

Paris Session 2022



Environmental directives with best LCA facilitate Net Zero

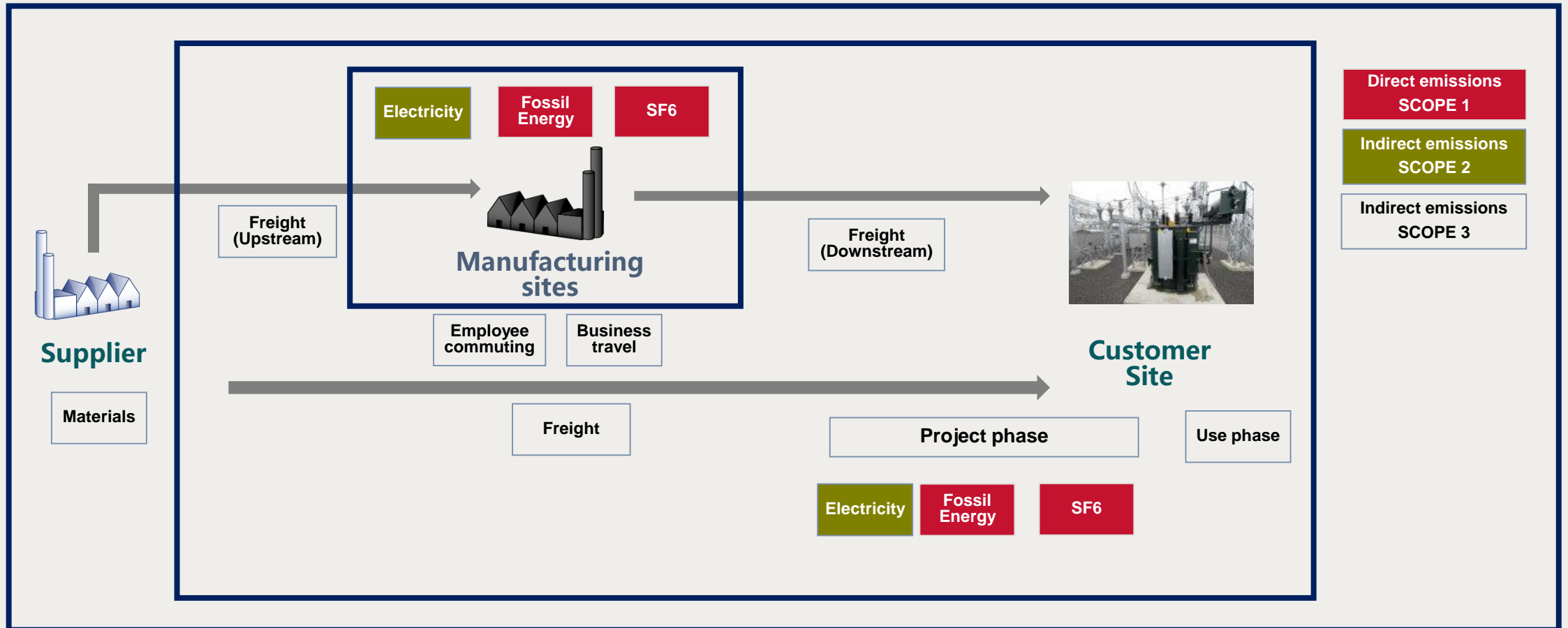
SC B3 Substations and electrical installations

PS1 Question PS1.4

Yannick KIEFFEL, France



To what degree are the new environmental directives impacting on the industry's ability to respond and deliver the substation infrastructure necessary to facilitate Net Zero?



Carbon neutrality: Measures carbon footprint and achieve a net zero impact by balancing emissions with an equal amount of reductions and offsets

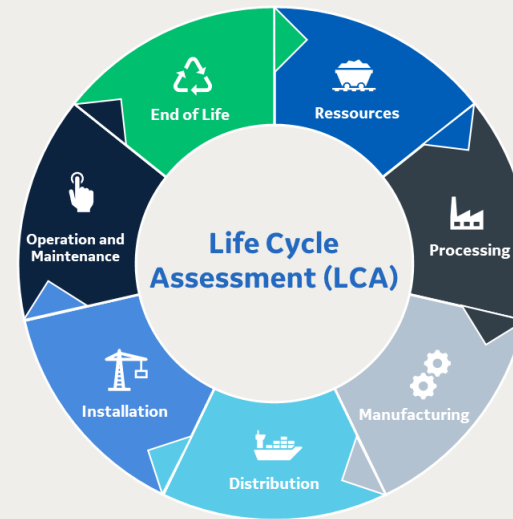
Example of current directives:



Environmental balance to be found:



Tool : Life Cycle Analysis



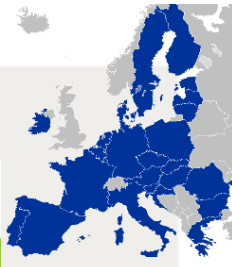
Multi steps

- Material
- Manufacturing processes
- Surface treatments
- Supplier transportation
- Assembly
- Packaging
- Distribution
- Installation
- Operation
- Maintenance
- End of life



ISO 14040 & 14044 framework

Environmental directive need to ensure the lowest carbon footprint



SF₆ regulations update in EU (F-gas 2022)

- Restriction of use in switchgear :
→ Depends on Voltage + Cascade on GWP

BUT

- **GWP of the gas is not the main factor** to assess the environmental impact of GIS.
- Total CO₂ emission must be via the LCA
- SF₆-free alternatives must be assessed using LCA for climate change impact but also resource depletion to avoid pollution transfer (see example for C4-FN based mixture).

To focus only on GWP may negatively impact on the overall carbon footprint of the switchgear and delay the CO₂ emission reduction target.

