

Supply Base Report

Pacific BioEnergy Prince George Limited Partnership

November 19, 2018

www.sustainablebiomasspartnership.org



Version 1.2 June 2016

NOTE:

This template, v1.2, is effective as of the date of publication, that is, 23 June 2016. Template v1.1 may still be used for those audits undertaken prior to 23 June 2016 and where the certificate is issued to Certificate Holders before 1 October 2016.

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

Document history

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Contents

1	Overview	1
2	Description of the Supply Base	2
2.1	General description	2
2.2	Actions taken to promote certification amongst feedstock supplier	3
2.3	Final harvest sampling programme	3
2.4	Flow diagram of feedstock inputs showing feedstock type [optional]	4
2.5	Quantification of the Supply Base	4
3	Requirement for a Supply Base Evaluation	7
4	Supply Base Evaluation	8
4.1	Scope	8
4.2	Justification	8
4.3	Results of Risk Assessment.....	8
4.4	Results of Supplier Verification Programme	8
4.5	Conclusion	8
5	Supply Base Evaluation Process	9
6	Stakeholder Consultation	10
6.1	Response to stakeholder comments	10
7	Overview of Initial Assessment of Risk	11
8	Supplier Verification Programme	12
8.1	Description of the Supplier Verification Programme	12
8.2	Site visits	12
8.3	Conclusions from the Supplier Verification Programme.....	12
9	Mitigation Measures	13
9.1	Mitigation measures	13
9.2	Monitoring and outcomes	13
10	Detailed Findings for Indicators	14
11	Review of Report	15

11.1	Peer review.....	15
11.2	Public or additional reviews.....	15
12	Approval of Report.....	16
13	Updates	17
13.1	Significant changes in the Supply Base	17
13.2	Effectiveness of previous mitigation measures	17
13.3	New risk ratings and mitigation measures.....	17
13.4	Actual figures for feedstock over the previous 12 months	18
13.5	Projected figures for feedstock over the next 12 months.....	19

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° 49'43.16" North 122°43'45.43" West
Primary contact: Tammy Lukoni, Logistics Manager, 9988 Willow Cale Forest Road, Prince George, BC, Canada, V2N7A8, 250-649-2071
Company website: <http://www.pacificbioenergy.ca/>
Date report finalised: November 19, 2018
Close of last CB audit: Main Assessment
Name of CB: Control Union
Translations from English: No
SBP Standard(s) used: Standard 2, Standard 4, Standard 5
Weblink to Standard(s) used: <http://www.sustainablebiomasspartnership.org/documents>
SBP Endorsed Regional Risk Assessment: N/A
Weblink to SBE on Company website: <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*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* A Supply Base Evaluation is scheduled for 2019 once the Regional Risk Assessment is completed to support BP Supply Base Evaluations.

2 Description of the Supply Base

2.1 General description

PBLP's feedstock all originates from within the province of British Columbia within the North and South Forest Areas as defined by the MFLNRORD. Specifically, feedstock is supplied from the following Forest Regions – 1) Northwest 2) Omineca 3) Skeena 4) Cariboo 5) Kootenay / Boundary 6) Thompson / Okanagan. PBLP utilizes feedstock from within this area from other forestry firms sawmill waste, logging waste piles and more recently, from biomass log harvests. Approximately 350,000 ODT of feedstock is delivered from three supply types:

- a. 1⁰ feedstock; post-harvest forest residuals (i.e. tops and limbs from logging slash piles) -33%
- b. 1⁰ feedstock; biomass logs – 6%,
- c. 2⁰ feedstock; sawmill residuals - 61%.

•

The majority of forest management and harvesting within the Supply Base Area is conducted on Crown Lands which is owned and controlled by the province of British Columbia. Management and harvesting of the crown lands in the supply base is either conducted directly by the Province through their BC Timber Sales (BCTS) Program, or by companies which hold timber harvest licences issued by the Province. Timber harvesting licences can either area bases licences or volume based licences, with the management and harvesting rates being directly controlled by the Province through Forest Legislation and Regulation

PBLP commenced harvesting activities for biomass logs due to a decreasing volume of fibre available from sawmills and 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 clearing their land for agriculture/other purposes as well as from British Columbia Timber Sales (BCTS) FM certified, auctioned timber sales. All sources of biomass logs originate from within the Supply Base.

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

PBLP's feedstock is largely SBP-certified as the residuals are transferred as certified under each supplier's 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 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.

PBLP does not procure any feedstock that is not SBP-compliant or SBP-controlled.

BC's Forest Range and Practices Act 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 the Act, 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

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

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.html) and Canada is a member of the Convention on International Trade in Endangered Species (www.cites.org/eng/disc/parties/chronolo.php).

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

2.2 Actions taken to promote certification amongst feedstock supplier

No actions taken or required.

Residual fibre inputs come from sawmilling/planer mill waste (61%), from bush grinding of logging waste (33%) and biomass harvesting (6%). 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 2017 ~ 90% 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.

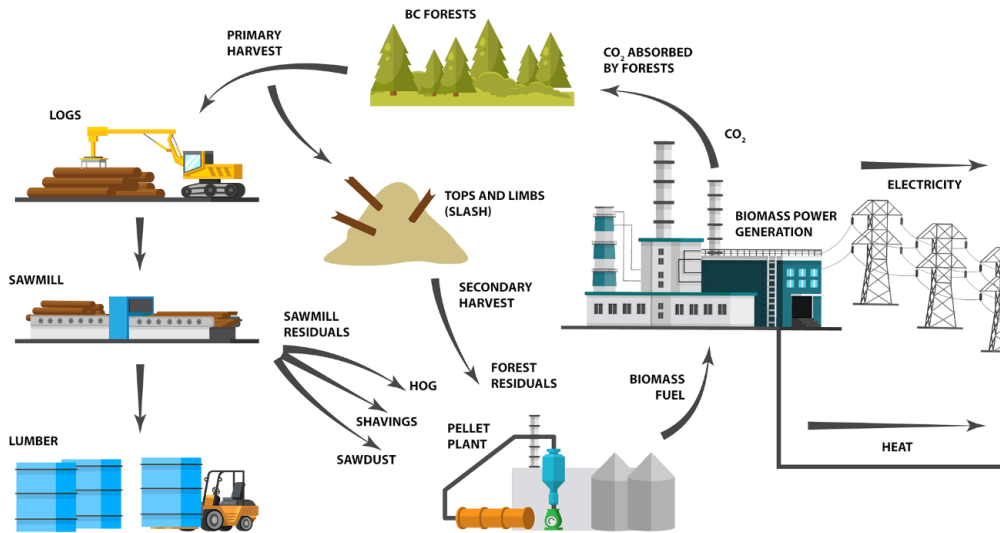
2.3 Final harvest sampling programme

In 2017 39% of the fibre was procured from the forest (approx. 119,282 ODT annually). Of that 33% (99,803 ODT's) was from grinding waste piles and 6% (19,479 ODT's) was from biomass log harvesting. Traditionally the waste pile material was burned as waste and the use as biomass fibre both utilizes this waste for energy production and lessens the release of carbon to the atmosphere. The remaining 61% is sawmill residual fibre which was traditionally burned in beehive burners. The feedstock that PBLP uses is 94% (290,049 ODT's) waste material with 6% (19,479 ODT's) originating from biomass log harvesting.

In 2018, year to date, sawmill residuals are 72% (168,471 ODT's) with grinding waste piles at 26% (61,521 ODT's) and biomass harvesting at 2% (4,465 ODT's) with an expected increase of both waste piles and biomass harvesting % during Q4-2018.

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]



2.5 Quantification of the Supply Base

Supply Base

a. Total Supply Base area (ha):

Quesnel TSA/TFL #52, Williams Lake TSA, Prince George TSA/TFL #30 & #52, Mackenzie TSA, Dawson Creek TSA/TFL#48 and Robson Valley TSA. Data on certified areas derived from Certification Canada (<http://certificationcanada.org/index.php/maps-en/provincial/bc>). Data on the uncertified %'s are the % area uncertified for each TSA. 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>). 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	TFL	Total Area (ha)	Timber Harvesting Landbase Area (ha)	Licensee	Certification Type	Certified Area (ha)	Uncertified % (of TSA/TFL)	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	

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

- 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.

Feedstock

- f. Total volume of Feedstock: 309,527 ODT's
- g. Volume of primary feedstock: 119,282 ODT's
- h. List percentage of primary feedstock:
 - a. Certified to an SBP-approved Forest Management Scheme - ~91%
 - b. Not certified to an SBP-approved Forest Management Scheme - ~9%
- a. - Lodgepole pine – *Pinus contorta*
- b. - Hybrid white spruce – *Picea glauca x engelmannii*
- c. - Engelmann Spruce – *Picea engelmannii*
- d. - Douglas fir – *Pseudotsuga mensezii*
- e. - Black spruce – *Picea mariana*
- f. - Western hemlock – *Tsuga heterophylla*
- g. - Sub-alpine fir (Balsam) – *Abies lasiocarpa*
- h. - Western Red Cedar – *Thuja plicata*

- i. - Western Larch – *Larix occidentalis*
- j. - Paper Birch – *Betula papyrifera*
- k. - Trembling aspen – *Populus tremuloides*
- l. - Black cottonwood – *Populus balsamifera*
- i. Volume of primary feedstock from primary forest: 119,282 ODT's
- j. List percentage of primary feedstock from primary forest (j), by the following categories. Subdivide by SBP-approved Forest Management Schemes:
 - a. Primary feedstock from primary forest certified to an SBP-approved Forest Management Scheme - ~91%
 - b. Primary feedstock from primary forest not certified to an SBP-approved Forest Management Scheme - ~9%
- k. Volume of secondary feedstock: specify origin and type – 61% sawmill waste from the local area in/around Prince George
- l. Volume of tertiary feedstock: specify origin and composition – 0%

3 Requirement for a Supply Base Evaluation

SBE completed	SBE not completed
<input type="checkbox"/>	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:	P.L. Carruthers, MF, RPF	-	Nov 19, 2018
	Name	Title	Date
<p>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.</p>			
Report approved by:	Joe Kenney, RPF, P.Eng	Forestry Manager	Nov 19, 2018
	Name	Title	Date
Report approved by:	Shawn Bells	VP Operations	Nov 19, 2018
	Name	Title	Date

13 Updates

Note: Updates should be provided in the form of additional pages, either published separately or added to the original public summary report.

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

- a. **Total volume of Feedstock:** 309,527 ODT's
- b. **Total volume of primary feedstock:** 119,282 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 – 91%
 - b. Primary feedstock not certified to an SBP-approved Forest Management Schemes – 9%
- e. List all species in primary feedstock, including scientific name

- Lodgepole pine – <i>Pinus contorta</i>	Trembling Aspen – <i>Populus tremuloides</i>
- Hybrid white spruce – <i>Picea glauca x engelmannii</i>	Black Cottonwood – <i>Populus trichocarpa</i>
- Engelmann Spruce – <i>Picea engelmannii</i>	
- Douglas fir – <i>Pseudotsuga mensezii</i>	
- Black spruce – <i>Picea mariana</i>	
- Western hemlock – <i>Tsuga heterophylla</i>	
- Sub-alpine fir (Balsam) – <i>Abies lasiocarpa</i>	
- Western Red Cedar – <i>Thuja plicata</i>	
- Western Larch – <i>Larix occidentalis</i>	
- Paper Birch – <i>Betula papyrifera</i>	
- f. Volume of primary feedstock from primary forest – 119,282 ODT's
- g. List percentage of primary feedstock from primary forest (i), by the following categories.
 - a. Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes – 91%
 - b. Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – 9%
- h. **Total volume of secondary feedstock:** 190,245 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

Feedstock

- a. **Total volume of Feedstock:** 306,450 ODT's
- b. **Total volume of primary feedstock:** 127,540 ODT's
- c. List percentage of primary feedstock (g), by the following categories.
- d.
 - Primary feedstock certified to an SBP-approved Forest Management Schemes – 80%
 - Primary feedstock not certified to an SBP-approved Forest Management Schemes – 20%
- 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 trichocarpa*
- f. Volume of primary feedstock from primary forest – 127,540 ODT's
- g. List percentage of primary feedstock from primary forest:
 - Primary feedstock from primary forest certified to an SBP-approved Forest Management Schemes - 80%
 - Primary feedstock from primary forest not certified to an SBP-approved Forest Management Schemes – 20%
- h. **Total volume of secondary feedstock:** 178,910 ODT's
- i. Origin: BC
- 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>