
ATLANTIC POWER WILLIAMS LAKE RENEWAL PROJECT

FREQUENTLY ASKED QUESTIONS

ATLANTIC POWER WILLIAMS LAKE

What is the APWL Power Plant?

Atlantic Power Williams Lake (APWL) owns and operates the Williams Lake Power Plant, a 66 Megawatt biomass-fuelled electricity generation station. The plant has been operating since 1993.

What is the primary fibre source used to generate electricity?

The plant consumes approximately 450,000 tonnes of biomass annually, primarily consisting of wood residues from local sawmills.

Where does the electricity go?

Electricity is supplied to BC Hydro under a long-term electricity purchase agreement (EPA). The amount of power which can be produced by the plant is enough to provide the electricity needs of 52,000 homes in British Columbia.

How many people work there?

The plant has 32 full-time employees, earning above average salaries. APWL is the single largest taxpayer in the City of Williams Lake at \$1.2 million dollars in taxes annually. APWL also spends 8 times that amount in the region through purchase of goods and services.

RENEWAL PROJECT

What is the Williams Lake Power Plant Renewal Project?

APWL is proposing to supplement the existing fibre used to generate electricity at its Williams Lake Power Plant with additional shredded rail ties that would be blended with residual fibre from wood processing plants in the area.

Why?

The company's contract to supply electricity to BC Hydro expires in 2018. APWL and BC Hydro are in active discussion to extend the contract. However, APWL needs to ensure it has a stable and secure supply of fibre to feed the plant and convince BC Hydro that the cost of power from the plant will be competitive.

Why shredded rail ties?

The recent announcement by the provincial government of a reduction in the maximum timber harvest (Allowable Annual Cut), the ongoing impacts of the mountain pine beetle infestation, and the increasing competition for biomass fibre all reduce the availability of sawmill and forest residues for use by APWL.

Where would the rail ties come from?

Approximately one million rail ties are replaced each year by rail companies in Western Canada. Should the Renewal Project move ahead, APWL would work with the rail companies to ship rail ties to Williams Lake.

How many rail ties would you use in a year?

We expect to burn between 800,000 and 1.2 million rail ties each year. This represents between 15%-25% of our annual fuel supply.

What quantity of rail ties would be on site at a given time?

On average we would expect to have +/-150,000 rail ties onsite, but the number will vary on a seasonal basis and could go as high as 300,000 ties.

What ratio of rail ties to other kinds of fibre would that mean?

We anticipate burning 15%-25% rail ties on an average annual basis but we are applying to burn up to 50% rail ties if needed at times to supplement residual fibre from sawmills in the area.

How does APWL define the term “periodic basis” with regard to the desired intention to burn a 50/50 tie and untreated wood mix?

Our principle source of fuel will continue to be residual fibre from local sawmills. Due to a reduction in AAC in future years we anticipate these volumes will drop. We anticipate burning 15%-25% rail ties on an average annual basis to make up for this reduction. At times, depending on the availability of rail ties and traditional fibre, we may burn up to 50% rail ties should the need arise.

This was tried once before and it failed because of community concerns. Why is APWL testing the idea again?

The Williams Lake Power Plant did burn rail ties between 2004 and 2010. In 2009, rail ties accounted for 4% of our fuel supply. A rail tie chipping operation was located near the downtown area of Williams Lake. We understand that many people objected to the noise and dust associated with this process. APWL proposes to have the rail ties shipped to our plant for processing with slow-speed shredding equipment.

How would the rail ties be managed at the Williams Lake Power Plant site?

We anticipate having about 150,000 rail ties onsite on average depending on the time of year, but never exceeding 300,000 rail ties on site. We anticipate only shredding ties as needed to blend with residual fibre from local sawmills, never exceeding a 3-day supply of shredded material on site.

Has this been done elsewhere?

Currently shredded rail ties are being used in cement production plants in Kamloops and Richmond. Used rail ties are also being burned at power plants and cement production plants in the United States. APWL staff has visited several sites to learn about the equipment used and best practices for rail tie processing.

Why not use roadside logging debris (RLD) instead of rail ties?

Currently use of roadside logging debris (RLD) is not an economical option for APWL. The cost per tonne to grind and haul RLD to our plant is significantly higher than using shredded rail ties to supplement our residual fibre supplies from local sawmills. APWL will always be open to using RLD provided the cost per tonne is competitive.

DRAFT PERMIT

The Ministry of Environment (MOE) has recently issued a ‘draft permit’ for the WL Renewal Project and is seeking public feedback. What does the draft permit say?

The draft permit proposes a reduction in the maximum allowed particulate emissions at all times, regardless of fuel being burned. It also includes specific emission limits and monitoring requirements

for constituents related to rail ties. The MOE has issued the draft permit to provide the public with the opportunity to review the document and ask questions about the proposed emissions levels and provide comments.

What is the maximum amount of particulate (dust) allowed to be emitted each year in the draft permit?

The Total Particulate Concentration will be limited to 20 mg/m³ at 8% oxygen (O₂), which is the same level required for a new biomass project in BC. This is a reduction from the project's current permit limit of 50 mg/m³ at 8% O₂.

The chemicals listed in the draft permit are known to cause health challenges and negative impacts on the environment. How can APWL proceed with the proposed project knowing this when it says it wants to continue to be a good corporate citizen?

APWL commissioned two studies, one to look at air emissions and one to consider health impacts. The studies considered maximum exposure levels of the most vulnerable individuals under the most adverse conditions. The studies concluded that our air emissions will fall within all applicable standards and guidelines, and that no adverse health impacts are expected. The studies have been reviewed by MOE, Interior Health and the Williams Lake Indian Band (including WLIB's independent environmental consultant) and all have verified our conclusions.

How will the emissions at APWL be measured to ensure compliance with the levels in the draft permit?

The draft permit requires additional continuous monitoring, as well as quarterly stack testing transitioning to annual stack testing for an expanded list of emissions.

Who tests the emissions at APWL and who sees the results to ensure compliance?

APWL contracts a third-party air testing company to conduct independent air quality tests once per year. This testing will be conducted quarterly until compliance is demonstrated and then the testing will revert to annual.

Would APWL agree to install additional air monitoring equipment that can measure the chemicals listed in the draft permit at strategic points around the community for up to two years to ensure the air in Williams Lake is safe?

Yes, and this is a condition included in the draft permit.

ENVIRONMENT

Aren't there environmental and health hazards associated with rail ties?

The WLPP conducted a test burn of 100% rail ties in 2001 and the results showed that the high temperature in the boiler and existing pollution controls were highly effective in destroying and/or removing contaminants. APWL conducted new air modelling studies in 2015, which included the data from the 2001 test burn. The report by the firm RWDI is in the Williams Lake library and on both the APWL and MOE websites. APWL also commissioned Intrinsik to conduct a health impact study, which is also available on APWL and MOE websites. The studies showed that burning 50% rail ties results in emissions that are within all applicable requirements and no health impacts are expected.

Would the rail ties be coated with creosote or some other wood preservative chemicals?

Yes. We anticipate the rail ties we would receive at the plant would be coated mainly with creosote. A small percentage of older ties may have been treated with pentachlorophenol.

Aren't these wood preservative chemicals known to be harmful to the environment?

They can be as these chemicals will break down over time and can impact soil and water, and if combusted in an uncontrolled environment, can result in harmful emissions. APWL plans to burn them in a controlled environment.

Won't the rain and snow falling on the rail ties or the shredded material result in chemicals impacting our drinking water?

We have an existing storm water management plan. The monitoring program associated with that plan will continue to operate in accordance with the MOE's requirements. Whole rail ties on site will be covered, and shredded material will also be covered in an enclosed bin, resulting in minimal impact on storm water. The draft permit requires the un-shredded rail ties to be contained in an area separate from the clean biomass and protected from precipitation and storm water runoff, and it requires that no more than 3,000 tonnes of shredded rail tie material may be stored on site at any one time and must be in an enclosed bin, protected from the elements.

And when they are burned, aren't there toxic emissions?

The combustion system at our plant burns so hot (approximately 2,000 Degrees Fahrenheit) that many toxins are destroyed and our existing pollution control equipment ensures that all of the chemical emissions are well below accepted provincial health and environmental standards. The draft permit requires a minimum boiler temperature of 1,000 C (1,832 F).

What assurances can APWL provide that incomplete combustion of treated chips would never occur?

Incomplete combustion occurs in an uncontrolled environment, whereas fuel combusted in a wood-fired boiler is part of a controlled high-temperature combustion environment, which greatly reduces the possibility of incomplete combustion. The shredded rail ties typically have a higher heating value with lower moisture, and actually tend to burn even more quickly and completely than green / wet wood. The draft permit requires us to monitor the combustion temperature to ensure complete combustion.

If incomplete combustion does occur, how will the ash be treated differently from the current ash disposal process so that leaching does not occur?

In the unlikely event that wood was not completely burned and was apparent in the ash, this ash would be collected by a loader and added back to the fuel system for re-introduction in to the furnace. Otherwise the ash will be handled and managed in the same way.

What happens to the ash that is created?

Ash from our plant is collected and buried in a landfill near the plant in accordance with a plan approved by the MOE.

How do pollutant levels in the ash differ from those in untreated wood ash?

The pollutant levels in the ash from rail ties, although higher than from traditional fuel sources, are still well within BC regulations. The draft permit requires additional testing of the ash.

We can expect continued decreased fibre supply from local mill sources between now and 2028. If APWL were to get approval to burn more ties, what is the likelihood of Williams Lake becoming the primary rail tie disposal destination for Western Canada and/or beyond?

Our primary fuel source will always be our traditional fuel supply from the local mills. In the event that additional area mills are closed, no more than 50% of our fuel supply would come from rail ties as permitted. Furthermore, the availability of rail ties is also limited.

You say that using rail ties at the Williams Lake Power Plant won't harm the environment but isn't this proposal simply solving someone else's environmental problem by bringing used rail ties to Williams Lake and creating a new environmental problem here?

Our proposal would see the rail ties collected and transported to Williams Lake. They would be carefully handled, stored and shredded and combusted at very high temperatures, which results in emissions that are well below provincial standards. We see this as a long-term win for the environment and a way to sustain the jobs and economic activity at our plant.

How much water does APWL use in its cooling system?

Peak usage is about 1 million gallons per day but it is generally less than that. This project will not increase water usage. More than 90% of our water consumption is used in the power plant's cooling system. If the greenhouse project goes ahead, any hot water from the plant that goes to the greenhouse will decrease the amount of water that evaporates in the cooling tower, resulting in less make-up water needed for the plant's cooling system.

Where does APWL get the water used in the cooling system?

From the City's water supply, for which we pay approximately \$600,000 to \$900,000 per year, in addition to our property taxes.

What impacts does the annual water usage at the Williams Lake Power Plant have on the local aquifer that supplies drinking water for people in Williams Lake?

The City would be best able to answer this question.

Can APWL access another source of water for use in its cooling system at the plant?

Not at this point in time as there is not an available water source that we are aware of.

Would APWL be willing to undertake a potable water reduction study if the Renewal Project is approved?

We would be open to discussing any options that would potentially reduce the amount of water we require.

Would APWL be willing to work with the City of Williams Lake and other partners to undertake a long term study on the impacts on the local water supply?

Yes, we are always interested in finding ways to conserve the water we use. If the greenhouse project is implemented using our waste hot water, the amount of water lost to evaporation would be reduced. Additionally, under a recent curtailment agreement that is also expected to continue if we execute an EPA extension, we would not normally operate the plant during the hot summer months when our water needs would be the highest. This in itself has and will continue to have a significant impact on the water consumption rates at the plant during the times when the local aquifer is the most used.

What strategy will be used to prevent run-off from un-shredded and shredded ties stored on location?

The shredded ties represent larger concerns than the whole ties due to the increase in the overall surface area of the material. In order to mitigate the risk of run-off from these ties, any shredded tie materials will be kept in an enclosed silo or bin and will not be exposed to rain or snow. The whole ties will be covered and stored in a concentrated area on site, and a prescriptive storm water management and monitoring plan will be adhered to in accordance with Ministry of Environment requirements.

How will spontaneous combustion fires be prevented in shredded tie piles?

Spontaneous combustion can occur when piles of shredded wood have been left for long periods of time (>3 months), and when certain other ambient conditions are met. The rail ties in this case will only be shredded as needed and will be maintained in a controlled environment (enclosed silo or bin) in relatively small quantities (less than 3 day supply). The rail ties will not be stored with the traditional hog fuel, and the draft permit requires us to develop a revised Fire Prevention and Control Plan (FPCP) with procedures to prevent and control spontaneous combustion of stockpiled hog fuel.

The plant location is in the urban/wildland interface. If there is a forest fire, how will solid and shredded ties be stored so they are not at risk of combustion?

APWL has its own fire suppression system and our crews receive regular fire response training. In addition, APWL has a sprinkler system along the perimeter fences, which we use during hot, dry conditions to reduce the potential spread of fire to our neighbours.

HEALTH

Exactly what are the chemical constituents of the emissions that would come from the plant?

The chemicals and maximum quantities proposed for emission are provided in the draft permit issued by the MOE.

What are the levels today, and what will they be if you burn rail ties?

Our current permit provides stack discharge limits with respect to particulate (50 mg/m³ maximum limit), nitrogen oxides (320 mg/m³ maximum limit) and limits opacity to 10%. Under the proposed draft permit the particulate limit would be reduced to 20 mg/m³ at all times, regardless of what fuel we are burning. The nitrogen oxides and opacity limits would be unchanged. The proposed draft permit adds the following limits to be applied when burning rail ties:

- Sox as SO₂: 110 mg/m³ at 8 % O₂ (daily average);
- Sox as SO₂: 193 mg/m³ at 8 % O₂ (1 hour rolling average);
- HCL: 78 mg/m³ at 8 % O₂ (hourly average);
- Minimum Temperature: 1000 degrees C (hourly average);
- Class I (Pb, Sb, Cu, Mg, V, Zn): 4.7 mg/m³ at 8 % O₂ (hourly average);
- Class II (As, Cr, Co, Ni, Se, Te): 0.9 mg/m³ at 8 % O₂ (hourly average);
- Class III (Tl, Cd, Hg): 0.2 mg/m³ at 8 % O₂ (hourly average);
- Total dioxins and Furans (as PCDD/D TEQ): 0.1 mg/m³ at 8 % O₂ (hourly average);
- Chlorophenols: 1.3 mg/m³ at 8 % O₂ (hourly average);
- Chlorobenzenes: 1.3 mg/m³ at 8 % O₂ (hourly average);
- Polycyclic Aromatic Hydrocarbons: 6.5 mg/m³ at 8 % O₂ (hourly average);

How far from the plant would these chemicals travel in the air?

This information is contained in our updated air modelling report available in the Williams Lake library and on both the APWL and MOE websites.

Has there been any work done to assess the expected cumulative effects of long-term emissions from rail-tie burning into the Williams Lake airshed?

It is the Province's responsibility to manage the airshed, and in doing so they impose standards which take into consideration cumulative long-term health effects, which we must assess as part of our dispersion modelling. This modelling captures all meteorological conditions experienced by the airshed,

including temperature inversions. The Intrinsic report considered long term health impacts resulting from the emissions and found no cause for concern.

What actual evidence does APWL have that ties can be burned safely and efficiently?

The Williams Lake Power Plant conducted a multi-day test in 2001, burning 100% rail ties, and the air testing results were well below permit standards. Since then, there have been no material changes to the plant process that would alter the results. Consider again that the maximum we will burn under our amended permit will be a 50/50 mixture of rail ties and traditional fuel sources.

What are the potential health impacts for people breathing these chemicals?

The province determines what the limits are for protection of human health and environment and the standards are set according to those limits. We will comply with those standards. Although not required to do so, APWL commissioned Intrinsic to study the potential for health impacts. The Intrinsic report is available in the Williams Lake library and on both the APWL and MOE websites.

Will APWL pay for additional air monitoring stations around Williams Lake that measure the rail tie chemical emissions to help assure people that emissions are within provincial standards?

APWL will continue to support and participate in the community airshed monitoring system. The draft permit requires APWL to participate in an Ambient Monitoring Program (for NO_x, SO_x and HCL), to include an Ambient Monitoring Plan prepared by a Qualified Professional and acceptable to the Director

How will you ensure the public has access to emissions data so we know you're not impacting our health or the environment?

The data are submitted to the MOE and are all publicly available on request.

How often does APWL test the air emitted from its stack?

APWL's emissions monitoring equipment tests air emissions once every 10 seconds. The draft permit adds requirements to monitor SO_x, HCl, and CO in addition to the existing requirements for NO_x and Opacity.

APWL also contracts a third-party air testing company to conduct independent air quality tests once per year. The new draft air permit provides for additional quarterly and annual emissions testing. Quarterly stack testing will be required until three quarterly tests are successfully completed, and then testing will be conducted annually. The draft permit adds requirements to test for HCl, metals, dioxins/furans, chlorophenols, chlorobenzenes, and polycyclic aromatic hydrocarbons (PAH) in addition to the existing requirements for flow and particulate.

Would the company consider increasing the frequency of testing the air coming from its stack?

Yes, we concur with the increased testing identified in the draft permit.

Does the company currently share its stack testing results with the community?

All test results are reported to the MOE and are available to the public on request.

Would the company consider partnering with the Interior Health Authority to conduct a long-term health impacts study in Williams Lake?

We would certainly consider participating in a study if the health authority or province felt it would be useful.

What is being done about the fugitive dust that is currently being emitted from the site, and will there be more when you start burning rail ties?

We currently have a fugitive dust management plan for the site that has been reviewed by the MOE. In the event that MOE deems it necessary, the FDM Plan will be revised to address any concerns associated with fugitive dust emissions. The introduction of rail ties will actually help with fugitive dust emissions because they will be stored whole and will inevitably reduce the amount of fuel being offloaded on the truck dumper, which is where most fugitive dust is created. In addition, the shredded rail ties will be stored in a bin or silo.

How will dust generated from the shredding process be managed to prevent inhalation and spread into environment?

The preliminary design of the rail tie handling system includes numerous features to control dust, including: receipt of whole ties and unloading with a grapple arm; the shredder inlet chute will be enclosed with a hood and the entrance opening will be fitted with dust curtains, covered conveyors, and dust curtains on discharge chutes; and, shredded RRTs will be stored in a silo or bin. These design features, will ensure minimal fugitive dust from the receipt, handling, and storage of the rail ties, which, combined with the fact that rail tie deliveries will take the place of other fuel deliveries, should result in an overall reduction in fugitive dust from fuel handling.

COMMUNITY IMPACTS

What's in it for Williams Lake if the proposed Renewal Project is approved?

The project will help allow APWL to negotiate a new electricity purchase agreement (EPA) with BC Hydro. The current EPA expires in 2018 and BC Hydro is seeking assurances that APWL can access sufficient fuel if a new EPA is concluded. A new EPA with BC Hydro would sustain the 32 jobs currently at the plant. Another 25 construction jobs would be created to install the new equipment and 2-3 jobs would be created to run the new rail tie storage and shredder area at the plant. It would also ensure that APWL would continue to spend over \$8 million each year for goods and services supplied by local and regional businesses throughout the Cariboo.

An Economic Development group in Williams Lake is looking at the feasibility of developing a greenhouse operation to grow local vegetables and fruit and help diversify the local economy. Would APWL be willing to join this group?

APWL representatives have been part of this group since the idea was first proposed. It would involve our plant sending excess hot water through a pipe to help warm the greenhouses at no cost to the greenhouse. APWL signed a term sheet regarding the greenhouse project in July 2015 and an initial feasibility study was recently completed. We produce a lot of excess hot water in generating electricity at the plant, and sending some to heat to greenhouses would mean we wouldn't have to cool it, which in turn would result in a reduction of the water we use each year.

Won't approval of this project mean increased truck traffic, noise and road surface dust in the city?

Our project proposes to receive used rail ties at a railyard location in an industrial area of the city. The ties will be loaded onto trucks and transported to our plant primarily by highway and then a short distance on Mackenzie Avenue North. Our project will not materially change the total truck deliveries to the plant site since the rail tie deliveries replace current residual wood waste deliveries.

Have you considered building a rail spur to your property so you don't have to add trucks to the road?

Yes, we considered a rail spur, but it is not economically feasible. The project will not add trucks to the road; rather, the reduction in trucks delivering wood chips will be offset by trucks delivering rail ties.

Does the Renewal Project include any benefits for local First Nations?

We had the great pleasure of being welcomed on the traditional territories of both the Williams Lake Indian Band and the Soda Creek Indian Band to introduce our project to representatives of both First Nations. In January 2016 we signed an agreement with WLIB which governs the consultation process and WLIB has since provided a letter of support for the Renewal Project. WLIB told us that our use of end-of-life rail ties is consistent with their goal of sound environmental stewardship of the land.

Why should Williams Lake support this project?

We believe the community should support the project for several reasons.

- First, when our plant opened in 1993, there was an immediate improvement in air quality because we consumed the material that used to be burned in beehive burners. If we keep operating, Williams Lake continues to have cleaner air and local sawmills continue to have an economically viable wood waste disposal solution.
- Second, it's a project that will allow the plant to keep operating despite the long-term fibre access challenges in the region.
- Third, keeping the plant operating ensures protection of 32 well-paying jobs and greater than \$8 million spent in local businesses in the Cariboo purchasing a variety of goods and services.
- Fourth, we are the largest taxpayer in the City of Williams Lake, and if we keep operating we'll keep paying our taxes, which benefit all citizens.
- Fifth, our project would create construction jobs and 2-3 new jobs to help manage the rail tie storage and shredder area at the plant. Our jobs pay above-average wages and benefits and allow our employees to purchase homes and raise families.
- Sixth, it's an environmentally sound project that helps solve an environmental challenge throughout Western Canada. All this while sustaining and creating new jobs.

What are the next steps for the project?

The MOE has issued a draft permit, which specifies what maximum emissions would be allowed should the project receive final approval. APWL is hosting an Open House on June 28 to share information about the project and the draft permit. As well, both the APWL and MOE website have copies of the draft permit and information APWL has submitted to support its request for an amendment to its existing air permit. An official 30-day public comment period commenced on June 24 and APWL will answer all questions submitted during this period that pertain to the draft permit and the WL Renewal Project.