Operations Project Authorization Form

Date Prepared: October 31, 2019	**Project Title:** [redacted]
Company/ies: Eversource CT	**Project ID Number:** CD01393
Organization: Distribution Electric	**Class(es) of Plant:** Distribution
Project Initiator: [redacted]	**Project Category:** Line
Project Manager: [redacted]	**Project Type:** Distributed Generation
Project Sponsor: [redacted]	**Project Purpose:** Study the impact if BNE interconnects three turbines to a proposed buildout of the 27.6 kV 5R80 feeder
Estimated in service date: December 31, 2020	**If Transmission Project: PTF?** N/A
Eng. /Constr. Resources Budgeted? Yes	**Capital Investment Part of Original Operating Plan?**
Authorization Type: Preliminary	**O&M Expenses Part of the Original Operating Plan?**
Total Request: $6,034,000	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

[redacted]

The purpose of this project approval form is to request preliminary engineering dollars for the distribution system impact study, dynamic risk of islanding study, transmission study (per request of ISO-NE), and detailed engineering of the [redacted].

[redacted]. This project will be beneficial in fulfilling PURA's mandate's to Eversource to settle a dispute over lost revenue to the wind farm.

The customer contribution to the project per PURA's mandate will be $500,000.

Project Costs Summary

The below project costs illustrate just the *preliminary engineering study* costs. The request is for $180,000:

- $30,000 | Distribution System Impact Study
- $30,000 | Dynamic Risk of Islanding Study
- $120,000 | Transmission Study
- $5,854,000 Preliminary Line Extension estimate

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2020	2021	20__+	Totals
Capital Additions - Direct	$0	$2,501	$0	$0	$2,501
Less Customer Contribution	$0	$0	$0	$0	$0
Removals net of Salvage ____%	$0	$177	$0	$0	$177
Total - Direct Spending	$0	$2,679	$0	$0	$2,679
Capital Additions - Indirect	$0	$3,032	$0	$0	$3,032
Subtotal Request	$0	$5,711	$0	$0	$5,711
AFUDC	$0	$116	$0	$0	$116
Total Capital Request	$0	$5,827	$0	$0	$5,827
O&M	$0	$207	$0	$0	$207
Total Request	$0	$6,034	$0	$0	$6,034

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	**Year 1**	**Year 2**	**Year 3+**	**Total**
Straight Time Labor	$785	$0	$0	$785
Overtime Labor	$111	$0	$0	$111
Outside Services	$1,418	$0	$0	$1,418
Materials	$1,318	$0	$0	$1,318
Other, including contingency amounts (describe)	($952)	$0	$0	($952)
Total Direct Costs	**$2,679**	**$0**	**$0**	**$2,679**
Indirect Capital Costs	**Year 1**	**Year 2**	**Year 3+**	**Total**
Indirects/Overheads (including benefits)	$3,032	$0	$0	$3,032
Capitalized interest or AFUDC, if any	$112	$0	$0	$112
Total Indirect Costs	**$3,145**	**$0**	**$0**	**$3,145**
Total Capital Costs	**$5,823**	**$0**	**$0**	**$5,823**
Less Total Customer Contribution	**$500**	**$0**	**$0**	**$500**
Total Capital Project Costs	**$5,323**	**$0**	**$0**	**$5,323**
Total O&M Project Costs	**$211**	**$0**	**$0**	**$211**
Total Project Cost	**$5,534**	**$ 0**	**$ 0**	**$5,534**

Note: Explain unique payment provisions, if applicable

Future Financial Impacts

PURA is allowing Eversource to recover all costs incurred by for the distribution system upgrades, less the [redacted] contribution. This will be sought for recovery in the next company's general rate case. See page 15 note: 6 of Docket No. 13-01-32RE01

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Technical Justification:

Project Need Statement

Eversource is mandated by PURA, through a recent dispute, to provide [redacted]. The two existing turbines are forced to not operate at their rated output (4.98 MW vs 5.6 MW); impacting their PPA. The developer has proposed a third turbine and it was determined that to accommodate the full 9 MVA installation a dedicated 27.6 kV tap would be necessary to connect directly to the [redacted] Additionally, by [redacted]

Project Objectives

Eversource is looking to improve the quality of service to an existing wind farm, [redacted]. Over the course of their service, [redacted]

Project Scope

[redacted]

Eversource will be performing a more detailed engineering cost estimate in-house. Eversource distribution engineering will be running these designs in parallel to the above two studies.

Major Material:

Approximately 5.92 miles of 556 TW
3 – 30KV Cooper Nova Reclosers and Form 6 Controls
1- 30KVA Metering Cabinet

Background / Justification

[redacted] filed a formal complaint with PURA about lost revenue and loss of service while they were operating on the current [redacted] 23 kV configuration. Their complaints involved [redacted]

Building this project will allow Eversource to comply with the PURA Final Decision. The wind farm will be able to operate its current turbines at full rated output and allow for the installation of a third proposed wind turbine. By moving the customer to its own dedicated tap to the [redacted] feeder, [redacted] buildout also yields the potential of opening more capacity to distributed energy resources in the area given a large influx of proposed PV and wind projects. 27.6 kV feeders host more load/generation capacity and voltage deviations are not as stringent as there are no existing load customers.

Business Process and / or Technical Improvements:

This project will have multiple technical improvements to the capacity and reliability to the [redacted] distribution systems. The [redacted] will have an increase in hosting capacity; as the existing wind farm configuration took all the available generation capacity. The [redacted] buildout will also extend capacity to nearby large, photovoltaic generation requests. The [redacted] buildout also [redacted]. The regulator and control upgrade would have allowed for a 'bias co-generation' mode of operation; allowing for better controls to manage higher penetrated circuits that may disturb the balance of power flow.

Alternatives Considered with Cost Estimates

There were no alternative solutions to fully integrate the 9 MW wind farm from the [redacted] feeder. To increase the reliability and output of the current project (4.98 MW) distribution engineering considered upgrading the tie [redacted] The solution included upgrading the regulator control boxes to CL-7 to implement bias co-generation mode. Under the current configuration, if the [redacted]. The upgrade would have provided the [redacted] site with a higher generation output.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Preliminary Approval	October 31th, 2019
Distribution System Impact Study and Dedicated Line Design (25% Contingency)	November 13th, 2019
Dynamic Risk of Islanding Study	February 6th, 2020
Facility Study	April 6th, 2020

Regulatory Approvals

All milestones will need to be reviewed and approved by PURA, per their final decision (13-01-32RE01).

References

Attachments (One-Line Diagrams, Images, etc.)

[redacted] Distribution Impact St

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