

## Zeche Zollverein

Sustainability strategy

29 September 2021



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## Five key sustainability trends are forcing companies to integrate sustainability into their strategy



Companies need to *timely integrate sustainability into strategy*, operations and business decision making in order to:

**Reposition & transform the business** towards a circular model with zero emissions

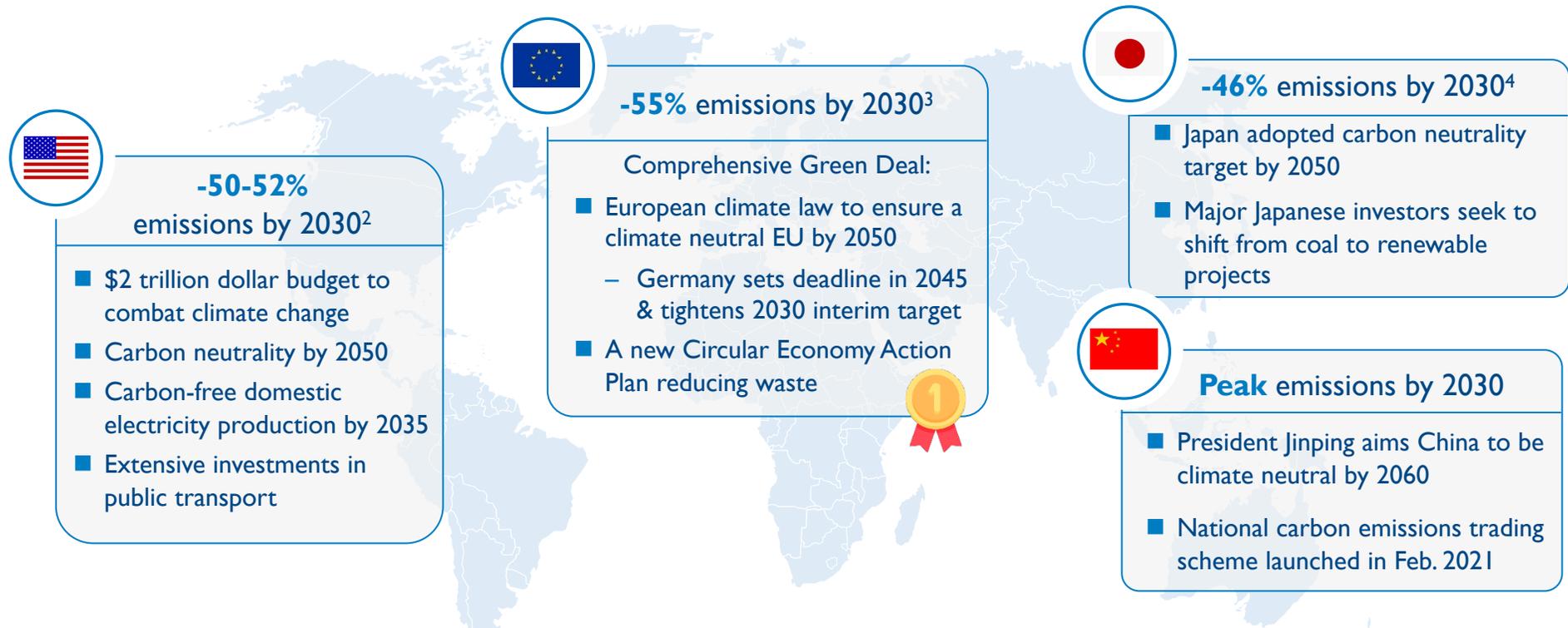
**Exploit opportunities** for differentiation & new sources of value creation

**Reduce risk** by timely anticipation & mitigation and reallocating capital



## The four largest economic blocks in the world have all set ambitious greenhouse gas reduction targets for 2030, backed by substantial and increasingly tight legislation

### GHG<sup>1</sup> reduction targets & accompanying plans



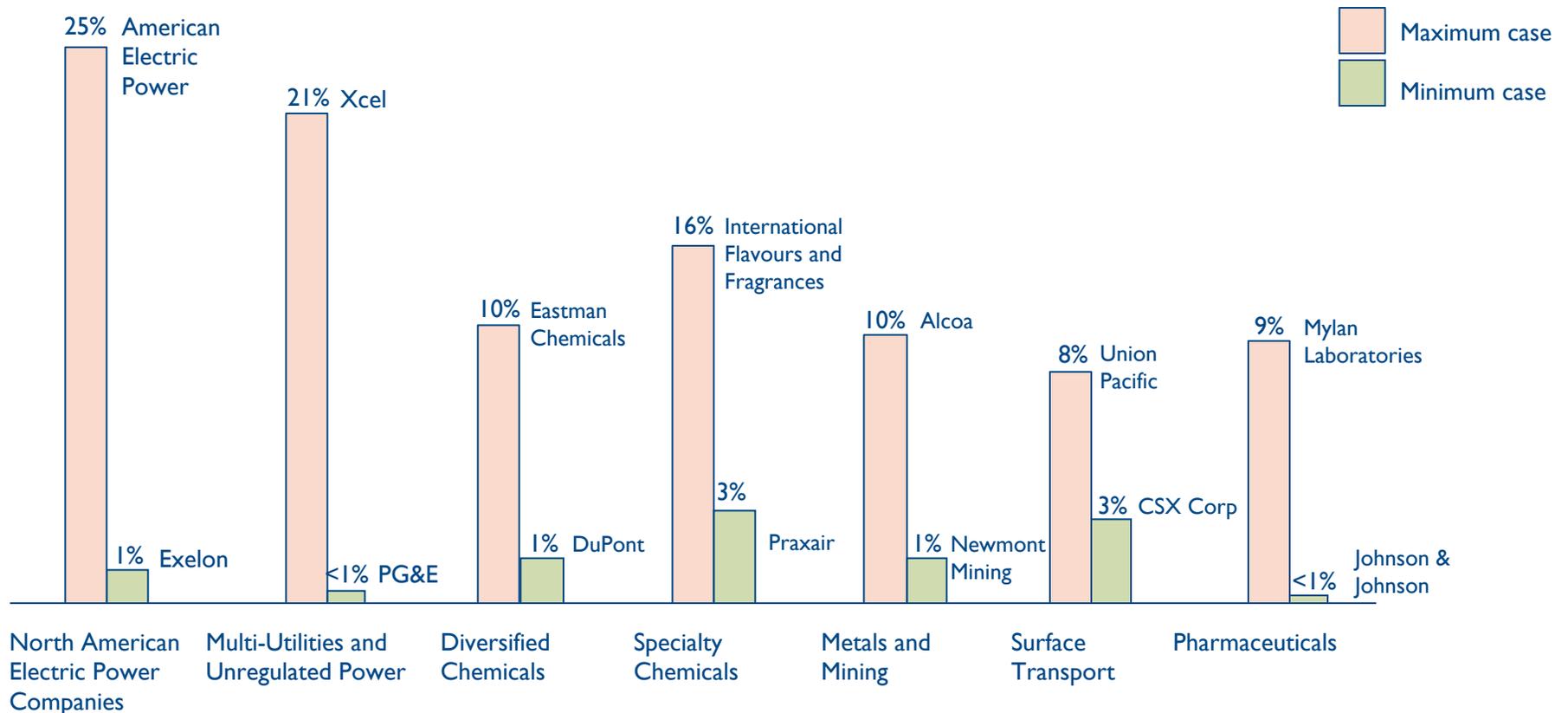
Consequently, ever more countries all over the globe are implementing carbon taxes and Emission Trading Systems (ETS) to ensure realization of the targets

1) GHG= GreenHouse Gas; 2) Base: 2005; 3) Base: 1990; 4) Base: 2013  
Source: Biden campaign, Financial Times, Guardian, European Commission, WEF, Arthur D. Little



# The cost of compliance to carbon regulation has different impacts not only across industry but critically within industries

CO<sub>2</sub> Regulatory cost of compliance<sup>1</sup>  
% of EBITDA



1) Cost of compliance is defined as the dollar value of all CO<sub>2</sub> emissions based on current prices on U.S. voluntary carbon market  
Source: Innovest, Arthur D. Little



## Banks need to report on their funding of non-aligned businesses – resulting in ‘carrot and a stick’ approaches to change their clients’ sustainability performances

Illustrative

### Example: Barclays aiming at net zero by 2050



#### Eliminate ‘financed emissions’

- Barclays’ works towards becoming a **net zero bank by 2050** - received **overwhelming shareholder support** at their AGM in May 2020
  - Already net zero for emissions from our own operations (Scope 1 and 2)
  - Now focus on *eliminating* the emissions of their clients (**‘financed emissions’** or: the stick)
  - Across all sectors, **starting with Energy & Power** (as responsible for ~75% of global emissions)



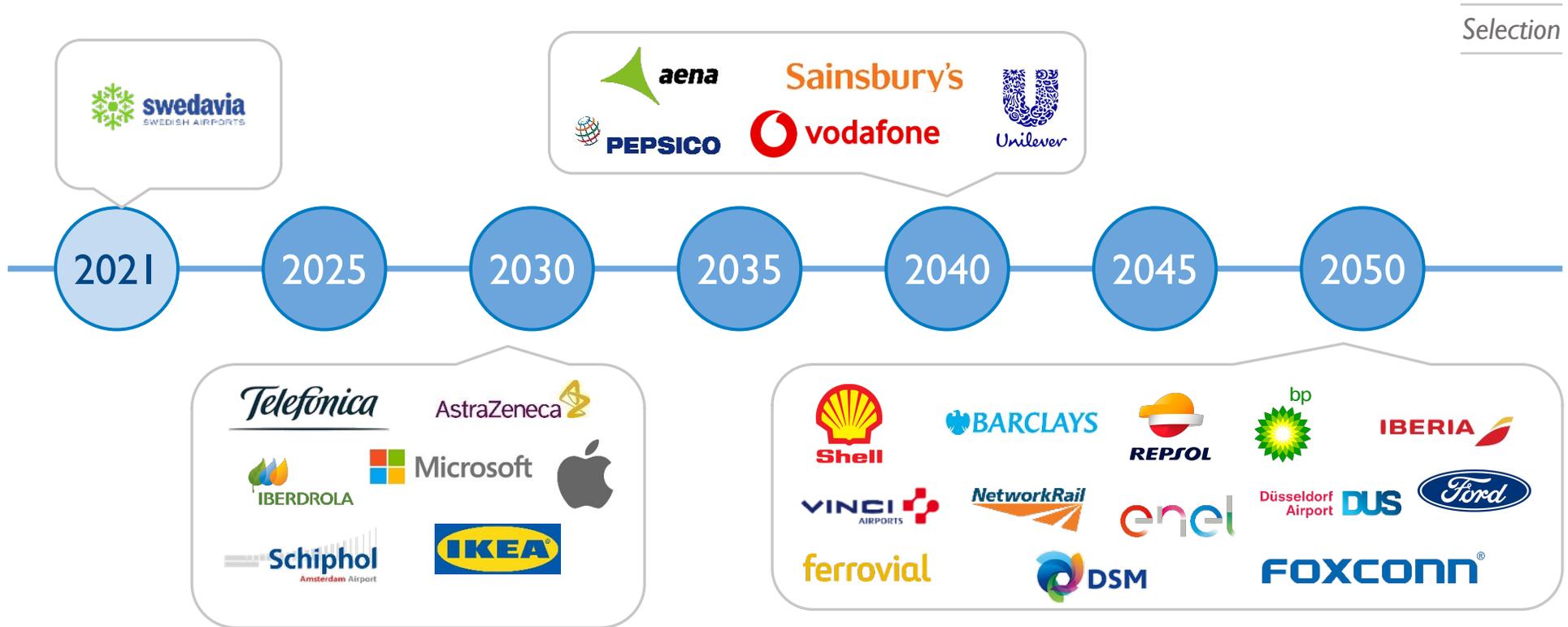
#### Finance green initiatives

- Commitment to specific goals to help accelerate the transition to a low-carbon economy (the carrot):
  - **£100bn of green financing by 2030** (green financing in Q1+2 2020 was £13bn, growth ~200% vs. 2019)
  - **£175m investment in green innovation** for principal investments in equity of innovative and environmentally-focused companies by 2025

It is crucial for energy intensive businesses to develop a sustainability strategy that is aligned with the global climate goals, as they can otherwise expect both difficulties in access to funding and unfavorable financing conditions



## More and more companies are voluntarily committing to reaching net zero GHG emissions in 2050, or even earlier



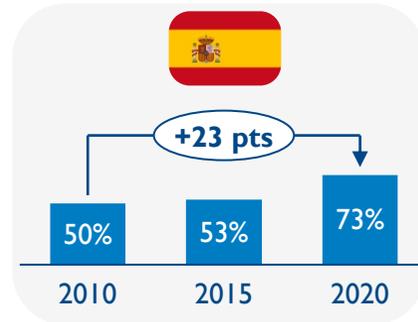
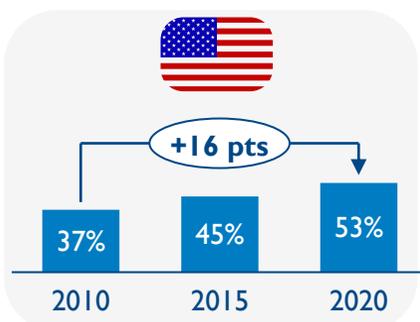
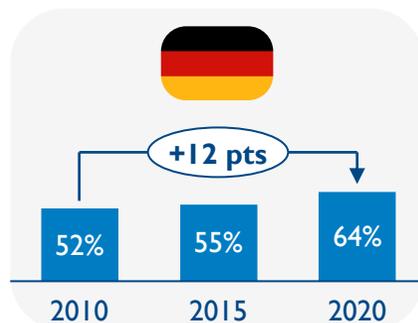
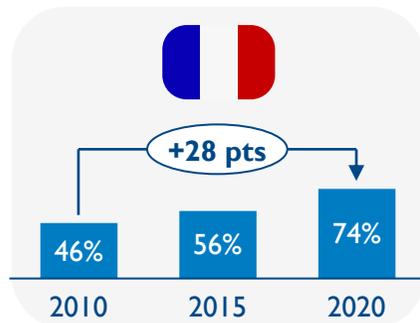
▶ A growing amount of leaders have already adopted **internal carbon prices** ranging from **10 to 100 Euro per ton CO<sub>2e</sub>** as key instrument to reduce their GHG emissions



## Public concern with climate change is growing and has resulted in legal action by civilian action groups against governments and private companies to reduce GHG emissions

### Public concern related to climate change ...

% of correspondents who say climate change is a very serious problem



### ... is resulting in legal action by the public



vs.



- Public action group Urgenda demanded that the Dutch government would reduce the national emissions of GHG
- In Dec. 2019 the Dutch Supreme Court mandated the Dutch state to reduce GHG emissions by 40% by 2020<sup>1</sup>
- Similar cases are being brought to court in i.a. DE, ES, FR, KR



vs.



- Public action group Milieudefensie demanded that Shell would reduce its GHG emissions
- In May 2021 a NL court found Shell's commitment to reduce emissions insufficient and ruled a 45% reduction (including action requirements for scope 3)
  - Just months *after* Shell had stepped up its commitments
- Shell is currently appealing the verdict

<sup>1</sup>) Compared to 1990  
Source: PEW Research, Poll of HSBC and Barclays customers by environmental NGO Market Forces Arthur D. Little

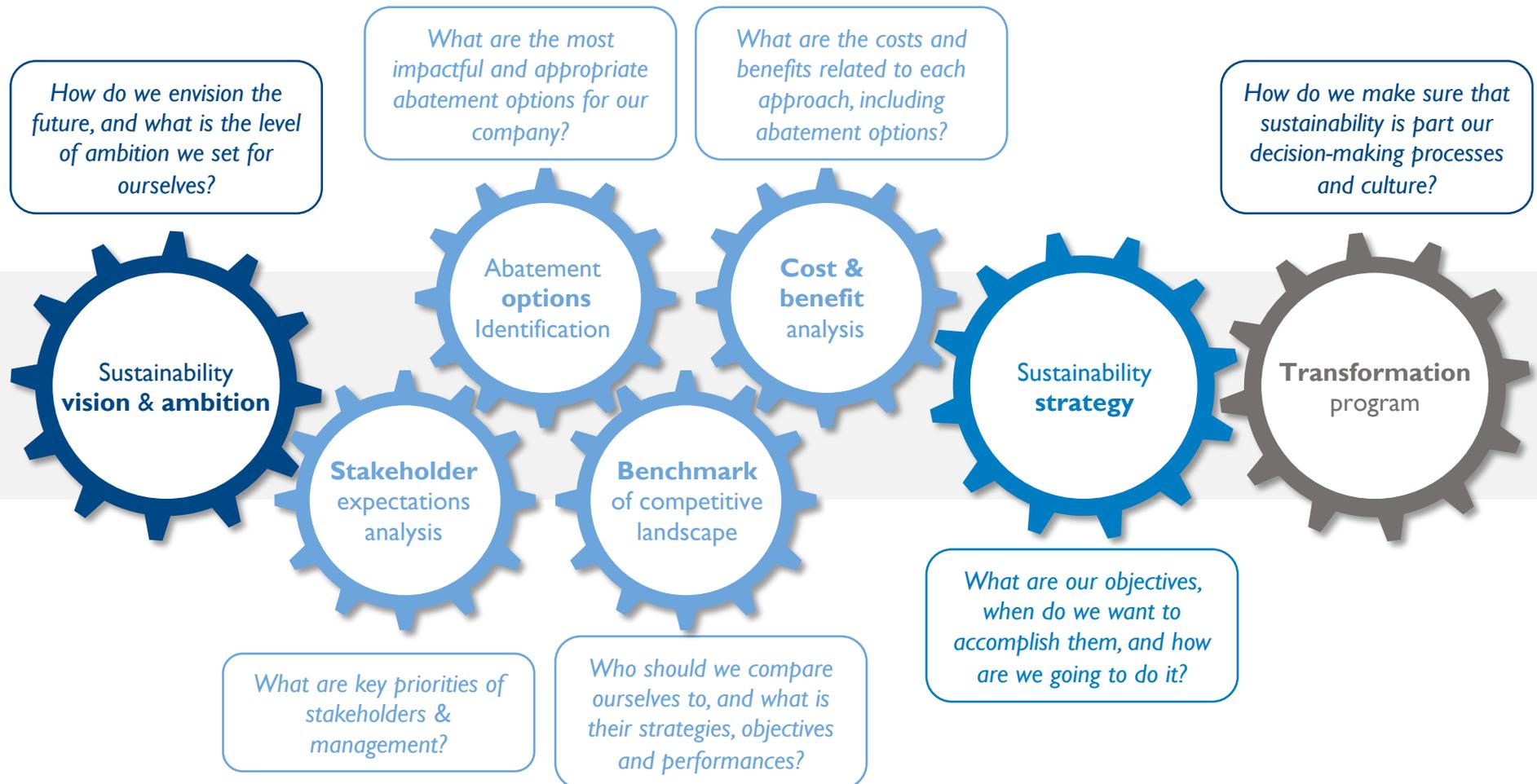
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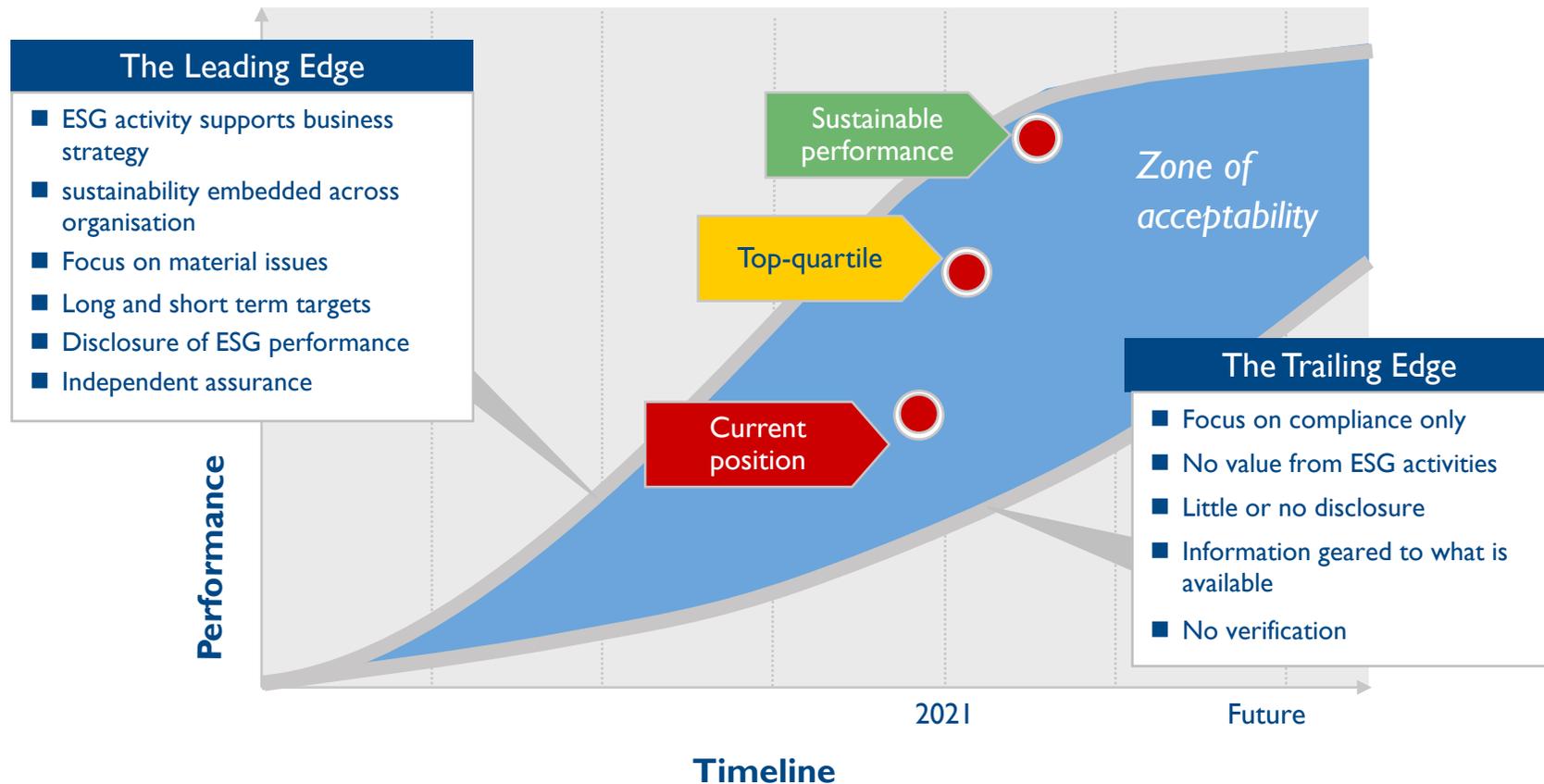
A robust sustainability strategy is the result of an interactive analysis, comprising various building blocks



# What is the desired level of sustainability performance?

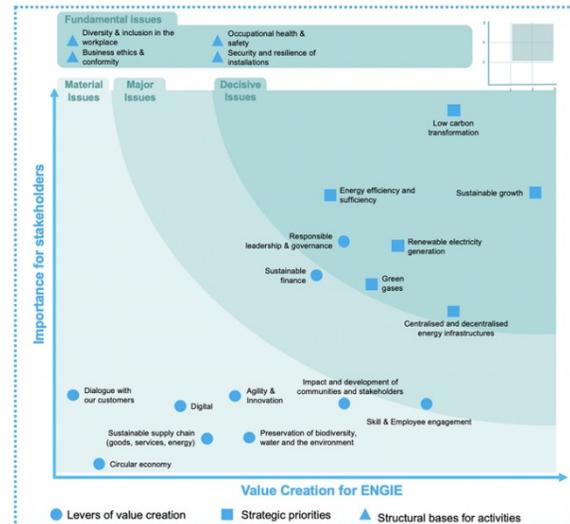
*Illustrative*

## The Zone of Acceptability



Source: Arthur D. Little

To understand the company's impact on stakeholders, a materiality matrix can be used to prioritize the most pressing sustainability issues



Governance	Environment	Social
1. Sustainability Governance*	11. GHG Emissions	22. Employee Management
2. Business Ethics	12. Energy	23. Corporate Culture
3. Risk Management	13. Water	24. Human Capital Development
4. Business Continuity Management	14. Air Emissions	25. Occupational Health and Safety
5. Efficiency and Reliability of Power Plants*	15. Waste	26. Community Engagement
6. Process Improvement and Innovation	16. Mineral Waste	27. Community Development
7. Supplier Management	17. Specific Waste from Power Plants	28. Resettlement
8. Customer and Product Stewardship	18. Biodiversity	29. Indigenous Peoples
9. Economic Distribution	19. Mine Closure	30. Human Rights
10. Socioeconomic Compliance	20. Mine Subsidence	31. Corporate Philanthropy
	21. Environmental Compliance	

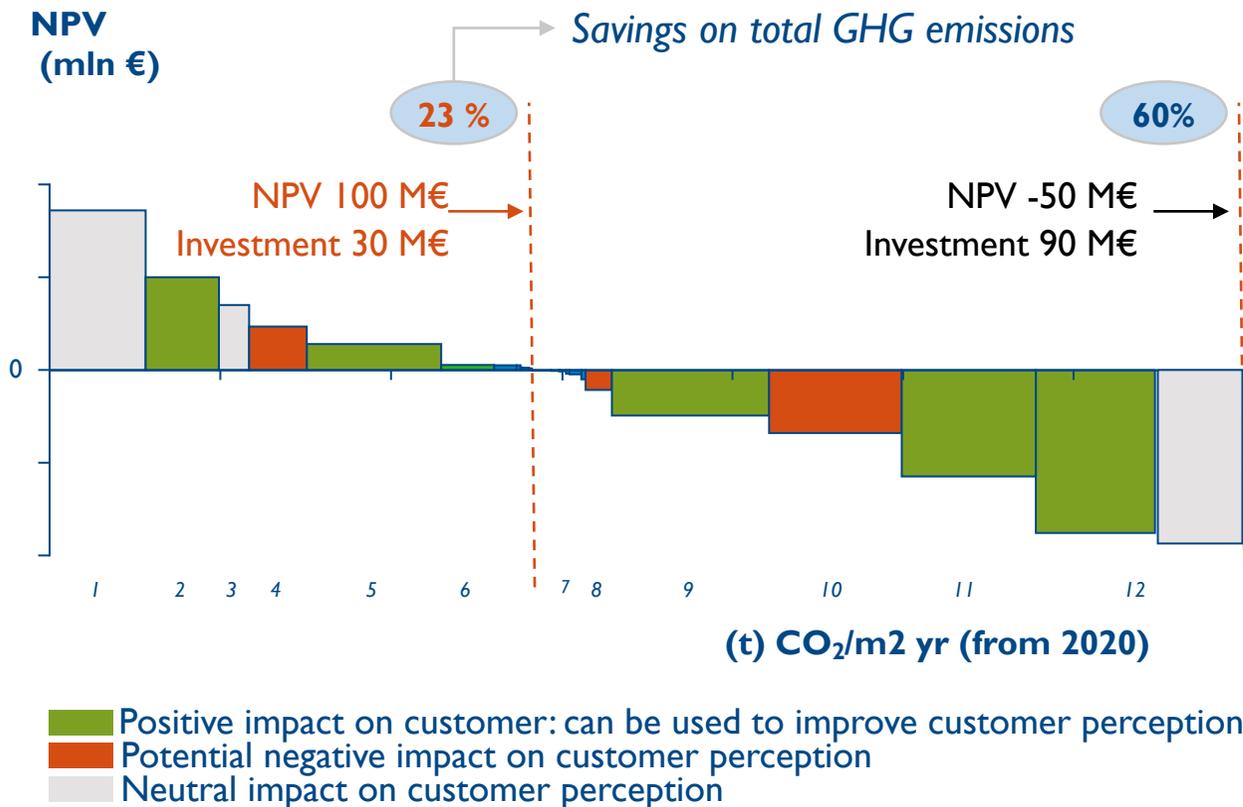
The Materiality Index assesses priority issues for companies based on their **importance to stakeholders** and **significance or impact** to the company

Source: Various company websites, Arthur D. Little analysis

Various abatement options should be identified and then compared based on their respective busines

Abatement options: NPV vs. mitigated CO<sub>2e</sub>

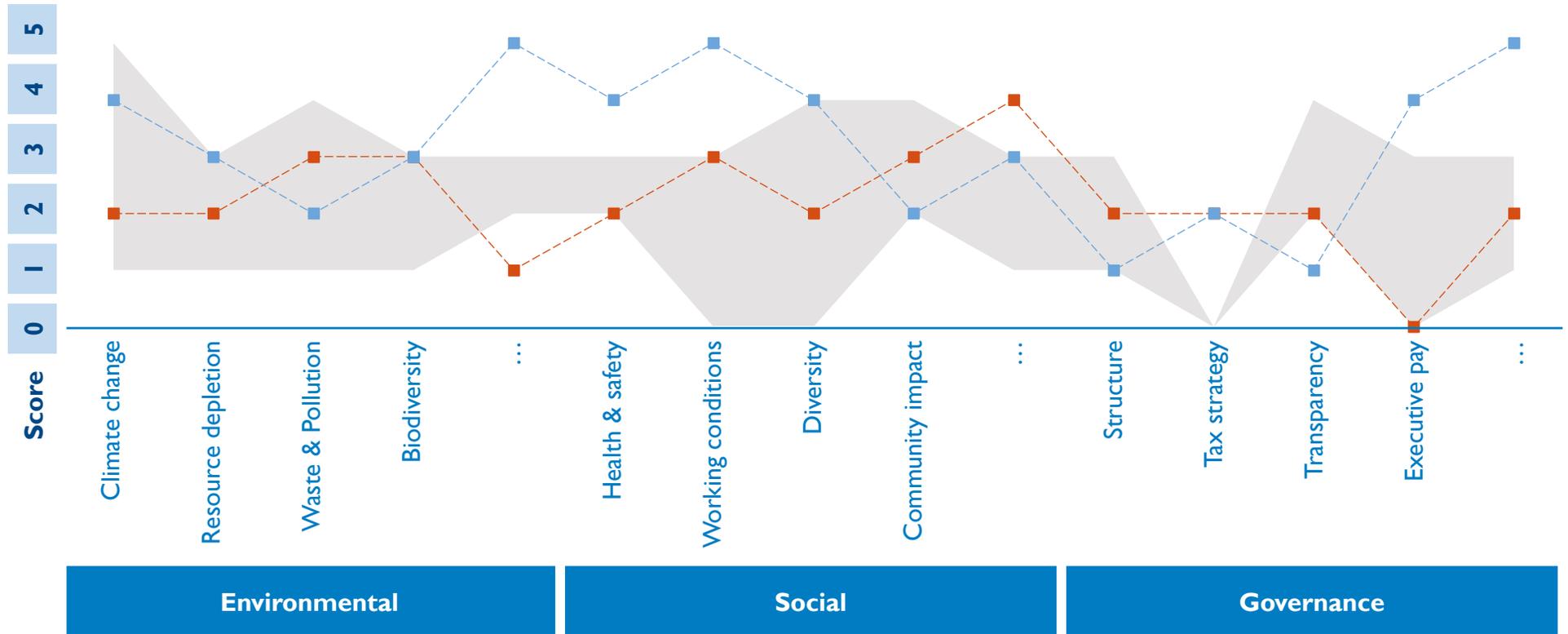
Disguised example



**Examples of GHG mitigation measures:**

- Measure 1 Green procurement of raw materials
- Measure 2 Supply-chain optimization
- Measure 3 Developing low-carbon alternative products
- Measure 4 Changes to cooling units
- Measure 5 Sourcing of 'green' electricity
- Measure 6 Investments in solar or wind farms

## Benchmarking indicated where the client was falling short vs. future investor expectations and competitor performance



**Legend**

---■--- Company performance

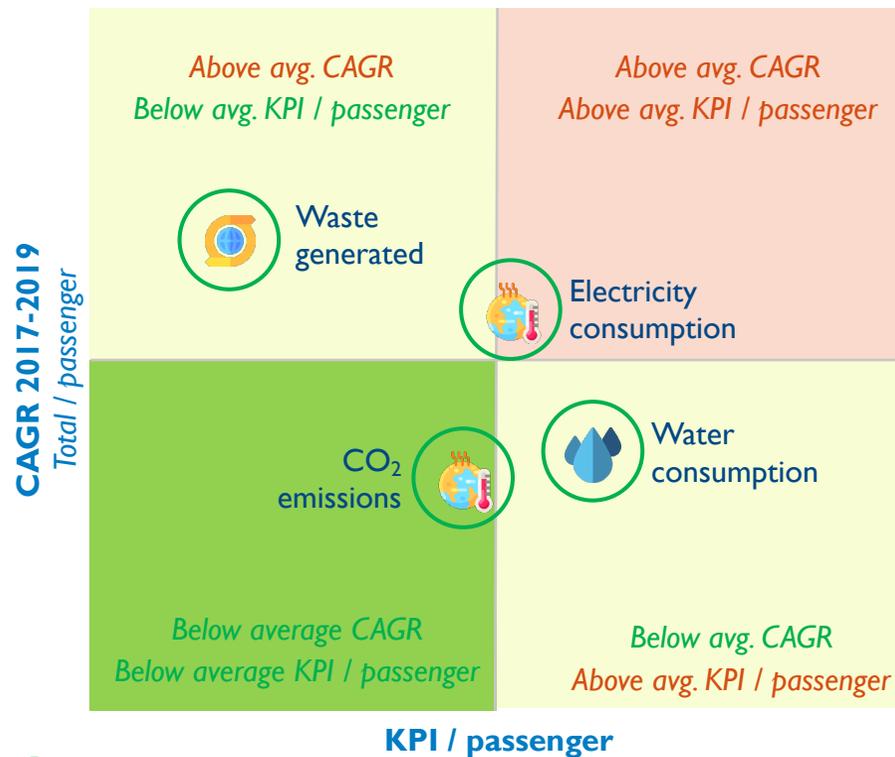
---■--- Stakeholder expectations

■ Competitor performance

A leading airport operator analyzed its sustainability performance on several KPIs vs. its peers, showing it where to focus its attention

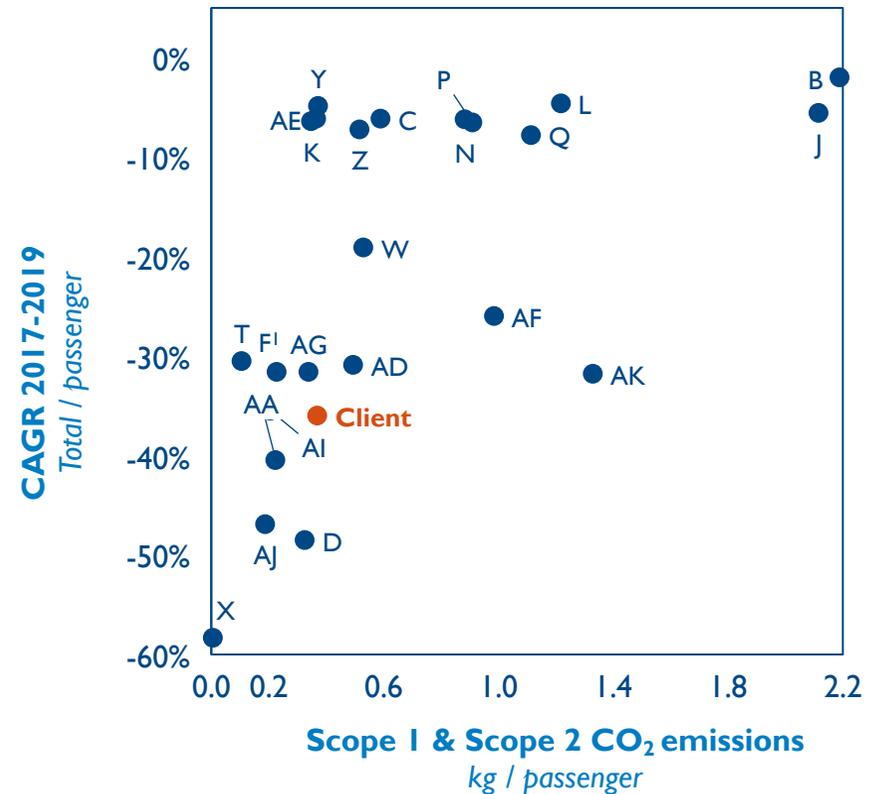
Sanitized

Overall performance client



Position client for KPI

GHG emission performance client



Source: Arthur D. Little

Sustainability initiatives come at a cost that should be carefully considered, but in return, companies benefit from higher returns and other advantages

## Benefits



**Up to 40% higher shareholder return** compared to industry peers



**5-10% lower cost of debt financing** via sustainability linked loans and bonds



**Up to 50 % reduction in employee turnover** rates



**5-7% stock outperformance** during regulation changes and supply chain shocks



**~9% higher growth of products** that are perceived by the market to be more 'green'

# A solid sustainability strategy includes a well-defined and preferably quantifiable sustainability KPIs

## Sustainability performance indicators

Non-exhaustive

<p>Typical KPIs</p>	<ul style="list-style-type: none"> <li>Carbon intensity (kg CO<sub>2</sub>eq/kWh)</li> <li>GHG emission (tCO<sub>2</sub>eq)</li> <li>Water consumption (m<sup>3</sup>)</li> <li>Hazardous waste generation (ton)</li> </ul>	<ul style="list-style-type: none"> <li>Non-hazardous waste generation (ton)</li> <li>Electricity use (Gj)</li> <li>Gender diversity (% female employees)</li> <li>Turnover rate (%)</li> </ul>	<ul style="list-style-type: none"> <li>Training hours (h/employee)</li> <li>Accident frequency (year)</li> <li>Fatality rate (year)</li> </ul>
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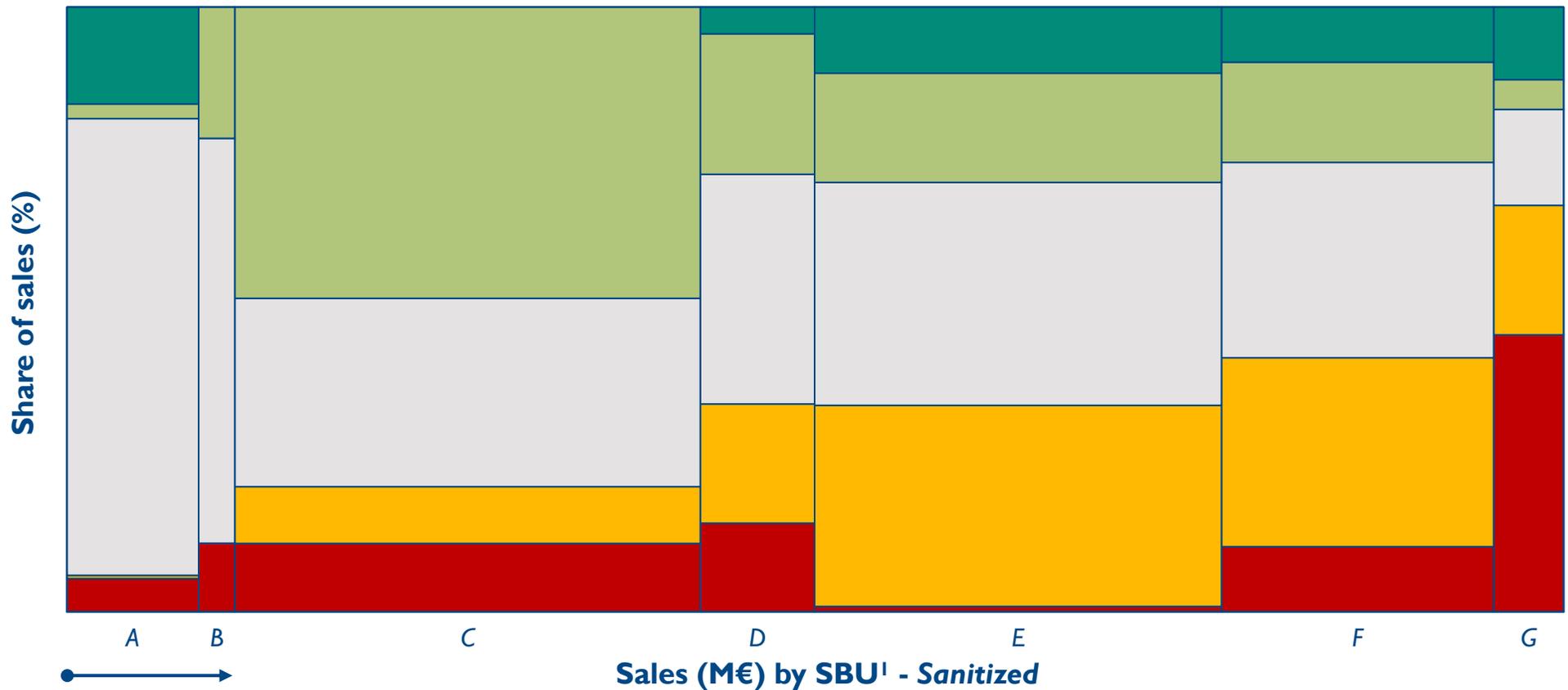
<p>Specific KPIs (examples)</p>	  <p><i>Linking sustainability to compensation</i></p> <p><b>Senior executive compensation</b> includes a 35% variable component tied to min. one CSR objective, e.g.:</p> <ul style="list-style-type: none"> <li>Reducing Scope 1 and 3 GHG emissions in line with SBTs<sup>1</sup></li> <li>Increasing percentage of women in Group management</li> </ul>	  <p><i>Low-carbon strategy as % of business</i></p> <p>Key sustainability metrics include:</p> <ul style="list-style-type: none"> <li>% zero-emission generation (% of total generation)</li> <li>EBITDA for low-carbon products, services, and technologies</li> <li>Ratio of CAPEX for low-carbon products, services, and technologies</li> </ul>	  <p><i>Holistic scoring methodology</i></p> <p>Created the <b>Corporate Environmental Footprint (CEF)</b> as holistic measure:</p> <ul style="list-style-type: none"> <li>Uses software tool to calculate score based on multiple inputs from all environmental aspects</li> <li>Calculated contribution of each business segment and country to the total score</li> </ul>
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Note: KPI – Key performance indicators; DJSI – Dow Jones Sustainability Index; SBT – Science-based targets  
 Source: Respective company websites, Industry reports, Arthur D. Little analysis

Transformation is facilitated by tools that assess the ‘sustainability performance’ of the product portfolio - enabling target setting & creating a common language on sustainability

What % of sales is ‘at risk’ & what % offers growth opportunities?

illustrative



1) Strategic Business Unit  
Source: Arthur D. Little

In order to transform, companies need to embrace sustainability across the entire hierarchy and demonstrate full commitment from top management

### Key success factors



**Timely anticipate changing requirements** of main stakeholders and regulatory environments



**Engage internal and external stakeholders** to renew commitments and communicate results frequently, discuss performance and exchange ideas



**Embed ‘sustainability’ into decision making** across all levels of the organization and set up **governance model**



Define a **common understanding** of sustainability with clear narrative, definitions and **quantitative long- & short-term targets** and assessment timelines



**Robust performance measurement & control** to signal effectiveness and progress of program initiatives

# Well-executed climate change strategies result in tangible financial value creation

## Arthur D. Little project



Carbon strategy for multinational **food retailer**



Energy efficiency & GHG optimization for 2 collocated **chemical companies**



Sustainable procurement strategy for regional **utility group**



Climate change strategy for leading chemical company (**DJSI<sup>1</sup> leader**)

## Illustrative results<sup>2</sup>

**23%** global CO<sub>2</sub> emissions reduction

43 measures with NPV of **€ 120 mln**

**3.5 Petajoules** energy savings annually

24 measures with ROIs between **5%** and **30%**

**8.5 kiloton** GHG emissions reduction

16 measures with NPV of **€ 7 mln**

**32%** reduction in overall GHG emissions

35 measures with NPV of **€ 78 mln**



**Stronger competitive position**  
Increased differentiation, first mover advantages

1) DJSI = Dow Jones Sustainability Index  
2) Excluding benefits from green funding and intangible benefits  
Source: Arthur D. Little

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