

Supply Base Report: Pinnacle Renewable Energy Inc (Meadowbank Division)

First Surveillance Audit

www.sbp-cert.org



Completed in Accordance with the Supply Base Report Template Version 1.2

For further information on the SBP Framework and to view the full set of documentation see www.sbp-cert.org

Document history

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1 Overview

Producer name: Pinnacle Renewable Energy Inc. – Meadowbank division
Producer location: 41180 Hwy 97 N Strathnayer, British Columbia V0K 1S1, Canada
Geographic position: 122°31'29.87"W 53°18'9.45"N
Primary contact: Joseph Aquino
 8545 Willow Cale Road
 Prince George, BC V2N 6Z9
 (250) 562-5562 ext. 2220

Company website: www.pinnaclepellet.com
Date report finalised: 31/Mar/2018
Close of last CB audit: 31/May/2018
Name of CB: SCS Global Services
Translations from English: No
SBP Standard(s) used: Standard 2, Standard 4, Standard 5 (version 1.0)
Weblink to Standard(s) used: <https://sbp-cert.org/documents/standards-documents/standards>
SBP Endorsed Regional Risk Assessment: Not Applicable
Weblink to SBE on Company website: Not Applicable

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations				
Main (Initial) Evaluation	First Surveillance	Second Surveillance	Third Surveillance	Fourth Surveillance
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2 Description of the Supply Base

2.1 General description

BC's land base is 95 million hectares of which 62% or (55 million hectares) is forested, where only 24% is available for harvest. Approximately 83% of BC's forests are coniferous leading, 6% are mixed forests containing both coniferous and deciduous species and 6% are deciduous leading. Six million hectares (approximately 15%) of BC's forests are in protected areas and 13% of all forests in protected areas are 141-250 years old. BC is Canada's most ecologically diverse province containing coastal and inland temperate rainforests, dry pine forests, sub-alpine forests, and other forested ecosystems.ⁱ

95% of BC's forests are a government/publically owned resource. As such BC is a global leader in terms of forest legislation and certification. Approximately 52 million hectares of forest in BC is covered by third-party certification (e.g. SFI, FSC, CSA) or meets specific criteria required for environmental management systems (e.g. ISO 14001)ⁱⁱ.

Forest tenure provides the authorization for companies to harvest timber from crown land. There are various forms of tenure; the two main categories of tenures are area based and volume based. Main tenure types are Replaceable Forest Licenses, Non-Replaceable Forest Licenses, Tree Farm Licenses and Woodlot Licenses. Tenures are associated with license numbers that identify the type of tenure and to whom it is issued. Under the license, the proponent can apply for cutting authority to harvest a specified area on crown land. Registered professionals who practice forestry in the Province prepare the cutting authority and submit the application to Provincial government for review. The government may approve or reject the permit application based on any number of determining factors. The cutting authority will be valid for a specified term where harvesting and silviculture are required to be completed. All cutting authorities issued in the Province are associated to a unique timbermark that tracks the timber to its origin.

Management of harvesting volume is governed under the Forest Act. Allowable annual cuts (AAC) are calculated in all districts across the Province using growth and yield data within the timber harvesting land base. An AAC is allocated to tenure holders operating in the district. The total harvested volume from each tenure holder represents the district AAC.

Management of harvesting practices is governed under the Forest and Range Practices Act (FRPA). Landscape level and site level forest management objectives are described in FRPA legislation. Proponent cutting authority applications are measured against FRPA objectives. The Provincial government has a compliance and enforcement division that inspects forest practices to ensure proponents are meeting the intent of FRPA.

Private land represents a small portion of British Columbia's overall landbase. Private land is considered outside the timber harvesting and managed forest landbase, and therefore is not reflected when determining district or Provincial level AAC's. Some parcels of private land contain treed areas that when harvested are sold to various wood product manufacturing facilities. Of the 2% of land in British Columbia that is private land, 51% is managed forest land, 22% is forested farmland and 27% is forested residentialⁱⁱⁱ. The timber and the harvesting practices on private land are governed by various pieces of Provincial and Federal legislation

that ensure ownership and legality of timber is legitimate and impacts to natural systems are minimized. Less than 1% of the total fibre procured by PREI is from private land.

Roundwood Calculation

The annual allowable cut for British Columbia is approximately 65 million cubic meters per year^{iv}. The proportion of the AAC consumed in round wood form at PREI plant is accounted for as follows:

PREI consumes some round wood at Burns Lake Division (PBL) and Meadowbank Division (PPM). The volume of round wood is determined by the volume of long rotation broadleaf harvest. In BC, licensees harvesting commercial conifer trees will be required to harvest a small proportion of deciduous trees where these trees will impact harvest operations. These are called incidental harvest. Pinnacle will purchase the incidental deciduous trees as there are no other markets for deciduous volume close to where these mills operate. The percentage of volume is less than 50% of the overall AAC.

Burns Lake: Total Broadleaf Long rotation logs = 3,297 ODT x 2.3 = 7,583.215 M3

7,583.215m3/total provincial AAC 65 million m3 = 0.012% of AAC

Meadowbank: Broad leaf long rotation logs = 6,164 ODT x 2.3 = 14,177.2 m3

14,177.2m3/total provincial AAC 65 million m3 = 0.022% of AAC

Supply Base Regions

The province is divided into forest Regions and Districts managed by government offices that authorize access to timber resources. The Forest Regions and Districts where PREI sources fibre include^v:

1. Cariboo Region (Williams Lake)	2. Kootenay/Boundary Region (Cranbrook)
<ul style="list-style-type: none"> a. 100 Mile House District b. Cariboo-Chilcotin District c. Quesnel District 	<ul style="list-style-type: none"> a. Rocky Mountain District b. Selkirk District
3. Northeast Region (Fort St. John)	4. Skeena Region (Smithers)
<ul style="list-style-type: none"> a. Peace District 	<ul style="list-style-type: none"> a. Kalum District b. Nadina District c. Skeena Stikine District
5. Thompson/Okanagan Region(Kamloops)	6. Omineca Region (Prince George)
<ul style="list-style-type: none"> a. Thompson Rivers District b. Okanagan Shuswap District c. Cascades District 	<ul style="list-style-type: none"> a. Fort St. James District b. Mackenzie District c. Prince George District d. Vanderhoof District

Fibre Supply

Approximately 89% of the fibre procured by PREI is secondary fibre. Secondary fibre is residual material or bi-products from the lumber, plywood and remanufacturing industry in the form of bark, sawdust, shavings and hog. EC and UK feedstock types correspond to PREI feedstock types as follows:

In total, approximately 1,392,000 oven dry tonnes (odt's) of fibre are converted to biomass fuel in the form of wood pellets. Approximately 84% of the fibre procured by PREI is forest management certified where

approximately 75% is accompanied by chain of custody claim certificates. The 75% fibre supply accompanied with a PEFC CoC claim certificate represents the tonnage of SBP compliant material produced PREI. The remaining 25% is considered SBP controlled as determined by the PEFC DDS regional risk assessment. All fibre supplied to Armstrong Division originates from within the supply base area.

PREI controls fibre deliveries to seven biomass production facilities strategically located in areas where residual fibre markets exist. The seven biomass production facilities include:

- Houston Pellet Limited Partnership (**HPLP**)
- Pinnacle Pellet Burns Lake (**PBL**)
- Pinnacle Pellet Meadowbank (**PPM**)
- Pinnacle Pellet Williams Lake (**PWL**)
- Pinnacle Pellet Armstrong (**PPA**)
- Lavington Pellet Limited Partnership (**LPLP**)
- Pinnacle Pellet Entwistle (**PPE**)

Input Groups

EC Feedstock Types	Corresponding Pinnacle Feedstock Types	Feedstock Type
Forest Residues	Bush Grind - with Timber mark	Primary
	Chips – with Timber mark	Primary
Stemwood	Logs - All	Primary
	Pulp Logs	Primary
Wood Industry Residues	Sawdust	Secondary
	Shavings - All	Secondary
	Hog/Hog Mix	Secondary
	Composer	Secondary
	Trim Blocks	Secondary
	Chips – All	Secondary
UK Feedstock Types	Corresponding Pinnacle Feedstock Types	Feedstock Type
Forestry Residues	Bush Grind - with Timber mark	Primary
	Chips – with Timber mark	Primary
Tree Tops	Pulp Logs	Primary
Long Rotation Forestry (Broadleaf and	Logs - Deciduous	Primary
Bark	Hog/Hog Mix	Secondary
Sawmill Residues	Chips - All	Secondary
	Sawdust	Secondary
	Shavings - All	Secondary
	Composer	Secondary
	Trim Blocks	Secondary
	Yard Grind	Secondary
Dryer Fuel	Pellet Fines, pellets	Secondary, Primary

2.2 Actions taken to promote certification amongst feedstock supplier

Customer demand for certified wood products drives extensive forest certification in BC. PREI requires that claim certificates for PEFC certified fibre are issued from PEFC certified suppliers. PREI requires all non-certified suppliers and certified suppliers providing non-certified fibre, sign a supplier declaration verifying

their compliance with the various legality, forest management and environmental requirements set out by the certification scheme. Pinnacle promotes certification schemes with suppliers as it is a core value of Pinnacles business. Pinnacle provides suppliers with the tools necessary to achieve certification compliance through shared knowledge

2.3 Final harvest sampling programme

Approximately 10% of total procured fibre at PMB is from final fellings where 100% of final fellings end up as biomass. Data is compiled from annual summary of monthly fibre reports. Fibre inputs other than mill residuals are included as final fellings.

2.4 Flow diagram of feedstock inputs showing feedstock type [optional]

2.5 Quantification of the Supply Base

Supply Base

- a. Total Supply Base area (ha): **≈19,000,000ha**
- b. Tenure by type (ha): **95% Crown Land, 5% Private Land**
- c. Forest by type (ha): **Coastal -4,750,000ha, Interior -11,400,000ha, Boreal -950,000ha**
- d. Forest by management type (ha): **100% Natural managed forest**
- e. Certified forest by scheme (ha): **Approximately 95%**

Feedstock

- f. **Total PMB volume of Feedstock: 254,249.95 odt**
- g. **Total volume of primary feedstock: 24,766.61 odt**
- h. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.
- i. **PMB:**
 - Primary feedstock certified to an SBP-approved Forest Management Schemes – **16%**
 - Primary feedstock not certified to an SBP-approved Forest Management Schemes – **84%**
- j. List all species in primary feedstock, including scientific name
 - **Lodgepole pine – *Pinus contorta***
 - **Hybrid white spruce – *Picea glauca x engelmannii***
 - **Engelmann Spruce – *Picea engelmannii***
 - **Douglas fir – *Pseudotsuga mensezii***
 - **Black spruce – *Picea mariana***
 - **Western hemlock – *Tsuga heterophylla***
 - **Sub-alpine fir (Balsam) – *Abies lasiocarpa***
 - **Western Red Cedar – *Thuja plicata***
 - **Western Larch – *Larix occidentalis***
 - **Paper Birch – *Betula papyrifera***

- **Trembling aspen – *Populus tremuloides***
 - **Black cottonwood – *Populus balsamifera***
- k. Volume of primary feedstock from primary forest – **24,766.61 odt**
- l. List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes
- Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – **16%**
 - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – **84%**
- m. **Total volume of secondary feedstock:** **229,483.29 odt**
- n. **Origin:** **BC**
- o. **Type:** **Sawmill residuals, sawdust, bark, shavings, hog**
- p. **Total Volume of tertiary feedstock:** **0 odt**
- q. **Origin:**

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
<input type="checkbox"/>	<input checked="" type="checkbox"/>

4 Supply Base Evaluation

4.1 Scope

Not Applicable

4.2 Justification

Not Applicable

4.3 Results of Risk Assessment

Not Applicable

4.4 Results of Supplier Verification Programme

Not Applicable

4.5 Conclusion

Not Applicable

5 Supply Base Evaluation Process

Not Applicable

6 Stakeholder Consultation

Not Applicable

6.1 Response to stakeholder comments

Not Applicable

7 Overview of Initial Assessment of Risk

Not Applicable

8 Supplier Verification Programme

8.1 Description of the Supplier Verification Programme

Not Applicable

8.2 Site visits

Not Applicable

8.3 Conclusions from the Supplier Verification Programme

Not Applicable

9 Mitigation Measures

9.1 Mitigation measures

Not Applicable

9.2 Monitoring and outcomes

Not Applicable

10 Detailed Findings for Indicators

Not Applicable

11 Review of Report

11.1 Peer review

The Supply Base Report (SBR) was peer reviewed by an external certification consultant, Nate Ryant – NMR Resources. Nate has extensive experience in the resource sector providing certification expertise across Canada. Nate is a Registered Professional Forester in the Province of BC and has extensive knowledge on forest legislation. PREI has contracted Nate for the past five years to provide certification services and expertise. Upon completion of the peer review, qualified PREI staff reviewed the SBR.

11.2 Public or additional reviews

Not Applicable

12 Approval of Report

Approval of Supply Base Report by senior management			
Report Prepared by:	<i>Joseph Aquino</i>	<i>Head of Sustainability</i>	<i>March 31, 2018</i>
	Name	Title	Date
The undersigned persons confirm that I/we are members of the organisation’s senior management and do hereby affirm that the contents of this evaluation report were duly acknowledged by senior management as being accurate prior to approval and finalisation of the report.			
Report approved by:	<i>Bernard Tobin</i>	<i>General Manager of Fibre</i>	<i>March 31, 2018</i>
	Name	Title	Date
Report approved by:	<i>Vaughan Basset</i>	<i>Senior Vice President of Sales and Logistics</i>	<i>March 31, 2018</i>
	Name	Title	Date

13 Updates

Updated figures reflect actual feedstock deliveries for 2015 and forecasted feedstock deliveries for 2017.

13.1 Significant changes in the Supply Base

N/A

13.2 Effectiveness of previous mitigation measures

N/A

13.3 New risk ratings and mitigation measures

N/A

13.4 Actual figures for feedstock over the previous 12 months

Feedstock

- a. **Total PMB volume of Feedstock: 261,331.43 odt**
- b. **Total volume of primary feedstock: 14,899.35 odt**
- c. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.
- d. **PMB:**
 - a. Primary feedstock certified to an SBP-approved Forest Management Schemes – **20%**
 - b. Primary feedstock not certified to an SBP-approved Forest Management Schemes – **80%**
- e. List all species in primary feedstock, including scientific name
 - **Lodgepole pine – *Pinus contorta***
 - **Hybrid white spruce – *Picea glauca x engelmannii***
 - **Engelmann Spruce – *Picea engelmannii***
 - **Douglas fir – *Pseudotsuga mensezii***
 - **Black spruce – *Picea mariana***
 - **Western hemlock – *Tsuga heterophylla***
 - **Sub-alpine fir (Balsam) – *Abies lasiocarpa***
 - **Western Red Cedar – *Thuja plicata***
 - **Western Larch – *Larix occidentalis***
 - **Paper Birch – *Betula papyrifera***

- **Trembling aspen – *Populus tremuloides***
 - **Black cottonwood – *Populus balsamifera***
- f. Volume of primary feedstock from primary forest – **14,899.35 odt**
- g. List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes
- a. Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – **20%**
 - b. Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – **80%**
- h. **Total volume of secondary feedstock: 246,436.08 odt**
- i. **Origin: BC**
- j. **Type: Sawmill residuals, sawdust, bark, shavings, hog**
- k. **Total Volume of tertiary feedstock: 0 odt**
- l. **Origin:**

13.5 Projected figures for feedstock over the next 12 months¹

Feedstock

- a. **Total PMB volume of Feedstock: 175,000 – 225,000 odt**
- b. **Total volume of primary feedstock: 5,000 – 10,000 odt**
- c. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.
- d. **PMB:**
- Primary feedstock certified to an SBP-approved Forest Management Schemes – **20%**
 - Primary feedstock not certified to an SBP-approved Forest Management Schemes – **80%**
- e. List all species in primary feedstock, including scientific name
- **Lodgepole pine – *Pinus contorta***
 - **Hybrid white spruce – *Picea glauca x engelmannii***
 - **Engelmann Spruce – *Picea engelmannii***
 - **Douglas fir – *Pseudotsuga mensezii***
 - **Black spruce – *Picea mariana***
 - **Western hemlock – *Tsuga heterophylla***
 - **Sub-alpine fir (Balsam) – *Abies lasiocarpa***

¹ Values in this section are provided as ranges due to unforeseen circumstances related to down time, maintenance and fibre types that cause increases or decreases in production.

- **Western Red Cedar – *Thuja plicata***
 - **Western Larch – *Larix occidentalis***
 - **Paper Birch – *Betula papyrifera***
 - **Trembling aspen – *Populus tremuloides***
 - **Black cottonwood – *Populus balsamifera***
- f. Volume of primary feedstock from primary forest – **5,000 – 10,000 odt**
- g. List percentage of primary feedstock from primary forest (i), by the following categories. Subdivide by SBP-approved Forest Management Schemes
- Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – **20%**
 - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – **80%**
- h. **Total volume of secondary feedstock: 175,000 – 225,000 odt**
- i. **Origin: BC**
- j. **Type: Sawmill residuals, sawdust, bark, shavings, hog**
- k. **Total Volume of tertiary feedstock: 0 odt**
- l. **Origin:**

ⁱ Council of Forest Industries. 2016. Accessed from: <http://www.cofi.org/industry-info/forest-facts/>

ⁱⁱ Certification Canada. 2014. British Columbia - SFM - Year-end 2014.

ⁱⁱⁱ Private Forest Landowners Association. 2017. Accessed from: <http://www.pfla.bc.ca/managed-forest-land/>

^{iv} State of Canada's Forests. Annual Report. 2017. Accessed From: <http://cfs.nrcan.gc.ca/pubwarehouse/pdfs/38871.pdf>

^v Ministry of Forest Lands and Natural Resource Operation. 2016. Accessed from: <http://www.for.gov.bc.ca/>