Clean & Prosperous INSTITUTE

STUDY MISSION 3.0
QUÉBEC

SPRING 2023 TRIP REPORT

Clean & Prosperous INSTITUTE

To accelerate the transition to a clean economy with prosperity for all, the Clean & Prosperous Institute drives progress with research and analysis to frame challenges and potential solution sets.

We treat policy perspectives respectfully and in depth, thinking critically without adhering to binary frameworks.

In so doing, we create space for the discovery of better answers, and seed the ground for smarter political action.

We explore the opportunities and complex risk factors associated with creating climate policy from the state level up.

We share a belief in the power of business leadership, bipartisan problem solving, and data-driven public policy.

On the cover: Québec City, the capital city of the Canadian province of Québec.

All photos, graphics and slides within this report are provided by Study Mission attendees, staff and/or speakers.

WHAT CAN WASHINGTON LEARN FROM QUÉBEC?

WE TRAVELED EAST TO FIND OUT

Attendess enjoy an evening dinner cruise on the St. Lawrence River in Montréal.

In May 2023, the Clean & Prosperous Institute ventured out for its third study mission, this time traveling internationally to the scenic Québec Province in eastern Canada to see firsthand how Québec is transitioning to a low-carbon economy. The group of nearly 50 government, business and community leaders - including Senators Matt Boehnke, Joe Nguyen and Jesse Salomon, Representatives Jake Fey and Kristine Reeves and former State Senator Reuven Carlyle - were all eager to learn from Québec's decade of experience with Cap-and-Invest. They met with top Canadian government officials, spoke with local businesses, and toured clean energy facilities which have benefited from carbon revenue investments.

WHY QUÉBEC?

Though the fight against climate change – and the transition to a cleaner, more energy-efficient economy – is global, much of the power to take action is at the sub-national level, something the group heard a lot about while in Canada.

In 2021 and 2022, the Institute led trips to California, where attendees learned about electric school buses and dairy digesters in the Central Valley, toured the Tesla factory and a battery plant in the Bay Area, and sailed aboard the world's first hydrogen passenger ferry on San Francisco Bay.

Fast forward to Québec and the Institute's decision to head overseas. Québec has a decade of experience with its Cap-and-Invest system (exactly a decade more than Washington has), and Québec's carbon emissions market is linked to California's – and hopefully soon to Washington's emissions market. So a trek to Québec made sense, as it would provide valuable implementation lessons to be learned from Québec's government ministries and clean energy businesses.

More reasons for Québec included our similar economies and similar ambitions. Both are strong in research and technology, aeronautics, hydroelectricity, agriculture, fishing, mining, pharmaceuticals, aluminum, wood, and paper. They produce more maple syrup while we lead in apples and cherries.

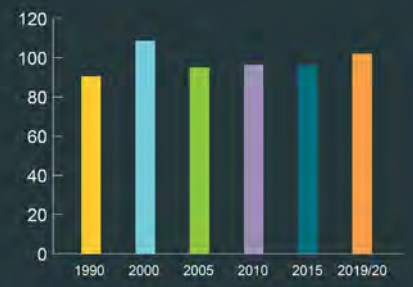
They have a slightly larger population, yet a smaller carbon footprint

Greenhouse Gas Emissions

Measured in Million Metric Tons of CO_2 equivalent

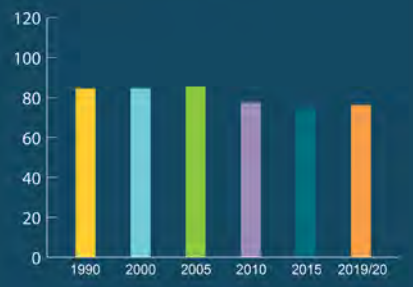
Washington

POPULATION 7.7 MILLION



Québec

POPULATION 8.5 MILLION



Both are leaders in the generation of hydroelectricity

Hydro Power

Washington

POPULATION 7.7 MILLION

Grand Coulee Dam

By capacity, the Grand Coulee Dam on Washington's Columbia River is the largest power plant in the United States. Power production facilities are among the largest in the world; the total generating capacity is rated at **6,809 megawatts.**

Québec

POPULATION 8.5 MILLION

Robert-Bourassa Facility

Quebec is the largest producer of electricity in Canada and had an estimated generating capacity of 46,380 megawatts in 2019. This includes Canada's largest hydro plant, the **5,616 megawatts** Robert-Bourassa facility in Québec.

Much of the hydro comes from our two rivers

A River Runs Through It

Washington

Columbia River

Columbia is one of the largest and longest rivers in the USA, with a discharge rate of **273,000 CFS**. Its drainage basin stretches over seven US states and one Canadian province.

Québec

Saint Lawrence River

Saint Lawrence is the second-largest river in the USA, with a discharge rate of **275,000 CFS** of water emptying at the US-Canada border.

Crude Oil Refinery

And just as Washington state is a clean economy leader in the U.S., Québec sets the pace in Canada. Québec introduced its Cap-and-Invest system ten years ago. Washington's Cap-and-Invest system commenced in 2023 and was designed to link with the programs in Québec and California. What does that mean? It means that businesses in one jurisdiction can use emission allowances issued by the others for compliance. This increases the number of businesses under the cap, which reduces compliance costs by creating more options for companies to reduce their emissions.

Like Washington, Québec is home to some large oil refineries

Stanley Cup Stats

The Seattle Metropolitans beat the Montréal Canadiens to win the 1917 Stanley Cup. In 1919 Seattle and Montréal faced off again, but the series was canceled after the fifth game (tied 2-2-1) because of the flu epidemic. The Stanley Cup was not awarded that year. (Per the Seattle Times: "The greatest ice hockey series ever staged ends in a draw").

We even share some hockey history

SCENES FROM OUR TRIP

Meanwhile, let's look at this study mission's highlights from Québec. They include what Québec is doing to Green Up by 2030, linkage to Québec's (and California's) Carbon Markets, electrification, what Québec taught us about Sustainable Aviation Fuels (SAF), their Cap-and-Invest system and more.

QUÉBEC'S AMBITIOUS PLAN FOR A GREEN ECONOMY AND THE FIGHT AGAINST CLIMATE CHANGE

As the Study Mission participants settled into the Le Capitole Hotel in Québec City to hear from a myriad of officials from Québec Province and elsewhere, the theme was an overriding one of Québec's ambitious plan and progress toward a green economy by 2030, and its overall fight against climate change.

Just prior to the study mission's arrival in Québec, the provincial government had released its third edition of the green plan, announcing details of increased funding for greenhouse gas reduction and climate change from the original budget that had been announced in March 2023. This time, the province was adding an additional $1.4 billion, bringing the total to more than **$9 billion between 2023 and 2028** to reduce greenhouse gas (GHG) emissions and decarbonize the economy.

According to the CBC news, Québec Premier François Legault held a news conference to announce the increased climate investments and said, "When we talk about the fight against climate, it's the big challenge of the 21st century, and every citizen has a responsibility."

Québec Environment Minister Benoit Charette

Standing next to Legault at the press conference was Québec's Minister of the Environment and the Fight Against Climate Change, Benoit Charette who was one of the study mission's first speakers on Wednesday, May 24. He was introduced by former Washington State Senator Reuven Carlyle, who said, "In our state and abroad, a package of climate action is a symbolic representation of a serious commitment to the Paris agreement and to the letter and the spirit of science-based targets and net zero."

"The leadership we see from Québec is deeply appreciated including your recent announcements of the additional commitment your government has made toward this fight. It is incredibly inspiring to people at the sub national leadership level around the world. And our hope is to take this much deeper and explore ways we can strengthen our partnership in the years to come."

Having been in Seattle only a few weeks prior, Minister Charette took the stage and spoke to the gathered study mission participants talking about the ambitious plan Québec has to reduce its greenhouse gas emissions from where they were in 1990 by increasing the funding. He added, "We are so fortunate with our access to less expensive electricity, much like Washington. But we have big, big issues with transportation with 48% of our emissions coming from transportation."

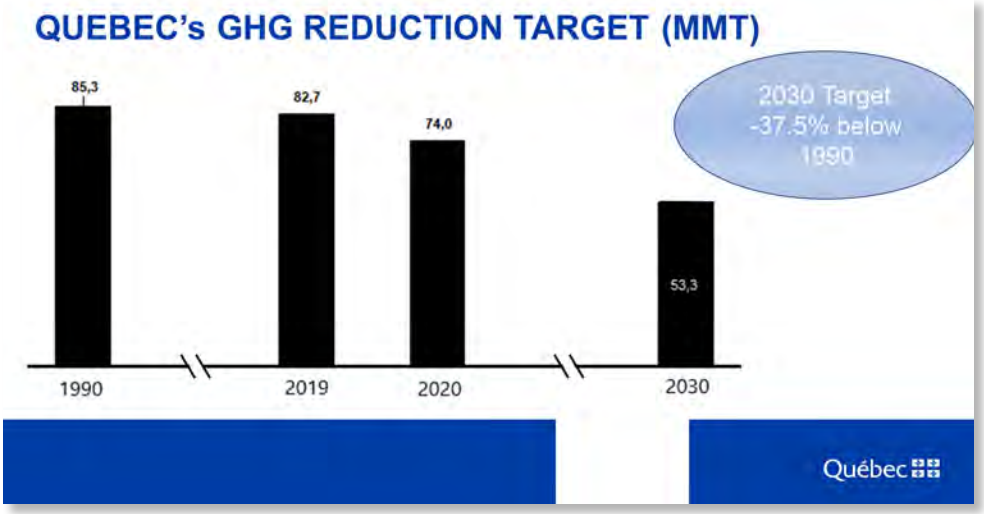
Harold Côté, Director General in the Office of Climate and Energy Transition, Ministry of the Environment, the Fight Against Climate Change, Wildlife and Parks, echoed what Minister Charette was saying and added that their plans to reduce emissions are very ambitious.

"But we're still optimistic because of the Québec carbon market, and specifically the association (linking) that we have with the California market."

Côté went on to say they reached their 2020 target and again credited the linkage between Québec's carbon market and the carbon market in California, hoping to see Washington join that combined market soon. More on linkage in this report.

Côté talked about the climate change risks they are already experiencing like extreme floods that happened only two weeks before the group arrived, one hour east of Québec City.

"We do have extreme events, even though we're living north," said Cote. "We have heavy precipitation, coastal erosion and flooding, extreme heat and already the first forest fires of the summer. We are now even seeing Permafrost thaw."



Côté went on to explain that Québec's fight against climate change is being tackled on several fronts.

"The three main points encompassed in our plan to fight climate change include mitigating climate change, building tomorrow's economy and adapting to climate change."

MITIGATING CLIMATE CHANGE

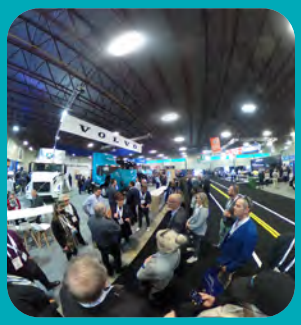
According to Québec's government website on the 2030 plan, priority is being given to electrification by "electrifying everything for which electrification is feasible." The government of Québec is also taking into consideration other forms of renewable energy and transition energies.

BUILDING THE ECONOMY OF TOMORROW

Québec's economy of tomorrow will be "driven by the emergence of new businesses and strategic sectors, particularly with respect to electric vehicles and batteries, as well as by innovation, thereby paving the way for new technologies and know-how."

SCENES FROM OUR TRIP

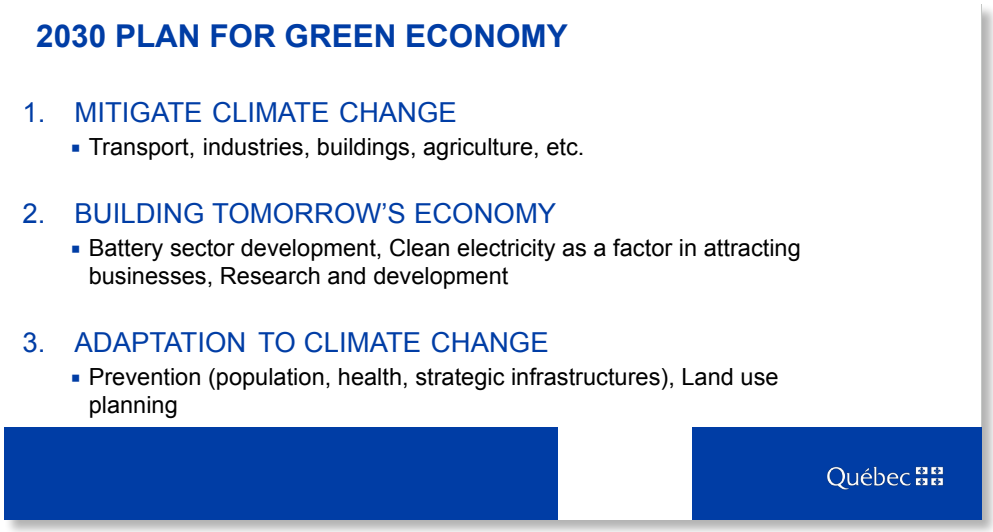
SCENES FROM OUR TRIP



ADAPT TO CLIMATE CHANGE

As Côté told the group, climate change is already having an impact on Québec's infrastructure and ecosystems, and is affecting the economic activities, well-being and safety of many of its citizens and communities.

"Our implementation plan will focus on prevention and take future climate changes into account in an effort to play an important role in strengthening the resilience of our communities across the Province of Québec."



QUÉBEC'S GREEN HYDROGEN STRATEGY

In the pursuit of its energy transition and on the strength of its natural resources, we learned that Québec intends to increase the role of green hydrogen and bioenergy in its energy portfolio. Mathieu Payeur, the Director, Green Hydrogen and Bioenergy Bureau, Ministry of Economy, Innovation and Energy spoke to the group and said that in order to reach their GHG reduction targets, they must turn to other forms of renewable energy like green hydrogen and bioenergy.

Payeur said these energy sources will play a major role in the success of the global energy transition and added that in 2030, green hydrogen and bioenergy will have the potential to reduce consumption of petroleum products by nearly one billion litres per year in Québec.

"This could reduce our GHG emissions by 4 megatonnes of CO_2 per year, which would be equivalent to removing 1.2 million gasoline vehicles from the roads," added Payeur.

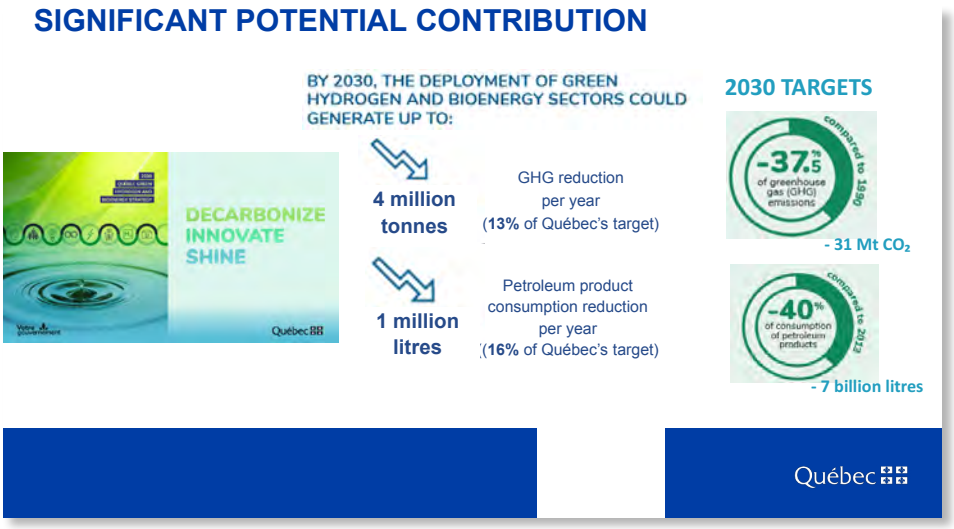
According to the Government of Québec's website, "By the 2050 horizon, according to the International Energy Agency, global hydrogen demand could be multiplied by five and bioenergy production could meet 20% of global energy needs, if global carbon neutrality is targeted."

Québec's advantages are many for developing new energy sources and sectors including:

- renewable electricity at a competitive cost
- a reliable and robust electric power distribution grid
- diversified residual biomass distribution throughout the territory
- research and development centers with recognized know-how and collaboration between researchers and industrialists
- favorable policies for achievement of projects

Québec is already active in the hydrogen and bioenergy fields:

- Québec's expertise in hydrogen research and development is recognized. The improvement of electrolyzer technologies and the low costs of renewable electricity make it possible to envision a profitable and competitive green hydrogen production sector in Québec.
- Bioenergy represented 8% of the energy consumed in Québec in 2019. Québec has planned to increase production by 50% by 2030. According to a study conducted in 2021, residual biomass from forest, agricultural, municipal, commercial and industrial sources available here will be sufficient to envision such growth.

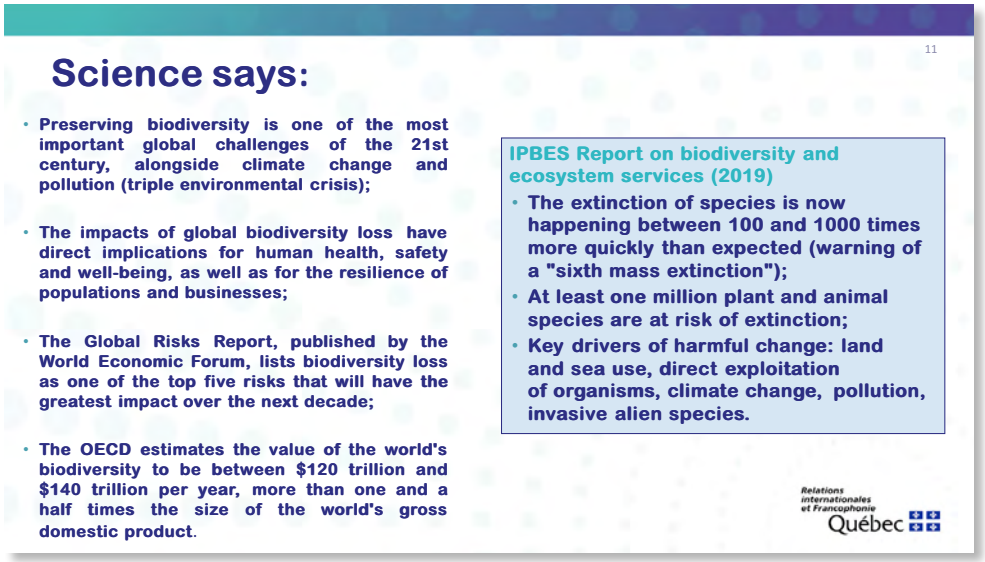


Québec Green Hydrogen and Bioenergy Strategy

SCENES FROM OUR TRIP

"BIODIVERSITY IS THE HEART OF CLIMATE CHANGE SUCCESS"

Meanwhile, Jean Lemire, Québec's Emissary for Climate Change and Northern and Arctic Affairs spoke about climate diplomacy and said Québec is focused on international climate cooperation with the most vulnerable countries and regions. He warned that climate change is having a drastic effect on biodiversity of species with complete extinction of species happening 100 to 1000 times more quickly than expected. He said preserving biodiversity is one of the most important markers of climate health and one of the most critical things we need to focus on.



LINKING TO QUÉBEC'S CARBON MARKET

IS CARBON THE NEW FUR?

When French-Canadian fur trapper Simon Plamondon traveled from Québec to the wilds of the Pacific Northwest in 1820, he probably didn't envision that 200 years later descendents of his Cowlitz Tribe hosts would travel with the Clean & Prosperous Institute to visit Québec. And he certainly didn't think that fur trade would be replaced by carbon trade.

When we ventured up to the Province of Québec, we were joined by the General Council Chairwoman of the Cowlitz Tribe, Patty Kinswa-Gaiser. After Huron-Wendat Nation Grand Chief Rémy Vincent welcomed us to the Nionwentsio Territory, Chairwoman Kinswa-Gaiser said, "This year marks a milestone in our collective journey that began centuries ago, when a young citizen of Quebéc became an historic icon in our Cowlitz Tribe. A Cowlitz bride Thas-a-Muth and a Canadian, Simon Plamondon, still in their teens, became parents to children whose descendants are still among the leadership of the Cowlitz Tribe.

The connection between indigenous communities and the land is one that stretches back for countless generations. The wisdom of our ancestors has guided us, and their legacy is woven into the very fabric of our common populations. As we have learned, land is not merely a backdrop for our stories; it is a living testament to the strength and resilience of both our peoples.

WHO ARE THE HURON-WENDAT PEOPLE?

The Huron-Wendat Nation in Québec is an Iroquoian-speaking nation that was established in the 17th century. The French gave the nickname "Huron" to the Wendat, meaning "boar's head." The nation inhabited the area between Lake Simcoe and Georgian Bay, historically known as Wendake (Huronia), conquered and devastated in the 17th century Beaver Wars, which prompted the surviving Hurons to move east to Québec, under French protection. It now has two communities and reserves at Wendake, Québec, a municipality now enclosed within Québec City in Canada.

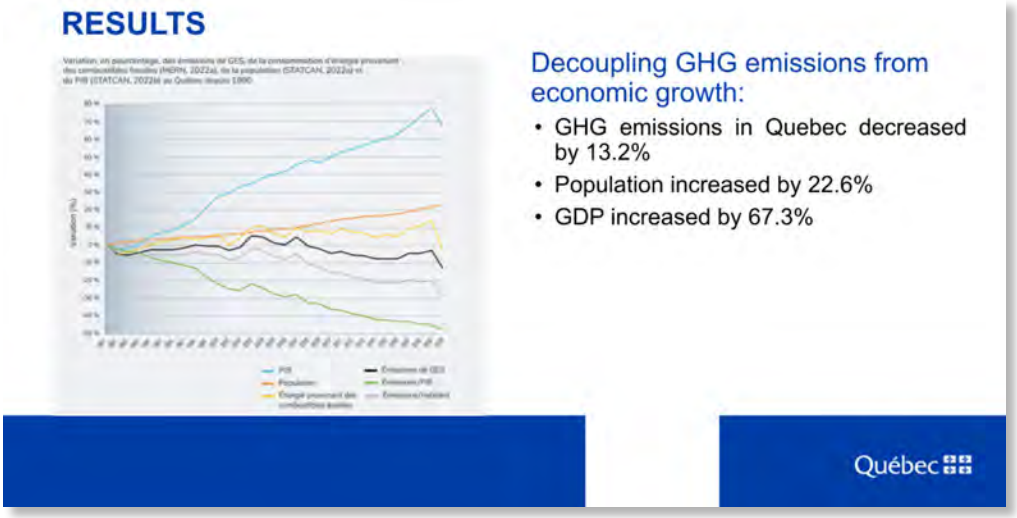
As we work side by side with the leaders and citizens of Québec, we are taking a significant step forward. This step is one of understanding, respect, and partnership—a step that acknowledges the importance of honoring the rich heritage of both the Cowlitz and City of Québec – we are cousins, after all."

Photos left to right: Huron-Wendat Nation Grand Chief Rémy Vincent, Cowlitz Tribe General Council Chairwoman Patty Kinswa-Gaiser

Linking our Washington state emissions-allowance market with those of Québec and California was the focus of many of the briefings in Québec City.

After Québec's Minister of the Environment and the Fight Against Climate Change, Benoit Charette, described the Province's commitment to a green economy, Harold Côté, Director General in the Office of Climate and Energy Transition told us the government sees climate action as an engine (a clean engine) of economic development – and he said that their most important tool is the carbon market.

"Linking to Québec's Carbon Market" was the title of Onil Bergeron's talk. Onil is Senior Strategic Advisor, Emissions Data and Carbon Regulation, and he shared the results of Québec's Cap-and-Invest program at the 10-year mark:



He compared the carbon tax that Canada introduced in 2006:

- Provides uncertain GHG emissions reduction with price certainty (the government sets the price)

… to the Cap-and-Invest program that Québec introduced in 2013:

- Provides certain GHG emissions reduction with price uncertainty (the market determines the price)

SCENES FROM OUR TRIP

Bergeron shared Québec's Climate Action Dashboard that's central to the transparency promised when their Cap-and-Invest program was implemented. Similar metrics of performance may be tracked in Washington. The Washington State Department of Ecology has started new rulemaking focused on reporting requirements for state agencies that receive and use CCA auction revenues to fund various climate programs, projects, and initiatives across the state. From this information, Ecology must compile an annual report to the Legislature that shows where funds were spent and, for decarbonization projects, the greenhouse gas reductions they achieved.

Bergeron described Cap-and-Invest as "a game-changer for climate and the economy", as it is "robust and flexible, offering choices to reduce emissions at the lowest possible cost". He went on to say that linking Québec's carbon market with California's was "a no-brainer. The bigger the market, the more efficient."

We have studied and written about the efficiencies of linking with California. The same benefits hold true for linking with Québec.

The Environmental Defense Fund writes, "Washington, California and Québec have a lot to gain from linkage. It can drive deeper cuts in climate pollution, lower prices and increase the stability of the carbon market. The programs in these jurisdictions are already aligned in the central ways needed to function as a linked market — but to unlock the greatest benefits of linkage, leaders need to align key aspects of these carbon markets in their respective processes."

Resources for the Future writes, "Linking has two key benefits. It reduces the cost of achieving Washington's climate goals and broadens the state's influence in advancing climate policy beyond its borders. If Washington links with other jurisdictions in a common effort to drive emissions reductions, it will legitimize and enable efforts to implement carbon pricing and companion regulatory policies to reduce greenhouse gas emissions elsewhere. Linking would substantially enhance the rigor, influence, and durability of Washington's climate policy efforts. The benefits of linking would accrue to all three jurisdictions, but Washington's newly formed carbon market would especially benefit by boosting its stability and the influence that its leadership can have throughout the nation and internationally."

In order to link markets, regulatory and governance mechanisms must be aligned. The Washington State Department of Ecology is currently evaluating a number of considerations and reviewing public input prior to making its recommendation, which is expected in early 2024.

Not much fur gets traded between Washington and Québec these days, and we look forward to the day when not much carbon gets traded. But in the meantime, a common market for emission allowances can help both Washington and Québec transition to a carbon-free (and fur-friendly?) future.

TOURS AND PRESENTATIONS

BIG IDEAS FOR DECARBONIZING BIG RIGS

The national trucking show, ExpoCam, had returned in full force and the Institute was lucky enough to be able to attend the show's first full three-day post-pandemic presentation.

On May 25, we gathered along with 8,207 other attendees to see how big rigs are decarbonizing.

In this renewed ExpoCam, we saw Washington state's Kenworth zero emission trucks on full display. Celebrating 100 years this year, Kenworth has come a long way from their four-cylinder, gas powered trucks to fully electric Zero Emission, Battery-Electric Trucks. Their T680E Class 8 and K270E/K370E Medium Duty models combine state-of-the-art zero emission powertrains with comprehensive PACCAR charging solutions and infrastructure support. And they were on full display in Montréal.

Kenworth's electric truck

SCENES FROM OUR TRIP

Kenworth also has their fuel cell electric vehicles with a powertrain that combines hydrogen gas and air to produce electricity, with water as the only emissions byproduct.

"Kenworth's storied history over the past 100 years provides much to be proud about. From being the first U.S. truck manufacturer to offer a diesel engine as standard equipment in 1933 to selling Kenworth trucks with an electric powertrain today, it's been quite a journey," said Kevin Baney, Kenworth general manager and PACCAR vice president.

"We're also especially proud of our leadership in truck aerodynamics with the Kenworth T600 introduction in 1985. That model began the revolution in fuel-efficient trucks and its evolution has tremendously advanced in the new flagship T680 that sets industry standard today in truck aerodynamics," said Baney.

Volvo trucks were also on display and participants learned that hydrogen-fuel-cell trucks will be an important part of their zero-exhaust-emission product portfolio, saying that these trucks passed an important milestone, being test-driven on public roads in the Arctic Circle.

According to our tour guide, Volvo Trucks last year showcased its fuel-cell electric trucks for the first time. These zero-exhaust-emission trucks use hydrogen to produce their own electricity onboard.

Volvo's electric truck

Two fuel cells provide a capacity to generate 300 kW of electric power. The number of Certified Electric Vehicle Dealerships in North America, has tripled, growing from 12 locations in May 2022 to 36 locations in 19 states in May 2023.

To date, Volvo Trucks has delivered 251 VNR Electric trucks from its New River Valley Plant in Dublin, Virginia.

Sarah Severn and Kevin Tempest from the Clean & Prosperous Institute next to Volvo's electric truck

FOREST CARBON SEQUESTRATION

Here in the United States, federal, state and local governments are examining the importance of forests for capturing and storing carbon to keep it out of the environment. In fact, the USDA has developed the "Forest Carbon Management Menu" to identify a number of actions that can be taken to help adapt forests to a changing climate.

In Washington state, offset projects are an important component to become carbon neutral by 2050. Under our own Cap-and-Invest program, offset projects must provide direct environmental benefits to our state and include things like reforestation, planting trees in urban areas and capturing methane on dairy farms.

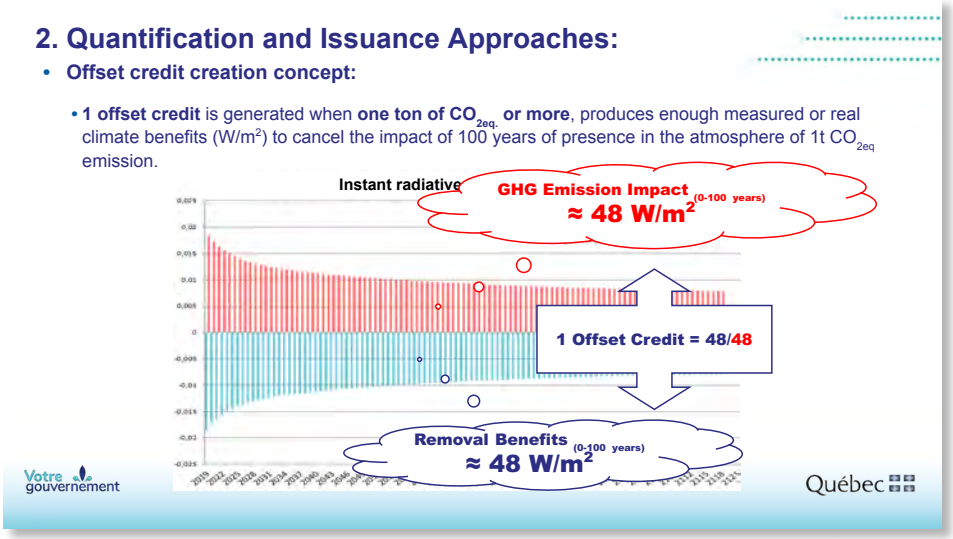
Meanwhile, in Québec, we heard from Claude Fortin, Québec's Forestry and Climate Change Specialist for the Ministry of the Environment and the Fight Against Climate Change, Wildlife and Parks, about their own forest carbon sequestration programs.

Their new, innovative regulations make it possible to reward the removal of CO_2 from the atmosphere through afforestation and reforestation projects on Québec's privately-owned land. These projects, as part of the Québec-California regulatory carbon market, can also contribute to the restoration of habitats for biodiversity, soil regeneration and the protection of waterways.

According to the Government of Québec, "the climate outcomes or benefits associated with GHG emissions reduction projects, the climate benefits associated with removing atmospheric CO2 and storing of carbon in forest ecosystem biomass are only temporary. Consequently, this limits the impact of climate benefits associated with carbon sequestration efforts and also limits their capacity to offset GHG emissions from fossil fuel combustion."

"To ensure the environmental integrity of all offset credits issued for this project type, partners of the Western Climate Initiative (WCI), of which Québec is a member, have adopted the 'permanent' criterion. Among other things, this criterion stipulates that the climate benefits of projects designed to remove quantities of atmospheric CO_2 must be equivalent to those obtained by GHG emissions reduction projects."

Wapizagonke Lake viewed from the lookout Le passage, La Mauricie National Park, Québec



CLEAN ENERGY GENERATION

Once the group arrived in Montréal from Québec City, we learned more about Québec and Montréal's clean energy generation and zero emission transportation from Hydro Québec, Canada's largest electric company.

Hydro Québec's Barbara Sauriol and Elodie Piche-Lussier, corporate strategy advisors to Hydro-Québec spoke about Québec's ambitious transition toward a low-carbon economy and their work to create a robust strategic plan taking them through 2026. They said, "The profound changes that swept Québec and the world during the pandemic prompted us to reflect on our values and how we want to evolve as a company to help Québec society become more resilient, more prosperous and more sustainable."

They also said that the time was right to begin a new strategic planning cycle considering the pivotal role Hydro-Québec is playing in the implementation of the electrification initiative outlined in the Government of Québec's 2030 Plan for a Green Economy.

HOW TO GET THERE?

Both Sauriol and Piche-Lussier said that over 100 Terrawatt-hours (TWh) of additional clean electricity, or more than half of their current annual generating capacity, will be required to reach carbon neutrality in Québec by 2050.

"It's a tall order," said Sauriol. "Regardless of the pace and magnitude of this transition, Hydro-Québec is fully committed to meeting the challenge."

In order for this to happen, there are four major paradigm shifts they said will need to take place that will lead to changes in their operations:

- Energy and capacity balances will tighten with growing demand for green electricity.
- The new electricity supplies needed to meet demand growth will cost more.
- The grid will transition to a more complex and more interactive energy system.
- More significant infrastructure investments will be required to reinforce the grid and equip it to handle the higher demand.

In addition, they shared the three key components for power system operators to reach these goals:

- Decarbonization, or the gradual phase-out of fossil fuels in favor of renewable energy sources with a smaller carbon footprint
- Digitization, which leverages cleantech innovation to optimize power system operations and energy consumption
- Decentralization, meaning expanding the role customers play in generating renewable energy and managing their energy use

We learned that Hydro Québec has been "generating, transmitting and distributing electricity for over 75 years." Clearly, as their website says, they work to make use of "clean, renewable energy sources, contribute to Québec's prosperity and play a central role in the emergence of a green, sustainable economy."

Read more about Hydro Québec 2022-2026 Strategic plan here.

ZERO EMISSION TRANSPORTATION

WHAT DID QUÉBEC TEACH US ABOUT TRUCKS & BUSES? PLENTY.

We were impressed with the climate commitment demonstrated by everyone we met. Already Québec has the lowest per capita carbon emissions in Canada – half the national average. And they are motivated to bring their emissions down further, **guided by nine principles that could just as easily apply to our ambitions in Washington state:**

1. Electrification and the fight against climate change are major levers for economic development and the creation of wealth.
2. Electrification and the fight against climate change must maximize the reduction of greenhouse gas emissions across Québec while taking advantage of the flexibility offered by the carbon market.
3. Electrification and the fight against climate change are grounded on the efficient use of energy and resources.
4. Everyone is responsible for electrification and the fight against climate change.
5. Electrification and the fight against climate change must be implemented with a positive approach that highlights the gains to be made and generates the motivation we need to get there.
6. Electrification and the fight against climate change objectives will need to be integrated into government orientations, policies and strategies.
7. For both electrification and the fight against climate change, the government intends to act pragmatically, rigorously, and effectively, using a science-based approach and prioritizing the results to be achieved while accounting for the future climate and the realities of the various areas that fall under the scope of this project.
8. The government's vision of electrification and the fight against climate change is not limited to Québec. The Plan must ensure that Québec contributes beyond its borders.
9. Electrification and the fight against climate change must ensure a just transition for society as a whole and factor in the specific realities of each of Québec's regions.

Like Washington, transportation in Québec is the number one contributor to greenhouse gas emissions. Like Washington, leaders in Québec recognize that zero-emission trucks are a smart climate investment.

Their 2030 Plan for a Green Economy plans to invest 42% of its budget in the transportation sector, and includes setting a standard for heavy-duty vehicles.

The 2030 Plan encourages Québec municipalities and businesses to buy fully electric, Québec-made trucks and buses. Toward that end, the government uses the E-FLEET fleet electrification optimization model from Dunsky Energy + Climate Advisors.

SCENES FROM OUR TRIP

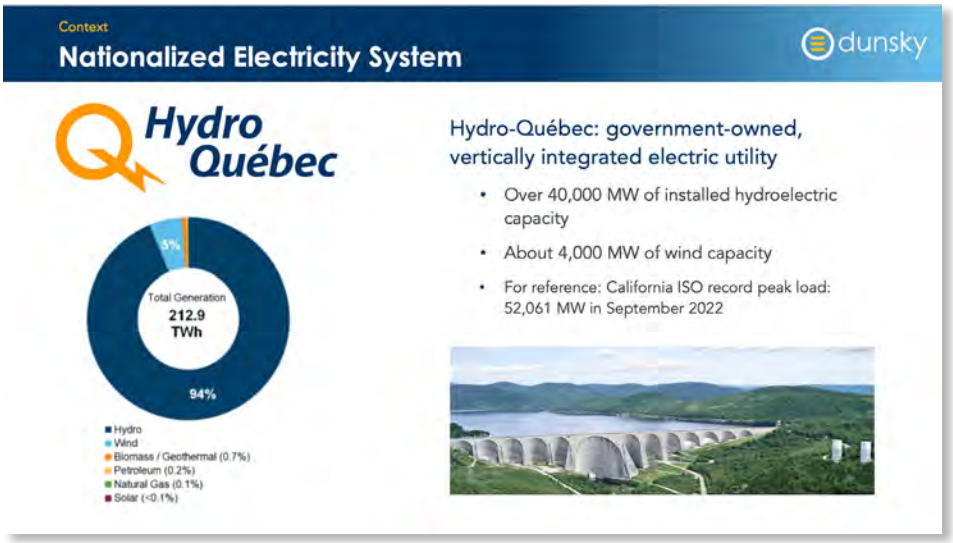
As of 2025, all new buses that are acquired by public transit companies and covered by government financial assistance will be electric. The government intends for electric buses to account for 55% of all city buses in Québec by 2030.

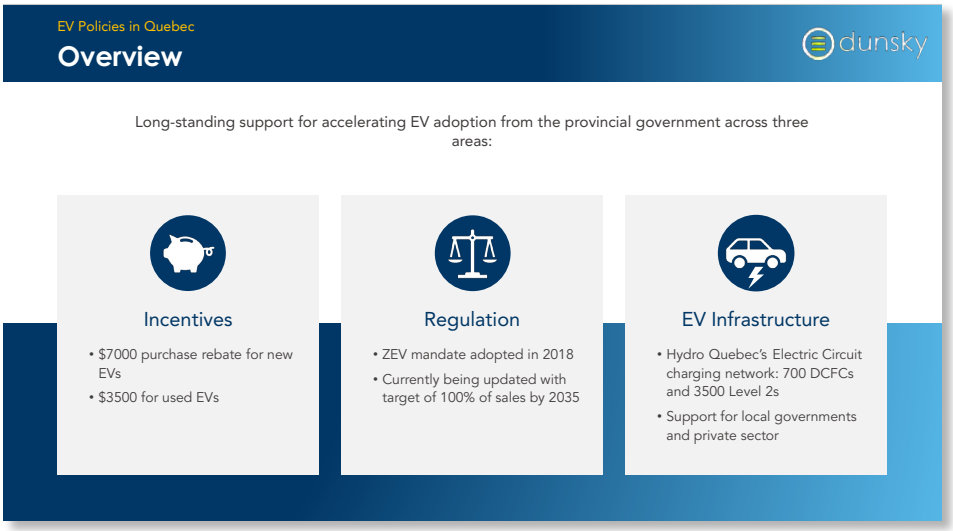
Specific initiatives will also be put in place to accelerate the acquisition of electric school buses. The government intends for electric buses to account for 65% of all school buses in Québec by 2030.

Jeff Turner, Dunsky's Director of Clean Mobility, briefed the delegation in Montréal, highlighting the long-standing support of the provincial government for accelerating EV adoption, including purchase incentives for Medium- and Heavy-duty Vehicles: up to $200k (Federal) + up to $175k (Québec) per vehicle.

Turner also shared the fact that Québec - as in all of Canada - has a Nationalized Electricity System, meaning over 40,000 MW of hydroelectric capacity and 4,000 MW of wind capacity all come from a government-owned, vertically integrated electric utility.

Harold Coté, Director General in the Office of Climate & Energy Transition, said "The transport sector is the leading source of greenhouse gas emissions, so electrifying it is critical. Electrification also serves as an opportunity for Québec to develop a dynamic and innovative industrial ecosystem around electric vehicles, batteries, and recharging infrastructures to emerge as a leader in the field."





The Clean & Prosperous Institute delegation got a first-hand look at that dynamic and innovative industrial ecosystem, beginning with a stop at Canada's largest trucking expo, ExpoCam. There we saw battery-electric semi trucks from Volvo and Kenworth. (see longer story on page 12 of this report).

On the outskirts of Montréal we toured Volvo's Nova Bus assembly plant, where 1,229 electric buses will be built thanks to government funding that will allow ten public transportation organizations to begin the conversion of their bus fleets to become 100% electric.

Like Québec, Washington can support development of its dynamic and innovative industrial ecosystem while reaping the benefits of decarbonization.

Electric trucks are manufactured in Renton by Kenworth, while dozens of other Washington manufacturers are part of the EV supply chain.

Kenworth and Volvo were members of the Clean & Prosperous Washington 2022-2023 Medium/Heavy-Duty Zero Emission Vehicle Working Group that helped secure a $120 million appropriation for MHD ZEV incentives during the 2023 legislative session. Clean & Prosperous Washington is now convening the 2023-2024 MHD ZEV Working Group, to work toward the design of purchase and infrastructure incentives, advise the state's EV Council on the Transportation Electrification Strategy, and help implement MHD incentives.

Another lesson from Québec is the power of partnerships -- in particular the partnership between power provider Hydro-Québec and the Provincial government of Québec. Together they have made installation of EV charging infrastructure a priority.

Here in Washington, power provider Seattle City Light has partnered with King County to implement the Transportation Electrification Strategic Investment Plan, toward the goal of 100% electric bus and light duty vehicle fleets by 2035. According to Climate Cabinet, Seattle City Light helps King County with comprehensive project modeling, technical expertise, and charging station design.

Because the road ahead for clean trucks is the fastest route to a clean economy, both Québec and Washington are paving the way with investments in incentives and infrastructure. Driving those investments are leaders from the Clean & Prosperous Institute Study Mission delegation who made constructive connections with their counterparts in Québec.

Volvo's assembly plant in Saint-Eutache

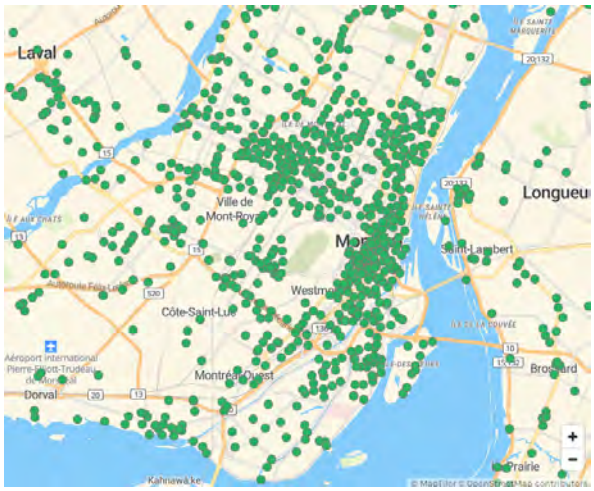
EV Policies in Quebec

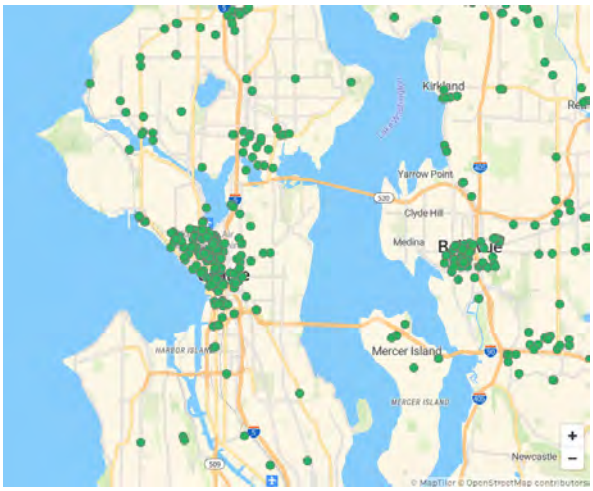
EV Infrastructure

dunsky

Partnerships with local governments for Level 2 infrastructure

Montreal has over 1400 curbside Level 2 chargers. Comparison with Seattle at same scale:





Study Mission participants at EVLO

CLEAN ENERGY TOURS: EVLO/IREQ AND LITHION RECYCLING

Clean energy tours capped off the study mission agenda including Hydro-Québec's Center of Excellence in Transportation Electrification and Energy Storage. There we learned how the utility is leveraging Québec's expertise in hydroelectricity to develop transportation electrification and energy storage solutions. The center is a world-class innovation hub in the field of battery materials for electric vehicles and other energy storage applications, both stationary and mobile.

The first close-up tour was of EVLO, Hydro Québec's energy storage facility in Québec.

ACCORDING TO EVLO:

The development of large-scale energy storage technologies remains somewhat in the shadow of the electric vehicle battery industry, but it is equally promising. Several local companies are innovating and stand out, including EVLO, Hydro-Québec's energy storage subsidiary.

Launched in early 2021, EVLO Energy Storage Inc. is the culmination of 40 years of R&D work carried out in the research centres of the Institut de Recherche d'Hydro-Québec (IREQ), and aims to export Québec technology and know-how to international markets.

ENERGY STORAGE: THE CORNERSTONE OF THE GLOBAL ENERGY TRANSITION

The rapid adoption of solar and wind power, which are now the cheapest energy sources, brings its share of challenges, especially because they are intermittent. The sun doesn't shine (unfortunately) 24 hours a day, and the wind doesn't blow all the time. This represents a technical challenge for the power grid, which needs a constant power source.

Battery energy storage systems, such as those developed by EVLO, provide the solution to this problem: by storing renewable energy when it is produced, batteries can then discharge it as the grid needs it. In addition to storing energy, EVLO systems offer several other services to the grid, providing flexibility and resilience.

EVLO: SPEARHEAD OF QUÉBEC KNOW-HOW

The expertise developed at Hydro-Québec positions EVLO as one of the leaders in the large-scale energy storage industry. First and foremost, it is an intimate knowledge of lithium-ion battery materials: perfected in their laboratories on the South Shore, in the Montréal area, the lithium iron phosphate (LFP) battery has been recognized as the safest technology. It is also a concrete experience with the integration of these systems into major electricity transmission and distribution networks, particularly in Québec, with half a dozen projects across the province, and in France, on the RTE network.

Designed specifically for the needs of large power grids, EVLO's energy storage products are particularly suited to the harsh winter conditions of our climate. The EVLO 1000 system is particularly resilient: it can be operated normally at temperatures down to -40 °C and can survive peaks of -50 °C, which distinguishes it from competitive products.

LOOKING AHEAD

Québec is a world champion in clean energy, and EVLO's mission is to export this know-how and capitalize on the economic opportunities created by the energy transition. EVLO's ambition is to capture 10% of the global high-capacity energy storage market by 2030, with a foothold in the Canadian, American, South American and European markets.

In addition to storage options, the Center is also working to revolutionize the world of battery materials by teaming up with universities, research centers and companies around the world to collaborate on new materials for batteries.

Its R&D efforts, focused mainly on advanced lithium-ion batteries and solid-state batteries, have already "given rise to an impressive portfolio of patents and publications, as well as many licensing agreements and hundreds of citations in scientific journals."

Warned against taking pictures other than the "after product" that is recycled once the battery is taken apart, we toured Lithion's pilot battery recycling facility and learned about their expansion plans to get to battery recycling scale.

Walking around the facility, we learned that this is Lithion's first commercial mechanical separation plant and that Lithion plans to have at least 20 battery recycling plants built around the world in the next 15 years. This first pilot plant was built in Anjou, Québec, which is a suburb of Montréal.

Their next ambitious plans are to build a first generation commercial plant with a capacity that is equivalent to 4,000 electric car batteries. By 2030, the company's leadership told us it wants to have 10 plants in North America, 10 plants in Europe, and 20 plants in Asia.

Lithion's president and CEO Benoit Couture told us this is a critical moment in the history of Lithion and that they intend to play a significant and crucial role in the future of the province's battery and EV sectors.

"We are passionate about finding sustainable solutions for critical materials to be reused infinitely. We see lithium-ion batteries as a resource to be leveraged to create circularity of materials and lessen the pressure on our precious planet."

– Benoit Couture, President & CEO

Québec-based Lithion Recycling has developed an innovative process to recycle lithium-ion batteries.

Learn more about Lithion Battery Recycling: lithionrecycling.com

SAF CONSORTIUM

WHAT DID QUÉBEC TEACH US ABOUT SAF — SUSTAINABLE AVIATION FUELS?

The Clean & Prosperous Institute Study Mission delegation that visited Québec City and Montréal flew from Seattle on traditional, "unsustainable" aviation fuel – though the Institute did buy carbon offsets. Will future study mission delegations fly on commercial jets powered by sustainable aviation fuel (SAF)?

To help answer that question, we learned about advances in SAF from a briefing by Jean Paquin, President and CEO of the SAF+ Consortium, and a tour of the SAF+ Consortium's pilot plant.

But first, what is SAF? It's a greener alternative to traditional, refined-from-oil jet fuel. It can be produced from fats, oils and greases, or from biomass such as algae, municipal solid waste, or agricultural and forest residue. eSAF is produced with a Power-to-Liquid (PtL) process of electrolysis that extracts hydrogen from water, and carbon from atmospheric carbon dioxide or from industrial waste gas, using renewable electricity. This PtL process is what the delegation saw at the SAF+ Consortium's pilot plant in Montréal.

Per GreenBiz,

> SAF's great advantage is that it's a "drop-in" fuel — you can pump it straight into aircraft fuel tanks without expensive retrofitting to aircraft or special infrastructure at airports. Current regulations only permit commercial aircraft to use a 50/50 mix of SAF and regular kerosene. But in March, Airbus successfully tested its A380 — the world's largest passenger aircraft — with one of its four engines using 100 percent SAF. Airbus has conducted similar tests on other aircraft models and on a helicopter. In June, a Swedish regional airline completed the world's first test flight with a commercial aircraft flying SAF in both its engines.
>
> So much for the good news. The bad news is that SAF is still very expensive — anything between two and five times the 2019 price of conventional jet fuel. As a result, SAF represents less than 0.1 percent of global aviation fuel consumption today — a tiny step that needs to become a giant leap.

That giant leap will depend on supply going up and cost coming down. Already, even with cost at an early-stage premium, there is growing demand for SAF. Delegation participant Charles Knutson of Amazon noted that his company is the world's largest cargo buyer of SAF.

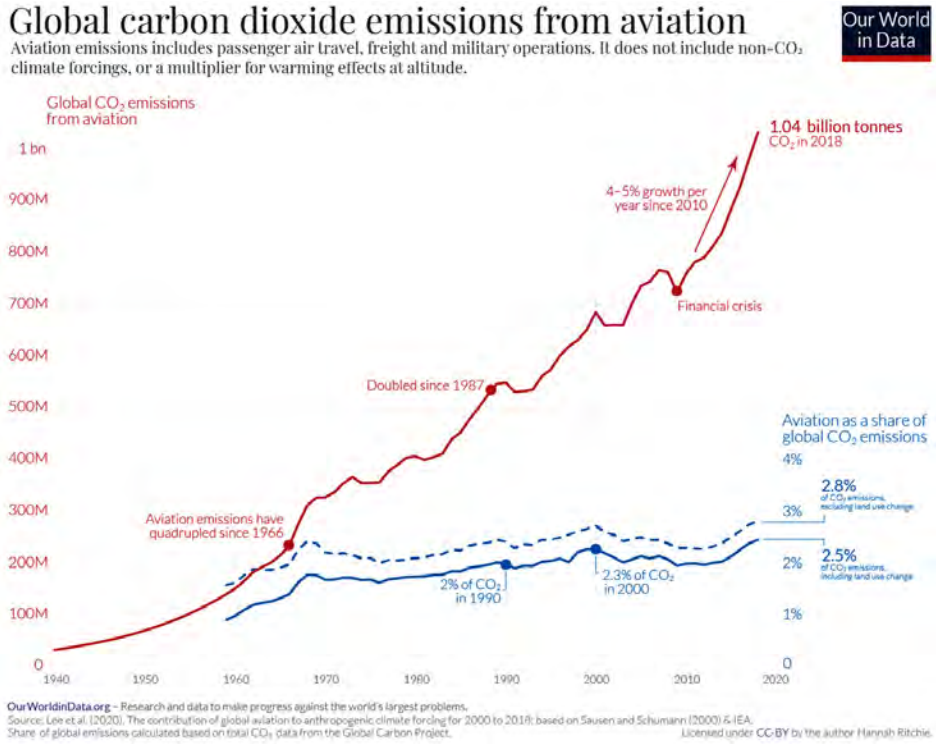
Boeing has agreements to purchase 5.6 million gallons of blended SAF produced by Neste – the world's leading SAF producer and another delegation participant – to support its U.S. commercial operations. These agreements more than double the company's SAF procurement from last year.

United Airlines was the first carrier to sign an offtake agreement with an overseas supplier (again, Neste) for 50 million gallons of SAF for its flights out of Amsterdam. This is on top of the long-term agreements already signed by major US and European carriers to purchase half a billion gallons of SAF. United estimates that it currently buys nearly half of all available SAF.

United is not only buying SAF, but also investing in production via a joint venture known as Blue Blade Energy. United Airlines has signed an offtake agreement with Blue Blade Energy for up to 135 million gallons of the future ethanol-based SAF annually and up to 2.7 billion gallons in total. This corresponds to 50,000 flights powered by unblended SAF between United's hubs in Chicago and Denver per year. Blue Blade's new SAF technology was developed by researchers at the US Department of Energy's Pacific Northwest National Laboratory (PNNL), a leading center for technological innovation in sustainable energy in Richland, WA.

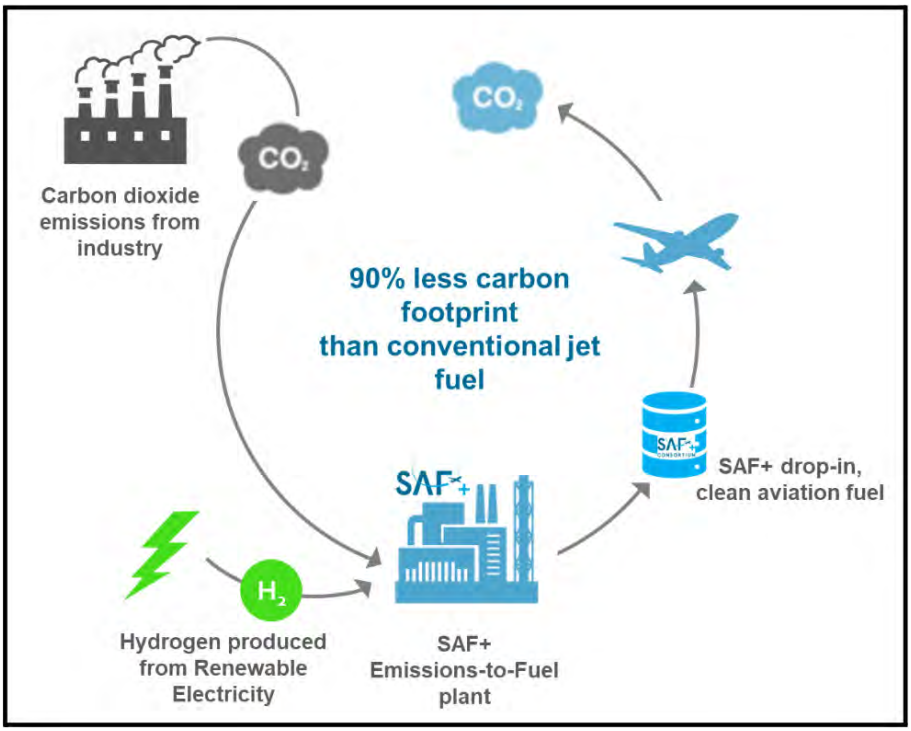
cCarbon reports that "the Sustainable Aviation Fuel market size stood at US$1.1 billion in 2022, up from US$50 million in 2019 registering an annually compounded growth rate of 115.38%." cCarbon estimates the market is expected to reach a value of US $29.7 billion by 2030.

Québec's SAF+ Consortium intends to be a major player in this growing market. During his briefing to the Clean & Prosperous Institute delegation, Jean Paquin noted that while the aviation sector's share of global greenhouse gas emissions is relatively small now, as other sectors decarbonize, aviation's share will expand to over 20% by 2050.



Climate change and flying: what share of global CO_2 emissions come from aviation

That is, unless the airline industry pivots to SAF, including Paquin's "Pollution-to-solution" technology:



Graphic from SAF+ Consortium safplusconsortium.com

For more about how SAF+ is made, watch this 3-minute video

Inside SAF+ Consortium's pilot plant in Montréal

Shortly after our tour of the SAF+ pilot plant, the Consortium attended the Paris Air Show where they announced that beginning in 2030 they'll supply SAF to the Air France-KLM Group.

While Québec works to develop its sustainable aviation fuel supply chain, Washington state – led by several of the government and business leaders in the study mission delegation – worked to leverage its abundance of aerospace innovation, clean energy, and sustainable feedstocks toward a leadership position in the emerging SAF industry.

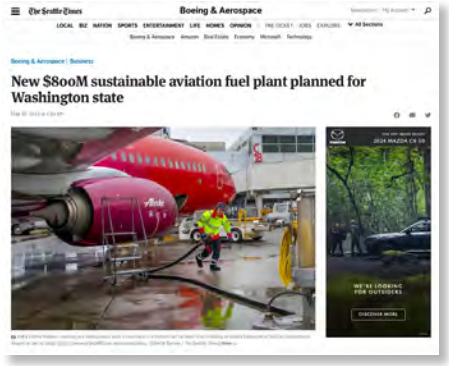
Washington state now offers a per-gallon SAF Business & Occupation tax credit, thanks to Representative Andy Billig's Washington Senate Bill 5447, which also passed the House and was signed into law by Governor Inslee in early May, 2023. Qualifying fuel will receive $1 per gallon plus $0.02 for each additional 1% reduction beyond 50%, capped at $2.

"Our state is already at the forefront of the aviation industry, and we should also be a leader in the development of cleaner fuels for those same airplanes," said Billig in a statement. "This is a market just waiting to be tapped. There are potentially hundreds of family wage jobs and wonderful opportunities for businesses in this emerging industry, and we're just now scratching the surface."

The legislation implemented key recommendations from the Washington State University Sustainable Aviation Biofuels Work Group December 2022 Final Report.

In Washington, D.C., the U.S. Department of Energy is leading a government-wide strategy for scaling up new technologies to produce SAF, with a goal of meeting 100% of domestic aviation fuel demand with sustainable fuel by 2050. That initiative aims to boost SAF production to at least 3 billion gallons/year by 2030 and wean the sector off petroleum-based jet fuel completely by producing 35 billion gallons/year of SAF by 2050. According to Secretary of Energy Jennifer Granholm, "Not only is Sustainable Aviation Fuel critical to decarbonizing the airline industry and reaching our climate goals, but this plan will help American companies corner the market on a valuable emerging industry." The Department of Energy is supporting SAF development with IRA-funded grants and tax incentives.

With federal and state government assistance, Washington state SAF producers are making headlines.



FROM FAST COMPANY:

A STARTUP CALLED TWELVE IS BUILDING THE U.S.'S FIRST LARGE-SCALE FACTORY TO MAKE JET FUEL FROM CO_2 IN WASHINGTON STATE. BY NEXT YEAR, ALASKA AIRLINES PLANS TO BUY THE FUEL.

On the site of a former sugar beet mill in Moses Lake, Washington, a startup called Twelve is building a very different type of factory: one of the first to make jet fuel from CO_2 and renewable electricity.

FROM THE SEATTLE TIMES:

NEW $800M SUSTAINABLE AVIATION FUEL PLANT PLANNED FOR WASHINGTON STATE.

Dutch company SkyNRG has chosen Washington state to locate a major new biogas plant that will produce sustainable aviation fuel — a key part of the airline world's push to decarbonize flying.

FROM WSUTC NEWS:

WASHINGTON STATE UNIVERSITY TRI-CITIES AND SNOHOMISH COUNTY WILL PARTNER TO BRING A PROPOSED RESEARCH AND DEVELOPMENT CENTER FOR SUSTAINABLE AVIATION FUELS TO LIFE.

Snohomish County officials announced Tuesday plans for a $6.5 million Sustainable Aviation Fuel (SAF) Applied Research and Development Center located at Paine Field in Snohomish County. The first-of-its-kind center will offer fuel testing, fuel finishing and the world's first fuel repository.

FROM THE NORTHERN LIGHT:

BP PLANNING FOR $1.5 BILLION GREEN INVESTMENT AT CHERRY POINT.

BP's Cherry Point Refinery could be subject to a $1.5 billion investment that would make the Whatcom County facility a future hub for green energy.

So…will future study mission delegations fly on commercial jets powered by sustainable aviation fuel? Almost certainly.

And maybe…
on a Boom Supersonic!

INNOVATIVE VEHICLE INSTITUTE (IVI) AND NOVA BUS & PROPULSION QUÉBEC

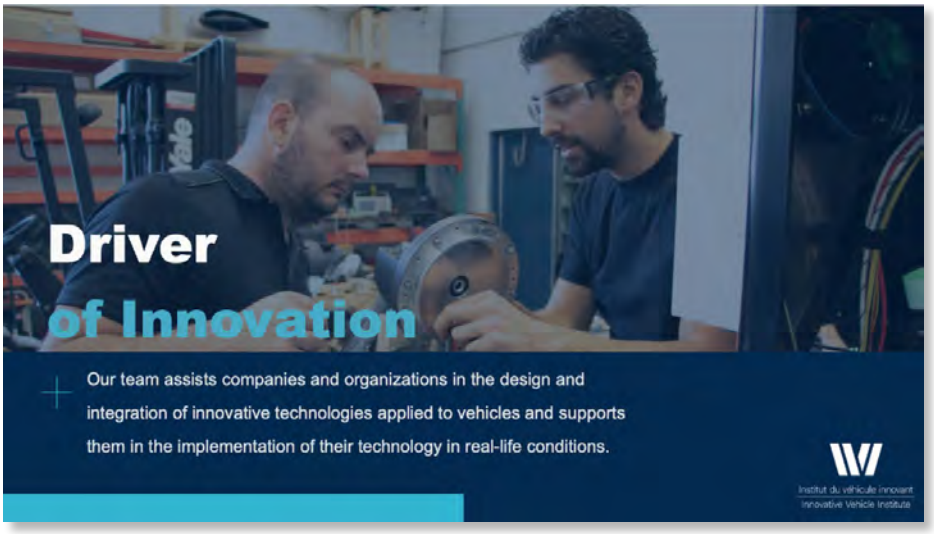
WHAT DID QUÉBEC TEACH US ABOUT R&D?

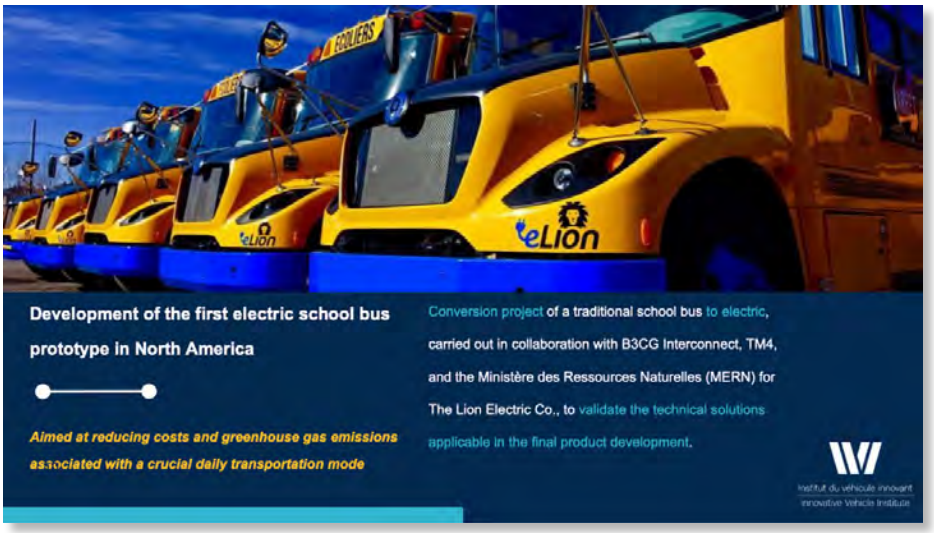
A highlight of the trip was the visit to the Innovative Vehicle Institute (IVI) on the outskirts of Montréal.

When the delegation pulled into the IVI parking lot, it seemed that just about every parking space had an EV charger. And that stands to reason, as IVI sees its mission as a vehicle innovation catalyst to be “helping companies develop new technology, and helping consumers adopt new technology”.

One of many specialized research centers across Canada, IVI is a non-profit founded by the government of Canada, but funded by projects contracted with private companies. Among the projects we heard about were:

The electrification of school buses, described by our hosts as “a home run”. Their client for this project was Lion Electric, Québec-based manufacturer of trucks and buses.





Project description

The challenges related to productivity in the agricultural sector lead to some challenges regarding traditional working methods. One solution is to rethink agricultural vehicles so that they are smaller, lighter, hybrid or electric, and have a sufficient level of automation to reduce the need for labour. As part of this project, Elmec and IVI have joined forces to develop a concept of an autonomous agriculturalrobot with an electric motor. Powered by four electric wheel motors and equipped with an autonomous navigation system, the robot will be used to perform repetitive agricultural tasks such as mechanical weeding, soil and plant identification and characterization..

Another project was completed for Québec's Elmec: A prototype autonomous and electric agricultural robot.

We got to see a heavy-duty all-electric dump truck in action – utilizing an IVI-developed electric propulsion system adapted to the difficult conditions of Canada's open-pit mining industry. Describing this project, IVI says,

- Within the next 20 years, all mines will be in the process of eliminating diesel vehicles, as they represent a considerable operating cost and are the source of a significant portion of their greenhouse gas emissions. Several manufacturers have already proposed electric versions of on-road vehicles that are not adapted to Canadian open-pit mining conditions or intended for underground operations. Indeed, this extremely harsh environment requires adequate technologies capable of performing in very cold climatic zones.
- As part of this project, IVI and its industrial partners, Adria, TM4, Nouveau Monde Graphite (NMG), Fournier et Fils, and the NRC have joined forces to design and develop an electric propulsion system specifically adapted to heavy mining vehicles. The development of this solution also involves the design and development of a high-power battery system technology and a fast charging infrastructure adapted to mining operations. The type of vehicle used for this project is a 40 ton dump truck produced by Daimler Western Star model 6900XD. The solutions being developed will be tested at NMG's new site.

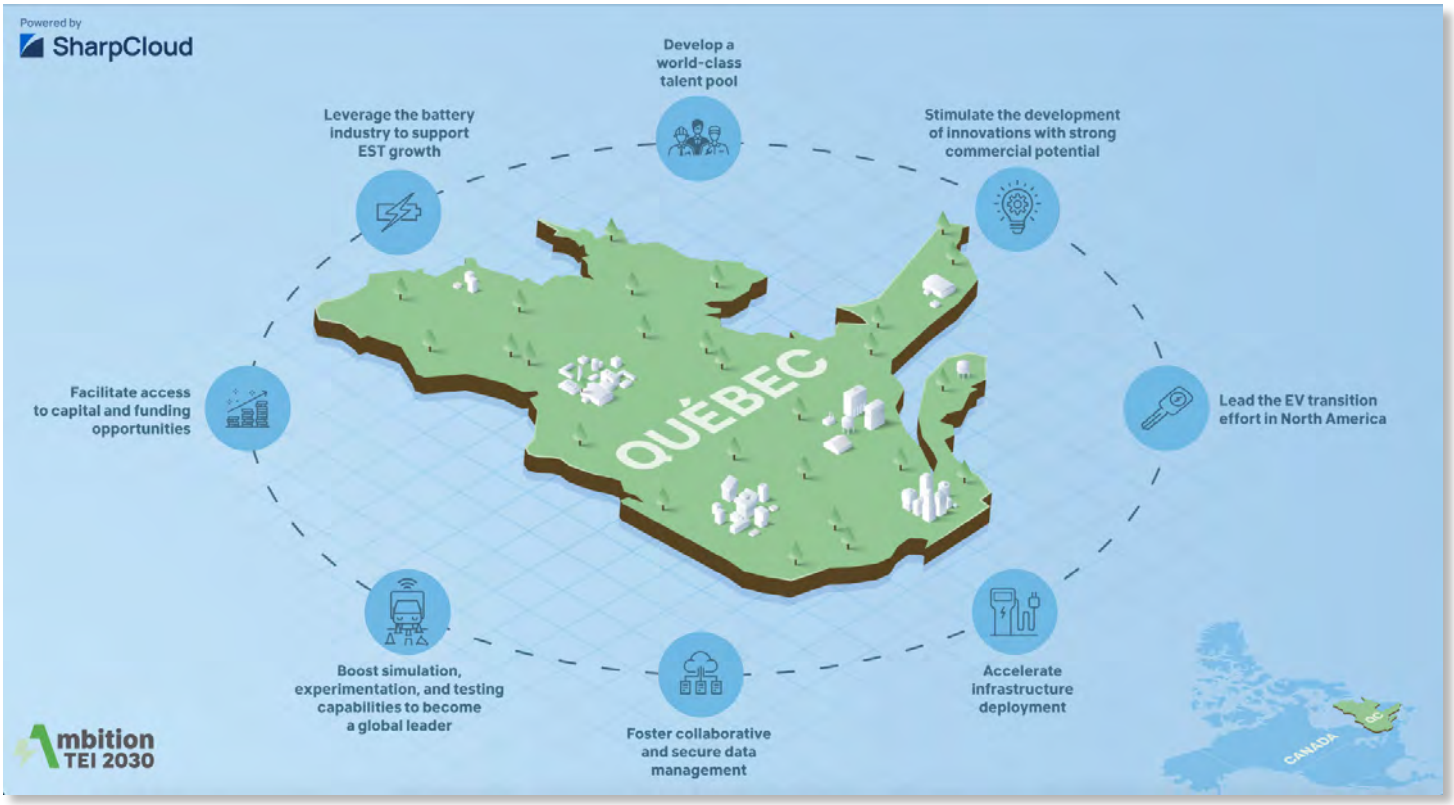
Another vehicle that caught our eye while touring the IVI facility was the CAFU mobile charging van.

Dubai's CAFU partnered with IVI to design and build the prototype CAFU En Charge mobile electric vehicle charger and app, and it is now being tested as a commercial service on the streets of Montréal. The service is described in this one-minute video:

"We had the whole world to go to… " said Jean-François Lapierre, Senior Vice President International and Head of Special Projects at CAFU, in an interview with Electric Autonomy. "But ultimately what clinched the deal was seeing how impressive the clean transportation ecosystem is in the province and the expertise it has in developing EV innovations."

The power of a clean transportation ecosystem and world-class expertise in clean technology innovation to attract business investment validated the perspective of many in the study mission delegation.

Québec advances its clean transportation ecosystem with Propulsion Québec, a non-profit, government-supported, membership-model, collaboration cluster for electric and smart transportation. The study mission delegation was briefed by Propulsion Québec's Romain Gayet, Director of Commercialization & Supply Chain, on their Ambition EST 2030 Electric and Smart Transportation ecosystem roadmap. This is an acceleration plan that aims to make Québec a world leader in electric and smart transportation by 2030.



WHAT DO YOU THINK?

Please let us know your thoughts on how Washington should move forward.

EMAIL info@cleanprosperouswa.com

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STUDY MISSION 3.0 QUÉBEC

Clean & Prosperous INSTITUTE

Tuesday, May 23 – Friday, May 26, 2023
Québec City + Montréal

OUR PARTICIPANTS

ATTENDEES

BRUCE AGNEW
Director
Pacific NW Economic Region's Infrastructure Accelerator

The PNWER Accelerator is funded by the USDOT to accelerate clean energy and smart transportation projects through innovative public and private finance. PNWER is a public/private, bi-national nonprofit created in 1991 by state statute and governed by state legislators from Alaska, Idaho, Oregon, Montana, Washington and five Western Canadian provinces and territories. Since 2017, Bruce has been the Director of the Cascadia Center's ACES NW Network promoting Autonomous-Connected-Electric-Shared technology for the movement of people and goods. Previously, he served as Chief of Staff to Congressman John Miller and was elected to serve two terms on the Snohomish County Council.

SHANNON BRADDOCK
Chief of Staff
King County

Shannon oversees implementation of Executive Office policy priorities – including the Executive Climate Office and the Office of Economic Opportunity and Creative Economy – and manages Executive Office staff. She also provides strategic support on intersectional issues relating to operations, workforce, and community. Prior to joining the Executive's office, she was Chief of Staff to King County Councilmember Joe McDermott. Shannon has over fifteen years of experience in government relations and management, as well as experience in non profit board leadership and regulatory affairs.

ANNE-CATHERINE BRIAND-FORTIN
Director of Government Relations
Québec Government Office in Los Angeles

As the Director of Government Relations for the Québec Government Office in Los Angeles, Anne-Catherine is responsible for developing mutually beneficial relationships with thirteen states in the Western United States, promoting Québec's interests and policies in the Western U.S., and contributing to a better understanding of Québec in the United States. Focus areas include the environment, energy, clean technologies, transport electrification, and international trade policy. She graduated from McGill University with a degree in management and political science. She also obtained a certificate in journalism from the Université de Montréal.

PAMELA BURTON
Co-founder
Puget Sound Solar

Pamela is co founder of Puget Sound Solar in 2001, the first company in WA State to offer solar hot water and electric systems to residential and commercial business. She bought her first electric vehicle, a Solectria, in 2006 and have gone on to grow the fleet and install 100's of charging stations, as EV Support. As a hobby, she started an LP radio station with a group of community folks and Produces extensive coverage about climate change and renewable solutions. The station KBFG 90.7fm also plays fabulous music of the northwest and can be listened to online at kbfgseattle.org

JEREMY BUTZLAFF
President
MTRWestern

Jeremy is the President of MTRWestern, the Pacific Northwest's leading shuttle, charter and corporate transportation provider. Over the past 3 years, MTR has become the leader within the battery operated/EV world of private, mass-passenger transportation. Recently, along with their partner Flix, MTR became the first privately owned carrier in North America to operate a 100% battery-electric motor coach in an intercity/interstate fixed route service. As a leader in college and professional sports travel, MTR was also the first company to carry professional teams with an EV vehicle. MTR is excited about expanding their EV offerings/reach.

BRYCE CAMPBELL
Senior Policy Advisor
Consulate General of Canada in Seattle

Bryce is a senior policy advisor on climate action at the Consulate General of Canada in Seattle. The Consulate represents Canada's interests in the Pacific Northwest and Alaska. Bryce joined the Consulate seven years ago following a series of leadership roles at Washington, DC think tanks where he contributed to and led international development, energy, and humanitarian policy research.

KENT CAPUTO
Senior Advisor
Cowlitz Indian Tribe

Kent is an executive and attorney with over 30 years of public and private sector experience emphasizing tribal governments and interests. Kent's career presents a depth of understanding across industries and issues, addressing a wide variety of governmental, commercial, legal, regulatory, policy, and political topics. Kent was counsel with the House of Representatives and, subsequently, Legal Counsel to the Governor in Washington State. He has been Chief Operating Officer for different tribes, overseeing enterprises and government operations and Chief Commercial Officer and General Counsel for an international development corporation. He currently serves on the Pacific Northwest Hydrogen Association Board.

ROBERT COWIN
Senior Manager
Fortescue Future Industries

Rob's passion for clean energy started when the National Environmental Trust (NET) sent him around the country in a solar-powered airstream trailer to promote renewable energy technologies with governors, mayors, and city officials, right out of college. Rob spent 12 years with the Union of Concerned Scientists (UCS) leading their federal work on climate change and clean energy policy and was a day-1 appointee of the Biden Administration as Deputy Assistant Secretary for Public Engagement at the U.S. Department of Energy (DOE) where he was an advisor to Secretary Granholm and led public engagement with external stakeholders across all DOE programs and offices. Rob joined Fortescue Future Industries (FFI) last year because he is passionate about green hydrogen as a critical tool in our climate toolbox. FFI is a global clean energy company committed to producing green hydrogen from 100% renewable sources.

ALAN CRAIN
EVP/CFO, Kitsap Bank
Board Member, Clean and Prosperous

Kitsap Bank's mission is to responsibly provide for the prosperity of our communities through continuous improvement and innovation. Serving Washington for 115 years, Kitsap Bank is one of the oldest and largest women owned companies in Washington. The Bank is a founding supporter of the Clean & Prosperous Institute and leader in CPACER and renewable energy finance in Washington.

CHIYO CRAWFORD
Executive Director
ECOSS

ECOSS is a nonprofit based in South Seattle with a mission to empower businesses and diverse communities to implement environmentally sustainable practices. More than two decades of experience has made ECOSS a leader in inclusive environmental outreach and engagement, with a focus on immigrant and refugee communities most impacted by environmental harms. ECOSS staff come from the communities, speaking 10 languages in-house and working alongside and on behalf of Asian, East African, Mexican, Central and South American immigrant communities across King County. ECOSS's work spans four areas: solid waste management, clean energy, clean water, and environmental stewardship.

MARC D. DAUDON
Executive Board
Energy Northwest

Marc serves on the Executive Board of Energy Northwest as a gubernatorial appointee with a focus on advancing the clean energy transition with the public power community. He is also President of The Caspian Group, LLC, a boutique consultancy providing strategy, program design and evaluation services to public, non-profit, and private clients, based in Twisp, WA. Previously, Marc co-founded and led the Cascadia Consulting Group based in Seattle.

ADAM DAY
Government Affairs Manager
First Mode

Adam spent 12 years working in the Washington State Legislature before joining Seattle-based industrial decarbonization company, First Mode. First Mode focuses on heavy equipment decarbonization for the mining industry and recently deployed the world's largest zero-emission vehicle, a hydrogen-powered mining haul truck, at a South African platinum mine. The company is expanding its manufacturing capacity in Seattle and building a proving ground in Centralia, WA for a commercial scale deployment of the clean haulage solution at a former coal mine.

CSENKA FAVORINI-CSORBA
Deputy Policy Director
Washington State Department of Natural Resources

The WA State Department of Natural Resources manages over 5.6 million acres of lands and waters for trust beneficiaries and the people of Washington, providing recreation opportunities, a sustainable supply of timber to local mills, conservation areas, agricultural products, and more. As the Deputy Policy Director for the agency, Csenka leads high priority policy initiatives related to carbon sequestration and storage in natural and working lands, urban forestry, and climate resilience.

MICHAEL FURZE
Assistant Director
Washington State Department of Commerce

Michael is an assistant director at the Department of Commerce, where he heads the State Energy Office. This office leads Washington state's transition to a clean and just energy future through policy leadership, investing in cutting-edge clean technologies, planning and responding to energy emergencies, and expanding equitable access to clean energy. This work strengthens communities, so Washington residents can thrive in a clean, affordable and equitable energy economy. Michael also serves on the Board of the National Association of State Energy Officials. He holds a master's degree in community and regional planning and a graduate certificate in town design from the University of New Mexico. When not focused on his energy work, Michael and his family patiently wait for the sun to occasionally emerge from behind the clouds and rain of the Pacific Northwest.

CHRIS GREEN
Assistant Director, OEDC
Washington State Department of Commerce

Chris joined the Department of Commerce in 2015 as assistant director for the Office of Economic Development and Competitiveness (OEDC). OEDC includes Business Development, Rural & Marketing Services, Small Business Export Assistance, Small Business Finance & Community Support, Finance & Grant Services, and Industry Sector Development units. Chris previously served for seven years as Vice President for Business Retention and Expansion at the Economic Development Board for Tacoma-Pierce County. Before that, he worked in government relations for several elected officials, including former U.S. Rep. Norm Dicks, former Seattle Mayor Ed Murray and U.S. Rep. Derek Kilmer. Chris earned his Bachelor's Degree in Political Science from Pacific Lutheran University and a Master's of Business Administration from the University of Washington.

ANGELA GRIFFIN
CEO
Launch

Angela is the CEO of Launch, a Seattle-based nonprofit serving children ages 3-12 and their families, with a focus on early childhood development, kindergarten readiness, and afterschool enrichment. She also currently serves in an elected position on the WA State Board of Education.

JASON HERBERT
Sr. Director for External Strategy
Energy Northwest

Jason is the Senior Director for External Strategy at Energy Northwest. He advises Energy Northwest, utilities, and technology developers on external affairs, communications, and government relations strategies, and consults with entities across the country on nuclear power, energy, climate and environmental policy.

Energy Northwest is a joint operating agency of the state of Washington providing at-cost power generation and electric services to utilities across the northwest. Energy Northwest owns and operates a portfolio of 100% carbon-free energy resources, including wind, solar, storage, hydroelectric, and nuclear energy, as well as a large electric vehicle infrastructure installation program.

AUSTIN HICKS
Senior Vice President
Public Affairs Strategies 360

Strategies 360 is a full-service public affairs and communications firm with offices in 13 Western U.S. states, as well as Vancouver B.C. Austin's work at the firm focuses on helping clients in the renewable energy sector navigate the intersections of project development, permitting, and the public policy process.

MOLLY KEENAN
President
MCK Public Affairs

Molly is a public affairs consultant with 15 years experience in public service. Having served Governor Inslee in various advisory roles, she has deep Washington state relationships and engagement in climate policy and action. Molly is a graduate of the University of Portland with a BA in Political Science and a BBA in Finance. She is President of the Evergreen Action Board, an organization born out of Jay Inslee's 2020 Presidential run with the mission to defeat the climate crisis and create millions of jobs in a clean energy economy.

BECKY KELLEY
Senior Policy Advisor for Climate
Office of Governor Jay Inslee

Becky has served as Senior Policy Advisor for Climate to Governor Jay Inslee since January 2021. She led and co-led successful efforts to pass Governor-request legislation including the Climate Commitment Act, Clean Fuels Standard, and clean energy siting, incentives, and workforce. She helped create the Governor's biennial budget for the initial $1.7 billion of Climate Commitment Act revenues, including required spending to benefit overburdened communities and tribes. She is one of Governor Inslee's representatives in the leadership of the US Climate Alliance and America Is All In coalitions. Previously, Becky served in advocacy and organizational leadership roles at Washington Environmental Council/ Washington Conservation Voters.

CHARLES KNUTSON
Senior Manager Public Policy
Amazon

Charles serves as Senior Manager, Public Policy at Amazon and leads Amazon's government affairs in Washington state. Prior to this, Charles served as Senior Advisor for Innovation and Global Affairs to Governor Jay Inslee. In this role, he provided strategic counsel to the Governor on economic development and international issues, led policy initiatives and worked with the Washington State Departments of Commerce, Transportation and Revenue, other agencies, the Legislature, tribes and stakeholders to grow jobs across the state. An avid mountaineer, Charles has crossed Washington state on foot, and completed 900 miles of the Pacific Crest Trail between Mexico and Canada. He lives with his wife and two sons in Seattle.

CARRIE LEE
Greenhouse Gas Manager
King County

Carrie is the Greenhouse Gas Emissions Program Manager in the newly formed King County Executive Climate Office. In this role she leads and coordinates work across King County government with internal and external partners to achieve deep reductions in GHG emissions from both County operations and at the community scale. Most recently, Carrie led Metro Transit's Sustainability and Climate Program. Carrie is a subject matter expert in climate mitigation policy, carbon pricing, and low carbon cities. Carrie is passionate about activating local government's role in tackling climate change and sees her career as the critical window to implement transformational change.

MARTHA LEE
Vice President, Treasurer
Ethnic Chamber of Commerce Coalition

Martha has over 35 years of financial and management experience. She has held various Senior Vice President and CFO positions with Royal Philips Electronic Corp., including Philips Electronic North America, Philips Lighting in North America, Philips Consumer Communication in Asia Pacific, and Philips Medical Sales and Service Region in North America.

Ethnic Chamber of Commerce Coalition was formed in 2016 to give a unified voice in their communities. Education, Health and Business Development are its top focus. The mission is to promote the development and sharing of activities among ethnic chamber of commerce organization, to inform and educate the ethnic business community about current policy changes that may impact their business and to participate in the discussions with government entities that may impact the ethnic businesses.

MARTY LOESCH
Managing Partner
Insight Strategic Partners

Marty is the founding partner of Insight Strategic Partners and a highly sought out advisor and strategist who served as Chief of Staff to Washington Governor Chris Gregoire. Insight is a public affairs firm based in Seattle, specializing in government relations, public policy, and strategic communications. Insight provides strategic and political guidance on federal, state and local issues to a wide range of organizations. Marty serves as an advisor to Puget Sound Energy, among other clients.

DAVID LOGSDON
Director of Electrification
Seattle City Light

David is Seattle City Light's Director of Electrification and Strategic Technology. In this role David works with City leaders to achieve the strategic intent of deep decarbonization through electrification, leading the development and implementation of a portfolio of electrification and innovation projects, programs, and partnerships. Including the implementation of leading-edge technologies and Grid Modernization and emerging technology projects as key components of Seattle City Light's objective to promote and facilitate equitable electrification. David previously worked at Con Edison for a decade where he led Product and Service Development, revamping customer programs and launching new Non-wires and Non-pipeline solutions portfolios.

KASSIE MARKOS
Public Policy Manager
Puget Sound Energy

Kassie has been with PSE since 2013 serving in various government affairs and public policy roles in that time. Most recently, she has been managing PSE's engagement with the Climate Commitment Act rulemaking and implementation efforts and managing PSE's legislative engagement before the Montana State Legislature. Additionally, Kassie and her team track and analyze emerging public policy trends of interest and impact to PSE and the energy industry. Kassie graduated from the University of Washington with a double major in Political Science and Law, Societies and Justice.

DAVID B. MENDOZA
Director of Advocacy and Engagement, WA
The Nature Conservancy

David is the Director of Advocacy and Engagement for the WA chapter of the Nature Conservancy, leading state and federal government relations, policy and communications staff. Prior to TNC, he was the founder of Inclusive Solutions, a policy, advocacy and communications consulting firm. While representing environmental justice organizations, David conceived of and led the development of the now enacted HEAL Act, Washington's foundational environmental justice law. He also served as a Co-Chair of the state Environmental Justice Task Force and is now a member of Washington state's first Environmental Justice Council.

MATT MILLER
Manager of State Government Affairs & Public Policy
Puget Sound Energy

Puget Sound Energy is Washington state's largest energy provider and has been in operation for over 145 years. PSE provides 850,000 customers natural gas service and over 1.2 million customers electricity.

LEAH MISSIK
Senior WA Policy Manager
Climate Solutions

Climate Solutions is a Pacific Northwest non-profit working to accelerate clean energy solutions to the climate crisis. Leah serves as the Senior WA Policy Manager, conducting policy research and advocacy with a focus on the transportation sector.

DONNA MOODIE
Community Leader
Seattle Urban League / Capitol Hill EcoDistrict

Donna is a creative and inspiring community leader specializing in the complex crossroads of art, commerce, government and the environment in order to develop transformational and sustainable solutions to a wide range of chronic community problems. Donna is a small business advocate who works closely with the Seattle Urban League via her position as EVP of Community Engagement and Executive Director of the EcoDistrict at Community Roots Housing. Seattle Urban League vigorously works to empower communities and change lives through a vision of equity for all.

ENDER REED
Public Affairs Manager
Neste

Almost two decades ago, Neste started a transformation into a renewable energy company, moving away from fossil fuels. Today, Neste is the world's leading producer of renewable diesel and sustainable aviation fuel (SAF) and the company is pioneering renewable plastics. Currently, Neste has a renewable products global production capacity of 3.3 million tons annually. With the expansion projects in Singapore and Rotterdam, as well as the joint venture with Marathon Petroleum, Neste's total production capacity of renewable products is expected to reach 5.5 million tons in 2023. Their climate commitment is to reach carbon neutral production by 2035, and to help their customers reduce their greenhouse gas (GHG) emissions by at least 20 million tons annually by 2030.

DEAN REYNOLDS
Public Works Director
Cowlitz Indian Tribe

Dean is the Public Works Director for the Cowlitz Indian Tribe. His area of focus as the Public Works Director are within Transit, Transportation, and Facilities maintenance programs. As an enrolled Cowlitz Tribal Member, he has been elected to the Cowlitz Tribal Gaming Authority and Cowlitz Tribal Culture Board. Before devoting his work fulltime to the Cowlitz Tribe, Dean served as a Chief Operating officer/Senior Vice President for Engineering, Marine and Heavy Civil construction firms.

Dean has over 35 years' experience working in the heavy civil and marine construction industries which includes tunneling, bridges, dams and power generation industries. His career has taken him to all 50 states within the continental US and continued his business into multiple countries around the world.

MELANIE ROBERTS
Director of State and Regional Affairs
PNNL

Melanie is a science and innovation policy practitioner focused on increasing the benefits of science for society. She is Director of State and Regional Affairs at Pacific Northwest National Laboratory, a U.S. Department of Energy National Laboratory whose research lays the foundation for innovations in sustainable energy. Melanie also worked for the U.S. Senate, the National Science Foundation, the University of Colorado, and the American Association for the Advancement of Science to develop policies, partnerships, and programs that build bridges between research and application. She completed a Ph.D. in neuroscience and a postdoctoral fellowship in science and innovation policy.

LEA SENFT
Manager of Government Relations
Fortescue Future Industries

Lea started at FFI in January of 2023 and is based in Washington, D.C. Fortescue Future Industries (FFI) is a global green energy company committed to producing green hydrogen from 100 per cent renewable sources. Prior to joining FFI, Lea worked in U.S. Government Relations for the Environmental Defense Fund. Additionally, she worked in the environmental policy space for the U.S. House of Representatives and the United States Environmental Protection Agency. Lea holds a Bachelor's degree from Franklin & Marshall College and Master's in Environmental Policy and Business from the University of Pennsylvania.

JEREMY SMITHSON
Founder
Puget Sound Solar / EV Support

If you count scooters and e-bikes, Jeremy has been using electric vehicles since 2003. He has been an owner and driver of electric cars since 2006 and to-date his company has two electric cars and one electric van. Since 2011, EV Support has installed a few thousand charging stations, public and private. Jeremy has been an active proponent of transportation electrification and is a member of the Washington State EV Council Advisory Committee.

JESSICA SPIEGEL
Sr. Director Washington and Oregon
WSPA

Western States Petroleum Association (WSPA) is a non-profit trade association that represents companies that produce and refine the fuels and creates the energy we all need now and for the future, including renewables, biofuels, innovative solar and sustainable energy projects and biofuels.

MICHELLE VARGO
COO
Seattle City Light

Michelle is the Chief Operating Officer for Seattle City Light (SCL). She has responsibility for all utility Transmission, Distribution, and System Operations functions. Prior to her appointment to this position, she served in a number of roles including Deputy Operating Officer, and as a Director in both Transmission and Distribution and Generation Operations and Engineering. Michelle is a registered professional engineer, holds a Bachelor of Science in Engineering from the United States Military Academy, has a Master of Business Administration from the University of Chicago.

City Light owns and operates 16 major substations and delivers electricity to over 460,000 business and residential customer premises across 131 square miles.

CATHERINE VENINGA
Policy Analyst
Washington State Senate Democratic Caucus

Catherine joined the Washington state Senate Democratic Caucus staff as a Policy Analyst this year. Prior, she worked for a nonprofit in southeastern Washington facilitating community research and advocacy on topics including education, affordable housing, and broadband access. Catherine earned a PhD in geography with a focus on urban political economy and race at the University of Washington, and has taught courses at the College of Charleston, Whitman College, University of Washington, and Walla Walla Community College. Catherine enjoys spending time in the mountains in all seasons with her husband and two children.

DAVE WARREN
Principal
The Warren Group, LLC

Dave is a lobbyist and consultant located in Olympia, Washington specializing in clean energy production, manufacturing and usage. His clients include producers or manufacturers of solar modules, sustainable aviation fuels, renewable and electrolytic hydrogen, hydrogen storage, transportation related hydrogen power plants, and renewable natural gas, as well as an industrial scale battery recycling company. He holds Bachelors and Masters degrees in Civil and Environmental Engineering respectively from the University of New Mexico and is a Professional Engineer licensed in the states of Washington and New Mexico.

LAURA WATSON
Director
Washington State Department of Ecology

Laura serves in Governor Inslee's executive cabinet and is Director of the Department of Ecology. Ecology has over 2100 employees across the state, working to protect, preserve, and enhance the environment. The Department of Ecology provides regulatory services and science-based analysis through ten environmental programs focused on protecting and managing water resources and shorelands, preventing and cleaning up toxic contamination, oil spill prevention and response, preserving air quality, combatting climate change, and managing solid and hazardous wastes. The agency emphasizes environmental equity, seeking to eliminate or minimize environmental burdens and maximize environmental benefits in communities with environmental justice concerns.

TOM WOLF
Senior Government Affairs Manager, US West Coast
bp America
Board Member, Clean and Prosperous

As bp's Senior Government Relations Manager on the U.S. West Coast, Tom focuses on issues and opportunities for the company in Washington, Oregon and California – working from the company's Cherry Point refinery outside of Blaine, Washington. Prior to his time at bp, Tom was Executive Director of the Illinois Chamber of Commerce's Energy Council and before that he spent two decades in the public affairs agency arena working for nonprofit, government, political, and corporate clients. Tom lives in Bellingham, Washington and loves baseball and travel. He graduated from the University of Wisconsin with a BA in International Relations.

DAVID YEAWORTH
Strategic Advisor
Port of Seattle

David serves as staff to the Port of Seattle Commission. His portfolio of issues includes sustainability, land-use, and tourism. David has worked in various capacities in local and regional governments and non-profit organizations. The Port of Seattle and the Northwest Seaport Alliance are launching a zero-emission drayage pilot project and convening a Puget Sound Zero-Emission Truck Collaborative to decarbonize the estimated 4,000 diesel class 8 trucks that haul cargo from seaports.

TIM ZENK
Principal
Molecule, LLC

Tim has worked in renewable energy for two decades to build new technologies for difficult to decarbonize sectors. Presently, he is the president at Molecule LLC where he works at the nexus of policy, finance, and technology. Here in the U.S., he represents renewable fuels leader Neste among other clients. He is the founder and Executive Director of the Washington Green Hydrogen Alliance and Clean Fuel Washington. He was a senior executive at Sapphire Energy, the inventor of renewable crude oil from algae. He has served on staff the Clinton/Gore White House, Congressman Norm Dicks and Washington Governor Booth Gardner.

ELECTED OFFICIALS

HON. MATT BOEHNKE
Senator
Washington State Senate

Sen. Matt Boehnke is serving his first term representing the 8th Legislative District in the State Senate, after serving two terms in the Washington House of Representatives. Matt was raised in Kennewick, graduating from Kamiakin High School in 1986. He then attended Eastern Washington University, where he graduated as an ROTC-Distinguished Military Graduate and received his active-duty commission in the U.S. Army Aviation branch in 1990. He spent the next 21 years in the service, rising to the rank of Lieutenant Colonel before retiring and moving back to Kennewick. Since 2015, Matt has served as the director and lead professor of the cybersecurity division at Columbia Basin College. He also owns a cybersecurity consulting business. Before joining the Legislature, he served for three years on the Kennewick City Council. Matt and his wife, Dawn, have been married for more than 30 years. They have two sons, Matthew and Brandon.

HON. REUVEN CARLYLE
Founder
Earth Finance

Sen. Reuven Carlyle is founder of Earth Finance, a global climate strategy and investment firm and a former Washington state legislator (2009-2023). Reuven served as chair of the state Senate Environment, Energy & Technology Committee and authored the Climate Commitment Act and numerous other legislation.

HON. KRISTINE REEVES
Representative
Washington State House of Representatives

Rep. Kristine Reeves is currently a third-term WA State Representative. While in the state house, Kristine has been instrumental in championing issues for women and children, working families, veterans, and the environment. As an economic developer, Kristine championed nation-leading legislation on childcare reform, economic and environmental justice, as well as consumer protection efforts. Kristine brings a lived experience to her work as a first-generation college graduate, former foster youth, and someone who's experienced homelessness to ensure we are fighting for a future that includes us all. Founding the legislature's first Black Legislators Caucus, Kristine now serves as its Vice Chair. Kristine also serves as the Vice Chair of the Consumer Protection and Business Committee, Vice Chair for Natural Resources on the Agriculture and Natural Resources Committee, and a member of the Regulated Substances and Gaming Committee. Outside the citizen legislature, Kristine is the principal consultant and CEO of a small strategic planning, cultural humility, and project management firm as well as a doctoral student in Industrial-Organizational Psychology. Kristine lives with her husband, Camron, and their two elementary-age children in Federal Way, WA.

HON. JESSE SALOMON
Senator
Washington State Senate

Elected to the Washington State Senate in 2018, Sen. Jesse Salomon has demonstrated leadership, energy and compassion as he represents Washington's 32nd Legislative District. Through his advocacy and legislative work, Jesse has become known as a champion for the environment, youth and children, and justice system reform. Jesse serves on four Senate committees, serving as Vice Chair of the Agriculture, Water, Natural Resources & Parks Committee. Jesse also serves on the Legislative Council on River Governance, part of the national Council of State Governments. Prior to joining the Senate, Jesse served on the Shoreline City Council, including as deputy mayor.

HON. JOE NGUYEN
Senator
Washington State Senate

Sen. Joe Nguyen, from the 34th Legislative District, is a committed community advocate and a leader in the Washington State Senate. He serves as Chair of the Environment, Energy & Technology Committee and also sits on the Human Services and Ways & Means Committee, in addition to being the Senate Democratic Assistant Floor Leader. During his time in the legislature, Joe has prioritized increased funding for social services, affordable housing, and criminal justice reform, as well as advocating for climate action and expanding educational opportunities for students. His work has included championing legislation to modernize and increase access to basic needs programs, expunging cannabis-related misdemeanors, increasing availability of zero emissions vehicles, and allowing Community and Technical Colleges to offer four-year computer science degrees. Joe's dedication to his community and his commitment to addressing systemic inequalities are informed by his lived experience as the son of immigrants, and resides in Seattle with his wife and three children.

HON. JAKE FEY
Representative
Washington State House of Representatives

Rep. Fey serves as Chair of the House Transportation Committee and has been a Legislative champion for transportation decarbonization. In 2019, Jake introduced the Green Transportation bill, aimed at helping switch to electric vehicles and cleaner fuels, with incentives to buy electric vehicles and help to build the infrastructure to charge electric vehicles in the State. This past Legislative session, Jake directed nearly $1 billion of revenue from the Climate Commitment Act to decarbonization initiatives, including electric ferries, shore power, medium and heavy-duty ZEV purchase and infrastructure incentives, locomotive decarbonization and clean off-road equipment.

HON. JOHN WILSON
Assessor
King County Department of Assessments

In his second term as King County Assessor, John Wilson is recognized locally and nationally as a leader and innovator in property assessments. He has broad experience in federal, regional and local governments (especially in the energy field) and was a national award-winning TV journalist. He is active in the National Association of Counties and the International Association of Assessing Officers.

HON. PATTY KINSWA-GAISER
General Council Chairwoman
Cowlitz Indian Tribe

Chairwoman Patty Kinswa-Gaiser's path with the Cowlitz Indian Tribe has come full circle as the Tribe's first General Council Chairwoman. She is a descendant of Ike Kinswa and Taidnapum/Upper Cowlitz. Cultural preservation is of paramount importance to the Chairwoman. She has been at the forefront of resurrecting the Cowlitz culture, where she passes down her knowledge of beading, making of medicine bags and regalia, and working with cedar. She's a founding member of the Cowlitz Indian Tribe Drum Group and led efforts to bring language and culture classes. Chairwoman Kinswa-Gaiser is also very passionate about her family. The Cowlitz Indian Tribe is a federally recognized Tribe located in Southwest Washington State. Our historical landscape includes the mighty Columbia River. Since time immemorial, the Cowlitz people have been stewards of the lands and waters and fierce advocates for the health and prosperity of future generations. We are known as "the forever people." This compels us to engage in the critical work ahead. For the benefit of the Cowlitz people. For the benefit of the communities we share. For the benefit – for the very survival – of our planet. We continue to be stewards, knowing that environmental and economic stewardship are inseparable. We have always been experts in what we now call "commercially viable ecosystems." We managed resources, we traded, maintained a deep relationship with the planet, and thrived. We will work to thrive together.

PANELISTS AND SPECIAL GUESTS

FRANÇOIS ADAM
General Director
Institute of Innovative Vehicles (IVI)

François Adam, a graduate in Electrical Engineering from the Université de Sherbrooke in 1992, currently holds the position of General Director of the Institute of Innovative Vehicles (IVI) since 2015. Prior to founding the IVI in 2015 by merging the teams from CNTA and ITAQ, Mr. Adam was the director of ITAQ since 2012. His career in electrification of transportation is remarkable, having led several projects in the development of electric vehicle prototypes. Under his leadership, the IVI also received the Prix Génie Innovation from the Ordre des ingénieurs du Québec in 2016. Additionally, François is co-president of the R&D and Innovation work group of Propulsion Québec and sits on the Board of Directors of InnovÉÉ.

MARTINE BIRON
Minister of International Relations and La Francophonie
Minister Responsible for the Status of Women

Martine Biron holds a master's degree in political science (Université Laval, 2022) and a bachelor's degree in the same field from the Université du Québec à Montréal. She worked for 30 years as a journalist and political analyst. In 1993, she joined the Société Radio-Canada, where she distinguished herself as a relevant and credible female figure. She was a national reporter in Western Canada and the United States and has a keen interest in politics. She covered two federal election campaigns and five provincial campaigns and was also assigned several mandates as journalist in Washington. Since 2016, she has best been known as a political analyst in Québec City across Radio-Canada's platforms. Effective and rigorous, she is eager to serve Québec and contribute to its economic development. It is that desire that inspired her to enter politics in 2022.

BENOIT CHARETTE
Minister of the Environment, the Fight against Climate Change, Wildlife and Park
Minister Responsible for the Laurentides Region

Benoit Charette has been the Member of the National Assembly for the Deux-Montagnes riding since 2008. He holds a bachelor's degree in history with a concentration in political science from the Université du Québec à Montréal and a degree in public administration from the École nationale d'administration publique. He began his career at the Ministère des Relations internationales in the Québec Government Office in Mexico City. He then worked at the Agence intergouvernementale de la Francophonie in Moncton. Mr. Charette was appointed Minister of the Environment and the Fight against Climate Change in January 2019 and subsequently Minister Responsible for the Laval Region in August 2020 and Minister Responsible for the Fight against Racism in February 2021. In October 2022, he was appointed Minister of the Environment, the Fight against Climate Change, Wildlife and Parks, and Minister Responsible for the Laurentides Region in addition to being given increased responsibilities regarding the energy transition.

HAROLD CÔTÉ
Director General in the Office of Climate and Energy Transition
Ministry of the Environment, the Fight against Climate Change, Wildlife and Parks

Harold Côté is Director General in the Office of Climate and Energy Transition of the Québec's Ministry of the Environment, the Fight against Climate Change, Wildlife and Parks. Its teams are notably in charge of the implementation of the Plan pour une économie verte 2030 ("2030 Green Economy Plan"), its reporting and its assessment. Holder of a bachelor's and a master's degree in statistics from Université Laval, Mr. Côté has worked for several years in the Government of Québec, where he notably led teams assigned to performance measurement, program evaluation and strategic planning.

CLAUDE FORTIN
Forestry and Climate Change Specialist
Ministry of the Environment and the Fight Against Climate Change, Wildlife and Parks

Claude Fortin studied forestry at Laval University and the University of British Columbia. He holds a bachelor's degree in applied science in forest management and environment and a master's degree in forestry. Since 2011, Mr. Fortin has been working on the integration of Québec's forestry sector into the offset component of Québec's cap-and-trade system for greenhouse gas emissions. As an expert in this field, he also participates in various technical committees aimed at defining the role and potential of the forestry sector as a means to mitigate the effects of climate change.

ROMAIN GAYET
Director, Supply Chain and Commercialization
Propulsion Québec

Romain Gayet is Director, Supply Chain and commercialization, at Propulsion Québec and is a mechanical engineer, graduated from École Polytechnique de Montréal. Over the past few years, he has developed expertise on the issues and technologies related to the electrification of vehicle fleets as well as those regarding autonomous vehicles, in addition to being interested in solutions for a more sustainable mobility in our cities. For the industrial cluster, he leads several mandates aimed at deploying electric and intelligent transportation technologies and aimed at making the sector's supply chain more local and resilient. Employed at Propulsion Québec since 2020, he was previously responsible for the implementation of strategic planning for 2030, that of an industrial roadmap which will position Québec as a world leader in the strategic industry of electric transport and intelligent transportation.

JEAN-CHRISTOPHE LAMBERT
Director of Growth and Business Development
Lithion Recycling

Jean-Christophe holds a bachelor's degree in international business from Laval University in Québec City, Canada. Prior to joining Lithion in December 2019, he was an Advisor for international market development for the Chamber of Commerce of Metropolitan Montréal where he led multiple international delegations, consulting mandates and export projects. In his role at Lithion as Director for Growth and Business Development, he oversees key account management, international development, and strategic partnerships. In the past three years, he has given talks on battery recycling and critical materials in numerous conferences in North America, Europe and Asia.

JEAN LEMIRE
Envoy for Climate change, Northern and Arctic Affairs

Jean Lemire was appointed Envoy for Climate change, Northern and Arctic Affairs by the Government of Québec in September 2017, thus becoming the first envoy in the history of Québec diplomacy.A biologist by training and renowned science communicator, Jean Lemire has conducted work on climate change and biodiversity that has led to major scientific missions. In 2001, he converted a large oceanographic schooner into a scientific research platform and production studio that took him across the world's oceans to raise awareness about key environmental issues. In 2012, following missions to the Arctic (2002) and Antarctica (2005-2006), he and his crew, in collaboration with the Secretariat of the U.N. Convention on Biological Diversity, began the 1000 Days for the Planet series, involving a three-year world expedition to examine the state of the planet's biodiversity.

JEAN PAQUIN
President & CEO
SAF+ Consortium

Jean is a cofounder of the SAF+. He has over 25 years of experience in developing and managing renewable energy projects in Europe, the Middle East, Africa, South East Asia, North and Latin America. After launching businesses in Spain and France, he became Director of Business Development for one of the world's leading wind and solar energy consultants. Subsequently, he became director of the hydroelectric generation department and senior director of business development for one of the largest independent power generators in Canada. Jean cofounded SAF+ in 2019 to bring his deep expertise to the development of a large commercial SAF project in east-end Montréal. Jean holds an eMBA from the John Molson School of Business and a degree in Civil Engineering (B.Sc.) from Condordia University.

MATHIEU PAYEUR
Director, Green Hydrogen and Bioenergy Bureau
Energy sector, Ministry of Economy, Innovation and Energy

Mr. Payeur has held various positions in the last 15 years at the government of Québec in the fields of energy efficiency and energy transition. First as head of the commercial sector, he was appointed director of partnerships, then that of energy strategies at Transition énergétique Québec. Engineer by training, Mr. Payeur is interested in issues concerning the energy system as a whole, as well as in normative and regulatory approaches. Since December 2021, he has been in charge of the Green hydrogen and bioenergy Bureau of the Ministry, which is namely involved in stakeholders support and in the strategic positioning and deployment of these energy sectors, in complementarity with energy efficiency and direct electrification.

ÉLODIE PICHÉ-LUSSIER
Corporate Strategy Advisor
Hydro-Québec

Élodie Lussier-Piché has joined the Corporate Strategy and Development team in 2022. Since she joined the team, Élodie contributed to multiple strategic projects, as well as to market intelligence initiatives. Previously to her arrival at Hydro-Québec, Ms. Lussier-Piché worked in the private strategy and management consulting industry, with a variety of clients in different sectors. Élodie holds a bachelor in business administration (BBA) from HEC Montréal.

ERIC RONDEAU
Head of Montréal Innovation Center
Alstom

Eric is Managing Director of Alstom's Americas Green Innovation Center. Previously, he acted as senior strategic advisor to Investissement Québec International and the Ministère de l'Économie et de l'Innovation du Québec for the launch of the Quebec battery strategy. Over the past 25 years, he has initiated and carried out complex projects as a business developer and program manager, among others, at CAE Energy Control System, TELUS and GE Renewable Energies in the Asian and American markets. . He graduated in industrial engineering from École Polytechnique de Montréal and holds a PMP certification in project management In addition, he is co-founder of the Quebec Tesla Club and sits on various boards of directors, including Innovée, Conservation Nature Canada, and is an investor member in ClimateTech startups with Anges Québec.

BARBARA SAURIOL
Corporate Strategy Advisor
Hydro-Québec

Barbara Sauriol has joined the Corporate Strategy and Development team in 2022. In this capacity, she collaborates to various strategy and market intelligence mandates. Ms. Sauriol joined Hydro-Québec in the mid 1990s. She was an Advisor – Corporate Visits, then went to become an Investor Relations Advisor with Hydro-Québec's Finance Group, representing the Company before the financial community and rating agencies. Barbara Sauriol holds a bachelor's degree of Arts from Université de Montréal.

JEFF TURNER
Director of Clean Mobility
Dunsky Energy + Climate Advisors

Jeff is the Director of Clean Mobility at Dunsky Energy + Climate Advisors, a Montreal-based consulting firm that supports governments, utilities and other organizations in their efforts to accelerate the clean energy transition. Since joining Dunsky in 2017, Jeff has overseen over 150 clean mobility projects across Canada and the US, including forecasting adoption of EVs, assessing charging infrastructure needs and grid impacts, and leveraging this analysis to develop effective electric mobility strategies. Prior to joining Dunsky, Jeff was based in Vancouver, BC, where he supported BC Hydro's initial deployment of public charging infrastructure and demonstrated various vehicle-grid integration technologies. Jeff holds a Masters in Mechanical Engineering from McGill University, and currently sits on the Board of Directors of Electric Mobility Canada.

RÉMY VINCENT
Grand Chief
Huron-Wendat Nation

Mr. Rémy Vincent is a member of the Vincent, Romain, Paul Family Circle, which he represented on the Huron-Wendat Nation Council as Family Chief from 2018 until his election as Grand Chief in October 2020. A graduate in Forestry, Grand Chief Rémy Vincent is an avid hunter and outdoor sportsman. The practice of customary family activities on the territory of the Huron Wendat Nation, the Nionwentsïo, is particularly dear to his heart. A volunteer involved in sports to encourage young people, he has taken part in the Pierre Lavoie 1,000 km Challenge on two occasions. In the tradition of the values transmitted by the lineage of his ancestors who held the position of Grand Chief, namely Nicolas Vincent Tsawenhohi "The man who sees clearly", Philippe Vincent Tehonwasta "He stands tall" and Herménégilde Vincent Tehonwasta "He stands tall", Grand Chief Rémy Vincent proudly carries the torch of asserting the rights and interests of all members of the Huron-Wendat Nation with a contemporary, proactive, and inclusive approach.

CLEAN AND PROSPEROUS TEAM

DOMINIC CANTERBURY
Operations

Dominic is a Principal at Turbine Agency and has led successful marketing and technology projects for startups, nonprofits, regional, national, and international clients.

ISAAC KASTAMA
Lobbying

Isaac is the Managing Partner of Water Street Public Affairs LLC, a public affairs firm representing diverse clients in energy and business. Isaac has built effective coalitions of regulated industries and environmental interests and has over ten years of experience representing clients in Washington. He had deep involvement in the legislative process to enact the 100% Clean Electricity Standard, Clean Fuel Standard, and Climate Commitment Act, and continues to engage in policy implementation. Isaac leads advocacy efforts as a member of the Clean & Prosperous Washington team.

LEE KELLER
Strategic Communications

Lee heads public relations and media outreach efforts for Clean and Prosperous. Her firm, The Keller Group, specializes in CEO brand management, public relations and crisis communications. She has served as a United States Senate Press Secretary in Washington, D.C., directed communications at both the National Wildlife Federation and Weyerhaeuser. She worked directly for the late billionaire, Paul Allen, as his Director of Communications for both the campaign to build a new football and soccer stadium in Seattle as well as his parent company, Vulcan Inc., where she was responsible for community and governmental outreach for many of Vulcan's projects.

MICHAEL MANN
Executive Director

Michael serves as the Executive Director for Clean and Prosperous Washington. His firm, Cyan Strategies, specializes in government affairs and business development for companies reducing carbon emissions through their business activities. Michael previously served as the Director of the City of Seattle's Office of Sustainability and Environment and as the District Director for then Congressman Jay Inslee, the current Governor of Washington.

BILL MCCLAIN
Marketing Communications

Bill has led domestic and international marketing for several major brands, including Clarisonic and Sonicare. He played a key role in the successful launch of over 30 new products, including market-leaders from LifeScan (Johnson&Johnson), Braun, and Oral-B. Bill currently teaches Global Business Strategy and Marketing at the University of Washington. He earned his B.S. at West Virginia Wesleyan College and his MBA at the University of Pittsburgh.

LORRIE MCKAY
Logistics and Ground Support

Lorrie joined Cyan Strategies in 2021 following a 25-year career in local government public administration in the Office of the King County Executive and the City of Kirkland's City Manager's Office. In her role with Cyan Strategies, McKay provides clients with project management support, intergovernmental and community relations. Lorrie has provided team support on each of Clean & Prosperous Institute's Study Missions.

SARAH SEVERN
Outreach Director

Sarah began her career with over a decade in advertising and market research before joining Nike where she led the adoption of sustainability into Nike's operations, product design process and manufacturing supply chain. Sarah spent over two decades in senior sustainability roles leading stakeholder engagement, futures and scenario planning, and championing systems thinking and collaborative change. She initiated Nike's climate change work in the mid 90's and catalyzed the formation of BICEP, (Business for Innovative Climate and Energy Policy) in 2008. Since retiring from Nike in 2014, Sarah has focused on the intersection of business advocacy and climate policy.

KEVIN TEMPEST
Research

Leads decarbonization and climate policy modeling work at CaPWA and its partner organization, Clean and Prosperous Institute, as the Research & Development Scientist. Research projects include the Building Back Better and Decisive Decade reports, focused cost-benefit analysis of decarbonization opportunities in Washington State, and the GHG Reduction Explorer Model to inform policy development at the state level. Kevin previously worked as a staff scientist in climate and energy topics at Stockholm Environment Institute-U.S, publishing on carbon infrastructure lock-in, fossil fuel supply-side (extraction) issues, and global urban greenhouse gas emissions modelling.

KIM TRYHORN
Event Manager

Kim leads logistics and planning for Clean & Prosperous Institute's Study Missions. As Principal at Cyan Strategies, she has worked extensively with CPI and other exciting organizations in Washington state, strategizing on ways to reduce carbon emissions through business and policy development. Prior to Cyan, she held positions in the City of Seattle Mayor's Office and for then-US Congressman Jay Inslee's Office.