

Engineering The Clean Energy Vision



Stony Brook University

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Engineering Manager

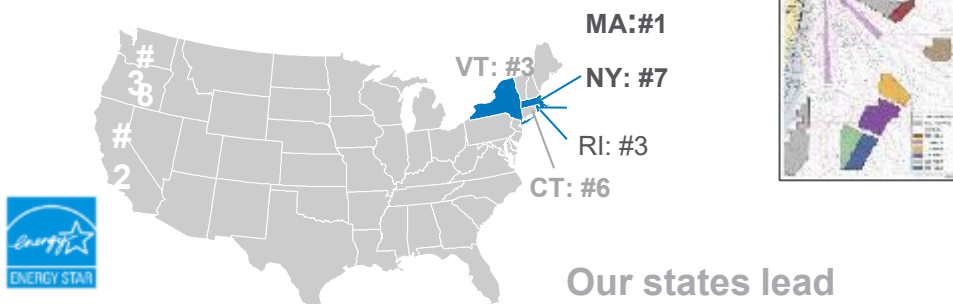
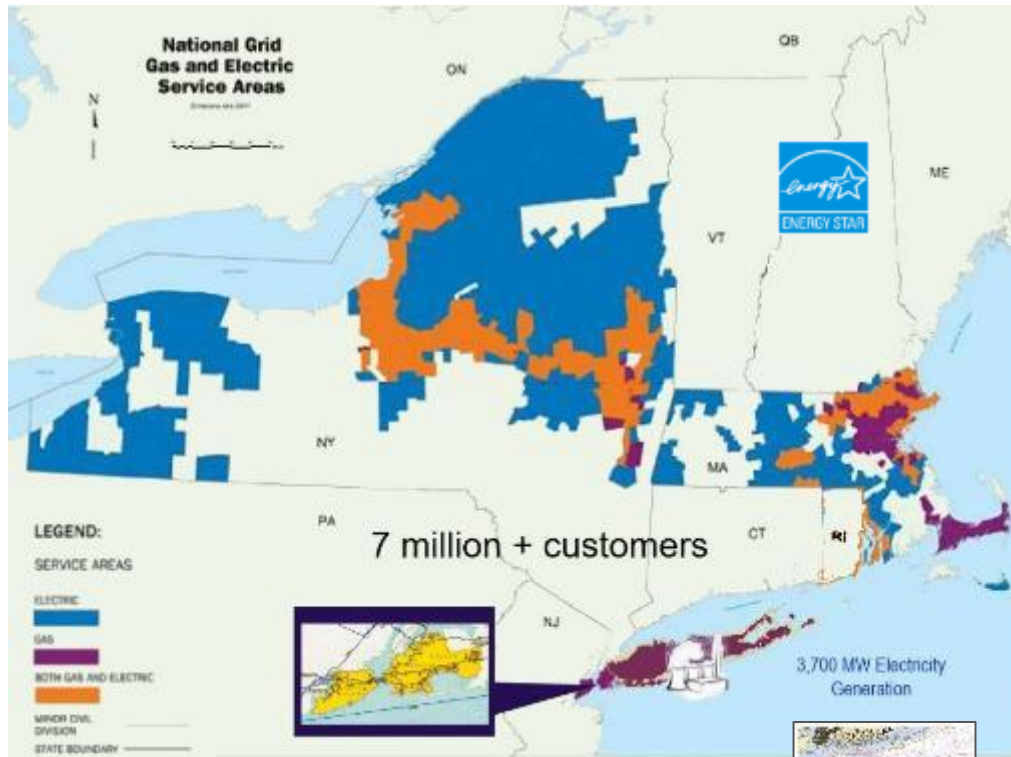
Gas Asset Management & Engineering

November 19, 2025

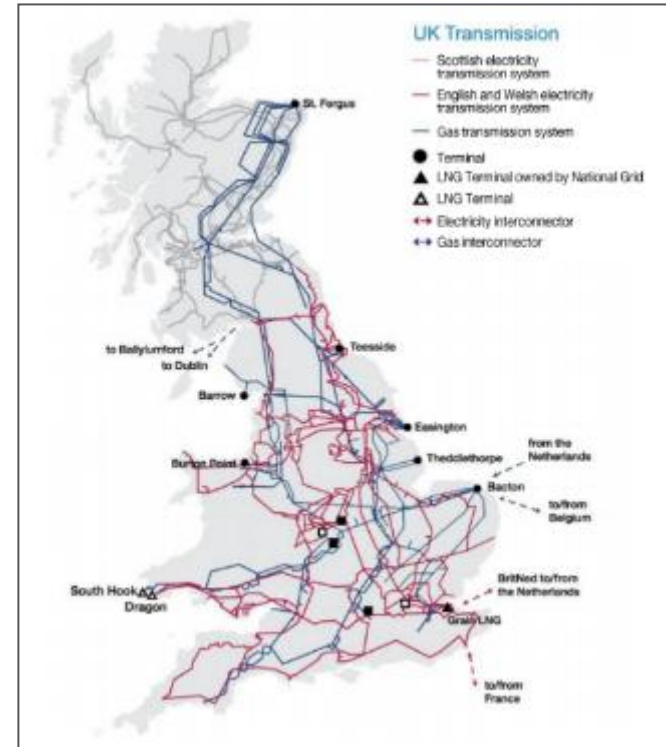
nationalgrid



An International Energy Company with a Local Presence



National Grid SBU-SPIR

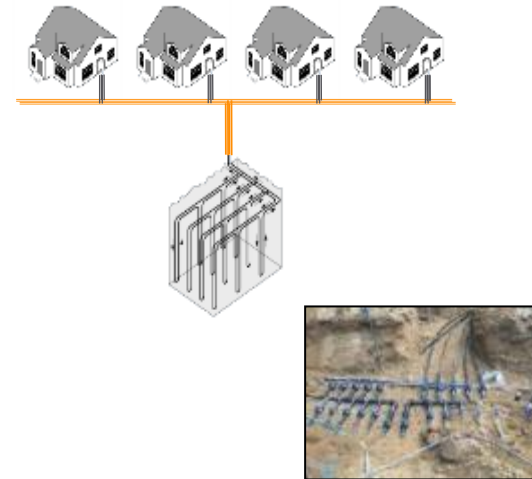


- **UK's largest electricity distribution network serves nearly 8 million customers in the East and West Midlands, South West and Wales,**
- **National Grid Ventures**
 - US Wind (Community Wind w/RWE)
 - Energy Storage

Goals for NY & similar for MA need more time!

- ◆ **New York State Climate Leadership and Community Protection Act – Signed by Governor July 18, 2019**
 - ◆ **Statewide greenhouse gas (CO₂e) emission limits**
 - ◆ 60% of 1990 emissions by 2030; 15% of 1990 emissions by 2050
 - ◆ Statewide electrical demand system will be zero emissions by 2040
 - ◆ Ground source heat pump qualifies as a renewable energy system
 - ◆ Rules and regulations to ensure compliance
 - ◆ Regulatory measures for “beneficial electrification” of vehicles and buildings
 - ◆ Cost-benefit calculations, including social cost of carbon
- ◆ **NY - Climate Action Council - Final Scoping Plan - December 2022**
 - ◆ Scenario 2: Strategic Use of Low-Carbon Fuels includes significant investment in renewable diesel, renewable jet kerosene, and renewable natural gas
 - ◆ **The Scoping Plan recommends the use of green hydrogen**

A better way to net zero



Pillar one

Energy efficiency in buildings



We will continue to provide programs for our customers to accelerate energy efficiency improvements to buildings, including deep retrofits and measures that reduce peak gas and electric demand; and support more rigorous building codes for new buildings.

Pillar two

100% fossil-free gas network



We will eliminate fossil fuels from our existing gas network no later than 2050 by delivering renewable natural gas and green hydrogen to our customers.

Pillar three

Hybrid electric-gas heating systems



We will support our customers by providing them strategies and tools to capture and maximize the benefits of pairing electric heat pumps with their gas appliance.

Pillar four

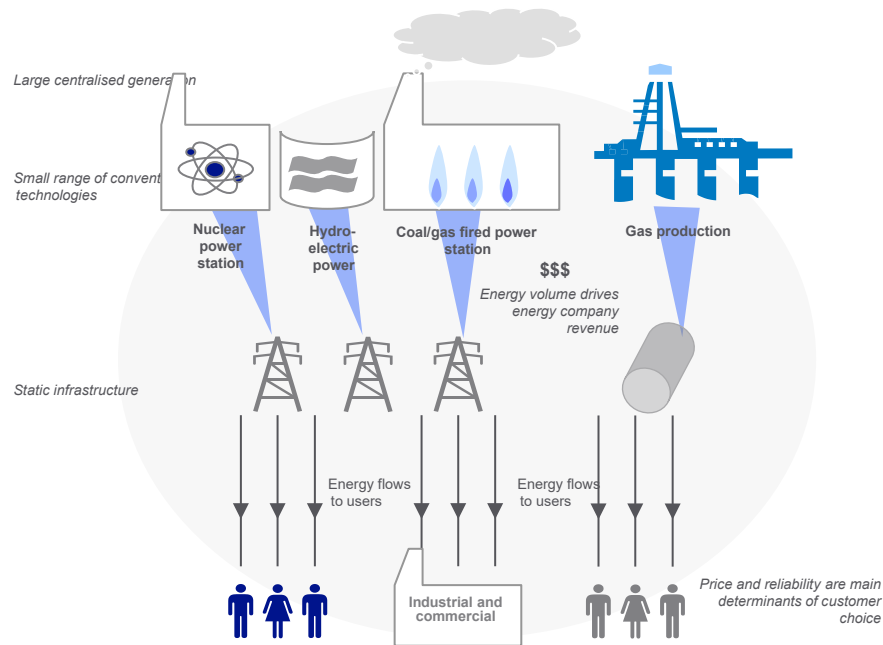
Targeted electrification and networked geothermal



We will support cost-effective targeted electrification on our gas network, including piloting new solutions like networked geothermal. We will support customers who heat with oil and propane with strategies and tools to convert to heat pumps.

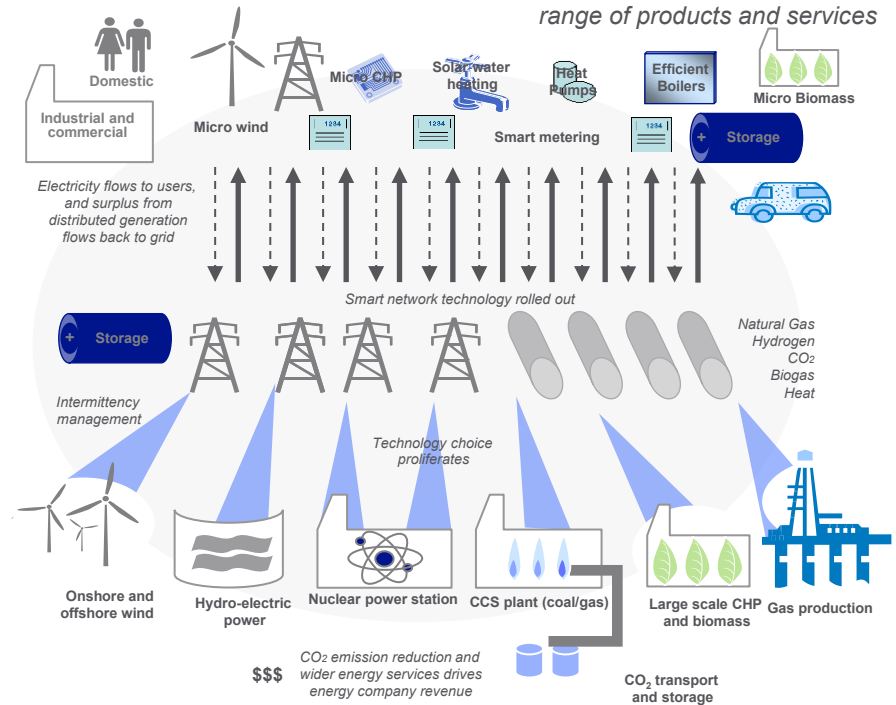
The energy markets are changing Fast

Traditional Energy Market - supply driven



Today's Evolving Market - customer driven

Customers focus on economic and environmental value, using a wider range of products and services



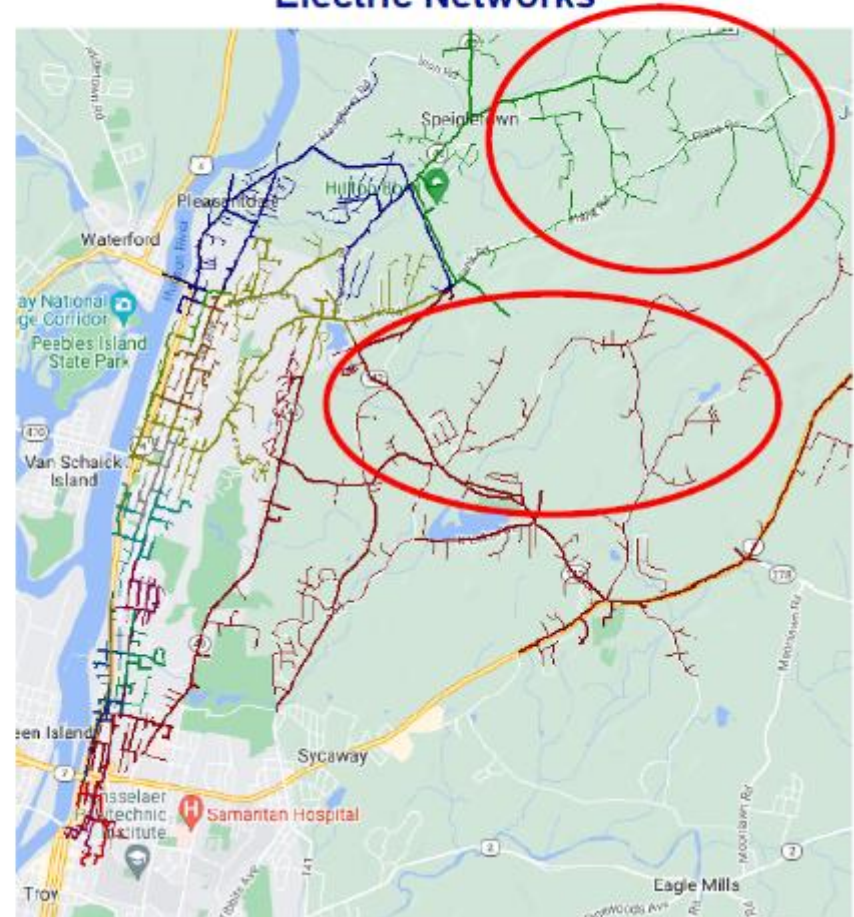
Example: Integrated Gas and Electric Planning

Desktop Analysis – Phase 1 – Dual Fuel Identification

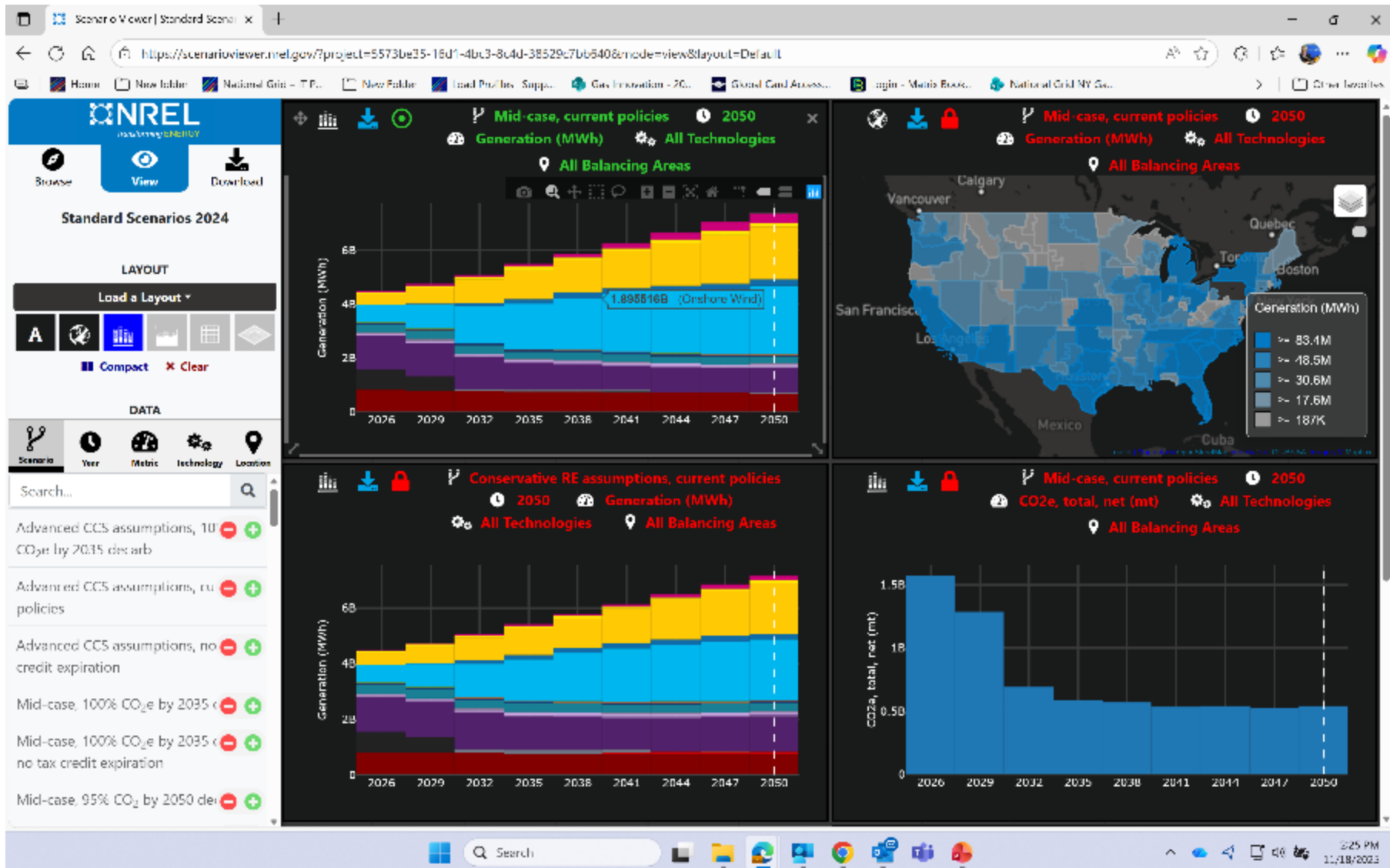
Gas Networks



Electric Networks






A New Approach – Regional Energy Modeling



Stony Brook is Leading the Way in Low Carbon Fuels

Renewable Natural Gas



The Research Foundation for the State University of New York at Stony Brook
Office of Sponsored Programs of Stony Brook University
Stony Brook, NY

ANALYSIS OF THE POTENTIAL SCALE AND IMPACTS FROM THE USE
OF ANAEROBIC DIGESTER GAS AND RENEWABLE NATURAL GAS FOR
HARD-TO-DECARBONIZE ENERGY USES IN NEW YORK STATE

Agreement No 141021

Final Report

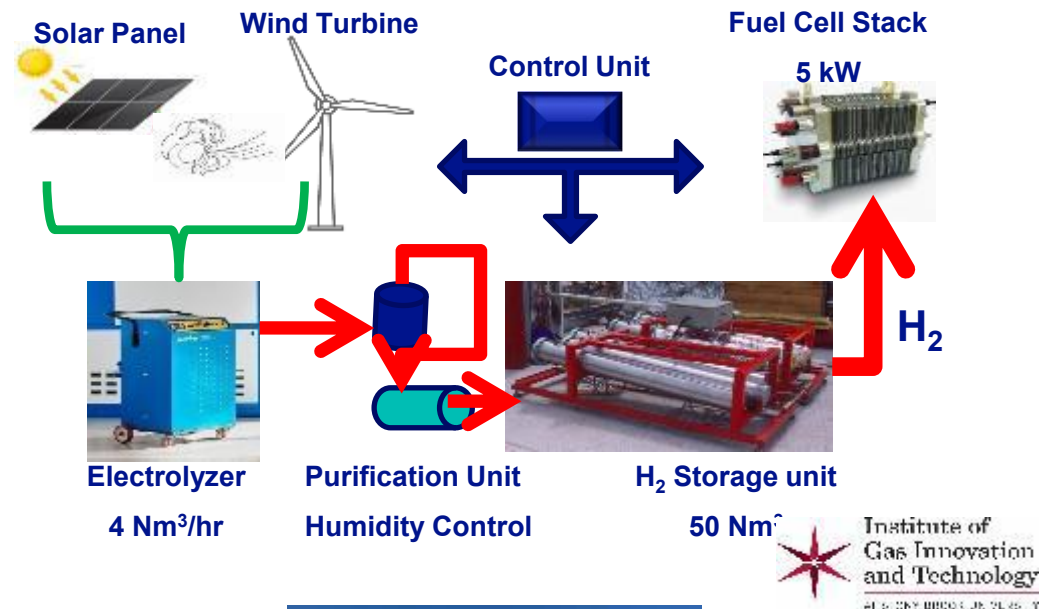
Prepared for the
New York State Energy Research and
Development Authority
Albany, NY
www.nyserda.ny.gov
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Prepared by
Stony Brook University
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June 2025



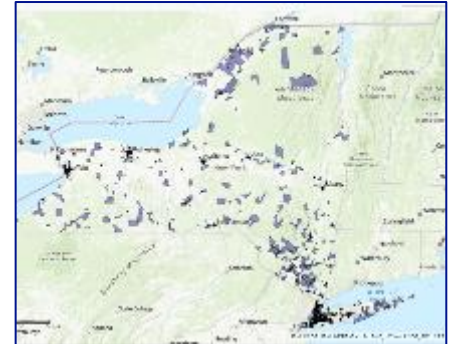
Hydrogen



Workforce Skills & Opportunities

◆ Workforce Skills

- ◆ Engineering excellence is the starting point!
 - ◆ Interactive infrastructure on both sides of the meter
- ◆ Communications
 - ◆ Diversity Equity and Inclusion
 - ◆ Environmental Justice Communities →
- ◆ Entrepreneurship
 - ◆ Business Development and Market Analysis
 - ◆ Government Policy Analysis (Local → Global)



◆ New Opportunities

- ◆ Internships
- ◆ Professional Societies (e.g. IEEE)
- ◆ R&D
- ◆ Incubator Programs
- ◆ Global Programs



The Role of Academia

- ◆ Basic and Longer-Term Research
- ◆ Academic Relationships
- ◆ Access to Incubator and Start-Up Eco-system
- ◆ Access to Funding Sources
- ◆ Objective and Independent
- ◆ Ability to Focus
- ◆ The Institute for Gas Innovation and Technology

- ◆ An institute of the Advanced Energy Reach and Technology Center at Stony Brook University; A university in the largest public university system in the US.
- ◆ Founded in 2017 by AERTC and National Grid
- ◆ Focused only on infrastructure efficiency, environmental performance and renewable energy technologies.
- ◆ Success in developing programs in the US for Renewable Natural Gas and Hydrogen
- ◆ A member driven- Industry-academic collaboration



CLEAN ENERGY
BUSINESS
INNOVATION
PORTAL



Greentown Labs



I-GIT: Established 2018



Mission: Use **Academic-Industry platform** to accelerate deployment of advanced energy technologies and infrastructure for gas to provide community residents and businesses with value-added services accomplished through innovative energy research, analysis, education.

Built on five-pillars



A landscape photograph featuring a single, large, leafy green tree standing in the middle of a vast, flat green field. The horizon is low, and the sky is a deep blue with scattered white clouds. The text "With your help we can lead the way in creating the climate for change" is overlaid in white, centered in the upper half of the image.

With your help we can lead the way in creating the
climate for change

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[nationalgrid](https://www.nationalgrid.com)