

Focus Groups on the Forest Bioeconomy

Final Report

Prepared for Natural Resources Canada

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January 2021

The purpose of the research was to provide Natural Resources Canada (NRCan) with an understanding of the general public's awareness, understanding and perceptions of the forest bioeconomy. The results will be used to provide input to future public opinion research and to assist in the development of communications to increase the general public's awareness of the economic potential of new technologies and bioproducts for the forest products industry.

Two online focus groups were conducted November 14 and 18, 2020, with one group conducted in English, and one in French. The qualified participants were members of the general public 18 years of age and older, but excluding people working in the forestry or energy sectors.

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1. Executive Summary

1.1 Background and Purpose

In recent years, the development of a competitive bioeconomy has become a priority for federal and provincial governments. The forest bioeconomy specifically represents an opportunity for the forest sector to diversify products and access new markets, and is a vital part of the transition to a low carbon future. Some research in the form of consultations has been undertaken by the Canadian Council of Forest Ministers (CCFM) with governments and forest industry stakeholders. However, little research has been conducted on the public's perceptions of the forest bioeconomy in Canada.

The overall purpose of the research was to provide Natural Resources Canada (NRCan) with an understanding of the general public's awareness, understanding and perceptions of the forest bioeconomy. Topics explored included:

- Perceptions of the Canadian forest industry.
- Perceptions of sustainable forest practices.
- Awareness of the forest bioeconomy.
- Positive and negative associations with the forest bioeconomy.
- Perceived consumer reactions to products made from sustainably sourced biomass.

Results from the research will be used to:

- Provide input to future public opinion research.
- Assist in the development of communications to increase the general public's awareness of the economic potential of new technologies and bioproducts for the forest products industry.
- Provide fundamental public environment information for program, policy and communications planning, inform post-COVID-19 green recovery efforts in the forest sector and identify focus areas to accelerate the bioeconomy's contribution to Canada's 2030 and 2050 climate goals.

1.2 Method

Two two-hour online focus groups were conducted November 14 and 18, 2020, with one group conducted in English, and one in French. There were seven participants in each focus group.

Participants in the English-language group were drawn from B.C., the Northwest Territories, Saskatchewan and Newfoundland. Participants in the French-language group were drawn from Quebec, Manitoba, Ontario and New Brunswick.

The qualified participants were members of the general public 18 years of age and older, but excluding people working in the forestry or energy sectors. Within each group there was mix of men and women, a mix on age, and a mix on community size (large city/suburb of a large city versus small/medium city/town/village/rural area).

1.3 Note on Interpretation of Findings

This research was qualitative in nature, not quantitative. As such, the results provide an indication of participants' views about the topics explored, but cannot be statistically generalized to represent the full population. Further, due to the small size of this project (two focus groups, 14 participants), there is not sufficient data to suggest hypotheses about the prevalence of themes in awareness and attitudes among the broader general public. The value of this qualitative research is that it gives an indication of the range and types of views that can be found among the general public pertaining to sustainable forest practices and the forest bioeconomy.

1.4 Key Findings

Impressions of the Canadian Forest Industry

Participants did not feel they were knowledgeable about the forest industry in Canada. To varying albeit quite limited degrees they had some impressions based on things they had seen or heard in the media, but overall there was little depth of knowledge.

There was general agreement that the forest industry plays an important role for Canada in terms of jobs and trade, but no specific knowledge of the size of the sector in terms of number of jobs.

Quite a few participants commented on the importance of planting new trees to at least replace those that are cut down. Essentially, they were saying that it is important to ensure the long-term health of Canada's forests. However, there were mixed views as well as a lack of knowledge on the extent to which this is happening and the level of success of regeneration programs.

Impressions of Sustainable Forest Practices

The large majority of participants said they did not know how Canada compares to other countries in terms of sustainable forest practices. They hoped that Canada compares well – and some assumed Canada likely compares well, but they had limited knowledge of what is being done in Canada, and even less knowledge about what is being done in other countries.

Participants were given the following information: *Canada harvests less than 1% of its forests each year, and as a result of forest management requirements more than 500 million tree seedlings are planted each year.* This was new information for almost all the participants. It was perceived to be a positive statement about sustainable forest practices, but many participants raised questions as to whether the information is as good as it seems on the face of it. Questions were raised about the meaning of the 1% figure, the level of success of planting tree seedlings in ensuring forest health, and harvesting impacts on old-growth forests.

Participants were then given the following information: *There are several third-party independent organizations that certify whether or not a particular forest is being sustainably managed. It turns out that Canada has the largest area of third-party-certified forests in the world, that is, the largest area of sustainably managed forests in the world.* A majority of

participants were suspicious or at best skeptical about this information without knowing more about who these organizations are, how they operate and the standards they apply to certifying forestry management practices. Despite the skepticism, some did note that there is a need for the public to be reassured that forests are being sustainably managed. They felt it is a good idea to have organizations that are neutral, unbiased and scientifically sound do evaluations that evaluate sustainability practices and compliance with regulations. The issue is convincing people that an organization meets these criteria.

Some participants also raised questions about the claim *“largest area of sustainably managed forests in the world”*:

- Several said they wanted to know what percentage of Canada’s forests are sustainably managed. Their point was that if this percentage appears to be small, the claim about comparison to other countries is less impressive.
- Several noted that Canada is a very large country with a lot of forested areas. In this context, comparing the absolute size of sustainably managed forests in Canada to the sizes in other countries with much less forested land is a bit misleading.

Awareness of the Phrase “Forest Bioeconomy”

None of the participants had seen or heard the phrase “forest bioeconomy.” If the phrase is to be used in communications, it will need to be explained.

Presentation of Information about the Forest Bioeconomy

To help facilitate informed discussion, participants were provided information about what the forest bioeconomy is, a description of the various sources of forest biomass that can be used in the forest bioeconomy, and several examples of things that can be made using forest biomass.

Notably, the information read to participants about the forest bioeconomy was largely unfamiliar to them. That is, not only was the phrase “forest bioeconomy” unfamiliar, but also information on sources and uses of forest biomass.

Perceived positive aspects of the forest bioeconomy and the uses of biomass to make products and to make various types of biofuels

Participants liked the idea of making more use of forest biomass where possible, and that it is good for the environment to use wood fibre and all parts of trees as resources to produce a variety of products in addition to traditional lumber. Perceived benefits included:

- Products made from wood fibre will hopefully be recyclable or reusable, and can replace products that are not.
- Products made from wood fibre, including biofuels, can result in reduced greenhouse gas emissions relative to the products they replace.

- Forest biomass is a renewable/sustainable resource, and can replace some products that are not made from renewable materials.
- Using all parts of trees is economically more efficient, less wasteful, and more respectful of the environment.

Participants perceived the forest bioeconomy to have the potential to boost Canada's economy and jobs through the creation of new industries. There is also a perceived potential to boost exports, as trade is important for the Canadian economy.

Concerns or questions about the forest bioeconomy and the uses of biomass to make products and to make various types of biofuels

Participants had a number of concerns or questions about the forest bioeconomy and the uses of biomass. These related to (a) the efficacy and safety of the products produced from forest biomass, and the longevity of these products; (b) the viability of the industry and the products it would produce; (c) who benefits from the forest bioeconomy and who possibly suffers from the creation of the forest bioeconomy; (d) environmental concerns; (e) cost and affordability of biomass products.

The number of participants raising questions or concerns, and the variety of types of questions and concerns, points to the importance of providing information to the public about the forest bioeconomy as part of growing this sector of the economy.

Overall, what would you want to see happen to make sure that the forest bioeconomy makes a strong positive contribution to Canada both now and in the future

Participants emphasized that affordability of products made from forest biomass is a key consideration. Their point was that while they believe in social responsibility and want to practice it for the good of the environment and society as a whole, what it costs to buy these products is the bottom line. Unless these products are affordable, people and companies will not make the change to products produced from forest biomass.

A number of participants emphasized that the use forest resources should not exceed the ability to renew and sustain those resources. That is, the forest bioeconomy should not have a net negative impact on Canada's forests.

Do you think governments in Canada should invest in encouraging greater development of the forest bioeconomy and should Canada try to be a world leader in this area

There was general agreement that governments in Canada have an important role to play in investing in research and development, in assisting and encouraging adoption of new products, and in providing objective information to the public. Some also commented that government involvement will also help ensure that sustainability and environmental protection standards will be followed.

What more would you like to know about uses of forest biomass or bioenergy to be comfortable supporting these types of uses of forest resources

Participants identified the following types of information that they would like:

- Ensure that economic development of the forest bioeconomy is accompanied by good sustainability and environmental practices, so that there is no net harm to Canada's forest resources.
- Provide information about the status of the development and commercialization of products and the industries involved in the production of products from forest biomass and biofuels.
- Provide information about how this is affecting the traditional forest industry and job creation within the industry.
- Provide information about the impact of the bioeconomy on the oil and gas industry.
- Try to ensure that the new industry equitably benefits all provinces and territories. This comment was motivated by the perception that not all provinces and territories have equivalent forest resources.
- Provide assurance that this is a viable industry producing products people will buy and that creates jobs.

Consumer Interest in Products Made from Sustainably Sourced Biomass

Participants said they are interested in products made using sustainably sourced wood fibre and would make an effort to find products of this type. However, these products must also provide value for money relative to what they are paying now.

One area of interest was alternatives for food packaging, that is the reduction or replacement of traditional plastic packaging or containers with packaging made from forest biomass. Generally participants said they might be willing to pay a little bit more for products that are not single use products or that are single use but can be recycled, composted or re-purposed. Again, however, some cautioned that the products must provide value for money: they would not pay more for a product that is significantly inferior to what they buy now just because they are made from forest biomass.

When asked what they would like to see on the packaging to be sure that a product is made using sustainable materials and practices, most participants in one session said that it would be most believable if the packaging had some sort of government seal certifying that the product met the necessary standards.

1.5 Contract Value

The contract value is \$25,918.25 including HST.

1.6 Statement of Political Neutrality

I hereby certify as Senior Officer of Sage Research Corporation that the deliverables fully comply with the Government of Canada political neutrality requirements outlined in the *Communications Policy* of the Government of Canada and Procedures for Planning and Contracting Public Opinion Research. Specifically, the deliverables do not include information on electoral voting intentions, political party preferences, and standings with the electorate or ratings of the performance of a political party or its leaders.



Anita Pollak
President
Sage Research Corporation

2. Detailed Findings

2.1 Impressions of the Canadian Forest Industry

In the first part of the focus group, participants were asked for their impressions of the role and importance of the forest industry in Canada. In part this was intended as a warm-up, but also as a way to get an indication of participants' depth of knowledge about this sector. In this context, it should be kept in mind that participants were recruited from the general public and excluded people employed in the energy and forestry sectors. So, the results are based on people who do not have direct ties to the sector.

Overall, participants did not feel they were knowledgeable about the forest industry in Canada. To varying albeit quite limited degrees they had some impressions based on things they had seen or heard in the media, but overall there was little depth of knowledge.

There was general agreement that the forest industry plays an important role for Canada in terms of jobs and trade, but no specific knowledge of the size of the sector in terms of number of jobs. Additional findings include:

- Several participants noted that while the forestry industry is important, they had some negative impressions of the health of the industry. Specifically, they had heard of forestry industry companies shutting down some operations, resulting in loss of jobs and hardship for some smaller rural communities.
- Some participants said trade in forest products is important for Canada in terms of jobs and the economy, but a few had concerns about this. Specifically, they were concerned about Canada exporting raw forestry materials and then buying back finished products, rather than creating jobs by doing the processing and manufacturing in Canada.
- Participants did not have any specific knowledge of the level of importance of the forestry industry to indigenous communities, although some said they assumed it could be an important source of jobs and income. However, some commented that in their view logging could cause harm to indigenous communities by damaging the local environment or forests important to a particular community. A few said they had heard of protests and tensions involving indigenous communities and logging operations.

Quite a few participants commented on the importance of planting new trees to at least replace those that are cut down. Essentially, they were saying that it is important to ensure the long-term health of Canada's forests. There was a mix of views on what is happening in this regard.

- Some had a negative impression that not enough is being done.
- Some had the impression that there are replanting programs, although there was little specific knowledge of the scope or success of these programs. Some framed their impression as a "hope", in that they hoped trees are being replanted but did not specifically know if this is the case.

This topic was explored further in the focus groups, as summarized in the next section, *Impressions of Sustainable Forest Practices*.

2.2 Impressions of Sustainable Forest Practices

There were three parts to the discussion of sustainable forest practices:

1. Impressions of how well Canada is doing in terms of sustainable forest practices compared to other countries.
2. Reaction to the following information: *Canada harvests less than 1% of its forests each year, and as a result of forest management requirements more than 500 million tree seedlings are planted each year.*
3. Reaction to the following information: *There are several third-party independent organizations that certify whether or not a particular forest is being sustainably managed. It turns out that Canada has the largest area of third-party-certified forests in the world, that is, the largest area of sustainably managed forests in the world.*

1. Impressions of how well Canada is doing in terms of sustainable forest practices compared to other countries

The large majority of participants said they did not know how Canada compares to other countries in terms of sustainable forest practices. They hoped that Canada compares well – and some assumed Canada likely compares well, but they had limited knowledge of what is being done in Canada, and even less knowledge about what is being done in other countries.

A minority of participants had some impressions, although the comparisons to other countries were limited in scope:

- A few participants said they had heard of extensive deforestation in Brazil. Although, this was more a comment on what they perceived as very bad forest management in Brazil rather than praise for Canada. Similarly one participant had immigrated from a country where there is little replanting, and perceived Canada to be doing better in this regard.
- A few participants had the impression that Scandinavian countries manage their forests better than Canada. This appeared to be based on an impression that there is less clear-cutting in these countries, that harvesting is more selective, and that more is done to ensure species diversity.
- A few participants said they assumed forest management is better in Canada than in certain less developed countries, presumably because those countries may be more limited in their capability to invest in sustainable practices.
- One participant had heard from friends that work in saw mills that the forestry industry in Canada is well monitored and that there are strict controls in place as to what is harvested and what is replanted.

2. Canada harvests less than 1% of its forests each year, and as a result of forest management requirements more than 500 million tree seedlings are planted each year.

This was new information for almost all the participants. One participant recalled hearing about the federal government’s commitment to plant “one billion trees.”

The information was perceived to be a positive statement about sustainable forest practices, but many participants raised questions as to whether the information is as good as it seems on the face of it.

- Some participants were skeptical that the “less than 1%” statistic is actually all that impressive, for one of two reasons:
 - Their impression is that harvesting is taking place mostly in the same areas, rather than being widely spread across forests all across Canada. Thus it may be that there is a greater impact and more damage being done to the areas where most of the forests are being harvested.
 - Given the sheer size of Canada and the fact that many areas of the country are inaccessible for purposes of economically viable harvesting, the “less than 1%” could be misleading because of the concentration of the forestry industry in just the relatively small area actually economically accessible for harvesting purposes.

- There was general agreement that planting seedlings is a responsible part of sustainable forest management. However, for some participants it raised the question of how many of these seedlings would survive and how long it would take for these seedlings to mature. Essentially, these participants were saying that it is not enough to say that seedlings are being planted. One also needs to know about the actual success of tree planting programs in renewing the forests in harvested areas.
- Several participants commented that their perception is that tree loss due to forest fires is significant. They wondered what if anything is being done to help these areas recover. They also wondered what percent of forests are damaged or lost due to forest fires. One participant raised a general question about *what is forestry's role in maintaining the forest and making sure it is safe from fires.*
- A few participants said they would want to know more about the ages of the trees being harvested in the "less than 1%" regions, as they were concerned about harvesting in old growth forests which are not easily replaced. One suggested the focus should be on growing tree plantations rather than harvesting old-growth forests. They felt that harvesting old-growth forests causes ecological damage that extends to the other flora and fauna living in those forests.

In the description read to participants there was no mention of the source of the information and this raised some skepticism about the data. As noted earlier, participants had little knowledge of what is being done in terms of sustainable forest practices. In this context, perceptions of the source of the information are critical to the perceived credibility of the information.

In one group participants were asked who would be the most believable source for information about the practices of the forestry industry. All agreed that Natural Resources Canada or the Government of Canada more generally would be a more believable source compared to industry. Because of this, it was also suggested that the federal government should play a role in communicating information about what is happening in Canada's forests and in the industry.

3. There are several third-party independent organizations that certify whether or not a particular forest is being sustainably managed. It turns out that Canada has the largest area of third-party-certified forests in the world, that is, the largest area of sustainably managed forests in the world.

A majority of participants were suspicious or at best skeptical about this information without knowing more about who these organizations are, how they operate and the standards they apply to certifying forestry management practices. The following are the types of questions raised by participants:

- Who are the third-party organizations: are they third-party government organizations or organizations independent of government? Are these organizations independent of the forest industry?
- What are the names of the organizations? Who is paying them and what are their motivations for being involved? Might they be biased?

- One participant suggested that this information would be most believable if the third-party independent certifiers were *made up of forestry biologists, conservation groups*, a point of view with which others in the group agreed.
- What standards are applied to the certification? For example, are these organizations certifying forests based on government regulations? Do all these organizations apply the same standards in their assessment? Do they apply the same standards to all forests in Canada, or are different forests or regions evaluated differently?

Although there was some skepticism and questions about these “third party organizations”, some did note that there is a need for the public to be reassured that forests are being sustainably managed. They felt it is a good idea to have organizations that are neutral, unbiased and scientifically sound do evaluations that evaluate sustainability practices and compliance with regulations. The issue is convincing people that an organization meets these criteria.

Some participants also raised questions about whether the claim “*largest area of sustainably managed forests in the world*” might be somewhat misleading:

- Several participants said they wanted to know what percentage of Canada’s forests are sustainably managed. Their point was that if this percentage appears to be small, the claim about comparison to other countries is less impressive.
- Several participants noted that Canada is a very large country with a lot of forested areas. In this context, comparing the absolute size of sustainably managed forests in Canada to the sizes in other countries with much less forested land is a bit misleading. They were essentially saying that given the large magnitude of forested area in Canada compared to most other countries, one would expect Canada to also have a larger area of sustainably managed forests.

2.3 Awareness of the Phrase “Forest Bioeconomy”

Participants were asked if they had seen or heard the phrase “forest bioeconomy.” None had seen or heard this phrase. If the phrase is to be used in communications, it will need to be explained.

2.4 Presentation of Information about the Forest Bioeconomy

To help facilitate informed discussion, participants were provided the following information about what the forest bioeconomy is, a description of the various sources of forest biomass that can be used in the forest bioeconomy, and several examples of things that can be made using forest biomass.

Whiteboard #1

In a **bioeconomy**, renewable biological resources are used to make products with improved environmental qualities that can replace non-renewable products.

The result is reduced waste and pollution.

In the **forest bioeconomy**, forest biomass is used to produce advanced wood products, biochemicals and biofuels.

Whiteboard #2

What is biomass material that is used to make things in the forest bioeconomy? Where does this material come from?

Forest biomass is renewable organic material which includes all parts of the tree, that is not only the main part of the tree but also the bark, the branches, the needles or leaves and even the roots of trees.

Sources of forest biomass for use in the forest bioeconomy include:

- Trees harvested using sustainable forest management practices
- Material left over from logging, including the tops & branches removed following the harvesting of trees
- By-products from forest product processing facilities such as sawmills – for example, woodchips, sawdust, and bark
- Biomass plantations where trees are grown specifically for the purpose of using them as biomass – for example, plantations of fast-growing willow or poplar trees
- Trees and branches removed as part of forest management activities that promote forest health and tree growth, and reduce forest fire risk
- Trees damaged by natural disturbances such as fire, insects or disease
- Construction and demolition waste that might otherwise be sent to a landfill or disposed of by burning

Whiteboard #3

In the forest bioeconomy, wood fibre can be used in many ways:

Some examples of uses of wood fibre:

- tall wood buildings of 6-20 storeys: this reduces or replaces products that have a significant environmental footprint like steel and concrete
- sustainable alternatives to plastic products such as traditional plastic packaging or single use plastic utensils
- liquid biofuels such as biodiesel, a fuel substitute used in diesel engines that can reduce greenhouse gas emissions by up to 80%

Participants were then asked what they thought would be good about the forest bioeconomy and the uses of biomass to make products and various types of biofuels and what if any concerns they might have. Participants were also asked what they would like to see happen to make sure that the forest bioeconomy makes a strong positive contribution to Canada both now and in the future.

One notable result is that the information read to participants about the forest bioeconomy was largely unfamiliar to them. That is, not only was the phrase “forest bioeconomy” unfamiliar to the participants, but also information on sources and uses of forest biomass.

2.5 Perceived positive aspects of the forest bioeconomy and the uses of biomass to make products and to make various types of biofuels

Participants liked the idea of making more use of forest biomass where possible, although as described later they also had various questions and concerns.

Participants felt that it is good for the environment to use wood fibre and all parts of trees as resources to produce a variety of products in addition to traditional lumber:

- Products made from wood fibre will hopefully be recyclable or reusable, and can replace products that are not.

- Products made from wood fibre can result in reduced greenhouse gas emissions relative to the products they replace.
- Forest biomass is a renewable/sustainable resource, and can replace some products that are not made from renewable materials. For example, some participants particularly liked the possibility of replacing some petroleum-based plastics.
- Using all parts of trees is economically more efficient, less wasteful, and more respectful of the environment.

Participants perceived the forest bioeconomy to have the potential to boost Canada's economy and jobs through the creation of new industries. There is also a perceived potential to boost exports, as trade is important for the Canadian economy. Although as noted later, participants emphasized that Canada should be exporting finished products rather than the raw materials.

Participants were asked if they thought the use of bioenergy could lower greenhouse gas emissions and what sectors they thought it could have the most impact on lowering greenhouse gas emissions. Participants generally agreed that they expect using bioenergy would lower greenhouse gas emissions. The following sectors were thought to be most impacted:

- Transportation because the use of biodiesel would cut down on greenhouse gas emissions
- Several: The recycling industry

2.6 Concerns or questions about the forest bioeconomy and the uses of biomass to make products and to make various types of biofuels

Participants had a number of concerns or questions about the forest bioeconomy and the uses of biomass. These related to (a) the efficacy and safety of the products produced from forest biomass, and the longevity of these products; (b) the viability of the industry and the products it would produce; (c) who benefits from the forest bioeconomy and who possibly suffers from the creation of the forest bioeconomy; (d) environmental concerns; (e) cost and affordability of biomass products.

The following summarizes the questions or concerns raised by the participants:

Product efficacy, safety and longevity

- The Information provided to participants gave several examples of uses of wood fibre, including tall wood buildings where wood replaces some usage of steel or concrete, and alternatives to plastic products such as traditional plastic packaging.
- While participants liked these ideas in principle, some said they would want to know more about the performance of these types of products relative to what they are replacing. How well do they work? Are they safe? How long will they last? For example, some raised questions about tall wood buildings: How will the use of wood instead of concrete or steel in construction in 20-storey buildings hold up long-term in terms of factors like weather and infestations? Will it hold up the same way, and has testing been done on these products?

Environmental Concerns

- Some participants cautioned that it is important to ensure that the production of products made from biomass is not creating additional emissions into the air, or releasing harmful chemicals into the environment.
- For example, there were mixed views on biofuels. One participant questioned if biodiesel specifically would actually be good for the environment. On the other hand, several other participants thought this would be positive for the environment.
- One participant was concerned that emissions from transporting forest biomass might significantly offset reduced emissions in other parts of the supply chain.
- Some participants were concerned that growth of the forest bioeconomy, with its attendant greater use of forest biomass, could end up damaging or depleting Canada's forests. Essentially, they were concerned that sustainable forest practices would not keep up with demand for forest resources, and they were concerned that economic development might be given more weight than preserving the forest resources. For example, several were concerned that aggressive development for export markets could end up damaging Canada's forest resources.
- Some participants were concerned that replacing full-grown trees with seedlings that take a long time to grow to maturity could actually reduce the overall effectiveness of Canada's forests in storing carbon. That is, seedlings and small trees presumably store less carbon than full-grown trees. One participant suggested to address this by replacing each harvested tree with multiple new seedlings.
- Basically, the theme of the various participant comments is that at least some people will not automatically assume that products made from wood fibre are better for the environment, and that they would want assurance in this regard.

The viability of the industry and the products it would produce

- A few participants wondered if there is enough sustainably sourced biomass available in Canada to actually enable the viability of industries using these materials.
- Some said an export market could be an important component because the market in Canada may not be big enough to support an economically viable forest biomass industry. Several participants commented with regard to biofuels that there will be a need to get the sectors that would be using biofuels on board to use these products, including for example possibly needed conversions to vehicles.
- One participant suggested that government will need to get involved to put laws in place for the conversion for vehicles to happen and to be enforced to get people and companies to use biofuels and to lower greenhouse gas emissions.

Who benefits from the forest bioeconomy and who possibly suffers from the creation of the forest bioeconomy

- A few participants were concerned that the new forest bioeconomy might somehow leave behind workers in the traditional forestry sector. They said there should be training to ensure that these workers can participate in the new industries.

- Quite a few participants were concerned that raw forest biomass materials would be shipped overseas rather than be processed here in Canada. There were two aspects to this concern over outsourcing – the lost opportunity of creating jobs in Canada and the higher price associated with importing the products back into Canada.
- Several participants asked what impact biofuels would have on the struggling gas and oil industry.
- One participant believed that northern communities that run on 100% petroleum for their heating would greatly benefit from switching to biofuels, as long as it is affordable.

Cost and affordability of biomass products

- It was evident that many participants assumed that products made from forest biomass would cost more than the products they replace, and there were questions about just how much these products would cost. The concern was that if these products cost too much, then the general public and companies will not make the change to these products because of the higher cost.

2.7 Overall, what would you want to see happen to make sure that the forest bioeconomy makes a strong positive contribution to Canada both now and in the future

Participants emphasized that affordability of products made from forest biomass is a key consideration. Their point was that while they believe in social responsibility and want to practice it for the good of the environment and society as a whole, what it costs to buy these products is the bottom line. Unless these products are affordable, people and companies will not make this change to products produced from forest biomass.

A number of participants emphasized that the use of forest resources should not exceed the ability to renew and sustain those resources. That is, the forest bioeconomy should not have a net negative impact on Canada's forests.

Other points made by participants:

- The forest bioeconomy should create jobs.
- The industry needs to make products that are actually viable and in demand.

2.8 Do you think governments in Canada should invest in encouraging greater development of the forest bioeconomy and should Canada try to be a world leader in this area

There was general agreement that governments in Canada have an important role to play in investing in research and development, in assisting and encouraging adoption of new products, and in providing objective information to the public. Some also commented that government

involvement will also help ensure that sustainability and environmental protection standards will be followed – that is, that the public interest will be represented in the forest bioeconomy.

One participant suggested it is the role of government and beneficial to Canada as it moves to a forest bioeconomy to learn what other countries are doing with forest biomass rather than just producing lumber – for example, the Scandinavian countries. Other participants in the group agreed with this point of view.

Participants were not knowledgeable either about what is happening here in Canada in terms of the forest bioeconomy or what is happening in other countries. Nonetheless, they suggested that Canada could attempt to be a world leader. However, some participants cautioned that being a leader must also mean being a leader in the sustainable, environmentally responsible use of forest resources, and not just an “economic” leader. This would mean that Canada would also export sustainability practices and standards, as well as products.

2.9 What more would you like to know about uses of forest biomass or bioenergy to be comfortable supporting these types of uses of forest resources

Participants identified the following types of information that they would like:

- Ensure that economic development of the forest bioeconomy is accompanied by good sustainability and environmental practices, so that there is no net harm to Canada’s forest resources.
- Provide information about the status of the development and commercialization of products and the industries involved in the production of products from forest biomass and biofuels.
- Provide information about how this is affecting the traditional forest industry and job creation within the industry. Is this an industry expansion?
- Provide information about the impact of the bioeconomy on the oil and gas industry.
- Try to ensure that the new industry equitably benefits all provinces and territories. This comment was motivated by the perception that not all provinces and territories have equivalent forest resources.
- Provide assurance that this is a viable industry producing products people will buy and that creates jobs.

2.10 Consumer Interest in Products Made from Sustainably Sourced Biomass

Participants were told that some of the types of products they currently buy could potentially be made from sustainably sourced biomass. They were then asked the following questions:

As a consumer, what would be your reaction to products made using sustainably sourced biomass, for example, as an alternative to traditional plastics or other materials that use nonrenewable resources?

Do you think you would make an effort to look for these types of products, or probably not really?

Would you be willing to pay a bit more, or not really?

What would you want to see on packaging to be sure a product is made using sustainable materials and practices?

At the end of this discussion, participants were also asked for their opinions about what could manufacturers do to help create awareness about the biomass and biofuel products they produce.

As noted earlier participants are interested in products made using sustainably sourced wood fibre and would make an effort to find products of this type. Some participants are already looking for products that are made from renewable resources. However, these products must also provide value for money relative to what they are paying now.

One area of interest was alternatives for food packaging, that is the reduction or replacement of traditional plastic packaging or containers with packaging made from forest biomass. Some participants have already made lifestyle changes – not using plastic bags for groceries, bringing their own reusable containers.

Keeping in mind that this discussion about consumer products took place at the end of the groups following detailed discussion of the forest bioeconomy, some caution should be taken about what participants had to say about their willingness to pay more for products produced from forest biomass. Generally participants said they might be willing to pay a little bit more for products that are not single use products or that are single use but can be recycled, composted or re-purposed. Some participants also felt that products made from wood fibre might be longer lasting and worth paying a little bit more. However, some cautioned that the products must provide value for money: they would not pay more for a product that is significantly inferior to what they buy now just because they are made from forest biomass.

When asked what they would like to see on the packaging to be sure that a product is made using sustainable materials and practices, most participants in one session said that it would be most believable if the packaging had some sort of government seal certifying that the product met the necessary standards. Participants also mentioned the following packaging elements:

- Many wanted to have country of origin indicated on the package and some also wanted to have the province of origin of the product. The latter is because participants said they prefer to buy local products to cut down on the carbon footprint from transporting products from long distances.
- A specific simple logo, pictogram or QR code to flag that the product is made using sustainable sourced biomass materials.
- Many wanted to have a list of ingredients, that is, what is the product actually made of and specifically what chemicals it might contain.
- Many stated that the packaging had to include information about whether the product was recyclable, compostable or re-usable, as this was not evident otherwise.

In one of the groups where time permitted, participants were asked the following question:

What could manufacturers do to help create awareness about the biomass and bioenergy products they produce?

Participants made the following suggestions:

- Some participants felt that to generate awareness manufacturers would have to invest in an advertising campaign. A few however said that there would need to be a partnership between government and manufacturers to educate the public. One participant felt that government should lead on this rather than industry, as they perceived government to be a more trustworthy source of information.
- Some participants also suggested clear labeling on products to indicate when it is a biomass-based product, as product packaging is an important source of information for consumers.

2.11 Final Participant Comments on What is Important Personally

In the final part of the discussion, participants were asked *What is the most important aspect of the forest bioeconomy to you personally?*

Participants made the following points:

- Quite a few participants cited the positive impact on the environment both because of sustainable forestry practices and the expectation that the products produced from forest biomass would be recyclable, compostable or re-usable.
- Some wanted to have assurance that indigenous communities would be involved in consultations about the forest bioeconomy and in benefitting from this new use of forest biomass.
- Some again mentioned the importance of the affordability of products made from biomass.
- Some said it was important that the forestry industry is producing products that consumers want, contributing to economic growth and doing so in an ethical manner. Also they wanted to ensure the industry is working in partnership with other sectors (for example, the oil and gas industry) to benefit all Canadians.
- A few wanted assurance that there is limited if any export of raw materials and that processing and manufacturing of products would not be outsourced to other countries.

Appendix A – Methodology

Number, Location and Composition of Focus Groups

Two two-hour focus groups were conducted November 14 and 18, 2020. There were seven participants in each focus group.

- One English-language focus group with participants from B.C. (4 participants), Northwest Territories (1), Saskatchewan (1) and Newfoundland (1).
- One French-language focus group with participants from Quebec (3), Manitoba (2), Ontario (1) and New Brunswick (1).

Qualified Participants

The qualified participants for these groups were members of the general public 18 years of age and older. Within each group there was mix of men and women (6 men; 8 women), a mix on age (10 18-44 years of age; 4 45 years of age and over), and a mix on community size (large city/suburb of a large city -- 9 participants versus small/medium city/town/village/rural area – 5 participants).

The following exclusions were applied:

- Neither they nor anyone in their immediate family or household work in any of the following: Government of Canada, a government department or agency responsible for forestry or economic development, a company involved in the forestry or energy industry, a lobby group or nonprofit organization involved in forestry, a firm that does advertising, public relations, marketing research, or media (radio, television, print, film/video production).
- Not attended a qualitative session in the past six months, nor attended five or more qualitative sessions in the past five years, and never involved in a discussion related to forestry or alternative sources of energy.

Study Procedure

Recruiting process: Recruiting was by telephone. The recruiting for the English-language group was done by Synchro Research. Recruiting for the French-language group was done by Ad hoc Research. The sample source was Synchro's and Ad hoc's opt-in databases of people who have indicated an interest and willingness to be contacted for possible inclusion in a research study.

Online Methodology: The online groups were conducted using the itracks *Video Chat* platform, with participants using webcams. Prior to the session, each participant underwent a tech check with itracks to ensure that participants could log in to the group discussion without experiencing any audio or video issues.

Participant Honoraria

The honorarium for all participants was \$100.

Moderators

Anita Pollak conducted the English-language session, and Nadia Papineau-Couture conducted the French-language session.

Appendix B – Screening Questionnaire

SPECIFICATIONS

Q.1. Region

English-language Session

		Quota (12 recruits)
<input type="radio"/>	British Columbia	4
<input type="radio"/>	Newfoundland & Labrador	2
<input type="radio"/>	Nova Scotia	2
<input type="radio"/>	Saskatchewan	2
<input type="radio"/>	Yukon/Northwest Territories	2

French-language Session

		Quota (11 recruits)
<input type="radio"/>	Quebec	5
<input type="radio"/>	Manitoba	2
<input type="radio"/>	New Brunswick	2
<input type="radio"/>	Ontario	2

Q.2. Gender

		Quota (11/12 recruits)
<input type="radio"/>	Female	At least 4
<input type="radio"/>	Male	At least 4

Q.3. Age

		Quota (11/12 recruits)
<input type="radio"/>	18-44	At least 4
<input type="radio"/>	45 and over	At least 4

Hello/Bonjour, I'm _____ of [name of recruiting company], a public opinion and marketing research company. First off, let me assure you that we are not trying to sell you anything. We are organizing a research project on behalf of the Government of Canada that is not political in nature.

Would you prefer that I continue in English or in French? Préférez-vous continuer en français ou en anglais? [If prefers French, either switch to the French screener and continue, or say the following and then hang up and arrange French-language call-back] Nous vous rappellerons pour mener cette entrevue de recherche en français. Merci. Au revoir.

The research project is specifically for Natural Resources Canada. The purpose of the research is to get opinions of Canadians about the use of forest resources in Canada. In this project, an individual like yourself is chosen along with several others to give your opinions in a two-hour session. The session will be held online and people who are invited and take part in the discussion will receive a cash payment honorarium as thanks for their time.

May I continue?

- Yes 1
- No 2 **Thank and end interview**

[For the French-language group recruited from Ontario, Manitoba, New Brunswick, Quebec: If prefers to continue in English, ask:] The discussion will be held entirely in French, and participants may be asked to review and discuss materials written only in French. Would you be comfortable with this?

- Yes 1
- No 2 **Thank and end interview**

[For the English-language group recruited from BC, Yukon/Northwest Territories, Saskatchewan, Nova Scotia, Newfoundland/Labrador : If prefers to continue in French, ask:] La discussion se déroulera entièrement en anglais et nous demanderons aux participants de passer en revue du matériel en anglais seulement puis d'en discuter. Seriez-vous à l'aise avec cela?

- Oui 1
- Non 2 **Remerciez et terminez l'entrevue**

Your participation in the research is voluntary and confidential. All information collected, used and/or disclosed will be used for research purposes only and administered per the requirements of the *Privacy Act*. The full names of participants will not be provided to the government. Your decision to participate or not will not affect any dealings you may have with the Government of Canada.

May I continue?

- Yes 1
- No 2 **Thank and end interview**

I need to ask you a few questions to see if you fit the profile of the type of people we are looking for in this research. This will take about 5 minutes.

Note to recruiter: When terminating a call because of their profile say: *Thank you for your cooperation. We already have enough participants who have a similar profile to yours, so we are unable to invite you to participate at this time.*

- 1) First of all, are you, or anyone in your household or immediate family, employed in... ? **(Read list)**

	<u>No</u>	<u>Yes</u>	
A marketing research firm or public relations company	()	()	
An advertising agency, web or graphic design firm	()	()	
A magazine or newspaper, radio or television station	()	()	
The Government of Canada	()	()	If “yes” to any, thank and terminate
The provincial or local government responsible for forestry, energy or economic development	()	()	
The forestry industry	()	()	
The energy industry	()	()	
A nonprofit organization or lobby group involved in forestry, energy or environmental issues	()	()	

- 2) We would like to talk to people in different age groups. Into which **one** of the following groups should I place you? **(Read list)**

Under 18	A	Watch quotas
18-30	1	
31-44	2	
45-54	3	
55-64	4	
65 and over	5	

- 3) Please tell me the last level of education you completed. **(Do not read list)**

Some/completed high school	1	Recruit Mix
Trade school certificate	2	
Some/completed post-secondary	3	
Graduate degree	4	

- 4) In what type of area do you live? Is it a... ? **(Read list)**

1	Large city	Recruit Mix
2	The suburbs next to a large city	
3	A small or medium size city that is not right next to a large city	
4	A town, village or rural area	

5) Including yourself, how many people 18 years of age and over are there in your household?
(Do not read)

- 1 One **Ask Q.6a**
- 2 Two or more **Ask Q.6b**

6a) **[Ask if “One” at Q.5]** Which **one** of the following categories best corresponds to your total personal annual income for 2019, before taxes? **(Read list)**

1	Under \$20,000	Lower
2	\$20,000 to just under \$60,000	
3	\$60,000 to just under \$100,000	Higher
4	Over \$100,000	
5	REFUSED/DK	Recruit maximum of 1

6b) **[Ask if “Two or more” at Q.5]** Which **one** of the following categories best corresponds to the total annual income of all members of your household, for 2019, before taxes? **(Read list)**

1	Under \$20,000	Lower
2	\$20,000 to just under \$60,000	
3	\$60,000 to just under \$100,000	
4	\$100,000 to \$150,000	Higher
5	Over \$150,000	
6	REFUSED/DK	Recruit maximum of 1

7) Participants in group discussions are asked to voice their opinions and thoughts. How comfortable would you say you are voicing your opinion in front of other people? **(Read list)**

1	Very comfortable	
2	Fairly comfortable	
3	Not very comfortable	Thank and end interview

8) Have you ever participated in an in-depth research interview or a discussion group involving a small group of people where people were asked to discuss different topics?

- Yes 1
- No 2 **Go to Q.10**

9a) What topics have you ever discussed?

(If related to forestry ,natural resources or the environment, thank and end interview)

9b) And when was the last time you attended an in-depth interview or group discussion?

6 months ago or less 1 **Thank and end interview**

OR more than 6 months ago 2

9c) In the past 5 years, how many in-depth research interviews or group discussions have you attended? Would you say less than 5 in total, or would you say 5 or more?

Less than 5 1

5 or more 2 **Thank and end interview**

10) The discussion group will require you to go online using a desktop or laptop computer. **For this project, you will not be able to use a tablet or mobile phone.**

You will need internet access, preferably high speed, in a private and quiet location.

You will need a webcam, either one that is built in to your computer or a stand-alone webcam. For the audio, you will be provided with a toll-free phone number to call in while using your computer. It would be good if you can use your phone hands-free as a speakerphone, or to use your phone with a head set.

Will you be able to have access to a desktop or laptop computer for the group discussion?

Yes 1

No 2 **Thank and end interview**

Will you be able to have access the internet for two hours to take part in the session?

Yes 1

No 2 **Thank and end interview**

Are there any other reasons, such as difficulty seeing things on the screen or hearing other participants speak that may prevent you from being able to fully participate in the group discussion?

Yes 1

No 2

Terminate if person gives a reason such as sight, hearing, or related to reading/writing ability.

Let me tell you some more about this study to see if you would like to take part.

11a) There may be some people from Natural Resources Canada who have been involved in this project who will observe the session. However, they will not take part in the discussion in any way, and they will not be given your full name. Is this acceptable to you?

Yes 1

No 2 **Thank and end the interview**

11b) The session will be video-recorded. These recordings are used by the research firm to help with analyzing the findings and writing the report. The recordings are not given to Natural Resources Canada. Your name will not appear in the research report. Is this acceptable to you?

- Yes 1
- No 2 **Thank and end the interview**

Invitation

Thank you. We would like to invite you to participate in the 2-hour group discussion. The session will take place on [DATE] at [TIME] EST. After the discussion you will be paid a \$100 honorarium to thank you for your participation.

For the group discussion we will be using an online software company called itracks (pronounced eye-tracks). Prior to the group discussion, you will be called by a technical support person from itracks. The technical support person will check that you are comfortable with how to log in to the online research site. This technical check will take 5 minutes.

The person leading the discussion will be Anita Pollak/Nadia Papineau-Couture of Sage Research, which is a public opinion research company.

As I mentioned earlier, this is a research project being done on behalf of Natural Resources Canada.

I want to reassure you that your name will not be given to them, nor will your decision about participating affect any dealings you have with the Government of Canada.

Would you be willing to participate in this study?

- Yes 1
- No 2 **Thank and end interview**

Schedule tech-check

Scheduling constraints: Tech check should be 4 or more days after the final recruiting interview.

We will email you instructions on how to log in to the online group discussion.

We are only inviting a small number of people to participate in the group and even with one person missing, the overall success of the group may be affected. Because of this, please make every effort to attend the group.

But, in the event you are unable to attend for any reason, let us know as soon as possible so we can find a replacement.

You can email us, or you can call us at **[Insert recruiting company phone #]** and ask for **[Insert recruiting company contact name]**.

Please also log-in 10 minutes prior to the starting time. **The discussion will begin promptly at [Time]**

People who arrive too late to participate in the group discussion will not receive the honorarium.

Thank you for agreeing to help out with this research project! Someone from our office will be calling you back to confirm these arrangements. May I please have your contact information where we can reach you during the evening and during the day.

Name: _____

Evening phone: _____ **Day time phone:** _____

Email address: _____

Thank you very much!

Recruited by: _____

Confirmed by: _____

Note to recruiter: Should a participant require validation that this is a legitimate research project, please refer them to the following person at Natural Resources Canada: **[Insert contact information]**

Appendix C – Discussion Guide

1) Introduction (15 minutes)

- a) **Introduce self** (Anita Pollak/Nadia Papineau-Couture of Sage Research, an independent market research company). This is a research project we're doing on behalf of the Government of Canada, and specifically for Natural Resources Canada.

The purpose of the research is to get opinions of Canadians about the use of forest resources in Canada.

The people we're talking to in this project are the general public, and we definitely do not expect any of you to be experts on the forest industry. But the forest industry is a sector of the economy in Canada, and I'm interested in whatever perceptions and opinions you might have related to the industry.

I'll start the discussion with any general thoughts you have about the forest industry, and after that I'll get into some more specific topics.

In this project we're only talking to a small number of people. The results of this research will be used to help in designing a survey to get a more comprehensive picture of Canadians' views about the forestry industry. This research will help in deciding what types of questions need to be included in that survey.

b) **Review group discussion procedures:**

- Role of moderator
- Role of participants: there are no right or wrong answers; just want everyone to participate and offer your own views; not here to get a consensus but it is of great value to the research to know each of your candid views
- Confidentiality: Participation is voluntary. Your name will not appear in the report; the report will be available through Library and Archives Canada
- Recording: The session is being video-recorded. The recording is for my use only to help in preparing the report on this research, and will not be provided to Natural Resources Canada
- Presence of observers from Natural Resources Canada – they are not given your full name; they are here to observe the moderator and to increase their general understanding of the topics we are discussing tonight; they will not be participating in our discussion
- Discussion to last 2 hours

c) **Any questions?**

- d) **Participant self-introductions:** First name only, what province or territory you live in

2) Canadian forest industry (15 minutes)

When you think of the Canadian forest industry, what comes to mind? What impressions do you have of the role and importance of the forest industry in Canada?

- Probes:** Importance in terms of number of jobs
Importance to rural communities
Importance to indigenous communities

3) Sustainable forest practices (15 minutes)

One aspect of the forest industry is sustainable forest practices. The purpose of sustainable forest practices is to ensure that Canada's forests are maintained and are healthy, while at the same time contributing to the economy.

Canada conserves and protects its forest through laws and science-based sustainable forest management practices. Overall, do you have an impression of how well Canada is doing in terms of sustainable forest practices relative to other countries?

- Probes:** Do you think Canada is a leader in sustainable forest practices, or not really? Or are you not sure?

Here's some information for you about sustainable forest practices in Canada. Canada harvests less than 1% of its forests each year, and as a result of forest management requirements more than 500 million tree seedlings are planted each year. Does any of this information surprise you? If so, in what ways?

Here's some more information. There are several third-party independent organizations that certify whether or not a particular forest is being sustainably managed. It turns out that Canada has the largest area of third-party-certified forests in the world, that is, the largest area of sustainably managed forests in the world. What's your reaction to this?

4) "Forest bioeconomy (7 minutes)

A phrase sometimes used by people in the forest industry is quote, "forest bioeconomy", unquote. Forest Bioeconomy. This phrase is not often used outside the industry, but I'm curious – has anyone heard or seen this specific phrase before, that is, "forest bioeconomy"?

- IF YES:** In what context did you see or hear it?

5) Present information about the forest bioeconomy (8 minutes)

I want to give you some information about what the forest bioeconomy is, and then ask you some questions about what you think of its potential role and importance in Canada. The information is pretty detailed, so I'm going to put it on screen and also read it out loud. Once I've done that, I'll take it off the screen and we can talk about it. I'll ask you what, if anything, you think is good about the forest bioeconomy, what, if any, concerns you have, and what more you might want to know.

Present three whiteboards (definition; sources; forest biomass uses)

6) Questions about the forest bioeconomy (35 minutes)

- a) I've given you a description of what the forest bioeconomy is, a description of the various sources of forest biomass that can be used in the forest bioeconomy, and several examples of things that can be made using forest biomass. I want to ask you what you think is good about this, and what if any concerns you have.

To start off, what do you think are good things about the forest bioeconomy and the uses of forest biomass to make products and to make various types of biofuels?

Probes: Do you think the use of bioenergy could significantly help lower greenhouse gas emissions? If so, in what sectors do you think it could have the most impact on lowering greenhouse gas emissions?

- b) What if any concerns do you have about the forest bioeconomy and the use of forest biomass to make products and various types of biofuels?
- c) Overall, what do you want to see happen to make sure that the forest bioeconomy makes a strong positive contribution to Canada both now and in the future?

Probes: Do you think governments in Canada should invest in encouraging greater development of the forest bioeconomy?

Do you think this is an area where Canada should try to be a world leader?

What more, if anything, would you like to know about uses of forest biomass or bioenergy to be comfortable supporting these types of uses of forest resources?

7) Consumer demand (15 minutes)

As a consumer, some of the types of products you currently buy could potentially be made from sustainably sourced biomass. As a consumer, what would be your reaction to products made using sustainably sourced biomass, for example, as an alternative to traditional plastics or other materials that use nonrenewable resources?

Probes: Do you think you would make an effort to look for these types of products, or probably not really?

Would you be willing to pay a bit more, or not really?

What would you want to see on packaging to be sure a product is made using sustainable materials and practices?

[Time permitting] What could manufacturers do to help create awareness about the biomass and bioenergy products they produce?

8) Conclusion (10 minutes)

To wrap up, what is the most important aspect of the forest bioeconomy to you personally?

Forest Bioeconomy Whiteboards

Whiteboard #1

In a **bioeconomy**, renewable biological resources are used to make products with improved environmental qualities that can replace non-renewable products.

The result is reduced waste and pollution.

In the **forest bioeconomy**, forest biomass is used to produce advanced wood products, biochemicals and biofuels.

Whiteboard #2

What is biomass material that is used to make things in the forest bioeconomy? Where does this material come from?

Forest biomass is renewable organic material which includes all parts of the tree, that is not only the main part of the tree but also the bark, the branches, the needles or leaves and even the roots of trees.

Sources of forest biomass for use in the forest bioeconomy include:

- Trees harvested using sustainable forest management practices
- Material left over from logging, including the tops & branches removed following the harvesting of trees
- By-products from forest product processing facilities such as sawmills – for example, woodchips, sawdust, and bark
- Biomass plantations where trees are grown specifically for the purpose of using them as biomass – for example, plantations of fast-growing willow or poplar trees
- Trees and branches removed as part of forest management activities that promote forest health and tree growth, and reduce forest fire risk
- Trees damaged by natural disturbances such as fire, insects or disease
- Construction and demolition waste that might otherwise be sent to a landfill or disposed of by burning

Whiteboard #3

In the forest bioeconomy, wood fibre can be used in many ways:

Some examples of uses of wood fibre

- tall wood buildings of 6-20 storeys: this reduces or replaces products that have a significant environmental footprint like steel and concrete
- sustainable alternatives to plastic products such as traditional plastic packaging or single use plastic utensils
- liquid biofuels such as biodiesel, a fuel substitute used in diesel engines that can reduce greenhouse gas emissions by up to 80%