# 2013 Preliminary Annual Results

February 5, 2014

Energy Trust of Oregon

# 2013 preliminary annual results

- Preliminary generation results are best available data at this time.
  - Achieved 72% of renewable energy conservative goal

- Complete results available in 2013 Annual Report to the Oregon Public Utility Commission on April 15

# Preliminary 2013 renewable generation results

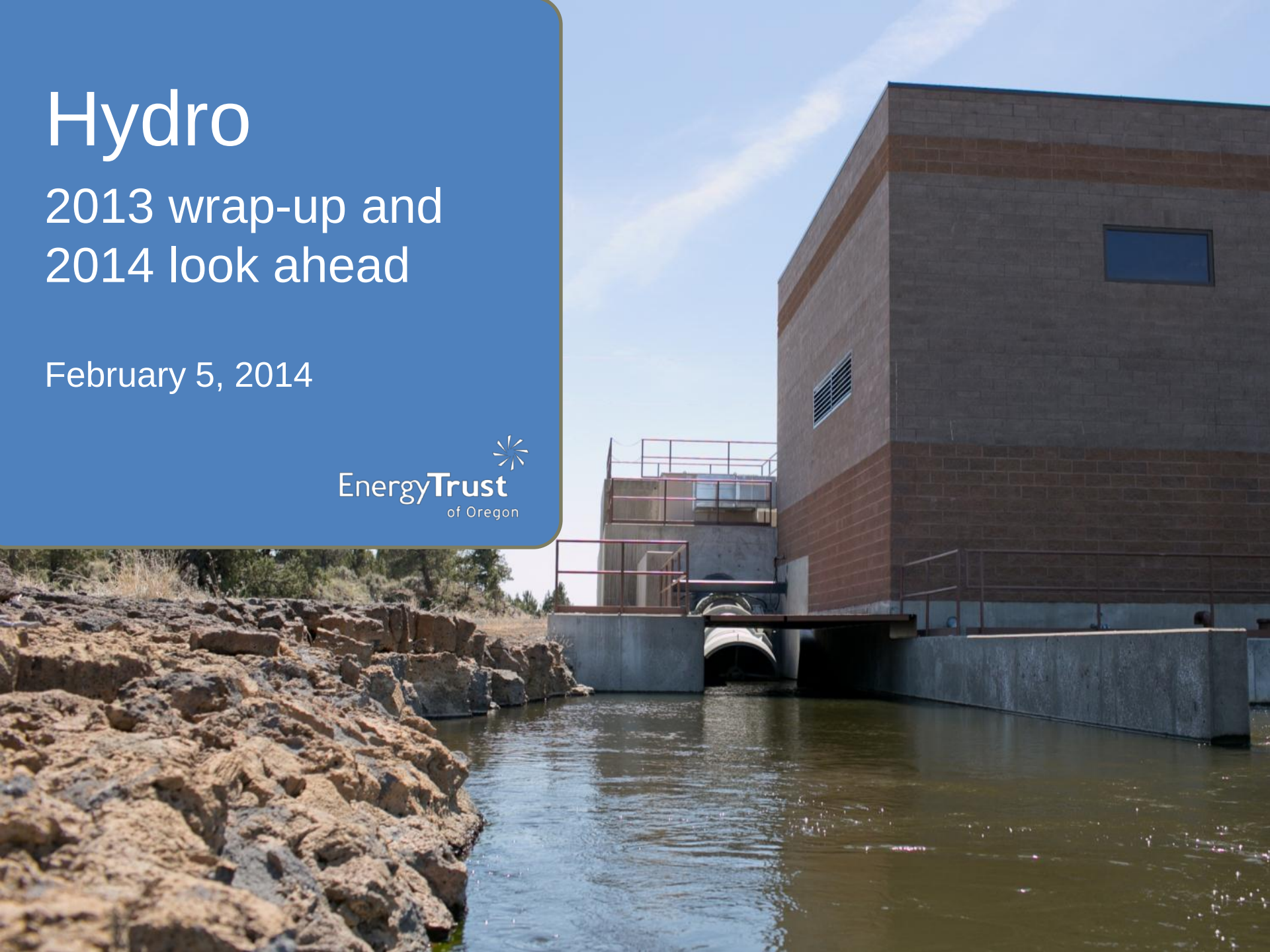
| | Pacific Power aMW | PGE aMW | Total Generation aMW |
|---|---|---|---|
| **Biopower** | 0.69 | 1.44 | 2.13 |
| **Solar Electric** | 0.30 | 0.42 | 0.72 |
| **Other Renewables** | 0.01 | 0.01 | 0.02 |
| **Total Renewable Programs** | **1.00** | **1.87** | **2.87** |

# Hydro

## 2013 wrap-up and 2014 look ahead

February 5, 2014

Energy Trust of Oregon



# History of hydro support

11 installed projects

- 7.4MW of capacity, 23.8GWh annually
- $3.5MM in incentives

5 dedicated projects

- 6.5MW of capacity, 15.1 GWh annually
- $4MM in incentives

# 2013 Results

- One project reached commercial operation
- Commitments for four PAC installations
- Project Development Assistance at 10 sites

# 2014 – Why Target Hydro?

Continued poor market fundamentals but hydropower can still be viable…

# 2014 – Which hydro targets?

| Opportunity | Technical Capacity | Main Customer Groups, ordered | Energy Trust Target |
|---|---|---|---|
| **Irrigation canal pressurizations** | 60MW + | Irrigation Districts, Irrigators | Primary target |
| **Pressure reduction valve replacements** | 10MW | Municipalities, Irrigation Districts, Irrigators | Secondary target |
| **Non-powered dam retrofits** | unknown | Irrigation Districts, Private Developers | Not targeted |
| **Upgrades at existing small hydro facilities (turbine upgrades)** | unknown | Irrigation Districts, Private Developers, Municipalities | Not targeted |
| **Aquifer storage and recovery systems** | unknown | Municipalities, Irrigation Districts | Not targeted |
| **Micro hydro on natural streams** | unknown | Residential, small commercial | Not targeted |

# Strategies & Opportunities

- Pipeline development
- Resource agency outreach
- County permitting

# Geothermal Wrap-up

February 5, 2013

EnergyTrust of Oregon

# History

One project funded:

OIT 280 kW (665 MWh)

Other activity:

- Surprise Valley Electric
- US Geothermal

# 2013

OIT project construction →

$1.55 million

7,646 annual MWh

Completed one study (Paisley area)

Committed to two studies (Klamath Falls area)

# 2014

Challenging fundamentals, plus…

Unique challenges for geothermal

- High costs
- Risk profile

Strategic advantages

- High capacity factor
- Occasional federal DOE funding

# 2014 Opportunities

- Larger PDA is popular
- Completed projects – opportunities for learning
- New professional developers
- Remain opportunistic

# ETO Small Wind Program Update

February 2014

Energy Trust of Oregon

# Program History

- 1st turbine installed in 2006
- Program started in 2008
- 39 turbines installed (1.5 – 225 kW)

- 678 kW total capacity
- 0.1 aMW (~900 MWh annually)
- $1.2 million in incentives

# Industry Condition and 2013 Results

**Industry condition:**

- ❖ Shakeout and consolidation
- ❖ US Installations declined 50%
- ❖ Many companies focusing abroad

**2013 Results:**

- 3 turbines installed
- Project development assistance to two community-scale wind projects
- Marketing throughout service territory

# Small Wind in 2014

- New $0 down leasing programs: United Wind, Xzeres
- Umatilla Tribe 50 kW turbine and trade ally training
- Leasing programs have potential to renew demand
- Comprehensive wind program review


# Biopower (biogas)

*Summary,2013 Year in Review, 2014 Preview*

RAC: February 5, 2014

EnergyTrust of Oregon

# Past support for Biopower (biogas)

## WWTPs – (5,096 kW)

- Gresham (2), Portland-Columbia, Medford, Pendleton, CWS-Durham
  - Anticipated generation – 36,155 MWhs / year
- Incentives = $4.67MM

## Dairy Digesters – (1,285 kW)

- Three operating projects
  - Anticipated generation – 9,245 MWhs / year
- Incentives = $1.88 MM

## Food Processing & Merchant – (3,150 kW)

- One food processor (Stahlbush) and one merchant biogas plant (JC Bio)
  - Anticipated generation – 17,900 MWhs / year
- Incentives = $2.83 MM


JC Biomethane Open House;
September, 2013
Junction City, Oregon.

# 2013

- **Commercial operation:**
  - JC Biomethane –
    - 1550 kW ; PGE (Junction City)
  - Farm Power Misty Meadows -
    - 750 kW; PAC; (Tillamook)
- **Incentives approved:**
  - CWS – Durham WWTP (1696 kW); cogeneration; brown grease (FOG); **$3MM**
  - Gresham cogen expansion (395 kW); FOG receiving / processing phase II: **$330,000**
- **First full year of generation:**
  - Pendleton WWTP (130 kW);
  - Forest Glen Oaks (RES) dairy digester (370 kW);
  - Medford WWTP (750 kW)


**JC Biomethane**
**Junction City, Oregon.**



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# 2014

- Focus - Rebuilding the pipeline
- Market → net-metered biopower projects at WWTPs
  - Off-set retail power rates

| PGE | PAC |
|---|---|
| CWS- Rock Creek | Klamath Falls |
| Salem | Grants Pass |
| WES – Kellogg | Albany |
| WES – Tri-city | Roseburg |

- FOG (tipping fees & biogas)
- Project Development Assistance
  - Klamath Falls (predesign study by Brown & Caldwell)

# Biopower Strategies & Opportunities

- **Challenging fundamentals for biopower**
  - Low avoided cost rates
  - Dwindling federal tax incentives
  - Competition from CNG initiatives
- **Strategies & Opportunities**
  - Project Development Assistance
  - Identify source of co-digestible materials (tipping fees, increased biogas production)
  - FOG Market Assessment
  - AD Case Study
  - Coordination with ODOE
    - ❑ CHP tax credit

**Brown grease (FOG) clogging a sewer line.**

# Solar Program: 2013 review, 2014 preview

## Renewable Advisory Council

February 6th, 2014

EnergyTrust of Oregon

# 2013 preliminary results

Paid in 2013:

- 881 PV projects (5.8 MW)
- 73 solar water & pool projects
- $4.3 Million of incentives

Paid since 2003:

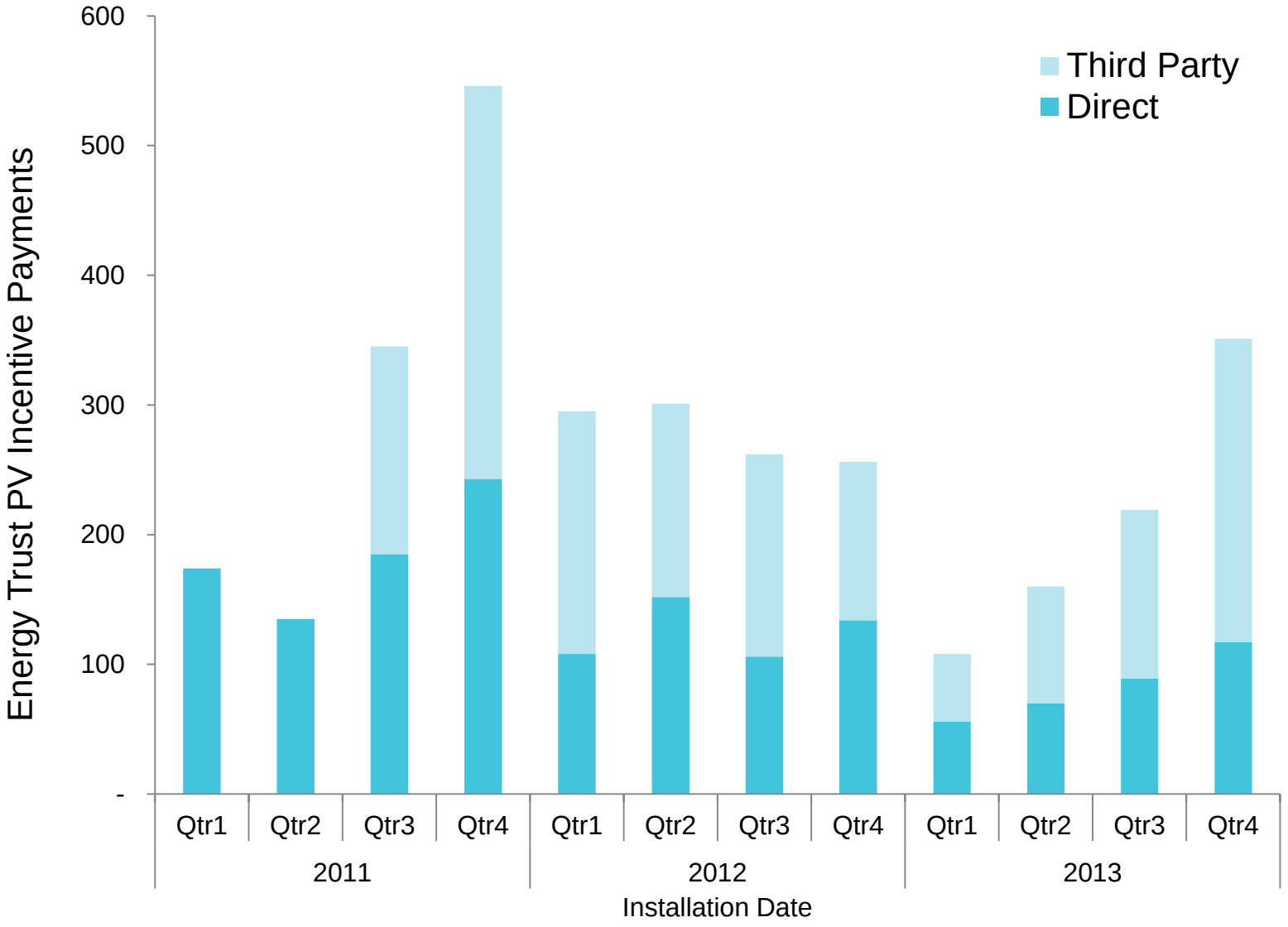
- 6,067 PV projects (58.6 MW)
- 1,400 solar water & pool projects
- $68.9 Million of incentives

# Residential solar electric

- After dramatic (50%) incentive cuts in 2012, 2013 was a rebuilding year: started weak, but finished strong
- Market continues to shift toward third party-ownership
- Raised cap and PGE incentive rate for direct-owned systems at the beginning of 2014

Celebrated 5,000th solar home!

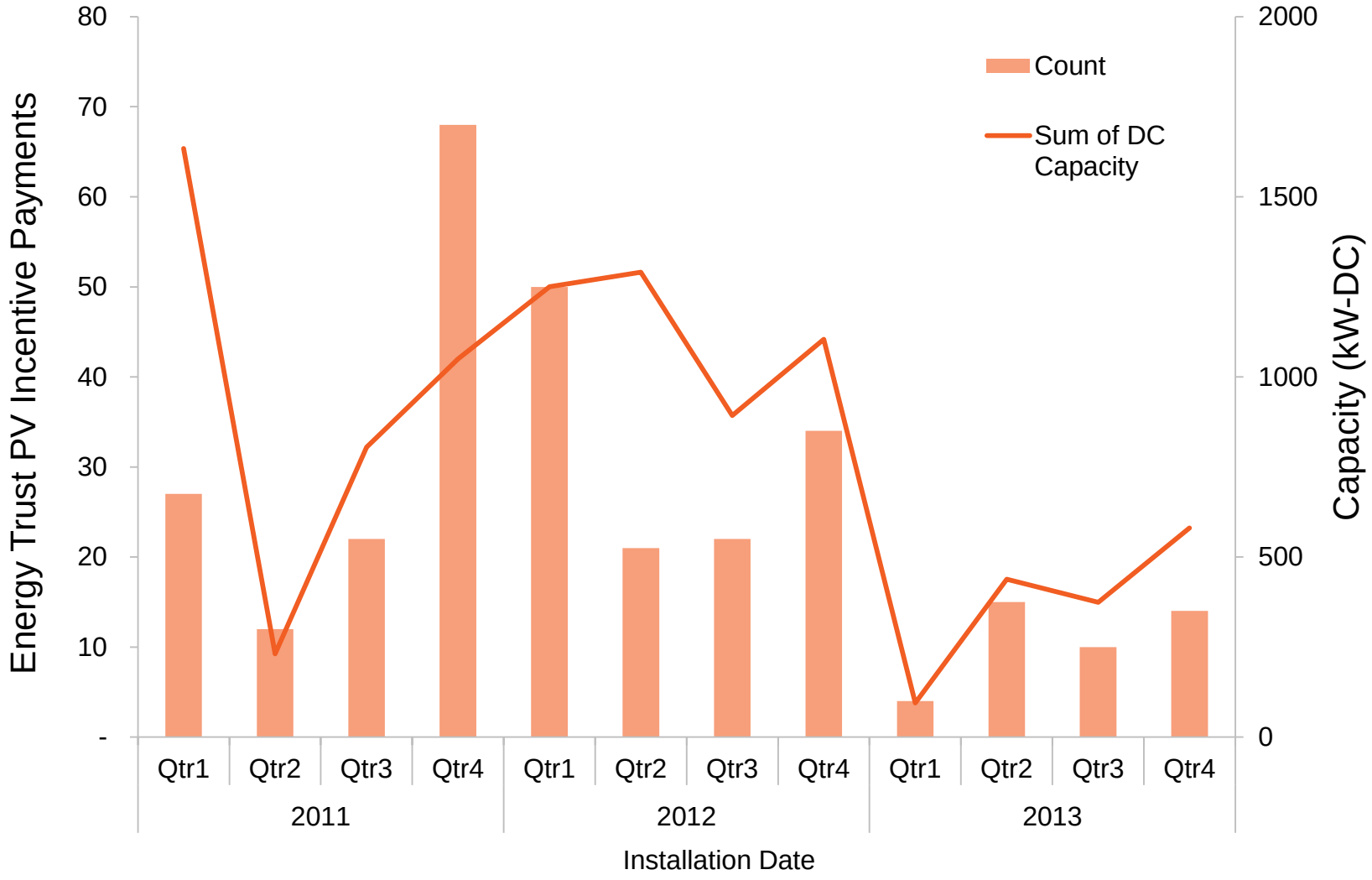
# Residential solar electric installations



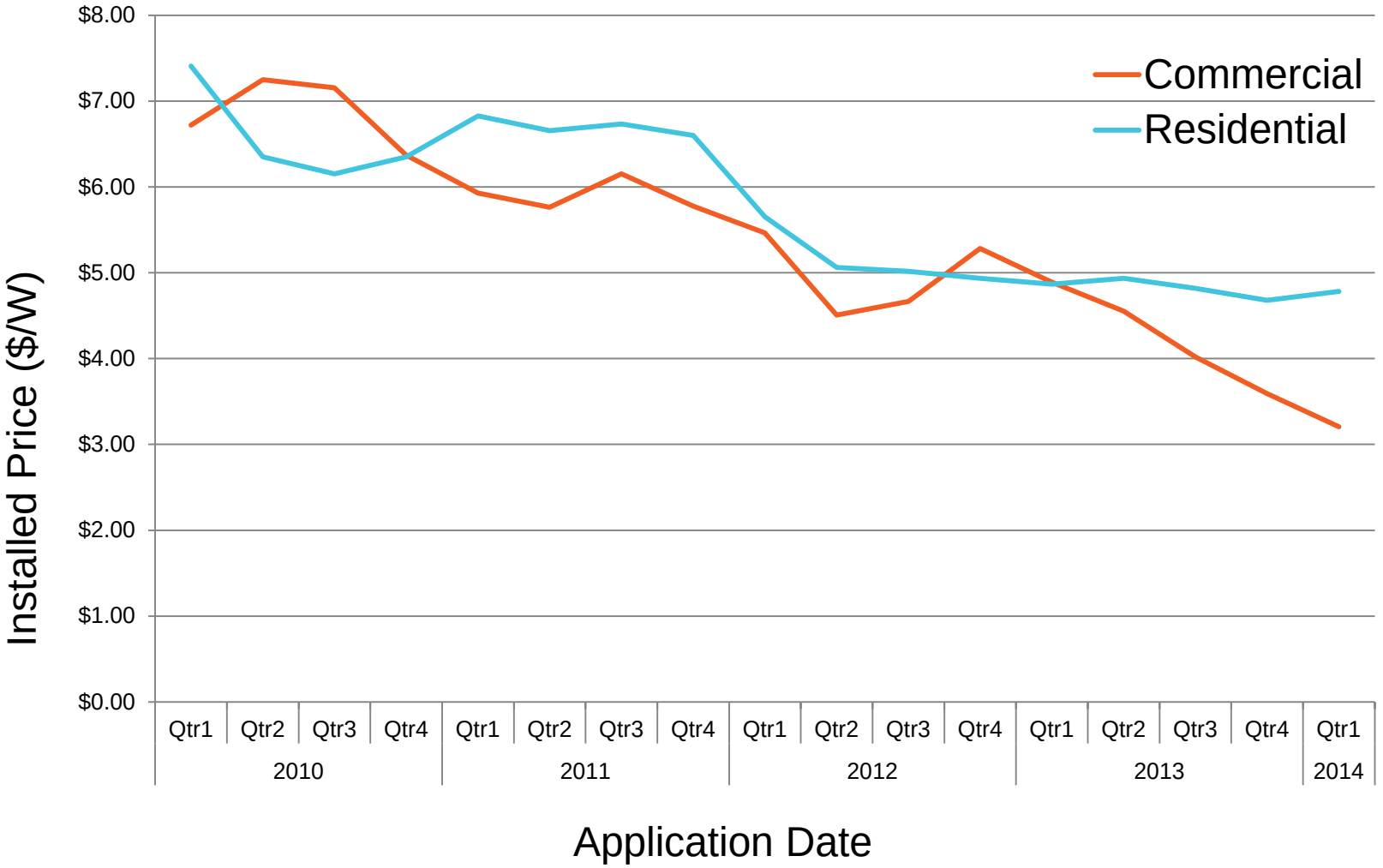
# Commercial Solar Electric

- Depleted commercial pipeline and low incentives led to a very slow year in 2013
- We raised our PGE and Pacific Power business incentives in April and PGE again in October
- Launched New Buildings Solar Ready
- Ran a targeted marketing campaign for PGE business customers in the Fall

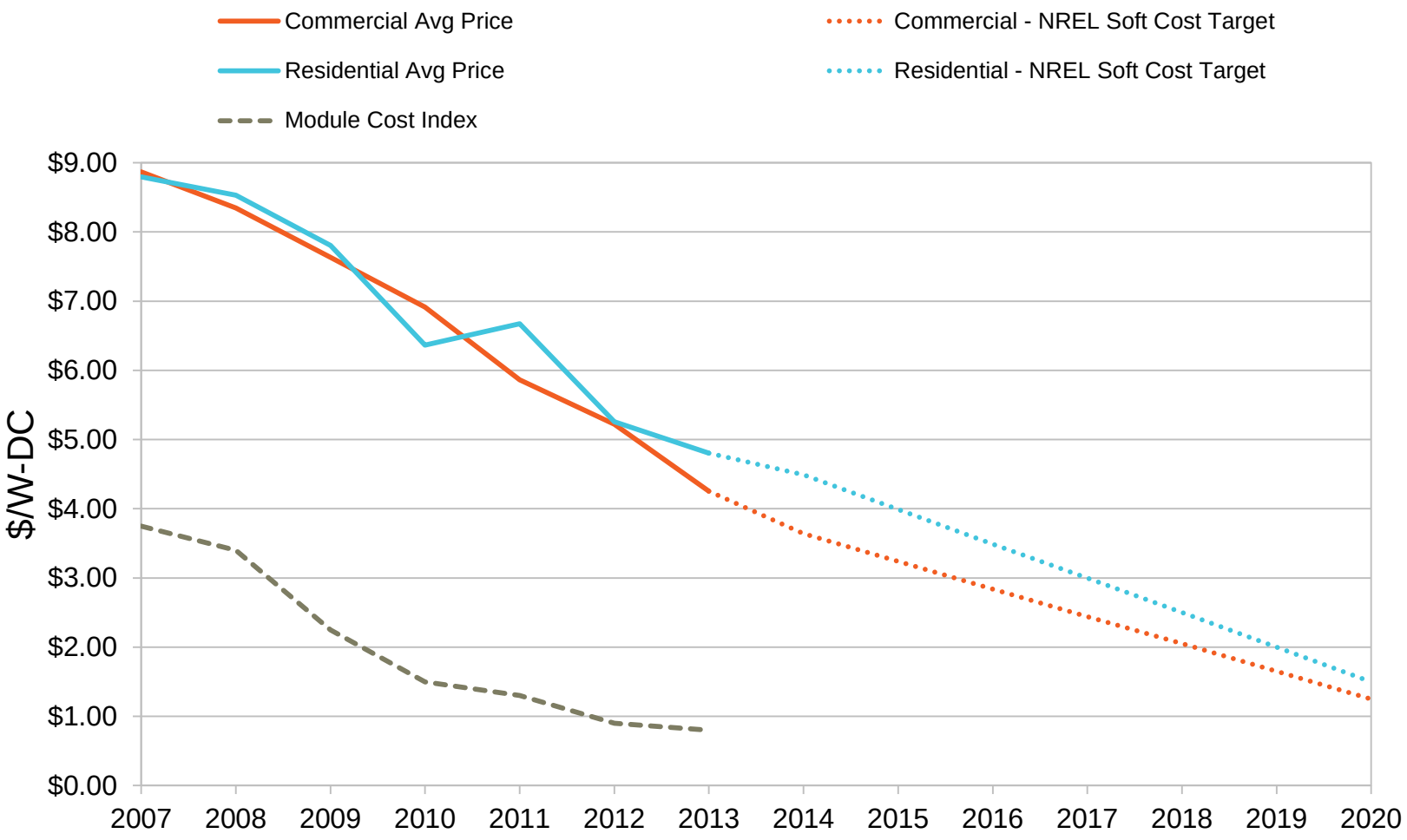
# Commercial solar electric installations



# Installation prices still falling, residential dropping more slowly



# NREL: aggressive soft cost reduction goals




http://www.nrel.gov/news/press/2013/5306.html

# 2014 solar program outlook

- Fresh team: new manager, new operations analyst, new project manager and roles, new program assistant in two weeks
- Opportunity to develop longer term incentive and market transformation plan
- Focus on soft cost reductions: in particular, customer acquisition and labor costs
- Stronger pipeline and customer interest than this time last year

# Thank You

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# 2015-2019 Strategic Plan

## CAC and RAC Discussion

February 5, 2014

Energy Trust of Oregon

# Strategic Planning at Energy Trust

- Grant agreement: plan every 5 years
- Major elements
  - Mission
  - Goals
  - Strategies
  - Actively seek input

# 2015-2019 Strategic Plan

## 2014 Development Schedule

# CAC and RAC Engagement

- February – Introduction
- March or April – Strategic issues
- June – Review of Draft
- July /Aug – Comments on Draft
- October – Update on Final Plan

# Products and Phases

- Situation Analysis √
- Information gathering √
- Strategic Issue Identification
- Draft Plan
- Final Plan
  - Goals
  - Focus areas
  - Ongoing reference

# Framing of Strategic Issues

- Inside-the-box
- Expanding-the-box
- Outside-the-box

# Early Look at Renewable Issues

- Is our approach still optimal?
  - Project/market development
  - Range of technologies
- Vision for distributed generation's role

# Early Look at Efficiency Issues

- Declining resource – “base”
  - Business model impacts
  - Ways to ensure we get all we can
  - Flexibility if more than we think
- Finding and acquiring savings beyond “base”
  - Tensions between CE, higher cost to acquire, new markets, new technologies

# Early Look at Overall Issues

- Outside the box
  - Expansion of goals; GHG, economic development, equity or social justice, early innovations
  - Setting visionary goals; focusing on components in support of that larger vision for Oregon

- 10 year vision vs. 5 year?

# Next Steps for Input

March or April CAC/RAC

- Review of issues list
- Group discussion/feedback on EE or RE specific issues

# Thank You

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