

# Greater Montréal, a Booming Cleantech Industry



# A world leading economic development agency





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# 01

## Montréal, A Prosperous City and a Strategic Location



# A strong and growing metropolis, strategically located in North America



## Population

- 4.3 million residents
- 23% of population are foreign-born (34% for the city of Montréal)



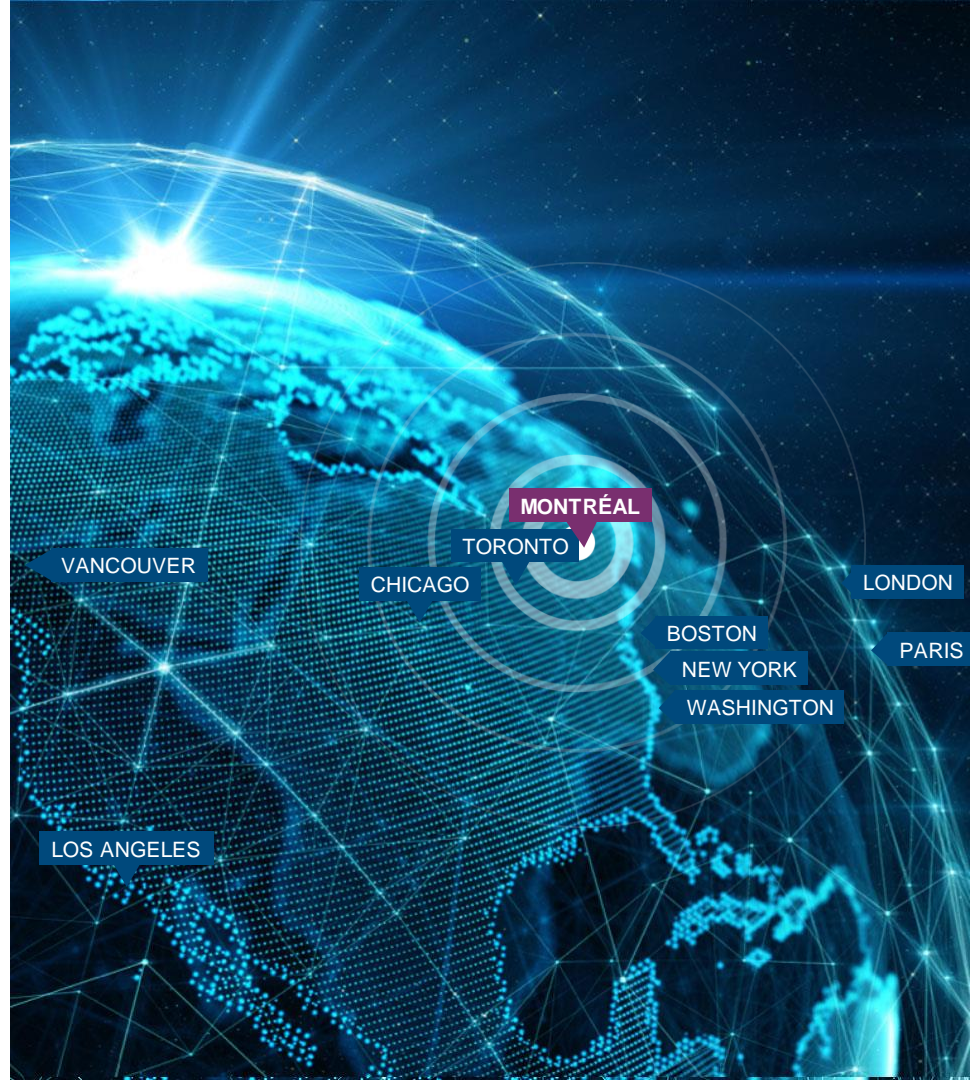
## Economy

- Fastest economic growth in Canada in 2021
- Among the strongest economic growth forecasts in Canada in 2022
- \$3.765 billion in foreign direct investment in 2021 supported by Montréal International



## Location

- 82 municipalities, 1 metropolitan area
- A 90-minute flight to Boston and New York City
- Less than a one-hour drive to the U.S. border





# 02

## Québec, a Key Player in the Fight against Climate Change



# Québec, a key player in the fight against climate change



**No. 1 renewable energy producer** in North America



More than **99% of the electricity is produced from a clean and renewable source** (hydroelectricity, wind power, biomass)



Government of Québec's 2030 Plan for a Green Economy: **Reduce GHG emissions by 37.5%** compared to 1990 by 2030 and reach carbon neutrality by 2050



Member of **several international groups** for reducing GHG



THE CLIMATE GROUP



Canal Lachine

# Strong government commitment to support clean technologies and the ecological transition

## Federal support



- **\$8B+** in funding to **decarbonize** and invest in **cleantech**
- **\$2.2B over 7 years** to expand the Low Carbon Economy Fund
- **\$1.4B** for cleantech development and its commercialization
- **\$2.6B over 5 years** in tax credit to spark CCUS technologies

## Provincial support



- **Nearly \$150M over 5 years** to support Québec companies in the development of cleantech
- **\$152.4M over 5 years** to spur energy transition
- Close to **\$25G over 10 years** on infrastructures to reduce GHG emissions and adapt to climate change

## Metropolitan support



- Significant budgets and efforts to ensure the **ecological transition** by 2030: sustainable mobility, green economy, zero waste future, green infrastructure, etc.
- **Reduce GHG emissions by at least 55%** below 1990 levels by 2030 and **achieve carbon neutrality by 2050**





# Québec's electricity industry, a strategic asset to decarbonize the economy

- 7<sup>th</sup> global hydropower producer
- **Hydro-Québec**, Canada's largest electricity producer and one of the largest hydropower producers in the world
- Québec's electricity industry, a thriving sector:
  - **63,000** jobs
  - **\$16.9B** contribution to Québec's GDP
  - **\$5B** in export to over 170 countries

**Many industry leaders** are operating in Greater Montréal

**SIEMENS**

**Schneider**  
Electric



**Hitachi**  
Energy

Source: Association de l'industrie électrique du Québec, L'industrie électrique du Québec : Pilier d'une économie carboneutre, Annual Report 2021.

# A world-class R&D hub

- **Québec, 1<sup>st</sup> in Canada for R&D investment** in % of GDP with expenditures of \$9.7B per year\*
- **Montréal, 1<sup>st</sup> city in Canada for university research funding** with close to \$2B per year
- **Research institutions in Montréal are among the world's top universities**

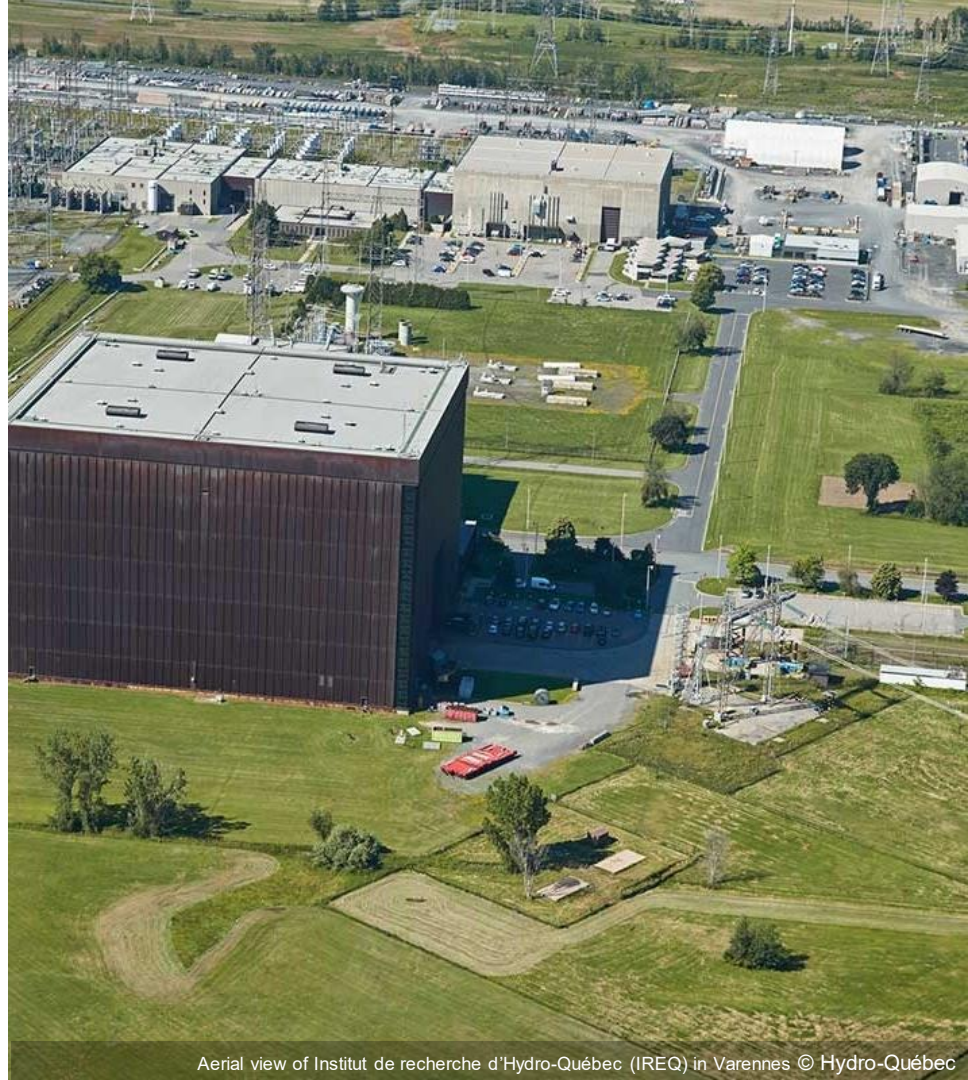


- **Home to several renowned research organizations** related to cleantech



Note: \* Including \$9.3B spent on businesses and universities and \$0.4B spent on the government sector.

Source: Research InfoSource, 2021; Statistics Canada, Table 27-10-0359-01, 2016, and Table 27-10-0273-01, 2017; QS World University Rankings 2023



Aerial view of Institut de recherche d'Hydro-Québec (IREQ) in Varennes © Hydro-Québec





# A culture of sustainable, low-carbon urban mobility

- Québec, no. 1 for vehicle electrification in Canada
- Largest charging network with 3,400+ electric stations, including 600 fast charging stations
- A public transportation networks adopting sustainable mobility technologies



Acquire only electric vehicles as of 2025 and achieve zero emissions for vehicles by 2040



Pioneer of car-sharing in North America with 3,000+ vehicles, including 200+ electric vehicles



Bicycle-sharing system with 2,400+ electric BIXI bikes and 7,000+ regular BIXI bikes in 700+ stations



67 km of light rail system with 26 stations (under construction)



# Québec, a pioneer of the circular economy in North America

- **Québec expertise** and solid **collaborative networks**, including:



- **Réseau québécois de recherche en économie circulaire (RQREC)**, a network bringing together 110 researchers from 16 universities and 6 colleges
- A **circularity index** developed for the Québec economy in 2021 along with 7 societal goals
- **Key high-potential sectors**: agri-food, energy, construction, and metals







# Montréal stands out for its commitment to the environment

- The city is actively involved in **sustainable development networks across the world:**



- Montréal mayor was appointed **Global Ambassador for Local Biodiversity** by Local Governments for Sustainability
- Many international organizations fighting climate change are present, such as:



- Montréal chosen to host **NATO Climate Change and Security Centre of Excellence** and the second part of **the UN Biodiversity Conference (COP15)**

# 03

## A Booming Cleantech Industry





# A booming cleantech industry



## A favourable business environment

- Canada is the second-most attractive country for cleantech companies



## Québec's cleantech sector by the numbers

- **85,000+** jobs
- **Close to \$8B** in total annual revenue
- **200** public research groups
- **1,000** organizations revolving around the sector

Source: 2021 Global Cleantech Innovation Index; Ecotech Québec, 2018; EY, 2018; Statistics Canada, Tables 36-10-0632-01, 38-10-0087-01, 38-10-0031-01, 2021.



# A collaborative ecosystem that drives the industry's development

## Cluster organizations



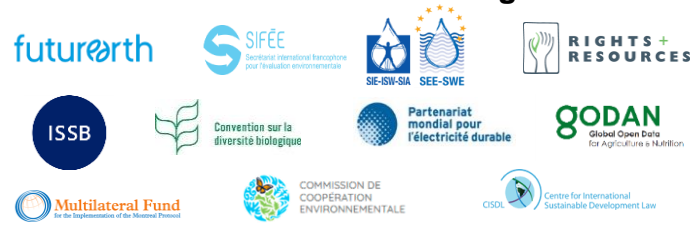
## Accelerators and venture capital



## Innovation and research centres



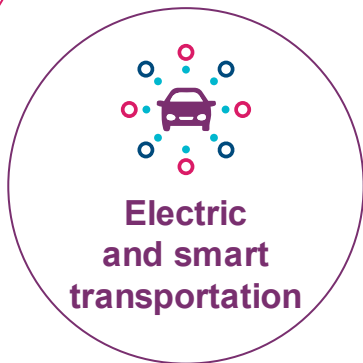
## International organizations



- And many more!



# Fast-growing cleantech sectors in Greater Montréal



# A world-class hub in artificial intelligence



Global leaders, including **Google**, **Microsoft** and **Meta**, have made Montréal their AI R&D centre



Close to **900 researchers** MSc, PhD, post-doc and applied AI students at **Mila**, the world's largest academic research lab in deep learning and reinforcement learning



Home of **Scale AI**, Canada's AI supply chain supercluster



Sample of major players located in Greater Montréal:





# A strategic hub for solving environmental challenges with AI



**Several members of Mila**, specialize in research that can help fight the harmful impacts of climate change, such as:

- **David Rolnick**, McGill University
- **Yoshua Bengio**, Université de Montréal



Examples of AI research projects on **climate change** and **environmental research**:

- Using AI to visualize the **impacts of climate change**
- AI and climate change: opportunities, considerations, and policy levers to **align AI with climate change goals**



Mila has numerous projects with industry and academic partners including the **carbon footprint of AI** and the **reduction of greenhouse gas (GHG) emissions** in the energy sector:



An open-source software that help track the carbon footprint of algorithms and code. A collaboration between BCG's GAMMA, Comet, and Haverford College



An organization with the goal of catalyzing impactful work at the intersection of climate change and machine learning

# Cutting-edge expertise in electric and smart transportation

## A solid industry

- Close to 150 companies
- 6,200+ jobs
- \$1.3B in GDP

## A large ecosystem and a strategic location

- A large ecosystem with expertise across the value chain from active materials to recycling
- **Specialized vehicle expertise:** buses, coaches, trucks, garbage trucks, armoured vehicles, ambulances, police vehicles, motorcycles, snowmobiles, three-wheel vehicles

Many industry leaders are operating in Greater Montréal



TM4



NOVABUS



Lithium-ion battery recycling







# Intelligent infrastructure powered by a thriving technology sector



**160,000+ IT professionals and 7,000+ companies** in Greater Montréal



**Lowest operating costs in North America** for software development



**An AI and cybersecurity hub** contributing to the development of advanced smart infrastructures



**Broadly diversified expertise:** smart parking, advanced traffic management Systems, advanced transportation pricing system, automotive collision avoidance systems

## Major companies in Greater Montréal



Microsoft



OPAL-RT  
TECHNOLOGIES

immersion



Orange traffic+



LeddarTech

Source: Montréal International's estimate based on the 2018 TECHNOCompétences' Labour Diagnostic in ICT in Québec; fDi Benchmark, 2022.

# Sustainable buildings, an industry built on solid foundations



**A construction sector at the heart of Québec's economy with 280,000+ workers and 30,000+ companies in 2021**



**Public investments expected to reach \$130B between 2020 and 2030**



**An expertise in advanced materials:** engineered wood, polymers, coating concrete, ceramic, glass, etc.



**Multiple fields of application:** building automation, property management, energy efficiency, rental management, etc.

**Key actors in smart buildings, such as:**

**Schneider**  
Electric



BRAINBOX AI



DIMONOFF







# An AgTech industry at the forefront of innovation



**The agri-food industry, a major contributor to Québec's economy** with 450,000+ jobs and 80,000+ companies



**\$2.4B in government funding for innovative manufacturers** to foster their digital transformation (2020-2024)



**A large scope of applications, such as :** precision agriculture, vertical farming, robotics, cultured meat, alternative farming methods (permaculture, biodynamic farming), etc.

## Zone AgTech in Repentigny

An incubator that promotes innovative businesses to advance **technology-based agriculture**



Source: AgTech, 2020 ; Québec Institute of Statistics and MAPAQ, *Le bioalimentaire économique - Bilan de l'année 2020*; Montréal International's estimates.





# A booming startup ecosystem

- Canada is the **most attractive country** in the world for entrepreneurs according to the OECD
- **\$8 B+** in VC investments between 2017 and 2021 in Québec
- **Six of Canada's ten most active venture capital (VC) funds** in 2021 are based Montréal
- **30+ incubators/accelerators**
- **Close to 60 coworking spaces**





# A place where startups scale and raise in cleantech

- **850M\$+ in VC investments** between 2017 and 2022 in Cleantech in Québec
- Presence of **many specialized VC funds**, such as:



- **Examples of recent funding in Cleantech (US\$):**



**\$51M** (2022)  
Series A

BRAINBOX AI **\$24M** (2021)  
Series A



**\$45M** (2021)  
Series B



**\$12M** (2022)  
Series A



# Many promising cleantech startups are based in Montréal

BRAINBOX AI

BrainBox AI is redefining building automation and pioneering **grid-interactive buildings through artificial intelligence** to address the energy transition challenge

SOLLUM

Inspired by nature, Sollum Technologies offers greenhouse producers **the only smart LED lighting solution** which dynamically recreates and modulates the full spectrum of the Sun's natural light



GHGSat has developed satellites and aircraft sensors to **measure greenhouse gas emissions** directly from industrial sites, providing actionable insights to businesses, governments, and regulators

PYROWAVE

Pyrowave is a pioneer in the **electrification of chemical processes based on low carbon footprint** microwaves and leader in the plastic's circular economy and chemical recycling

CarbiCrete

Carbicrete's patented technology allows manufactures to **produce cement-free carbon-negative concrete with waste and CO2**



Xebec specializes in deploying a portfolio of proprietary **technologies for the distributed production of hydrogen, renewable natural gas, carbon capture, oxygen and nitrogen**



# 04

## A Large Pool of Highly Qualified Talent



# Among the best student city in the Americas and Canada's university capital

- **Canada's university capital:** 15 university institutions and 100+ colleges
- **600,000+ post-secondary students in Québec**, including **350,000+ university students** and **65,000+ international students**
- **Over half of Québec's students** are located in Greater Montréal
- **1<sup>st</sup> in Canada for university research funding** with nearly \$2B per year



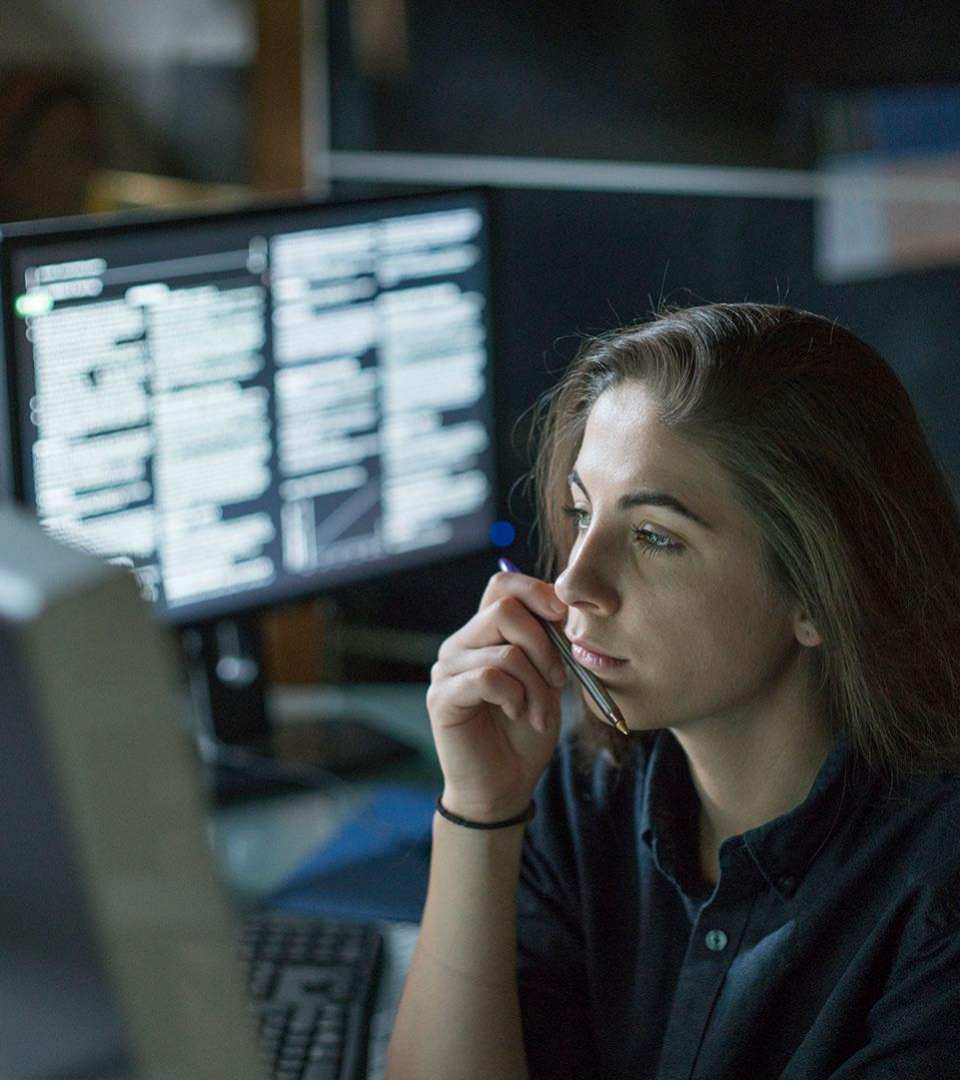
**Among the best student cities in  
the world and Best student city of  
Canada**

QS Best Student Cities Rankings 2023

Source: QS Best Student Cities in the World 2023; Québec Ministry of Education and Higher Education, 2022; Research Infosource Inc., 2022.







# A deep pool of highly skilled talent

- **1,087,900 direct and indirect jobs\*** in STEM\*\* in Québec
  - Close to **63,000 members** registered with Québec's Order of engineers
- **Close to 34,000 students** enrolled in engineering programs
  - **12,000+ graduates** in engineering
  - Research institutions ranked among top universities worldwide



Note: \* Including 33% STEM professions (e.g., chemists, engineers, and mathematicians) and 67% STEM-related professions (e.g., land surveyors and industrial designers).

\*\* STEM: Science, technology, engineering, and mathematics.

Source: Statistics Canada, special compilation based on data from Labour Force Survey, 2019; Ministère de l'Éducation et de l'Enseignement supérieur, 2021; Montréal International compilation; Ordre des ingénieurs du Québec, 2021.



## 110,000+ university students in programs related to sustainable development in Québec

University programs related to sustainable development	Students enrolled, 2021-2022	Graduates 2021
Engineering	53,722	12,348
Applied sciences	36,215	6,742
Pure sciences	23,518	3,764
Environment (environmental quality and pollution)	3,537	743



# 05

## Attractive Costs and Incentives



# Funding provided for major projects and investment



## Strategic Innovation Fund (SIF) – Net Zero Accelerator Initiative

- **Provide up to \$8B to support large-scale investments** in key industrial sectors across Canada: decarbonization of large emitters, Cleantech and battery ecosystem development, etc.



## ESSOR Program (Volet 3 - Reduction of the environmental footprint)

- Repayable contributions (interest-free or low-interest loans) and non-repayable contributions
- **Up to 20% of eligible expenditures** (minimum \$100,000)





# Several programs to spur innovation



## Scientific Research and Experimental Development (SR&ED) Program

- **15% credit from the Government of Canada, and 14% non-repayable credit from the Government of Québec**



## InnoVÉE/PROMPT

- Contribution up to **40% of eligible expenses** for **university-company collaborative R&D projects**



## INNOV-R

- Funding for **projects aiming to reduce GHG emissions in Québec. Covers up to 50% of eligible expenses** for a collaborative partnership between an academic organization and a business operating in Québec



## Québec Technoclimat program

- **Up to \$3M per project** (50% of eligible expenses) to support innovation in relation to energy and the reduction of GHG emissions



## Compétivert

- Loan for projects related to the green economy to increase sustainable productivity of businesses with a funding of **\$50,000+**



## Tax Holiday for Foreign Researchers and Experts

- **Five-year Québec income tax exemption** at the personal level: 100% of salary for the 1<sup>st</sup> and 2<sup>nd</sup> year; 75% for the 3<sup>rd</sup> year; 50% for the 4<sup>th</sup> year; 25% for the 5<sup>th</sup> year



Seaway terminal of Sainte-Catherine © MRC de Roussillon

# Tax credits to support cleantech development

## Federal tax credit for investments in cleantech

- **Up to 30%** in credit focused on net-zero technologies, battery storage solutions and clean hydrogen\*

## Investment Tax Credit for Carbon Capture, Utilization, and Storage (CCUS)

- Repayable credit for eligible corporate expenditures in CCUS\*\*
- **Up to 60% in credit** to purchase CO<sub>2</sub> capture equipment and **37.5%** for transportation, storage and use equipment **between 2022 and 2030\*\*\***

Note: \* Details of the design of the credit to come at the next fiscal update in fall 2022; \*\* Depending on eligible uses (CO<sub>2</sub> storage in concrete and/or dedicated geological storage) and CCUS projects; \*\*\* Credit rates will be set at 50% between 2031 and 2040.

Source: Department of Finance Canada, 2022.



# 06

## Montréal International: Personalized, Free and Confidential Services



# Montréal International, a single point of access to a series of personalized, free and confidential services



**Long-term  
strategic support**



**Economic data  
and communication  
services**



**Government  
relations facilitation**



**Incentive programs  
assistance**



**Foreign workers  
immigration  
assistance**



**International  
recruiting solutions**





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