The Green Transition for Financial Institutions

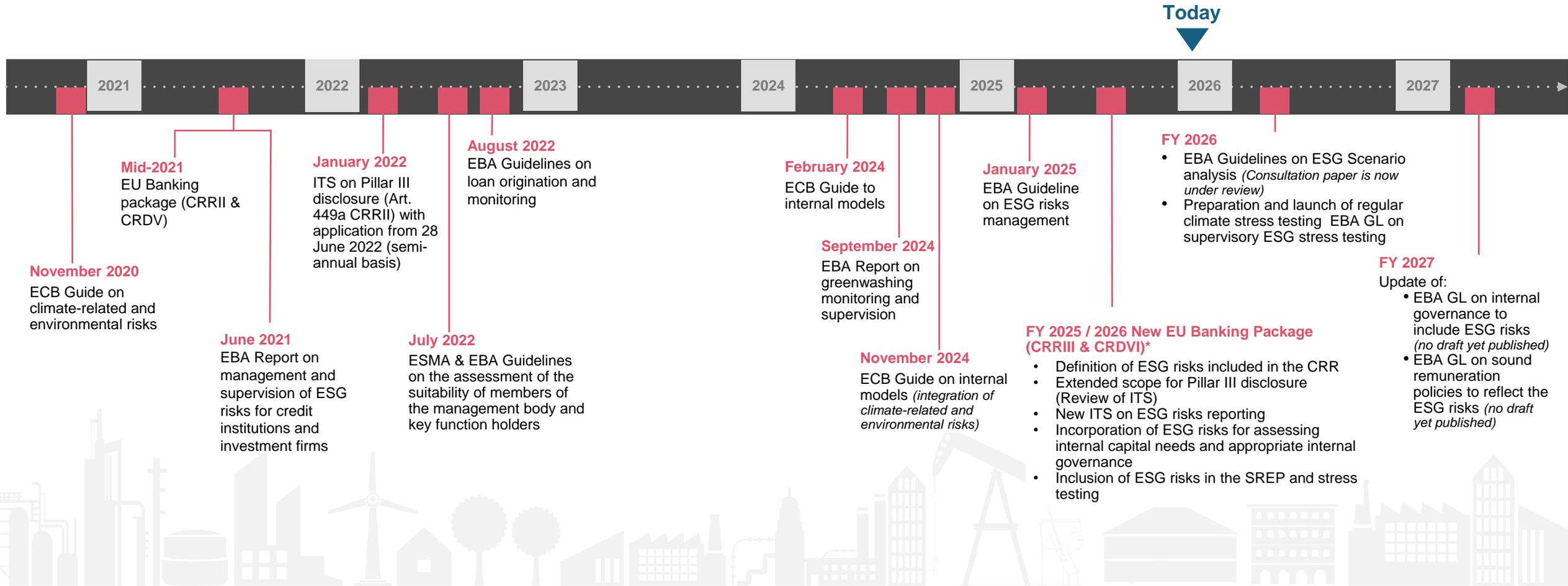Fulfilling EBA Guidelines on ESG Risks

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Agenda

1. Regulation, risk and alignment
2. Transition plans
3. Challenges
4. Assessing financed emissions
5. Estimating GHG reduction paths
6. Conclusions

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How the prudential framework is evolving

Today

Timeline: 2021 · 2022 · 2023 · 2024 · 2025 · 2026 · 2027

November 2020
ECB Guide on climate-related and environmental risks

Mid-2021
EU Banking package (CRRII & CRDV)

June 2021
EBA Report on management and supervision of ESG risks for credit institutions and investment firms

January 2022
ITS on Pillar III disclosure (Art. 449a CRRII) with application from 28 June 2022 (semi-annual basis)

July 2022
ESMA & EBA Guidelines on the assessment of the suitability of members of the management body and key function holders

August 2022
EBA Guidelines on loan origination and monitoring

February 2024
ECB Guide to internal models

September 2024
EBA Report on greenwashing monitoring and supervision

November 2024
ECB Guide on internal models *(integration of climate-related and environmental risks)*

January 2025
EBA Guideline on ESG risks management

FY 2025 / 2026 New EU Banking Package (CRRIII & CRDVI)*
- Definition of ESG risks included in the CRR
- Extended scope for Pillar III disclosure (Review of ITS)
- New ITS on ESG risks reporting
- Incorporation of ESG risks for assessing internal capital needs and appropriate internal governance
- Inclusion of ESG risks in the SREP and stress testing

FY 2026
- EBA Guidelines on ESG Scenario analysis *(Consultation paper is now under review)*
- Preparation and launch of regular climate stress testing EBA GL on supervisory ESG stress testing

FY 2027
Update of:
- EBA GL on internal governance to include ESG risks *(no draft yet published)*
- EBA GL on sound remuneration policies to reflect the ESG risks *(no draft yet published)*

* Date reflects CRD VI transposition into national law, CRR III is applicable since 1st January 2025

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EBA Guidelines on ESG risk management (EBA/GL/2025/01)

- Account for ESG risks when developing and implementing the overall **business and risk strategies**
- Set out dedicated actions to monitor and address material ESG risks via a Transition plan

- **Continuous monitoring** of ESG risks, set early warning indicators
- Establish **institution-wide targets**

- Clearly define **risk appetite** to address all material ESG risks
- Integrate ESG risks into **internal control frameworks** across all **lines of defense**.

ESG (central)

Wheel segments: Strategic planning · Risk identification · Risk assessment · Risk aggregation · Risk steering · Risk monitoring

- **Materiality assessment** (periodic reassessment)
- Mapping of ESG factors and **transmission channels**

- Progressively develop more **advanced qualitative and quantitative measures**
- Establish robust systems for gathering & consolidating **ESG risk data**, define data quality
- Proposed methodologies: **sector-based, scenario-based, exposure-based**
- Ensure robust **scenario selection process**

- Define and establish **measurement approaches**, **metrics incl. limits and internal controls** for each risk type
- Integration into **ICAAP/ILAAP**

More detailed guidance

Identification and measurement

- Increased level of **granularity** when it comes to requirements
- Clearly identified **main approaches**:
    - Exposure-based (less than 3 years): geolocation and transition vulnerability
    - Portfolio-based (3 to 5 years): Alignment and gap vis-à-vis net-zero 2050 and 55% reduction from 1990 levels
    - Scenario-based (at least 10 years): future guidance is included into respective EBA Guidelines
- More emphasis on **data governance & gaps remediation** as well as progressive **development of more advanced qualitative and quantitative measures**

Management and monitoring

- More emphasis on **risk management tools and business implications**: financial terms, conditions, pricing, limits, diversification.
- More emphasis on **monitoring metrics**, especially when it comes to measuring alignment: GHG emissions, GAR, portfolio alignment, "brown sectors", collateral's energy efficiency.

Prudential transition plan

- Request to develop **short, medium and long-term plans**: focusing on risks linked to the EU objective of reducing GHG emissions by 55% compared to 1990 levels
- **Targets and monitoring metrics**: to track plan execution

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Structure of a transition plan

Baseline Assessment	Targets & Metrics	Strategic Actions	Risk Management Integration	Governance & Accountability	Monitoring & Reporting
• Assess exposure • Verify current alignment	• Establish Paris-aligned and EU-aligned goals and trajectories	• Outline specific actions	• Incorporate climate-related risks • Include ESG scoring in client onboarding	• Define roles & responsibilities • Ensure board-level oversight • Incentives and training	• Track progress • Regular reporting • Third-party assurance
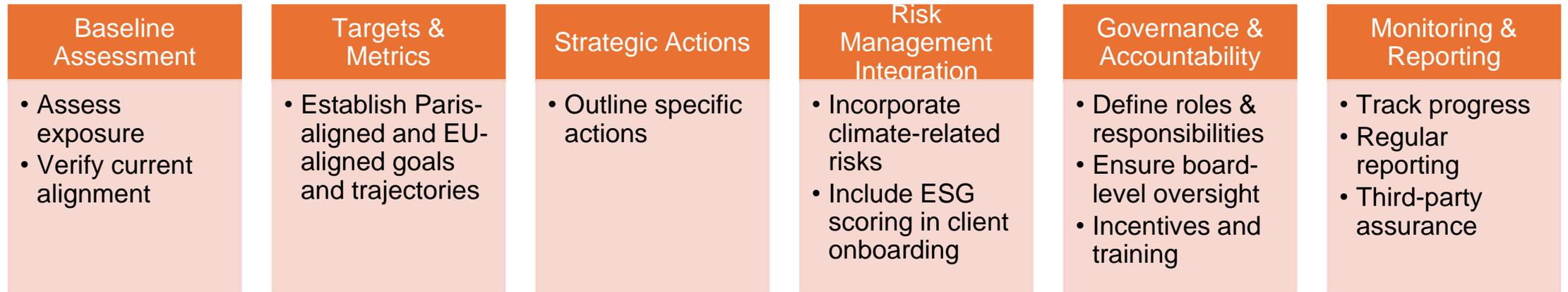
Structure of a transition plan (ctnd.)

Strategic Actions

Portfolio Decarbonisation	Green Financing & Incentives	Client Engagement & Transition Support	Divestment & Allocations	Product and Capital Allocation
• Reduce 1-3 missions • Reduce exposure to carbon-intensive sectors • Set exclusion criteria • Increase allocation to green sectors	• Green loans • Sustainability-linked loans • Green mortgages for energy efficient homes • Tighten terms for clients without a transition plan	• Work with clients on transition plans • Link interest margins to ESG KPIs • Support SME clients • Offer advisory services	• Set timelines for exiting certain assets • Reallocate capital to ESG funds • Divest from companies with revenues from thermal coal over a certain threshold	• Green construction loans • Transition bonds for hard-to-abate sectors • Energy retrofit financing

Example of 2025–2030 Interim Targets

Sector	Current Exposure	2030 Target	Action
Oil & Gas	€2.5B (6% of book)	€0.5B (1.5%)	Gradual divestment and exposure cap
Coal	€600M (1.5%)	€0	Immediate halt to new financing; full exit by 2027
Renewable Energy	€1.2B	€4.0B	Annual growth +25%
Green Mortgages	€900M	€2.5B	New product suite for EPC A-B homes

Example of Divestment and Reallocation

Action	Example Metric	Target
Reduce fossil fuel exposure	% of portfolio	-50% by 2030
Increase green assets	% of new lending	+40% by 2027
Client alignment	% of clients with transition plans	80% by 2026
Financed emissions	tCO$_2$ financed	Net-zero by 2050

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Challenges

1. The hypothetical nature of net-zero plans
- Largely aspirational and built on long-term targets
- Assumptions rather than observable dynamics

2. Data quality and availability
- Client-reported emission data
- Often incomplete, inconsistent, non verified

3. Risk of greenwashing and misaligned incentives
- Temptation to reclassify or overstate green exps.
- Marketing-driven rather than real decarbonization

4. Conceptual and Methodological Gaps in Green Finance
- Linear relationship between green funding and emission reduction
- Bias in existing tools; May favour larger firms and crowd out innovation
- Wrong treatment of Scope 3

5. Integration into Risk Frameworks
- Reputational rather than integrated risk management issue
- Challenging to translate transition scenarios into capital

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Approaches to GHG Assessment

- Life Cycle Assessment (LCA)

  Provides a **full view** of the emissions embedded for the production process, following it from raw material extraction to disposal (Moss et al., 2008). ☐   Complexity for resource and data constraints in SMEs.

  Simplified LCA might prioritize emission hotspots to ease implementation.

- Tailored SME – Sector-Specific Tools

  Based on tools designed for accessibility and **adaptability** across sectors (e.g. Eleftheriadis & Anagnostopoulou, 2024). E.g. Agri-food tools account for seasonal variability. Focus on key emission sources: fertilizers, transportation, land use (e.g. Alromaizan et al., 2023).

- Environmentally-Extended Input-Output (IO) Modeling

  Links economic activity to environmental impacts based on national accounts. **Useful** for SMEs with limited primary data. However, the input IO table aggregations may **reduce granularity** (e.g. Berners-Lee et al., 2011 on UK data) ☐   As an additional unit of a product is demanded, a certain combination of other (intermediate) products is required to produce that unit, each associated with specific environmental impacts.

- Multi-Regional Environmentally-Extended Input-Output (MRIO) Modeling

  Tracks emissions in **global supply chains** addressing harmonization challenges. However, it suffers from uncertainty challenges and error margins in transnational emissions estimates. (e.g. Schulte et al., 2024).

Environmentally-extended IO Modelling

Exiobase data (EXIOBASE 3.9.5 updated at 2022) ☐   it covers 28 European countries, 16 major economies 5 regions for unrepresented economies. 163 industries.

Basic Input-output model $\mathbf{x} = \mathbf{Ax} + \mathbf{y}$, where
- x = total output;
- A = technical coefficients matrix;
- y = final demand.

→ Compute the Leontief Inverse as $\mathbf{x} = (\mathbf{I} - \mathbf{A})^{-1} \mathbf{y}$
It captures direct and indirect inputs needed per unit of final demand.

Include environmental impacts (Miller and Blair, 1985) and introduce a vector of environmental coefficients:

$$e=[e1, e2, …, en]^T$$

The overall environmental impact is expressed as:

$$E=e^T x$$

Can rewrite the EEIO model as:

$$E = e^T (I - A)^{-1} y$$

Operational Steps

For each sector, calculate **direct** emissions intensity as:

$$Gi = gi / xi$$

where gi = emissions in sector i; xi = total output of sector i

The matrix E of CO_2 emissions originating from each sector i per unit of final demand in each sector j is expressed as:

$$e_{ij} = l_{ij} \times g_i$$

Adjust emissions factors using country-specific inflation rates (2023–2024).

$$Etotal_{ij} = y \times e_{ij}$$

represents the overall **indirect** emissions based on company expenditures across sectors.

Example

- Estimating the combustion-related carbon dioxide (CO_2) equivalent emissions of an Italian SME in the textile industry (Manufacture of wearing apparel; dressing and dyeing of fur (NACE 18)).

Type	Country	Sector	Amount (MEUR)	Overall Emissions (kg CO₂)
Revenue	Italy	*Manufacturing - Manufacture of wearing apparel; dressing and dyeing of fur (NACE 18)*	19,000,000€	
Expenditure	Italy	*Electricity, Gas & Water Supply - Not specified category*	2,610,000€	
Expenditure	Italy	*Manufacturing - Not specified category*	2,610,000€	**547,611 kg CO₂**
Expenditure	Italy	*Transport & Storage - Not specified category*	2,350,000€	
Expenditure	Italy	*Health & Social Work - Not specified category*	2,350,000€	
Expenditure	Italy	*Professional & Administrative Services - Not specified category*	2,350,000€	

The tool provides SMEs with actionable emissions estimates also with limited inputs

Example (cntd.)

Total Emissions: 547,611 kg CO_2

Source	CO_2 Emissions (kg)
Revenue-based (Scope 1 & 2)	240,368
Cost-based (upstream Scope 3)	307,243

The value is aligned with the estimate provided within the company non-financial reporting

Uncaptured Scope 3 emissions estimates

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esg2go

- A fact-based sustainability rating and reporting tool helping SMEs to monitor and improve sustainability management.

- Unbiased and fair comparability

- Targeting win-win ability and holistic double materiality score

- A scoring system in all ESG categories

- An automated reporting system that can transfer to further reporting.

https://esg2go.org/en/

Benchmarking initial emission values with actuarial method

"Fair Value" of emissions with respect to:

- Class-specific emissions

- Collective emissions

- Credibility weight z_C depend on the discrimination power of the available data

$$CO2\widehat{_{cred}}(SMI) = z_C * \widehat{CO2}_C + (1 - z_C)\widehat{CO2}$$

$$z_C = \text{Max}\left(0, 1 - \frac{\widehat{\text{Var}_C}(O)}{S(C) * \left|(\widehat{CO2}(O) - \widehat{CO2_C}(O))/2\right|^2}\right)$$

Estimating emission reduction path (an example of target setting)
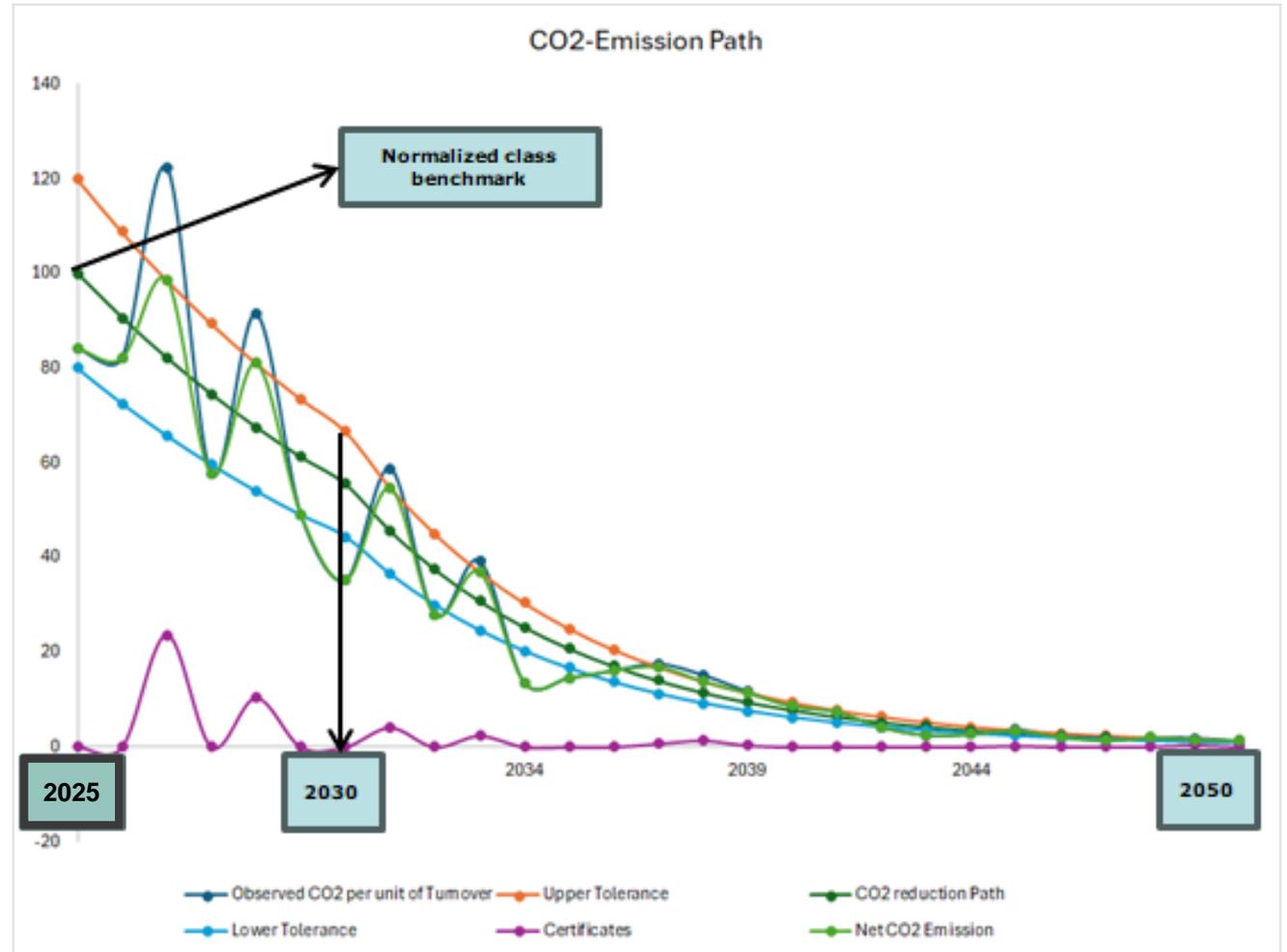
- Paris climate targets 2030 and 2050
- Fair peer-to-peer comparability
- 2025-2030 CO2 – Emission Reduction = 44%

By means of interpolation between the two targets we obtain:

$$RP(SME, t) =$$
$$\begin{cases} B(SME) * \left(T_{2024,2030}\right)^{(2030-t)/6}, & for\ 2024 \le t \le 2030 \\ RP(SME, 2030) * \left(T_{2030,2050}\right)^{(2050-t)/20}. & for\ 2030 < t \le 2050 \end{cases}$$
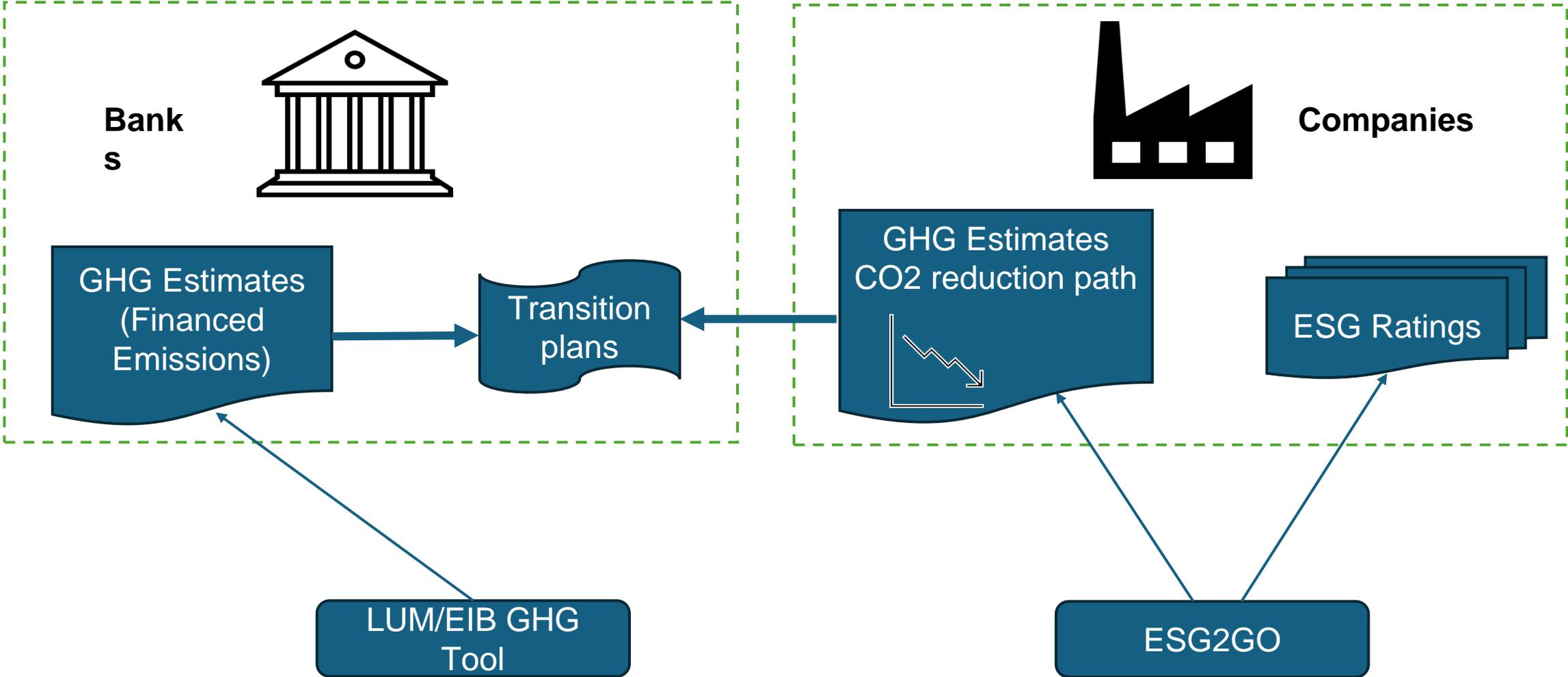
Reporting items for management purposes:

- CO2-Reduction path for at least five years
- CO2-Emission at valuation date
- Upper and lower bounds driven by error tolerance interval in % CO2-Reduction Path
- Observed Net-Emission path

CO2-Emission Path

Normalized class benchmark

2025   2030   2034   2039   2044   2050

Observed CO2 per unit of Turnover — Upper Tolerance — CO2 reduction Path
Lower Tolerance — Certificates — Net CO2 Emission

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Enabling the Green Transition

Thank you