Marin Pellan

PhD Candidate, CSTB & ETH Zürich

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Profiles

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Summary

As a PhD student, I am engaged in researching the interaction between climate and sectoral policies within the building sector. I have a keen interest in prospective life-cycle assessment, input-output analysis, scenario analysis, and building stock modeling.

My goal is to engage in projects that bridges the gap between scientific research and practical policy application, aiming to develop science-based policies that drive sustainable and impactful changes both in policy frameworks and industry standards.

Education

ETH Zürich — 2021 - 2024
Civil & Environmental Engineering — PhD

INSA Lyon — 2019 - 2020
Environmental Engineering & Sustainability — Advanced Master

University College Dublin — 2015
Academic Exchange

Grenoble School of Management — 2014 - 2018
Technology, Economics & Management — MSc

Champollion High School — 2012 - 2014
Mathematics, Economics, Geopolitics — Preparatory classes

Experience

Scientific and Technical Center for Buildings (CSTB) — Feb 2021 - 2024
PhD Candidate

"Downscaling the French low-carbon national strategy for the building activities" - a 3-year PhD project conducted with the CSTB and the Chair of Sustainable Construction at ETH Zürich, led by Prof. Guillaume Habert.

The main objective of the research is to integrate life-cycle thinking into net-zero national policies and quantitavely assess exploratory scenarios by 2050. This involves applied modelling using life-cycle assessment, input-output analysis and scenario analysis combined with data-driven methods.

Scientific and Technical Center for Buildings (CSTB) — Sep 2020 - Feb 2021
Environmental Engineer

Collaborated on various projects centered around Life-Cycle Assessment (LCA) and Material-Flow Analysis (MFA), with a particular focus on building renovations. Key contributions include:

- *Integrating embodied impacts of retrofitting archetypes into the Menfis model.*
- *Collecting data for an MFA model in the Ile-de-France region.*
- *Researching the influence of carbon taxation on construction practices.*

Scientific and Technical Center for Buildings (CSTB) — April 2020 - Sep 2020
Research Assistant

Collaborated with a PhD candidate on Consequential Life-Cycle Assessment, in particular:

- *Analyzing industrial and economics data to construct a stock-flow consistent model.*
- *Participating in the case study on residential buildings retrofitting in the context of the pandemic economic subsidies.*

Schneider Electric — Sep 2018 - Sep 2019
Market Analyst Apprentice

Conducted market studies for low-voltage products with product engineers and organized focus group in Madrid and Barcelona.

Publications

From limit values to carbon budgets: assessing comprehensive building stock decarbonisation strategies — March 2024
Building & Environment (in review)
🔗 http://dx.doi.org/10.2139/ssrn.4676635
Pellan, M; Almeida, D; Louërat, M; Habert, G

Beyond sectoral carbon budgets for the building activities: a French case study — Jan 2024
Energy & Buildings (in review)
🔗 http://dx.doi.org/10.2139/ssrn.4633977
Pellan, M; Almeida, D; Louërat, M; Habert, G

Decarbonisation roadmap for the building activity: LCA modelling of the renovation lever — Sep 2023
Journal of Physics: Conference Series
🔗 https://iopscience.iop.org/article/10.1088/1742-6596/2600/15/152010
Pellan, M; Almeida, D; Dubois, F; Louërat, M; Habert, G

A holistic perspective on the French building and construction GHG footprint — Sep 2022
IOP Conference Series: Earth and Environmental Science
🔗 https://iopscience.iop.org/article/10.1088/1755-1315/1078/1/012049/meta
Pellan, M; Louërat, M; El Beze, J; Habert, G

Languages

French — Mother tongue — ● ● ● ● ●

English — Fluent — ● ● ● ● ○

Spanish — Professional proficiency — ● ● ● ○ ○

Skills

Python — ● ● ● ● ○

Brightway — ● ● ○ ○ ○

SQL — ● ● ● ○ ○

LaTeX — ● ● ● ○ ○

Courses

Brightway Autumn School — Oct 2023
Départ de Sentier

Open Science Summer School — July 2022
EPFL

Prospective Environmental Assessment — May 2021
ETH Zürich

Teaching

Universite Grenoble Alpes — 2021-2022

Introduction to the environmental impacts of the building activities (bachelor civil engineering students)

Practical courses on 'Elodie' building LCA software (master civil engineering students)

References

Prof. Guillaume Habert
PhD director

Dr. Mathilde Louërat
PhD co-supervisor

Dr. Denise Almeida
PhD co-supervisor

Marine Vesson
Manager

Interests

Outdoor sports
Cycling , Trail running, Mountaineering

Guitar player and music lover

Cinema

Open source and sustainability