WISEWOOD ENERGY

DESCRIPTION OF FIRM

WISEWOOD ENERGY is a leading advanced wood energy project development firm in Portland, Oregon that outfits institutional, commercial, tribal, and industrial clients with state-of-the-art biomass energy systems. Wisewood's projects build strong local economies, support healthy forest ecosystems, and lower energy costs. The firm's focus is heating, cooling, combined heat and power (CHP), and district energy applications. As a design/build firm, Wisewood Energy works with a variety of mechanical, electrical, and structural engineering firms and subcontractors to complete complex biomass energy projects on time and on budget.

COMPANY FOCUS AND CAPABILITIES

THERMAL ENERGY, COMBINED HEAT AND POWER, AND BIOMASS

Wisewood Energy has a deep understanding of how to develop advanced wood energy systems for thermal and CHP applications. The firm has successfully designed and built both CHP and thermal energy systems across the US West. Wisewood sees modern CHP and microgrid solutions as the next generation of biomass energy systems that reflect the multidimensional needs of both end users and traditional power utilities.

ENERGY MODEL ANALYSIS AND ENGINEERING

Executing a successful CHP, district energy, or distributed renewable energy project requires balancing the sources and uses of available resources. That takes a firm understanding of the current technology and how to deploy those assets as part of a larger project. Wisewood assesses multiple wood energy technologies to find the most appropriate for each client, blending technology, infrastructure, and local fuel supplies into a system that meets the needs of both the developer and the community.

PROJECT FINANCE AND PRO FORMA ANALYSIS

Wisewood understands the complexity of energy project finance. Wisewood brings parties together to underwrite large, multi-tenant energy projects and develop innovative renewable systems that are often expandable for future growth. Past projects have leveraged tax structures, philanthropic organizations, and special purpose entities to help meet the requirements of the end user.

UTILITY-SCALE BUSINESS DEVELOPMENT EXPERIENCE

Wisewood thinks at utility scale and understand the value of providing customers with a turnkey solution that can grow with their customer base. District heating connection solutions that are scalable and utilize the network effects of having centralized command and control with SCADA are key to system longevity. Wisewood has in-house expertise in 3D modeling, plant automation, and construction project management.

WISEWOOD ENERGY

COMPANY FOUNDER

ANDREW HADEN is Founder and President of Wisewood Energy. Andrew has led the technical development and implementation of biomass energy projects through complete cycles of feasibility assessment, engineering, construction, commissioning, and ongoing operations support. His biomass projects across the Western US have been foundational to local economic development strategies that generate both savings and new revenue for communities that decide to transition their heating systems from fossil fuels to renewable biomass energy.

SELECT BIOMASS ENERGY CONSTRUCTION PROJECTS

VALUE-ADD WOOD CHIPS PROCESSING LINE – HOOD RIVER, OR (CURRENT)

Wisewood Energy is providing detailed engineering, and General Contracting services to a private wood products company expanding operations to serve its current markets for clean, dry multi-species wood chip products sold into the consumer marketplace.

PELLET MILL DESIGN & CONSTRUCTION MANAGEMENT – BIODYNAMICS OF OREGON, OR (2020)

Wisewood Energy is providing the design, engineering, and General Contracting services for an alfalfa and wood pellet mill in Eastern Oregon. This fast-tracked project combines whole log processing, hog fuel and dried wood furnish production, wood and alfalfa pelletizing, and alfalfa bale processing for a full-service, log-to-pellet and bale-to-pellet system. A central biomass boiler will provide plantwide process and space heating via both steam and hot water.

COMBINED HEAT AND POWER DESIGN/BUILD – SIERRA INSTITUTE FOR COMMUNITY AND ENVIRONMENT, CA (2019)

Wisewood Energy provided design, engineering, and construction management for a biomass CHP system that provides heat and net metered electricity to a Plumas County facility. The project represents the foundational biomass system among a network of proposed systems in the Plumas County area being developed through a collaboration between Wisewood Energy and the Sierra Institute, as well as the first use of cross-laminated timber (CLT) in California. The project was funded by the California Energy Commission.

DISTRICT ENERGY DESIGN/BUILD – HARNEY COUNTY, OR (2016)

Wisewood Energy completed the feasibility assessment, design and engineering, project development, financing, and construction of a biomass district energy system in Burns, Oregon that uses hog fuel wood chips to provide heating to multiple community facilities. Harney Community Energy, a subsidiary of Wisewood Energy, owned and operated the system for one year, after which the local community took over ownership and long-term operations as the High Desert Biomass Cooperative. The project represents an innovative model for other rural communities seeking to reduce and stabilize heating bills and localize their energy systems, and has expanded to connect new customers since its initial completion.

BOILER SYSTEM DESIGN/BUILD – KETCHIKAN INTERNATIONAL AIRPORT, AK (2016)

Wisewood Energy designed and provided construction administration for a new biomass pellet-fired heating system to serve the Ketchikan International Airport. The system was designed to

showcase best practices of biomass thermal energy system implementation, including biomass boiler baseloading, ample thermal storage, remote monitoring, and digital control integration.

SELECT BIOMASS ENERGY CONSULTING PROJECTS

PRINEVILLE COMMUNITY ENERGY – CITY OF PRINEVILLE, OR (CURRENT)
Wisewood is working with the City of Prineville on a project intended to utilize woody biomass from the surrounding fire-adapted landscape to produce heat and power for core community institutions, including schools, a hospital, and a data center. This will include otherwise unutilized material such as municipal wood waste, non-merchantable timber from thinning overstocked forests, and removal of invasive juniper; using sustainable fuels and keeping more money in the community.

WASTE WOOD COMBINED HEAT AND POWER – PORTLAND METRO, OR (CURRENT)
Wisewood is working with Portland Metro to assess opportunities to divert municipal wood waste in the region, which would otherwise be landfilled or shipped to distant wood mills, into local commercial and industrial facilities for high temperature process applications and net-metered electricity generation. The project represents a first step in creating a network of systems in the Metro area that produce sustainable energy from municipal waste wood.

DISTRICT ENERGY DESIGN & ENGINEERING – HAINES BOROUGH, AK (2019)
Wisewood Energy completed construction-ready design and engineering of a biomass boiler system that will provide heating to multiple Borough facilities in Haines AK, including assessing the applicability of existing biomass boiler equipment. The system will utilize passively dried wood chips and has capacity for future expansion of the district energy grid.

DISTRICT ENERGY COMBINED HEAT AND POWER ANALYSIS & DESIGN – OREGON STATE UNIVERSITY (2018)
Wisewood Energy worked with the Oregon State University – Cascades campus to complete several preliminary design options of a district energy system to provide power and thermal energy to a planned new campus in Bend, OR. Wisewood Energy anticipates re-engaging with OSU-C to fully design the proposed district energy system once the campus construction strategy is finalized.

CAMPUS ENERGY DESIGN & ENGINEERING – MT. BACHELOR SKI RESORT, OR (2017)
Wisewood Energy completed construction-ready design and engineering of a hog-fueled biomass system that will provide heat to multiple Mt. Bachelor Ski Resort facilities. The system is designed to utilize material available from forest restoration activities in the surrounding Deschutes National Forest, directly contributing to forest health objectives in the region.