BUILDINGENERGY BOSTON

Accelerating Building Decarbonization with Tariffed On-Bill Financing

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Northeast Sustainable Energy Association (NESEA)
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We help people and businesses save energy and reduce waste


IPSWICH
UTILITIES

Problems Facing Utilities

- Social equity
- Power supply
- Power demand
- Expectations
- Value to customer

Data suggests problems

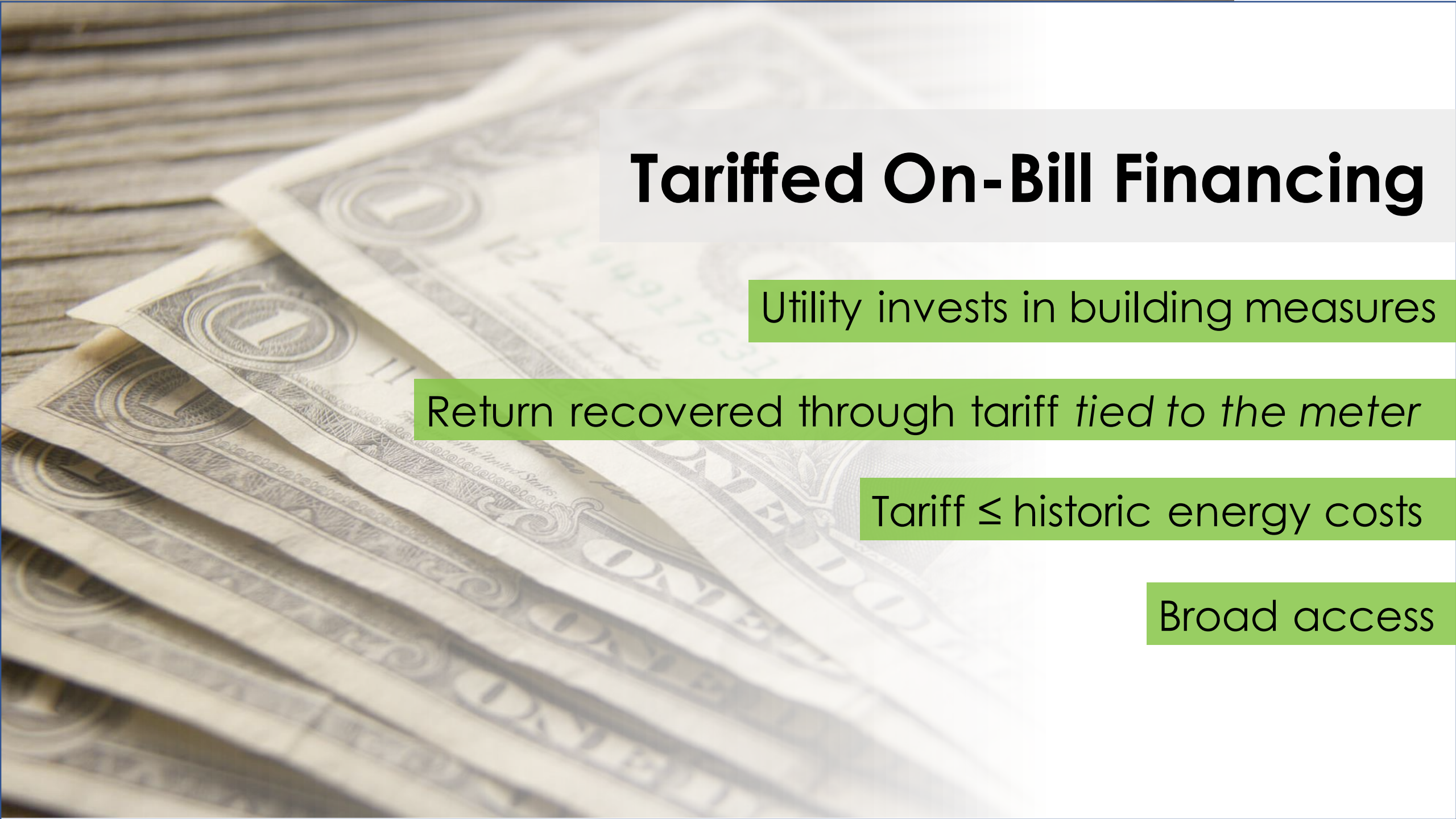
28%
Report upfront capital is biggest barrier to energy efficiency, electrification

80%
Who access meaningful incentives live in homes above median value

>95%
Incentives go to homeowners

~1/3 utility customers are renters

42%
Residents low- or moderate-income; 2/3 of whom are "cost burdened"



Tariffed On-Bill Financing

Utility invests in building measures

Return recovered through tariff *tied to the meter*

Tariff ≤ historic energy costs

Broad access

Established Concept

New Challenges

https://www.energystar.gov/products/inclusive_utility_investment
June 2022

Feasibility Analysis

CET CENTER FOR ECOTECHNOLOGY

ReSource Ipswich

MASSACHUSETTS CLEAN ENERGY CENTER

UMASS BOSTON

greatblue
WHAT'S NEXT.

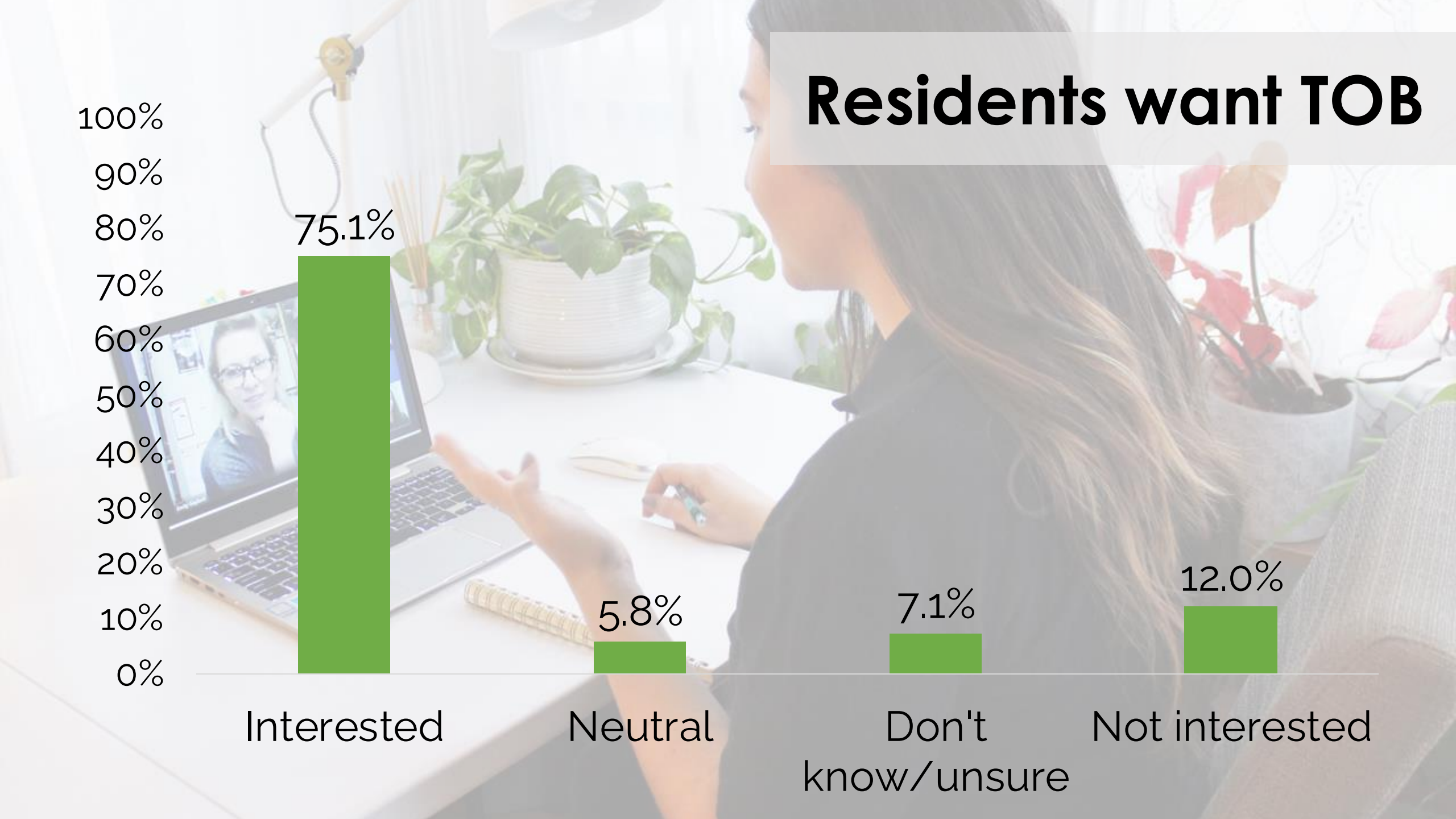
IPSWICH UTILITIES

CLEANENERGYWORKS

MMWEC
Public Energy Partners


Market Study
Measure Analysis
Economic & Regulatory Study

Residents want TOB



TOB makes upgrades more accessible

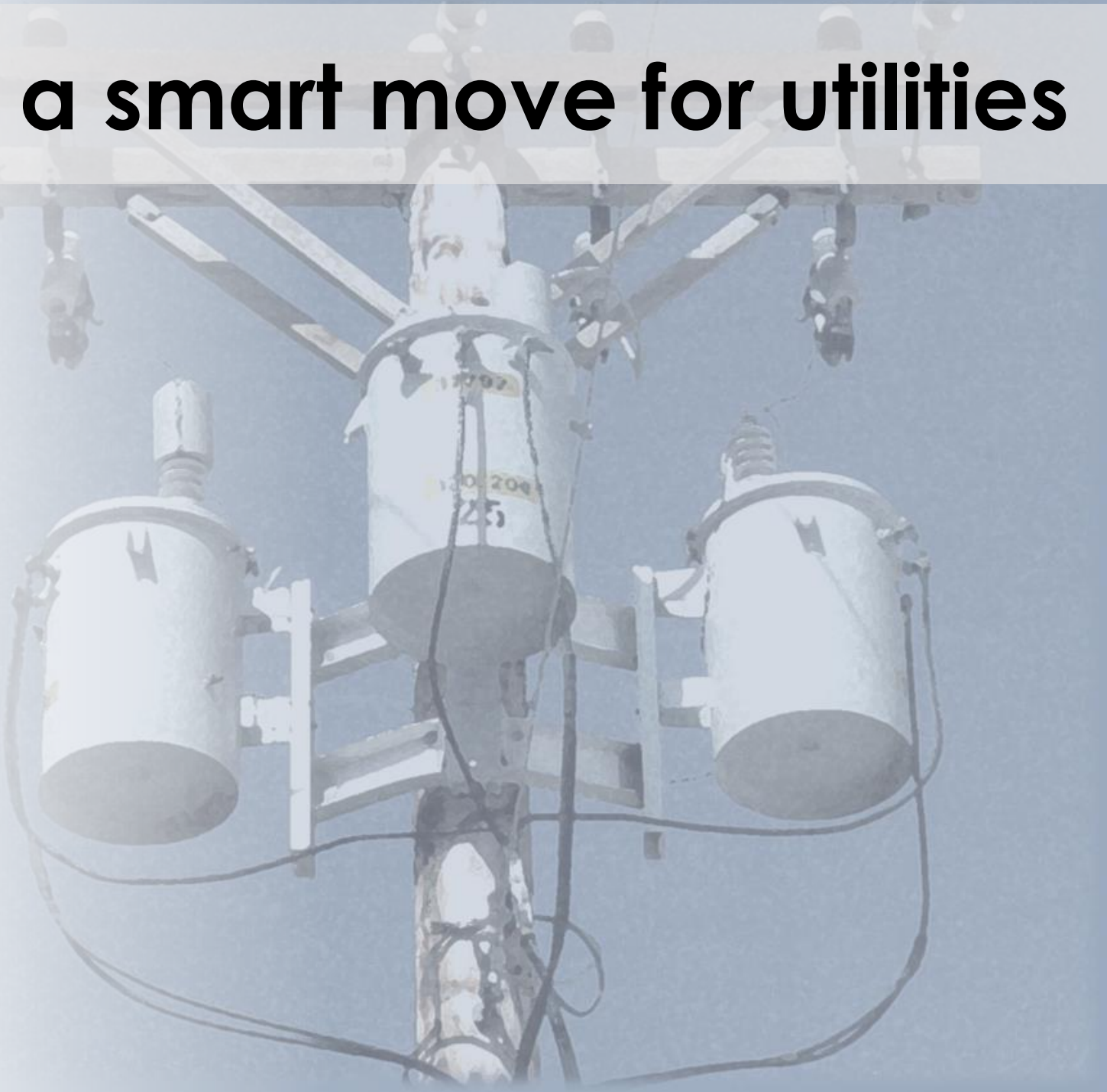
What we looked at

- Modeled: weatherization, heat pump hot water heaters, heat pumps, and solar PV plus battery storage
- 3 housing types
- Incorporated utility and IRA incentives
- Feasibility of recovering installation cost using 80% savings over 80% measure life

What we found

- Easily financed measures
  - Weatherization
  - Solar PV
  - Heat pump water heater
  - Heat pumps with weatherization
- Incentives still matter
  - Mass Save and/or IRA whole-home heat pump incentive unlock HPs
  - Low incentives = upfront cost

TOB is a smart move for utilities

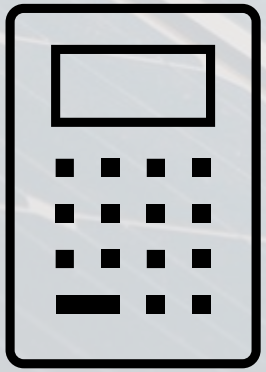


- Strong return on investment for every participant
- Controlling infrastructure investments
- Smoothing demand
- Customer engagement

Next steps...

Tariffed On-Bill: How it Works

Tariffed On-Bill: How it Works

Scope & price opportunities	Calculate energy cost savings	Confirm feasible cost recovery	Install measures under TOB contract
			

Customer Case Study

Customer Case Study

ABOUT THE HOME

1782 sq. ft conditioned space

FHW Boiler
Fuel oil
Sidearm hot water
Design load = 59,615 Btu/hr

Poorly weatherized

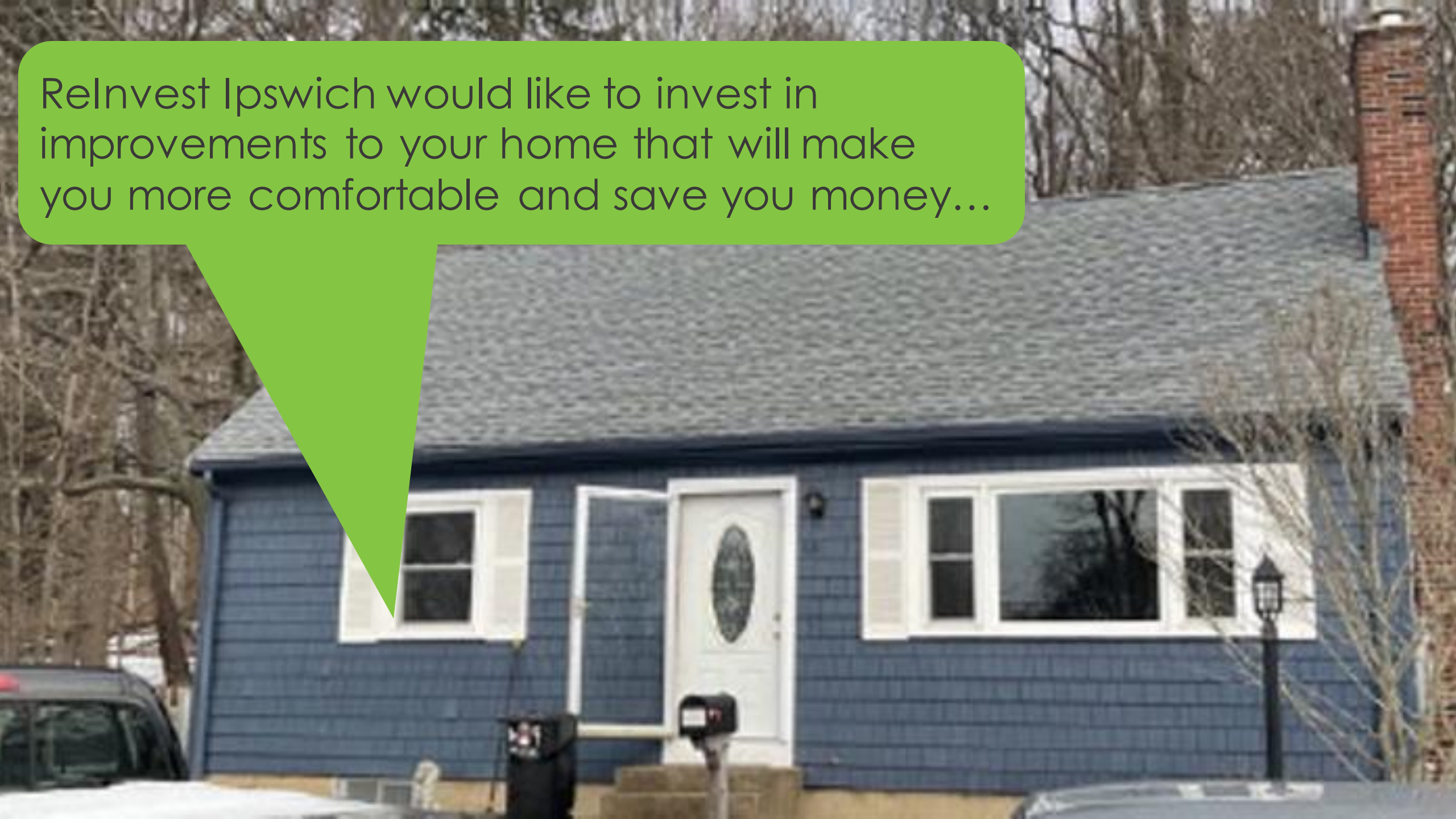
Mass Save eligible?
NO

Step 1: Home assessment & Snugg Pro work order

Measure	Estimated Installed Cost	Estimated Annual Savings
Weatherization: Air sealing, Attic insulation, Wall insulation, Basement rim joists	$6,300	$797
Whole-home ductless heat pump	$20,000	$2,089
Heat pump hot water heater	$2,400	$298
TOTAL	$28,700	
ReSource Ipswich incentives	$6,225	
TOTAL CUSTOMER COST	**$22,475**	


Good luck!

Or…


ReInvest Ipswich would like to invest in improvements to your home that will make you more comfortable and save you money…

Step 2: TOB Feasibility Assessment

- Fully specced during audit
- Fixed pricing with participating contractors

- Customer tariff is ≤80% of estimated savings
- Full payback ≤80% measure lifetime

Measure	Estimated Installed Cost	Estimated Annual Savings	Upfront Customer Cost ($)	Tariff ($/month)	Months of tariff
Weatherization	$6,300	$797	$0	$53.13	30 (2.5 yr)
Whole-home heat pump	$20,000	$2,089	$0	$139.27	136 (11.4 yr)
Heat pump hot water heater	$2,400	$298	$0	$19.87	96 (8 yr)

Step 3: Refine HVAC quote

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- Contractor contacted to conduct home visit and develop quote
- CET reviews quote for optimal sizing and configuration
- Design approved and quote updated in TOB model

Step 3: Refine HVAC quote

Measure	Estimated Installed Cost	Estimated Annual Savings	Upfront Customer Cost ($)	Tariff ($/month)	Months of tariff (min #)
Weatherization	$6,300	$797	$0	$53.13	30 (2.5 yr)
Whole-home heat pump	$20,700	$2,089	$0	$139.27	**141** (11.8 yr)
Heat pump hot water heater	$2,400	$298	$0	$19.87	96 (8 yr)

Step 4: Produce TOB offer

Measure	Monthly tariff ($/mo)	Months of tariff (#)	% measure life
Weatherization	$9.38	168	70%
Heat pump hot water heater	$15.83	120	77%
Whole-home heat pump	$117.26	168	80%

Tariff Schedule for meter ID XXXX	Tariff ($/month)	Occupant spend per year	Occupant NET savings per year
Months 1-120 (10 yr)	$142.47	$1,709.64	$1,474
Months 121-168 (4 yr)	$126.64	$1,519.68	$1,644
Months 168-216 (4 yr)	$0	$0	$2,886

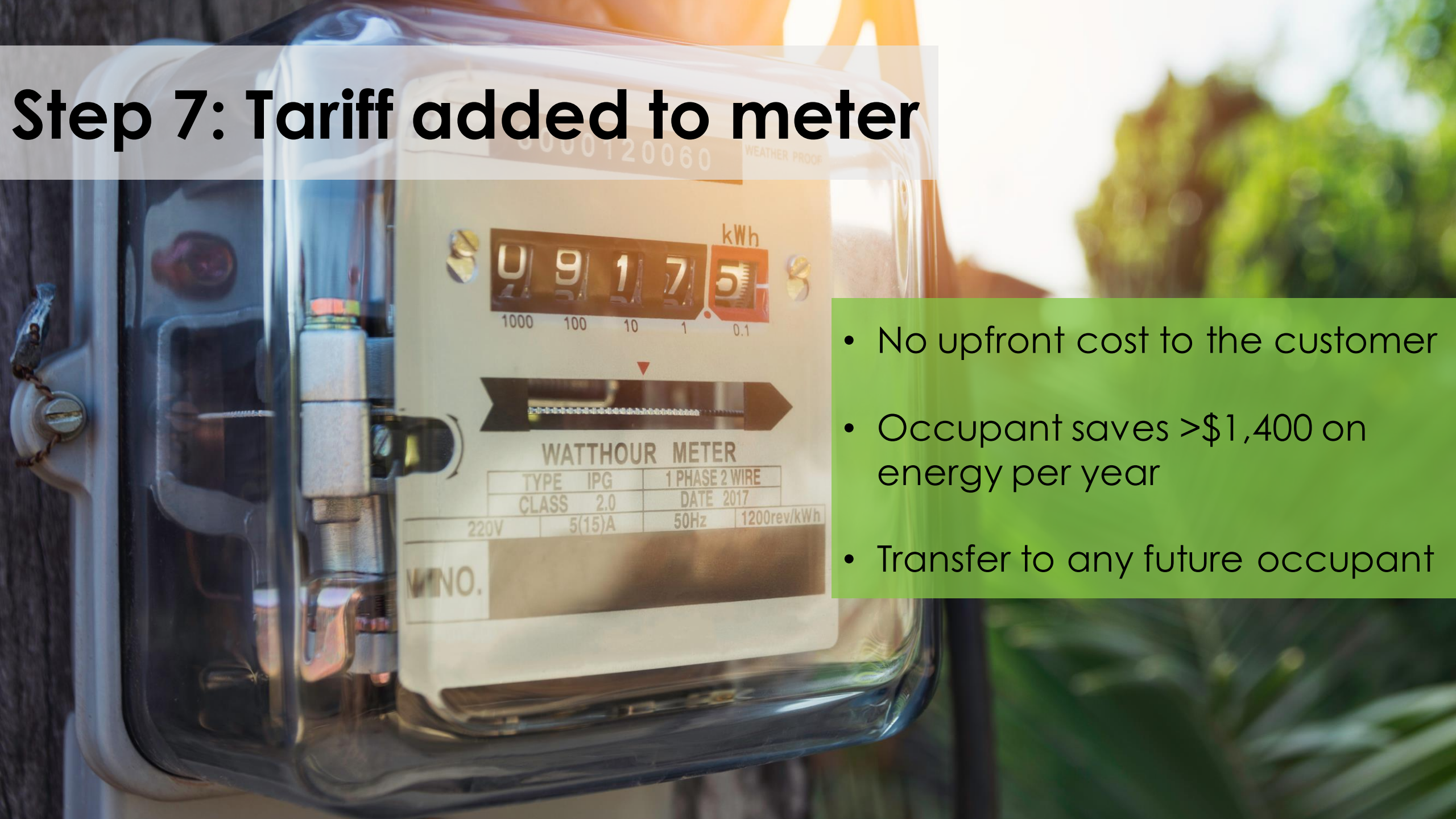
Step 5: Customer receives & signs TOB offer

- Signs agreement for tariff fee schedule assigned to *meter*

Step 6: Contractors install measures

- CET arranges contractors
- Post-installation QA
  - Ensure alignment with approved quotes
- Ipswich ELD pays contractors

Step 7: Tariff added to meter



- No upfront cost to the customer
- Occupant saves >$1,400 on energy per year
- Transfer to any future occupant

Alternatives analysis

	Upfront Cost?	Interest?	Credit Check?	Single payer?	Year 1 Payment	Year 1 NET Savings
Mass Save HEAT Loan (7 year, 0% interest)	X	X	✓	✓	$3,311	-$127
Home Equity Loan (10 year, 7% interest)	X	✓	✓	✓	$3,204 ($897 interest)	-$20
Pay out of pocket	✓	X	X	✓	$23,175 (-$3700 25C tax credit)	-$19,991 (+$3700)
TOB	X	X	X	X	$1,709	$1,474

Scalability

Across utilities

- **Municipal Light Plants:** competitive electricity prices, easy regulatory path; need capital
- **IOUs:** large incentives, majority customer base; big regulatory process

By fuel type

- **Delivered fuels:** TOB works for MLP and IOU customers
- **Gas:** Yes-in MLP territory; No-in IOU (with current electric rates)

Questions?

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