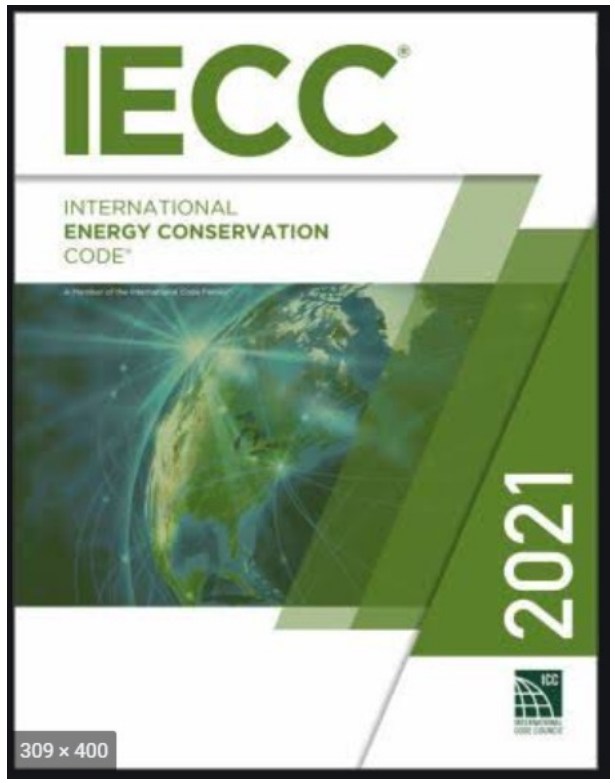
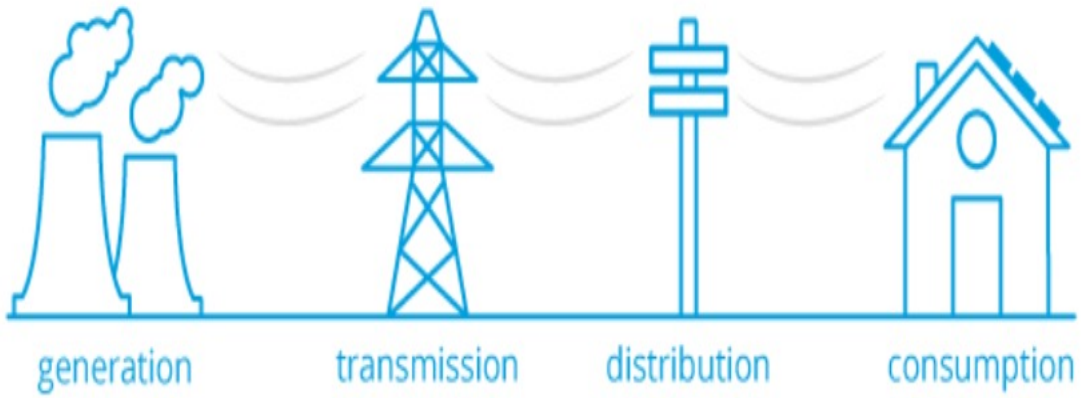
Building Energy Code & Grid Resilience





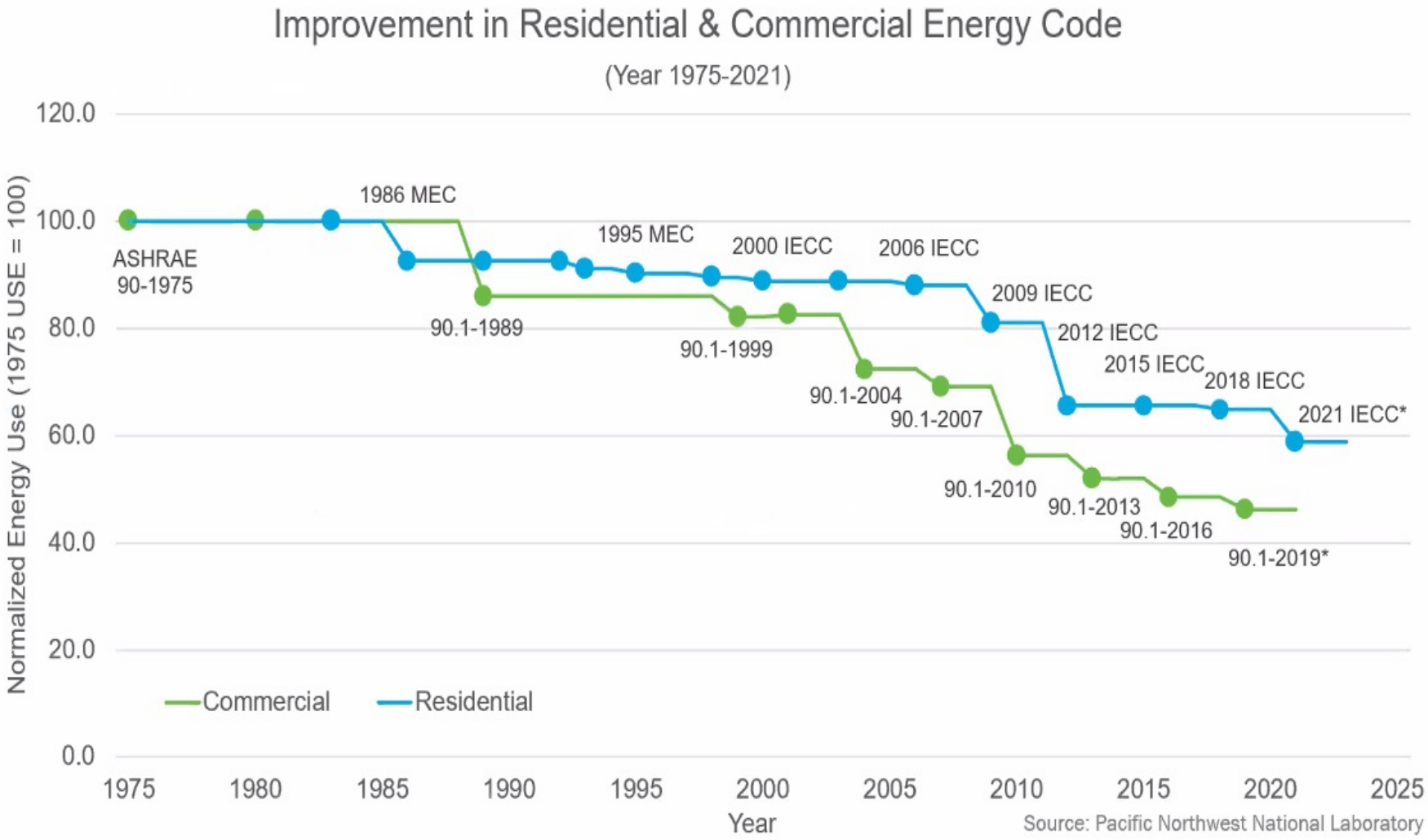
2022 SPEER Policy & Industry Workshop

SPEER
The South-central Partnership for Energy Efficiency as a Resource

Agenda

- 2021 IECC Discussion
  - Stringency
  - State Law
  - Changes
- Insulation Opportunity Study
- Federal Funding
- Discussion

Historical Improvement: IECC and Standard 90.1



The 2021 IECC is Cost Effective

Table ES.3. Impacts on Consumers' Cash Flow from Compliance with the 2021 IECC

	Compared to the 2018 IECC	
Climate Zone	Net Annual Cash Flow Savings ($ for Year 1)	Years to Cumulative Positive Cash Flow
1	145	1
2	108	2
3	101	3
4	59	5
5	7	10
6	44	4
7	138	3
8	239	2
National Average	76	4

https://www.energycodes.gov/sites/default/files/2021-07/2021IECC_CostEffectiveness_Final_Residential.pdf

Texas Adoption Process

→ IECC was published in January 2021
→ ESL completed stringency analysis fall 2021
→ SECO should have moved Texas to the 2021 IECC…

HB 2439 ☹

Texas Code (2015 IECC) vs 2021 IECC

Climate Zone	2015 U-factor	2021 U-factor	2015 SHGC	2021 SHGC	2015 Wall	2021 Wall	2015 Ceiling	2021 Ceiling
1	NR	**0.50**	0.25	0.25	R-13	R-13 or R-10ci	R-30	R-30
2	0.40	0.40	0.25	0.25	R-13	R-13 or R-10ci	R-38	**R-49**
3	0.35	**0.30**	0.25	0.25	R-20 or R-13+5	R-20 or R-13+5	R-38	**R-49**
4	0.35	**0.30**	0.40	0.40	R-20 or R-13+5	**R-20+5 or R-13+10**	R-49	**R-60**

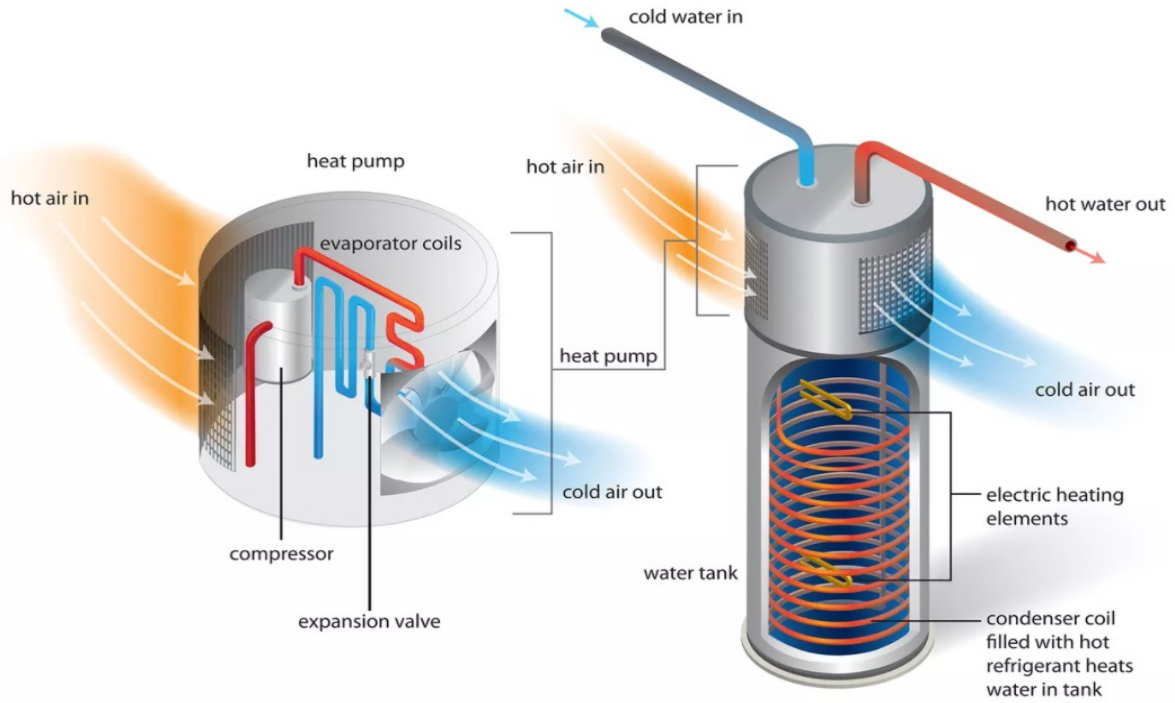
2021 IECC – Additional Efficiency

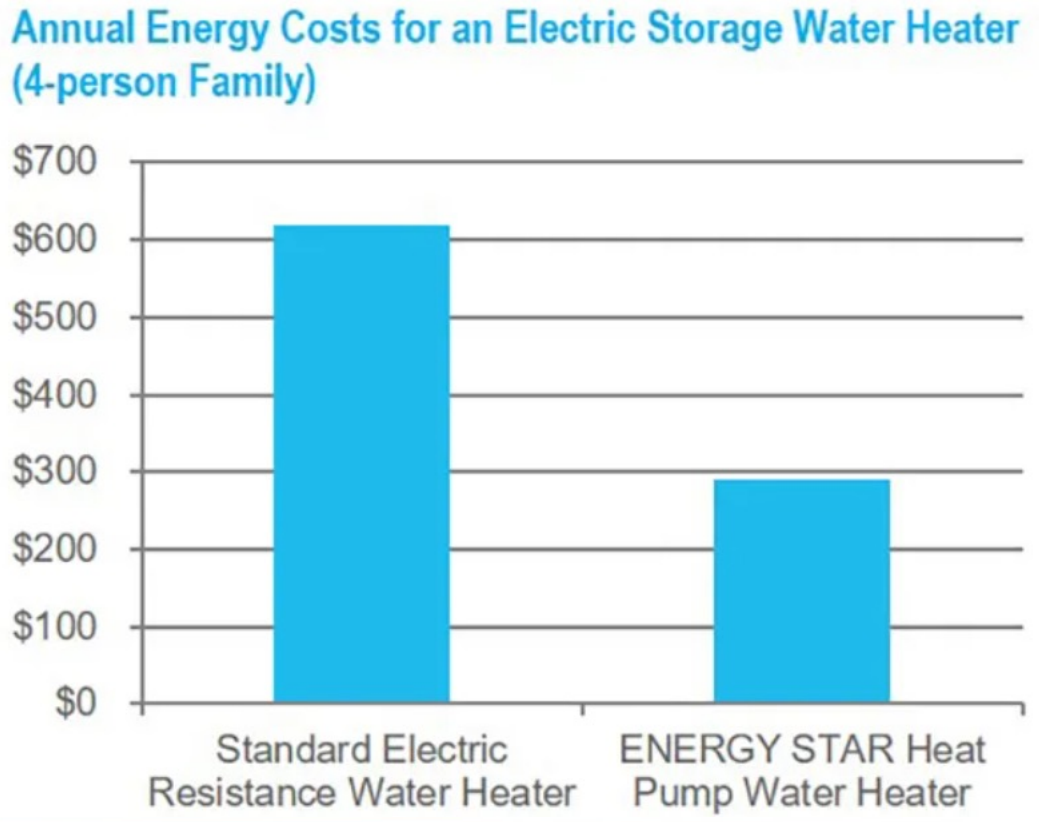
- Option 1 – 5% better building thermal envelope
- Option 2 – More efficient HVAC equipment
- Option 3 – More efficient water heating
- Option 4 – Ducts in conditioned space
- Option 5 – ERV/HRV

Option # 3 - R408.2.3 Reduced energy use in service water-heating option.

…One of the following efficiencies:

1) Greater than or equal to 82 EF fossil fuel service water-heating system.
2) Greater than or equal to 2.0 EF electric service water-heating system.
3) Greater than or equal to 0.4 solar fraction solar water-heating system.





ICF : Insulation Opportunity Study

A study to assess the state- and national-level energy and emissions impacts and economic benefits that could accrue over from the installation of code-compliant insulation in the residential, commercial, and industrial building sectors.

Link to full study HERE

Residential Key Takeaways

THE HUGE ENERGY SAVINGS OPPORTUNITY OF INSULATION RETROFITS

Residential Buildings

- **Considerable energy savings potential for existing homes**

  10 to 45% savings can be achieved in existing homes by adding insulation and air sealing

- **Expected long-term carbon reductions**

  Reduce roughly **10 BILLION TONS** of carbon emissions over a 50-year period

Insulation Institute. KNOWLEDGE. LEADERSHIP. CONFIDENCE.

NAIMA NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION

Learn more: InsulationAdvocacy.org/insulationopportunitystudy

Commercial Key Takeaways

THE HUGE ENERGY SAVINGS OPPORTUNITY OF INSULATION RETROFITS

Commercial Buildings

Insulation Institute. KNOWLEDGE. LEADERSHIP. CONFIDENCE.

NAIMA NORTH AMERICAN INSULATION MANUFACTURERS ASSOCIATION

- **Significant energy savings possible for commercial buildings from roof insulation and HVAC pipe insulation upgrades**

  70% of these savings flow from decreased need for natural gas use

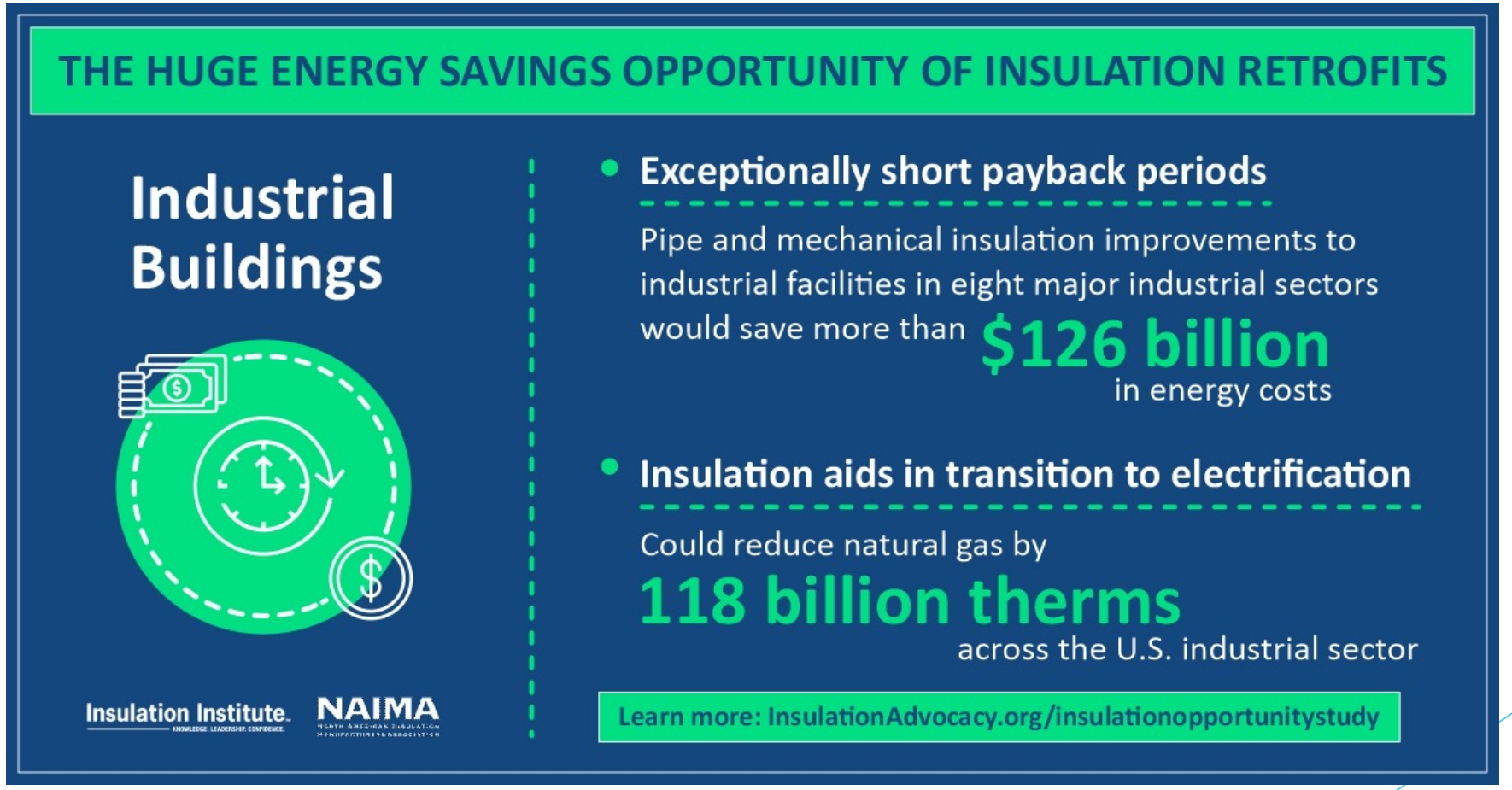
- **Reduced energy costs for education subsector**

  Primary school energy savings **9%** average

  Secondary school energy savings **7%** average

Learn more: InsulationAdvocacy.org/insulationopportunitystudy

Industrial Key Takeaways



Inflation Reduction Act

- 4 billion in loan authority for low-income housing projects
- 4.3 billion for DOE approved state home rebate programs for performance based whole home efficiency upgrades
- 4.5 billion for DOE approved electrification upgrades including insulation
- 330 million in grants to assist states with 2021 IECC adoption, implementation etc.
- 670 million in grants to states and local government for net zero codes
- 10 billion for DOE to award tax credits

Building Codes Implementation for Efficiency and Resilience

Bipartisan Infrastructure Law

Bipartisan Infrastructure Law » Building Codes Implementation for Efficiency and Resilience

Bureau or Account: Energy Efficiency and Renewable Energy

Funding amount: $225,000,000

Period of Availability: Available until expended

Funding Mechanism: Grant

New Program: Yes

Recipients: States and State Partnerships

https://www.energy.gov/bil/building-codes-implementation-efficiency-and-resilience

Thank you & Discussion

jvandever@naima.org