



# Market Research and Momentum Savings Team Quarterly Call

AUGUST 2, 2023





# Welcome

Name

Organization

Favorite summer activity



# Controls Market Characterization

Research Findings

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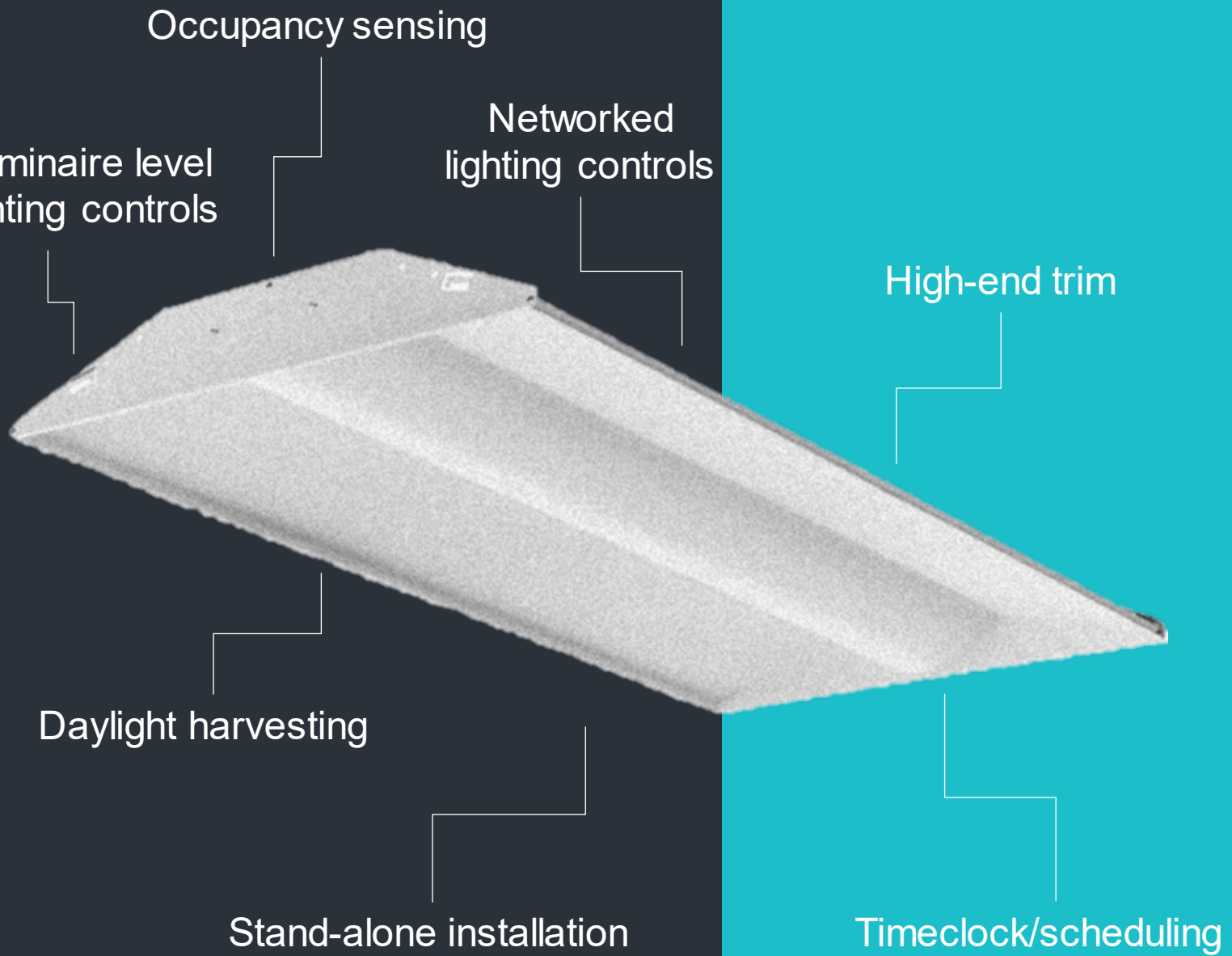


# Why Controls?

# Controls (might) have potential

- › High regional interest
- › Savings opportunities
- › Under-characterized market

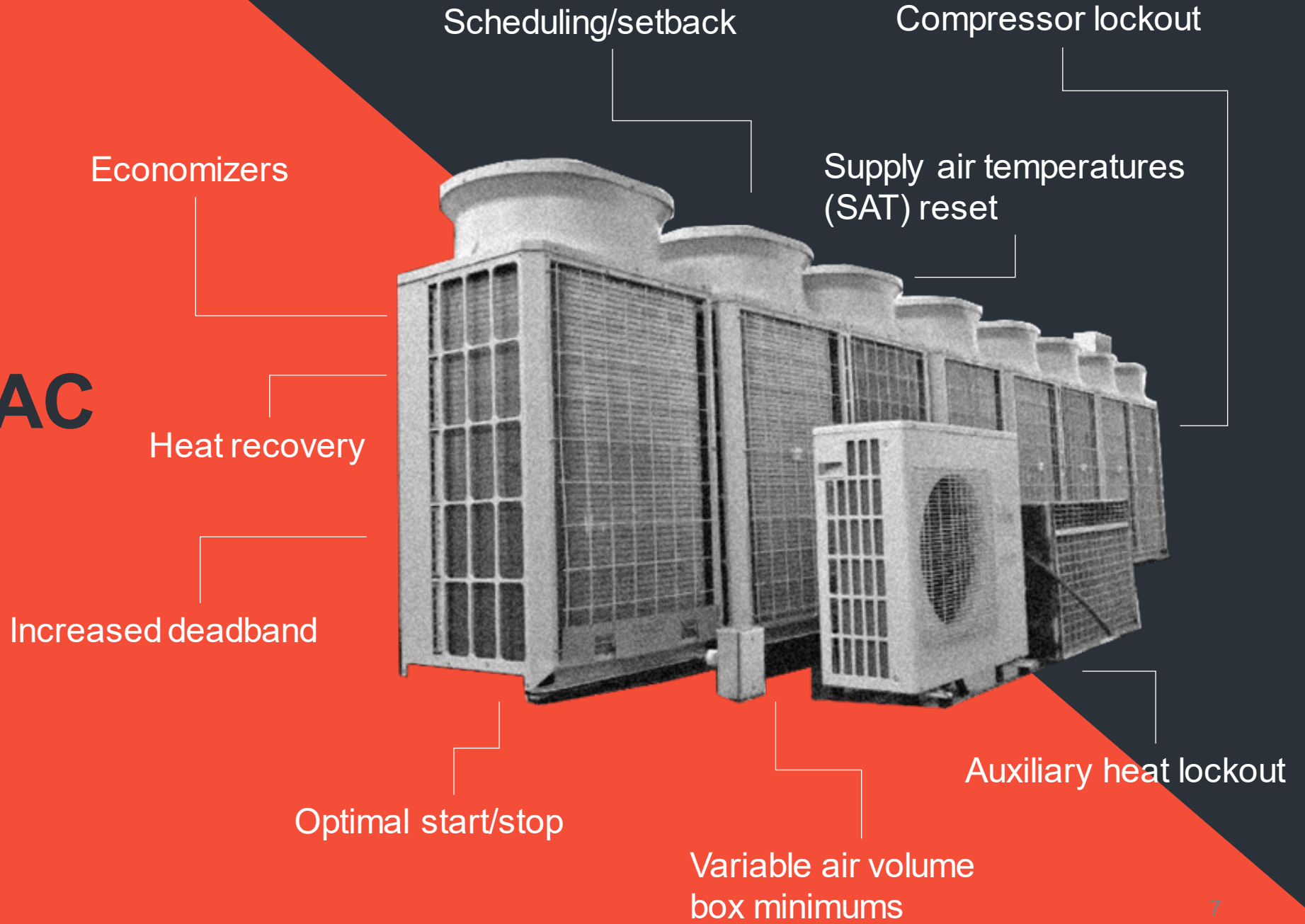




**We investigated a variety of lighting controls...**



# ... and HVAC controls





**We also investigated whole-building controls**







**We also investigated whole-building controls**

**Still uncommon**





# Methodology & Findings





# We reviewed available regional data

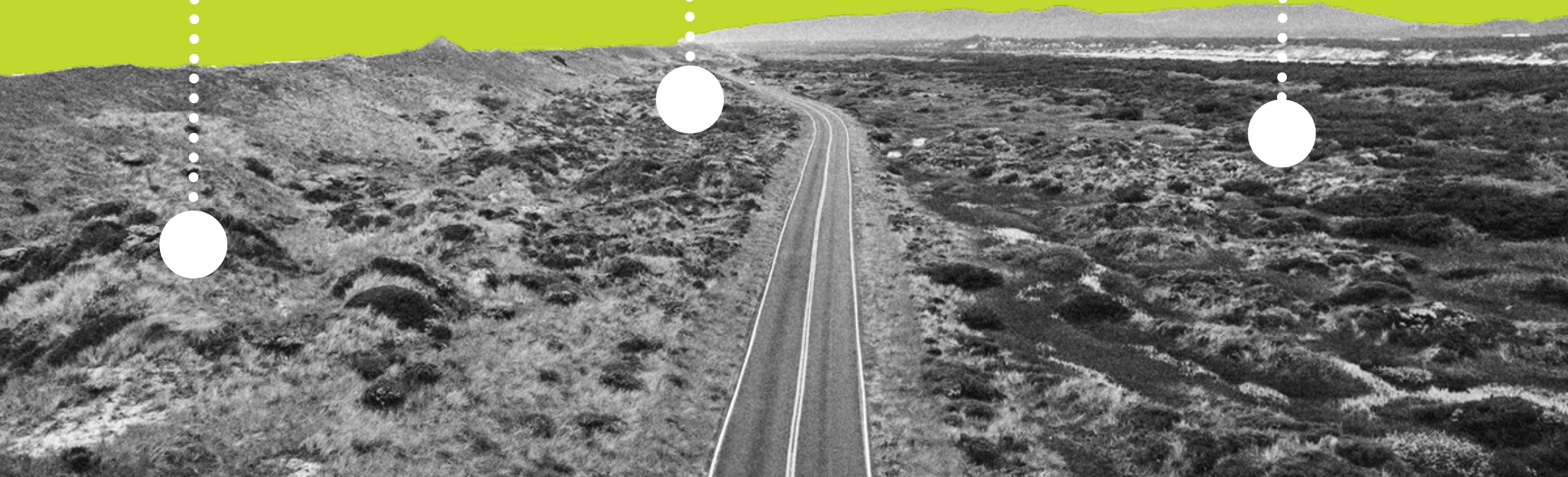
stock & flow data,  
savings potential &  
persistence



2021 Power Plan  
supply curves & load  
forecast



regional program  
incentives & savings data





# We reviewed available regional data

stock & flow data,  
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available  
but  
limited

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inclusion is  
justified and  
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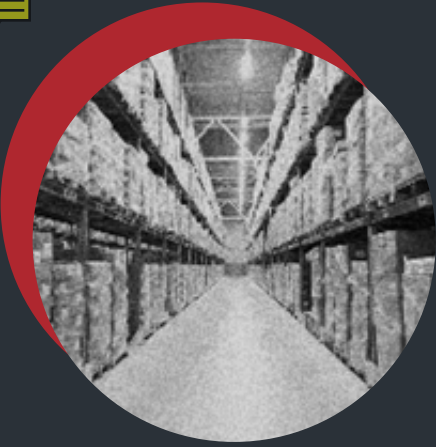


inclusion is  
justified and  
potential is  
in retrofits

regional program  
incentives & savings data



considerable  
variation and  
lack of  
granularity



**Manufacturer  
Reps and  
Distributors**

**8** Lighting  
**5** HVAC



**Commissioning  
Agents**

**6** Lighting  
**6** HVAC



**Controls  
Installers or  
Contractors**

**7** Lighting  
**9** HVAC



**ESCOs**

**5** Lighting  
**4** HVAC



**Facilities  
Managers**

**1** Lighting  
**2** HVAC

**We interviewed  
50+ market actors**



# Controls activity is not well documented.

Market actors keep inconsistent records and sometimes keep none.





# Code requirements drive controls activity.

Most market actors install controls exclusively to meet code requirements.



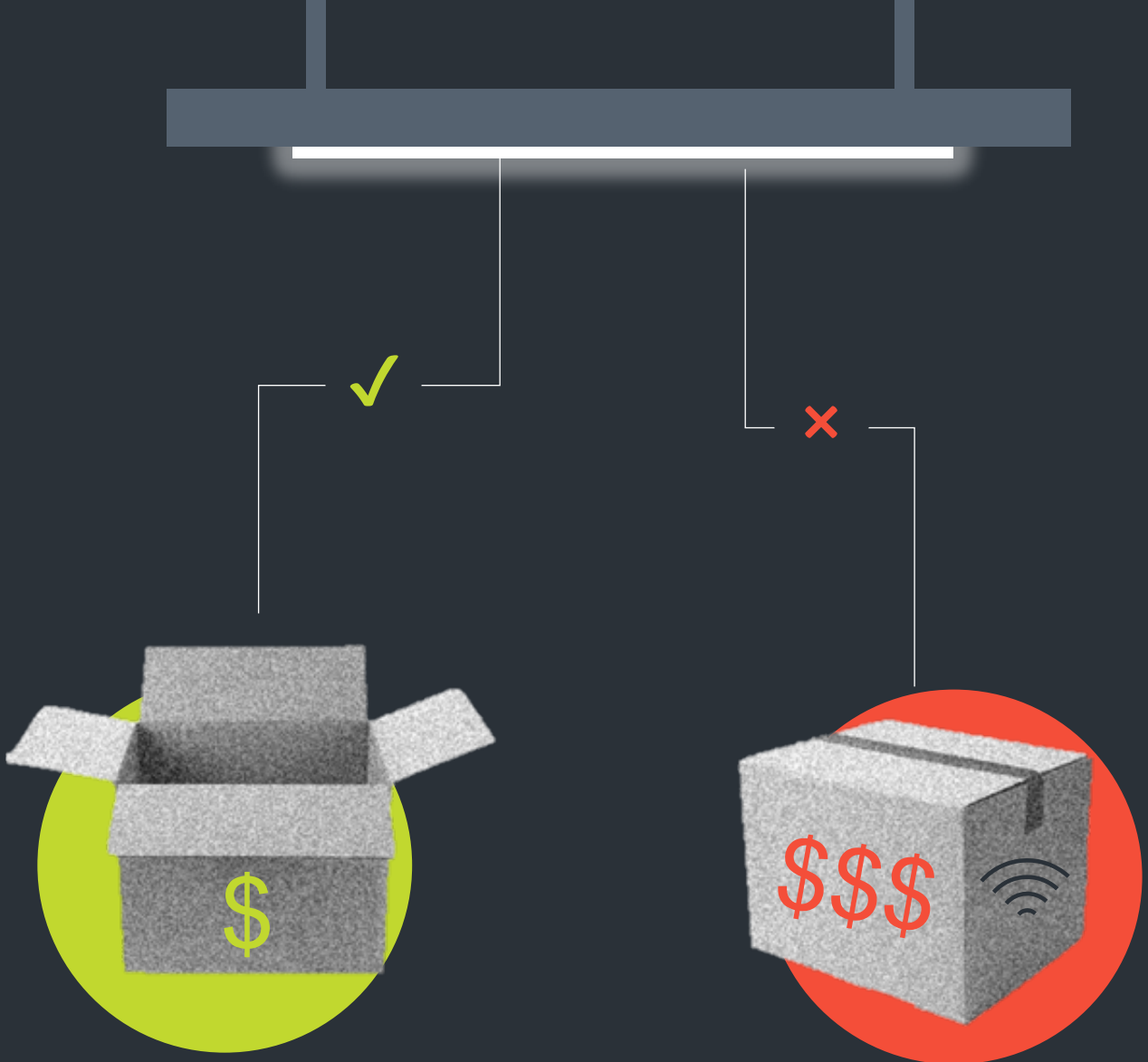
Daylighting

Occupancy





**Controls are rarely installed in retrofit projects.**





# Customers have a lot of influence.

How controls are selected and by whom varies widely depending on customer involvement.

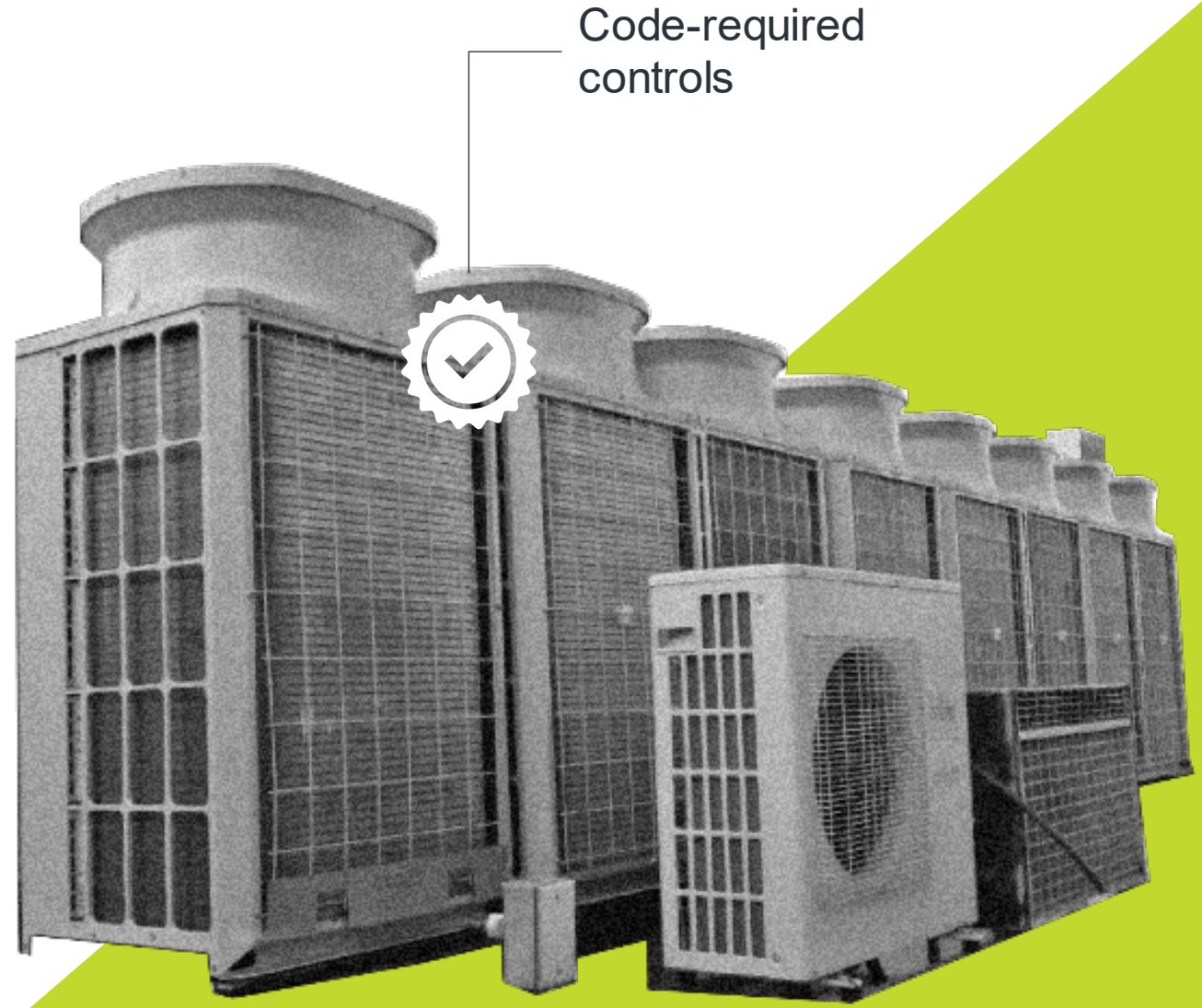




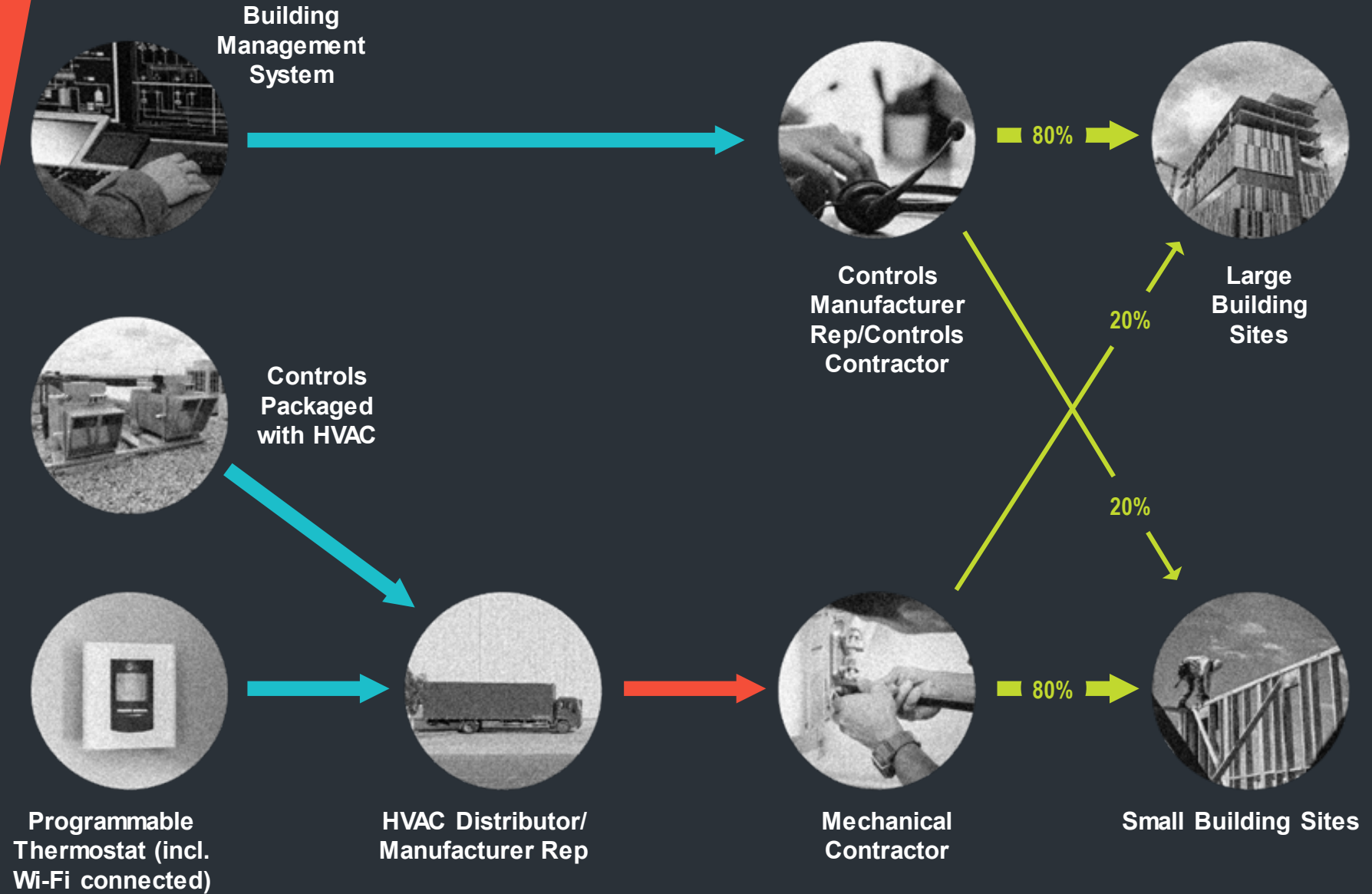
# Most HVAC controls are required by code.

Many market actors indicated that they install controls exclusively to meet code, meaning the opportunities for energy savings lie with:

- Commissioning
- Retro-commissioning
- Retrofit projects



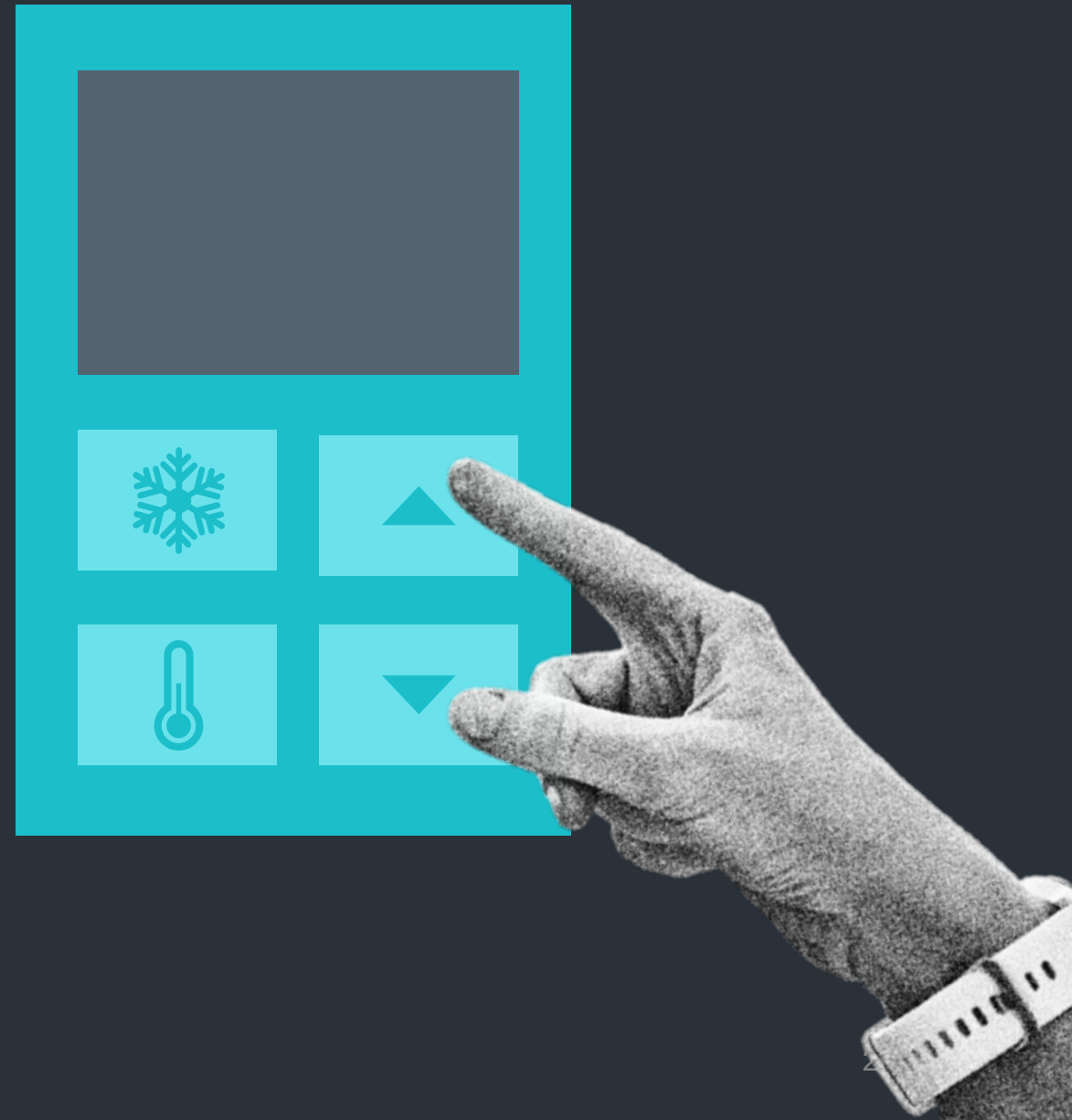
# Building size and type influence controls





# Controls strategy persistence is a savings risk...

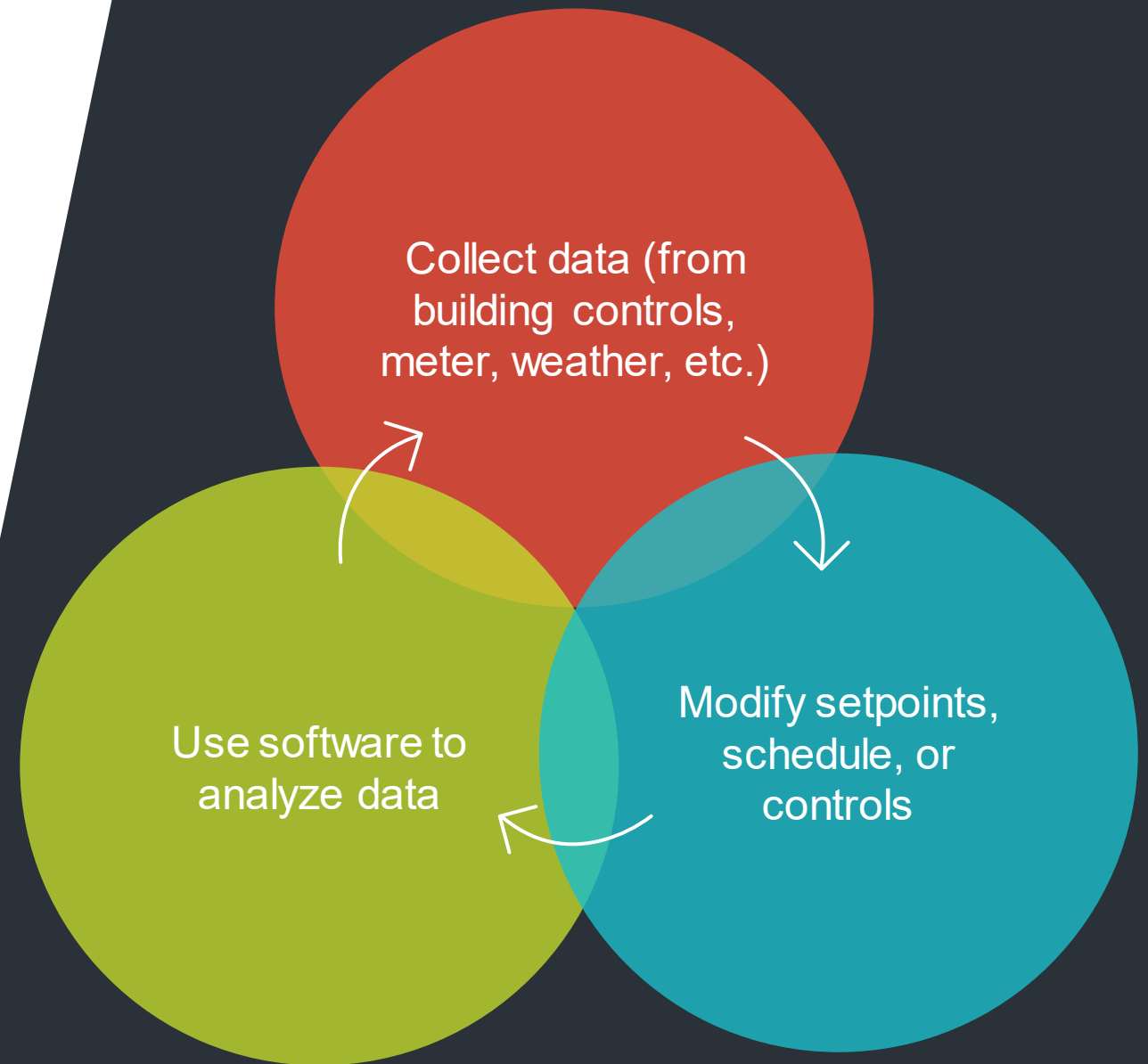
End users often override control strategies, which impacts the persistence of controls savings.





# ... monitoring-based commissioning could help

Monitoring-based commissioning presents an opportunity to increase energy savings and persistence of savings.





# Conclusions

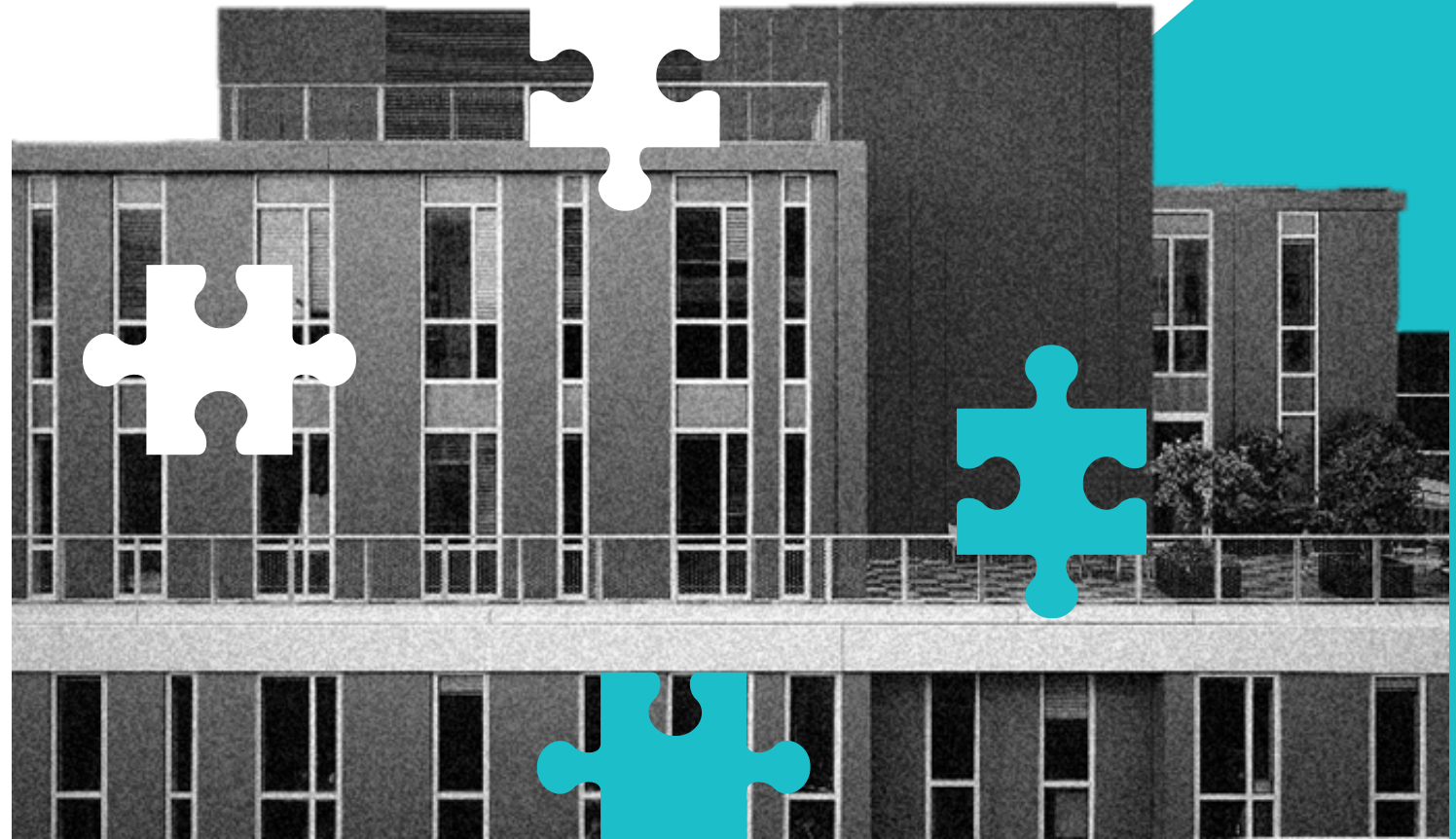






# Fully understanding the controls opportunities requires more data.

Controls are still an important savings opportunity, but more data is needed to fully characterize their regional impact.





**Improved  
granularity and  
consistency in  
reporting  
controls activity  
are needed.**





More code requirements =  
**More controls**  
in more places





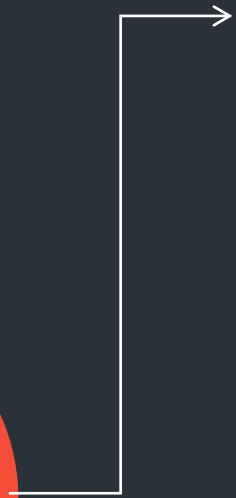
# Large buildings offer greatest controls potential.

Outside of code, large buildings and campus projects present the most controls savings opportunities.



# Utility programs can help.

Utility incentive programs can help tip the scales toward adding controls, even for smaller projects.





# Looking Ahead

Include controls  
in our market  
models

Controls in the  
era of demand  
flexibility





# Thank You

## Contact

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