ATLANTIC POWER WILLIAMS LAKE RENEWAL PROJECT

FREQUENTLY ASKED QUESTIONS

ATLANTIC POWER WILLIAMS LAKE

What is the APWL Power Plant?
Atlantic Power 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, but has the capacity to burn up to 600,000 tonnes, 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. Atlantic Power is the single largest taxpayer in the City of Williams Lake at $1.3 million dollars in taxes annually. Atlantic Power 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?
Atlantic Power Williams Lake (APWL) is proposing to supplement the existing fibre used to generate electricity at its Williams Lake Power Plant with 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. Atlantic Power and BC Hydro are in active discussion to extend the contract for 10 years. However, APWL needs to ensure it has a stable and secure supply of fibre to feed the plant.

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 Atlantic Power.

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, Atlantic Power 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 the plant would burn between 55,000 - 85,000 tonnes of rail ties per year. That would be equivalent to about 800,000 to 1.2 million rail ties. The low end of this rail tie range at our current operating rate would be about 15% of our fuel supply. The upper end of this rail tie range at a possible reduced operating rate in the future would be about 25% of our fuel supply.

What quantity of rail ties would be on site at a given time?
The size of the whole tie pile would vary seasonally. On average, we expect an inventory of approximately 10,000 tonnes, but this could range as high as 20,000 tonnes during peak periods (300,000 ties).

What ratio of rail ties to other kinds of fibre would that mean?
We are considering making an application to increase the volume of rail ties we are allowed to burn under our environmental permit (currently 5%). Depending on operations, we anticipate burning 15%-25% rail ties on an average annual basis, but if needed we would like the ability to burn a 50/50 mix of rail ties and traditional wood fibre on a periodic basis.

How does Atlantic Power define the term "periodic basis" with regard to the desired intention to burn a 50/50 tie and untreated wood mix?
The amount of rail ties burned will vary on the supply and availability of the ties, as well as supply and availability of traditional biomass supply and the production level of the plant. We expect to burn an average concentration of rail ties of approximately 15%-25% annually. However, we are requesting the flexibility to go up to a 50/50 mix in the event of high rail tie deliveries and/or low plant production levels. The 50/50 is being used as the basis for all modelling and analysis as a proactive measure.

This was tried once before and it failed because of community concerns. Why is Atlantic Power testing the idea again?
The Williams Lake Power Plant did burn rail ties between 2004 and 2010, up to nearly 4% of total fuel consumption in 2009. We understand the community concerns were focused on the location where the rail ties were being stored and chipped. It was too close to the downtown area of the city. There were also concerns about noise levels and fugitive dust being created through the chipping process. Our current proposal differs because we would have the whole rail ties delivered directly to our plant site. Shredding of the rail ties would be tightly controlled within our site to eliminate concerns from prior chipping operations. Storage of shredded ties will be minimized and stored in a silo in order to avoid any possible issues.

How would the rail ties be managed at the Williams Lake Power Plant site?
We envision rail ties being delivered as we require them. We would develop a rail tie storage area at the plant for whole ties. It would be close to the shredder, which is the piece of equipment that would take whole rail ties and shred them into smaller pieces that would be mixed with other residual wood fibre before entering the plant on conveyors for combustion. We would maintain a limited supply of shredded rail ties at our site stored only for short periods of time so as not to create a fire hazard and minimize fugitive dust blowing off the plant site and any runoff from the shredded material.

Has this been done elsewhere?
Yes, rail ties have been used as a fuel in other power plants and in cement kilns in the US and Canada. We have visited several sites to learn about the equipment used and best practices, and we have hired design engineers with extensive experience in this area. Our system design will incorporate the benefits of the past experience in the industry.

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

Previous attempts to use RLD were not economically feasible and were discontinued in consultation with BC Hydro as it resulted in high electricity production costs. However, by installing the new rail tie processing and shredding equipment, it will enable us to take unprocessed RLD where currently we cannot. This will allow a supplier to collect and deliver RLD to us without the supplier having to invest in processing equipment. There is room for both rail ties and RLD in our fuel mix, and by investing in the equipment needed to process rail ties, we will also improve the economic viability of RLD's use as a fuel in the plant.

ENVIRONMENT

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

The Williams Lake Power Plant did a test burn in 2001 using 100% rail ties. The results showed that the high temperatures in the boiler combined with the state of the art pollution controls were highly effective in removing contaminants. We are in the process of further modeling the impacts of burning rail ties on the Williams Lake area air quality, the results of which will be shared with the Ministry of Environment and the public.

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 if not handled properly. These chemicals will break down over time and can impact soil and water. Atlantic Power is developing a detailed rail tie management system at our site that will ensure minimal environmental impacts. Rail ties would be stored whole until they are shredded for use in our plant. Our shredding equipment will be designed to minimize dust so there is minimal fugitive dust put into the air from our shredder. It's notable that the trial burn using 100% RRT showed dioxins and furans below provincial standards.

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. If and when rail ties are stored on site, we will adhere to any sampling requirements and provincial emissions limits imposed by the Province. If, in the process of monitoring, any concerns are identified, we will address the issue immediately.

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 all of the chemical emissions are well below accepted provincial health and environmental standards. The Williams Lake Power Plant conducted a week-long test in 2001 burning 100% rail ties and the air testing results were well below permit standards.

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

Excess oxygen is consistently maintained at the required boiler design level which supports complete combustion, and the system includes modern emissions abatement equipment that treats the flue gas prior to discharging from the stack. In addition, the plant has a CEMS unit (continuous emissions

monitoring system) which monitors opacity and NOx that would help us to identify conditions in which complete combustion may not 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.

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 on the fuel pile 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?
The ash is currently managed in accordance with a management plan approved by MOE. It will be updated to reflect the new fuel mix, and we will ensure we continue to operate in accordance with the currently approved plan.

How do pollutant levels in the ash differ from those in untreated wood ash?
The pollutant levels in the ash from rail ties, although somewhat higher than from traditional fuel sources, are still well within BC Regulations.

We can expect continued decreased fibre supply from local mill sources between now and 2028. If Atlantic Power 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?
Shredding and combusting rail ties to generate electricity at our plant helps solve the issue of rail ties accumulating over time at the side of rail lines, and eventually in landfills, which results in GHG emissions in the form of methane during decomposition in a landfill.

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 result 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 Atlantic Power 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, heat 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 Atlantic Power 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 the most appropriate body to answer that question. At this point, the City provides us with the water we require from the source they feel is most appropriate.

Can Atlantic Power 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 Atlantic Power 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 Atlantic Power 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, the amount of water lost to evaporation would certainly 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 and will not be exposed to rain or snow. The whole ties will be 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 tie chip 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 in relatively small quantities (1-3 day supply).

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?
The plant has a fire water loop with deluge stations around the perimeter of the fuel pile, and qualified and trained staff to manage any fire situations. In addition, the site is equipped with irrigation sprinklers along the perimeter fence where the plant abuts neighbouring properties to wet the area during dry periods to hinder the spread of fire.

HEALTH

Exactly what are the chemical constituents of the emissions that would come from the plant?
We will have extensive results from tests that were conducted according to MOE guidelines that define what the constituents in the exhaust were during our previous testing. These will be included in the dispersion modelling results that will be provided to the public and MOE, and the results will be compared to applicable air quality objectives.

What are the levels today, and what will they be if you burn rail ties?
In large part, the emissions from the burning of rail ties will not change from what the current emissions are. For emissions that do change, they will be kept below all applicable provincial standards and any permit limitations. The plant currently operates below all of these levels. Particulate, an emission of concern in Williams Lake, does not increase when rail ties are combusted.

How far from the plant would these chemicals travel in the air?
A dispersion modeling study is being conducted to determine the extent of any influences to air quality in the Williams Lake area. The models being used are US EPA-approved and their use is regulated by MOE guidelines.

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 will capture all meteorological conditions experienced by the airshed, including temperature inversions.

What actual evidence does Atlantic Power 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 that 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 that. We will comply with those standards.

Will Atlantic Power 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 decision to add monitors should continue to be based on health and environmental concerns. If that rationale indicates a new monitor and APWL is a key source of the contaminant in question we will provide the new equipment.

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 Atlantic Power test the air emitted from its stack?
The plant has a CEMS unit (continuous emissions monitoring system) which monitors opacity and NOx every 10 seconds. Additionally, an annual RATA (Relative Accuracy Test Audit) is completed by a qualified third party in order to validate the accuracy of our CEMS. Any exceedances are promptly reported to the MOE.

Would the company consider increasing the frequency of testing the air coming from its stack?
If increased testing adds valuable information, then yes. If test data shows that emissions are stable over time then increased test frequency will not be beneficial.

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 are currently developing a fugitive dust management plan for the site that we will submit to the MOE. 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 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. 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 allow Atlantic Power to negotiate a new 10-year electricity purchase agreement (EPA) with BC Hydro. The current EPA expires in 2018 and BC Hydro is seeking assurances that Atlantic Power 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 Atlantic Power would continue to spend about $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 Atlantic Power be willing to join this group?
Atlantic Power 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. We produce a lot of excess hot water in generating electricity at the plant, and sending some to heat 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 are considering a rail spur, but it may not be economically feasible. The project will not add trucks to the road; rather, the reduction in trucks delivering wood chips will be partially 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. We explained the proposed project and the likely timeline for moving it forward and committed to continue sharing information and meeting with them.

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 continuation of 32 well-paying jobs and another $8 million spent in local businesses in the Cariboo purchasing a varity 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 a sound project that helps solve an environmental challenge throughout Western Canada with no net environmental impacts in Williams Lake. All this while sustaining and creating new jobs.

What are the next steps for the project?
We will use the feedback we received during our preliminary consultation period in the Spring and Summer of 2015 to help develop the final application to the MOE to seek an amendment to our

emissions permit. We expect to do this sometime in July. The MOE will then conduct its own review process.

The MOE will inform us when the official 30-day public review process begins. This formalized process allows people to submit questions in writing and we will provide answers. The MOE will then consider the questions, comments and concerns received through the official public review period as part of its decision to grant or deny our application. In the meantime, we at Atlantic Power will continue to meet with groups and individuals to share information about our project, answer questions and receive feedback.