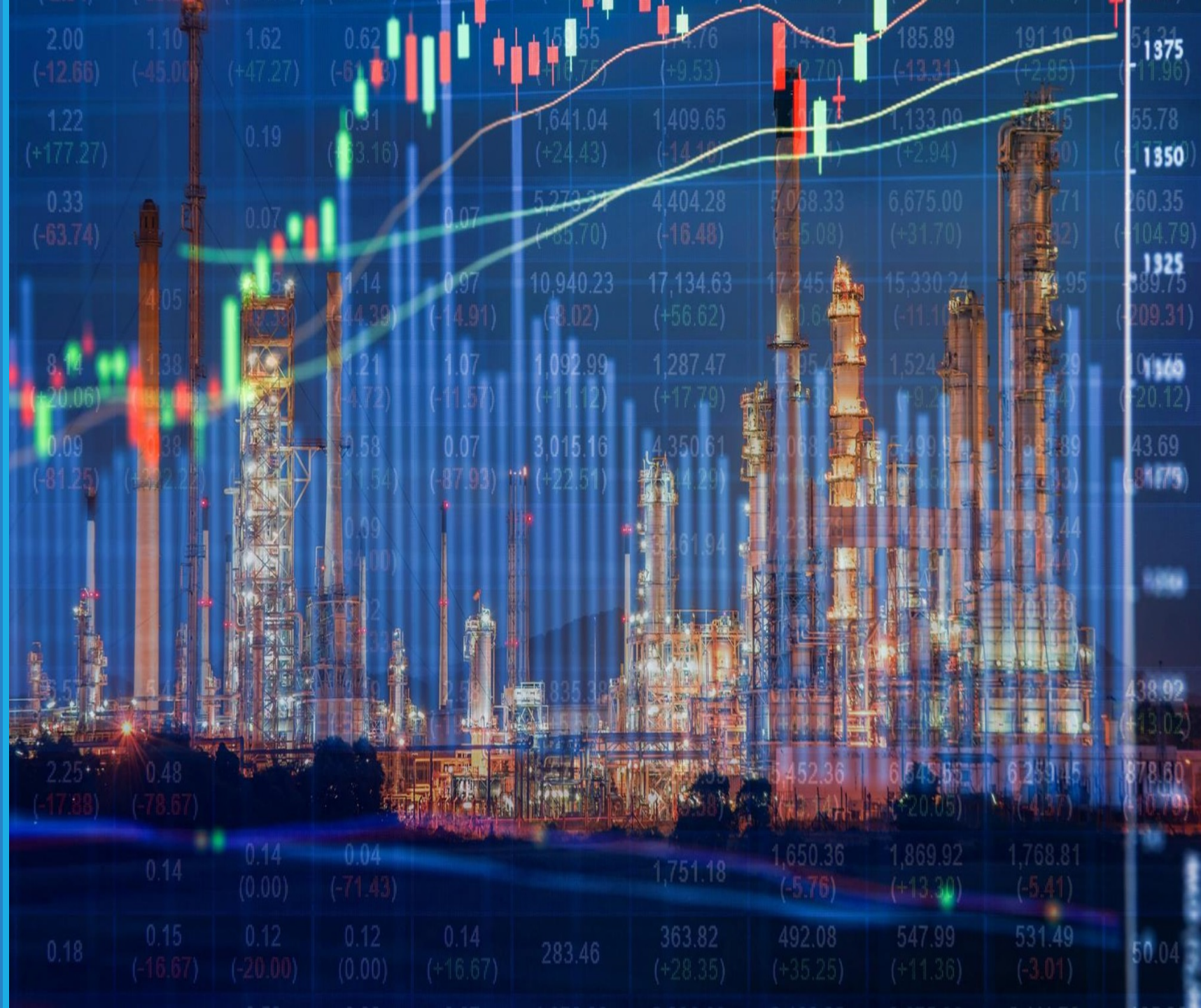
Energy Academy

Session #7: Energy Transition with Energy Efficiency

Metropolitan Mayors Caucus | The Power Bureau

April 20, 2023



AGENDA

HOUSEKEEPING	▪ Course-related items
RESOURCES	▪ Readings ▪ Website of the Week
LECTURE	▪ Context ▪ Barriers to Energy Efficiency ▪ EE Funding and Program Options ▪ Strategies for Local Government
DISCUSSION	▪ Open

HOUSEKEEPING

HOUSEKEEPING

Announcements from MMC	Cheryl and Edith
Requests for Specific Course Items	We've had a few suggestions: ▪ Smart Grids ▪ Microgrids ▪ Franchise Account management/conversion ▪ New federal energy incentives
Recommendations	As always, please feel free to share any ideas and recommendations for improvements to the course and its content!

RESOURCES

RESOURCES

Weekly Readings

Managing the Energy Transition in Illinois	**Link:** Decarbonizing the Illinois Grid: The Role of Natural Gas Fired Peakers Under CEJA **Source:** PA Consulting **Description:** "By the end of the decade, ComEd would face periods across 11 days a year in which brownouts or blackouts are possible because insufficient energy is available to meet demand, caused by premature peaker retirements and intermittent wind and solar generation."
Performance Contracting for Energy Efficiency	**Link:** Deep Energy Retrofits Using Energy Savings Performance Contracts: Success Stories **Source:** Rocky Mountain Institute **Description:** 8 case studies (7 federal, 1 municipal) with an average of 58% energy use reduction.
Energy Benchmarking Polices	**Link:** Benchmarking and Building Performance Standards Policy Toolkit **Source:** US Environmental Protection Agency **Description:** Toolkit to inform and support state and local governments considering policies to reduce energy use and greenhouse gas (GHG) emissions from existing commercial and multifamily buildings in their communities.

WEBSITE OF THE WEEK: BEST (BUILDING ENERGY SOFTWARE TOOLS) DIRECTORY

BEST Directory

Building Energy Software Tools

Formerly hosted by US Dept. of Energy

Home | FAQ | Software Listing | Training | About | Contact | Sign In | Register

Find Software

Search

Capabilities

- Whole Building Energy Simulation
- Load Calculations
- HVAC System Selection and Sizing
- Parametrics and Optimization
- Energy Conservation Measures
- Code Compliance
- Ratings and Certificates
- Utility Bill and Meter Data Analysis
- Weather Data and Climate Analysis
- Building Automation
- Building Energy Auditing
- Building Energy Benchmarking
- Building Energy Monitoring
- Lighting Simulation
- Air Flow Simulation
- Life Cycle Analysis
- Solar and Photovoltaic Analysis
- Support Services
- Training Services
- Weather
- Other

AcousticCalc - HVAC Noise Prediction Program

HVAC Noise Source-Path-Receiver Acoustical Analysis program.

HVAC System Selection and Sizing | Parametrics and Optimization | Other

Commercial, Residential

Last Software Update: 15 January 2016 | **Last Entry Update:** 18 July 2018

Ratings ☆☆☆☆☆ | Reviews **0** | **Add to compare**

BuildSimHub

BuildSimHub provides a cloud-based energy model management platform and a variety of modeling toolset to streamline and automate modeling cycles for businesses who focus on building sustainability, saving up to 70% modeling time and cost.

Whole Building Energy Simulation | Parametrics and Optimization | Code Compliance | Other

Commercial, Residential, Industrial

Last Software Update: 17 September 2018 |

Last Entry Update: 17 September 2018

Ratings ☆☆☆☆☆ | Reviews **0** | **Add to compare**

Our Sponsors

WEBSITE OF THE WEEK

BEST (BUILDING ENERGY SOFTWARE TOOLS) DIRECTORY

https://www.buildingenergysoftwaretools.com/

BEST allows users to sort through over 200 software tools by topic, technology and building type

Search

Capabilities

- [ ] Whole Building Energy Simulation
- [ ] Load Calculations
- [ ] HVAC System Selection and Sizing
- [ ] Parametrics and Optimization
- [x] Energy Conservation Measures
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- [ ] Lighting Simulation
- [ ] Air Flow Simulation
- [ ] Life Cycle Analysis
- [ ] Solar and Photovoltaic Analysis
- [ ] Support Services
- [ ] Training Services
- [ ] Weather
- [ ] Other

Building Type

- [ ] Subsystem Level
- [x] Commercial
- [ ] Residential
- [ ] Multi Family
- [ ] Industrial
- [ ] Portfolio Scale
- [ ] District Scale
- [ ] Urban Scale

Platform - Any -

Pricing - Any -

Total Results: 6

Commercial Building Energy Saver

Commercial Building Energy Saver (CBES), intended use for small and medium office and retail buildings in California, provides energy benchmarking and three levels of retrofit analysis considering the project goal, data availability, and user experience.

Whole Building Energy Simulation | Energy Conservation Measures | Utility Bill and Meter Data Analysis

Commercial

Last Software Update: 06 July 2015 | **Last Entry Update:** 28 December 2018

Ratings ☆☆☆☆☆ | Reviews **2** | **Add to compare**

Dexma Platform by Spacewell

Dexma Platform, is an AI-powered solution, cloud-based and integrated with 100+ metering / sensoring data-sources.

Energy Conservation Measures | Utility Bill and Meter Data Analysis | Weather Data and Climate Analysis | Building Energy Monitoring

Commercial, Industrial

Last Software Update: 10 February 2019 | **Last Entry Update:** 17 August 2022

Ratings ☆☆☆☆☆ | Reviews **0** | **Add to compare**

Measurabl

Measurabl is sustainability reporting software built to help you collect, report, and act upon non-financial data. You can effortlessly collect utility, waste and travel data, create and e-File financial-grade reports on demand, and analyze sustainability KPIs to make improvements.

Energy Conservation Measures | Utility Bill and Meter Data Analysis | Building Energy Monitoring

Commercial, Portfolio Scale

Last Software Update: 24 February 2016 | **Last Entry Update:** 24 September 2018

WEBSITE OF THE WEEK

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Building Type

- Subsystem Level
- Commercial
- Residential
- Multi Family
- Industrial
- Portfolio Scale
- District Scale
- Urban Scale

Building Performance Database (BPD)

External Link to Product Page
View Author Profile

Ratings ☆☆☆☆☆ | Reviews 0

The Building Performance Database (BPD) is the nation's largest dataset of information about the energy-related characteristics of commercial and residential buildings. The BPD combines, cleanses and anonymizes data collected by Federal, State and local governments, utilities, energy efficiency programs, building owners and private companies, and makes it available to the public.

The web site allows users to explore the data across real estate sectors and regions, and compare various physical and operational characteristics to gain a better understanding of market conditions and trends in energy performance.

Using the Application Programming Interface (API), users can query the same analytical tools available through the web interface. The API enables the sharing of content and data between applications, meaning that third party web or mobile applications can be dynamically updated with BPD data.

Add to compare

Expertise Required:

No expertise required, but knowledge of building characteristics is helpful.

Audience:

Building owners, facility managers, energy utilities, engineers, policy analysts.

Input:

Users select buildings records of interest by specifying building type, location, floor area, vintage, operational characteristics and building systems.

Output:

Building data is presented in histograms, scatter plots, and tables, allowing for exploration of trends within a group of buildings. The tool also provides histograms and scatter plots for side-by-side comparison of different groups of buildings.

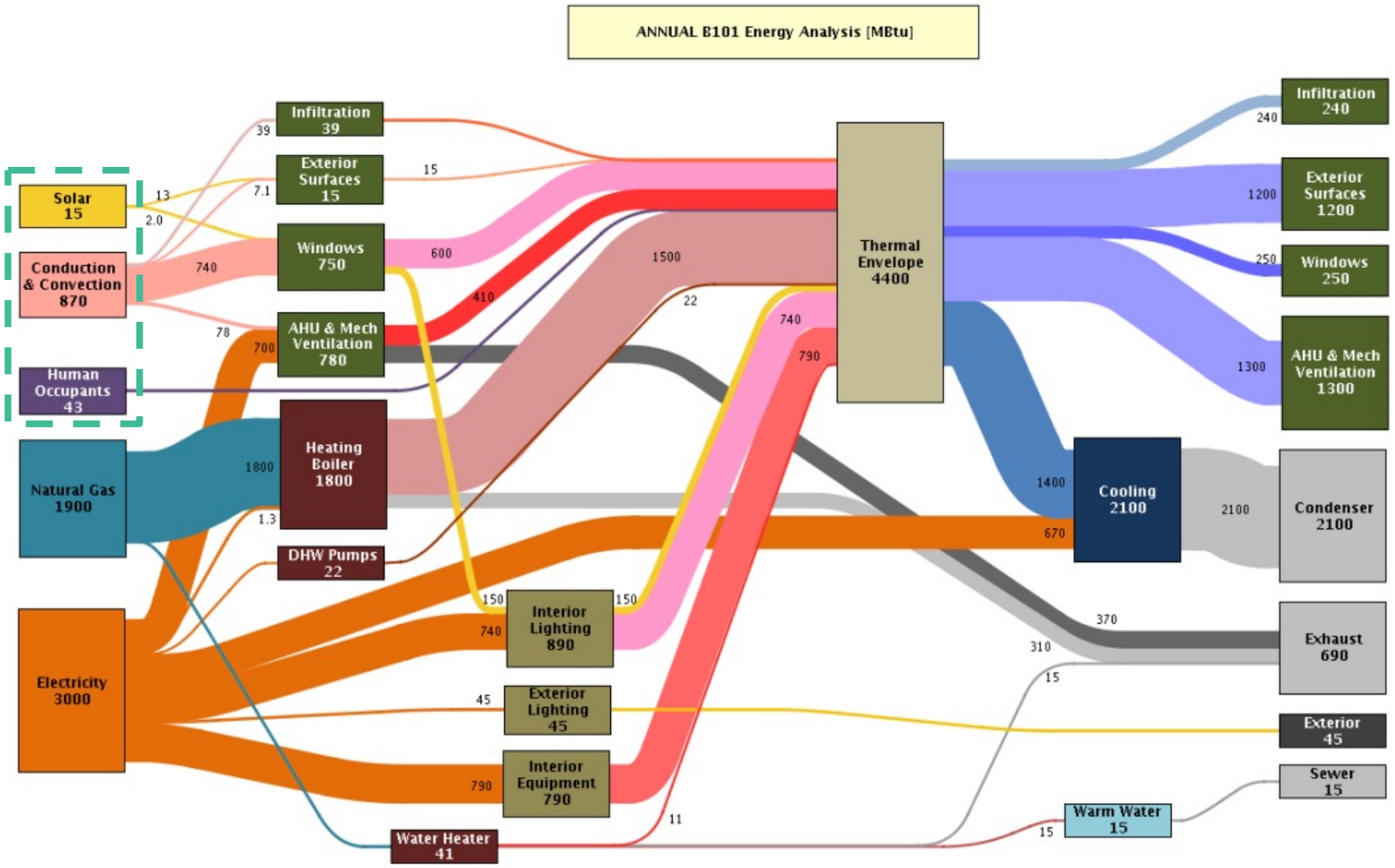
LECTURE

ENERGY TRANSITION: ENERGY EFFICIENCY

CONTEXT

- **Building Systems and Energy**
- Energy Efficiency Economics

All Buildings Absorb Passive Energy from the Environment and Occupancy…



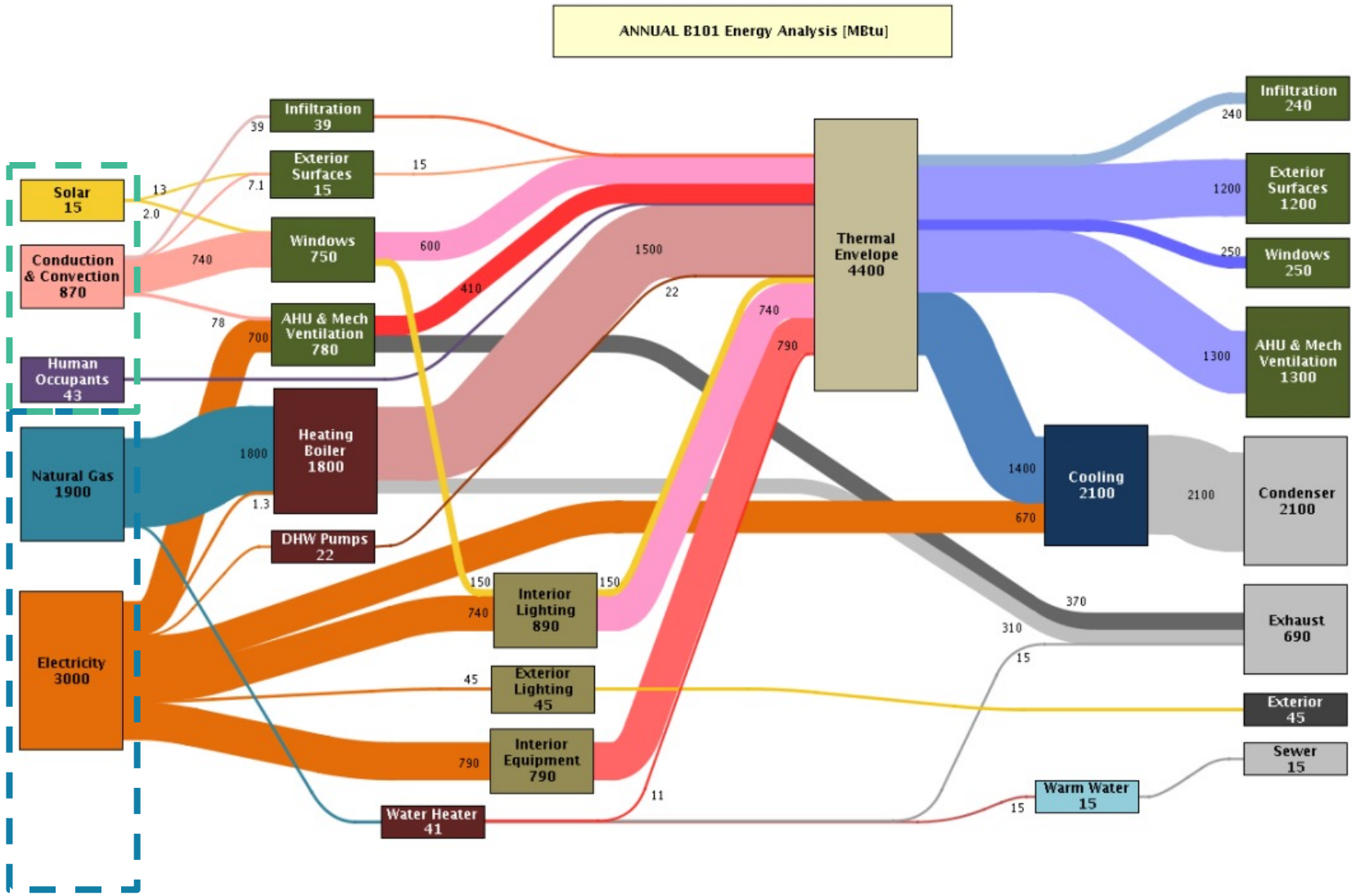
Source: OSTI

ENERGY TRANSITION: ENERGY EFFICIENCY

CONTEXT

- **Building Systems and Energy**
- Energy Efficiency Economics

…and then Buildings Receive Active Energy from Utilities…



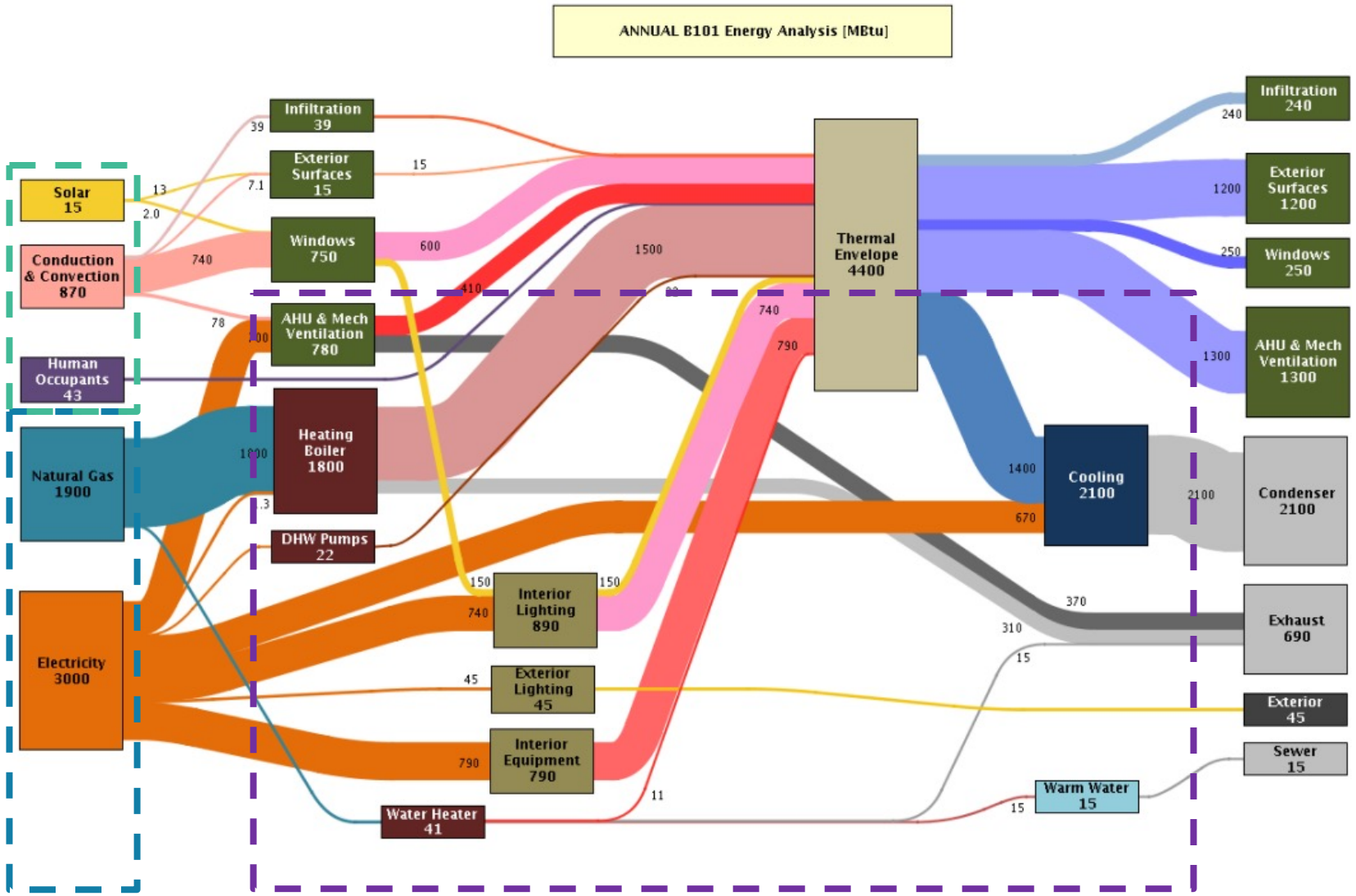
Source: OSTI

ENERGY TRANSITION: ENERGY EFFICIENCY

CONTEXT

- **Building Systems and Energy**
- Energy Efficiency Economics

…and the Utilities Support the Operation of Building Systems that Provide Environmental Control…



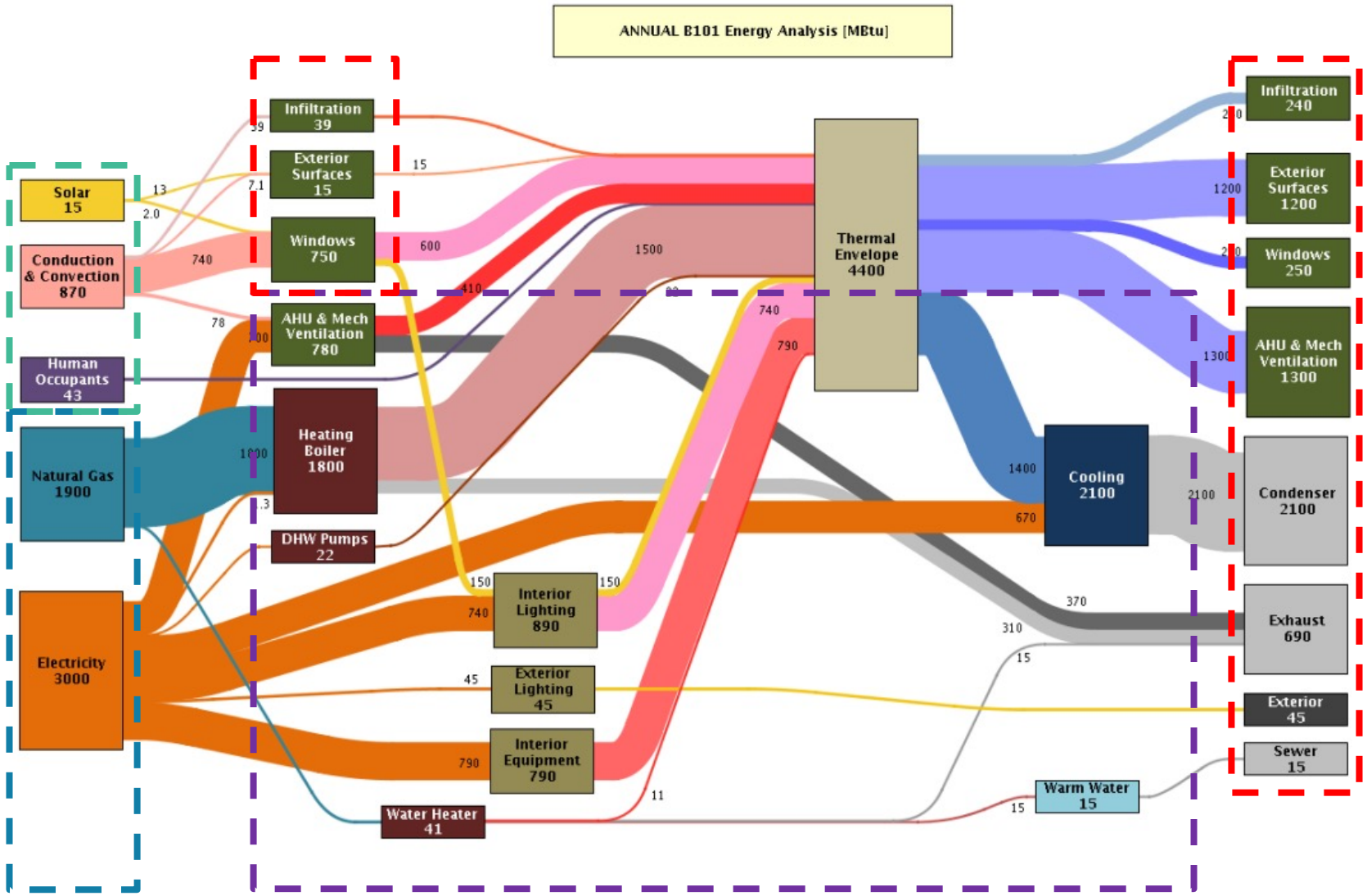
Source: OSTI

ENERGY TRANSITION: ENERGY EFFICIENCY

CONTEXT

- **Building Systems and Energy**
- Energy Efficiency Economics

...and then there are Losses to that Environmental Control



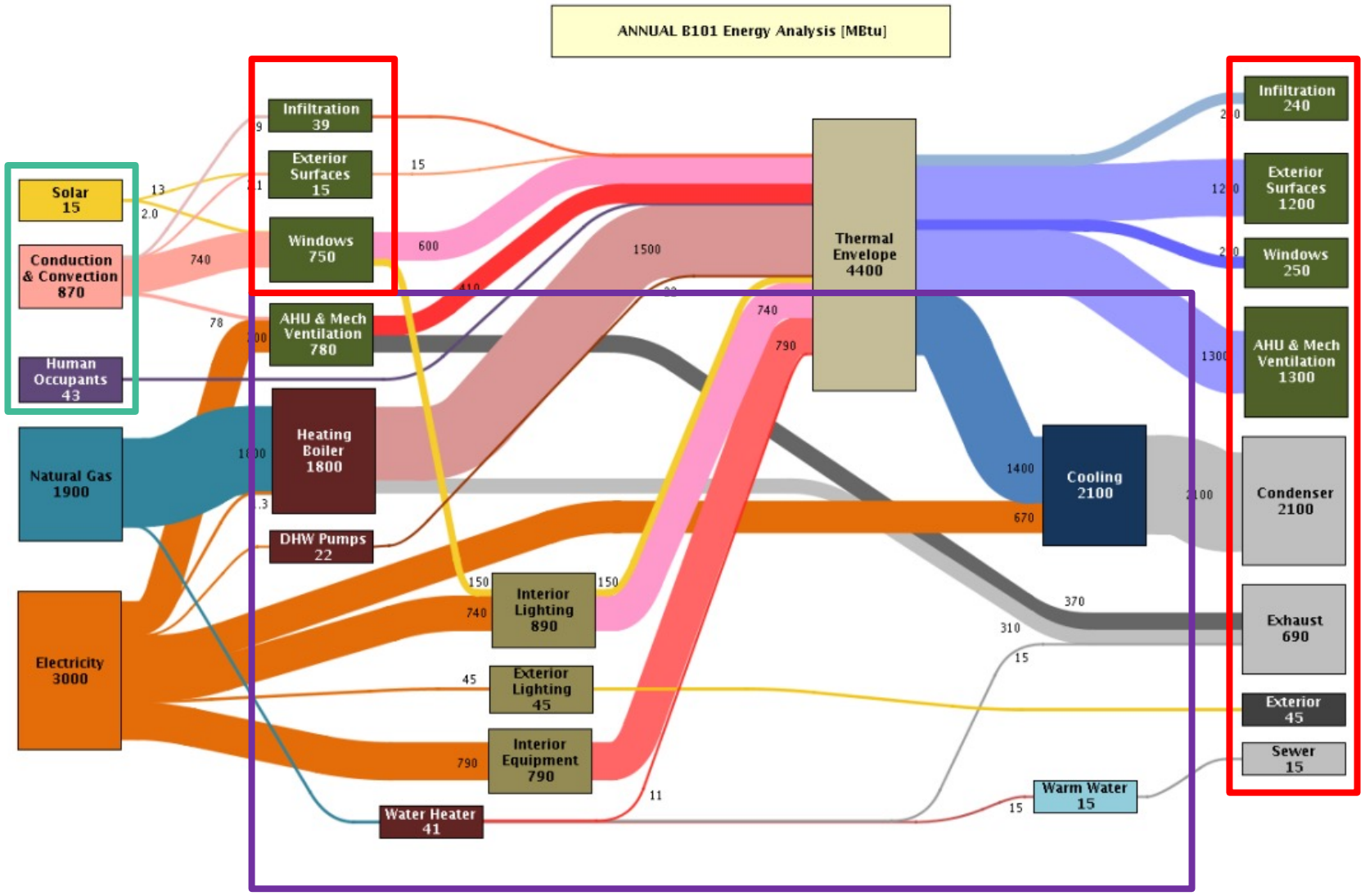
Source: OSTI

ENERGY TRANSITION: ENERGY EFFICIENCY

CONTEXT

- **Building Systems and Energy**
- Energy Efficiency Economics

…Energy Efficiency is the Practice of Reducing Passive Gains, Increasing Output from Building Systems, and Reducing System Losses



Source: OSTI

ENERGY TRANSITION: ENERGY EFFICIENCY

CONTEXT

- Building Systems and Energy
- Energy Efficiency Economics

Energy Efficiency Economics are Driven by Different Types of Costs

ComEd
An Exelon Company

Page 1 of 2

Account Number 9999999999
Name COMED COMMERCIAL CUSTOMER
Service Location 100 MAIN ST CHICAGO
Phone Number 999-999-9999

Bill Summary

Previous Balance	$301.63
Total Payments - Thank You	$301.63
Amount Due on February 15, 2022	**$332.82**

Issue Date January 31, 2022

Visit ComEd.com
Customer Service / Power Outage
English
1.877.4COMED1 (1.877.426.6331)
Español
1.800.95.LUCES (1.800.955.8237)
Hearing/Speech Impaired
1.800.572.5789 (TTY)

Your Usage Profile
13-Month Usage (Total kWh)

Electric Usage

Month	kWh
Feb-21	1594
Mar-21	1675
Apr-21	1595
May-21	1555
Jun-21	1386
Jul-21	2142
Aug-21	2344
Sep-21	2343
Oct-21	2333
Nov-21	1674
Dec-21	1630
Jan-22	1799
Feb-22	**1959**

Month Billed	Average Daily kWh	Temp
Last Year	53.1	29
Last Month	51.4	38
Current Month	**59.4**	**23**

Meter Information

Read Dates	Meter Number	Load Type	Reading Type	Meter Reading Previous	Meter Reading Present	Difference	Multiplier X	Usage
12/29-1/31	999999999	General Service	Total kWh	77101 Actual	79060 Actual	1959	1	1959
12/29-1/31	999999999	General Service	On Pk kW	0.00 Actual	10.82 Actual	10.82	1	10.82
12/29-1/31	999999999	General Service	Off Pk kW	0.00 Actual	11.17 Actual	11.17	1	11.17

Service from 12/29/2021 to 1/31/2022 - 33 Days **Commercial Demand - 0 to 100 kW**

Electricity Supply Services				**$164.08**
Electricity Supply Charge	1,959 kWh	X	0.06522	127.77
Transmission Services Charge	1,959 kWh	X	0.01353	26.51
Purchased Electricity Adjustment				9.80
Delivery Services - ComEd				**$116.19**
Customer Charge				17.32
Standard Metering Charge				5.75
Distribution Facilities Charge	10.82 kW	X	8.38000	90.67
IL Electricity Distribution Charge	1,959 kWh	X	0.00125	2.45
Taxes and Other				**$52.55**
Environmental Cost Recovery Adj	1,959 kWh	X	0.00053	1.04
Renewable Portfolio Standard	1,959 kWh	X	0.00502	9.83
Zero Emission Standard	1,959 kWh	X	0.00195	3.82
Energy Efficiency Programs	1,959 kWh	X	0.00363	7.11
Energy Transition Assistance	1,959 kWh	X	0.00082	1.61

For Electric Supply Choices visit pluginillinois.org

(continued on next page)

ENERGY TRANSITION: ENERGY EFFICIENCY

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- Building Systems and Energy
- Energy Efficiency Economics

Energy Efficiency will NOT Reduce Fixed Charges on your Utility Bill

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ENERGY TRANSITION: ENERGY EFFICIENCY

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- Building Systems and Energy
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Energy Efficiency Should Reduce Billing Units

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ENERGY TRANSITION: ENERGY EFFICIENCY

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- Building Systems and Energy
- Energy Efficiency Economics
  - Economic analysis requires the user to develop a comprehensive (8,760 hour) model of how a building or a system uses energy
  - Application of that energy use against the detailed billing variables from energy suppliers and utilities

But Not All Billing Units are the Same

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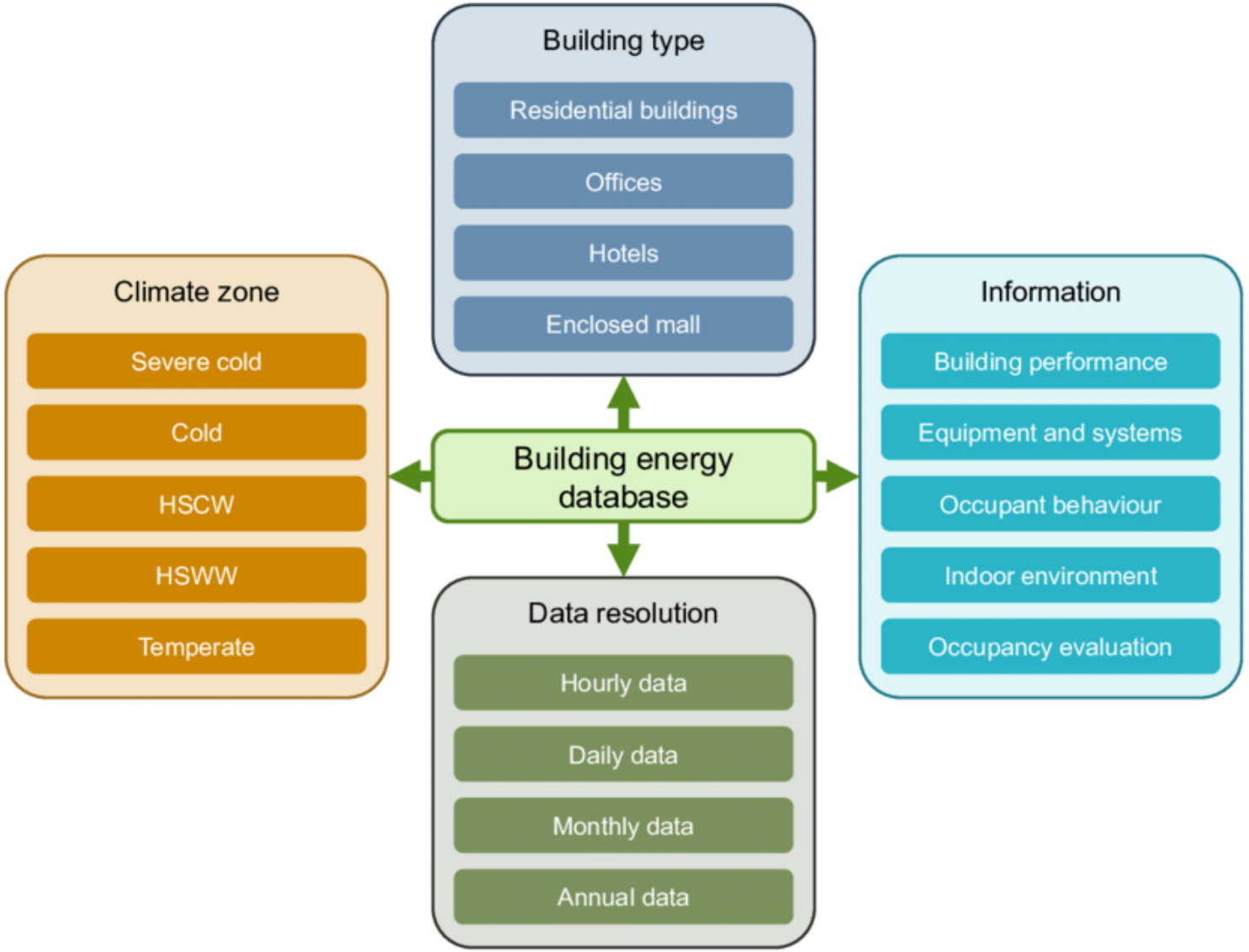
ENERGY TRANSITION: ENERGY EFFICIENCY

BARRIERS TO ENERGY EFFICIENCY

- **Data**
- Technical
- Financial

The Lack of Consistent and Accurate Building Data is the First Barrier to Energy Efficiency

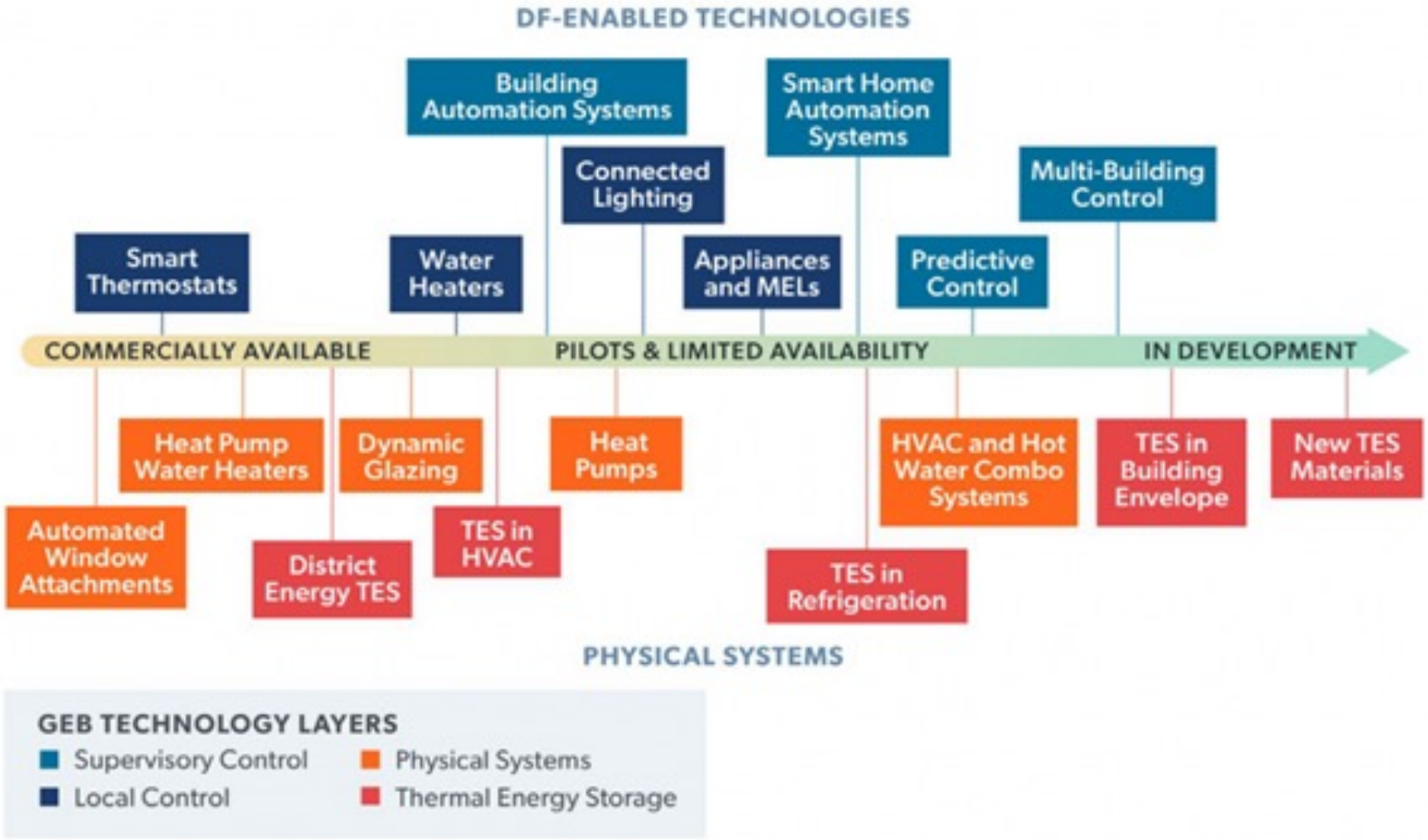


ENERGY TRANSITION: ENERGY EFFICIENCY

BARRIERS TO ENERGY EFFICIENCY

- Data
- **Technical**
- Financial

Technology is always Changing – Should you Buy Now or Wait?



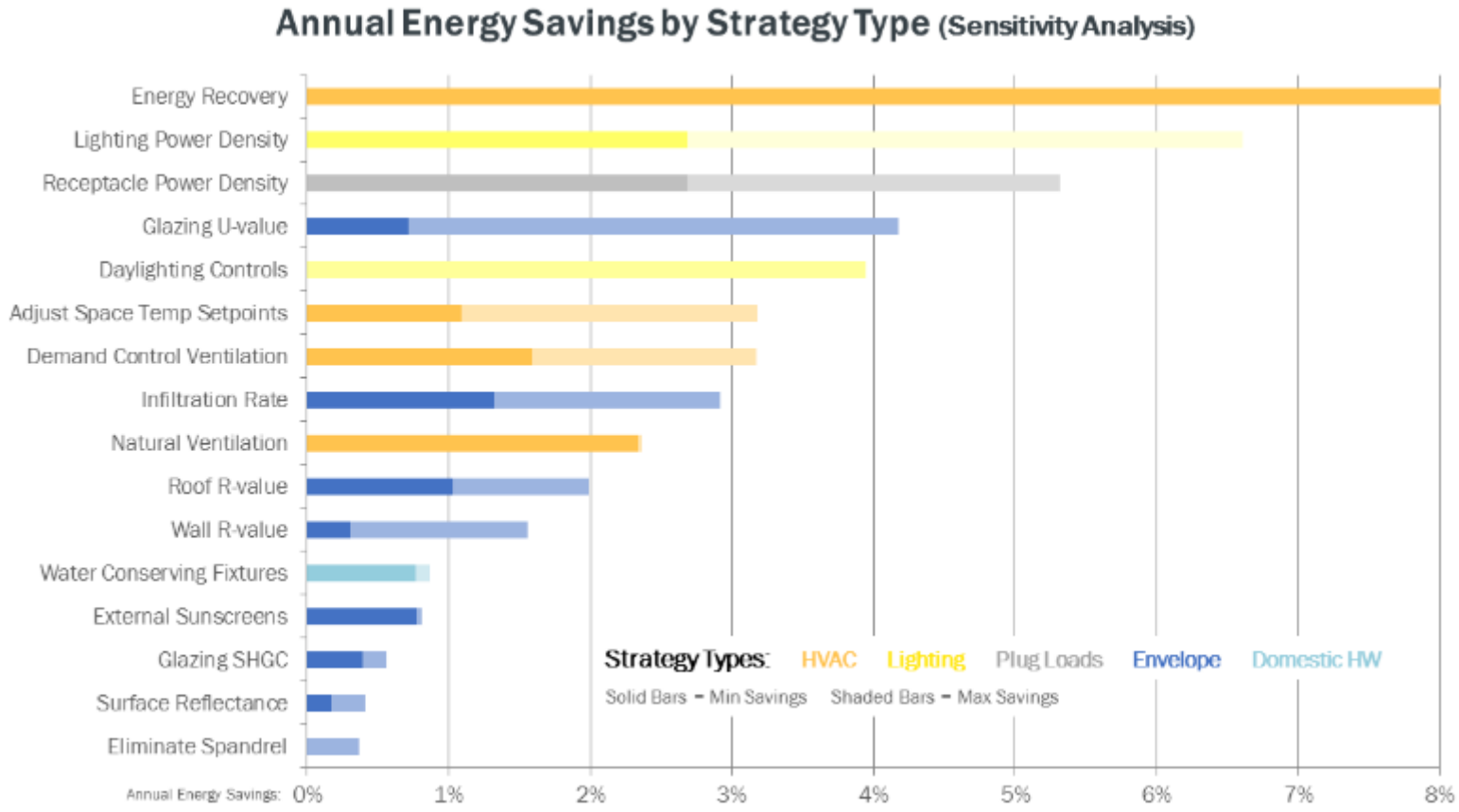
Source: OSTI

ENERGY TRANSITION: ENERGY EFFICIENCY

BARRIERS TO ENERGY EFFICIENCY

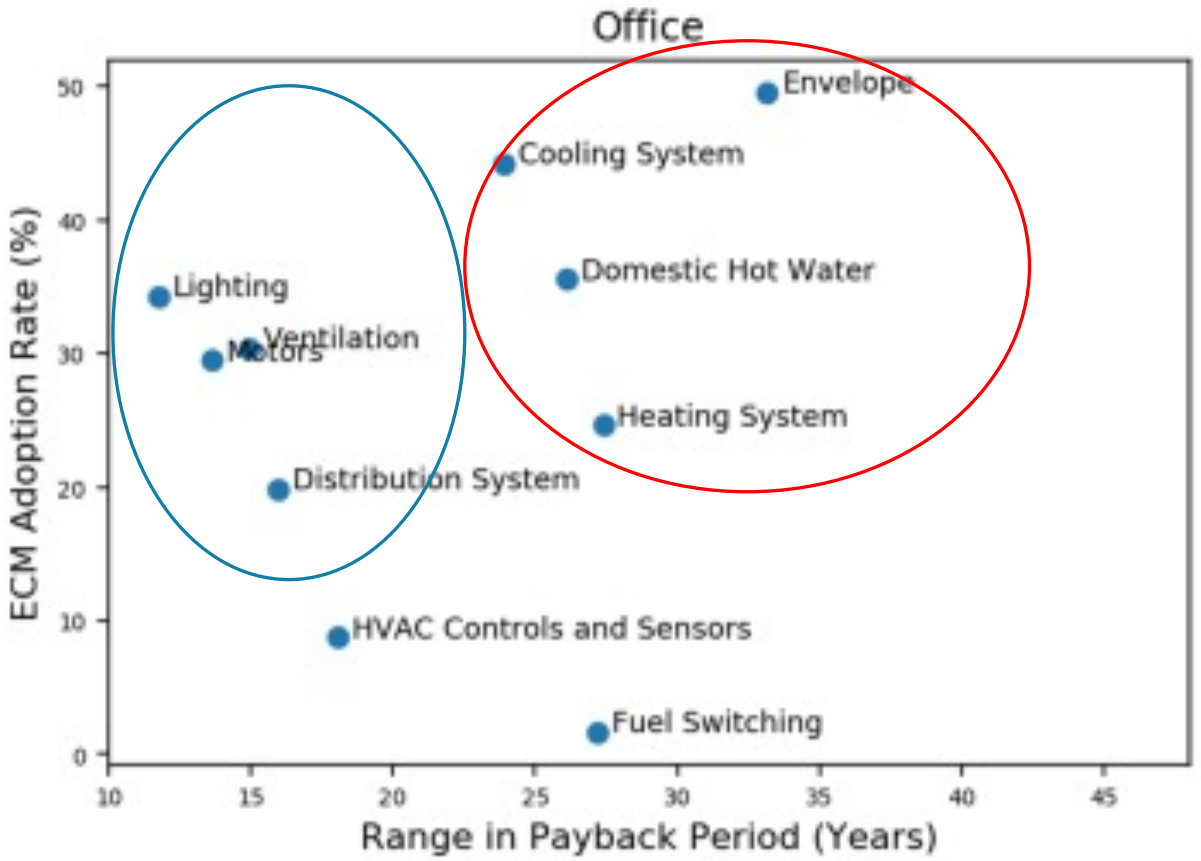
- Data
- **Technical**
- Financial

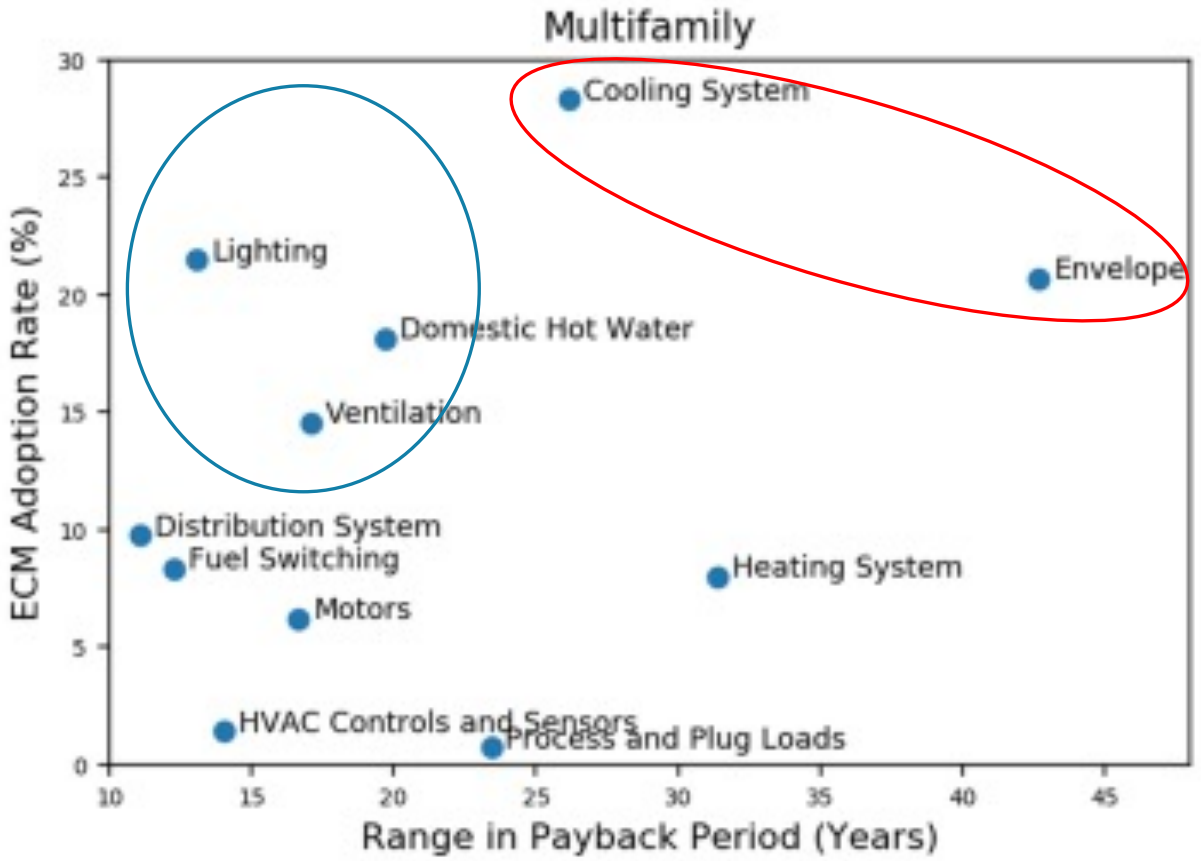
Where should you focus your efforts?



Source: Project Stasio

These Questions Cause some Energy Conservation Measures (ECM's) while others may not





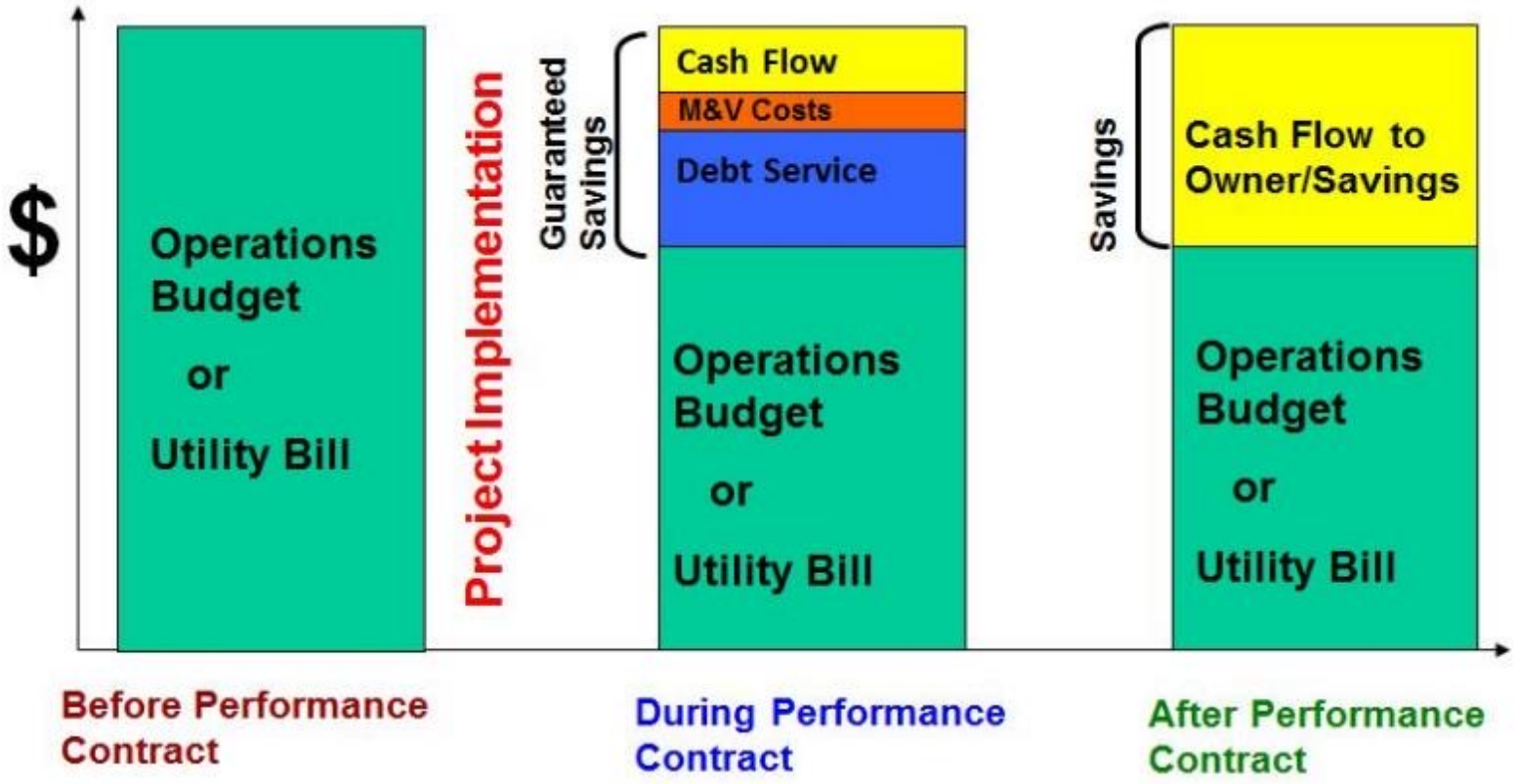
Source: Project Stasio

ENERGY TRANSITION: ENERGY EFFICIENCY

BARRIERS TO ENERGY EFFICIENCY

- Data
- Technical
- **Financial**

Many Municipalities Consider an Energy Savings Performance Contract (ESPC) to fill their Technical and Financial Gaps that Prevent or Delay EPC Deployments



Source: Energy Finance Bloc, University of North Carolina

ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- **Local Utilities**
- State Programs
- Federal Incentives

Significant Funding for Utility-Operated Energy Efficiency Programs in Illinois

PROGRAM YEAR	COMMONWEALTH EDISON	NICOR	PEOPLES GAS	NORTH SHORE GAS	TOTAL
2008-2009	$34,305,960	-	-	-	$34,305,960
2009-2010	$63,543,475	-	-	-	$63,543,475
2010-2011	$104,350,143	-	-	-	$104,350,143
2011-2012	$141,365,182	$21,108,714	$7,059,075	$1,273,956	$170,806,927
2012-2013	$140,951,942	$41,307,396	$20,482,133	$2,948,316	$205,689,787
2013-2014	$185,128,616	$79,260,730	$28,291,874	$6,050,517	$298,731,737
2014-2015	$201,167,347	$37,691,762	$20,817,898	$4,067,397	$263,744,404
2015-2016	$199,118,437	$29,698,518	$19,249,938	$3,846,698	$251,913,591
2016-2017	$439,804,242	$62,894,346	$37,361,888	$6,830,212	$546,890,688
2017-2018	$352,988,359	$29,053,303	$24,646,499	$4,026,594	$410,714,755
2018-2019	$351,381,796	$41,136,995	$26,918,182	$3,951,074	$423,388,047
2019-2020	$346,480,330	$43,779,659	$29,237,648	$3,586,530	$423,084,167
2020-2021	$351,037,752	$45,163,143	$28,691,448	$4,348,325	$429,240,667
2021-2022	$427,470,991	$45,705,020	$29,049,031	$4,098,601	$506,323,643
2022-2023	$423,304,298	$45,705,020	$29,049,031	$4,098,601	$502,156,950
2023-2024	$423,304,298	$45,705,020	$29,049,031	$4,098,601	$502,156,950
2024-2025	$423,304,298	$45,705,020	$29,049,031	$4,098,601	$502,156,950
TOTAL	$4,609,007,466	$613,914,646	$358,952,707	$57,324,023	$5,639,198,841
% OF STATEWIDE TOTAL	81.7%	10.9%	6.4%	1.0%	100.0%

ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- Local Utilities
- State Programs
- Federal Incentives

All Consumers Pay for Energy Efficiency Programs via Rider EEPS (or similar)

Commonwealth Edison Company

ILL. C. C. No. 10
ELECTRICITY 7th Revised Informational Sheet No. 38
(Canceling 6th Revised Informational Sheet No. 38)

ENERGY EFFICIENCY ADJUSTMENTS

Supplement to Rider EEPP (1)

Customer Group	EE Adjustment Applicable for the February 2022 Monthly Billing Period and Extending Through the December 2022 Monthly Billing Period (2)(3)
Residential	0.233 ¢/kWh
Small N&L (4)	0.363 ¢/kWh
Large N (5)	0.157 ¢/kWh

Customer Group	EE Adjustment Applicable Beginning with the January 2023 Monthly Billing Period and Extending Through the December 2023 Monthly Billing Period (2)(3)
Residential	0.276 ¢/kWh
Small N&L (4)	0.461 ¢/kWh
Large N (5)	0.221 ¢/kWh

ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- Local Utilities
- State Programs
- Federal Incentives

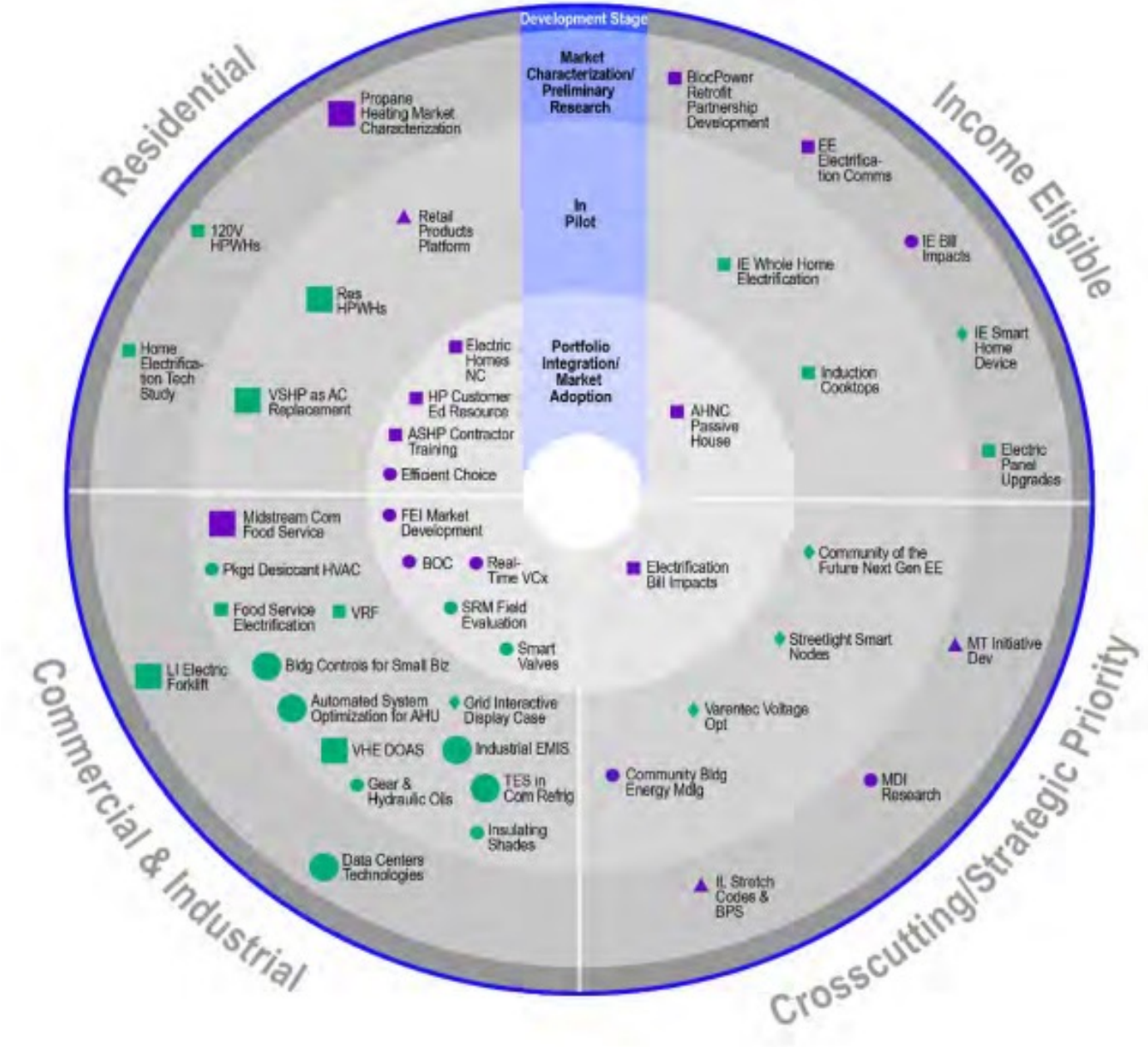
Framework
- Project
- Development Stage

Strategic Alignment (Shape)
- Market Transformation
- Relevance to EE Electrification
- Cross-ComEd Partnership

Project Type (Color)
- New Technology / Measure Opportunity
- Design / Delivery Innovation Based

Savings Potential (Size)
- <100 GWh or TBD
- 100+ GWh

Commonwealth Edison Energy Efficiency Program Rubric

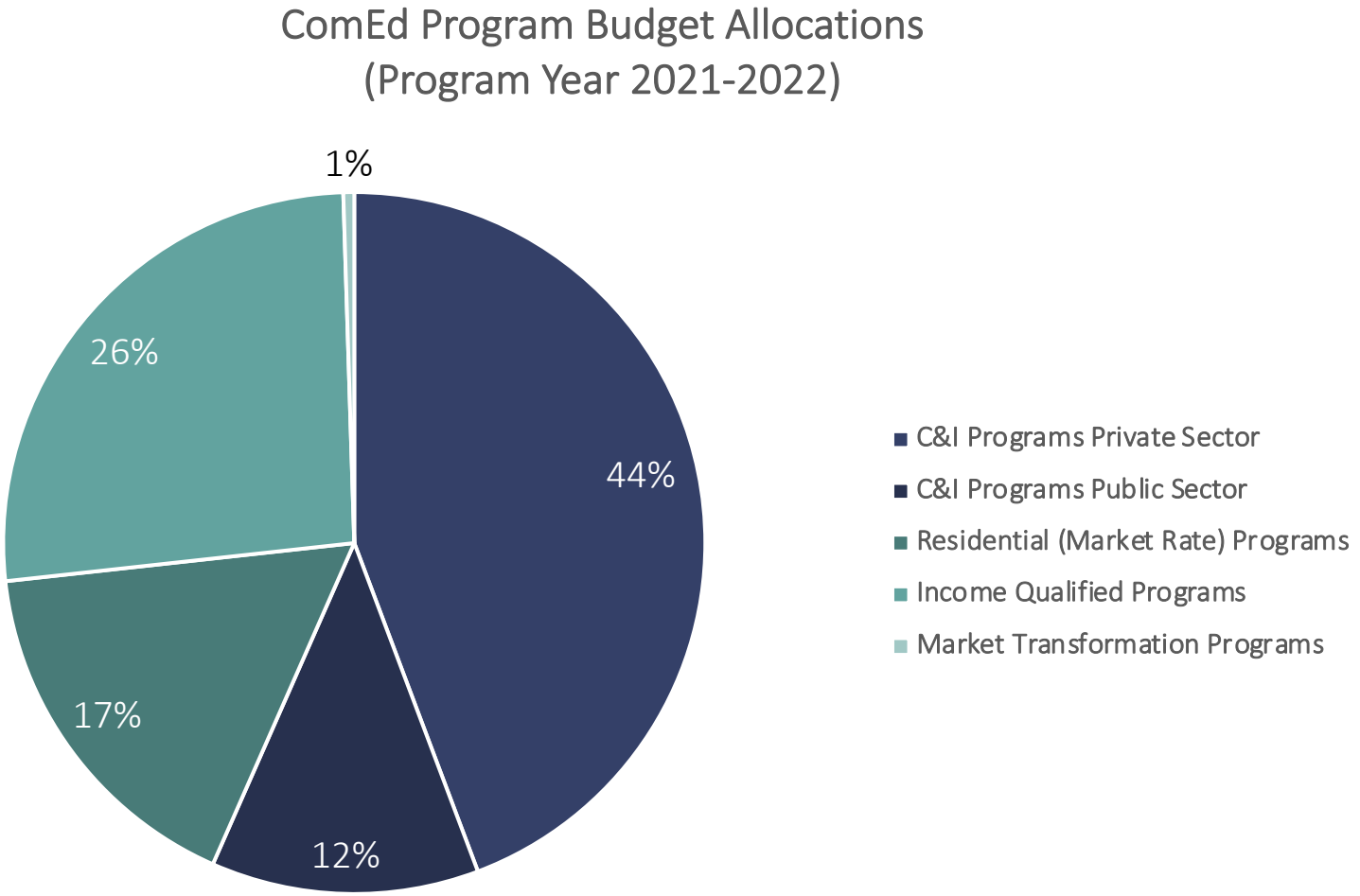


ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- **Local Utilities**
- State Programs
- Federal Incentives

Commonwealth Edison Energy Efficiency Program Allocations

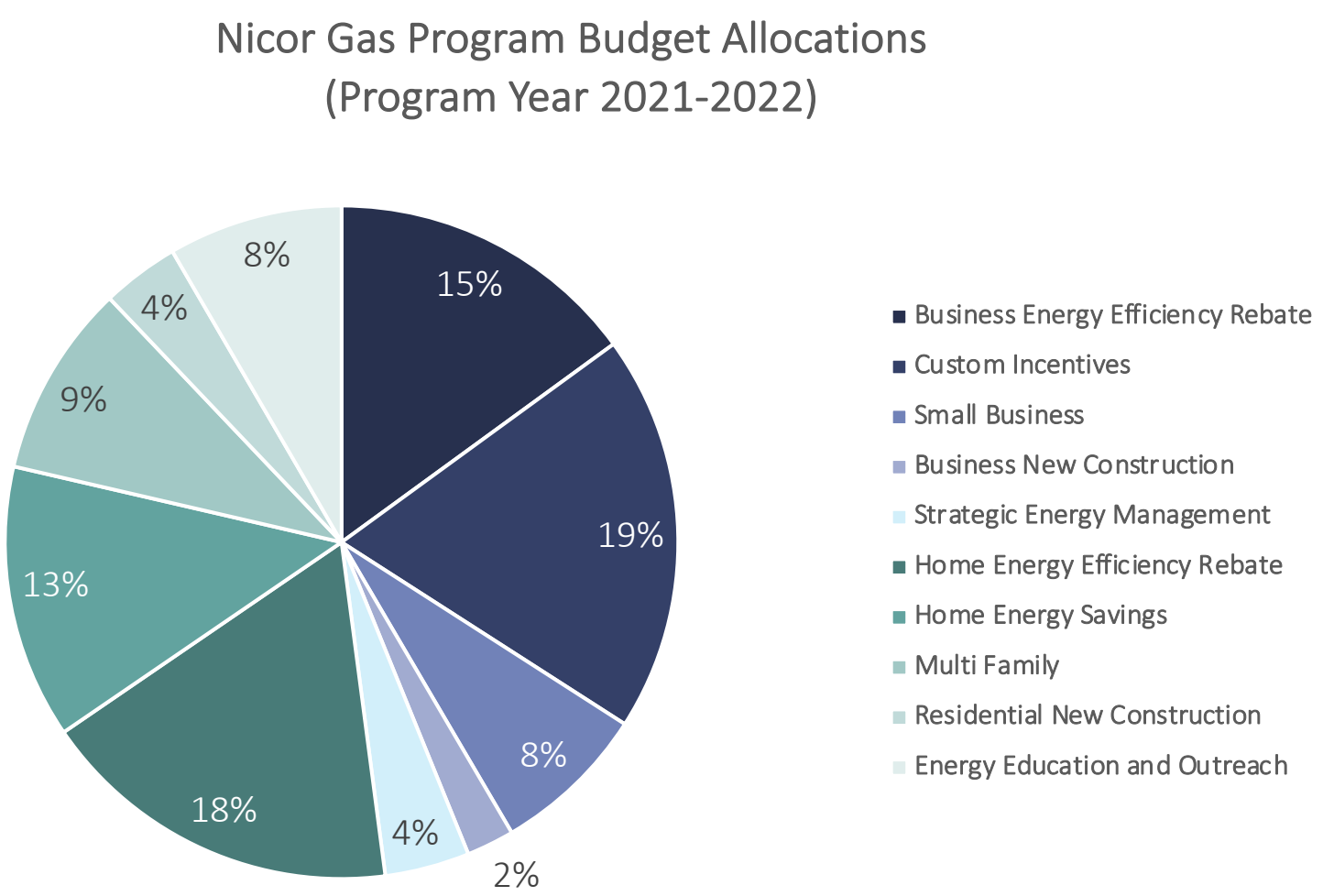


ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- **Local Utilities**
- State Programs
- Federal Incentives

Nicor Gas Energy Efficiency Program Budget Allocations

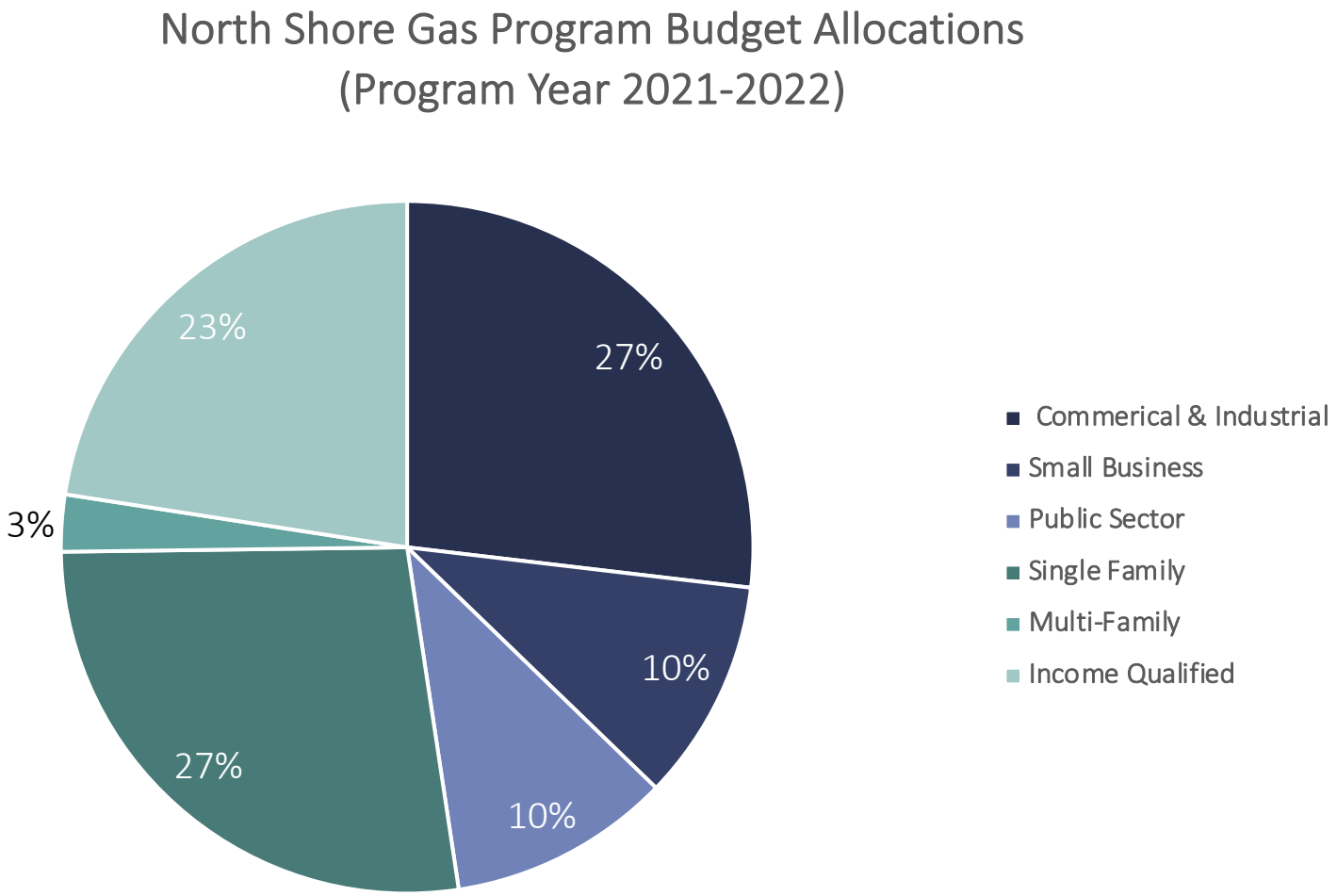


ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- **Local Utilities**
- State Programs
- Federal Incentives

North Shore Gas Energy Efficiency Program Budget Allocations

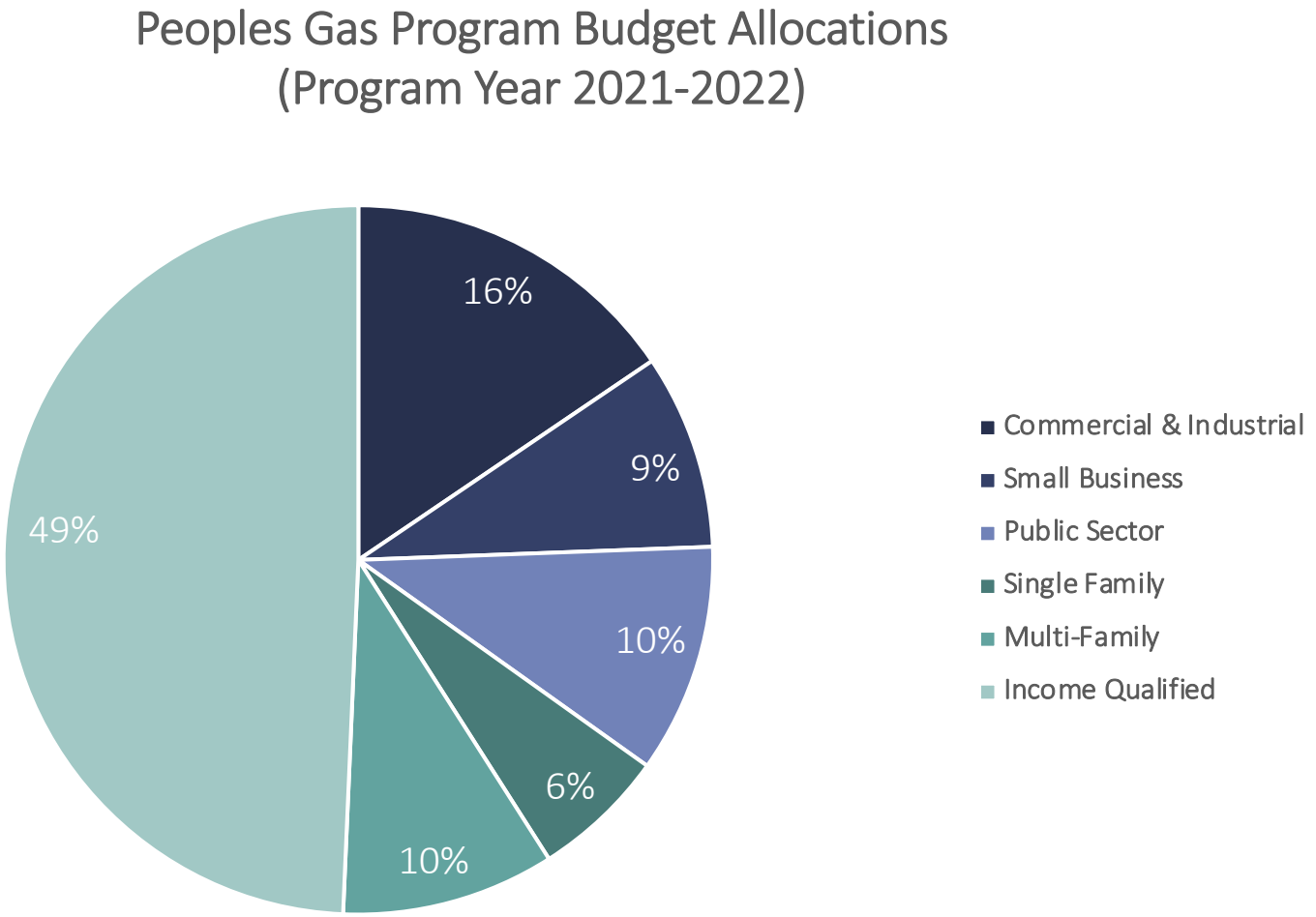


ENERGY TRANSITION: ENERGY EFFICIENCY

EFFICIENCY PROGRAMS AND FUNDING

- **Local Utilities**
- State Programs
- Federal Incentives

Peoples Gas Energy Efficiency Program Budget Allocations



ENERGY TRANSITION: STATE ENERGY INCENTIVES

Office of Energy

- Energy Efficiency at Public Water Infrastructure
- Energy Conservation Code and Training
- Clean Energy Innovation Fund
- Low Income Residential Energy Efficiency Program
- Renewable Energy Development at Landfills and Clea...
- Energy Rebates

Office of Energy

Illinois Environmental Protection Agency

The Illinois EPA Office of Energy is focused on delivering energy programming on an equitable basis across the State with opportunities that reach individuals and businesses as well as municipalities. For example, our partners have helped us implement a wastewater treatment energy efficiency program that has already reached 28% of Illinois counties in its first full year!

$2.1 Million	#1 in Midwest	Wastewater Treatment Plants Assessed for Energy Efficiency since 2018	Code Officials and Building Professionals trained in Energy Codes
Approximate Annual Funding from U.S. Department of Energy	Illinois Leads in Number of Clean Energy Jobs!	108 Plants	5,879 Trainees

Expanding Our Reach:

- Extending no-cost energy efficiency assessment opportunities to public drinking water facilities and other industries such as agriculture
- Investing in solar + storage
- Collaborating on strategic Electric Vehicle infrastructure

Our Primary Partners:

U.S. DEPARTMENT OF ENERGY — Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

SEDAC — SMART ENERGY DESIGN ASSISTANCE CENTER

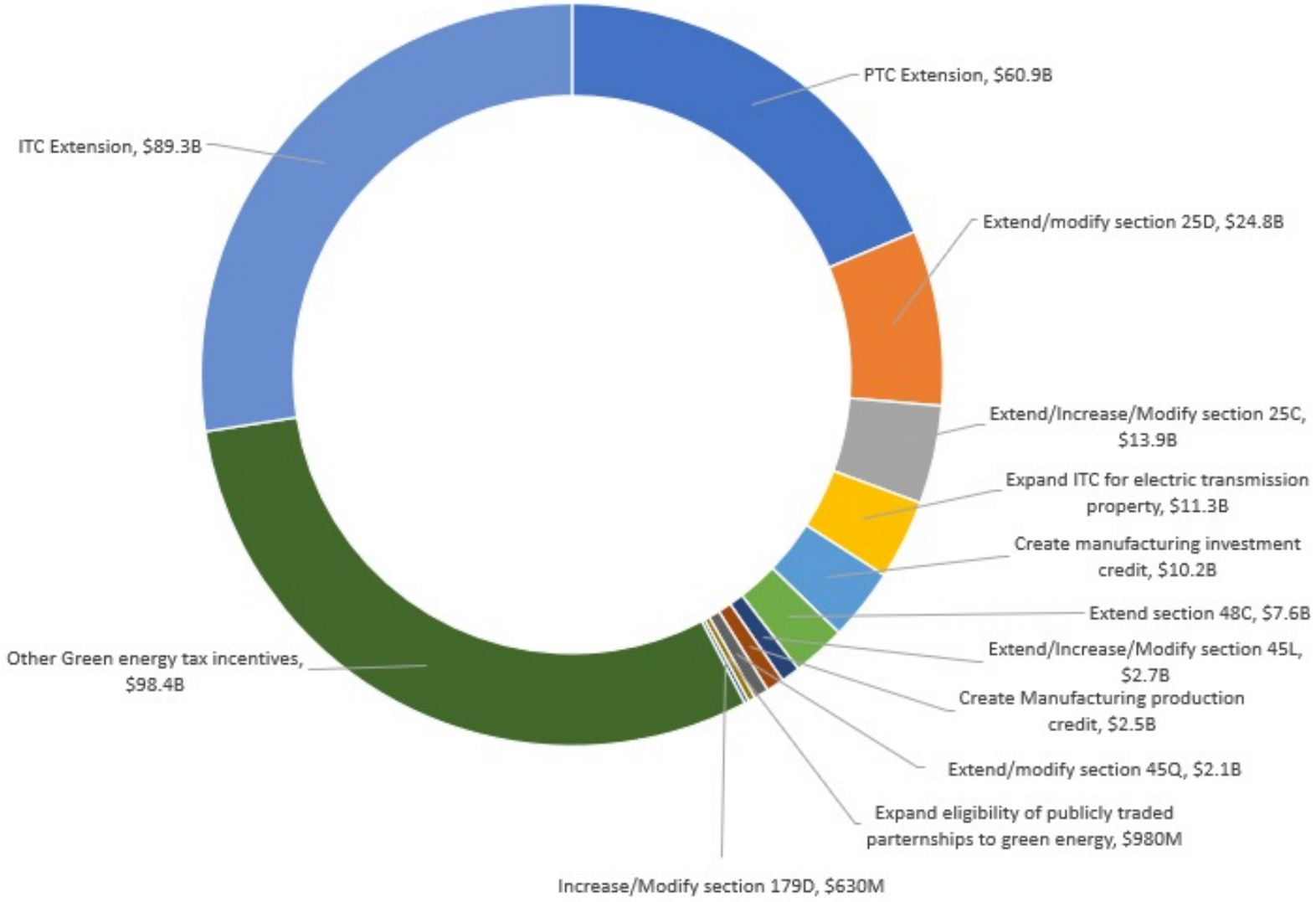
evergreen climate innovations

ILLINOIS — Illinois Sustainable Technology Center — PRAIRIE RESEARCH INSTITUTE

ENERGY TRANSITION: ENERGY EFFICIENCY (FEDERAL)

- Inflation Reduction Act
- General
  - Increase and accelerate deployment of sustainability technologies
  - Tax credits for taxable entities
  - Direct grant for non-taxable entities
- Conditionals to receive maximum credits
  - Prevailing Wage
  - Apprenticeships
  - Domestic Content

Inflation Reduction Act: $325.3 billion over 10 years



ENERGY TRANSITION: ENERGY EFFICIENCY (FEDERAL)

- Tax Credits
  - Refer to section of the Tax Code
  - IRS is required to publish rules
  - Plenty of time to think through how all of this will work

Inflation Reduction Act: $325.3 billion over 10 years

- Section 48 ITC
- Section 45 PTC
- Section 45Q credit for carbon capture and sequestration
- Section 30C alternative fuel vehicle refueling property credit
- Section 48C advanced energy project credit
- Section 48D investment credit for transmission property
- Section 48E zero emissions facility credit
- Section 45W zero-emission nuclear power production credit
- Section 45X clean hydrogen production credit
- Section 45BB clean electricity production credit
- Section 48F clean electricity investment credit
- Section 45CC clean fuel production credit

ENERGY TRANSITION: ENERGY EFFICIENCY (FEDERAL)

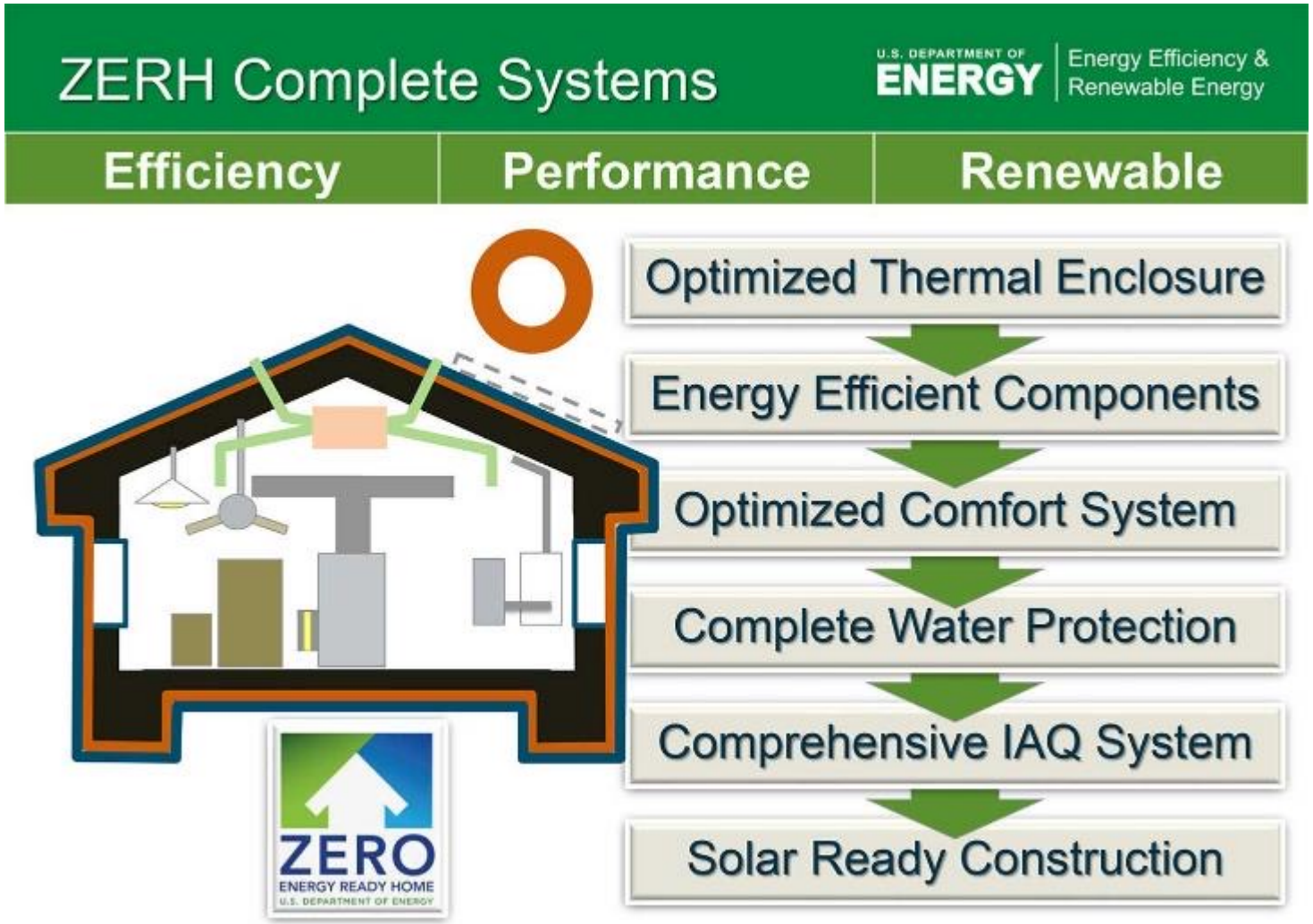
- **Production Tax Credit (PTC).** Tax credit ($0.005-0.025/kWh) for all new renewable generation beginning construction pre-2026
  - Biomass, landfill gas, municipal solid waste, hydro, geothermal
- **Investment Tax Credit (ITC).** Tax Credit equal to 6-30% of capital cost of a new renewable energy resource beginning construction pre-2026
  - Biomass, landfill gas, municipal solid waste, hydro, geothermal, energy storage, interconnection, microgrid controllers, linear generators

Inflation Reduction Act: $325.3 billion over 10 years

- Section 48 ITC,
- Section 45 PTC,
- Section 45Q credit for carbon capture and sequestration,
- Section 30C alternative fuel vehicle refueling property credit,
- Section 48C advanced energy project credit
- Section 48D investment credit for transmission property,
- Section 48E zero emissions facility credit,
- Section 45W zero-emission nuclear power production credit, and
- Section 45X clean hydrogen production credit,
- Section 45BB clean electricity production credit,
- Section 48F clean electricity investment credit,
- Section 45CC clean fuel production credit.

ENERGY TRANSITION: ENERGY EFFICIENCY (FEDERAL)

- Residential Energy Efficient Property Credit (Section 25D).
  - 30% tax credit for projects installed before 2031
  - Solar (PV, thermal), fuel cell, small wind energy, geothermal heat pumps battery storage
- New Energy Efficient Home Credit (Section 45L).
  - Single Family
    - $2,500 (Energy Star)
    - $5,000 (Zero Energy Ready)
  - Multi-Family
    - $500-$3,000/Unit (Energy Star)
    - $1,000-$6,000 (Zero Energy Ready)



ENERGY TRANSITION: ENERGY EFFICIENCY (FEDERAL)

- **Energy Efficient Commercial Buildings (Section 179D).**
  - Standard Credit
    - Commercial buildings that reduce energy consumption at least 25% below ASHRAE standards set 4 years before building was first operated
    - Base Incentive of $0.50/Square Foot of building space (at 25%)
    - Incremental incentive $0.02/Square Foot for each 1% improvement over the 25% baseline
    - Not to exceed $1/Square foot
  - Bonus Credits available

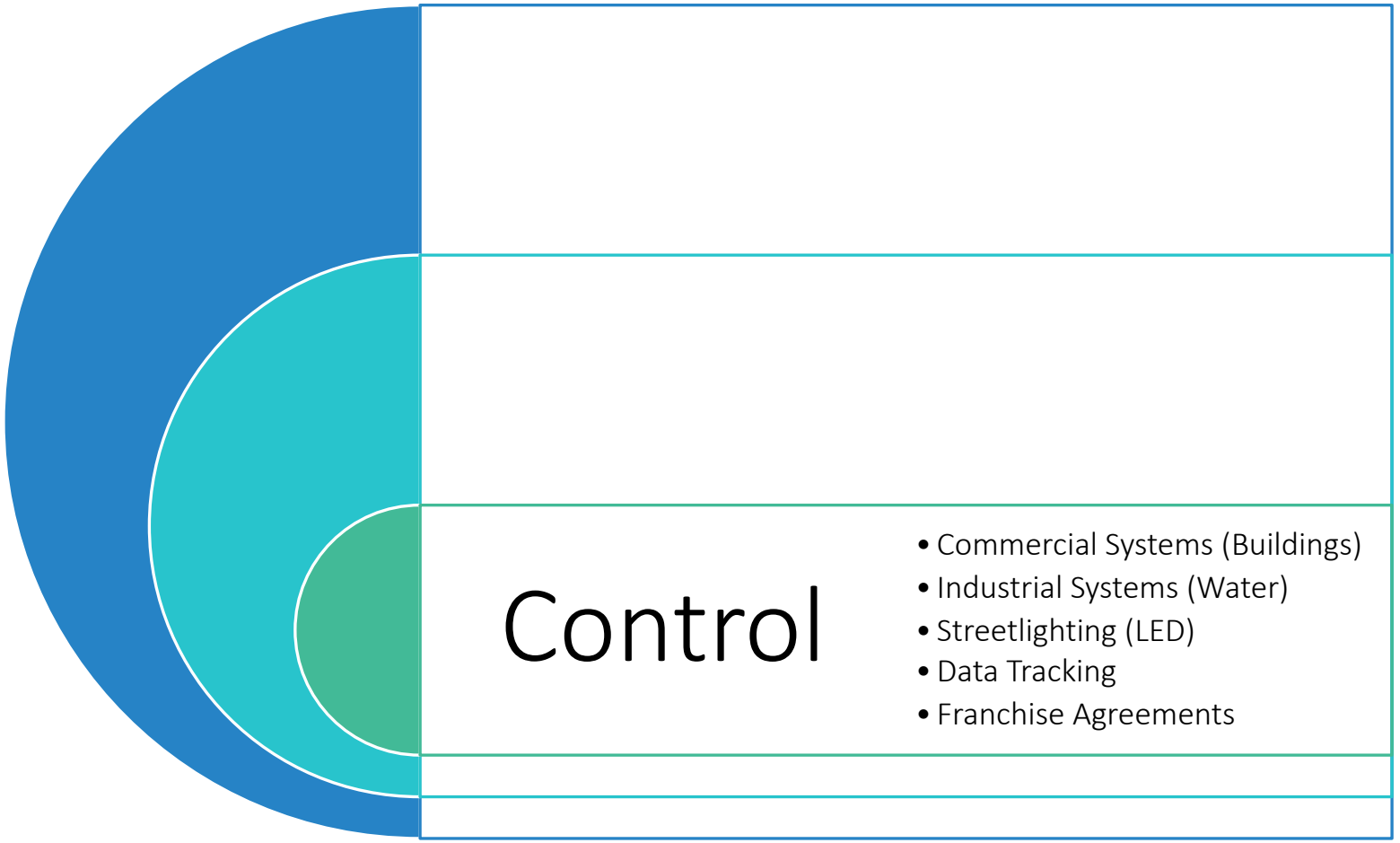
PROVISION	NEW IRC SECTION 179D *EFFECTIVE FROM JAN. 1, 2023*	PREVIOUS IRC SECTION 179D *EFFECTIVE FROM JAN. 1, 2006-DEC. 31, 2022*
Eligibility	• Commercial building owners • Designers of buildings owned by: o Government entities o Not-for-profit organizations o Churches and other religious organizations o Tribal organizations o Not-for-profit schools and universities • REITs	• Commercial building owners • Designers of buildings owned by government entities
Tax deduction range	**Base deduction:** Sliding scale of 50 cents/sqft for energy savings of 25% and up to $1/sqft for energy savings of 50% or greater **Bonus deduction:** Sliding scale of $2.50/sqft for energy savings of 25% and up to $5/sqft for energy savings of 50% or greater	63 cents/sqft – $1.88/sqft per eligible system
Deduction cap	A three-year cap that allows IRC Section 179D to be claimed on buildings if the previous full deduction claim occurred more than three taxable years ago	Since 2006, there's been a lifetime cap of $1.80/sqft or $1.88/sqft with inflation adjustment
Technical requirements	ASHRAE standard in effect from four years prior to completion of construction	ASHRAE standard in effect from two years prior to start of construction
Bonus deduction	• Meet local prevailing wage • Meet apprenticeship percentage hours for up to 15% of labor hours	Not applicable

ENERGY TRANSITION

ROLE FOR MUNICIPAL GOVERNMENT

- **Control**
- Sponsor
- Influence

Municipalities have the authority to regulate certain aspects of development, operations and reporting from private sector entities that can support sustainability policies and programs



ENERGY TRANSITION

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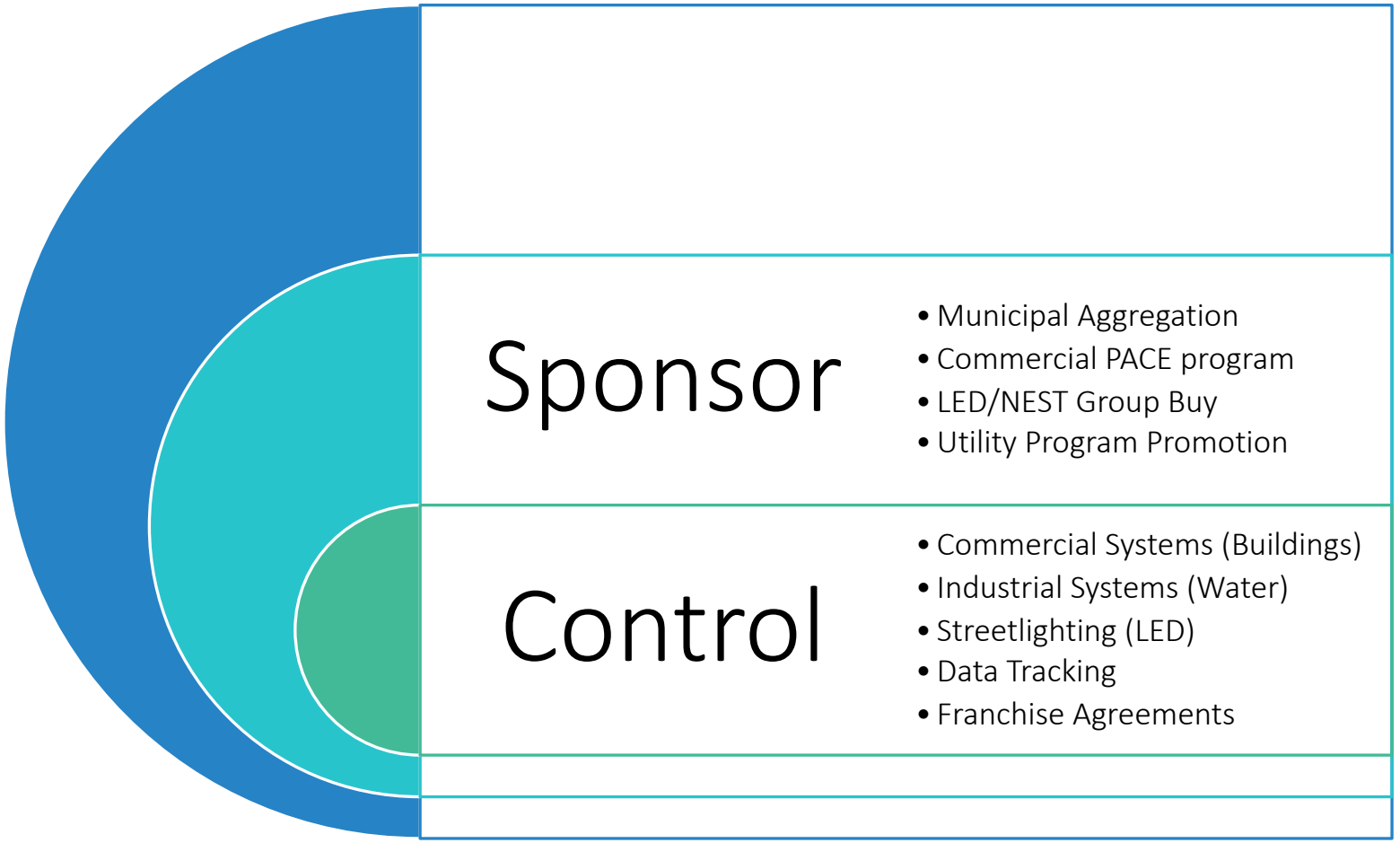

ENERGY TRANSITION

ROLE FOR MUNICIPAL GOVERNMENT

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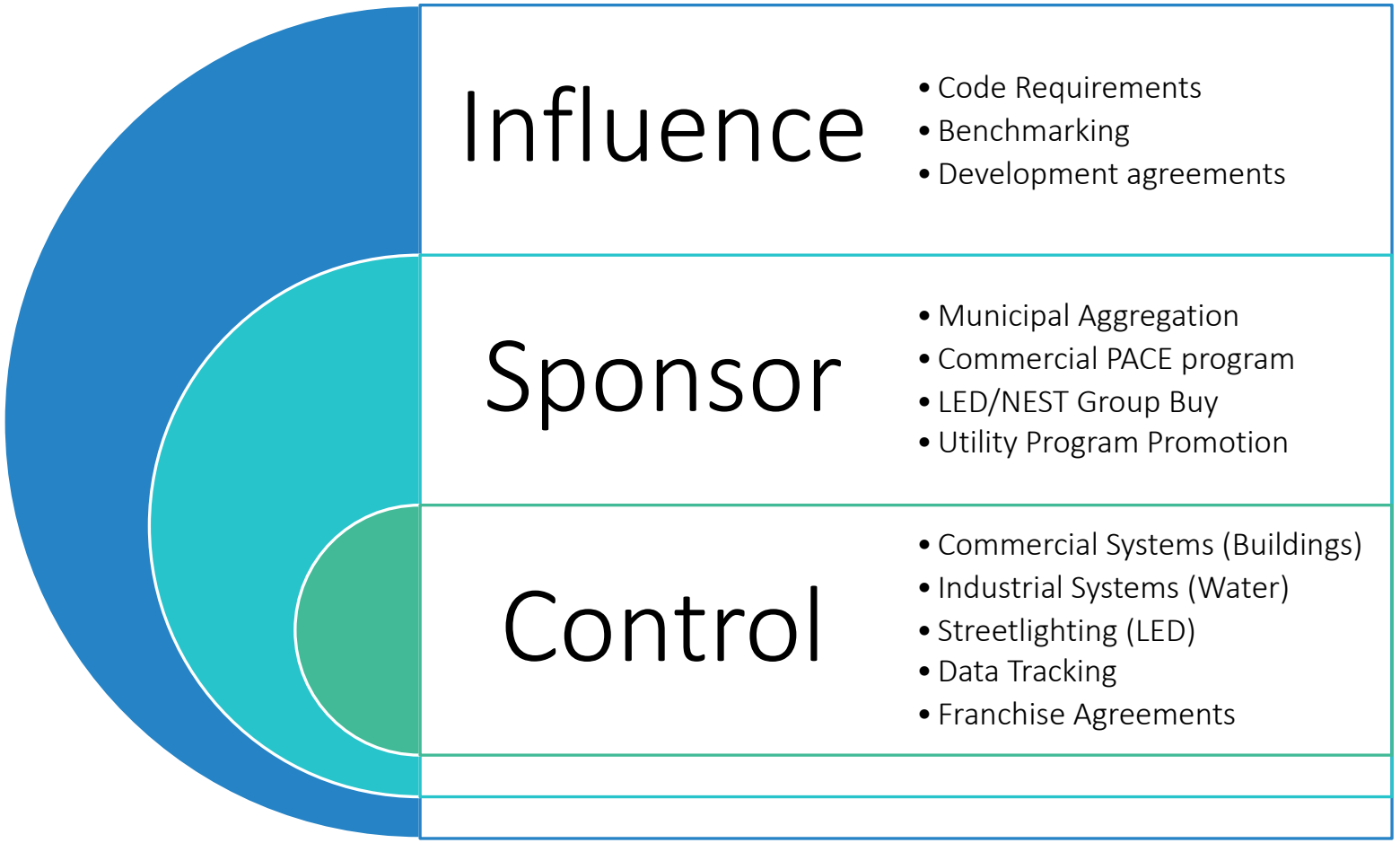

DISCUSSION

DISCUSSION AND QUESTIONS

Key Points

- Energy Efficiency is an effective way to support sustainability goals while reducing costs
- Data, Technical, and Financial considerations can be barriers to energy efficiency projects and programs
- Funding for Energy Conservation Measures (ECM's) is available from local utilities, state programs and federal sources
- ECM economics are driven by:
  - Initial capital costs
  - Incentives
  - Long term avoided costs
    - Energy (kWh)
    - Demand (kW)
    - Taxes and Fees (kWh)

THANK YOU

Mark Pruitt
Principal | The Power Bureau
markjpruitt@thepowerbureau.com
C: (219) 921-3828