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Prepared By: Alexandra Watters

Approved By: Mary Ellen Smith

Report Highlights:

FAS/Canada forecasts Canada's wood pellet production to decline by six percent in 2023 as a result of closure of pellet mills, reductions in allowable cut, and a high activity wildfire season. Exports of wood pellets are forecast to decline 14 percent as a result of reduced production and diminished demand from South Korea and the UK for Canadian wood pellets. Canada is forecast to increase imports on a slight growth in domestic demand.

I. Executive Summary

Canada released the final Clean Fuel Regulations (CFR) in July of 2022 which focuses exclusively on liquid fuels. Solid fuels, such as wood pellets, are not included in the Regulations at this time. While Canada has additional policies which consider solid biomass as part of the climate and sustainability landscape, industry feels that possible future iterations of the CFR should include fuel types beyond just liquid fuels. Increased federal incentives towards solid biomass as part of the climate and sustainability discussion could help to support industry expansion.

Canada's wood pellet market continues to be export-oriented. Closure of pellet mills and reductions in harvest are forecast to negatively impact production in 2023. Consequently, FAS/Canada is forecasting a reduction in export volumes.

Large-scale commercial wood pellet use for heat and energy is limited in Canada with smaller-scale industrial and residential use supporting demand. While there remains significant potential for growth in domestic consumption, growth has been slow and government policy has been lacking to provide a stimulus for conversion to wood pellets for heat and energy projects. While FAS/Canada is forecasting a 45 percent growth in wood pellet imports to Canada for 2023, this volume will continue to remain very small relative to Canada's production and exports.

II. Policy and Programs

Clean Fuel Regulations

In December 2020 the Government of Canada published the proposed [Clean Fuel Standard \(CFS\)](#) with the goal to reduce greenhouse gas (GHG) emissions. While gaseous and solid fuels were included in the original 2016 discussions on developing a standard, the 2020 proposal focused solely on liquid fuels. The wood pellet industry has previously indicated that they feel that the proposed CFS is lacking policy to promote the adoption of lower emission solid fuels. The final regulations were published in July 2022 as the [Clean Fuel Regulations](#) and only addresses liquid fuels at this time.

Net Zero Accelerator Initiative

The [Net Zero Accelerator Initiative](#) provides up to CAD 8 billion to support Canada's targets to reduce GHG emissions by 40-45 percent by 2030 and to reach net zero by 2050. The program contains three investment pillars: 1) Decarbonization of large emitters, 2) Industrial transformation, and 3) Clean technology and battery ecosystem development. While not explicitly aimed at the wood pellet industry, projects involving biomass for heat and energy could be eligible under the program if they fall within the three pillars and meaningfully provide for GHG reductions.

Quebec Green Hydrogen and Bioenergy Strategy

Quebec's [Green Hydrogen and Bioenergy Strategy](#) focuses on reducing GHG emissions. Under the bioenergy portion of the strategy, Quebec notes potential for biomass, including wood pellets, as a heat

and energy source to contribute to reductions targets. Depending on evolution of the strategy, this could see increased support for the use of wood pellets in heat and energy within the province over the coming decades.

Ontario Forest Biomass Action Plan

In March 2022, the Government of Ontario released its [Forest Biomass Action Plan](#). The plan notes that forest biomass is mainly used for heat and energy in the province but highlights that diversification of end uses should be a target. The plan continues to highlight supporting demand for forest bioenergy and bioproducts as an objective but it is not clear if this would support growth in use of wood pellets or for novel bioenergy production from forest biomass. The plan does call for the development of a provincial bioheat strategy to increase production and consumption of biofuels for heat.

In May 2023, the Government of Ontario announced almost CAD 20 million in funding for the [Forest Biomass Program](#). The program will provide funding to projects harvesting wood from Crown forests and utilizing forest biomass across a multitude of sectors including energy and manufacturing. Applications closed at the end of September 2023 for the 2023 intake period.

New Brunswick Crown Lands Harvest Forest Biomass Policy

For Crown lands within the province of New Brunswick, forest biomass is defined as residual tree tops, branches, foliage, non-merchantable wood stems of trees and shrubs, pre-existing dead woody material, and flail chipping residue. Full-tree chipping is not considered as eligible biomass. Licensees operating on Crown lands are required to adhere to the provincial [policy](#).

British Columbia Allowable Annual Cut (ACC) and Residual Fibre Utilization Policy

A minimum of once per decade, the chief forester in the province of British Columbia determines the [allowable annual cut \(ACC\)](#). The ACC is determined by timber supply area and tree farm licence and may also have specifications by timber type and terrain within the management unit.

In an effort to better utilize residual waste and to mitigate fire risk, British Columbia implemented a [Residual Fibre Utilization Policy](#). The target is to promote business-to-business relationships which will see primary harvesters and secondary users (such as pulp mills, pellet plants, bioenergy facilities, etc.) coordinate to better utilize the residual fiber remaining after primary harvest. The policy also accounts for the need for some residual waste to remain in order to support biodiversity.

Phasing Out Coal by 2030 in New Brunswick

In October 2023, the Government of Canada announced over CAD 2 million in funding to explore converting the Belledune coal-fired plant, in New Brunswick, to sustainably sourced biomass. A conversion study must first be conducted to determine if the plant can be converted to biofuel. The plant will not be permitted to burn coal as of 2030. If converted to biomass, an estimated 700,000 MT of

wood pellets per annum would be required. The plant currently has a capacity of 467 MW. Belledune is the second largest fossil fuel powered generating station in the province.

Strategic Innovation Fund

In [Budget 2023](#), the Government of Canada announced CAD 500 million over 10 years to the [Strategic Innovation Fund](#). This funding would be earmarked for projects supporting development and application of clean technologies in Canada. Biomass projects could potentially be eligible for program funding.

Sustainability

In September 2022, the Wood Pellet Association of Canada released the results of a study completed by forestry academics and Registered Professional Foresters evaluating the sustainability of the BC wood pellet industry. Key findings of the study were that 85 percent of the fiber sourced by wood pellet mills is from by-products of sawmills and associated industries, 11 percent from low quality logs with no other cost-effective outlet, and 4 percent bush grind (e.g. branches, log trim ends, foliage, and bio-logs, those which do not meet the quality specifications of the higher-value forest product producers). The majority of Canadian wood pellet mills are third-party certified under the [Sustainable Biomass Program](#). The majority of forestry activity in Canada occurs on Crown lands, predominantly provincial/territorial, and is subject to provincial/territorial legislation that also encompasses the federal [legislation](#) applicable to federal Crown land forests and international agreements where Canada is a participant. Forestry activity does occur on a more limited basis on privately owned land across the country where municipal regulations typically govern activity. Depending on the province/territory, provincial/territorial governments may also have over-arching legislation applying to forest management practices on private lands within their jurisdictions.

Certification

Voluntary standards for grading of wood pellets are maintained by the [Canadian Standards Association](#) under CAN/CSA-ISO 17225 Part 2 Standard. Residential use wood pellets in Canada can be certified under a third party verification program, [CANplus](#), with the Wood Pellet Association of Canada as the owner of the trademark as a national licensor under ENplus. CANplus follows the ENplus standards.

III. Market

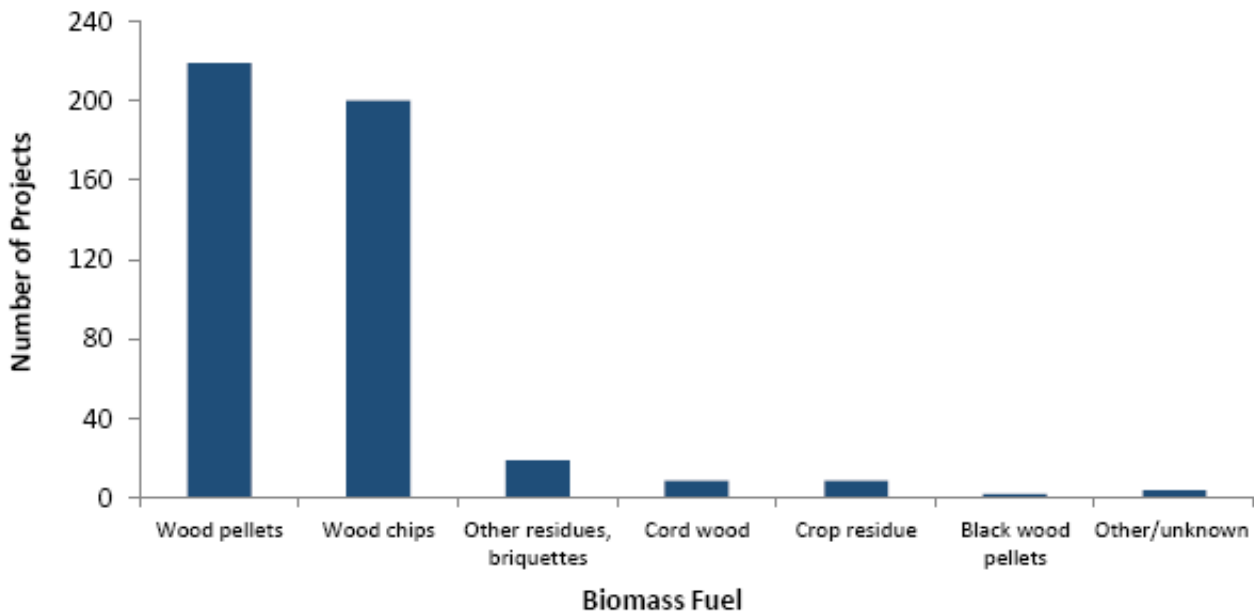
The Canadian wood pellet industry is export-oriented with production capacity currently exceeding domestic demand. Commercial use of wood pellets for energy and heat production remains limited in Canada. Solid biomass is currently not included in Canada's [Clean Fuel Regulations](#). While gaseous and solid fuels were included in the original 2016 discussions on developing a standard, the final regulations focus entirely on liquid fuels at this time. The solid biomass industry in Canada is hopeful that future climate-focused regulations around heat and energy will include the sector, particularly, industry feels

there is potential to reducing greenhouse gas emissions should Canada’s remaining coal-fired power plants undergo the conversion to being powered by wood pellets.

Currently, coal-fired plants remain in operation in Alberta, Saskatchewan, New Brunswick, and Nova Scotia. These will be shut down at end of life or retrofitted with carbon capture and storage technology to meet federal emissions requirements. However, whether these plants convert to other power sources, are fitted with carbon capture and storage, or simply shut down will be dependent on the evolution of policy as those plants approach end of life. Per Canada Energy Regulator, Alberta has signalled that coal plants will be converted to natural gas, Saskatchewan has retrofitted one plant with carbon capture and storage technology while other plants will be converted to run on renewables, and New Brunswick and Nova Scotia have indicated they will focus on hydro power and wind power as coal is phased out.

Across Canada, Canada Energy Regulator and Natural Resources Canada estimate that only 1.4 percent of electricity generation comes from an aggregate category of biomass/geothermal. Separately, Natural Resources Canada notes that the contribution of forest biomass to Canada’s energy supply is an estimated five to six percent. The largest wood pellet power generating plant in North America is located in Ontario and uses an estimated 100,000MT of wood pellets per year to generate 140 GWh of power for the Ontario grid. The plant was a former coal burning plant retrofitted to burn wood pellets. The plant’s contract with the province’s electricity operator is due to expire in 2024. The Province of Ontario announced a *Forest Biomass Action Plan* in March of 2022 part of which focuses on biomass for heat and energy. Although this plan doesn’t specific mention growth of wood pellet production and use of wood pellets for heat and energy, it does highlight bioheat projects utilizing wood pellets and indicates support for continuation of current biomass installations connected to the Ontario grid.

Figure 1. Canadian biomass heat projects by fuel type.



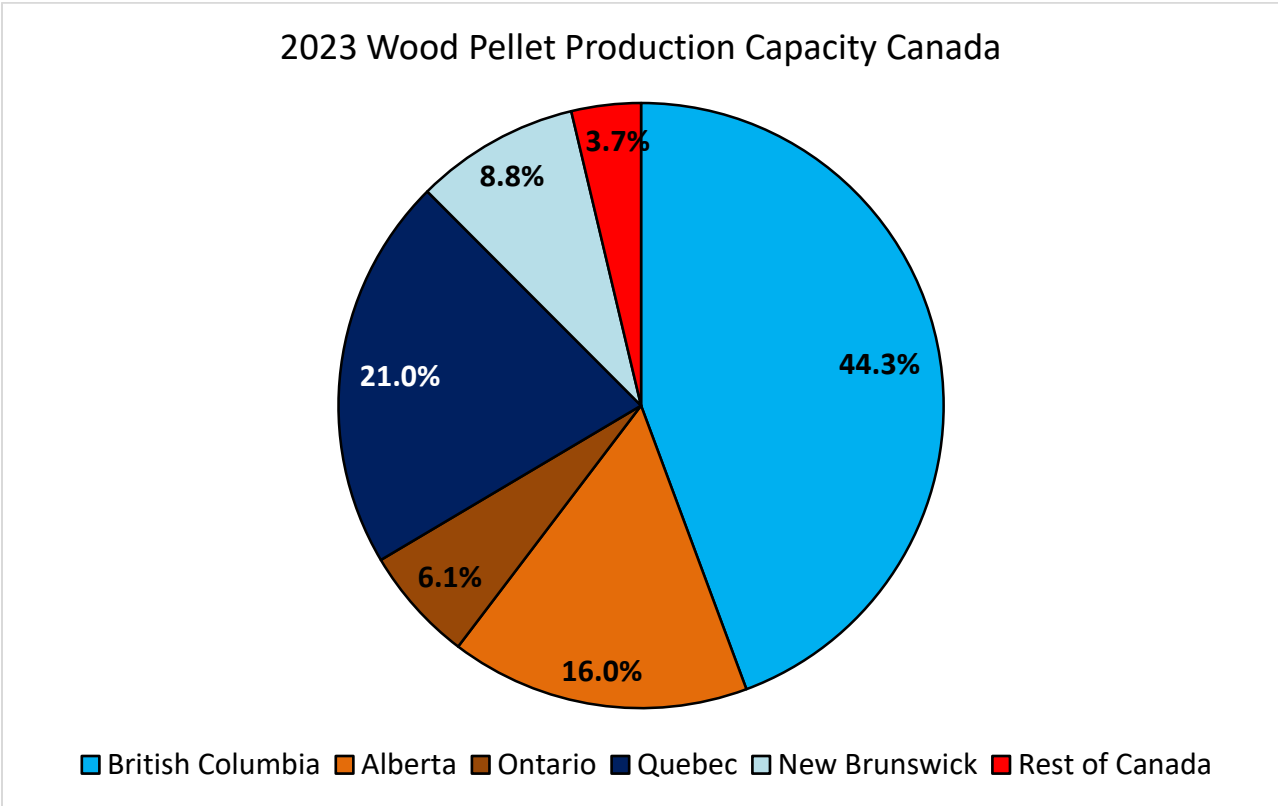
Source: Natural Resources Canada, Bioheat Survey Report 2020

The 2020 bioheat survey contracted by Natural Resources Canada noted that wood pellets are the dominant feedstock of solid fuel bioheat installations in Canada. Wood pellet use is noted as being most prevalent in New Brunswick, Ontario, and the Northwest Territories. Use of wood pellets is more common in Eastern Canada and on the west coast in British Columbia. These geographic locations also correlating to proximity to forested regions as well as major population areas. Of the 462 bioheat projects recorded in the survey, over 80 percent were classed as small or very small (<1 MW). The latest iteration showed growth of 61 new projects since the last data collection in 2018. The report notes that the new additions are all heat only and that heat and power installations have not been well established in Canada at this time owing to challenges in reaching agreements with provincial utility operators. The utility infrastructure in Canada is often described as fractured and energy flows tend to travel north-south between Canada and the United States as opposed to east-west/west-east, interprovincially, within Canada.

Canadian pellet mills in operation for 2023 are reduced from 47 plants in operation in 2022 to 45 plants in operation in 2023 per the Canadian Biomass Magazine. A 25,000 MT plant in Ontario and 100,000 MT plant in British Columbia are no longer listed. A new plant in Quebec is expected to bring up to 100,000 MT of additional production in 2023. While an 82,000 MT plant in British Columbia was reportedly idled February to June. The plant re-opened but the company is reportedly in receivership.

The majority of pellet mills are located in British Columbia and Quebec while British Columbia has almost 45 percent of Canada's production capacity; over double the capacity of Quebec, the second largest producing province. Reductions in the annual allowable cut (ACC) in British Columbia could negatively impact pellet production in the coming years although pellet production could also benefit depending on how harvest related management practices are used to combat mountain pine beetle infestations in the province. The ACC for each timber supply area (TSA) is generally determined every 10 years. In April 2023, a review of the ACC for the Soo TSA, resulted in a postponement with the ACC remaining as is. A new ACC is to be established by May 2026. In May 2023, the new ACC for the Mackenzie TSA was announced with a 46.9 percent reduction below the current AAC; estimated at a 19.5 percent reduction below the base case harvest projection. In October 2023, the Government of British Columbia announced a new ACC for the Lillooet TSA that is a 34 percent reduction compared to the previous and a 47 percent reduction for live tree harvest. As pellet mills take byproduct of the forestry industry, reductions in ACC are likely to have downstream impacts in reducing feedstock availability for pellet mills.

Figure 2. Canadian wood pellet production capacity, 2023.



Source: Canadian Biomass Magazine, Pellet Map 2023

Table 1. Production, Supply, and Disposition of Wood Pellets in Canada.

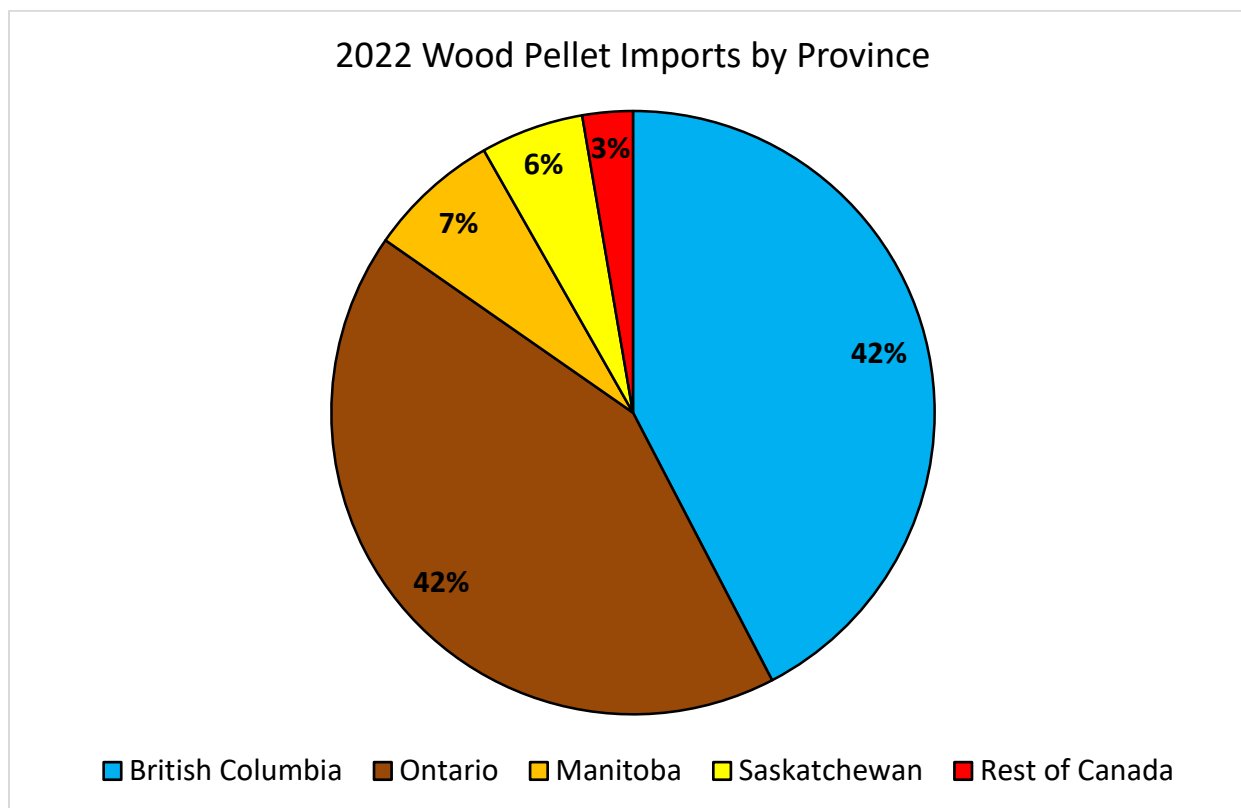
Wood Pellets (1,000 MT)										
Calendar Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023f
Beginning Stocks	87	129	161	129	393	548	760	758	634	222
Production	1,900	1,900	2,600	2,700	3,100	3,220	3,300	3,500	3,650	3,450
Imports	30	30	20	20	20	26	29	29	31	45
Exports	1,638	1,628	2,373	2,172	2,651	2,634	2,901	3,153	3,493	3,000
Consumption	250	270	279	284	314	400	430	500	600	617
Ending Stocks	129	161	129	393	548	760	758	634	222	100
Production Capacity										
Number of Plants	41	41	39	42	42	45	45	46	47	45
Nameplate Capacity	3,175	3,282	3,681	4,282	4,282	4,657	4,657	4,856	5,054	4,720
Capacity Use (%)	59.8%	57.9%	70.6%	63.1%	72.4%	69.1%	70.9%	72.1%	72.2%	73.1%

Source: Production and consumption data is derived from FAS/Canada and industry estimates. Trade data is sourced from Trade Data Monitor, LLC.

FAS/Canada is forecasting 2023 wood pellet production to fall six percent. Two pellet plants have reported closed and a third has had production disruption. Reductions in harvest capacity and a harsh wildfire season are also factors. Despite this gains in domestic demand and exports are forecast to see remaining pellet operations improve their capacity use.

Uptake of wood pellets as a fuel source for heat and electricity continues to slowly expand in Canada. Propositions to convert coal-fired plants to pellets continue to hold potential to expand domestic consumption. Federal support for wood pellets in Canada's sustainability and GHG reductions policies is largely lacking but exploration of wood biomass as a renewable fuel source continues. Some provincial governments appear to be more engaged on exploring and developing policy around wood biomass as part of their renewable fuels and climate initiatives.

Figure 3. Canadian imports of wood pellets by province.



Source: Trade Data Monitor, LLC

FAS/Canada forecasts a 45 percent growth in wood pellet imports in 2023 to meet expanded consumer and institutional demand. Import volumes remain small despite this significant growth percentage-wise. Industry indicates that imports of wood pellets are typically consumer bagged for the residential heating market. The United States will continue to be the dominant supplier due to geographic proximity.

Table 2. Canadian imports of wood pellets.

Canada: Imports of wood pellets (MT)											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
World	44,545	22,615	30,108	29,938	20,257	19,612	19,938	25,462	28,536	29,267	30,626
United States	44,518	21,510	22,718	20,934	11,383	16,577	17,623	25,233	28,185	28,560	29,650
<i>Market share:</i>	<i>100%</i>	<i>95%</i>	<i>75%</i>	<i>70%</i>	<i>56%</i>	<i>85%</i>	<i>88%</i>	<i>99%</i>	<i>99%</i>	<i>98%</i>	<i>97%</i>
China	3	15	6	17	11	26	231	158	201	244	133
Germany	0	89	12	23	28	46	75	64	133	417	785
Norway	0	917	7,362	8,946	8,831	2,950	2,003	0	0	0	0
All other countries	24	84	10	18	4	13	6	7	17	46	58

Source: Trade Data Monitor, LLC

IV. Competitor

The Canadian wood pellet industry is export-oriented and despite forecast reductions to production, production and production capacity still currently exceed domestic demand. Japan and the United Kingdom are Canada's largest export markets, comprising over 50 percent of export volumes.

Table 3. Canadian exports of wood pellets.

Canada: Exports of wood pellets (MT)											
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
World	1,369,181	1,640,347	1,637,589	1,627,784	2,373,110	2,171,528	2,651,441	2,634,241	2,900,687	3,153,192	3,492,510
United States	86,665	152,271	218,903	205,743	169,930	210,069	217,166	210,536	204,591	195,002	194,096
United Kingdom	794,379	1,026,527	982,809	1,205,928	1,664,145	1,489,578	1,577,562	1,656,401	1,456,317	1,259,468	1,101,606
Japan	105,640	76,018	61,807	80,203	272,376	245,179	621,928	560,817	611,245	1,090,635	1,401,495
Netherlands	253,481	0	0	0	0	0	57,250	15,650	398,859	179,998	76,664
Denmark	11,464	13,635	17,197	0	0	0	38,859	59,213	90,930	76,500	114,142
Belgium	5,800	132	306	0	144,000	126,758	40,604	72,480	57,096	34,250	4,063
South Korea	2,084	113,077	150,004	49,029	48,915	55,483	40,657	11,804	48,553	253,887	425,693
All other countries	109,668	258,687	206,563	86,881	73,744	44,461	57,415	47,340	33,096	63,452	174,751
Market Share:											
United States	6%	9%	13%	13%	7%	10%	8%	8%	7%	7%	7%
United Kingdom	58%	63%	60%	74%	70%	69%	59%	63%	50%	43%	38%
Japan	8%	5%	4%	5%	11%	11%	23%	21%	21%	38%	48%
Netherlands	19%	0%	0%	0%	0%	0%	2%	1%	14%	6%	3%
Denmark	1%	1%	1%	0%	0%	0%	1%	2%	3%	3%	4%
Belgium	0%	0%	0%	0%	6%	6%	2%	3%	2%	1%	0%
South Korea	0%	7%	9%	3%	2%	3%	2%	0%	2%	9%	15%
All other countries	8%	16%	13%	5%	3%	2%	2%	2%	1%	2%	6%

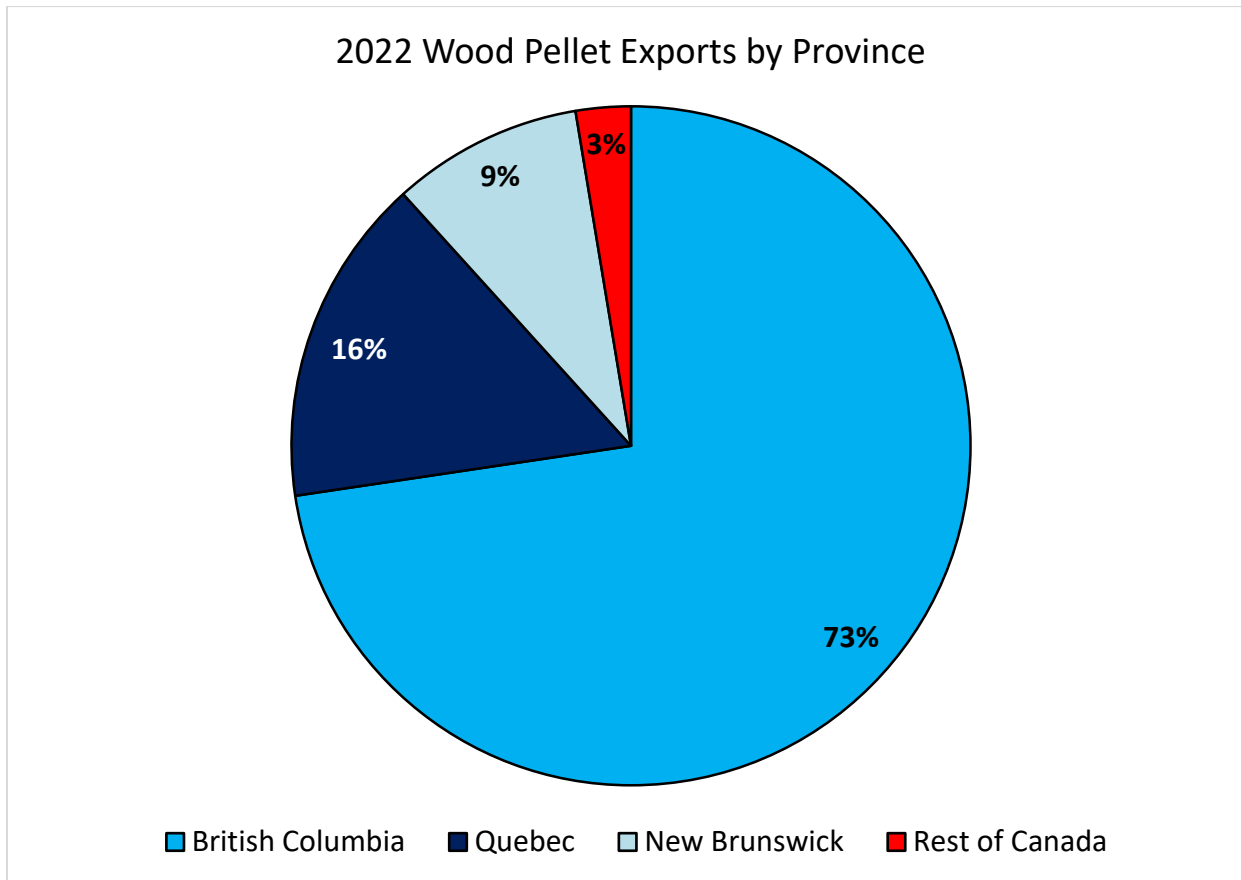
Source: Trade Data Monitor, LLC

The majority of Canada's wood pellet exports are from British Columbia, the province with the highest production. Wood pellets move out of both the Port of Vancouver and Port of Prince Rupert. Both of these ports have rail links and facilities to bulk load vessels. Canada has been expanding exports to Japan in recent years, however, pellet mill closures and reductions in harvest allowances are likely to result in production decreases in British Columbia. Pinnacle, now owned by Drax, has charter vessels moving wood pellets between British Columbia and Japan, establishing a strong supply link between British Columbia and Japan. As Pinnacle's pellet mills are located in Western Canada, Drax is expected to maintain export activity to Japan given established relations. Canada had been growing exports to South Korea, however, competition from Russian wood pellets appears to be displacing volumes in 2023.

The volume of pellets exported from Canada to the United Kingdom continues to be in decline as Asian markets provide more favorable export logistics and growth opportunities. The EU ban on Russian wood pellets has seen increased demand for Canadian pellets in EU markets, however, Canada remains a lower volume competitor compared to the United States. A lesser volume of Canadian production on the Canadian east coast compared to U.S. southeast production continues to favor U.S. exports. Demand for

wood pellets in France should grow with the announcement of conversion of the two-remaining coal-fired power stations to pellet fuel by 2027.

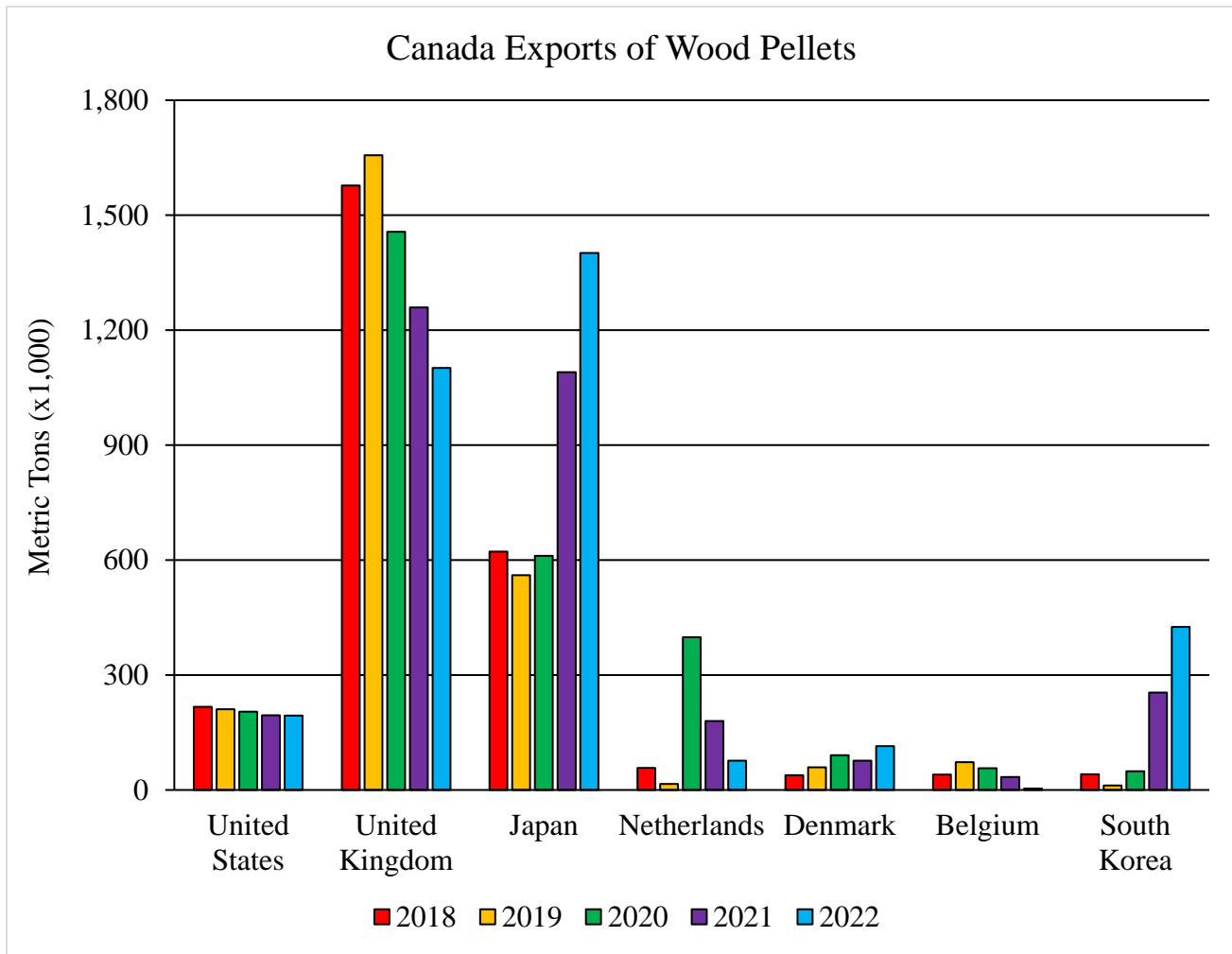
Figure 4. Canadian exports of wood pellets by province.



Source: Trade Data Monitor, LLC

FAS/Canada forecasts that 2023 exports will decline 14 percent on lowered production and reduced demand from South Korea and the UK. While the industry has growth potential, growth within Canada will be constrained by federal and provincial/territorial management of Crown lands where most forestry activity is occurring. A lack of focus on wood pellets in policies on renewable fuels and sustainability and reductions in GHG emissions will also continue to hamper industry growth.

Figure 5. Main export markets for Canadian wood pellets.



Source: Trade Data Monitor, LLC

V. Notes on Statistical Data

Attachments:

No Attachments