

Quillayute Valley School District (Forks) Biomass Pilot Project

Request: Funding for a pilot grant project to construct a wood fired boiler that would predominately utilize cedar mill waste, as well as other mill and wood waste, to fuel portions of the Forks Middle School and Forks High School. Estimated project cost is \$1m.

Explanation of the project: As a result of a regulatory change, 13 cedar mill owners were required to end their burning of mill waste associated with their manufacturing of cedar shakes and shingles. The mill owners sought the assistance of the Clallam Economic Development Council, the City of Forks and the Port of Port Angeles in attempting to renew/continue their previously enjoyed exemption permitting their burning of these materials. An initial study showed that the material could be used for a developing hot water and steam in sufficient quantities that could be used by the Quillayute Valley School District as a replacement to an existing retrofitted heating system utilizing a combination of petroleum based heating fuels. At the time of this study, it was affirmed that the mill owners operations had 130 direct and identified in-direct jobs associated the 13 mills. The study also revealed that the mill owners product had a fixed price determined by the products quality and grade that did not allow them to simply raise the price of their product to offset these additional costs. Finally, the study team determined after long consultations with EPA and the Olympic Region Clean Air Agency that it was not possible to obtain a continuation of the previously enjoyed exemption regarding burning of mill waste.

A second study was funded by CTED, at the request of Governor Gregoire, to determine whether the utilization of woody biomass in either a heat/steam operation, or a “cogen” (heat and power) operation, would be feasible. Siemens was awarded that contract and determined that a 1,526 MBtuh boiler could serve the school’s purposes, and could be incorporated into any new school additions, while consuming the mill waste from the cedar mills. This would in turn reduce disposal costs to the cedar mill owners who had begun long hauling the waste for use as hog fuel to locations at least 60 miles away.

The project has been the source of continual investigation by the District, the City, the Port of Port Angeles, and the Clallam Economic Development Council. A preliminary contract for fuel acquisition has been developed and a contract for acquiring other fuels from other types of non-cedar mill operations is being developed as well. This second contract mechanism is to ensure that there are other woody biomass fuel sources in case the cedar shake and shingle industry was to complete collapse in Forks. The identified elements required for this project include:

1. A 2,300 sq. ft slab-on-grade boiler house with necessary air circulation systems;
2. A new 1,526 MBtuh wood chip boiler with associated emission controls installed in said boiler house;
3. A storage bay that could contain at least 24 hours of feed stock inside the boiler house;
4. An automatic chip feeding mechanism;
5. and, associated operational equipment for the system.

While earlier project analysis focused on a system for the school, as well as a nearly identical one for a now closed aquatic center, ***the project proponents have only been seeking funding for the school option described above.***

The project proponents advocate that this plant must meet and exceed state (Olympic Region Clean Air Agency) and federal Clean Air Act omission standards. In fact, the project proponents are expecting that the publicly bid project will have requirements that the equipment not only comply with these existing regulations, but also comply as close as possible with European emission standards regulating greenhouse gases based upon the Kyoto Protocols. In addition to being good public environmental policy, the proponents believe that pursuing such a heightened set of standards ensures the efficiency of the system over time as well as allow the project to compete for “green energy” financial incentives.

While discussions continue with Siemens, the proponents have recently begun discussions with two Washington based distributors of woody biomass boiler systems. One company is currently developing a micro-co-gen option for boilers of approximately the size needed for this project. The other distributor is reviewing the possibility of adding a “micro-co-gen” component to their English-designed equipment. If available and installed as part of this pilot project, this operation could not only generate steam based heat for the District’s associated facilities, but also electrical power for the District as well.

Due to the infrastructure needs of the school district, with a large addition being developed for voter approval in the next two years, the project cannot be loan based. A loan option for the district could significantly alter their financing of any proposed future addition to the existing high school campus. While the Siemens cost analysis did indicate a neutral operations revenue to expenditures, the financing of the debt service showed the project *‘pencil in the red.’* While the proponents believe that the analysis by Siemens may have had additional operational costs that would in fact not be required (2 FTEs for example), the proponents have not been able to prove such beliefs.

The benefits associated with this project are significant:

- First, the cedar mills would have a disposal location for their wood waste and no longer need to undertake a 60 mile-one-way trip to dispose of this material. This then reduces their costs and ensures their continued viability thereby maintaining the 100+ jobs associated with their operations. It also significantly reduces their utilization of fossil fuels associated with long hauling these materials to hog fuel processors.
- Second, the school district would be able to replace a retrofitted boiler currently utilizing petroleum based products to generate heat. By utilizing the wood products the school would be able to reduce air emissions associated with their existing petroleum fueled boiler; cap if not reduce their heating costs; and, possibly generate electrical power from the project if the “micro-co-gen” option materializes. If the school district’s development of a 10-classroom and administrative office addition is approved by voters in the next two years, that addition would utilize the proposed project as its heat source.
- Third, the proposed project could also utilize storm related woody debris, as well as yard/land cleared woody debris, as a fuel source. The recently extended ban on burning such materials has created a significant issue in the Forks area with regard to cost-effective disposal of such materials. If funded, this project could consume those materials as part of its woody fuel stream.

All documents created and developed would be done so in a manner that could be readily shared with other rural school districts interested in such a green energy heating option. Further, the coalition would be willing to travel and permit visits to the project thereby sharing what was learned in Forks with others across the state. As a pilot project, it is understood that developing a potential replicable project could aid other local governments in rural communities facing similar issues.

This project is an attempt to utilize an existing wood waste stream in a manner that meets emission standards, replacing fossil fuel consumption, improving air quality, and producing a “green” renewable source of heat for a rural, remote economically challenged School District. It is the proponent’s understanding that funding was allocated to a bio-diesel project within the 24th Legislative District that was not utilized. It may be appropriate to see if a portion of those unutilized state funds could be allocated to this project instead.