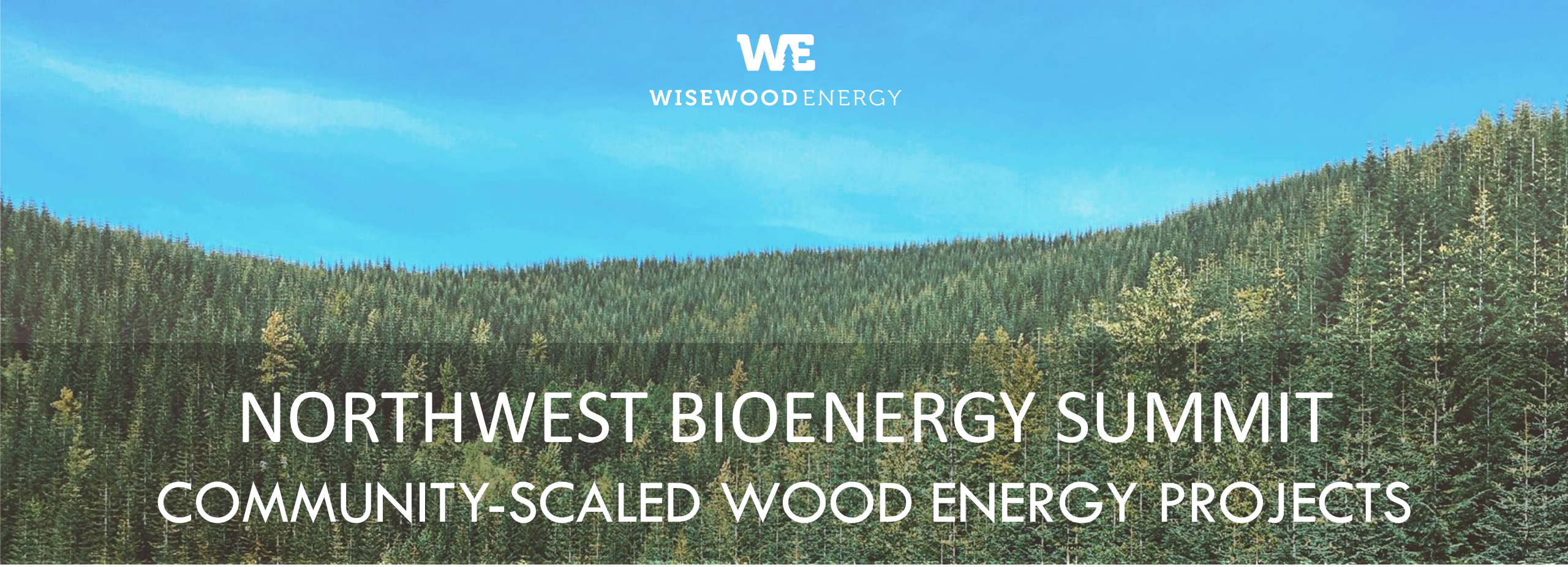

WISEWOOD ENERGY

NORTHWEST BIOENERGY SUMMIT
COMMUNITY-SCALED WOOD ENERGY PROJECTS

Meagan Hartman

Vice President & Director of Business Development

Wisewood Energy

Northwest Bioenergy Summit

October 15-16, 2024
Spokane, Washington

TECHNOLOGY IN SERVICE OF COMMUNITY AND ENVIRONMENT

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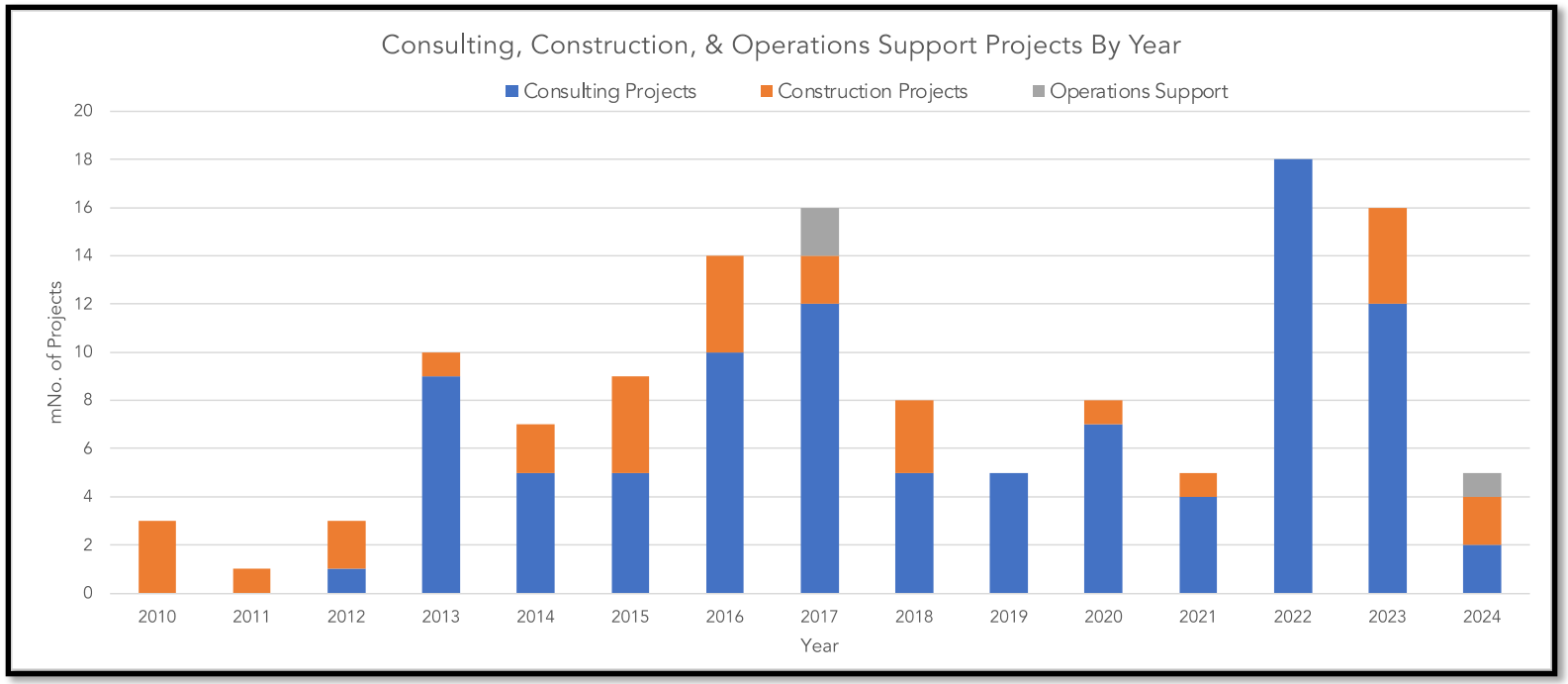
ABOUT WISEWOOD ENERGY

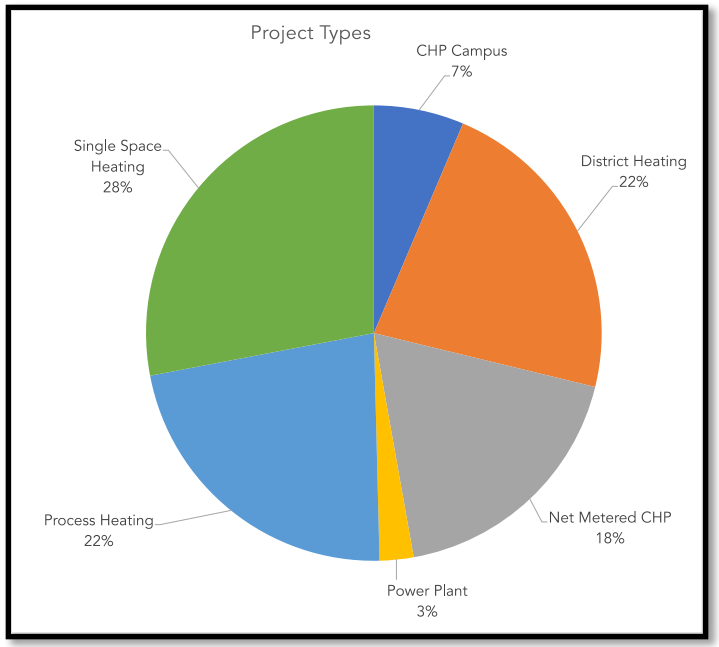
PROJECT DEVELOPMENT & ENGINEERING, PROCUREMENT & CONSTRUCTION (EPC)

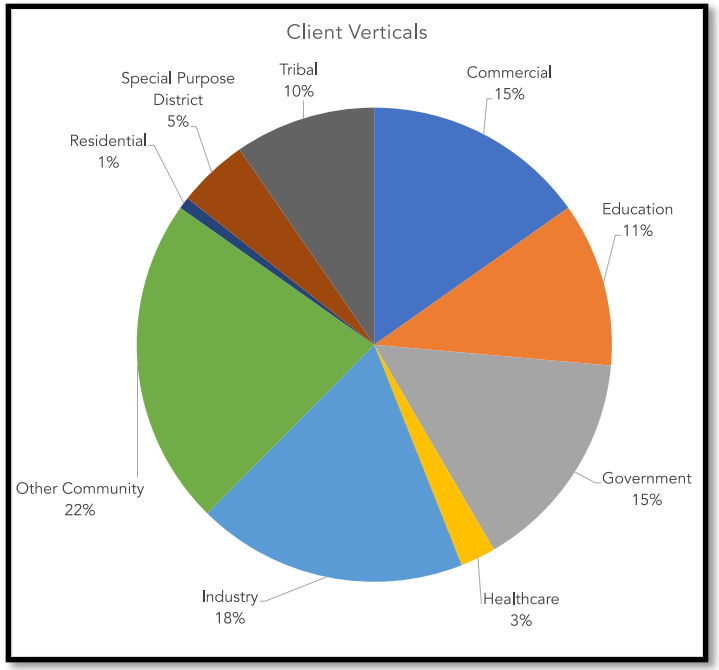
ABOUT WISEWOOD ENERGY

Our Mission

We outfit communities with state-of-the-art biomass energy systems that make local economies more resilient, stabilize energy costs and restore forest ecosystems.

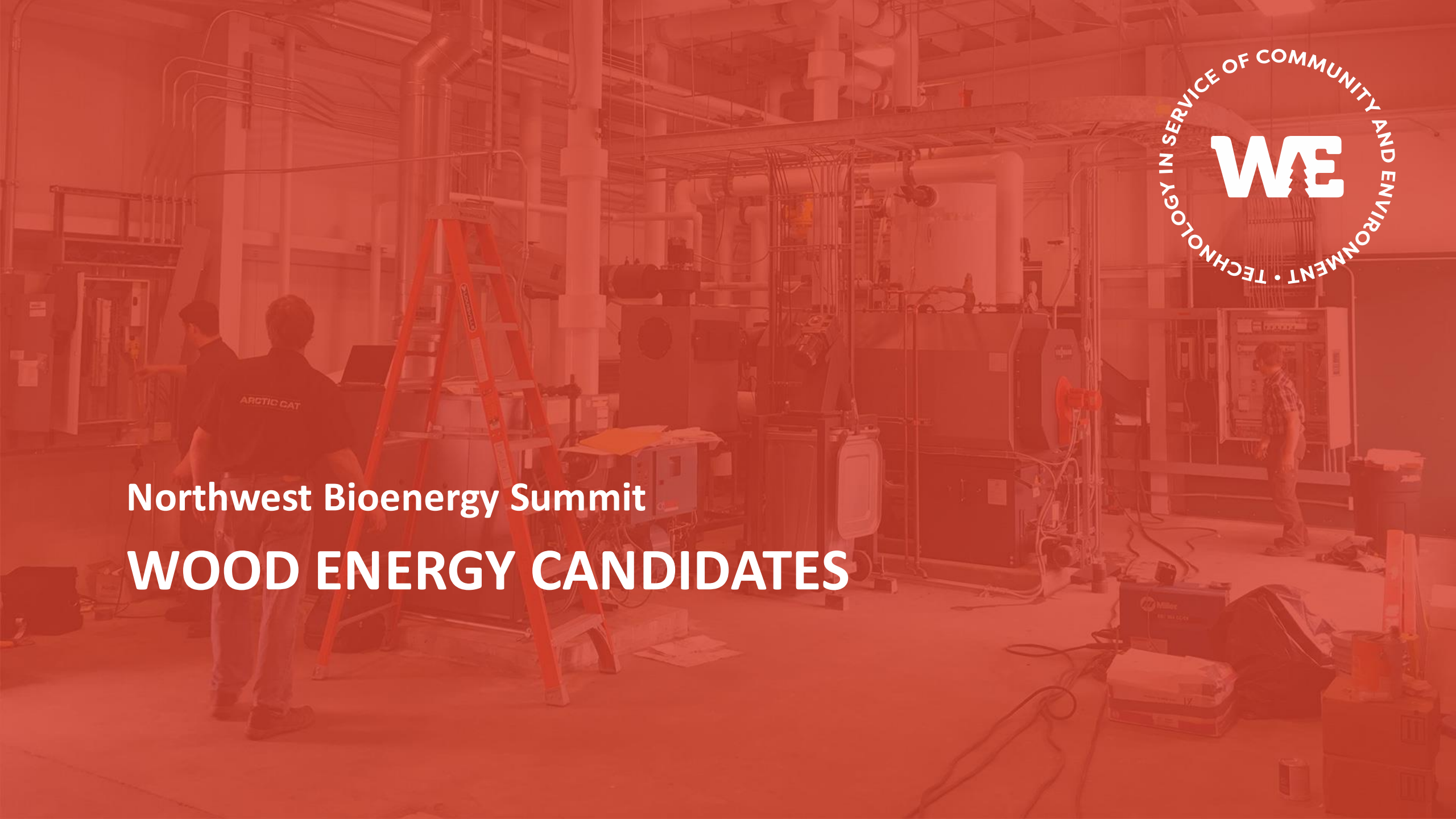






Data as of 2024

Technology in Service of
Community and Environment
TECHNOLOGY IN SERVICE OF COMMUNITY AND ENVIRONMENT
WE



Northwest Bioenergy Summit

WOOD ENERGY CANDIDATES

BIOMASS ENERGY SCALE

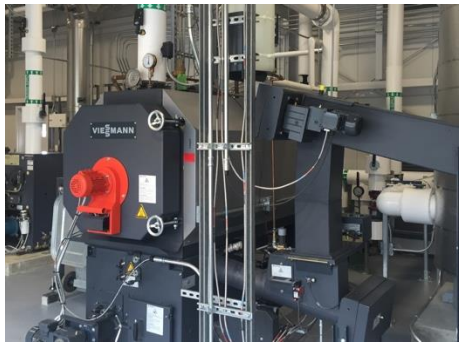
Process Heat
(Steam)

District Heating

Transportation Fuels

Power Export

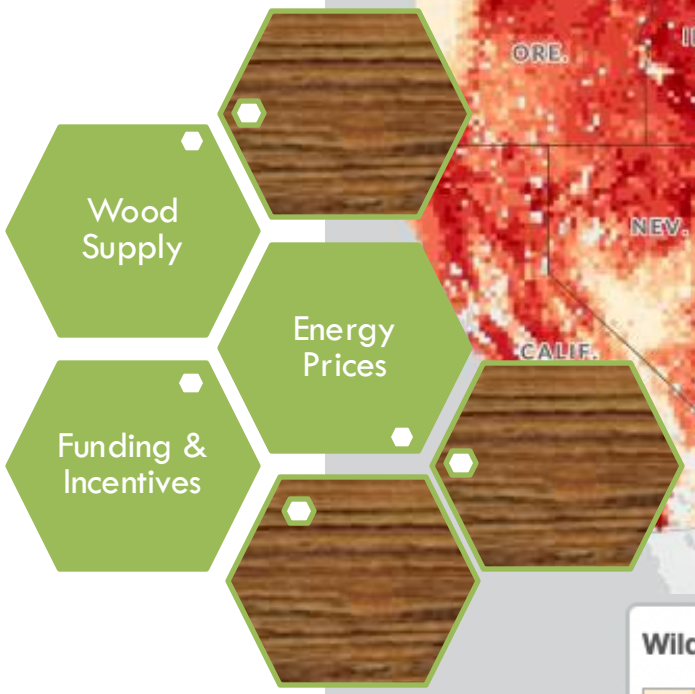
Single Building Space Heating



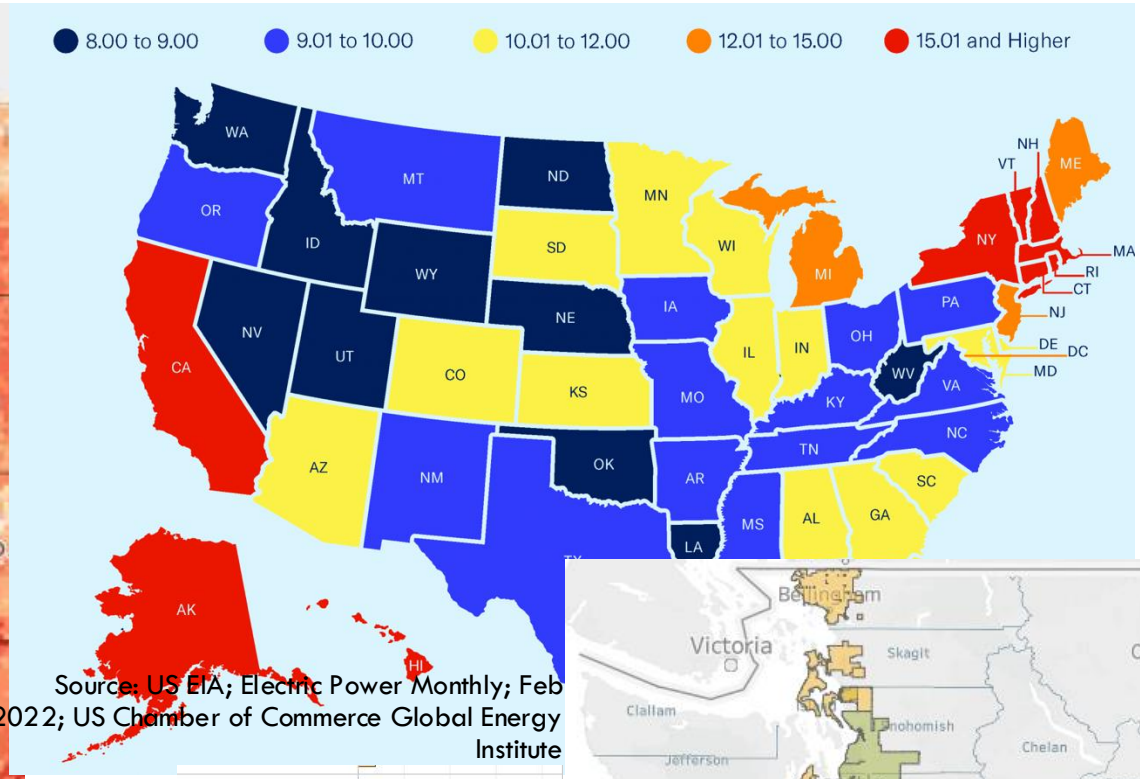
Net Metered CHP

CHP = Combined Heat and Power

WOOD ENERGY CANDIDATE REGIONS

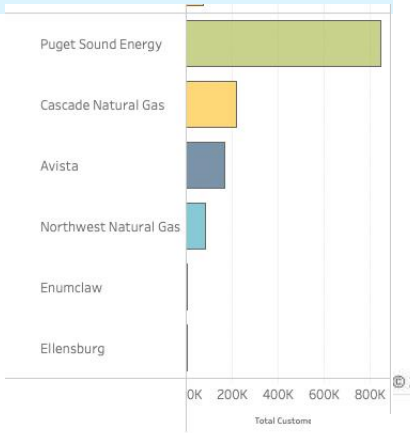


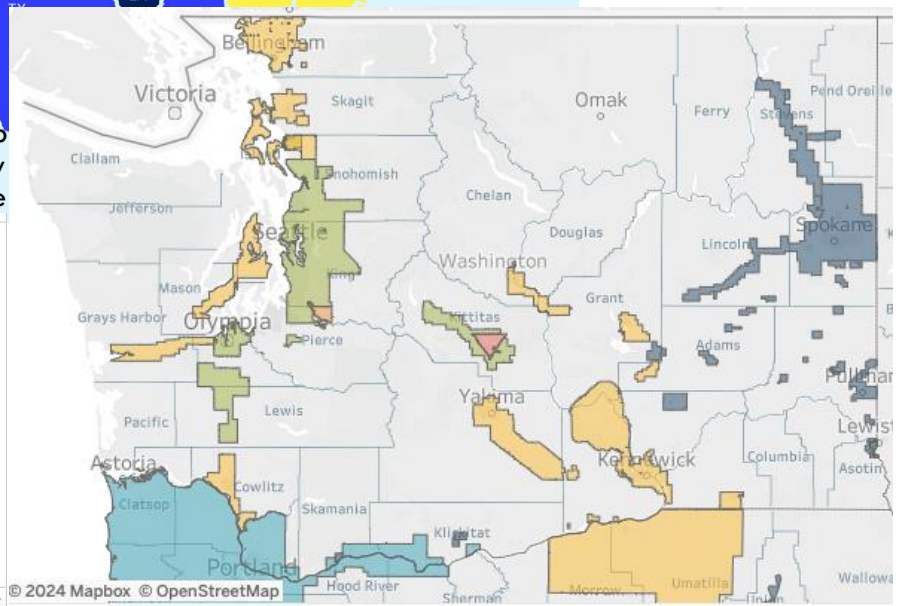
Source: USFS Wildfire Risk to Communities



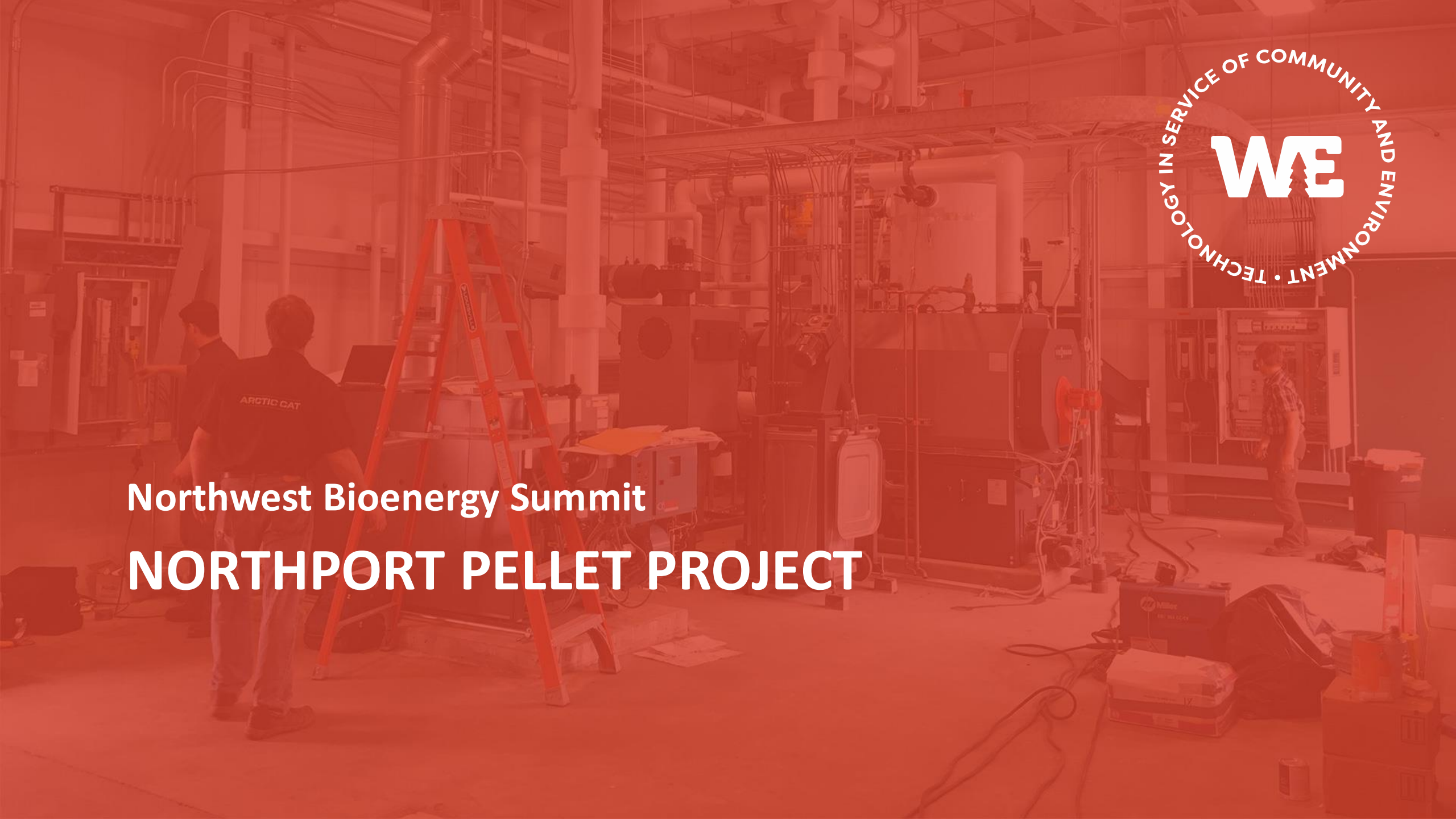
Source: US EIA; Electric Power Monthly; Feb 2022; US Chamber of Commerce Global Energy Institute

2021 Avg US Retail Prices (cents per kWh)
The National Avg is $0.1118/kWh





Natural Gas Utility Service Areas Source: NW Clean Energy Atlas



Northwest Bioenergy Summit

NORTHPORT PELLET PROJECT

Northport School District

340MBH Pellet Boiler in Northport, Washington

THE SPOKESMAN-REVIEW
Spokane, Washington Est. May 19, 1883

NEWS > EDUCATION

Northport school cuts costs, reduces air pollution emissions

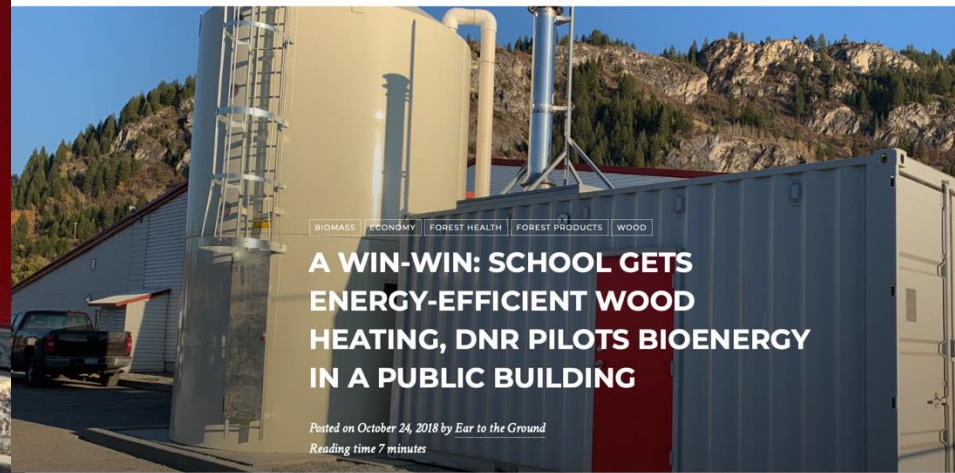
Sat., Sept. 28, 2019

The INDEPENDENT
Serving Chewelah and Stevens County since 1903

Northport School District's new wood pellet boiler part of pilot project supporting bioenergy, rural economies

By Administrator Oct 24, 2018 0

EAR TO THE GROUND WITH DNR & COMMISSIONER FRANZ



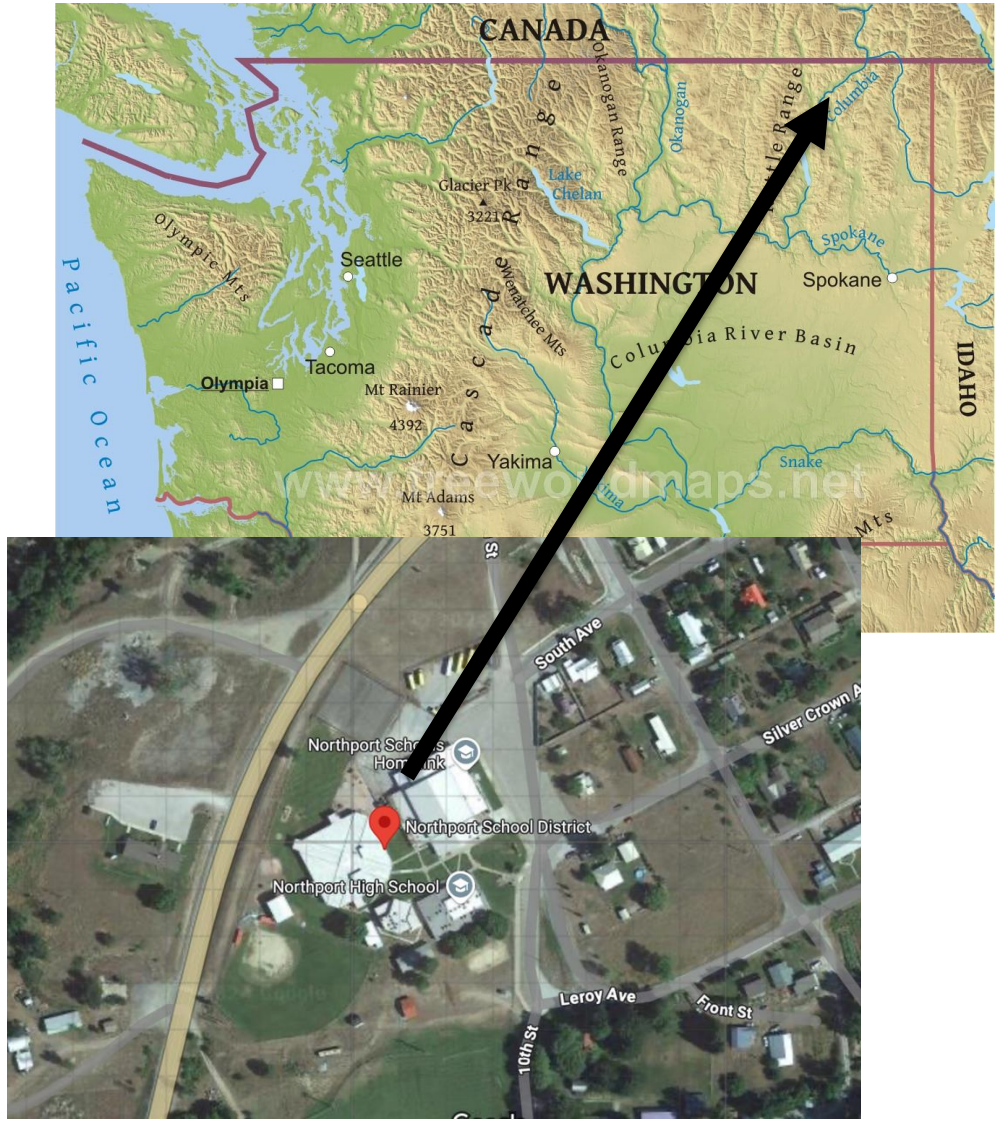
BIOMASS | ECONOMY | FOREST HEALTH | FOREST PRODUCTS | WOOD

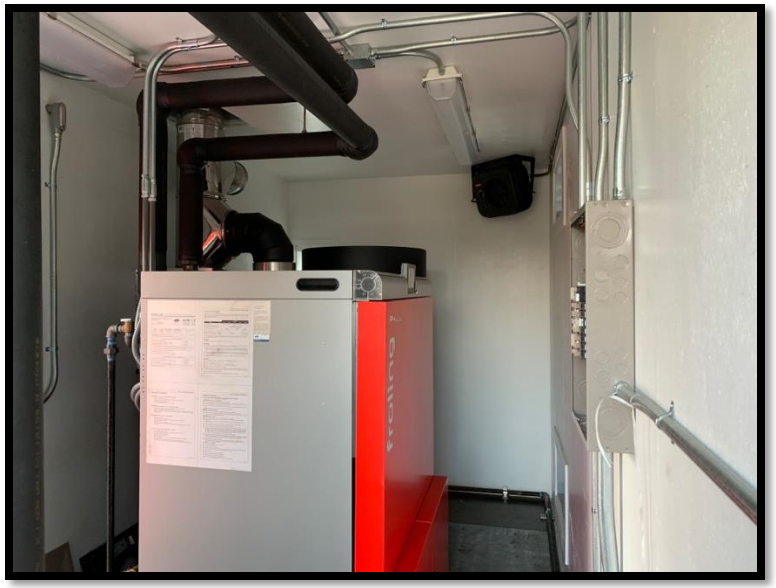
A WIN-WIN: SCHOOL GETS ENERGY-EFFICIENT WOOD HEATING, DNR PILOTS BIOENERGY IN A PUBLIC BUILDING

Posted on October 24, 2018 by Ear to the Ground
Reading time 7 minutes

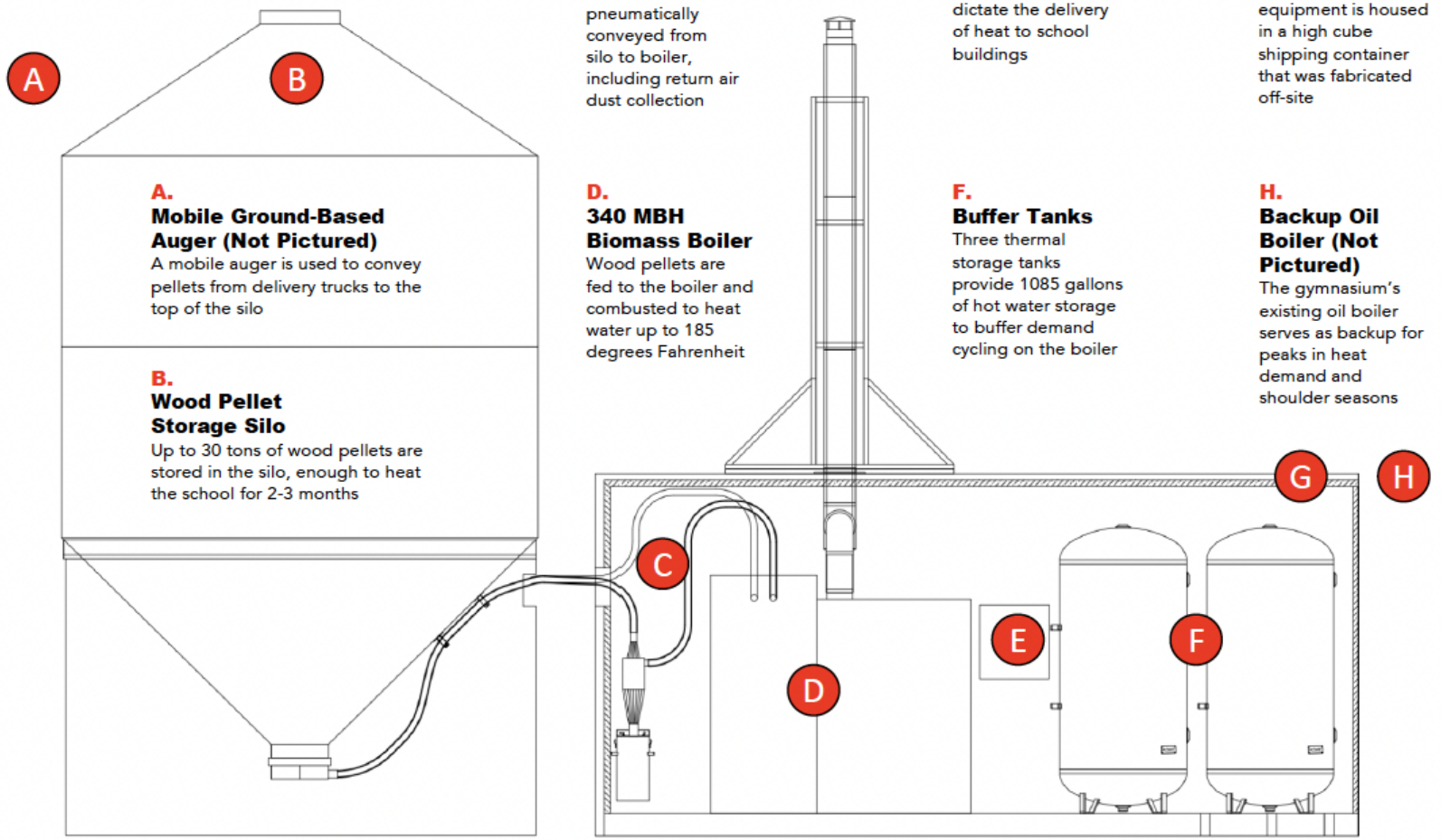
PROJECT DETAILS

- **Northport School District, Stevens County**
  - Originally identified through WSU Energy Program database of schools on fuel oil
  - CHP TAP developed initial analysis and helped to champion the project (thanks David VH!)
  - Secured Dept. of Commerce funding (2018, 2024)
- **2018 first project phase**
  - Serves Gym and El. School
  - Reduces fuel oil use by ~5,000 gal/yr, saving approx. $10k/yr
  - Uses approx. 60 tons/yr
- **2022 interestsd in expanding, secured funding 2024**
  - Adds High School and Annex buildings, replacing 20-yr failing heat pumps





Biomass Heating for Northport School District



A. Mobile Ground-Based Auger (Not Pictured)
A mobile auger is used to convey pellets from delivery trucks to the top of the silo

B. Wood Pellet Storage Silo
Up to 30 tons of wood pellets are stored in the silo, enough to heat the school for 2-3 months

C. Pneumatic Delivery
Pellets are pneumatically conveyed from silo to boiler, including return air dust collection

D. 340 MBH Biomass Boiler
Wood pellets are fed to the boiler and combusted to heat water up to 185 degrees Fahrenheit

E. Control Panel
Simple controls and a decoupled system dictate the delivery of heat to school buildings

F. Buffer Tanks
Three thermal storage tanks provide 1085 gallons of hot water storage to buffer demand cycling on the boiler

G. Container
The biomass boiler and associated equipment is housed in a high cube shipping container that was fabricated off-site

H. Backup Oil Boiler (Not Pictured)
The gymnasium's existing oil boiler serves as backup for peaks in heat demand and shoulder seasons

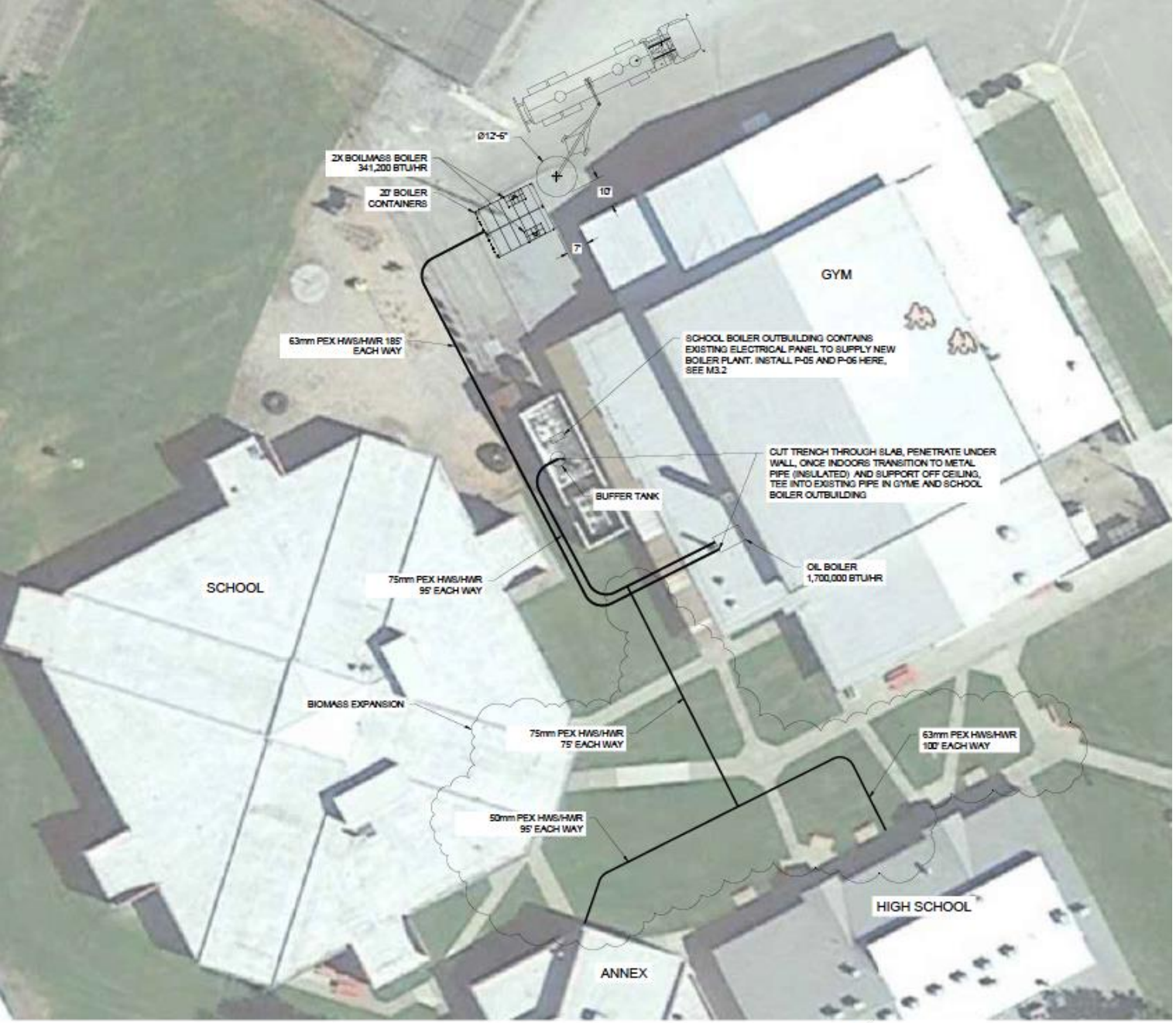
WISEWOOD ENERGY

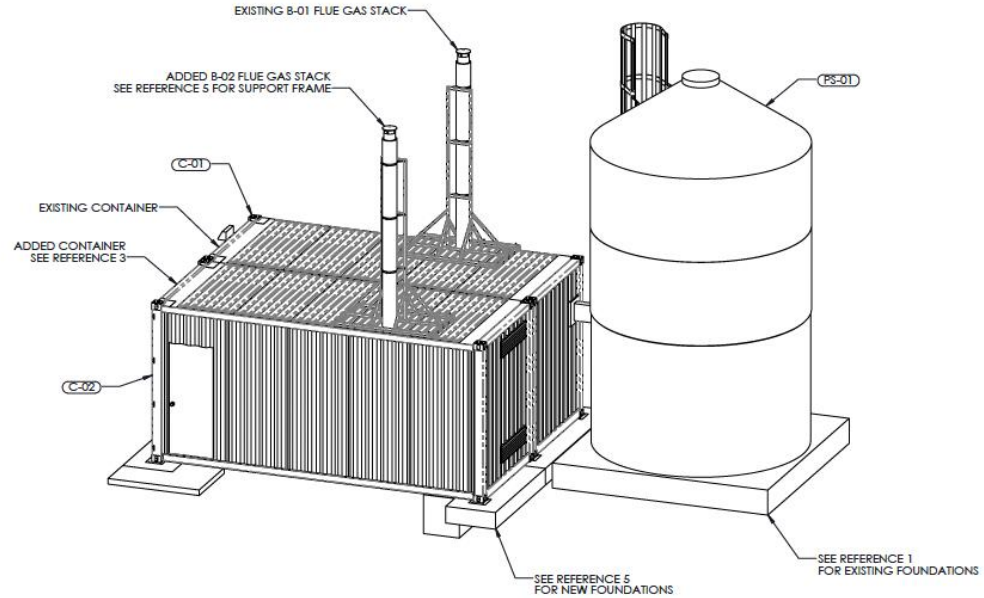
Design Team
Wisewood Energy
R&W Engineering
Smith Monroe Gray Engineers

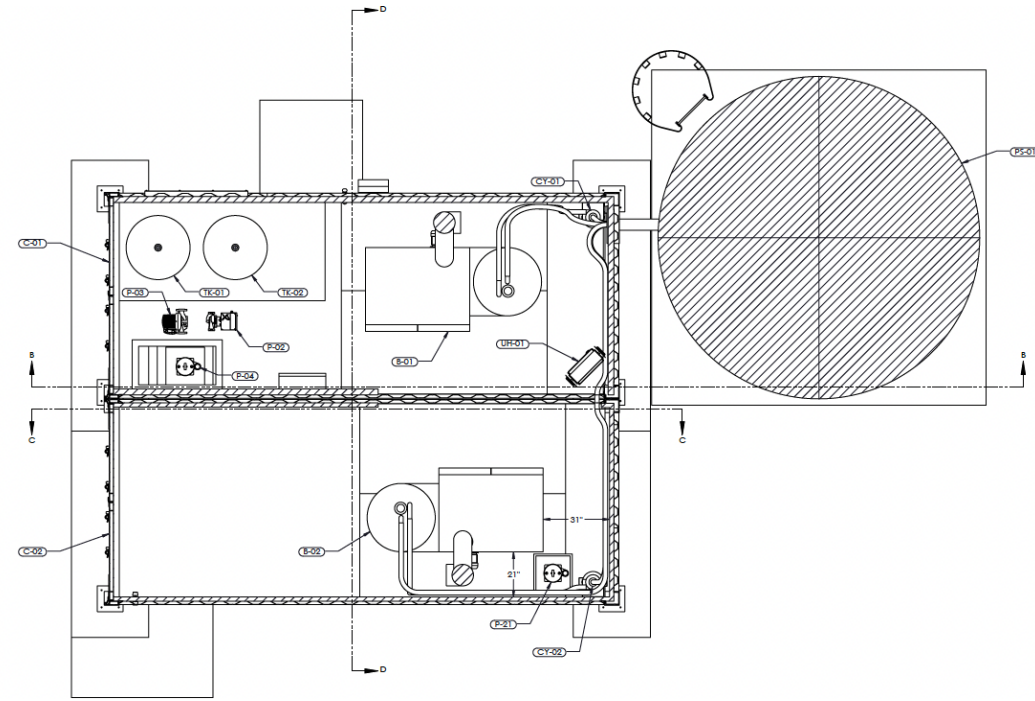
Construction Team
UCR Construction
Norstar Heating & Cooling

Funders & Supporters
Department of Commerce
Innovation is in our nature.

Energy Program
Washington State University


Ø12'-6"
2X BOILMASS BOILER
341,200 BTU/HR
20' BOILER
CONTAINERS
10'
7'
GYM
63mm PEX HWS/HWR 185'
EACH WAY
SCHOOL BOILER OUTBUILDING CONTAINS
EXISTING ELECTRICAL PANEL TO SUPPLY NEW
BOILER PLANT. INSTALL P-05 AND P-06 HERE,
SEE M3.2
CUT TRENCH THROUGH SLAB, PENETRATE UNDER
WALL, ONCE INDOORS TRANSITION TO METAL
PIPE (INSULATED) AND SUPPORT OFF CEILING,
TEE INTO EXISTING PIPE IN GYME AND SCHOOL
BOILER OUTBUILDING
BUFFER TANK
OIL BOILER
1,700,000 BTU/HR
SCHOOL
75mm PEX HWS/HWR
95' EACH WAY
BIOMASS EXPANSION
75mm PEX HWS/HWR
75' EACH WAY
63mm PEX HWS/HWR
100' EACH WAY
50mm PEX HWS/HWR
95' EACH WAY
HIGH SCHOOL
ANNEX
N


EXISTING B-01 FLUE GAS STACK
ADDED B-02 FLUE GAS STACK
SEE REFERENCE 5 FOR SUPPORT FRAME
PS-01
C-01
EXISTING CONTAINER
ADDED CONTAINER
SEE REFERENCE 3
C-02
SEE REFERENCE 1
FOR EXISTING FOUNDATIONS
SEE REFERENCE 5
FOR NEW FOUNDATIONS


D
PS-01
CY-01
C-01
P-03
TE-01
TE-02
P-02
P-04
B-01
UH-01
B
C
31"
B-02
21"
P-21
CY-02
C-02
D

WE

Current Status

- Container, boiler, etc pre-fab in OR
- Install/commissioning expected in Nov
- School District to update controls and other HVAC requirements summer ‘25 to enable full biomass coverage

Rural Forested Community, Anywhere Western USA…

Distributed wood energy opportunities across the West!

THANK YOU! QUESTIONS?

MEAGAN HARTMAN
VP & DIRECTOR OF BUSINESS DEVELOPMENT

meagan@wsewoodenergy.com
(503) 545-8685

WEBSITE wisewoodenergy.com

WISEWOOD ENERGY