

Wood Innovations Project Application – Part 2: Narrative Proposal and Program of Work

Application Guidelines for Fiscal Year 2015

A. Project Title: Central Oregon Biomass Energy Cluster Development Strategy + Project Development

B. Length of Project: 36 months (3 years) July 1, 2015 – June 30, 2018

C. Costs:

	Forest Service	Cooperator and Partners
Year 1	\$44,000	\$21,526.67
Year 2	\$36,500	\$21,526.67
Year 3	\$36,500	\$20,926.67
Totals	\$117,000	\$63,980.00

D. Abstract:

COIC proposes the development of a Central Oregon biomass energy cluster development project for Crook, Deschutes, and Jefferson counties and the surrounding fuel/woodsheds. The purpose of this project is to increase the market-based utilization of forest restoration byproducts and other small diameter woody material by: a) developing an overall regional strategic plan that includes analyzing the opportunities and barriers for biomass utilization in Central Oregon and plan; b) providing a menu of technical assistance offerings by public and private entities to help current and future projects be successfully implemented; and c) working with regional, statewide, and national partners to share best practices, bring in outside technical assistance as necessary, and promote Central Oregon as a biomass utilization hub.

E. Project Narrative

The overall goal of this project is to improve the market-based utilization of woody biomass material in Central Oregon from federal and other land ownerships by a) developing a regional strategic plan that establishes baseline conditions and barriers to market development and a series of implementation strategies to overcome the barriers; b) supporting project development and implementation strategies; and c) working with statewide partners to share best practices, bring in outside technical assistance as necessary, and promote Central Oregon as a biomass utilization hub.

Strategic Approach

Central Oregon currently lacks the capacity necessary to help the region become a biomass utilization “hub”. This project aims to fill gaps and to set the stage for future enhanced capacity – through successful project implementation and demonstration, development of regional partnerships and networks, development of baseline data and out-year goals, and future capacity-building – to fill the gaps and fulfill the potential for biomass utilization in the region.

This project will directly address the following gaps:

- 1) Biomass Supply Assessment and Characterization. It has been over ten years since the last comprehensive effort to assess the volume, characteristics, sources, and costs of current biomass supplies in Central Oregon (TSS Consultants, 2002). Without this information, it is impossible to identify the full potential for biomass utilization in the region, nor to identify the appropriate technologies, markets, and scale.
- 2) Regional Team and Regional Strategy. There does not currently exist a regional public-private team focused on identifying and realizing biomass utilization opportunities and solving barriers. There is also no shared regional strategy – supported by the key local, state, and federal agencies and private partners – to bring the technical, political, financial, and marketing and outreach support needed to achieve a groundswell of successful local implementation projects. To this end, COIC has built a team composed of the following public and private partners to build a regional strategy: COIC; OR Employment Dept; Oregon Dept. of Energy; Deschutes National Forest; OR Dept. of Forestry (Central OR District and Salem); OSU (Cascades Campus, Corvallis, and Extension); Crook, Deschutes, and Jefferson Counties; BLM Prineville District; Wisewood; Redmond Power Company; and Intermountain Wood Energy.
- 3) Regional Point of Contact. Although COIC has fulfilled this role in the past, a lack of recent funding has reduced COIC’s ability to be a central point of contact for biomass supply, project development and technical assistance, regional coordination and goal-setting, barrier identification; and outreach and advocacy.
- 4) Public Support & Acceptance. Some biomass energy projects, particularly those situated within existing residential and urban areas (e.g. OSU-Cascades Campus’ proposal), will require sophisticated public outreach to help educate neighbors and communities about the realities of modern biomass utilization technologies.
- 5) Hog fuel and Wood Chip Implementation Projects. In order to better tie biomass utilization to federal forest restoration projects, it is critical to establish biomass energy facilities that may be fueled by hog fuel and/or lower-quality wood chips. For this reason, a portion of this project will be dedicated to supporting the implementation of the Mt. Bachelor biomass chip boiler system and marketing this project as a model.

Project Development

In addition to filling the need for a strategic regional approach to promoting biomass energy, this project aims to support the implementation of identified biomass energy projects and work with

local, regional, and statewide partners to prospect new projects, assess their feasibility, and line up potentially viable projects for implementation. Local project proponents have requested the following types of assistance:

- Identification and characterization of fuel supply and fuel supply chains;
- Research and identification of new biomass markets;
- Pre-feasibility and full feasibility studies;
- Project financing, including identifying opportunities for energy service company (ESCO) ownership models;
- Outreach to regional architects and engineers unfamiliar with biomass technologies;
- Grant writing, administration, and reporting;
- Outreach and public relations;
- State, local, and federal government engagement to achieve a variety of goals; and
- Regional point of contact and biomass utilization “championing”.

Currently identified projects include:

- OSU-Cascades Campus District Heating – Campus administrators hope to develop a biomass heating system for the full campus build-out, which will serve up to 5,000 students by 2025. This will require classrooms, offices, research facilities, and housing totaling 650,000 to 1,000,000 million square feet. Using a conservative conversion ratio, this equates to 26 to 40 million BTU (40 BTU/ft²) heating capacity. Estimating the biomass heating appetite for the facility at 10% of overall needs (the university desires to install a mixed renewable energy system), this equates to 2.6 to 4.0 million BTU of potential biomass heating. The project will require a) local championing; b) local and state government engagement; c) feasibility studies; d) local community outreach and public relations; and e) financing assistance, including identification of potential energy service company (ESCO) opportunities.
- Deschutes County – The Deschutes County landfill processes 4,500 tons of low-grade woody biomass material/year. The County is seeking ways to enhance the utilization of this material through on-site processing as well as the potential for utilization at off-site business opportunities (including Redmond Power; see below). Deschutes County needs the following assistance: a) identification of additional technologies and markets to utilize material, and b) coordination with more communities to collect additional supply.
- Mt. Bachelor Biomass Heat – Mt. Bachelor is in the midst of developing full design/engineering for a 4.4 million BTU chip-based biomass heat boiler to heat the “hot walks” and decks (snowmelt systems). This project requires: a) assistance with grant administration and reporting; b) fuel supply identification and characterization; c) financing assistance, including identification of potential ESCO opportunities; and d) community outreach and public relations.
- Redmond Power – Redmond Power is developing a cellulosic ethanol system to convert post-municipal and forest restoration byproduct woody biomass into fuel additive

ethanol. The project will produce 2 million gallons of ethanol/year using ~57,000 tons of woody biomass. This project will require a) engagement with local governments to identify additional post-municipal woody biomass feedstock; b) identification of federal land fuel supply; and c) regional “championing”.

- Intermountain Wood Energy – IWE currently produces and distributes 2,000 tons/year of wood products to local markets including bundled firewood and utilizes their wood waste for animal bedding. IWE’s near-term goal is to double their volume to utilize 4,000 tons/year, research more efficient methods and processes for wood utilization, and diversify their products to offer clean, dry industrial volume chips for local biomass markets. Together, IWE and COIC will: a) research and evaluate the small diameter timber supply available to create clean industrial volume chips; b) research new biomass markets to identify new business opportunities; c) generate a clearer understanding of the supply chain to utilize existing forest land and business biomass; and d) undertake technical modifications to existing equipment to allow for better separation and utilization of biomass material.
- A private (as yet confidential) energy developer has approached COIC about conducting a fuel supply analysis for small diameter materials including source, characteristics, and costs within 100 miles of Prineville. If the new facility is developed, the ultimate project scale is a 30MW facility utilizing 2,000 tons/day for 100 working days per year.

COIC will work with the aforementioned local partners and through the Statewide Wood Energy Team (SWET) to provide the specific menu of technical assistance required for each project. COIC and partners will also prospect for additional biomass utilization projects, in particular a) new large public facilities; b) new large private facilities that are not in natural gas territory; and c) the potential to develop a market for new, turnkey small-scale pellet boiler systems for large residential and small commercial application.