

Enabling fossil-free heat

National Grid is committed to playing a leading role in enabling and accelerating the transition to a clean energy future, while ensuring all customers and communities continue to have affordable and reliable options to heat their homes and run their businesses.

To build this better energy future for all, we are announcing our plan to fully eliminate fossil fuels from both our gas and electric systems by 2050, and sooner if possible.

National Grid Ventures (NGV) plays an important role in enabling this target through advancing offshore wind that will be critical to future green hydrogen production, building a hydrogen hub, which includes helping create islanded hydrogen neighborhoods and converting fossil fuel generation assets, and building more transmission to support targeted electrification.

1. Green hydrogen production from offshore wind:

We will eliminate fossil fuels from our gas supply no later than 2050 by delivering renewable natural gas (RNG) and green hydrogen to our customers. Already, a significant number of offshore wind projects are proposing hydrogen production through electrolysis as a form of long-duration storage of renewable electricity.

NGV has the potential to develop green hydrogen through renewable sources such as offshore wind. National Grid and RWE have jointly acquired an offshore seabed lease in the New York Bight with the goal of developing, constructing and operating an offshore wind farm. The joint venture is called Community Offshore Wind, which has the potential to host 3 gigawatts (GW) of capacity, enough to power over 1 million homes with clean energy, grow the local economy, and create jobs. Via electrolysis, offshore wind can produce local, green hydrogen for storing high volumes of energy to use at different times when demand is higher.

2. Developing a hydrogen hub:

Hydrogen can help decarbonize multiple sectors, including heat, power generation, and transport. In areas with high levels of gas demand, pure hydrogen also has the potential to serve fossil-free heating and other energy needs in dedicated 100% hydrogen clusters. These may be part of “hydrogen hubs” – clusters of local hydrogen production, storage and demand – such as the those in which the US Department of Energy is investing \$8 billion to support innovation and to scale up a hydrogen economy.

We are proud to be a part of the consortium announced by Governor Hochul to develop a regional clean energy hydrogen hub in the Northeast. Our vision for hydrogen is to create 100% hydrogen-fueled neighborhoods, blend hydrogen with RNG into the existing gas networks, create hydrogen clusters anchored by large commercial and industrial customers in a distinct network of industrial users, and fuel our generation assets with hydrogen. With more research and development, plus seeking funding from the Infrastructure, Investment and Jobs Act, we can introduce hydrogen pilots that will bring these to life. NGV has the potential opportunity to spearhead a number of these efforts.

Enabling fossil-free heat *continued*

In areas with limited transmission connections, some regions rely heavily on local generation to meet power needs. We have a vision to transition power plants to run on hydrogen. We're exploring how we can leverage existing sites from National Grid's Long Island generation business to deploy new and emerging technologies like low and zero carbon generation.

We envision hydrogen-fueled power plants that run when demand is high to provide grid reliability and cost-effective grid balancing by 2030.

3. Building more transmission:

We believe that electrification of heat will play an important role for some of our customers in achieving net zero. We will support cost-effective, targeted electrification of our gas network as one clean heating solution. With more electrification, we need thousands of miles of new or upgraded high voltage electric transmission lines across New York and New England to meet demand.

NGV is competing for large-scale electricity transmission projects across the US. NGV is a part-owner of New York Transco, which improves the resiliency of the electricity grid in New York State. There are two transmission network modernization projects currently in development that are expected to be in service by late 2023:

- The New York Energy Solution project will modernize transmission infrastructure along a 55-mile stretch to remove energy congestion, allow for a greater flow of clean energy from upstate NY, and improve resiliency and reliability of the transmission network.
- The Rock Tavern to Sugarloaf Upgrade is a 12-mile transmission upgrade that will strengthen the grid between the Rock Tavern and Sugarloaf substations. The existing lines will be replaced by a new line and structures to increase the capacity in Orange County, NY and support the flow of clean energy on the grid.

Both projects will deliver much needed electric transmission upgrades and support New York state's clean energy goals.

