



***WDAT  
FACILITY STUDY***

*March 19, 2015*



SOUTHERN CALIFORNIA  
**EDISON**  
An EDISON INTERNATIONAL<sup>SM</sup> Company

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***SOUTHERN CALIFORNIA EDISON COMPANY***

## EXECUTIVE SUMMARY

[REDACTED] applied to Southern California Edison ("SCE") for interconnection and wholesale distribution service for its proposed [REDACTED] pursuant to SCE's Wholesale Distribution Access Tariff ("WDAT"). SCE performed a Facility Study as requested by [REDACTED] for a [REDACTED] interconnection from an [REDACTED]. The interconnection point is at an [REDACTED], which will be located approximately [REDACTED] miles from [REDACTED]. The request is for a [REDACTED] photovoltaic ("PV") solar generation and [REDACTED] for a total capacity of [REDACTED]. The initial request is for service to commence by November 15, 2015.<sup>1</sup> This Facility Study report focuses on the [REDACTED] net output component of the project. The results associated with the charging section of the project have not changed and can be found in Attachment C: Distribution Charging Assessment<sup>2</sup>.

The new proposed generation, consisting of [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED] The generated power would be delivered to the California Independent System Operator ("CAISO") grid at the [REDACTED]

The purpose of this Facility Study is to determine:

- The estimated cost for the Distribution Upgrades and Interconnection Facilities that were identified in the System Impact Study<sup>3</sup>.
- The estimated time required to complete the design and construction of the Distribution Upgrades and Interconnection Facilities that were identified on the System Impact Study.

<sup>1</sup> Date as requested in the application. The actual operating date depends on design and construction requirements.

<sup>2</sup> A copy of the Distribution Charging Assessment is provided as Attachment C.

<sup>3</sup> A copy of the System Impact Study is provided as Attachment A.

Non-binding order of magnitude cost estimates<sup>1,2</sup> for the required interconnection facilities and [REDACTED] system upgrades are as follows

The Facility Study will have Cost Estimate A and Cost Estimate B in regards to the facilities for interconnection onto the [REDACTED]

Cost Estimate A is the cost estimate for the facilities that are required to interconnect the proposed project to the [REDACTED]

Cost Estimate B is the cost estimate for the facilities related to the charging portion of the project that could be required in the event of changes in system loading<sup>3</sup>.

**Cost Estimate (A):**

**Distribution Upgrades** **\$ 63.3 k**

Electrical Facilities: \$ 58.3 k

- One (1) [REDACTED]
- Approximately [REDACTED]

Real Properties \$ 5.0 k

**Interconnection Facilities** **\$ 74.0 k**

Electrical Facilities: \$ 69.0 k

- [REDACTED]
- [REDACTED]
- [REDACTED]

Real Properties \$ 5.0 k

Telemetry Requirements \$ 14.5 k<sup>4</sup>

ITCC (35%) \$ 47.8 k

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**Total non-binding order of magnitude cost estimate** **\$ 199.6 k**

<sup>1</sup> The cost estimates do not include the costs required for civil work completed by the customer.

<sup>2</sup> The cost estimates are in 2015 constant dollars.

<sup>3</sup> The cost estimate related to the charging portion of the project can be found in Attachment C.

<sup>4</sup> The cost estimate is based on the centralized [REDACTED] method; the cost and scope of telemetry may significantly increase to include a dedicated [REDACTED] as required by SCE's Interconnection Handbook with an approximate cost of \$155,000 in the event that the centralized [REDACTED] method is not feasible for this project.

**Cost Estimate (B):**

**A description of the corresponding facilities related to the charging portion of the project that could be required are provided in Attachment C: Distribution Charging Assessment<sup>1</sup> section 4.**

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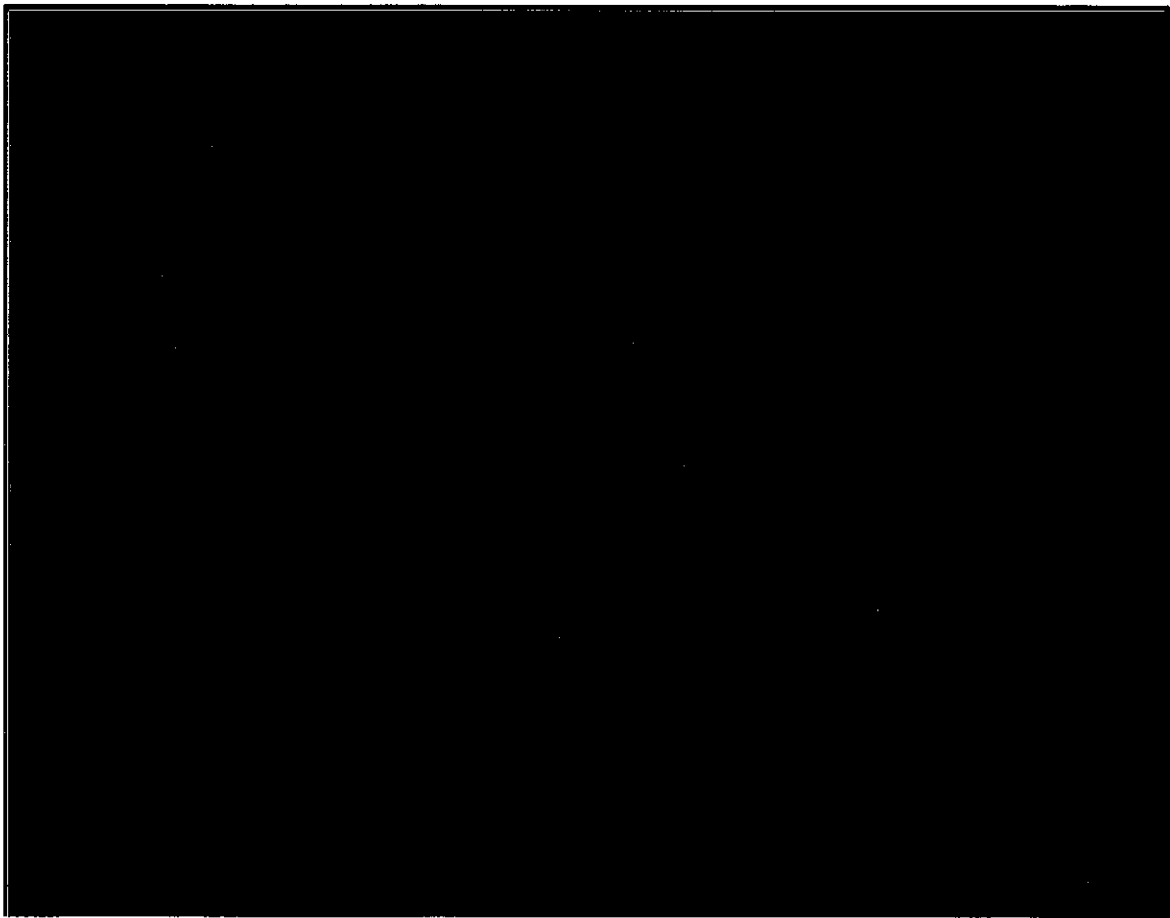
<sup>1</sup> A copy of the Distribution Charging Assessment is provided as Attachment C.

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## I. INTRODUCTION

██████████ applied to Southern California Edison ("SCE") for interconnection and wholesale distribution service for its proposed ██████████ and ██████████ pursuant to SCE's Wholesale Distribution Access Tariff ("WDAT"). SCE performed a Facility Study as requested by ██████████ for a ██████████ interconnection from an existing ██████████. The interconnection point is at an applicant-owned ██████████, which will be located approximately ██████████. The request is for a ██████████ photovoltaic ("PV") solar generation and ██████████ for a total capacity of ██████████. The initial request is for service to commence by November 15, 2015.<sup>1</sup> This Facility Study report focuses on the ██████████ net output component of the project. The results associated with the charging section of the project have not changed and can be found in Attachment C: Distribution Charging Assessment<sup>2</sup>.



<sup>1</sup> Date as requested in the application. The actual operating date depends on design and construction requirements.

<sup>2</sup> A copy of the Distribution Charging Assessment is provided as Attachment C.

The new proposed generation, consisting of [REDACTED]  
[REDACTED]  
[REDACTED] will receive interconnection service from SCE's existing [REDACTED] [REDACTED] will be installed. The generated power would be delivered to the California Independent System Operator ("CAISO") grid at the [REDACTED]

The purpose of this Facility Study is to determine:

- The estimated cost for the Distribution Upgrades and Interconnection Facilities that were identified in the System Impact Study<sup>1</sup>.
- The estimated time required to complete the design and construction of the Distribution Upgrades and Interconnection Facilities that were identified on the System Impact Study.

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<sup>1</sup> A copy of the System Impact Study is provided as Attachment A.

**II. SUMMARY**

1. Distribution upgrades include the installation of one (1) [REDACTED]
2. Interconnection facilities include the installation of [REDACTED]
3. Real time telemetry will be required for this project to provide Watts and VAR flow data from the generating facility to the SCE distribution system.

Non-binding order of magnitude cost estimates<sup>12</sup> for the required interconnection facilities and system upgrades are as follows:

<b>Distribution Upgrades</b>	<b>\$ 63.3 k</b>
Electrical Facilities	\$ 58.3 k
Real Properties	\$ 5.0 k
<b>Interconnection Facilities</b>	<b>\$ 74.0 k</b>
Electrical Facilities:	\$ 69.0 k
Real Properties	\$ 5.0 k
Telemetry Requirements	\$ 14.5 k <sup>3</sup>
ITCC (35%)	\$ 47.8 k
<hr/>	
<b>Total non-binding order of magnitude cost estimate</b>	<b>\$ 199.6 k</b>

**Cost Estimate (B):**

A description of the corresponding facilities related to the charging portion of the project that could be required are provided in Attachment C: Distribution Charging Assessment<sup>4</sup> section 4.

<sup>1</sup> The cost estimate does not include the costs required for civil work completed by the customer.

<sup>2</sup> The cost estimates are in 2015 constant dollars.

<sup>3</sup> The cost estimate is based on the centralized [REDACTED] method. The cost and scope of telemetry may significantly increase to include a dedicated [REDACTED] as required by SCE's Interconnection Handbook with an approximate cost of \$155,000 in the event that the centralized [REDACTED] method is not feasible for this project.

<sup>4</sup> A copy of the Distribution Charging Assessment is provided as Attachment C.



4. The time required to design and construct the Interconnection Facilities directly assigned to this project is approximately 9 months from execution of Generation Interconnection Agreement (“GIA”) and the completion of the required milestones within it.
5. Upgrades identified are general and preliminary descriptions only. The costs indicated are non-binding order of magnitude only. The schedule is projected and preliminary.
6. Applicant is responsible for the installation of [REDACTED] needed for the interconnection in accordance with SCE design.
7. A Facilities Study detailing required scope and cost of the identified upgrades may be completed prior to proceeding with the project.
8. This System Impact Study is based on various technical data previously provided by the applicant. If any of that information changes significantly, as determined by SCE, the results of this study may no longer be appropriate and may necessitate a new study.
9. Current distribution standards are being updated to address generation interconnection systems. The proposed method of service on this report may change according on final design to comply with the updated distribution design standards.
10. This report does not include all Real Properties evaluations and cost estimates. Where formal rights of way, easements, land leases, or permits are required by SCE for installation of facilities, on or over Applicant’s property, or the property of others, the Applicant shall grant SCE the rights of way and easements for the electrical facilities.
11. For SCE facilities and scope of work not subject to CPUC's GO 131-D, SCE will follow the requirements of all applicable environmental laws and regulations and issue an in-house Environmental Clearance before commencement of construction activities. The cost estimates provided assume that SCE will provide oversight on facilities and scope of work on the customer’s property and/or SCE will perform all required environmental activities for SCE facilities and scope of work, located outside of the customer’s property, from the siting through the post-construction phases. However, it is recommended for SCE facilities and scope of work to be included in the Generator's Environmental Licensing and Permitting documents to streamline the environmental process and avoid unnecessary delays in construction. The responsibilities for performing certain environmental activities may be negotiated during or after the Interconnection Agreement process.
12. This study does not include costs associated with environmental studies which may be required for the licensing or permitting of the proposed generating facility.
13. This study does not consider potential milestone setbacks that could result from the local jurisdiction requiring underground construction of distribution facilities. SCE encourages

the Interconnection Customer to consult with the local jurisdiction to identify existing underground ordinance to reduce the risk of complication associated with said ordinance.

14. This study does not include analysis related to the following system variability conditions, et. al.
  - a. Generator system start-up: Solar photovoltaic generator's increasing output profile during sunrise
  - b. Generator return-to-service: Solar photovoltaic generator's output profile following a system outage (faulted condition)
  - c. Generator output variability: Solar photovoltaic generator's output variation correlated with weather conditions, i.e. cloud cover

This study assumes that the Interconnection Customer's generating facility will include all equipment, software, and appropriate controls necessary to maintain the generator output profile per SCE requirements. The Interconnection Customer will be responsible for maintaining designated voltage levels under all conditions, including but not limited to the conditions identified above. Upon execution of the GIA, SCE will provide the Interconnection Customer with the required ramp rate control parameters. The ramp rate controls will be a function of the generation penetration on the distribution system, as well as SCE's distribution system configuration (additional parameters maybe considered, as need). Changes to the ramp rate control scheme may be required as determined by increased generation, changes in the distribution system topology, or other changes in the distribution system.

15. Applicable to projects requesting primary service: This study does not include analysis related to coordination of system protection equipment. A coordination study may be required during final engineering. The coordination study may identify additional interconnection requirements such as installing new protection equipment, reprogramming and/or relocating existing protection equipment. The additional scope of work may have an effect on the Interconnection Customer's requested in-service date.