

Optiml<sup>+</sup>



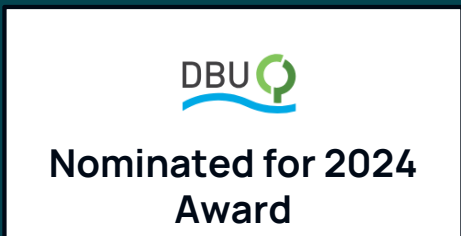
WHERE THE FUTURE IS BUILT

# ULI Proptech Innovation Challenge (PIC) 2024

AI-powered SaaS for scalable, cost-efficient decarbonization of existing buildings

October 3<sup>rd</sup>, 2024

# Optiml awarded as **most innovative** solution for real estate decarbonization



**“A solution with depth”**

Nikolas Samios, Co-Founder & MD, PropTech 1

**“Actionable measures to develop & implement effective decarbonization strategies”**

Sabine Georgi, Managing Director ULI DACH

**“Combining Science and practice”**

Prof. Dr. Verena Rock, Professor for digital real estate management & proptech

**“Makes decarbonization of existing buildings measurable/manageable as an investment.”**

Dr. Susanne Hugel, Head of Digital & Technology, CE, CBRE



# The **most pressing challenge** of real estate: Decarbonize existing buildings



**~40%<sup>1</sup>**

of energy-related emissions



**60-80%**

due to building operations



**80-90%**

of stock in 2050 in EU/US

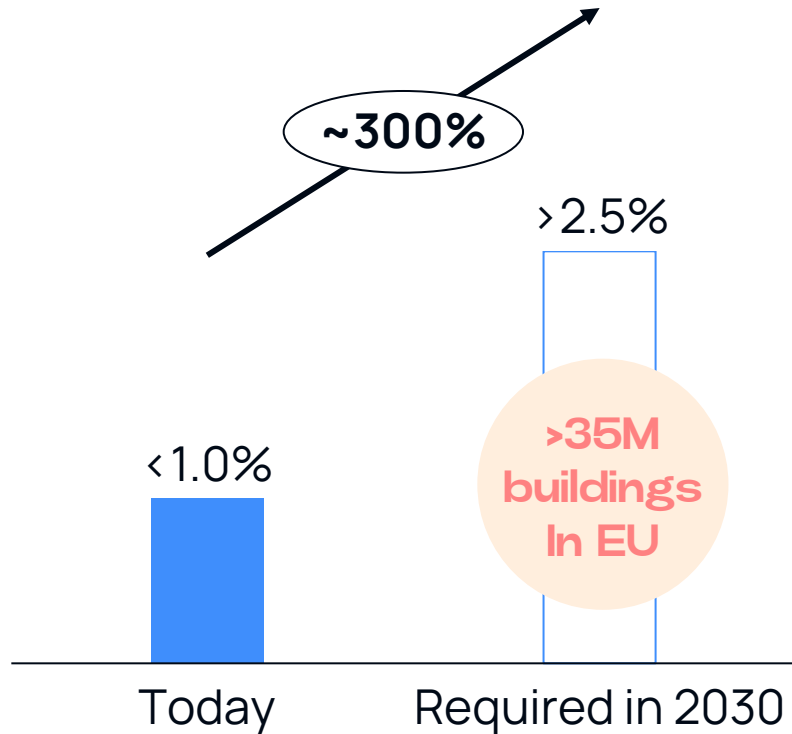
1. Share of building and construction sector's operational energy-related CO2 emissions (~8.9Gt) in 2020 and 2021.  
2. IEA Net Zero scenario. Only including CO2 emissions | Source: UNEP FI (2022 Global Status Report for Buildings and Construction), BCG, IEA



# Renovation rates are too low, despite significant “carrots” & “sticks” – **WHY?**

**Renovation rate**  
in % p.a.

**“Carrots” and “sticks” to foster decarbonization**



35%  
value loss

Subsidies

10%  
Rent  
decrease

Stranded  
Assets

Carbon  
Penalties  
(ETS I, II)

Limited  
capital  
access,  
higher  
interest

75%  
tenants  
willingness  
to pay  
more

Reduced  
occupancy



The challenge: Reach Net Zero and business requirements at the same time

**Adhere to  
Net Zero goals**  
as a “License to Play”

Taxonomy

GRESB/CREEM

REIDA/ BREEAM

...



**Meet**  
**business requirements**  
as a company’s obligation

Returns / ROI

Limited Capex

Low rents

High valuations

...



# Traditional approach & existing tools are insufficient to solve the challenge

### Building audits & Spreadsheets

| Status Quo EPC |       |     | Year | Target EPC |       |     | 2024  |
|----------------|-------|-----|------|------------|-------|-----|-------|
| Envelope       | Total | CO2 | 2024 | Envelope   | Total | CO2 | 12'00 |
| D              | C     | F   | 2024 | B          | B     | A   |       |

| 2031    | 2032      | 2033 | Planned renovation measures                                                                                                                                                               |
|---------|-----------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 900'000 | 1'500'000 |      | 2024: Replacement of boiler<br>2025: Insulation basement<br>2031: Heat pump (ground)<br>2031: PV (21kWp)<br>2031: New windows<br>2031: Steep roof<br>2032: Kitchen, Bathroom, Electricity |

**Manual, slow, expensive, not scalable**

### ESG- & Reporting-Tools

**Indications by meter data, no measures**

### Digital Energy Consultancies

**Nice front-end, but still manual, expensive, not scalable**

### Digital Renovation Tools

**Simple benchmarks, not actionable, reliable or optimized**



# What is required to make cost-efficient Net Zero a reality



Graduated insights into Assets and Portfolios, even with low data



Harmonized ESG & business requirements, and buy-in from stakeholders



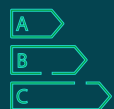
Scalable to Assets & Portfolios, all building types, and interoperable with tools



Optimized decisions ( faster, cheaper & better) with relevant CO<sub>2</sub>e-impact



Costed, timed & actionable plans for Assets and Portfolio overview



Reliable Net Zero target achievement, even if regulations and market change



# Optiml provides a scalable AI-powered solution that solve the challenges of building & portfolio decarbonization and renovation action planning



**Portfolio Overview**

|               |        |                                       |                     |                                         |                          |
|---------------|--------|---------------------------------------|---------------------|-----------------------------------------|--------------------------|
| Value (M EUR) | ASSETS | RENTABLE FLOOR AREA (M <sup>2</sup> ) | VACANCY RATE (AVE.) | ENERGY REFERENCE AREA (M <sup>2</sup> ) | ALIGNED WITH EU TAXONOMY |
| 330           | 22     | 16'500                                | 5%                  | 19'400                                  | 3/22                     |

**Portfolio Targets**

- Valuation increase: +5%
- Net ROI: 3.2%
- Annual Capex cap: 5M EUR
- EU Taxonomy: 10%
- CO<sub>2</sub> operational (S 1-2): 5 kgCO<sub>2</sub>/m<sup>2</sup>
- CO<sub>2</sub> total (S 1-3): 10 kgCO<sub>2</sub>/m<sup>2</sup>

**Baseline strategy**

|         |           |                         |
|---------|-----------|-------------------------|
| NET ROI | CAPEX     | OPEX                    |
| 3.8%    | 54.2M EUR | 12.4 EUR/m <sup>2</sup> |

**Portfolio performance**

Operational CO<sub>2</sub> emissions intensity (kgCO<sub>2</sub>/m<sup>2</sup>)

**Langstrasse 20**

8004 Zürich, Switzerland

**General information**

|                     |                     |
|---------------------|---------------------|
| Client              | Anonymous           |
| Portfolio           | Demo                |
| Asset ID            | 2204412             |
| Asset type          | Residential         |
| Construction year   | 1955                |
| Nr. of buildings    | 2                   |
| Rented floor area   | 1000 m <sup>2</sup> |
| Energy ref area     | 1200 m <sup>2</sup> |
| Nr. of rental units | 150                 |
| EPC                 | F                   |

**Economic**

|               |                   |
|---------------|-------------------|
| Market value  | 15.0 M EUR (2023) |
| Discount rate | 2.9% / year       |
| Vacancy rate  | 1.0%              |
| Net ROI       | 4.6%              |

**Energy**

|                      |                               |
|----------------------|-------------------------------|
| Heating source       | Gas                           |
| Heat consumption     | 100 kWh/m <sup>2</sup> (2023) |
| Elec. consumption    | 25 kWh/m <sup>2</sup> (2023)  |
| Energy use benchmark | 65%                           |

**Asset Targets**

- Valuation increase: +5%
- Net ROI: 3.2%
- Annual Capex cap: 5M EUR
- EU Taxonomy: 10%
- EPC: C
- CO<sub>2</sub> operational: 5 kgCO<sub>2</sub>/m<sup>2</sup>
- CO<sub>2</sub> total: 10 kgCO<sub>2</sub>/m<sup>2</sup>

**Baseline strategy**

|         |           |                         |
|---------|-----------|-------------------------|
| NET ROI | CAPEX     | OPEX                    |
| 3.8%    | 54.2M EUR | 12.4 EUR/m <sup>2</sup> |

**Digital Twin**

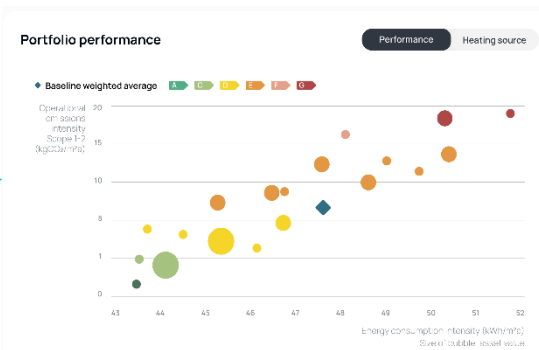
|                      |                       |
|----------------------|-----------------------|
| Volume               | 12'000 m <sup>3</sup> |
| Floors               | 3                     |
| Window to wall ratio | 53%                   |
| Facade area          | 1400 m <sup>2</sup>   |
| Window area          | 150 m <sup>2</sup>    |
| Roof area            | 1200 m <sup>2</sup>   |
| Footprint            | 1200 m <sup>2</sup>   |
| Solar feasibility    | Yes                   |
| Solar roof area      | 900 m <sup>2</sup>    |



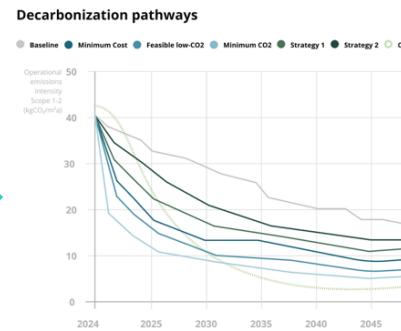


We enable decarbonization and renovation plans for Assets and Portfolios without building visit, adhering to Net Zero goals and meeting business goals

## Indicative Assessment



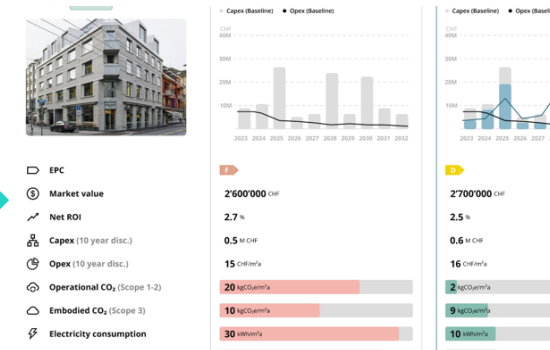
## Calibrated Asset & Portfolio strategies



### Assets

| EPC | Address          |
|-----|------------------|
| A   | Junghofstraße 1  |
| B   | Ständliertstraße |
| C   | Friedrichstraße  |
| D   | Booth St 32, Mi  |
| E   | Lindengasse 10   |
| F   | Munzgraben 10    |
| G   | Buckingham Pa    |
| H   | Langstrasse 20   |
| I   | Westermarkt 2K   |
| J   | Passaggio Duon   |

## Actionable renovation plans



Reliable target achievement



# AI structures and enriches available data, algorithms optimize Capex & Opex, Energy, CO<sub>2</sub>e (Scope 1-3), Returns & Policy for reliable decisions

**Step 1:** Fast, easy onboarding of existing data, company goals and baseline strategy

**Step 2:** Increase insights & accuracy via AI, despite limited data

**Step 3:** Run all use cases for optimized “Decision & Intelligence”

**Step 4:** Tailored reports and play-back to systems

**Connect your portfolio data**

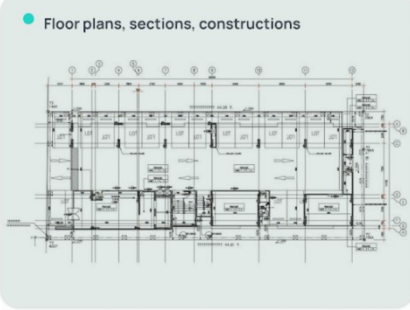
🔗 Systems, tools, and APIs

- MIS, ERP, and ESG software
- Data aggregators

📄 Document upload

- Building info
- Valuations & Capex plans
- Energy consumption
- Condition reports & pictures

- Floor plans, sections, constructions



**Building data**  
(e.g., building type)

**Company goals**  
(e.g., 5% ROI)

**Baseline strategy**  
(e.g., Net Zero 2040)

**AI data enrichment**

🔗 Transparent & editable data

**ECONOMIC**

- Capex & Opex benchmarks
- Construction costs
- Real estate market data
- Energy prices

**POLICY**

- Policies & norms
- Subventions & incentives

**CONTEXT**

- 3d building geometry
- GIS, scraping, open data
- Components & systems
- Emission & climate data

**PARTNERS**

- Valuations
- Energy data



**Optiml algorithms**

**Asset to Portfolio**

- Digital twin 
- Energy simulation 
- Optimization Cost & CO<sub>2</sub>e 

Analytics, statistics, sensitivity

Portfolio KPIs

- Revenue +1.2%
- Net ROI 3.5%
- Net Zero 2050
- EPC

**Tailored exports**

**Reintegration to existing tools**

**Export**

📄 Customizable

**REPORTING**

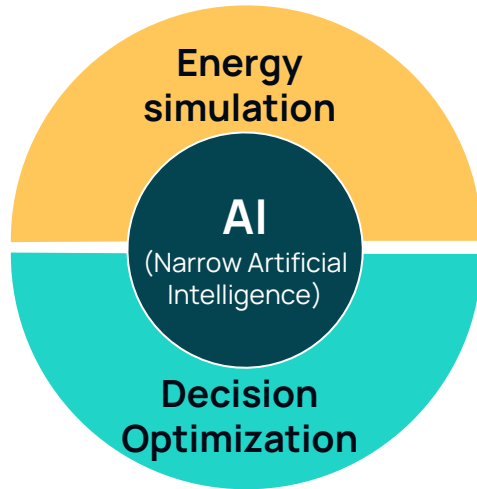
- Indicative EPC
- Excel DCF strategies
- Asset & Portfolio PDF reports

**STRUCTURED EXPORT**

- MIS, ERP, and ESG software
- Regulatory reporting
- Other software (valuation)



# A unique value proposition built on 10+ years research and validation



**ETH** SusTec

 Empa



**Graduated insights starting with low data (AI enriched)**



**Scalable (building types, Geos), interoperable (tools & experts)**



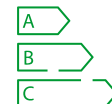
**Harmonized sustainability & business goals (& stakeholders)**



**Optimized decisions for faster, cheaper & more CO2e-impact**



**Costed, timed & actionable Asset plans & Portfolio view**



**Long-term reliable Net Zero target achievement**



# Our solution creates relevant impact for Net Zero & Real Estate companies

## Net Zero impact



Reduce  
**>35%**  
more CO<sub>2</sub>e

Reduce up to  
**90%**  
cost

Support  
**5 SDGs**  
of actively

## Impact for companies



Reduce  
**>30%**  
Capex

Reduce  
**>90%**  
Cost

Avoid  
**Stranding**  
of Assets

Increase  
**valuations**  
of Assets

Less than  
**1 year**  
payback

## CASE STUDY: INVESTMENT STRATEGY

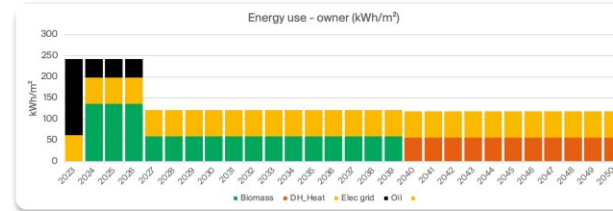
# Office building renovation

📍 Switzerland

📅 Office, 1972

🏠 1200 m<sup>2</sup> rentable floor area

📏 EPC potential (CO<sub>2</sub>) **F** → **A**

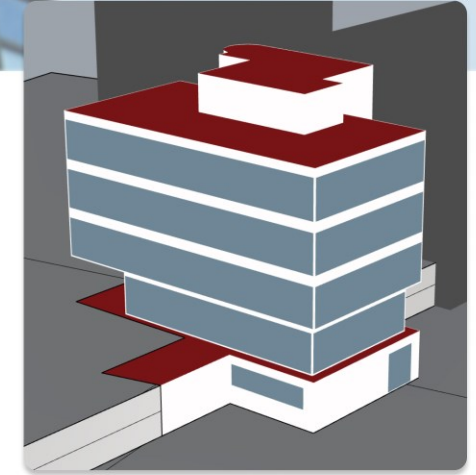


**-31%**  
Capex  
vs. Baseline

**-70%**  
Oper CO<sub>2</sub>e  
vs. Baseline

**-80%**  
Analysis cost  
reduced

**3.75%**  
ROI target  
met

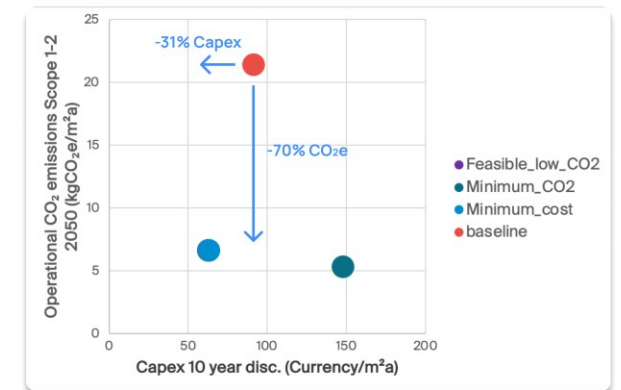


## BACKGROUND & POTENTIAL

- Client wants to re-develop office building for improved rentability and efficiency
- High glazed area in temperate climate
- HVAC systems need urgent replacing
- Existing oil heating with heating ceilings
- Annual energy data, resorted to Energy simulation with EnergyPlus + SIA norms
- District heating available in 2030

## RESULTS AND NEXT STEPS

- Optiml “Feasible low CO<sub>2</sub>” strategy chosen by client, reduces Capex & achieves ROI goal
- Oil boiler (107 kW) urgently replaced with temporary Biomass (31 kW) with planned envelope renovation in 2027
- District Heating installed in 2040 as main source
- Total CO<sub>2</sub>e (Scope 1-3) saved: 650 tCO<sub>2</sub>e
- Cost of CO<sub>2</sub>e (Scope 1-3): 545 CHF/tCO<sub>2</sub>e






# Complimentary founders, growing team (15 FTE), top investors & supporters

## A complimentary Co-Founder team




**Dr. Evan Petkov**   
CEO / Product  
Developed Optiml's algorithms & models (5 years research), 10+ years in energy engineering, policy, & sustainable buildings



**Jordi Campos**   
CTO  
Built front-end/back-end of Optiml, 5+ years in cloud-based software, data science, optimization for low-CO2 and AI-methodologies



**Nico Dehnert**   
CCO  
Ex-BCG Partner, 11+ years consulting in Climate Tech & B2B SaaS, with PEs/VCs & corporates, energy engineer & certified consultant



## A growing, global team

15 FTE (August 2024), growing to +20 until end of 2024

9 nationalities

6 out of 15 FTE female (40%)

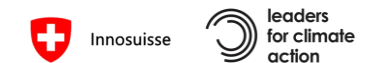
Global experience and networks for fast expansion



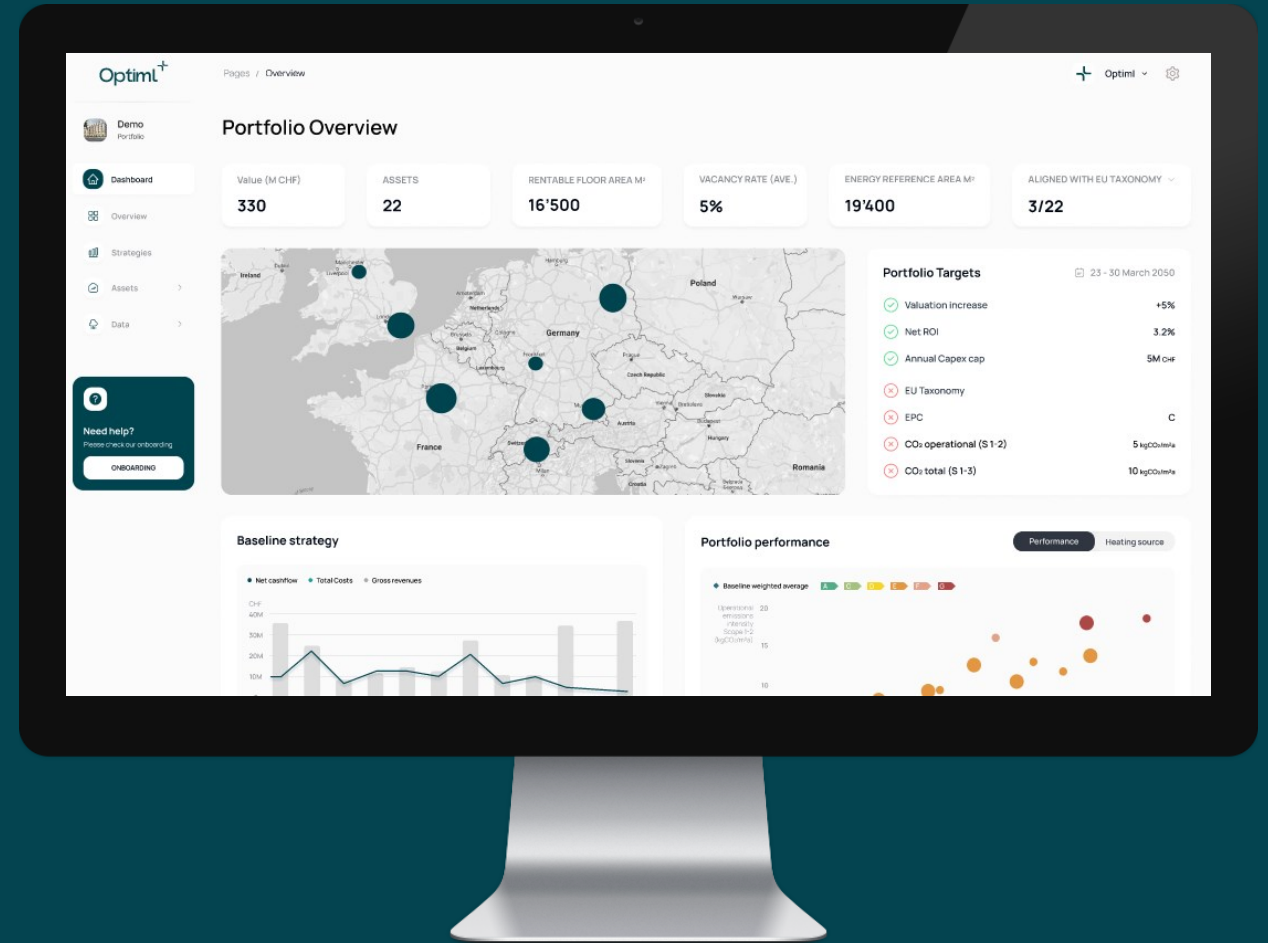
## Leading investors



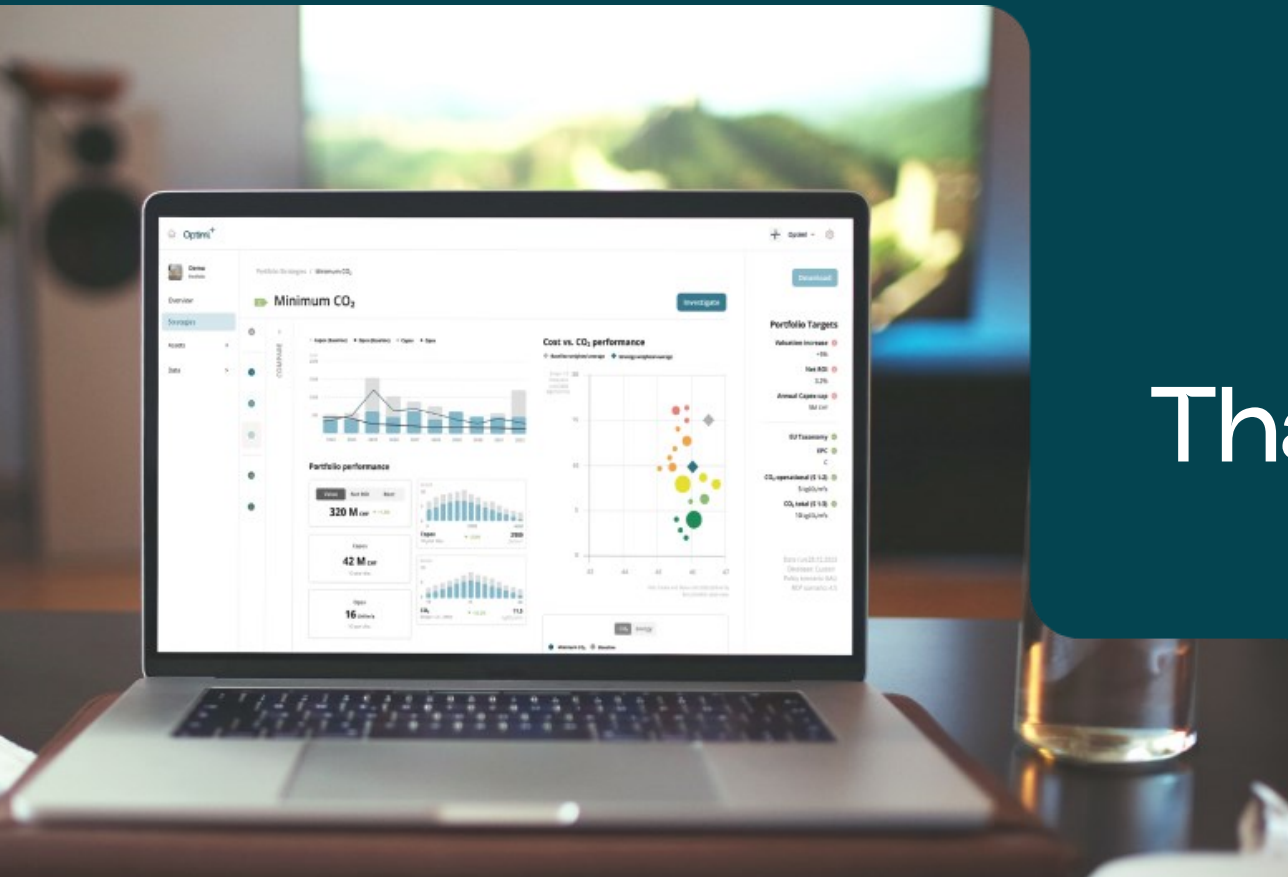
## Strong associations



Sign-up for your  
demo meeting via  
[www.optiml.com](http://www.optiml.com)



# OptimL<sup>+</sup>



Thank you!