



Energy Freedom Program: 2008 Status Report

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Funding bioenergy research and development in Washington State

December 1, 2008
Report to the Legislature
Juli Wilkerson, Director

Produced by cooperation with the
Washington State Department of Agriculture



ACKNOWLEDGEMENTS

Per RCW 43.235.060, the Director of the Washington State Department of Community, Trade and Economic Development (CTED) is to report on the status of the Energy Freedom Program to the Washington State Legislature and Office of the Governor by December 1 of each year. This report includes information on the projects funded, their status, and the environmental, energy savings and job creation benefits they provide.

Given their shared history of program administration, CTED and the Washington State Department of Agriculture (WSDA) have closely collaborated in the preparation of this report.

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This report is also available on the CTED website: cted.wa.gov

Annual reports for 2006 and 2007 are available on the WSDA website: agr.wa.gov/bioenergy

EXECUTIVE SUMMARY

The Energy Freedom Program was established in 2006 under E3SHB 2939 to, “promote public research and development in bioenergy, and to stimulate the construction of facilities in Washington to generate energy from farm sources or convert organic matter into fuels.” (RCW 43.325)

The program provides financial and technical assistance to cities, counties, ports, special purpose districts and other political subdivisions of the state, as well as federally recognized Tribes and state institutions of higher education. Administrative responsibilities were initially assigned to the Washington State Department of Agriculture (WSDA).

Under the program, a project may receive up to \$5 million as long as the support constitutes no more than fifty percent of total project costs. Criteria for selection include projects which:

- Convert farm products, wastes, cellulose, or biogas directly into electricity, biofuel or other coproducts
- Demonstrate technical feasibility and assist in moving commercially viable projects into the marketplace
- Use feedstocks produced in the state
- Increase energy independence or diversity
- Produce long-term economic benefits, including new jobs, job retention or higher incomes
- Provide an option for the state to purchase a portion of the fuel or feedstock produced by the project

In 2007, E2SHB 1303 transferred program administration to the Washington State Department of Community, Trade & Economic Development (CTED) effective July 1, 2007. Any financial agreement in place at that time continues to be serviced by WSDA.

E2SHB 1303 also established the Green Energy Incentive Account as a subaccount of the Energy Freedom Program to support development of alternative fuel refueling infrastructure along Interstate highway corridors throughout the state. No appropriation has been provided for the Green Energy Incentive Account.

CTED will continue to work closely with WSDA and other agencies and public entities with bioenergy expertise and knowledge to assess the technical and economic feasibility of project proposals, and actively support those with the highest probability of success.

Since inception, the Energy Freedom Program has provided nearly \$18 million in grants and low-interest loans to local public-private partnerships for:

- ☞ Oilseed crushing and biodiesel production in Yakima, Grant, Lincoln and Snohomish counties
- ☞ Wood-fired boilers and steam turbines in Grays Harbor and Clallam counties
- ☞ Anaerobic digestion of organic wastes for biogas power in Yakima county

Together, these projects have:

- ☞ Created 42 new jobs (a total of 100 new jobs are expected once all projects are fully operational)
- ☞ Provided clean power for 700 homes
- ☞ Leveraged more than \$107 million in additional public and private investment
- ☞ Improved air and water quality

LOOKING FORWARD

The Energy Freedom Program was designed to serve primarily as a revolving loan fund. At present, only \$13 million of the original FY2007 appropriation of \$23 million remains in circulation. Four active projects, which total \$10.4 million in loans, will continue to be managed by the Washington State Department of Agriculture (WSDA). They have all begun regular repayments. The balance of the original appropriation, \$2.6 million, was returned to the account when a fifth loan recipient cancelled their project earlier this Fall.

Based on recaptured funds, loan repayments and interest, the Energy Freedom Program account balance is expected to be \$3.7 million at the close of FY2009. Over the 2009-2011 biennium, some \$1.2 million in loan repayments and \$100,000 in interest is expected to flow into the account each year. All told, the account balance at the end of FY2011 is expected to be roughly \$6.3 million.

The Energy Freedom Program is now at a crucial crossroad in its development. Given its central role as the only state-level financial assistance program specifically targeting bioenergy production, dozens of public and private sector proponents have approached the Washington State Department of Community, Trade & Economic Development (CTED) over the last year concerning the program's status. Formative projects interested in support include:

- “Fuels-for-Schools” wood-fired boilers and turbines to displace heating oil and produce electricity for schools in rural, timber-dependent communities.
- “Energy Efficiency in Agriculture” training program for energy auditors to assist agricultural producers with efficiency measures, and help prepare applications for financial assistance under the new Farm Bill and other federal programs.
- Gasification of food processing waste for clean heat and power, building off a successful pilot program in the Tri-Cities partially supported by state funds.
- R&D facilities and pilot-scale bioenergy production from a variety of cellulosic feedstocks, primarily forestry material, construction debris and paper from municipal waste streams.
- Upgrades at landfills and wastewater treatment plants for biogas capture and power production.
- Wood-fired boilers and biogas from anaerobic digestion to displace diesel and produce electricity at rural correctional facilities, and provide job training opportunities.
- Biodiesel processed from used restaurant and wastewater treatment plant grease in Spokane and the central Puget Sound region.

In response to this interest, CTED is requesting an appropriation of \$6 million for the 2009-2011 biennium in support of one or more competitive funding rounds.

PROGRAM TIMELINE

2006

- The Energy Freedom Program is established under E3SHB 2939. The Legislature appropriates \$23 million, including \$17 million to the Washington State Department of Agriculture (WSDA) for low-interest loans, and \$6 million to the Washington State Department of Community, Trade & Economic Development (CTED) for a designated grant.
- Eight public-private partnerships are designated by the Legislature and/or selected through WSDA's competitive process to receive loan awards.
- WSDA structures the loan program to provide 10-year terms and a one percent interest rate. Repayment can be deferred up to 24 months from date of funding unless the project generates revenue sooner.

2007

- Under E2SHB 1303, administrative responsibility for the program is transferred to CTED effective July 1, 2007. Original loan agreements continue to be serviced by WSDA. Allowed technologies expand to include biogas and cellulosic feedstocks.
- Green Energy Incentive Account is established as a subaccount of the Energy Freedom Program to support development of alternative fuel refueling infrastructure along Interstate highway corridors throughout the state. No new appropriation is provided to either account.
- The Legislature amends the original awards in response to the changing needs of the projects. Two of the projects chose not to proceed, two projects have their awards adjusted, and one project changes their public partner.
- The remaining \$2.5 million is designated for a bioenergy project outside the Energy Freedom account, reducing overall revolving funds from \$17 million to \$14.5 million.
- In late 2007, one of the loan recipients opts to use other funds and withdraws from the program.

2008

- Funds returned in 2007 are designated by the Legislature as grants for two new bioenergy projects, reducing total revolving funds from \$14.5 million to \$13 million.
- A fourth loan recipient opts not to move forward and returns their award. The funds remain in the account subject to appropriation.
- By the end of 2008, all four remaining loan recipients will have begun to make regular repayments. Over the course of the 2009-11 biennium, an estimated \$6.3 million will be returned to the account in the form of recaptured loans, loan repayments and interest.

Energy Freedom Awards: 2006-2008

(rounded to closest \$1,000)

Public Recipient / Private Partner	Location	Bioenergy Production	Designated Loans	Competitive Loans	Grants	Status
Odessa Public Development Authority Inland Empire Oilseeds LLC	Odessa Lincoln County	Oilseed Crushing & Biodiesel Processing	\$3,500,000	\$848,000		In development
Port of Warden Home Grown Oil LLC	Warden Grant County	Oilseed Crushing & Biodiesel Processing	\$2,500,000	\$796,000		In development
South Yakima Conservation District George DeRuyter & Sons Farms	Outlook Yakima County	Biogas Power & Coproducts	\$1,973,000			Operating
Port of Sunnyside Natural Selection Farms	Sunnyside Yakima County	Oilseed Crushing	\$750,000			Operating
Spokane County Conservation District Palouse Bio LLC	Spokane Spokane County	Oilseed Crushing & Biodiesel Processing	(\$1,779,000)	(\$854,000)		Cancelled 2008, loans returned
Tulalip Tribes Qualco Energy Corp	Monroe Snohomish County	Biogas Power & Coproducts		(\$1,500,000)		Declined 2007, no loan issued
Port of Whitman County Western Industrial Biofuels	Colfax Whitman County	Oilseed Crushing & Biodiesel Processing		(\$779,000)		Cancelled 2006, no loan issued
Port of Columbia Pacific Agrienergy LLC	Dayton Columbia County	Oilseed Crushing & Biodiesel Processing	(\$2,500,000)			Cancelled 2006, no loan issued
Grays Harbor PUD Grays Harbor Paper LC	Hoquiam Grays Harbor County	Wood-Fired Heat & Power			\$6,000,000	Operating
Quillayute Valley School District TBD	Forks Clallam County	Wood-Fired Heat & Power			\$1,000,000	Grant signed, Fall 2008
Snohomish County Wolfkill Whole Energy LLC	Cathcart Snohomish County	Oilseed Crushing & Biodiesel Processing			\$500,000	Grant signed, Fall 2008
Total Awards	\$17,867,000		\$8,723,000	\$1,644,000	\$7,500,000	

ENERGY FREEDOM GRANTS

Grays Harbor PUD – Grays Harbor Paper



Under the original FY2007 appropriation, a \$6 million grant was designated via CTED to the Grays Harbor Public Utility District (PUD) for purchase and installation of a 7.5 megawatt turbine at the Grays Harbor Paper mill in Hoquiam. The turbine, one of three driven by wood-fired steam boilers, increased the mill's potential power output to 18 megawatts. Excess electricity is purchased by the PUD.

This \$9 million upgrade provides Grays Harbor Paper with sufficient energy to power their papermaking, and

additional revenue to offset swings in the paper market.

The project also provides Grays Harbor PUD with reliable power in a region prone to storm-related grid outages, and stable pricing to balance volatile power markets. By increasing local generation, the PUD can more efficiently manage their cost structure and reduce costs for the business community and general public.

The woody biomass needed for this project also benefits a host of forest product processors, loggers, truck drivers and other positions in the timber industry. Grays Harbor Paper is a leader in development of new densification technologies that reduce the cost of transporting woody biomass to the mill by 60-90 percent.

🌀 **Employment:** 25 new jobs, total of 45 new jobs once fully operational, support for 225 jobs at the mill

🌀 **Environmental Benefits:** Use of woody material left by forest practices, storm debris removed from landfills, renewable power production for local PUD

🌀 **Production:** 7.5 MW electricity

Quillayute Valley School District



Quillayute Valley Schools, in partnership with Clallam County Economic Development Council, City of Forks, Port of Port Angeles and numerous private businesses, have tapped a series of state-funded planning grants to explore biomass energy opportunities in the Forks area.

For FY 2009 the District received a \$1 million designated

🌀 **Employment:** One new job once fully operational, supports 100+ jobs at local mills

🌀 **Environmental Benefits:** Heating oil replaced by local mill waste, renewable power production for local PUD

🌀 **Production:** Area heating, potential 750 kW electricity

grant via CTED to purchase and install a wood-fired boiler for steam heat at Forks Middle School and nearby buildings, and explore use of microturbines to generate 750 kilowatts of power. As of November 2008, they were reviewing proposals for engineering services. The project plans to be operational within a year.

Snohomish County – Wolfkill Whole Energy



Snohomish County, Washington State University and local growers began to explore oilseed crops in 2005. The Snohomish County Farm-Grown Fuel Project was launched, and for FY2009 the Legislature awarded a \$500,000 designated grant via CTED to purchase and install an oilseed crusher for biodiesel production.

Located at the former Cathcart Landfill near Mill Creek, the project uses about one-quarter of captured landfill biogas to fuel a seed dryer. The dryer is more efficient than flaring and puts biogas to productive use.

Once the seeds are crushed, the oil will be processed into biodiesel and the meal fed to local livestock. By 2012, the project hopes to have 2,500 acres under propagation and be producing 240,000 gallons of biodiesel, enough to provide a 40 percent biodiesel blend for the county's diesel fleets. The county expects to save \$1.5 million in fuel, taxes and leasing costs over the first five years.

In addition to Energy Freedom, the project received \$409,000 in county support and \$344,000 from US Department of Energy.

➤ **Employment:** One new job, new opportunities for local agricultural producers

➤ **Environmental Benefits:** Efficient value-added use of landfill gas, diesel displacement in county fleets

➤ **Production:** 240,000 gal/yr biodiesel by 2012

ENERGY FREEDOM LOANS

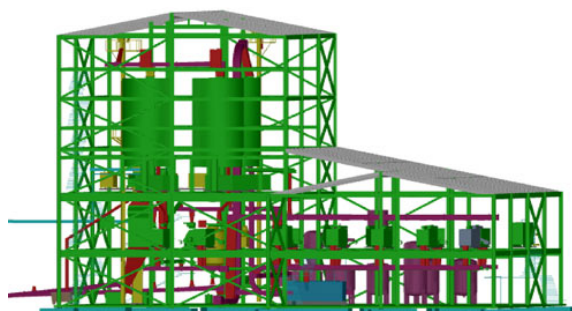
Eight local public entities were offered low-interest loans in FY2007 for projects designated in the state Capital Budget and/or selected through the Washington State Department of Agriculture's competitive award process. Two of the recipients, Pacific Agrienergy and WI Biofuels, cancelled their projects prior to signing loan agreements. A third project, Qualco Energy, secured federal financing and opted not to use their state loan offer.

WSDA signed agreements to provide \$13 million to the remaining five projects. In mid-2008, Palouse Bio terminated their efforts due to volatile commodity markets. Their public partner, Spokane County Conservation District, returned both designated and competitive loan funds to the Energy Freedom account in September 2008. The remaining four projects are operational or in final phases of development, and all have begun to make loan repayments.

The loan documents prepared by WSDA were project-specific and typically consist of a loan agreement, promissory notes, a trust indenture, lease or use agreement between the local jurisdiction and its private partner, and assignments for security purposes. Loan procedures and documentation followed standard banking procedures and required verification of how loans will be repaid and how they will be collateralized in the event of a default.

The program allows for up to 3 percent of the total loan amount to be used for administrative expenses directly related to the project. WSDA elected to pass that allowance on to its public sector partners.

Port of Warden – Home Grown Oil



The Port of Warden is partnering with Home Grown Oil LLC (previously Washington Biodiesel LLC) to construct a \$100 million integrated oilseed crushing and biodiesel production facility in Grant County. In the near term, the project will purchase canola seed from out of state. The project is working with growers and agencies to support oilseed production, and expects to purchase in-state feedstock as it becomes available.

In June 2007, Home Grown Oil implemented a two-phase construction strategy: the oilseed crush facility will be completed prior to the biodiesel production facility, rather than simultaneously as originally planned. Home Grown Oil has committed to making its oil available to other biodiesel processors until its own facility is operational.

Home Grown Oil has completed the SEPA approval process, and has letters of agreement with the City of Warden and Washington State Department of Ecology which address the remaining permitting issues. The Port of Warden has started to access Energy Freedom loan funds for site infrastructure, but does not expect to distribute additional funds until project financing has been completed. Home Grown Oil expects to wrap up financing by March 2009.

∞ **Employment:** 35 new jobs once fully operational, new opportunities for local agricultural producers

∞ **Environmental Benefits:** Biodiesel production to displace current diesel use

∞ **Production:** 40 million gal/yr oil

Odessa Public Development Authority – Inland Empire Oilseeds



The Odessa Public Development Authority is partnering with Inland Empire Oilseeds LLC on a \$10 million oilseed crushing and biodiesel refining facility in Lincoln County. The ownership group includes farmer cooperatives, which are working with their members to assess and support in-state feedstock production. Until local feedstock is available, the project will acquire oilseed from out of state.

2008. They are currently working with the Washington State Department of Ecology and the Governor's Office of Regulatory Assistance on air quality permitting for the oilseed crush operation. Crushing equipment is on-site and expected to be operational by May 2009.

To date, the project has created seven new jobs with a payroll of approximately \$400,000 per year, and expects to hire three additional operators in the next two months. The project estimates it has thus far injected at least \$3 million into the local economy through the employment of contractors and purchase of supplies.

- ∞ **Employment:** Seven new jobs, total of 10 new jobs once fully operational, new opportunities for local agricultural producers
- ∞ **Environmental Benefits:** Biodiesel production to displace current diesel use
- ∞ **Production:** 3-5 million gal/yr biodiesel

Washington State Department of Agriculture – Natural Selection Farms



Natural Selection Farms in Sunnyside is a \$1.3 million oilseed crushing facility producing oil for use in biodiesel production. In addition to growing its own canola and camelina crops, the project purchases oilseeds from elsewhere in Washington State and throughout the Northwest region. Natural Selection sells oil for biodiesel production and seed meal as feed to local dairies.

Natural Selection is a biofuels pioneer, using King County biosolids to grow oilseeds for biodiesel which is used, in turn, by the county's Public Works fleet.

The project is currently crushing Northwest-grown camelina seed. Some camelina meal can be sold domestically as animal feed, however until the US Food & Drug Administration approves higher use of camelina in domestic feed rations the project will need to export some of its seed meal to non-domestic markets.

Funding began in September 2006 in partnership with the Port of Sunnyside. In May 2008, the Port notified WSDA it had completed its role as public partner. WSDA has assumed any remaining public partner duties and will receive loan payments and reports directly.

- ∞ **Employment:** Seven new jobs, new opportunities for local agricultural producers
- ∞ **Environmental Benefits:** Oil for biodiesel production
- ∞ **Production:** 500,000 gal/yr oil

South Yakima Conservation District – George DeRuyter & Sons Farms



South Yakima Conservation District has partnered with George DeRuyter & Sons Farms on a \$5.1 million anaerobic digester that converts methane from dairy waste into electricity. Located in Outlook, the digester currently uses only on-farm manure as its feedstock for energy production.

The project may boost future methane production by co-digesting food processing waste. Co-digestion provides an effective means of managing and capturing carbon and nutrients from organic waste streams, and diversifies the

revenue sources available for digester operations.

In operation since November 2006, the DeRuyter digester has the potential to produce 1.2 megawatts, enough to power some 700 homes. The power is purchased by Pacific Power & Light, and carbon credits are sold on the Chicago Climate Exchange.

The project helps protect air and water quality, and sells digester fiber as a soil amendment and peat moss replacement. Liquid digester effluent provides nutrients for crop production.

➤ **Employment:** One new job

➤ **Environmental Benefits:** Methane captured from organic wastes for renewable power production, fiber replacement for mined peat moss

➤ **Production:** 1.2 MW electricity, fiber