

EnergyAtlas

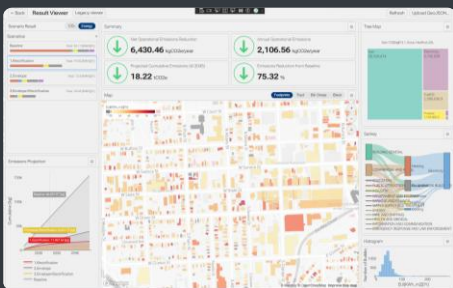
City-Scale Building Energy Intelligence for Climate Action



ES|LAB

Cities face mounting pressure to decarbonize buildings, plan electrification, and modernize grid infrastructure — but rarely have the in-house tools or expertise to do it at scale. EnergyAtlas closes that gap.

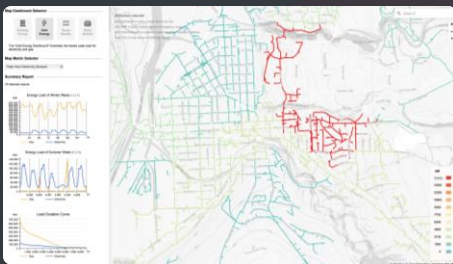
EnergyAtlas is a city-scale digital twin and Urban Building Energy Modeling (UBEM) platform. It integrates tax records, LiDAR scans, RECS/CBECS-derived building archetypes, zoning data, and utility meter readings into an automated simulation and calibration workflow, constructing a physics-based energy model of every building in your jurisdiction without field surveys, proprietary software, or specialized staff. Simulations run on reduced-order 5R1C thermal network models, delivering computationally efficient predictions of peak loads, electrification impacts, and retrofit outcomes across the entire building stock. Results are accessible through Rhino, Grasshopper, Cesium, and browser dashboards, putting actionable insights in the hands of planners, utilities, and policymakers. Combined with financial modeling and scenario exploration tools, EnergyAtlas gives cities the data-driven decision-making capabilities to plan a sustainable and equitable energy transition.



Emissions & Retrofit Scenario Dashboard

EnergyAtlas simulates building-level energy performance across your entire city, modeling envelope upgrades and HVAC electrification under future climate conditions, including extreme heat- and cold-stress events. We answer questions such as:

- Which buildings should we retrofit first?
- How does a full electrification scenario change our cumulative CO₂e trajectory through 2040?
- Which neighborhoods face the highest energy burden risk during extreme heat or winter cold snaps?



Utility & Grid Infrastructure Planning

EnergyAtlas aggregates building-level hourly energy profiles to feeder-level and district-scale load models, simulating peak demand and load duration curves under electrification scenarios. We answer questions such as:

- Which feeders will overload if we install heat pumps?
- Where should we prioritize grid upgrades?
- Can our current distribution infrastructure handle the added load from EV charging and heat pumps?



Renewables Integration Planning

EnergyAtlas maps annual solar radiation across every rooftop and façade in the city using LiDAR-derived 3D geometry, identifying sites viable for building-integrated photovoltaics (BIPV) and utility-scale PV. We answer questions such as:

- Which sites best qualify for BIPV and utility PV?
- How much electrification load can be offset by rooftop PV?
- Which sites are strong candidates for paired PV and battery storage to reduce peak grid draw?

Data Requirements

- Address of all properties
- Tax assessment data, parcel level
- Heating system type and fuel, parcel level
- Building permit (if available)
- ArcGIS REST service directory
- LiDAR remote sensing data
- Measured energy use at any scale
- Feeder line geometry and capacity

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Learn More

More information available: energyatlas.io