



Supply Base Report: Pacific BioEnergy

Third Surveillance Audit

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Completed in accordance with the Supply Base Report Template Version 1.4

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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Contents

1	Overview
2	Description of the Supply Base
2.1	General description
2.2	Description of countries included in the Supply Base
2.3	Actions taken to promote certification amongst feedstock supplier
2.4	Quantification of the Supply Base
3	Requirement for a Supply Base Evaluation
4	Supply Base Evaluation
4.1	Scope
4.2	Justification
4.3	Results of risk assessment and Supplier Verification Programme
4.4	Conclusion
5	Supply Base Evaluation process
6	Stakeholder consultation
6.1	Response to stakeholder comments
7	Mitigation measures
7.1	Mitigation measures
7.2	Monitoring and outcomes
8	Detailed findings for indicators
9	Review of report
9.1	Peer review
9.2	Public or additional reviews
10	Approval of report
Annex 1: Detailed findings for Supply Base Evaluation indicators	

1 Overview

Producer name: Pacific BioEnergy

Producer address: 9988 Willow Cale Forest Rd, V2N 7A8 Prince George, Canada

SBP Certificate Code: SBP-06-23

Geographic position: 53.831500, -122.735000

Primary contact: Joe Kenny, 12506173020,jkenny@pacificbioenergy.ca

Company website: www.pacificbioenergy.ca

Date report finalised: 30 Nov 2021

Close of last CB audit: 22 Dec 2021

Name of CB: Control Union Certifications BV

SBP Standard(s) used: SBP Standard 2: Verification of SBP-compliant Feedstock, SBP Standard 4: Chain of Custody, SBP Standard 5: Collection and Communication of Data Instruction, Instruction Document 5E: Collection and Communication of Energy and Carbon Data 1.5

Weblink to Standard(s) used: <https://sbp-cert.org/documents/standards-documents/standards>

SBP Endorsed Regional Risk Assessment: Not applicable

Weblink to SBR on Company website: N/A

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations					
Main (Initial) Evaluation	First Surveillance	Second Surveillance	Third Surveillance	Fourth Surveillance	Re-assessment
☐	☐	☐	☒	☐	☐

2 Description of the Supply Base

2.1 General description

Feedstock types: Secondary, Primary

Includes Supply Base evaluation (SBE): No

Feedstock origin (countries): Canada

2.2 Description of countries included in the Supply Base

Country:Canada

Area/Region: British Columbia / Alberta

Exclusions: No

PGLP's feedstock all originates in the province of British Columbia within the North and South Forest Areas as defined by the MFLNRO & RD. Specifically, feedstock is supplied from the following Forest Regions – 1) Northwest 2) Omineca 3) Skeena 4) Cariboo 5) Kootenay/Boundary 6) Thompson/Okanagan and more recently from West Central Alberta and specially from West Fraser Mills Ltd.'s Hinton Wood Products FMA #8800025. PGLP utilizes feedstock from the supply base from other forestry firms sawmill waste, logging waste piles and more recently, from biomass log harvests. Approximately 267,962 Oven DryTonnes (ODT's) of feedstock was delivered from three supply types:

- a. 1⁰ feedstock; post-harvest forest residuals (i.e. tops and limbs from logging slash piles) -31.7% - 5 suppliers
- b. 1⁰ feedstock; biomass logs – 36.4% - 25 suppliers,
- c. 2⁰ feedstock; sawmill residuals – 31.9% - 13 suppliers.

The majority of forest management and harvesting (95% of harvesting) within the Supply Base Area is conducted on Crown lands owned and controlled by the province of British Columbia and the province of Alberta. Harvesting for Biomass is less than 1% of the volume harvested in the Supply Base Area. Harvesting in the Supply Base Area is either conducted by clearcutting or clearcutting with reserves, with very minor component of thinning. Harvesting of the Crown lands in the supply base is either conducted through the province of British Columbia's BC Timber Sales (BCTS) Program or by companies holding tenures issued by the provinces. Timber harvesting licences are area based licences or volume based licences with the management and rate of harvest controlled by the provinces through their environmental regulatory frameworks. The profile of the lands adjacent to Supply Base Area are similar forests to the forests contained in the supply base area.

PGLP commenced harvesting activities for biomass logs due to a decreasing volume of fibre available from sawmills in British Columbia and Alberta as well as limited, economically viable post logging waste. Harvesting by PGLP occurs on their non-replaceable forest licences in the Quesnel (NRFL A76553, A88189 & A91936) and Prince George (NRFL A93518) and on West Fraser's (NRFL A89982) Timber Supply Areas (TSA's). In addition, PGLP purchases logs from private land owners clearing their land for agriculture/other purposes as well as from British Columbia Timber Sales (BCTS) forest management certified, auctioned timber sales. All sources of biomass logs originate from within the Supply Base.

PGLP uses primarily SPF residuals (spruce/pine/balsam fir) with minor inputs of other coniferous species (black spruce/hemlock/Douglas-fir) and some hardwoods (cottonwood/aspen/birch). No softwood or hardwood species native to British Columbia or Alberta are listed in CITES or IUCN

PEFC™ Chain of Custody certificate with a PEFC certified claim. Any portion of the residuals transfer that is not PEFC™ certified is PEFC™ controlled and has been screened through PGLP's PEFC™ due diligence system[1]. The licensees who provide the sawmill residuals harvest timber from their certified forestlands and purchase some amount of logs from others certified or uncertified forestlands.

In 2020 66.9% of the feedstock was SBP-compliant and 33.1% SBP-controlled. PBLP does not procure any feedstock that is not SBP-compliant or SBP-controlled.

While the regulatory frameworks differ in BC and Alberta both regulatory constructs provide direction for tenure holders for their operations.

British Columbia

British Columbia's Forest Range and Practices Act (FRPA) and pursuant regulations identify eleven resource values that must be identified/addressed in a site plan before the commencement of authorized timber harvesting on Crown land (<https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/integrated-resource-monitoring/forest-range-evaluation-program>). Under FRPA forest managers are accountable for the results of resource protection through a rigorous government compliance and enforcement regime. Ingredients of results-based forest management include: (a) professional reliance, (b) stakeholder consultation, (c) healthy forest industry, and (d) a credible third-party auditor, the Forest Practices Board, which ensures the environment is protected. Forest companies harvesting on Crown land must submit a Forest Stewardship Plan consistent with objectives of local land use plans, species at risk, old growth, streams, cutblock size, and retention of coarse woody debris and wildlife trees. Results are monitored by forest professionals responsible for implementation of the plan as well as officials from Compliance and Enforcement, the law enforcement arm of the MoFLNRO & RD. C&E's purposes is to make sure that resource management laws are being followed and to take action where there is non-compliance (<https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-law-enforcement/natural-resource-officers>). BC's Ministry of Environment ensures conservation of Species at Risk (www.env.gov.bc.ca/wld/frpa/species.htm) and Canada is a member of the Convention on International Trade in Endangered Species (www.cites.org/eng/disc/parties/chronolo.php).

Alberta

Alberta Agriculture and Forestry (AAF) is charged with implementing the regulatory construct that provides direction for tenure holders and include the:

- Forest Act/regulations,
- Forest and Prairie protection Act/regulations
- Forest Reserves Act/regulation.

(<https://www.agric.gov.ab.ca/app21/ministrypage?cat1=Ministry&cat2=Legislation>). AAF provides further guidance through Directive Letters issued from time to time for specific issues. Tenure holders must develop and gain approval of forest management plans for their area based Forest Management Agreement (FMA) areas which include the operations of Timber Permit/Quota Holders operating on volume based licences within the FMA's. Forest Management Plans address government's requirements inclusive of conservation, biodiversity and cultural/archaeological values (<https://www.agric.gov.ab.ca/app21/forestrypage?cat1=Forest%20Management&cat2=Forest%20Management%20Plans>) with lower level plans (Annual Operating Plans and Final Harvest Plans) having to address

legal requirements and company commitments identified in the Forest Management Plans. AAF monitors operations through their compliance and enforcement program (<https://www.agric.gov.ab.ca/app21/forestrypage?cat1=Forest%20Management&cat2=Compliance%20%26%20Enforcement>).

PGLP's calendar 2020 feedstock consumption was 267,962 ODT's and consisted of:

- 85,059 ODT's of forestry waste grinding/primary feedstock,
- 97,548 ODT's of biomass log harvesting/primary feedstock, and
- 85,354 ODT's being sawmill residuals/secondary feedstock.

The increase in biomass log harvesting is due to the reduction in secondary feedstock available from local sawmills coupled with the curtailments at sawmills through 2019 into 2020 as well as the economic margin of forestry waste grinding. Consistent with PBTC's goal, high value logs are sold to willing sawmill's, higher value pulp logs sold to the local pulp mills and low grade logs sold to PGLP for grinding into input raw material.

2.3 Actions taken to promote certification amongst feedstock supplier

All suppliers of Biomass logs are provided with a "purchase wood information package which includes information on sustainable forest management, best management practices, use of Qualified Professionals and information on certification. For the other fibre sources no actions were taken or required given a majority of the fibre procured is forest management or chain of custody certified.

The calendar year 2020 raw material inputs originate from:

- 31.7% (85,059 ODT's) forestry waste pile grinding/1⁰ feedstock,
- 36.4% (97,548 ODT's) biomass log harvesting/1⁰ feedstock, and
- 31.9% (85,354 ODT's) sawmill residuals/2⁰ feedstock.

Suppliers hold forest management (CSA Z809 FM/SFI®- FM) certification for their tenured forestlands and PEFC™ chain of custody certification in most cases with contracts that identify the certification and origin for the waste piles or harvest areas. Invoices/statements have claims to support the PEFC™ certified sawmill residuals.

Where PGLP completes biomass log harvesting or grinds logging waste it is screened through PBLP's PEFC due diligence system prior to purchase. In 2020 66.94% of the biomass log harvesting came from certified forest lands with remainder coming from uncertified forest lands.

Forest certification is common in North America and in Canada, some of the largest tracts of forestland in North America are certified to Canada's national forest management standard, CSA Z809-16 and SFI® forest management standards and to a minor extent, Canada's new FSC forest management standard.

2.4 Quantification of the Supply Base

Supply Base

- a. **Total Supply Base area (million ha):** 26168346,00
- b. **Tenure by type (million ha):**24859928.00 (Public), 1308417.00 (Public)
- c. **Forest by type (million ha):**26168346.00 (Boreal)
- d. **Forest by management type (million ha):**26168346.00 (Managed natural)
- e. **Certified forest by scheme (million ha):**2105647.00 (SFI)

Describe the harvesting type which best describes how your material is sourced: Clearcutting

Explanation: The majority of harvesting in the supply area is done using a clear-cut and clear-cut with reserves silviculture system. A minor component of harvesting is done with selective harvesting and through thinning's. Harvesting timber consists of several phases: falling the trees, manufacturing them into logs, and transporting the logs from the stump to a landing or roadside and then to a conversion facility. The most common method for classifying harvesting systems is to consider the primary transport phase; that is, from stump to the landing or roadside. The two most common systems employed in the supply area are ground based skidding and forwarding. In the ground-based harvesting systems, the logs are felled with a feller buncher and dragged or carried from the stump to the landing by a machine that travels over the ground. In the forwarding method trees are felled by a harvester / processor and processed to length at the stump and loaded onto a forwarder to the roadside.

Was the forest in the Supply Base managed for a purpose other than for energy markets? Yes - Majority

Explanation: Harvesting is done for sawlog values. The sawlog harvest is the main economic driver for harvesting. Pulp logs and biomass logs are by products of the sawlog harvest. Some harvesting in the supply base is done for silviculture purposes to rehabilitate a site following fire or insect damage.

For the forests in the Supply Base, is there an intention to retain, restock or encourage natural regeneration within 5 years of felling? Yes - Majority

Explanation: Reforestation is mandated in both Alberta and British Columbia by various Acts and Regulations on crown land.

Was the feedstock used in the biomass removed from a forest as part of a pest/disease control measure or a salvage operation? Yes - Majority

Explanation: In British Columbia the Mountain Pine beetle damaged most pine stands in the Prince George Area and salvage harvest has been occurring since 2006 and more recently (2014 till today) a Spruce Beetle outbreak has occurred east of Prince George. In 2020 most harvesting in the Prince George area has been occurring in Spruce Beetle and Pine Beetle damaged stands.

Feedstock

Reporting period from: 01 Jan 2020

Reporting period to: 31 Dec 2020

- a. **Total volume of Feedstock:** 200,000-400,000 tonnes
- b. **Volume of primary feedstock:** 1-200,000 tonnes
- c. **List percentage of primary feedstock, by the following categories.**
 - Certified to an SBP-approved Forest Management Scheme: 60% - 79%
 - Not certified to an SBP-approved Forest Management Scheme: 20% - 39%
- d. **List of all the species in primary feedstock, including scientific name:** Pinus contorta (lodgepole pine); Picea glauca (hybrid white spruce); Picea engelmannii (Engelman spruce); Pseudotsuga

menziesii (douglas fir); Picea mariana (black spruce); Tsuga heterophylla (western hemlock); Abies lasiocarpa (balsam fir); Thuja plicata (western red cedar); Larix occidentalis (western larch); Betula papyrifera (white birch); Populus tremuloides (aspen); Populus balsamifera (cottonwood);

- e. **Is any of the feedstock used likely to have come from protected or threatened species?** No
- Name of species: N/A
 - Biomass proportion, by weight, that is likely to be composed of that species (%): N/A
- f. **Hardwood (i.e. broadleaf trees): specify proportion of biomass from (%):** 15,00
- g. **Softwood (i.e. coniferous trees): specify proportion of biomass from (%):** 85,00
- h. **Proportion of biomass composed of or derived from saw logs (%):** 0,00
- i. **Specify the local regulations or industry standards that define saw logs:** BC Forest Service Timber scaling manual and local mills individual specifications
- j. **Roundwood from final fellings from forests with > 40 yr rotation times - Average % volume of fellings delivered to BP (%):** 31,70
- k. **Volume of primary feedstock from primary forest:** 97548 tonnes
- l. **List percentage of primary feedstock from primary forest, by the following categories. Subdivide by SBP-approved Forest Management Schemes:**
- Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme: 40% - 59%
 - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme: 40% - 59%
- m. **Volume of secondary feedstock:** 200,000-400,000 tonnes
- Physical form of the feedstock: Sawdust, Offcuts, Clean chips or dust
- n. **Volume of tertiary feedstock:** 0 N/A
- Physical form of the feedstock: N/A

Proportion of feedstock sourced per type of claim during the reporting period				
Feedstock type	Sourced by using Supply Base Evaluation (SBE) %	FSC %	PEFC %	SFI %
Primary	0,00	0,00	0,00	100,00
Secondary	0,00	0,00	100,00	0,00
Tertiary	0,00	0,00	0,00	0,00
Other	0,00	0,00	0,00	0,00

3 Requirement for a Supply Base Evaluation

Is Supply Base Evaluation (SBE) is completed? No

N/A

4 Supply Base Evaluation

4.1 Scope

Feedstock types included in SBE: N/A

SBP-endorsed Regional Risk Assessments used: Not applicable

List of countries and regions included in the SBE:

Country: N/A

Indicator with specified risk in the risk assessment used:
N/A

Specific risk description:

4.2 Justification

N/A

4.3 Results of risk assessment and Supplier Verification Programme

N/A

4.4 Conclusion

N/A

5 Supply Base Evaluation process

N/A

6 Stakeholder consultation

N/A

6.1 Response to stakeholder comments

N/A

7 Mitigation measures

7.1 Mitigation measures

N/A

7.2 Monitoring and outcomes

N/A

8 Detailed findings for indicators

Detailed findings for each Indicator are given in Annex 1 in case the Regional Risk Assessment (RRA) is not used.

Is RRA used? N/A

9 Review of report

9.1 Peer review

N/A

9.2 Public or additional reviews

N/A

10 Approval of report

Approval of Supply Base Report by senior management			
Report Prepared by:	j Kenny	Woodlands Mgr.	29 Nov 2021
	Name	Title	Date
Report Prepared by:	John Stirling	President and CEO	30 Nov 2021
	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:	John Stirling	President and CEO	30 Nov 2021
	Name	Title	Date

Annex 1: Detailed findings for Supply Base Evaluation indicators

N/A