

FACT SHEET

Industrial Symbiosis

Turning waste into value.

Industrial symbiosis includes waste, by-products, residues, energy and water. This program seeks to go beyond waste reduction by turning waste into a resource which benefits the producer and stimulates new business opportunities that support the circular economy.

One company's waste is another's resource

Innovation is happening around the world to move this idea forward as part of a circular economy, and Washington State is ready to accelerate it.

This new program looks across the state to expand existing industrial symbiosis efforts, assist others that are on their way, and support those still on the drawing board.

While there are different strategies to help businesses find new uses for their waste, the goal is the same – to achieve mutual benefit for those creating the waste and those receiving it. Whether a public entity or private organization, those working together will each benefit while reducing waste.

More information is available in our 2019 report to the legislature: [Washington Industrial Waste Coordination \(Industrial Symbiosis\) Program Recommendations](#).



Established in 2021 with broad legislative support

Businesses know their costs, whether they are related to supply chain, production or waste. Reducing waste saves money. Selling waste is even better. Senate Bill 5345 passed with nearly unanimous support, and signed into law in July 2021 ([RCW 43.31.625](#)).

The new law seeks to create networks and innovation hubs among Washington business, which will transform waste from one company into new products from another. This mutual benefit will lead to a more sustainable and integrated industrial economy.

Agency contact:

Kirk Esmond

kirk.esmond@commerce.wa.gov

Phone: 206-837-2622

Capitalizing on Opportunities

Businesses, public utilities and other organizations throughout Washington State are expanding existing technologies for the beneficial reuse of industrial waste, while others are starting new and innovative efforts:

- **Beta Hatch**, Cashmere – Applies waste heat from nearby businesses to grow meal worms for livestock feed.
- **Columbia Pulp**, Starbuck – Uses crop stubble to make recyclable food containers.
- **Cosmo Specialty Fibers**, Cosmopolis – Recognizes the value of its lignosulfonate (red liquor) waste, and is experiencing success in finding customers outside the state.
- **Public utilities** – Specifically, wastewater treatment plants (WWTPs), are a longtime practitioner of industrial symbiosis. Whether its biosolids, reclaimed water, anaerobic digesters or waste heat, WWTPs are using this type of municipal waste for multiple benefits. Facility upgrades are an opportunity to invest in processes that achieve multiple benefits and better serve communities.

Industry highlight – Anaerobic digestion, which is the process of taking organic waste and converting it to reclaimed natural gas (RNG) and nutrients, has been in practice at Washington dairies for many years. **DeRuyter and Sons Dairies** (Yakima) is a large example and smaller scale digesters are operating in Whatcom County such as **Edaleen** and **Vander Haak Farms**.

Early Support

Commerce is funding new and exciting efforts through the first year of the program ranging from research and development to on-the-ground implementation:

- **Inland Empire Paper** (Spokane), **Qualterra** (formerly NuPhY - Pullman), and **Washington State University** are collaborating to improve soil health with biochar and fly ash as soil amendments to increase crop yields.
- **Washington State University** is testing biochar waste from the Kettle Falls Power Generating Station as a filter medium to remove odorants from municipal compost.
- The **City of Pasco** is exploring the beneficial reuse of food processing wastewater through an algae denitrification system that can reduce nitrate levels in wastewater while generating a value-added product.
- **Myno Carbon** (Kettle Falls) will not only create biochar and capture the biogas, but also explore the capture of CO₂ using crushed basalt to create a liming agent beneficial to soil health.
- **Impact Bioenergy** (Vashon Island) will deliver renewable natural gas (RNG) to a local food manufacturing plant and capture waste heat from the facility to manufacture certified organic dry fertilizer.

Critical Tools – The **Washington Materials Marketplace** provides an on-line market for valuable used materials. The Marketplace connects in-state and out-of-state organizations as they explore new opportunities to transform waste materials into new products, or secure recycled material streams to reduce use of virgin feedstock.

The Next Industrial Revolution

Washington State is building a stronger circular economy – one that is sustainable, integrated, climate-friendly and profitable – by decoupling growth from the consumption of finite resources. Industrial symbiosis is one tool in a box using future forward ideas and applications, demonstrating that growth does not have to equal waste.