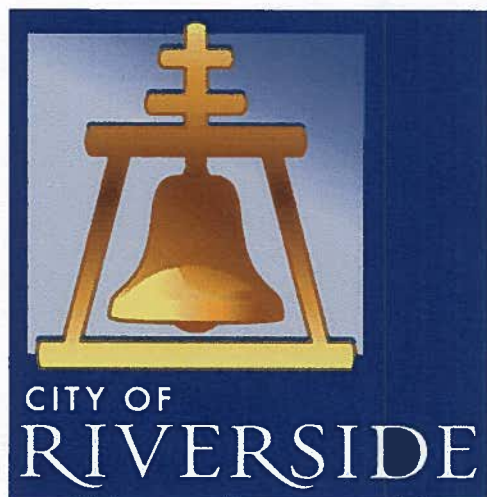




Arts & Innovation

DSR Solar PV Project and Iberdrola Renewables

Utility Services/Land Use/Energy Development Committee

July 7, 2015

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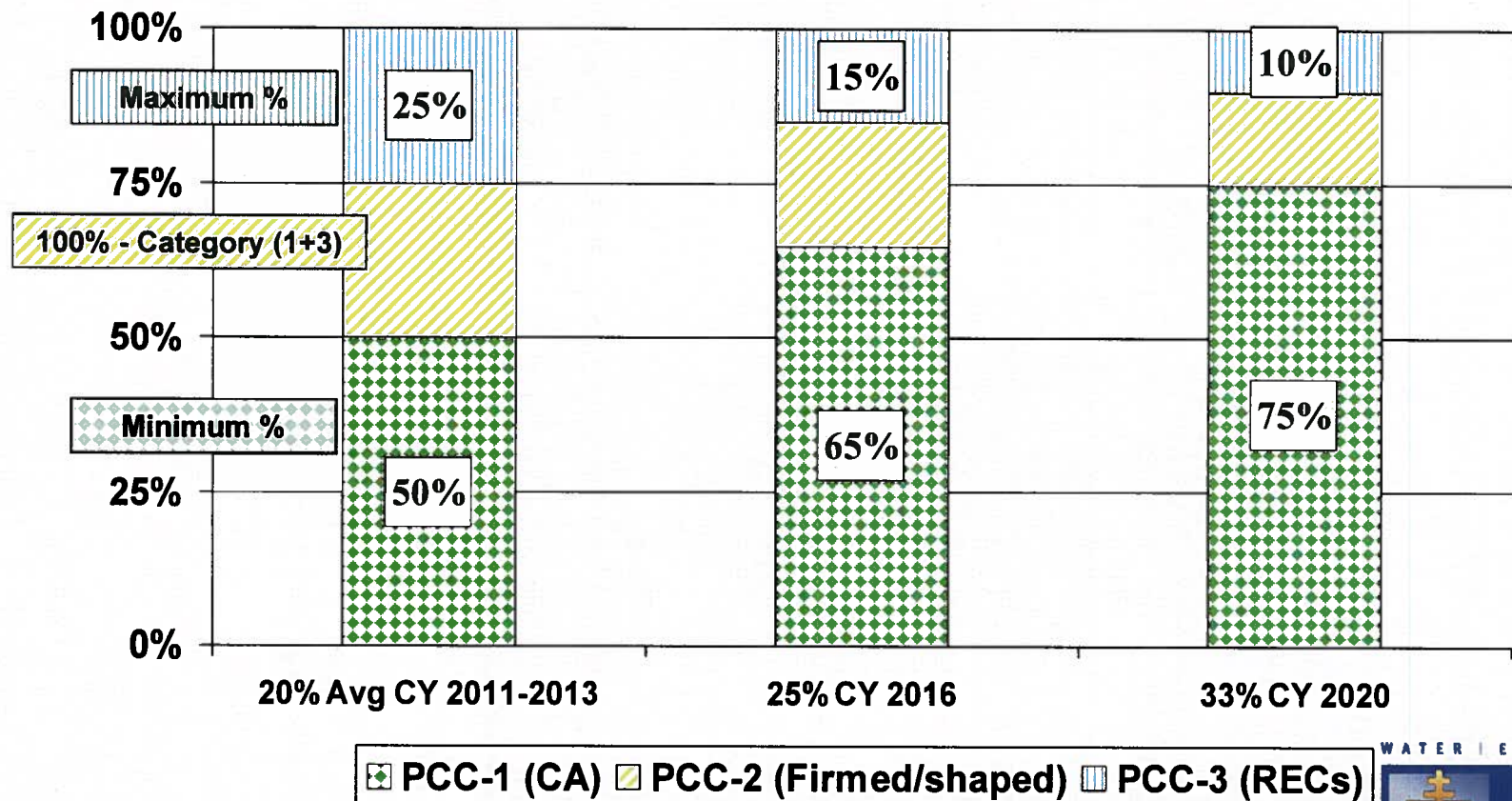
Background - History of Riverside's Renewable Resource Procurement

☐ PUB/City Council – EARLY ACTIONS

- Oct 2002 - PUB Strategic Plan - Add 25 MW renewable resources
- PUB/CC Adopt 15% RPS goal by 2015 June 6 & July 8, 2003
- Procuring renewable resources since 2003: RECs, geothermal, landfill gas, in-state and out-of-state wind resources
- PUB/CC revised RPS goal (20% by 2010, 25% by 2015 and 33% by 2020) on May 4, 2007 & December 9, 2008

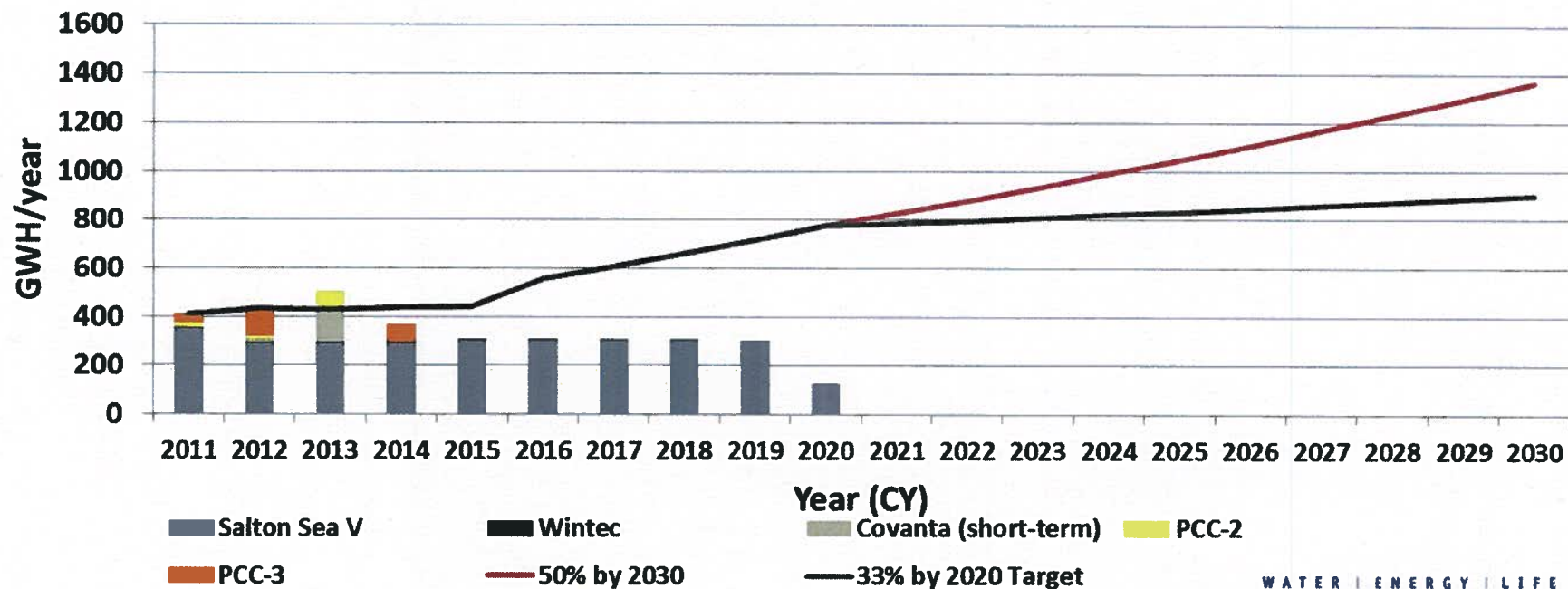
☐ CA SB X1-2 (2011) - 33% of retail sales by 2020

SBX1-2 RPS Procurement Requirements ("Bucket" Rules) & Compliance Periods



Renewable Procurement < 2012

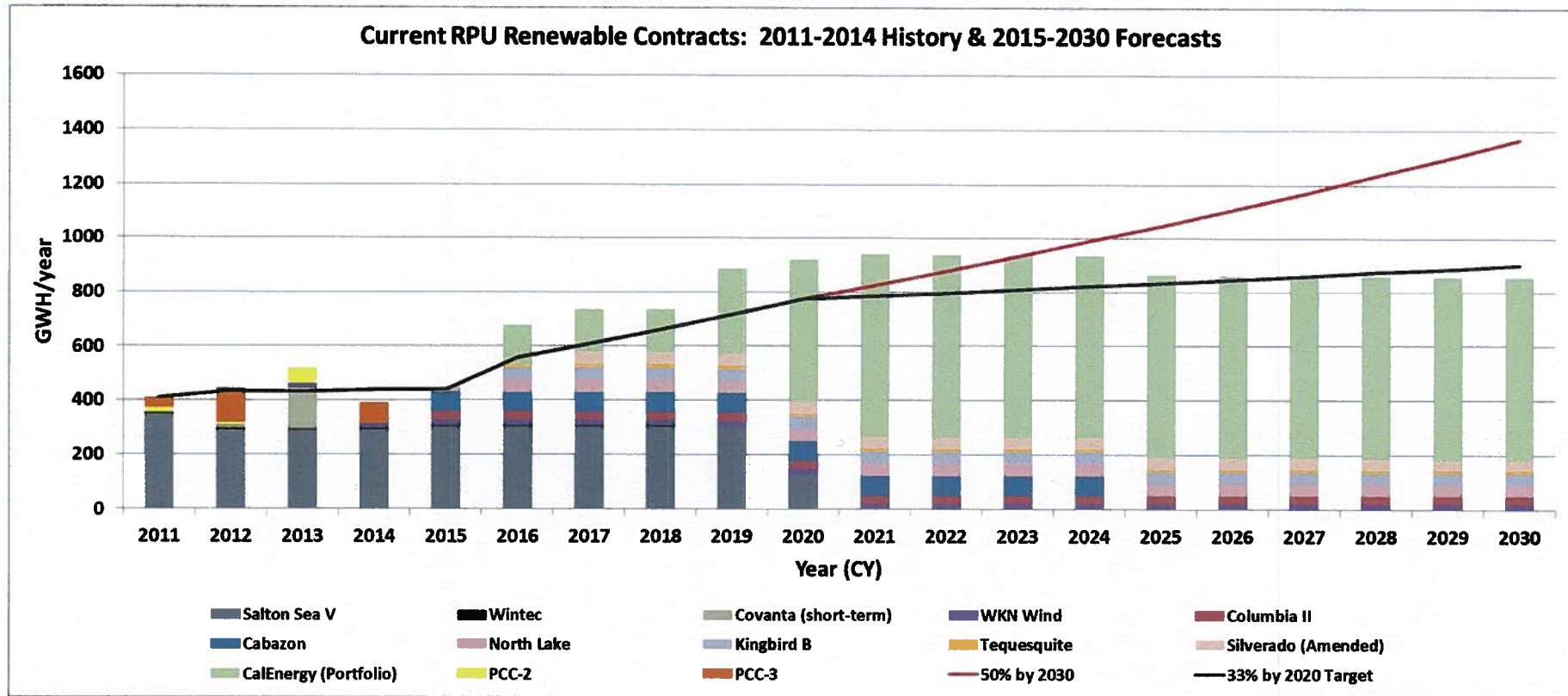
Historic RPU Renewable Contracts and 2011-2014 Short Term Purchases Only



Background – 218 MW Renewable Resource Procurements Since 2012

Project	MW	GWh	COD	Type	PUB	CC
WKN Wind	6	21	2013	Wind	11/16/12	12/18/12
Columbia II	11	31	2014	Solar PV	9/6/13	9/24/13
Clearwater	14	39	2014	Solar PV	9/6/13	9/24/13
Cabazon	39	71	2014	Wind	11/15/13	12/3/13
North Lake	20	50	2015	Solar PV	9/21/12	10/9/12
Kingbird B	14	41	2015	Solar PV	9/6/13	9/24/13
Tequesquite	7.5	11	2015	Solar PV	2/7/14	3/4/14
Silverado (Amended)	20	47	2016	Solar PV	3/21/14	4/1/14
Cal Energy (Portfolio)	Up to 86	Up to 674	Various	Geothermal	5/3/13	5/14/13

Procurement Impacts on 33% RPS

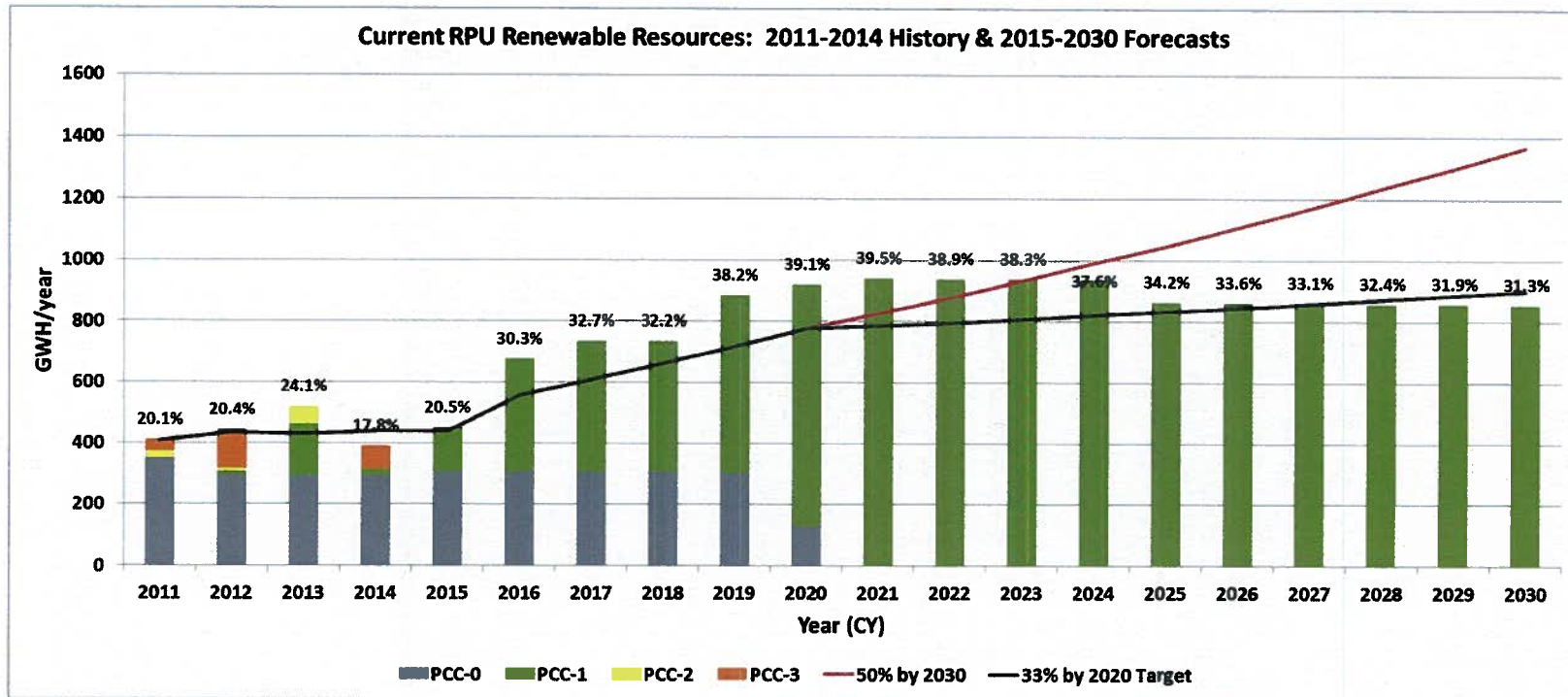


- 4/19/15 – Executive Order B-30-15 – GHG reduction – 40% below 1990 levels – includes 50% RPS
- Additional renewables needed for a 50% RPS (Proposed SB350 and AB645)

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Current Forecast: More Renewables Needed to Meet “New” 50% RPS Target.



Proposed Strategy

- Acquire a sufficient amount of cost effective renewable projects that fill energy needs and generate bankable, excess-procurement RECs
- Use these bankable RECs to meet the escalating 50% by 2030 RPS mandate during the next decade, at least until IPP is retired
- Within the next 5-10 years, identify new/existing, cost-effective base load renewable energy project that can:
 - partially replace retired IPP energy, and
 - meet or exceed a 50% renewable portfolio beyond 2030

IRP - Recall Our Guiding Principles

(For selecting New Assets or Contracts)

- Does the proposed new generation asset or contract:
 - Help RPU ensure wholesale and/or retail price stability?
 - Maintain or improve technology diversification within RPU's resource portfolio?
 - Support/improve our local or system reliability needs?
 - Meet cost effectiveness criteria?
 - Properly align with RPU's daily and/or seasonal load serving needs?
 - Reduce RPU's Carbon footprint and/or increase RPU's renewable energy supply?
 - Support RPU's commitment to environmental stewardship?

Staff continually attempts to meet as many of these Guiding Principles as possible, whenever we propose a new asset or contract to the PUB and CC.

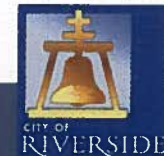
To Meet Our Future RPS Needs...

Staff recommends adding two more renewable resources to RPU's portfolio:

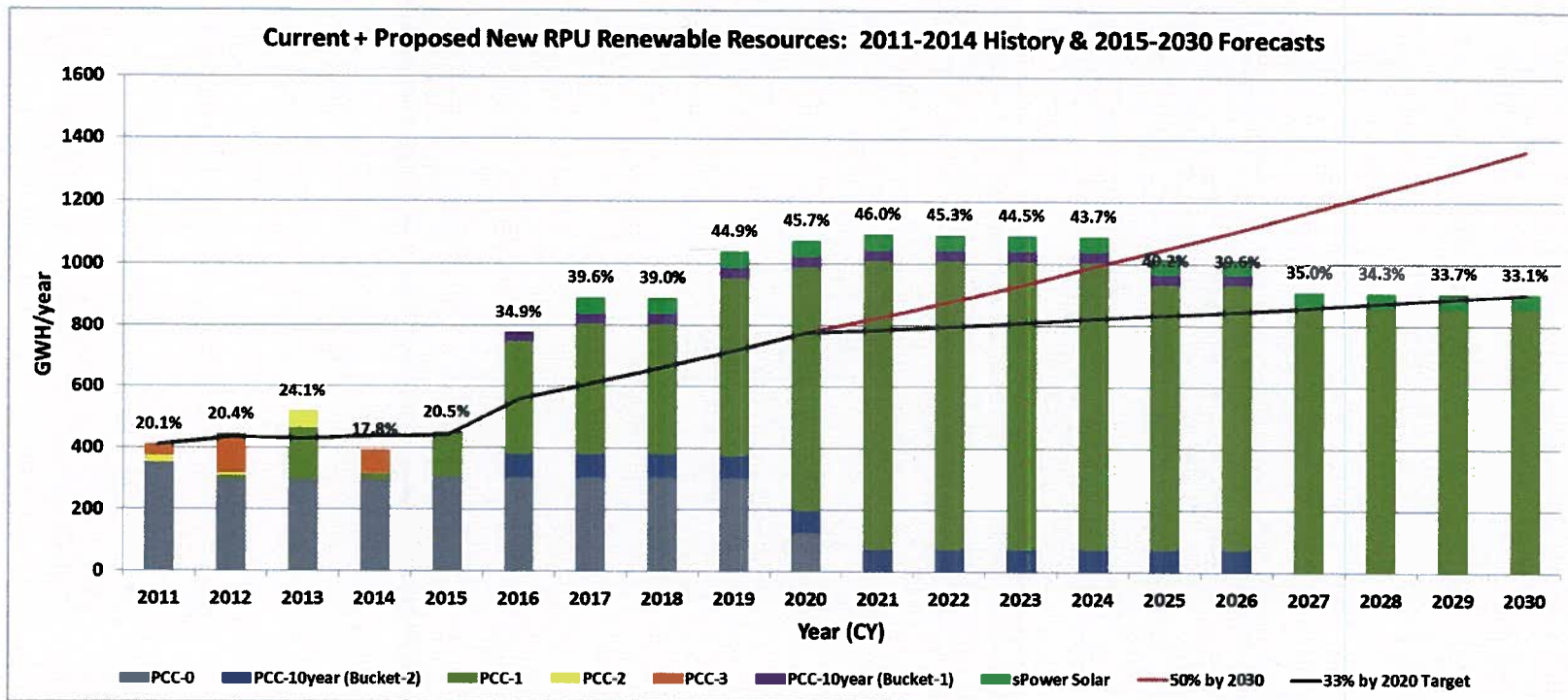
- sPower's Antelope DSR 1 Solar PV Project
- Iberdrola's Firmed & Shaped Renewable Product



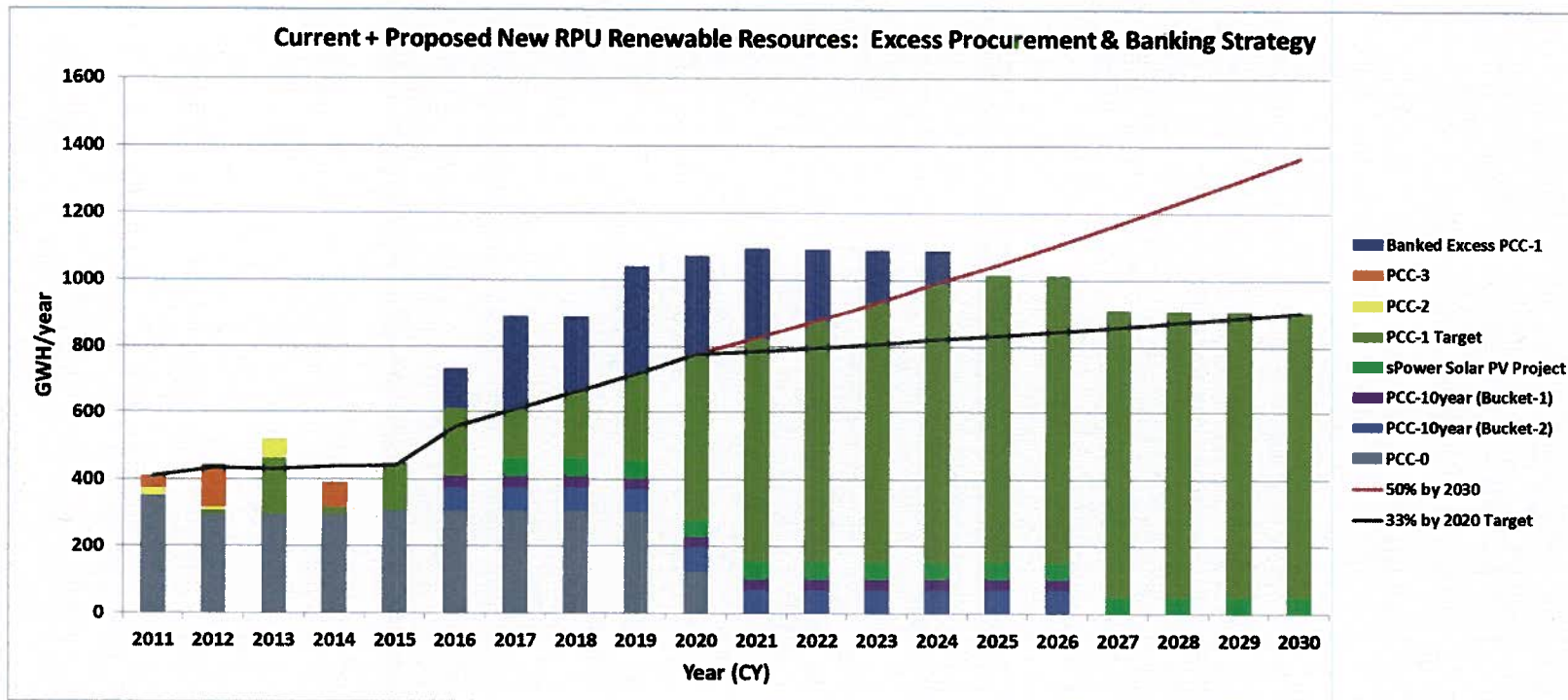
WATER | ENERGY | LIFE



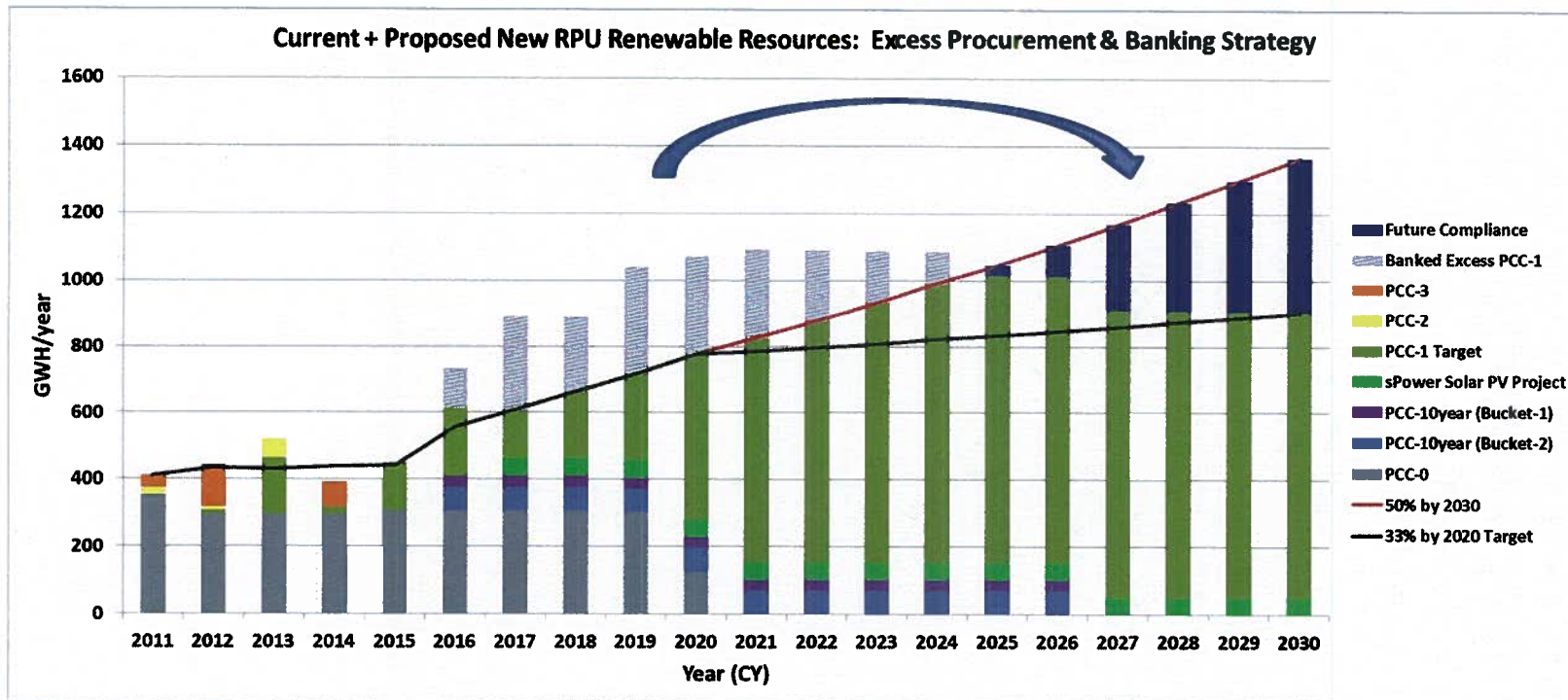
Adding sPower (Antelope DSR) & Iberdrola Resources



RPU's Current PCC-1 Excess Procurement Can Be "Banked"



“Banked” Excess - Used to Satisfy Future Compliance Obligations



Procurement #1

ANTELOPE DSR 1 SOLAR PV PROJECT - SPOWER

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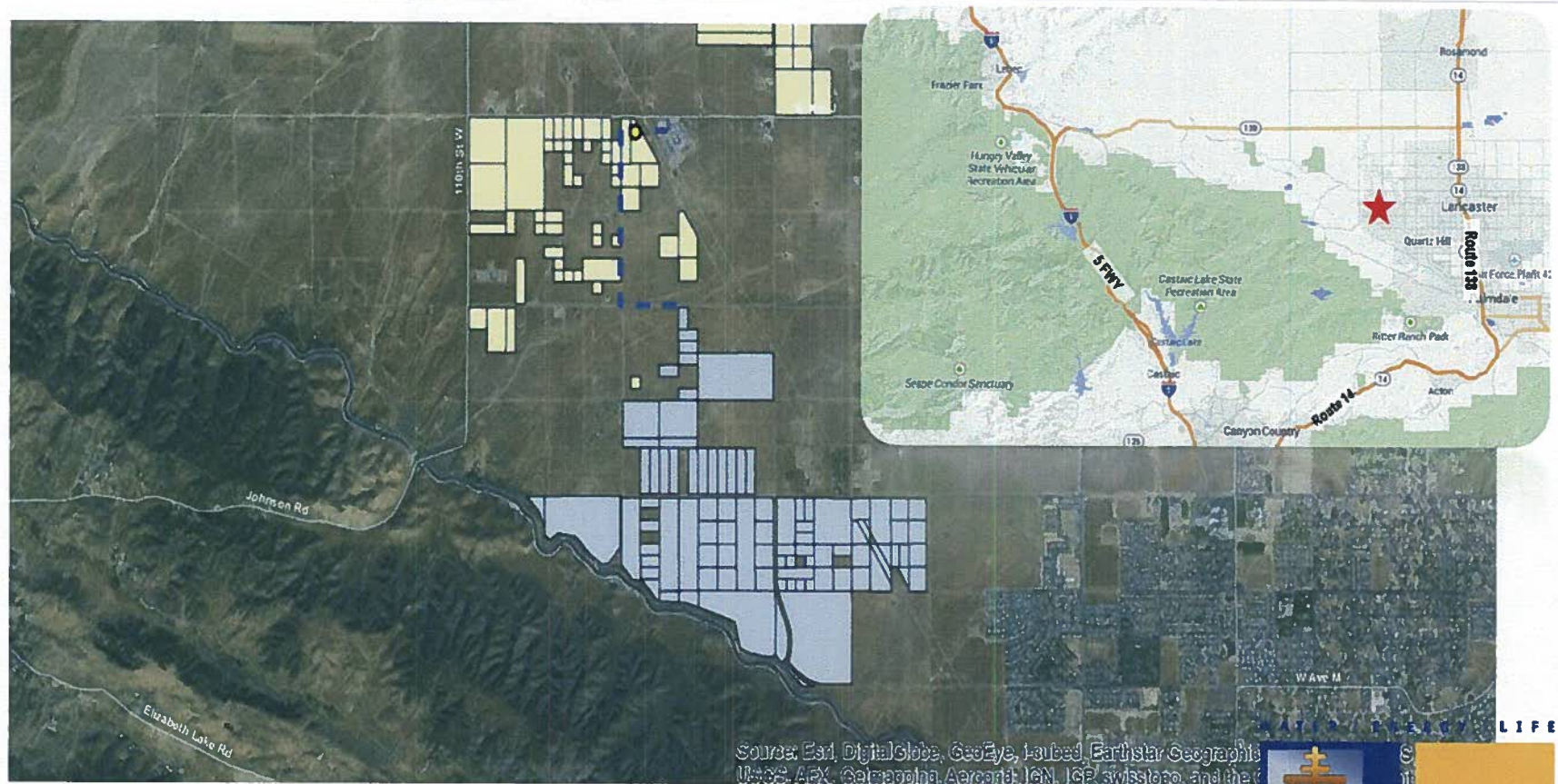
Why Another Solar Project?

- Meet Higher RPS Mandates
- Replaces RE Clearwater Project
 - 14MW RPU share (SCPPA Project)
 - Permitting challenges—won't be built
 - RPU's collected \$1.3M in delay damages
 - PPA is being unwound
- Capture the Lowest PV Pricing before ITC Expires
- Includes option for Utility-Scale Energy Storage

Antelope DSR Project Overview

- sPower (formerly Silverado) - 50 MW project (Lancaster, CA)
- SCPPA Project: Riverside 25MW and Vernon 25MW
- 20-year PPA commencing December 31, 2016
- Provides additional 3% to RPS goal as PCC-1 Resource
- Suitable Replacement for RE Clearwater

Project Site Location



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RIVERSIDE

PUBLIC UTILITIES

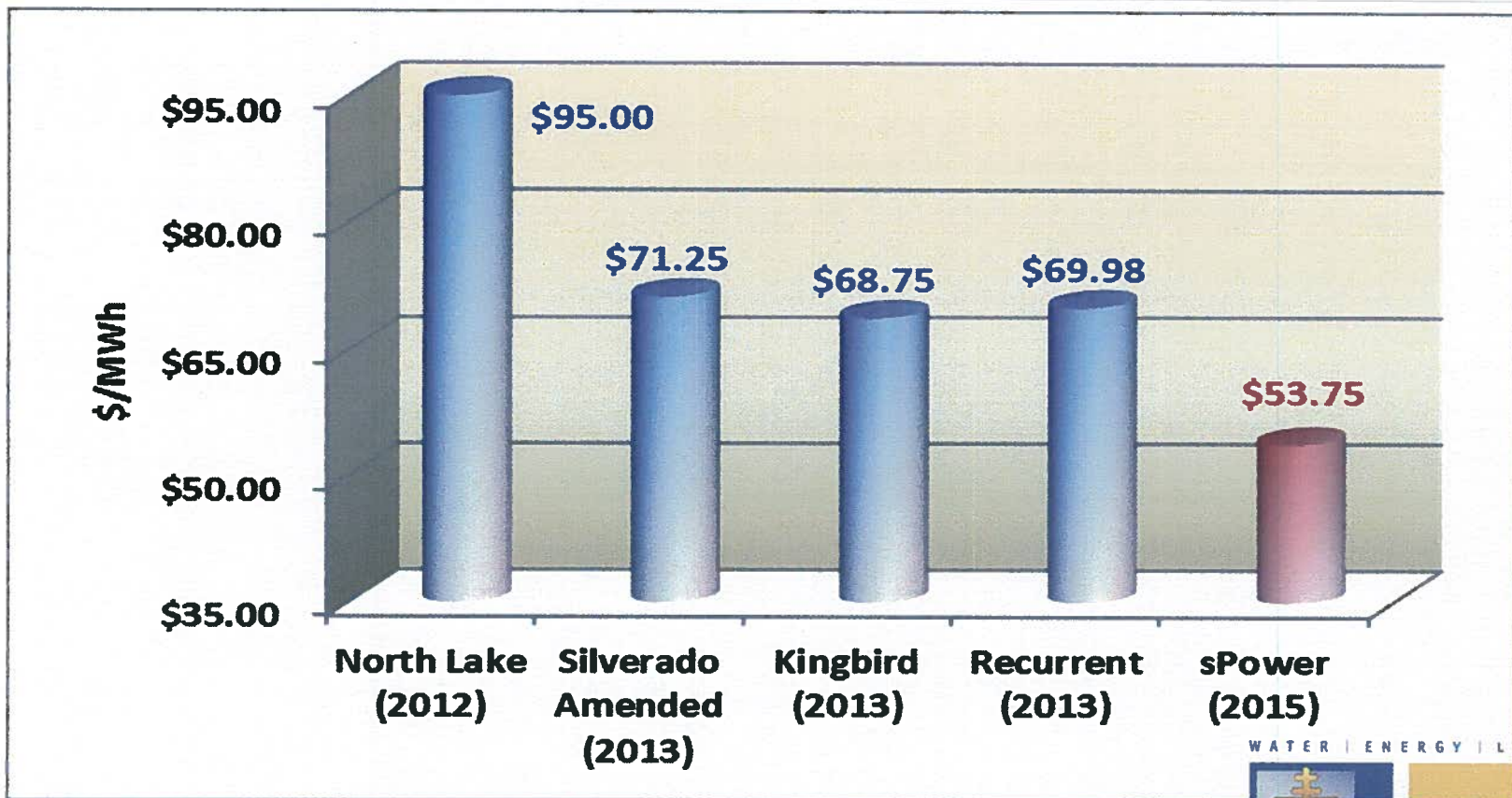
Antelope DSR Attributes

- Familiar Developer –
 - 2 other solar projects with sPower (thru SCPPA)
- Economy of Scale –
 - sPower has > 800MW of solar development assets in the Antelope Valley area
 - Part of a 330MW interconnection with the CAISO
- Advanced Stage in Development –
 - Interconnection Agreement executed
 - Environmental permit expected in September of 2015
- Mitigation of Development Risk -
 - Enforceable development milestone dates with financial penalties

Antelope DSR Attributes (Cont'd)

- Performance Security –
 - \$2.25M in Development Security
 - \$6.91M Delivery Term Security (first 10 years)
 - \$5.41M Delivery Term Security (last 10 years)
- Scheduling Coordinator (SC) Fee –
 - \$91,000/year credit-- RPU to offer SC services to capture this credit;
- Attractive Pricing –
 - \$53.75/MWh fixed
 - > 20% below prices for Recurrent projects and Kingbird B
 - NPV saving of \$8.8M compared to RE Clearwater

Project Price Comparison



Embedded Options

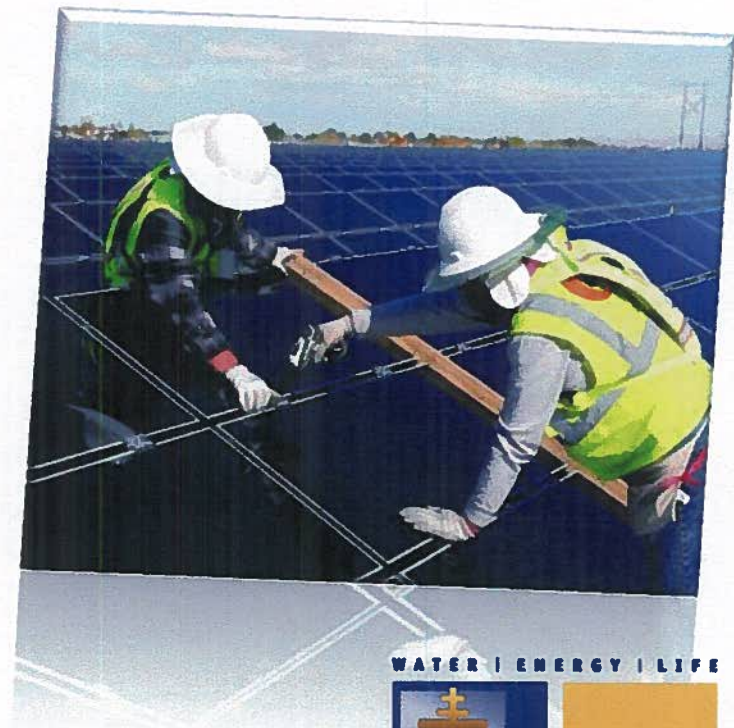
- Storage Option –
 - First 15 years - up to 12 MW of energy storage at the project site
 - Opportunity to integrate energy storage with the solar facility
 - Helps meet any future energy storage mandates
 - Reserves sufficient project area for storage installation
 - Developer funds up to \$182,000 (permitting and interconnection costs)
 - Land lease for energy storage is \$1/year
- Purchase Option –
 - Years 10, 15 and 20 (after COD) at the then fair market value

Step-Up Provision

- If tax exempt bonds are issued to finance either option – payment guarantee to SPPA is required
- Upon payment default, non-defaulting participant “steps-up” for payments
- Non-defaulting participant reimbursed by:
 - repayment by the defaulting participant
 - taking delivery of defaulting participant’s share of the facility output
 - collecting proceeds from the sale of facility output to a third party
- Standard term in joint projects (IPP, PV, Hoover, MPP, MAP and STS)

Project Schedule

- **June 15, 2016** –
Start of Construction
- **December 31, 2016** –
Guaranteed COD
- **June 30, 2017** –
Outside COD



Staff Recommendation

Public Utilities Board— Unanimously approved on June 19, 2015

That the Utility Services/Land Use/Energy Development Committee recommend that the City Council approve the 20-year PSA between SCPPA and the City for sPower's Antelope DSR Solar PV Project and the associated storage and purchase option agreements, as outlined in the report package.



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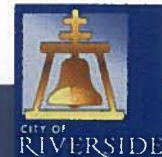
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Procurement #2

IBERDROLA RENEWABLE POWER PURCHASE AGREEMENT

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Benefits of a Structured Product (PCC-1&2 or PCC-2)

- Maximize flexibility to meet a higher RPS mandate
- Hedge Q3 energy needs with firm renewable resources
- Diversify and optimize RPU's portfolio of renewable resources
- "Bank" excess procurement for future compliance obligations
- Avoid CAISO integration costs/fees
- Use less expensive Out-of-State RECs (e.g., PCC-2)
- Replaces BPA Energy Exchange Contract (expires May 2016)

RFP for A Structured Product

Process / Activity	Time Period
Date of RFP Release	April 14, 2015 @ 9 AM
Riverside responded to Counterparty questions	April 27-30, 2015
Closed RFP	May 12, 2015 @ 9 AM
Selected best party for bilateral negotiations	May 14, 2015 @ 1 PM

Bids Received for the RFP

- RFP sent to 14 Counter-parties meeting RPU credit criteria
- 6 responses to RFP
- Bids accepted for:
 - a) blended PCC-1&2 product,
 - b) straight PCC-2 product, or
 - c) both products.
- Riverside received 3 blended PCC-1&2 bids and 5 straight PCC-2 bids
- 11 years - Firm, summer peaking renewable energy (2016-2026)

RFP Evaluation Results

- Assessed on the total delivered price \$/MWh (Total Price = Energy price + REC price), forecasted congestion costs, and any additional index fees or adders
- Value-proposition assessment (quantification of five risk mitigation T&Cs (Regulatory compliance, Credit support, Seller e-Tagging service, RPS verification penalties, and Buyer curtailment rights))
- Range of bid offers
 - Fixed energy price offers: \$48.15/MWh to \$56.00/MWh
 - PCC-1 - Fixed REC price offers: \$14/MWh to \$20/MWh
 - PCC-2 - Fixed REC price offers: \$6/MWh to \$11/MWh
 - Off-setting value propositions: \$0/MWh to \$11.40/MWh

Iberdrola Selected

- Lowest bid on both a straight cost basis and value-adjusted basis
- Only counter-party meeting all five additional T&Cs
- REC prices are roughly “mid-market” (\$16 PCC-1 and \$7 PCC-2)
- Significantly lower fixed energy price (approx. \$8/MWh lower than the next lowest fixed price competitor)
- Lowest overall price proposal

Iberdrola Product Overview

- WSPP Contract - Heavy Load (HL) energy deliveries
- 11-year contract term starting June 2016
 - June-25 MW, July-60 MW, August-75 MW, Sept-60 MW, Oct-25 MW
 - Approximately 101,000 MWh/year
 - Roughly equivalent to annual energy under BPA contract
- Minimum 70% PCC-2 (blended REC price cannot exceed \$9.70/MWh)
- RPU's has pre-existing transmission rights at point of delivery
- Energy sources are CEC certified wind resources from the Pacific Northwest
- Approximately 4% contribution to RPU's RPS goal

Attractive Contract Price

- Fixed 57.85/MWh (energy + REC price for summer heavy-load)

Energy Breakdown:

- \$48.15/MWh Energy Price

REC Premium Breakdown:

- \$16/MWh PCC-1 RECs (Max. 30%)
- \$7.00/MWh PCC-2 RECs (Min. 70%)
- \$9.70/MWh Blended REC Premium

Additional Iberdrola PPA Attributes

- Full Liability for Regulatory Compliance
 - No payment for any RECs if assets aren't CEC RPS certified
 - Seller incurs up to \$500k to bring the renewable assets into compliance
- \$3,000,000 (PCC-1&2) Delivery Term Security
 - Seller posts cash or letter-of-credit
- Unilateral RPU Termination Rights for Seller's Non-Performance
 - If Seller fails to meet deliverability requirements
- Seller Full Responsibility for All NERC e-Tagging Activities
- RPS Verification Penalties
 - Seller pays escalating REC penalty for CEC disqualified RECs during the compliance review process

Summary

- Iberdrola PCC-1&2 PPA helps Riverside
 - achieve maximum flexibility in meeting higher RPS mandates
 - hedge RPU's Q3 energy needs with firm renewable resources
 - diversify and optimize RPU's portfolio of renewable resources
 - bank excess procurement to meet future compliance obligation
 - avoid CAISO integration costs/fees
 - take advantage of less expensive PCC-2 RECs
 - replace expiring BPA Energy Exchange Contract
- Iberdrola PCC-1&2 PPA offers
 - Very competitive pricing
 - Very favorable T&Cs

Staff Recommendation

Public Utilities Board– Unanimously approved on June 19, 2015

That the Utility Services/Land Use/Energy Development Committee recommend that the City Council approve the 11-year PPA between Iberdrola and the City to provide Portfolio Content Category 1 (PCC-1) and Portfolio Content Category 2 (PCC-2) energy and associated renewable energy credits (RECs) from Iberdrola's pool of Pacific Northwest wind resources, as outlined in the report package.



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