



# **Washington State Bioenergy Activities**

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# Bioenergy Coordinator Responsibilities

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*Developing, coordinating, and overseeing the implementation of a plan, or series of plans, for the production, transport, distribution, and delivery of biofuels produced.*



# Industry Dynamics

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- 1) Second phase of industry development underway:
  - ❖ Early adopters pushed policies (tax incentives, expedited permitting, content requirements) and built markets.
  - ❖ Investors, big ag and biotech now engaged, often in partnership with petroleum interests. Look for wave of M&A in coming years as industry matures.
  - ❖ Success ultimately determined by combination of price point and industry standing (control over feedstocks, process IP, distribution, retail markets).



# Industry Dynamics

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How can the state...

- ❖ *Help biofuels producers become and remain competitive, especially those using regional feedstocks?*
- ❖ *Implement policies and incentives that incorporate new technologies without picking winners in the marketplace?*
- ❖ *Maximize job creation and retention of economic values in local communities?*



# Industry Dynamics

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2) Public and private R&D agendas coming into play. Strategic alliances, many driven by federal grants, forming between:

- ❖ Land grant universities
- ❖ National labs
- ❖ Private firms



# Industry Dynamics

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How can our regional partnerships ensure...

- ❖ *Northwest states receive their fair share of federal R&D funding?*
- ❖ *Emerging process technologies make the best use of unique regional feedstocks?*
- ❖ *Technological advances get to the marketplace in a timely and productive manner?*



# Industry Dynamics

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3) Environmental concerns growing, especially for feedstocks:

- ❖ Net energy balance
- ❖ Food system impacts
- ❖ Increased demands for irrigation and process water
- ❖ Genetically modified organisms (field v lab)
- ❖ Removal of cellulosic materials from fields and forests



# Industry Dynamics

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How can we...

- ❖ *Identify policies that incorporate environmental sustainability and economic opportunity?*
- ❖ *Develop a better understanding of complex agronomic conditions to best support regional feedstocks?*
- ❖ *Mitigate the impacts of shifting commodity prices on other agricultural economies?*



# Follow the reports...

Report	Lead	Partners	9/07	12/07	1/08	12/08	7/09	12/09
1) Biofuels Advisory Committee	WSDA	lots	X					
2) Energy Freedom annual report	CTED	WSDA, WSU, UW, WWU, ORNC		X		X		
3) Biofuels incentives/feedstock R&D	CTED*	WSU		(X)		X		
4) Forest bioenergy utilization	CTED*	UW		X?		X?		
5) SW WA pipelines, incl. biofuels	CTED*	EFSEC		X				
6) Gov's Climate Advisory Team	ECY, CTED	lots			X			
7) Climate change mitigation markets	CTED	ECY			(X)	X		
8) Biomass markets (eastern forests)	UW	WSU					X	
9) Sugar beets for biofuels study	WSDA	WSU						X?

*(X) = Interim Report Date, X? = Presumed Report Date, \* = Functioning primarily as fiscal agent*



# Biofuels Advisory Committee

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Advises WSDA director...

- ❖ Implementing or suspending Renewable Fuels Standards
- ❖ Logistical, technical, and economic issues
- ❖ Potential for credit trading
- ❖ Compliance and enforcement provisions
- ❖ Tracking and reporting requirements
- ❖ How blends greater than 2% and renewable fuels other than biodiesel or ethanol could achieve goals

*[agr.wa.gov/bioenergy/](http://agr.wa.gov/bioenergy/)*



# Energy Freedom Loan Program

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Originally housed at WSDA. CTED director now reports on status of program each year by December 1. Report must include...

- ❖ Information on projects funded, and their status
- ❖ Environmental, energy savings, and job creation benefits



# Market Incentives & Feedstock R&D

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WSU to analyze availability of biofuels and estimates types and origins of feedstocks contributing to biofuel production and use.

WSU to also recommend models for at least the following:

- ❖ Market incentives to encourage instate production of brassica-based biodiesel, and cellulosic ethanol, including direct grants, production tax credits, contracting preferences, and state guaranteed purchase contracts
- ❖ Preferred research programs, grants, or other forms of assistance for accelerating development of instate production of cellulosic ethanol, and biodiesel crops and coproducts



# Market Incentives & Feedstock R&D

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When evaluating potential programs, consider how to:

- ❖ Assist farmers and businesses in developing economically viable, environmentally sustainable in-state biofuel and feedstock production
- ❖ Leverage and encourage private investment
- ❖ Support feedstocks and production techniques with greatest net reductions in petroleum dependence and carbon emissions

Interim report due December 1, 2007; final due December 1, 2008



# Forest Biomass

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UW College of Forest Resources to...

- ❖ Identify barriers to using forest resources for fuel production
- ❖ Explore renewable energy markets for forest biomass, especially material removed from eastern Washington forests as part of forest health improvement efforts. Analyze how to efficiently collect and deliver forest biomass, including role of transportation and processing infrastructure, and identify new biological, chemical, and engineering technologies.

Report due June 30, 2009



# Climate Advisory Team

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Ecology staffing Governor's multi-stakeholder Climate Advisory Team process, meeting since Spring. Goals include...

- ❖ Working with farmers, entrepreneurs, fuel distributors and retailers to assure biofuel feedstocks are grown in Washington
- ❖ Ensuring refiners, blenders and distributors of biofuels create family wage jobs
- ❖ Promoting public purchase of fuel blends that reduce dependence on imported fuel

*[www.ecy.wa.gov/climatechange/cat\\_overview.htm](http://www.ecy.wa.gov/climatechange/cat_overview.htm)*

Report due by February 7, 2008



# Carbon Markets

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CTED and Ecology developing framework for state to participate in emerging markets to mitigate climate change on a multisector basis. Framework to include...

- ❖ Credible, verifiable inventory and accounting methodologies
- ❖ Findings of Climate Advisory Team

Report due December 1, 2008



# Allied Efforts

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- ❖ EFSEC review of pipeline corridor capacity and distribution for natural gas, petroleum and biofuels in SW Washington. Report due December 1, 2007.
- ❖ WSDA & WSU evaluation of sugar beets for production of biofuels. Report due December 1, 2009?
- ❖ WSU collaborative R&D effort with PNNL on bioproducts from ag waste.
- ❖ WSU applied research effort with WSDA and others on bioenergy feedstock development.
- ❖ Ecology “Beyond Waste” organics recycling program



# Upcoming Session

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Still early to read the tea leaves. May see proposals for...

- ❖ Movement on Climate Advisory Team's Early Action Recommendations concerning carbon management, possibly including a Low Carbon Fuel Standard
- ❖ Change in RFS from volumetric to universal
- ❖ Anti-exclusivity in biofuels retailing
- ❖ Energy Freedom tweaks (dedicated funding, revolving loans, addition of grants, expanded scope)



# Bioenergy: Next Steps

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Initial priorities include...

- ❖ Clarifying agency roles on reporting, contract management, interagency coordination, multi-stakeholder work groups
- ❖ Determining future of \$1.5 million in residual Energy Freedom loan funds
- ❖ Partnering with WSDA on statewide financing and project development workshops for biodiesel and digesters



# Bioenergy: Future Goals

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- ❖ Develop effective roadmaps for bioenergy industry development
- ❖ Determine most effective ways to address sustainability concerns
- ❖ Define role of public policy in supporting emerging technologies
- ❖ Attract additional funding for R&D and coproduct marketing assistance
- ❖ Explore scalability and ownership models to retain value at local level
- ❖ Gain a more sophisticated understanding of agronomic issues, and realistic assessment of feedstock opportunities
- ❖ Explore instituting consistent policies across state and local boundaries to facilitate industry development
- ❖ Develop real world models for bioenergy development (e.g. BioTown)



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