Accelerating Building Decarbonization

CALPLUG, APR 22 2024
Our mission is to provide planet-positive building comfort
Gradient revolutionizes HVAC installation and efficiency for modern comfort

- All-season comfort
- Quick, low-cost installation
- Smart connectivity
- 95% lower direct emissions
- All-climate, high performance electric heating and cooling
The Stick: Building Performance Standards Impose Penalties for Inefficiency

Example Building Performance Standards

- **Local Law 97 (NYC)**
- **BERDO 2.0 (MA)**
- **Denver Green Code**

Many more via the Institute for Market Transformation and the National BPS Coalition

✔ Building Performance Standards target the reduction of energy use or carbon emissions from existing buildings, as compared to Energy Codes that apply to new construction
  - Specify energy use or emissions reductions.
  - Penalties if exceed targets.

✔ Example: NYC Local Law 97
  - Covers buildings 25k square feet and larger.
  - Targeting 40% emissions reductions by 2030 and 80% by 2050, a reduction only achievable with heat pumps.
  - Charges $268/tCO2eq over targets; each Gradient offsets ~0.4 tCO2eq/yr in NYC, or ~$107/yr in fines.
  - Led to NYCHA CH4A Challenge, which Gradient won.

Passed BPS Policy or Program

Committed to passage of BPS policy or program by Earth Day 2024
Faster + Lower Cost for Building Owners Today

Existing solutions require extensive permitting, construction, retrofits, skilled labor

Per room estimates

<table>
<thead>
<tr>
<th></th>
<th>Gradient</th>
<th>Mini-split</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware</td>
<td>$3,800*</td>
<td>$1,200</td>
</tr>
<tr>
<td>Installation</td>
<td>$0 - $100</td>
<td>$2,200</td>
</tr>
<tr>
<td>Electrical Upgrades</td>
<td>$0</td>
<td>$1,400</td>
</tr>
<tr>
<td>Other**</td>
<td>$0 - $100</td>
<td>$1,100</td>
</tr>
<tr>
<td>TOTAL (per room)</td>
<td>$3,900</td>
<td>$5,900</td>
</tr>
</tbody>
</table>

**Gradient before incentives

**Demo, drywall, wall-mount thermostat, load calcs
Total Cost of Ownership (TCO) vs. Traditional HVAC

- Compelling TCO for older multi-family buildings with traditional HVAC heating systems for one Gradient customer
- Lower day one capital costs for window-based heat pumps due to available incentives and high cost to maintain traditional HVAC system
- More energy efficient with lower heating and cooling costs
- Significant savings in ongoing maintenance costs

70%+ reduction in annual total costs

Source: Gradient estimates based on publicly available data. These estimates have not been verified by Gradient customer.
Guiding Principles of Product Strategy

The user matters

Modular infrastructure scales faster/cheaper

Digital/networked control

Professional grade without professional install
Customer Testimonials for Gen 1

“Genuine ease with zero intimidation. My partner and I were able to get it in our window within 15 minutes and powered on shortly after. How cool is that!”
Carol L.

“It’s so easy to use, it doesn’t take up window space, it looks nice, and the heat is not uncomfortable to your body if you are sitting close to the unit.”
Blake W.

“I extremely liked the mobile app and the overall interface and its quick reaction time”
Hans V.

“It runs quiet and it cooled the room right down on a hot night in Oaktown! So far so good. :)
Gabriel K.

“Form and function are no longer at odds.”
Brad T.

“It heats and cools! Only got hot enough one day for A/C but wow, great.”
Laura F.
Central Valley Project

Overview

<table>
<thead>
<tr>
<th>Units</th>
<th>Product</th>
<th>Location</th>
<th>Installation Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>Generation 1</td>
<td>CA Central Valley</td>
<td>March 2023</td>
</tr>
</tbody>
</table>

Key Result

Reduction in utility bills for more than 50% of residents

Summary

Partnered with Redwood Energy for surveys and bill analysis and the Electric Power Research Institute (EPRI) for smart plug coordination.

The collaboration was pivotal in honing our offerings and approach across markets. The data gathered informs our understanding of user preferences and behaviors, driving enhancements in product reliability, interface, and satisfaction.
NEEA Study Results

The Northwest Energy Efficiency Alliance (NEEA) Micro-Heat-Pump Field Study revealed that tenants highly value the Gradient (“the saddle unit”) for its ease of installation, efficient performance, user-friendly design, and unique all-in-one heating and cooling feature, making it a standout choice in the market.

Ease of Installation
“Saddle unit users had an easier time with installation. They considered the instructions clear and found the numbered boxes to be helpful”

Performance and Design
“Participants appreciated its performance design ease of installation quietness temperature control and overall user experience”

All-in-One Heating and Cooling Feature
“The benefits of heat pump technology should be marketed especially the all-in-one heating and cooling feature which is unique to this product”

User-Friendly Controls
“Most found the settings + controls easy to understand + manage”
NYCHA Resident Feedback: The All-Weather 120V

“Es magnifico!”
“Muy elegante.”

“I love the look.”

“The air feels more fresh.”

“I am very comfortable.”

“The air feels so much more fresh! I have issues with my breathing and I feel like I can breathe better now!”

“The other day I came out of the shower and wanted to dry my hair. When I walked by the warm air from the Gradient, I realized I could use that to dry my hair instead of my hair dryer, so I leaned over and dried my hair with the Gradient.”
Product Performance at NYCHA: Efficiency and Satisfaction

Cost Efficiency
Operates 15% to 78% cheaper than fossil fuels, demonstrating significant cost savings across different conditions.

Partner Satisfaction
NYCHA, NYPA, NYSERDA partners express high satisfaction.

Residential Approval
Positive resident feedback highlights comfort, control, and improved conditions post-installation.

Operational Efficiency & Performance
System maintains intended efficiency/capacity within plug load (< 10 amps). Achieved COP of 3.0 to 5.6 in moderate temps (37-44°F) and 2.5 to 4.7 in the coldest conditions (24-27°F).

Cost Analysis

<table>
<thead>
<tr>
<th>Efficiency Type</th>
<th>COP Range</th>
<th>Cost Reduction (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate Temp Efficiency</td>
<td>COP 3 (worst) to 5.6 (best)</td>
<td>29% to 78% compared to fossil fuels.</td>
</tr>
<tr>
<td>Coldest Day Efficiency</td>
<td>COP 2.5 (worst) to 4.7 (best)</td>
<td>15% to 74%, far outperforming traditional heating.</td>
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</tbody>
</table>

Key Takeaway
Gradient’s technology not only surpasses traditional fossil fuel systems in cost and efficiency but also earns strong partner and resident endorsements, setting a new standard for heating in urban communities.