

# Making the Green Economy Work for Your Business

*Let's Talk Green Economy Workshop Series*

January – March, 2020

# Who is EnviroCentre?

envirocentre  
Bringing environmental change to life

## Our work focuses on four main areas



**Green  
Homes**



**Active  
Transportation**



**Green  
Lifestyles**



**Green  
Business**

# Carbon 613: EnviroCentre's program for businesses

## Supporting Businesses to Achieve Their Sustainability Goals

- Membership-based
- Events, resources, discounts
- Carbon accounting, sustainability planning and business engagement tools
- Local network

# Carbon 613 Members



Centre Shaw) Centre



## Our goals today

- Understand Green Economy
- Learn what other businesses are doing
- Talk about the context here in Ottawa

# Why Green Economy?



## **What is the Green Economy?**

An economy that works in a world that works



**Why stay  
under 1.5  
degrees?**

## Over 1.5 degrees?

Catastrophic warming

- Species loss
- Mass flooding
- Mass crop failure
- Large-scale human and other species suffering

**Emissions targets to  
stay below 1.5  
degrees warming**

- **Global:** net-zero by 2050
- **Canada:** net-zero by 2050
- **Ottawa:** zero-emissions by 2050
- To reach target must be **70% there by 2030**

# An economy for 1.5 degrees

**Low-emissions** – heading to zero by 2050, well on our way by 2030

**Net-Positive**

**It works**

So what  
does that  
mean?



## Green Economy:

An economy that is low carbon, resource efficient and socially inclusive

Clean Energy

Energy Efficiency

Clean Tech

Carbon Capture

Ecosystem Services

Supporting Industries

(Biodiversity, Conservation, Waste Reduction)



# Green Economy facts

Global **cleantech** sector will surpass  
**US\$2.5 trillion**

Global market potential for **bioproducts**  
will exceed **US\$500 billion**

Green Economy here in Canada is  
projected to be worth **US\$26 trillion**,  
creating **559,400 jobs in Clean Energy**  
**alone** by 2030.

## Global stats

## Global examples

**Solar** – 2019 up 17.5% over 2018

**Electric Vehicles** – 2019 up 46% over 2018, 64% over 2017

**Carbon-reduction laws** – taxes, EV targets, emissions caps

**ESG Investments** – in 2018 \$11.6 trillion,  
up from \$3 trillion in 2010

**Divestment** – Sep 2019 \$11 trillion, up  
from \$52 Billion in 2014

**Big Companies are getting on board...**

**Financial Sector:  
The tide is turning**

Pinned Tweet



**Microsoft On the Issues** @MSFTIssues · Jan 16

Today, Microsoft announces its plan to be carbon negative by 2030.

"Today we are making the commitment that by 2030 Microsoft will be carbon-negative. Not just across our direct emissions, but across our supply chain too. We must take responsibility to address the carbon footprint of our own technology and company."

—Satya Nadella



32

617

1.5K



## Siemens is leading the way: carbon neutral operations by 2030

"Committing to cutting our global carbon footprint is not only prudent – it's profitable." – Joe Kaeser, CEO Siemens AG

## How Ikea plans to be climate positive by 2030

A company known for its disposable furniture seems like it would have a hard time quickly getting to a place where it reduces more greenhouse gas emissions than its entire value chain creates. But the company has a plan: radically rethinking how it designs its products.



Illustration: FCI

## Coca-cola: cutting carbon in factories, fridges and flavourings

Company is following through with its commitment to reduce the carbon footprint of its soft drinks by a third by 2020



## Taco Bell says it will make all its packaging recyclable, compostable, or reusable by 2025

Your Cravings Box won't clog up a landfill anymore.



## Michael McCain announces that Maple Leaf Foods is carbon neutral

Michael McCain, President and CEO, explains the importance of being the world's first major carbon neutral food company.

# Climate Change Costs

In real terms, the cost of inaction is greater than the cost of action

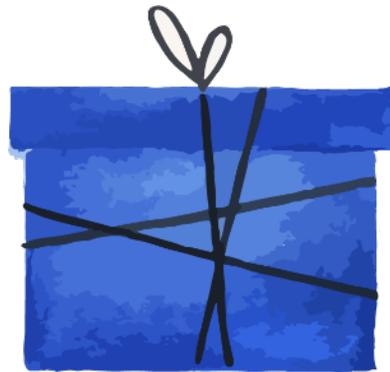
- Global Cost of Climate Change **5%** of global GDP each year
- Costs of action **1%**  
(Stern Review on the Economics of Climate Change)
- Estimated cost to Canada **\$21-\$43 billion** per year by 2050
- Actual cost in 2018 of insured damage from severe weather across Canada **\$2 billion**

**Green Economy is better business.**



**Where is  
Canada's  
place in all  
this?**

## Opportunity



We're well positioned

1. Abundant clean energy resources
2. Ability to develop these resources
3. Educated population
4. Construction and Development Industry
5. Innovation and Clean Tech economy
6. Strong, ethical governance

**Costs of inaction** – surprise is a bad thing

**Stranded assets**

**Just transition** – while 50,000 jobs may be lost in fossil fuels, just over 160,000 will be created in clean energy

**Getting left behind**

**Risk**





**Building a good future**

**Co-Benefits**

Health and society

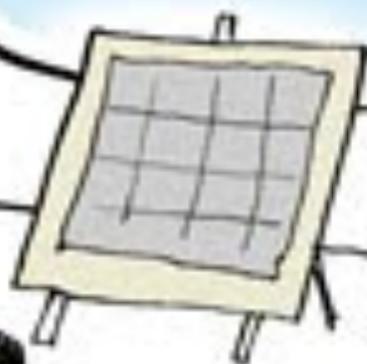
Resilience



# CLIMATE SUMMIT

WHAT IF IT'S  
A BIG HOAX AND  
WE CREATE A BETTER  
WORLD FOR NOTHING?

- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.



YELK



**You  
are  
here**

**OK.  
But What  
About Here?**

**2,135,000 tonnes of  
CO<sub>2</sub>e could be managed  
and reduced by city of  
Ottawa businesses**



**On average, businesses  
save \$397 per tonne of  
CO2e reduced.**



# Ottawa Business Cost Savings

Well worth the counting...

**Carbon Accounting** = 11% reduction after 3 years **WHILE BUSINESS GROWS**

**Top-performs** see 30% reduction by year 2

**In Ottawa**, this could mean:

- 128,000 tonnes of CO2 reduced
- Cost savings over \$50 million for local businesses

# Largest Sectors in Ottawa

Ranked by number, emissions and emissions per business

| Rank | By number of businesses                  | By emissions                               | By emissions per business   |
|------|--|--|---|
| 1    | Office-Based Businesses<br>(NAICS 51-55) | Accommodation and Food Services (NAICS 72) | Manufacturing (Metal Products, Machinery, Electrical Equipment)<br>(NAICS 33) |
| 2    | Retail Trade<br>(NAICS 44-45)            | Construction<br>(NAICS 23)                 | Accommodation and Food Services<br>(NAICS 72)                                 |
| 3    | Construction<br>(NAICS 23)               | Office-Based Businesses<br>(NAICS 51-55)   | Manufacturing (Food, Beverage, Textiles, Clothing) (NAICS 31)                 |

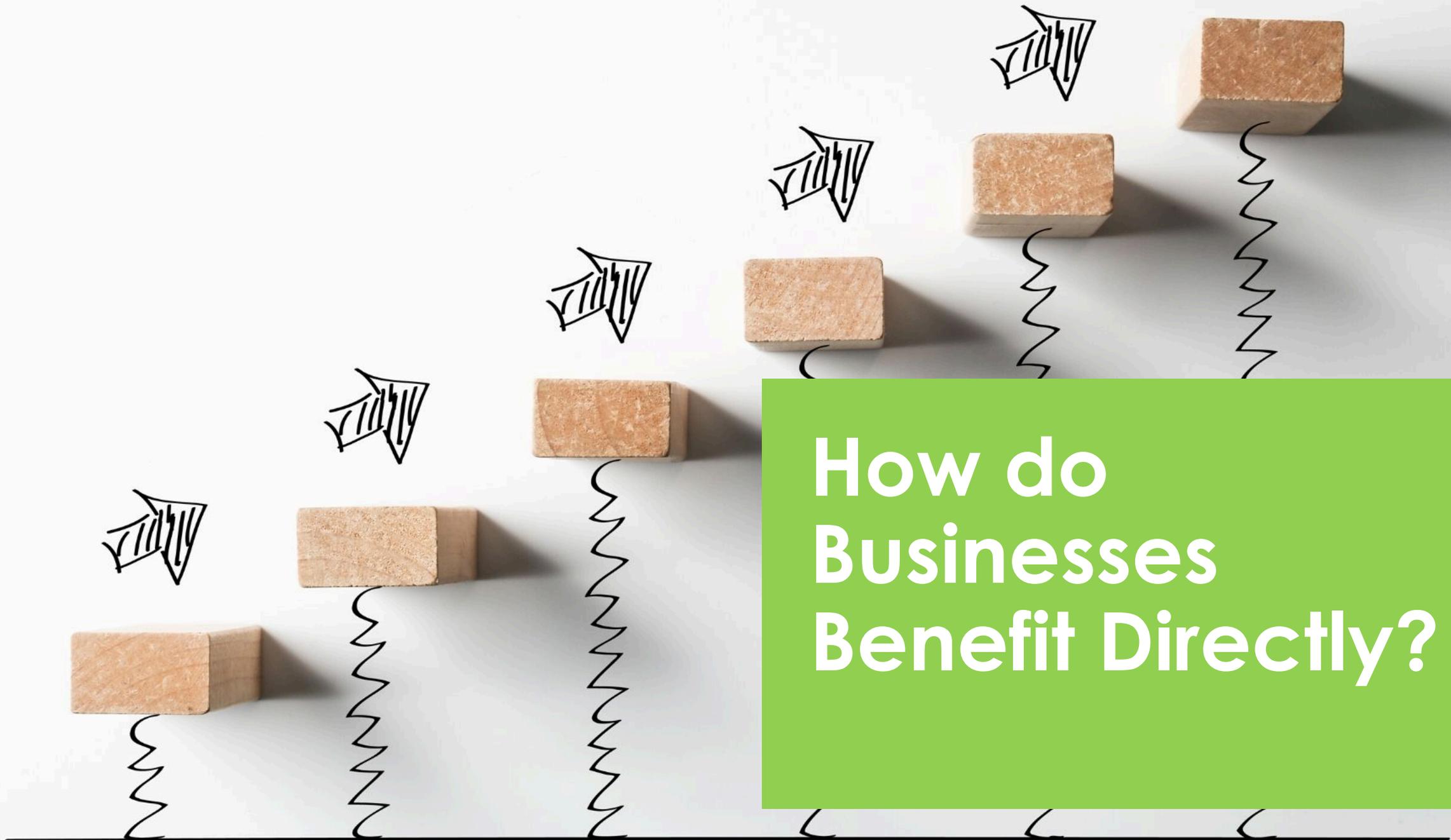
# Emission By Sector

Right Here In Ottawa



Emissions by NAICS Sector  
tonnes CO<sub>2</sub>e





**How do  
Businesses  
Benefit Directly?**

## Business Gains From

Energy efficiency



Clean Innovation



Competitive Advantage



## Energy Efficiency

Boost global economy US\$18 billion  
by 2030

**Reduce costs** – under PCF Businesses save \$3.2 billion each year

**Increase money available to spend** – Consumers save \$1.4 billion each year

**New business opportunities** – waste to energy, clean-tech, e-buses

**Reduce business vulnerabilities** – commodity price fluctuations and resource scarcity

**Better machines** – high efficiency furnace

**Better processes** – garbage and gas

**Improved technology** – photovoltaic cost  
down 70% since 2010

**New stuff** – automation cuts costs 15%,  
energy 30%

## Clean Innovation





Do more with less

Prepared for the price on carbon

Reputation – staff/clients/community

The first with the new product

**Competitive Advantage**

## The New Product

- 88% of Canadians interested in buying more efficient appliances
- 79% in upgrading their homes to save energy
- 78% in switching to more efficient heating and cooling systems.

Less is More – Efficiency Canada

# **YOUR COMPANY'S NEXT LEADER ON CLIMATE IS...THE CFO**

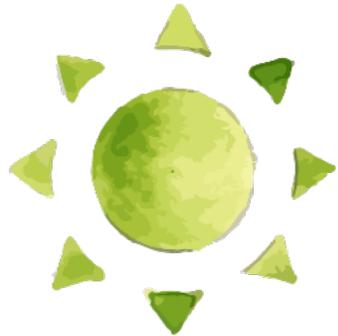
**BY LAURA PALMEIRO AND DELPHINE GIBASSIER**

JANUARY 28, 2020



# Forecast Growth Sectors

## Renewables



### Need to scale to reach targets

- 17% clean today

### Market forecast

- Grow 40% 2017-2022

### The business case

- EROI: wind 30:1; solar 9:1; oilsands 5:1

**Ottawa Renewable Energy Coop**

- 14 solar projects, value \$7 million

**Ottawa-Carleton District School Board**

- clean energy at 50 locations



**Renewables here in town**

# Retrofitting to Net-Zero



## Scale of retrofits required: small residential

- 60% still standing in 2050
- Retrofit 90% of existing
- ~ 300,000 homes; most by 2040 ~15,000 per year

## Market gaps

- Businesses
- Labour force

## Oakwood Designers and Builders

- The first and only Canadian contractor to Design & Build its own award winning, Design Centre and Corporate Headquarters to **LEED Platinum standards** to showcase the most innovative materials and technologies available today
- Honored with the coveted **Consumer Choice Award for Ottawa's Best Home Designer and Best Renovator** 12 consecutive years



**Asten Johnson cut lighting costs  
94% with one day ROI**

- installed smart controls, and replaced obsolete fluorescent lights with LED tubes
- Energy Savings
- IESO Incentives, federal incentives





**Retrofits** – new HVAC at Water Purification

Plants create annual savings of ~35,000

kWh, \$50,000

**Water savings** at splash pads save

\$147,000/year

**Infrastructure investment** - \$180 billion over  
next 12 years

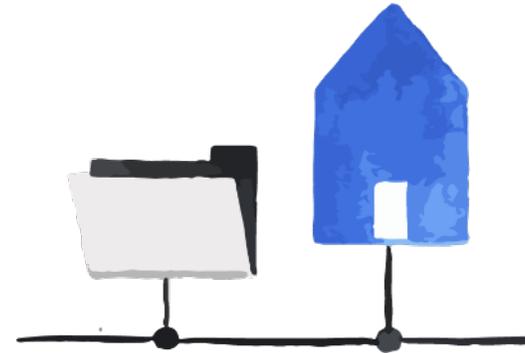
**Energy Infrastructure** - electrification

**Public Transit** - electrification

**Housing** – efficient/resilient

**Clean water and air**

**EV charging**

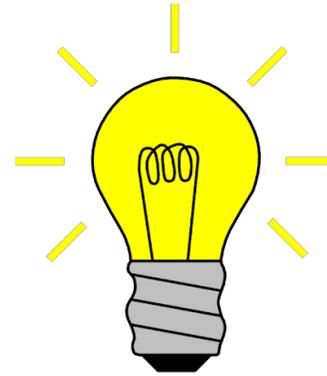


## Infrastructure

A decarbonized economy requires  
different kind of infrastructure

**Portage Power**

- grown 5-fold since 2012
- Includes Hydro, Landfill Gas, Solar



**Building Local  
Energy Infrastructure**

**CSV Architects**

- Passive House Standard
- 16 unit
- Met budget limitations for non-profit housing



**Building Local Social Housing - Arlington**

## Manufacturing



A green economy requires energy saving machines, devices and materials

**Electric vehicles** – New Flyer

**Heat pumps, HVAC, insulation** - Retrofits

**Building materials** – CarbonCure, Mass Timber

**Automation Systems** – lighting, smart thermostats

**Renewables** – solar systems, battery storage



Oakville and across  
Canada

- Conservation focused  
**manufacturer and installer**
- **Products** include lighting, water, smart devices, solar and more
- **Serves** utilities, government agencies, distributors and customers across North America.

**Clean-Tech in Ottawa** – home to 240 companies

**Growing demand** – will double by 2030

**Growing investment** –double over next decade

**Examples:** Automation systems, apps,  
measurement tools, tools to reduce  
consumption, improve battery efficiency etc...



## Clean Tech

the size of the clean technology  
investment opportunity will  
reach a cumulative \$184 billion  
from 2020 to 2030

**Ottawa-based Thermal Energy  
posts record first half revenues  
up 51%**

- Sells energy efficient systems  
to Fortune 500 customers



## Gbatteries Energy Canada

Ottawa Startup

Developing battery system to allow electric cars to charge almost as quickly as gas vehicles can be refuelled

Landed \$1.2 million in federal funding



## Education & technical expertise



**Skilled Trades** – Home Renovation

Program

**Technical Education** – Applied research

**Specialized Knowledge** – CEM, REA,

LEED



**EnviroCentre**– Registered Energy Advisors  
for Home Audits

**La Cite**– Centre d'expertises en  
prototypage intelligent (CEPI).

**CaGBC**– LEED certification

**YMCA** – Home Renovation and Horticulture  
programs

**Carleton** – Sustainable Energy Engineering  
Program



**And so much more...**

**Sustainability Consultants** – WSP, Stantec, Stratos, Delphi, Posterity Group

**Sustainable Finance** – YCU, RBC

**Capacity Building** – Invest Ottawa, Impact Hub

**Green Retail** – Nu Grocer, Terra 20, Bloomin' Studios

**Green Food** – CSAs, Lufa Farms

**Green Tools** – Project Neutral

**Green Tech** – Open Concept

## Local economic benefits



**Jobs** – retrofit trades-workers, clean energy, education

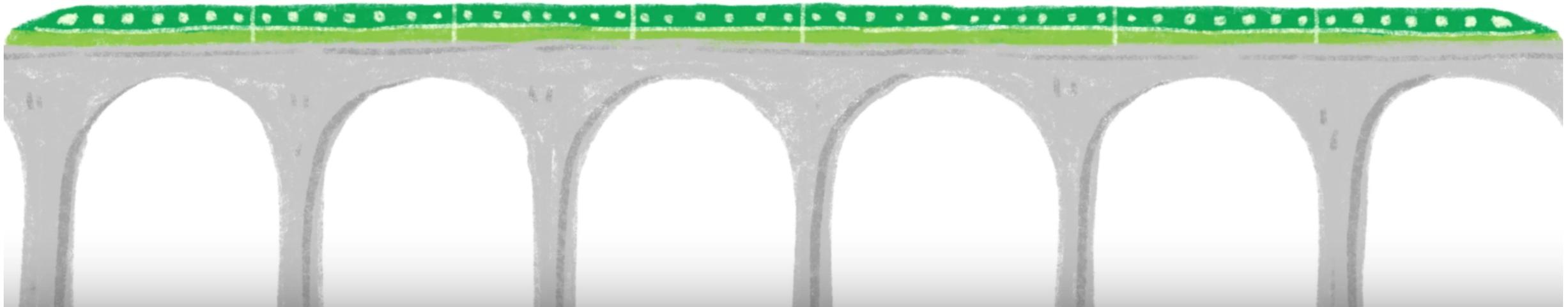
**Keep money in the region** - \$3 billion on imported energy kept here

**Reduced health spending**

**Reduced long-term payout from resiliency**

**More liveable communities**

# Get on the Green Business Train!



## How do you get on board?

Get informed

Join a program or network

Get Creative



- [Our Natural Resources](#) ▾
- [Climate Change](#) ▾
- [Energy Efficiency](#) ▾
- [Maps, Tools and Publications](#) ▾
- [Public Consultations](#) ▾
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[Home](#) → [Energy Efficiency](#)

## Energy Efficiency

Innovation in the fields of housing, building, communities, industry, and transportation can take advantage of the benefits of energy efficiency, such as lower energy costs, cutting emissions, improving operating performance, and increasing asset values.

### [Energy efficiency for homes](#)

Assess and improve the energy performance of your home. Learn about programs and financial incentives to consume less energy and save money.

### [Energy efficiency for transportation and alternative fuels](#)

Fuel consumption, choosing the right vehicle, fuel-efficient driving, charging and alternative fuelling stations, commercial transportation.

### [Energy efficiency for buildings](#)

Integrated design, energy codes, building life cycle, commissioning, recommissioning, and retrofitting.

### [Energy efficiency for industry](#)

Energy management for industry, financial assistance, Canadian Industry Partnership for Energy Conservation

### [Energy efficiency for products](#)

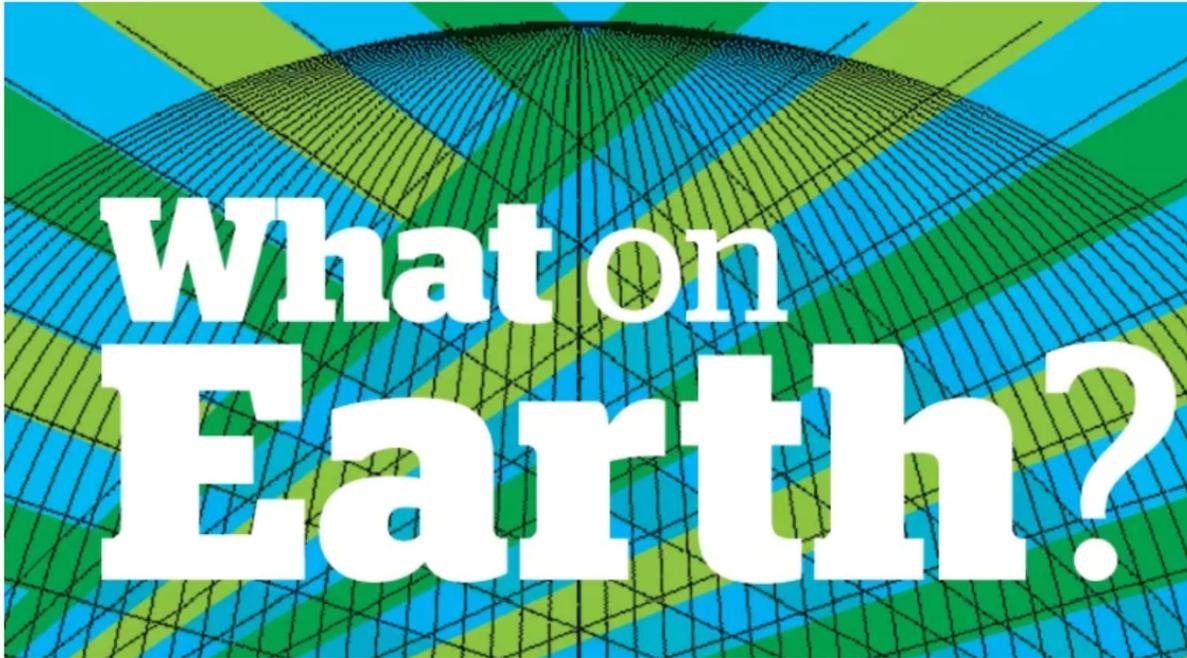
Canada's strategy, news and tips, product profiles and categories.

### [ENERGY STAR Canada](#)

Trusted mark of high efficiency products, homes, buildings and industry.



# Sustainability



The  
**ENERGY MIX**

CLIMATE & SOCIETY CLIMATE IMPACTS & ADAPTATION DEMAND & DISTRIBUTION JURISDICTIONS NON-RENEWABLE ENERGY RENEWABLE ENERGY

SPECIAL REPORTS PODCASTS & WEBINARS OPINION & ANALYSIS **SUBSCRIBE** DONATE ABOUT US WHICH ENERGY MIX IS THIS? PARTNERS CONTACT

f t r

SEE OUR LATEST DIGEST

|  |   |
|--|---|
| <p>CABINET COULD DELAY TECK DECISION, AS COMPANY SAYS MEGA-MINE MAY NEVER BE BUILT</p>     | <p>INDIA WOULD NEED MASSIVE NEW SOLAR CAPACITY TO REPLACE 500,000 COAL JOBS</p>         |
| <p>U.S. AGENCY SEES RENEWABLES SURGING BUT GHG EMISSIONS NEARLY UNCHANGED THROUGH 2050</p> | <p>RADIOACTIVE FOSSIL WASTEWATER STILL FLOWS, 40 YEARS AFTER DAMNING INSIDER REPORT</p> |
| <p></p>  | <p></p>   |

 **CLEAN ENERGY REVIEW**  
News and insight you need, delivered.

THIS WEEK  
How Canadian cleantech tops global lists, a retirement job for old EV batteries, and why climate change could 'blow up the economy'



# Green Business Toolkit



[www.envirocentre.ca/carbon613/green-business-toolkit/](http://www.envirocentre.ca/carbon613/green-business-toolkit/)

## Let's Talk Green Economy

A free workshop series for  
Ottawa businesses.

SIGN UP TODAY!

[envirocentre.ca/letstalk](https://envirocentre.ca/letstalk)



## More free learning? Why don't you try...

- **10 Steps to a Low Carbon Workplace**
- **Building Retrofits for SMEs**
  - Part 1: Where to Start
  - Part 2: From Plan to Project
- **Retrofitting to Net Zero for Builders**
  - Part 1: Knowing the Landscape
  - Part 2: Getting it Right



**Ottawa Businesses Committed  
to Climate Action**

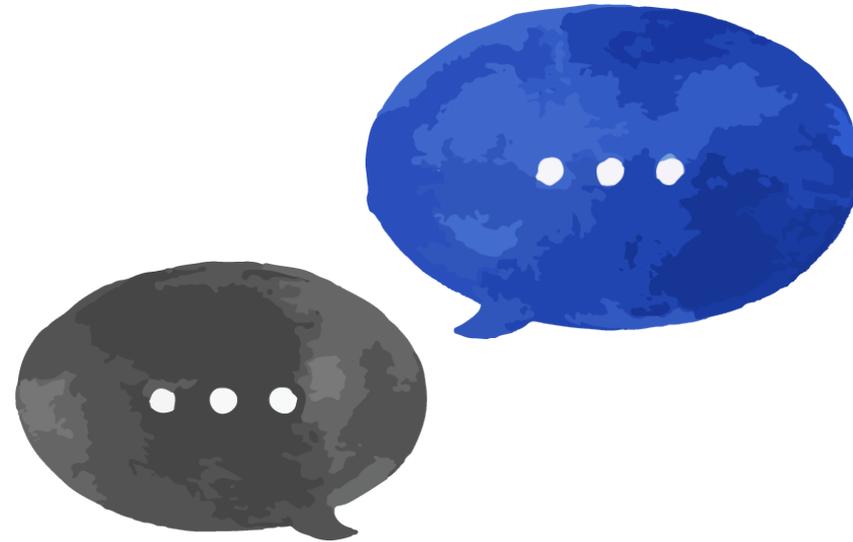
**Carbon<sup>613</sup>**  
by envirocentre





Get Creative

Talk it up



# Thank You!

## And Good Luck!!!

This project was undertaken with the financial support of:  
Ce projet a été réalisé avec l'appui financier de :



Environment and  
Climate Change Canada

Environnement et  
Changement climatique Canada



**enviro**centre

Visit us at [envirocentre.ca](http://envirocentre.ca)



To cut carbon  
**Your Business  
Matters**

What are **you** doing?

**Ottawa Businesses Committed  
to Climate Action**

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