

# New York

## Empowering the State

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 President, National Grid NY

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 Head of US Business Development and Partnerships at NGV

Good afternoon and welcome to the NY break out session.

I'm Rudy Wynter, I am President of National Grid NY. I've been with National Grid for 33 years and I cannot think of a more exciting time to be running this business. We are at the center of one of the world's greatest challenges. We are committed to net zero while ensuring that a safer, more reliable and clean energy future emerges. We are also determined that no one is left behind during this transition.

Joining me today in this presentation is Will Hazelip, VP for Business Development at NGV. NGV is our unregulated company and they are targeting a number of great opportunities in NY.

Today, we are going to share with you a picture of this business, focussing on:

- Our role at the heart of the energy transition in NY;
- Our strong growth opportunities; and
- Our financial outlook for the NY business.

Now, please follow me into the presentation

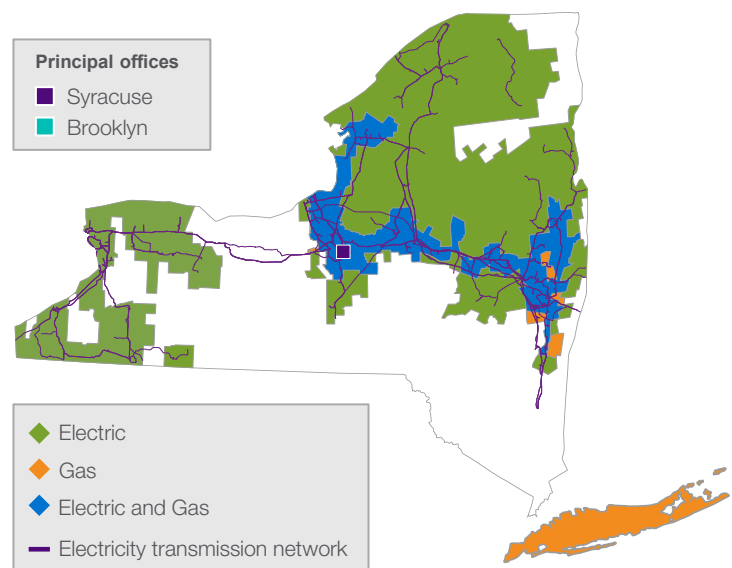
Behind me is a map of our NY service territory.

As a reminder:

- The business is 65% of the Group's total US asset base; We have the privilege of serving over 4 million customers;
- We invest around \$2 billion capex each year, at a rate base of almost \$16 billion.

And we operate in a state that has some of the most progressive environmental targets of any state.

I've been with National Grid for 33 years and I cannot think of a more exciting time to be running this business.



National Grid NY  
**65%**  
 of the NGUSA business

**21,000 miles**  
 of pipeline

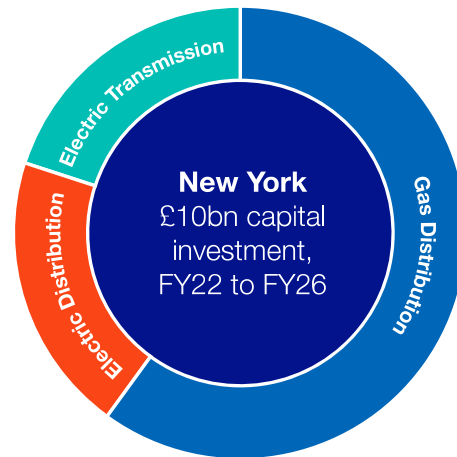
**53,000 miles**  
 of electric lines

Earlier you've heard John and Andy set out the group 5-year financial framework. This is how NY aligns to it:

- 5-year capex spend of \$14bn, or ~£10bn, and expected asset and earnings growth;
- We will deliver this through our focus on efficiency and delivering the exciting growth opportunities that we see ahead.

And with new rates agreed for KEDNY-KEDLI, and proposed for NIMO, we have:

- Alignment with the environmental aims of the state;
- Good sight on how we will drive efficiencies to meet our goal of earning at least 95% of our allowed return; and
- Excellent visibility for capex deployment.



During my time at National Grid, we have largely had really good relations with policymakers and regulators in the state.

Clearly that was tested a couple of years ago, when we implemented a moratorium on new gas connections given the strong growth in gas demand we have been seeing, with concerns around supply keeping pace.

However, since then we have worked incredibly hard with the state to overcome these challenges, with greater focus on demand side management, and non-infrastructure solutions.

Listen to this short video from Bryan on how we are shaping these relationships.

Now, we need to ensure we deliver affordability for our customers whilst ensuring returns for our shareholders

To do this, we always maintain a focus on how we can deliver efficiently.

Earlier, you heard Andy talk about the Group's new cost efficiency program over the next three years, and we are playing our part in NY, with a target to deliver £175 million of those savings.

To deliver our target, we are looking at three main areas across our electric and gas businesses:

- Reducing our external and supply chain spend;
- Enhancing our work and asset management capabilities; for a great example of us utilizing technology in workplace management to reduce the cost of pipeline repair, you can visit the CISBOT on display. It has enabled us to save \$40m between 2017 and 2021.
- Digitising and automating our work processes - our digital enhancements will result in over \$30M annual savings which includes a single scheduling and coordination platform to enable work bundling and optimizing scheduling & dispatch

All of this will help us to become more efficient for customers, but also help us maximise our achieved return, towards 95% of the allowed RoE across our businesses.

But – it's not all about opex – we are also continuing to find ways to deliver our capital investment more efficiently too. We will deliver the same level of output, by deploying it 10% more efficiently than we did 3 years ago.

**£175 million**  
over 3 years  
NY share of  
Group efficiency programme

Moving now to our growth opportunities.

I want you to leave here as excited as we are about the next 5 years, and beyond, and why we are playing a critical role in enabling NY to deliver an affordable energy transition.

So, over the next 5 years, we have a clear line of sight to invest £10 billion.

We'll speak on the investment we are making across our gas business, and why this is crucial for an affordable energy transition.

And you'll hear more about the areas of growth within electricity distribution, in particular how we are enabling renewable generation.

Lastly, we will cover electricity transmission, detailing the great regional solutions we are working on as well as the work we are doing on Long Island.

Let's begin with our gas distribution business, where we plan to invest £6 billion of capex over the next five years.

80% of this is mandated for safety and reliability investment across the network, including our Leak Prone Pipe Replacement Programme in Upstate and Downstate NY.

Leak prone pipe replacement:

- Increases reliability;
- Reduces CO<sub>2</sub> equivalent emissions; and
- Underpins growth in Gas Distribution for many years - we've replaced over 5,000 miles over the past 10 years, and have another 10-15 years to run.

So, the level of investment we have seen in recent years will continue into the medium and long term, which ultimately will drive growth.

The Leak prone pipe program also future proofs our network for low carbon gas blending

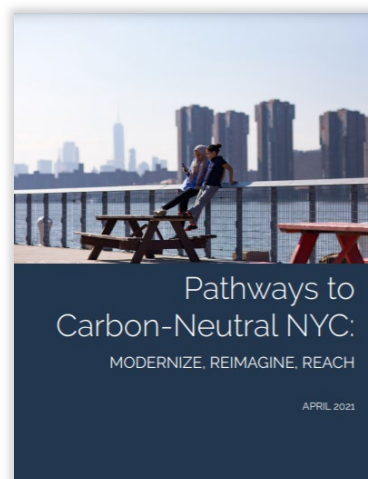
In fact, we have recently published and co-authored a report with the NY City Mayor's office on pathways to decarbonise the City. The report highlights two important findings:

- On the coldest day of the year, the natural gas system in NY City carries 3x the amount of energy the electric system carries on a peak day in the summer; and
- We can decarbonise the natural gas system.

There are numerous scenarios that plan on decarbonizing heat solely through electrification. Whilst we do see a critical role for electrification to achieve 'net zero', including from geothermal energy networks, it is not practical nor affordable to electrify everything.

The most sensible 'net zero' pathway includes utilising our existing gas network.

**£10 billion**  
in capital investment  
over the next five years



Existing natural gas networks will continue to play a critical role in delivering low carbon fuels by blending renewable natural gas and hydrogen with methane. Under such a pathway heat pump customers will become dual fuel users, meaning that clean electricity will be used for some heating needs and the gas network for when demand is high.

We are not just talking about this; we are making it real. In the coming days, we will announce a hydrogen blending project in NY. We will utilize green hydrogen and blend it into our Natural Gas network to supply hundreds of customers.

There remains a long-term role for our gas distribution network.

This is a great opportunity to hand over to Will to talk about the work we are doing on hydrogen.

Thank-you Rudy.

Hydrogen is going to be a key tool to reach decarbonization goals and NY is poised to lead as one of the first hydrogen hubs in the US which led us to launch our vision just a couple of months ago.

In addition to the upcoming blending project Rudy mentioned, NY is also home to one of the leading green hydrogen companies in the world, Plug Power, which recently broke ground on a \$250m facility in upstate NY powered by hydroelectricity that will produce 40 tons of green hydrogen each day.

Further, Long Island's unique requirements for power generation to maintain reliability coupled with significant offshore wind penetration make it the perfect place to pursue hydrogen fuelled power generation to support the grid when the wind isn't blowing.

We also see demand potential in the gas network, and mass transport including ferries, trains and airports. While investment won't happen for a number of years, there's important work to do today and when we look out at the future the opportunity in Hydrogen will be significant.

For example, we forecast that establishing a hydrogen hub in NY would lead to:

- 15x increase in H2 production 600 tons/day;
- Which could fuel 10 passenger ferries, 45 locomotives and up to;
- 1 GW power generation in addition to blending into the existing natural gas network;
- That would represent \$5bn in investment over the next decade

We're excited about the future for hydrogen and see our role leading in this space by spearheading the development of a hub, developing H2 fueled power generation, and blending into the existing network. Being a leader here is central to remaining at the heart of the energy transition for decades to come.

Back to you Rudy.

Turning now to our electric businesses, where we plan to deploy £4 billion of capex over the next five years – £2 billion distribution, £2 billion transmission.

**£4 billion of capex**  
planned over next 5 years

First, looking at Electric Distribution - around a third of capex in NY has been deployed in our Upstate NY electric distribution networks where our electric business is situated.

Like gas, strong investment drivers remain across our electric distribution network.

In particular, hardening the network against increased storm activity in the North East US is critical, especially as 82% of the lines we operate are above ground.

But I want you to get excited about the growth opportunities we are seeing in the next five years, that will continue to expand over the next 10 and 20 years.

Take renewables: Over the last 20 years, we've connected 900 MW of distributed generation – I have another 4 GW of renewables in the queue, which means sizeable further investment is required to connect them.

And take EVs: Over the past three years we have installed 1,600 EV charging ports in upstate NY; over the next 3 years, our ambition is to install 16,000 charging ports!

**900MW of renewables**  
connected since 1998

aim to install  
**16,000 EV charging points**  
over next three years

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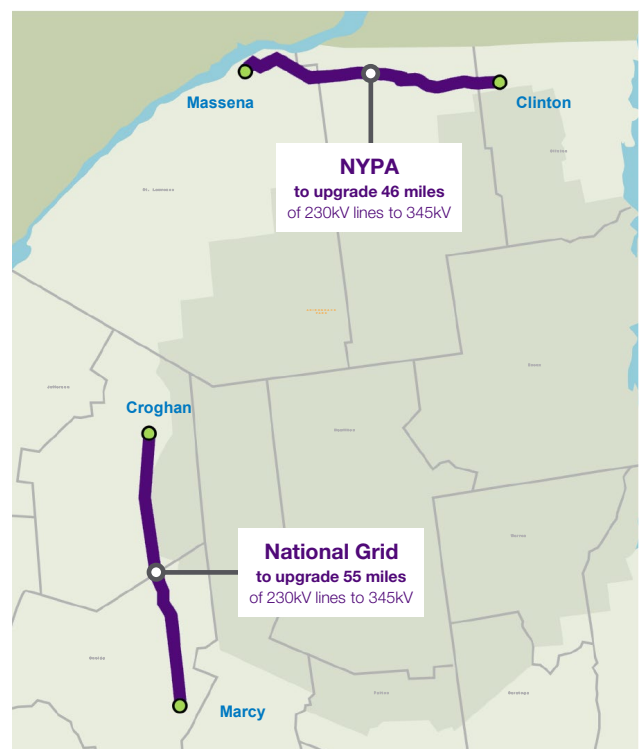
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And if we look across to Transmission, renewable connections are now starting to drive huge opportunities.

**What we are seeing:** unprecedented investments to create NY's Green Superhighway, to help deliver renewable energy from upstate to downstate demand centres.

**What we are doing:** planning the local transmission upgrades that will be needed to facilitate the cost effective delivery of renewable resources by 2030. If approved by the PSC, we estimate that these can represent an investment of an additional \$2 billion of investments between 2025 and 2030.

**We are proactively proposing solutions** to unbundle renewable generation pockets and facilitate the energy deliverability of over 10GW of planned renewable generation by increasing the combined export limit from these pockets by over 3,500 MWs of transmission capacity.



An example of a Regional transmission solution is our Smart Path Connect project. In 2021, the NY Power Authority selected National Grid as a partner for this project.

The project, due to commission in 2025 will help to unbottleneck more than 1,000MW of existing renewable energy and avoid CO<sub>2</sub> emissions.

The project overall represents an investment opportunity of almost \$500 million.

I'm now going to hand over to Will again who's going to describe another exciting opportunity we're seeing on Long Island, being led by our NGV team.

Thanks Rudy – it is such an exciting time to be part of transforming the transmission network. With the regulated utilities Rudy just discussed and our commercial business at National Grid Ventures we really are right at the heart of delivering the clean energy transition.

So, for NY, the single largest source of clean electricity will be offshore wind and much of that offshore wind will connect to Long Island making Long Island critical to NY's clean energy transition.

In fact, of the 4.3 GW of offshore wind already under contract in NY, just over half - 2.3 GW - will connect to the Long Island electric system.

Beyond that, we could see another 5 GWs over the next 10-15 years.

This will require connecting new transmission both on the island and connecting the island to the main NY transmission grid.

Currently there is a competitive process to:

- Add at least one transmission cable, to be able to connect Long Island with at least 3GW of offshore wind; and
- Upgrade local transmission to be able to maintain reliability.

Proposals were submitted to the system operator in October and we expect them to make a selection in late 2022.

- We have bid in as part of our NY Transco JV of which we own just under 30% along with the other NY utilities.
- To further enhance our competitive position, NY Transco partnered with the NY Power Authority (NYPA) and jointly submitted proposals as "Propel NY Energy".

In addition to enabling offshore wind, the Propel NY Energy proposals would deliver important benefits, including:

- Emission reductions from more efficient energy transfer to and from Long Island;
- Lower costs to consumers by reducing congestion; and
- Increased reliability and delivery of clean energy to high demand areas.

To put in perspective, 3-6 GW of transmission capacity could cost in the order of \$3-5bn. So – Propel NY Energy is clearly an exciting opportunity for us.

Back to you, Rudy.

Projects of 3-6GW represent a  
**\$3-\$5 billion**  
investment opportunity

In my 33 years in this business I have never seen this level of growth and this level of investment opportunities.

Over the next five years we expect to deploy \$14bn of capex, or around £10bn, across the NY business.

This will help drive rate base growth of around 8% CAGR across the same period, which will help underpin and drive earnings growth of 8% CAGR, again between FY22 and FY26.

As you can see right now, we are doing an enormous amount to deliver energy safely, reliably, and efficiently but there is a lot more to do to ensure we decarbonize our energy systems.

We are and will continue to be firmly at the heart of the energy transition aligned with the state to deliver affordability to our customers and a cleaner energy future.

Thank you.

Right now, we are doing an enormous amount to deliver energy safely, reliably, and efficiently but there is a lot more to do to ensure we decarbonize our energy systems