



Next Generation  
Manufacturing Canada

**CORPORATE  
PLAN  
2020/21**

**Manufacturing. Revolutionized.**

## STRATEGIC OBJECTIVES

Next Generation Manufacturing Canada (NGen) is the industry-led not-for-profit corporation leading Canada's Advanced Manufacturing Supercluster. NGen is dedicated to building world leading advanced manufacturing capabilities in Canada, for the benefit of Canadians.

NGen aims to strengthen Canada's economic performance, boosting GDP by \$13.5 billion and creating 13,500 well-paying jobs over the next ten years, while contributing solutions that address some of the world's most pressing challenges in areas like health care, energy and environmental sustainability.

NGen works to achieve these objectives by leveraging Canada's technology and industrial strengths to accelerate the development, scale-up, and productive deployment of advanced technologies in Canadian manufacturing and their commercialization in global markets. Specifically, NGen undertakes initiatives that:

- ▶ Promote Canada's advanced manufacturing opportunities and capabilities, both within Canada and internationally;
- ▶ Build connections, identify partnership opportunities, and strengthen collaboration across Canada's advanced manufacturing ecosystem;

- ▶ Facilitate and fund collaborative, industry-led projects that will lead to the development, adoption, and scale-up of world leading capabilities in Canadian manufacturing and strengthen Canada's advanced manufacturing ecosystem; and,
- ▶ Build capacity by strengthening advanced manufacturing workforce capabilities and de-risking technology deployment and scale-up on the part of smaller firms.

NGen's initiatives are designed to be:

- ▶ Transformative – building advanced manufacturing capabilities that confer a competitive advantage on Canadian industry;
- ▶ Applied – developing advanced manufacturing solutions with significant commercial potential;
- ▶ Collaborative – enabling capabilities that no individual company or organization can achieve on its own; and,
- ▶ Enduring – contributing know-how and resources in support of Canada's advanced manufacturing ecosystem.

## BUILDING ON PROGRESS IN 2019-2020

During its first full year of operations, NGen aimed to:

- ▶ Put in place the operational processes and resources required to carry out its mission as Canada's Advanced Manufacturing Supercluster;
- ▶ Approve and fund its first collaborative industry-led projects; and,
- ▶ Grow its membership, develop strategic partnerships, and launch its capacity-building fund.

NGen's progress with respect to each of these objectives is summarized below. Based on the experience of the past year, NGen has also identified a number of ongoing requirements that are reflected in its corporate plan for 2020-2021.

### Operations

OBJECTIVE	EXPECTED OUTCOME	YEAR-END RESULT
Define the terms and conditions of Supercluster funding	▶ Strategic criteria and funding requirements for Supercluster projects defined and posted on NGen website	▶ Complete
Establish representative and effective governance	<ul style="list-style-type: none"> <li>▶ Board membership reflects gender parity, broad ecosystem representation, and significant presence of independent directors</li> <li>▶ Governance policies and processes developed, reviewed, and approved</li> <li>▶ Board and committee meetings supported, documented, and action items reported</li> </ul>	<ul style="list-style-type: none"> <li>▶ Twenty Board members, including:                             <ul style="list-style-type: none"> <li>▶ Ten women;</li> <li>▶ Ten independent directors;</li> </ul> </li> <li>▶ Directors and observers from industry, innovation centres, colleges, universities, and business networks</li> <li>▶ Complete, operational, and reviewed annually</li> <li>▶ Ongoing Board support</li> </ul>

OBJECTIVE	EXPECTED OUTCOME	YEAR-END RESULT
Establish operating processes and procedures for financial management, contracting, and project development, approvals, IP management, contracting, monitoring, and reporting	<ul style="list-style-type: none"> <li>Processes and procedures documented and implemented in operations</li> <li>Regular review and updating for improvements</li> </ul>	<ul style="list-style-type: none"> <li>Complete</li> </ul>
Ensure compliance with governance and operating policies and procedures	<ul style="list-style-type: none"> <li>Governance and operating policies, processes, and procedures approved by Board</li> <li>Board orientation, staff training, and compliance processes in place</li> </ul>	<ul style="list-style-type: none"> <li>Policies, processes, and procedures documented and approved</li> <li>Annual Board self-evaluation and orientation sessions</li> <li>Weekly staff briefings and training sessions</li> <li>Compliance and approval processes in place and regularly reviewed by Board</li> </ul>
Scale up NGen staff complement as required	<ul style="list-style-type: none"> <li>Small team of dedicated experts</li> <li>High degree of female participation</li> </ul>	<ul style="list-style-type: none"> <li>18 full time employees with recognized industry experience</li> <li>10 female, 8 male employees</li> </ul>
Launch membership database	<ul style="list-style-type: none"> <li>Application operational online</li> </ul>	<ul style="list-style-type: none"> <li>Complete</li> </ul>
Build secure data systems	<ul style="list-style-type: none"> <li>Data management systems for membership, project applications, financial and administrative management in place and operational</li> </ul>	<ul style="list-style-type: none"> <li>Systems in place and hardened for cybersecurity</li> </ul>
Identify organizational and operational risks and undertake actions to mitigate risks	<ul style="list-style-type: none"> <li>Current and potential risks identified and reviewed regularly</li> <li>Actions undertaken to mitigate risks</li> </ul>	<ul style="list-style-type: none"> <li>Organizational and operational risks identified and reviewed quarterly by Board</li> <li>Mitigating actions undertaken and reported to Board</li> </ul>

## Ongoing Requirements:

- Rapid response to questions regarding project and funding eligibility.
- Constant monitoring of risks, cyberthreats, and mitigating actions.
- Regularly updated risk management and mitigation plans.
- Staff orientation, training, review, and performance management.
- Process compliance and continuous improvement.

## Projects

OBJECTIVE	EXPECTED OUTCOME	YEAR-END RESULT
Launch funding for collaborative industry-led projects	<ul style="list-style-type: none"> <li>Up to \$100 million in total project costs approved</li> </ul>	<ul style="list-style-type: none"> <li>23 projects and \$76.8M in total project costs approved</li> </ul>
Launch open call for project proposals	<ul style="list-style-type: none"> <li>Open call and project application posted online</li> </ul>	<ul style="list-style-type: none"> <li>Open call launched</li> <li>Simplified project application available online</li> </ul>
Establish independent panels of industry experts and efficient processes to carry out project assessments	<ul style="list-style-type: none"> <li>Independent assessors engaged</li> <li>Quarterly meetings of independent assessment panels</li> <li>Standard assessment process in place</li> </ul>	<ul style="list-style-type: none"> <li>Independent assessment process in place</li> <li>Industry experts serve as assessors on a project-by-project basis</li> <li>Assessment panels convene upon receipt of complete project applications</li> </ul>



Build project pipeline	<ul style="list-style-type: none"> <li>▶ Provide advice on project development and IP management</li> <li>▶ Develop standard Master Project Agreement</li> <li>▶ Monitor and continuously improve project approval process</li> <li>▶ Three NGen Collaboration Days to identify opportunities for project and technology partnerships</li> </ul>	<ul style="list-style-type: none"> <li>▶ 153 projects in active development, assessment, or contracting stage</li> <li>▶ Hands-on advice provided for project development and IP management</li> <li>▶ Capacity building fund linked to project development</li> <li>▶ Standard Collaboration Agreement for project partners available</li> <li>▶ Standard Master Project Agreement used for project contracting</li> <li>▶ One-stage assessment for projects under \$5 million</li> <li>▶ Managed risk approach for financial due diligence</li> <li>▶ Seven Collaboration Days organized involving more than 1,100 participants and 90 pitches for project partnerships</li> <li>▶ Partnership opportunities posted on NGen website</li> </ul>

## Ongoing Requirements:

- ▶ Grow NGen's active project pipeline.
- ▶ Continue to organize Collaboration Days to identify partnership opportunities and promote NGen activities.
- ▶ Provide hands-on support for project development and project and IP management.
- ▶ Focus capacity-building funding on initiatives that have the potential to build NGen's project pipeline.
- ▶ Facilitate access to resources, expertise, and additional sources of funding to support project development and management.
- ▶ Work to simplify project development and approval processes.

## Membership, Networking, and Capacity Building Programs

OBJECTIVE	EXPECTED OUTCOME	YEAR-END RESULT
Grow NGen membership	▶ 2,000 members	<ul style="list-style-type: none"> <li>▶ 1,947 members registered from across Canada</li> <li>▶ Terms of funding defined</li> <li>▶ Applications tied to full project development opportunities</li> <li>▶ Three capacity building funding streams launched (pilot projects, technology assessments, cluster building)</li> <li>▶ 6 pilot projects approved totalling \$1.5 million</li> <li>▶ 42 capacity building projects in pipeline</li> </ul>
Launch Capacity Building Fund	<ul style="list-style-type: none"> <li>▶ Capacity building streams and funding terms finalized</li> <li>▶ Open call for proposals launched</li> <li>▶ 30 projects in pipeline</li> </ul>	<ul style="list-style-type: none"> <li>▶ Working relationships with 17 federal and provincial partners</li> <li>▶ Negotiations underway with 6 prospective partners</li> <li>▶ Joint funding arrangements with two federal agencies</li> </ul>
Develop strategic partnerships with federal and provincial agencies to support SMEs, NGen project development, and expand funding opportunities	▶ 10 Strategic partnerships developed	<ul style="list-style-type: none"> <li>▶ 6 roundtables (in Ontario, Manitoba, Alberta, BC, and Nova Scotia) with 87 participants from industry, academia, government, and supporting associations</li> <li>▶ 3 industry webinars (with companies in BC, Manitoba, and Quebec) with over 130 participants to brief on terms of NGen funding</li> <li>▶ Presentations at 45 conferences across Canada</li> </ul>
Organize information sessions and industry roundtables to promote NGen and identify opportunities to strengthen regional ecosystems	▶ 5 industry roundtables and information sessions	
Organize a meeting of national ecosystem partners to identify priorities for NGen initiatives	▶ Report on ecosystem priorities	▶ Meeting of national ecosystem partners and report on ecosystem development priorities published in March

OBJECTIVE	EXPECTED OUTCOME	YEAR-END RESULT
Solicit industry sponsorships for NGen activities	<ul style="list-style-type: none"> <li>\$750,000 cash and in-kind sponsorship commitments over five years</li> </ul>	<ul style="list-style-type: none"> <li>\$833,000 in-kind and cash sponsorship commitments</li> </ul>

### Ongoing Requirements:

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| <ul style="list-style-type: none"> <li>Continue to grow NGen membership across Canada.</li> <li>Increase funding support for pilot projects, feasibility studies, cluster development, transformation planning, and access to advanced manufacturing infrastructure for SMEs.</li> <li>Expand strategic partnerships to increase coordination and leverage resources and additional funding in support of advanced manufacturing projects and initiatives.</li> <li>Play a strategic role in coordinating support for advanced manufacturing</li> </ul> | <ul style="list-style-type: none"> <li>initiatives among local, provincial, and federal agencies and ecosystems.</li> <li>Continue to organize industry roundtables, information sessions, and webinars to recruit project proposals, partners, and promote NGen activities across Canada.</li> <li>Focus ecosystem development projects on priorities identified in discussions with regional and national ecosystem partners.</li> <li>Grow industry sponsorship for NGen events and activities.</li> </ul> |
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## NGEN AND THE FIGHT AGAINST COVID-19

March 25, 2020, NGen announced that it would commit at least \$50 million in Supercluster funding to support rapid manufacturing scale-up of products critical for fighting the COVID-19 pandemic. By the end of March, NGen had approved nine COVID-19 projects valued at \$28.1 million. NGen's investment in those projects will total \$26.8 million.

The COVID-19 projects that NGen announced in March involve 20 industry partners, 18 of which are SMEs. They have led to the manufacturing of Canada's Pandemic Ventilator, as well as test kits, and personal protective equipment (PPE), including face shields and biometric monitoring textiles, and were delivering products to front-line health care workers by the end of June.

NGen was able to move so rapidly to invest in COVID-19 projects because over the course of the year it had built robust project development, assessment, and management

systems in support of its advanced manufacturing programs. It had developed a cross-Canada network of organizations with research, technology, and manufacturing capabilities that could be focused quickly on producing critical health care products. And, it had already established strong working relationships with public funding agencies that were also turning their attention to fighting the pandemic.

NGen has worked closely with federal and provincial government departments and funding agencies, including Innovation, Science, and Economic Development Canada, Health Canada, the National Research Council, Innovation Challenges Canada, and the Ontario Together Fund, to prioritize projects for funding, identify opportunities for co-investment, and direct manufacturers to other sources of financial and business support.

Of the 333 project proposals submitted to NGen by the end of March for COVID-19 funding support, 15 were approved for NGen investment by the end of April while 165 were referred to other federal or provincial funding and procurement initiatives.



## OBJECTIVES FOR 2020-2021

NGen aims to achieve the following objectives during its 2020-2021 financial year.

### Support the Fight Against COVID-19 and Canada's Economic Recovery

OBJECTIVE	EXPECTED OUTCOMES BY MARCH 31, 2021
Support manufacturing of critical products required in the rapid response against COVID-19	<ul style="list-style-type: none"> <li>At least \$40 million allocated to short-term industry-led projects aimed at manufacturing and delivering ventilators, test kits, PPE, and other medical products to front-line workers by the summer of 2020</li> </ul>
Support the development of automated disinfecting systems for use in health care, business, and other public facilities	<ul style="list-style-type: none"> <li>At least \$5 million allocated to collaborative, industry-led projects involving the development and manufacturing of disinfecting robots for use in facilities</li> </ul>
Support long-term, globally competitive, and sustainable manufacturing and supply chain capabilities for the Canadian production of critical products required to fight the pandemic	<ul style="list-style-type: none"> <li>At least \$15 million allocated to collaborative, industry-led projects resulting in the establishment of globally competitive manufacturing and supply-chain capabilities in Canada</li> </ul>
Connect advanced manufacturing companies to government challenges aiming to develop innovative solutions for managing the pandemic	<ul style="list-style-type: none"> <li>25 NGen members referred to NRC/Innovation Canada challenges related to COVID-19</li> </ul>
Connect Canadian suppliers of health care products to procurement opportunities across Canada	<ul style="list-style-type: none"> <li>Development of the Rapid Response Platform (hosted by Buly.io) into a trusted pan-Canadian portal identifying procurement opportunities for high quality Canadian suppliers of PPE and other medical devices</li> <li>50 NGen members connected to federal and provincial procurement opportunities</li> </ul>

OBJECTIVE	EXPECTED OUTCOMES BY MARCH 31, 2021
Coordinate the development of Canadian standards for health care products and facilitate access to test sites in Canada	<ul style="list-style-type: none"> <li>Blueprint for the development of a product standards development, testing, certification, and quality control network in Canada</li> </ul>
Prioritize funding for projects in key manufacturing sectors crucial for economic recovery	<ul style="list-style-type: none"> <li>In addition to general advanced manufacturing projects, at least 50% of approved NGen funding allocated to projects in: <ul style="list-style-type: none"> <li>MedTech</li> <li>Aerospace</li> <li>Automotive</li> <li>Agrifood</li> </ul> </li> </ul>

### Facilitate and invest in collaborative, industry-led projects

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Grow NGen's active project pipeline	<ul style="list-style-type: none"> <li>60 project proposals in development or approved</li> </ul>	<ul style="list-style-type: none"> <li>100 projects completed</li> </ul>
Increase the value of approved projects	<ul style="list-style-type: none"> <li>Approved projects valued at \$300 million</li> </ul>	<ul style="list-style-type: none"> <li>\$580 million in total project investments</li> </ul>
Ensure NGen's project portfolio is representative of Canada's advanced manufacturing ecosystem in terms of SME participation, geography, manufacturing sectors, and technologies	<ul style="list-style-type: none"> <li>Expanded geographic and sectoral participation</li> <li>SMEs represent at least 75% of project leaders and partners</li> </ul>	<ul style="list-style-type: none"> <li>Project portfolio representative of strategic opportunities for advanced manufacturing in Canada</li> <li>SMEs represent at least 80% of project leaders and partners</li> </ul>
Organize Collaboration Days to identify potential projects and partner opportunities	<ul style="list-style-type: none"> <li>At least three virtual Collaboration Days</li> <li>Over 1,000 attendees</li> </ul>	<ul style="list-style-type: none"> <li>10+ Collaboration Days organized across Canada</li> <li>3,000+ attendees</li> </ul>

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Direct capacity building funding for pilot projects, feasibility studies, transformation plans, cluster development, and access to infrastructure to support SME project development and participation	<ul style="list-style-type: none"> <li>▶ All Capacity Building Funding streams launched</li> <li>▶ \$18 million in total project expenses approved</li> </ul>	<ul style="list-style-type: none"> <li>▶ \$24 million in total Capacity Building project expenses approved and funded</li> <li>▶ Additional funding raised from strategic partners</li> </ul>
Launch targeted calls for project proposals based on strategic advanced manufacturing opportunities and critical gaps in the ecosystem (see Ecosystem Development Objectives below)	<ul style="list-style-type: none"> <li>▶ Targeted calls launched by second quarter</li> </ul>	<ul style="list-style-type: none"> <li>▶ \$50 million in targeted projects funded by NGen</li> </ul>
Support Ecosystem Development Projects	<ul style="list-style-type: none"> <li>▶ \$20 million in ecosystem development projects approved</li> </ul>	<ul style="list-style-type: none"> <li>▶ \$82 million in total ecosystem development project investments</li> </ul>

## Promote Canada's advanced manufacturing capabilities

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Develop a strategy that identifies Canada's strengths and future opportunities in key advanced manufacturing sectors and technologies	<ul style="list-style-type: none"> <li>▶ Strategic briefs published on MedTech, Aerospace, Automotive, Additive, AI, and 5G published with input from industry and ecosystem partners</li> </ul>	<ul style="list-style-type: none"> <li>▶ Strategic briefs published on other advanced manufacturing strengths, including cybersecurity, quantum computing, advanced materials, robotics and automation</li> <li>▶ Priorities identified in briefs inform NGen investments and implementation strategies for public and private sector partners</li> </ul>
Highlight Canada's advanced manufacturing capabilities in project announcements and on-line vignettes	<ul style="list-style-type: none"> <li>▶ NGen project announcements highlighted on web and media across Canada</li> <li>▶ NGen website highlighting leading advanced manufacturing capabilities across Canada</li> </ul>	<ul style="list-style-type: none"> <li>▶ Updated reports on project outcomes and expanded treasury of vignettes publicly available on NGen's website and integrated into NGen's promotional campaigns</li> </ul>
Launch a campaign to promote advanced manufacturing in Canada and as an attractive career opportunity for young people	<ul style="list-style-type: none"> <li>▶ Campaign developed and launched</li> <li>▶ Social media strategy launched</li> </ul>	<ul style="list-style-type: none"> <li>▶ Multi-media promotional campaign acknowledged to be successful in raising profile of advanced manufacturing in Canada and attracting interest of young people</li> </ul>
Expand Canada's presence at international advanced manufacturing events	<ul style="list-style-type: none"> <li>▶ Participation in at least three international events highlighting Canadian advanced manufacturing capabilities</li> </ul>	<ul style="list-style-type: none"> <li>▶ NGen recognized internationally as a leader in building world-leading advanced manufacturing capabilities</li> <li>▶ Significant participation by members of Canada's advanced manufacturing ecosystem at key international advanced manufacturing events</li> </ul>

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Support Canadian Trade Commissioners, Export Development Canada, and Invest in Canada in promoting Canadian advanced manufacturing capabilities internationally	<ul style="list-style-type: none"> <li>▶ Promotional material developed to support investment attraction and international partnerships</li> <li>▶ NGen presence at international events highlighting advanced manufacturing investment opportunities in Canada</li> <li>▶ Engagement with international advanced manufacturing clusters to identify opportunities for joint project participation</li> <li>▶ NGen playing a key role in attracting international investment to Canada</li> </ul>	<ul style="list-style-type: none"> <li>▶ Increased international investment in Canada and Canadian participation in international advanced manufacturing projects enabled by NGen</li> </ul>

## Connect and strengthen collaboration across Canada's advanced manufacturing ecosystem

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Grow NGen membership	▶ 3,000+ members	▶ 5,000+ members
Expand membership outside Ontario	▶ 25% of members outside Ontario	▶ 40% of members outside Ontario
Engage members in key technology and industry sectors	▶ Engage more automotive and aerospace participation	▶ Project participation representative of Canada's advanced manufacturing sector
Develop online advanced manufacturing capabilities maps	▶ Interactive national map of NGen members	▶ Interactive national and regional maps of NGen members
Launch an online partner-to-partner collaboration platform	▶ Platform for NGen projects	▶ Platform for broader project collaboration, including international partnership opportunities
Identify and engage members in international partnership opportunities	▶ Eureka and European cluster opportunities	▶ Broader range of international opportunities identified with Trade Commissioners
Launch an online IP Registry	▶ Registry for NGen projects	▶ General IP Registry
Grow and deepen strategic partnerships with federal and provincial departments, research and funding agencies	▶ 10 collaborative partnerships with federal and provincial funding agencies	▶ Expanded collaborative partnerships with public and private sector funding partners
Grow and deepen strategic partnerships with business networks, academic institutions, innovation centres, and supporting business service and technology providers	<ul style="list-style-type: none"> <li>▶ Collaborative activities underway with Innovation Centres, industry associations, universities and colleges in Ontario and Quebec</li> <li>▶ Three major business sponsors</li> </ul>	<ul style="list-style-type: none"> <li>▶ Collaborative activities underway with Innovation Centres, industry associations, universities and colleges across Canada</li> <li>▶ Ten major business sponsors</li> </ul>



## Strengthen advanced manufacturing management and workforce capabilities, and de-risk investments in technology deployment and scale-up

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Survey NGen members to identify challenges and opportunities in deploying advanced manufacturing technologies and practices, including opportunities for regulatory improvements and collaborative standards development	<ul style="list-style-type: none"> <li>▶ Survey results reported in advanced manufacturing strategy report and inform priorities for NGen ecosystem support</li> </ul>	<ul style="list-style-type: none"> <li>▶ Annual surveys informing NGen priorities and implementation plans for strategic partners</li> </ul>
Organize a regular series of virtual peer-to-peer discussions among advanced manufacturing leaders across Canada to identify strategic opportunities for business development and share insights about challenges affecting their business	<ul style="list-style-type: none"> <li>▶ Six virtual webinars and industry roundtables</li> <li>▶ 100+ industry and ecosystem partners</li> </ul>	<ul style="list-style-type: none"> <li>▶ 20 roundtables</li> <li>▶ 500+ industry and ecosystem partners</li> </ul>
Develop roadmaps and a management development program for SMEs to assist their efforts in deploying advanced technologies, scaling up production, and managing supply chain risks	<ul style="list-style-type: none"> <li>▶ Launch of an online transformation management program and training modules</li> </ul>	<ul style="list-style-type: none"> <li>▶ 1,000 SMEs enrolled in NGen's transformation management courses</li> </ul>
Launch a virtual plant visits program to demonstrate best management practices in advanced manufacturing innovation	<ul style="list-style-type: none"> <li>▶ Program launched with industry partners</li> </ul>	<ul style="list-style-type: none"> <li>▶ 25 visits</li> <li>▶ 500 participants</li> </ul>

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Increase diversity and inclusion in Canada's advanced manufacturing sector	<ul style="list-style-type: none"> <li>▶ Program launched to support additive manufacturing capabilities among aboriginal youth and on First Nations Reserves</li> <li>▶ NGen playing a coordinating role to support ecosystem initiatives engaging youth, women, and new immigrants in advanced manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>▶ NGen recognized as a leader in encouraging the engagement of youth, women, and under-represented communities in advanced manufacturing</li> <li>▶ 1,000 new jobs created in advanced manufacturing for young people, women, and other members of under-represented communities attributable to NGen initiatives</li> </ul>
Launch an education program aimed at strengthening collaborative project and IP management capabilities	<ul style="list-style-type: none"> <li>▶ IP management webinars launched</li> </ul>	<ul style="list-style-type: none"> <li>▶ Online IP management information sessions and services available to NGen members</li> </ul>
Launch an advanced manufacturing education program aimed at strengthening Lean management capabilities and enhancing the ability of NGen members to identify their business and skills requirements for successful technology deployment	<ul style="list-style-type: none"> <li>▶ Open-source online training platform launched (AmpUp)</li> <li>▶ Six online training partners engaged</li> <li>▶ 100+ SMEs accessing training at preferred discounted prices</li> </ul>	<ul style="list-style-type: none"> <li>▶ Program delivered by partners across Canada</li> <li>▶ Over 1,000 SMEs engaged</li> <li>▶ NGen credential recognized by industry and participating training providers</li> </ul>
Develop a coordinated approach to advanced manufacturing education and skills development	<ul style="list-style-type: none"> <li>▶ Industry/academic coordinating body formed</li> <li>▶ Opportunities for collaborative initiatives identified</li> </ul>	<ul style="list-style-type: none"> <li>▶ Coordinated Work Integrated Learning strategy adopted and being implemented among NGen members</li> </ul>
Develop online data sharing platforms for SMEs	<ul style="list-style-type: none"> <li>▶ Identify opportunities for online platforms</li> </ul>	<ul style="list-style-type: none"> <li>▶ Online learning and data sharing platforms integrated in NGen website</li> </ul>
Facilitate access to services, funding, and infrastructure in support of advanced manufacturing projects and SME transformation plans	<ul style="list-style-type: none"> <li>▶ Agreements with strategic partners</li> </ul>	<ul style="list-style-type: none"> <li>▶ Online concierge service highlighting capabilities of NGen members</li> </ul>

## Strengthen NGen's operating capacity

OBJECTIVE	EXPECTED OUTCOMES	
	BY MARCH 31, 2021	BY MARCH 31, 2023
Ensure adequate industry contributions and cash flow to support operations	<ul style="list-style-type: none"> <li>\$1,941,000 in project administration fees</li> <li>\$174,000 in sponsorships and other fee revenue</li> </ul>	<ul style="list-style-type: none"> <li>\$6,812,000 in project administration fees</li> <li>\$791,000 in sponsorships and other fee revenue</li> </ul>
Ensure robust governance, data management, and operating processes are in place and continuously being improved	<ul style="list-style-type: none"> <li>Processes in place, operating KPIs monitored, and improvement measures reviewed quarterly by NGen management and Board</li> <li>See Performance Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Processes in place, operating KPIs monitored, and improvement measures reviewed quarterly by NGen management and Board</li> <li>See Performance Monitoring</li> </ul>
Implement NGen branding and communications plan	<ul style="list-style-type: none"> <li>Website refreshed and expanded</li> <li>More frequent, informed member communications</li> <li>NGen branded promotional material tied to advanced manufacturing campaign</li> </ul>	<ul style="list-style-type: none"> <li>NGen is the point of contact for advanced manufacturing know-how in Canada</li> </ul>
Strengthen NGen's data management and cybersecurity defences	<ul style="list-style-type: none"> <li>See Data Strategy Implementation</li> </ul>	<ul style="list-style-type: none"> <li>See Data Strategy Implementation</li> </ul>
Take actions required to mitigate operating risks as they arise	<ul style="list-style-type: none"> <li>See Risk Management</li> </ul>	<ul style="list-style-type: none"> <li>See Risk Management</li> </ul>

## PROGRAM FUNDING STREAMS 2020-2021

Based on NGen's project pipeline as of July 31<sup>st</sup>, 2020 and the corporation's objectives for funding ecosystem development and capacity building

initiatives, NGen is aiming to approve projects with a total value of \$319 million by March 31, 2021.

NGen supports six types of industry-led projects from Supercluster funding:

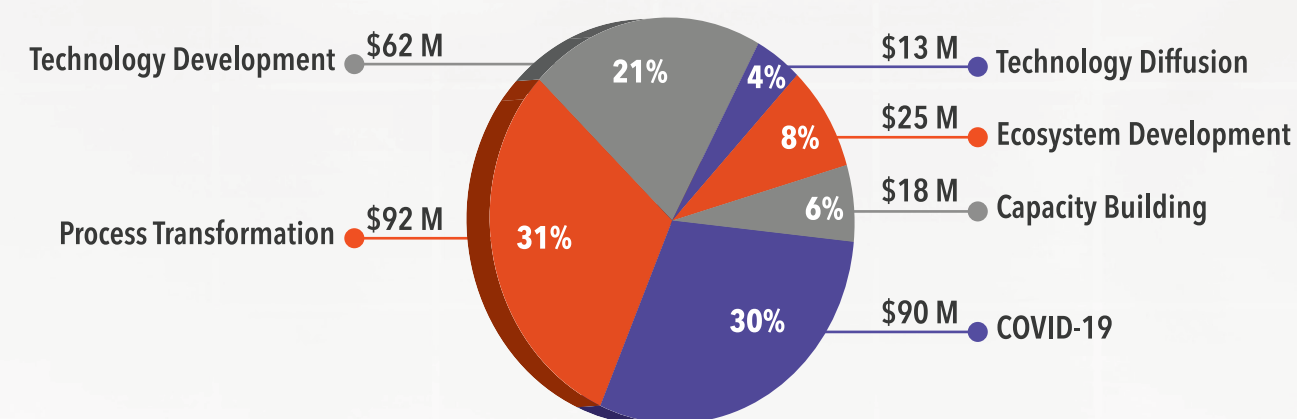
1. *COVID-19* projects that lead to the manufacturing in Canada of critical products to fight the pandemic and safeguard Canadians;
2. *High Potential Technology Development* projects that develop and scale new manufacturing technologies with significant commercial potential that will give Canadian manufacturers a leading competitive advantage worldwide;
3. *Ground-Breaking Process Transformation* projects that involve the adoption of digital technologies to transform existing manufacturing processes in critical sectors of Canadian manufacturing;
4. *Technology Diffusion* projects that aim to expand the manufacturing user base for new and unique technologies developed in Canada;
5. *Ecosystem Development* projects that strengthen Canada's advanced manu-

facturing ecosystem through support for training, cluster building, and research and manufacturing infrastructure, and the development of tools and testbeds that will allow SMEs to pilot technology applications and scale-up projects for manufacturing; and,

6. *SME Capacity Building* projects, which are smaller scale projects undertaken by SMEs, including pilot projects, feasibility studies, cluster development, transformation planning, and projects that involve access to advanced manufacturing applied research, pilot, and test centres.

In reality, NGen projects usually entail a combination of technology development and diffusion, process transformation, and ecosystem development. Capacity building initiatives are also intended to feed the pipeline for larger projects. The following provides a breakdown of funding streams based on the primary intent of projects in NGen's pipeline as of July 31, 2020.

**FORECAST PROGRAM STREAMS 2020-2021**

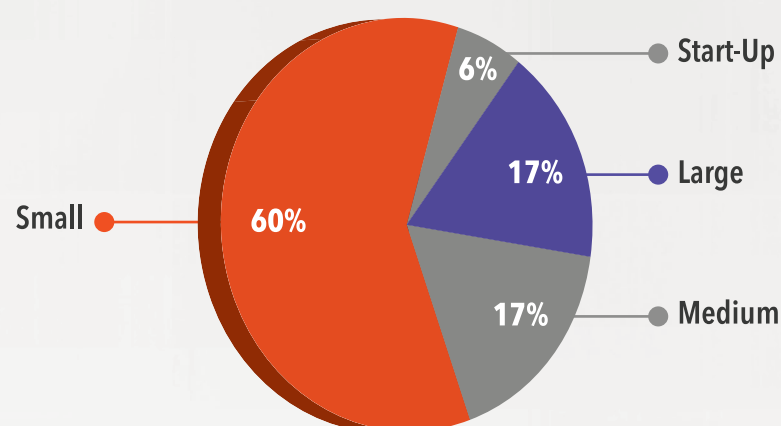




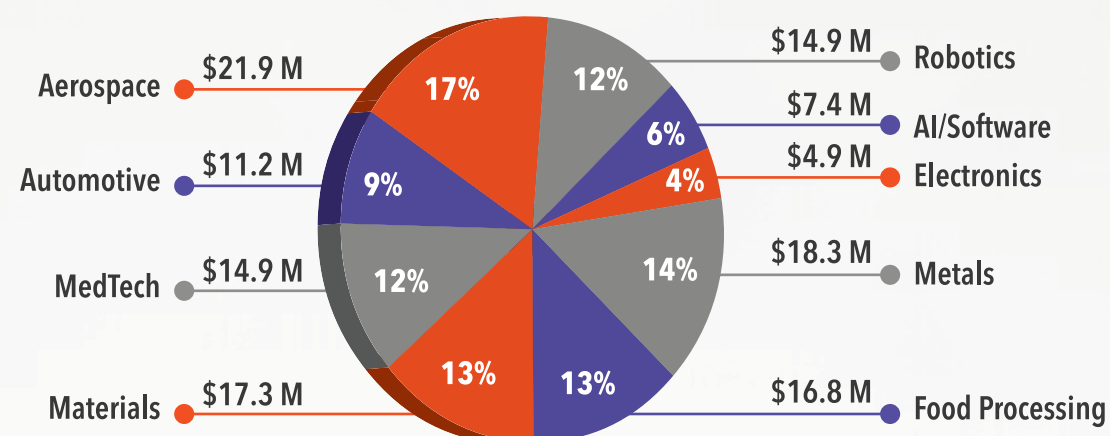
## Project Pipeline 2020-2021

The profile of NGen project approvals for 2020-2021 is based on the advanced manufacturing project pipeline as of July 31<sup>st</sup>, 2020.

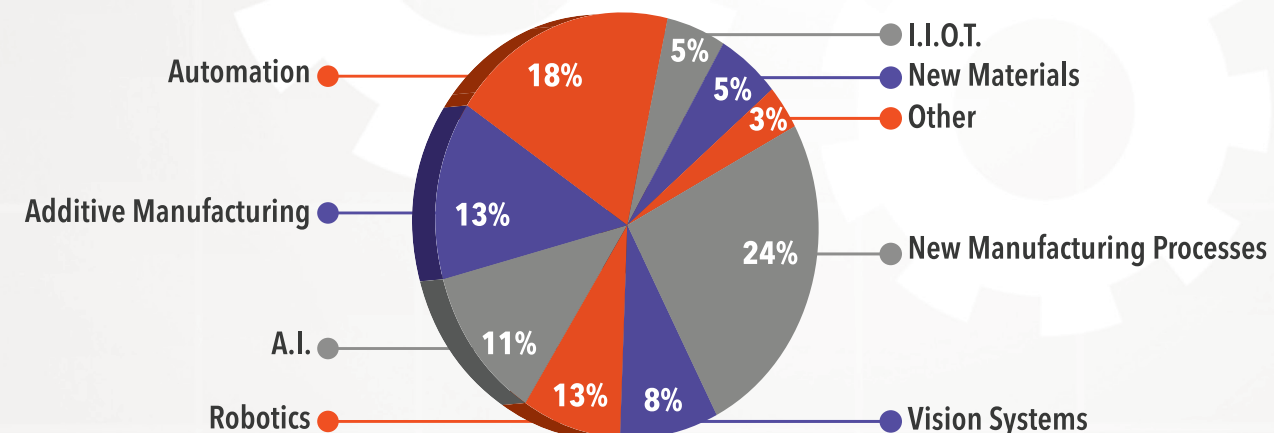
**ENTERPRISE SIZE (PROJECT LEADS)**



**ADVANCED MANUFACTURING PROJECT PIPELINE DISTRIBUTION BY INDUSTRY SECTOR**



**TECHNOLOGY DISTRIBUTION**



## Anticipated Results:

- ▶ Development, scale-up, and commercialization of new manufacturing processes
  - ▶ MedTech and PPE
  - ▶ Lentiviral vectors for therapeutic treatment of cancers
  - ▶ Precision tooling for oil sands extraction
  - ▶ Orthopaedic implants for children
  - ▶ Smart metal forming
  - ▶ Mass manufacturing of nano-materials, micro-computers, and supporting electronics
  - ▶ New methods of additive manufacturing
- ▶ New manufacturing processes for carbon fibre and lightweight parts
- ▶ Modular molding of biomedical plastics
- ▶ 3-D forming of automotive parts
- ▶ Collaborative robotics
- ▶ Process Transformation/Digitization
  - ▶ Health care products and PPE
  - ▶ Hot ladle steel manufacturing
  - ▶ Aerospace manufacturing
  - ▶ Automotive parts manufacturing
  - ▶ Factory of the Future for discrete part manufacturing



- ▶ AI applications in auto, aerospace, chemicals, materials, food processing
- ▶ Technology Diffusion
  - ▶ Textile computing
  - ▶ Virtual fabrication
  - ▶ High strength steel integration
  - ▶ Closed loop plastics recycling
- ▶ Ecosystem Development
  - ▶ Urban Manufacturing Scale-Up Centre
  - ▶ Automation and Robotics Centre of Excellence
- ▶ SME Capacity-Building
  - ▶ Pilot projects
  - ▶ Technical and commercial feasibility studies
  - ▶ Technology transformation plans
  - ▶ New advanced manufacturing cluster development
  - ▶ Facilitated access to technology innovation infrastructure

## ECOSYSTEM DEVELOPMENT OBJECTIVES

NGen works to strengthen Canada's advanced manufacturing ecosystem capabilities by:

- ▶ Leading or coordinating initiatives that significantly enhance ecosystem capabilities;
- ▶ Raising awareness about, connecting, and encouraging collaboration among manufacturers, technology providers, research and academic institutions, manufacturing and technology clusters, and supporting business and funding services across Canada;
- ▶ Funding industry-led projects that address ecosystem gaps or otherwise strengthen the ecosystem;
- ▶ Requiring all NGen funded projects to strengthen collaboration and contribute IP, training, tools, and/or testbeds to other members of the ecosystem; and,
- ▶ Funding collaborative capacity-building initiatives on the part of SMEs.

During its 2019-2020 financial year, NGen conducted a series of roundtables across Canada engaging industry and ecosystem leaders in discussions aimed at identifying gaps and opportunities to strengthen ecosystem performance at both regional and national levels. The results of those discussions will be incorporated into the priorities that will inform NGen's ecosystem

development activities over the course of 2020-2021 as well as in subsequent financial years.

Some of the priorities identified for NGen investment in ecosystem development include:

- ▶ A promotion campaign to attract young people into advanced manufacturing careers;
- ▶ Initiatives that address current and future skills shortages in advanced manufacturing;
- ▶ Expansion of programs aimed at encouraging the participation of women and aboriginal workers in advanced manufacturing;
- ▶ Programs to enhance advanced manufacturing management;
- ▶ Cluster development in new fields of advanced manufacturing applications - like digital twinning and simulation, biologics and medical technologies, cybersecurity, quantum computing, and artificial intelligence;
- ▶ Regulatory sandboxes for new technology applications in manufacturing; and,

- ▶ The development of online platforms for diagnostics, training, partnering, IP commercialization, and data sharing that would provide SMEs advanced

manufacturing capabilities they would otherwise be unable to achieve on their own.

## Funding for Ecosystem Development Activities

In 2020-2021, NGen will support the development of Canada's advanced manufacturing ecosystem by:

- ▶ Funding specific ecosystem development projects - targeting \$25 million for approval and contracting during the financial year;
- ▶ Requiring all industry-led technology development, diffusion, and transformation projects to contribute to ecosystem development - ecosystem development accounts for 15% of eligible project expenses approved to date;
- ▶ Funding smaller capacity-building projects that enhance project opportunities for SMEs and support the development of new advanced manufacturing clusters across Canada - \$18 million targeted for approval and contracting in 2020-2021; and,
- ▶ Allocating \$6.5 million of NGen's own operating expenses to invest in:
  - ▶ Online advanced manufacturing education and management development programs;
  - ▶ Data collection and expert analysis of strategic opportunities for Canada's advanced manufacturing

sector, including analysis of manufacturing supply chain risks;

- ▶ Thought leadership webinars and peer-to-peer workshops;
- ▶ Development of online tools and data platforms to enable technology adoption and scale-up for SMEs;
- ▶ Development of a trusted, high quality sourcing platform for Canadian suppliers of health care products and PPE related to COVID-19;
- ▶ Development of a health care product standards, testing, certification, and quality control network across Canada;
- ▶ The launch of a campaign to promote advanced manufacturing as an attractive career opportunity for young people, including initiatives aimed at engaging more young people, women, and members or other under-represented communities in advanced manufacturing;
- ▶ Promotion of Canadian advanced manufacturing capabilities and NGen projects; and,

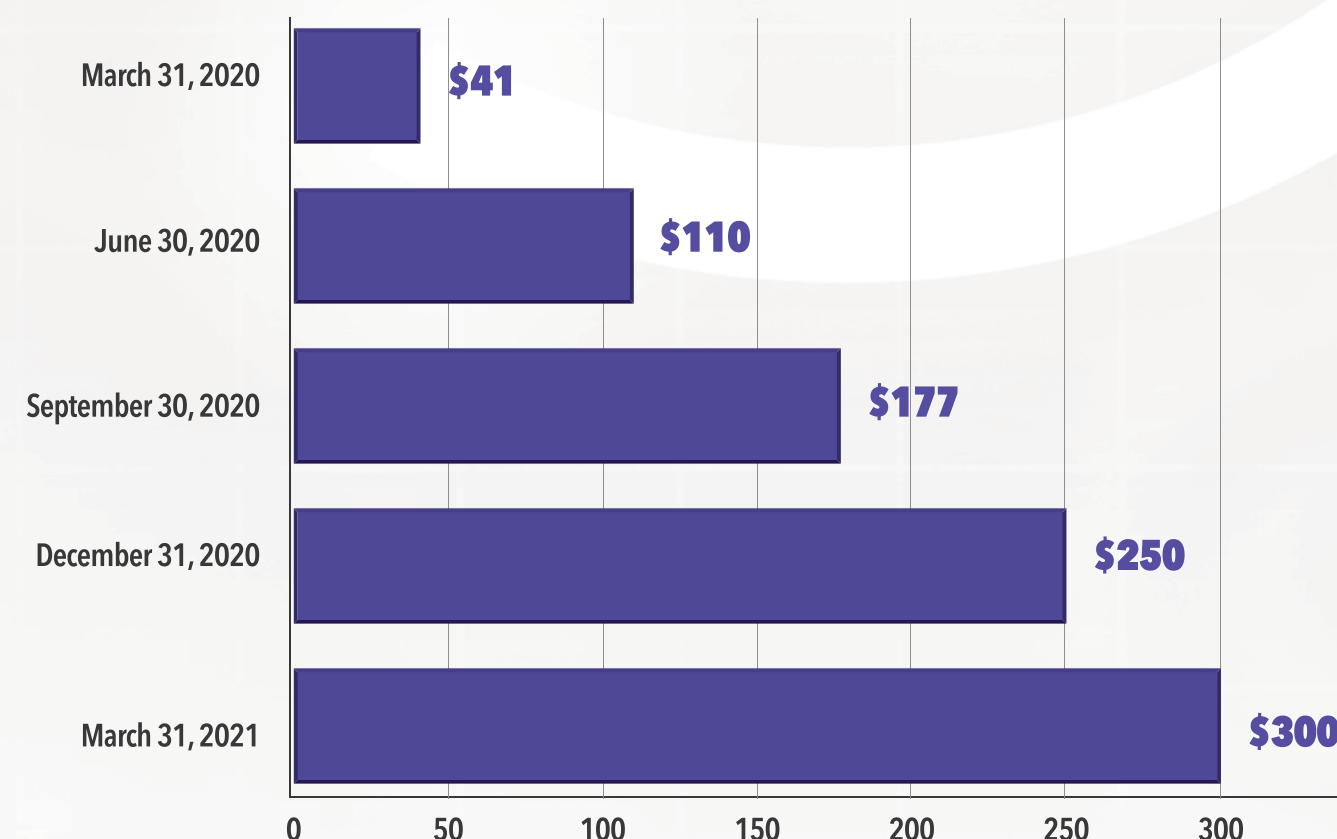
- ▶ Organization and production of virtual collaboration events and roundtables aimed at growing NGen membership and building connections and collaboration across Canada's advanced manufacturing ecosystem.

Total NGen investment in ecosystem development in 2020-2021 is forecast at \$23.6 million. This estimate is based on the assumptions that 20% of expenses in contracted ecosystem and technology projects and 50% of expenses in contracted

capacity building projects will be incurred over the course of the financial year.

ECOSYSTEM SUPPORT	INVESTMENT
Ecosystem Development Projects	\$11.0 million
Technology Projects (at 15% of estimated project investments)	\$19.2 million
Capacity Building	\$9.0 million
OPEX	\$6.5 million
<b>Total for 2020-2021</b>	<b>\$45.7 million</b>

## Anticipated Project Implementation Schedule





## Industry Matching Funds

The anticipated amount of industry matching funds for NGen projects approved by March 31<sup>st</sup>, 2021 is \$142.5 million, of which an estimated \$60.1 million is likely to be spent over the course of the 2020-2021 financial

year. An additional \$2.1 million in industry contributions are expected to be raised from project administration fees, sponsorships, and fee revenues.

## Revenue from Other Sources

Revenues are anticipated from other sources in the form of:

- ▶ Collaborative project funding from other federal and provincial agencies; and,
- ▶ Cash and in-kind sponsorships for NGen activities and events.

NGen's target is to secure at least \$10 million in revenues from other sources for these purposes, primarily for joint project funding. Project revenues from other sources will be secured and reported on a project-by-project basis.

## RISK MANAGEMENT

**Current and potential organizational and operational risks are identified and reviewed quarterly by NGen's senior management team and Board of Directors. Mitigating actions are undertaken by management to reduce or eliminate risks, and their implementation is likewise reported to and monitored by the Board.**

The key risks facing NGen and its ability to build world-leading advanced manufacturing capabilities in Canada relate to:

- ▶ The impact that COVID-19 has had on industry cash flow, slowing down both project development and completion timelines;
- ▶ NGen's ability to facilitate collaborative industry-led projects capable of transforming Canadian manufacturing;
- ▶ The objectivity, effectiveness, and efficiency of NGen's governance and operating processes;

- ▶ NGen's ability to ensure the security of private personal and confidential business information;
- ▶ The openness and inclusivity of NGen membership and project partnerships;
- ▶ NGen's responsible management of public and private funding; and,
- ▶ The ability to demonstrate that NGen is playing a critical role in enabling positive outcomes for Canada's advanced manufacturing ecosystem, and more generally for Canadians as a whole.

The steps required to mitigate these risks inform the objectives of NGen programming, as well as the development, implementation, and continuous improvement of the organization's governance and operating processes with respect to financial and administrative management, project selection, contracting, and performance monitoring.



## PERFORMANCE MONITORING

NGen performance monitoring is an important element in ensuring that risks are mitigated, operating processes are improved, and that projects meet the goals they set as part of their project application, remain compliant with funding rules, and deliver value for the funds committed to their execution.

NGen measures success by the benefits it delivers to Canadians.

In line with the objectives of Canada's Innovation Supercluster Initiative, NGen aims to:

- ▶ Develop world-leading technological capabilities in advanced manufacturing;
- ▶ Increase industry investment in innovation;
- ▶ Enhance value creation and economic growth;
- ▶ Key Outcomes:
  - ▶ New domestic and international sales
  - ▶ Jobs created
  - ▶ Companies created
  - ▶ New products, processes, and services

- ▶ Intellectual property created
- ▶ Connect and actively engage members of Canada's advanced manufacturing ecosystem;
- ▶ Contribute to the development of a skilled advanced manufacturing workforce; and,
- ▶ Improve the social well-being of Canadians.

NGen's project monitoring process aims to help projects achieve the best results possible while ensuring adherence to program deliverables. To that end, NGen monitors the progress of projects in its project portfolio in accordance with NGen's Project Monitoring Framework and Key Performance Metrics on a quarterly basis. Monitoring consists of meetings between project partners and NGen project staff to review key metrics such as the project's progress and performance, risk management, financial management and forecasting, facilitate the project team's IP, exploitation, and commercialization strategy, and report on project outcomes. At the end of each project, the consortium team will file a final report describing outcomes and detailing all of the Key Performance Metrics defined in the NGen Strategy. Recipients will be expected to report on these results and future outcomes resulting from their project for a period of up to 5 years after the project end, as specified in NGen's Master Project Agreement with consortium members.

## INTELLECTUAL PROPERTY STRATEGY IMPLEMENTATION

NGen's Intellectual Property strategy is a critical tool for achieving the objectives of the Supercluster in promoting the commercialization of IP and identifying new business opportunities for Supercluster members, especially for SMEs.

NGen will maintain clear, transparent, and predictable IP ownership policies and licensing structures for Foreground IP arising from Supercluster-funded projects, including processes for NGen members to re-request and negotiate licenses to use such arising IP.

Foreground IP arising from NGen projects will be shared among participating members of project consortia according to the terms of the project collaboration agreement developed in consultation with NGen's IP manager. Wherever feasible, and as determined by the IP owners, the foreground IP will be shared with other members of NGen Canada. Balancing this availability will be a mechanism to enable companies to recoup their investment, through licensing/sharing agreements or user fees to be paid by members who wish to access newly developed technology. Both of these considerations are important criteria in evaluating and selecting projects for Supercluster funding.

Title to any IP arising from Supercluster-funded projects will be determined by a collaboration agreement among

consortium partners undertaking the project. Collaboration agreements must be concluded before a final Master Project Agreement is undertaken and funding finally approved by NGen. Each collaboration agreement will include:

- ▶ Assurance of adherence to commitments set out in NGen's IP Strategy;
- ▶ A right for each participant in a project to access on fair, reasonable, and non-discriminatory terms and subject to relevant competitive issues all Foreground IP arising from the project, at least for research and development purposes; and,
- ▶ A commitment from each project participant to enter into negotiations regarding access to Foreground IP arising from the project with other members of NGen Canada subject to any limitations placed on such access.

In 2019-2020, NGen:

- ▶ Developed model IP agreements for project consortia members;
- ▶ Employed an IP manager whose responsibility it is to:
  - ▶ Assist in maximizing the benefits of Foreground IP likely to arise in Supercluster funded projects;
  - ▶ Help small and medium-sized companies participating in

Supercluster projects access independent expertise and advice related to strategic IP management, generation and retention; and,

- ▶ Provided advice and assistance to project consortia members in developing their IP strategies as part of project proposals prior to assessment and contracting.

In 2020-2021, NGen will:

- ▶ Continue to provide advice and assistance to project consortia members;
- ▶ Develop a member-accessible registry of Foreground IP arising from Supercluster projects; and,
- ▶ Design and deliver programming aimed at enhancing the ability of SME members to leverage IP in a fashion that enhances their capacity and enables them to compete on the global stage.

## DATA STRATEGY IMPLEMENTATION

**The innovation and economic benefits that will flow from Canada's Advanced Manufacturing Supercluster depend on the collection, management, and use of data by NGen to generate value for Supercluster members and ensure the efficient and compliant administration of its operations and activities.**

NGen's data strategy outlines how Next Generation Manufacturing Canada will acquire, store, govern, manage, use, and share data to accomplish its mission, achieve its strategic objectives, create value for its clients, carry out its operations, and ensure its long-term business success.

NGen's data strategy is based on leveraging data as a strategic asset – focusing on

business results, using data as a competitive advantage for NGen and its members, and supporting NGen's strategic objectives. It requires robust operational, governance, and compliance processes to ensure data integrity, privacy, and security.

To operationalize its strategy, NGen's Director of Operations for Data, Technology and Security will develop, implement, and oversee the policies and procedures related to the governance and management of data contained in and transferred into, out of, and between NGen's data lake housed with Third Party platforms and NGen's corporate services IT stack.

An update on short-term implementation goals and longer-term ambition with respect to NGen's data strategy and how they are tied to the corporation's strategic objectives is outlined below.

NGEN STRATEGIC OBJECTIVE	SHORT-TERM FOCUS	LONG-TERM AMBITION
<b>PRODUCTS</b>		
Manage Projects/ Programs	<ul style="list-style-type: none"> <li>▶ Develop and manage \$204 million in projects and programs by March 31, 2023</li> <li>▶ Manage open and strategic calls for project proposals</li> <li>▶ Manage ecosystem development projects</li> </ul>	<ul style="list-style-type: none"> <li>▶ Building a scalable, integrable, and sustainable data processing pipeline for assessment, monitoring, claims and reporting</li> <li>▶ IP Registry for NGen projects</li> </ul>
		▶ General IP Registry



NGEN STRATEGIC OBJECTIVE	SHORT-TERM FOCUS	LONG-TERM AMBITION
<b>PRODUCTS</b>		
Events & Sponsorships	<ul style="list-style-type: none"> <li>▶ Collaboration Days</li> <li>▶ Sponsorship Opportunities</li> <li>▶ Member Workshops</li> </ul>	<ul style="list-style-type: none"> <li>▶ Event data analytics</li> <li>▶ Sponsorship analytics</li> <li>▶ Providing data security knowledge for members/workshops</li> </ul> <p>▶ NGen will be the go-to company for Canadian advanced manufacturing and knowledge transfer</p>
Partnerships/Build Collaboration	<ul style="list-style-type: none"> <li>▶ Private sector investors</li> <li>▶ Provincial funding</li> </ul>	<ul style="list-style-type: none"> <li>▶ Partner identification capability</li> <li>▶ Partnership platform launched</li> </ul> <p>▶ AI enabled partner matchmaking</p> <p>▶ AI enabled problem solving/prediction</p>
Membership/Connect	<ul style="list-style-type: none"> <li>▶ 5,000+ target by 2023</li> <li>▶ Data Quality and Integrity</li> </ul>	<ul style="list-style-type: none"> <li>▶ Membership registration and directory</li> <li>▶ Membership capabilities database</li> <li>▶ Integrate other capabilities databases</li> </ul> <p>▶ AI enabled search</p>
Communications	<ul style="list-style-type: none"> <li>▶ Promotion campaigns highlighting Canadian capabilities</li> </ul>	<ul style="list-style-type: none"> <li>▶ Online information about data security</li> <li>▶ Cyber Security tools for members</li> </ul>
Strategy/Educate	<ul style="list-style-type: none"> <li>▶ Advanced Manufacturing Strategy published</li> <li>▶ Skills strategy developed</li> <li>▶ Statistics review with Statscan</li> </ul>	<ul style="list-style-type: none"> <li>▶ Publish strategy, NGen reports, Success stories</li> <li>▶ NGen analysis / external reports &amp; analysis</li> <li>▶ Calendar of events</li> </ul> <p>▶ Self assessments</p> <p>▶ Best practices</p>

NGEN STRATEGIC OBJECTIVE	SHORT-TERM FOCUS	LONG-TERM AMBITION
<b>PRODUCTS</b>		
Capacity Building/ Facilitate Tech Adoption/ Scale-Up in Manufacturing	<ul style="list-style-type: none"> <li>▶ \$18M in capacity building projects</li> <li>▶ Diagnostic &amp; assessment program built on capability standards</li> <li>▶ Process improvement modules developed &amp; online</li> <li>▶ Resource centre launched</li> </ul>	<ul style="list-style-type: none"> <li>▶ Links to partner services</li> <li>▶ Define gaps in the Ecosystem using current data</li> <li>▶ Online tools – diagnostics, training, etc.</li> </ul> <p>▶ Integration in partner platforms</p> <p>▶ Data pools for shared AI applications</p>
<b>OPERATIONAL/PROCESS</b>		
Manage NGen Operations	<ul style="list-style-type: none"> <li>▶ Efficiency</li> <li>▶ Cost optimization</li> <li>▶ Quality improvements</li> </ul>	<ul style="list-style-type: none"> <li>▶ Legal and compliance</li> <li>▶ Financial, HR, procurement, IT/data management</li> <li>▶ Integrations</li> <li>▶ User experience/support</li> </ul> <p>▶ Achieved operational Excellence</p>
Business Analytics/ Architecture (Big Data)	<ul style="list-style-type: none"> <li>▶ Existing and future data assets</li> <li>▶ Source and staging, data lake and delivery solutions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Access data easily using a standardized tool within the organization, pull, analyze, and use the data to improve decision making</li> <li>▶ Investigate AI solutions</li> </ul> <p>▶ Use AI to develop intelligence in data sets</p>



### COMPLIANCE/GOVERNANCE

Security	<ul style="list-style-type: none"> <li>Incident Management</li> </ul>	<ul style="list-style-type: none"> <li>Data security measures with Third-Party</li> <li>Incident Management reporting</li> <li>Policies</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing security maturity for all NGen data</li> </ul>
Data Governance	<ul style="list-style-type: none"> <li>Audits</li> <li>Data Quality and Integrity of NGen Company Operational Data</li> <li>Archiving and Data Disposing Policy</li> </ul>	<ul style="list-style-type: none"> <li>Data Management/ repository</li> <li>Retention</li> <li>DLP – data classification</li> <li>Certification, 3rd Party Audit, Annual Audit</li> </ul>	<ul style="list-style-type: none"> <li>Achieved data governance</li> </ul>
Compliance	<ul style="list-style-type: none"> <li>Compliance to Canadian Data Privacy Policies</li> <li>Certification</li> </ul>	<ul style="list-style-type: none"> <li>GDPR compliance – first level</li> <li>PIPEDA</li> <li>Annual Employee Training, Annual Attestation compliant to ISO27001</li> </ul>	<ul style="list-style-type: none"> <li>Achieved Compliance</li> </ul>

### PLANNED STATEMENT OF OPERATIONS 2020-2021

#### WITH INDUSTRY CONTRIBUTIONS

	CURRENT YEAR	5 YEAR
IN \$ 000'S	FORECAST 2021	FORECAST 2023
<b>REVENUES</b>		
Federal Contributions		
OPEX	13,444	31,575
Projects & Programs	91,622	198,190
Industry Contributions	60,130	169,417
	165,196	399,182
Administration Fees	1,941	6,812
Sponsorships, Fees & Other Income	174	791
<b>TOTAL REVENUES</b>	<b>167,311</b>	<b>406,785</b>
<b>EXPENSES</b>		
Project Expenditures	86,456	185,071
Program Expenditures	4,001	12,000
Industry Expenditures	60,130	169,417
	150,587	366,488
Salaries & Benefits	3,721	16,712
Outsourced Services	7,991	14,772
Administration & Governance	578	3,271
Communications & Events	583	2,109
Amortization of Capital Assets	130	501
	13,003	37,365
<b>TOTAL EXPENSES</b>	<b>163,590</b>	<b>403,854</b>

WITH INDUSTRY CONTRIBUTIONS				
		CURRENT YEAR	5 YEAR	
IN \$ 000'S		FORECAST 2021	FORECAST 2023	
<b>EXCESS / (SHORTFALL) OF REVENUE OVER EXPENSES</b>		<b>3,721</b>	<b>2,932</b>	
Contracted Estimates:				
	NGen Commitment	Total	Total	NGen Commitment
COVID -19	60,000	85,000	85,000	60,000
Projects	27,000	75,000	256,000	125,000
Programs	5,000	10,000	24,000	12,000
	<b>92,000</b>	<b>170,000</b>	<b>365,000</b>	<b>197,000</b>

## CASH FLOW REQUIREMENT 2020-2021

IN \$ 000'S	ANNUAL	5 YEAR
	FORECAST 2021	FORECAST 2023
<b>OPENING CASH BALANCE</b>	(154)	0
<b>CASH INFLOWS</b>		
Federal Contributions		
OPEX	13,444	31,575
Projects & Programs	91,622	198,190
	105,066	229,765
Administration Fees	1,941	6,812
Sponsorships, Fees & Other Income	174	791
<b>TOTAL INFLOWS</b>	<b>107,181</b>	<b>237,368</b>
<b>CASH OUTFLOWS</b>		
Project Expenditures	86,456	185,071
Program Expenditures	4,001	12,000
	90,457	197,071
Salary & Benefits	3,721	16,712
Outsourced Services	7,991	14,772
Administration & Governance	578	3,271
Communications & Events	583	2,109
	12,873	36,864
<b>TOTAL OUTFLOWS</b>	<b>103,330</b>	<b>233,935</b>

	ANNUAL	5 YEAR
IN \$ 000'S	FORECAST 2021	FORECAST 2023
<b>NET OPERATING INFLOWS / (OUTFLOWS)</b>	<b>3,851</b>	<b>3,433</b>
BALANCE SHEET MOVEMENTS	(125)	(551)
ISED ADVANCES / (REPAYMENTS)	(2,396)	(2,135)
	<b>(2,521)</b>	<b>(2,686)</b>
<b>NET MOVEMENT</b>	<b>1,330</b>	<b>747</b>
<b>CLOSING CASH BALANCE</b>	<b>1,176</b>	<b>747</b>





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