THE BUILDING ENERGY HUB

Start Here: A Building Retrofit Series
Episode 2

Planning for Action – From Awareness to Strategy

→

November 5, 2025

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The Building Energy Hub is a project of Illinois Green Alliance

ILLINOIS GREEN ALLIANCE

THE BUILDING ENERGY HUB

The Goals of the Hub are to:

- Educate & train building professionals
- Support diverse contractors
- Connect contractors to a project pipeline
- Build capacity for advanced codes and policies
- Streamline access to financial resources

The Hub is growing capacity for commercial & multi-family building retrofits.

Start Here: A Building Retrofit Series for Owners and Operators

Register here

Episode 1

The Business Case for Decarbonization – Why It Matters Now

Learn why investing in building upgrades makes financial and strategic sense, with insights on savings, risk reduction, and long-term value.

VIEW RECORDING

Episode 2

Planning for Action – From Awareness to Strategy

Learn how to get started with assessments, benchmarking, and incentive programs to create a customized, actionable plan.

Today!

Episode 3

Making it Happen – Implementation Pathways

See why investing in building upgrades makes financial and strategic sense, with insights on savings, risk reduction, and long-term value

Dec 16, 2025 @ Noon

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Speakers

Abdul Hadi Ayoub
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Principal
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PE, LEED AP BD+C
Principal Engineer
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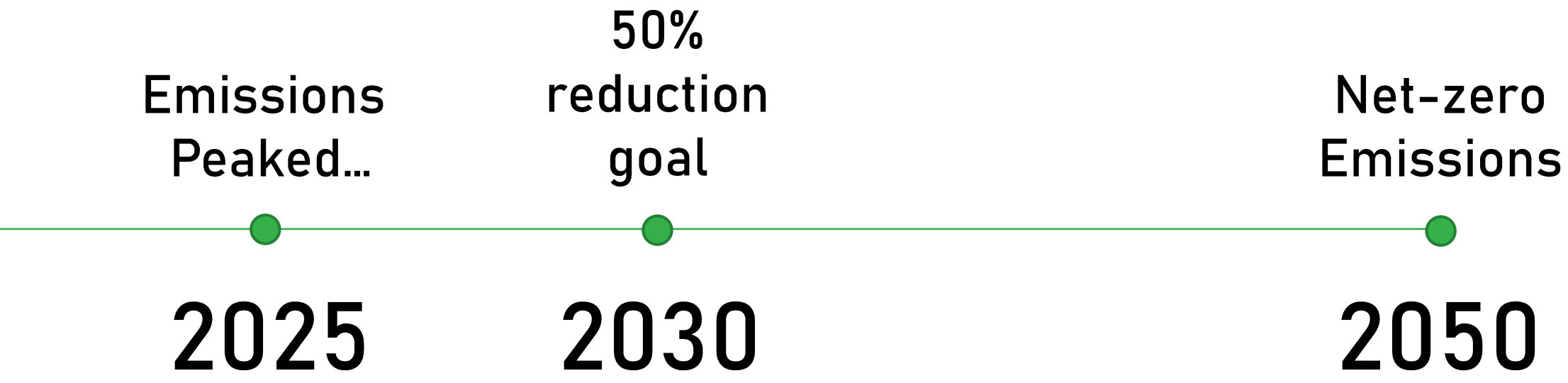
Carbon is long-lasting, and cumulative.
We need to adapt and mitigate our built environment.



The grid is getting cleaner.

Wind and solar surpass coal generation

2025

40% emission reduction is possible

2030

Illinois targeting net zero generation

2050

There are limited opportunities to electrify at equipment end of life.

Equipment replacement cycle is 15-20yrs

Planned replacements increase viability

80% of buildings in 2050 exist today

2025

2030

2050

Commercial buildings are complex and much of this work requires planning.

One-for-one replacements do not need planning

Phased approaches and partial displacement do

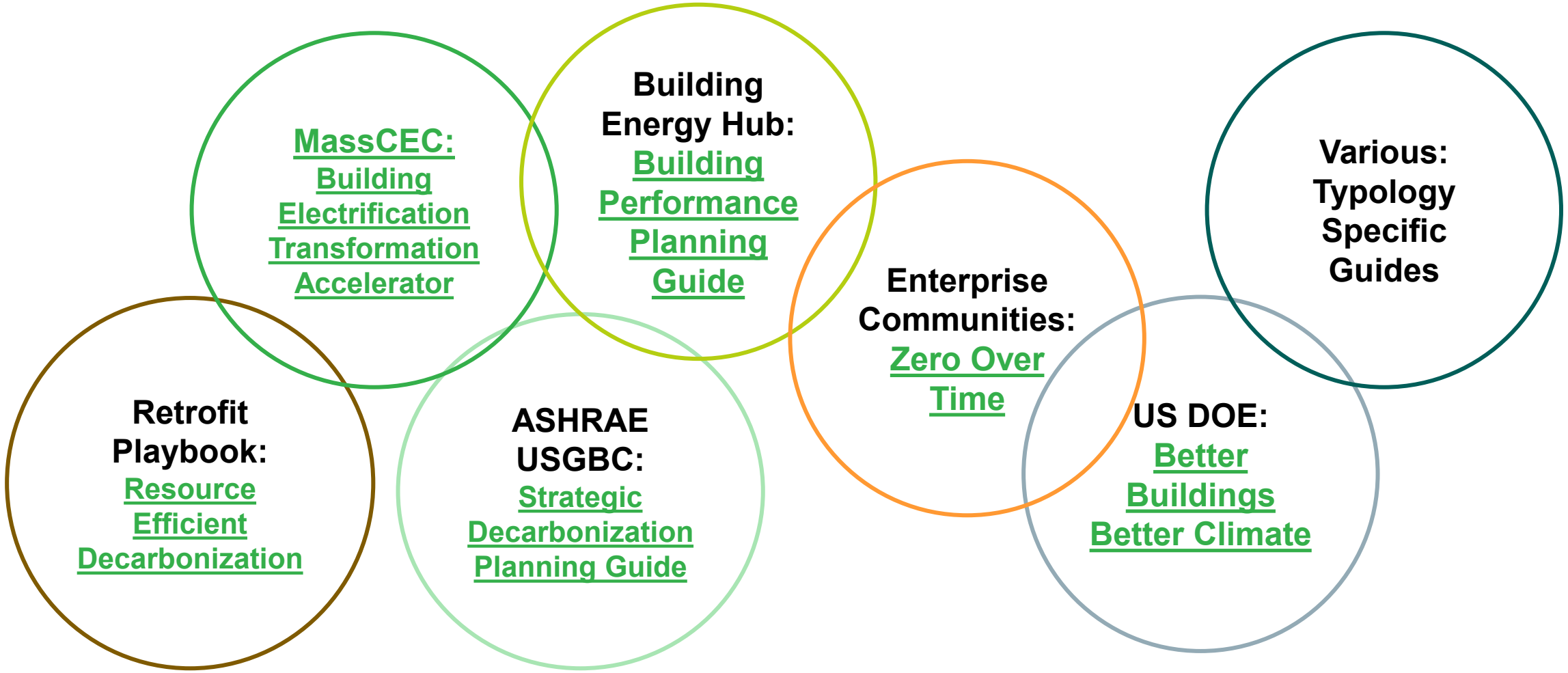
Integrated engineered plans can take many years

2025

2030

2050

Building Improvement Planning Processes



Shifting to a planning approach

- ☑ Energy efficiency audits
- ☑ Benchmark GHG emissions
- ☑ Electrification readiness check
- ☑ Propose emissions reduction scenarios

- ❑ Establish Business-as-usual comparison
- ❑ Review performance over time
- ❑ Expand beyond typical efficiency measures
- ❑ Create implementation timeline tied to investment triggers

Establish a business-as-usual case

This becomes the baseline over 25 years (5-10 years most precise)

- ❑ Operational expenditures
  - Utility costs
  - Maintenance costs
  - ACP payments
  - Escalation is likely
- ❑ Capital expenditures
  - Based on major equipment replacement needs
  - Today's costs are easiest to understand

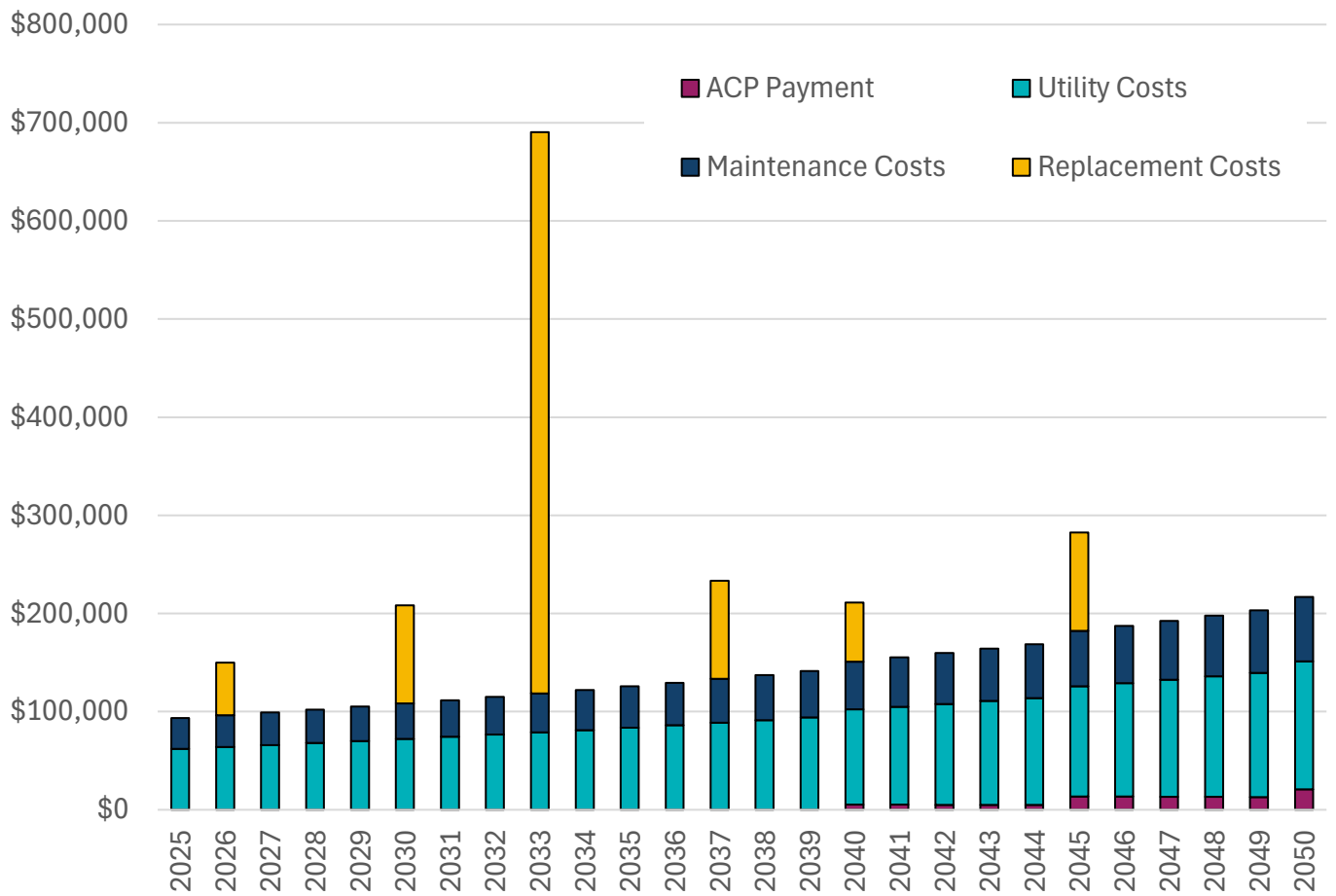


Image courtesy of MassCEC BETA Project Planning

Establish a business-as-usual case

Comparison to BAU is critical

- ❑ Focus on incremental costs between BAU and decarbonization investments
- ❑ Discuss costs and risks for maintaining BAU
- ❑ Document monetary value or cost when straightforward
- ❑ Allow stakeholders to set value for co-benefits

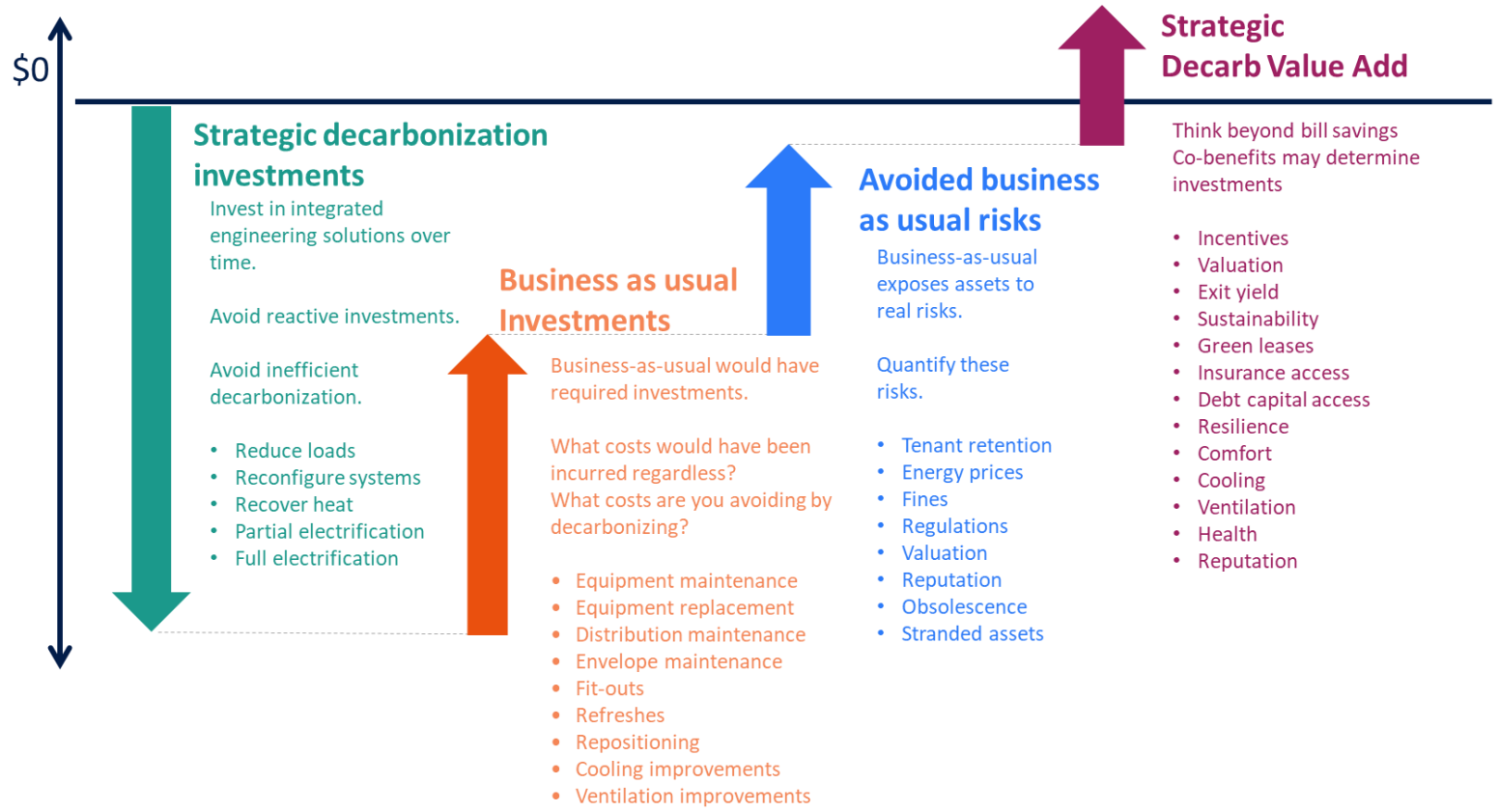


Image courtesy of RMI for illustrative purposes only

Performance over time

Project and compare emissions over time

- Emission factors are needed
  - Jurisdiction or tools like Cambium
  - Simple approach actual historical projected to zero by 2050
- Comparison between BAU and proposed scenarios
  - Cleaning of grid will lower emissions year over year
  - BAU will have flatter slope and proposed will reflect measure implementation
  - BPS targets or benchmarks should be tracked

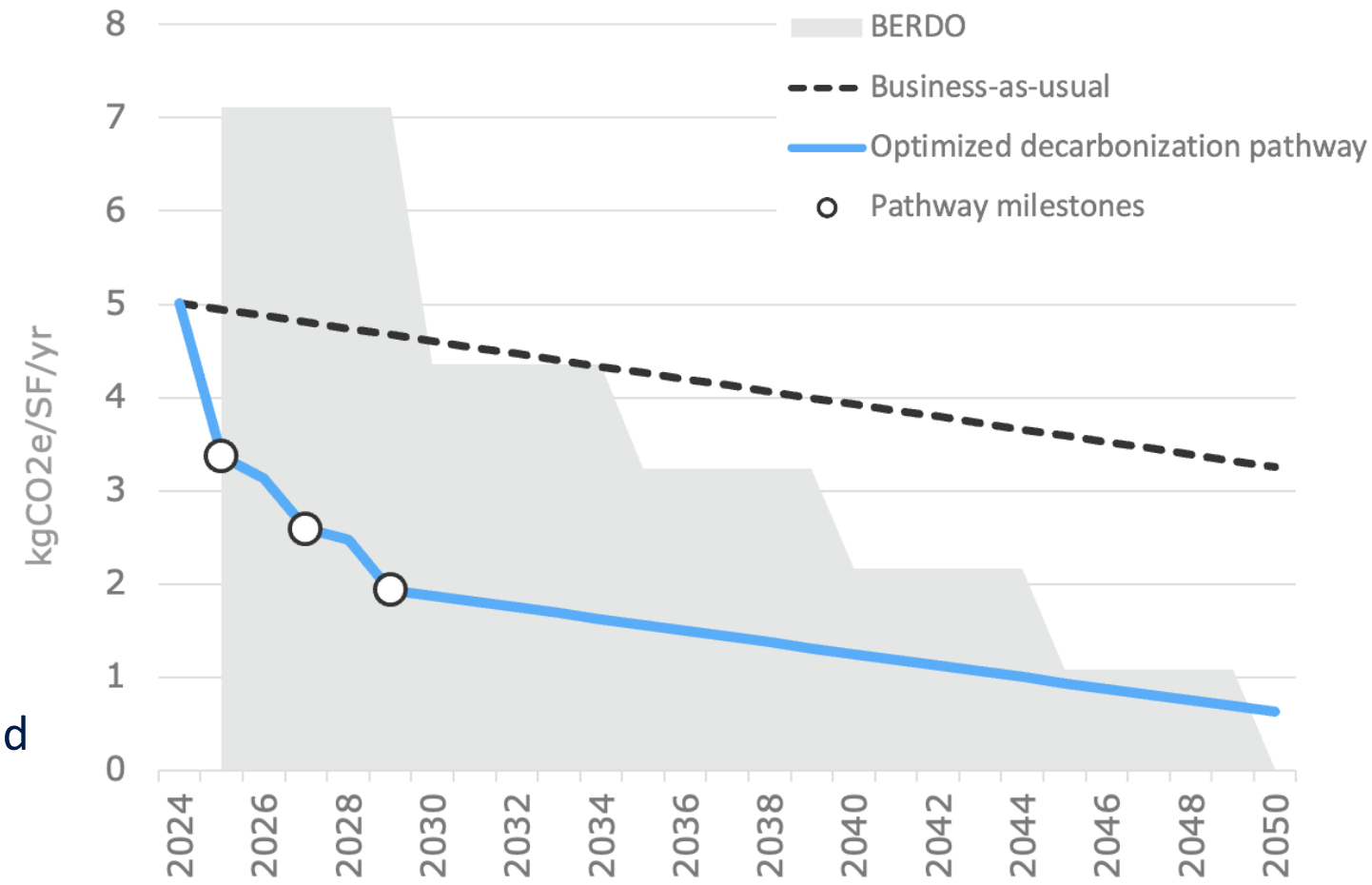
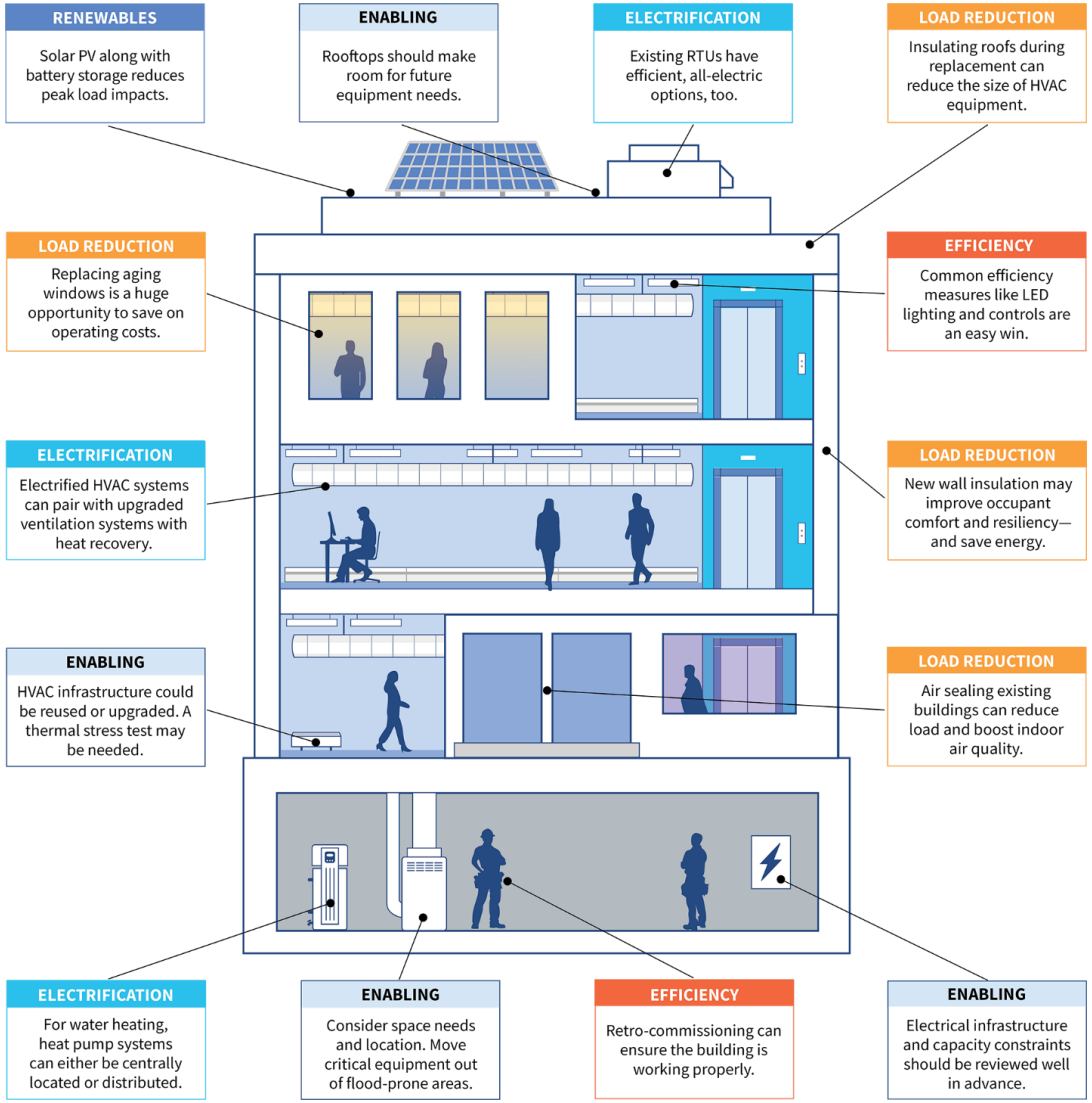


Image courtesy of MassCEC BETA Project Planning

Expand measure approach

Five potential measure categories

- ❑ **Energy efficiency** is foundational
- ❑ **Load reduction** measures should be evaluated for benefit in combination of electrification
- ❑ **Enabling** measures should be specified as important steps to ready infrastructure for electrification
- ❑ **Electrification** measures can be considered full or partial displacement options
- ❑ **Renewables and battery storage** can reduce peak loads and operational costs



Expand measure approach

Optimize around lifetime costs

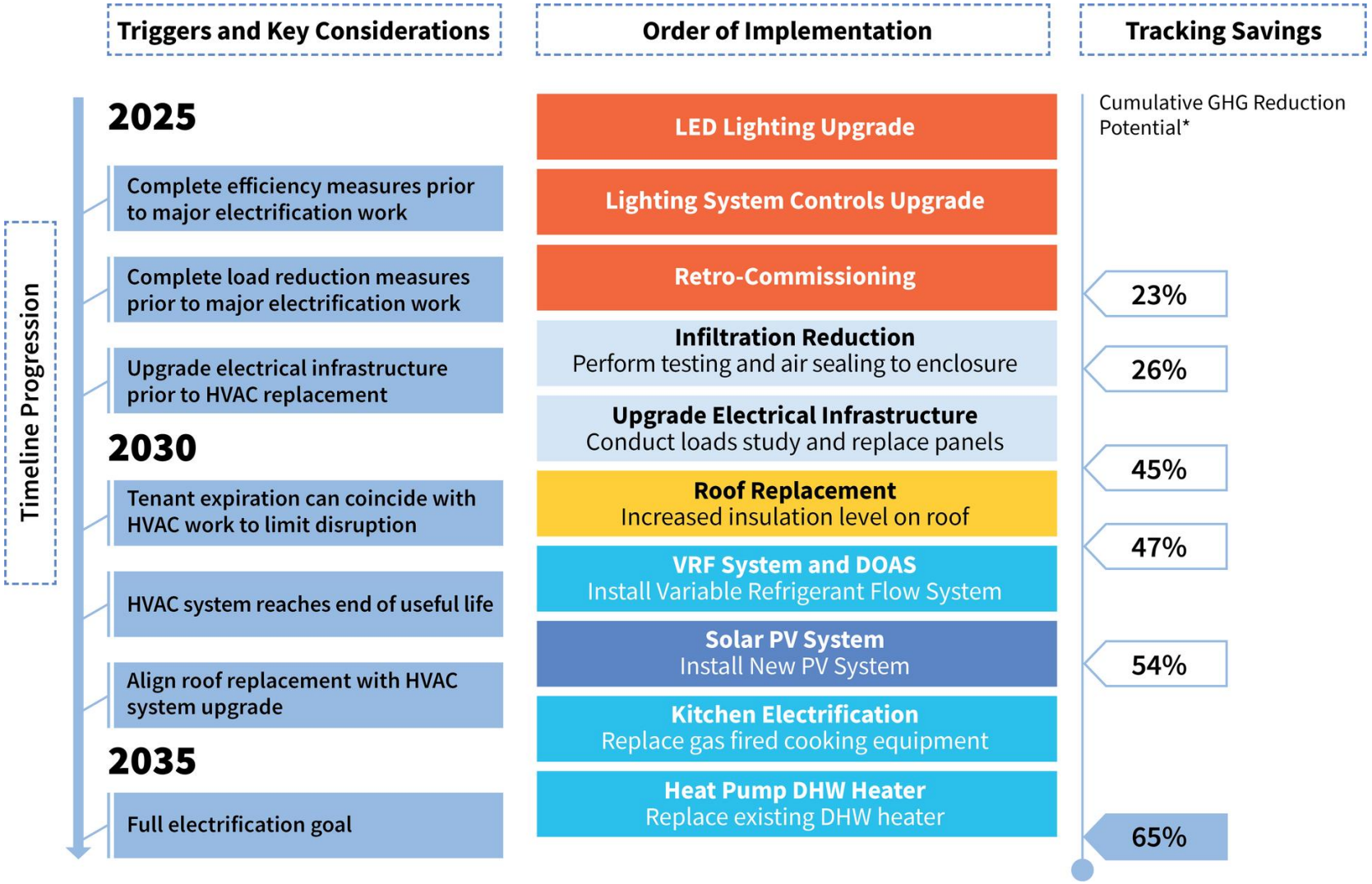
- Incremental costs between BAU and proposed should drive decisions
  - Simple payback has limitations*
  - Do not need a full LCCA
  - Important to analyze investments across full length of decarbonization plan

Scenario	Costs				Incentives		Net total cost	25 Year LCCA
	Base building and envelope costs	Mechanical costs	Renewable Energy Costs	Soft Cost	Competitive incentives	Non-competitive incentives		
Business-as-usual (BAU)	$9,000	$925,000		$93,000	($0)	($0)	**$1,027,000**	**$13,600,000**
Optimized decarbonization	$82,000	$1,238,000	$225,000	$154,000	($31,000) Federal Solar Tax Credit	($514,000) Utility Incentive	**$1,154,000**	**$12,660,000**

*** 48-year simple payback**
11% incremental cost over BAU
$940,000 improvement on LCCA

Analysis Courtesy of MassCEC BETA Project Planning

Implementation Timeline



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Principal
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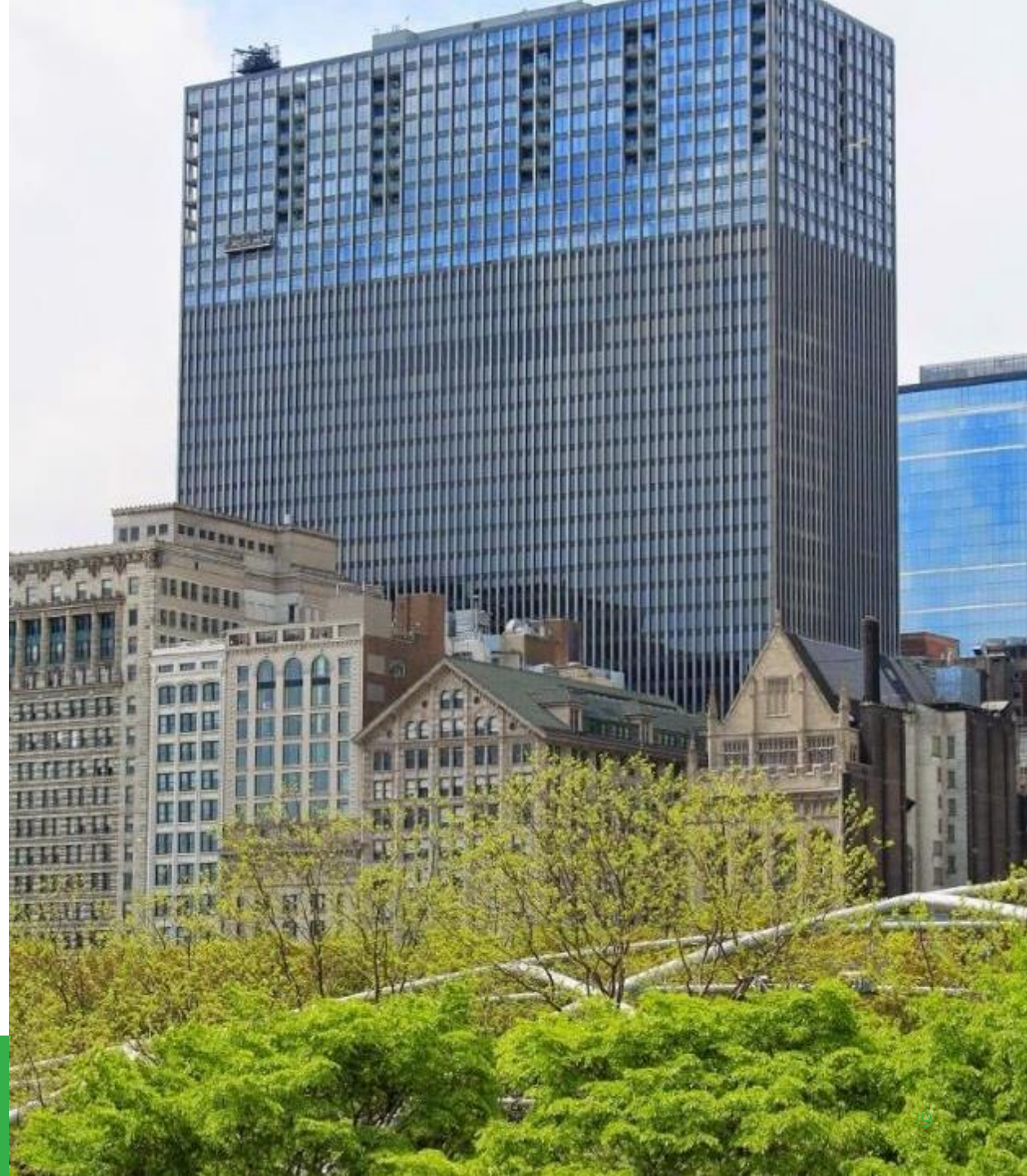
What is RCx?

- RCx is a systematic process to improve building systems' efficiency, reliability, and occupant comfort.
- Focuses on existing buildings, identifying operational improvements rather than major renovations.
- Building automation system optimization
  - setpoints, schedules, sequences, etc..



RCx Goals and Benefits

- Reduce energy waste and operational costs
- Enhances occupant comfort and indoor quality
- Reduce maintenance needs and extend equipment life
- Gain deeper understanding of building systems and controls
- Improve energy performance and energy benchmarking scores

ComEd RCx

Engineering study of building systems to identify low-cost improvements to building operations with simple paybacks of <18 months

- Study-based approach:
  - Fully-funded engineering study
    - Expected savings: 5-10% of annual usage
    - Calibrate and optimize building systems such as HVAC and lighting
  - Three types of studies:
    - RCx Flex
    - Monitoring-Based Commissioning (MBCx)
    - Virtual Commissioning (VCx)
- Program website: ComEd.com/RCx

Typical Savings Opportunities

Top 10 energy conservation measures for RCx

1. Scheduling Equipment: Air Handling Units (AHUs), Fans, Pumps, Electric Heat, Variable Air Volume (VAV)/Fan Power Boxes (FPBs), Lighting
2. Economizer and Outdoor Air Control
3. Duct Static Pressure Reduce/Reset
4. Chilled Water Temperature Reset
5. Supply Air Temperature Reset
6. Reduce Ventilation
7. Condenser Water Temperature Reset
8. Setback Space Temperature
9. Reduce Simultaneous Heating and Cooling
10. Reduce Pump Differential Setpoint

Participant Implementation Incentive

- In addition to a fully-funded RCx study which covers the costs of engineering services, a cash incentive may be received:
- Based on Verification Report savings
  - Electric: $0.04/kWh
  - Natural Gas: $0.15/therm for Peoples Gas/North Shore Gas customers.
- Capped at 100% of implementation cost
- Ability to sign over incentives to a third party

Energy Management Resources

Not Sure Where to Start? Give Us a Call

- 855.433.2700

Request a fully-funded RCx study

- ComEd.com/RCx

Request a FREE Facility Assessment

- ComEd.com/FacilityAssessment

Enroll in the ComEd Energy Usage Data System

- ComEd.com/EnergyUsageData

Enroll in the Building Operator Certification (BOC) Program

- Boccentral.org

Get Started With Business Energy Analyzer, a free online tool to help you manage energy use!

- ComEd.com/BEA

Earn Financial Rewards for Reducing Electricity Use During Peak Usage Periods

- Enroll In Smart Returns Voluntary Load Reduction (VLR) Program

Take The First Step To Go Solar By Learning About Your Solar Options Today

- ComEd.com/Solar

Learn about Beneficial Electrification Opportunities

- ComEd EV savings, benefits and incentives

Engage with the Hub

- Check out our updated website
- Volunteer with us
- Share a featured building or project
- Sign up for our newsletter
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