



# **Inventory of federal business innovation and clean technology programs**

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# Inventory of federal business innovation and clean technology programs

## From Treasury Board of Canada Secretariat

Budget 2017 announced a horizontal review of federal programs that support business innovation and clean technology. The Government of Canada's innovation programs are dispersed which makes it difficult for businesses to find the support that they need. The review is looking to simplify programming so that it is more effective and client-centric. This will reduce administrative burden and ultimately put more money in the hands of Canadian innovators.

As part of this review, the Treasury Board of Canada Secretariat (TBS) has produced a working inventory of Government of Canada programs that support business innovation and clean technology.

In order to produce this inventory, departments and agencies provided key program and financial information for "lowest level program activities" (LLPAs) that are based on Departmental Program Alignment Architectures (PAAs) from fiscal year 2015 to 2016. A total of 28 departments and agencies participated to ensure the resulting inventory was comprehensive. In addition, organizations identified "program streams" or client-facing funding opportunities and service supports.

The financial Crown corporations (e.g. Business Development Bank of Canada, Canadian Commercial Corporation, Export Development Canada, and Farm Credit Canada) are included in the scope of this review; however, since they have neither PAAs nor program streams per se they are not listed in the working inventory. Each of these organizations does have business financing and services that support business innovation. Funding related to programs that support business innovation and clean technology announced in budgets 2016 and 2017 were also identified as part of this exercise; however some are still in the process of being implemented.

This document includes:

1. [Summary graphs](#)
2. [A working inventory of business innovation and clean technology programs \(based on LLPA\)](#)
3. [A working list of program streams \(client-facing funding opportunities\)](#)
4. [Budgets 2016 and 2017 measures identified as part of the review](#)

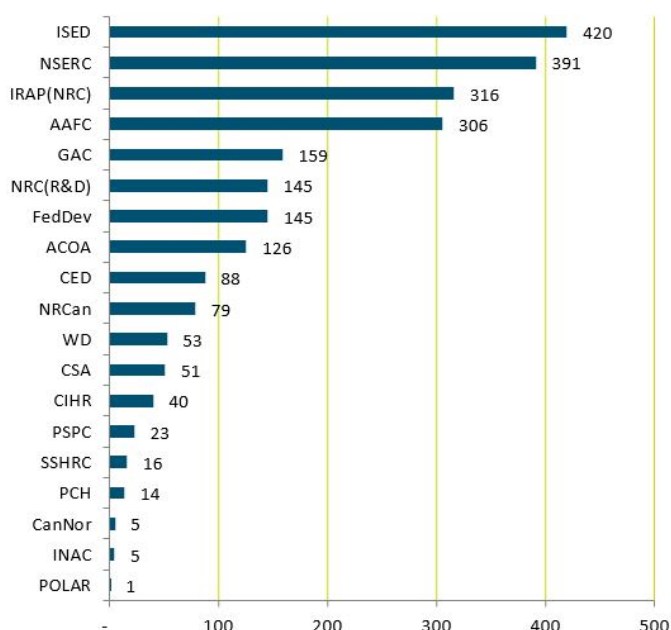
If you have questions or comments about this document, you may direct them to the Treasury Board of Canada Secretariat.

## Government of Canada programs supporting business innovation

The following section describes the data collected from federal departments and agencies regarding programs that support business innovation and clean technology. The graphs show the estimated total program financial support and estimated attribution to innovation and clean technology, as provided by departments, and the breakdown of financial support, whether grants, salary or operational. Also shown are the key instrument used, the key recipients of program support and inputs supported.

Figure 1: Total dollars supporting business innovation for fiscal year 2016 to 2017 (\$million)

### Support for business innovation 2016 to 17 (\$million)

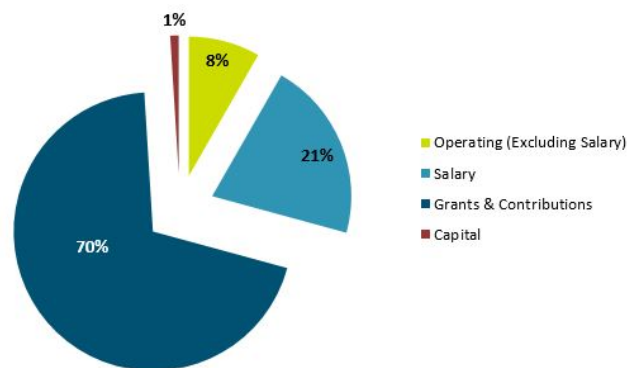


POLAR	1
INAC	5
CanNor	5
PCH	14
SSHRC	16
PSPC	23
CIHR	40
CSA	51
WD	53
NRCan	79
CED	88
ACOA	126
FedDev	145
NRC (R&D	145
GAC	159
AAFC	306
IRAP (NRC)	316
NSERC	391
ISED	420

Displayed per federal organization is the total financial support attributed to business innovation for fiscal year 2016 to 2017. The estimated total expenditure was approximately \$2.379 billion. Of the 19 organizations listed, the top 5 organizations in terms of financial support for business innovation are as follows:

1. Innovation, Science and Economic Development with \$420 million
2. Natural Sciences and Engineering Research Council of Canada with \$391 million
3. National Research Council's Industrial Research Assistance Program with \$316 million
4. Agriculture and Agri-food Canada with \$306 million
5. Global Affairs Canada with \$159 million.

**Figure 2: Financial breakdown dedicated to business innovation in fiscal year 2016 to 2017**

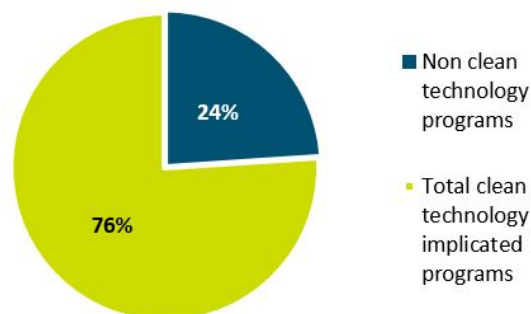


▼ Figure 2 - Text version

Operating (Excluding Salary)	8%	180,248
Salary	21%	455,486
Grants & Contributions	70%	1,517,839
Capital	1%	21,574
<b>Total</b>	<b>100%</b>	<b>2,175,147</b>

Of the expenditures dedicated to business innovation in fiscal year 2016 to 2017, 70% of the total support for business innovation and clean technology was provided through grants and contributions. 21% of the support involved the expenditure of salary dollars, for example support involving the provision of advisory services, and less than 10 % of the support involved operating or capital expenditures.

**Figure 3: Percentage of innovation programs supporting clean technology**

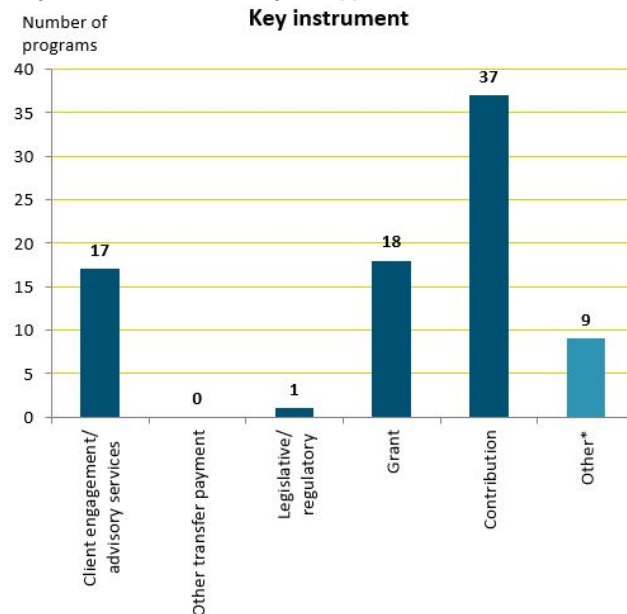


▼ Figure 3 - Text version

Non clean technology programs	24%
Total clean technology implicated programs	76%

76 % of programs indicated that they provide some support to clean technology innovation, although this may not be the primary focus of the program. The extent to which clean technology innovation is supported within these programs ranges from eligible, to targeted, to an exclusive focus. Further analysis will be undertaken to understand clean technology innovation support.

**Figure 4: Key instruments for delivery of support for business innovation and clean technology**



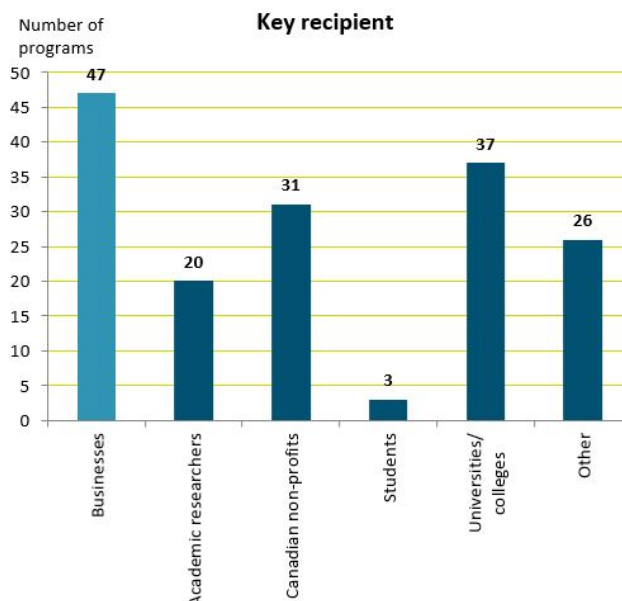
\*Other instrument includes: research services; specialised services; direct to client; procurement)

▼ Figure 4 - Text version

Client engagement/ advisory services	Other transfer payment	Legislative/ regulatory	Grant	Contribution	Other *
17	0	1	19	38	9
* Other instrument includes: research services; specialised services; direct to client; procurement)					

The majority of programs, 37 in total, use contributions as the delivery instrument, with another 18 programs using grants and 17 others using advisory services.

**Figure 5: Key recipients of support from Business Innovation and Clean Technology programs**

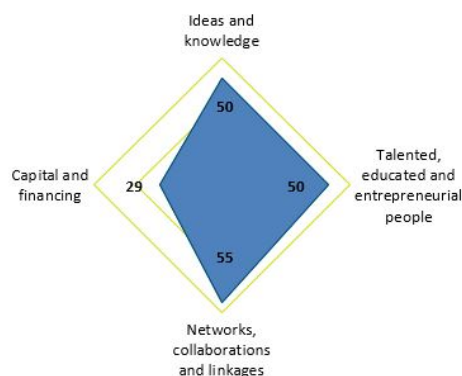


▼ Figure 5 - Text version

Businesses	Academic researchers	Canadian non-profits	Students	Universities/ colleges	Other
47	20	32	3	37	27

When looking at the key recipients of programs supporting business innovation, 47 programs identified businesses as a key recipient. Allowing for overlap, that is, the ability to identify multiple key recipients, another 37 identified universities and colleges, 31 identified Canadian non-profits, and some 20 identified academic researchers.

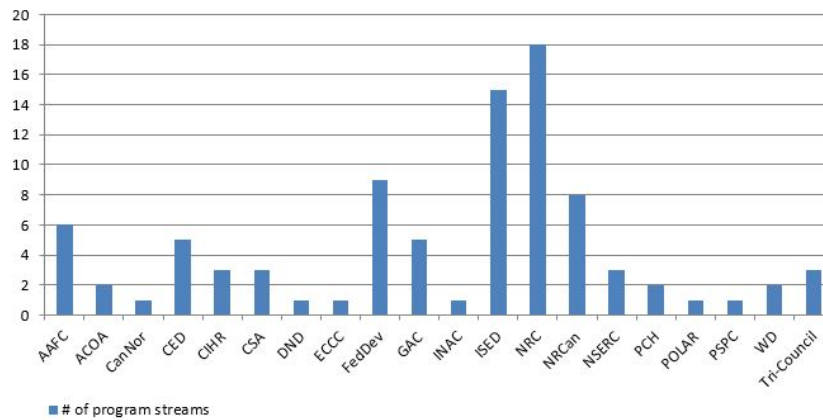
**Figure 6: Government inputs to business innovation**



▼ Figure 6 - Text version

From the programs identified as supporting business innovation, a determination was made as to what input, or inputs, to innovation they supported. The following 4 inputs to business innovation were identified: ideas and knowledge; talented, educated and entrepreneurial people; networks, collaborations and linkages; and capital and financing. Many programs supported more than one area, with a total of 50 aligning with ideas and knowledge, 50 supporting talented and educated people, 55 supporting networks, collaborations and linkages, and 29 supporting capital and financing.

**Figure 7: The number of program streams by federal organization**



▼ Figure 7 - Text version

Federal institution	# of program streams
AAFC	6
ACOA	2
CanNor	1
CED	5
CIHR	3
CSA	3
DND	1
ECCC	1
FedDev	9
GAC	5
INAC	1
ISED	15
NRC	18
NRCan	8
NSERC	3
PCH	2
POLAR	1
PSPC	1
WD	2
Tri-Council (CIHR/NSERC/SSHRC)	3
Total	89

The inventory identifies 90 program streams across 20 different federal organizations that support business innovation.

## Horizontal innovation and clean technology review

### Working inventory: lowest level program activities

Federal institution	Numbers: program activity	Title of lowest level program activity
Agriculture and Agri-Food Canada	5	<ul style="list-style-type: none"> <li>Canadian Agricultural Adaptation Program</li> <li>Enabling Commercialization and Adoption</li> <li>Research Accelerating Innovation</li> <li>Research, Development and Knowledge Transfer</li> <li>Science Supporting an Innovative and Sustainable Sector</li> </ul>

<b>Federal institution</b>	<b>Numbers: program activity</b>	<b>Title of lowest level program activity</b>
<b>Atlantic Canada Opportunities Agency</b>	3	<ul style="list-style-type: none"> <li>• Innovation and Commercialization</li> <li>• International Business Development</li> <li>• Productivity and Growth</li> </ul>
<b>Canadian Northern Economic Development Agency</b>	1	<ul style="list-style-type: none"> <li>• Business Development</li> </ul>
<b>Canada Economic Development for Quebec Regions</b>	2	<ul style="list-style-type: none"> <li>• Business Performance</li> <li>• Entrepreneurship Support</li> </ul>
<b>Canadian Institutes of Health Research</b>	2	<ul style="list-style-type: none"> <li>• Operating Support</li> <li>• Horizontal Health Research Initiatives</li> </ul>
<b>Canadian Space Agency</b>	4	<ul style="list-style-type: none"> <li>• Earth Observation Data and Imagery Utilization</li> <li>• Enabling Technology Development</li> <li>• International Market Access</li> <li>• Qualifying and Testing Services</li> </ul>
<b>National Defence</b>	1	<ul style="list-style-type: none"> <li>• Science and Systems Development and Integration</li> </ul>
<b>Environment and Climate Change Canada</b>	1	<ul style="list-style-type: none"> <li>• Environmental Youth Employment</li> </ul>
<b>Federal Economic Development Agency for Southern Ontario</b>	5	<ul style="list-style-type: none"> <li>• Advanced Manufacturing</li> <li>• Business Growth and Productivity</li> <li>• Business Investment</li> <li>• Commercialization Partnerships</li> <li>• Eastern Ontario Development Program</li> </ul>
<b>Global Affairs Canada</b>	2	<ul style="list-style-type: none"> <li>• International Business Development through Promotion of Exports and Trade in Canada and Abroad</li> <li>• International Innovation, Science and Technology</li> </ul>
<b>Indigenous and Northern Affairs Canada</b>	4	<ul style="list-style-type: none"> <li>• Business Capital and Support</li> <li>• Business Opportunities</li> <li>• Science Initiatives</li> <li>• Strategic Partnerships</li> </ul>
<b>Innovation, Science and Economic Development Canada</b>	5	<ul style="list-style-type: none"> <li>• Aerospace and Defence Innovation</li> <li>• Automotive Innovation</li> <li>• Northern Ontario Economic Development</li> <li>• Science and Technology Partnerships</li> <li>• Small business financing and growth</li> </ul>
<b>National Research Council Canada</b>	10	<ul style="list-style-type: none"> <li>• Aerospace</li> <li>• Aquatic and Crop Resource Development</li> <li>• Automotive and Surface Transportation</li> <li>• Construction</li> <li>• Energy, Mining and Environment</li> <li>• Human Health Therapeutics</li> <li>• Industrial Research Assistance Program</li> <li>• Information and Communication Technologies</li> <li>• Medical Devices</li> <li>• Ocean, Coastal, and River Engineering</li> </ul>
<b>Natural Resources Canada</b>	4	<ul style="list-style-type: none"> <li>• Clean Energy Science and Technology</li> <li>• Forest Sector Innovation</li> <li>• Geospatial Innovation</li> <li>• Mining Innovation</li> </ul>



Federal institution	Numbers: program activity	Title of lowest level program activity
Natural Sciences and Engineering Research Council of Canada	6	<ul style="list-style-type: none"> <li>• College and Community Innovation</li> <li>• Commercialization of Research</li> <li>• Industry-Driven Collaborative Research and Development</li> <li>• Networks of Centres of Excellence</li> <li>• Research in Strategic Areas</li> <li>• Training in Industry</li> </ul>
Canadian Heritage	2	<ul style="list-style-type: none"> <li>• Canada Media Fund</li> <li>• Canada Periodical Fund</li> </ul>
Polar Knowledge Canada	1	<ul style="list-style-type: none"> <li>• Technology Development and Transfer</li> </ul>
Public Services and Procurement Canada	1	<ul style="list-style-type: none"> <li>• Build in Canada Innovation Program</li> </ul>
Social Sciences and Humanities Research Council of Canada	1	<ul style="list-style-type: none"> <li>• Networks of Centres of Excellence</li> </ul>
Western Economic Diversification Canada	2	<ul style="list-style-type: none"> <li>• Innovation Capacity Building</li> <li>• Technology Commercialization</li> </ul>
Total of program activity	62	

#### Working inventory: program streams

Federal institution	Number: program stream	Program stream
Agriculture and Agri-Food Canada	6	<ul style="list-style-type: none"> <li>• Canadian Agricultural Adaptation Program</li> <li>• Enabling Commercialization and Adoption</li> <li>• Research Accelerating Innovation : Crops, Livestock and Food</li> <li>• Research Accelerating Innovation: Sustainable Science and Technology Advancement</li> <li>• Industry-led Research and Development</li> <li>• Science Supporting an Innovative and Sustainable Sector</li> </ul>
Atlantic Canada Opportunities Agency	2	<ul style="list-style-type: none"> <li>• Business Development Program</li> <li>• Atlantic Innovation Fund</li> </ul>
Canadian Northern Economic Development Agency	1	<ul style="list-style-type: none"> <li>• Strategic Investments in Northern Economic Development</li> </ul>
Canada Economic Development for Quebec Regions	5	<ul style="list-style-type: none"> <li>• Productivity and Expansion</li> <li>• Innovation and Technology Transfer</li> <li>• Commercialization and Exports</li> <li>• Network Structuring</li> <li>• New Business Development and Start-ups</li> </ul>
Canadian Institutes of Health Research	3	<ul style="list-style-type: none"> <li>• Industry Partnered Collaborative Research (IPCR)</li> <li>• Proof of Principle (POP) Programs</li> <li>• Health Innovations Partnership Program (eHIPP)</li> </ul>
Canadian Space Agency	3	<ul style="list-style-type: none"> <li>• Earth Observation Applications &amp; Utilizations (EOAU)</li> <li>• Space Technology Development Program</li> <li>• David Florida Laboratory</li> </ul>
National Defence	1	<ul style="list-style-type: none"> <li>• Defence Innovation Research Program</li> </ul>
Environment and Climate Change Canada	1	<ul style="list-style-type: none"> <li>• Science Horizons Youth Internship Program</li> </ul>

Federal institution	Number: program stream	Program stream
<b>Federal Economic Development Agency for Southern Ontario</b>	9	<ul style="list-style-type: none"> <li>• Advanced Manufacturing Fund</li> <li>• Investing in Business Growth and Productivity</li> <li>• Achieving Innovation and Manufacturing Excellence (AIME) Global Initiative</li> <li>• SMART Advanced Technologies for Global Growth</li> <li>• Investing in Business Innovation</li> <li>• AC Jumpstart</li> <li>• SmartStart Seed Fund</li> <li>• Investing in Commercialization Partnerships</li> <li>• Eastern Ontario Development Program</li> </ul>
<b>Global Affairs Canada</b>	5	<ul style="list-style-type: none"> <li>• Trade Commissioner Service</li> <li>• CanExport</li> <li>• Canadian Technology Accelerators</li> <li>• Going Global Innovation</li> <li>• Canadian International Innovation Program</li> </ul>
<b>Indigenous and Northern Affairs Canada</b>	1	<ul style="list-style-type: none"> <li>• Aboriginal Entrepreneurship Program: Business Capital and Support</li> </ul>
<b>Innovation, Science and Economic Development Canada</b>	15	<ul style="list-style-type: none"> <li>• Strategic Aerospace and Defence Initiative</li> <li>• Technology Demonstration Program</li> <li>• Automotive Innovation Fund</li> <li>• Automotive Supplier Innovation Program</li> <li>• Northern Ontario Development Program: Targeted manufacturing initiative for Northern Ontario</li> <li>• Northern Ontario Development Program: Youth internships</li> <li>• Northern Ontario Development Program: Business Growth and competitiveness priority</li> <li>• MITACS</li> <li>• CANARIE</li> <li>• STEM cell network</li> <li>• Genome Canada</li> <li>• Centre for Drug Research and Development</li> <li>• Sustainable Development Technology Canada (SDTC)</li> <li>• Futurpreneur</li> <li>• Canada Small Business Financing Program</li> </ul>
<b>National Research Council Canada</b>	18	<ul style="list-style-type: none"> <li>• Aerospace</li> <li>• Aquatic and Crop Resource Development</li> <li>• Automotive and Surface Transportation</li> <li>• Construction</li> <li>• Energy, Mining and Environment</li> <li>• Human Health Therapeutics</li> <li>• Industrial Research Assistance Program: Contributions to Firms</li> <li>• Industrial Research Assistance Program: Contributions to Organizations</li> <li>• Concierge</li> <li>• Canadian HIV Technology Development Program</li> <li>• Business Innovation Access Program</li> <li>• Industrial Research Assistance Program: Youth Employment Program</li> <li>• IRAP: Youth Employment Program Green</li> <li>• Industrial Research Assistance Program – EUREKA</li> <li>• Canadian Accelerator and Incubator Program</li> <li>• Information and Communication Technologies</li> <li>• Medical Devices</li> <li>• Ocean, Coastal, and River Engineering</li> </ul>

Federal institution	Number: program stream	Program stream
Natural Resources Canada	8	<ul style="list-style-type: none"> <li>• Energy Innovation Program (ecoENERGY Innovation Initiative)</li> <li>• Oil Spill Response Science</li> <li>• Green Jobs: Science and Technology Internship Program</li> <li>• Forest Innovation Program</li> <li>• Forest Research Institutes Initiative</li> <li>• Investments in Forest Industry Transformation Program</li> <li>• GeoConnections Program</li> <li>• Mining Innovation Program</li> </ul>
Natural Sciences and Engineering Research Council of Canada	3	<ul style="list-style-type: none"> <li>• Industry-Driven Collaborative Research and Development</li> <li>• Strategic partnership grants for networks and projects</li> <li>• Experience awards (previously Industrial Undergraduate Student Research Awards [IUSRA])</li> </ul>
Canadian Heritage	2	<ul style="list-style-type: none"> <li>• Canada Media Fund</li> <li>• Canada Periodical Fund</li> </ul>
Polar Knowledge Canada	1	<ul style="list-style-type: none"> <li>• Northern Science and Technology Program</li> </ul>
Public Services and Procurement Canada	1	<ul style="list-style-type: none"> <li>• Build in Canada Innovation Program</li> </ul>
Western Economic Diversification Canada	2	<ul style="list-style-type: none"> <li>• Western Diversification Program</li> <li>• Western Innovation (WINN) Initiative</li> </ul>
*Tri-Council	3	<ul style="list-style-type: none"> <li>• Centres of Excellence for Commercialisation and Research (CECR)</li> <li>• Business-led Centres of Excellence (BL-NCE)</li> <li>• College and Community Innovation Program</li> </ul>
Total of program stream	90	

#### Budget 2016 and 2017 measures

Federal institution	Numbers: initiative	Initiative	Budget
Business Development Bank of Canada	1	Establish a new "Venture Capital Catalyst Fund" to provide late stage capital	Budget 2017
Business Development Bank of Canada, Export Development Canada	1	Increased financial support for Canada's clean technology firms	Budget 2017
Canadian Northern Economic Development Agency	1	Strengthening northern economic development	Budget 2016
Canada Economic Development for Quebec Regions	1	Supporting business innovation through optics and photonics solutions	Budget 2016
Global Affairs Canada	2	Linking Canadian technology companies to global markets and expertise	Budget 2016
		New funding for Global Affairs Canada to implement a clean technology strategy for international business development	Budget 2017
Innovation, Science and Economic Development Canada	6	Provide funds to "Futurpreneur Canada" to support young entrepreneurs	Budget 2017
		Establish Innovation Canada	Budget 2017
		Consolidate aerospace, defence, automotive and technology demonstration programs into a single "strategic innovation fund"	Budget 2017
		Establish a competition to support identified "superclusters"	Budget 2017
		Additional funding to MITACS to provide 6,250 work-integrated learning placements for Canadian post-secondary students and graduates	Budget 2017

Federal institution	Numbers: initiative	Initiative	Budget
		Commercializing Canada's world-class health discoveries	Budget 2016
Innovation, Science and Economic Development Canada and Natural Resources Canada	1	Establish a Clean Growth hub within a new Innovation Canada platform to coordinate and improve federal clean technology services and reporting	Budget 2017
Innovation, Science and Economic Development Canada, National Research Council Canada , Global Affairs Canada, Business Development Bank of Canada, Export Development Canada , and Regional Development Agencies	1	Announcement of intention to help scale up high growth firms. Later, launched by Minister of Small Business and Tourism in June 2016 as the Accelerated Growth Service.	Budget 2016
Innovation, Science and Economic Development Canada / Public Services and Procurement Canada	1	Launch "Innovative Solutions Canada" to permit procurement of innovative emerging goods and services	Budget 2017
National Research Council Canada	2	Helping small and medium-sized companies to innovate and grow	Budget 2016
		Highlighted publically announced and upcoming National Research Council Review/modernization initiative	Budget 2017
Natural Resources Canada	5	Research, development and demonstration of clean energy technologies	Budget 2016
		Developing cleaner oil and gas technologies	Budget 2016
		Reducing the reliance of rural and remote communities on diesel fuel (demonstration component)	Budget 2017
		Deploying infrastructure for electric vehicle charging and natural gas and hydrogen refuelling stations (demonstration component)	Budget 2017
		Increasing the use of wood as a greener substitute material in infrastructure projects (for example, in mid-rise commercial and industrial buildings), helping to create new markets for sustainable Canadian products.	Budget 2017
Natural Resources Canada and Transport Canada	1	New funding for Natural Resources Canada and Transport Canada for clean energy and transportation and research and development	Budget 2017
Natural Resources Canada, Agriculture and Agri-Food Canada and Fisheries and Oceans Canada	1	New funding for clean technology research and development in Canada's natural resources sectors	Budget 2017
Regional Development Agencies	1	Increasing federal support for clean technology activities in all regions	Budget 2016
Sustainable Development Technology Canada	2	Accelerating clean technology development	Budget 2016
		Recapitalize the Sustainable Development Technology Canada Tech Fund	Budget 2017
N/A	1	Create an "Impact Canada Fund": initial focus on clean technology and smart cities	B2017
Total number of initiatives	28		

## Related links

- [Improving Results: 2017 horizontal and departmental reviews](#)

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