Getting to Net Zero Energy
A case study: 2481 NW Drouillard Ave, Bend OR

Presented by Cindi O’Neil
Vice President/Owner SolAire Homebuilders
Design to capture the power of the sun.

• Orient home lengthwise east to west
• Place primary living spaces on the south
• Place garage on the west & north
• Place extra bedrooms, closets on north
• Place most of the large windows on the south
• Calculate eave depth to help shade windows in summer, bring sun into the home in winter
• Make sure southern roof can accommodate PV panels to bring home to net zero energy
Build a super insulated, near air tight, durable home shell.

- Construct walls that reduce thermal bridging and increase insulation to R-48
- Construct subfloor to accept R-48 blown in blanket fiberglass
- Construct raised heel trusses that accept R-60 loose fill fiberglass
- Use triple pane, U-0.18 to U-0.20 windows
- Reach an air tightness measurement of 2.0 ACH or less
- Consider double air lock entry systems with unconditioned flex space
- Manage exterior moisture intrusion fastidiously
Reduce energy consumption in the home.

• Size Mini-Split ductless heat pumps appropriately with the Energy Performance Score Model and Manual J modeling.

• Locate the Hot Water Heater and the Energy Recovery Ventilator in conditioned space inside the home.

• Use 100% LED lighting

• Use Energy Star Appliances
Model for renewable energy production.

• This home needs 7975 kW of solar electric panels to reach Net Zero Energy.

• In Bend Oregon this translates to 9465 kW hours of estimated total annual production.