All-Electric Buildings. Clean, Simple & Affordable.

2024

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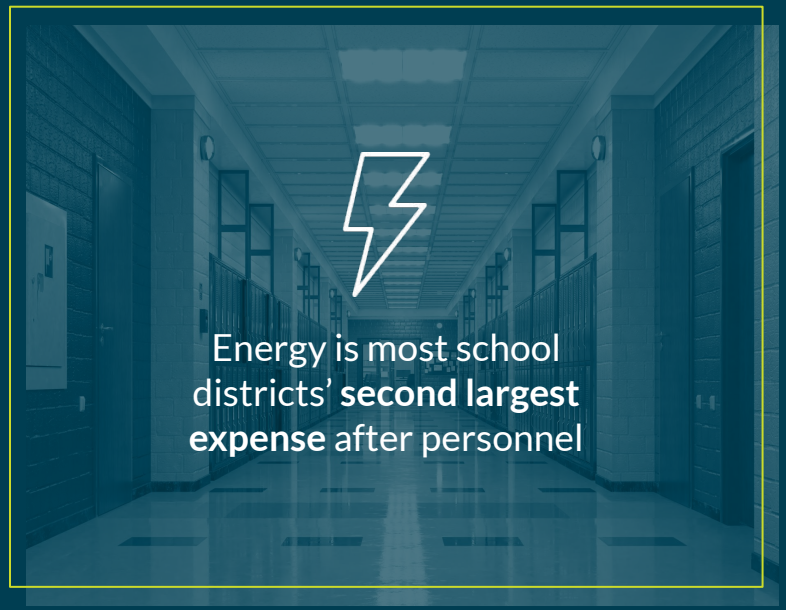
OUR PURPOSE

Community Energy Labs' (CEL) mission is to simply & affordably enable communities' building decarbonization goals by 2030.



Energy is most school districts' **second largest expense** after personnel

Cost savings can be better invested in **kids and classrooms**

Source: Sierra Club

WHY NOW?

Climate laws are spreading

19
STATES

29
OF THE 50 MOST POPULATED CITIES

65
ELECTRIC UTILITIES

Small & mid-sized publics ***struggle*** to keep up

PROBLEM

KIM

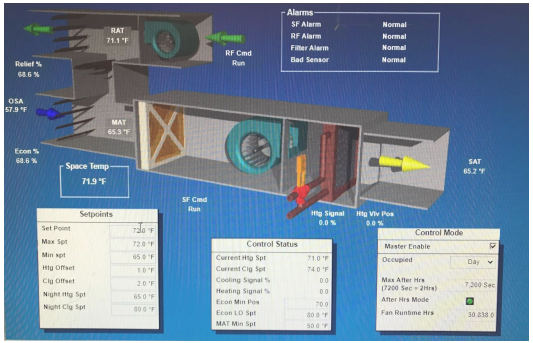
⇩CAPEX
1 million ft.^{2}
$3M energy bill
Net Zero by 2025

GLENN

4-20 buildings
1-3 staff
⇧backlog

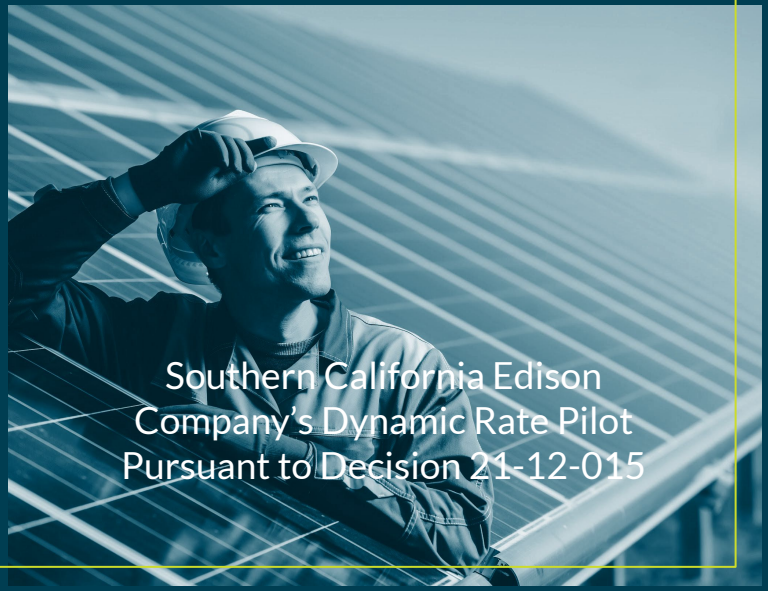
⬆️ CAPEX $3MM

➡ CARBON

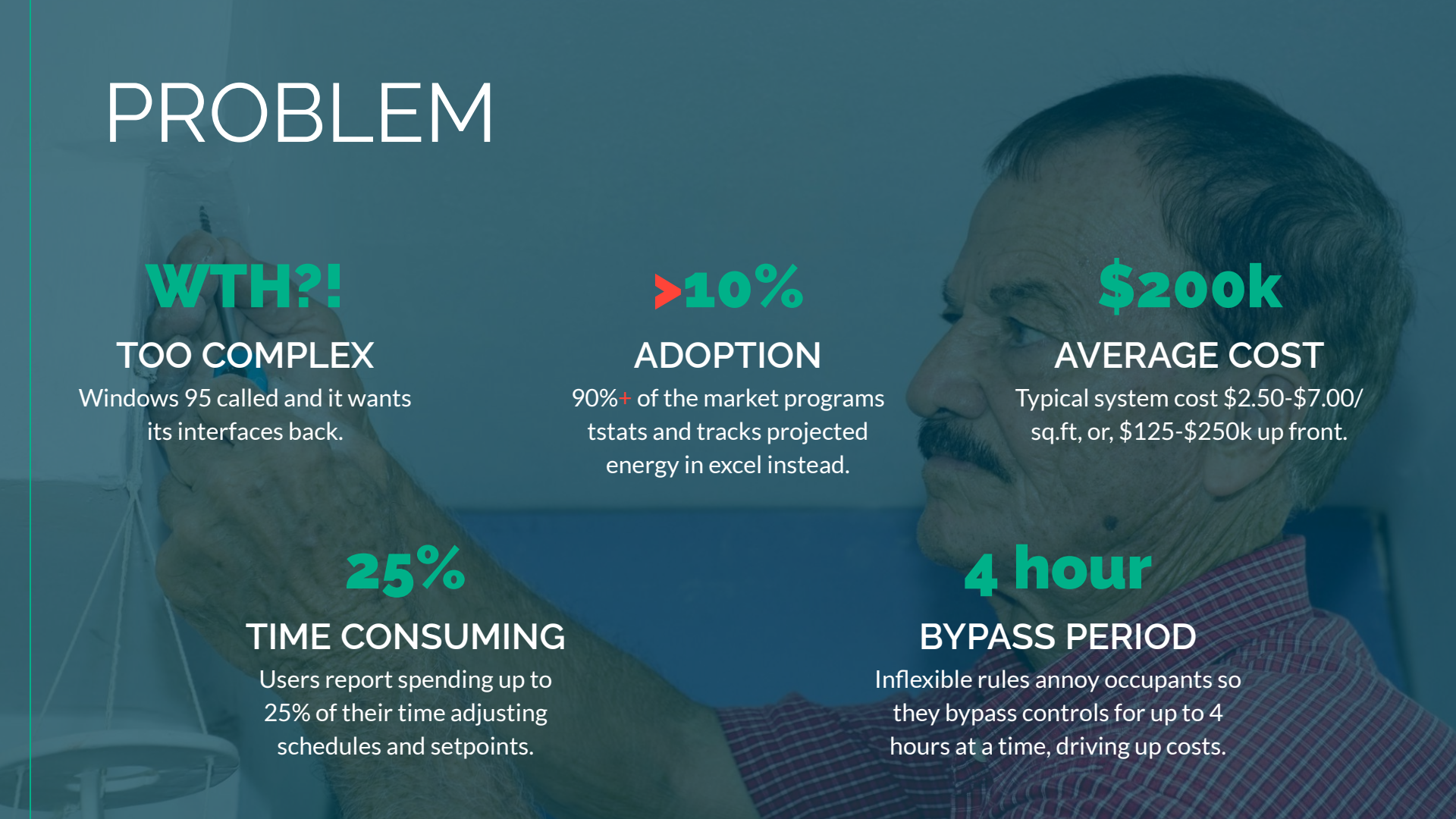


BACKGROUND

SCE partnered with CEL & EPRI to explore ways to help K12 adapt to the rapidly changing realities of the energy transition.



PROBLEM



WTH?!

TOO COMPLEX

Windows 95 called and it wants its interfaces back.

>10%

ADOPTION

90%+ of the market programs tstats and tracks projected energy in excel instead.

$200k

AVERAGE COST

Typical system cost $2.50-$7.00/ sq.ft, or, $125-$250k up front.

25%

TIME CONSUMING

Users report spending up to 25% of their time adjusting schedules and setpoints.

4 hour

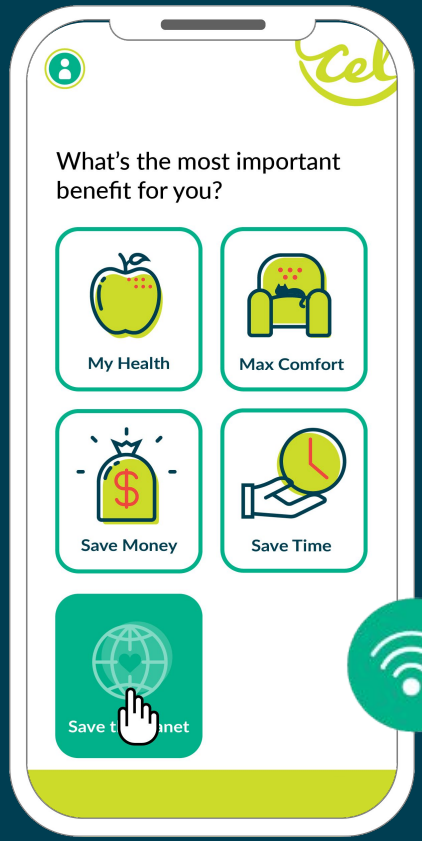
BYPASS PERIOD

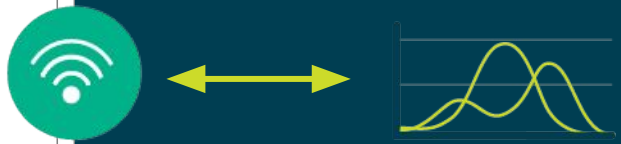
Inflexible rules annoy occupants so they bypass controls for up to 4 hours at a time, driving up costs.

SOLUTION

CEL is an IoT & Software as a Service control platform for building operators who find it complex, frustrating and very expensive to meet new building energy goals using standard building control options.

// Simple & intuitive
// Single day installation
// Autonomous control
// Works with solar & battery





↑ SAVINGS OF 5-25%
↓ GHG REDUCTION
↓ CAPEX UNDER $20k
↑ ROI IN UNDER 2 MONTHS

PILOT PROCESS & RESULTS

1
CHOOSE

// Smart T-Stat
// BACnet over IP

2
SETUP & INSTALL

// Audit ½ - 1 day
// Install ½ - 1 day

3
TURN ON THE SYSTEM

// Pilot pays for 1 year
// Then $.06-.10 sq ft/yr

4
TESTING CAMPAIGNS

// 20-40% Demand Charge Reduction
// Comfort Rules

COOL

BEFORE

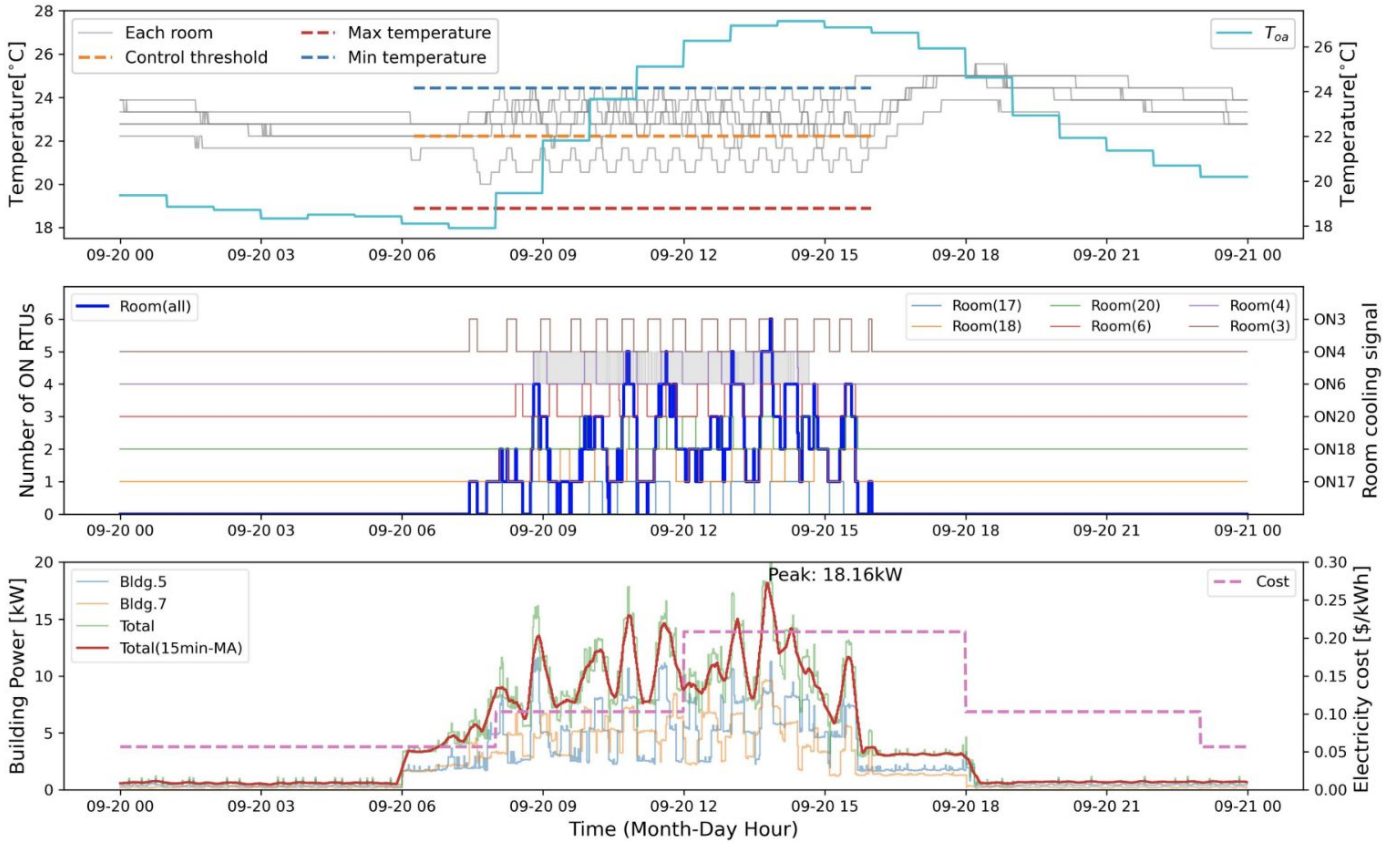


Figure 12: Summary of RTU operation in a default schedule day (Baseline); top: room temperatures with min/max comfort boundary (thermostat deadband adjusted setpoints) and outdoor air temperature, middle: RTU signals and override period (grayed area), bottom: building power and electricity price signal.

COOL

AFTER

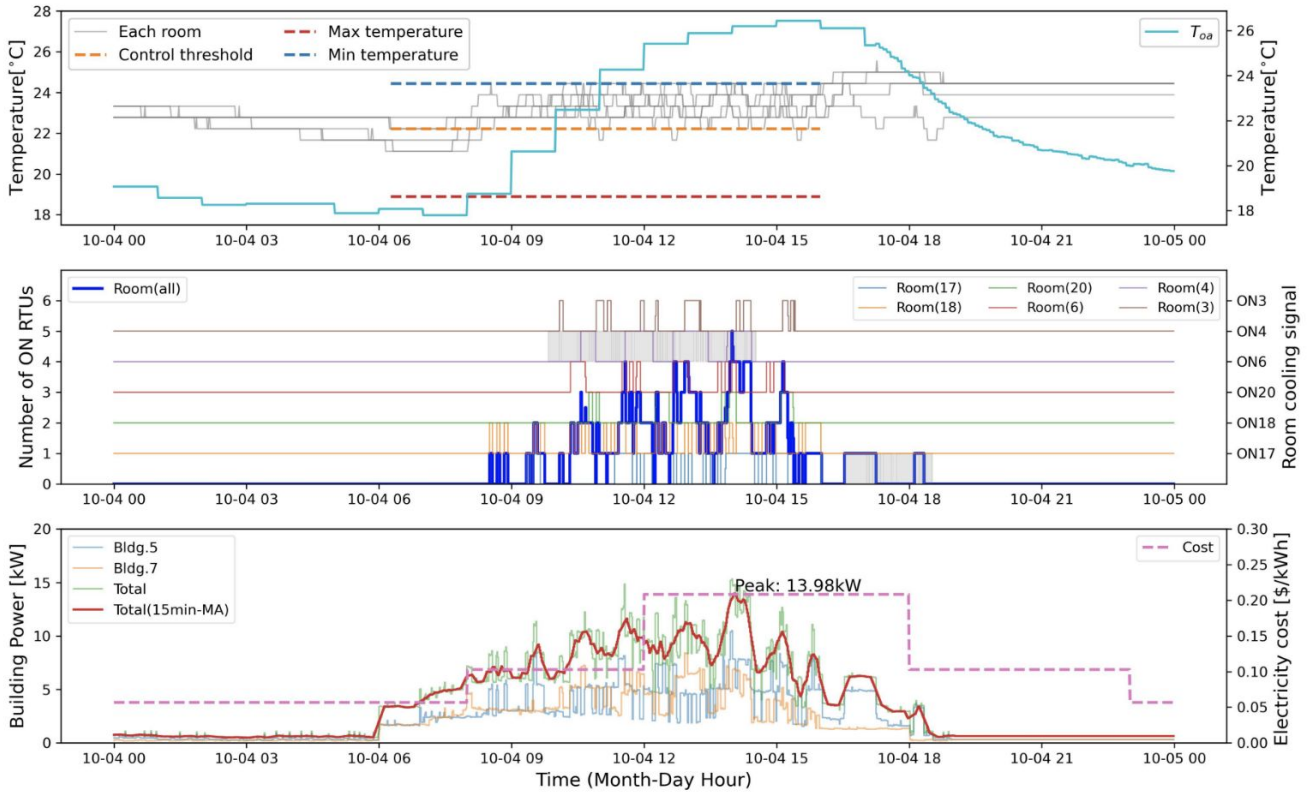


Figure 13: Summary of RTU operation in an MPC day (MPC); top: room temperatures with min/max comfort boundary (thermostat deadband is included) and outdoor air temperature, middle: RTU signals and override period (grayed area), bottom: building power and electricity price signal.

COOL

SHIFT

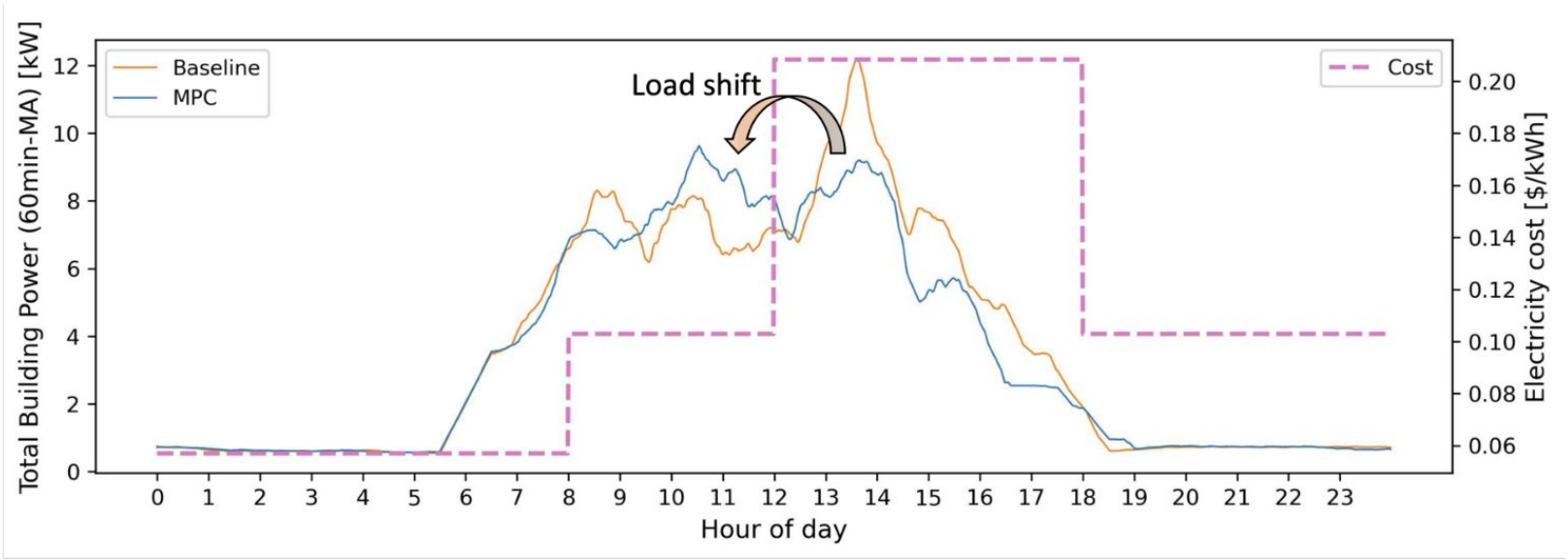
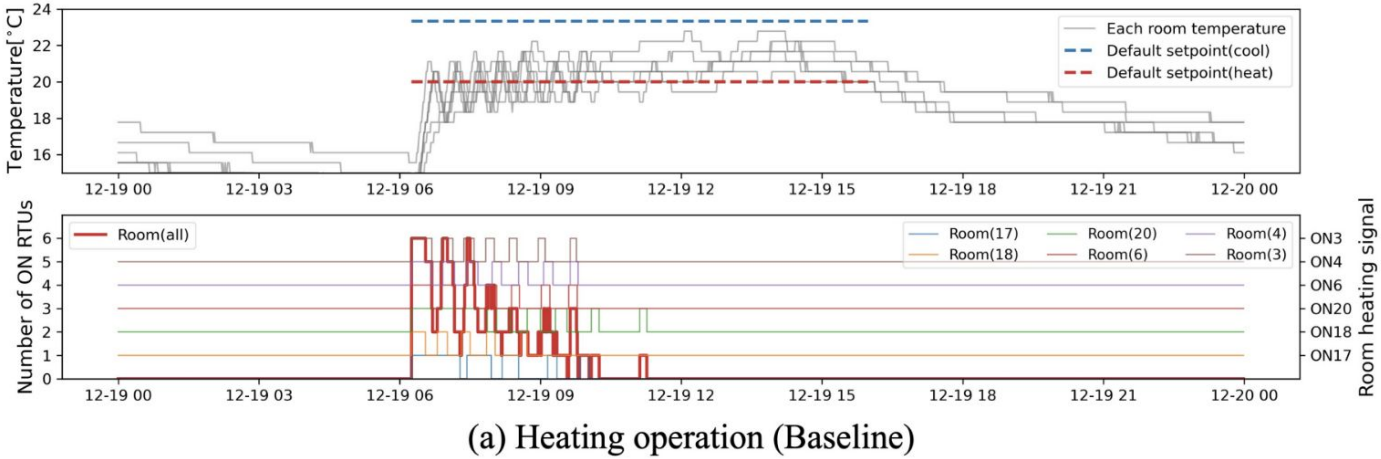
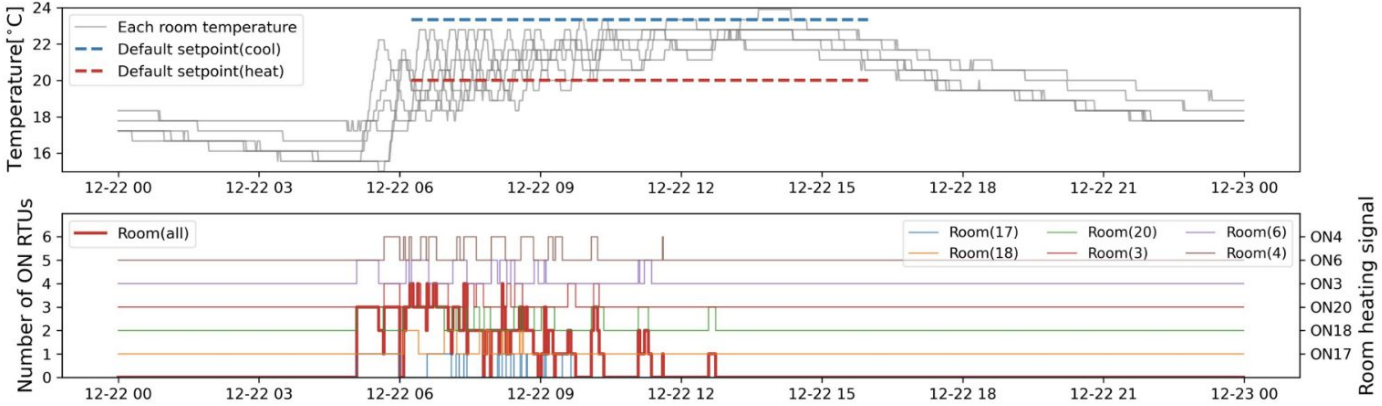


Figure 17: Comparison between the load profiles in a Baseline and an MPC day with the utility tarrif

HEAT



(a) Heating operation (Baseline)



(b) Heating operation (MPC)

AWARDS & PARTNERS

ACCELERATORS & INCUBATORS

// Google for Startups
// Wells Fargo IN2
// Greentown Labs
// Madrona Venture Labs
// Public Spend Forum
// Venture for Climatech
// SCEIN
// VertueLab
// Washington State

GRANTS & PRIZES

// CalTestBed
// CalSEED
// 3 CEC EPIC Grants
// CleanTech Open
// EPRI Incubatenergy Labs
// WA Dept of Commerce
// US Dept of Agriculture
// US Dept of Energy

CONTRACTS & PILOTS

// Southern California Edison
// Silicon Valley Clean Energy
// Tacoma Power
// Energy Northwest
// BEF
// ENEL & more

THANK YOU.

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