



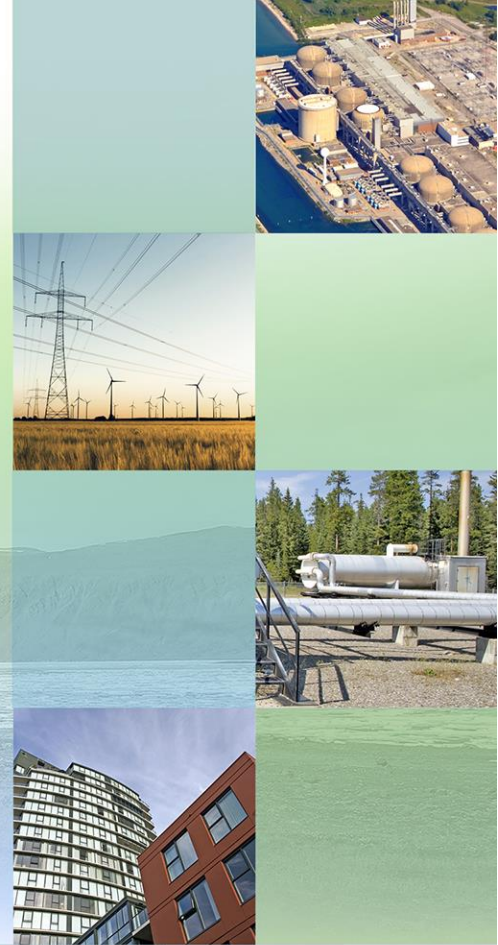
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New Technologies/Digitalization and Energy End Use Data Collection in Canada

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November 21-22, 2019 ▪ G20 Energy End-Use Data and Energy
Efficiency Indicators, IEA Paris, France



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Outline

Digitalization and Energy Efficiency

Data Collection at Natural Resource Canada (NRCan)

Data Collection at Statistics Canada (StatCan)

The Canadian Housing Statistics Program

Challenges

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Digitalization and Energy Efficiency

- Smart and connected efficient devices
 - Ability to digitally control and digitally enhance tools to act on the physical world
 - Remote control or automation
 - Enhanced tracking/monitoring and influencing energy use and energy efficiency
 - Automated decision making
-
- ***Digital technologies -> interconnection -> energy efficiency***

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The Impact of Digitalization on Energy Efficiency (opportunities)

- Machines/Computers making energy-use decisions
- Opportunities for systematic energy savings
- Real-time, customized, two-way and interactive data flow
- New stakeholders and newly targeted or personalized programming
- Digital technologies spurring business models that can save energy

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Digitalization and Energy Efficiency

We need both *big* and *thick* data to inform effective policy design and delivery



Source: [Why Big Data Needs Thick Data](#)

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Digitalization: What have we begun to work on?

- Building digital awareness, expertise and capacity in NRCan
- Participating in broader inter-agency discussions
- Experimentation projects via partnerships and through “learning by doing”

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Digitalization: What have we begun to work on?

- ***Small network equipment voluntary agreement***
- To encourage the deployment of energy efficient devices in Canada
- Negotiations include provinces, major Canadian internet service providers, equipment manufacturers, utilities industry associations and NRCan
- Available information on the type and energy consumption of all new product purchases on annual basis

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Digitalization: What have we begun to work on?

- *Geospatial mapping and thermal imaging*

Making energy visible to nudge energy efficiency

Using **data** and **digital technologies** to identify high impact energy efficiency and low carbon opportunities and **engage citizens in more customized ways** to act on them

- Geospatial mapping and thermal imaging to segment and reach households with information about potential energy saving and transition opportunities
- Field experiments to assess if such information might nudge action



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New technology and Data Collection at Statistics Canada

Surveys of Energy Use

- Industrial Consumption of Energy survey (ICE)
 - Annual, mandatory, sample surveys, via. EQ, RR: 84%
- Survey on End-Use of Refined Petroleum Products [RR:70%] and the Survey of Secondary Distributors of Refined Petroleum Products (SRPP) (incl. biofuel)
 - Annual, mandatory, census, via. EQ
- Survey of Household Energy Use (SHEU)
 - Every four years, sample survey, voluntary, paper based, RR:74%
- Survey of Commercial & Institutional Energy Use (SCIEU) via EQ
 - Every five years, sample survey, voluntary

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New Technology and Data Collection at Statistics Canada

- Integrated Business Statistics Program (IBSP)
- Business Register
- Building Register
- Electronic questionnaires (EQ)

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Next Generation – Administrative Databases Talk to Each Other

The Canadian Housing Statistics Program (CHSP)

This program uses information from...

Statistics Canada

Business Register

Census

Property
Assessment

Land
Registry

Financing
& Credit

Canada
Revenue
Agency

Provincial
Health
Agencies

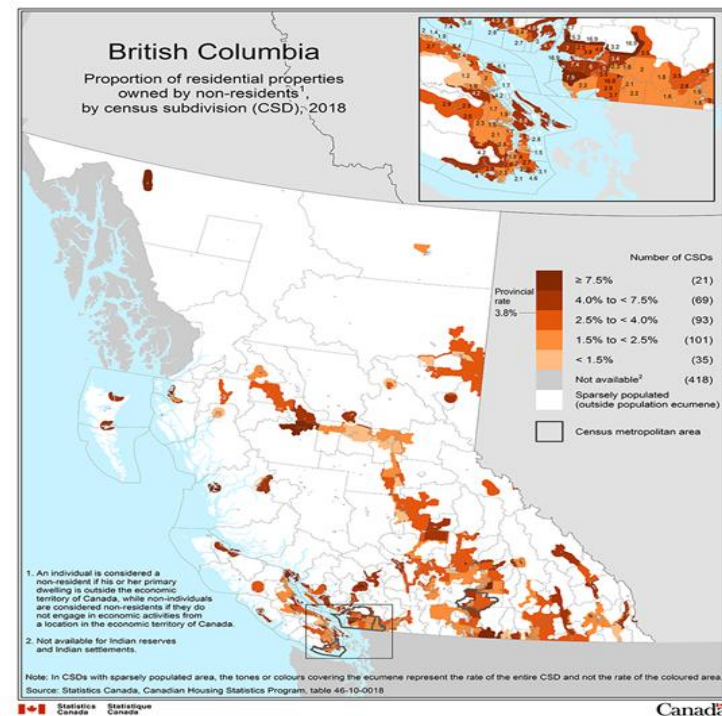
Provincial
Housing
Agencies

Canada Mortgage and
Housing Corporation

Immigration, Refugee and
Citizenship Canada

External

Government



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Challenges

- Confidentiality and privacy
- Data access
- Cybersecurity
- Social acceptance and inclusion
- Affordability
- Labour market implications

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Thank you!

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