Climate 21
Vision, Strategy & Framework

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Why do we need Climate Action?
Sustainability trends are shifting markets

**Investors**
integrating ESG* into investment decisions

76%
growth in the UK between 2015 and 2017

**Consumers**
Shift to more sustainable products and services

42%
of consumers walk away from the brand in frustration. One in five (21 percent) never come back

**Employees**
Focus career choices on responsible employers

15%
of Fortune 1000 employees satisfied with employer action on environmental impact.

* Environmental, Social & Governance
Climate action is high on the CEO agenda

~ 50% reduction in CO2 emissions needed over the next 10 years for a 1.5 degree pathway

Projected global CO₂ emissions per scenario³

Metric gigatons of CO₂ (GtCO₂) per year

Business Models? Sourcing strategy? Location strategy? Product Portfolio?

There is NO planet B
Climate Action requires a coherent global strategy

Local complexities are creating new pressures to steer planning and decision making globally with greater transparency.

Traditional Annual GHG reporting is no longer adequate.

Summary map of regional, national and subnational carbon pricing initiatives implemented, scheduled for implementation and under consideration (ETS and carbon tax)

Source: World Bank Carbon Markets
Leaders *across all industries* are taking action

- Allianz: don’t insure coal fired power plants any longer
- MAERSK: going for zero emission vessels
- Walmart: take CO₂ out of supply chain
- BlackRock: integrate carbon risk into investment strategy
**Climate 21**

**Ecological**
- Honor the 2030+ carbon reduction promises

**Economical**
- Safeguard the “license to operate”
- Be a viable investment on the capital market
- Make business model, product portfolio, and operations resilient to climate related regulation

**Social**
- Leave a livable planet to our children and grandchildren

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**Fighting Climate Change:**

**CO\textsubscript{2}e** at the intersection of ecological, economical, and social sustainability
Climate Action **Challenges** and how they impact the business

**Market Risks**
- Market is changing with focus on Climate Action. With that, the behavior of consumers and supply chains.
- Competition will have new niches to play in.

**Regulatory Risks**
- Standards / regulations
- Future regulations expected
- Increased costs/taxation
- Missing benchmarking

**Investor Risks**
- Need to prove ability to react on requests for Climate Action to stay attractive for Investors
- Safeguard the “license to operate”

**Reputational Risks**
- Consumers distribute opinions fast via internet.
- Missing Climate Action can destroy the reputation of a company.
- Not getting the right talent
Climate Action Challenges and what is hindering the mitigation

<table>
<thead>
<tr>
<th>Market Risks</th>
<th>Regulatory Risks</th>
<th>Investor Risks</th>
<th>Reputational Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to capital</td>
<td>Business Model</td>
<td>NO Insights</td>
<td>Location strategy</td>
</tr>
<tr>
<td>Sourcing strategy</td>
<td>NO Calculation</td>
<td>NO Data</td>
<td>Customer Demand</td>
</tr>
</tbody>
</table>

Product Carbon Footprint is unknown
Climate 21

Create transparency on the Product CO2e Footprint
Climate 21 – Product Direction & Vision

We will embed **sustainability** as a new **dimension of success** into analytical and transactional applications to enable an **Intelligent Enterprise** to minimize CO$_2$e, across entire value chains – from **cradle to gate**.

- **Assess** information on the CO$_2$ footprint of their inputs and products
- **Evaluate** their operations based on benchmarks
- **Optimize** operations to minimize CO$_2$ footprint and improve product portfolio
Climate Action Risk Mitigation Strategy

**Market Risks**
- Open to support different standards
- Influence definition of regulations

**Regulatory Risks**
- Benchmark to investment alternatives
- Define Targets and actions

**Investor Risks**
- Optimize product Portfolio and pro-duction parameters
- Best-in-class products
- Reduce energy, water, waste

**Reputational Risks**
- Be an exemplar in the industry related to products and operations
- Invest into innovative products and processes

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**Evaluate** the opportunity to minimize the Carbon footprint of your inputs, products, and operations.
- Simulation
- Analytics

**Assess** your inventory and the climate impact of your inputs and operations.
- Business Activities
- Quantity Structures
- "BoM"
- Inputs (Energy, Material and Components)

**Optimize and transform your operations, products, portfolio, and business models.**
- Integration into transactional systems to transform supply chain and execution

- Completeness
- Accuracy
- Real-time
- Actionable Decision Support
- Auditable Reporting
- Reliable Forecasting

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E2E Processes View – Embedding the new dimension for Climate Action

- Design for minimized Carbon footprint (processes & products)
- CO2e optimized supplier mgmt.
- CO2e optimized purchased goods and services
- Sustainable business network
- Emissions and waste mgmt. in operations
- Energy / CO2e efficient production planning & scheduling
- CO2e / energy optimized warehousing (e.g. cool chain)
- CO2e optimized transport
- CO2e optimized packaging

- Promote corporate sustainability image
- GHG reporting
- Financial impact (valuation)
- New business models
- Sustainable customer support more efficient product use
- Returns & recycling
- Product carbon footprint disclosure
GHG Protocol Scopes and Emission

Scope covered by Climate 21 roadmap

* see GHG Protocol [http://ghgprotocol.org/](http://ghgprotocol.org/)
Climate 21 Vision - CO₂ Transparency end-to-end

Enterprise

Safeguard the license to operate by making business models, product portfolio, and operations resilient to carbon regulation.

Business Operations

Track and optimize the carbon footprint of products and services from cradle to gate.

Consumers

Empower consumers to make responsible buying decisions with carbon footprint information about products and services.

CO₂ Pilot

580g
122g
180g
700g
450g

A+
A
A-
B
C
D
E

A-
82g CO₂/kg

Facilities

Logistics

Products

CO₂ Efficiency

A
A
A
B
C
D
E

82g CO₂/kg

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Why SAP?
75% of the world’s transactions touch a SAP system

We have the analytical tools and transaction systems to help our customers on a global scale along the full supply chain and across all industries.
Climate 21
A New Dimension
Climate 21 Solution Overview

The Green Line

SAP

&

External

Optimize

Visualize
Reporting
Transaction

Evaluate
Modeling
Calculations
Simulations

Assess
Quantity
Structures
Data
Provisioning

Record to Report
Design to Operate
Lead to Cash
Source to Pay

Global scale
Industry specific
Best Practices
Implementation

External Benchmarking
External Standards & regulations
Auditing

External Data

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Roadmap
## Climate 21 Product Roadmap - Key Use Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Assessments</th>
<th>Use Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>C21 Evaluate: Foundation</td>
<td>Carbon Accounting integrate to Finance</td>
</tr>
<tr>
<td>2022</td>
<td></td>
<td>Integrate into Operations &amp; Supply Chain</td>
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</tbody>
</table>
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SAP Product Carbon Footprint Analytics
SAP Product Carbon Footprint Analytics

Objective

Analyze the product carbon footprint.

Capabilities

• CO2e analysis by Plant, Profit Center and Product.
• Maintain CO2 values for transport, direct emissions, electricity and purchased goods

Benefit

• Transparency on CO2 details

Supporting Applications

• SAP S/4HANA Enterprise Management
• SAP Analytics Cloud
Product Carbon Footprint Analytics: Coverage of Emission Categories in Release 1

1. CO2e from purchased raw materials
2. CO2e from Energy / “Activities”
3. Direct CO2e Emissions
4. CO2e from Outbound Transport

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SAP Product Carbon Footprint Analytics Architecture

1. Raw Materials
2. Energy / “Activities”
3. Direct Emissions
3. Transport (outbound)

To be entered manually in minimal viable scope (MVP)

SAP Analytics Cloud
- Dashboarding & Analysis
- CO2 Calculation

SAP S/4HANA
- Itemization
- BOM, Routings
- Cost Estimates
- Sales Quantities
- Sales Data

oData-Services
- API_FINPLAN_COSTESTIMATE_ITEMS_SRV
- API_JOURNALENTITEMBASIC_SRV

Cost estimate quantity structures (derived from BOM + routing)
Further Information

Customer Connect Community

Goal 13: Climate Action

Diginomica Interview with Christian Klein speaking about sustainability and Climate 21

SAP Investor Magazin 2020: Interview Thomas Saueressig

Video: CEO Christian Klein on Sustainability

Position paper

LinkedIn article: Thoughts from Davos: Intelligent Enterprises Will Be Sustainable Organizations
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