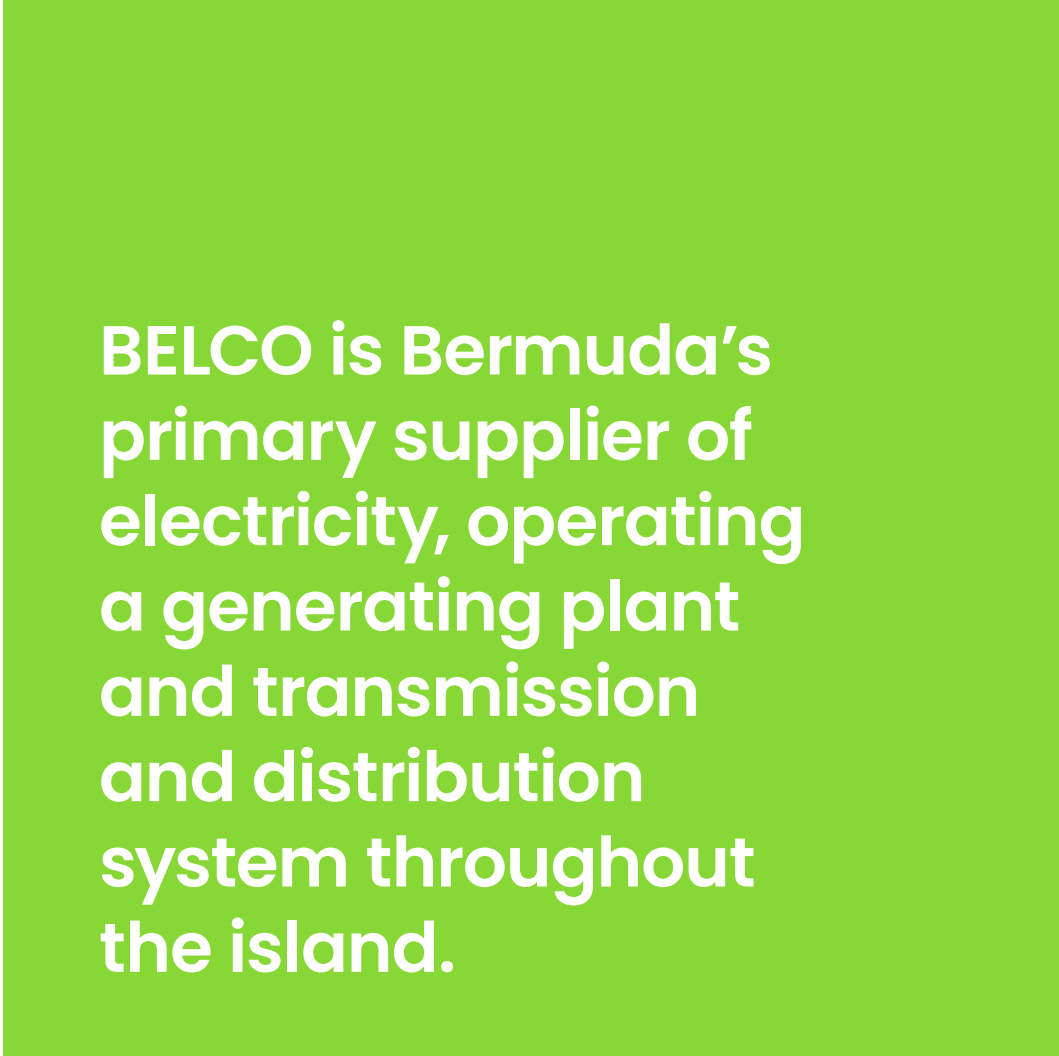



BELCO

North Power Station





BELCO is Bermuda's primary supplier of electricity, operating a generating plant and transmission and distribution system throughout the island.



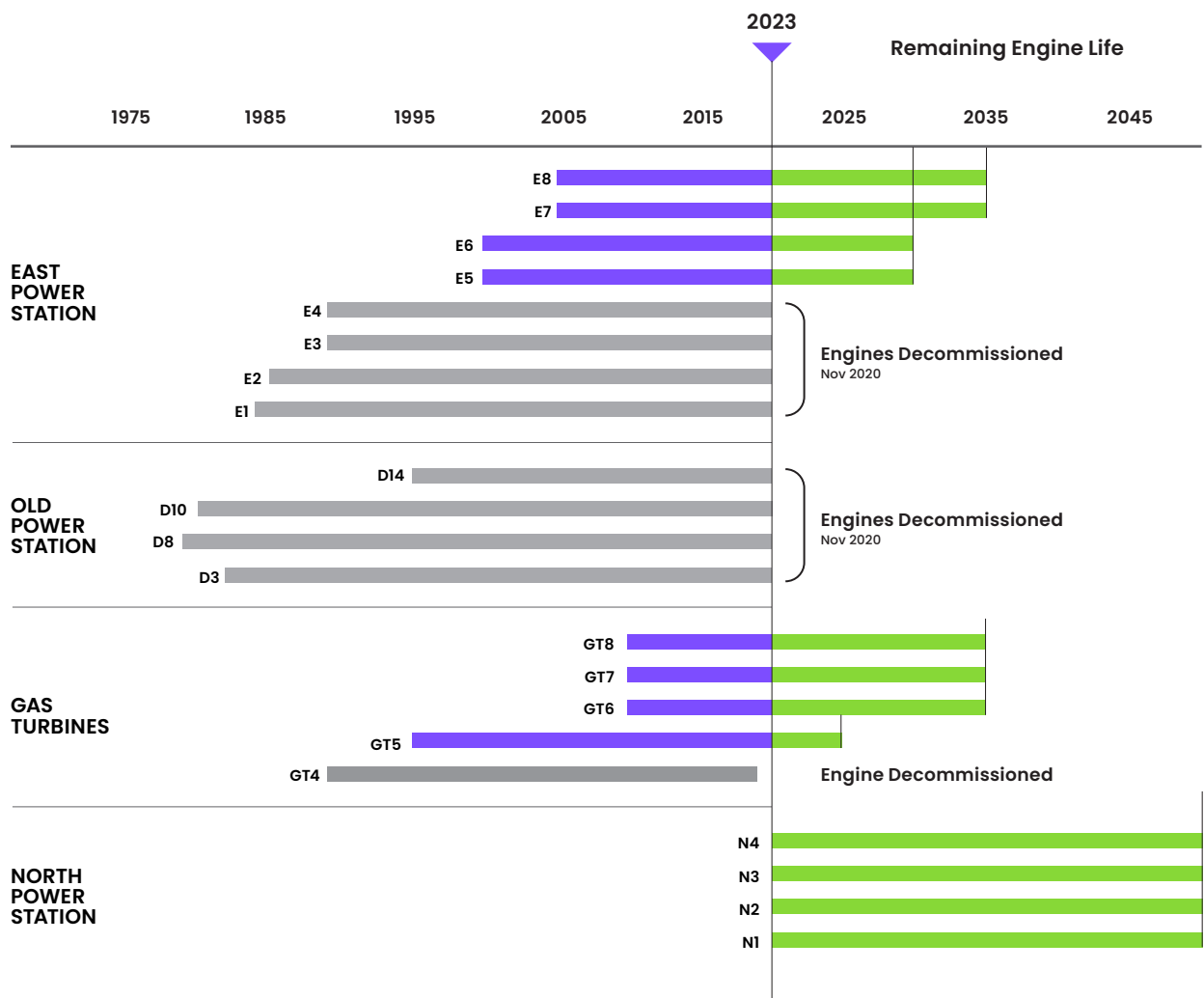
For over 115 years, we have worked continuously to supply a secure, reliable, and sustainable electric power system, laying the foundation for Bermuda's continual progress. As a fundamental part of the fabric of Bermuda and one of the largest employers, we are driven by our commitment to serve our local community, and operate in the long-term public interest. Our obligation to serve Bermuda is not just our mission, it's in our company DNA.

The North Power Station was commissioned in April 2020 as a direct response to the challenge of replacing ageing engines. Much of our infrastructure was outdated, including some engines that were 40 years old. In order to replace these engines, we needed to build a new power station.

The North Power Station has new, modern engines that are cleaner and much more efficient, which allowed us to decommission eight costly and unreliable diesel engines. The North Power Station addition has also allowed us to remove one tall metal exhaust stack and four smaller stacks as a part of the Asset Retirement Project (ARP). All in all, this has resulted in reduced emissions coming from our power plant.

The immediate benefits are already apparent. With elevated cooling fans, turbochargers and exhaust ductwork, noise and vibrations have been substantially reduced. The North Power Station was built to meet both local and international standards with respect to spill containments for fuels, lubricants and transformer insulating oils.

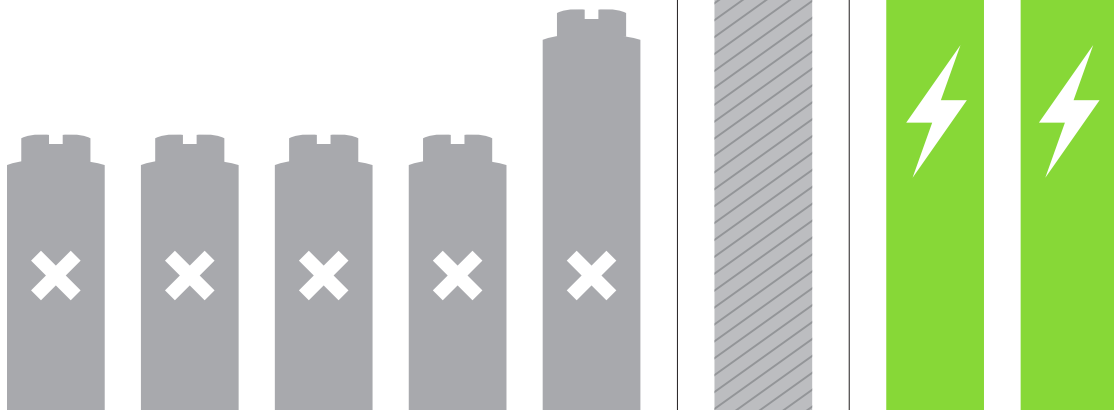
Engines in operation and the projected timeframe before they are decommissioned.



Decommissioned Engines
 Engines in operation
 Remaining lifespan of engines in operation

Investing in our infrastructure, is an investment in Bermuda's environment.

Smokestack removal plan



5 stacks have been removed as of April 1, 2023.

No longer
in operation

2 remaining stacks are
in operation to manage
Bermuda's electricity
demand. These stacks will
also be removed once the
transition to renewables
is fully realised.



Occupational Health, Safety & Environment (OHSE)

We are committed to the environment and safety. Our OHSE team constantly monitors the effects of our plant operations, both on the adjacent neighbourhood and across Bermuda. OHSE works closely with The Department of Environment and Natural Resources (DENR) to ensure that BELCO emissions are within required legal limits.

BELCO meets the highest international standard for its environmental management system, maintaining the ISO 14001 certification. Additionally, BELCO complies with the Clean Air Act 1991 and the Regulations 1993, providing regular reports on data to the Environmental Authority.



Challenges

Since the commissioning of the North Power Station (NPS), we are aware that our neighbours, have experienced some unforeseen challenges and have concerns regarding air quality, water quality and odours. We've made adjustments to our operations to minimise our impact and will continue to do so until we reach optimum efficiency, while sustaining the reliable electricity supply required to power Bermuda.

NPS Optimisation Timeline



Optimisation Efforts

Operational investigations commenced in June of 2020, after realising the North Power Station exhaust stack was emitting soot and particulate matter into the atmosphere that were large enough to fall onto the neighbouring community. Our investigations indicated we were suffering from improper combustion on startups of the engines. The unburnt fuel was forming black flakes that were being emitted. Various hypotheses were discussed between BELCO, the builder of the NPS and the engine manufacturer. All parties worked together to present remedial actions in a phased approach, which would address the low compression and combustion pressures associated with the engines, while maintaining the reliable power supply required for the island.

Engine Remediation Action Plans:

Phase 1

Oct 2020 – Jun 2021

Shim Installation

To reduce soot fallout, shims were installed on all 4 North Power Station engines. This phase resulted in great improvements as we stopped seeing the large flakes of soot. However, we were still seeing smaller particulate matters not getting burnt through the process.

Phase 2

Feb 2021 – Jan 2022

Piston Crown Installation

To further reduce soot fallout, the piston crowns were changed on all 4 North Power Station engines. This phase resulted in a slight but further improvement to the size and frequency of the fallouts observed over the 3 months following project completion.

Phase 3

Jan 2023 – Est May 2023

Engine Startup Procedures & Governor Setting Changes

Work has begun on the installation of a new programme to reduce the amount of fuel injected during start-up, which will result in the reduction of soot buildup in the engines over time. The expectation is that the reduction in soot buildup will equate to a reduction in fallout incidents experienced by our neighbours.

Phase 4

Jan 2023 – Est Aug 2023

Install Dryer Skid

To further improve the combustion process, work to install a dryer skid has begun, which will remove moisture from the combustion process and further reduce soot fallout from the North Power Station exhaust stack.

Current Operational Adjustments:

Starting engines on Light Fuel Oil (LFO)

When we start a North Power Station engine and return it to service we use a light fuel oil to help prevent soot fallout. This has resulted in a reduction in particulate matter during start-up and a reduction in impacts experienced by area residents.



Please rest assured that our neighbours' concerns are our concerns. We take them seriously and we will continue to work to improve our operations and reduce our impact.

Odour

To address the odour that is intermittently smelt on St. John's road we have installed carbon filters on our tank farm. This project began in May 2021 and was completed in December 2021. This project reduced odour complaints significantly but not completely. To further improve our operations and reduce the odour we have begun rerouting the waste oil from the North Power Station tank farm to an alternative on-campus treatment plant.

Air Quality

Through the use of 3 ambient air quality monitoring stations and in-stack mounted opacity monitors, we are able to measure our impact on air quality and opacity. BELCO works with a third party to ensure the readings taken from the air quality monitoring stations are following best practice and accurate. To date, BELCO continues to meet the standards set by the Bermuda Clean Air Act and subsequent regulations.

An additional portable, trailer-mounted air quality monitoring station had previously been temporarily installed on Ocean Lane in Pembroke. However, the property owner requested the unit removal and a new suitable placement has not been identified as of yet.

Air Quality Exceedance Report

During the reporting period of January 1 to December 31, 2022, zero (0) exceedances of the Bermuda Ambient Air Quality Standards (BAAQS) were recorded at BELCO's three ambient air quality monitoring stations, 'BDA1', 'BDA2', and 'BDA4'. Annual averages of all measured pollutant parameters were below the annual BAAQS at both 'BDA1', 'BDA2', and 'BDA4' stations in 2022.

Station	Parameter	BAAQS - 1-Hr (µg/m³)	Max. 1-Hr Avg. (µg/m³)	# of Exceed (1-hr)	BAAQS - 24-Hr (µg/m³)	Max. 24-hr Avg. (µg/m³)	# of Exceed. (24-Hr)	BAAQS - Annual (µg/m³)	Annual Avg. (µg/m³)	# of Exceed. (Annual)
BDA 1	NO ₂	400	74	0	200	23	0	60	2.7	0
	SO ₂	450	15	0	150	7	0	30	2.3	0
	PM ₁₀	-	-	-	50	37	0	30	9.9	0
	TSP	-	-	-	100	-	0	60	-	0
BDA 2	NO ₂	400	104	0	200	37	0	60	2.7	0
	SO ₂	450	206	0	150	73	0	30	1.8	0
	PM ₁₀	-	-	-	50	41	0	30	11.6	0
	TSP	-	-	-	100	-	0	60	-	0
BDA4	NO ₂	400	331	0	200	69	0	60	5.9	0
	SO ₂	450	293	0	150	97	0	30	6.9	0
	PM ₁₀	-	-	-	50	33	0	30	12.8	0

Total Number of BAAQS Exceedances Recorded During Reporting Period

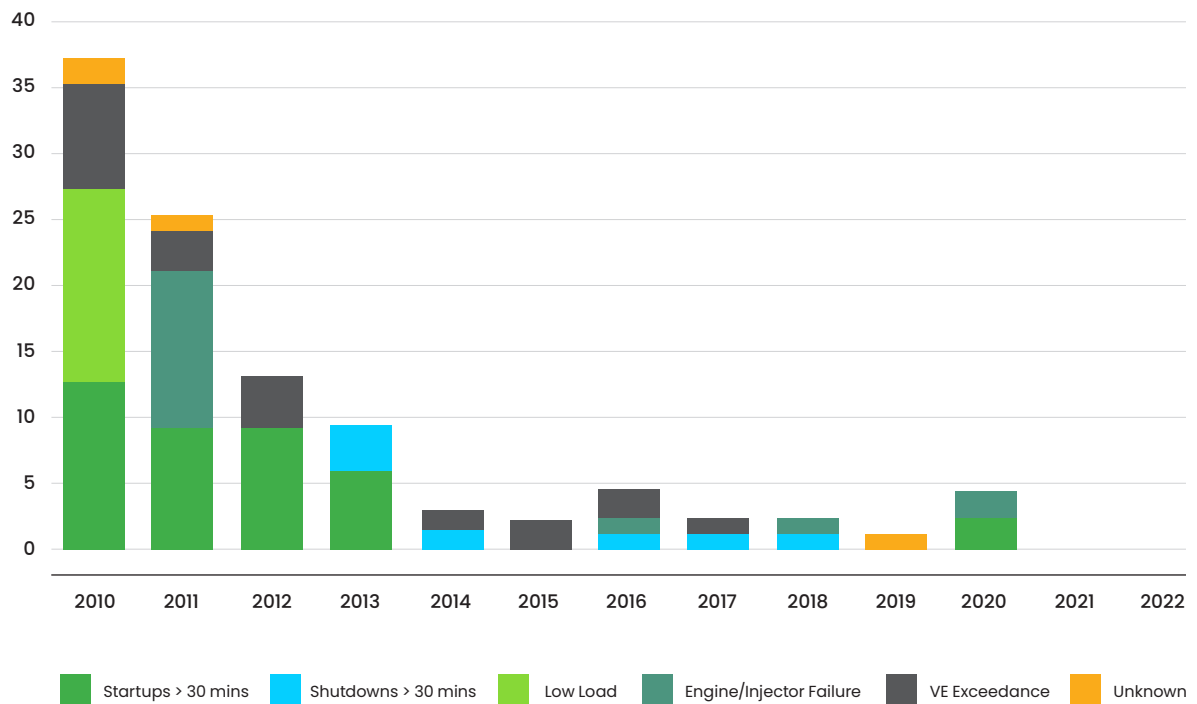
0



The scientific data shows that we are having less of a negative impact on air quality than ever before.

Annual Comparison of Opacity Regulatory Exceedances (2010-2022)

During the 2022 monitoring period there were zero (0) exceedances of the regulatory standard recorded by the in-stack opacity monitors. Since 2010, there has been a significant reduction in the number of opacity exceedances reported. Year to year opacity exceedance records have decreased by over 99% since 2010 which is an example of BELCO's continued effort to improve our Standard Operating Procedures (SOP's) and operate more efficiently.





Water Quality

With the support of the Bermuda Biological Station and the Department of Environment and Natural Resources, BELCO conducts tank water testing annually of properties that are affected by BELCO. To date, all results have shown that all water tested meets the primary standards for safe drinking water set by the US, the UK and the World Health Organisation (WHO).

Mitigation Efforts

We are committed to continuing to mitigate the impacts on our neighbours' properties while working to resolve the challenges at the source.

To mitigate our impact, we evaluate each unique situation and work in partnership with our neighbours to address concerns. Our neighbours, or concerned customers, may submit their concerns via our website (belco.bm), telephone (295-5111) and/or email (ohse@belco.bm).

If mitigation is required, we arrange for third parties to address the concerns, including roof painting, property cleaning, vehicle cleaning, tank cleaning and water filtration system installation.

From the time of the North Power Station's commissioning until now, we have completed the following mitigation projects:

502 roofs painted/cleaned

139 vehicles cleaned

84 water tanks cleaned

44 filtration units installed

Stakeholder Engagement

At BELCO, we recognise that we have a multitude of stakeholder groups with varying priorities, such as Government, the opposition party, neighbours, customers, shareholders, residents, environmental stewards, and so on.

We are proud to have maintained regular dialogue with our stakeholders through the following methods:

- Emails and telephone
- Press ads, story responses and press statements
- Direct mailers to neighbours
- Virtual and in-person town halls
- Neighbourhood walkabouts
- Government meetings
- Opposition party meetings
- BCAC meetings

Online Platform

We have also launched an online platform for concerned residents to submit any environment and safety concerns they may have.

We are committed to maintaining transparency and open dialogue with all of our stakeholders, especially our neighbours. We encourage all concerned parties to contact our OHSE team via the following platforms:

Online Submission:

www.belco.bm

Telephone: 295-5111

Email: ohse@belco.bm



BELCO

We will continue to improve our operations while we work to provide a reliable supply of electricity to all of Bermuda.

→ belco.bm | 295.5111



April 2023

