

Summer 2020 Connection



Hello Neighbours and Friends

I hope you're all doing well during these unprecedented times.

As generating electricity is essential to support our communities and critical services during the COVID-19 pandemic, Genesee's employees have continued to safely and reliably provide more than 1,300 (gross) megawatts of baseload generation for Alberta.

We have been able to sustain normal operations due to our continuity planning and the procedures and safety measures we've put in place to protect our people. Early on, we quickly implemented temperature checks and screening procedures for all personnel entering the facility, temporarily closed gate access to all external visitors and mobilized accommodations in the event essential staff had to isolate on-site.

For the health and safety of workers, a planned maintenance outage for Genesee Unit 2 that was scheduled to begin in May 2020 was deferred to 2021. This will result in two planned maintenance outages scheduled next year.

March marked 15-years of operations at Genesee Unit 3, the first power generation facility in Canada to use supercritical-combustion technology for greater fuel efficiency and lower emissions. This milestone, and the recent 30-years of operations at Genesee Unit 2 and 25-years of operations at Genesee Unit 1, Capital Power continues to put operations excellence on the forefront. A number of exciting initiatives at Genesee are highlighted in this newsletter.

I want to wish you and your family health and safety during this challenging time. I also want to thank Genesee's employees and contractors for their exceptional efforts to ensure we continue to provide an essential service to Albertans during the COVID-19 pandemic.



Sean Furey, Plant Manager
Genesee Generating Station
Capital Power

Discontinuation of the Genesee 4 and 5 Project

On May 4, 2020, Capital Power announced that the Company and its partner would no longer be pursuing the Genesee 4 and 5 project.

The combined cycle natural gas-fired generation facility was planned to be located on a brownfield site adjacent to the existing Genesee Generating Station. All regulatory approvals associated with the project are being rescinded.

Genesee Repowering Project

Capital Power continues to commit to finding economic and socially sustainable energy solutions for Alberta. Maintaining flexibility at the Genesee site, Capital Power intends to seek regulatory approval to potentially repower Genesee Units 1 & 2 to natural gas as early as 2023.

We are seeking to permit these units now to maintain the option to proceed depending on market conditions and other factors. If Capital Power chooses this option, the repowered units will utilize best-in-class natural gas combined-cycle technology while using existing infrastructure such as the steam turbine. The new combustion turbines and heat recovery steam generators will be located within the existing Genesee site footprint, on a brownfield site directly west of the existing facility. Detailed design, engineering, environmental and emission studies are underway for inclusion in the project's regulatory applications.

The repowered units will result in a significant decrease in emissions, water consumption for cooling and will extend the lives of the Genesee assets.

Join us for a virtual Project Question & Answer Session

WHEN:

Tuesday, September 22
3:30pm to 6:30pm MDT

HOW:

By phone.
Canada/USA Toll-free:
1-800-319-4610

For more information:

Additional information is available at
www.capitalpower.com/GeneseeRepowering

Interested stakeholders can also request to receive project information directly by contacting us at the methods below.

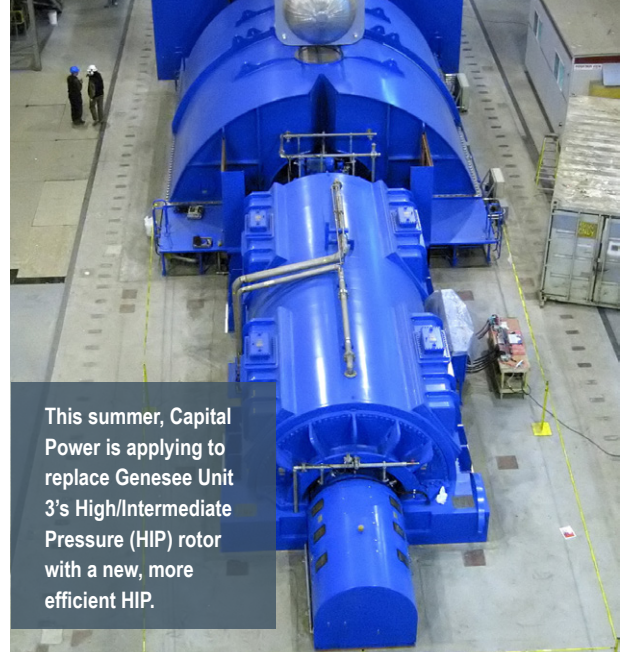
How you can provide input:

If you are unable to participate in this question & answer session, contact us anytime with questions or comments about the project:

Telephone: **1-855-703-5005**

Email: canadadevelopment@capitalpower.com

Mail: **Genesee Repowering Project
C/O Stakeholder Engagement
Capital Power
10th Floor EPCOR Tower
10423 101 Street NW
Edmonton, AB T5H 0E9**



Genesee Unit 3 Rotor Replacement Project

At Capital Power we are always looking to improve efficiencies, reduce emissions and provide reliable, responsible energy now and into the future.

As part of this objective, Capital Power is preparing to apply to the Alberta Utilities Commission (AUC) in summer 2020 for approval to complete a replacement of Genesee Unit 3's (G3) High/Intermediate Pressure (HIP) rotor with a new, more efficient HIP. There will be no other changes to any property, plant, or equipment.

The rotor replacement will result in an increase of the unit's Maximum Capability (MC) by approximately six megawatts (MW) to 472 MW net to grid, with no additional fuel consumption. As Genesee Unit 3 emissions are directly correlated to fuel use, CO₂, NO_x, SO₂, PM, Hg or other emissions will remain unchanged, improving the unit's emissions intensity by approximately 1.5%.

The rotor replacement is being completed as part of Capital Power's five-year efficiency improvement program, which targets a 12% reduction in carbon emissions by 2021.

If approved by the regulator, the replacement will be completed during a planned maintenance outage targeted for spring 2021.

A crane offloads a natural gas pressure regulating skid required for the dual fuel project at Genesee. Once the project is complete, the three units will have the flexibility to use 100% coal or natural gas, or a mix of the two.



Dual Fuel Project Update

In 2019, Capital Power announced plans to maximize the flexibility of the three units at Genesee to use both natural gas and coal as fuel. Upon completion, the project will provide the flexibility to use 100% coal or natural gas, or a mix of the two to better respond to market demands.

In April, ATCO completed construction of a new natural gas pipeline that brings additional fuel supply to the Genesee plant gate. This spring also saw the installation of the necessary infrastructure including gas conditioning equipment and tie-ins for the Genesee units to use the new pipeline. This work will allow Genesee to increase natural gas firing for each of the three units in preparation for 100% natural gas capability.

Dual Fuel Project Time Extension Approved

In September 2019, Capital Power received approval from the Alberta Utilities Commission (AUC) for the Genesee Dual Fuel Project. Under the AUC's project approval, the modifications to Genesee Unit 2 were to be completed by July 1, 2020 and Genesee Unit 1 by July 1, 2021.

Focusing on the health and safety of workers due to the COVID-19 pandemic, Capital Power postponed its Genesee 2 maintenance outage scheduled to begin in May 2020, and applied to the AUC requesting a time extension for the Genesee 1 & 2 dual fuel modifications. Capital Power also applied to increase the capabilities for use of natural gas for Genesee Unit 3 from 40% co-firing to 100% dual fuel on or before September 2021.

On June 18, 2020, the AUC issued approval for the time extension to complete the alterations for the dual fuel project.

Upon completion, all three Genesee units will have complete dual fuel capability, with flexibility to use 100% natural gas or coal, depending on market conditions, until we completely phase out of coal by 2029.

Commercial-scale production facility of carbon nanotubes to be constructed - Genesee Carbon Conversion Centre

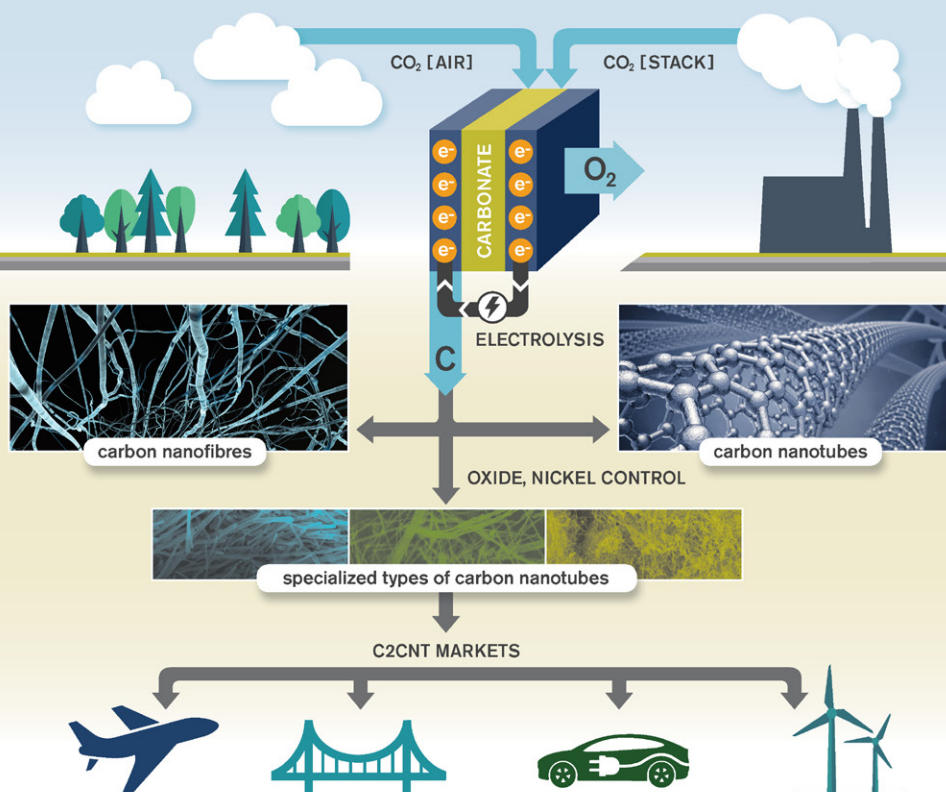
In December 2019, Capital Power announced plans to build the Genesee Carbon Conversion Centre (GC³), the first-ever commercial scale production facility of a high-value product called carbon nanotubes (CNTs). GC³ will use technology developed by C2CNT, a company that has developed an innovative technology that captures flue gas and transforms carbon dioxide into CNTs. GC³ will have an initial production capacity of 2,500 tonnes of CNTs per year and once completed will be capable of generating 7,500 tonnes annually.

CNTs can be used as an additive to substantially increase the properties of various applications including advanced materials, batteries and renewable energy. Capital Power's inaugural application of CNTs is focused on concrete. In addition to improving the strength properties, using CNTs reduces the cement requirement, a heavy emitting carbon process.

In support of this effort, Lehigh Hanson (Lehigh), a subsidiary of Heidelberg Cement A.G., a worldwide construction materials company, is currently conducting tests using CNTs in concrete. Assuming the CNTs in concrete testing and preliminary marketing of the product is successful, we plan to start commercial scale production of CNTs at GC³.

In addition to GC³, Capital Power has an option to increase its equity interest in C2CNT to 40% by the end of the year. Capital Power's investment in C2CNT supports our pursuit of innovative and leading-edge technology that has the potential to reduce greenhouse gases.

For more information about GC³ and C2CNT, visit www.capitalpower.com



C2CNT Process

1. CO₂ is captured from the atmosphere and industrial processes.
2. CO₂ is split by molten carbonate electrolysis into high value carbon nanotubes and O₂.
3. Oxide and nickel control is applied to render specialized types of carbon nanotubes.
4. Specialized carbon nanotubes are used for various industrial materials applications.



On June 24, five young American Kestrels, North America's smallest falcon were temporarily removed from a nesting box at Genesee and outfitted with identification bands.



Genesee employee Craig Butler holds one of three Peregrine Falcon chicks born at Genesee this season.

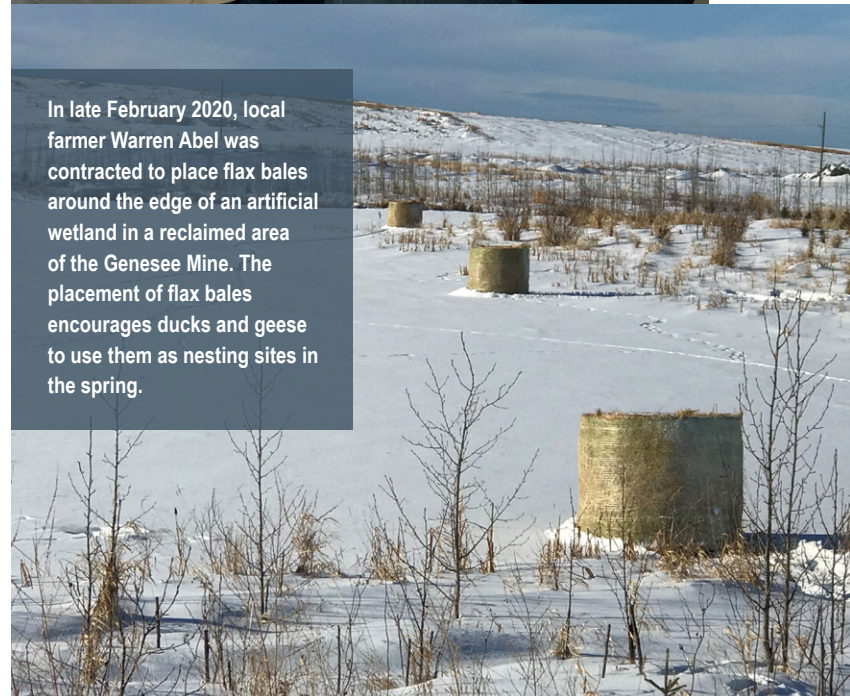
2020 Peregrine Falcon Program

An active Peregrine nesting site can be found at the halfway point on our Genesee 3 stack. The Genesee Generating Station has been part of the recovery and maintenance of Peregrine Falcon populations in Alberta since the early 1990s.

A pair of Peregrine Falcons produced four eggs at the Genesee nesting box this season. Three of the eggs hatched in early June. On June 24, Alberta Environment & Parks temporarily removed the chicks from the nesting box for a health check and outfitted them with identification bands.

Banding helps scientists understand the bird's movements and behaviour. The information is then recorded into databases for later use.

The falcon chicks have fledged and left the nesting site.



In late February 2020, local farmer Warren Abel was contracted to place flax bales around the edge of an artificial wetland in a reclaimed area of the Genesee Mine. The placement of flax bales encourages ducks and geese to use them as nesting sites in the spring.

Genesee Mine Reclamation Update

While rainy weather hampered reclamation efforts in 2019, more than 30,000 trees were planted in restoration areas. In total, we have reclaimed 1,148 hectares at the Genesee Mine (36% of the total surface area), which now includes farmland, reforested and wetland areas. This previously mined area is now fully productive farmland and wildlife habitat.

In 2020, another 22,000 tree seedlings were planted in the west field of the Genesee Mine.

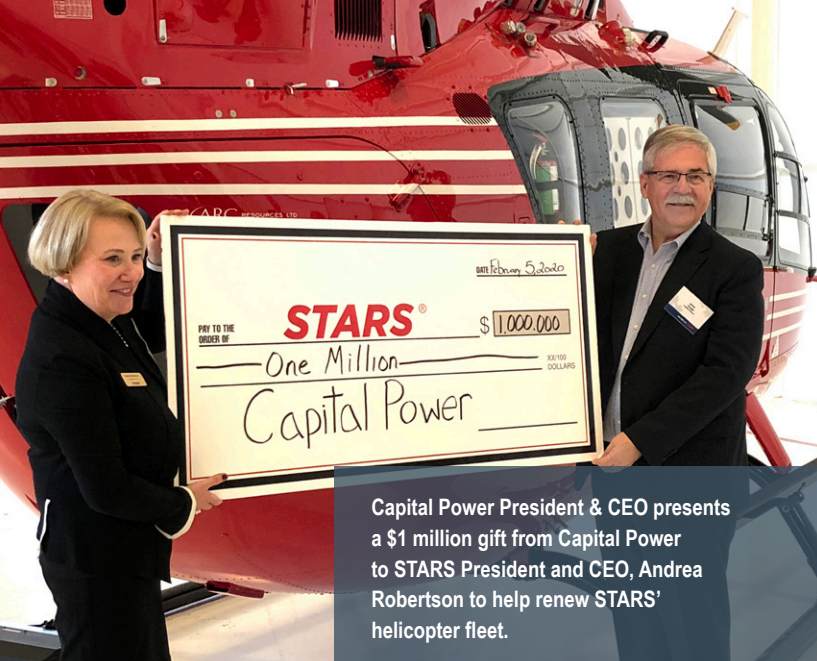
in 2019

30,000
trees planted

in 2020

22,000
trees planted





Capital Power President & CEO presents a \$1 million gift from Capital Power to STARS President and CEO, Andrea Robertson to help renew STARS' helicopter fleet.

Capital Power's Commitment to Help Renew STARS Fleet and Save Lives

In February, we announced a \$1 million contribution to STARS (Shock Trauma Air Rescue Service), providing crucial funding to the charitable organization toward renewing its helicopter fleet.

At Genesee, we have a windsock and a landing pad that provides comfort every day to the over 300 people at the facility that, if needed, STARS will be there.

Capital Power and its employees contribute \$400,000 in support of Alberta COVID-19 relief efforts

During a two-week campaign this spring, Capital Power and its employees donated **\$400,000** in support of COVID-19 relief efforts in Alberta, raised through the Company's 'GENerosity: Let's Rally Together' matched-giving campaign and additional corporate contributions.

This donation was further matched through the Government of Alberta's Charitable Donations Matching Program, adding up to **\$800,000** in relief funds going to designated Alberta-based charities.

Security at Genesee

Safety and security are a top priority for Capital Power and we diligently monitor and patrol our property at Genesee, as well as collaborate with the local RCMP detachment to report any issues or unusual activity.

If you see any suspicious activity on any Capital Power property, please contact our Genesee Security Office: 780-969-8505

Supporting Area Foodbanks

As part of our continuity planning for the COVID-19 pandemic, we mobilized a fully stocked camp for essential workers in the event they had to isolate on site. To-date, the camp has not been needed, which allowed us to donate more than 400 pre-made meals to Parkland Food Bank and another 100 to the Warburg Food Bank. The donated meals were all before their best before date.

Prior to the outbreak of the COVID-19 pandemic, Capital Power provided a contribution to the Leduc & District Food Bank in support of their community kitchen program for residents of Warburg and Thorsby. Due to COVID-19, the community kitchen program had to be postponed. Capital Power's contribution was redirected to support the Food Bank's hamper program, which was especially needed during the pandemic.

Supporting Safe Hunting at Genesee

The Alberta Hunting Education Instructors Association (AHEIA) has successfully managed public access for hunting on Capital Power land at Genesee for more than 10 years, enabling managed access to Capital Power's extensive land base. Each fall, Capital Power opens some of its land for low velocity hunting to hunt deer, elk and moose living on the property. Low velocity hunting uses primitive weapons including black powder rifles, archery and shotguns.

To hunt on Genesee lands, contact Chuck Strong at chuck@aheia.com or call 780- 466-6682 ext. 346.

Capital Power Pheasant Release Site

Since 2018, Capital Power has provided the Alberta Conservation Association (ACA) with a pheasant release site.

The pheasants are farm raised and released to create hunting opportunities and are not meant to create a local population.

All hunters must register for a pheasant hunting permit prior to hunting at the site. Visit abconservation.com for more information.

Genesee Station Environmental Performance

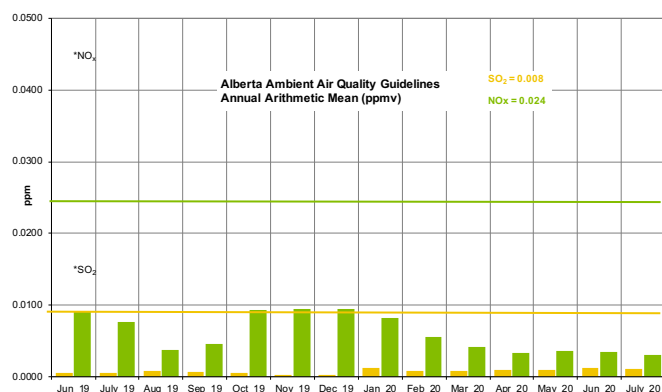
The following graphs show the most recent environmental performance results:

- Ambient air quality as measured by the Genesee ambient air monitoring trailer;
- Stack emissions for stack one (for generating units 1 and 2);
- Stack emissions for stack two (for generating unit 3).

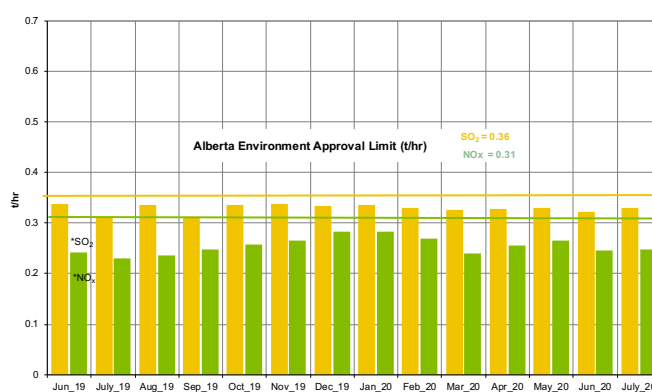
Measurements are compared to guidelines and approval limits set by Alberta Environment & Parks.

Genesee continues to operate below maximum levels set for ambient air quality and stack approval limits.

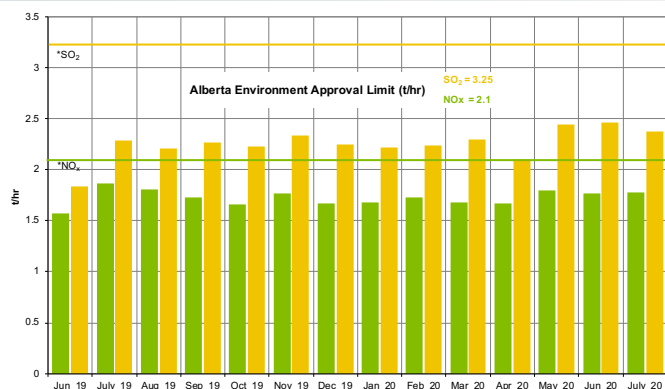
Ambient Emission Levels



G3 Emission Levels



G 1/2 Emission Levels

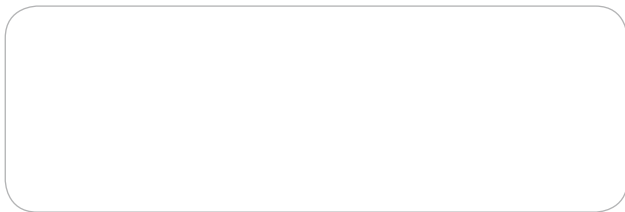


Sulphur Dioxide (SO₂): In high concentrations, SO₂ is known to be harmful to vegetation and human health. SO₂ is soluble in water and excessive levels can lead to sulfuric acid deposition or acid rain.

Nitrogen Oxides (NO_x): When concentration is high, NO_x is of concern because it contributes to ground-level ozone or smog.

Note: All results are converted to reference standard conditions to be comparable to other coal fired plants in Alberta and elsewhere.

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1200 – 10423 101 Street NW
Edmonton, Alberta T5H 0E9



What is Important to You?

If you have an idea or suggestion for the Genesee Connection Newsletter, contact Community Engagement and help us continue to provide relevant information of interest to you.

Genesee Contact Information

If you have questions or comments about our operations, community engagement or our land management practices, please feel free to contact us.

Generating Station Reception

780-848-8300

Community Engagement

1-855-703-5005

PublicConsultation@capitalpower.com

Manager, Land Services

George Greenhough 780-969-8618

Genesee Guardhouse (24-hour Security)

780-969-8505

Careers

For more information or starting a career with Capital Power and to view current job opportunities, visit our website at capitalpower.com/careers. Capital Power is an equal opportunity employer.

Newsletter

Get this newsletter by email: If you prefer to receive your copy of the Genesee Connection by email instead of hard copy, or if you no longer wish to receive this newsletter, please contact us at **Community Consultation** and we will remove you from our mailing list.

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