

DECEMBER 2019

POWER WORKS

 PWU NEWSLETTER

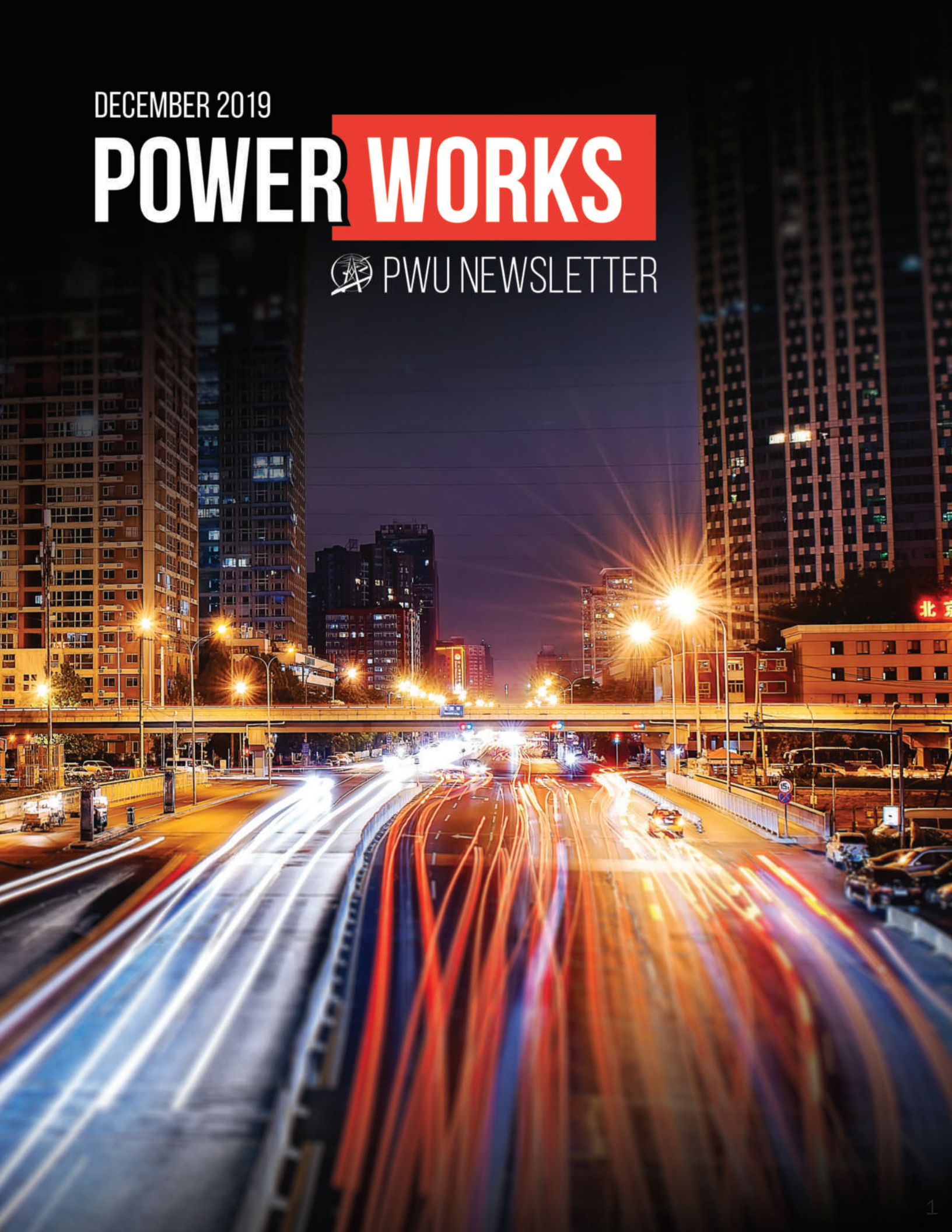


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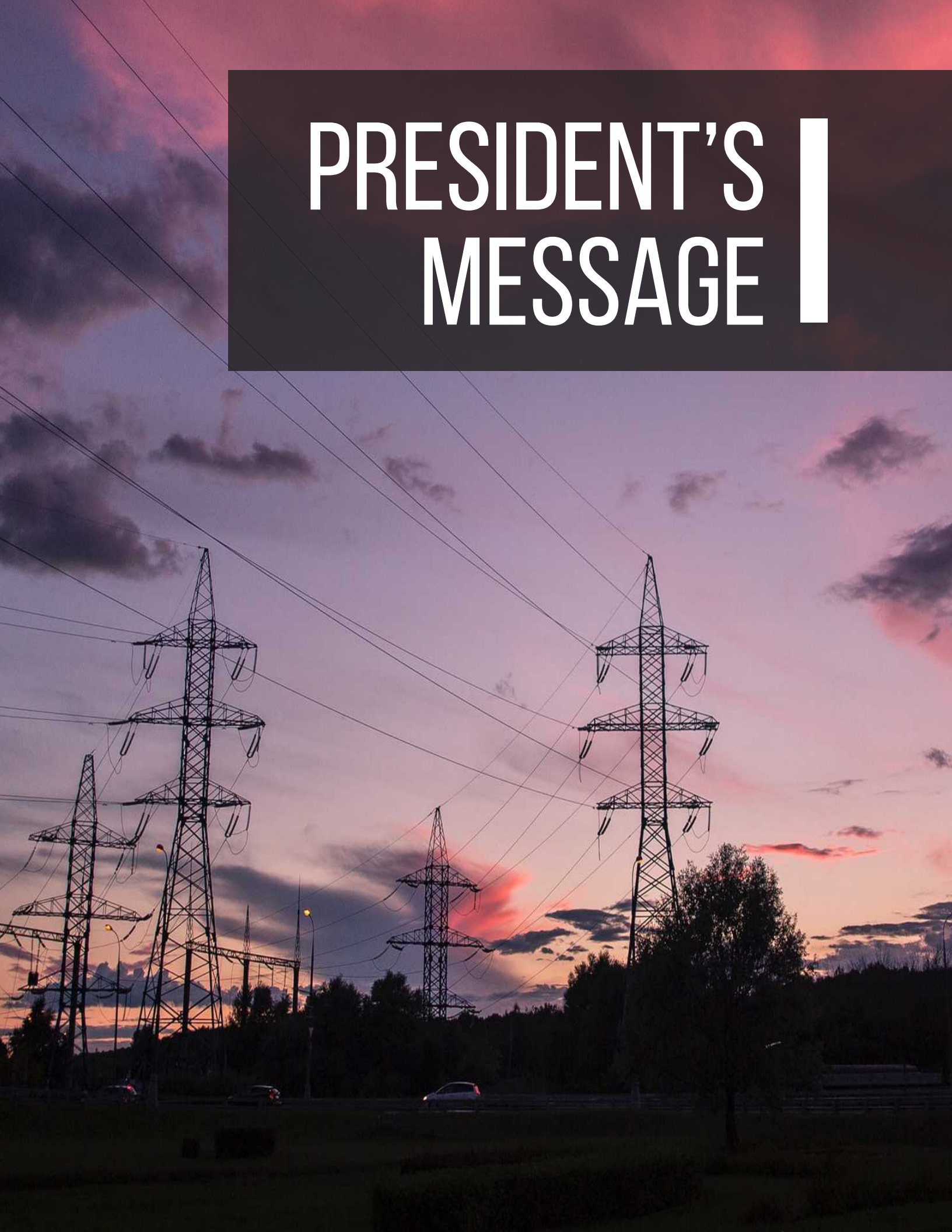
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PRESIDENT'S MESSAGE



Here we are already in the month of December, getting in the holiday spirit and another year, 2019, is about to pass.

Together, we've continued to meet the challenges facing our membership, families and society. I think we can safely say, some positive things have been accomplished that helped advance our collective values. I will briefly mention a few highlights.

As you know, Ontario's government experienced opposition to several of its policy initiatives during the year. This included pushback from some labour unions. Your Executive has been able to establish and sustain a positive relationship on this front while still successfully completing collective bargaining. We've been able to achieve this in large part because of your dedicated professional staff and elected representatives. Your Executive thanks you for your support and efforts. Our goal is always to ensure the PWU has a place at the decision-making table. Without it, we have no voice when critical labour and energy policies are being decided.

The PWU's Executive, skilled and experienced Staff, and external experts worked very hard in 2019 on behalf of the membership in multiple decision-making forums. The PWU has made over 36 submissions to federal and provincial regulatory reviews, boards and government consultations over the last two years. To me, some of the better policy shifts we have seen indicate that they are listening to our comments and reading our analyses.

However, these fact-based, cost/benefit supported submissions are not the only way the PWU expresses its positions on



By **Mel Hyatt**
President
The Power Workers' Union



behalf of the membership. Your union representatives advanced your interests in many face-to-face meetings with senior decision-makers, webinars, seminars and conferences throughout the year.

For example, in May, the PWU sponsored a panel discussion on equality and diversity in the nuclear workforce at the Canada sponsored CEM10/MI-4 Conference in Vancouver. This venue provides a high-level policy dialogue and sharing of best practises; collaboration opportunities on clean energy innovation and adoption of clean energy policies and practises; and, encourages public-private engagement among industry, government, and civil society.

The PWU also made a multi-year contribution to help improve and mentor women's access to education and careers in science, technology, engineering and mathematics (STEM). Our donation will be matched dollar-for-dollar by the University of Ontario Institute of Technology's (UOIT) Board of Governors, making this initiative doubly impactful. This helps create entrance and in-course scholarships that will directly support about 110 female students throughout their university studies. Programs like this will help fill the skills gap in Canada's nuclear sector, support nuclear innovations that create new high-value employment opportunities, and, of course, grow Durham Region's nuclear supply chain.



In late November, the United Nations Environment Programme (UNEP) released its annual Emissions Gap Report. Compiled by 57 leading scientists from 33 institutions across 25 countries, the Report concluded that without drastic action, our world could become warmer by 3.2°C in less than 100 years. The authors called on governments to act immediately to limit global warming to 1.5°C or 2°C by the year 2100, noting that the needed technological options exist, at least in the short and medium term.

Your Executive has been monitoring climate change and global warming and assessing the possible impacts on our membership in the workplace, and of course in a broader societal context. We engaged outside experts to develop a strategy for our membership. It is prudent for us to know and understand the climate-related risks and opportunities that can be expected to face our membership in their various workplaces across Ontario's vast and diverse geography.



The PWU's overall goal is to support a just transition as society moves towards a low-carbon economy. This means good union jobs will be created as part of the transition, and support provided for areas where jobs will be lost. Our "Climate Change Strategy", focuses on five strategic priority areas:

1. Advocate for recognition of changing everyday working conditions associated with climate change.
2. Focus on support where jobs are lost and creating new, high-quality union jobs.
3. Ensure our members are equipped with skills to handle the challenges presented by climate change and succeed in evolving the electricity sector environment.
4. Work to improve grid reliability through advocating for infrastructure improvements and implementing best practices in maintenance.
5. Position the PWU as a progressive, trusted voice on climate change for all union members and potential union members.

We will be setting up a Climate Change Committee to manage our Strategy and will drive our priority areas forward to achieve five action objectives.

Another 2019 success for me personally, has been the opportunity your Executive has had to meet you and your families at several PWU events across Ontario. These gatherings are important. We put a face to a name, share experiences, information and aspirations. That builds solidarity.

2020 Challenges Ahead

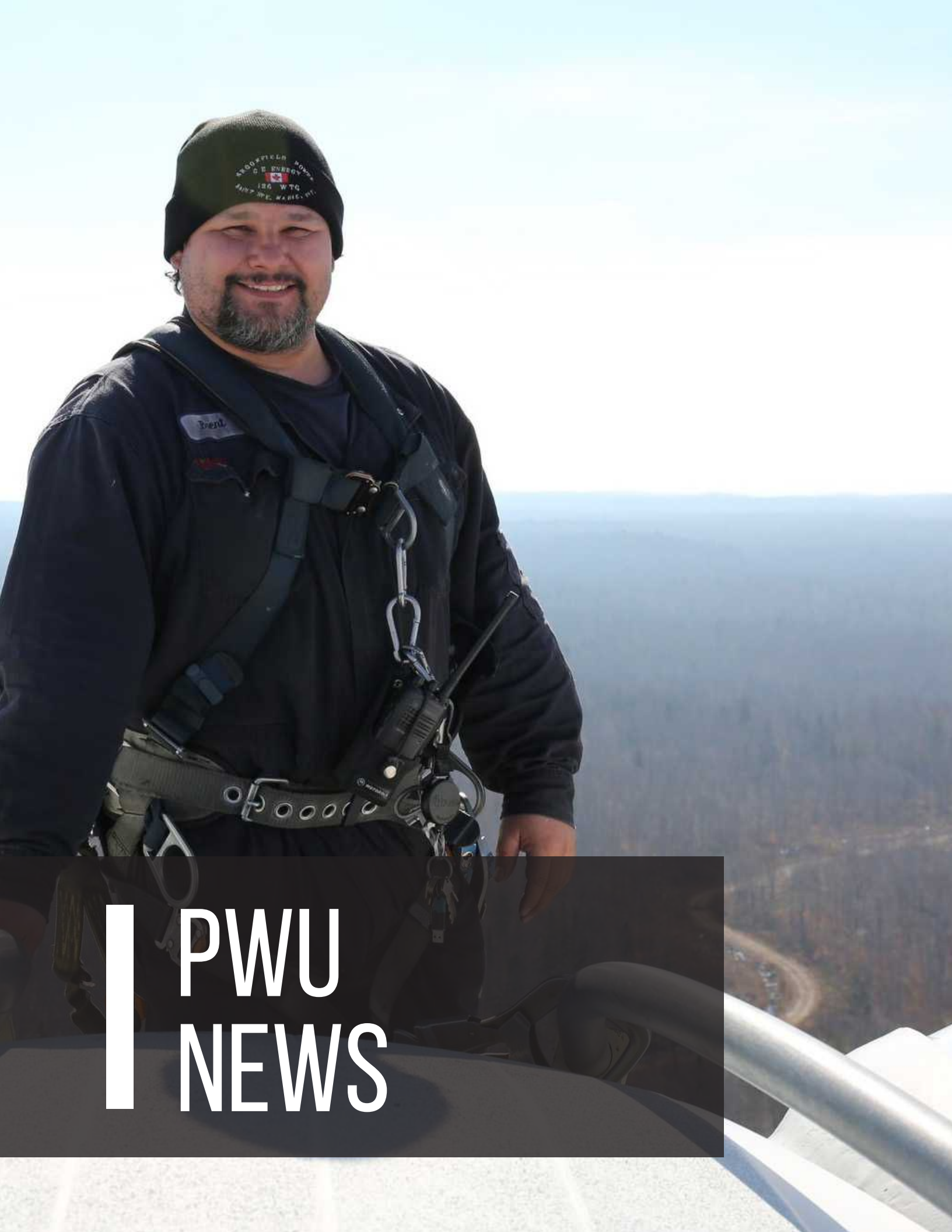
My messages during the year have been directed at sharing with you what your Executive sees as the major challenges facing our union. In the coming year we don't expect the challenges to change significantly. We see more of the same turmoil and rapid pace. So, I'm not going to re-visit any of the challenges in great detail, but mention what we see as the priorities:

- Collective Bargaining/Health and Safety
- Energy Policy:
 - New Provincial Direction?
 - Ontario's Next Energy Plan - Outlook
 - Electricity Planning Process - Integrated Regional Resource Strategy, Bulk System
 - Ontario's transition to a competitive electricity market: the IESO's Market Renewal Project-Capacity Auction etc.
 - Regulatory—Distributed Energy Resources, Small Modular Reactors. Overall Objective and DER/SMRs/ Bulk Grid
- Biomass at the Thunder Bay and Atikokan Generating Stations
- Capital Investments in new Nuclear, Bulk Electricity System, Small Modular Reactors and electrification of transportation.

Your Executive remains committed to engage on these and other fronts to sustain and expand the interests of the membership. We do our best to make prudent, strategic decisions that enable the Power Workers' Union to "punch above our weight".

In closing, on behalf of your Executive, we want to thank you for your continuing support and efforts. We also want to extend warm wishes to you and yours' during the coming holiday season.





PWU NEWS

COUNCIL OF CHIEF STEWARDS

**COMMUNITY VOLUNTEER
AWARD WINNERS**

Sector 1 – Quinton Jacobs

Quinton Jacobs works at Kinectrics and puts an average of 216 hours of volunteer work into the community per year. Once a month he helps out at Scadding Court Community Centre where he, and occasionally his children, serve dinners to the less fortunate. In December he and his family spend a weekend with the Noninna’s Table Team. There they prepare food baskets and turkeys for the less fortunate.

Quinton is also a volunteer at Start2Finish, a program that prepares at risk youth for a 5K run. And every month, Quinton and his friends cook dinner for the staff and residents at Gerstien Mental Health Crisis Centre. They have been doing this since 2016.

Congratulations Quinton on a well-deserved award!

Sector 2 – Andre Bernier

Andre works at OPG in Abitibi Canyon. He volunteers at a variety of places such as the Smooth Rock Falls Truck Fest, a staple of the community that raises money for families in need. Andre also clears trails and cuts fire wood at Mattagami Ski Club. He has been volunteering here for the last ten years and his efforts keep the people safe and warm.

At a very young age, Andre began to learn karate; a skill that he still uses today as he teaches the martial art to the community. He is a huge fan of the outdoors and uses his experience to teach the community about water safety and survival skills.

Andre is also a volunteer fire fighter. If there is a fire or a car crash, he is there in an instant ready to assist as many people as he can. Recently when a plane went down on March 7th, Andre and other community members set out on a search and rescue mission to find a missing couple.

His Chief Steward Susan Duprey had this to say about Andre, “Andre is always looking to make a positive influence in the community, whether it is the Santa Claus visit, helping out families young and old, or responding to a car accident or fire”.

Congratulations Andre on a well-deserved award!



Sector 3 – Linda Delbato

Linda works at Alectra Utilities. Since November 2016, Linda has dedicated her time and effort to helping out at The Ronald McDonald House Charities South Central Ontario (RMHCSCO), an organization that provides a home away from home for families with sick children. This way, kids can stay close to where they need their treatment. Linda has become a key figure in helping the RMHCSCO run smoothly. She does this with her years of professional experience and knowledge.

Congratulations Linda on a well-deserved award!

RWC – Steve Eckenswiller

Steve is a retired Bruce Power employee who is not only a valued member of the Walkerton & District Optimist Club but a beloved member of the community. Steve is always the first person to stand up in a crowd to volunteer. Whether someone asks him to help or not, he is always there with a smile and a helping hand. At breakfast with Santa, Steve was there, setting up and preparing food the day before. Steve was also there for the Bicycle Rodeo, Halloween Bash, Easter Bazaar, Christmas Toy Drive, St. Patty's Day Fundraiser, Krispy Kreme Donut Fundraiser, and the Clothing Drive.

Steve has worked with The Optimist Club and the Knights of Columbus to help raise funds for a more accessible park for Walkerton's youth. He is also a part of the Church's Social Justice Committee and the Church Building Committee for the Sacred Heart Church.

Steve also regularly volunteers at an orphanage in Nicaragua. Since 2011, Steve has spent two weeks working with the children and since then his involvement has only increased. He not only raises money for them but also collects supplies, and medical shoes. Steve has become a key part of Nicaragua over the past eight years.

Steve Eckenswiller is a man who is constantly giving. These were just a few highlights of the way he contributes to the community. Darlene Thompson says, "he has a great way of bringing out the best in people as he goes around doing what he does".

Congratulations Steve on a well-deserved award!



COUNCIL OF CHIEF STEWARDS

HEALTH & SAFETY ACTIVIST AWARD WINNERS

Sector 1 – Karen Hamelin

From 2014 - 2016, Karen was an integral part of our pilot Waste Sorting and Segregating Program. Wearing PPE, doing repetitive work, sorting through thousands of bags of Zone 2 and 3 waste can make for long days, but Karen persevered, remained positive, and maintained safety to benefit the program and produce significant results with her team of Green Qualified Personnel.

In 2017, Karen was the Radiation Safety Technician during the Trench 3-2 Project at WWMF. Karen's role was to ensure radiation safety for OPG PWU staff during the opening and working in the large trench to inspect and remove 35 year old waste because of water seepage into the trench. Karen provided reassurance and accurate information by clearly communicating to staff who were working in challenging circumstances. Karen demonstrated a strong leadership role in ensuring staff felt safe and reassured before completing their work during the Pre-Job, throughout the task, and Post-Job.

In 2019, Karen often provides oversight of PWU Worker safety when confronted with Low Level Storage Building Legacy Waste storage

issues. Karen's competent communication skills, conventional and radiological safety skills, and nuclear training and experience from Bruce Power and OPG make her a worthy candidate of this prestigious award.

Congratulations Karen on a well-deserved award!

Sector 2 – Jamie Smith

Jamie has been nominated for his outstanding contribution to the Joint Health and Safety Committee. In the past 5 years, he has executed his duties with diligence, integrity, honesty, and his attention to detail regarding the safety of both OPG Staff and all the Contractors that work on site can never be surpassed.

Jamie promotes a very high standard of Safety Culture in the workplace and encourages adherence to policy and procedure, as well as compliance with all the safety rules.

With all of his work experience, he is able to foresee and suggest preventative measures to management and staff reducing the possibility of accidents.

In his 5 years on the Committee he has moved from a new member to Co-Chair to PWU H&S Trainer. He has promoted safety training for all, safety education, drills, initiated an investigation into the fire alarm system, falling concrete hazard at various elevations, awareness for pollution prevention drills, and environment

protection awareness among all the JHSC members.

His biggest strength is where many people falter and that is on follow up. Jamie promoted the use of the official OPG recommendation form and an official response from the company which provides a way to track the committee's recommendations and follow up.

He is a mentor to all the JHSC Members and is always available for consultation to one and all. He has taken safety consciousness to a whole new level at R.H. Saunders.

Congratulations Jamie on a well-deserved award!

Sector 3 – Branka Stefanovic

Branka is dedicated to Health & Safety. Besides her billing position at Alectra Utilities, she has been the Co-Chair of the JH&SC for 6 years.

Branka is always looking out for the wellbeing of her co-workers on a professional and personal level.

Branka has volunteered in the community with the IHSA as a Young Worker Awareness trainer. She continues with her education in Health & Safety.

Congratulations Branka on a well-deserved award!

RWC – Sheldon Speedie

OPG Involvement in Health and Safety

Sheldon has served as a JHSC activist almost since his arrival at OPG and throughout his days with Ontario Hydro; a period of over three decades. In addition, Sheldon was not only a H&S Activist, but expanded his health and safety activism through a variety of roles he had access to through his position as Chief Steward.

Additional roles such as JCRP member, significant involvement in work protection issues and JHSC training issues. In addition to ongoing JHSC efforts, Sheldon has worked tirelessly on very significant issues of health and safety at the OPG Western Waste Management Facility and Nuclear Waste Management (NWMD) on the Bruce Site.



Examples are as follows:

- Machine guarding, harassment and bullying and improving the safety culture at the Waste Volume Reduction Facility and across OPG whenever he could add anything.
- Sheldon is a WHSC qualified Instructor and has instructed at the community level and the PWU Accreditation level. Additionally, he has been instrumental in keeping the Accreditation Training up to date.
- Sheldon was always available to aid other JHSC's across the Sector through shared experience and/or a deep and abiding interest in the good operation of all site JHSC's.

Health and Safety Involvement Outside of Bruce Power.

- Sheldon often attended CNWC meetings and reported on the WVRF and the NWMD.
- Sheldon has extended his skills to aiding community members on H&S issues and has offered assistance to any and all that look for advice and assistance.
- Sheldon is active with Labour Day Celebrations in Port Elgin.

Congratulations Sheldon on a well-deserved award!



SECTOR 3 UPDATE

Since September, Sector 3 has steadily been at the bargaining table. On Oct. 29th, a tentative Memorandum of Agreement with Inergi LP was reached. Ratification meetings are scheduled in November and the ballot count will take place on December 5th.

Currently we are bargaining several agreements including Elexicon Energy, London Hydro, Algoma Power, Aptum Technologies, and Lakeland Power. We are currently in conciliation with CochraneTel, Grimsby Power, and EPCOR.

Vice President Tom Chessell, Sector Reps, Chief Stewards and Sector 3 Staff have also been working with other utilities to make improvements and resolve all member-related issues. We have recently negotiated a mass hire agreement for the Lines department at Hydro One and over the past several months met with Alectra to resolve issues related to the implementation of their new Collective Agreement.



We recently welcomed Elexicon (formerly Whitby and Veridian) to the PWU family in June 2019.

The voting result clearly indicated the Power Workers' Union as the sole bargaining agent for all unionized employees at Elexicon Energy. The PWU was extremely pleased with these results and we will work hard to help Elexicon employees bargain a new Collective Agreement.

In July and August 2019, members voted and elected their Principal Steward and Stewards from across Elexicon. A Bargaining Committee was formed from the elected Stewards and on Tuesday, October 1, 2019 the Bargaining Committees of both Elexicon Energy and the Power Workers' Union met for the inaugural kick-off bargaining meeting for a new Collective Agreement.

The committee has met in Ajax and will be meeting in Toronto in November to bargain a deal that will position the Company to be a top Utility in Ontario.

TOURNAMENT IN MEMORY OF MARCEL PELCHAT

This tournament, envisioned as an annual fundraiser, consists of a 50/50 split between PWU & The Society of Engineers participants from every work center within the North East. It is held in memory of Marcel Pelchat, who passed away from cancer at the age of 38.

In its first year, the event generated proceeds that were donated to the children of Marcel in the form of an education fund.

In 2018, the family of Carissa Marcotte, a grade 5 student who is in remission from leukemia, was the recipient.

For the 2019 year, our beneficiary was named Breanna Plourde from Kapuskasing, diagnosed with osteosarcoma in May of 2019.

The event generated a great turnout and was appreciated by all who attended. Luc Gallant, the main organizer, extended a special thanks to the Power Workers' Union & The Society of Engineers for embracing the vision and providing generous financial contributions. Due to this endeavour, this year's recipient received a total of \$6000 in donations.



WENDEL CLARK'S EASTER SEALS CELEBRITY CLASSIC IN THUNDER BAY

2019 marks the second year of participation by Hydro One and our members in Wendel Clark's Easter Seals Celebrity Classic in Thunder Bay.

The event raises much needed funds that help sick kids in Northwestern Ontario. In an age when mass media enables go fund me pages, and access to a large population base to request money for any number of charitable causes, it becomes increasingly difficult to get support as people are being inundated with requests for a myriad of charities.

Despite this, the group managed to raise \$12,640.00 for Sick Kids locally, in no small part because of Hydro One's Power To Give program which donated \$2000.00 as well as PWU also matching that amount.

The event is held over two days where a draft party/meet and greet takes place and where the teams involved get to meet and interact with NHL alumni, who are always accommodating.

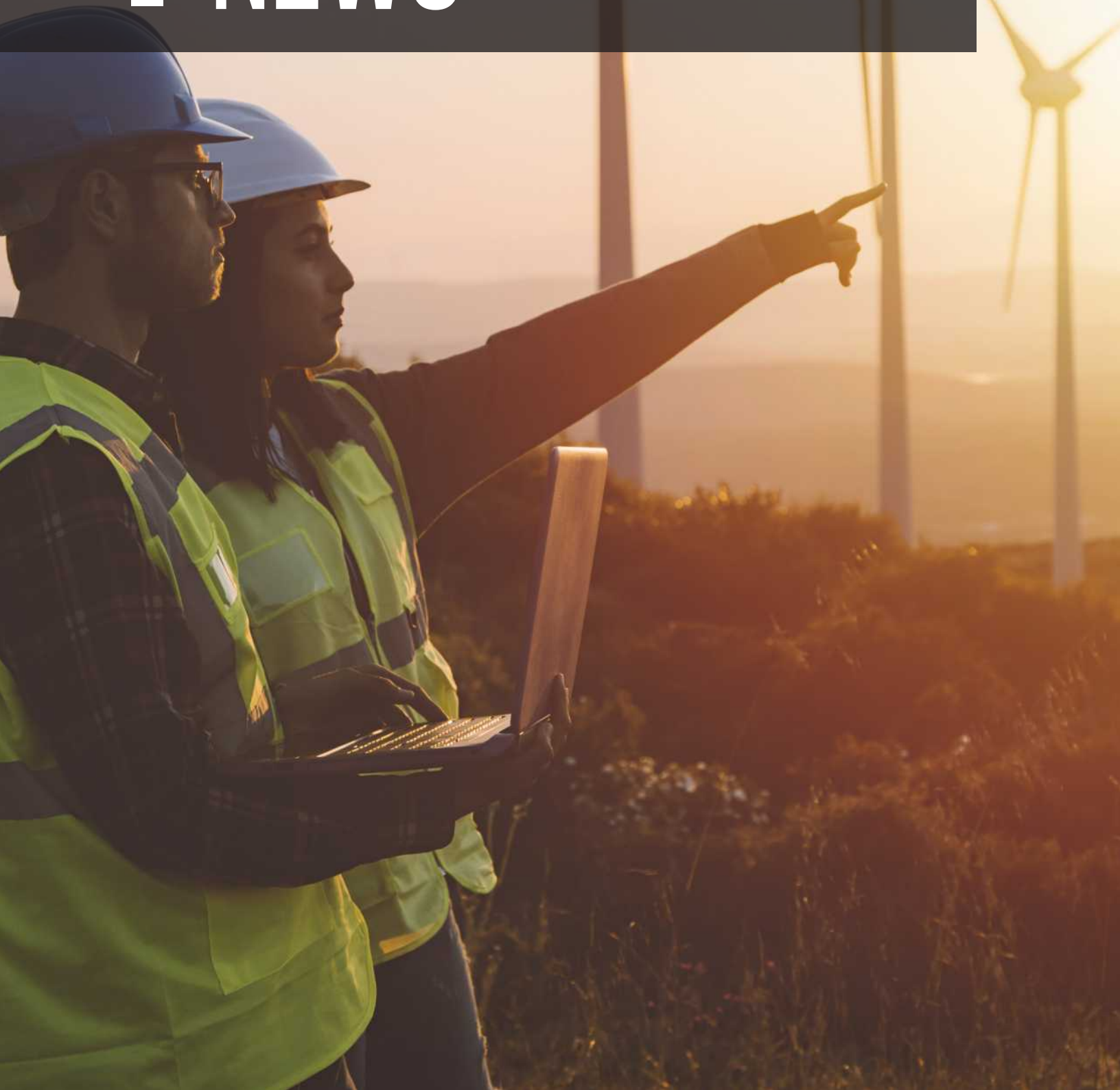
This year's NHL stars were Wendel Clark, Rick Vaive, Steve (Stumpy) Thomas, Al Lafrate, P.J. Stock, Troy Crowder, Billy Smith, John Leclair, Craig Muni, and Taylor Pyatt.

The evening is spent interacting, then deciding which player your team wants to draft. Top fundraising team goes first in the draft, second highest next and so forth until all 10 are selected. It is always a great event, filled with some interesting tales and insights into the lives of your NHL athletes. The final game pits the top fundraisers against the pros and it is always entertaining. But truly what most matters are the children who will benefit from all the money raised.

A special thanks to Hydro One, PWU, and all the players who combine to make this event more successful every year.



INDUSTRY NEWS



Biggest Battery Energy Storage Facility in GTA Now Live in Newmarket

Leading energy efficiency company Ameresco opens Twinney Drive facility



Sep 25, 2019 8:00 AM By: **Kim Champion**
newmarkettoday.ca

The largest battery energy storage system of its kind in the GTA is now live in Newmarket.

And Mayor John Taylor said this serves as the first example that the days of needing to build massive power plants are coming to an end.

“We are standing in the future, it’s arrived,” Taylor told NewmarketToday after attending the grand opening Tuesday morning of the Twinney Drive Battery Energy Storage Facility.

Leading U.S.-based energy efficiency and renewable energy company Ameresco celebrated the launch of a project four years in the making that saw it design, build, own, and operate 2 megawatt (MW), four-hour

“battery solid” energy storage systems, on behalf of Ontario’s Independent Electricity System Operator, the Crown corporation that operates the province’s electricity market. The two solid-state lithium-ion battery energy storage systems connect to the Newmarket-Tay Power Distribution grid at a capacity of 4 MW. Both systems absorb power during periods of excess energy supply and deliver it back to the grid when energy demand is high.

The recently completed systems provide 16 MWh in overall energy storage capacity, according to information provided by Ameresco. A megawatt hour is one million watts of electrical power used for one hour.

“Battery storage is central to the better utilization of all assets within the electricity system, better value to ratepayers, and reduction of our carbon footprint,” Ameresco Canada president Bob McCullough said in a Sept. 24 statement. “Taking this action now will demonstrate how energy storage facilities deployed at the distribution level can facilitate more cost-effective designs of both transmission and distribution infrastructure while providing greater power reliability to local areas, regardless of peak energy demands,” he said.





The energy storage pilot project is creating buzz locally.

“It’s two 50-feet long by 6-feet high big banks of batteries surrounded by technology, and Tesla in California monitors every cell within the system on a real-time basis,” Taylor said. “As you get one, five, or 10 of these battery energy storage facilities around a geographic area, it will have the ability to manage those peaks and you won’t have to build massive infrastructure.”

For now, the Newmarket battery energy storage facility will connect to the local grid, but Taylor said the future could find neighbourhoods and local hospitals, for example, tapping in.

“It’s environmentally progressive, and it means you don’t need to start up a massive (peaking power) plant because you need 2 MW, you can just pull it from this facility instead,” he said. “It’s also an enabler for economic development because it adds resiliency to the local grid.”

The Newmarket facility is being touted as a showcase example of the advantages of time-shifting energy consumption and production, along with the potential of future ancillary services, Ameresco officials stated.

To learn more about batteries and energy storage system development, visit ameresco.com.

WILDFIRES

FIVE THINGS TO KNOW ABOUT MICROGRIDS

Nov 1, 2019 By: **Julie Cart**
calmatters.org

More than 1 million Californians were left in the dark for days recently as their big utility companies shut off power for fear of sparking wildfires. Frustrated by those outages, some homeowners say they'd like to turn their backs on the companies in favor of smaller providers who might do a better job of keeping the lights on. The mayors of San Francisco and San Jose say they want to sever ties with Pacific Gas and Electric, which serves much of Northern California, and create separate utilities for their cities.

Grasping for solutions, people toss around ideas like joining "microgrids" or setting up banks of generators to keep the electricity flowing during widespread power cutoffs. Would that really help?

What, exactly, is a microgrid?

A microgrid can be as simple as a single home operating on its own solar power, or a complex series of connections between a power source and distribution lines to end users. It can run a business, a neighborhood or even a city. It can be any size and may be fueled by renewable energy stored in batteries, or by generators run on a conventional fuel such as diesel.

Here's Chris Marnay, a senior scientific fellow at Lawrence Berkeley National Laboratory, who wrote the definition of microgrid that is used by the U.S. Department of Energy: "There are two characteristics: It is a locally controlled system, and it can function either connected to the grid or as an electrical island."

How many microgrids are in California? It's difficult to say how many have sprouted across the state and are now dotting the landscape, producing and sharing their own energy. Such systems include small neighborhood operations and one that runs the desert town of Borrego Springs.

That town, and others like it, are known as end-of-the-line communities, lying just



beyond the reach of power companies' distribution lines. For those small locales, and for residents in many rural parts of California, a microgrid is the only choice if they want power.

Many state universities have training-wheels versions that use small solar arrays to power a building or a section of the campus. UC San Diego runs a much larger system that provides up to 90% of campus electricity.

If some California lawmakers have their way, there will be many more such systems. A bill in the Legislature would require utility companies to identify the best areas of the state for employing microgrids and then build them.

A 2018 law sets a deadline of Dec. 1, 2020, for creation of a program for how they might operate, especially during times of emergency. The state Public Utilities Commission, which regulates California's power companies, the California Energy Commission and the Independent System Operator—which runs most of the state's electrical grid—are developing the plan.

Not surprisingly, former Gov. Jerry Brown is an enthusiastic supporter of microgrids. He said in his 2015 inaugural address that they should be greatly expanded. His rural retirement compound, Rancho Venada, at the end of a dusty road in Colusa County, is powered by a microgrid system.

How can microgrids be used during emergencies, such as fires?

Natural disasters have a way of prying open windows of opportunity. But “California is a bit behind the curve,” Marnay said. “The fires are going to

be our Superstorm Sandy. They are going to bring about change.”

Hurricane Sandy lashed the East Coast in 2012, leaving millions of customers in 21 states without power for days and weeks. The superstorm's aftermath brought about policy changes in several states in the Northeast. Connecticut became the first in the country to create a statewide system of microgrids to provide emergency power.

Marnay and others noted that a microgrid research project kept operating after a magnitude 9.1 earthquake and tsunami devastated Japan in 2011 and knocked out power. The project, at a local university, performed well in the wake of the twin disasters, cementing the idea that independent power systems could maintain service in emergencies.

“It was a complete wake-up call,” Marnay said. “It woke up policymakers. The genie got out of the bottle, and (it) wasn't just energy nerds such as myself interested in microgrids.”

In the last few years, “resilience” has become the watchword for the advantages of microgrids as a backstop when disasters obliterate the larger grid's ability to distribute power. During the 2017 fires in Sonoma County, Stone Edge Farm drew electricity from its microgrids for 10 days while utility power was down.

State officials hope that eventually, electricity generated by microgrids can keep critical services operating in emergencies: hospitals, communications systems, community centers, etc. One city that has already adopted this approach is Fremont: It has outfitted three fire stations with their own power supplies.

THE ROLE OF NUCLEAR

ontariosnuclearadvantage.com

An Important Contributor to Health Care

Ontario's nuclear power plants produce 70% of the world's supply of Cobalt-60, a lifesaving medical isotope that's used to sterilize medical equipment, keep food safe, fight the spread of disease, and treat cancer. There's a growing demand for a reliable supply of isotopes such as Cobalt-60 and Molybdenum-99 to support health-care systems around the world.

One of the most familiar and important applications of nuclear technology is the use of radioisotopes to diagnose and treat cancer. Every year, 40 million patients from around the world benefit from the use of radioisotopes to diagnose and treat cancer. Nuclear technology is also used to sterilize medical equipment such as gloves, masks, syringes and implants.

Diagnostic nuclear medicine is a critical component to diagnosing health problems based on the function of organs, tissues or bones. Nuclear materials are also used in biotechnology, analyzing specific molecules inside the body to improve human health. Radioactive isotopes are also used to treat cardiovascular disease, tuberculosis and other infections.

TYPES OF CANCER DIAGNOSABLE BY NUCLEAR IMAGING



MELANOMA



ESOPHAGEAL



HEAD & NECK



COLORECTAL



BRAIN



CERVICAL

An Important Contributor to Food Safety



Food irradiation involves the use of radiation to kill the bacteria, insects and parasites that cause food-borne diseases and spoilage.

Did You Know?

The nuclear by-product Cobalt-60 plays an important role in nuclear medicine. Low-grade Cobalt-60 is excellent at killing off potentially harmful and deadly bacteria, making it an effective solution to sterilize medical equipment such as syringes and catheters to keep patients safe. High-Speed Activity (HSA) medical-grade Cobalt-60 has been widely used for over half a century to treat cancer patients. More than 70 million people have been helped thanks to Cobalt-60 radiation therapy and these machines are still in use today.



THYROID



BREAST



PANCREATIC



LYMPHOMA



LUNG



AND MORE

THE ROLE OF NUCLEAR

IN CANADA GOES FAR BEYOND BEING A SAFE, CLEAN, AFFORDABLE AND RELIABLE SOURCE OF ENERGY

IT HAS AN IMPORTANT ROLE IN



MEDICINE



INDUSTRY



ECONOMY



INNOVATION

AND IT SUPPORTS THOUSANDS OF LONG-TERM, HIGH-TECH AND WELL-PAYING JOBS

Investing in nuclear generation as a source of baseload power for the province of Ontario is the best way to ensure a stable and affordable supply of electricity well into the future.

The refurbishment of Ontario's nuclear power plants is the largest clean-technology investment in the country.



THE ROLE OF NUCLEAR

ontariosnuclearadvantage.com

Powering Millions of Homes

5 million

Bruce Power supplies enough energy to meet the demands of **5 million** homes per year

2.2 million

OPG Pickering supplies enough energy to meet the demands of **2.2 million** homes per year

2.7 million

OPG Darlington supplies enough energy to meet the demands of **2.7 million** homes per year

The Facts on Nuclear Power and Energy Pricing

- Low-cost nuclear power provides 60% of Ontario's electricity;
- The cost of nuclear power generation in the province is more than 30% lower than the average cost to produce residential power. It provides families and businesses with a low-cost source of electricity that reduces costs and saves money compared to other energy options;
- Ontario's three nuclear facilities — Bruce Power, OPG Darlington and OPG Pickering — create jobs and economic growth across the province;
- Nuclear power helps Ontario meet its climate change goals;
- Modern health care around the world capitalizes on Ontario's role as a leading supplier of Cobalt-60.

Producing Jobs

Ontario's nuclear industry contributes billions of dollars annually to the Canadian economy and supports more than 50,000 jobs across the province, including:

- 15,600 in the daily operation and support of Ontario's nuclear fleet;
- 9,000 are in the process of being hired for the refurbishment programs;
- 30,000 are employed in the nuclear manufacturing, engineering, construction, consulting, research and development, fuel fabrication and medical isotope sectors.

Ontario's Refurbishment Project

- The refurbishment project is Canada's largest infrastructure project to date;
- 10 nuclear reactors are being refurbished so they can provide clean, affordable and reliable electricity for the next 20-30 years;
- An additional **9,000 jobs** will be created over the next 15 years;
- Refurbishment will inject **\$3 billion** into the economy.

What is Nuclear Waste?

All industries create waste products. In the nuclear industry, the waste products are radioactive — some much less than others. Fortunately, the total volume of nuclear waste products is much smaller than for many industries because a tiny amount of uranium generates a lot of power.

Who Makes Sure Nuclear Waste is Safe in Canada?

The Canadian Nuclear Safety Commission (CNSC) licenses all Canadian facilities that handle nuclear waste. The CNSC applies strict regulations to keep workers, the public and the environment safe. It can suspend or cancel a licence if any facility fails to meet its high standards.

The CNSC also works closely with the International Atomic Energy Agency (IAEA), a United Nations organization that seeks to promote the responsible use of nuclear energy. Provincial authorities also monitor nuclear facilities, while Health Canada monitors radiation exposure of workers.

Ontario's Nuclear Supply Chain

Businesses in five categories make up the supply chain

- Raw Materials and Fuel Cycle
- Engineering and Construction
- Equipment and Manufactured Components
- Operations
- Business Services and Other

