

INNOVATIVE TRANSMISSION SOLUTIONS

NEW TRANSMISSION IS NEEDED



Note: Analysis seeks to match ZEV goals for New York + Massachusetts, makes simplifying assumption that all ZEVs are electric. See study for discussion of assumptions, including role of hydrogen fueling and impact on capacity. Comparisons are approximations. Source: National Grid. Electric Highways Study, November 2022

www.nationalgrid.com/us/EVhi ghway



NEEDED TO DECARBONIZE

2-5x more transmission needed by 2050



Source: Princeton University. Net-Zero America Study, October 2021

https://netzeroamerica.princeto n.edu/img/Princeton%20NZA% 20FINAL%20REPORT%20SUMM ARY%20(29Oct2021).pdf



SITING IS A BARRIER

- Siting can take a decade and sometimes it stops a project completely
- Community opposition
- Permitting
- Renewable energy needs longdistance, high-capacity transmission – MACRO GRID







TRANSPORTATION CAN HELP

WisDOT sited transmission in Interstate & highway ROW



Italy and France worked together to site buried HVDC transmission in highway ROW





STATE DOTS

- State DOTS own the ROW, not Feds
- Largest landowner in many states
- Relic prohibition on longitudinal siting of utilities in ROW
- Two paths public and private
 - 23 CFR 645: Utility Accommodation
 - 23 CFR 710: Valuation of ROW





CLEAN ENERGY & CONNECTIVITY PROJECTS

- FHWA Memo, April 2021
- "uses of the highway right-of-way (ROW) that can be leveraged by State DOTs for pressing public needs relating to climate change, equitable communications access, and energy reliability. This guidance document supports the consistent utilization of the ROW for renewable energy generation, electrical transmission and distribution projects, broadband projects, vegetation management, inductive charging in travel lanes, alternative fueling facilities, and other appropriate uses"
- "These uses of the highway ROW, including the development of renewable energy projects, enable breakthrough transportation technology related to electrification and connected and autonomous vehicles. These uses of the highway ROW also better utilize the full value and productivity of the existing asset while also reducing or eliminating the ongoing maintenance expenses for State DOTs."



BURIED HVDC LINES

Expect 20ft of ROW per GW





CO-LOCATE WITH FIBER



- Dig Once
- Resource share
- Intelligent Transportation
 Systems
- Bridge the digital divide
- C-V2X (5G) requires lowlatency fiber





ROW TRANSMISSION TOOL

- Roads and rail
- Transportation datasets, priorities, limitations
- Inclusion / exclusion criteria
- Red yellow green suitability
- 3D visualization







PARTNERS ON THE RAY















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