Wouldn't it Be Nice

The PAYS® Statewide Model Discussion

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About your speaker

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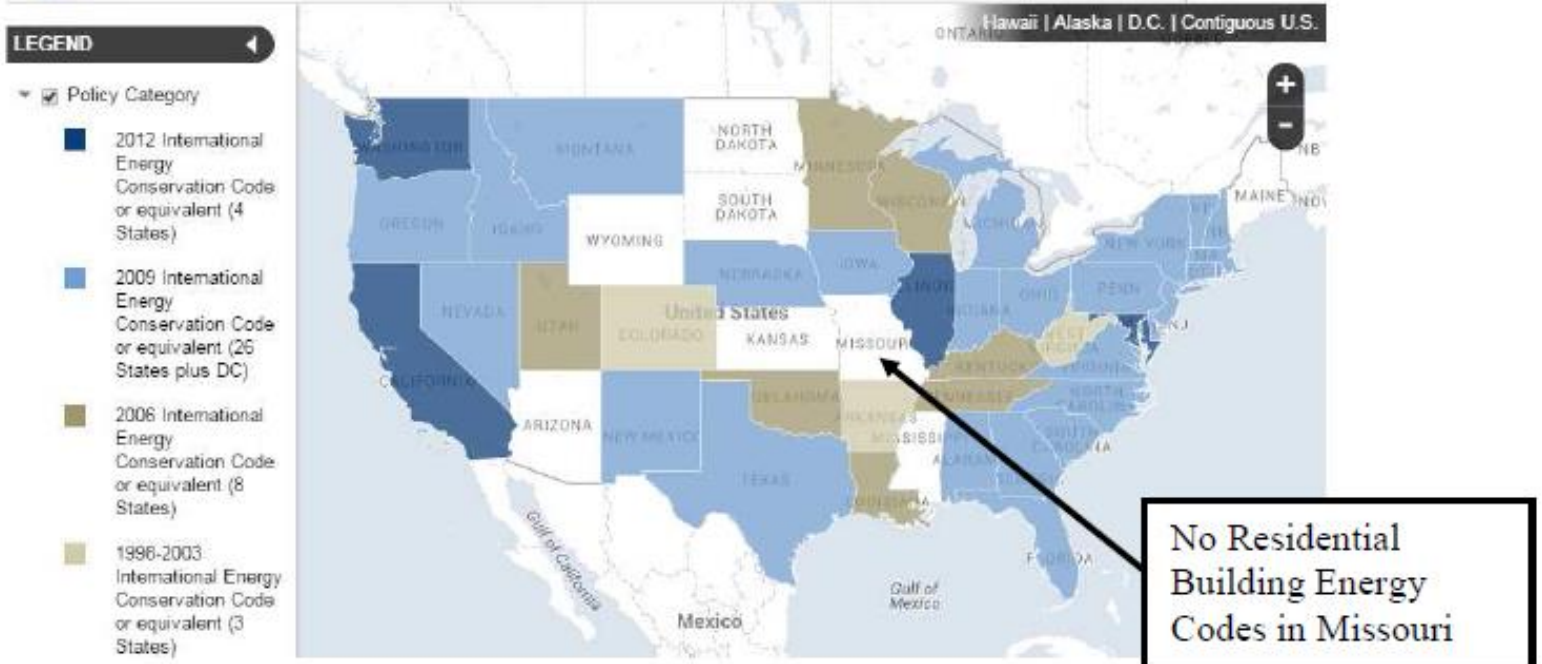
- Consumer Advocate Office for ratepayers in:
  - Vertically Integrated Electric, Natural Gas, Water and Sewer cases before the Missouri Public Service Commission

- **Obligatory Disclaimer**:
  - The comments and work product are my own and do not necessarily reflect any position of the Missouri OPC.

Current State of Affairs

Energy Efficiency Standards and Targets

Residential Building Energy Codes



Commercial Building Energy Codes

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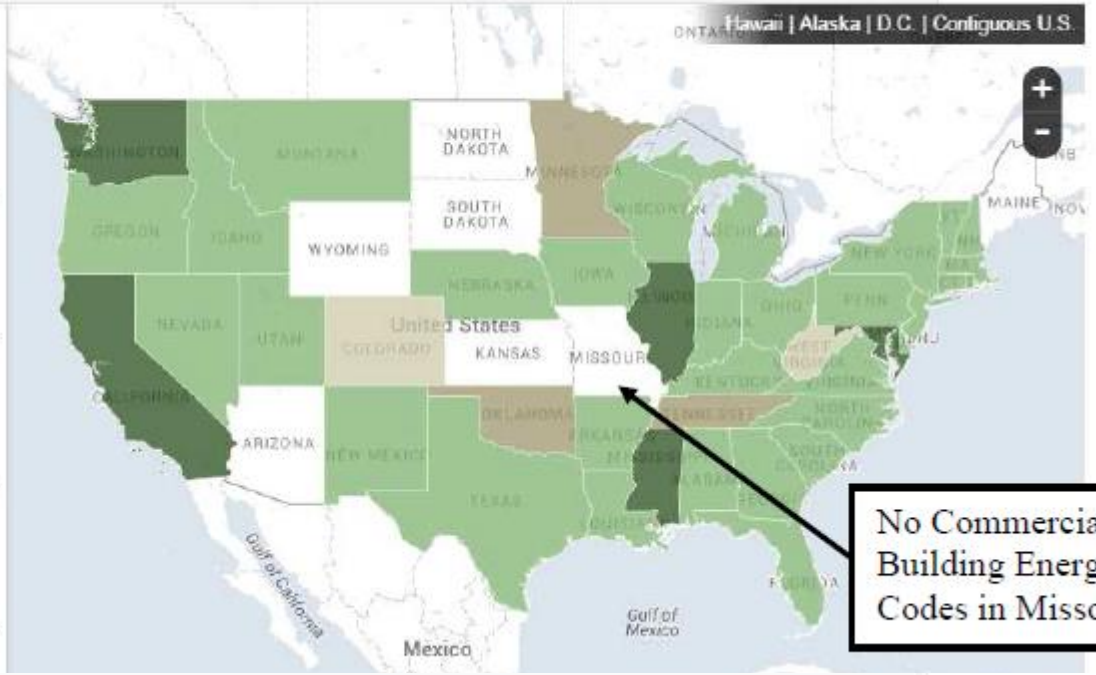
LEGEND

- Policy Category
  - 2012 International Energy Conservation Codes or equivalent (5 States)
  - 2009 International Energy Conservation Codes or equivalent (31 States plus DC)
  - 2006 International Energy Conservation Codes or equivalent (4 States)
  - 2003 International Energy Conservation Codes or equivalent (2



No Commercial Building Energy Codes in Missouri

Appliance Efficiency Standards

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LEGEND

- Policy Category
  - Standards beyond Federal Requirements (15 States plus DC)

View data table

No Appliance Efficiency Standards in Missouri

Evergy Missouri West

Table 4: Evergy West 5-year PISA investments plan comparisons

	2019 Pre-Elliott	2020 Post-Elliott	2021	2022	2023	2024	2025	2026	5-year total	% increase from original pre-Elliott plan
2019 Plan	$166.4 $169.7*	$166.4	$129.1	$114.4	$124.7				$700.9	
2020 Plan		$306.9 $334*	$341.2	$273.7	$224	$228.2			$1374	96% increase
2021 Plan			$447 $504*	$382	$261	$356	$396		$1842	163% increase
2022 Plan				$380	$299	$488	$339	$576	$2083	197.2% increase

Evergy Missouri Metro

Table 3: Evergy Metro 5-year PISA investments plan comparisons

	2019 Pre-Elliott	2020 Post-Elliott	2021	2022	2023	2024	2025	2026	5-year total	% increase from original pre-Elliott plan
2019 Plan	$169.9 $199*	$178.5	$157.1	$163.7	$162.4				$831.6	
2020 Plan		$249.2 $277*	$302.4	$264.3	$226.4	$229.2			$1271.5	53% increase
2021 Plan			$335 $378*	$334	$234	$328	$289		$1540	85.2% increase
2022 Plan				$348	$250	$325	$385	$392	$1700	104.4% increase

Liberty Utilities

Finally, it is worth noting that in Case No. ER-2019-0374 in the Direct Testimony of Sheri Richard, Schedule SDR-2, "Adjusted Test Year Rate Base", the total rate base amount for the electric company was as follows:

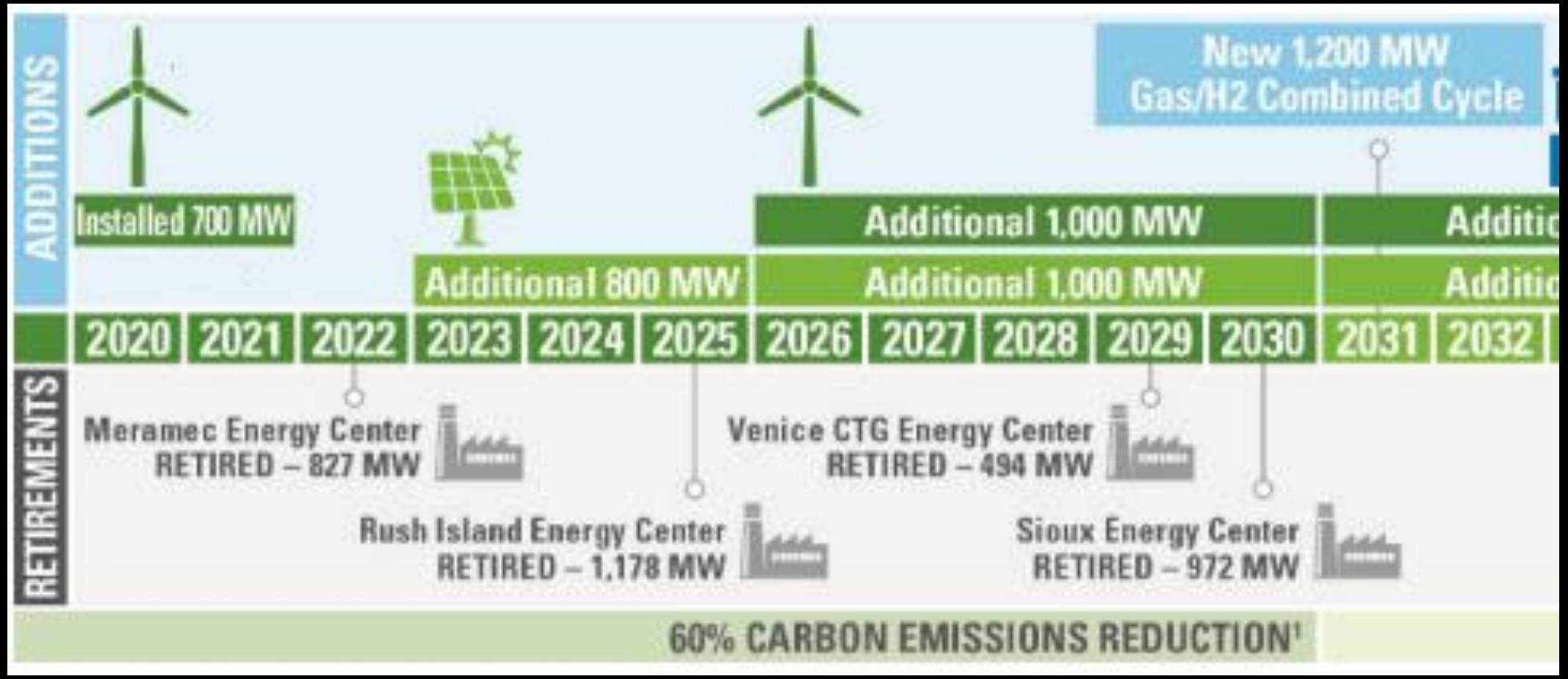
Total Rate Base Adjusted Test Year = $1,457,360,469

Contrast this with the filed PISA capital projects cost:

PISA CAPEX over the next 5 years = $2,010,100,000

Assuming all of the proposed PISA expenses are "prudent" capital expenses (and not operation expense), this would represent a roughly 138% increase in rate base relative to what the Company filed in its last rate case (2020).

Ameren Missouri



Take-Away

- Costs are increasing for ratepayers
- Storm Uri like events and reliability concerns overall have increased
- Migrating to a more carbon-free future that ensures proper reliability will require an increase emphasis on least-cost planning
- **Opportunity Costs:**
  - There is only a finite amount of money
  - There is only a finite amount of time
  - Every decision has a cost
  - Even the decision to not make a decision has a cost

Challenges with DSM (non-exhaustive list)

- What are we deferring?
- Most ratepayers have to pay into the program;
- Most ratepayers do not participate because they do not have disposable capital;
- Especially true for renters and low-income households; and
- Consequently, DSM can become a regressive policy and is often the first on the chopping block when rates get too high

First Impression of PAYS in operation

Progress

- Co-delivery and cost allocation
- Memorandums of Understanding
- Programs up and running across 4/5 utilities
- Interest rate uniformity
- Program certainty through 2023 with opportunity for real cost savings

Challenges

- Scaling up across the state to meet demand
- COVID-19
- Inflation and supply chain constraints
- # of auditors
- Different incentive models in place across utilities

Ameren Missouri GDS Market Potential Study

Replace on Failure Consideration

FIGURE 3-1. SINGLE-FAMILY BASELINE CONSUMPTION PROFILE

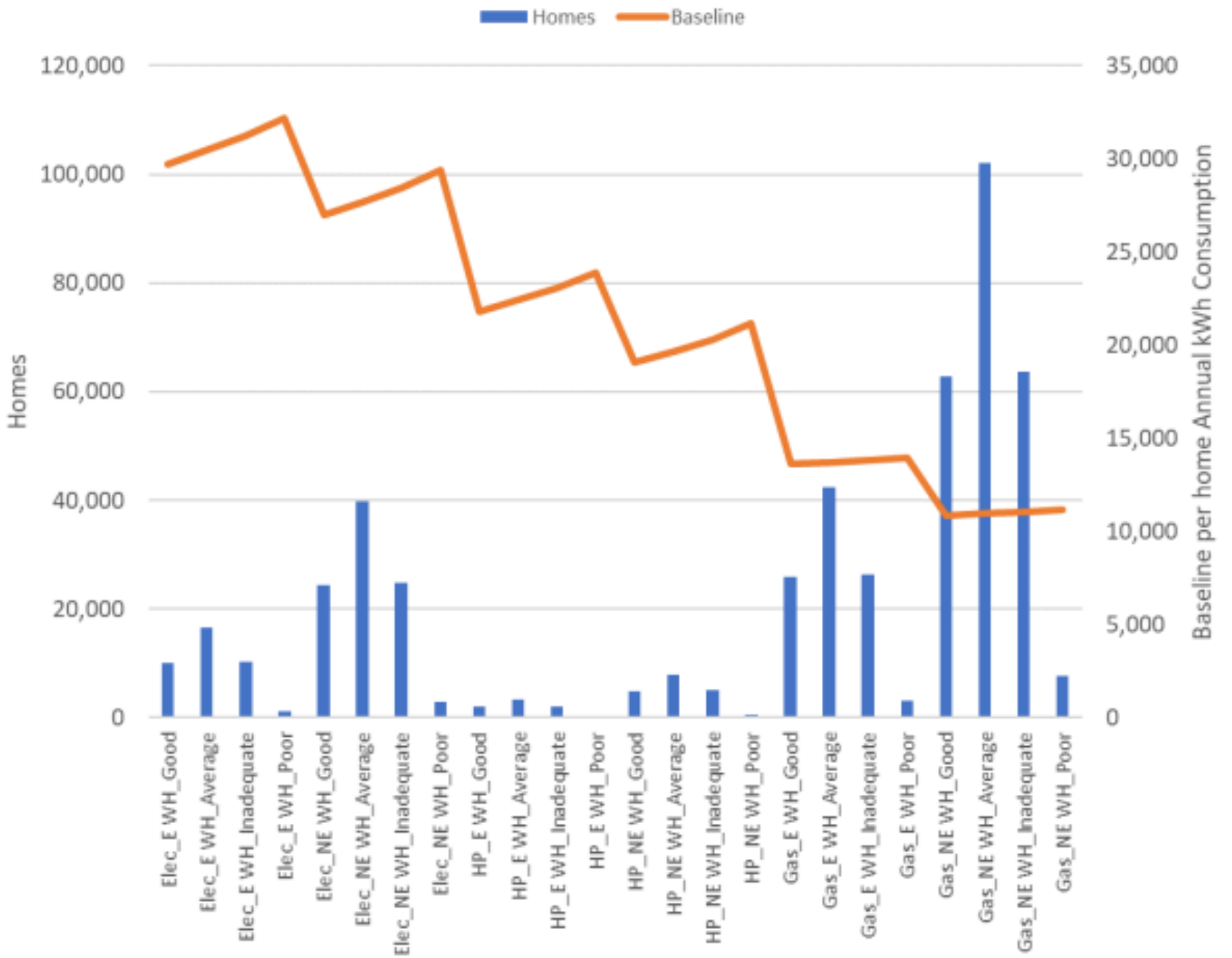


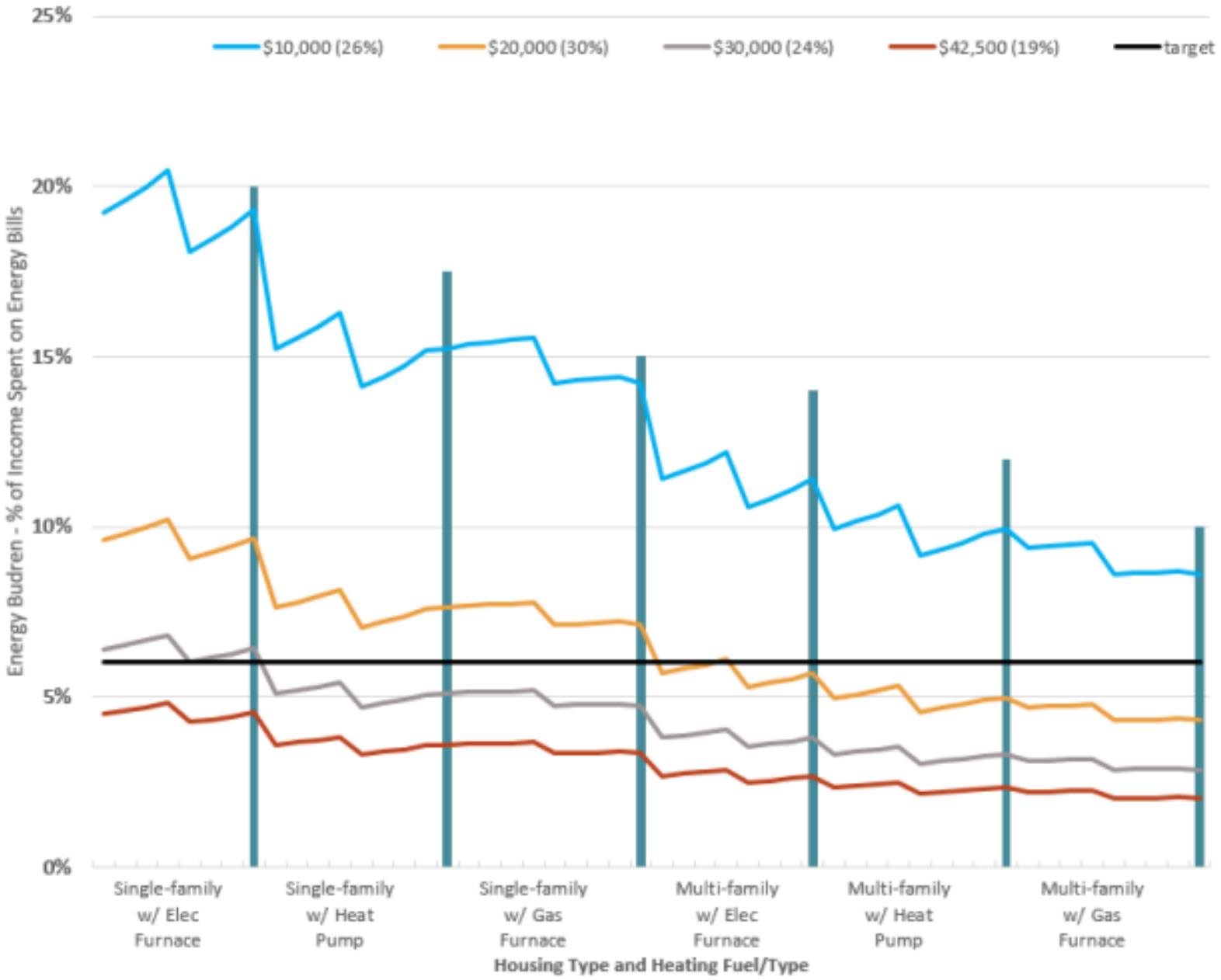
TABLE 4-2: WHOLE BUILDING PAYS POTENTIAL – BY MARKET SEGMENT

Market Segment	Residential Potential (Cumulative Annual MWh, 2040)	Percent of Total	Low-Income Potential (Cumulative Annual MWh, 2040)	Percent of Total
SF-Elec	945,665,201	64.0%	90,937,187	25.6%
SF-HP	138,971,561	9.4%	22,059,171	6.2%
SF-Gas	122,004,908	8.3%	26,015,271	7.3%
MF-Elec	227,375,008	15.4%	210,781,264	59.3%
MF-HP	4,781,702	0.3%	3,506,410	1.0%
MF-Gas	38,844,061	2.6%	2,037,168	0.6%
Total	1,477,642,441		355,336,472	

TABLE 4-4: WHOLE BUILDING PAYS POTENTIAL – BY RESIDENTIAL SECTOR MARKET SEGMENT[14]

Co-pay	Number of Qualifying Customers	Estimated Number of Participating Customers	Average Cost ($)	Average Annual Savings (kWh)
0% Co-Pay	338,410	304,569	$1,877	4,693
10% Co-Pay	60,258	33,744	$1,054	865
20% Co-Pay	24,028	5,286	$1,644	2,305
30% Co-Pay	103,451	5,173	$1,660	892
60% Co-Pay	66,594	3,330	$376	670
Total	592,742	352,102	$1,778	4,197
Percentage of Residential Customer Base	100%	59%	-	-

FIGURE 2-2. INCOME-ELIGIBLE ENERGY BURDEN – 2020 STUDY*



*Source: MPS 2020, Figure 5-12

Ameren Missouri GDS Potential Study

- This study finds the that the long-term PAYS potential **is 17% of forecasted sales in the residential sector and 8% in the low-income sector.**

- Some of these savings likely represent a subset of the RAP identified in the 2020 MPS, while some portion should be viewed as new, incremental potential that addresses financing constraints and increases the total willingness to participate of customers.

- Homes with a high energy burden (but not excessive) are the best candidates for PAYS because of the availability of financing to help overcome financial barriers to participation

Replace on Failure Discussion

- Another topic to consider going forward that was not a focus of this study is the leveraging of an on-bill financing model to cover the cost of HVAC equipment in a replace-on-fail scenario.

- In a replace on fail scenario, the customer is looking to replace a failed unit. The consumer will purchase an HVAC measure of some efficiency level, regardless of a program intervention. Thus, the program intervention helps move the customer to an incrementally more efficient unit.

- This situation creates important questions regarding the appropriate cost and savings to use for cost effectiveness analysis.
  - For example, while the customer would finance the full measure cost, a standard analysis would only consider the incremental costs and incremental savings relative to the but-for baseline.

- In contrast, this study analyzed full measure costs and estimated savings based on whole building potential. While the measure package costs would be significantly less in this scenario, the savings may be too small to satisfy the terms of the PAYS program.

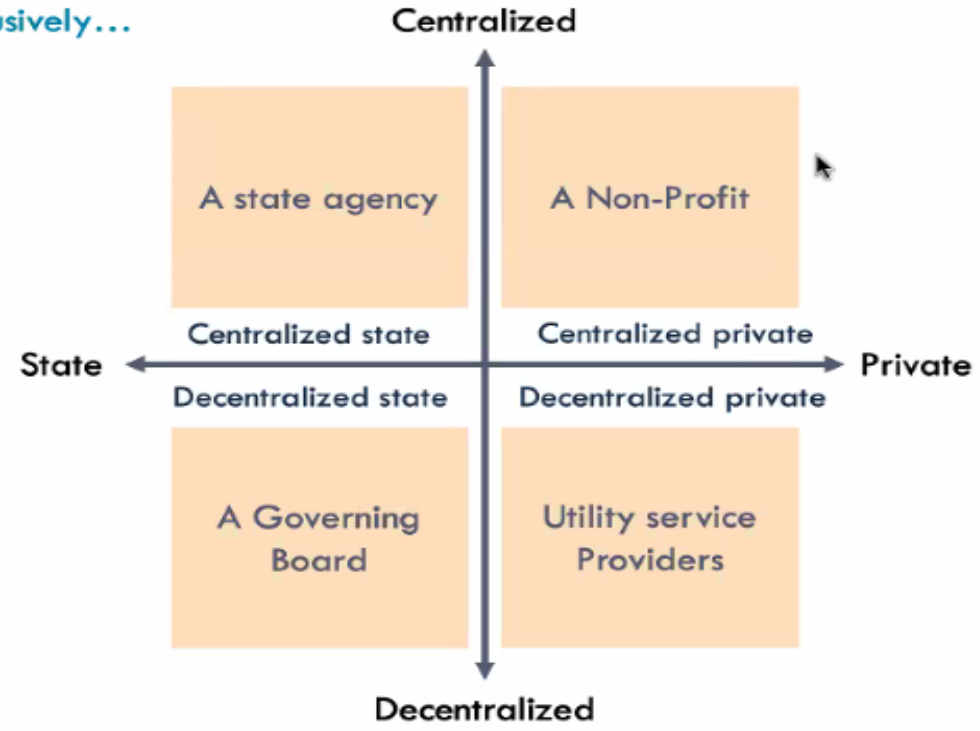
- Is there an answer to this?
- Fast Pass concept

Path Forward

RMI Insight

Program Administrator 2x2 Matrix

For **example**, but not exclusively…



RMI – Energy. Transformed.

Risks for PAYS at Scale

- Billing and Cost Allocation
- Program Control
- Time Consuming
- Legislative and/or Regulatory Changes
- Costs could outweigh benefits (Go big, go home mentality)
- Other

Opportunities for PAYS at Scale

- Economies of scale in marketing, program administration, trade ally outreach, and collective bidding
- Opportunity for outside capital to support program (federal or non-profit)
- More efficient regulatory process
- Increase in participants
- Decrease in costs
- Significant Energy and Demand Savings
- Other

Different Models

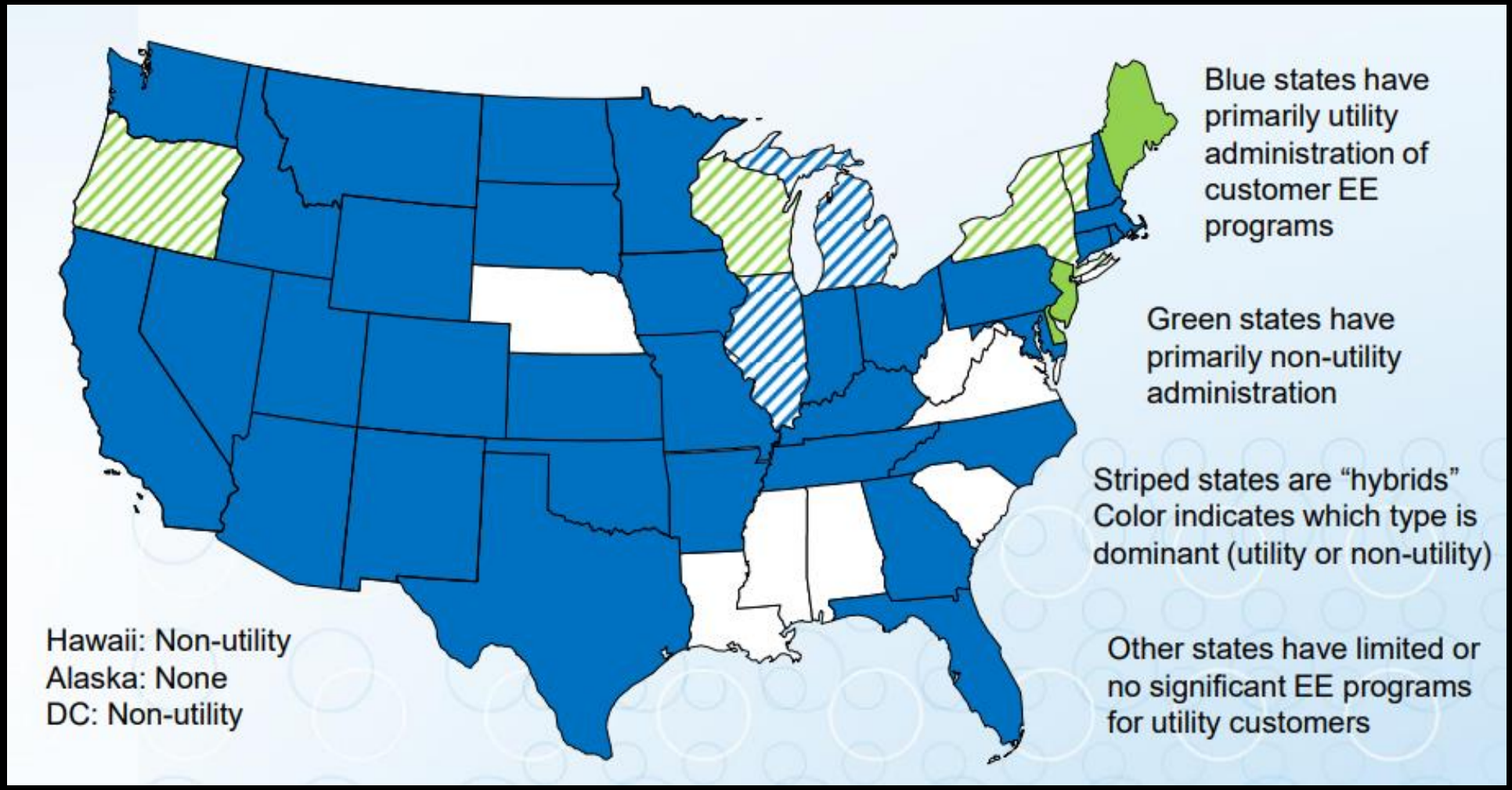
Advantages of Utility Administered

- Are well recognized, generally trusted by customers.
- Have direct, routine customer contact and established relationships.
- Are organizations structured to serve large numbers of customers and manage necessary resources.
- Are potentially a good fit for “energy services” that would include customer energy efficiency, which can clearly fit a utility business model if shareholder incentives are aligned with energy savings objectives of customer programs.
- Have easy, direct access to customer accounts (energy use history and characteristics).
- Generally have in-house expertise on customer energy use---along with other aspects of administering and delivering programs—marketing, accounting, field services, customer representatives, evaluation, etc.
- Are part of a well-established market—a structure for program administration and funding that may be more “stable” and less “political” than non-utility structures.

Advantages of non-utility administration

- Such programs generally have a single-purpose organizational objective: saving energy through improved customer energy efficiency (and possibly developing customer-sited renewable energy).
- Statewide programs can yield greater consistency and better coordination.
- Statewide programs provide better economies of scale for marketing and relationships with key stakeholders/market actors.
- Non-utility administration eliminates the potential internal business conflicts (energy savings reduce utility revenues) that can arise within utilities doing energy efficiency programs.
- Non-utility programs/administrators can become a trusted, independent authority-- -no mixed motives—”We’re here to serve you and save you energy. Period.”

DSM Administered Program Design



Third-Party (Non-Utility) Administration

- **Efficiency Vermont** ("energy efficiency utility" – program contractor to Vermont Public Service Board)
- **Energy Trust of Oregon** (public benefits organization created for energy efficiency and renewable energy programs)
- **New York Energy $mart Program** (existing state authority, NYSERDA, tasked with new, expanded mission)
- **Focus on Energy** (Wisconsin) (program contractor to Public Service Commission of Wisconsin; earlier to state energy office)
- **Efficiency Maine Trust** (independent organization created in 2009; replaced Efficiency Maine, predecessor non-utility program)
- **New Jersey Clean Energy Program** (contractor to Board of Public Utilities)
- **Delaware Sustainable Energy Utili**ty (contractor to State Energy Office, Department of Natural Resources and Environmental Control)
- **Washington, DC**: Sustainable Energy Utility (contractor to DC Energy Office, DC Department of Environment)
- **Mass Save: (governing board)** Berkshire Gas, Cape Light Compact, Eversource, Liberty, National Grid, Unitil

Disadvantages to 3rd party

- It takes time to build infrastructure---can't create new organizations and corresponding capabilities to administer and implement programs overnight.
- Changes in contractors can be disruptive.
- Customer data/account information may not be as readily accessible/available.
- Structure and funding can be less stable, more subject to political winds.

Oregon (Energy Trust of Oregon)

- Nonprofit, independent
- Funded by four utilities in Oregon: Portland General Electric, Pacific Power, NW Natural, Cascade Natural Gas and Avista, and serve those utilities' customers, totaling 75% of Oregon electricity customers and nearly all natural gas customers in the state of Oregon.
- Governed by a volunteer board of directors and three advisory councils and is overseen by the Oregon PUC
- Public Purpose Charge: historic 3% of utility revenues but changed to 1.5% in 2021
- https://www.energytrust.org/

Efficiency Vermont (3rd party Nonprofit)

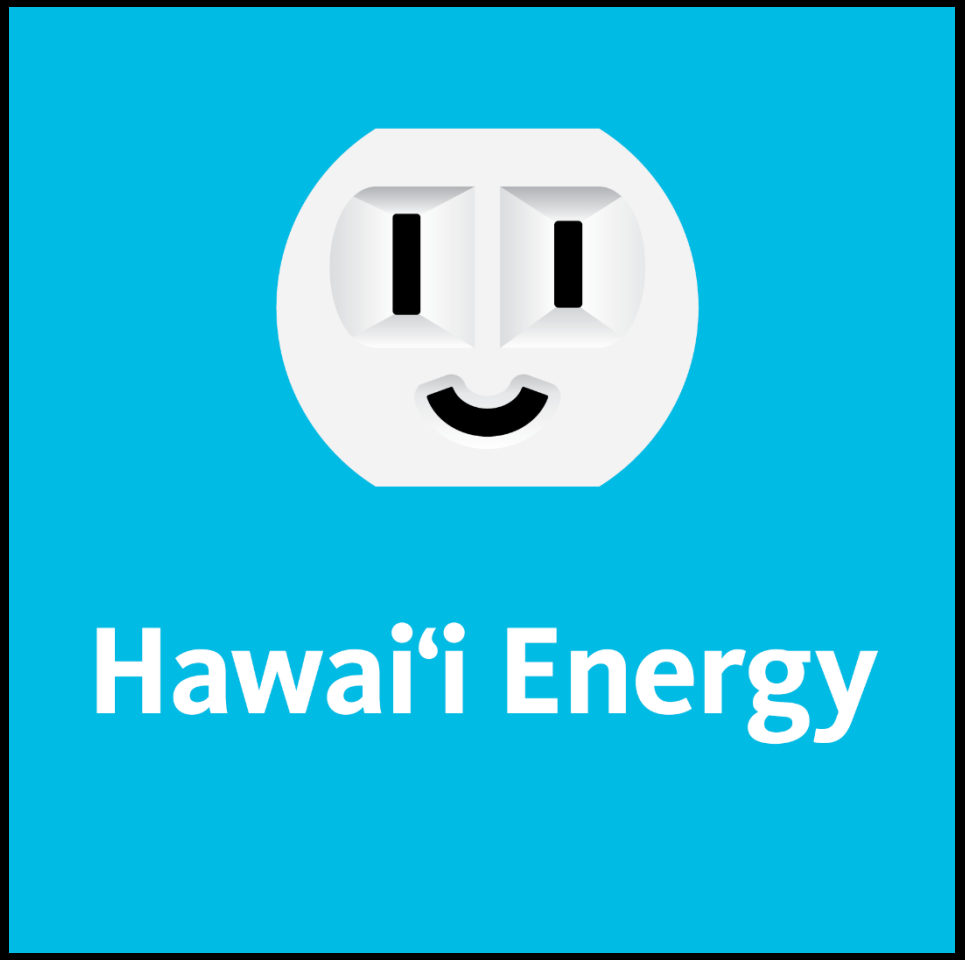
- Operated by the energy nonprofit VEIC (Vermont Energy Investment Corporation) and was created and regulated through the state legislature and the PUC.
- Primarily funded through a ratepayer surcharge, though they obtain additional funding by bidding energy savings from efficiency programs into the ISO-NE Forward Capacity Market (FCM) as an energy resource. They also receive funding from the Regional Greenhouse Gas Initiative (RGGI) that goes towards thermal efficiency programs.
- https://www.efficiencyvermont.com/

Efficiency Maine Trust

- A quasi-state agency which administers programs to improve energy efficiency and reduce greenhouse gas emissions in Maine
- Governed by a Board of Trustees appointed by the Governor and overseen by the Maine PUC Commission
- Funding from a variety of sources (mostly Electric Efficiency Procurement Fund, Regional Greenhouse Gas Initiative—RGGI, Forward Capacity Market—FCM Bids)
- https://www.efficiencymaine.com/

Hawaii (3rd party)

- Transitioned from utility to third-party administered in 2009
- HECO (Hawaiian Electric, Maui Electric and Hawaii Electric Light) and KIUC (Kauai Electric Utility Cooperative)
- Energy Efficiency Resource State
- Public Benefits Fee established
- https://hawaiienergy.com/



Hawaii

- Challenges:
  - Highest electric rates in the country
  - Offered programs since the early 1990s (three-stool model)

- Legislative change
  - 2006 – Public Benefits Fund
    - RPS increase
    - Decouple DSM from rate proceedings
    - Energy Efficiency Portfolio Standards (EEPS) 4,300 GWh in EE by 2030

- PSC #23258 Order
  - Detailed concerns over the inherent conflict between utility objectives to sell more electricity as a means of increasing profit and the DSM goals of encouraging customers to use less electricity.

- Emphasis on:
  - Long life measures
  - Reduced emphasis on CFL's
  - Increased role of community sponsorships
  - Geographic equity
  - Transitioned from ex-post multi-year evaluations to ex ante estimates with full annual verification, formative analysis and market assessment

- RFP
  - Setup scoring criteria comparing relative costs and impacts as well as bidder experience and track records
  - Multi-year contract (4 years)
  - Maximizing electricity and peak demand savings
  - Total resource costs
  - Broad participation by customers
  - Overcoming market barriers
  - Transforming end use markets
  - Performance incentive capped

1st year breakdown

Activity	PY2009	PY2010
Analysis of First year and Cumulative Savings	✔	✔
Comparison of Accomplishments and Program Potential	✔	
Analysis of Rebate Distribution	✔	✔
Telephone Surveys	✔	✔
• Participants	✔	✔
• Non-Participants	✔	
In-depth interviews	✔	✔
• Program Staff	✔	✔
• Market Actors	✔	✔
Focus Groups		✔
Economic Effects of EE		✔

Residential Programs

- Residential Water Heater Program
- Residential New Construction
- Energy Solutions for the Home
- Residential Low Income

Business Programs

- Business Standard Energy Efficiency (CIEE)
- Business New Construction (CINC)
- Business Customized Rebate (CICR)

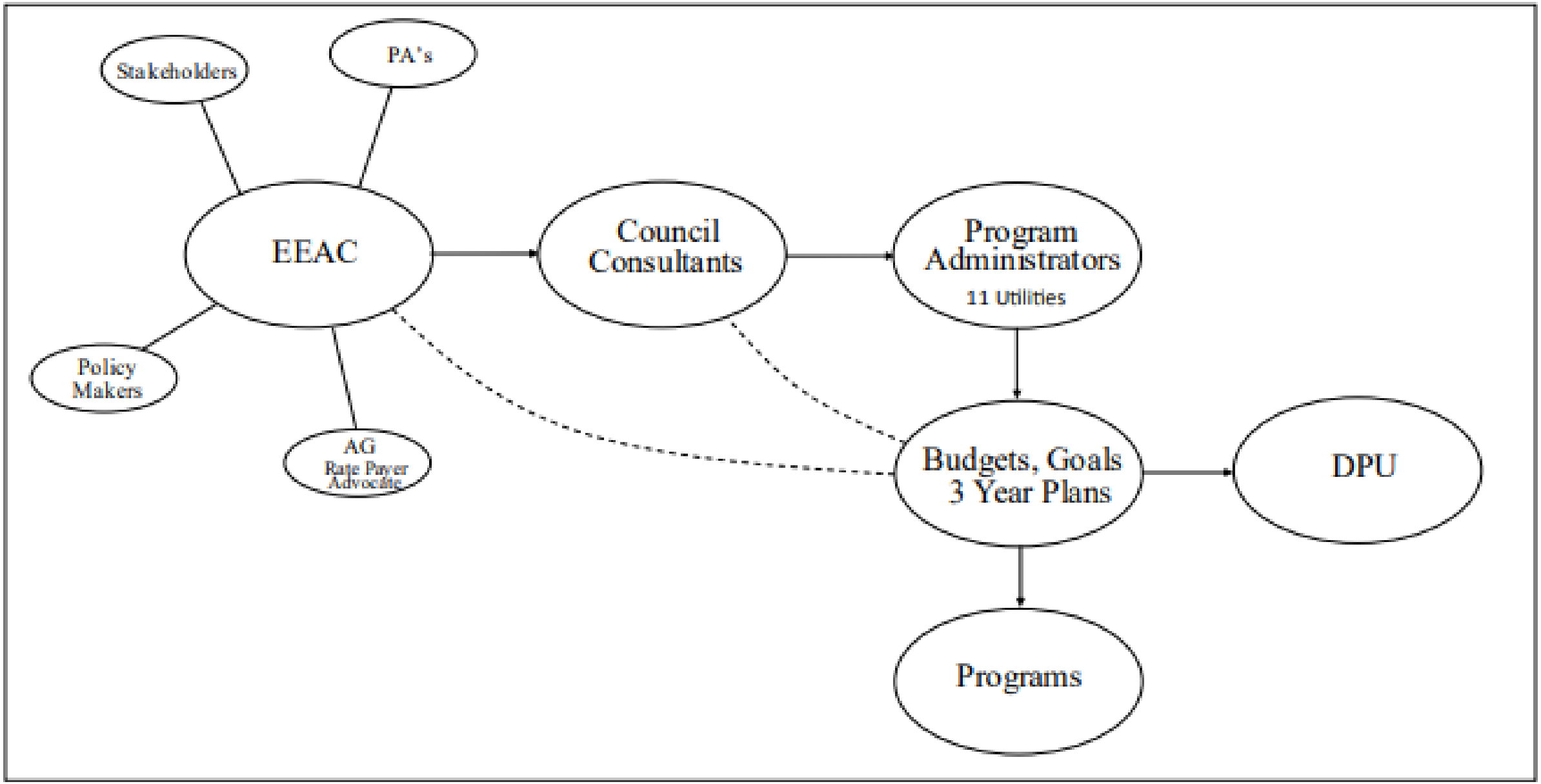
Performance indicator	Target	PY09 Results	% of Target
Res (GWh)	68.7	66.5	97%
Bus (GWh)	57.3	46.7	81%
Peak Demand (MW)	20.1	22.8	113%
TRB ($M)	140.1	126.6	90%
Market Transformation			
Emerging Tech	20	21	105%
Trade Ally Referrals	40	383	958%
Island Equity			Not met

Decentralized State

- https://www.masssave.com/
- Preceded by 25 and 15 years of electric and gas DSM programs
- 2008, Green Communities Act created MassSave brand out of necessity to meet as savings goals increased to capture economies of scale, minimize customer confusion and maximize cost-effectiveness
- MassSave is not an entity but a brand—an umbrella trademark for all program offerings
  - Sponsored by each utility which hold branding rights and guidelines
  - Supported by MA. Department of Energy Resources and Energy Efficiency Advisory Council
  - Synchronizes program offerings, delivery models, application forms and marketing plans

- Made up of 11 voting members w/ representatives from
  - Ratepayer advocate (AG)
  - Large business
  - Commerical business
  - Low-income interests
  - Labor
  - Residential customers
  - EE experts
  - Environmental community
  - Department of Housing and Economic Development
  - Department of Environmental Quality
  - DOER serves as chair of the EEAC
- 13 non-voting members
  - Program administrators
  - Energy efficiency businesses
  - Municipal aggregator

- Open, transparent monthly meetings
- EEAC hires a technical consultant to work through program level analysis and review
- Program administrators focus on achieving individual goals
  - Program administrators
  - Energy efficiency businesses
  - Municipal aggregator


Stakeholders
PA's
EEAC
Council Consultants
Program Administrators
11 Utilities
Policy Makers
AG
Rate Payer Advocate
Budgets, Goals 3 Year Plans
DPU
Programs

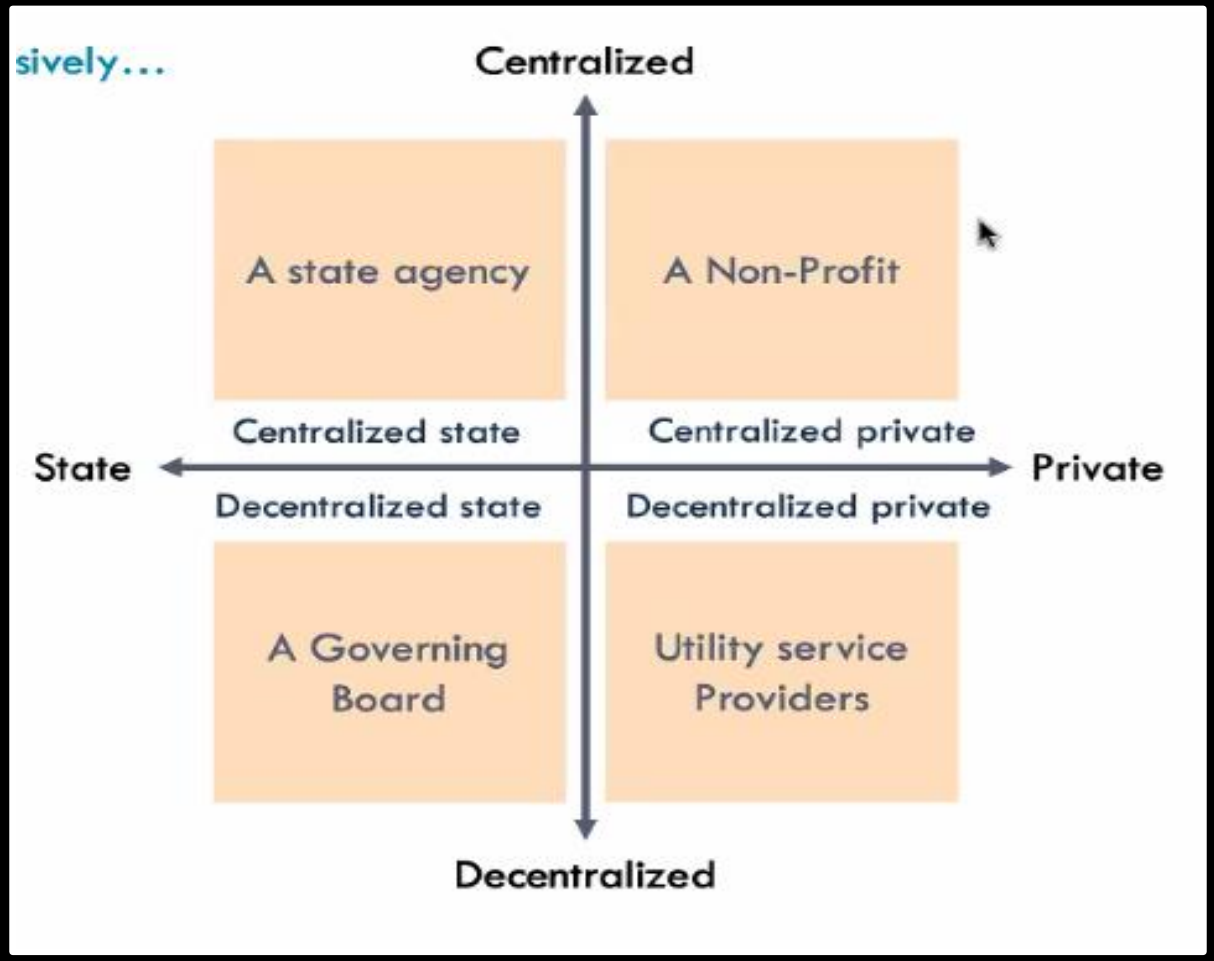
MassSave Success and Challenges

- Cited Success
- Residential Home Energy Services (Audits)
- Technical Assessment Committee
- Shared Staffing and Resources
- C&I Upstream Lighting

- Cited Challenges
- Branding
- Consistency of Systems and Data
- Need to set concrete baselines from which to measure success

Discussion

- Is there a path forward away from the utility service provider model?



Hypothetical: State Agency

- Division of Energy Oversees program
  - Legislative changes
- Works with EEtility as Consultant/ Program Advisor
- RFP for Program Implementer
- Utilities cut a check and earn a return based on potential and outcomes
- Funding stream from federal government and can compliment other activities
- PSC oversight in terms of regulatory approval and cost allocation

Hypothetical: 3rd party

- RFP for 3rd party Program Administrator
  - Legislative changes
  - Contractor for PSC or DE
- Works with EEtility as Consultant/ Program Advisor
- Utilities cut a check and earn a return based on potential and outcomes
- Funding stream from federal government and can compliment other activities
- PSC oversight in terms of regulatory approval and cost allocation
- Incorporate EIERA (environmental Improvement and Energy Resources Authority) for federal funding – Green Bank?

Hypothetical: Governing Board

- Rebrand Statewide similar to MassSave (e.g., Missouri Show Me Savings Program)
- RFP for program design and governing structure
- Take current IOU/MOU model and work on statewide brand for uniformity in marketing, trade ally network standards, offerings, collective bidding and fastpass
- Legislative and/or Regulatory changes?
- Board of Directors (voting and non-voting)
- PSC oversight in terms of regulatory approval and cost allocation
- Incorporate EIERA (environmental Improvement and Energy Resources Authority) for federal funding – Green Bank?

Discussion on Models

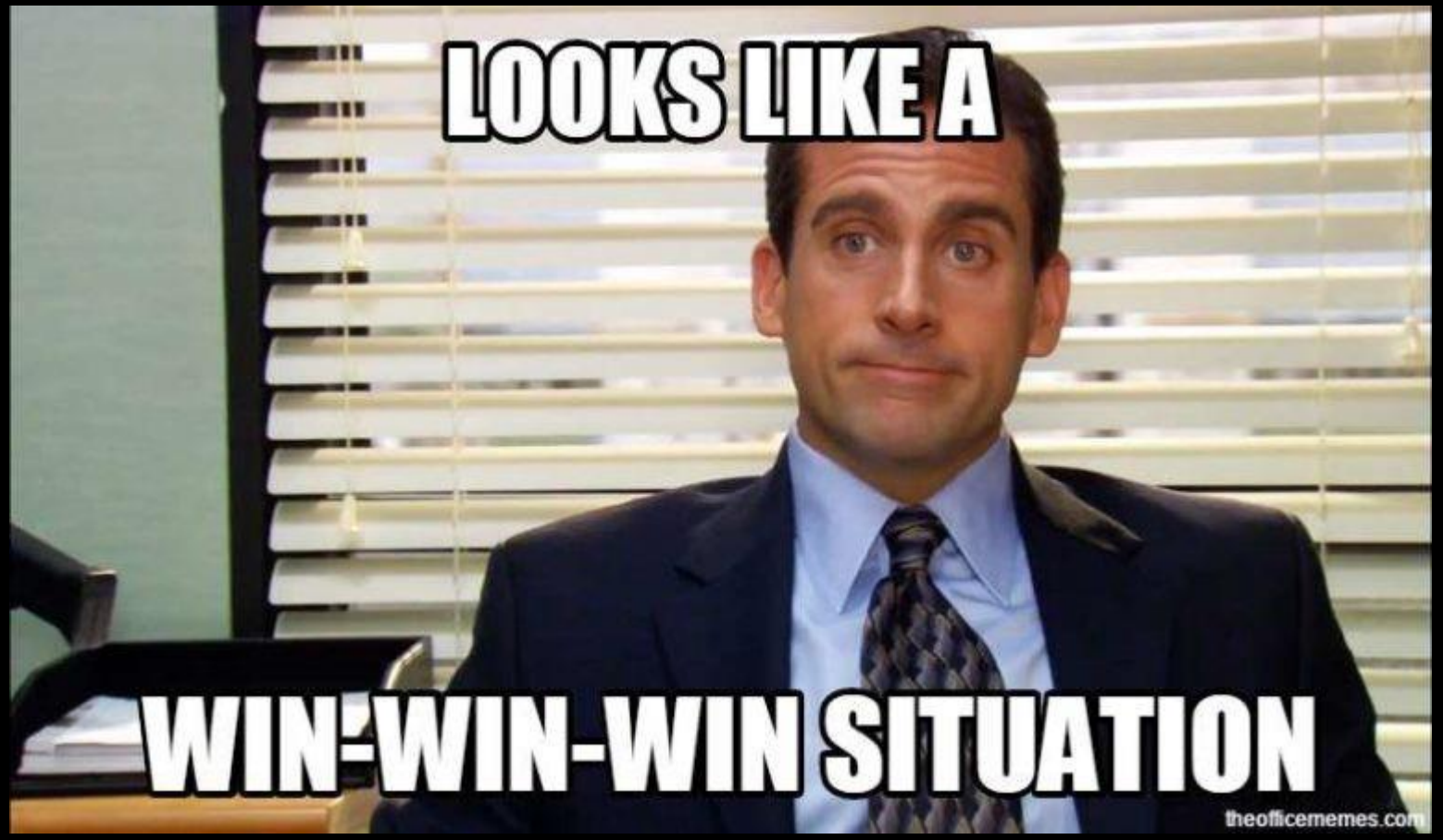
- Utility led PAYS
- Governing Board PAYS (Branding Model)
- State Agency PAYS
- 3rd Party PAYS

Outstanding Issues

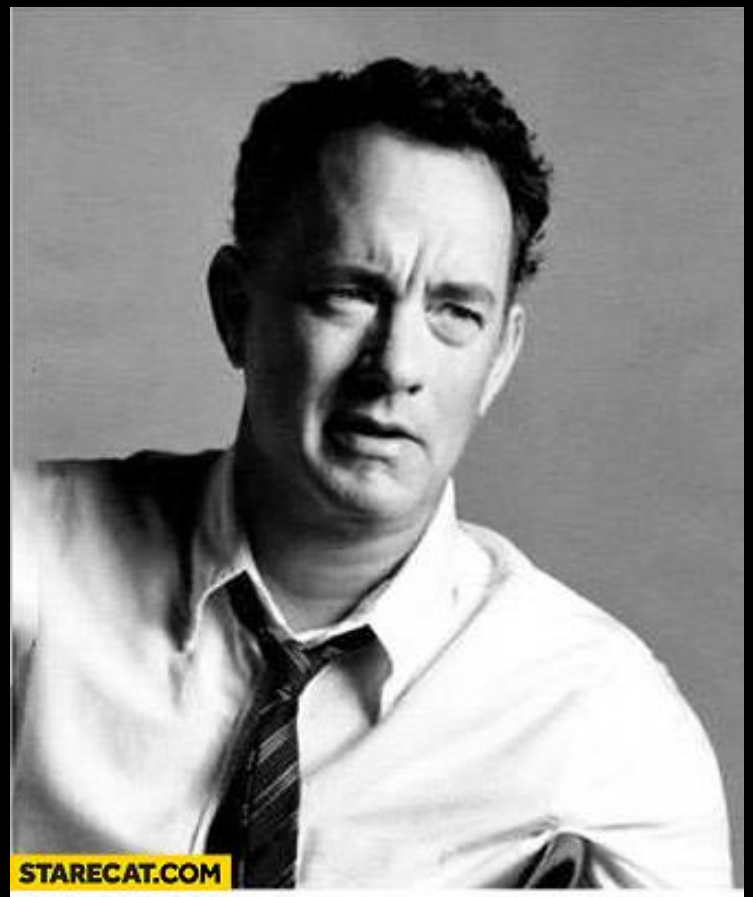
- Timing
- MEEIA Portfolios 2024 –
- Recognize Give-and-Take here from all parties
- Is consensus possible?
- Feedback from Utilities
- Next Steps
  - August/September vote
  - Legislative and/or Regulatory Changes
  - Meet up again with actionable items in September/October
  - Replace on Failure Discussion

Herding Cats and Value Propositions

- Utilities = certainty
- Regulators = efficiency
- Consumers = cost savings
- Environmentalist = clean
- State Energy Office = mission statement



Questions?



T.HANKS

T.hanks a lot

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1/16/2020