Wood Energy Financial Calculator

A Demonstration

Sponsored by the USDA Forest Service

Moderator:

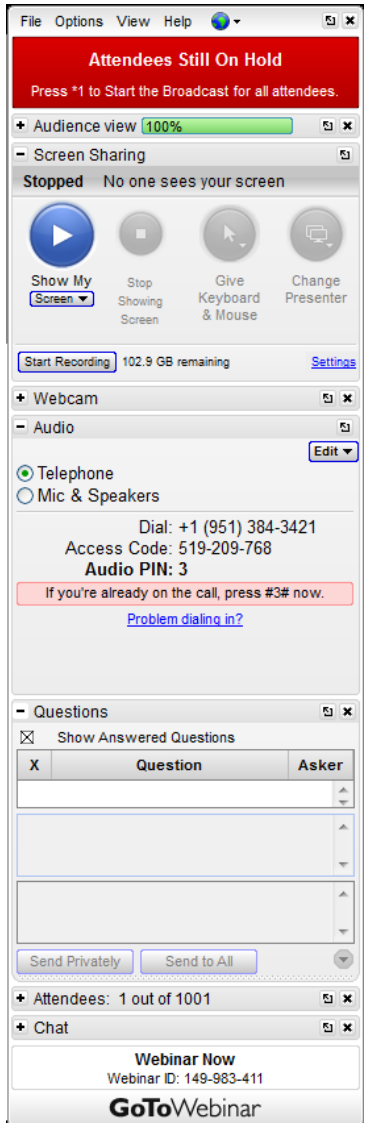
Peter Thompson, Biomass Thermal Energy Council

Quick Notes

- Two Audio Options: Streaming Audio and Dial-In.
- Select audio option in the Audio menu item on the right side of your monitor. Selecting one will display audio access information.
- Ask questions using the Questions Panel on the right side of your screen.
- The recording of the webinar and the slides will be available after the event. Registrants will be notified by email.

Audio

Questions



Agenda

- *Welcome & Introduction* - Jeff Serfass, BTEC Executive Director
- *Wood Energy Financial Calculator Project Background* – Dr. Dennis Becker, University of Idaho
- *Industry Perspective & Calculator Demonstration* – Bede Wellford, Viessmann and BTEC Board Director
- *Q&A*

Welcome and Introduction

Jeff Serfass
Executive Director
Biomass Thermal Energy Council

About BTEC

The national trade association for the modern wood heating industry.

- Engage in technical codes and standards development, public advocacy, and education.

60+ members and associates across the US and Canada:

- Fuel Producers
- Manufacturers
- Sellers
- Installers
- Service Providers
- Universities
- Non-profits & NGOs
- Government agencies

Scope of Activities

Policy and Government Affairs

- Biomass Thermal Utilization (BTU) Act
- Community Wood Energy Program in the Farm Bill

Technical and Regulatory Affairs

- Wood Energy Financial Calculator
- US Wood Chip Standard
- Boiler Efficiency Protocol
- ASHRAE 6.11 Working Group

Scope of Activities (cont.)

Education and Outreach

- International Biomass Conference & Expo – Atlanta, GA (April 16-18)
- Heating the Midwest Conference & Expo – Carlton, MN (May 1-3)
- PFI Annual Conference – Myrtle Beach, SC (June 24-26)
- Publicize Grant Opportunities
- Biomass Thermal Industry News Dissemination

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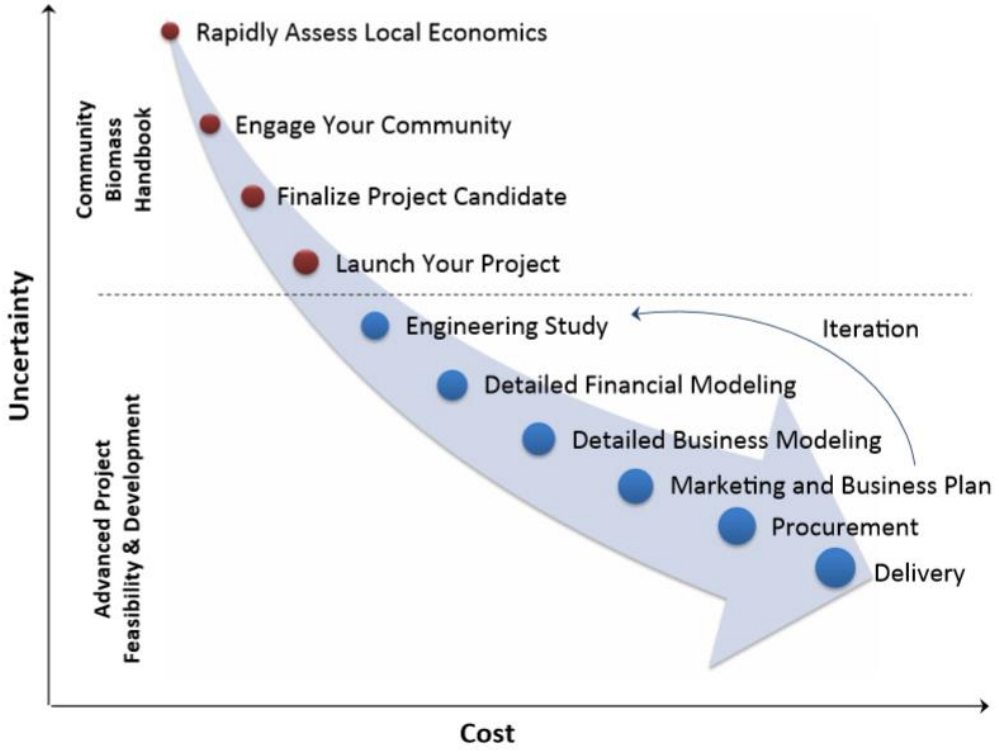
Wood Energy Financial Calculator Project Background

Dr. Dennis Becker

Director, Policy Analysis Group in the College of Natural Resources and
Associate Professor
University of Idaho

Project Development Lifecycle



Modified from: International District Energy Association

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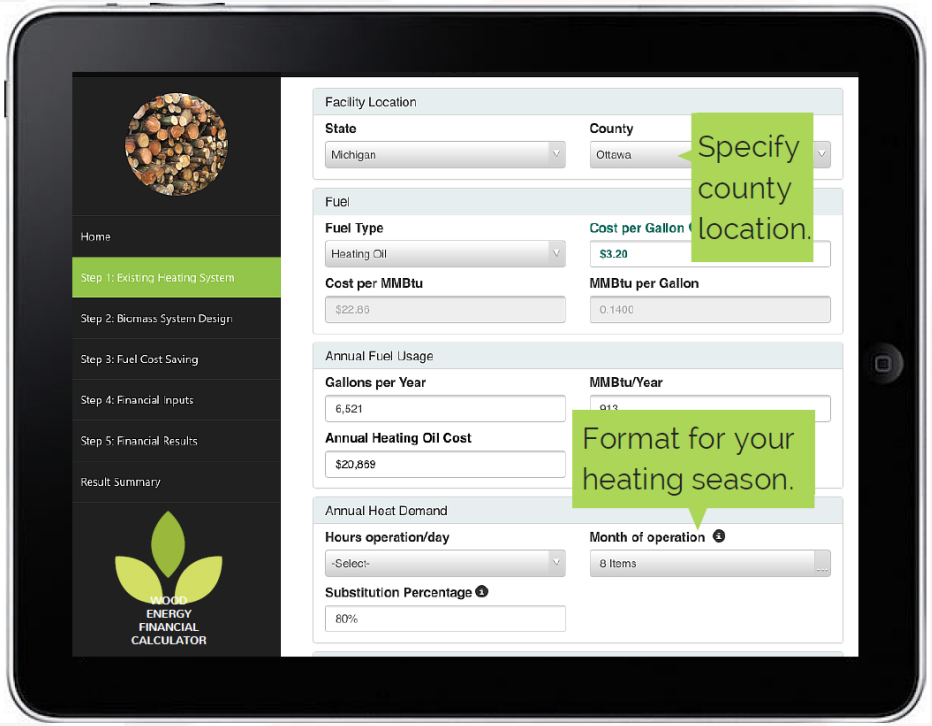

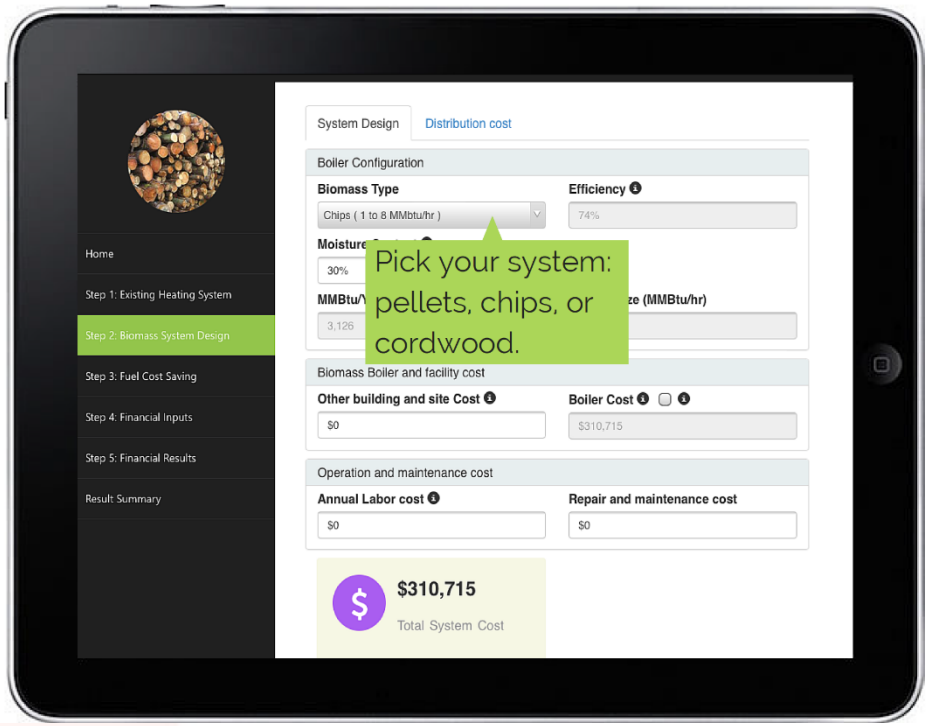

Industry Perspective and Calculator Demonstration

Bede Wellford

Renewable and Sustainable Business Development Manager
Viessmann Manufacturing Company (U.S.), Inc.

BTEC Board Director
BTEC Technical and Regulatory Affairs Committee Chair

Industry Perspective:

A consistent challenge for renewables in general and particularly for biomass thermal energy is the “why?”.

Why should one consider biomass thermal for a new construction or heating system renovation?

There are many reasons that biomass is utilized for heating, including:

- Carbon Footprint
- Contribution to Local Economy
- Utilization of Waste Stream
- Forestry Needs – Market Required for Low Grade Timber

However, the most cited rationale is to reduce heating costs. Even when the above factors are important drivers, projects that do not ”pencil” are rarely implemented.

Industry Perspective:

The ability to quickly gauge the economics of a particular biomass thermal energy project is critical to removing barriers to consideration and moving to next steps.

The Wood Energy Financial Calculator provides an easy to use tool that responds to the need.

If this encourages users to move forward and initiate specific projects directly with designers, contractors, ESCO's or equipment suppliers, it has fulfilled the purpose intended.

Similarly, if the tool dissuades a potential customer because the economics simply do not work, that will save time and energy for all concerned.

Industry Perspective:

Finally, the tool provides a 3rd party benchmark that engenders trust.

To the extent that the tool mirrors what we tell prospects regarding the economics of a project, they can move ahead with confidence.

Engineers and architects can use the tool independently of a particular supplier or system to illustrate potential to their clients.

Contractors less familiar with biomass economics can employ the tool to interest customers and develop/support specific proposals.

For us and our customers, the important outcome is to get the prospects in the door and qualify them. We can take over and be successful from there.

Retrofit Example: Houlton Jr. Sr. High School, Houlton, ME

Biomass

Biomass Type	Chips
Efficiency	0.8%
Moisture Content	40%
MMBtu/Year (biomass)	12600.00
System Size (MMBtu/hr)	3.48

Biomass System Annual Expenses

Biomass Fuel Cost	$83808.86
Remaining Fuel Cost	$89999.99
Additional O&M Cost	$276191.15
Debt Payment	$55376.67
Total Expenses	$229185.52

Financial Results : Payback Period

Simple Payback	3.0 Years
Payback including interest	3.7 Years

Houlton High School, Houlton, ME
Wood Chip Delivery and Walking Floor

Houlton High School, Houlton, ME
950 kW Viessmann Chip Boiler

New Construction Example: Plymouth State University AllWell Center, 200,000 square foot new construction

Biomass

Biomass Type	Pellets
Efficiency	0.8%
Moisture Content	8%
MMBtu/Year (biomass)	13406.40
System Size (MMBtu/hr)	3.67

Biomass System Annual Expenses

Biomass Fuel Cost	$52958.88
Remaining Fuel Cost	$0.00
Additional O&M Cost	$240719.04
Debt Payment	$46481.71
Total Expenses	$99440.59

Value of Adding Biomass System

Annual Net Cash Flow	$194237.33
Present Value of Cash Flow	$3807137.41
System Cost per MMBtu	$9.27

PSU AllWell Center, Plymouth, NH
New Gymnasium, Indoor Track and Facilities

PSU AllWell Center, Plymouth, NH
530 and 720 kW Viessmann Pellet Boilers

Join BTEC

Top 4 reasons to Join:

1. BTEC is your strong advocate and representative in Washington
2. BTEC leads technical and regulatory advances in the industry
3. BTEC is your platform to connect with industry leaders
4. BTEC educates consumers, policymakers, and the public

BTEC provides its members policy representation, exclusive content through newsletters and members only website, educational webinars, and recognition as an industry leader.

For more information of membership, visit
http://biomassthermal.org/membership

Thank you!

More Information
www.biomassthermal.org

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