

Agenda

Renewable Energy Advisory Council

Wednesday, March 13, 2013: 9:30 a.m. – 12:00 p.m.

<http://energytrust.org/About/public-meetings/REACouncil.aspx>

Energy Trust conference rooms

421 SW Oak Ave., Suite 300

Portland, Oregon 97204

9:30	Welcome, introductions <ul style="list-style-type: none">• Review agenda• Approval of November minutes• Staffing changes	Action
9:40	OPUC Performance measures for the renewable energy programs <ul style="list-style-type: none">• Staff will present a summary of a new set of performance measures recently approved by the OPUC	Information
10:00	Wrap-up and report on 2012; Plans for 2013 for all technologies <ul style="list-style-type: none">• 10:00 – Hydro• 10:15 – Wind	Information
10:30	Break	
10:40	Wrap-up and report on 2012; Plans for 2013 for all technologies (cont.) <ul style="list-style-type: none">• 10:40 – Geo• 10:55 – Bio• 11:10 -- Solar	
11:45	Public comment	
12:00	Adjourn	

Our next meeting is May 1, 2013. You can view this agenda and meeting notes at: <http://energytrust.org/About/public-meetings/REACouncil.aspx>.



Energy Trust 2013 OPUC Performance Measures

Renewable Advisory Council

March 13, 2013



OPUC Annual Performance Measures

Purpose:

- Sets a threshold by which regulators can determine the health of Energy Trust programs
- Early indicators of poor performance that if not met signal that intervention may be required
- Considered a floor for our performance, we are pushed to high performance via stretch goals



OPUC Annual Performance Measures

Background:

- Need for performance measures outlined in our grant agreement with the OPUC
- 2012 Order Renewable goals were suspended, new approach for 2013
- Energy Trust provides annual reports to OPUC on performance relative to measures



Renewable Energy Measures

- New for 2013 after 2012 year of high market uncertainty
- Four measures, one for each funding priority
 1. Market and project development assistance
 - Report annual results, approaches to market barrier removal
 2. Standard program (solar PV and wind) projects
 - 90% of conservative generation goal (0.66 aMW)
 3. Custom program (QF and net metered) projects
 - Limit on incentive \$40/allocated MWh generation committed
 4. Innovative projects and custom solar projects
 - Report on source of funding and criteria for selection

Approved 2/26/13, UM1158 Order 13-070 but...

6 month follow-up requested to address 2 points

1. The amount of funds projected to be provided to state mandated solar projects; and
2. Whether the \$40/allocated MWh for use with non-solar custom projects is appropriate or whether it should be reduced



2012 Wind Program

- Program substantially revised:
 1. Estimated production based incentive
 2. Wind Analytics engaged to estimate resource and provide on-line map
 3. ITAC formed and turbines authorized by all members jointly
- Marketing efforts ramped-up
- Two small wind projects completed

Manufacturer/Turbine	Rated Power at 11m/s	Rated Power at 5 m/s (As certified by the SWCC or MCS, unless otherwise noted)	Rotor Diameter	Certifications and Summary Reports
Bergey Excel 10 www.bergey.com	8.9 kW	13,800 kWh	7.0m (23 ft)	SWCC to AWEA 9.1 <ul style="list-style-type: none"> • MCS Summary Report • SWCC Summary Report
Endurance S343* www.endurancewindpower.com	5.4 kW	8,910 kWh (SWCC LPP Certification, August 2012)	6.4m (21 ft)	SWCC certification to AWEA 9.1 in progress <ul style="list-style-type: none"> • SWCC Limited Power Performance Report
Evance R9000 www.evancewind.com	4.6 kW	9,167 kWh	5.5m (18 ft)	SWCC to AWEA 9.1 <ul style="list-style-type: none"> • MCS Summary



2013 Wind Program

- Industry stressed nationwide; several US turbine companies in trouble
- Many US companies focusing on Europe and Japan because of high feed-in tariff
- Greater interest in 50 kW+ machines at larger farm operations
- Umatilla Tribe demonstration project underway on reservation outside of Pendleton
- One 10MW community wind project proposed in Southern Oregon





2013 – strategies and opportunities

- Continue aggressive marketing with trade allies
- Partner with experienced distributors from out of state to proactively identify potential customers with strong wind resource
- Explore larger mid-sized machines (50kW+) for larger farm operations





2012

- Four projects completed – all in PAC:
 - 1.17 MW in capacity
 - Incentives: \$675,000
 - Variety of projects: Irrigation districts, ranch, municipal
- Commitments to two projects: \$472,000; 260 kW in capacity
- Project development assistance activities on eight sites



2013

- Challenging fundamentals:
 - Low avoided cost rates
 - Dwindling federal tax incentives
- Hydro's strategic advantages:
 - High capacity factor
 - Grants are available for projects providing water savings and higher in-stream flows
 - Some projects can net-meter, offsetting retail rates



2013 – strategies and opportunities

- Continue working on fish passage issues
 - Gov’s working group still moving forward – potential for legislation
 - That could free up a number of municipal and irrigation projects and restore certainty to part of permitting process
- Begin to address county permitting issues, first in counties with good hydro resources
- New technologies and market opportunities: low head and municipal applications
 - Limited support



Funded Biopower Project Highlights

- **Wallowa Integrated Biomass Energy Project**
 - 100kW woody biomass; Pacific Power; net metering; Commercial operation Nov 2012
- **Revolution Energy Solutions (RES) – Forest Glen Oaks**
 - Waste doubled: 210kW → 370 kW (1,345 → 2,800 MWh); wheeling to PGE; commercial operation Dec 2012
- **Farm Power Misty Meadows:**
 - 750kW cogen; Pacific Power PPA (via Tillamook PUD); commercial operation Feb 2013
- **Pendleton WWTP**
 - 195kW microturbines; commercial operation Sept 2012
- **Medford WWTP**
 - 750kW cogen; Pacific Power; net metering; commercial operation Dec 2012





Funded Biopower Projects



- J.C. Biomethane
 - Junction City, Oregon
 - 1.55 MW QF merchant biogas project
 - PPA w/ PGE; power wheeled through Blachly-Lane Co-op and BPA
 - Commissioning planned for June 2013
 - \$2M Energy Trust incentive



Emerging Biopower Projects

- Waste Water Treatment Plants
 - Cogen installation and/or repower proposals [130kW – 1.7 MW]
- Industry
 - CHP projects associated with various liquid and solid waste streams
- Woody biomass project proposals
 - primarily central Oregon

Energy Trust WWTP w/ digesters standard practices survey:

- In coordination with Oregon ACWA
- Used to generate a set of best practices for plants generating biogas
- Expanded scope





Biopower Program Objectives

Goals:

- Focus on wastewater treatment (WWTP) and agriculture sector for project development
- Identify potential project opportunities in food processing and municipal solid waste (MSW)
- Support development of small scale woody biomass projects

Objectives:

- Characterize key components of successful project development for WWTP and agriculture sectors
- Fund studies to highlight business case for biogas development at food processors
- Participate in state Forest Products Energy Program to support the development of small scale CHP



2012 - review

- Commitment to OIT's second project: \$1,550,000; 1.5 MW in capacity
- Project development assistance for four projects
- Participated in Oregon Geothermal Working Group



2013 – overall look

- Challenging fundamentals, plus...
- Challenges particular to geothermal
 - High cost of proving a resource
 - Risk profile
 - No special value placed on baseload capacity
 - Costs are not dropping significantly
- Strategic advantages of geothermal
 - High capacity factor – lots of generation
 - Oregon has geothermal resources
 - Occasional DOE funding



2013 – strategies and opportunities

- Deploy PDA to allow applicants to be ready for medium-term opportunities – e.g. US DOE funds
- Monitor technology improvements that may improve market
- Encourage and facilitate information-sharing
- Focus on strong development teams and existing wells, where possible



Solar Program

2012 in Review, 2013 Preview

RAC, March 13, 2013



Energy Trust Solar Program

Paid in 2012:

- 1,245 PV projects (19.2 MW)
- 73 solar water & pool projects
- \$17.6 Million of incentives

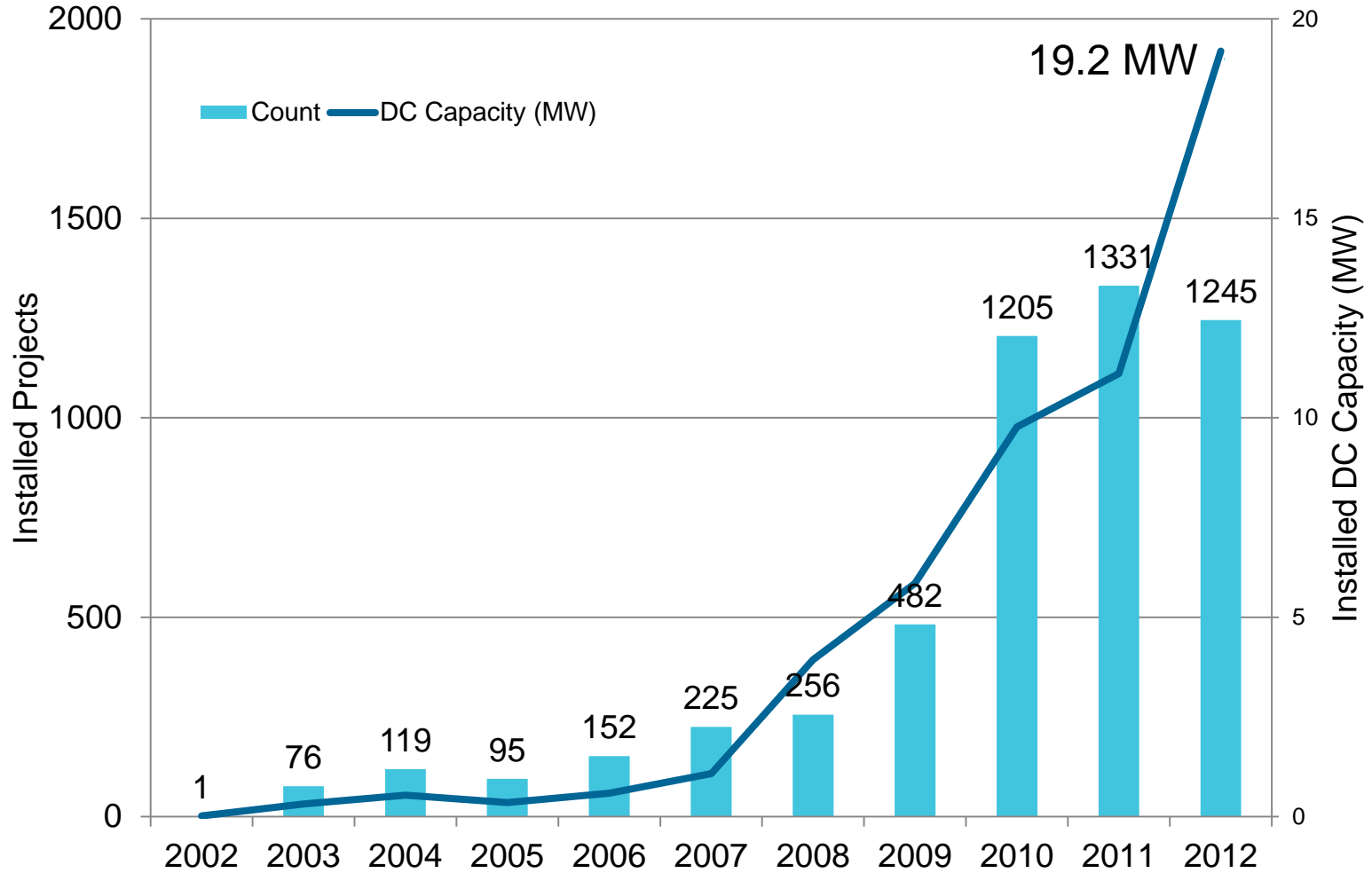
Paid since 2003:

- 5,187 PV projects (53 MW)
- 1,382 solar water & pool projects
- \$66.4 Million of incentives





10 years of Energy Trust solar PV





3 large custom solar projects in 2012

- ODOT Baldock:
1.75 MW



- Black Cap:
2.57 MW

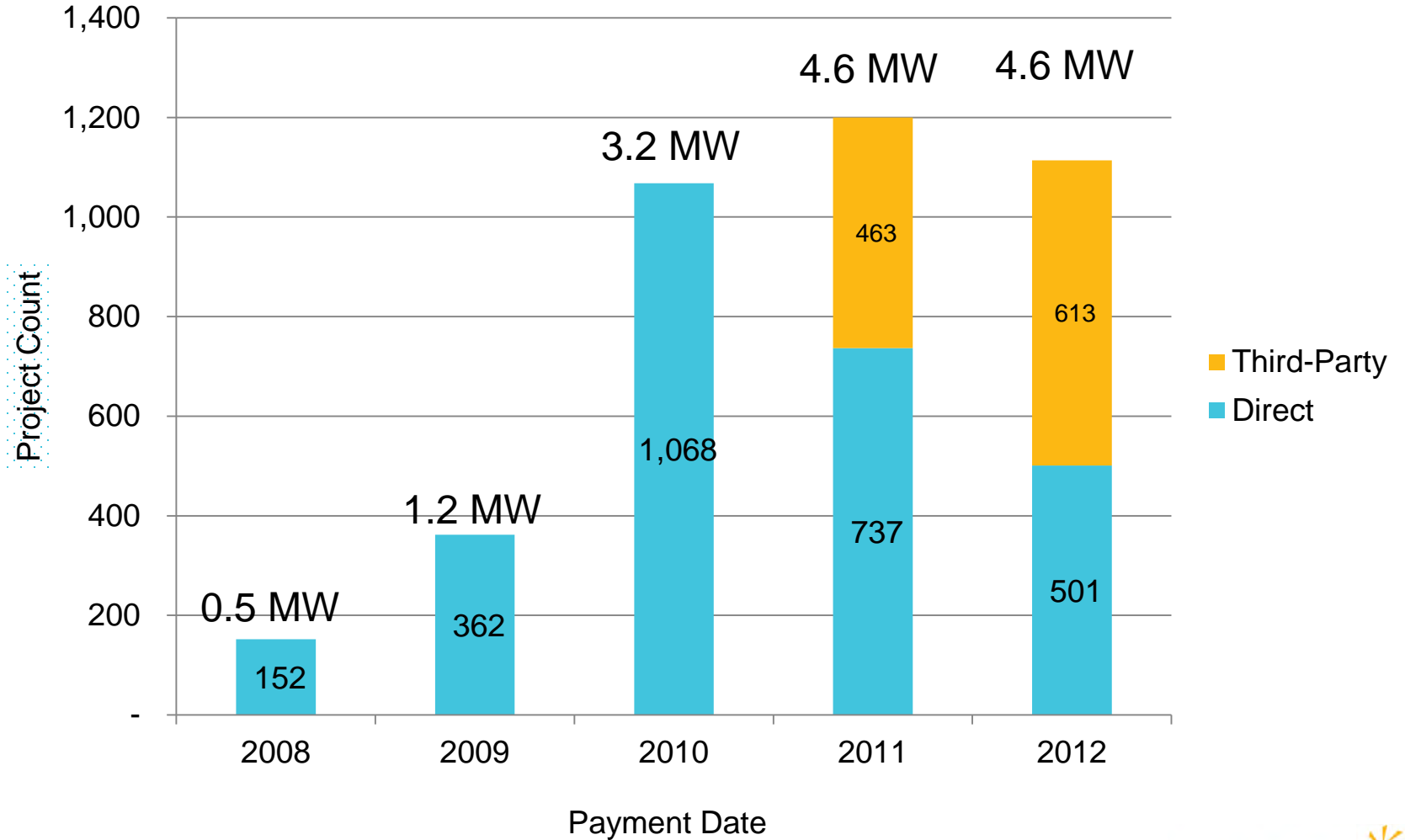


- Outback:
5.70 MW



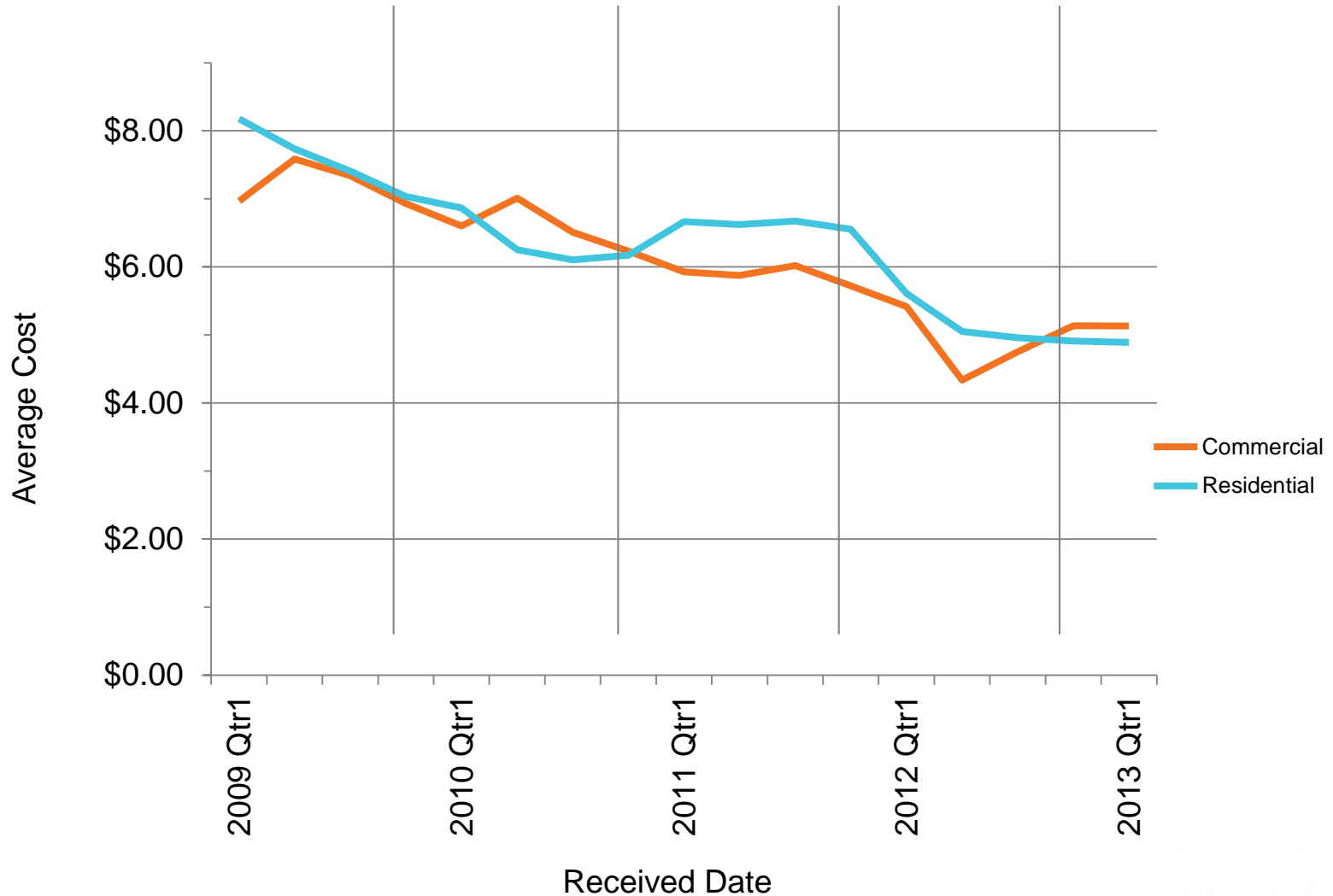


Residential Solar PV 2008-2012



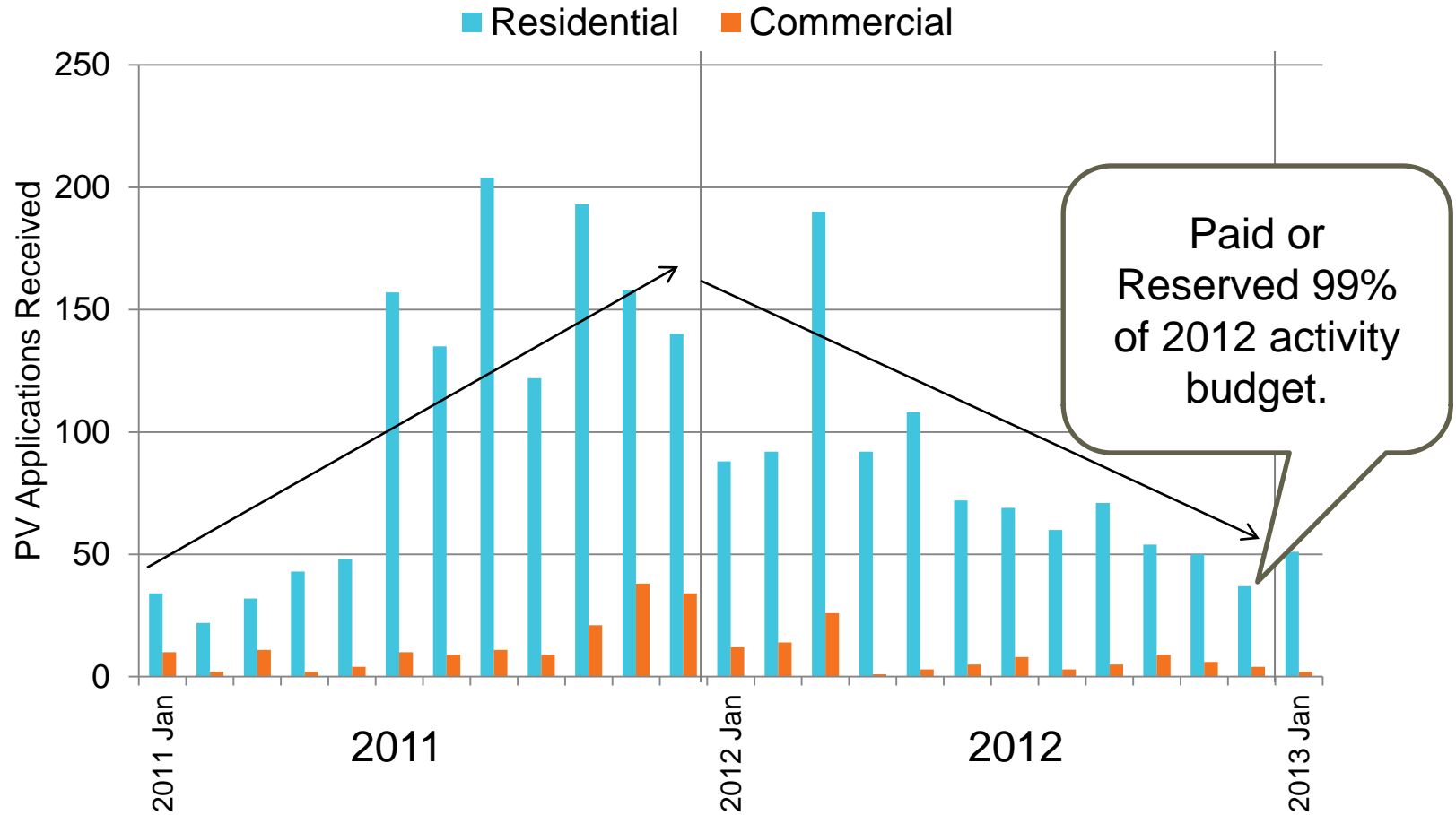


PV installed \$/W cost 2008-2013





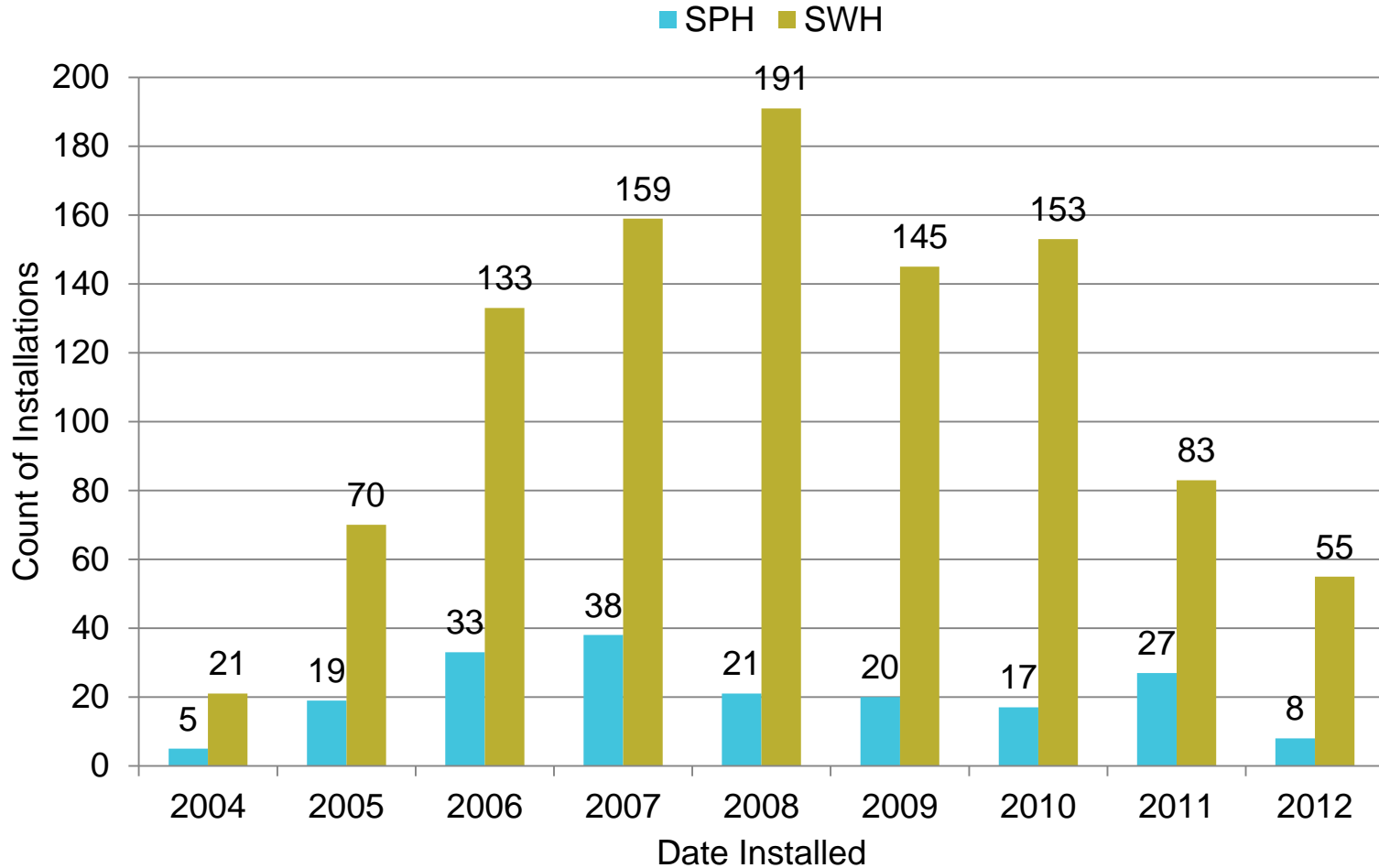
Impact of lowered incentives



Energy Trust solar electric applications received by month.



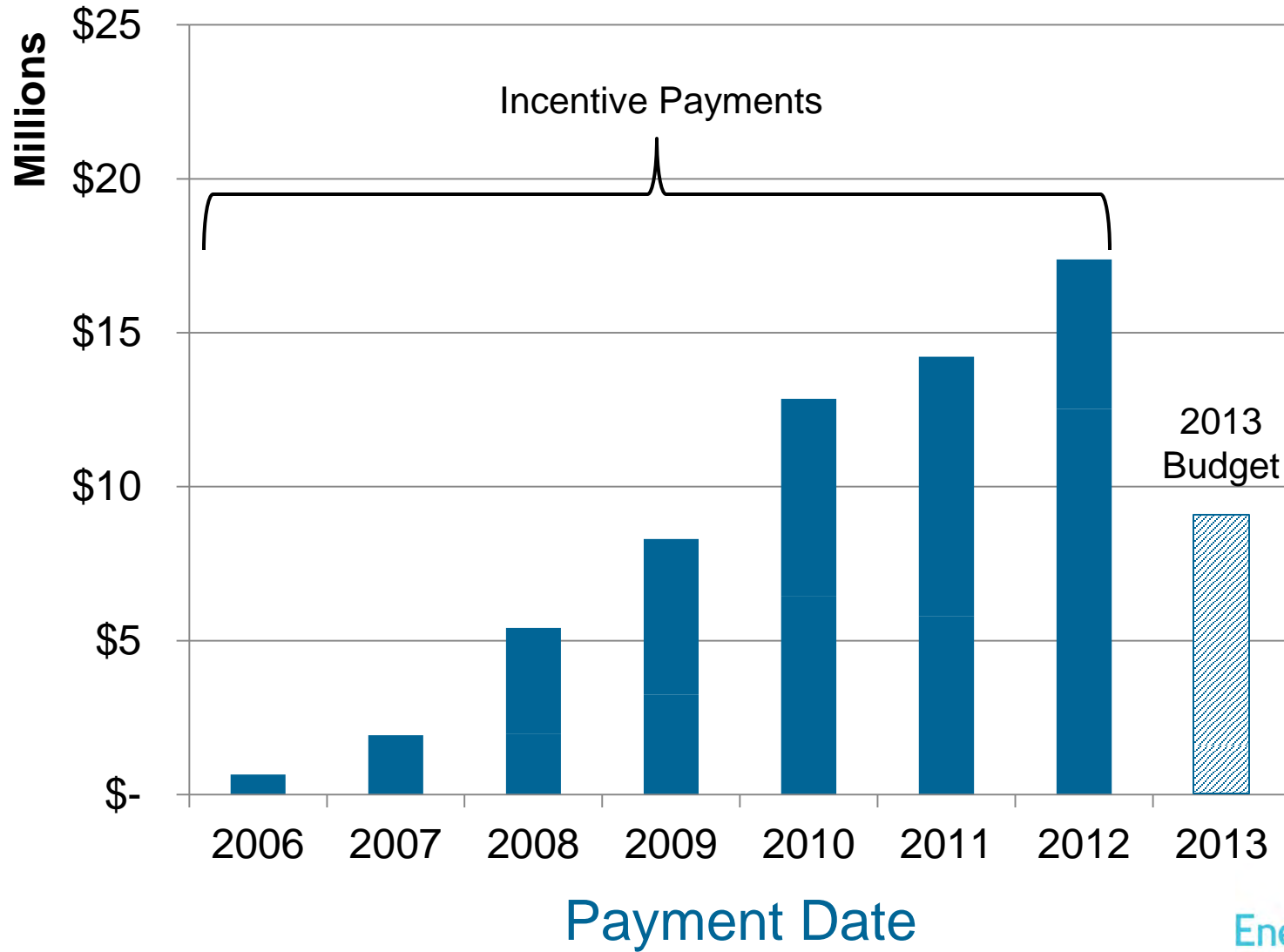
Energy Trust solar water 2004-2012



Solar Program in 2013

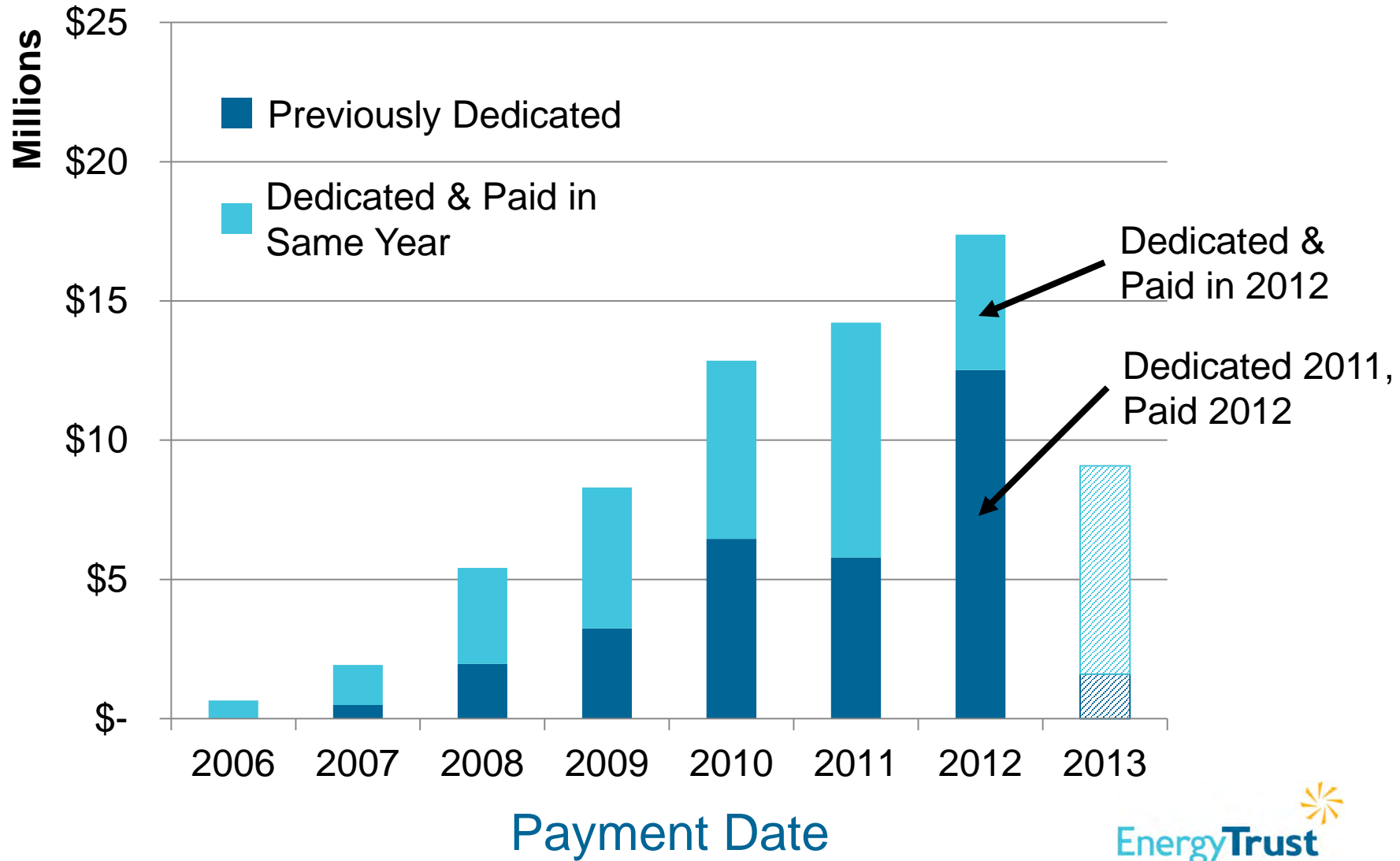


PV funding history – Payments



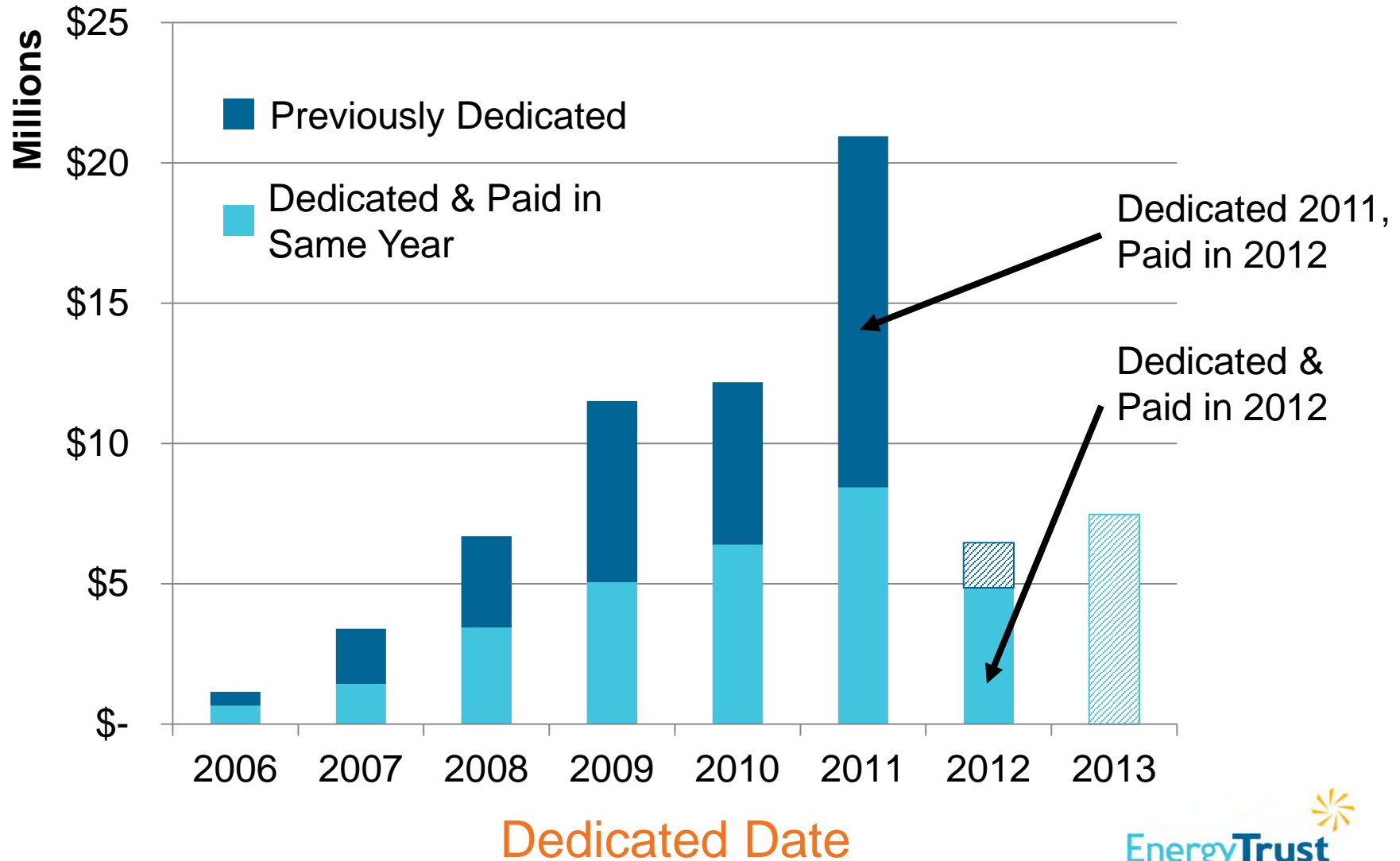


PV funding history – Payments



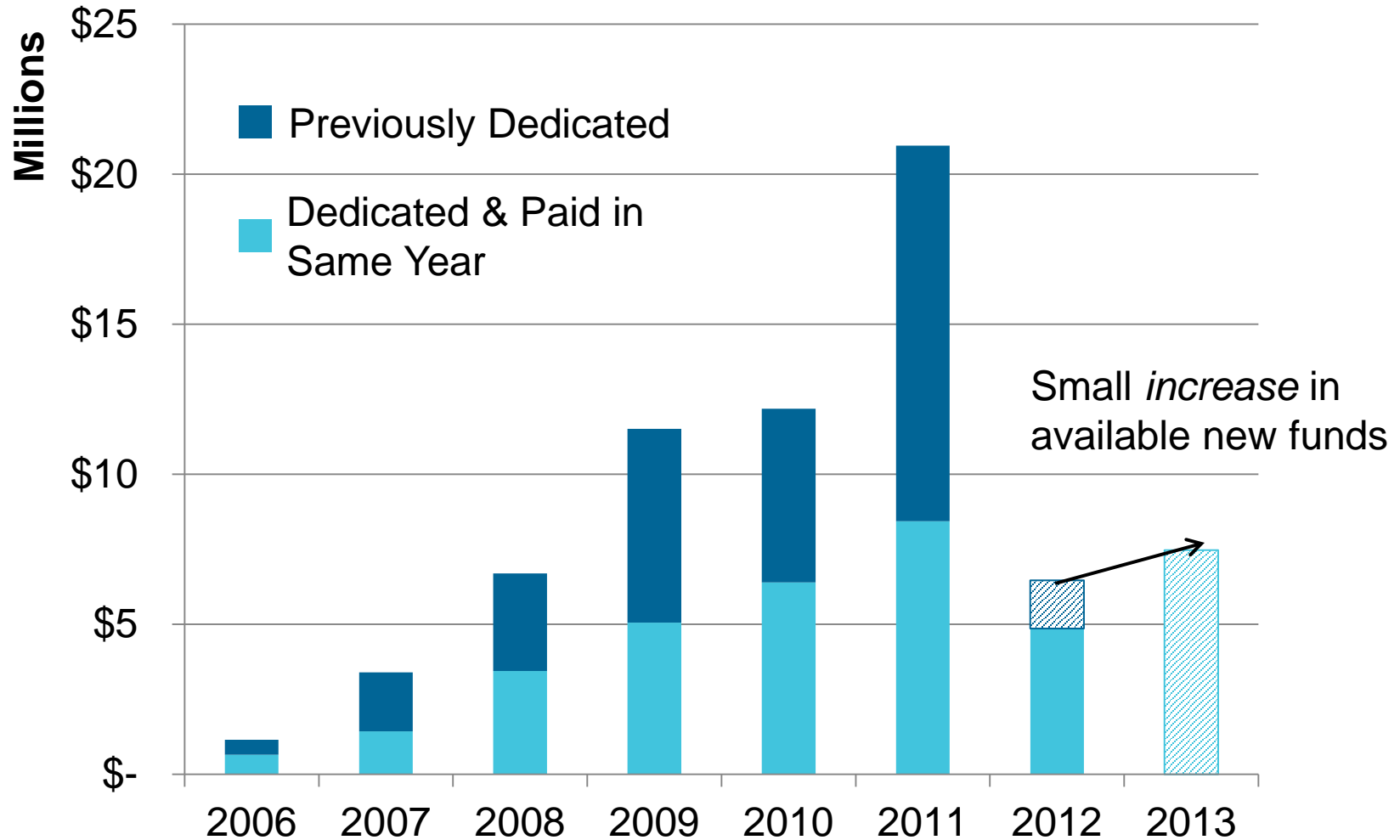


PV funding history – Dedications





PV funding history – Dedications



Dedicated Date



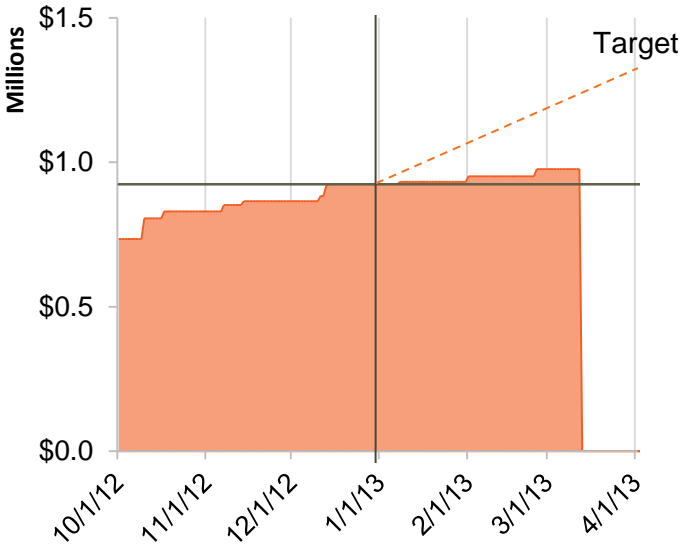
2013 solar electric budget

	Portland General Electric		Pacific Power	
	Residential	Non-Residential	Residential	Non-Residential
Standard incentives	\$2.1 million	\$2.7 million	\$1.4 million	\$1.5 million
Large competitive solicitation	-	\$1.0 million	-	-
Board-approved 2013 incentive budget	\$5.8 million		\$2.9 million	

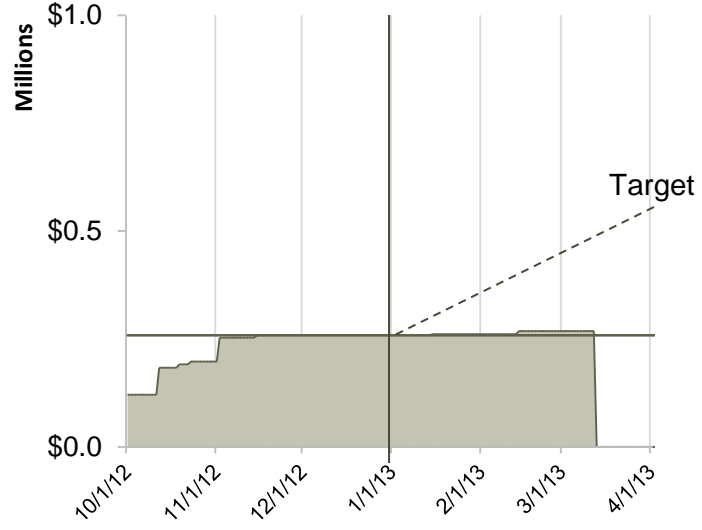


Non-residential PV market is slow

- Almost no non-residential activity in Q1
- We are considering incentive rate and cap changes to address this.



PGE Non-residential Reservations



PAC Non-residential Reservations





Custom solar RFP

- **\$1 million** of PGE funds available
- RFP closed on March 8th:
 - Received **4 applications**, asking for a total of **\$2.75 million**
 - Sizes range from **440 kW** to **10 MW**
- Next steps:
 - Review and score applications
 - We will present selection to May 1st RAC and May 22nd Board meeting



Solar Program goals for 2013

- Fund > 0.66 aMW of installed projects
- Learn from the RFP process and dedicate funds for one or more custom project(s).
- Increase non-residential PV activity
- Provide stable residential PV incentives
- Streamline solar water heating offerings
- Empower PMC efficiency teams to help customers go solar