

NYC Pilot: *Buildings as Batteries*[®]

A Performance Report

A presentation to the IEEE ISGT NA 2020
by Vincent Cushing and William Hederman
February 20, 2020



NYC Pilot: *Buildings as Batteries*®

Reduced HVAC energy 20%, peak 30%
... in sophisticated LEED Gold building.

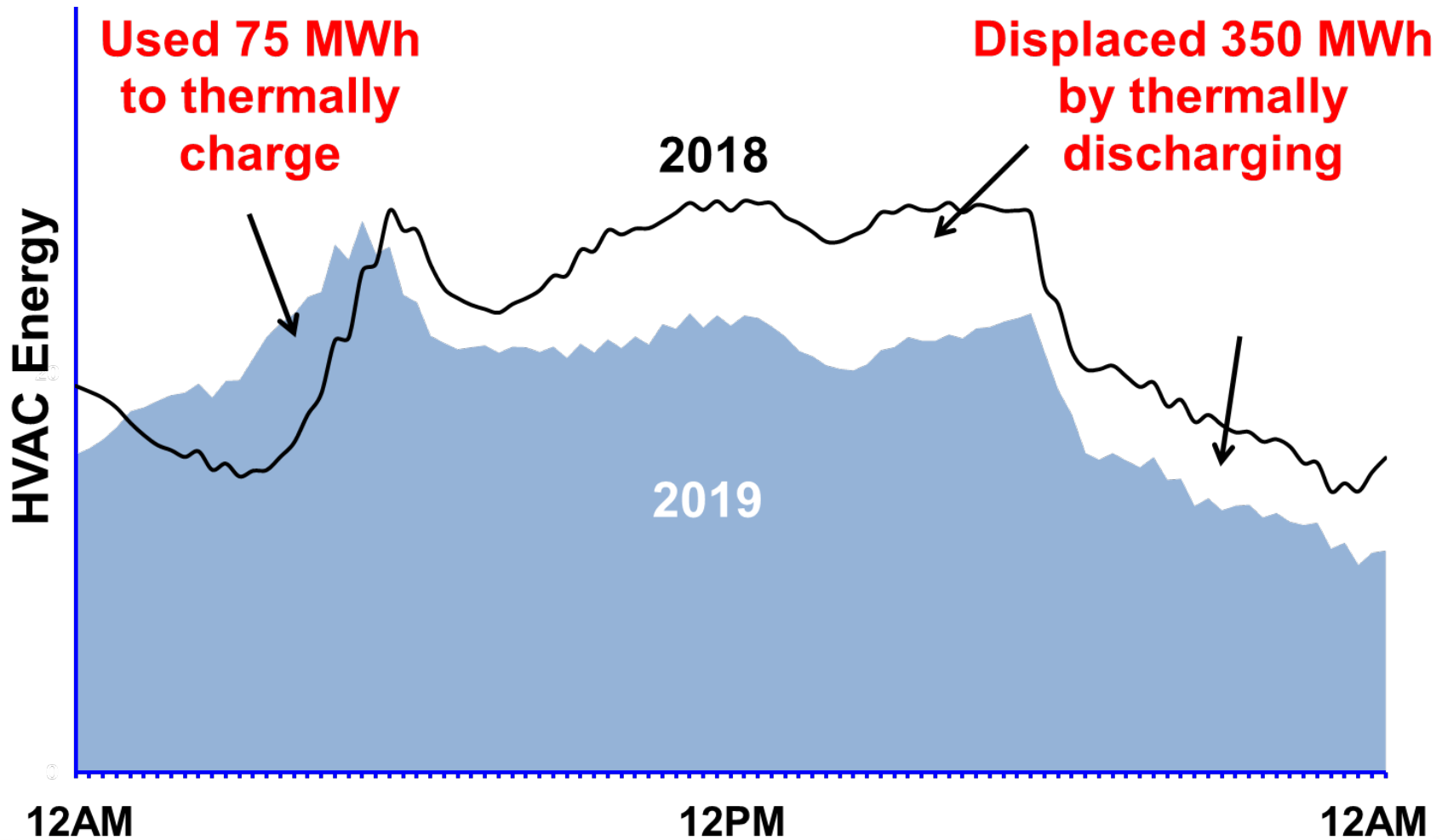
Concentrated on hot, high-priced days.

Powerful energy storage alternative.

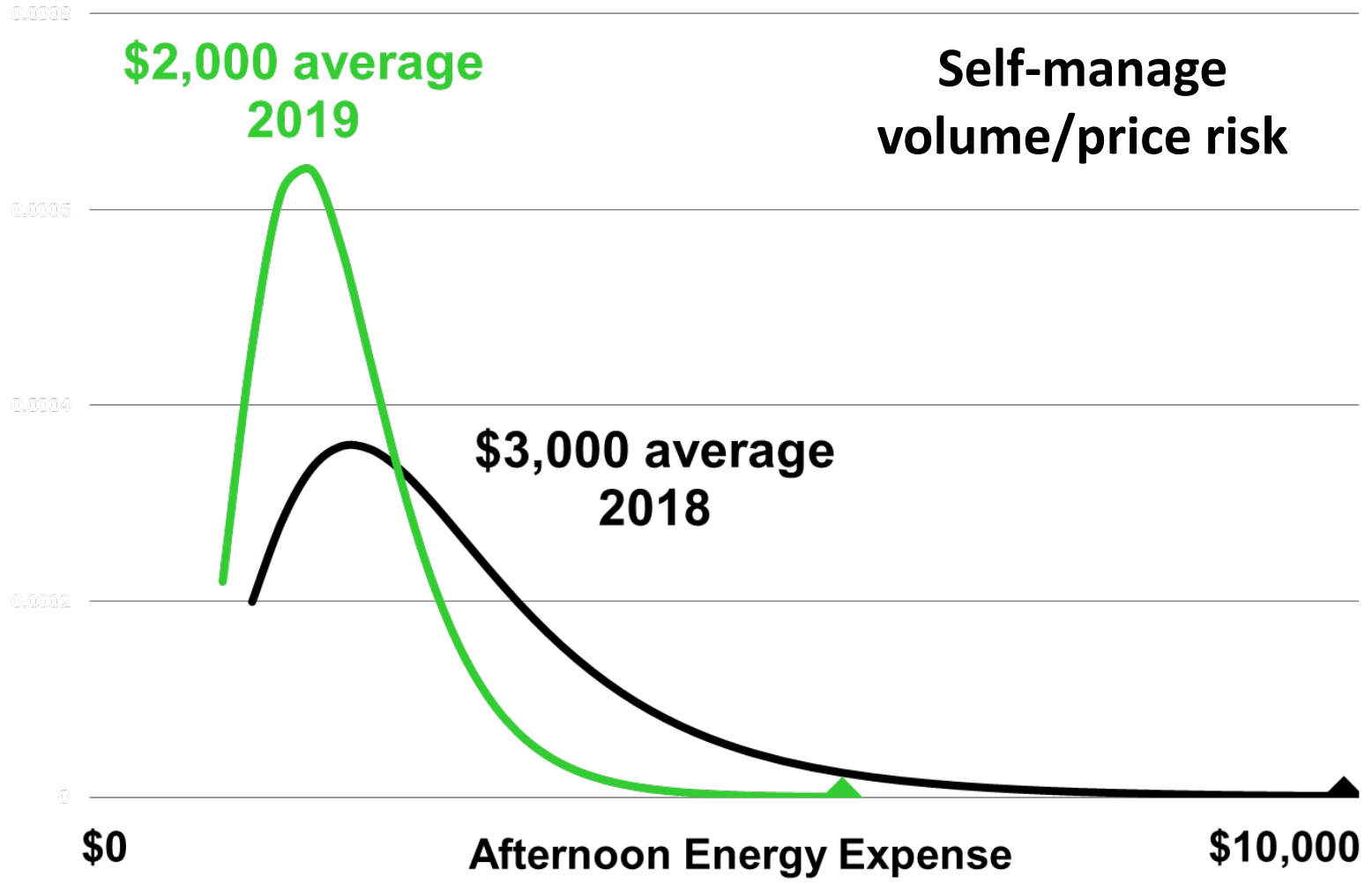
Fully automated.

Scalable, low cost carbon solution.

Reduced energy 20%, peak 30%



Concentrated on hot, high-priced days



Powerful energy storage alternative

Harness drywall/concrete as thermal energy storage



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→ **Grid scale** **Strategically located** **Rapidly deployed**

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- **No capex** **No space** **No equipment**

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- **Improved comfort** **Cybersecure**

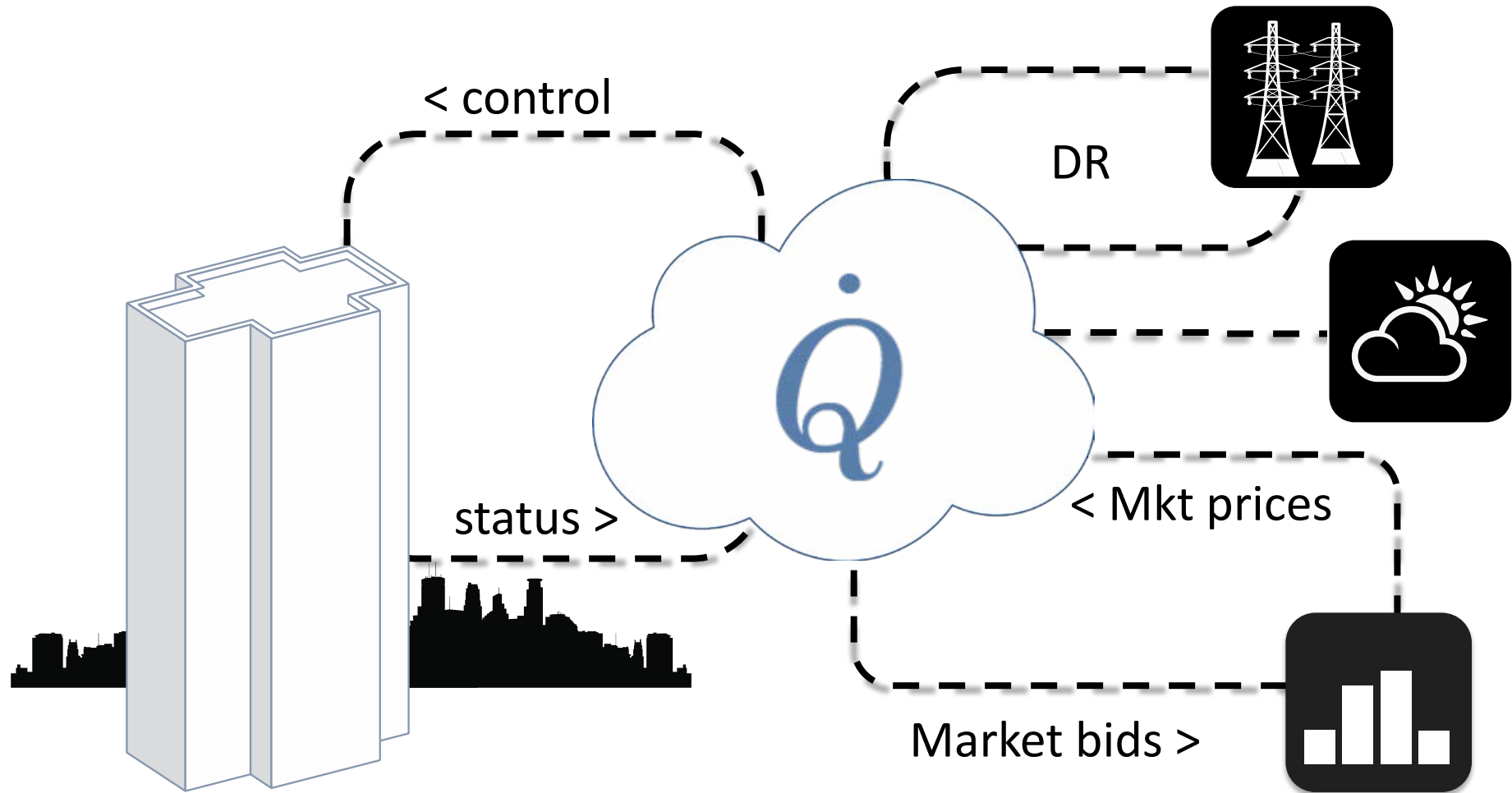
Powerful energy storage alternative

Harness drywall/concrete as thermal energy storage



- **Grid scale** **Strategically located** **Rapidly deployed**
- **No capex** **No space** **No equipment**
- **Improved comfort** **Cybersecure**
- **Infinite cycles** **No degradation**

Fully automated



Scalable, low cost carbon solution

Multi-objective optimization



Significant HVAC flexibility

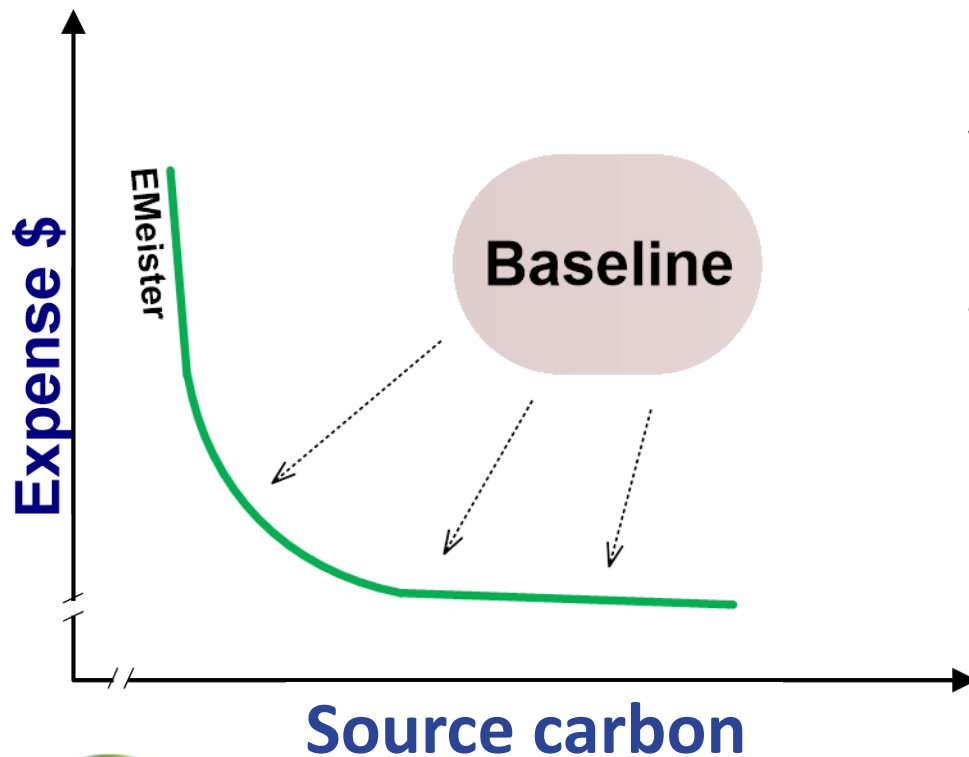
Means multiple solutions

With comparable \$\$\$ savings

Satisfying multiple objectives

NYC Local Law 97:

“Reduce carbon as a byproduct of reducing building energy expense.”



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Buildings as Batteries[®]

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