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~~Which~~What Resource~~s~~ Counts the Most?

Electrification, Affordability, and the Demand Side

Restructuring Roundtable

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What Does This Panel Have in Common?

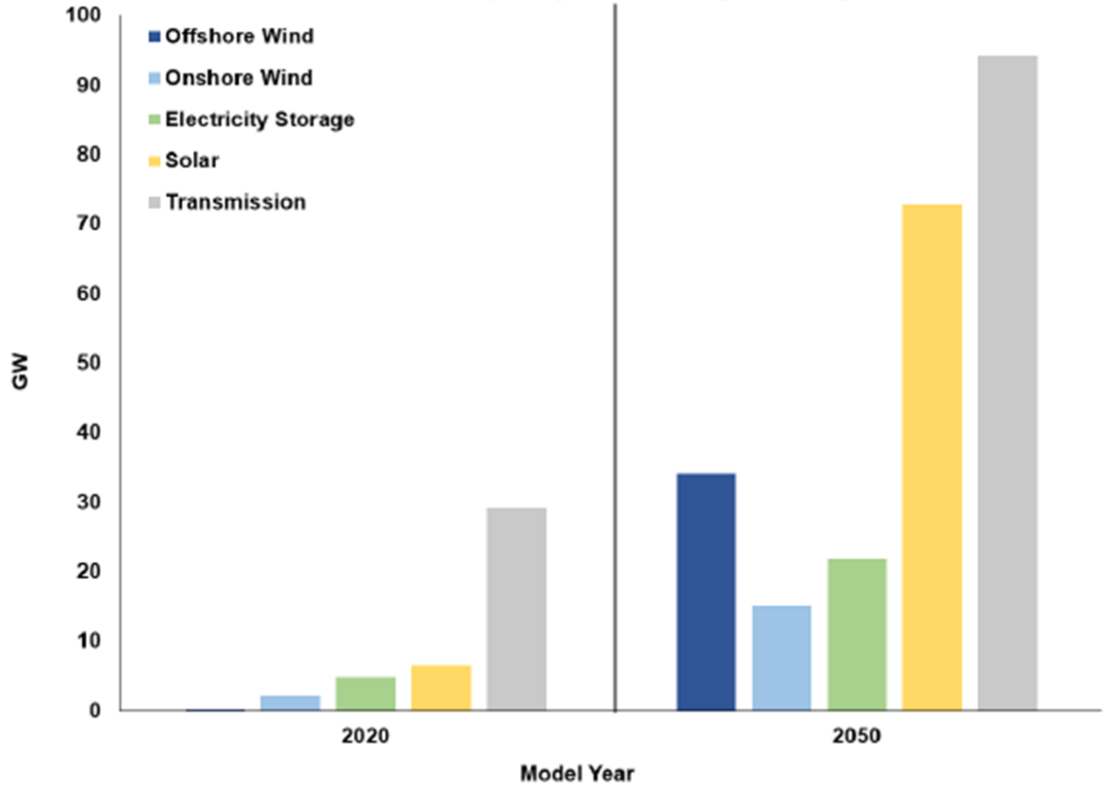
9:15 **Which Resources Count?**

- **Offshore Wind: Alicia Barton** $$
- **Solar: Nathan Phelps** +$$
- **Nuclear: Armond Cohen** +$$
- **Storage/Use of Existing Sites: John O'Brien** +$$

$$$$$$$$

- **Add:**
  - **Transmission to interconnect grid resources (+$$)**
  - **Capacity market and/or out of market payments to retain uneconomic gas-fired capacity needed for reliability (+$$)**
  - ***… And we haven't even discussed the distribution system yet***

Figure 6. Renewable and Transmission Capacity in New England, High Electrification Scenario



Source: [1] MA Workbook of Energy Modeling Results.

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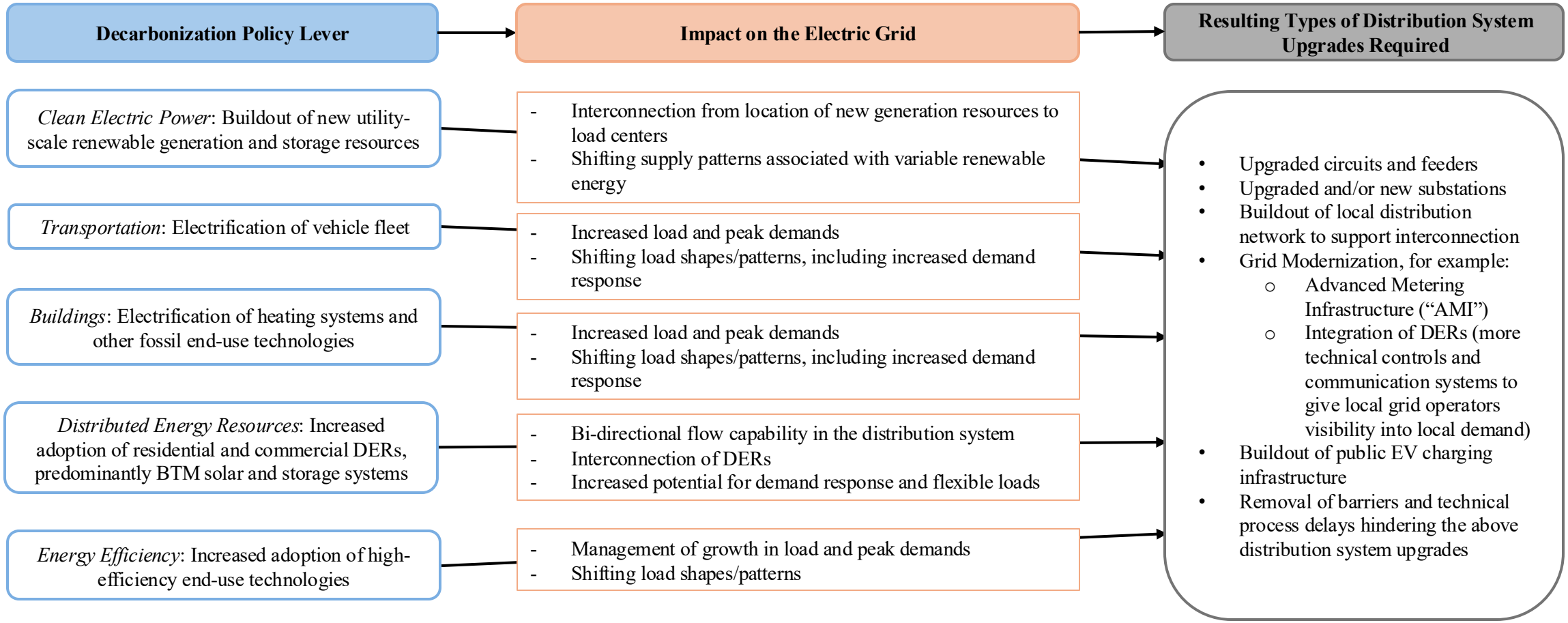
Distribution: Gridmod investments in the *billions* over the next 5-10 years, including distribution system infrastructure, AMI…



Which is to Say: Is Electrification the Right "Pathway" to economy-wide decarbonization?

- **We have endured severe reactions to electricity cost increases**
  - *The scary part:* this is unrelated to all the investments just discussed
  - Instead, typical issues around weather, fuel prices, market pricing
- **MA gets it: Governor affordability bill, Financing the Transition Working Group, Interagency Rates Working Group, DPU decisions**
- **Is there a feasible alternative?**
- **If not, it *must* include aggressively promoting total energy cost management through price incentives and technology**
- **What does this mean?**
  - Chart a pathway starting now (there is time)
  - Fundamental changes to rate design
  - Fundamental changes to program spending

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Rate design and technology engagement for an affordable climate strategy

- *Rapid evolution of rates:*
  1. Increasing customer charges
  2. Increased demand-based charges
  3. Declining energy charges
  4. Aggressive and dynamic TOU pricing structures
  5. Inclusion of wholesale prices
- *Rapid evolution of programmatic investments:*
  1. Away from energy-focused reductions
  2. Towards demand-focused reductions
  3. Include local specificity (stressed circuits/feeders)
  4. Engagement of tech and software in customer demand management

Rate Transition Concepts

	Now – 2030	2030 – 2035	2035 – 2040	2040+
EDC Revenue Requirement Allocation	• Increase customer charge by 10% • Move 10% of RR from T&D to demand • Evaluate optimal rate class designations (e.g., different rate class for customers with unique end-use circumstances?)	• Increase customer charge by 20% • Move 20% of RR from T&D to demand, primarily residential • Establish new rate classes, if appropriate	• Increase customer charge by 20% • Move 20% of RR from T&D to demand, primarily residential • Refine rate classes and rate designs based on evolving RR and system needs	• Increase customer charge by 10% • Move 10% of RR from T&D to demand • Refine rate classes and rate designs based on evolving RR and system needs
Electricity Supply and Delivery Time Varying Rate Designs	• Install TOU meters • Pilot TOU programs for EV and/or HP owners (e.g., managed charging) • Pilot bill credit programs for demand control • Evaluate options for tiered DER pricing tied to controllable output	• Establish/grow successful programs for end-use demand control, including gas/electric hybrid. • Establish TOU pricing for EV charging and/or HP programs if appropriate • Establish tiered pricing for DER customers	• Continue demand control, TOU, and DER tiered pricing programs • Evaluate TOU rate structures and adjust as needed based on evolving distribution of RR across T&D and demand billing determinants	• Evaluate and adjust TOU rate structures based on evolving distribution of RR across T&D and demand billing determinants
Programmatic Spending	• Increase spending • Reduce proportion of spending in programs not focused on transition • Increase spending on NPAs/NWAs to limit network growth • Increase availability of EV charging and HP incentives • Couple EV/HP incentives with demand control tech installation • Explore new program designs to address LMI challenges	• Increase spending • Reduce proportion of spending in programs not focused on transition • Continued spending on NPAs/NWAs to limit network growth • Adjust EV charging and HP incentives based on market assessment • Couple EV/HP incentives with demand control tech installation • Implement new program designs for LMI customers	• Level/reduce spending • Reduce proportion of spending in programs not focused on transition • Reducing/eliminate EV incentives, rely only on TOU pricing • Continue HP incentives; couple HP incentives with demand control tech installation if still appropriate • Largely increase program designs for LMI customers	• Reduce spending • Reduce HP programs • Evaluate need and appropriate focus of programmatic spending • Increase program designs for LMI customers
LDC Rates	• Increase customer charge by 20% • Establish accelerated depreciation for undepreciated rate base	• Increase customer charge by 20% • Explore regulatory and legislative options for RR recovery with declining customer base • Continue accelerated depreciation	• Increase customer charge by 20% • Achieve regulatory and/or legislative solutions to RR recovery • Continue accelerated depreciation	• Implement RR recovery solution

Note: The values included in the table are conceptual, and are meant to be directional and illustrative. Specific values should be derived for actual rate classes through an analysis of projected revenue requirement increases and an analysis of the impact of reallocation on rates and bills.

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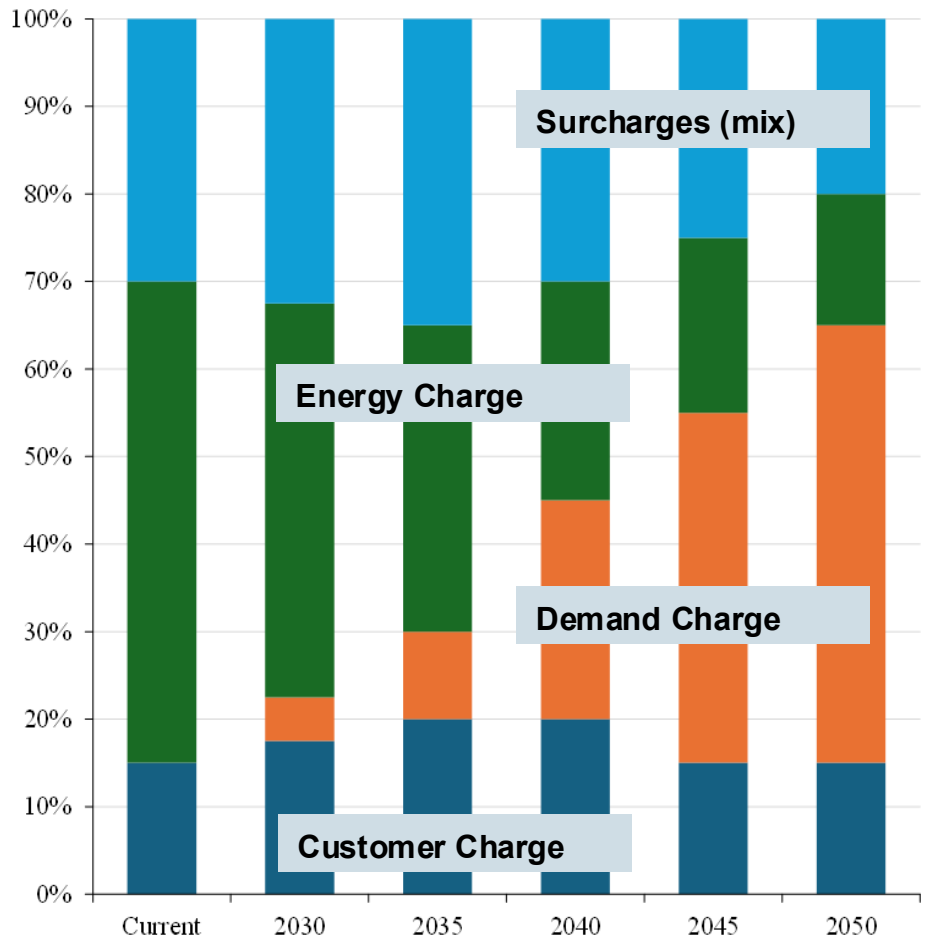
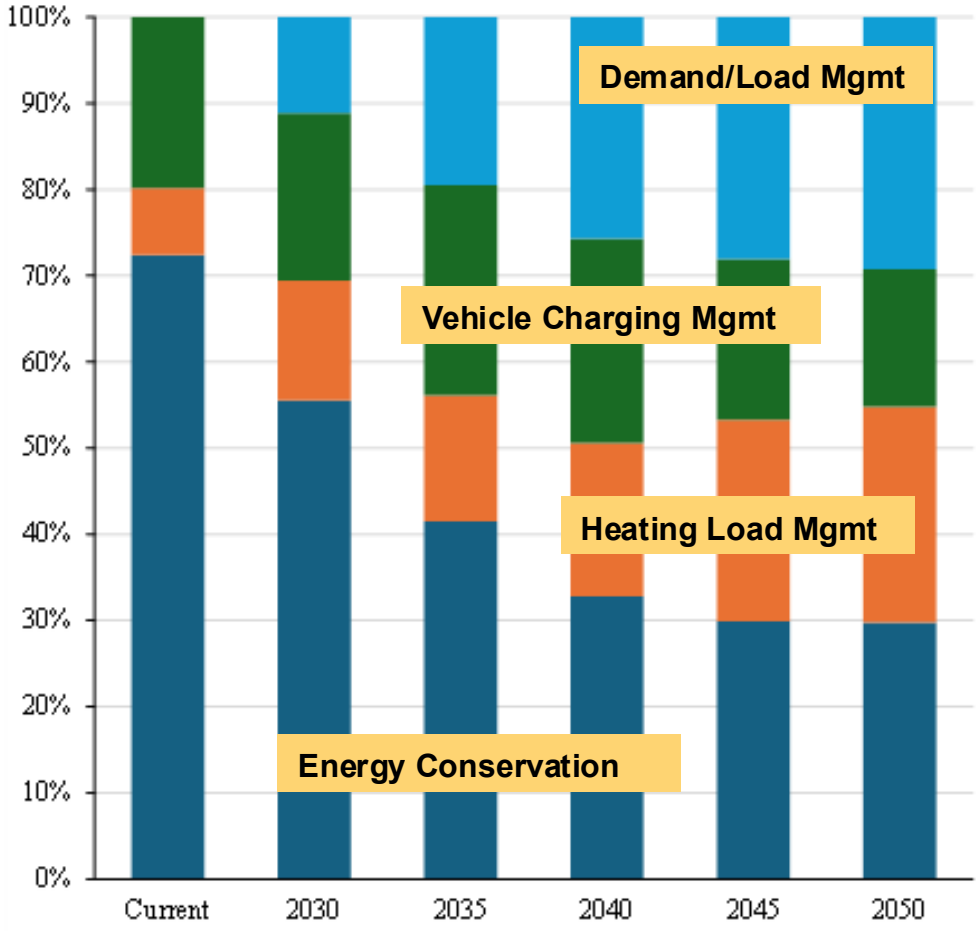
Change rates towards fixed cost drivers of needed investments



…while adjusting focus of programs to match the need to support electrification, and manage demand



Concluding Thoughts

- **Demand side: always the bridesmaid, never the bride**
  - DR and load management programs have always provided some real reduction in peak demand obligations
  - Yet they have never been taken seriously as either a significant resource, or as a true tool for "regular" customers to manage electricity costs
  - So in terms of "Which Resources Count?", the demand side is always mentioned, but always last, and more often as an asterisk than as an important resource
- **Is the table turning?**
  - Electrification depends on it
  - Affordability depends on it
  - Climate policy – as currently construed – depends on it
  - *Alternative*: bail on electrification as the path to economy-wide decarbonization

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