SBP

Sustainable Biomass Program

Supply Base Report: Pacific BioEnergy Prince George Ltd

First Surveillance Audit

www.sbp-cert.org

Completed in accordance with the Supply Base Report Template Version 1.3

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

Document history

Version 1.0: published 26 March 2015

Version 1.1 published 22 February 2016

Version 1.2 published 23 June 2016

Version 1.3 published 14 January 2019

Contents

1 Overview

Producer name:	Pacific Bioenergy PG Limited Partnership (PBLP)
Producer location:	9988 Willow Cale Forest Road, Prince George, BC, Canada, V2N7A8
Geographic position:	53^0 49'43.16" North $122^0$43'45.43" West
Primary contact:	PBLP - Tammy Lukoni, Logistics Manager, 250-649-2071
Company website:	http://www.pacificbioenergy.ca/
Date report finalised:	15/Nov/2019
Close of last CB audit:	Main Assessment November 21, 2018
Name of CB:	Control Union Certifications B.V
Translations from English:	No
SBP Standard(s) used:	Standard 2, Standard 4, Standard 5
Weblink to Standard(s) used:	https://sbp-cert.org/documents
SBP Endorsed Regional Risk Assessment:	N/A
Weblink to SBE on Company website:	N/A – no SBE completed (http://www.pacificbioenergy.ca/)

Indicate how the current evaluation fits within the cycle of Supply Base Evaluations				
Main (Initial) Evaluation	**First Surveillance**	**Second Surveillance**	**Third Surveillance**	**Fourth Surveillance**
☐	X	☐	☐	☐

2 Description of the Supply Base

2.1 General description

PBLP's feedstock all originates from within the province of British Columbia within the Northern Interior and South Interior Forest Regions as defined by the MFLNRO & RD and a select area within West Central Alberta. Specifically, feedstock is supplied from the following areas – 1) Northwest 2) Omineca 3) Skeena 4) Cariboo 5) Kootenay/Boundary 6) Thompson/Okanagan and, more recently, from West Central Alberta and specifically from West Fraser Mills Ltd.'s Hinton Wood Products FMA #8800025. PBLP utilizes feedstock derived from other forestry firms sawmill waste, logging waste piles and more recently, from biomass log harvests. In 2019 the feedstock percentages changed due to less sawmill residuals being available however the total volume remains approximately the same at 350,000 ODT of feedstock delivered from three supply types:

a. 1^0 feedstock; post-harvest forest residuals (i.e. tops and limbs from logging slash piles)
b. 1^0 feedstock; biomass logs
c. 2^0 feedstock; sawmill residuals

The majority of forest management and 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 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. In Alberta harvesting is conducted by companies holding tenure issued by that province. 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.

PBLP 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 PBLP occurs on their non-replaceable forest licences in the Quesnel (NRFL A76553, A88189 & A91936) and Prince George (NRFL A93518) Timber Supply Areas (TSA's). In addition, PBLP will purchase logs from private land owners as well as from British Columbia Timber Sales (BCTS) forest management certified, auctioned timber sales.

PBLP also purchases some of their whole log and sawmill residuals through another of PBEC's subsidiary, Pacific Bio Timber Corp. (PBTC). PBTC will procure both logs and sawmill residuals through contracts and sell these products, via contract, to PGLP for use in the Prince George facility. PBTC owns and operates a portable chipper and is contracted to custom chip whole logs for the PGLP facility in Prince George. All sources of biomass (logs & sawmill residuals) originate from within the Supply Base.

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

PBLP's feedstock both certified & controlled as the residuals are transferred as certified under each supplier's PEFC™ Chain of Custody certificate with a PEFC certified claim and any portion of the residuals transfer that is not PEFC™ certified is PEFC™ controlled and has been screened through PBLP'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.

[1] Consistent with the Normative Interpretations Document August 17, 2018 section #5, page #4.

PBLP does not procure any feedstock that is not considered SBP-compliant or SBP-controlled. Regulatory frameworks differ in BC and Alberta however both regulatory constructs provide direction for tenure holders for their operations.

British Columbia

BC's Forest Range and Practices Act (FRPA) and pursuant regulations requires that eleven resource values be identified and mapped 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, retention of coarse woody debris and wildlife trees. Results are monitored by forest professionals responsible for implementation of the plans 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.html) 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).

2.2 Actions taken to promote certification amongst feedstock supplier

No actions taken or required.

Residual fibre inputs come from sawmilling/planer mill waste . Suppliers hold forest management (CSA Z809 FM/SFI®-FM) certification and PEFC™ chain of custody certification in most cases and contracts identify the certified origin for the waste piles or harvest areas with invoices having claims to support the 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 2018 ~ 80% of the biomass log harvesting came from certified 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, one of Canada's four FSC regional land management standards.

2.3 Final harvest sampling programme

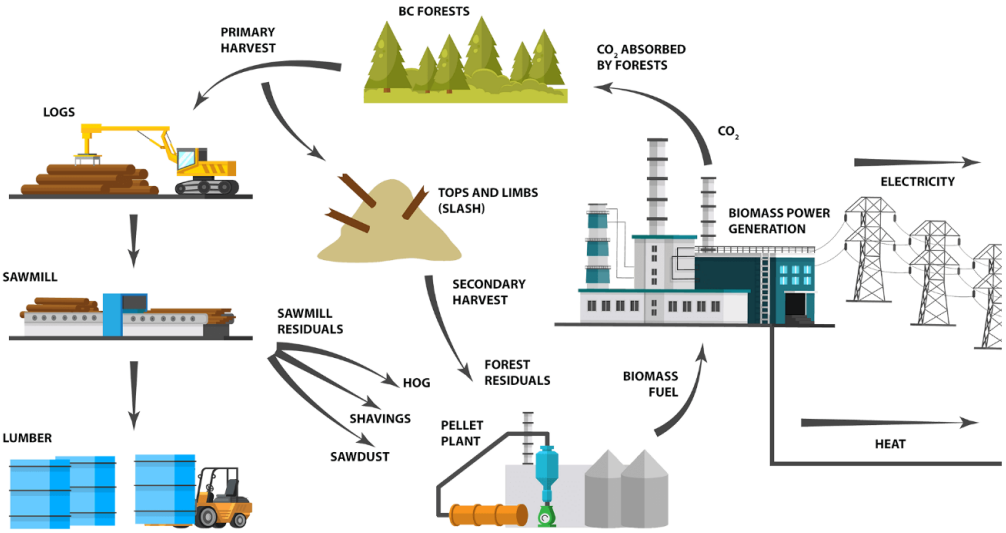
PGLP's 2017 feedstock was 309,527 ODT's and consisted of 32.24% (99,803 ODT's) of forestry waste grinding and 6.29% (19,479 ODT's) of biomass log harvesting with the remaining 61.47% (190,245 ODT's) being secondary feedstock received from local sawmills.

In 2018 38.65% of the fibre was procured from the forest (112,654 ODT's). Of that 32.8% (95,674 ODT's) was from grinding waste piles and 5.8% (16,960 ODT's) was from biomass harvesting. Traditionally the waste piles were burned in the forest however, with the utilization of this waste material for energy production the release of elemental carbon to the atmosphere is deceased. The remaining 61.3% was sawmill residual fibre which was traditionally burned in beehive burners. Again utilization of the sawmill residuals decreases the release of elemental carbon to the atmosphere.

In 2019 the change of raw material supply has shifted away from sawmill residuals, due to a decrease in availability, with an increase in grinding and forest harvesting for biomass logs. Sawmill residuals have decreased to 22% with grinding waste piles representing 48% and biomass harvesting representing 30% of the raw material input.

Data to support the grinding and biomass harvesting programs are available from the Forestry Manager who maintains contracts with controversial source assertions and inspections of operations to support sustainable practices.

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



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2.5 Quantification of the Supply Base

Supply Base

a. Total Supply Base area (ha):

In British Columbia the management units are Timber Supply Areas (TSA's) and Tree Farm Licences (TFL's), Community Forest Agreements (CFA's) and Woodlot Licenses (WL's). Data and analysis occurs at the TSA level and for the area based licences, at the TFL, CFA and WL level. In Alberta the forested area is divided into provincial forests with the Forest Management Units (FMU) identified as the Forest Management Agreement (FMA) or FMU. FMA's are managed by the tenure holder inclusive of the Forest Management Plan and timber supply estimates while the FMU is managed by AAF.

Currently PBLP's supply base includes:

- Quesnel TSA/TFL #52,
- Williams Lake TSA,
- Prince George TSA/TFL #30 & #52,
- Mackenzie TSA,
- Dawson Creek TSA/TFL#48
- Robson Valley TSA
- West Central Alberta/FMA #8800025.

Data on certified areas derived from Certification Canada (http://certificationcanada.org/index.php/maps-en/provincial/bc) and (http://certificationcanada.org/index.php/maps-en/provincial/ab).

Data on the uncertified percentages are the percent area uncertified for each TSA and FMA/FMU. In the case of the Prince George TSA there are three forest districts so the percentage is for each forest district.

Information on Timber Supply Areas (TSA's), Tree Farm Licences (TFL's) and their gross areas/timber harvesting land base areas and allowable annual cuts are derived from the most current timber supply review documents which can be found at https://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/timber-supply-review-and-allowable-annual-cut. Information on allowable annual cuts for FMU's and FMA's can be found at https://open.alberta.ca/opendata/provincial-timber-harvest-and-annual-allowable-cut-alberta-crown-lands. Specifically, Hinton Wood Products AAC can be viewed at https://www.agric.gov.ab.ca/app21/forestrypage?cat1=Forest%20Management&cat2=Forest%20Management%20Plans&cat3=West%20Fraser%20Mills%20Ltd.%20(Hinton).

The licensees that provide the secondary feedstock (residuals from their sawmills) are shown in the following table. Primary feedstock is sourced from the same areas and the level of certification varies based on the volume procured from private lands. All feedstock is screened through PBLP's PEFC™ certified due diligence system.

TSA/Mgmt Unit	TFL/FMA/FMU	Total Area (ha)	Timber Harvesting Landbase Area or Contributing Landbase (ha)	Licensee	Certification Type	Certified Area (ha)	Uncertified % (of TSA/TFL/FMU/FMA)	Comments
Dawson Creek	#48	2,300,000	758,335	LP Canada	SFI	2,960,620	0	
				West Fraser	SFI	574,876	0	
				BCTS	SFI	468,761	0	
				-	-	-	6.0	
Mackenzie	-	6,410,000	1,500,726	Canfor	CSA	13,403,454	0	
				BCTS	SFI	1,827,231	0	
				Conifex	SFI	2,127,801	0	
				Mackenzie Fibre	SFI	460,999	0	
				-	-	-	5.5	
Williams Lake	-	4,930,000	1,830,000	Tolko	CSA	1,821,895	0	
				BCTS	SFI	1,952,379	0	
				West Fraser	SFI	559,825	0	
				-	-	-	21.3	
Prince George	#30 #53	7,970,000	3,506,800	Canfor	CSA	13,403,454	0	Includes the PG/Vanderhoof and Fort St. James Forest Districts
				Sinclair Group	SFI	377,138	0	
				BCTS	SFI	1,827,213	0	
				Conifex	SFI	2,127,801	0	
				L&M Lumber	SFI	126,090	0	
				Carrier Lumber	SFI	153,615	0	
				West Fraser	SFI	383,703	0	
				Dunkley	SFI	194,842	0	
				-	-	-	34.2/37.4/30.2	
Quesnel	#52	2,077,293	1,020,699	Tolko	CSA	1,821,895	0	
				BCTS	SFI	1,952,379	0	
				West Fraser	SFI	787,162	0	
				C&C Wood Products	SFI	80,000	0	
				-	-	-	27.3	
Robson Valley	#30	1,458,588	132,497	Carrier Lumber	SFI	153,615	0	
West Central Alberta	FMA 8800025	1,022,465	988,774	West Fraser Mills Ltd.	SFI	988,774	0	Operates as Hinton Wood Products

A detailed map of the province and the TSA's/TFL's can be reviewed at https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/timber-tenures/tree-farm-licence/tfl_regions_tsas_districts_map_350dpi_2014.pdf

A detailed map of Alberta's provincial forest areas and FMU's/FMA's can be reviewed at http://certificationcanada.org/index.php/maps-en/provincial/ab.

b. Tenure by type (ha): 95% public tenures (forest licence [replaceable & non-replaceable]/tree farm licence, community forest agreements, woodlots and forest licence to cut with minor private lands held as part of TFL's.
c. Forest by type (ha): sub-boreal
d. Forest by management type (ha): 100% managed natural forest
e. Certified forest by scheme (ha): ~95%. Refer to table above.

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
☐	X

Pacific BioEnergy has determined that a SBE is not required in order to commercialize SBP-compliant feedstock as the majority of the feedstock is sourced within the scope of the PEFC COC Certificate.

4 Supply Base Evaluation

4.1 Scope

n/a

4.2 Justification

n/a

4.3 Results of Risk Assessment

n/a

4.4 Results of Supplier Verification Programme

n/a

4.5 Conclusion

n/a

5 Supply Base Evaluation Process

n/a

6 Stakeholder Consultation

Although no SBE was produced, a consultation with stakeholders was conducted by Control Union on October 19, 2018 with a deadline to submit comments by November 19, 2018.

The process for stakeholder consultation consisted of sending direct email to different stakeholder categories: state institutions, local NGOs, authorities, government bodies, forest owners associations, academic and research institutions. No comments from the stakeholders were received.

6.1 Response to stakeholder comments

n/a

7 Overview of Initial Assessment of Risk

n/a

8 Supplier Verification Programme

8.1 Description of the Supplier Verification Programme

n/a

8.2 Site visits

n/a

8.3 Conclusions from the Supplier Verification Programme

n/a

9 Mitigation Measures

9.1 Mitigation measures

n/a

9.2 Monitoring and outcomes

n/a

10 Detailed Findings for Indicators

n/a

11 Review of Report

11.1 Peer review

The Forestry Manager, a Professional Engineer and Professional Forester registered to practice in the province of British Columbia reviewed the SBR. The Forestry Manager has extensive experience and education and is competent to perform such a review.

11.2 Public or additional reviews

n/a

12 Approval of Report

Approval of Supply Base Report by senior management			
Report Prepared by:	Tammy Lukoni	Logistics Manager	Nov 15, 2019
	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:	Joe Kenney, RPF, P.Eng	Forestry Manager	Nov 15, 2019
	Name	**Title**	**Date**
Report approved by:	Shawn Bells	VP Operations	Nov 15, 2019
	Name	**Title**	**Date**

13 Updates

13.1 Significant changes in the Supply Base

February 2019 – the supply base was expanded to reflect the agreement to procure sawmill residues from West Fraser Mills Ltd.'s Hinton Wood Products in Hinton, Alberta.

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 (2018)

In 2018 38.65% of the fibre was procured from the forest (112,654 ODT's). Of that 32.8% (95,674 ODT's) was from grinding waste piles and 5.8% (16,960 ODT's) was from biomass harvesting. Traditionally the waste piles were burned in the forest however, with the utilization of this waste material for energy production the release of elemental carbon to the atmosphere is deceased. The remaining 61.3% was sawmill residual fibre which was traditionally burned in beehive burners. Again utilization of the sawmill residuals decreases the release of elemental carbon to the atmosphere.

Feedstock 2018

a. **Total volume of Feedstock:** 291,472 ODT's

b. **Total volume of primary feedstock:** 112,654 ODT's

c. List percentage of primary feedstock (g), by the following categories. Subdivide by SBP-approved Forest Management Schemes.

a. Primary feedstock certified to an SBP-approved Forest Management Schemes –~80.28%

b. Primary feedstock not certified to an SBP-approved Forest Management Schemes –~19.72 9%

d. 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*
- Trembling Aspen – *Populus tremuloides*
- Black Cottonwood – *Populus trichocarpa*

- Western hemlock – *Tsuga heterophylla*
- Sub-alpine fir (Balsam) – *Abies lasiocarpa*
- Western Red Cedar – *Thuja plicata*
- Western Larch – *Larix occidentalis*
- Paper Birch – *Betula papyrifera*

h. **Total volume of secondary feedstock:** 178,818 ODT's.
i. Origin: BC Interior
j. Type: Sawmill residuals (sawdust, bark, shavings, hog)
k. **Total Volume of tertiary feedstock:** 0%
l. Origin: n/a

13.5 Projected figures for feedstock over the next 12 months (2019)

In 2019 the change of raw material supply has shifted away from sawmill residuals, due to a decrease in availability, with an increase in grinding and forest harvesting for biomass logs. Sawmill residuals have decreased to 22% with grinding waste piles representing 48% and biomass harvesting representing 30% of the raw material input.

Estimation of changes to the feedstock profile for 2019 is:

48% from bush grinding of logging waste

29% from biomass harvesting

23% from sawmill residual

Feedstock 2019

a. **Total volume of Feedstock:** 300,000 ODT's

b. **Total volume of primary feedstock:** 231,249 ODT's (77%)

c. List percentage of primary feedstock (g), by the following categories.

d. Primary feedstock certified to an SBP-approved Forest Management Schemes – 70%

Primary feedstock not certified to an SBP-approved Forest Management Schemes – 30%

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*
- Trembling Aspen – *Populus tremuloides*
- Black Cottonwood – *Populus trichocarpa*

- Sub-alpine fir (Balsam) – *Abies lasiocarpa*
- Western Red Cedar – *Thuja plicata*
- Western Larch – *Larix occidentalis*
- Paper Birch – *Betula papyrifera*

f. **Total volume of secondary feedstock:** 68,751 ODT's (23%)
i. Origin: BC and Alberta
j. **Type:** Sawmill residuals (sawdust, bark, shavings, hog)
k. **Total Volume of tertiary feedstock:** 0
i. Origin: n/a

References

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

Certification Canada. 2014. British Columbia - SFM - Year-end 2014. http://certificationcanada.org/en/home/

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

Ministry of Forests, Lands & Natural Resource Operations & Rural Development
https://www2.gov.bc.ca/gov/content/governments/organizational-structure/ministries-organizations/ministries/forests-lands-natural-resource-operations-and-rural-development

Alberta Agriculture and Forestry.
https://www.agric.gov.ab.ca/app21/forestrypage?cat1=Forest%20Management