

Climate change is one of the greatest challenges facing our society today. The Commonwealth of Massachusetts has shown great leadership in facing this challenge by establishing a net zero greenhouse gas (GHG) emissions reduction target by 2050. We believe National Grid is a key partner in identifying and developing practical solutions to achieve this shared goal. The Company also seeks to be an enabler of an affordable transition for its customers to a decarbonized future.

The Massachusetts 2050 Decarbonization Roadmap highlights several crucial elements that will be required to achieve this decarbonized future with clean transportation and thermal electrification being among the sectors creating the largest portions of CO₂ reduction. The Massachusetts Interim 2030 Clean Energy and Climate Plan (CECP) estimates that approximately 750,000 zero-emission light duty vehicles, as well as significant growth in zero-emission medium- and heavy-duty vehicles, will be needed to make this transition by 2030. The CECP also estimates approximately one million households and 300-400 million square feet of thermal electrification of commercial real estate.

Increasing load and generation in large densely populated cities has been complicated especially in downtown areas that are often connected via underground electric distribution networks. These networks were installed for high reliability in urban areas, but they tend to be low-voltage due to the high cost of upgrading underground networks. The nature of the low-voltage underground networks has made the addition of Distributed Generation (DG), mostly in the form of Solar energy, challenging in these areas due to higher upgrade costs and longer interconnection process times necessary to interconnect DG and other Distributed Energy Resources (DER).

As part of this program, the Company is looking to work with program partners to identify creative and cost-effective approaches to enable increased adoption of several types of DER such as DG, Electric Vehicles (EV) and Electric Heat Pumps (EHP) in the non-network areas of large cities in the Commonwealth. This will focus the effort in urban areas with the greatest opportunity. The Company believes several factors and technologies when combined can help address this problem. The following potential solution concepts are not intended to limit the scope of the solutions provided but to help start the creative process discussion.

1-Advanced real time generation and load forecasting will likely be needed to help address the high variability of renewable energy resources.

2-Address generation and load timing mismatch through a combination of flexible load management approaches like time varying rates with demand response, smart EV charging technologies, energy storage, and/or thermal storage (i.e., EV charging and EHP load patterns may not naturally be aligned with renewable energy resource availability). This would include the protection systems to ensure the flexible load management systems perform as intended.

3-Address generation and load locational mismatch through innovative DG concepts, policies, and/or targeted distribution system infrastructure upgrades (e.g., locations adopting EV and EHP technologies may not be able to easily or cost-effectively accommodate traditional DG installations to offset the additional loads).

The Company is looking forward to working with all program partners and may help support the program by sharing generation and load data.

Sincerely,

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