



NEEP Strategic Electrification Project
Resource Catalogue
 Updated April 2018

Organization and Resource Link	Synopsis
NEEP: Action Plan to Accelerate Strategic Electrification in the Northeast (March 2018)	Regional Action Plan and recommended research to accelerate long-term market transformation for strategic electrification to displace the use of carbon intensive fuels with a focus on thermal renewable solutions coupled with deep efficiency and grid integration for home and building heating, and the advancement of electric vehicles.
NEEP: Northeastern Regional Assessment of Strategic Electrification (July 2017) and Blog: Driving Electrification	Regional analysis of the important role of electrification of fossil fuel use to achieve state and regional greenhouse gas emission reduction goals 80% by 2050. Developed with the assistance of Synapse Energy Economics and Meister Consulting Group.
NEEP: Regional cold climate Air Source Heat Pump Market Transformation Initiative , Strategy , 2017 Regional ASHP Workshop Summary: It Takes a Village ; Product Specification and List and Best Practice ccASHP Installer Resources	Growing multi-year regional project involving over 200 stakeholders – manufacturers, state energy offices, efficiency programs and advocates from northeast states and Eastern Canadian Provinces to speed the introduction and broad market adoption of quality, efficient cold climate ASHPs to displace carbon intensive heating fuels.
LBNL; Electrification of buildings and industry in the United States; Drivers, barriers, prospects, and policy approaches (March 2018)	This study reviews the possible benefits and barriers to greater electrification in U.S. buildings and industry, the technical and economic potential for electrification, and policy and programmatic approaches for regions that may want to explore beneficial electrification.
RAP webinar; Beneficial Electrification: What's Hot, and What's Not (March 2018)	Discussion of criteria to assess whether electrification is “beneficial” and how to quantify the energy, environmental, and consumer benefits of electrification.
EPRI; A Preview of the U.S. National Electrification Assessment (February 2018)	This document frames the discussion of the pivotal role efficient electrification, including analysis, creation of an electrification technology pipeline, and expansion of R&D collaborations, will play in the future energy system.
VEIC’s Driving the Heat Pump Market: Lessons Learned from the Northeast (February 2018)	This report reviews the policy, regulatory, and program frameworks in Northeast states – New England plus New York – to identify the key factors driving program success and overcoming barriers to ASHP adoption.



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<p>NRREL; Electrification Futures Study: A Technical Evaluation of the Impacts of an Electrified U.S. Energy System (December 2017)</p>	<p>NRREL’s Electrification Futures Study team published the first in a series of reports. This report provides estimated cost and performance data for electric technologies and applies a literature and expert opinion approach for future projections of technology advancements</p>
<p>NRDC’s America’s Clean Energy Frontier: The Pathway to a Safer Climate Future (September 2017)</p>	<p>NRDC’s groundbreaking analysis demonstrates clearly that with bold action on energy efficiency, renewable energy, electrification of vehicles and buildings with clean power, and electric grid enhancements, the United States can reach its 80 percent by 2050 climate goal.</p>
<p>US DOE’s Quadrennial Energy Review: Transforming the National Electricity System: (January 2017)</p>	<p>Section detailing necessity of electrifying non-electric end uses in buildings, industry, and transportation (Chapter 2, p 28-32).</p>
<p>The Brattle Group’s Electrification Emerging Opportunities for Utility Growth (January 2017)</p>	<p>The Brattle whitepaper provides an alternative paradigm for the U.S. utility industry where electricity sales break out of the often-cited “utility death spiral” through beneficial electrification.</p>
<p>RAP’s Beneficial Electrification: Opportunity Knocks for Utilities (January 2017)</p>	<p>Most recent in a series of articles authored by RAP’s Ken Colburn on the benefits of strategic electrification. (related webinar available here)</p>
<p>RAP/NRECA’s Environmentally Beneficial Electrification: The Dawn of Emissions Efficiency (August 2016)</p>	<p>Coins the term “Emiciency” to indicate the importance of emissions efficiency going forward.</p>
<p>Bloomberg New Energy Finance’s Ten Predictions for 2017 (January 2017)</p>	<p>Mentions electrification as an underlying trend toward further integration of renewables on the grid.</p>
<p>Benefits of Port Electrification (ICF on behalf of EPA- December 2016)</p>	<p>Highlights benefits of electrifying machinery and other fossil-intensive end uses at our nation’s ports.</p>
<p>MJ Bradley and Associates’ Power Switch: The Future of the Electric Power System in the Northeast and the Disruptive Power of Innovation (October 2016)</p>	<p>Cites Northeast states’ commitment to emission reduction and notes that electrification strategies will be required to satisfy such commitments.</p>



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<p>VOX’s The Key to Tackling Climate Change: Electrify Everything (September 2016)</p>	<p>Discusses electrification and outlines several prominent resources on the subject from respected sources:</p> <ul style="list-style-type: none"> • Environmental and Energy Economics (E3) • Mark Jacobson and colleagues at Stanford University • The UN Sustainable Development Solutions Network’s Deep Decarbonization Pathways Project • The California Council of Science and Technology • Jeffrey Sachs and Johan Rockström of Columbia University and Stockholm University respectively
<p>SWEEP’s How Leading Utilities are Embracing Electric vehicles (February 2016)</p>	<p>Provides detailed analysis of how electric vehicles may impact the electric grid in the Southwest.</p>
<p>NW Energy Coalition’s Building Good Load to Reduce Carbon Emissions: Getting Northwest Utilities More Involved in Widespread Transportation Electrification (January 2016)</p>	<p>Provides detailed analysis of benefits and costs associated with transportation sector electrification in the Northwest.</p>
<p>Fraunhofer’s What Will the Energy Transformation cost: Pathways for Transforming the German Energy System by 2050 (November 2015)</p>	<p>Identifies electrification of transportation as a key variable in moving Germany toward a clean energy grid.</p>
<p>Keith Dennis’s “Environmentally Beneficial Electrification: Electricity as the End-Use Option” (November 2015)</p>	<p>Proposes applying a systems approach to end use efficiency (et al.)</p>
<p>Acadia Center’s EnergyVision2030 (February 2014)</p>	<p>Identifies electrification as a priority in the shift towards a cleaner energy system.</p>
<p>NESCAUM’s Zero Emission Vehicle Action Plan (May 2014)</p>	<p>Outlines steps forward for promotion of zero emission vehicles and ultimately transportation electrification.</p>
<p>LBNL’s Scenarios for Meeting California’s 2050 Climate Goals: Volume I, Non-Electricity Sectors and Overall Scenario Results (September 2013)</p>	<p>Provides technical analysis identifying widespread electrification of passenger vehicles, building heating, and industry heating as a requirement of meeting California’s 2050 emission reduction goal of 80%.</p>



Public Policy Proceedings/Dockets	Summary
Massachusetts Order Establishing Eversource’s Revenue Requirement (November 2017)	Approval of Eversource’s rate case for a \$45 million EV infrastructure program to increase the availability of charging stations and lower the barriers to EV adoption in the state.
Rhode Island Power System Transformation Initiative (2017)	This initiative aims to design a new regulatory framework for Rhode Island’s electric system. This includes five work streams: utility business model, grid connectivity, distributed system planning, beneficial electrification, and video archive. Phase One Report (November 2017)
Rhode Island Greenhouse Gas Emissions Reduction Plan (December 2016)	Electrification of transportation and building heating identified as key emission reduction strategy.
Connecticut’s Comprehensive Energy Strategy (February 2018)	The 2018 update identifies strategic electrification, grid modernization, increasing efficiency, and improving reliability and security are key to guide CT toward a cheaper, cleaner, and more reliable energy system. NEEP comments
Systems Integration Rhode Island Vision Document (OER/RAP/et al.- January 2016)	Analysis and possible pursuit of strategic electrification is one of the document’s six major recommendations.
New York PSC Order Adopting Ratemaking and Utility Revenue Model Policy Framework (May 2016)	Groundbreaking decision that suggests the utilities should plan for and facilitate electrification of transportation and home heating sectors to reduce emissions, raise the load factor of the electric grid, and reduce consumer costs (p. 90). For further details, see first section of this NEEP Blog Summary of the order and its requirements/deadlines
New York PSC’s Notice of Technical Conference for Development of Thermal Renewable Energy Credits in Compliance with Clean Energy Standard (January 2017)	The New York Public Service Commission will provide for a thermal renewable energy credit carve out under their Clean Energy Standard.
Vermont Renewable Energy Standard – Tier III Renewable Thermal – July 2015	Requires Vermont’s regulated distribution utilities (DUs) to either procure additional new distributed renewable energy consistent with the requirements of Tier II, or acquire fossil-fuel savings through energy transformation projects that reduce their customers’ fossil-fuel consumption and associated greenhouse gas emissions. Under Tier III, DUs must procure either the amount of distributed renewable energy or fossil-fuel savings equivalent to 2% of their annual retail sales in 2017, increasing by two-thirds of a percent each year until reaching 4.3% in 2022.



Public Policy Proceedings/Dockets	Summary
Vermont 2016 Comprehensive Energy Plan (February 2016)	Outlines a statewide strategy and extensively analyzes implications of a shift away from fossil fuel- based end uses. For detailed explanation of policy framework, see this NEEP Blog .
Colorado Docket 17I-0692E, Investigation Of Electrification Of Transpiration	On November 16, 2017, the Colorado Public Utilities Commission (PUC) opened this proceeding to investigate electrification of the transportation sector. The Commission would like to examine: near-term and long-term challenges for transportation electrification, new technologies such as vehicle-to-grid (V2G), heavy duty electric vehicles (EVs), as well as other beneficial electrification such as water heating and space heating and cooling.

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