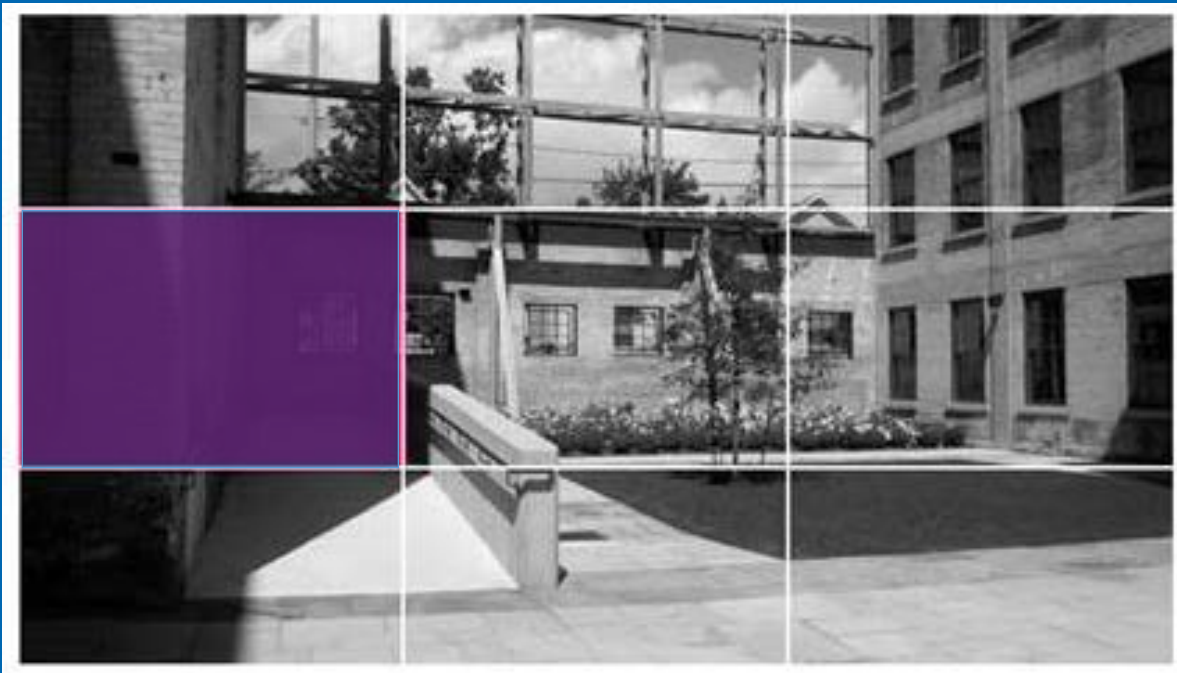


ENERCARE

Energy Management: *What's
New And What's Next*
Oct 26, 2016

*HOW UPCOMING
REGULATION WILL
AFFECT YOU*



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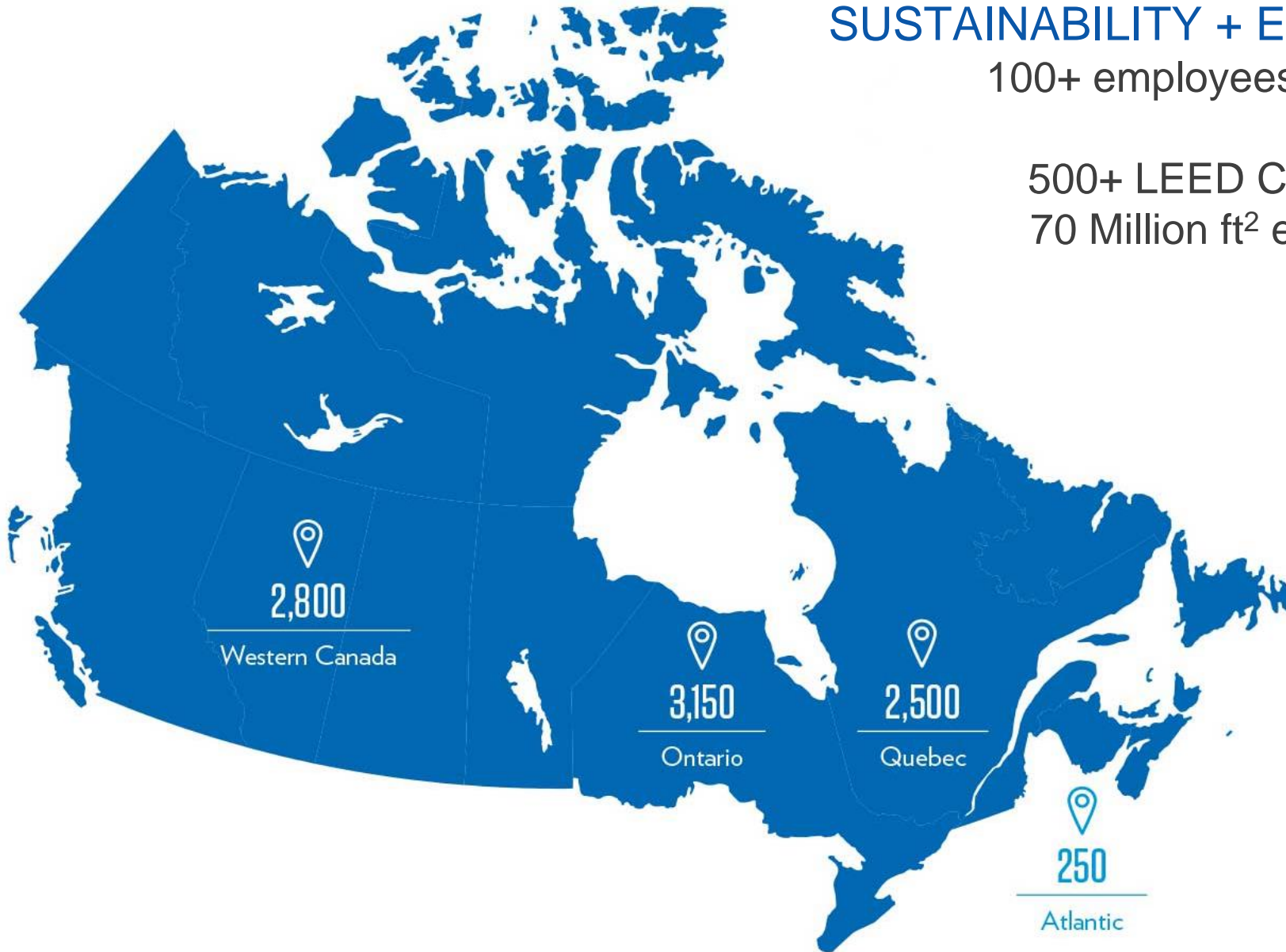
SUSTAINABILITY + ENERGY TEAM

100+ employees across Canada

70+ in Ontario

500+ LEED Certified buildings

70 Million ft² existing buildings



SUSTAINABILITY + ENERGY TEAM SERVICES

Sustainability Strategy

- Strategic planning
- Management system design and implementation
- GHG & resource management
- Operational assessments
- Program design and strategic planning
- Supply chain management
- Public reporting and communications
- Climate preparedness

Green Building Benchmarking

- LEED/WELL/BOMA/Green certification management
- Green building/Portfolio benchmarking
- Tenant engagement and partnership program
- Green to Great® performance tracking and reporting
- Integrated design management
- Daylight modelling
- Green education program

Building Performance

- Building commissioning
- Energy management planning
- Integrated energy assessments, including energy audits
- Retro-commissioning (ReCx)
- Operator training
- Building energy simulation
- Energy incentives consulting
- Performance measurement & verification
- Renewable energy analysis
- Carbon assessments/accounting
- Building automation system consulting services

WHERE WE ARE HEADING

EXTREME HEAT DAYS
WILL TRIPLE
BY 2040

66 days above 30°C,
up from 20

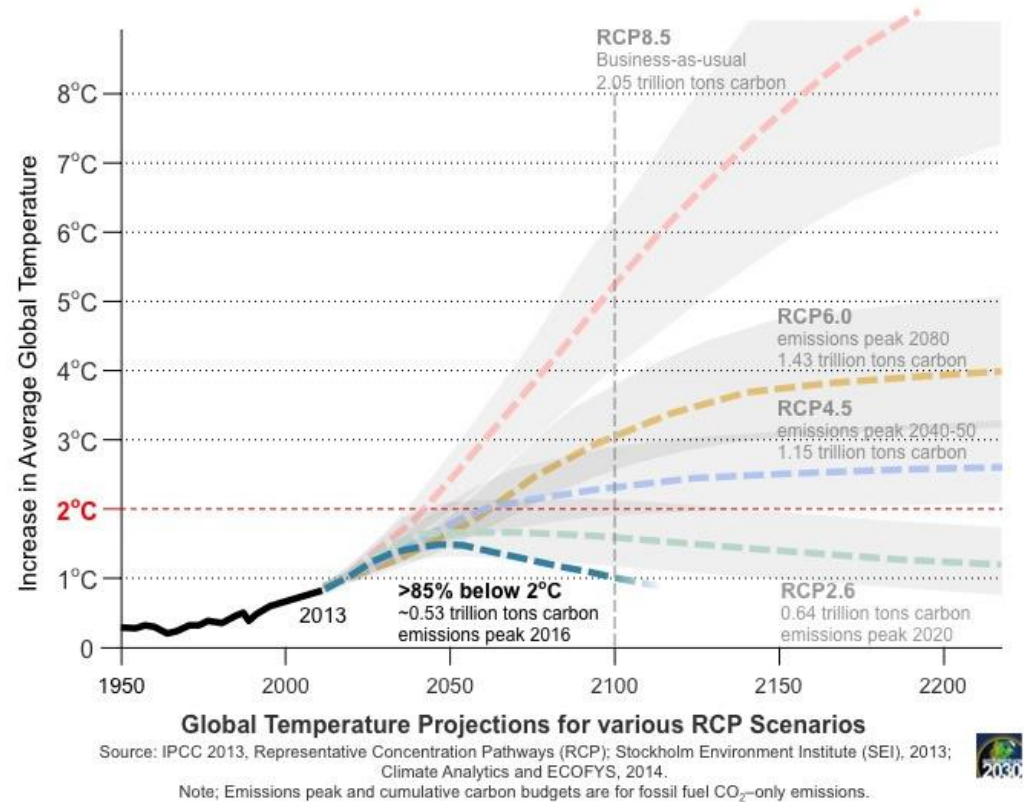
TORONTO'S FUTURE WEATHER AND CLIMATE DRIVER STUDY Volume 1 - Overview



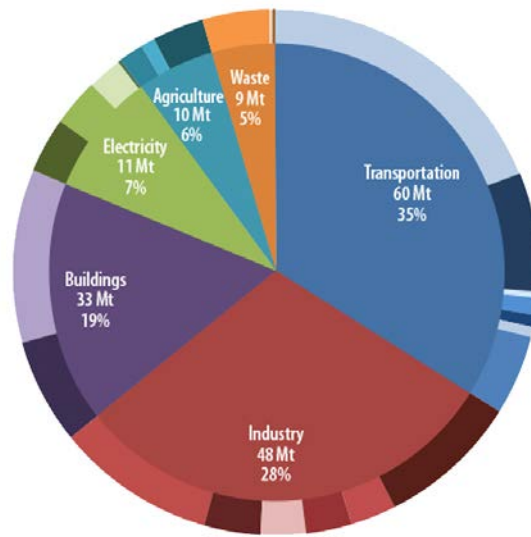
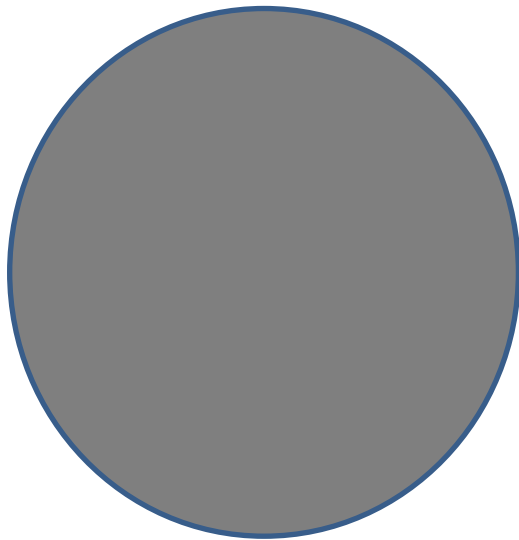
CAN WE ACHIEVE TWO DEGREES MAXIMUM GLOBAL RISE

FOR AN 85% CHANCE OF SUCCESS:

- › Carbon emissions peak by 2016
- › Phase-out of fossil fuels by 2050



ONTARIO'S PROGRESS TO DATE



We now need to reduce 10x faster

THE PLAN TODAY

ENERGY
BENCHMARK
REPORTING
DISCLOSURE
IN CANADA



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Here's where the provinces stand on carbon prices

Prime Minister Justin Trudeau says price on CO2 will start at \$10 tonne

By John Paul Tasker, CBC News Posted: Oct 03, 2016 5:47 PM ET | Last Updated: Oct 03, 2016 5:47 PM ET

ENERGY REPORTING CARBON CAP & TRADE GREEN FINANCING & CCAP



Sections [thestar.com](#)

Ontario cap-and-trade system will come next year, aims to reduce emissions: Wynne

Kathleen Wynne has called Ontario's 'very bad actors' when it comes to greenhouse gas produced.

Ontario will spend up to \$8.3B to fight climate change, offer incentives

Climate change plan, to be announced Wednesday, would add \$5 a month to home heating bills

By Keith Leslie, The Canadian Press Posted: Jun 07, 2016 4:47 PM ET | Last Updated: Jun 07, 2016 6:38 PM ET



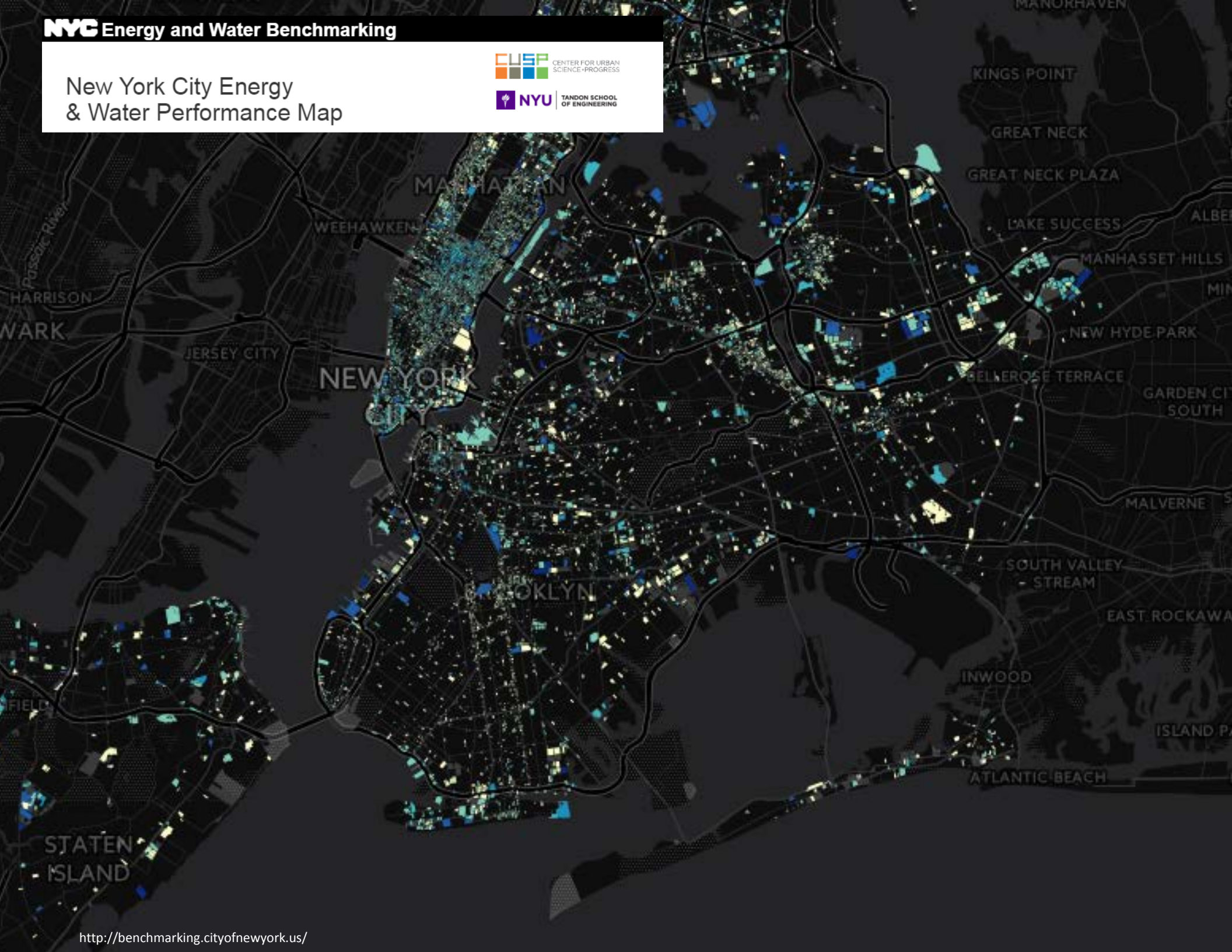
Prime Minister Justin Trudeau has said all



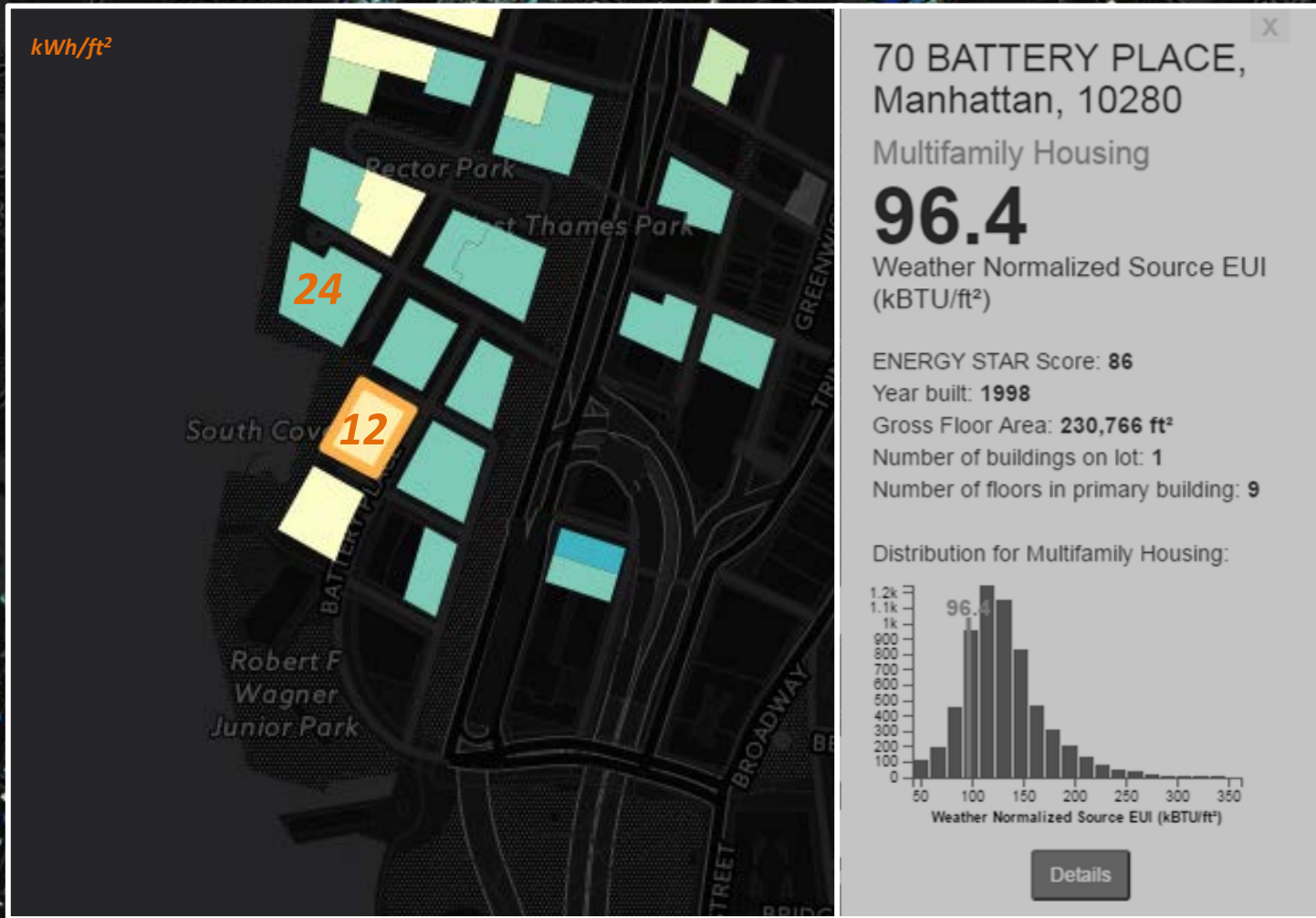
ENERGY REPORTING AND BENCHMARKING

Drive property value, not just operating cost
Motivate owners to invest in performance
Require management action

New York City Energy
& Water Performance Map



MARKET COMPETITION



SPECIAL REPORT

TD Economics



May 12, 2015

THE MARKET BENEFITS OF 'GREEN' CONDOS IN TORONTO

Highlights

- Leadership in Energy and Environmental Design (LEED) certified, or 'green' buildings represent an increasing share of new construction, including the condominium market.
- Limited research exists linking LEED status in residential buildings to market outcomes such as resale price, days on market, maintenance/condo fees, and others.
- Using a novel dataset, we find that **LEED certification increases the resale price of Toronto condos by between 5% and 14%.** The impact on other metrics, such as time on the market and maintenance fees, is found to be mixed.

<https://www.td.com/document/PDF/economics/special/GreenCondos.pdf>

MANAGEMENT ACTIONS

ANNUALLY REPORT

- Energy Star
- Utility Bills
- Building details (size, etc)
- Suite data collection TBD

VERIFICATION: TBD

WILL OWNERS DEMAND
EFFICIENCY IMPROVEMENTS?



CARBON: THE NEW CURRENCY IN BUILDINGS

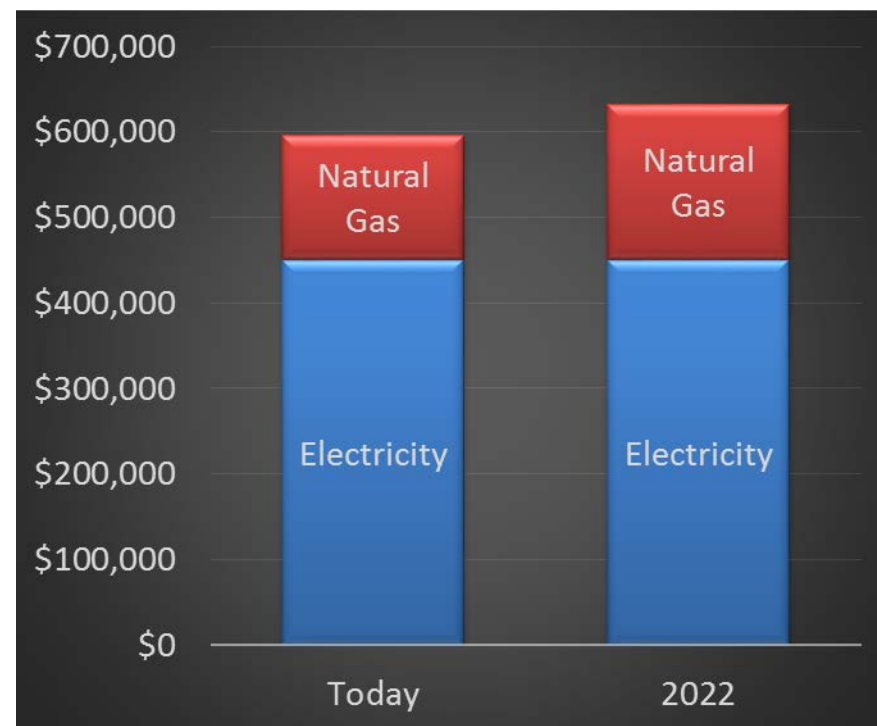
What will cap & trade cost?

Is your design / retrofit plan still relevant?

PUTTING A PRICE ON CARBON

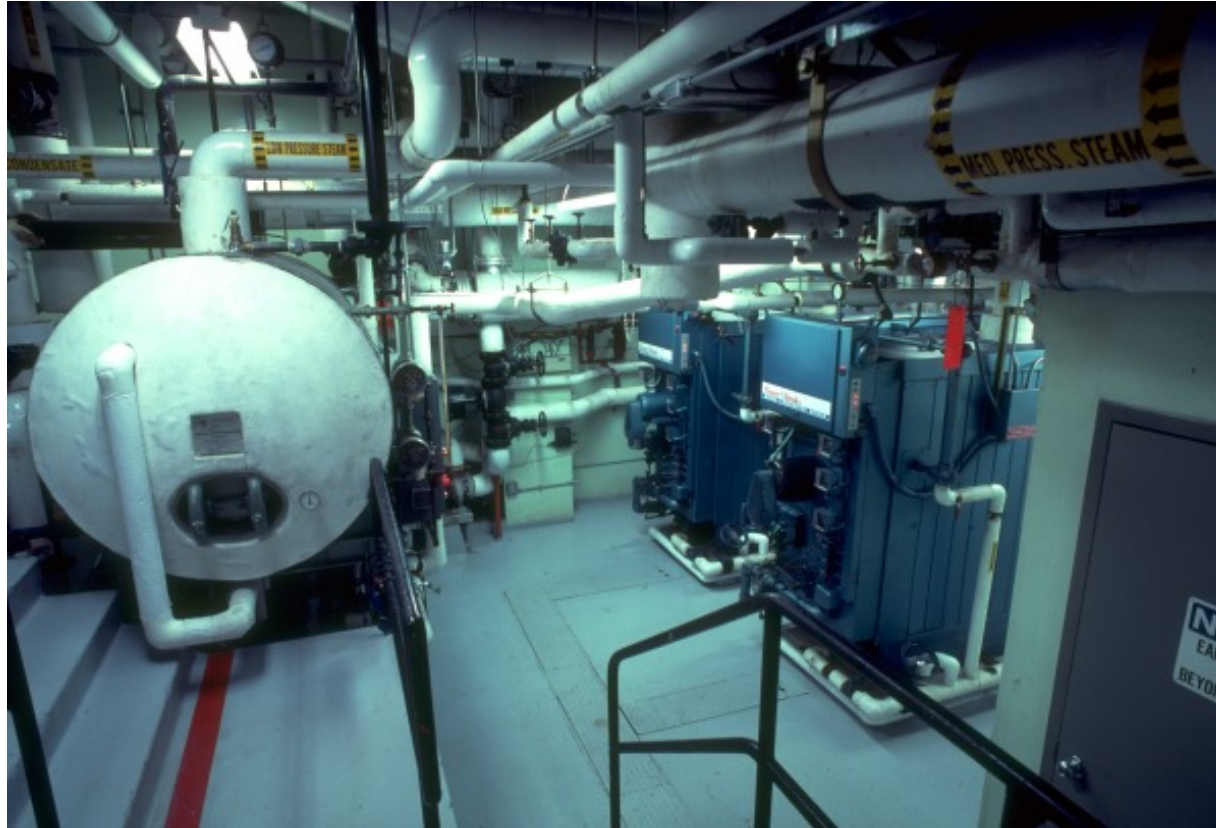
- Major impact on gas costs

<u>2017</u>	<u>2022</u>	<u>2025</u>
\$10/ton	\$50/ton	?
+2¢/m ³	+9¢/m ³	?
+~6%	+~ 25%	?



- Minor impact on electricity cost
- Net operating cost impact will vary, may be small

IS YOUR DESIGN / RETROFIT STRATEGY STILL RELEVANT?



A PERFECT CO-GEN IS 100% EFFICIENT

It would convert 9.5m^3 of natural gas into 100kWh of usable energy. For simplicity, say 50kWh of electricity and 50kWh of usable heat.

Total carbon emitted 18kg

A GOOD BOILER IS 90% EFFICIENT

It would deliver 50kWh of heat and the grid would deliver 50kWh of electricity

Total carbon emitted 15kg (avg)

IF CARBON IS THE QUESTION, THE ANSWER IS

- Co-generation will not help
- Reduce gas consumption wherever possible

IS ELECTRIC BASEBOARD HEATING THE SOLUTION?

SOME ACTIVITIES ARE BECOMING MORE IMPORTANT

Domestic hot water heating

Space heating

boiler retrofits

Battery storage & offset

(Co-generation less important?)

\$8 BILLION DOLLARS

Spending Cap and Trade Revenue
CCAP Green Bank

PREPARING TO CLAIM YOUR SHARE

“A green bank will help homeowners and businesses access and finance energy-efficient technologies to reduce greenhouse gas pollution from buildings”

PROJECTS RECEIVE MORE SUPPORT IF PROPOSALS

- are well thought out
- quantify the benefits (CO₂ reduction)
- Have a plan to track results
- Are submitted while there's still money available

QUESTIONS?

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