

March 17, 2022

Via E-mail

Ms. Nina Mascarenhas
Department of Environmental Resources
100 Cambridge Street., Suite 1020
Boston, MA 02114

Re: Stretch Code Straw Proposal Comments

Dear Ms. Mascarenhas:

National Grid appreciates the opportunity to provide comments on the straw proposal set forth by the Department of Energy Resources (“DOER”) updating the Stretch Energy Code and proposing a new, Specialized Opt-in Energy Code.

These updates are a transformative update to building in the Commonwealth of Massachusetts. Overall, National Grid is supportive of the proposed updates to the stretch code and the newly developed opt in specialized stretch code (“Stretch Code” and “Specialized Opt-in Code” collectively the stretch codes). National Grid believes that more stringent energy codes are one of the most effective ways to ensure that the buildings sector within the Commonwealth support its trajectory of decarbonization. These codes as proposed by DOER would be a major step in the right direction for the Commonwealth’s climate goals.

Optionality for Heating Compliance

The Company supports DOER’s proposal to both increase the stringency of efficiency levels required in the codes and allow for optionality for compliance and believes this will enable widespread public support for the codes and participation by builders. For example, all-electric construction remains a small portion of the new construction market today. Providing only all-electric compliance options could unnecessarily limit the appeal of the codes to builders and building owners, and therefore fall short of the codes’ potential to drive GHG reductions. The Stretch Energy Code update proposal allows for customer choice of heating equipment, including an option to use heating fuels with a higher required level of overall building efficiency compared to all-electric heating or Passivehouse alternative compliance options. The Specialized Opt-in Code also includes an option for using heating fuels with a higher required level of overall building efficiency, plus rooftop solar (where unshaded), and pre-wiring for future electrified heating.

National Grid believes these proposals appropriately balance building owners' diverse heating needs and preferences today, with clear requirements for efficiency and significant emissions reductions in the near-term.

National Grid supports DOER's proposal to define Net-Zero construction as "compatible, as built, with the Commonwealth's net zero emissions economy in 2050". Net zero construction does not necessitate onsite or offsite renewables, nor the assumption that an individual building is net zero energy. A building becomes net zero energy when the Massachusetts electric grid is net zero. National Grid recommends DOER also include in its net zero new construction definition the opportunity for compliance by buildings served by a net-zero gas network delivering renewable natural gas (biomethane) and/or renewable hydrogen in 2050.

Alignment with MassSave Programmatic Support

National Grid's energy efficiency programs provide significant technical support and financial incentives that help projects achieve the efficiency levels required by the stretch codes. These forms of support are widely viewed as integral to the feasibility of requiring high levels of efficiency. Consequently, there has been a longstanding agreement that energy efficiency savings calculations for customers in stretch code communities would not be measured against an elevated efficiency program baseline as this would disqualify those customers from some, or all, support from the Company's and other Program Administrators' ("PA's) energy efficiency programs (collectively known as the "Mass Save"® programs). National Grid should also continue to be able to use the same energy efficiency program baselines across the state regardless of a municipality's adopted energy code. Customers in any municipality adopting the Specialized Stretch Code should remain eligible for participation in energy efficiency programs offered by National Grid as a means to achieving stretch code requirements, and the claimed savings of such programs should not be reduced by reason of the adoption of the stretch codes. (The impact of doing so would likely be to render programmatic support for customer in these communities non-cost effective, precluding their participation in energy efficiency program offerings). National Grid recommends that, within the final stretch codes, DOER formalizes the long-standing agreement between the PAs, DOER, and other stakeholders to bring certainty to the market and ensure the energy efficiency programs continue as designed. Indeed, without this longstanding practice being codified, a municipality contemplating adopting the stretch codes may be disincentivized from doing so out of a concern that, by adopting it, they would risk preventing their citizens from receiving Mass Save® programmatic support to meet the very goals contemplated by the stretch codes.

EV Specific Recommendations

National Grid appreciates DOER's attention to the importance of Electric Vehicles ("EV") and EV charging as key enablers of a net zero society. National Grid supports requirements for EV charging readiness in the Stretch Code and Specialized Stretch Code. National Grid has two main EV related recommendations detailed below and summarized as follows: 1. Increase the number or share of parking spaces required to be EV Ready; and 2. Redefine "EV Ready" to be more flexible regarding the power levels required for each parking space and to facilitate the use of automatic load management systems. Additionally, National Grid recommends that DOER engage with utilities and experienced states and authorities having jurisdiction with EV readiness codes during the stretch code development process.

Background

National Grid currently offers an EV charging make-ready program for commercial customers and has proposed to broaden its EV and EV charging related offerings in its filing before the Massachusetts Department of Public Utilities ("Department") in docket D.P.U. 21-91. Enabling EV charging via new construction is universally acknowledged as cheaper than the building retrofits that typically come through the make-ready programs. Thus, to best support EV charging access for customers while minimizing the costs imposed on customers, National Grid supports requirements for EV charging readiness in the Stretch and Specialized Stretch Codes.

Defining EV Readiness

There are many considerations to weigh when defining EV Capable, EV Ready, or EV Installed requirements. At this time, National Grid recommends requiring EV Ready Spaces to have wiring for 240-volts (or greater) but only requiring a relatively low amperage or total power level, such as a minimum of 3.0 kilowatts.

The Commonwealth currently defines an EV Ready Space as "A designated parking space which is provided with one dedicated 50-ampere branch circuit for EVSE servicing Electric Vehicles." This definition would require, for example, ten 50-amp branch circuits for ten EV ready spots. Under the 2020 National Electric Code ("NEC") Section 625.42, these spots would be treated as "continuous loads," likely requiring an increase in the building's panel and service capacity to serve them. However, NEC Section 625.42 also allows for the use of automatic load management systems to reduce the maximum equipment load on the service and therefore potentially reduce the required service capacity and cost of enabling EV charging. The current definition of an EV Ready Space does not allow for sites to benefit from the flexibilities deliberately provided by the NEC. Further, these parts of the NEC and related standards are expected to be refined and expanded soon, thus National Grid recommends DOER pay close attention to revisions made to the 2023

Edition of the NEC, which should be final by August 2022¹ and drafts of which are available online today.²

National Grid recommends its revised definition of EV Ready Spaces for several reasons. First, customer vehicle charging needs can be met with power levels below those of the current EV Ready requirement nearly all the time. The 2017 National Household Travel Survey indicates the average miles traveled each year for personal vehicles in New England is around 11,000, while the 90th percentile of miles traveled is around 20,000.³ An average vehicle would need 3-4 hours of charging per day at 3.0 kilowatts, while a 90th percentile vehicle would need 6-7 hours per day charging, still within the typical overnight dwell period at a residence.⁴ There is room for DOER to conduct a more detailed analysis to find the optimal balance between minimum power level requirements and the diversity of customer mobility needs.

Second, EV Ready Spaces should allow for flexibility in their use. Requiring wiring for 240-volts allows customers much easier access to power levels above 3.0 kilowatts if desired, whereas 120-volt wiring could only ever reach 1.9 kilowatts, an insufficient power level for many vehicle uses. Further, while the exact definitions of EV Ready Spaces, minimum power requirements, and automatic load management systems needs more discussion, DOER should make sure that it does not preclude customers from appropriately managing their EV charging loads to reduce costs. A requirement of 3.0 kilowatts per parking space could allow for two to three times as many spaces to be served per 50-amp circuit, for example.

EV Ready Space requirements

National Grid recommends the following regarding the number of EV Ready Spaces:

- All residential and multi-family building groups should be required to offer one EV Ready Space per housing unit or one EV Ready Space per parking spot, whichever is fewer.
- Increase EV Ready Space requirements for other commercial building groups, with the specifics to be determined through further study and discussion.

At home EV charging is critically important in enabling EV adoption and minimizing the impact of EV charging on the electric grid. National Grid's experience suggests that 95% of existing EV

¹ <https://iaeimagazine.org/standards/proposed-changes-to-the-2023-nec-what-does-the-future-hold-for-the-next-edition-of-the-nec/>

² See <https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=70&tab=nextedition>

³ Analysis of the 2017 National Household Travel Survey data. Data available at <https://nhts.ornl.gov/>.

⁴ Assumes a vehicle efficiency of 0.35 kWh per mile, in line with the present-day averages seen in the Company's and its affiliates EV charging incentive programs.

owners have access to at-home charging,⁵ more than 80% of charging is typically done at home, and that at home charging helps enable and sustain affordable and equitable EV ownership.⁶ Further, the long-dwell times of vehicles at home creates a significant degree of flexibility for EV charging, helping to reduce EV contributions to peak loads and potentially enabling other grid benefits in the future.

Given that the Commonwealth is on track to require 100% of new light-duty vehicle sales to be zero emissions by 2035⁷ and the average lifespan of new construction will extend well beyond 2035, National Grid recommends instituting these EV Ready requirements for residential and multi-family new construction starting in 2023. Further, National Grid proposed in the Department docket D.P.U. 21-91 to support EV Ready Site Plans for Multi-Unit Dwellings (“MUDs”) to plan to provide one Level 2 charging port per residential unit, similar to the recommendation here for new construction.⁸

Regarding other commercial buildings, the long-term EV charging needs for any given building are not as clear as they are for residential and multi-family properties. The Commonwealth currently only requires a single EV Ready spot for certain building groups with 15 or more parking spaces. National Grid sees room to increase the number of required EV Ready spaces but is mindful of not requiring too much, given the diversity of customer needs. Further study is warranted to determine the right requirements for each building group, including the use of “EV Capable” parking designations.

National Grid appreciates the opportunity to offer these comments and looks forward to any future discussions and comment opportunity on these standards.

Sincerely,



Michael C. Calviou

⁵ 2020 Survey of Rhode Island EV owners as part of the Rhode Island Electric Transportation Initiative Evaluation Final Report – Rate Year 2, page 17 [http://www.ripuc.ri.gov/eventsactions/docket/4770-NGrid-RY2%20Transportation%20Initiative%20Annual%20Report%20Combined%20\(10.30.2020\).pdf](http://www.ripuc.ri.gov/eventsactions/docket/4770-NGrid-RY2%20Transportation%20Initiative%20Annual%20Report%20Combined%20(10.30.2020).pdf)

⁶ Hardman, Scott (2021), Discontinuance among California’s electric vehicle buyers: Why are some consumers abandoning their electric vehicles? <https://escholarship.org/uc/item/11n6f4hs>

⁷ *Transportation Sector Report, A Technical Report of the Massachusetts 2050 Decarbonization Roadmap Study*, December 31, 2020, page 8.

⁸ D.P.U. 21-91, Exhibit NG-EVPP-1 at 66-68.