

New NW research institute will turn ag wastes into energy and useful products

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RICHLAND, Wash. — Four major Northwest research organizations are bringing together industry, processors, growers, universities and federal laboratories to develop new methods for converting agricultural and food processing residue and wastes into commercially valuable “bio-based” energy and industrial products.

Members of the new Northwest Bioproducts Research Institute include the Department of Energy’s Pacific Northwest National Laboratory in Richland, Wash.; DOE’s Idaho National Engineering and Environmental Laboratory in Idaho Falls, Idaho; and Washington State University and the University of Idaho, both comprehensive land-grant universities. Each institution will bring its own unique capabilities, staff and facilities to the institute.

Under terms of the agreement — signed this past week — the participating universities and federal research laboratories will collaborate to form a nationally renowned, multi-disciplinary research and development program. They will examine and develop methods for converting agricultural and food processing residue and wastes into bio-based fuels, power and industrial products, such as chemicals for plastics, solvents and fibers. Industry, processors and growers will be able to use and profit from the institute’s products and technologies and, in some cases, will profit from the discoveries through licenses.

Laboratory facilities at the four institutions will be used. The agreement also calls on the consortium to seek public and private support for new research facilities.

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Pacific Northwest National Laboratory

Operated by Battelle for the U.S. Department of Energy



University of Idaho



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A Bioproducts Advisory Committee that includes members from industry and grower organizations will be created to set research priorities and help ensure the rapid transfer of scientific discoveries to commercial products and processes.

The collaborators noted the institute will help to more fully utilize the productivity of American farms, which are already the most productive in the world. It will explore new uses for such field residue as leaves, straw and stover, or discarded culls, hulls, peelings or pulp remaining after processing. Currently the market for such residues is typically livestock feed, which provides a low economic return to the producer. In some cases, food processing and farm residues can become a financial liability if they require disposal.

“Rural areas, including those in the Northwest, have missed out on the unprecedented national economic growth of the past two decades due to low commodity prices, increased environmental pressures and, more recently, increased energy costs,” explained WSU President V. Lane Rawlins. “New technology offers the potential to address all of these issues. Opening new markets adds value to agricultural production, converting farm wastes addresses water resource environmental issues, and producing energy may help keep power costs in check.”

“The institute will make the Northwest a leader in bio-based technology but the technology created and demonstrated in this institute will go beyond regional interest,” added PNNL Director Lura Powell. “It will contribute to the nation’s desire to increase markets for agriculture and help reduce its dependence on imported petroleum. In the Northwest, the institute will develop the technologies necessary to create a robust bioproducts and bioenergy industry.”

UI President Bob Hoover said the institute’s research ultimately will result in value-added processes and technology for industry and the agricultural community. “To accomplish this goal, industry and grower groups will help guide our research decisions and we will establish mechanisms to rapidly translate scientific and technical discoveries into commercially viable processes and products.”

And Bill Shipp, INEEL president and laboratory director, noted “To the degree possible, research conducted in this institute will contribute to the nation’s need to reduce its dependence on foreign oil and provide low-cost energy. Demand for petroleum feedstocks for products, fuels, and power production continues to increase, and it is intended that the institute will strive to address this increase by enabling the use of agricultural resources to partially offset this demand.”

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All four signees said the institute will create processes and products that are better for the environment. These include using waste streams as raw material — or feedstocks — supplied to processing plants, developing energy efficient processes, and developing a better understanding of the integrated environmental, energy and economic impact of the processes and products that are created.

The four institutions provide a breadth of capabilities for a fully integrated bioproducts industry. Together they bring plant science and biochemistry, production techniques, conversion and processing technologies, and economic and market analysis capabilities.

PNNL is a DOE research facility and delivers breakthrough science and technology in the areas of environment, energy, health, fundamental sciences and national security. Battelle, based in Columbus, Ohio, has operated the laboratory for DOE since 1965.

The INEEL is a science-based, applied engineering national laboratory dedicated to supporting DOE's missions in environment, energy, science and national security. The INEEL is operated for the DOE by Bechtel BWXT Idaho, LLC.

WSU and UI are land-grant research universities for Washington and Idaho with distinguished research, outreach and educational programs in agriculture, sciences, engineering, business and technology.

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