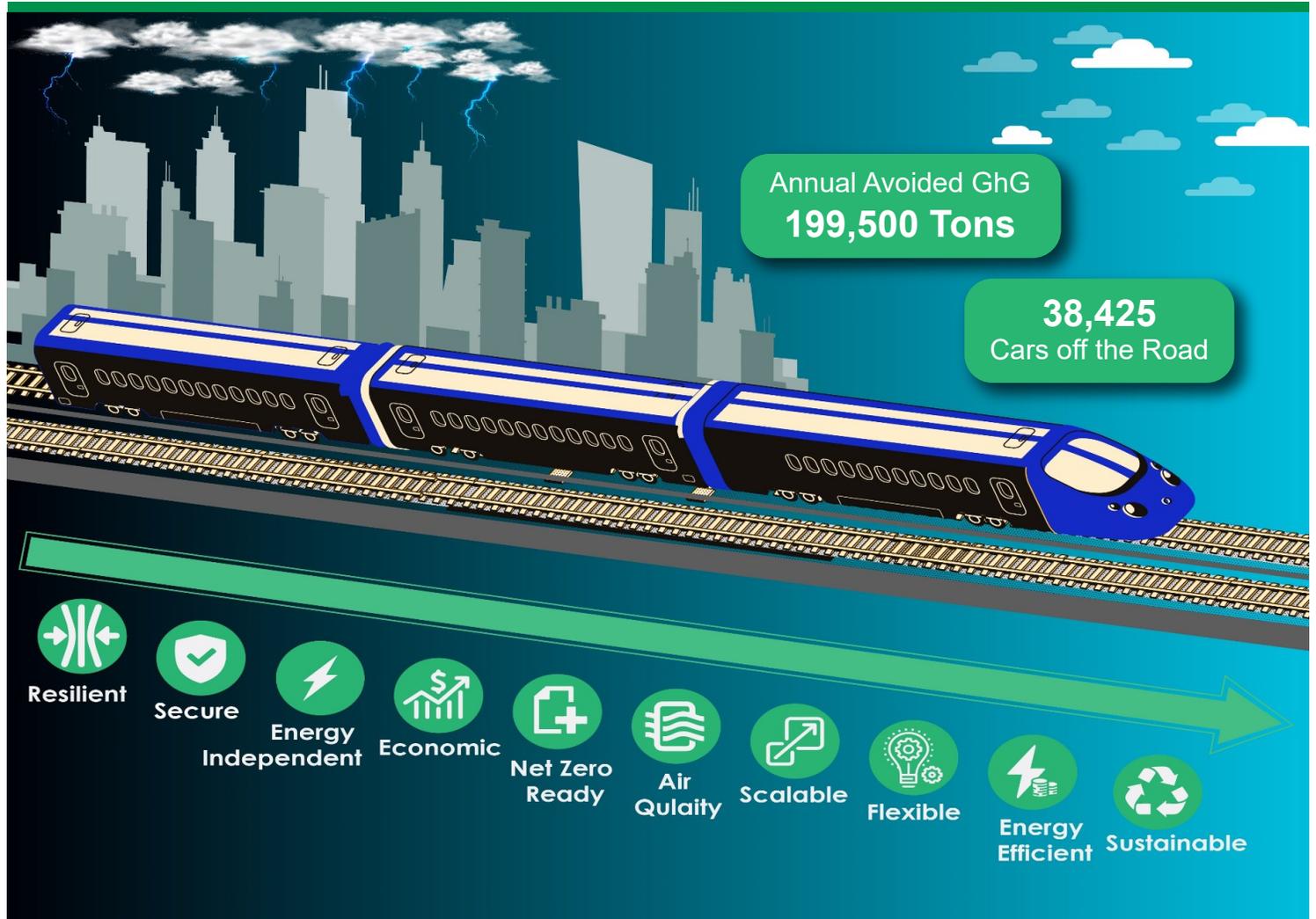


NJ TRANSITGRID

Resilience Program • Building Stronger

May 2019

NJ TRANSIT's innovative power solution will protect riders and the public from reliability issues and price instability, while mitigating congestion and improving air quality *LEADING THE WAY TOWARDS A NET ZERO FUTURE.*



Today

NJ TRANSIT currently buys power using a best practices approach that meets financial goals but relies on traditional utility infrastructure and generation. This model leaves NJ TRANSIT vulnerable to power interruptions and captive to the Greenhouse Gases (GhG) intensity of the power it is purchasing, especially during peak energy demand.

Tomorrow

NJ TRANSITGRID will be the most modern and sustainable traction power system in the U.S., incorporating grid flexibility, renewable power, fuel savings, and fast responding resources. Brief power shortages to wide-spread utility outages will be a thing of the past, ensuring vital and environmentally friendly transportation resources will be available for riders and the communities they serve.

Implementing the NJ TRANSITGRID project will provide the path forward for NJ TRANSIT to advance Governor Murphy's Executive Order 28 for New Jersey's Clean Energy Economy

Conditions of extreme weather, which are predicted to increase over time, create stress on the grid requiring older coal plants and inefficient peaker plants to be called upon as part of the PJM strategy to avoid brown and blackouts. The reduction of peak power, which is the dirtiest and most expensive power that New Jersey is forced to use, is critical to the success of Governor Murphy's Greenhouse Gas Initiatives. The following highlights the advantages and critical operational benefits NJ TRANSITGRID will bring to NJ TRANSIT and its ridership:

Resilient

Distributed on-site power generation stays actively connected to the rail systems in times of emergency to perform critical preparation and recovery activities

Sustainable

Increased optimization and integration of renewables, including solar help decarbonize the overall NJ TRANSITGRID system

Energy Efficient

Highly efficient central power plant to energize the connected rail lines reducing usage from old and less efficient energy generation from legacy coal-fired power plants

Air Quality

Measurable and direct decreases in air pollutants (SO₂, NO_x and PM_{2.5}) and GhG from high-emission generation facilities

Energy Independent

Design allows for NJ TRANSIT to assert control over power supply and production decisions, and prioritizing more efficient power generation.

Economic

Decreases costs resulting from avoided transmission and distribution system upgrades, reduced utility operation & maintenance, reduced line loss and congestion, fuel savings, and participation in wholesale markets

Secure

Adds to regional security by use of extensive communication, control, and protection infrastructure, with robust cybersecurity protocols to protect vital transit routes

Flexible

Aligns supply and demand of variable large-scale renewable power with fast-responding turbine and flywheel resources

Scalable

Creates a model for other large users in the state to reach decarbonization goals and expand the use of clean, renewable power

Net Zero Ready

Allows for the integration of carbon neutral power generation options, such as Renewable Natural Gas and hydrogen fuel cells as they become more commercially available

Decarbonization will require the widespread adoption of zero-carbon emitting power sources coupled with the use of cleaner and more efficient generation. Although many of the technologies are still being perfected today, employing these strategies will help move the generation fleet in New Jersey toward net-zero carbon dioxide emissions to slow the pace of global climate change and provide benefit for public health. The innovative, forward thinking NJ TRANSITGRID project advances these goals and puts NJ TRANSIT on a path to reduce peak power demand and make the system more resilient as weather intensity becomes more prevalent.