



Constellation Of The Future: Carbon And Resilience/New Metrics Needed To Chart The Course

Moderator and presenter: Nancy Seidman, Regulatory Assistance Project (RAP)
Rachel Henschel, National Grid
Robert Stephenson, VEIC

May 21, 2019

EMV and the Constellation of the Future

Nancy L. Seidman

Regulatory Assistance Project

NEEP Stellar EMV – Providence, RI

Key questions

1. What does the “EMV Constellation” mean to you?
2. What policies and goals do we need to do to reach the stars?
3. How can the Region reach for the stars together?
4. What is your North Star?

Resources from RAP

- [Beneficial Electrification: Ensuring Electrification in the Public Interest](#)
- [Beneficial Electrification of Space Heating](#)
- [Beneficial Electrification of Water Heating](#)
- [Beneficial Electrification of Transportation](#)

About RAP

The Regulatory Assistance Project (RAP)[®] is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org



Nancy L. Seidman
Senior Advisor
The Regulatory Assistance Project (RAP)[®]

Cambridge, Massachusetts
United States

+1 781 980 8006
nseidman@raponline.org
raponline.org

Northeast 80x50 Pathway

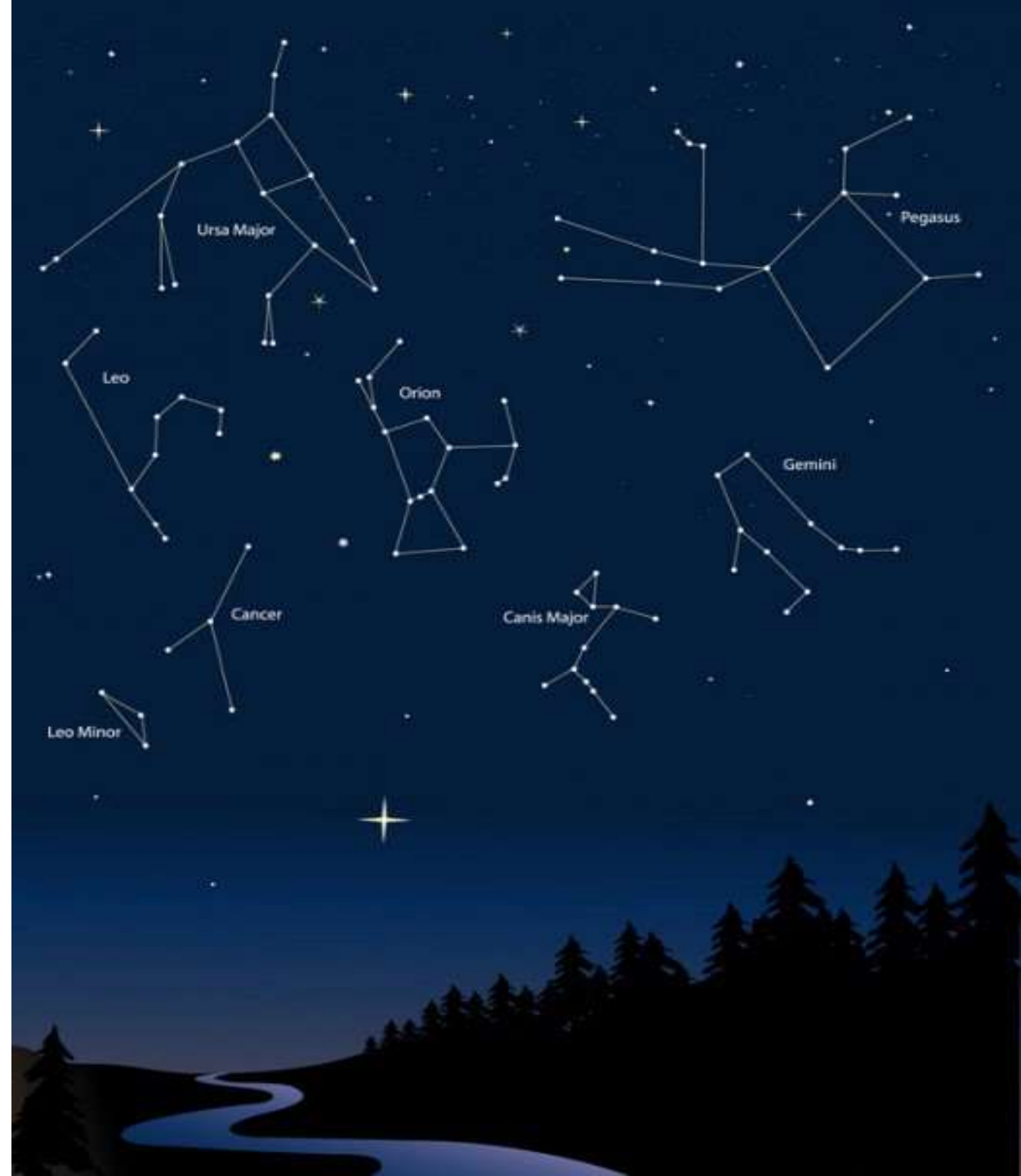
**2019 Annual Public Meeting: Stellar
EM&V**

May 21, 2019

Rachel Henschel, Rhode Island
Customer Energy Management

national**grid**





The National Grid Northeast 80x50 Pathway

Our 80x50 Pathway is ambitious and comprehensive, with implications for customers, communities, utilities, automakers, and policymakers.

	40% x 2030	80% x 2050
Power	<ul style="list-style-type: none">▪ Ramp up renewable electricity deployment to achieve 67% zero-carbon electricity supply vs. 45% today	<ul style="list-style-type: none">▪ Zero carbon electricity system▪ Increase large-scale renewables▪ Inter-seasonal energy storage▪ New clean electricity options (gas + CCS, modular nuclear)
Transport	<ul style="list-style-type: none">▪ Reach more than 10 million light-duty electric vehicles on Northeast roads (50% of all light-duty vehicles) vs. < 75,000 today	<ul style="list-style-type: none">▪ More than 20 million light-duty vehicles (100% of the fleet)▪ Low-carbon heavy duty, rail, and off-road transportation▪ Reductions in vehicle miles traveled
Heat	<ul style="list-style-type: none">▪ Double the rate of EE retrofits▪ Triple the rate of oil-to-gas heating conversions▪ Transform the oil-to-electric conversion market (10X scale up)	<ul style="list-style-type: none">▪ Sustain thermal efficiency investment▪ Decarbonize natural gas supply for heating▪ Hybrid gas/electric heating

None of us can achieve 80x50 alone.

To guide the economy-wide transformation, we will need:

- Active customer engagement
- Transformative industry partnerships
- Comprehensive policy and regulatory frameworks
- Rapid, widespread technological innovation

National Grid is **ready to innovate together** with our stakeholders in pursuit of reliable, least-cost decarbonization.



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CONSTELLATION OF THE FUTURE:

CARBON AND RESILIENCE/NEW METRICS NEEDED TO CHART THE COURSE

Robert Stephenson



Renewable energy

Fuel transformation

Energy efficiency

Infrastructure constraints

Role clarity

GHG emissions

Equity

- 70% of U.S. prompt GHG emissions from transportation and energy use on the grid?
- How can we best use the grid to enhance the benefits of clean and efficient energy?
- 40% of benefits of clean and efficient energy are lost to export
- Weatherization agencies focusing more on storm windows and doors
- Renewable Energy Standard (RES) is 17% of the energy budget for transportation and
- ramping up to 15% by 2032
- Green Mountain Power Group has a role for energy efficiency
- 17% of retail sales for new Washington Electric Co. 17
- 17% of retail sales for new Washington Electric Co. 17
- ramping up to 10% by 2032
- Ensure beneficial electrification as quickly as possible (Energy Action Network)
- Value
- New focus on how and where EE is deployed

North Star

- Renewable energy

- Fuel transformation

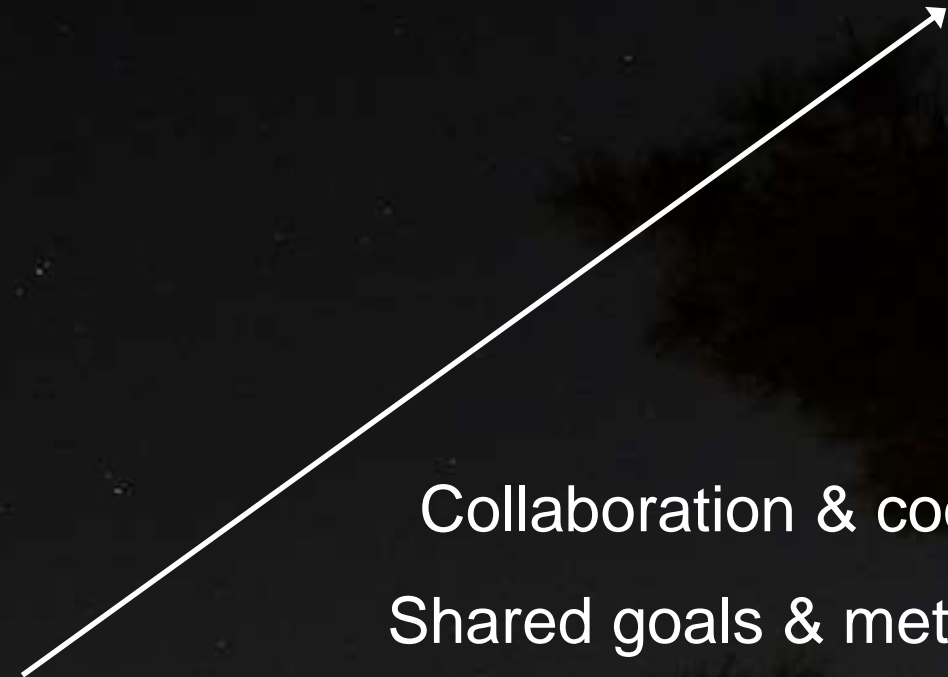
- Energy efficiency

- Infrastructure constraints

- Role clarity

- Equity

- GHG emissions



- Collaboration & coordination
- Shared goals & metrics (GHG)
- Flexible funding mechanisms
- New evaluation methods
- Data needs

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