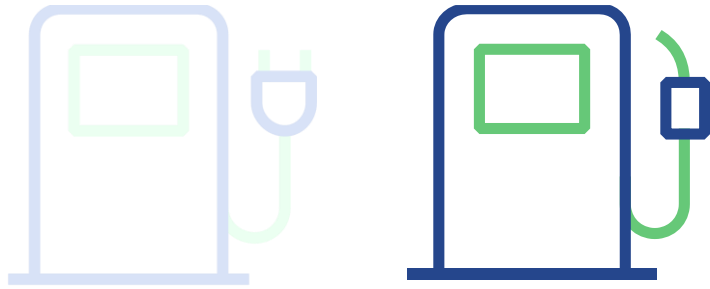
Impact Assessment

- Sensitivity analysis is performed in order to provide for **scenario-dependent financial impacts assessment**
- **Specific** production and **damage functions** for sector/impacts and dependencies guarantee **solid** and **granular analysis**
- The risk indicators obtained impacts **directly affect balance sheet items** (e.g., operating costs)

Business strategy

- Define the business strategy to support mitigation and adaptation to Nature-related risks:
- Sectoral Assessment and NRR inventory (KRIs)
 - Downscaling to single-name Assessment (monitoring of critical values based on sector/area)
 - Client engagement requesting active mitigation strategy on relevant KRI





How long will us stay in the hype with poor mitigation actions?



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