



## ENERGY STORAGE SYSTEM AND PHOTOVOLTAIC INTEGRATION STUDY - WORK ORDER NO. 2028672

Riverside Public Utilities

Board of Public Utilities  
January 11, 2021

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1

## BACKGROUND

The Tequesquite Landfill Solar PV Project was completed in 2015:

1. The project was a joint effort between Riverside Public Utilities and Public Works departments;
2. The 7.5 MW solar power farm began operation in 2015;
3. Unique and innovative approach to leverage local land resources into renewable power to benefit the community; and
4. Solar power is purchased by RPU and directly fed into the electrical grid and is enough to power about 1,600 homes.

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2

## TEQUESQUITE LANDFILL SOLAR PV



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3

## ENERGY STORAGE ADDITION

1. Staff have been analyzing energy storage options;
2. Tequesquite was determined to be a viable location for the addition of Energy Storage;
3. Collaboration between Resource Operations and Strategic Analytics and Energy Delivery; and
4. Collaboration determined there are benefits on the distribution grid and wholesale side, making this an ideal opportunity.

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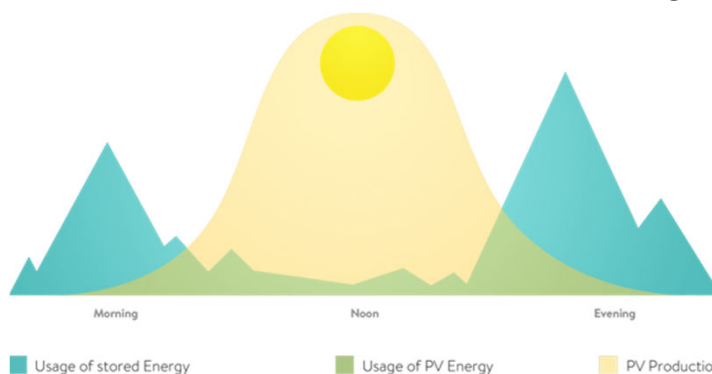


4

## WHY SOLAR WITH STORAGE

Solar panels have one job:

- They collect sunlight and transform it into electricity
- Energy is produced only when the sun is shining



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5

## WHY SOLAR WITH STORAGE

That's why the ability to store solar energy for later use is important:

- It helps to keep the balance between electricity generation and demand



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6

## 2018 INTEGRATED RESOURCE PLAN

The benefits of a BESS were examined in the 2018 Integrated Resource Plan (IRP):

1. Primarily from the perspective of a stand-alone system that would be controlled by the CAISO; and
2. Did not explicitly examine the concept of a BESS added to Tequesquite PV, where such a system could also be used to address distribution grid deficiencies.

## BENEFITS OF AN INTEGRATED SYSTEM

A battery energy storage system integrated with the existing PV facility will modernize the RPU distribution network into a resilient electric grid:

1. Maximizes the system and economic benefit that can be provided from an energy storage system coupled with an existing solar PV facility;
2. Diversity of energy sources is a benefit to sustainable power and grid security; and
3. An integrated system has the potential to improve both reliability and power quality on the distribution system.

## COST SAVINGS AND RESILIENCY

1. Co-locating the PV and an energy storage system produces cost savings:
  - a) Reduces costs related to site preparation, land acquisition, permitting, interconnection, installation labor, and overhead.
2. Battery energy storage paired with PV will allow RPU to comply with emerging energy regulations:
  - a) Provides greater flexibility, resiliency, and efficiency in the allocation of resources.

## SCOPE OF WORK

1. Develop the business case for battery energy storage;
2. Develop technical performance requirements, and procurement specifications; and
3. Prepare preliminary schematic and concept diagrams for an energy storage system located at Tequesquite Landfill Solar facility.

## DISCUSSION

1. On July 22, 2019, the Board approved the Master Professional Services Agreements for the Energy Delivery Consultant Panel;
2. A supplemental agreement will be executed upon approval of the expenditure by the Board;
3. RPU solicited proposals from six qualified firms from the Energy Delivery Consultant Panel for an energy storage system and solar PV integration study;
4. Three firms submitted proposals for the specified scope of work; and
5. Stantec Consulting Services Inc. was selected as the most qualified consultant based on the criteria outlined in the RFP.

## VENDOR SCORING MATRIX

Vendors	Weighted Score Evaluations						Rank
	Approach & Methodology (20%)	Experience (20%)	Professional References (10%)	Qualifications (30%)	Cost (20%)	Total Score	
Stantec Consulting Services, Inc.	133	127	70	215	200	745	1
HDR, Inc.	140	130	60	205	144	679	2
GL PwrSolutions, Inc. (DNV GL)	120	130	60	205	126	641	3

## FISCAL IMPACT

Project and Fiscal Breakdown		
Work Type	Performed By:	Amount:
Project Management and Engineering	RPU	\$8,491
Professional Services (Consultant Panel)	Stantec Consulting Services Inc.	\$101,372
Contingency (Professional Services 10%):		\$10,137
Work Order Total:		\$120,000
Anticipated Start Date:		November 2020
Anticipated Completion Date:		February 2021

## RECOMMENDATION

That the Board of Public Utilities approve Work Order No. 2028672 for the Energy Storage System and Photovoltaic Integration Study with Stantec Consulting Services, Inc. in the amount of \$120,000.