



# Riverside Public Utilities (RPU) Renewable Portfolio Standard (RPS) Procurement Plan for the California Renewable Energy Resource Act (SB X1-2)

## 1. Policy Guidelines

The recently adopted SB X1-2 legislation (April 2011) and the associated California Energy Commission (CEC) RPS regulations requires that the City of Riverside (**Riverside**) adopt and implement a Renewable Energy Resource Procurement Plan that complies with the RPS incorporated into Section 399.30 of the Public Utilities Code. Additionally, Riverside must submit this Procurement Plan to the CEC within 30 days of its official adoption. Pursuant to this legislative mandate, Riverside is adopting this RPS Procurement Plan. As described below, section 1 of this plan summarizes pertinent minimum procurement policy guidelines, while section 2 describes current and forecasted renewable resources in Riverside’s power resource portfolio to meet the RPS mandate. Additionally, Appendix A defines Riverside’s RPS Procurement Targets (as may be modified from time to time by CEC regulations) and the mathematical formulas for the various RPS procurement calculations referenced in section 1.

### 1.1 RPS Compliance Period (CP) Definitions

Compliance Period 1 (CP1): January 1, 2011 through December 31, 2013.

Compliance Period 2 (CP2): January 1, 2014 through December 31, 2016.

Compliance Period 3 (CP3): January 1, 2017 through December 31, 2020.

### 1.2 Riverside RPS Procurement Targets

Riverside RPS procurement targets are specified in Appendix A. Such targets are currently mandated by SB X1-2 and CEC RPS regulations and may be modified from time to time by regulations or new legislation. Therefore, Riverside RPS procurement targets shall automatically conform with the current regulations adopted by CEC.

### 1.3 Portfolio Balance Requirements

In addition to meeting the RPS procurement targets described in 1.2 above, Riverside will also adhere to the portfolio balance requirements defined in Section 399.16 of the Public Utilities Code when building, procuring or contracting for new renewable resources on/after June 1, 2010. The procurement percentages for these three Portfolio Content Categories (PCC1, PCC2, and PCC3) are shown below:



Compliance Period	PCC1	PCC2	PCC3
CP1	≥ 50%	≤ 50%-PCC3	≤ 25%
CP2	≥ 65%	≤ 35%-PCC3	≤ 15%
CP3	≥ 75%	≤ 25%-PCC3	≤ 10%
2021 & annually thereafter	≥ 75%	≤ 25%-PCC3	≤ 10%

The corresponding PCCs, defined in the regulations, can be described generically as follows:

**Portfolio Content Category 1 (PCC1)** – Renewable resources that are located in-state, or renewable resources delivered to the in-state power grid without substituting energy from non-renewable resources.

**Portfolio Content Category 2 (PCC2)** – Renewable resources that are located out-of state and require substituting energy from non-renewable resources for their deliveries to the in-state power grid.

**Portfolio Content Category 3 (PCC3)** – Unbundled renewable energy credits from in-state or out-of-state eligible renewable resources that are disassociated with the renewable energy.

The aforementioned percentage limitations for PPC1, PPC2 and PCC3 apply only to Riverside’s calculated “Net Short Renewable Energy Position” (**NS.REP**) for each CP or calendar year, as appropriate. Provided that sufficient renewable energy from each PCC has been acquired to satisfy our NS.REP, Riverside reserves the right to procure additional renewable energy products (above and beyond our minimum procurement targets) from any of these three PCCs.

For purposes of RPS compliance, our NS.REP shall be calculated as the difference between our RPS procurement target and the sum of the following eligible renewable products and credits: (i) electricity products procured from grandfathered resources, (ii) historical carryover credits, and (iii) excess procurement credits.

Based on current load growth forecasts and after accounting for grandfathered renewable resources (see section 1.4 below), Riverside will need to procure approximately 272, 414 and 1,724 GWh of new renewable resources during compliance periods 1, 2 and 3, respectively, to satisfy our NS.REP. Figure 1 below shows how these forecasted renewable energy needs distribute across the three SB X1-2 CPs and PCCs.

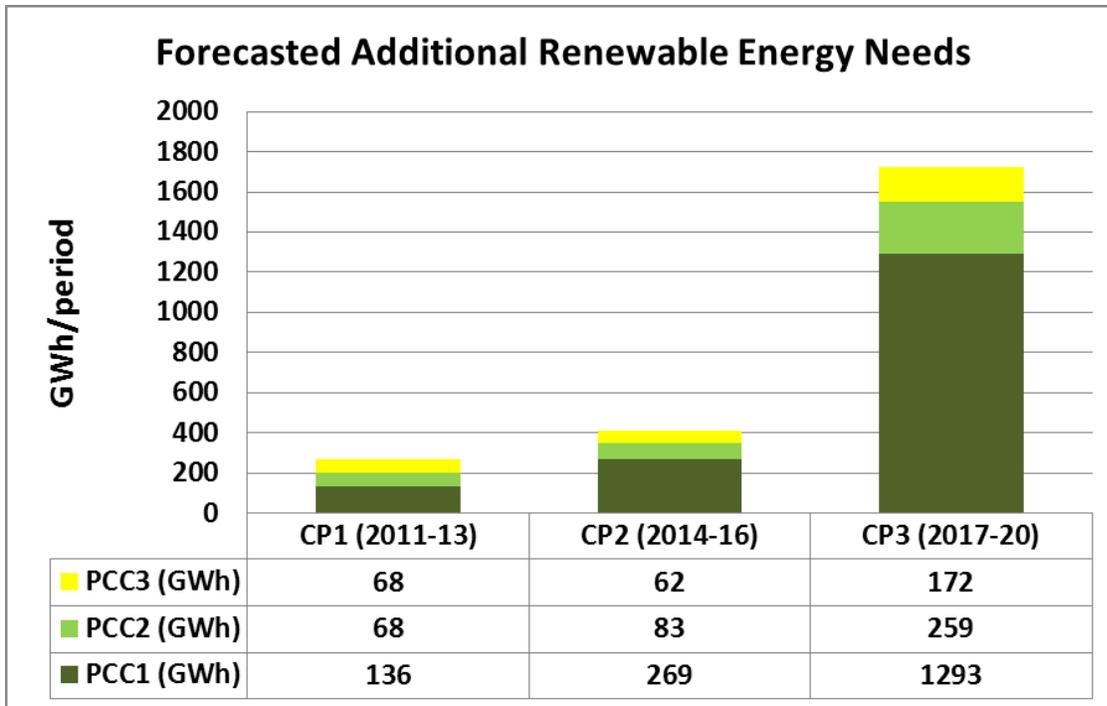


Figure 1. Forecasted additional Riverside renewable energy needs, by CP and PCC.

#### 1.4 Grandfathered Renewable Resources

SB X1-2 specifies that any renewable resource that was contracted for or purchased before June 1, 2010 shall be deemed a “grandfathered” renewable resource (399.16(d)). Energy procured from grandfathered renewable resources counts towards the utilities RPS requirements, but such resources are not assigned into a PCC.

Riverside currently has two grandfathered renewable resource contracts; Salton Sea V (a large geothermal resource) and Wintec (a small wind resource). Riverside also has an active ongoing retail solar PV program and solar PV installations on some city facilities. These resources will be deemed to be grandfathered” renewable resources and are discussed in more detail in section 2.

#### 1.5 Historic Carryover Credit

SB X1-2 permits Riverside’s Regulatory Authority (e.g., its Public Utilities Board and City Council) to establish criteria/guidelines/procedures to account for Historical Carryover Credits consistent with California Public Utilities Commission’s (CPUC) regulations for the Investor Owned Utilities (IOUs). Also, the CEC is proposing in their current RPS rule-making process to allow a Public Owned Utility (POU) to file for “Historic Carryover Credit” for excess renewable electricity products procured during the 2004-2010 time frames.



Since Riverside actively procured renewable energy contracts before the enactment of SB X1-2, Riverside may qualify for a significant amount of Historic Carryover Credits (a.k.a. “early adoption credits”). Riverside intends to file for its full legal entitlement of such credit and use any awarded credits to help reduce its projected costs associated with meeting the new RPS mandates.

In order to calculate the amount of Riverside’s Historic Carryover Credit, in the absence of any officially adopted pre-2010 RPS annual targets, Riverside will adopt the CEC’s proposed minimum annual procurement targets for 2004-2009.

Riverside shall submit all applicable historic carryover procurement claims for January 1, 2004 – December 31, 2010, baseline calculations, annual procurement target calculations, and pertinent historical renewable resource documentation to the CEC by the timelines as established in the final CEC regulations.

### **1.6 Excess Procurement**

In order to further benefit our ratepayers and facilitate maximum compliance flexibility, Riverside hereby adopts the following excess renewable energy procurement (“excess procurement”) rules, consistent with the SB X1-2 RPS mandate as follows:

1. The accrual of excess procurement energy can begin on/after January 1, 2011.
2. Electricity products qualifying as excess procurement may be applied toward any future compliance periods, including compliance years following 2020.
3. Electricity products that exceed the maximum limit for PCC3 (as specified in section 1.3) shall be subtracted from the calculation of excess procurement.

Excess procurement credit shall be calculated as the difference between our total eligible electricity products and the sum of the following two components: (i) our RPS procurement target, and (ii) retired PCC3 RECs in excess of our maximum limits.

### **1.7 Delay of Timely Compliance**

From time to time, due to unforeseen events beyond Riverside’s control, RPU may not meet the RPS procurement targets specified in section 1.2. Riverside hereby adopts the following Delay of Timely Compliance (**DTC**) rules consistent with SB X1-2 RPS mandate and CEC enforcement regulations for such events. Valid DTC events can be briefly summarized as follows:

1. Inadequate transmission capacity exists to allow for the contracted amount of electricity to be delivered from an eligible renewable energy resource using the current operational protocols of the CAISO balancing authority.
2. Permitting, interconnection, or other system-related circumstances beyond the control of Riverside have delayed the Commercial Operation Date of a contracted, eligible renewable energy resource.
3. Unanticipated curtailment of eligible renewable energy resources was necessary to address the needs of a balancing authority.

### 1.8 Other Optional Compliance Measures

On November 18, 2011 and December 13, 2011, Riverside's Public Utilities Board and City Council, respectively, formally adopted Riverside Public Utilities SB X1-2 Enforcement Program. This Enforcement Program contains additional cost limitations associated with this SB X1-2 RPS Procurement Policy. Riverside reserves the right to update both this Procurement Policy and the associated Enforcement Program as needed, in order to comply with future statutory and/or regulatory RPS mandates.

## 2. Riverside's Renewable Resource Plan

### 2.1 Grandfathered Resource Details

Riverside currently has two Power Purchase Agreement (**PPA**) contracts for renewable energy that qualify as grandfathered resources under the SB X1-2 RPS paradigm. The primary PPA is for 46 MW of base-load geothermal energy from the Cal-Energy Salton Sea V (SS-5) geothermal plant in Imperial Valley, CA. Riverside entered into a 15 year PPA contract with Cal-Energy for base-load output from this plant in August 2005; this contract expires on May 31, 2020. Based on a historical capacity factor of 89%, SS-5 is expected to generate about 358.6 GWh of renewable energy annually.

Riverside also has a second grandfathered PPA with Wintec Inc., for renewable energy from two small wind turbines in Riverside County, CA. This long-term contract was executed in January 2003 and expires on December 30, 2018. These two turbines have a combined nameplate capacity of 1.3 MW and a historical capacity factor of 41%, and thus typically generate about 4.7 GWh of renewable energy annually.

In addition, Riverside has an active ongoing retail solar rooftop program as well as solar PV installations on several City-owned facilities. Some of the renewable energy and the associated renewable energy credits are eligible to be counted as grandfathered renewable resources. In 2012 approximately 2,000

MWhs were generated and reported to WREGIS and will be counted as grandfathered renewable resources.

## 2.2 New Short-term Renewable Energy Purchases

Since early 2011, Riverside has been procuring short term renewable energy products in all three portfolio content categories in order to satisfy our SB X1-2 Compliance Period 1 renewable mandates. To date, 40.8 GWh of firm and shaped PCC2 wind energy and 162.5 GWh of PCC3 tradable Renewable Energy Credits have been procured. Additionally, Riverside has entered into a one year contract with Covanta Energy Marketing LLC for approximately 132 GWh of PCC1 renewable energy from the Covanta waste-to-energy biomass plant in Stanislaus County, CA from December 1, 2012 through November 30, 2013. In conjunction with the new WKN wind energy resource that came on-line in late December 2012 (see section 2.3 below); Riverside has procured enough new renewable energy to be fully compliant with the new SB X1-2 RPS mandates for CP 1.

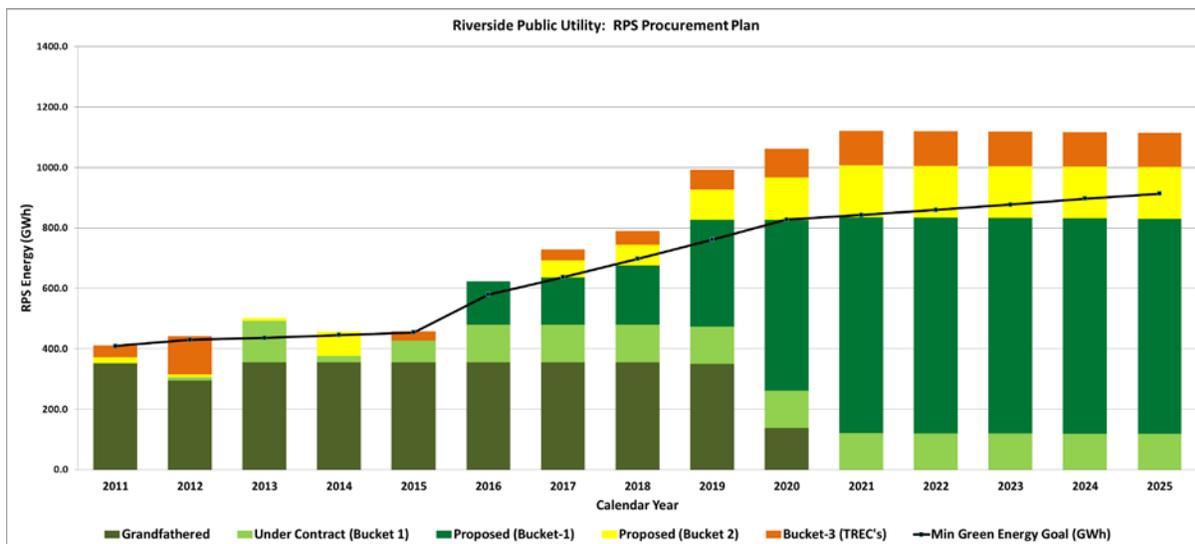
## 2.3 New Long-term Renewable Energy Purchases

In addition to short-term purchases, Riverside is aggressively pursuing cost effective, new long-term renewable resources. To date, Riverside has approved the following three new long-term renewable resources:

- The Public Utilities Board and the City Council approved a new long-term renewable energy PPA with North Lake Solar L.P. on September 21, 2012 and October 9, 2012, respectively, to construct and operate a 20 MW utility scale solar PV project in Hemet, CA. Once fully operational, North Lake Solar project is expected to generate 55.1 GWh of renewable energy annually (anticipated COD is currently June 1, 2015). North Lake Solar is categorized as a PCC1 in-state renewable resource.
- The Public Utilities Board and the City Council approved a new long-term renewable energy PPA with WKN Wagner Limited on November 16, 2012 and December 18, 2012, respectively, for a 6 MW wind project in Riverside County, CA. The WKN wind project began commercial operation at the end of December 2012, and is expected to generate 21.5 GWh renewable energy annually. WKN is categorized as a PCC1 in-state renewable resource.
- The Public Utilities Board and the City Council approved a second utility scale solar PV project with Silverado Inc. on December 7, 2012 and January 8, 2013, respectively, through Riverside's participation in the Southern California Public Power Authority (**SCPPA**). This project is expected to achieve full operation by January 1, 2015, and is expected to generate 48 GWh of renewable energy annually. This second solar PV project will also be categorized as a PCC1 in-state renewable resource.

With the aforementioned three new PPAs, combined with additional short-term PCC2 and PCC3 energy purchases, Riverside anticipates it will be able to procure enough renewable energy to be fully compliant with the new SB X1-2 RPS mandates for CP 2.

Additionally, Riverside is currently finalizing a new contract with Salton Sea Power L.L.C. to incrementally procure additional geothermal resources to meet Riverside’s future energy needs as well as to satisfy the RPS mandates specified herein. The Salton Sea PPA currently provides 46 MW and will provide an additional 20 MW in calendar year 2016, increasing to an additional 40 MW in calendar year 2019. The combined 86 MW from the Salton Sea PPAs will generate 680 GWh/year until the expiration of the new contract in 2039. These additional purchases are being identified and selected using a best-fit, least-cost procurement strategy. As shown below in Figure 2, these additional PCC1 resources will be combined with new PCC2 and/or PCC3 resources and used to meet and/or exceed our SB X1-2 mandates for CP 3 and beyond.



**Figure 2.** Riverside’s additional forecasted renewable energy purchase needs, by year and PCC. (Black line shows Riverside’s projected new SB X1-2 mandates, expressed in GWh.)

Finally, Riverside is actively pursuing the development of a small distributed solar PV project at the closed Tequesquite landfill site within Riverside (“**Tequesquite Project**”). The Request for Proposal (**RFP**) for the Tequesquite Project is ongoing and final selection of the project developer is expected by summer 2013. The Tequesquite Project will provide 5 MW and approximately 11 GWh per year to serve Riverside’s retail load commencing mid-2015.



Riverside continues to actively participate in the annual SCPPA renewable energy RFP process, conduct bilateral discussions with potential project developers and pursue customer based renewable energy projects. Within the next several years, Riverside plans to procure additional energy from eligible renewable resources as defined in the CEC regulations and as modified from time to time, which may include retail-based or grid-based solar PV, solar thermal, wind, biomass, small hydro and energy storage resources.

#### **2.4 Long-term Renewable Procurement Strategy**

As stated above, Riverside employs a best-fit, least-cost procurement strategy to acquire new renewable resources. The Power Resources Division within Riverside Public Utilities actively seeks to identify new renewable resources that are commercially viable, enhance and diversify the resource portfolio, mitigate future regulatory risks, and optimize its SB X1-2 renewables procurement, in the appropriate content categories, and in the most cost effective manner possible.

Under the direction of Riverside’s Public Utilities Board and City Council, Riverside shall continue to work diligently towards securing sufficient new renewable resources to meet our current and future CP and PCC mandates in the most cost-effective manner possible, in order to minimize future rate impacts to our retail customers.

## **APPENDIX A**

### **1. Riverside RPS Procurement Targets**

#### **CP 1 RPS Procurement Target:**

Riverside shall procure or obtain sufficient eligible renewable electricity products to equal the average of 20% of Riverside’s retail sales during the period of January 1, 2011 through December 31, 2013

#### **CP 2 RPS Procurement Target:**

Riverside shall procure or obtain sufficient eligible renewable electricity products to equal 20% of Riverside’s retail sales during calendar years 2014 and 2015, and 25% of Riverside’s retail sales during calendar year 2016.

#### **CP 3 RPS Procurement Target:**

Riverside shall procure or obtain sufficient eligible renewable electricity products to equal 27% in 2017, 29% in 2018, 31% in 2019, and 33% of Riverside’s retail sales during calendar year 2020.

#### **Compliance beyond Calendar Year 2020:**

For the calendar year ending December 31, 2021, and each calendar year thereafter, Riverside shall procure or obtain sufficient eligible renewable electricity products to equal 33% of Riverside’s retail sales on an annual basis.

### **2. Mathematical expressions for the section 1 RPS mandates.**

#### **A. Compliance Period 1 RPS Procurement Target:**

The requirement is defined as follows:

$$\frac{EP_{2011} + EP_{2012} + EP_{2013}}{RS_{2011} + RS_{2012} + RS_{2013}} \geq 0.20$$

where

$EP_x$  = Eligible electricity products retired for the specified year  $X$ , and

$RS_x$  = RPU retail sales for the specified year  $X$ .

**B. Compliance Period 2 RPS Procurement Target:**

The requirement is defined as follows:

$$EP_{2014} + EP_{2015} + EP_{2016} \geq 0.20(RS_{2014}) + 0.20(RS_{2015}) + 0.25(RS_{2016})$$

where

$EP_X$  = Eligible electricity products retired for the specified year  $X$ , and

$RS_X$  = RPU retail sales for the specified year  $X$ .

**C. Compliance Period 3 RPS Procurement Target:**

The requirement is defined as follows:

$$EP_{2017} + EP_{2018} + EP_{2019} + EP_{2020} \geq 0.27(RS_{2017}) + 0.29(RS_{2018}) + 0.31(RS_{2019}) + 0.33(RS_{2020})$$

where

$EP_X$  = Eligible electricity products retired for the specified year  $X$ , and

$RS_X$  = RPU retail sales for the specified year  $X$ .

**D. Net Short Renewable Energy Position (NS.REP)**

With respect to section 1.3, the net short renewable energy position in a given year is defined as follows:

$$NS.REP_X = P_X [RS_X] - GR_X - HC_X - XP_X$$

where

$P_X$  = RPS procurement ratio for the specified year  $X$ ,

$RS_X$  = RPU retail sales for the specified year  $X$ ,

$GR_X$  = procured electricity products from grandfathered resources for the specified year  $X$ ,

$HC_X$  = historical carryover credits retired for the specified year  $X$  (if any), and

$XP_X$  = excess procurement credits retired for the specified year  $X$  (if any).

**E. Excess RPS Procurement Calculations**

The numerical expression used for calculating excess procurement ( $XP$ ) for each compliance period or calendar year (as appropriate) shall be

$$XP_X = EP_X - P_X[RS_X] - S3_X$$

where

$EP_X$  = Eligible electricity products retired for the specified time period  $X$ ,

$P_X$  = RPS procurement ratio for the specified time period  $X$ ,

$RS_X$  = RPU retail sales for the specified time period  $X$ , and

$S3_X$  = retired PCC3 *RECs* in excess of the maximum limit for time period  $X$ .

Note that if this excess procurement formula yields a negative value, then 0 (zero) excess procurement credits shall be deemed to exist.