

*Arts & Innovation*

## DSR Solar PV Project and Iberdrola Renewables

Utility Services/Land Use/Energy Development Committee  
July 7, 2015

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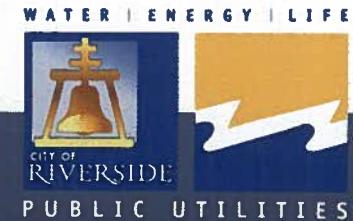
# Background - History of Riverside's Renewable Resource Procurement

## PUB/City Council – EARLY ACTIONS

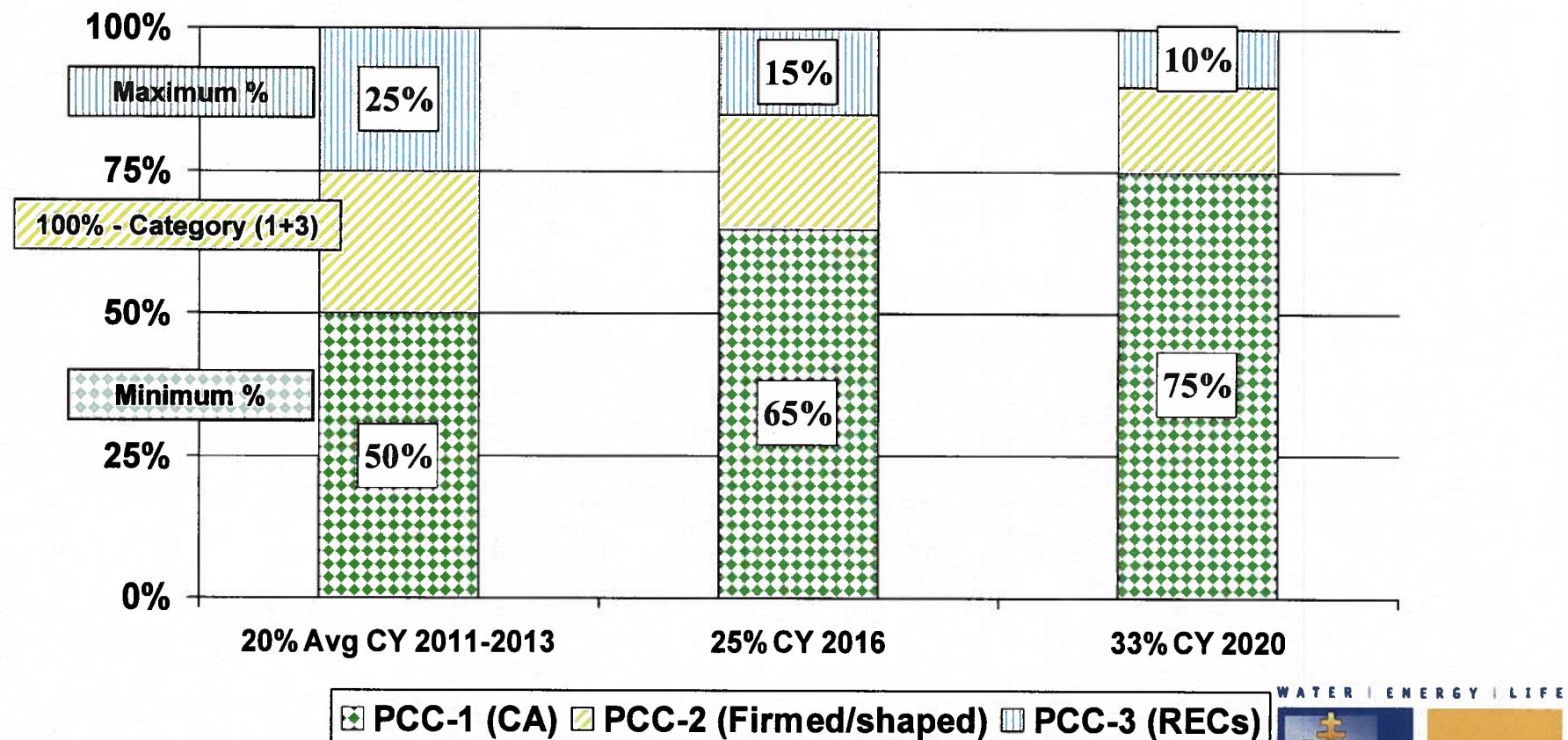
- Oct 2002 - PUB Strategic Plan - Add 25 MW renewable resources
- PUB/CC Adopt 15% RPS goal by 2015 June 6 & July 8, 2003
- Procuring renewable resources since 2003: RECs, geothermal, landfill gas, in-state and out-of-state wind resources
- PUB/CC revised RPS goal (20% by 2010, 25% by 2015 and 33% by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

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

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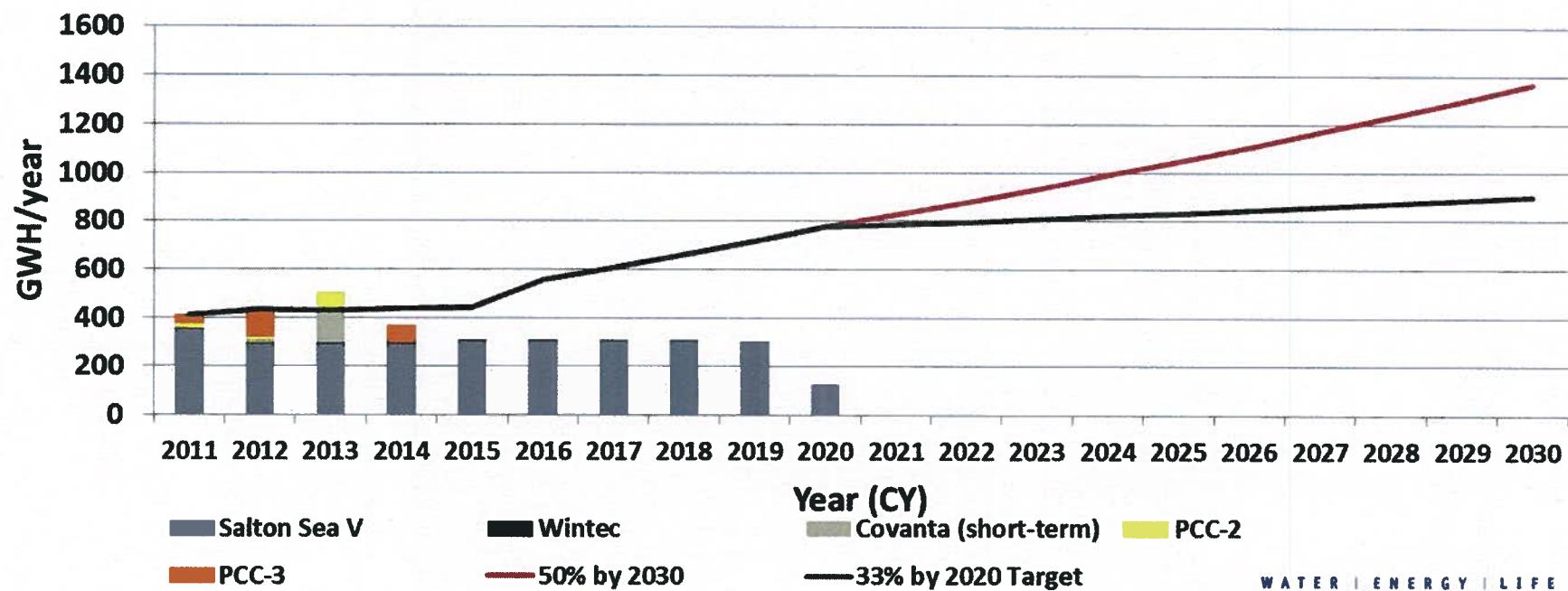


# SBX1-2 RPS Procurement Requirements (“Bucket” Rules) & Compliance Periods



# Renewable Procurement < 2012

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



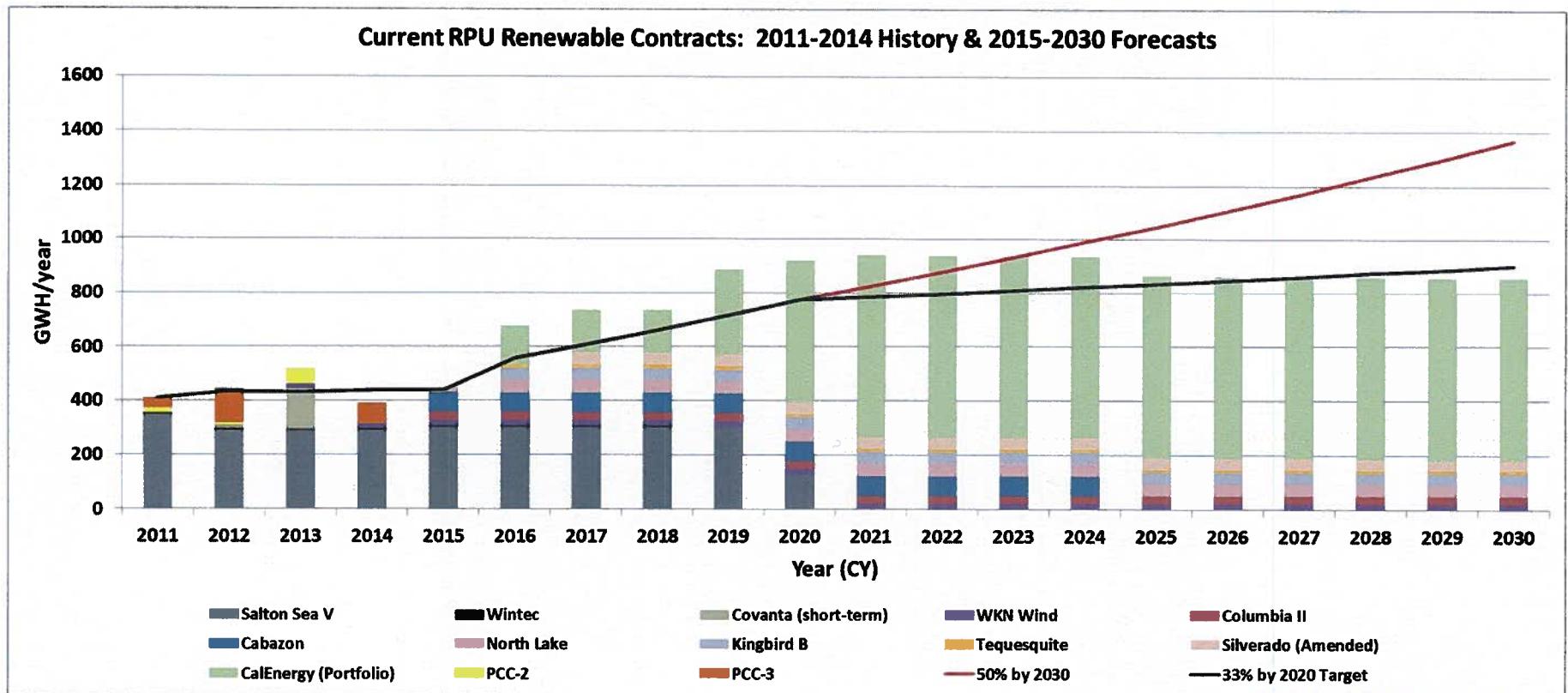
# Background – 218 MW Renewable Resource Procurements Since 2012

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

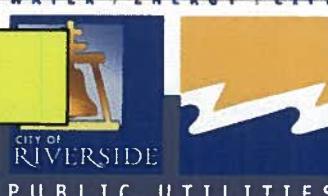
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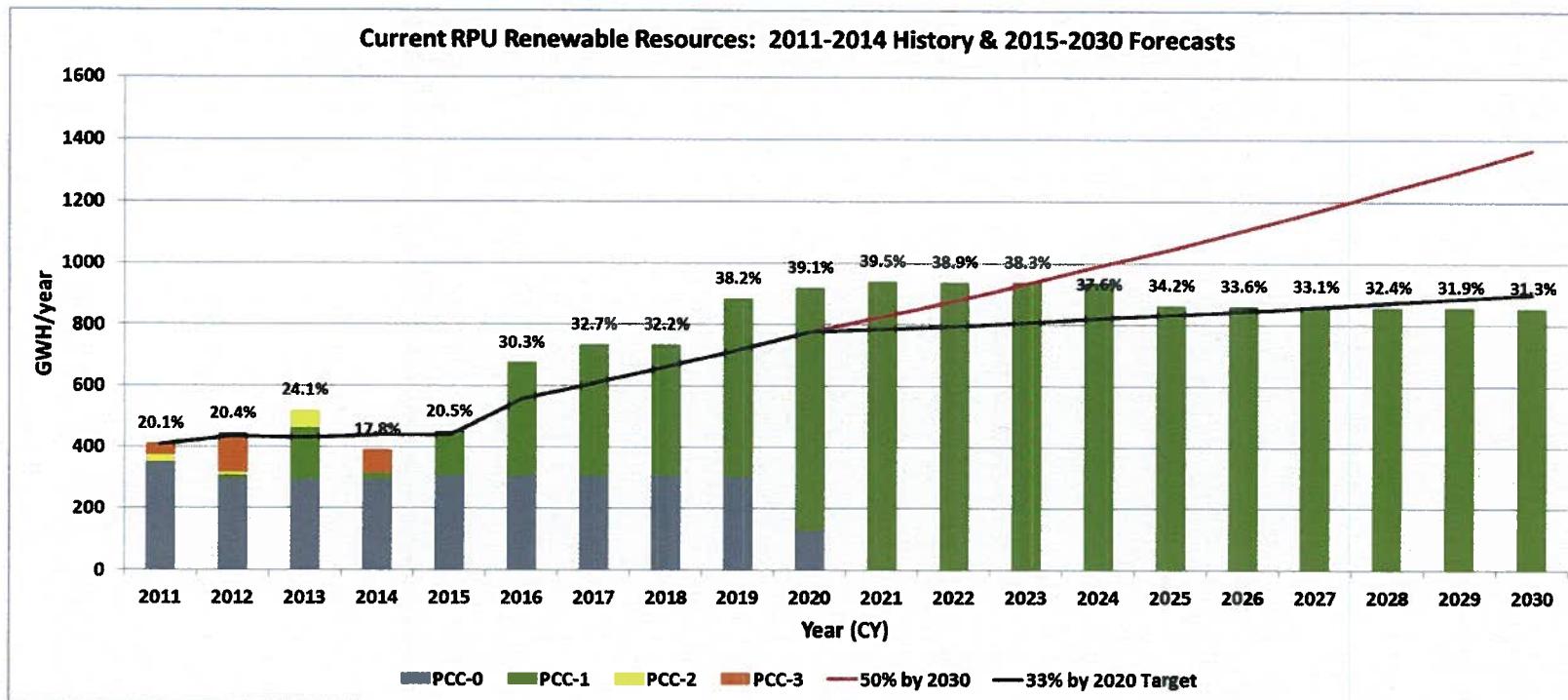
# Procurement Impacts on 33% RPS



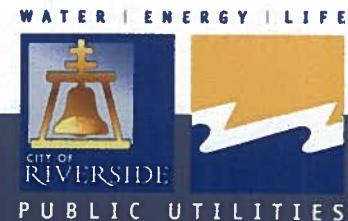
- 4/19/15 – Executive Order B-30-15 – GHG reduction – 40% below 1990 levels – includes 50% RPS
- Additional renewables needed for a 50% RPS (Proposed SB350 and AB645)



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



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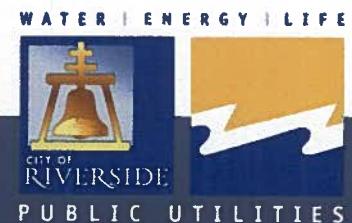
# Proposed Strategy

- 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

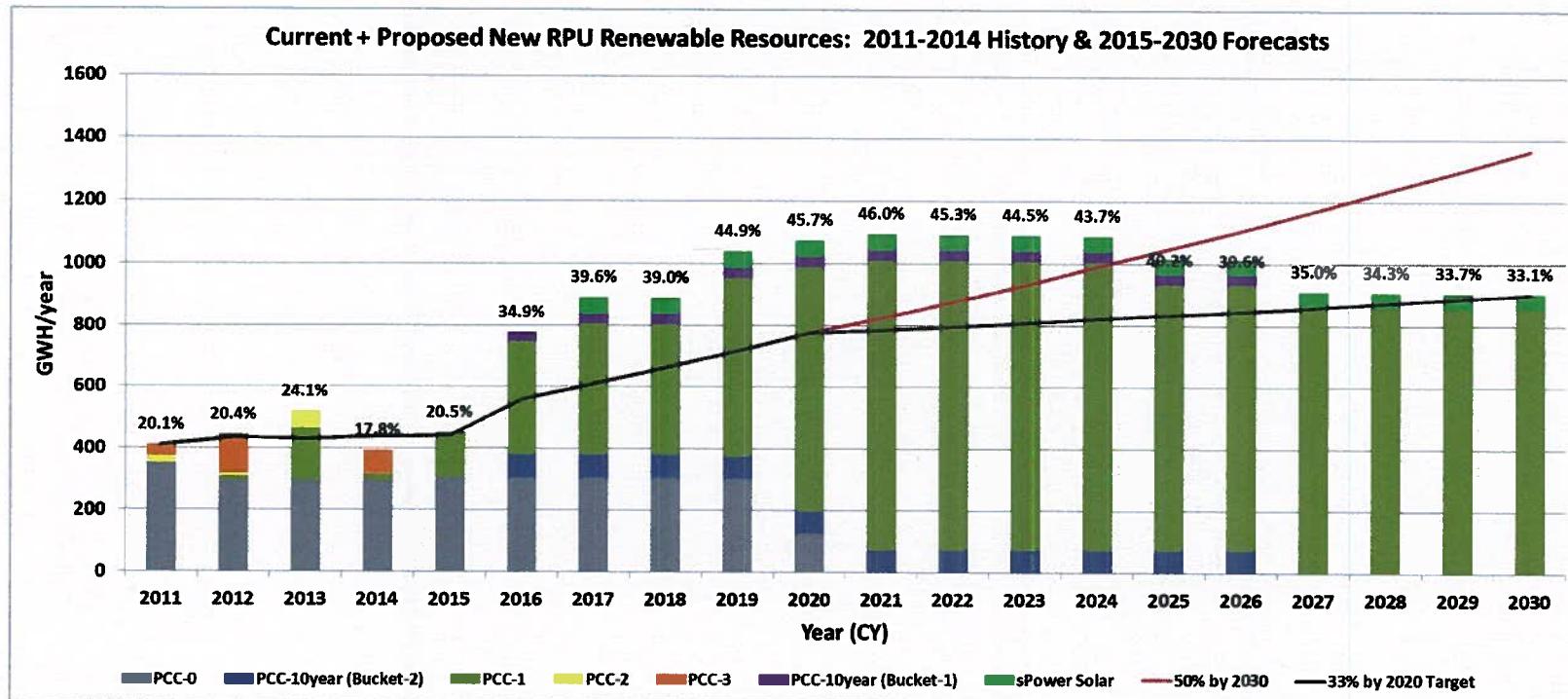


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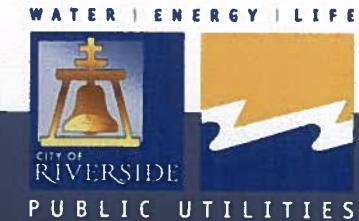
PUBLIC UTILITIES

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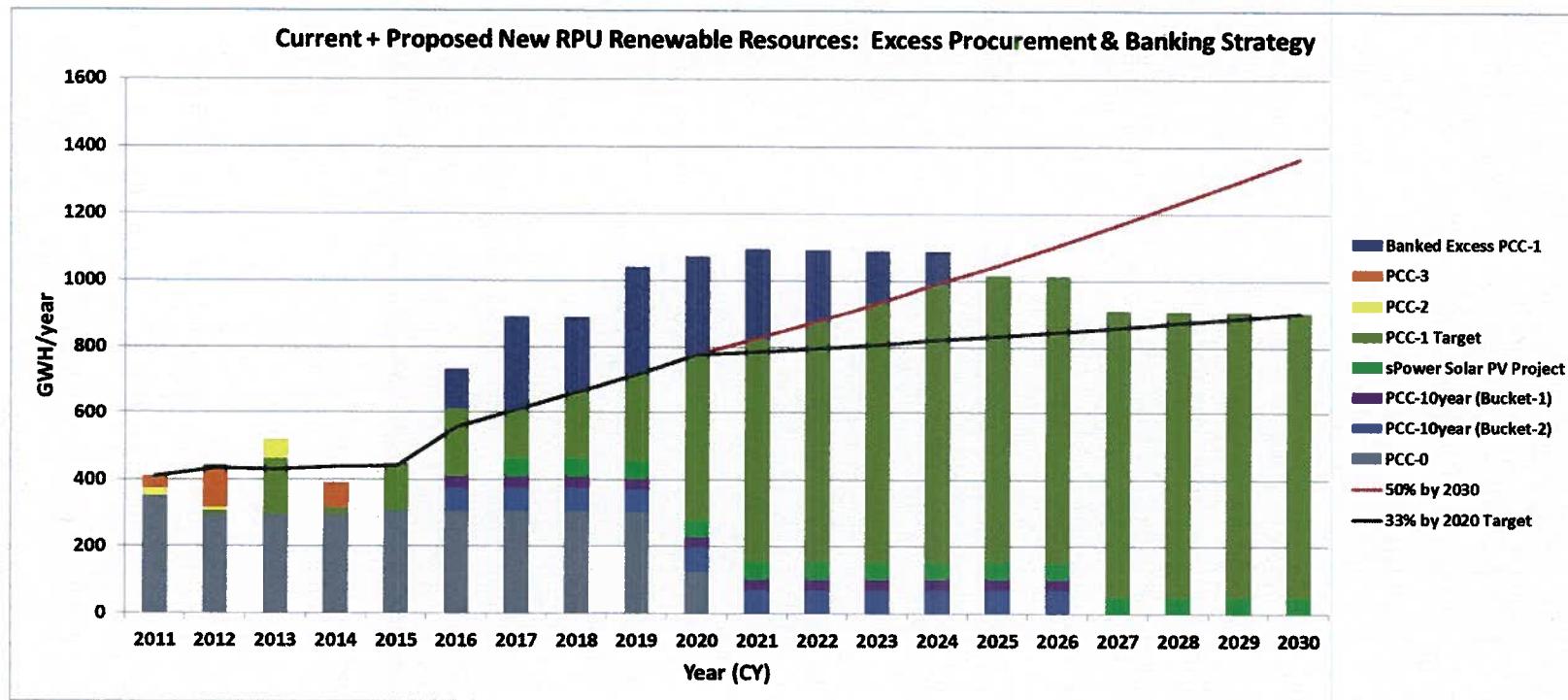
# Adding sPower (Antelope DSR) & Iberdrola Resources



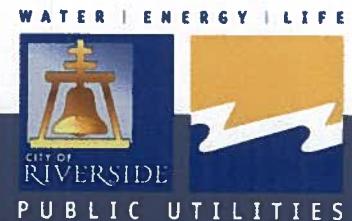
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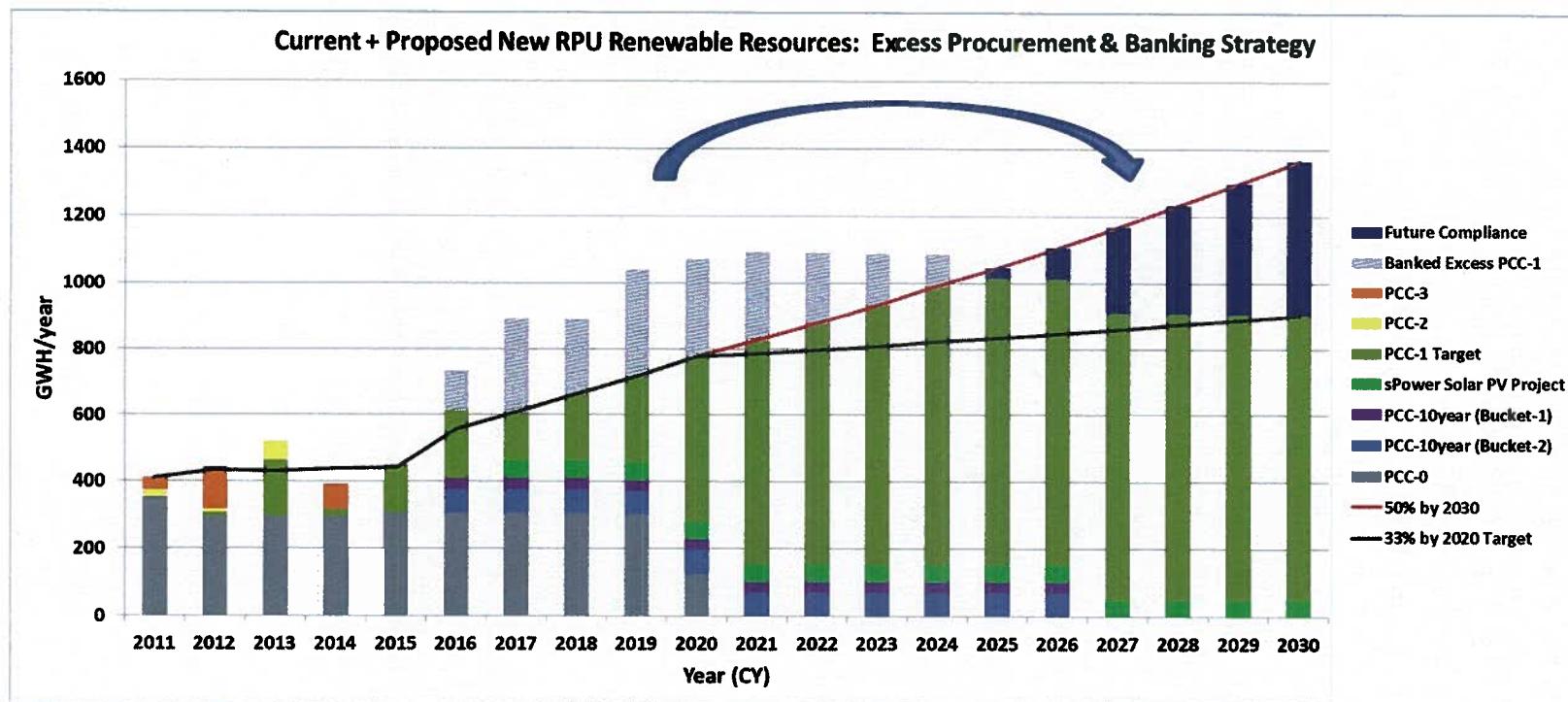
# RPU's Current PCC-1 Excess Procurement Can Be "Banked"



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# “Banked” Excess - Used to Satisfy Future Compliance Obligations



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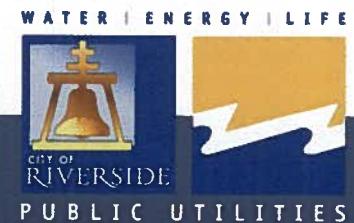


## Procurement #1

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# ANTELOPE DSR 1 SOLAR PV PROJECT - SPOWER

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# Why Another Solar Project?

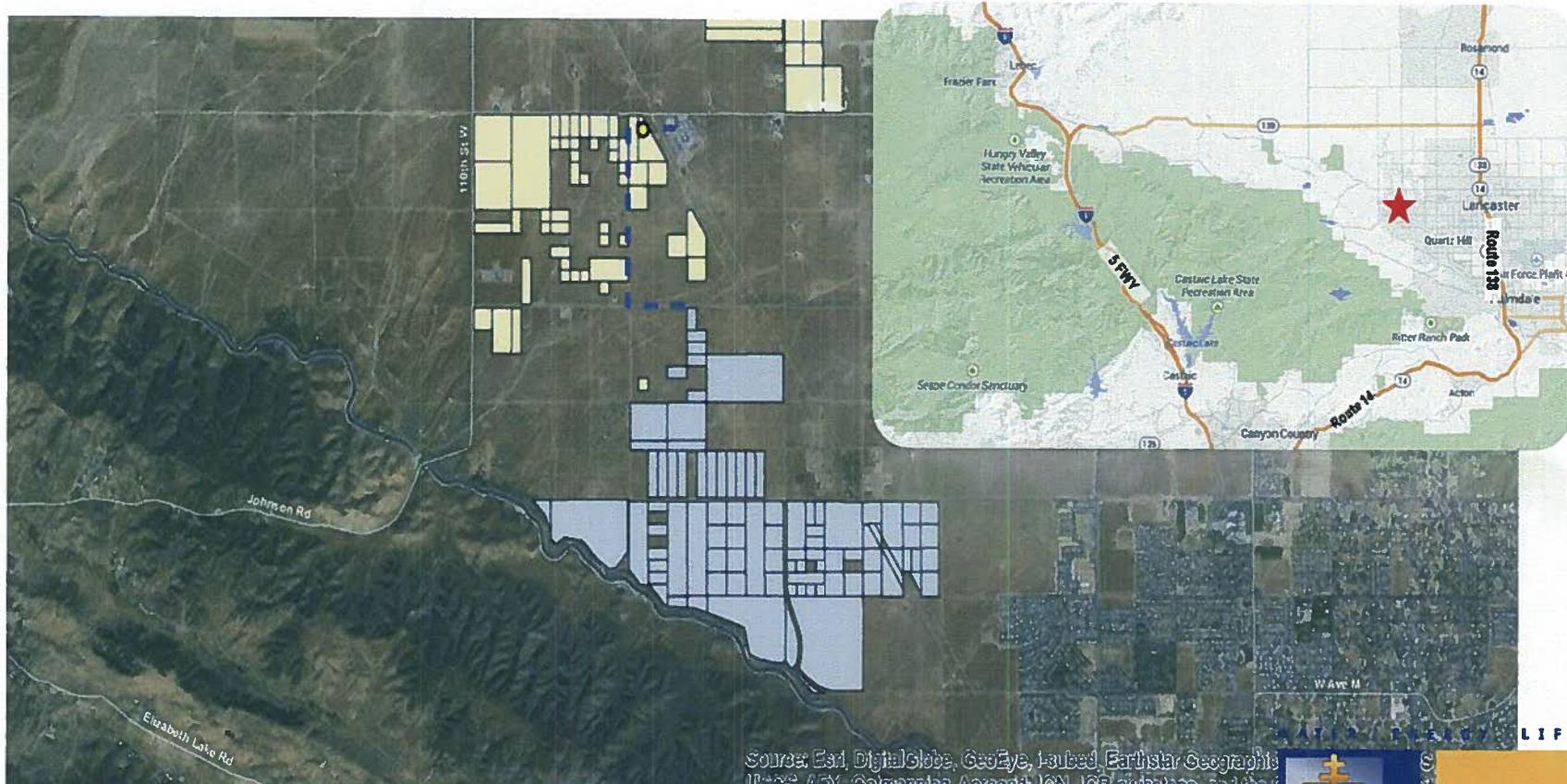
- Meet Higher RPS Mandates
- Replaces RE Clearwater Project
  - 14MW RPU share (SCPPA Project)
  - Permitting challenges—won't be built
  - RPU's collected \$1.3M in delay damages
  - PPA is being unwound
- Capture the Lowest PV Pricing before ITC Expires
- Includes option for Utility-Scale Energy Storage

# Antelope DSR Project Overview

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- 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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# Antelope DSR Attributes

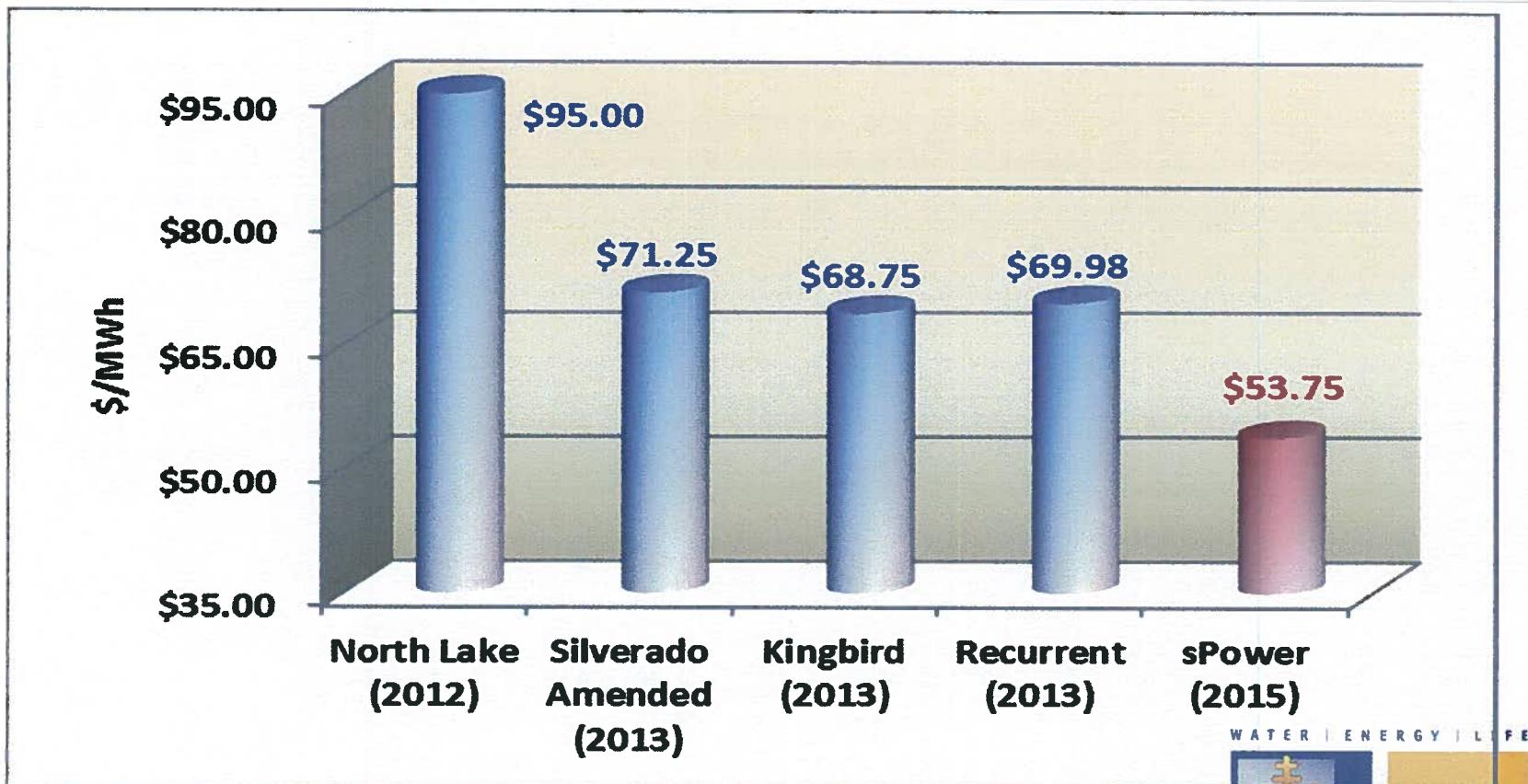
- Familiar Developer –
  - 2 other solar projects with sPower (thru SPPA)
- Economy of Scale –
  - sPower has > 800MW of solar development assets in the Antelope Valley area
  - Part of a 330MW interconnection with the CAISO
- Advanced Stage in Development –
  - Interconnection Agreement executed
  - 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 –

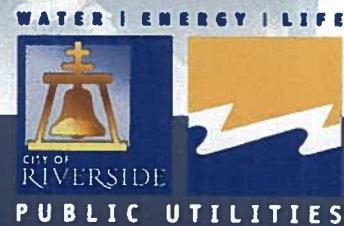
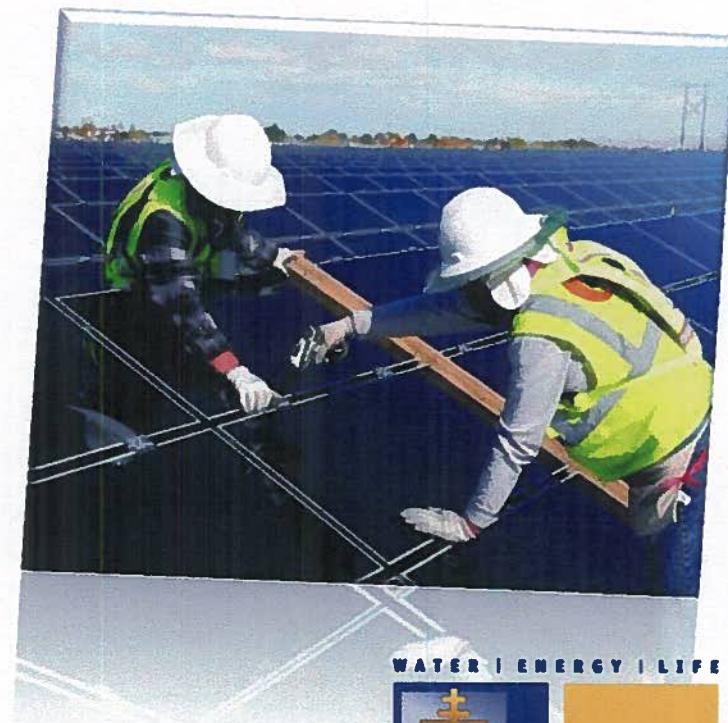
- Years 10, 15 and 20 (after COD) at the then fair market value

# Step-Up Provision

- If tax exempt bonds are issued to finance either option – payment guarantee to SCPPA 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

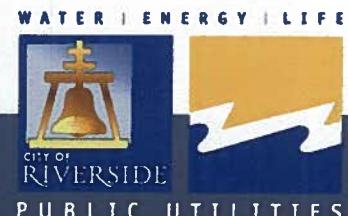
- **June 15, 2016 –**  
Start of Construction
- **December 31, 2016 –**  
Guaranteed COD
- **June 30, 2017 –**  
Outside COD



# 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 SPPA 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.



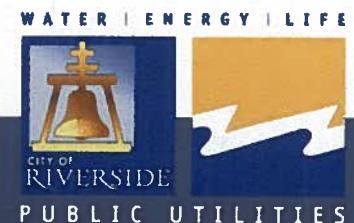
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## Procurement #2

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# 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

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- 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

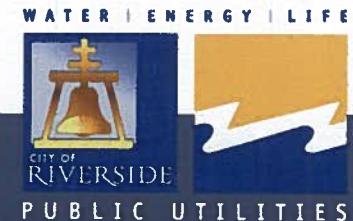
# Additional Iberdrola PPA Attributes

- 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

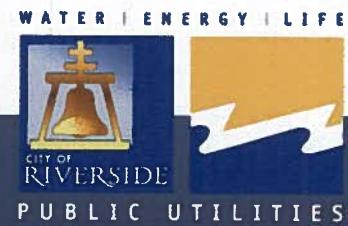
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# Staff Recommendation

**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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