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# PG&E's Category 3 RPS Procurement

RECPSAs with NextEra, Iberdrola and Sterling Planet

April 2014

Confidential Protected Material



## PG&E's response to concerns about the transactions

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- Need
  - PG&E has a need for RPS product in [Redacted] and beyond; is currently procuring long-term bundled products for this need
  - These RECs are an alternative to a very small amount of the volume PG&E must procure for the next decade
- Deal structure
  - Transactions mirror the structure of the RPS statute and comply with requirements of the banking provisions
  - SB 2(1X) recognized the need for compliance flexibility given the supply and demand variability mentioned above and allowed for the banking of qualified RECs to minimize customer costs
- RPS strategy
  - Long term bundled products are the primary means of meeting RPS objectives
  - These volumes represent less than [Redacted] of PG&E's total RPS requirement in between [Redacted]
  - Low cost unbundled RECs from long-term contracts provide a significant portfolio benefit as a means of hedging against year-to-year variability in load and generation
  - Reduce price pressure that could be created by short term procurement need
- Consistent with [Redacted] and [Redacted] RPS Plan decisions



## Transaction Details

PG&E filed Advice Letters on Oct 10, 2013 seeking approval of [Redacted] REC Purchase and Sale Agreements (“PSA”) for a total of approx. [Redacted]

Counterparty	Levelized Price (per REC)	Exp. Contract Start Date	Contract Term (years)	Total Quantity (RECs)	REC Vintages	Source
[Redacted]						

- **Fleeting Opportunity for Low Cost RPS Product:** The PSA prices and delivery profiles reflect the market’s reaction to the compliance period structure created by SB 2 (1X)
  - Approx. [Redacted] of the volume will be delivered in first contract year and is comprised of [Redacted] and [Redacted] RECs.
  - Unbundled RECs cannot be sold outside of the Compliance Period in which they were generated. This meant that the market was highly discounting [Redacted] RECs at the end of CP1
  - Remaining volume is spread out equally over the next [Redacted] year contract duration
  - A flat delivery schedule would have led to the average levelized price being [Redacted] as high as that of the executed contracts
- **Builds PG&E’s Necessary RPS Bank :** In addition to offering very low cost RPS product, the PSAs are [Redacted] years in duration and therefore can indirectly increase PG&E’s RPS bank, which is needed to manage year-to-year variability in load and generation



The PSAdelivery schedules over the Redacted year duration are a direct result of the market dynamics created by the legislation and seek to maximize customer benefit

2011 - 2013	2014- 2016	2017- 2020
Redacted		

Weighted Average RECPrice of PSAsby Compliance Period (with illustrative volumes)
Redacted



## PG&E's Need for an Adequate RPS Bank

PG&E has a need for banked RPS volumes to manage RPS compliance uncertainty post-Redacted

- PG&E's long-term RPS strategy is unchanged: The strategy continues to focus on purchasing long-term bundled product (Cat. 1) for meeting the majority of the RPS requirement
- But PG&E needs banked RPS volumes to manage year-to-year uncertainty post-  
Redacted Due to variability in load and generation, it is essential that PG&E maintain an adequate bank of RECsto avoid:
  - (1) over-procuring relatively expensive bundled products for long-term RPS need; or
  - (2) being subject to the market at an available time due to unforeseen shortfalls
- Therefore, PG&E employed simulation modeling of its portfolio to determine a minimum bank size: To evaluate the potential impact of key variables on PG&E's net short, PG&E used a Monte Carlo simulation to determine a minimum necessary RPS bank size. The key variables included:
  - Persistent impacts trends in retail sales and project failure rates
  - Short-term impacts that do not persist year-over-year annual generation unpredictability and curtailment volumes
- PG&E's analysis indicated the need for a minimum bank of Redacted

<sup>1</sup> The distribution of RPS deliveries minus RPS targets showed that one standard deviation over 2020-25 is approx. 8,000 GWh



In addition to being a low cost option for building PG&E's RPS bank for post-Redacted uncertainty, these PSAs offer:

- **Small notional values** : The PSAs have very small notional values in comparison to typical Cat. 1 transactions, which consist of significantly higher notional dollar values resulting from products that include energy and capacity. The small notional values of PSAs translate into low risk for customers
- **Small volumes** : The PSAs result in small volumes of RPS product
  - Including these PSAs, approx. Redacted of PG&E's total procurement in CP1 will consist of Cat. 3 RECs
- **Known prices and quantities** : The PSAs have small fixed prices and quantities that offer cost and volume certainty when planning for RPS compliance
- **Diversification** : The PSAs add incremental volume of RPS compliance product without incrementally adding to operational challenges



# PSAREC Prices vs. Avoided Cost of Alternative Procurement

The weighted average cost of the PSARECs is approx. [Redacted] of the implied REC-only price of alternative bundled procurement

- To determine if the PSARECs were the optimal product to add to PG&E's RPS bank, they were compared against future bundled procurement that could be avoided with these deals

- PG&E compared the benefits of avoiding a [Redacted] year bundled (Cat. 1) PPA in [Redacted], with deliveries starting in [Redacted] against the cost of procuring the PSARECs today

- To create the implied REC price of the bundled procurement, PG&E created a log-normal distribution of expected levelized REC prices using a set of assumptions about electricity volatility, inflation and marginal bundled procurement offers

- Using the mean of the distribution, the implied REC price for a bundled [Redacted] start year is [Redacted] MWh

levelized REC price for [Redacted]

[Redacted]