Interreg Baltic Sea Region

Co-funded by the European Union

ENERGY TRANSITION
Climate-4-CAST

Climate Action Decision Support (CADS) Tool: Actions, Scenarios, & Visualizations

Climate Budget Training Course Module 4 | 7 May 2026

Michael Mechenich, Kausal Ltd.

Climate Action Decision Support (CADS) Tool

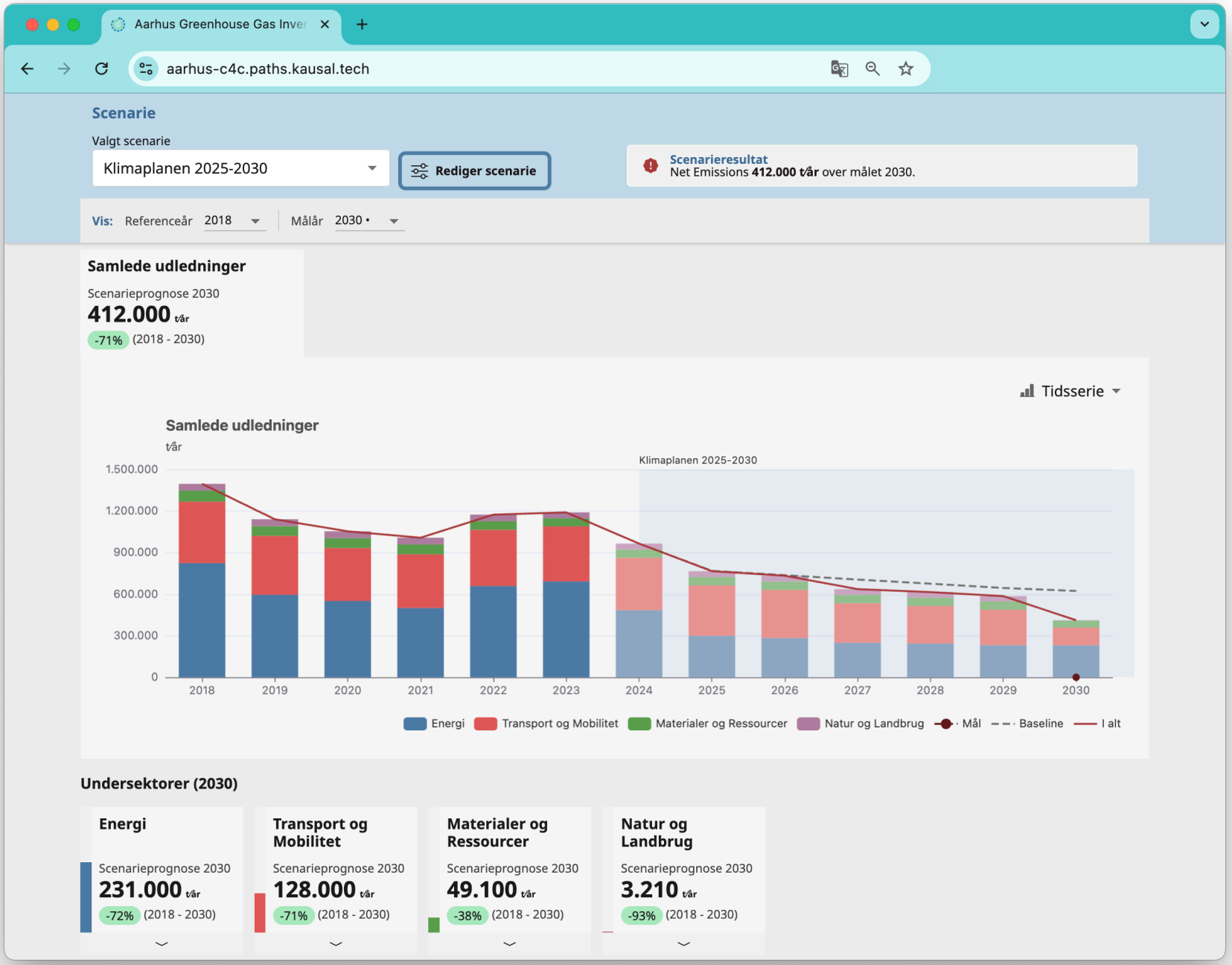
Actions, Scenarios, & Visualizations

- **Action Impact Modeling:** Simple vs. detailed approach, single trajectories vs. ranges of possible impacts
- **Visualizations of Results:** Action list, detailed action pages, cost efficiency and cost-benefit analysis visualizations
- **Scenarios:** Predefined and custom scenarios

CADS Tool

User Interface

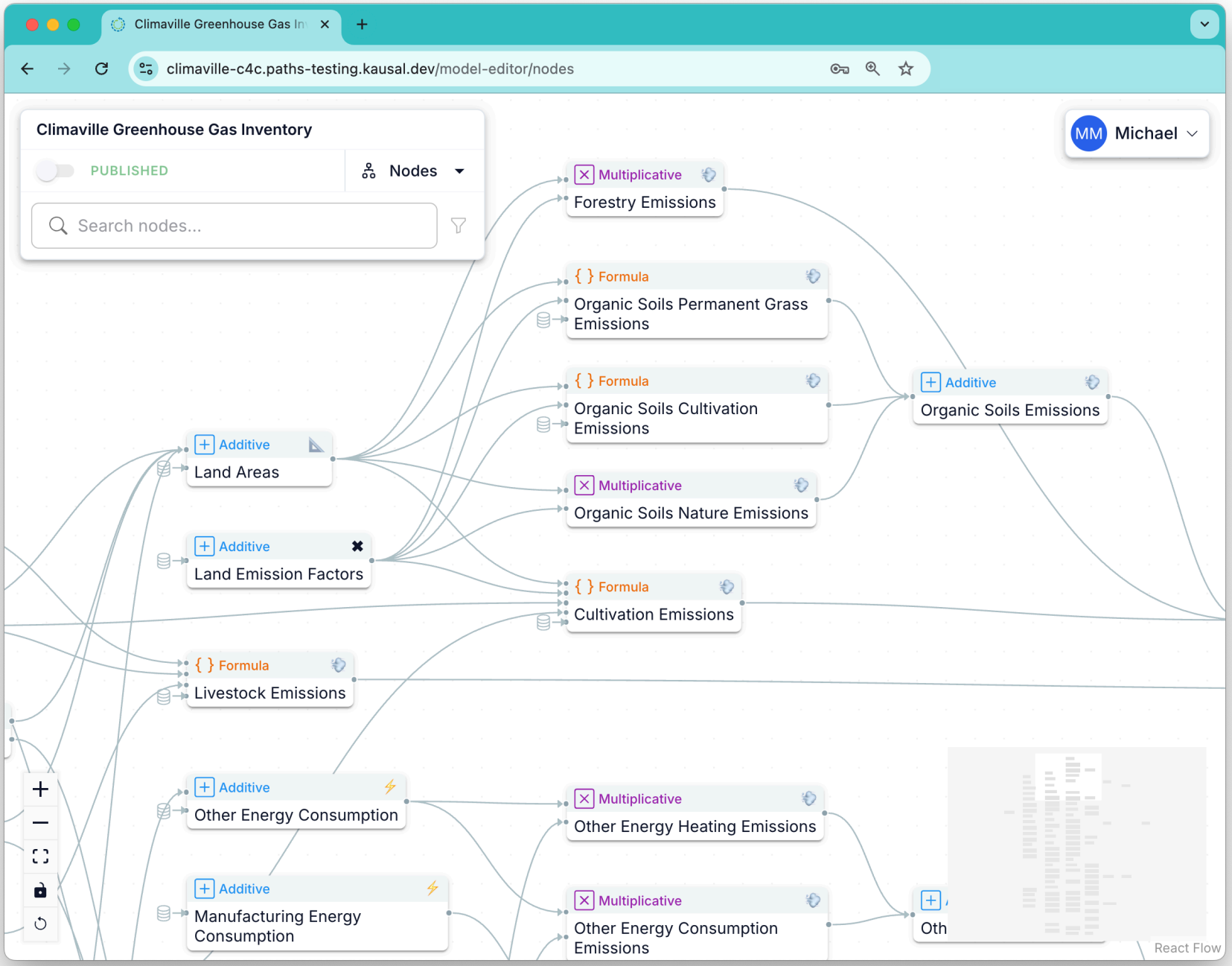
The CADS tool allows users to explore a city's emissions inventory and forecast visually, and reports key summary statistics.



CADS Tool

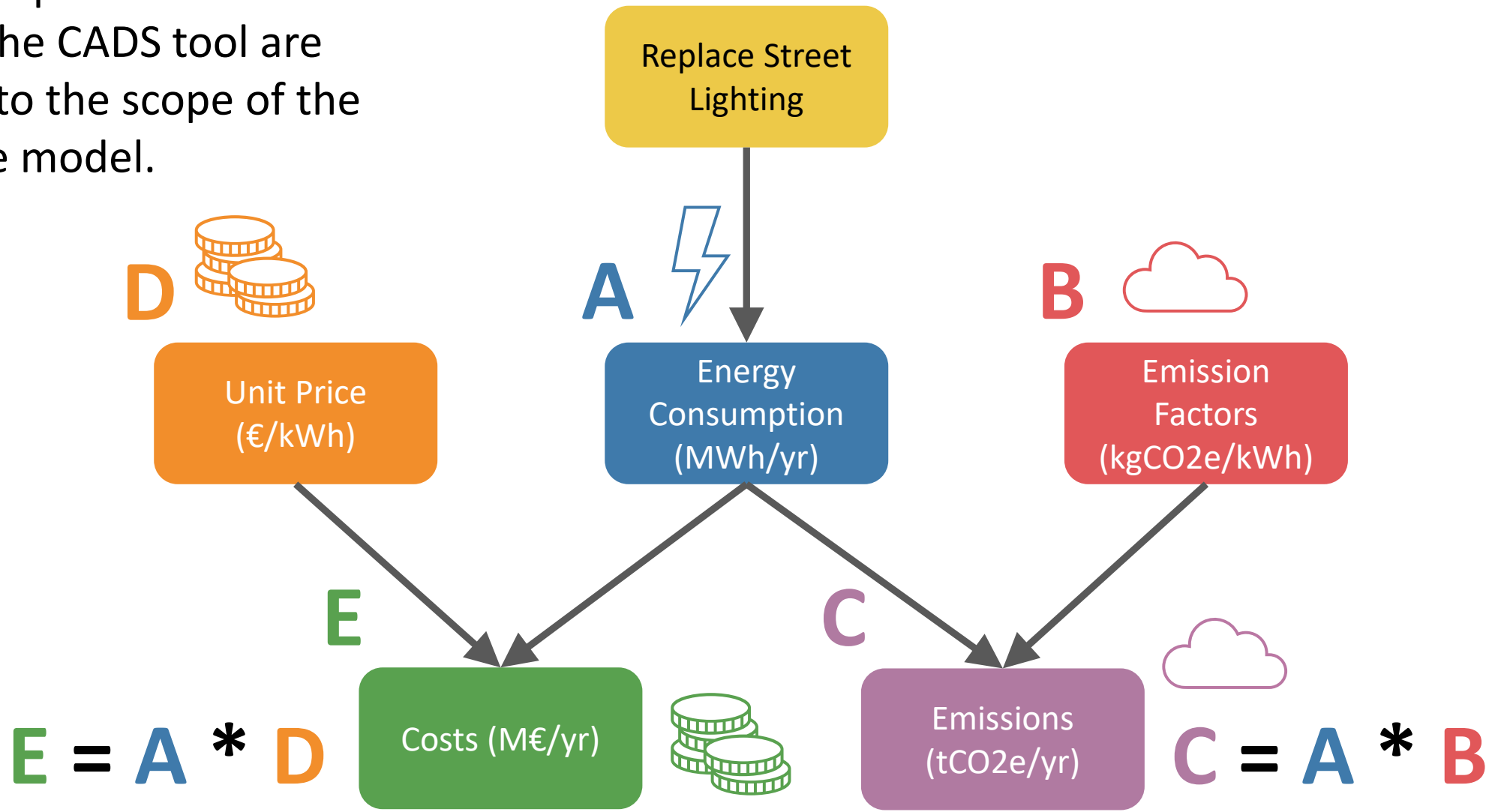
Model Editor

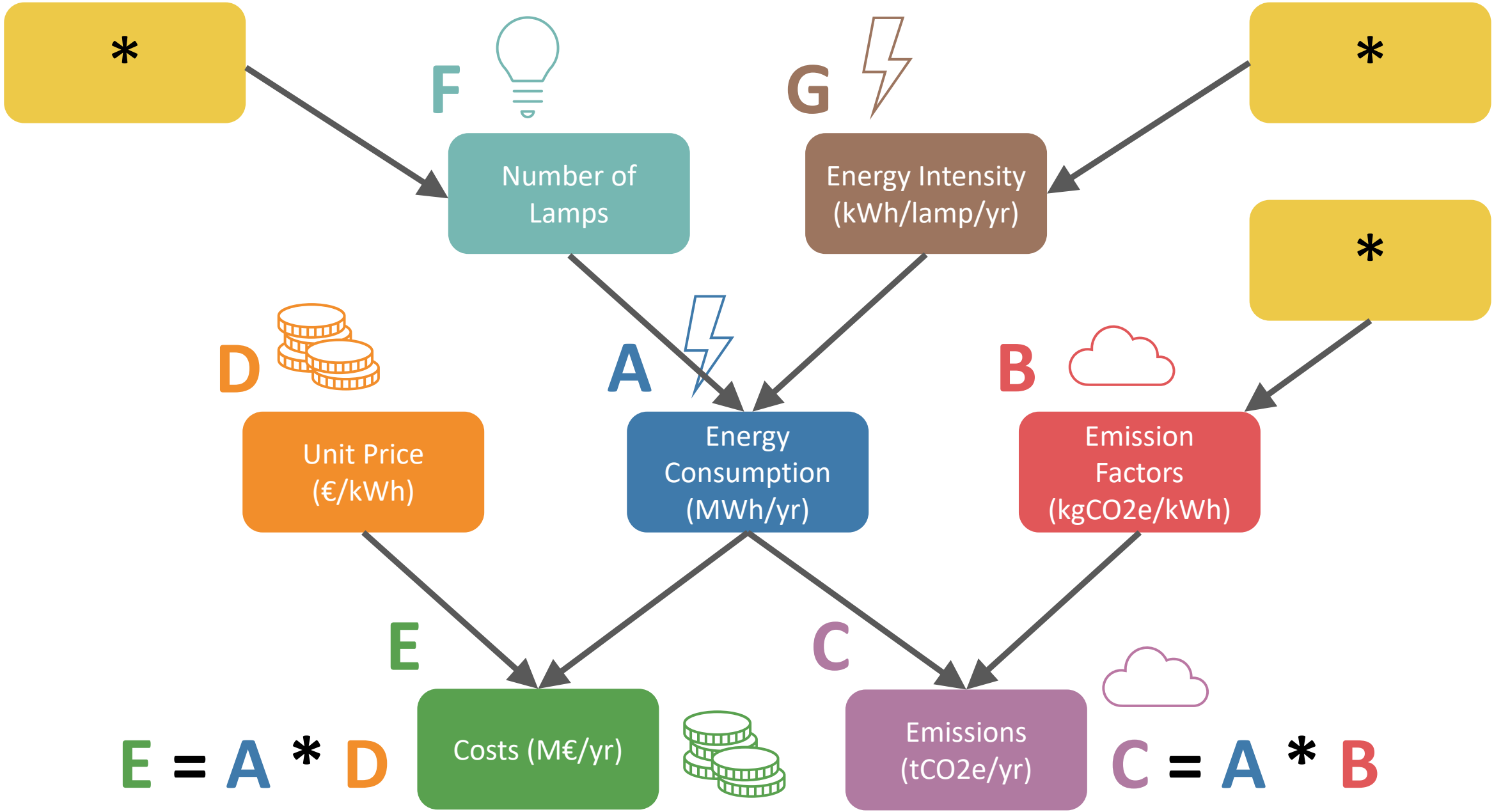
Behind the scenes, a user-defined, data-driven, structured model calculates baseline quantities and action impacts.



Action Impact Assessment

Action impact calculations within the CADS tool are limited to the scope of the baseline model.




*
F
Number of Lamps
G
Energy Intensity (kWh/lamp/yr)
*
*
D
Unit Price (€/kWh)
A
Energy Consumption (MWh/yr)
B
Emission Factors (kgCO2e/kWh)
E
C
Costs (M€/yr)
Emissions (tCO2e/yr)
E = A * D
C = A * B

CADS Tool Use Cases

Top-Down

Energy Efficiency Measures: Reduce Electricity Consumption by X% in 2030

Streetlight Electricity Consumption (MWh/yr)

Bottom-Up

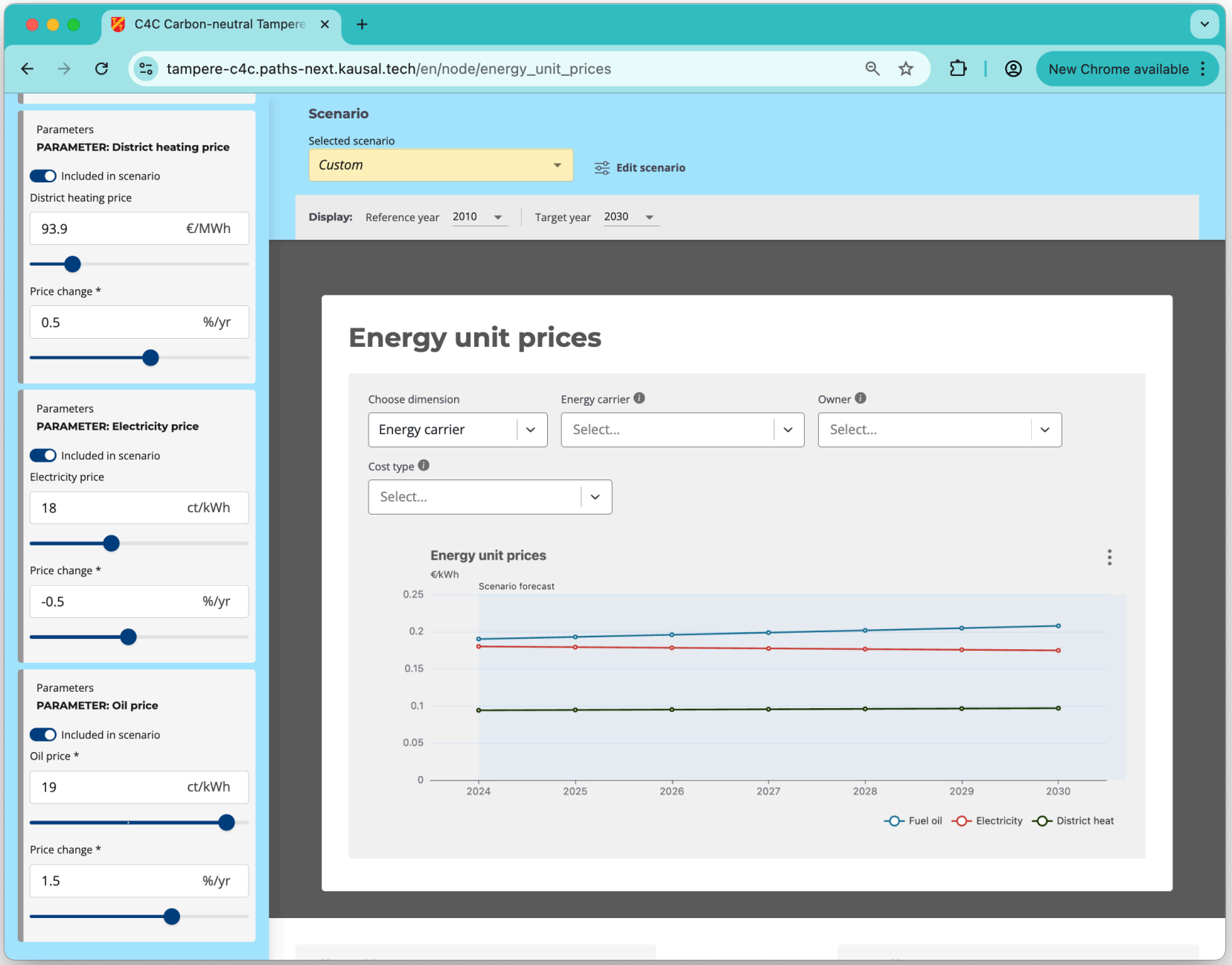
Switch X Streetlights in Y City District from HPS to LED Lamps in 2027

Number of Streetlights by Lamp Type

CADS Tool

Parameter Sliders

Baseline quantities and action impacts can be represented via adjustable parameters, rather than single time-series.

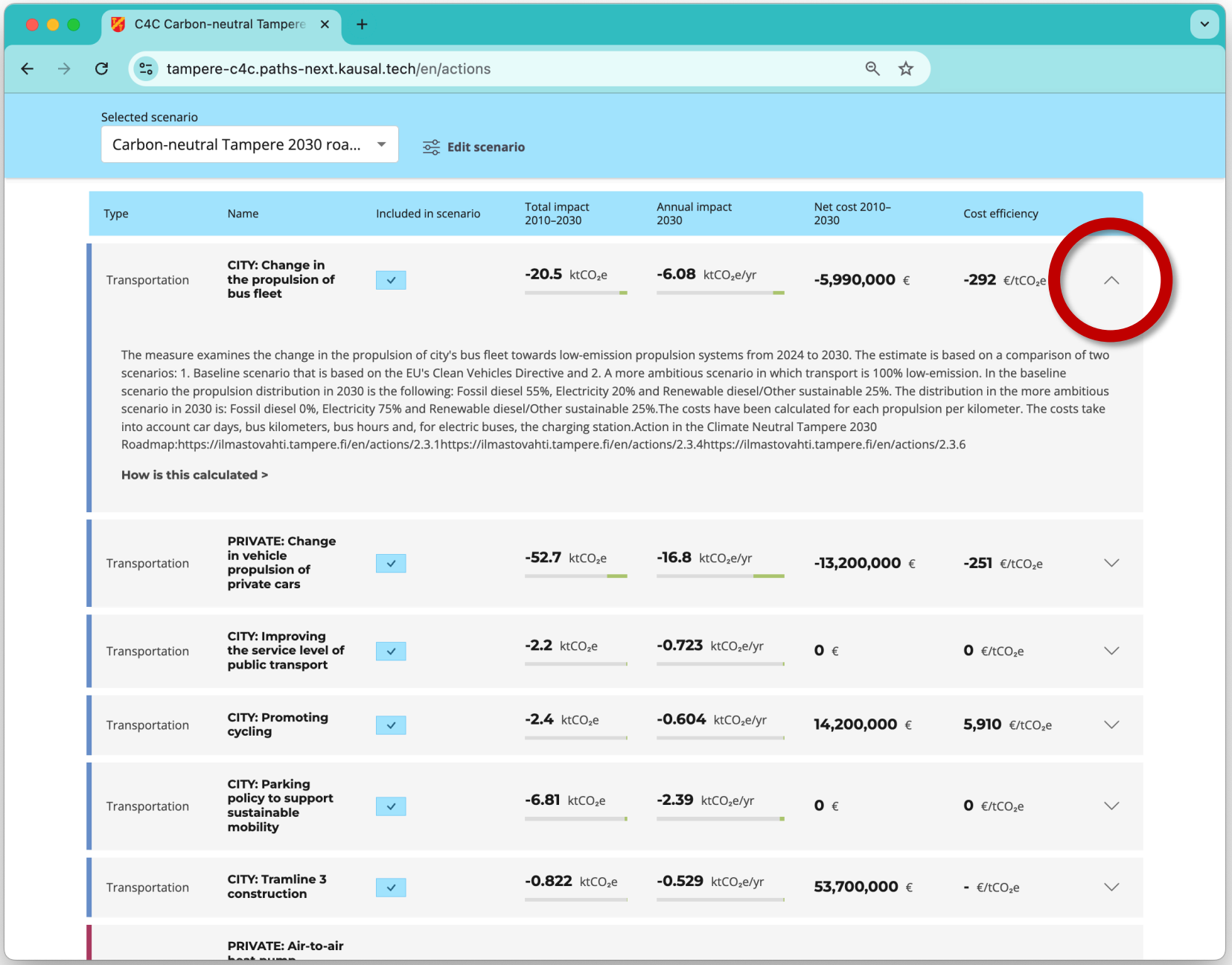


CADS Tool

Action List Page

Four impact KPIs shown for actions affecting emissions and financial costs/benefits.

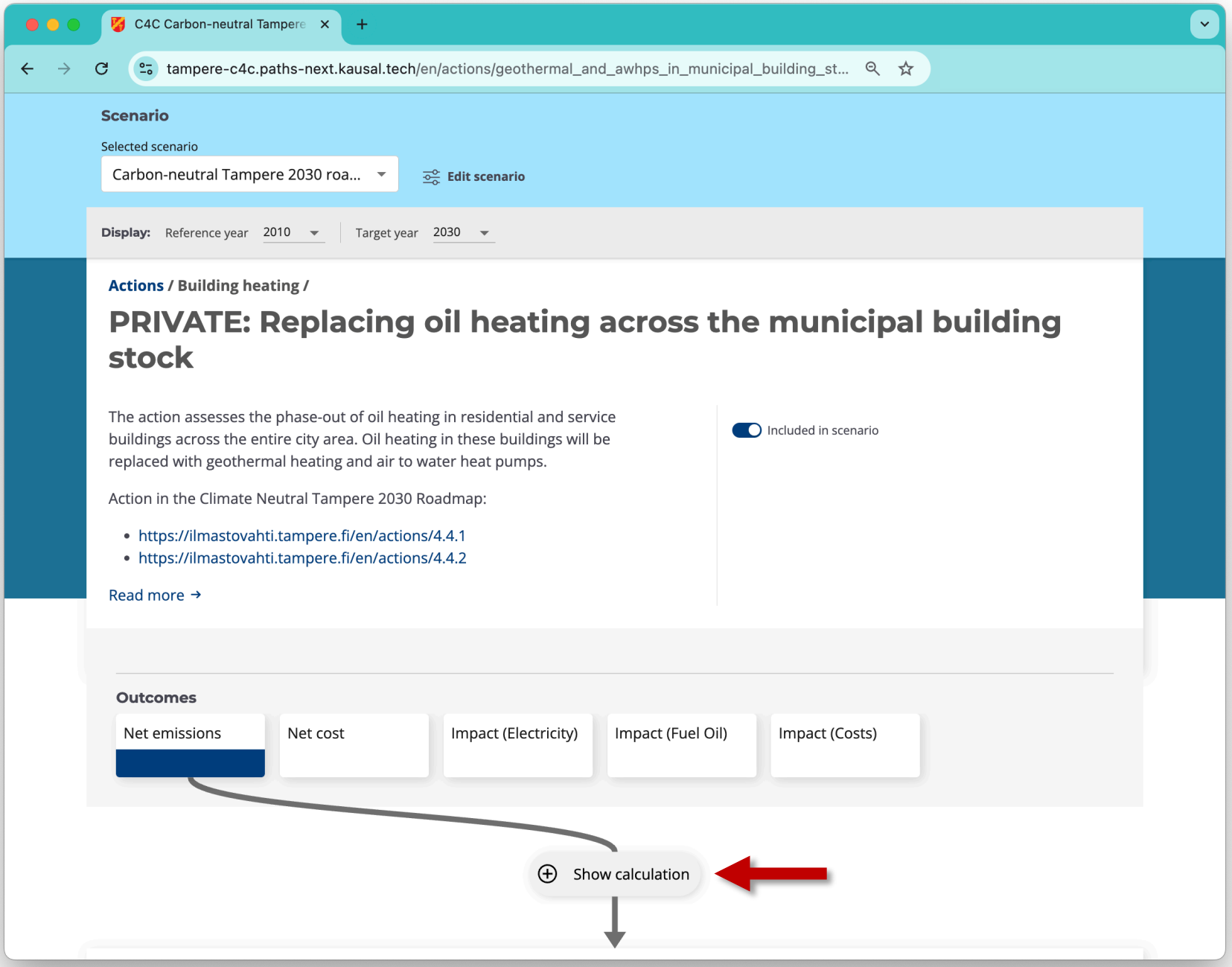
Action cards may be opened for additional details.



CADS Tool

Action Details Page

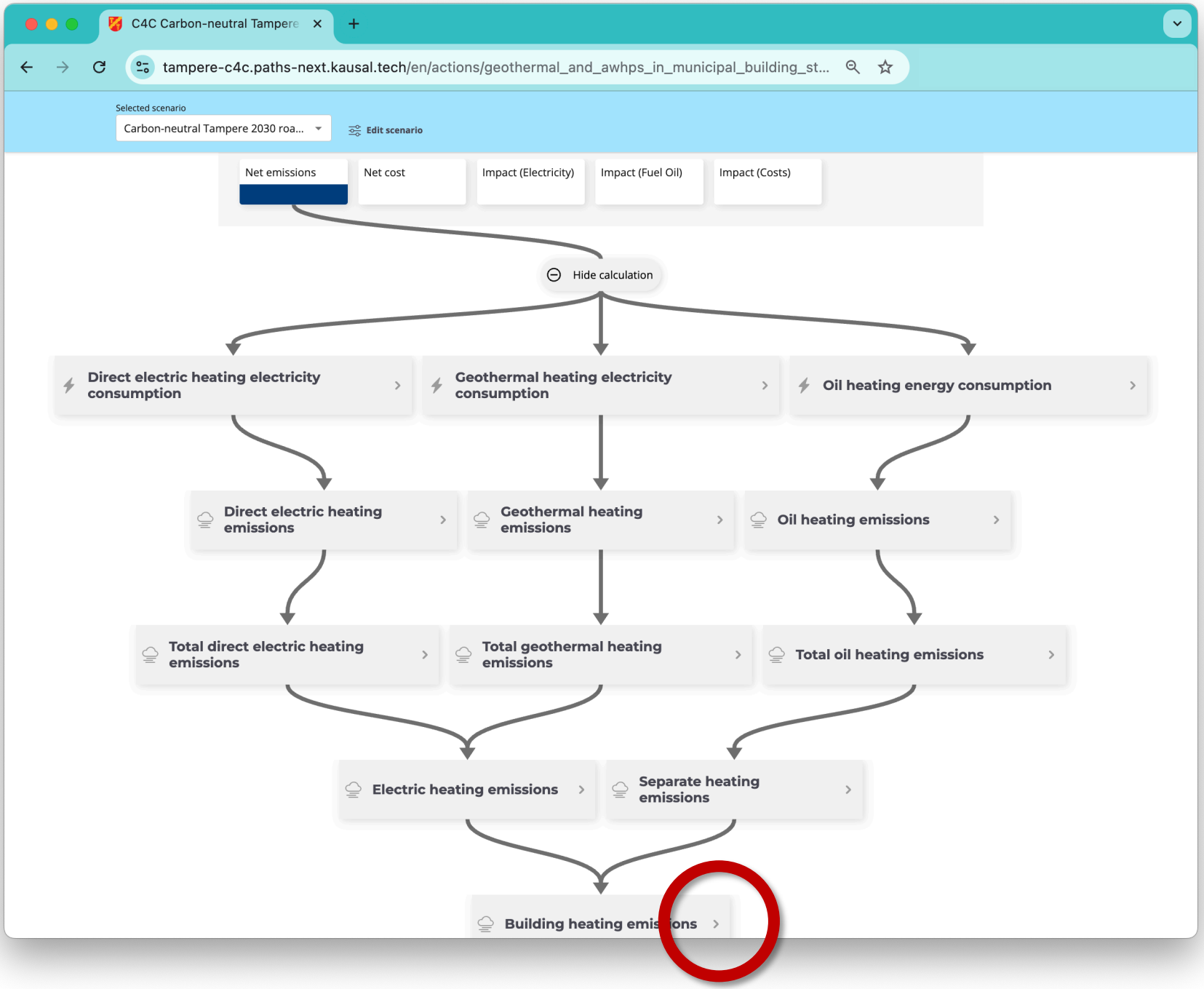
Action outcomes are shown across the bottom of each action's details page.



CADS Tool

Action Details Page

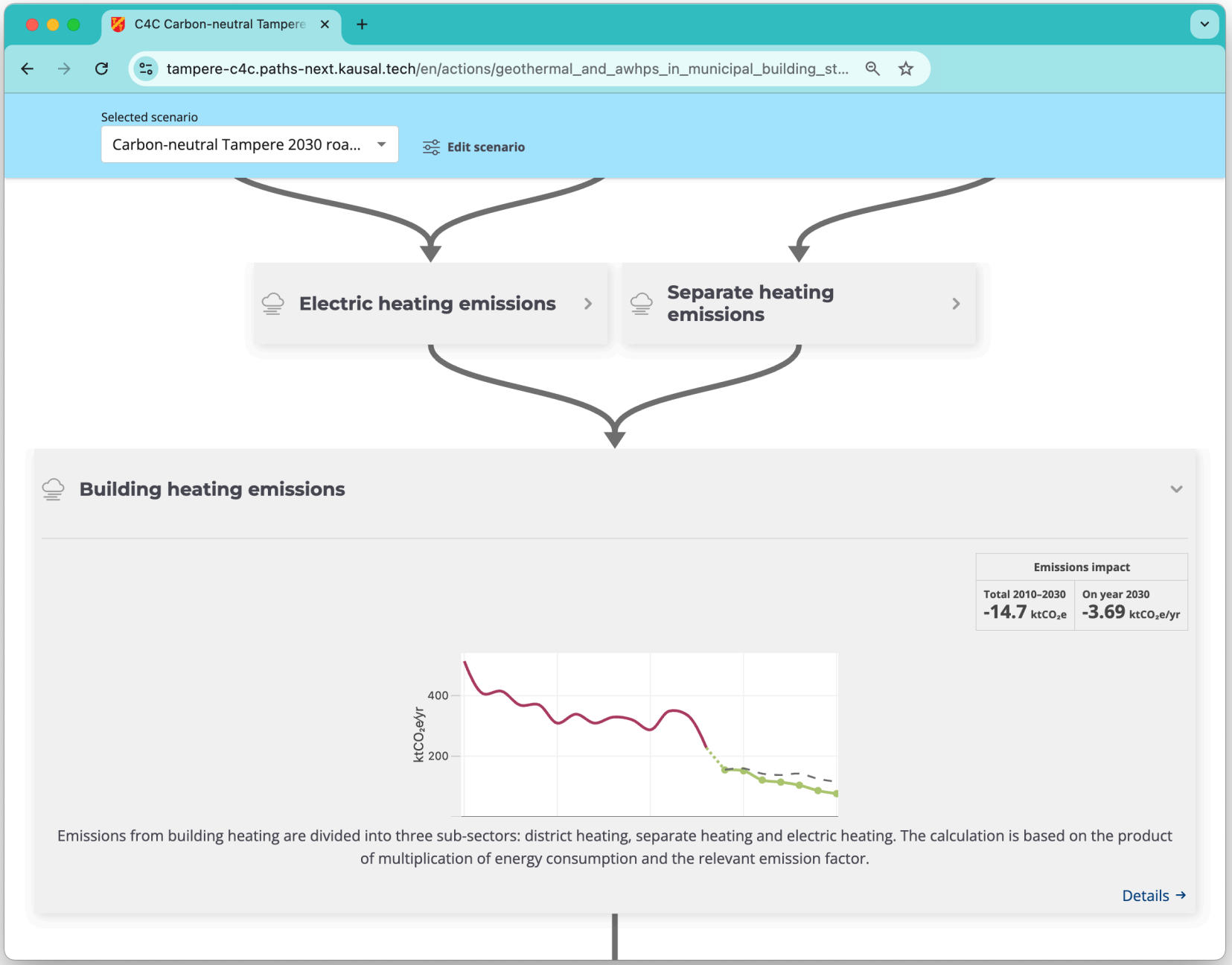
The “show calculation” button reveals the causal chain or network from intervention to outcome.



CADS Tool

Action Details Page

Nodes in the graph may be opened to examine the action's impact at each step along the way.

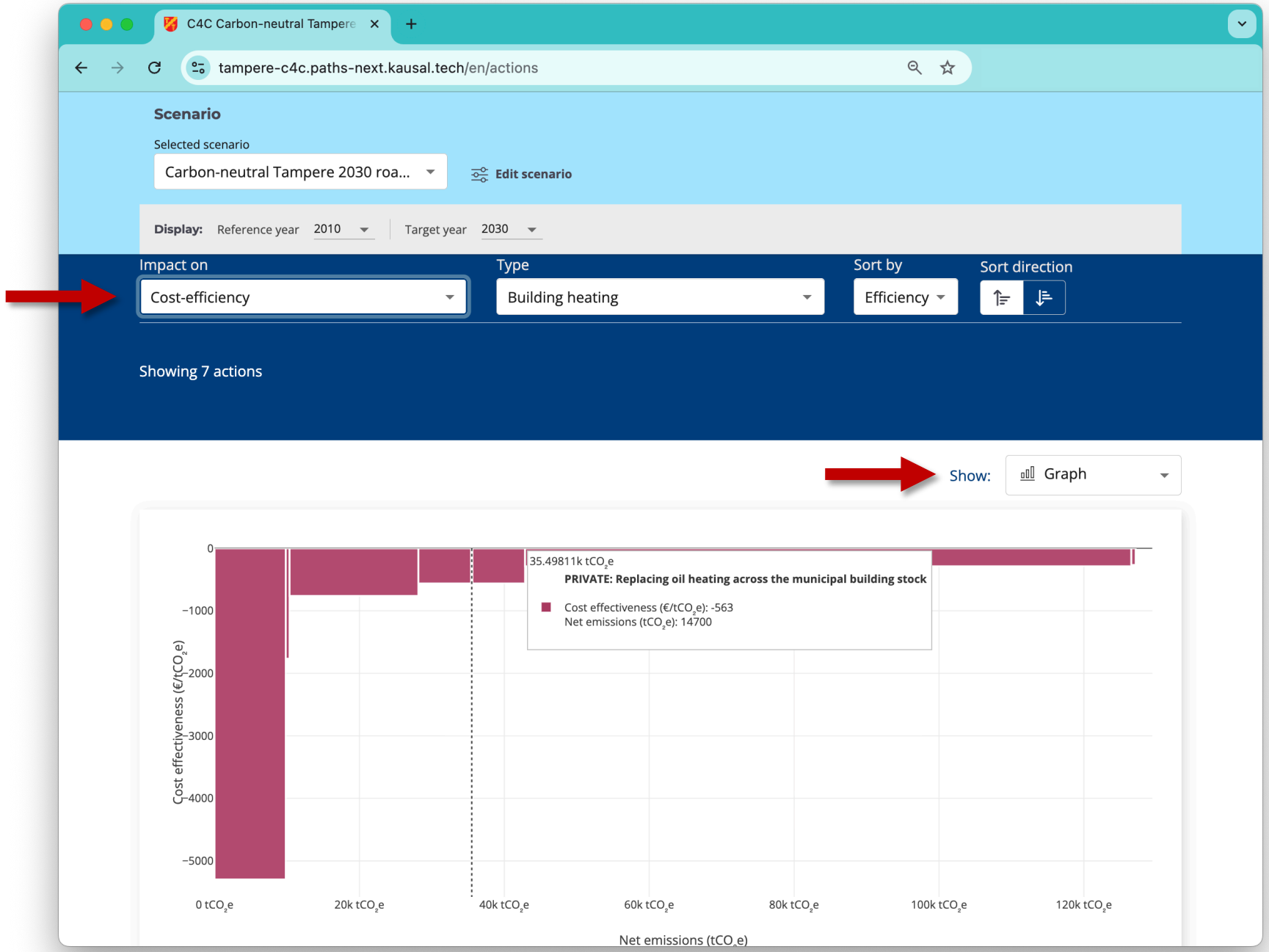


CADS Tool

Cost Efficiency

The cost efficiency graph, or MAC curve, visualizes actions by efficiency and total emissions impact.

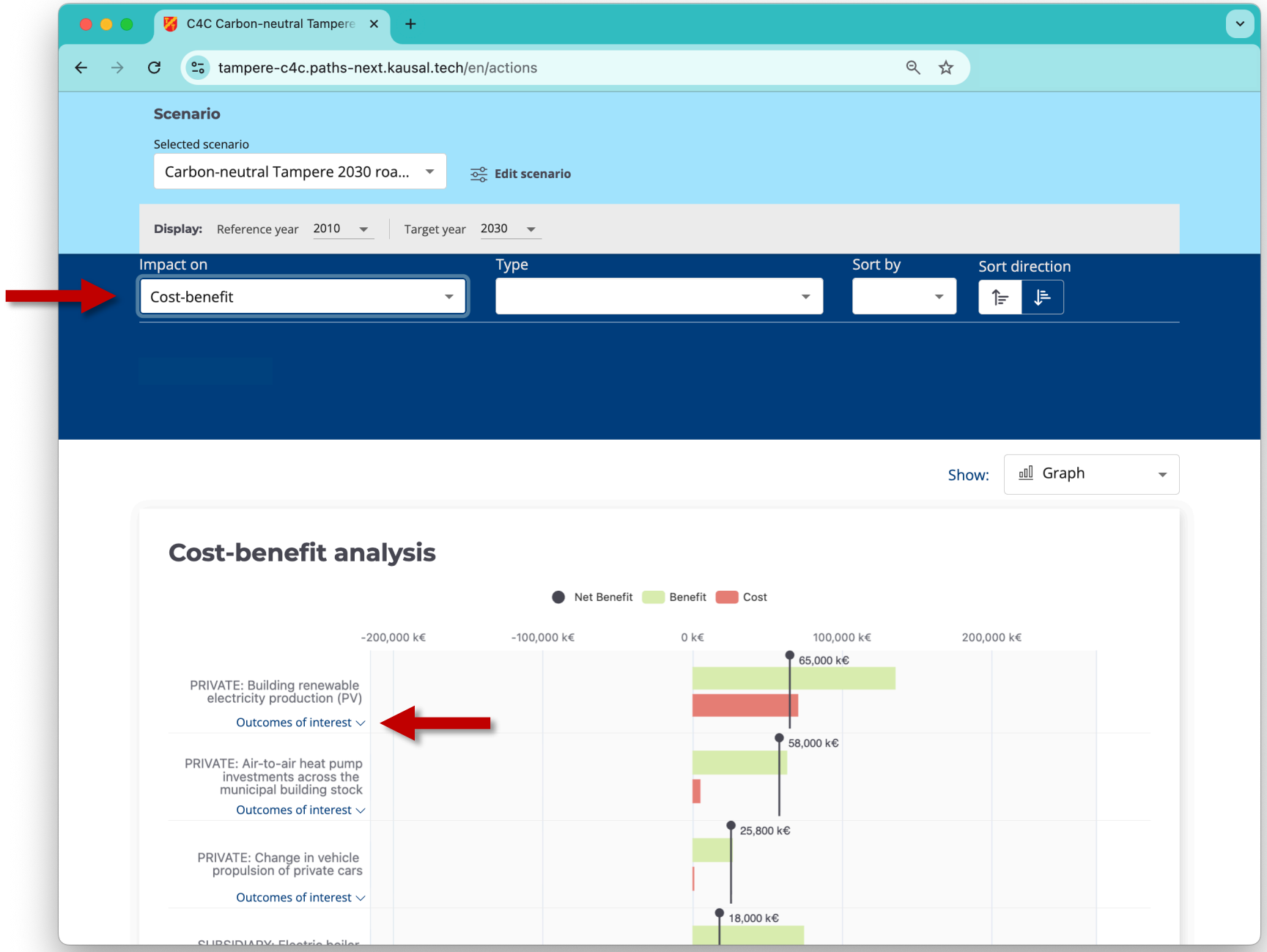
The more negative the bar, the more efficient the action; the wider the bar, the more impactful.



CADS Tool

Cost-Benefit

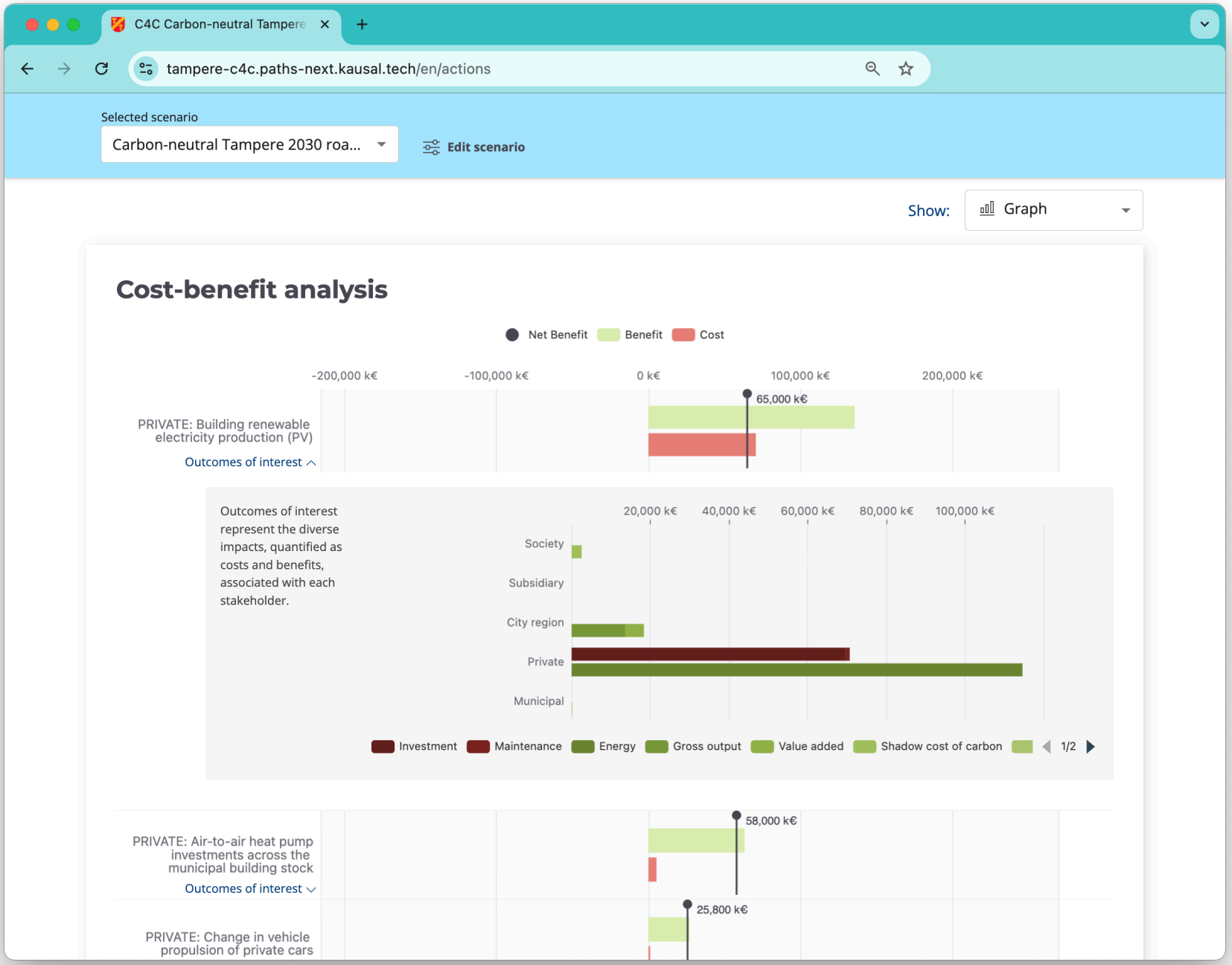
In the cost-benefit analysis graph, actions' total costs and benefits are shown side by side.



CADS Tool

Cost-Benefit

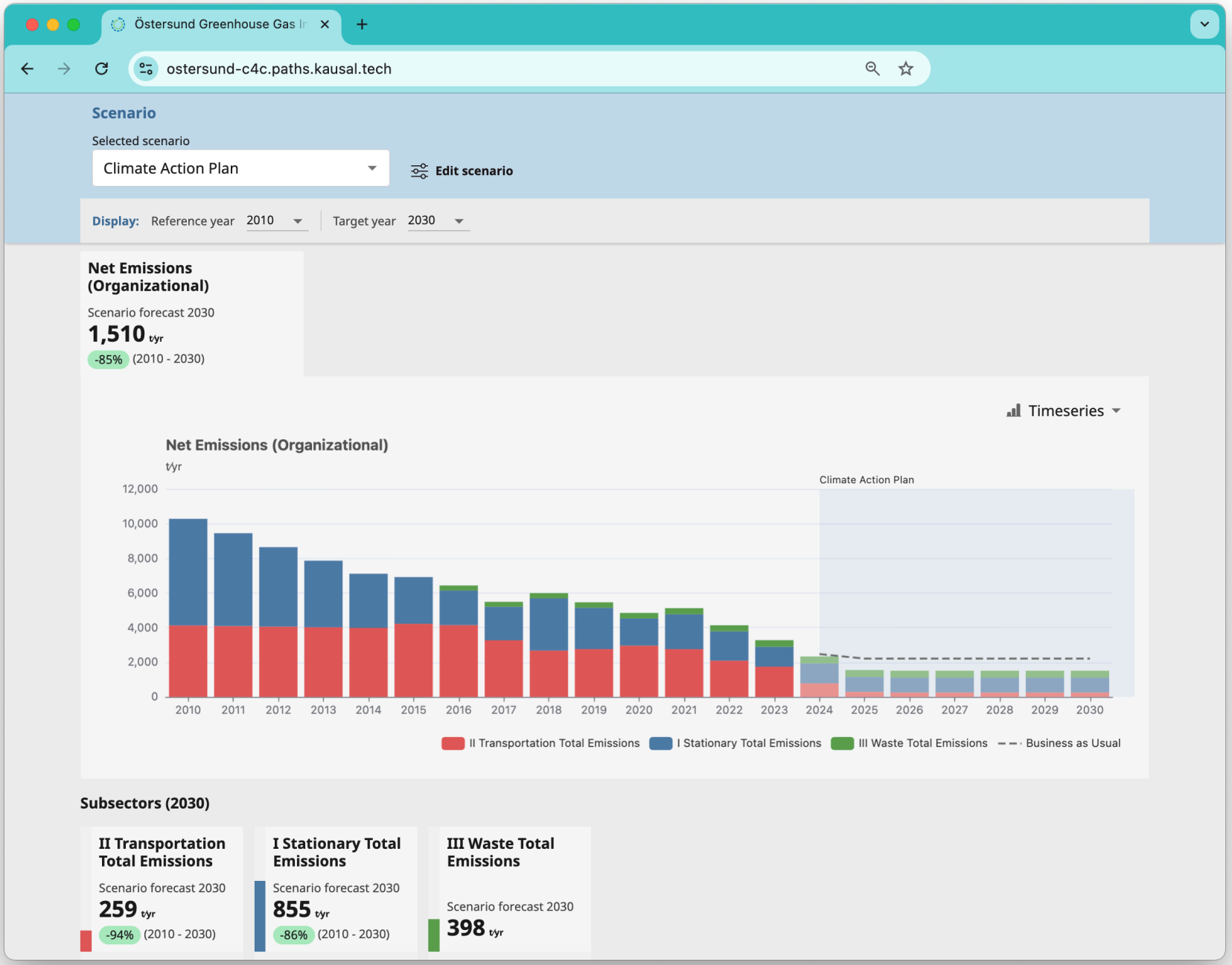
If tracked within the tool, the costs and benefits may be visualized by stakeholder and cost type.



CADS Tool

Scenario Toolbar

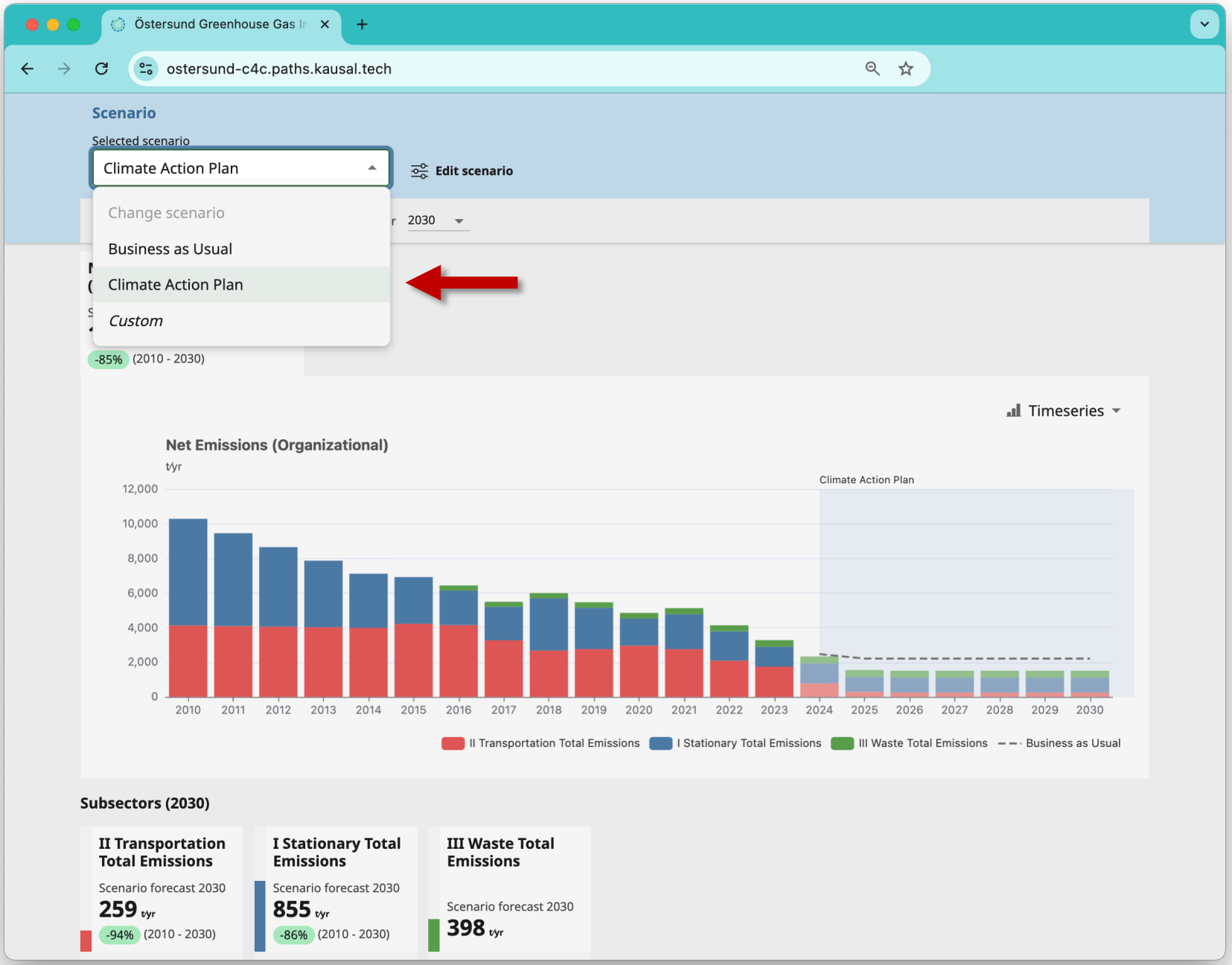
The scenario toolbar is available on most tool pages, and controls all graphs and KPIs.



CADS Tool

Scenario Toolbar

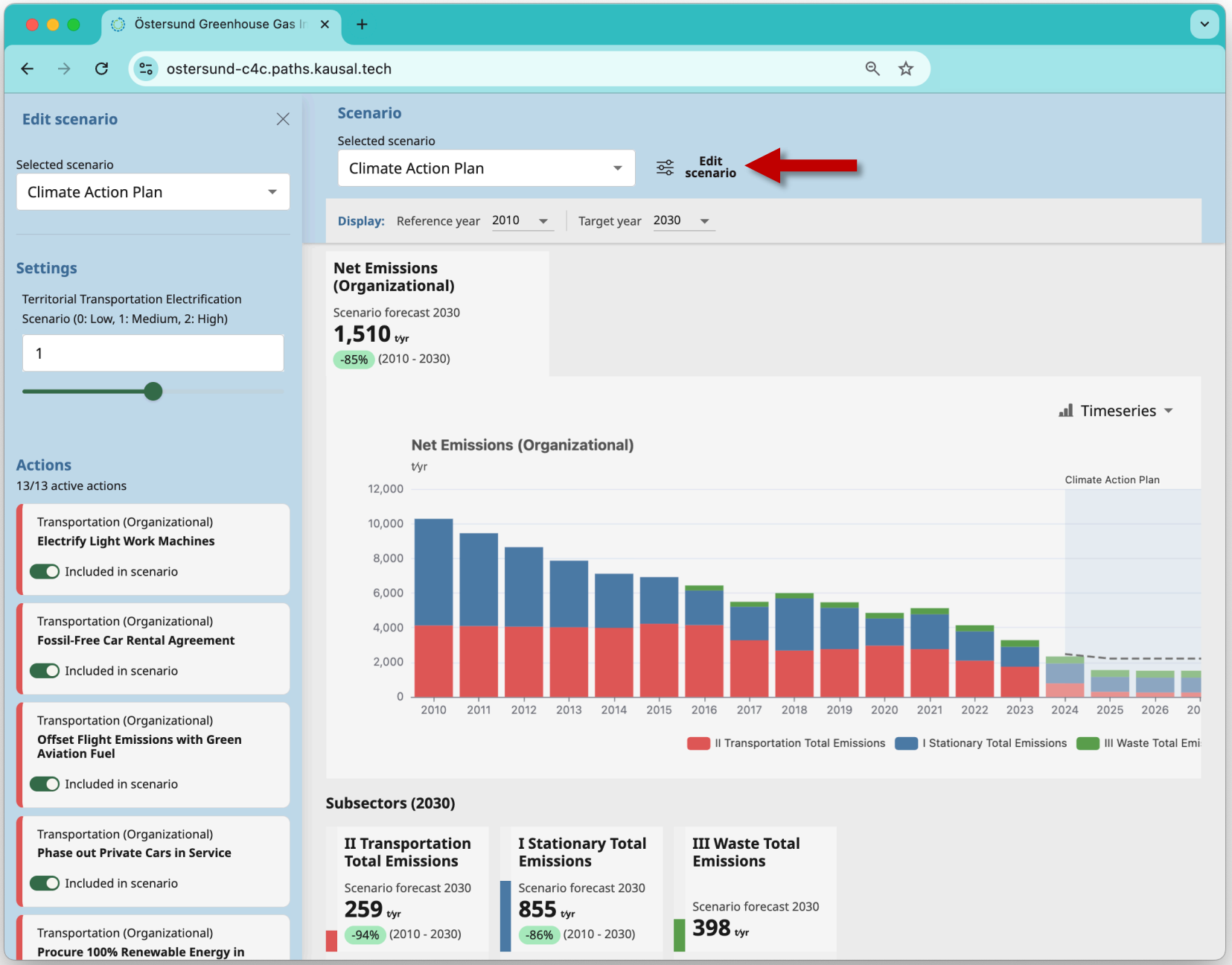
The scenario selector is used to switch between pre-defined scenarios.



CADS Tool

Scenario Editor

The scenario editor is used to build custom scenarios: actions may be turned on or off, and parameters adjusted individually.



Climate Action Decision Support (CADS) Tool

Actions, Scenarios, & Visualizations

- **Action Impact Modeling:** Simple vs. detailed approach, single trajectories vs. ranges of possible impacts
- **Visualizations of Results:** Action list, detailed action pages, cost efficiency and cost-benefit analysis visualizations
- **Scenarios:** Predefined and custom scenarios

Interreg Baltic Sea Region

Co-funded by the European Union

ENERGY TRANSITION
Climate-4-CAST

Climate Action Decision Support (CADS) Tool: Actions, Scenarios, & Visualizations

Climate Budget Training Course Module 4 | 7 May 2026

Michael Mechenich, Kausal Ltd.