SolMod Systems

Pilot Modeling Framework — What We Measure and Why It Matters

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March 2026

Every pilot starts with data, not assumptions.

SolMod's energy modeling pipeline provides site-specific thermal analysis for each pilot. We use real building data, local weather, and calibrated simulation — not generic savings estimates.

Site specific analysis per building

Real weather data not assumptions

Plain language readout for decision teams

Pre/Post measured comparison not projections

What we model for your building

YOUR BUILDING

Building Profile

- Building type & vintage
- Facade orientation & area
- Window-to-wall ratio
- Occupancy patterns

YOUR CLIMATE

Weather & Solar

- Climate zone (IECC/ASHRAE)
- TMY3 weather file
- Peak solar radiation hours
- Cooling degree days

YOUR SYSTEMS

Mechanical Baseline

- HVAC system type
- Peak cooling profile
- Current energy spend
- Electrification plans

What the model produces — and what it means for you

Peak demand reduction

→ Lower peak electricity costs. Reduced demand charges during the most expensive hours.

Load shape improvement

→ Less strain during expensive hours. Smoother demand, less HVAC cycling, lower ramp rates.

Coincident peak reduction

→ Direct kW savings during the grid's peak window — most expensive and carbon-intensive.

Annual energy impact

→ Total kWh reduction for budget planning, sustainability reporting, and ROI projections.

HVAC cycling reduction

→ Longer equipment life. Less compressor cycling means fewer maintenance calls.

Feeder-level aggregation

→ Multiple buildings combined can defer substation upgrades — key value for utilities.

How we prove electrification value

Every pilot models two scenarios to quantify SolMod's value in buildings that are electrifying or planning to.

SCENARIO 1

Electrified — no SolMod

Heat pump conversion without facade intervention. Establishes peak demand and load shape baseline.

SCENARIO 2

Electrified + SolMod

Same building with louvers installed. Compare peak delta, cycling intensity, and thermal lag effects.

When SolMod matters most

Midday solar surplus

Pre-condition the envelope during overgeneration hours. Reject heat early so HVAC doesn't compensate later during the evening ramp.

Peak demand window (2–7 PM)

Maximum shading when the grid is most stressed and electricity most expensive. Reduce cooling intensity when it matters most.

What happens next

STEP 1

Share your building

Building type, facade orientation, current comfort issues, and energy context.

STEP 2

We model it

Site-specific analysis using DuckDB, OpenStudio, and local weather data calibrated to your building.

STEP 3

You get a readout

Plain-language summary with projected impacts — ready for your procurement or decision team.

Ready to explore a pilot?

Share your building profile and constraints. We will respond with a practical pilot path designed around measurable outcomes.

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