

Tri-Cities an ideal environment for biofuels research

These days, you don't have to go far to hear a little something about renewable fuels and power. And in the Tri-Cities, you needn't look beyond your own backyard.

At the Bioproducts, Sciences and Engineering Laboratory (BSE) on Washington State University's Richland campus, scientists are doing some innovative research on the conversion of biomass to fuels and value-added products that are traditionally derived from petroleum. The facility, built by the state of Washington, houses scientists from Pacific Northwest National Laboratory and WSU Tri-Cities.

"It's an appropriate place for the kind of research we're doing," said Rick Orth of PNNL. "The Northwest has always been at the forefront of renewables, and Washington in particular is pretty proactive in this area."

In fact, Washington has the lowest carbon footprint for its electricity

production in the nation. As the leading producer of hydroelectric power, Washington accounts for nearly

75 percent of all electricity generated in the Northwest.

Orth recently addressed the Three Rivers Entrepreneur Network about the current state and future direction of work at BSEL. He also shared where the biggest opportunities exist for research being

done here to make a national impact. In a word: biofuels.

Biomass is a unique renewable source because it contains carbon and therefore is well suited for making fuels. In addition to automobiles, the presence of large airports, such

as SeaTac, and large military bases contributes to Washington being a large consumer of hydrocarbon fuels such as gasoline, diesel and jet fuel. And while we inherently tend to use significant amounts of these fuels, we also are naturally poised to produce hydrocarbon fuels from renewable sources such as a biomass.

In the Tri-Cities, we've demonstrated a strong commitment to renewable energy. We have a national laboratory here that invests heavily in energy and environmental research and development. There are huge spans of agricultural land to provide biomass for testing. And the partnerships at work are synergistic and strong.

WSU Tri-Cities has paired its agricultural science, pretreatment and biochemical conversion expertise with the work being conducted by PNNL at BSEL. The university's agricultural extension office in Prosser also is a valuable resource

with respect to crop development and sustainable practices. And PNNL employs top researchers in the fields of catalysis, environmental biotechnology and analysis and engineering to work toward solutions with viable scalability.

"PNNL is really the premier catalysis lab across the entire national laboratory system," added Orth. "Significant investments have been made by the U.S. Department of Energy in expertise and equipment that would be extremely rare to find anywhere else."

"Washington, and the Tri-Cities in particular, really represents the perfect marriage of organizations, equipment, expertise, funding and history to create an environment conducive to big breakthroughs in biofuels," Orth said. However there won't be one silver-bullet solution in his opinion.

"There will be many answers that come together to address the issue of

reducing our dependence on non-renewable fossil fuels. We work day in and day out to find the very best ones."

Scientists at BSEL primarily are focusing on using biomass to produce liquid transportation fuels that have high energy density, with an emphasis on producing refinery ready materials that are compatible with existing infrastructure and distribution channels.

"This will reduce overall costs, which remains a major concern," Orth explained. "After all, the state didn't build this world class research facility not to see tangible — commercially feasible — results."

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