Ontario

# Forest Biomass Action Plan Interim Report

December 2025

# Contents

## Overview

Ontario is recognized as a world leader in the production and distribution of material from its renewable, sustainable, and responsibly managed forests. The **Forest Biomass Action Plan** (FBAP), released in March 2022, is the province's action plan to promote the use of forest biomass to secure jobs, enhance forest sector sustainability and support economic development.

The FBAP is an important component of achieving the objectives identified in **Sustainable Growth: Ontario's Forest Sector Strategy**. By driving growth in Ontario's forest bioeconomy, the FBAP plays a key role in the development of new markets for sawmill residues and other forms of underutilized forest biomass. The added challenges resulting from pulp mill closures in 2023 and 2024 has highlighted the importance of the forest bioeconomy in building a more robust and adaptable forest sector moving forward. The FBAP prescribes a set of actions under five objectives, and indicators are used to track progress towards achieving the objectives. Appendix 1 lists the 27 actions and status towards their completion.

This interim report illustrates progress made towards the objectives in the first years of implementation. It highlights the strides taken to support economic development within the forest sector, and to promote renewable, wood-based alternatives to fossil fuels and carbon-intensive products. The Ministry of Natural Resources (MNR) has taken steps to more accurately describe Ontario's forest biomass characteristics and availability, and to explore market opportunities for bioenergy and bioproducts. Prioritizing engagement and inclusion of Indigenous communities is ensuring forest biomass development aligns with the principles of reconciliation and provides equitable opportunities for all. A final report, planned for release upon completion of the FBAP, will provide a more detailed assessment of achievements.

# Achievements

## Objective 1: Identify pathways to markets for forest biomass

The FBAP is pivotal to unlocking the potential of Ontario's forest biomass resources by establishing clear and viable pathways to markets. Global decarbonization efforts will continue to drive rapid development in new processes and technologies using forest biomass.

### Indicator 1.1: Information regarding Ontario's forest biomass characteristics. For example, types, quality, quantity, geography, and economics

The MNR has worked with forest industry and innovation partners to better define the types and availability of forest biomass across the value chain. Improved understanding of resource stocks will inform decision making on forest biomass management and options for valorization, supporting maximized use of underutilized forest biofibre and mill-byproducts.

**Evolution of Ontario's Forest Resources Inventory**

The **Forest Resources Inventory** (FRI) provides information about forests and trees in Ontario, including species distribution, stand composition, and forest age. This information is used to support resource management and land use decisions, and to help sustain healthy, diverse, and productive forests. The MNR is committed to adopting newer spatial approaches to forest resource inventory modelling. New LiDAR-enhanced FRI is in development, with 415,000 $km^2$ (out of a total 455,000 $km^2$) of LiDAR imagery captured as of September 2025. These data will help to refine Ontario's forest biomass inventory and can be used as a powerful input to enhance tools such as the Centre for Research and Innovation in the Bio-Economy's (CRIBE) ForestEDGE platform.

**CRIBE's ForestEDGE**

CRIBE developed **ForestEDGE**, an open-source geo-spatial tool that allows interested parties to map and cost Ontario's available forest resources, to support investment attraction. The tool combines information from various sources, such as

Ontario's FRI, forest management plans, processing facilities, and road networks. The Economic Fibre Supply Model (EFSM) allows for exploration of available wood volumes in Ontario, and it estimates average delivered fibre costs by combining forest inventory and the location of potential processing facilities. This tool produces stand-specific values and delivered wood fibre costs at multiple scales to support the screening of regional economic development opportunities. Infrastructure Explorer, another ForestEDGE tool, allows for exploration of demographic and market access information, regional infrastructure, and business support for investment assistance across Ontario. CRIBE is continuously enhancing the ForestEDGE tools to optimize user experience and ensure the ongoing relevance of the data provided.

**Southern Region Residual Survey**

In collaboration with the Wood Manufacturing Cluster of Ontario and CRIBE, MNR conducted a survey in 2023 to identify the types and volume of wood residues generated at sawmills and wood manufacturing facilities in Southern Ontario. The results showed that 464,292 $m^3$ of wood residues are generated per year from 96 facilities (10 sawmills and 86 secondary wood manufacturing facilities), with 75% of the total generated by the 10 sawmills. The primary end-use (48%) for wood residues from secondary wood manufacturing facilities is landfilling, while wood residues from sawmills are predominantly sold or donated to agricultural operations (42%) and bioproduct manufacturing facilities (33%). Secondary wood manufacturing facilities demonstrated interest to find better end-uses for residues, representing a valorization opportunity in the context of forest bioeconomy development.

### Long-term sustainability of biomass harvesting

The MNR's Science and Research Branch carries out scientific research and monitoring to inform resource management policy and decision making. This work supports key Ministry priorities that are relevant to forest biomass, including sustainable forest management, renewable energy development, and climate change mitigation and adaptation. In collaboration with Natural Resources Canada (NRCan), MNR researchers are conducting long-term studies to assess sustainability of forest biomass harvesting in Ontario. These studies involve field trials designed to investigate the ecological and economic implications of different biomass removal treatments. The results, collectively, will contribute to the development of appropriate guidelines for biomass removal.

## Indicator 1.2: Potential forest biomass markets, commercial and technological readiness

Growth of the bioeconomy will build out from existing markets and end-uses, making it important to gauge and forecast the deployment status of various conversion and consumption technologies for bioproducts. Given the diversity of available forest biomass and their geographic distribution, additional investigation and reporting was needed to obtain a fulsome understanding of the province's range of available feedstocks and where these materials could be used commercially.

### Jurisdictional scan

MNR completed a jurisdictional scan to inform bioproduct development and commercialization approaches for Ontario's forest biomass. The completion of this report satisfied the requirements of Action 1.4. It compared forest biomass approaches and policies across select leading jurisdictions in North America and Europe. Ontario was assessed as strong in terms of sustainable forest management and wood supply, but Ontario's bioeconomy was identified as underdeveloped as compared to more advanced jurisdictions, such as Sweden. Findings include economic and policy-driven strategies that could help to realize Ontario's untapped potential in the development and commercialization of bioproducts.

**Market research**

The rapid development of conversion technologies for forest biomass necessitates a thorough study of the options to determine the best fit for Ontario, ensuring that chosen technologies are economically viable, environmentally sustainable, and well-aligned with the province's unique forest resources and industrial capabilities.

The MNR completed two studies on possible technologies to increase the value of Ontario's forest biomass. The first report summarizes the types of forest bioproducts and their associated conversion technologies, and it satisfied the requirements of Action 1.2. It also assesses their global technological and commercial readiness and qualifies the best fits for Ontario's bioeconomy. The report recommended taking a regional approach in developing forest biomass supply chains and provided a listing of bioproducts that were considered best bets for Ontario. The second study focused on potential market pathways for Ontario's forest biomass, and satisfied the requirements of Action 1.3. The project examined anticipated demand for forest biomass across various sectors, and it considers the feedstock type and price requirements for increased utilization of biomass by 2030 and 2050. The study considered potential demand for forest biomass in the petroleum, natural gas, chemical, automotive, agri-food, and textile industries.

**Product sustainability research**

Product sustainability information is important for market development. To achieve goals to reduce greenhouse gas (GHG) emissions, companies, governments, and citizens want reassurance on the environmental performance of the products they buy. To become commercially viable, the majority of the bioproducts that can be manufactured with Ontario's biomass will eventually need to replace traditional products made from fossil feedstock. There is a need for scientific evidence that bioproducts made from forest biomass achieve more stringent environmental performance and allow for reduced GHG emissions.

The FBAP supports research on life cycle inventory and life cycle impact assessment, including biomass carbon dynamics studies conducted by MNR researchers. Life cycle inventories for wood products have been completed to support the development of HWP-CASE 2.0, a model allowing a comprehensive assessment of the carbon stocks and emissions associated with harvested wood

products. Work has been completed more specifically on lumber, wood-based panels, mass timber and wood pellets. A scientific paper providing updated Canadian emission factors for harvested wood products was published:

- **A Review of Cradle-to-Gate Greenhouse Gas Emission Factors for Canada's Harvested Wood Products**

Life-cycle assessments (LCAs) were also completed for innovative markets for forest biomass, including an LCA for biochar as a substitute for coal use in the steel industry. Two scientific articles were published:

- **Carbon Footprint of Biochar from Forest Harvest Residues as a Substitute for Coal during Steel Production**
- **Cradle-to-gate life cycle analysis of slow pyrolysis biochar from forest harvest residues in Ontario, Canada**

LCA related work will continue to cover a broader range of promising markets for Ontario's forest biomass.

## Objective 2: Support demand for forest bioenergy and bioproducts

The FBAP is designed to increase demand for forest bioenergy and bioproducts within Ontario, creating a robust market that contributes to the province's economy, communities, and the broader forest sector.

### Indicator 2.1: Socio-economic contribution of forest biomass to local communities and the provincial economy

As a critical part of forest sector value chains, forest biomass and bioproduct manufacturing operations are key to the sustainability of northern economies, and are important contributors to local jobs, income, and tax revenues. Understanding and communicating the role that forest biomass management and use plays in supporting communities across the province can help strengthen buy-in and interest in related technologies and value chains. To establish a baseline for the socio-economic contributions of forest biomass projects, two research reports were completed. Together, these reports meet the requirement of Action 2.2.

**Financial contribution**

As part of the first report, forest industry members were surveyed to measure the relative importance of biomass consumption to industry financial performance and viability.

- Biomass consumption was found to be an important contributor to energy and operational competitiveness.
- The estimated average annual financial contribution of forest biomass in Ontario was $422 million, with 98% coming from mill by-products and the remaining 2% through forest biofibre (2019-2021 averages).
- Limited participation in the survey by industry may understate the overall contribution of biomass to financial viability.

**Socio-economic impact**

The second report, examined the socio-economic impacts of forest biomass use in four community-based case studies:

- production and use of wood pellets for bioenergy
- use of sawmill residuals for combined heat and power generation
- community use of wood pellets for heating
- use of mill residuals for secondary wood product and bioproduct manufacturing

The investigations underscore the importance of maintaining users of low-grade material to local forest sector value chains and to deliver community benefits.

## Indicator 2.2: Use of forest biomass in operations and supply chains

As Ontario's forest bioeconomy grows, it is essential to balance efforts between sustaining existing forms of forest biomass consumption and investing in new opportunities. To date, the two primary routes through which the MNR has supported biomass utilization are by supporting the renewal of power purchase agreements (PPAs) for facilities that consume biomass for electricity generation and through the launch of the Forest Biomass Program. Achievements related to the Forest Biomass Program are explained under Indicator 2.3.

**Renewal of power purchase agreements**

Through the FBAP, Ontario ensured that existing facilities that consume biomass for electricity generation, and were approaching the end of their contract, were provided the opportunity to negotiate new five-year contracts with the Independent Electricity System Operator (IESO), balancing the benefits to the forestry sector with the value for the ratepayer and taxpayer. These contracts support the forestry industry as it considers a longer-term transition for alternative uses of forest biomass. The MNR supported these contract negotiations with the IESO by conducting socioeconomic impact analyses and quantifying the potential adverse effects that the non-renewal of the PPAs could have on the forest products industry in Northern Ontario.

To date, the following facilities have received new five-year contracts, preventing a loss of jobs and economic output:

- Atlantic Power's Calstock Cogeneration Facility – negotiated new five-year contract that expires March 2027. Calstock has since been awarded a further five-year contract through the IESO's competitive medium-term procurement. This contract will begin in March 2027 and expire in 2032.
- Chapleau Cogeneration Facility – negotiated new five-year contract that expires December 2027.
- Thunder Bay Pulp and Paper's Cogeneration Facility – negotiated new five-year contract that expires September 2028.
- Hornepayne Power Inc. – negotiated new five-year contract that expires February 2029.
- Atikokan Generation Station – negotiated new five-year contract that expires July 2029.

**Ontario Sawmill Chip Support Program**

Recognizing the need to address the consequences of pulp mill closures, the government launched the Ontario Sawmill Chip Support program, designed to assist affected sawmills and other facilities in unprecedented challenges by managing large stockpiles of chips caused by disruptions in the pulp and paper market while the market undergoes recalibration. With a total funding allocation of $10 million in fiscal year 2024-25, the program successfully supported 15 affected facilities in transporting over 810,000 green metric tonnes (GMT) (approximately 21,000 truckloads) of chips to new alternative markets and more distant locations. This assisted in keeping operations running, protected jobs and ensured mill yards remained functional. In addition, the program:

- prevented landfill disposal, reducing environmental impacts of mill residuals and chips, where applicable
- maintained operational efficiency by freeing up space in mill yards
- reduced fire hazards associated with stockpiled materials at the facilities and in the communities

For fiscal year 2025-26, the Ontario Sawmill Chip Support Program will provide $10 million, further helping sawmills and other facilities to find short term uses for their by-products while they look to expand to new markets and find new uses for by-product wood chips in the long term.

## Indicator 2.3: Regional interest and implementation of forest biomass projects

A strong distribution of interest and engagement in the forest biomass sector is an important measure of success. Implementation of biomass projects in different regions in Ontario demonstrates development of the forest bioeconomy, exploration of varying regional opportunities, and diversification and sustainability of sector growth. Tracking regional progress is also important for identifying comparative advantages of certain regions and need for future engagement in others.

### Forest Biomass Program

The **Forest Biomass Program** (FBP) was launched in June 2023 to support initiatives that secure and increase long-term wood utilization across the province, with a focus on underutilized species and forest biomass. The establishment of the FBP is part of Ontario's commitment to the use of wood and forest biomass to deliver economic benefits to Ontarians while helping to reduce emissions and address climate change. The FBP consists of four streams that target different aspects of the program's goals:

- The Indigenous Bioeconomy Partnerships stream: Increase Indigenous participation in forest biomass opportunities and benefit from bioeconomy development.
- The Exploring Biomass Pathways stream: Improve public and private sector understanding of the technical, financial, scientific, and operational considerations for use of forest biomass.
- The Innovative Bioproduct Manufacturing stream: Deploy innovative bioproducts and facilitate increased use of forest biomass as a feedstock in manufacturing, infrastructure, energy services and resource extraction sectors.

- The Modernization stream: Support forest sector transformation, competitiveness, and participation in emerging bioeconomy opportunities through use of forest biomass.

In its first year, the FBP committed support of more than $19.1 million towards 40 projects with total project costs of more than $43.2 million. The FBP has garnered significant interest, a testament to the growing recognition of the bioeconomy's potential across Ontario. With projects coming from across Ontario, there is a widespread desire to explore and expand the bioeconomy. This broad-based interest across the province highlights a collective ambition to leverage forest biomass as a sustainable resource for economic innovation, environmental stewardship, and regional development.

A three-year extension (through to 2026-27) of the FBP was announced in April 2024, with an investment of $60 million ($20 million per year) to help maintain and increase long term wood utilization across the province. To date, Ontario has committed close to $55 million under this program to support more than 55 research, innovation and modernization projects.

The FBP has been instrumental in advancing the bioeconomy through a variety of projects contributing to the province's goal to reduce GHG emissions. Some notable bioenergy-related initiatives include:

- Thunder Bay Pulp and Paper upgraded and improved equipment to modernize the mill's electrical system, enabling future measures to expand green energy production, reduce emissions and increase forest biomass usage (Modernization Stream - $5,000,000).
- Torchlight Bioresources Inc. aims to establish a facility for combined power, heat, and cooling using wood biomass at a new housing development at the Toronto Downsview airfield (Exploring Biomass Pathways stream - $100,000). A demonstration of a biomass district energy project in an urban context would be a novelty in Ontario and would open the door for future uptake of urban bioheat and bioenergy opportunities in areas of the province with dense populations and high energy demand.

- Lake Nipigon Forest Management Inc. is developing facilities for renewable natural gas and biocarbon production (Indigenous Bioeconomy Partnerships stream $200,000).

Biochar production is expected to play a significant role in the growth of Ontario's forest bioeconomy, particularly in sectors requiring intensive decarbonization, such as steel manufacturing and bioplastics, as well as in agriculture for soil amendment. Notable initiatives include:

- Mohawk College investigated biochar as a potential replacement for metallurgical coal in steel production, exploring its sustainability and reduced carbon footprint (Innovative Bioproduct Manufacturing stream - $160,000).
- Haliburton Forest Biochar is expanding their biochar production facility and creating efficiency in the manufacturing process to increase the consumption of forest biomass (Innovative Bioproduct Manufacturing stream - $4,643,100).

Through strategic investments and targeted support, the program is contributing to projects that will boost regional energy production, upgrade plants, fund feasibility studies, and support pilot projects and new facility planning. This funding has also helped firms to acquire cutting-edge technology and equipment and assist researchers as they develop and commercialize new forest-based products.

## Objective 3: Improve the business and regulatory environments for the use of forest biomass

A key part of unlocking potential of Ontario's biomass resources is to cultivate a business and regulatory environment that is conducive to the growth and development of the forest bioeconomy.

### Indicator 3.1: Regulatory environment for the use of forest biomass

To simplify the regulatory environment and foster bioeconomy growth, the government has undertaken strategic initiatives to reduce barriers and enhance the viability of forest biomass projects within Ontario.

**Small solid biomass combustors standard development**

A prime example of improving the regulatory environment for forest biomass use is the development of a new National Standard of Canada for small solid biomass combustors (SSBC). This project aims to harmonize standards for SSBC between the European Union and Canada, which is expected to significantly reduce capital expenditure costs for these systems. By simplifying the design certification process and lowering the financial barrier to market entry, the government hopes to spur greater adoption of bioheat systems across the province. The adoption of this new standard presents several opportunities for economic growth and scaleup, including but not limited to, fostering innovation by protecting intellectual property, and providing a new market opportunity for our advanced manufacturing sector and supply chains with the fabrication of SSBC in Ontario. The standard project is led by the Ministry of Economic Development, Job Creation and Trade, supported by the Ministry of the Environment, Conservation and Parks, the Ministry of Agriculture, Food and Agribusiness, the Ministry of Public and Business Service Delivery and Procurement, and MNR.

**BioHubs**

Another significant step towards simplifying the regulatory landscape is the conceptualization and development of BioHubs[1]. These facilities are designed to optimize the forest biomass value chain by centralizing the recovery and processing of regional residual streams at a single location. By fostering cooperation among forest companies within these hubs, the initiative aims to extract the highest value from residual streams, opening new avenues for industry opportunities, revenue generation, and bioproduct development through collaboration with non-traditional sectors. BioHubs facilitate the consolidation of biomass supplies, offering economies of scale that enable varied sorting and pre-treatment processes to meet the evolving needs of the market. In doing so, they establish a new paradigm for biomass supply chains, ensuring that materials are efficiently channeled to biorefinery centers to support the emerging bioeconomy. The Ministry worked with Lake Nipigon Forest Management to issue a facility license and will continue to work with the company to navigate wood measurement processes involved in the operation of a BioHub.

[1] For more information on BioHubs in Canada, visit the following links through the IEA Bioenergy website:
**Development of Techno-economic Model for Assessment of Bio-hubs in Canada [PDF]** (https://www.ieabioenergy.com/wp-content/uploads/2022/12/Biohub-IEA-Bioenergy-Task-43-Final-Report.pdf)
**Bio-hubs: Roles in Biomass Supply Chains [PDF]** (https://www.ieabioenergy.com/wp-content/uploads/2024/01/Webinar_Bio-hubs_Roles-in-Biomass-Supply-Chains.pdf)

## Indicator 3.2: Biomass projects receiving supports from federal and/or provincial funding programs

The Ontario government is actively seeking to leverage federal funding to support the development of new forest bioeconomy projects.

**Forest Biomass Program**

The initial provincial investment of over $19.1 million through the Forest Biomass Program has allowed for federal funds to be leveraged, amplifying the impact and scope of its initiatives. From this amount, over $1.35 million in federal funding was secured, showcasing the program's ability to attract additional funding. The renewal of the FBP for an additional three-year period stands as a testament to its accomplishments and sets the stage for even greater leverage of federal funds in the future. This strategic approach not only maximizes the financial resources available for forest biomass projects but also strengthens the program's foundation, enabling it to contribute more significantly to the development of Ontario's bioeconomy and the broader environmental and economic goals of the province.

## Indicator 3.3: The role of forest biomass in climate change initiatives and programs

The forest sector is a leader in the emerging green economy. Bioenergy and bioproducts derived from forest biomass present opportunities for more sustainable alternatives to GHG emission intensive petroleum products. Ensuring that the environmental benefits of forest biomass are recognized by applicable climate change initiatives and programs will help to advance Ontario's forest bioeconomy and contribute to reducing GHG emissions across Ontario.

**Ontario's Low Carbon Hydrogen Strategy**

**Ontario's Low Carbon Hydrogen Strategy**, launched in 2022, set out a vision for a thriving low-carbon hydrogen economy within the province. The Strategy highlighted the potential for producing low-carbon hydrogen through the gasification or pyrolysis of biomass. Ontario's abundant forestry, agricultural, and municipal biomass resources are identified as key assets that could pivot towards the production of low-carbon hydrogen and other renewable fuels. This innovative approach not only opens new markets for forest biomass, enhancing its economic value and sustainability, but also plays a pivotal role in mitigating GHG emissions in traditionally hard-to-abate industries.

In June 2025, Ontario released its first ever integrated energy plan, *Energy for Generations*, which recognizes hydrogen as a strategic resource that can complement other fuels and technologies to help meet growing energy demand, provide reliable energy storage and generation capacity, and support industry and heavy transportation.

Ontario announced several new initiatives as part of *Energy for Generation*s to advance the growth of a strong hydrogen economy. Initiatives included an expanded $30M Hydrogen Innovation Fund, which launched November 2025, designing a Hydrogen Interruptible Rate Pilot and exploring regulatory oversight for dedicated hydrogen pipelines. By leveraging its rich natural resources and fostering technological innovation in low-carbon hydrogen production, Ontario is set to create a conducive environment for the growth of the low-carbon hydrogen sector.

## Objective 4: Support holistic, culturally relevant pathways for Indigenous community involvement in forest biomass value chains to support reconciliation between Indigenous communities and the Crown

The FBAP has advanced the Forest Sector Strategy's commitment to continue to build strong, mutually beneficial relationships and partnerships with Indigenous communities across the province. Acknowledging Indigenous leadership in the development of Ontario's forest biomass resources, work is being carried out to increase Indigenous participation in, and benefits from, forest biomass supply chains.

### Indicator 4.1: Communities have the capacity, knowledge, and ability to participate in the use of forest biomass

In connecting with 38 Indigenous communities across Ontario during the development of the FBAP, the MNR heard that Indigenous communities have a strong interest in participating in forest biomass related projects. MNR has worked to increase capacity, knowledge, and participation by providing opportunities for Indigenous businesses and communities by supporting participation through provincial funding programs. Additionally**,** 2024 revisions to the Forest Management Planning Manual provide a process for First Nation communities in Ontario's far North to prepare and implement small-scale community-based Forest Management Plans. Growing Ontario's forest bioeconomy will result in economic, social, and environmental benefits for Indigenous communities.

**Forest Biomass Program's Indigenous Biomass Partnerships stream**

The Indigenous Biomass Partnerships stream is dedicated to supporting Indigenous businesses and communities to become more active participants in the forest sector and to lead the development of the forest bioeconomy. Under this stream, more than $3.7 million in funding has been provided to 17 projects with total project costs of more than $5.5 million. Through investments in feasibility studies and other forms of project support, this funding will facilitate a range of projects, including bioenergy projects, forest biomass supply chain development, and capacity building initiatives.

By providing financial support to forest biomass projects led by Indigenous communities, organizations, and businesses, this funding stream empowers Indigenous communities to take advantage of forest biomass opportunities and benefits from the development of the forest bioeconomy. The impact of funding through this stream is amplified by leveraged federal funding through programs such as Natural Resource Canada's Clean Energy for Rural and Remote Communities Program. Indigenous communities, organizations, and businesses can also apply for funding under the other three streams of the Forest Biomass Program, increasing the flexibility of approaches available to communities.

## Objective 5: Communicate, collaborate, and inform on forest biomass opportunities

Effective communication and collaboration across government, the forest industry and biomass users are essential to meaningful development of Ontario's forest bioeconomy and central to successful implementation across all objectives of the FBAP.

### Indicator 5.1: Materials to support prospective forest biomass users

Development of communication materials to make forest biomass information accessible to a public audience is a key component of completion of actions under Objective 5.

**Publication**

The MNR has released a public-facing summary of reports completed under FBAP Actions (1.2, 1.3, 1.4, and 2.2). This publication, **Growing the green economy of the future – Ontario's potential for innovation in forest biomass products**, provides broader access to information and research collected under the FBAP and aims to inform biomass users and forest industry investors of opportunities to unlock the potential of Ontario's forest biomass.

### Indicator 5.2: Participation in stakeholder discussions, industry innovation network events and workshops

Advancing Ontario's forest bioeconomy necessitates collaboration with a range of partners and stakeholders. Innovation and uptake of opportunities will be accelerated by coordinated efforts to share knowledge, resources, and expertise across the forest biomass supply chain.

**CRIBE's Nextfor initiative**

CRIBE is a partner in supporting innovation and hosting networking opportunities for Ontario's forest bioeconomy community. Through its **Nextfor** initiative, CRIBE brings innovators together to collaborate, build value and drive innovation within Ontario's forest bioeconomy. The Nextfor initiative focuses on three main areas: advanced wood-based materials, industrial decarbonization, and forest innovation. Since the release of the FBAP, CRIBE has held 30 innovation forums, bringing together companies, startups, academia, and government partners to support knowledge transfer.

Nextfor Innovation Forums are unique networking platforms to enable collaboration across the value chain – bringing together representatives from the forest products sector, as well as other relevant sectors including housing, energy, agriculture, and automotive. These leaders work on identifying opportunities and roadblocks to accelerate innovation and commercialization in each focus area. In some cases, the forums lead to an innovation challenge funding program based on the interests, priorities, and opportunities identified by participants. These challenge funding programs support the commercial development, investment, and deployment of next-generation forest-based solutions in Ontario. CRIBE's efforts have led to the launch of five challenge funding programs, resulting in investment to support 16 new projects since the FBAP's release in 2022.

## Next steps

FBAP initiatives have helped Ontario enhance research and increase knowledge to assess the status of our province's forest biomass resources and identify potential markets for bioproducts. Advancements in forest inventory technologies are improving our ability to estimate and model forest biomass across the province. Research conducted by MNR scientists continues to shed light on approaches to sustainable biomass harvesting and the environmental performance of forest bioproducts. Additionally, research reports completed under the FBAP provide insight into market pathways for Ontario's forest biomass as well as financial and socioeconomic contributions.

This foundational information will assist in stimulating new investments and will complement government efforts to support demand and improve the business and policy environments for forest biomass use. To address recent pulp mill closures and associated challenges within the forest sector, efforts will focus on facilitating biomass use and prioritizing opportunities to make use of sawmill residuals to uplift the sector. With the diversity of biomass projects supported through its different funding streams, the FBP contributes to all five objectives of the FBAP, and it has accelerated progress on a number of actions. The FBP will remain integral to FBAP progress moving forward, and it will continue to drive development of innovative forest bioeconomy solutions.

The MNR will work towards completing the remaining actions in accordance with the timelines. The final report will document achievements and outcomes, setting the stage for well-informed economic development through innovative and sustainable use of forest biomass into the future.

# List of links

## Page 2

**Forest Biomass Action Plan:** https://www.ontario.ca/page/forest-biomass-action-plan

**Sustainable Growth: Ontario's Forest Sector Strategy:** https://www.ontario.ca/page/ontarios-forest-sector-strategy

## Page 3

**Forest Resources Inventory:** https://www.ontario.ca/page/forest-resources-inventory

**ForestEdge:** https://cribe.ca/category/forestedge

## Page 7

**A Review of Cradle-to-Gate Greenhouse Gas Emission Factors for Canada's Harvested Wood Products:** https://fpj.kglmeridian.com/view/journals/fpro/74/4/article-p278.xml

**Carbon Footprint of Biochar from Forest Harvest Residues as a Substitute for Coal during Steel Production:** https://pubs.acs.org/doi/10.1021/acssusresmgt.4c00263

**Cradle-to-gate life cycle analysis of slow pyrolysis biochar from forest harvest residues in Ontario, Canada:** https://link.springer.com/article/10.1007/s42773-024-00352-z

## Page 11

**Forest Biomass Program:** https://www.ontario.ca/page/forest-biomass-program

## Page 17

**Ontario's Low Carbon Hydrogen Strategy:**
**https://www.ontario.ca/page/ontarios-low-carbon-hydrogen-strategy**

## Page 20

**Growing the green economy of the future – Ontario's potential for innovation in forest biomass products: https://www.ontario.ca/files/2025-12/mnr-febb-growing-green-economy-future-en-2025-12-09.pdf**

## Page 21

**Nextfor: https://nextfor.ca**

## Appendix 1. FBAP action table

| |
|---|
| **Action 1.1:** Further refine Ontario's inventory of forest biomass using tools such as CRIBE's Economic Fibre Supply Model.<br>**Timeframe:** By 2023<br>**Status:** In progress |
| **Action 1.2:** Publish a report that summarizes the types of forest bioproducts and their technology and commercial readiness.<br>**Timeframe:** By 2022<br>**Status:** Complete |
| **Action 1.3:** Publish a report that describes the current and future market demand for bioproducts made from Ontario's forest biomass.<br>**Timeframe:** By 2023<br>**Status:** Complete |
| **Action 1.4:** Complete a jurisdictional scan to inform bioproduct development and commercialization approaches for Ontario's forest biomass.<br>**Timeframe:** By 2022<br>**Status:** Complete |
| **Action 1.5:** Develop a life cycle inventory for traditional and non-traditional wood products (material/energy inputs and emissions), study biomass carbon dynamics, and refine life-cycle impact assessment models to build understanding of the environmental performance of forest biomass.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 1.6:** Support development of regional clusters that increase value generation from the use of forest biomass.<br>**Timeframe:** by 2026<br>**Status:** In progress |

| |
|---|
| **Action 1.7:** Conduct collaborative research studies on soil quality, stand development, productivity, and biodiversity to ensure long-term ecological sustainability of forest biomass harvesting.<br>**Timeframe:** Continuous<br>**Status:** Ongoing |
| **Action 2.1:** Ensure that existing facilities that consume biomass for electricity generation are provided ongoing access to the provincial market at fair compensation for the value they provide to Ontario's electricity system. This includes recognizing and, where possible, removing barriers that prevent biomass facilities from optimizing their assets.<br>**Timeframe:** By 2022<br>**Status:** In progress |
| **Action 2.2:** Publish a report that quantifies the financial contribution of forest biomass to individual facilities and the entire forest sector, and its socio-economic contribution to local communities and the provincial economy.<br>**Timeframe:** By 2022<br>**Status:** Complete |
| **Action 2.3:** Provide resources for the development of community-led projects that use forest biomass.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 2.4:** Develop a provincial bioheat strategy to increase the production and domestic consumption of biofuels for heat, drawing from expertise of the Ontario Bioheat Initiative and input from a range of partners and stakeholders.<br>**Timeframe:** By 2026<br>**Status:** Not started |
| **Action 2.5:** Engage with potential industry users to integrate forest biomass into supply chains.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 3.1:** Review and update Ontario's Forest Biofibre Directive.<br>**Timeframe:** By 2023<br>**Status:** Delayed |

| |
|---|
| **Action 3.2:** Look for opportunity to make forest biomass projects eligible in relevant economic development and business support programs.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 3.3:** Look for opportunity to make forest biomass projects eligible in relevant economic development and business support programs.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 3.4:** Integrate the benefits of forest biomass use in provincial Emissions Performance Standards and relevant provincial strategies.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 3.5:** Advocate on behalf of Ontario's forest biomass users and provincial interests during the creation and implementation of national climate change initiatives, such as the Clean Fuel Standard.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 4.1:** As part of readiness building, provide opportunities for Indigenous businesses to build capacity and knowledge in the use of forest biomass. This includes understanding of where biomass feedstocks are available and where they present feasible opportunities; how to optimize location to create best opportunities for success; complexity in forest product supply chains; Ontario's regulatory environment for forestry activities; and how to access forest biofibre through the Crown Forest Sustainability Act.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 4.2:** Work with Indigenous communities to take a stepwise approach to bring about greater Indigenous involvement and benefit from the use of forest biomass: create network connections; foster partnerships with industry; and encourage agreements between industry and Indigenous communities.<br>**Timeframe:** By 2026<br>**Status:** In progress |

| |
|---|
| **Action 4.3:** Support Indigenous participation in forest biomass project investments through provincial funding programs and explore additional opportunities for enabling investments through capacity building, skills training, access to expertise, and knowledge transfer.<br>**Timeframe:** Ongoing<br>**Status:** Continuous |
| **Action 4.4:** Support Indigenous community applications to federal funding programs for projects that use forest biomass.<br>**Timeframe:** Ongoing<br>**Status:** Continuous |
| **Action 4.5:** Facilitate preferred access to forest biomass for proposals with Indigenous participation, where and when forest biomass is available, as can be facilitated through regulations under the Crown Forest Sustainability Act.<br>**Timeframe:** Ongoing<br>**Status:** Continuous |
| **Action 4.6:** Support Ontario's Far North Indigenous communities in the development of bioenergy systems to replace base load power generation using diesel fuels with local forest biomass.<br>**Timeframe:** Ongoing<br>**Status:** Continuous |
| **Action 5.1:** Create information, communication, and marketing materials to support prospective forest biomass users.<br>**Timeframe:** By 2026<br>**Status:** In progress |
| **Action 5.2:** Support and participate in forest sector innovation networks that aim to deliver solutions for challenges to using forest biomass.<br>**Timeframe:** Continuous<br>**Status:** Ongoing |
| **Action 5.3:** MNR's Forest Industry Division will facilitate discussions between other ministries, federal agencies, investors, technology providers, and forest sector partners to increase the use of forest biomass.<br>**Timeframe:** Continuous<br>**Status:** Ongoing |

**Action 5.4:** Engage with partners and stakeholders to ensure alignment between regional, provincial and federal initiatives.
**Timeframe:** Continuous
**Status:** Ongoing