MASSACHUSETTS
DEPARTMENT OF ENERGY RESOURCES

Time of Use Rates

Targeted Conversation | May 28, 2025

This presentation will be used to guide the Massachusetts Electric Rate Task Force's targeted conversation, designed to facilitate an open, inclusive dialogue and frame critical questions and opportunities.

Note: The contents of this presentation do not necessarily reflect the views or positions of the Massachusetts Department of Energy Resources.

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Framing question

From your perspective, what does an ideal electric rate look like?

Massachusetts Electric Rate Task Force Goals

The Rate Task Force brings together diverse stakeholders to reimagine how electric rates and the regulatory framework can drive an affordable, equitable, and decarbonized energy future.

The Rate Task Force will use the Massachusetts Interagency Rates Working Group's Long-Term Ratemaking Study and Recommendations as a starting point for discussion and knowledge building on rate designs, ratemaking, and regulatory mechanisms.

Build technical knowledge

Provide an opportunity for **knowledge-building** by and amongst stakeholders, including those who have not traditionally been involved

Facilitate open, inclusive dialogue

Engage in **open, inclusive dialogue** about complex ratemaking and regulatory issues outside of a regulatory proceeding

Develop shared understanding

Converge towards **shared understandings** of the challenges and priorities

Frame critical questions and opportunities

Empower stakeholders to identify **critical questions and opportunities** for the advancement of rate design and ratemaking reform

Agenda

i. Introduction (20 minutes)

ii. Consideration of Cost-Reflective Electricity Rates (40 minutes)

iii. Break (5-10 minutes)

iv. Seasonality, Peak Periods, and Peak to Off-Peak Price Ratios (40 minutes)

v. Next Steps and Closing (10 minutes)

Ground rules & engagement

This work is complex – and your insight matters; let's focus on learning, listening, and shaping together!

Participation, Engagement, & Respect

- Everyone's perspective is valuable – this space works best when all voices are heard
- Respect differences in background, experience, and priorities
- Bring curiosity – ask questions and offer potential answers
- Focus on understanding others' goals and values, not just their positions
- It's okay not to have a solution – help us shape the right questions

Collaboration, Not Consensus

- This body is deliberative, it is not a decision-making space
- We don't need to agree on everything, but we should work toward shared understanding
- Where we disagree, help clarify what the tension is and why it matters

Transparency & Trust

- We'll be clear about how input is used
- Share what you can; identify when you're speaking on behalf of your organization or personally
- Materials, summaries, and key findings will be shared openly to support accountability

Focus & Productivity

- Stay on topic and honor the scope of the Task Force
- Raise related concerns, but help us stay anchored in the rate design and regulatory issues at hand
- Use the structures provided (i.e., expert sessions, targeted conversations, office hours) to deepen discussion
- Avoid discussion about open and ongoing proceedings at the DPU

Today's focus: time of use (TOU) rates

IRWG recommendation

- Retail electric rates do not provide proper price signals to minimize electric system costs – and should better reflect the costs of generating and delivering electricity
    - The IRWG recommended each electric distribution company (EDC) develop a default, **seasonal time-of-use rate for residential customers** that can be implemented when advanced metering infrastructure (AMI) meters are deployed

TOU design considerations

- Targeted conversations are intended to facilitate open, inclusive dialogue and frame critical questions and opportunities
    - The focus of today's targeted conversation will be on time-of-use design considerations including the time-varying nature of elements of electric service and trade-offs concerning seasonality, peak periods, and peak to off-peak price ratios

Topics for another targeted conversation

Related rate design issues

- **Alternative rate designs:** critical peak pricing, demand charges, policy fixed charge, or other advanced rate design options
- **Bill and DER impacts:** customer bill impacts, including the impact on current use and future adoption of DERs
- **Implementation and protections:** implementation considerations including timing, billing system capabilities, and customer roll-out and protections; default, or opt-out recommendation will be discussed in conjunction with customer protections
- **Marketing, education, and outreach:** planning and implementation for rollout of default TOU rates

The Task Force will be exploring various aspects of rate design in phase one.

While many of these aspects overlap or interact, the targeted conversations are designed with clear boundaries on discussion to focus on key issues within each topic.

Topics out of scope

Rate design subtopics

- **Basic Service Design:** DPU has open investigation (23-50) on basic service procurements and has previously indicated it will address TVR basic service in Phase 2
- **AMI Data Access**: St. 2024, c. 239 requires EDCs to establish a centralized data repository to allow customers and suppliers access to advanced metering data and submit a plan for the implementation of advanced metering data access protocols
    - Municipal aggregation and competitive supply product offerings will be informed by AMI data
- **Discount Rates:** DPU open investigation (24-15) is evaluating the design and implementation of tiered discounts and will investigate moderate income discounts pursuant St. 2024, c. 239

As a reminder, the Task Force cannot cover all topics and issues of rate design.

To better target time and attention to relevant discussions, we will not be comprehensively addressing a few rate design subtopics that are being addressed outside the Task Force and/or are the subject of open proceedings.

Cost-Reflective Electricity Service

Existing retail electric rates

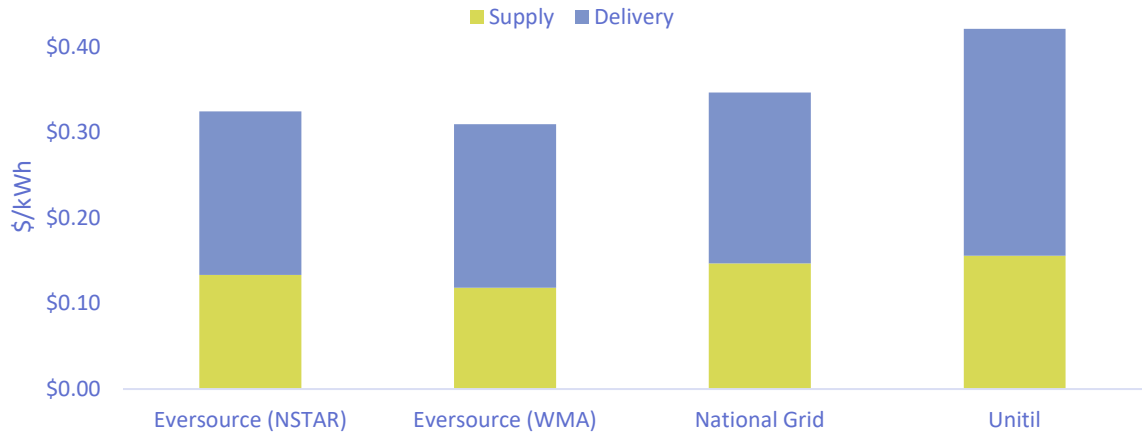
Most costs are collected from residential customers through uniform, volumetric charges

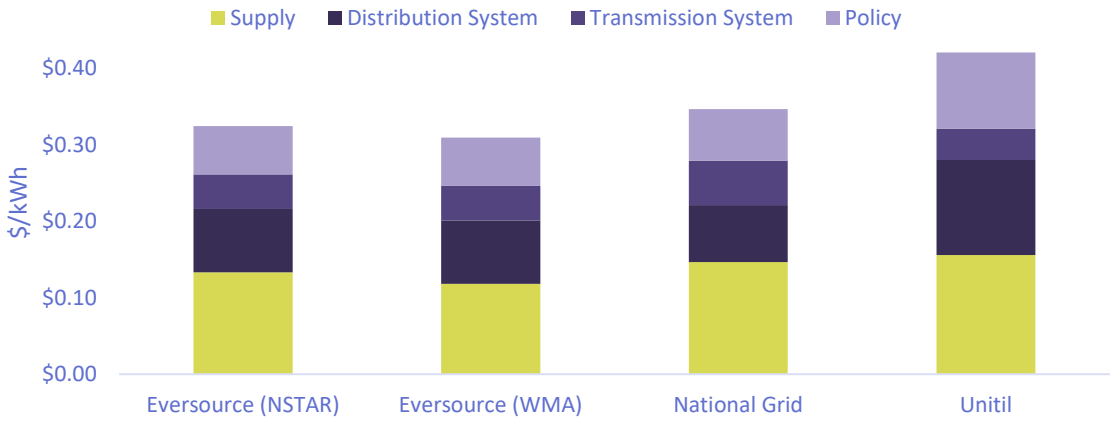
Electricity service elements

- **Supply:** include costs of wholesale energy, capacity, and other supply-related requirements
- **Delivery:** includes the costs related to transmission and distribution utility service

Retail electric rate structure

- **Volumetric:** the costs of most electricity service elements are recovered through energy consumption-based charges (dollars per kilowatt-hour, $/kWh)
- **Uniform:** electric rates do not vary for residential customers throughout the day





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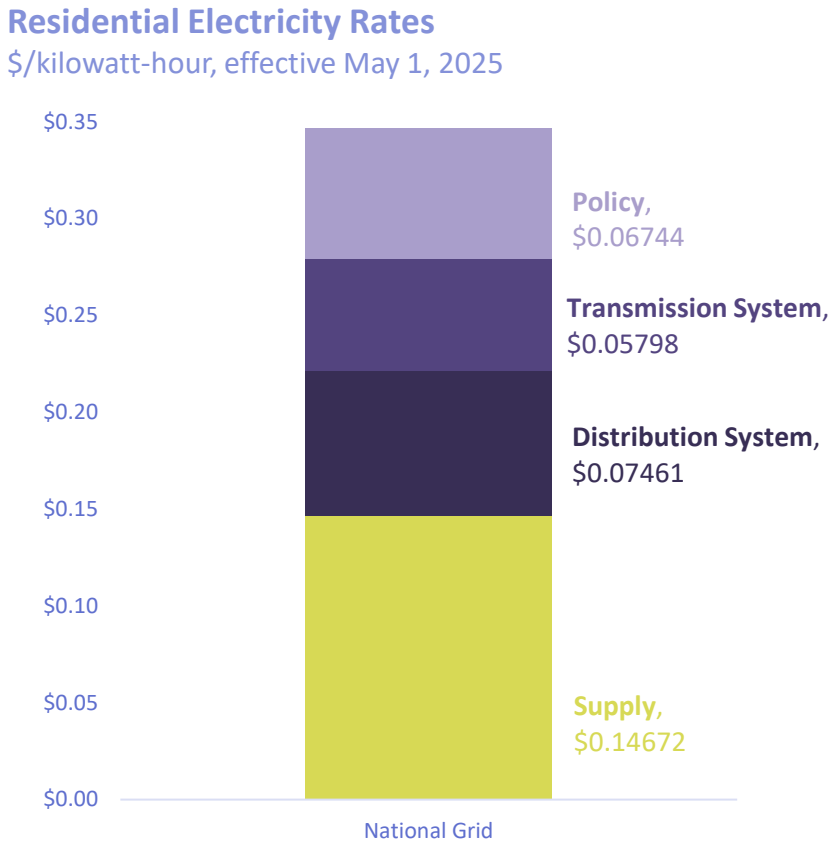
Components of retail electric rates

Existing retail electric rates include over twenty separate charges, but can be summarized by components that generally reflect the different elements of electricity service

- **Transmission charges** recover the costs associated with the existing transmission system
- **Distribution charges** recover the costs associated with the existing distribution system
- **Supply rates - or products -** reflect the costs of generating electricity, including energy and capacity costs
- **Policy - or program - charges** recover the costs associated with state policies or utility programs (e.g., energy efficiency, net metering, solar incentives, low-income assistance, etc.)



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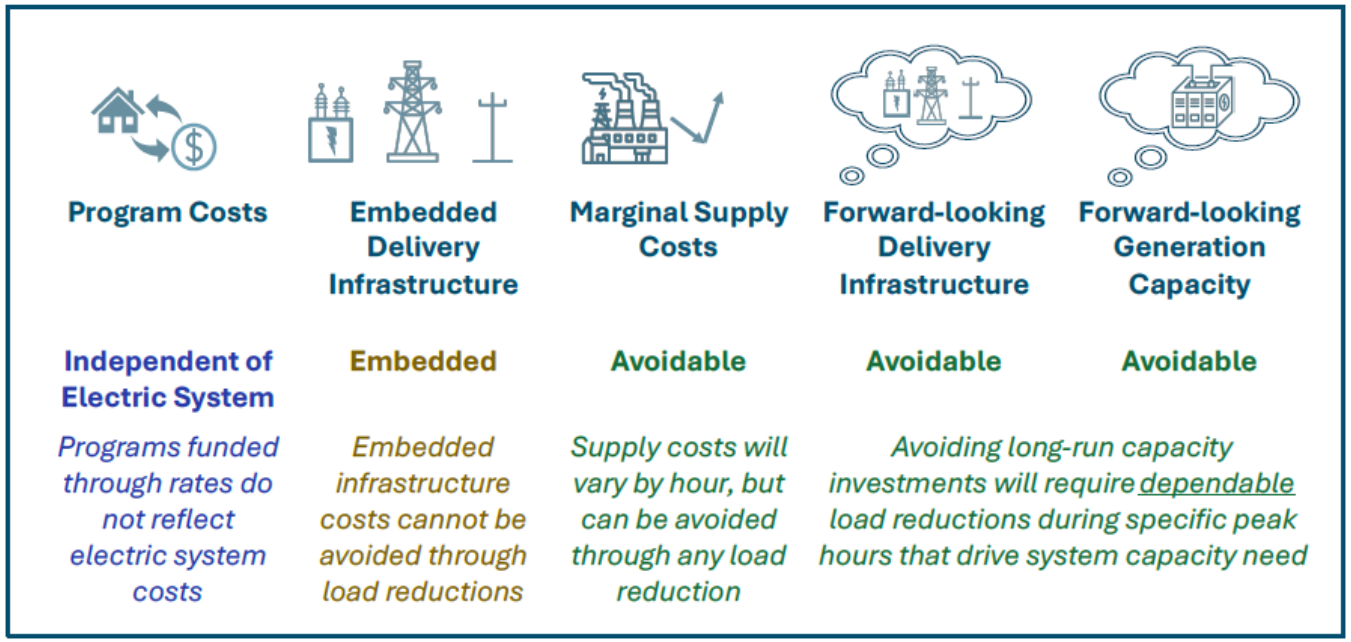
Cost-reflective rates can reduce growth in total system costs

The IRWG recognized that cost-reflective electric rates will provide a price signal to efficiently manage loads, avoiding incremental electric system costs

- Efficient price signals must reflect the incremental cost impact of customer usage decisions on the electric power system
  - Marginal cost represents the incremental cost of consuming an additional unit of electricity
  - Price signals that appropriately reflect marginal cost will be necessary to avoid increasing load during periods when generation is expensive, and the grid is constrained
- Electric rate design narrowly focused on recovering existing, or embedded, infrastructure costs – will fail to incentivize customer behavior and demand flexibility that can mitigate (i.e., defer or avoid) incremental electric system costs associated with electrification and decarbonization

Figure 3: Embedded and Avoidable Costs by Component



Energy and Environmental Economics, Inc. Long-Term Ratemaking Study at 16.

What's one insight or question that jumps out to you from this framing? How does it align with your priorities?

Time-varying nature of cost-reflective rates

The IRWG recommended a TOU rate that incorporated the time-varying nature of transmission

Component	Key Cost Driver	Current Allocation	Time-Varying Rationales
Transmission	Designed to accommodate maximum peak demand (annual coincident peak, 1CP)	EDCs are assigned costs on their contributions to the highest hour of ISO-NE load each month (monthly coincident peaks, 12CP)	Incremental transmission investments can be deferred or avoided by limiting peak demand growth

- What's one insight or question that jumps out to you from this framing?
- How should we consider designing a TOU rate component that is cost-reflective?
- What complexities are there in designing a TOU rate for this element of electricity service?

Time-varying nature of cost-reflective rates

The IRWG recommended a TOU rate that incorporated the time-varying nature of distribution

Component	Key Cost Driver	Current Allocation	Time-Varying Rationales
Distribution	Designed to accommodate customer and local system peak demand	EDCs assign a portion of their approved revenue requirement to each customer class based on an allocated cost study	Incremental distribution investments can be deferred or avoided by limiting peak demand growth

- What's one insight or question that jumps out to you from this framing?
- How should we consider designing a TOU rate component that is cost-reflective?
- What complexities are there in designing a TOU rate for this element of electricity service?

Time-varying nature of cost-reflective rates

The IRWG recommended a TOU rate that incorporated the time-varying nature of supply

Component	Key Cost Driver	Current Allocation	Time-Varying Rationales
Supply – Energy	Energy costs based on wholesale market prices, driven in part by higher load or demand for electricity	Retail suppliers manage financial responsibility of wholesale energy purchases, which contributes to the retail supply rate	Wholesale energy costs vary throughout the day
Supply – Capacity	Cost of energy resources scale with maximum annual peak demand (1CP)	Retail suppliers are assigned capacity costs based on their load obligation during the preceding year peak demand	Capacity investments can be deferred or avoided by limiting peak demand growth

- What's one insight or question that jumps out to you from this framing?
- How should we consider designing a TOU rate component that is cost-reflective?
- What complexities are there in designing a TOU rate for this element of electricity service?

Break: 5-10 minutes

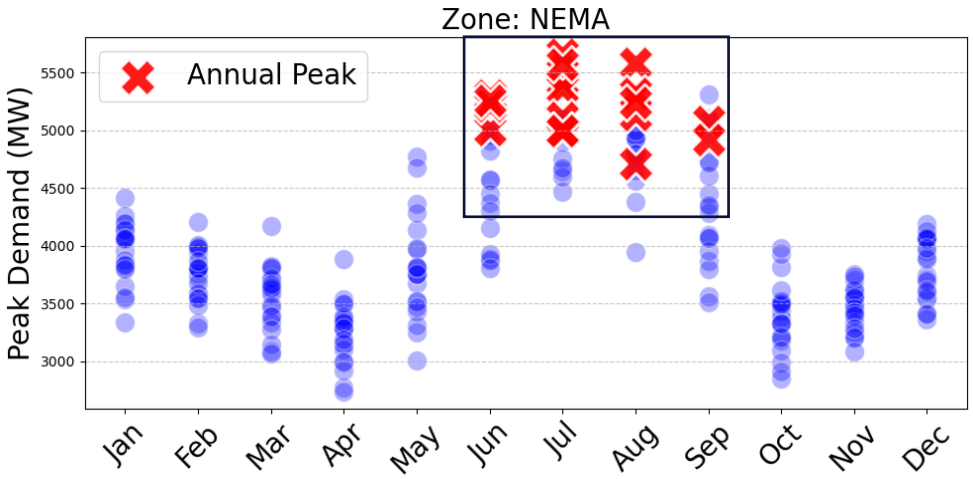
Seasonality, Peak Periods, and Peak to Off-Peak Price Ratios

TOU seasonality

Costs vary by season...

The costs of supplying and delivering electricity vary by season

- **Transmission**: Driven by annual peaks, allocated according to monthly peaks
- **Distribution**: Driven by local and customer peaks
- **Supply**: Capacity costs driven by annual peaks. Wholesale energy prices vary throughout the day and by season



How can TOU rates best reflect seasonal cost dynamics?

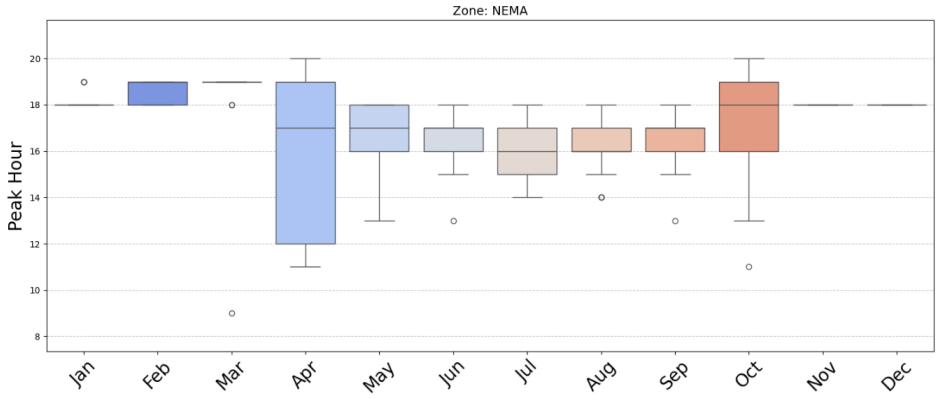
- What considerations should inform the timing and duration of a peak season?
- Should TOU periods be fixed year-round or vary by season?
- How might peak period and off-peak period prices differ by season?
- Are there equity or affordability implications for TOU seasonality?

Peak period duration and TOU schedules

TOU scheduling is a balancing act...

- Peak periods should be **long enough** to reliably capture system peaks, but **short enough** that customers can reasonably shift consumption to off-peak periods.
- The schedule should be cost-reflective (**complex**) but easy to respond to (**simple**)

Distribution of hours when monthly peaks occur, NEMA 2018-2024



What's the right balance for Massachusetts customers?

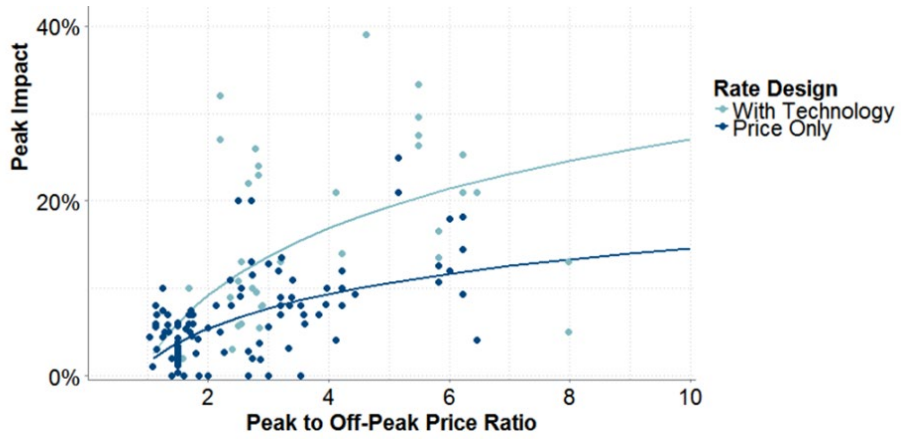
- How long should peak periods be?
  - What length preserves cost reflectivity?
  - What length maximizes customer understanding/response?
- Should there be other periods in addition to peak and off-peak, such as intermediate or super off-peak?
  - Should the granularity of TOU schedules evolve as more customers gain access to enabling (i.e., automated, flexible) technologies?
- Are there equity or affordability implications related to peak period duration and TOU schedules?

Peak to off-peak price ratios

Price ratios should be cost-based, but customer-centric

- The ratio between peak and off-peak prices impacts the extent to which customers reduce peak consumption
- Price ratios that are too low may fail to incentive cost saving behaviors; ratios that are too high may be unpopular and increase bill volatility

Impact of peak to off-peak ratio on peak reduction



What price ratio provides a meaningful signal for residential customers?

- Is there a recommended minimum price ratio (assuming the rate remains cost-reflective) for residential customers?
  - How about a maximum price ratio?
- Should the price-differential evolve over time? i.e., lower upon roll-out but scheduled to gradually increase over time?
- Are there equity concerns relates to peak to off-peak price ratios?
  - High ratio means more opportunity to save, but potentially more bill volatility

Reflection and Next Steps

Summary Wrap-Up

Rate Design Objective

Cost-reflective electricity service and time-varying nature of electricity system elements

- Emerging alignment
- Open questions
- Disagreement

Rate Design Parameters

Seasonality, peak periods, and peak to off-peak price ratios

- Emerging alignment
- Open questions
- Disagreement

Next Steps

Review Working Paper

We encourage participants to review the Time of Use Rate Design Working Paper, which further details the a few of the primary issues covered today. We welcome comments, questions, or concerns.

Optional Office Hours

June 4, 2025 from 2-4pm

- Optional office hours for further conversation, serving as a structured opportunity to work towards common understandings and positions. We also encourage participants to have discussions amongst each other beside formal Task Force sessions
- Please reach out to chris.connolly2@mass.gov to request an invitation.