



Emerging Technology in the Pacific Northwest

Presentation to the California ET Open Forum

Jeff Harris, Director of Emerging Technology, NEEA



July 8, 2010





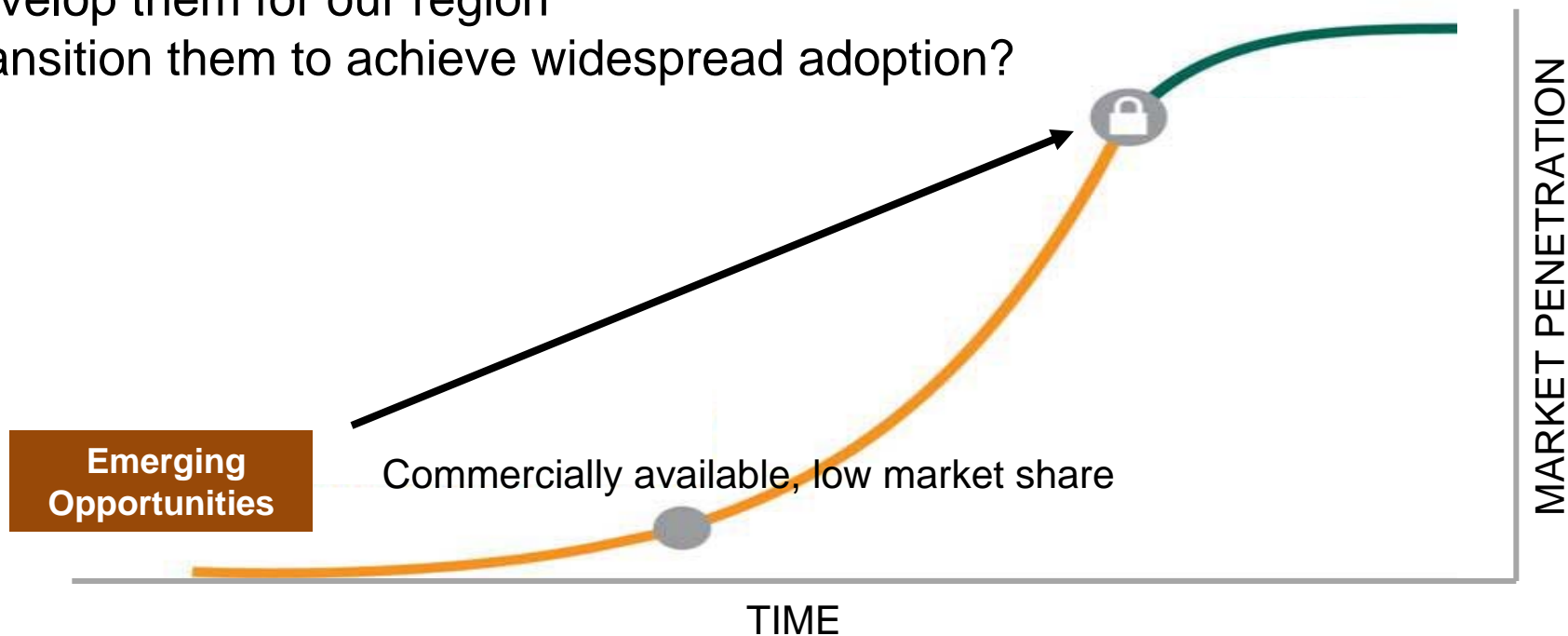
About NEEA:

- Non-profit corporation; est. 1996 in Portland, OR
- Funded by electric utilities in MT, ID, OR & WA
- Governed by representative Board; public and private utilities, state governments, public interest groups; oversight by State utility Commissions
- Five-year funding commitment from 14 direct funders
- Total funding 2010 ~ \$30 million
- 50 employees

Emerging Technologies Problem Statement: Filling the EE Pipeline

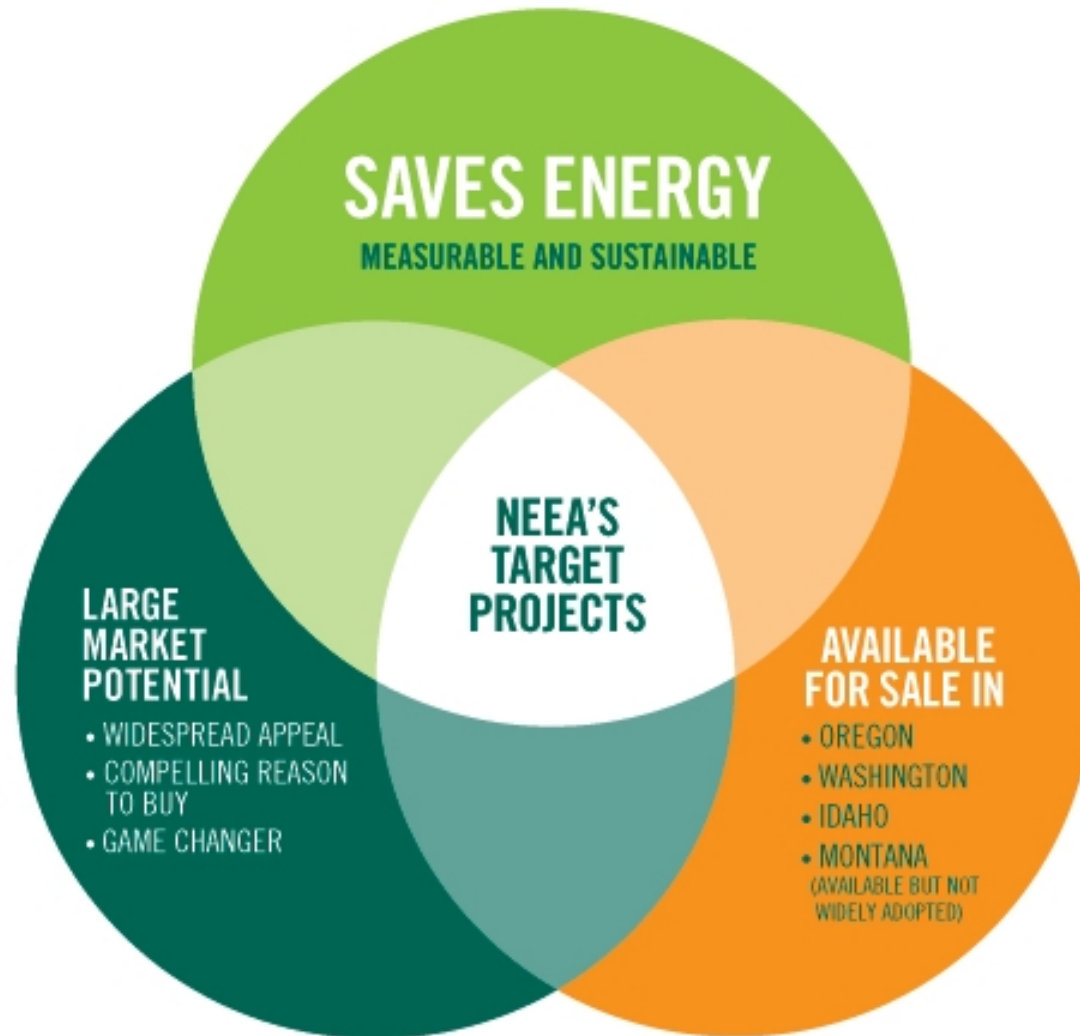
How do we:

- Find new opportunities
- Develop them for our region
- Transition them to achieve widespread adoption?

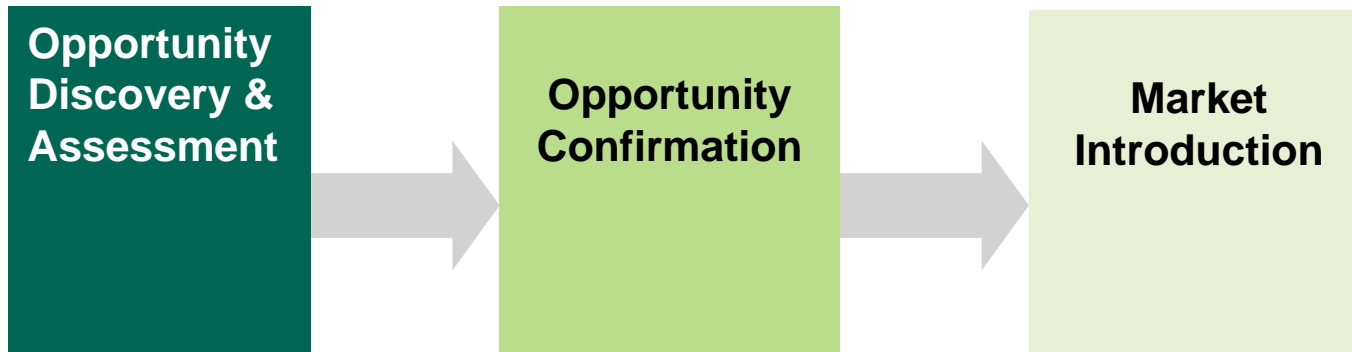


2010-2014 Goal: ET Project Portfolio with 300aMW
potential in 20 years

NEEA's ET Sweet Spot:



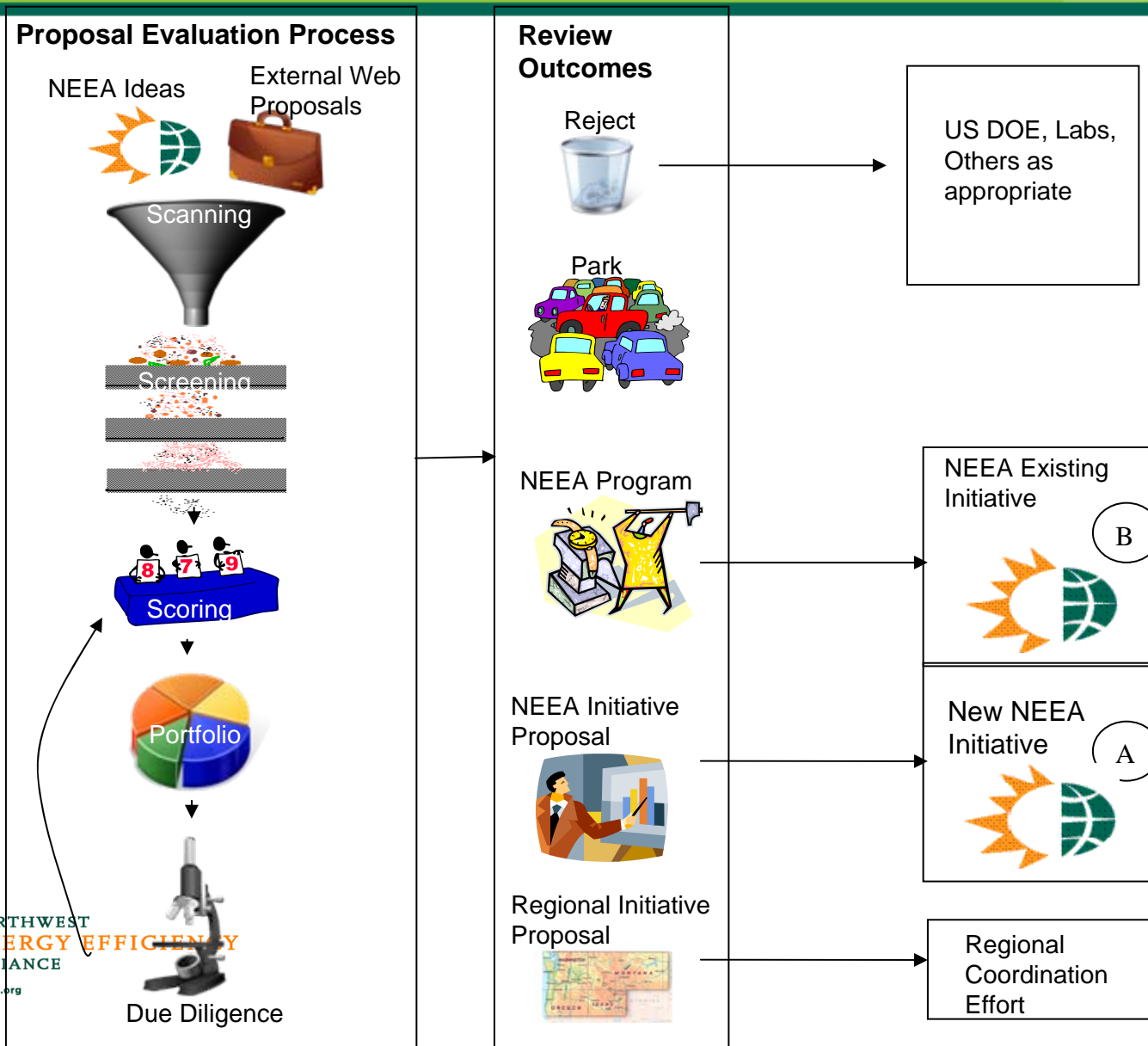
2010-2014 Business Plan



Emerging Efficiency Opportunities Information Services

Discovery and Assessment	\$	1,435,000
Confirmation	\$	5,175,000
Pilot Projects/Market Tests	\$	9,250,000
Information Services	\$	250,000
Evaluation	\$	350,000
Staffing and Related Expenses	\$	3,316,000
TOTAL	\$	19,776,000

NEEA Technology Selection & Development Process



Regional Emerging Technology Advisory Committee

Advisory Committee Charter Dual Purpose:

- Advise NEEA's ET portfolio
- Forum for Regional ET Coordination and Collaboration





Regional EE Emerging Technology Roadmap





NORTHWEST ENERGY EFFICIENCY
TECHNOLOGY ROADMAP
MARCH 2010



NEEA 2010 Projects

Technology	Barriers	Activities	Status
 <p>Ductless Heat Pump</p> <p>Cold Climate</p>	<p>Performance in cold climates</p>	<p>Field test performance of new systems: 100% capacity @ 0 F 75% capacity @ -15 F</p>	<p>In Progress</p>
 <p>Heat Pump Water Heater</p> <p>Northern Climate</p>	<p>Product Features</p> <p>Product Availability</p> <p>Product Knowledge</p> <p>Product Cost</p>	<p>Manufacturer Interaction</p> <ul style="list-style-type: none"> • Product Specifications • Golden Carrot Effort <p>Lab tests</p> <p>Education & Training:</p> <ul style="list-style-type: none"> • Manufacturers • Retailers • Contractors • End Users 	<p>In Progress</p>

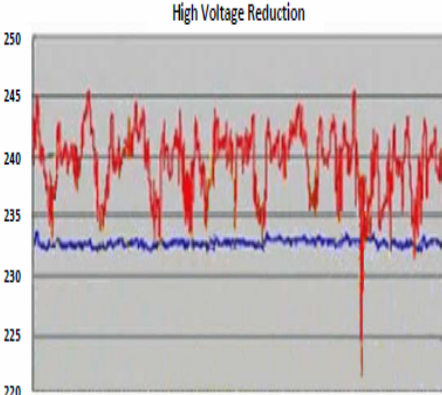

NEEA 2010 Projects

Technology	Barriers	Activities	Status
 <p>Windows R-5</p>	<p>Product differentiation</p> <p>Limited availability</p> <p>Credibility</p> <p>Installation issues</p>	<p>Research -Channel -Manufacturers</p>	<p>Developing contract</p>
 <p>Green Pumps Service</p>	<p>Evaluation of energy savings</p> <p>Supplier base</p> <p>End user knowledge</p>	<p>Specification</p> <p>Pilot project</p> <p>Develop supplier base</p>	<p>Developing contract</p>

NEEA 2010 Projects

Technology	Barriers	Activities	Status
 <p style="text-align: center;">Energy Management Software</p> <p style="text-align: center;">Industrial</p>	<p>Product availability</p> <p>Service supplier base</p>	<p>Specification</p>	<p>RFP</p>
 <p style="text-align: center;">Path to Net Zero Office Building</p> <p style="text-align: center;">Commercial</p>	<p>High risk for designers</p> <p>Perceived cost barriers</p>	<p>Update integrated design practices</p> <p>Prove cost and savings with prototype design</p>	<p>Developing needs statement and workplan</p>

NEEA 2010 Projects

Technology	Barriers	Activities	Status
 <p>Voltage Optimization Industrial</p>	<p>Cost effectiveness</p> <p>Supplier size</p>	<p>Product characterizations</p>	<p>RFQ</p>
 <p>Agricultural Energy Savings</p>	<p>Opportunities not clearly defined</p>	<p>Market assessment study</p>	<p>RFQ</p>

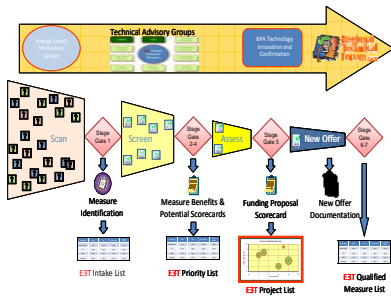
Coordination / Collaboration

- BPA – E3T
 - Regional ET Roadmap
 - HPWH / DHPs
- Portfolio Modeling: PSU, BPA and ETO
- Task/Ambient Lighting: CEE, PNNL
- SSL Lighting: NEEP, USDOE
- Regional Clean-tech Network
- HPWH Sourcing: EPRI, BPA
- Water Heater Test Standards: LBNL, PG&E

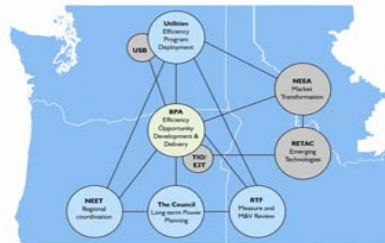


BPA E3T – Energy Efficiency Emerging Technology Program

Part 1 E3T -Technology Identification and Selection



Selection Process



Collaboration

The screenshot shows the 'Energy Efficiency' web site interface. It includes a navigation bar with 'Home', 'All Programs', 'Search', and 'Measure Detail'. Below the navigation bar is a 'Measure Index' table with columns for Title, ID, and Focus Area.

Title	ID	Focus Area
Advanced Lens Fluorescent Fixtures	129	Lighting
Bi-Level Lighting with Occupancy Sensors in Parking Lots and Garages	63	Lighting
Bi-Level Office Lighting with Occupancy Sensors, Auto-On 50%	222	Lighting

Web Site

Lighting

HVAC

Energy Management

Lighting TAG Ashland, NWPC, E Source, Lighting Design Lab, LEI, Lighting Research Center, WSU Energy Program, e2co

HVAC TAG EWEB, NEEA, NYSERDA, SMUD, Davis Energy Group, NBI, MacDonald Miller, PSE, PAE, LBNL, SCE, Arip, SCL, AHRI, BC Hydro, PG&E

Technical Advisory Groups

Energy Management: New members needed for 2010.

BPA E3T – Energy Efficiency Emerging Technology Program

Part 2 Portfolio of Assessment Projects



Heat Pump
Water Heater



Web-Enabled T-stats



LED Demo



PTHP with
Occupancy Control



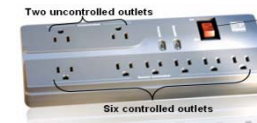
Ductless Heat
Pump



VRF Systems



Demand
Controlled
Ventilation



Smart Plug Strips

Thank You!

NEEA ET Unsolicited Proposal Website:

http://www.nwalliance.org/participate/submit_your_idea.aspx

BPA E3T Website:

<http://www.e3tnw.org/Default.aspx>