



Canada's Experience in Collecting Energy RD&D Data

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Objective

- Canada's experience collecting energy RD&D data
 - Background: reporting co-ordination
 - IEA survey: process and timeline
 - Lessons learned: take aways



Canada

- Location: Northern part of North America
- Governance: One federal, ten provincial and three territorial governments
- Fiscal year: April 1 – March 31
- Capital city: Ottawa
- Official languages: English and French
- Energy responsibilities: Provinces responsible for energy within their territory; federal government responsible for inter-provincial energy transportation; any level of government may invest in energy RD&D



Reporting: Lead Co-ordinator

- Natural Resources Canada (NRCan) is the co-ordinator of all federal, provincial and territorial (FPT) IEA reporting efforts.
 - NRCan's mandate includes energy
 - Data collection is done by means of a survey; full cycle of the survey takes one year from the preparation to the sharing of results
 - Approx. 30 federal departments/agencies plus 13 provincial & territorial (PT) governments respond to the survey



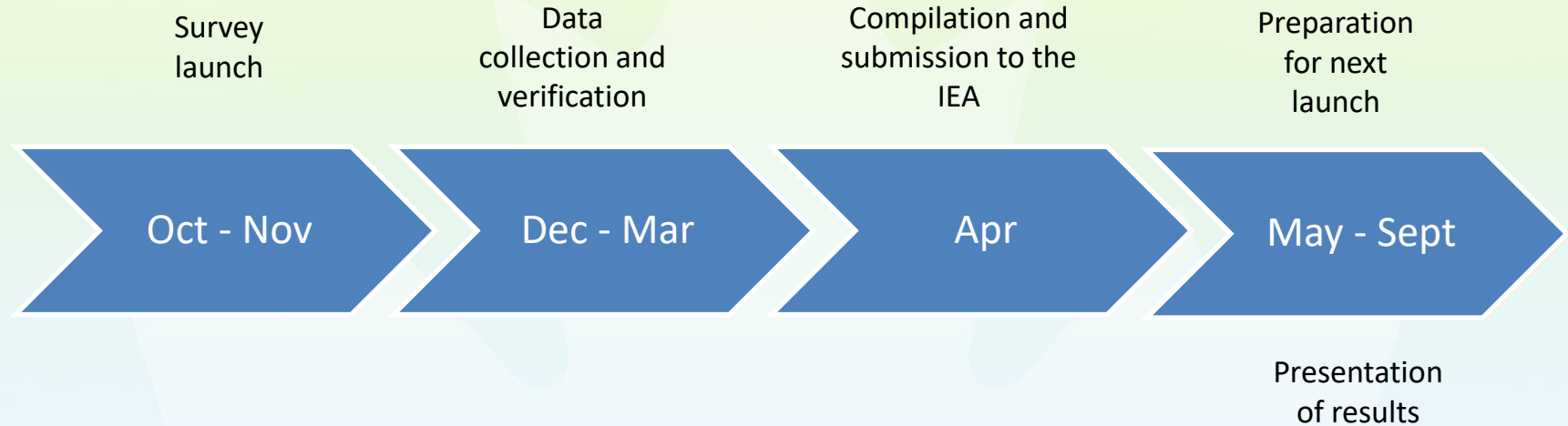
Reporting: Contributors

- Contacts were first established through existing groups of federal, provincial and territorial departments and agencies related to energy files.
 - Important to keep the contacts updated to ensure the appropriate group is taking on the lead of collection of data for their respective organization
 - Often, provincial & territorial (PT) departments/agencies with a core energy mandate (e.g. Ministry of energy) responsible for data collection, on behalf of their PT
 - Identification of federal participants often based on annual federal budget announcements
- **Recommendation: Identify government organizations at national/sub-national levels that oversee programs or have a reporting role (e.g. corporate reporting/performance reporting) to complete the survey.**

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Survey Process and Timeline



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Survey Launch

- Two separate survey launches take place (via email): Federal in October, Provinces/Territories in November.
- An official launch is done by sending a task letter from NRCan along with guidance documents to Federal, Provincial & Territorial (FPT) survey respondents.
- The task letter outlines the objective of the data collection, critical dates and contact information.



Survey Launch



- Survey launch package includes:
 - Task letter: objective, critical dates, contacts
 - Supplemental guidance: a reference/summary document for the IEA Guide to Reporting Energy RD&D Budget/Expenditure Statistics
 - Survey template: An Excel spreadsheet that includes all of the IEA energy tech/sub-tech categories for the survey respondents to report their spending
 - Frequently Asked Questions (FAQ) document: Questions and responses that have been collected from previous years
- Package material is updated each year.

IEA Survey Template (Excel)

Expenditures reported in thousands of \$

Energy RD&D expenditures (in thousands of Canadian \$ with no decimals)

	2018-19 actual Government		2019-20 budgeted Government		2020-21 estimated Government	
	Research and development	Demonstration	Research and development	Demonstration	Research and development	Demonstration
1 ENERGY EFFICIENCY (sum of rows 11 to 15)	0	0	0	0	0	0
11 Industry	0	0	0	0	0	0
111 Industrial techniques and processes						
112 Industrial equipment and systems						
113 Other industry						
114 Unallocated industry						
12 Residential and commercial buildings, appliances and equipment	0	0	0	0	0	0
121 Building design and envelope	0	0	0	0	0	0
1211 Building envelope technologies						
1212 Building design						
1213 Unallocated building design and envelope						
122 Building operations and efficient building equipment	0	0	0	0	0	0
1221 Building energy management systems (incl. smart meters) and efficient internet and communication technologies						
1222 Lighting technologies and control systems						
1223 Heating, cooling and ventilation technologies						
1224 Other building operations and efficient building equipment						
1225 Unallocated building operations and efficient building equipment						
123 Appliances and other residential/commercial	0	0	0	0	0	0
1231 Appliances						
1232 Batteries for portable devices						
1233 Other residential/commercial						
1234 Unallocated appliances and other residential/commercial						
124 Unallocated residential and commercial buildings, appliances and equipment						

3 fiscal years, R&D and demo reported separately

7 major categories (e.g. Energy Efficiency) with sub-categories

Built-in formulas will automatically sum expenditures you report.

Input your expenditure data into the blank cells that have no built-in formulas.



Data Collection and Verification: Support to Survey Respondents

- After the survey launch, an information session is held by NRCan to provide guidance to survey respondents.
 - Presentation slides provided in advance of the session:
 - Help guide the respondents to complete the survey template properly and accurately
 - Track questions and concerns from the respondents
 - Separate federal and provincial & territorial (PT) sessions take place
 - PT session(s) conducted via teleconference
 - Federal session(s) conducted in-person and via teleconference



Data Collection and Verification: Survey Respondents' Challenges

- There is no central database across federal, provincial & territorial (FPT) governments.
- Each department has its own way to track spending according to their context. For some respondents:
 - energy projects are easy to report, while others have a hard time picking out energy projects in their vast array of supported sectors
 - there are too many projects (i.e. thousands of projects) that cannot be evaluated and reported individually
 - they have a challenge of too many projects funded in many different industry sectors where energy is not identified as a sector
- **Solution: Working closely with each department to evaluate the projects/programs to determine whether spending is within the scope of the IEA guide definitions.**



Data Collection and Verification: Preventing Double Counting

- In order to minimize double counting and enhance accuracy/consistency, we report our funds in the following way:
 - *Do include* funds by the entire department/agency and not just by the unit (e.g. division, sector, etc..) that receives the survey package
 - *Do not include* funds the department transferred to another department (Those are to be reported by the recipient)
 - *Do include* funds that the department received from other department



Data Collection and Verification: Reliance on Respondents

- Each department/agency collects the data as they see fit, as the department/agency is better placed to navigate how to co-ordinate their internal reporting, however, we provide assistance in terms of how best to collect the data.
- NRCan's data collection is done by its sectors (e.g. energy, forestry, mining). Each sector behaves similar to a department, e.g. they are responsible for their own reporting.
- Often times, NRCan evaluates projects/programs across many departments (i.e. big spenders) to ensure the spending is within the scope of the IEA reporting definitions.

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Data Collection and Verification: Back and Forth Communication

- Completing the survey template goes through an iterative process with each respondent by:
 - Comparing with the previous year's submission (e.g. trends)
 - Comparing actual vs. previously budgeted expenditures for the same year
 - Checking/verifying current and forecasted amounts through budget announcements and consultation with working level contacts
 - Providing assistance to the survey respondents with the scope of data collection, types of expenditures under consideration, technology categories/definitions



Data Collection and Verification: Focus of Efforts

Most of our efforts are focused on verifying the data & information to ensure accuracy and consistency.



We work very closely with all of our working level contacts to complete the federal, provincial & territorial survey submissions.

Data Collection and Verification: Ensuring Deadlines are met

- A preliminary deadline of December is indicated in the task letter. Final deadline is February/March.
- Reminder emails are sent to the working level contacts, if the December deadline is not met.
- Throughout the entire survey process, we keep track of any questions/concerns and share our responses with all federal, provincial & territorial (FPT) respondents (e.g. update our FAQ document).
 - There are instances, where the questions are very program/project specific, we then discuss with the respondents to find appropriate solutions to address their questions (e.g. demo vs. deployment, project types)



Data Collection and Verification: Collaboration is Key

*Without the co-operation of
the survey respondents, data
collection cannot be
conducted nor verified.*



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Compilation and Submission: Consolidation and Verification

- Once each survey template is completed, all of the templates are linked and results are consolidated.
- This stage is the last stop to check the completeness of the individual survey templates.
- The consolidated results are reported in millions of Canadian dollars with a three-decimal point accuracy for submission to the IEA.
- We also provide any written responses to the IEA along with the data submission.



Presentation of Results

- Each year, we share our consolidated results. Such as:
 - Country ranking
 - Results by technology
- Sharing the results provides an opportunity to remind the respondents of the next survey cycle and to bring forward any questions/concerns they may have.



Preparation for Next Launch

- Preparation often starts with contact updates and follow-ups:
 - Major changes in contacts through re-organization
 - New respondents
 - New programs/projects to seek new funding amounts
- Preparation helps us forecast the following years' spending trend as well as establishing contacts.



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Lessons Learned

- ***For Canada, this is a collaborative effort.***
- Establishing and maintaining working level contacts are important to transition from year to year reporting.
- Preparation helps NRCan and the survey respondents with the upcoming survey cycle.
 - Improve the collection process each year
 - Address any questions/concerns



Questions

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