

# Early signs of a sustainable semiconductor future

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# Presentation Outline

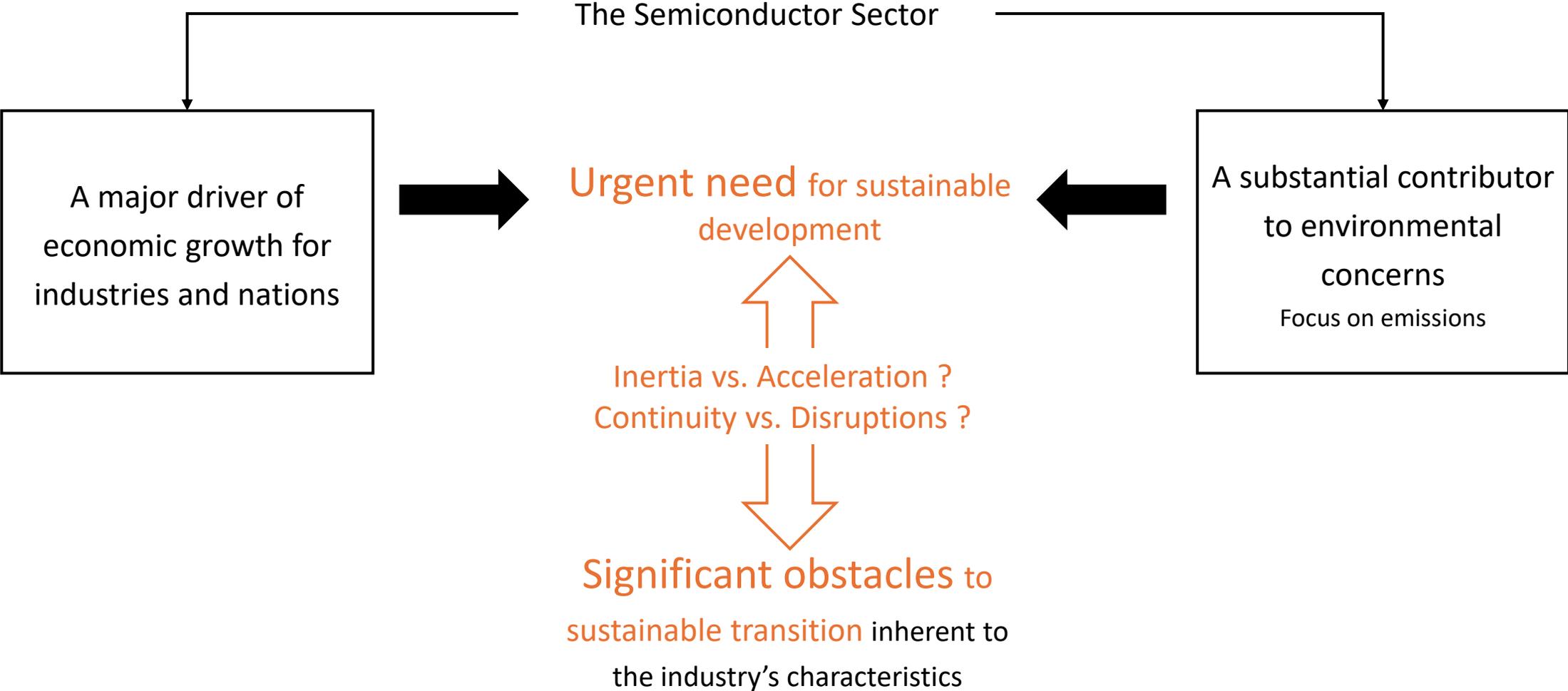
- Setting the scene: the topic, the problem, emerging phenomena
  - Framing the problem: conceptual insights
  - Exploring realities: Schneider Electric's perspective
  - Conclusions
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# Setting the Scene

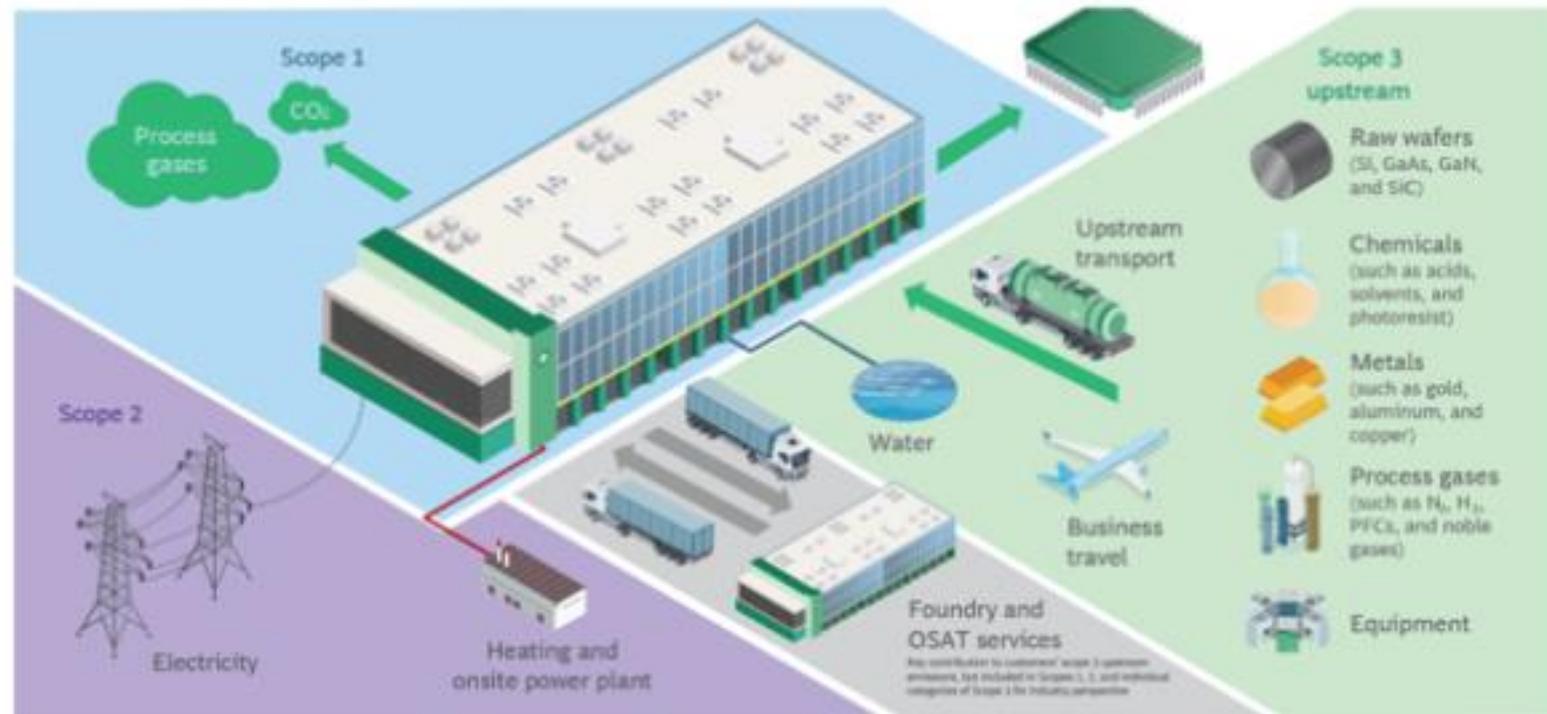
Topic – Problem – Emerging phenomena

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# Introduction of the topic



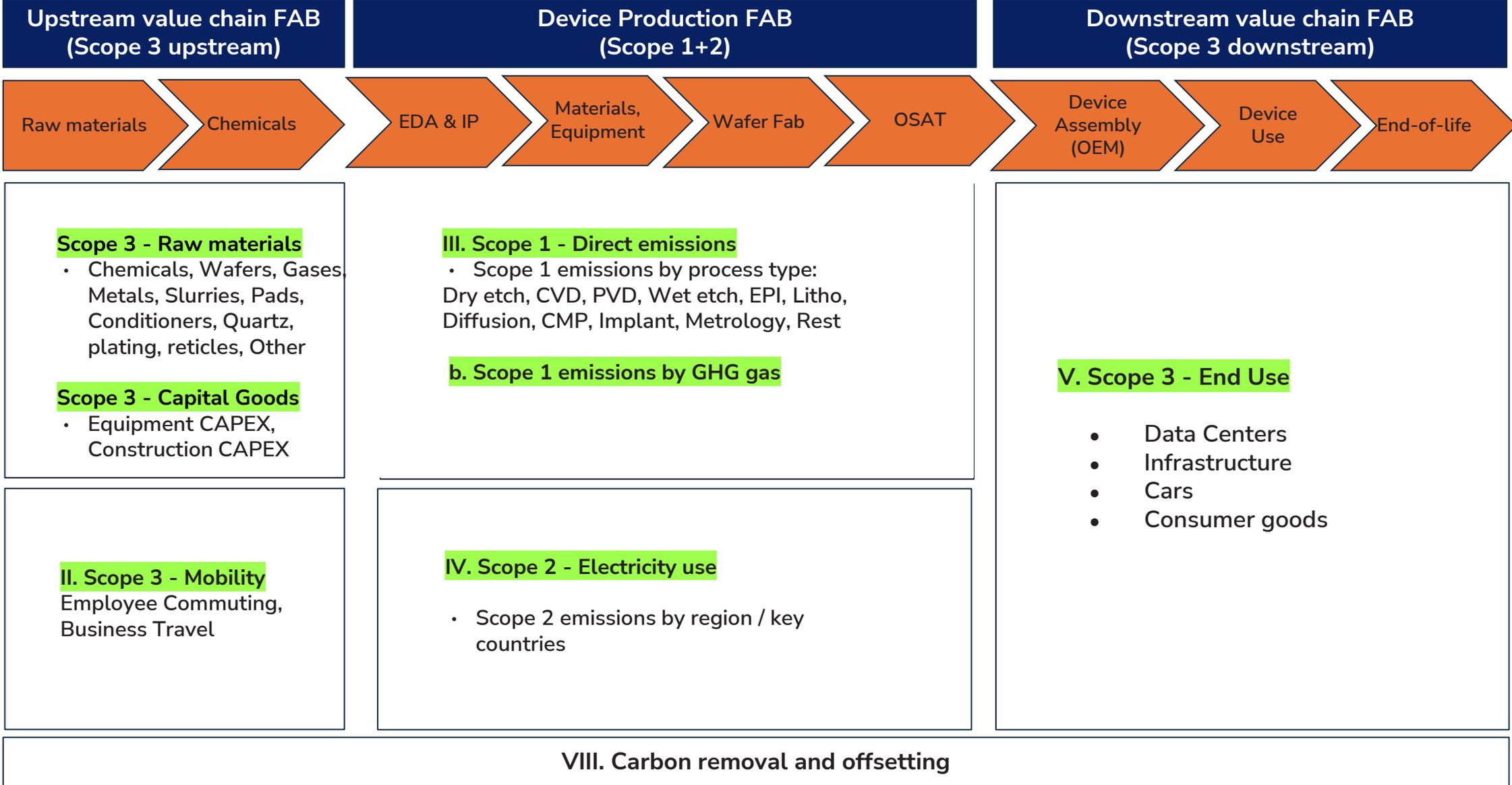
# Established view of the Semiconductor Industry's Environmental Impact



Source: BCG analysis.

Note: Si = silicon; GaAs = gallium arsenide; GaN = gallium nitride; SiC = silicon carbide; N<sub>2</sub> = nitrogen; H<sub>2</sub> = hydrogen; PFCs = perfluorinated compounds; OSAT = outsourced semiconductor assembly and test.

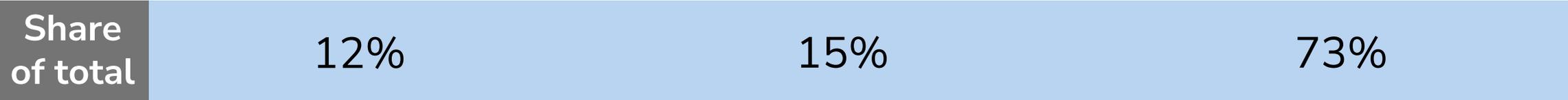
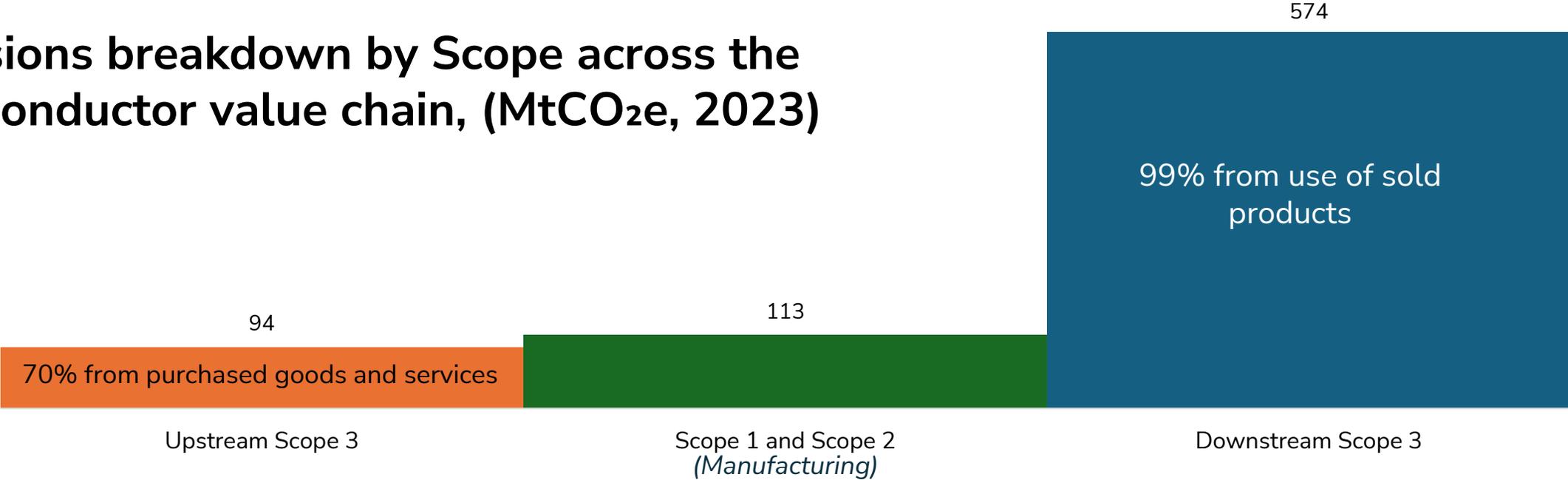
# Mapping emissions across the semiconductor value chain



# Identifying the major problem(s) within the value chain

73% of total semiconductor industry emissions are driven by downstream Scope 3

## Emissions breakdown by Scope across the semiconductor value chain, (MtCO<sub>2</sub>e, 2023)



# Understanding the critical problem(s) from customers' viewpoint

## Why do we all need to discuss about environmental footprint ?

- Corporate level

- In most companies carbon accounting for scope 1 & 2 is calculated and disclosed
- Scope 3 is still a challenge
- Carbon Disclosure Project becomes a must have

- Product level

- One customer is one Excel sheet
- Data need to be computed the same way with an acceptable level of transparency & comparability
- Need to be actionable
- One day, consumers hopefully will care

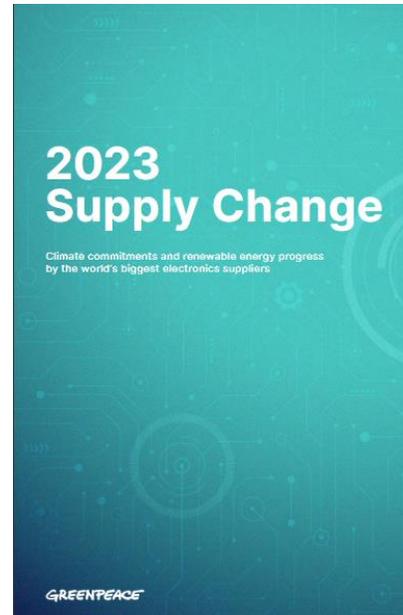
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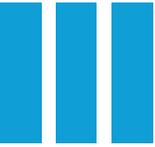
# The emergence of influential stakeholders in the value chain

**influential stakeholders:** actors capable of compelling their supply chain partners to heed their sustainability-driven requests

- ★ Amazon
- ★ Google
- ★ Apple
- ★ Greenpeace
- ★ Semi

Accelerating forces ?  
Disruptive forces ?





# Framing the problem: conceptual insights

*Sustainability initiatives of certain actors diffuse throughout their supply chain enhancing the performance of their key suppliers and customers...*(Tian et al. 2025)

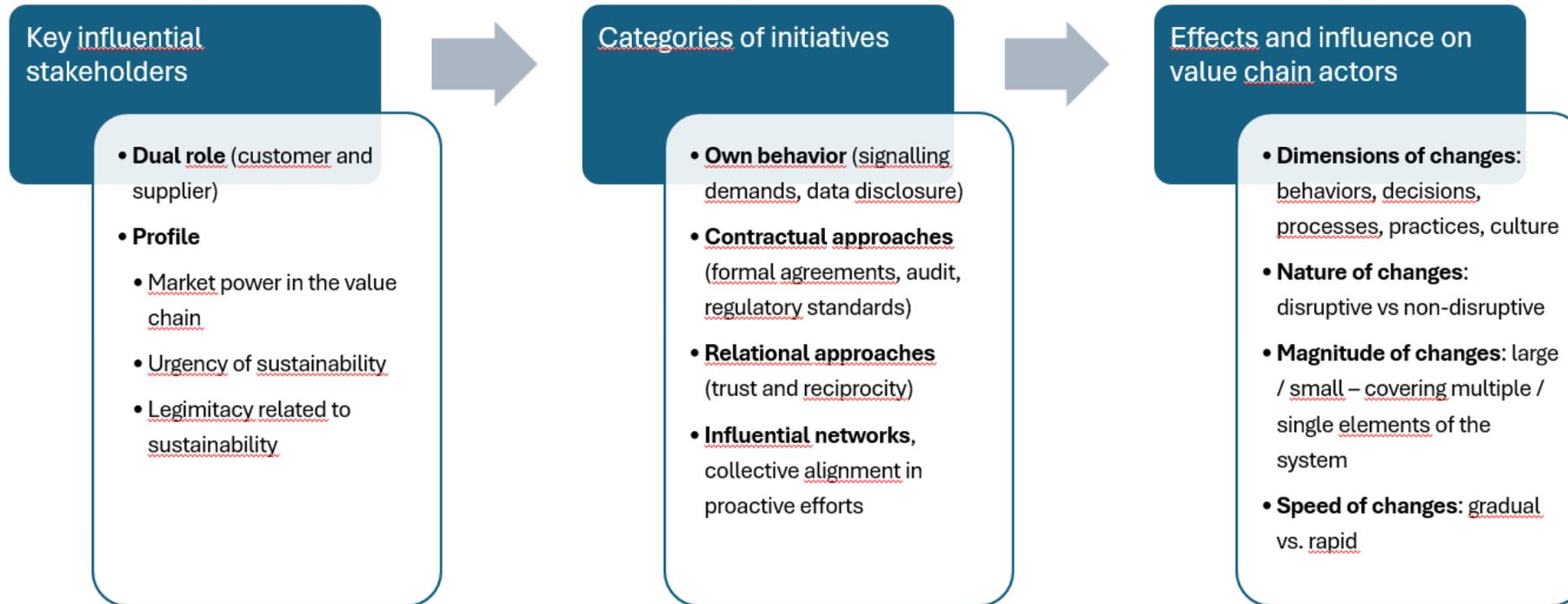
potentially triggering transitional disruptions in transition.

# The pivotal role of certain actors in influencing sustainable development

Key semiconductor manufacturing companies play a pivotal role in shaping the industry's dynamics.

Which firms could take the lead in accelerating sustainable development – emission reduction activities ?

## Framework for Observing Early Signs from Influential Stakeholders



# Exploring realities: Schneider Electric's perspective

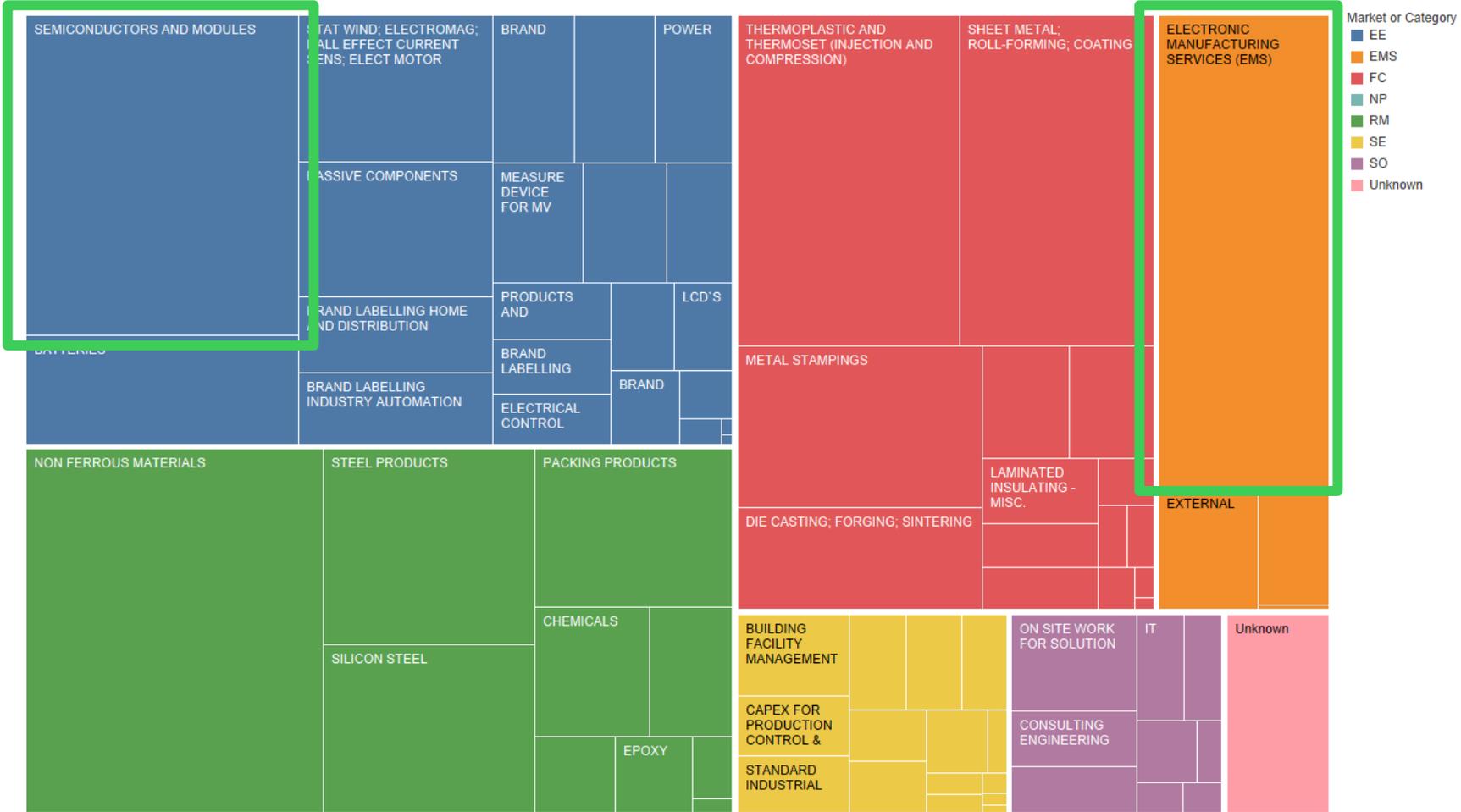
Real order of magnitude

# Electronics and Schneider Electric's emissions (2024)

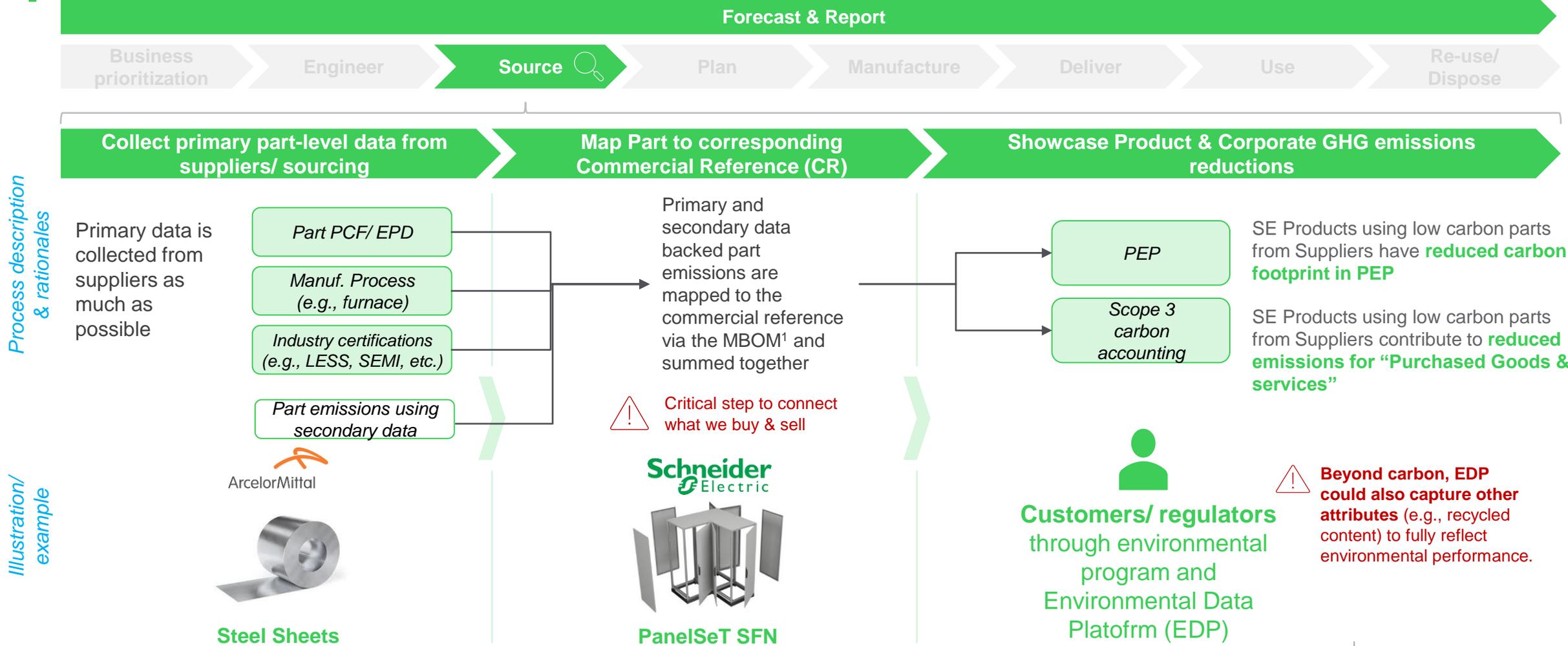


# Electronics and Schneider Electric's upstream emissions

Breakdown of PG&S CO2 emission by CatS Market and Category



# Supplier PCF can showcase emission reductions at product & corporate levels



# SCC Ambition Statement (Rev 2)



The SCC ambition statement articulates our Vision to accelerate progress as an industry through the power of collaboration. It is intended to complement – not replace – the unique sustainability goals of each SCC member, each guided by its own Net Zero strategy and roadmap.

## Emissions<sup>1</sup>

SCC aspires to help members achieve Net Zero GHG emissions<sup>2</sup> no later than 2050 with an aspiration for following short-term milestones:

1. Scope 1 Emissions: 43% reduction from 2019 levels in 2030<sup>3</sup>, aligning with the Paris Agreement 1.5 °C pathway<sup>4</sup>
2. 2040: 100% Low Carbon Electricity (LCE)<sup>5</sup> in APAC [75% by 2030] where regionally available
3. 2030: 100% Low Carbon Electricity in EU and Americas

<sup>1</sup> Energy efficiency target to be defined.

<sup>2</sup> As per GHG protocol.

<sup>3</sup> Following the IPCC 2019 guideline.

<sup>4</sup> Companies that achieved >43% emissions reduction before 2019 or began with a low emissions baseline due to early use of abatement systems may already be well aligned with the intent of this statement.

<sup>5</sup> Includes renewable energy technologies, and nuclear power, aligned with CDP Climate Change 2023 Reporting Guidance and IEA.

<sup>6</sup> Defined according to the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

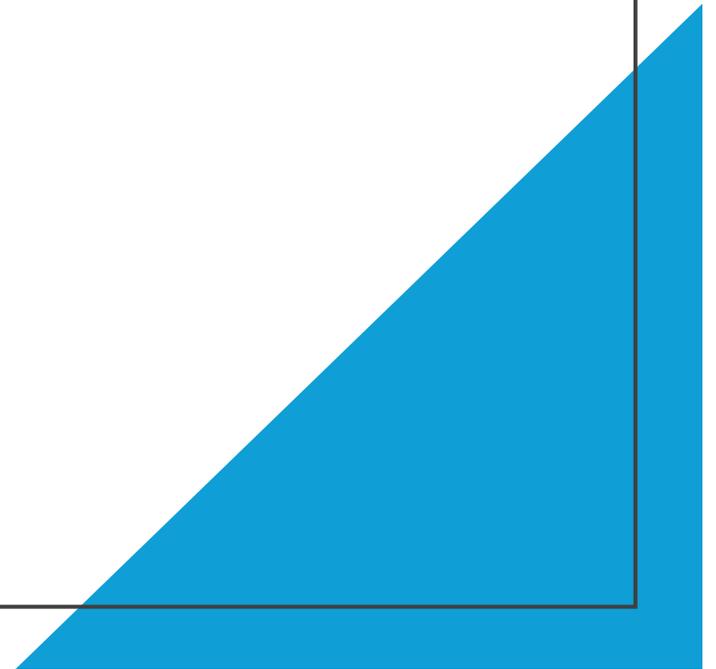
<sup>7</sup> Semiconductor manufactures, materials and chemicals suppliers, and equipment manufacturers.

## Transparency

4. > 95% of members publicly report Scope 1 & 2 emissions by the end of 2027 and relevant Scope 3<sup>6</sup> emissions by the end of 2028
5. By 2028, develop a methodology and reporting framework along our value chain<sup>7</sup> that enables exchange of relevant and reliable Product Carbon Footprints (PCF)

# Conclusion

Early signs of a sustainable semiconductor future and their implications



# Early signs of a sustainable semiconductor future and their implications

## **Lead semiconductors' customers engaging their supply chain towards more sustainable sourcing**

- Sense and seize their strategies, their initiatives and their impact (new rules, shifts in suppliers, disruptive forces ?)

## **Focus on critical challenges influencing sustainability dynamics**

- Data, measures (methods and standards), evolving demand and purchasing behaviors

## **Collaborations along the whole value chain**

- Set clear expectations and adopt a proactive approach by implementing sustainability disclosure practices and initiatives

## **Uniform adoption of sustainability standards to avoid competition distortion**

- Effects of regional policies and preferences



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Thank  
You