

## SCIENTIFIC SUMMARY

# Integrating biodiversity impacts assessment in sustainability strategy: A case study at Schneider Electric

FMIM01 DEGREE PROJECT IN ENVIRONMENTAL STUDIES - ENVIRONMENTAL AND ENERGY SYSTEMS STUDIES

This study compares classic and alternative production processes for steel and aluminum, focusing on their carbon intensity and their impacts on human health, as well as freshwater and terrestrial ecosystems.

Can we reduce carbon emissions without threatening biodiversity? This question is the core problem of this study conducted at Schneider Electric. As industries try to reduce carbon emissions, they may inadvertently overlook the critical role of biodiversity in maintaining our planet's health.

This research delves into the complex relationship between carbon reduction and biodiversity impacts in industrial processes, specifically focusing on aluminum and steel production. So, by comparing traditional manufacturing methods with innovative low-carbon alternatives, the study quantifies their carbon and biodiversity impacts through a Life Cycle Impact Assessment (LCIA) model.

Moreover, this study challenges the conventional wisdom that low-carbon automatically means environmentally friendly. In some cases, technologies that effectively reduce carbon emissions may still pose significant threats to ecosystems. The study's results have far-reaching implications for how companies approach sustainability. It emphasizes the need for a holistic strategy that considers both carbon reduction and biodiversity preservation. This balanced approach is crucial not only for environmental protection but also for long-term business resilience, as many industries depend heavily on nature's services.

For Schneider Electric and other manufacturers, these insights offer a new perspective on sustainable procurement and eco-design. The research

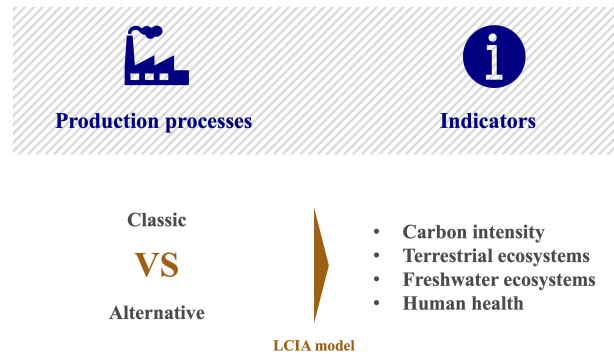


Figure 1: Project framework

provides a framework for evaluating production processes beyond just their carbon footprint, enabling more informed decision-making that supports both climate action and biodiversity conservation.

As we face the dual crises of climate change and biodiversity loss, this study serves as a timely reminder that our solutions must be as interconnected as the problems they address. By broadening our view of sustainability, we can work towards a future where industrial progress and environmental preservation go hand in hand.