NARA

Northwest Advanced Renewables Alliance

Led by Washington State University and funded by the USDA National Insti-tute of Food and Agriculture, the Northwest Advanced Renewables Alliance (NARA) is helping to develop a sustainable industry in the Pacific Northwest that uses forest residuals and waste from construction and demolition to make biojet fuel and valuable co-products. The alliance, initiated in August 2011, includes public universities, government agencies, private industry and interested stakeholders.

KEY ACCOMPLISHMENTS TO DATE: JULY 2013

We are advancing the development of renewable energy from sustainable forest byproducts such as slash piles and construction waste.

- Converting wood residues from several Northwest tree species to primary sugars (used to produce aviation fuel) is at 90% conversion efficiency.
- Douglas-fir trees can be selected in a manner that will enhance the properties that contribute to production of biofuel.
- We developed models that help regional and local decision-makers navigate logistical hurdles in processing and transporting raw materials.

We are helping mitigate biofuel production costs by exploring the creation of valuable co-products.

- The process of turning woody biomass into biojet fuel generates a lignin-rich by-product. Promising research shows that this by-product can be converted into commercially viable products such as activated carbon, concrete dispersants, and thermoplastics.

Our work enhances and sustains rural economic development. Development of a biofuel/co-product processing infrastructure will benefit rural communities in the Pacific Northwest that are ready to retool moth-balled plants and utilize existing assets for economic growth.

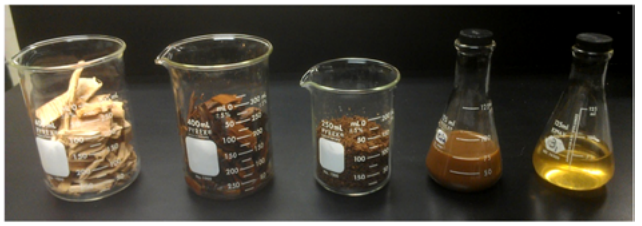
- Biorefinery processing centers have been identified, and a supporting depot model in rural communities has been completed for the Western Montana Corridor (WMC) that includes counties in western MT, northern ID and northeastern WA.
- Effective, well-coordinated supply chains are critical for a renewable energy industry to be sustainable. We completed a supply chain analysis for the WMC, and are now focusing on western Oregon and Washington.
- When surveyed, over 85% of stakeholders in the WMC worry about the local community and forest health.

Producing biofuels also means a cleaner, healthier environment.

- A preliminary analysis indicates that use of biojet fuel from forest residuals produces significantly less CO_2 and ozone emissions than current jet fuel emissions.
- Other natural benefits such as long-term soil productivity, vegetative effects, and wildlife impacts are being assessed.

By improving bioenergy literacy, we are helping develop a future energy workforce, providing professional development, and enhancing citizen understanding.

- With NARA training, K-12 teachers improved bioenergy literacy by 50%.
- NARA sponsors a regional high school competition "Imagine Tomorrow" which expanded to all NARA states (OR, WA, ID, MT) and includes a biofuels category (http://imagine.wsu.edu/)
- NARA offers many undergraduate and graduate research opportunities and biofuel curriculum for middle and high school students.



Wood to biojet samples

NARA long-term soil productivity site near Springfield, Oregon

2013 Imagine Tomorrow biofuels category winners

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