



Port of Seattle: Biofuels Use Grows

The Port of Seattle is leading the move toward aviation biofuels, nurturing a fledgling industry to get it off the ground. As the operators of Seattle-Tacoma International Airport, we're working with energy and research partners to systematically evaluate all aspects of developing a commercial-scale program from scratch.

Sustainable aviation biofuel reduces carbon dioxide emissions by 50 to 80 percent compared to fossil fuel. This is because a biofuel feedstock, or source material, absorbs carbon dioxide (CO₂) during its growth cycle (e.g. photosynthesis). Using biofuel also reduces sulfur emissions, soot and particulates.

Aviation biofuels can simply be dropped into the current fuel supply. No new engines, no new aircraft, and no separate fuel delivery systems are needed at airports. Currently, aviation biofuel is not produced in Washington and must be imported by truck, rail, or barge, and then blended with fossil jet fuel before it can be integrated into our airport's fueling systems.

Aviation biofuel infrastructure integration will make Sea-Tac Airport an attractive option for airlines committing to biofuel use and will assist in attracting biofuel producers to the region as part of a longer-term market development strategy. Charting a path to commercial-scale production of biofuels in our region, we aim to play a significant role in the creation of a biofuel market through support of fuel integration and infrastructure, assistance with the incremental cost of fuel, and helping incentivize biofuel production.

In partnership with Boeing and Alaska Airlines, we released a first-of-its-kind study in 2017 that identifies the best infrastructure options for delivering aviation biofuel to Sea-Tac Airport.

The infrastructure study evaluated 30 sites around Washington state that could potentially support the receipt, blending, storage, and delivery infrastructure required to supply the airport with up to 50 million gallons per year of sustainable aviation biofuel. Potential sites were evaluated both for the ability to accommodate near-term (12-18 months) supplies of five million gallons per year and long-term (2-10 years) supplies of more than 50 million gallons per year.

Currently, fossil jet fuel is produced at three refineries approximately 90 miles north of Sea-Tac, and delivered to airport facilities in the south via the Olympic Pipeline. The study evaluated many locations along the Olympic Pipeline where biofuels could be blended and injected into the delivery system. It also evaluated the infrastructure needed for small

and large biofuel delivery volumes. The study concluded that we should focus on short-term investments at smaller-scale facilities that are flexible and could support other aviation fuel supply uses due to the lack of long-term supply source for aviation biofuels. Facilities that rely on offloading fuel via rail and marine modes are only cost-effective for large volumes of biofuel over the long term due to high infrastructure costs.

The Olympic Pipeline Company and the petroleum refineries and distributors have shown strong interest in upgrading their facilities to handle aviation biofuel and moving the blended product in their pipelines. As the biofuel supply expands, the Port, its partners, and the fuel supply and transport organizations could work cooperatively toward the ultimate goal of integrating aviation biofuel into the fuel hydrant delivery system at Sea-Tac Airport.

A small biofuel receiving and blending facility at the Sea-Tac Airport Fuel Farm is the most cost-effective solution in the short term. In terms of aviation biofuel infrastructure, Washington's northern-area refineries are the most cost-effective options for large volumes of aviation biofuel over the long term due to their access to marine, rail, truck, and the Olympic Pipeline. The Phillips 66/Olympic Pipeline Company sites in Renton, WA also showed potential to accommodate receipt and blending facilities for moderate-to-large biofuel volumes over the long term.

Another study to be released in 2017 will identify the best ways to finance such a system. The full aviation biofuels

infrastructure study can be found at www.portseattle.org/environmental. 



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