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Operations Project Authorization Form

Approved on December 19, 2024 EPAC
Link to Meeting Minutes

Project Title: [redacted] **Substation Capacity Increase**	**Project Number: CS00683**
Date Prepared: 12/05/2024	**Company:** Eversource CT
Organization: System Planning	**Class(es) of Plant:** D SS
Project Initiator: [redacted]	**Project Category:** Stations - Transformer
Managing Organization: Project Mgt and Construction	**Schedule ID#: 80684990**
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan:** Yes
Estimated in service date: May 2027	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☐ local PTF ☒ Distribution ☐ N/A (General Plant)
EJ Community: No	**Authorization Type:** Full Funding
Total Capital Request: $23,199K	

[1] Executive Summary

[redacted]

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[2] Project Costs Summary

Note: Dollar values are in thousands and rounded to nearest thousand

Line item Category	Prior Authorized	Actuals to Date	2024 to Go	2025	2026	2027	2028	Total Request
1. ROW / Easements / Land Acquisition		-	-	-	-	-	-	-
2. Environmental Approvals / Permits	$20	-	$47	$5	-	-	-	$51
3. Outreach		$1	$57	$5	-	-	-	$63
4. Siting Approvals / Permits	$1	$1	$148	$14	-	-	-	$163
5. Engineering / Design	$271	$78	$94	$33	-	-	-	$205
6. Materials (Eversource purchased)		-	$289	$7,868	-	-	-	$8,158
7. Construction (incl materials by contractors)	$4	$5	-	-	$2,420	$1,234	-	$3,659
8. Testing / Commissioning		-	-	-	$889	$453	-	$1,342
9. Project Mgmt Team	$215	$38	$111	$261	$255	$134	-	$800
10. Removals		$7	-	-	$169	$86	-	$262
11. Other		-	$11	$307	$14	$7	-	$339
12. Risks		-	$227	$393	$646	$320	-	$1,586
SUBTOTAL DIRECTS W/ RISKS	$512	$130	$983	$8,887	$4,393	$2,235	-	$16,627
13. Indirects/Overhead	$836	$177	$514	$939	$1,392	$716	-	$3,738
14. AFUDC	$93	$10	$61	$502	$1,122	$616	-	$2,311
PROJECT TOTAL – BASELINE BUDGET	$1,441	$317	$1,558	$10,328	$6,907	$3,566	-	$22,676
15. Contingency		-	$7	$214	$214	$88	-	$523
TOTAL CAPITAL REQUEST	$1,441	$317	$1,565	$10,542	$7,120	$3,655	-	$23,199
16. Reimbursables/Customer Contribution		-	-	-	-	-	-	-
PROJECT TOTAL (LESS REIMBURSABLES)	$1,441	$317	$1,565	$10,542	$7,120	$3,655	-	$23,199
O&M								-
TOTAL REQUEST	$1,441	$317	$1,565	$10,542	$7,120	$3,655	-	$23,199

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Detail other costs, project risk items and their allocations:

Other Costs	
Other costs (taxes)	[redacted]
Risk	**Allocation**
1. Engineering – Substation Design Changes	[redacted]
2. Engineering – P&C Design Changes	
3. Construction Delays	
4. Contractor Costs	
5. Outage Impacts	
6. Labor Costs Impacts	
7. Design/Scope Changes	
8. Weather Delays	
9. Soil Contamination	
10. Removals	
Total	$1,586,000

Explain unique payment provisions, if applicable:

Not Applicable

Identify and detail any unique O&M impacts resulting from this project:

Not Applicable

[3] Technical Justification

Project Need, Objective and Justification

[redacted]

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Project Scope

[redacted]

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[redacted]

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[redacted]

[redacted]:

Transformer	Device	Device	Quantity	Panel
[redacted]				

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[redacted]:

Transformer	New Device Designation	Device Additions	Quantity	Panel
[redacted]				

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Substation Equipment

Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*
[redacted]			

Background

[redacted]

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[redacted]

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[4] Alternatives Considered

[redacted]

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[redacted]

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[5] Project Schedule

Milestone	Scheduled Completion Date
IFR Approval	August 2023
SDC Approval (for applicable projects)	June 2024
Conversion of Tx development costs, 183 to 107 (applicable to projects that require SSF approval and/or ISO preferred alternative selection)	N/A
EPAC Partial Funding Approval (for applicable projects)	September 2024
Preliminary Design Completion (or latest pre-full funding design phase)	October 2024
EPAC Full Funding Approval	December 2024
Siting Approval (for applicable projects)	January 2025
Start of Construction	March 2026
Project In-Service Date (ISD)	May 2027
Project Need Date (for applicable projects)	N/A
ISO Related Milestones: (for applicable projects)	N/A
• ISO Preferred Alternative Selected	N/A
• PAC Presentation	N/A
• TCA Submittal	N/A

See Attachment B for project schedule.

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[6] Regulatory Approvals

An Exempt Modification will be required to be submitted to the Connecticut Siting Council (CSC) for approval and is expected to be approved by January 2026.

EJ Community Considerations:

The project site is not located in an Environmental Justice (EJ) community.

[7] Risk and Risk Mitigation Plans

Contingency:

Contingency of $523K has been included in the project estimate to account for any unknowns.

Risk Mitigation:

Risk	Mitigation
1. Engineering – Substation Design Changes	Preliminary engineering has been completed based on current substation drawings and construction site visits. Risk is allocated for any changes that may arise during construction.
2. Engineering – P&C Design Changes	Preliminary engineering has been completed based on current substation drawings and construction site visits. Risk is allocated for any changes that may arise during construction.
3. Construction Delays	Construction delays are possible if there are extended material lead times. Mitigation is to secure long lead-time materials as soon as possible to avoid material delivery delays. Budget has been allocated for this risk.
4. Contractor Costs	Contractor prices could change at any time. Construction bids would be requested to lock-in construction costs. Risk has been allocated for changes in contractor costs.
5. Outage Impacts/SCLL	A mobile transformer will be at the station during the construction process. Outages will be coordinated with CONVEX. Budget has also been allocated for this risk.
6. Construction - Labor Costs Impacts	Contractor prices could change at any time. Construction bids would be requested to lock-in construction costs. Risk has been allocated for changes in contractor costs.
7. Construction - Design/Scope Changes	Preliminary engineering has been completed based on current substation drawings and construction site visits. Risk is allocated for any changes that may arise during construction, such as potential underground obstructions.
8. Construction - Weather Delays	Construction delays caused by weather and storm duty are possible. Being flexible with construction and outage schedules will mitigate this risk. Risk is allocated to the project estimate for delays.

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9. Construction - Soil Contamination	Soil sample borings has been completed and no concerns were found from the samples. Risk has been allocated for soil removal in the event that contaminated soil is found during the removal process.
10. Construction - Removals	Risk has been allocated to account for removal changes that may arise during the removal process such as underground obstructions.

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[8] References

References
1. CS00683 [redacted] Capacity Increase IFR, approved July 26, 2023.
2. CS00683 [redacted] Capacity Increase SSF; approved 06/20/2024
3. Eversource Standard Substation 014; approved August 2021
4. CS00567 [redacted] Full Funding PAF approved 06/22/2023
5. Electric Power Research Institute (EPRI) Power Transformer Expert (PTX) tool; revised 07/07/2024
6. Distribution System Planning Guide; approved June 2020
7. Non-Wires Alternative Tool; revised May 2023
8. CS00503 [redacted] Replacement Partial Funding PAF, approved November 22, 2022.
9. CS00683 [redacted] Capacity Increase PF PAF, approved August 1, 2024.

[9] Attachments (One-Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. CS00683 [redacted] FF Estimate	*YES*
B. CS00683 [redacted] Schedule	*YES*
C. CS00683 [redacted] Constructability Review	*YES*
D. CS00683 [redacted] Diagram RMVL&ADD	*YES*

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Project Authorization Form

Project Checklist - Transmission & Substation Capital Project			
Project Name: [redacted] **Capacity Increase**		**Project Number: CS00683**	
Facility Type: ☐BPS ☐BES ☐PTF ☐local PTF ☐non-PTF ☐CIP ☒Distribution ☐General Plant ☐CONVEX ☒SCADA			
PLANNING			
Is a NX-9 required?		Yes	
Is an ISO-NE PAC presentation required?		No	
ISO-NE Presentation Date (if completed):		N/A	
Cost in ISO-NE Presentation ($M) (if completed):		N/A	
Is a PPA required?		Yes	
ISO-NE Approval Date (if completed):		TBD	
Is a TCA Application Required?		No	
TCA Submittal Date (if submitted):		N/A	
Cost in TCA Submittal ($M) (if submitted):		N/A	
Enter ISO-NE RSP / Asset Condition ID, if assigned:		ES-24-LSP-143	
PLANNING/PROTECTION & CONTROLS			
Are RAS/SPS/UVLs affected?		No	
OPERATIONS			
Outage Required?	☒ Primary Equipment (Power Transfer)	☐ Secondary Equipment (P&C only)	☐ Outage Not Required
Do SCLL Conditions Exist?		Yes	
Has an outage schedule been approved?		No	
Are Operations & Maintenance procedures/training required?		No	
STANDARDS			
Does the project include standard equipment and designs?		Yes	
SUBSTATION ENGINEERING			
Does this impact Revenue Metering		No	
Is preliminary short circuit/ breaker duty analysis required?		Yes	
Are there any changes to the baseline audible noise?		Yes	
Is there an impact to the existing ground grid?		Yes	
Is a Transient Over Voltage (TOV) analysis required?		No	

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Project Authorization Form

Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] **Capacity Increase**	**Project Number: CS00683**
P&C ENGINEERING	
OP-22 - Are PMUs and DDR required?	No
If BPS, is an NPCC Directory #4 presentation required?	No
Are ISO-NE OP-24 Appendix B updates necessary?	No
TRANSMISSION LINE ENGINEERING	
Are there any changes that affect the baseline EMF?	No
Are there any changes that affect the baseline EMI?	No
SITING	
Has Siting reviewed this project?	Yes
Name of Siting contact:	[redacted]
Is a Siting filing required? *(If yes, list in regulatory approvals section)*	Yes
PERMITTING	
Is there any permitting required? *(If yes, list in regulatory approvals section)*	No
PROJECT SERVICES (OUTREACH) and ROW WORK COORDINATION	
Has Project Services reviewed this project?	Yes
Name of Project Services contact:	[redacted]
What is the level of outreach expected?	Medium
Has ROW Coordination reviewed this project?	No
Is this project coordinating with other existing scheduled work?	Yes
ENVIRONMENTAL JUSTICE COMMUNITIES	
Has the Equity and Environmental Justice team reviewed this project?	N/A
Name of Equity and Environmental Justice contact:	N/A
Is any part of this project in an Environmental Justice Community?	No
Was the Equity Framework Checklist completed?	N/A
Has enhanced outreach required per State Regulatory requirements been completed?	N/A
INITIATOR	
Has a field constructability review been completed?	Yes

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Project Checklist - Transmission & Substation Capital Project	
Project Name: [redacted] Capacity Increase	**Project Number: CS00683**
INVESTMENT RECOVERY	
Does the project require development of an Investment Recovery plan?	No
COST ESTIMATING	
What team/firm prepared the cost estimate?	Estimate was prepared by the Eversource Estimating Team
Name of the person who prepared the estimate:	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes - Full Review

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Project name [redacted] **Increase - FF**
Project no **CS00683**
Project manager [redacted]
Project estimator [redacted]

Est accuracy **Planning (-25% to +25%)**
Ext accuracy **N/A**
State **CT**
Business unit **Transmission**

Description	% Directs	% Total	[redacted] Increase - FF Estimate
ROW / Easements / Land purchases	0.0%	0.0%	-
Environmental Approvals / Permits	0.3%	0.2%	50,900
Project Services	0.4%	0.3%	62,500
Siting Approvals / Permits	1.0%	0.7%	163,500
Engineering / Design	1.2%	0.9%	204,900
Materials (Eversource purchased)	49.1%	35.2%	8,157,600
Construction (inc contractor sourced material)	22.0%	15.8%	3,658,900
Testing / Commissioning	8.1%	5.8%	1,341,800
PMT Project Mgmt Team	4.8%	3.4%	799,800
Removals	1.6%	1.1%	262,300
Other (including CWIP & Taxes)	2.0%	1.5%	339,100
Risks	9.5%	6.8%	1,586,200
Project Directs (including risks)	**100.0%**	**71.7%**	**16,627,500**
Indirects/Overhead		16.1%	3,738,300
AFUDC		10.0%	2,310,500
Project Total - Baseline Budget		**97.7%**	**22,676,300**
Contingency		2.3%	522,700
Project Total - Approval Level		**100.0%**	**23,199,000**
Reimbursables/Customer Contribution		0.0%	-
Project Total (less reimbursables)			**23,199,000**

Metrics	
	1 EA
	23,199,000 $/EA
Escalation (included above)	1,181,100
Miscellaneous	
Risks & Contingency / Project Total - Approval level (less Risks & Contingency)	10.00%
	Planning (-25% to +25%)
Estimate Range	
Low	17,399,300
Expected	23,199,000
High	28,998,800

CBS1 > 2 > 3 > 4	Description	Total Amount	Actual Amount	Labor Hours	Labor Amount	Material Amount	Subcontract Amount	Equipment Amount	Other Amount
		23,198,927	317,301	34,106	5,611,537	8,694,869	-	262,455	8,312,764
[redacted]	Increase - FF Estimate	23,198,927	317,301	34,106	5,611,537	8,694,869	-	262,455	8,312,764
02	Environmental Approvals / Permits	50,940	-	300	49,566	1,208	-	-	165
03	SCS Outreach	62,455	585	-	61,870	-	-	-	-
04	Siting Approvals / Permits	163,455	1,047	-	162,408	-	-	-	-
05	Engineering / Design	204,862	78,164	1,832	126,698	-	-	-	-
06	Equipment /Materials (Eversource purchased)	8,157,573	-	-	-	8,157,573	-	-	0
07	Construction (incl matl's by contractors)	3,658,949	5,021	19,098	2,878,332	536,089	-	239,508	-
08	Testing / Commissioning	1,341,813	-	6,200	1,341,813	-	-	-	-
09	PMT Project Mgmt Team	799,807	38,429	5,308	761,378	-	-	-	-
10	Removals	262,276	7,097	1,368	229,473	-	-	22,947	2,759
11	Other	339,100	-	-	-	-	-	-	339,100
12	Risks	1,586,150	-	-	-	-	-	-	1,586,150
13	Indirects/Overhead	3,738,318	177,334	-	-	-	-	-	3,560,984
14	AFUDC	2,310,530	9,624	-	-	-	-	-	2,300,906
15	Contingency	522,700	-	-	-	-	-	-	522,700
Grand Total		23,198,927	317,301	34,106	5,611,537	8,694,869	-	262,455	8,312,764

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Project name [redacted] Increase - FF Estimate
Project no CS00683
Project manager [redacted]
Project estimator [redacted]

Line item Category	Prior Authorized	Actuals to Date	PAF (dollars in thousands) 2024 to Go	2025	2026	2027	And on years 2028	Total
1. ROW / Easements / Land purchases		-	-	-	-	-	-	-
2. Environmental Approvals / Permits		-	$ 47	$ 5	-	-	-	$ 51
3. Project Services		$ 1	$ 57	$ 5	-	-	-	$ 63
4. Siting Approvals / Permits		$ 1	$ 148	$ 14	-	-	-	$ 163
5. Engineering / Design		$ 78	$ 94	$ 33	-	-	-	$ 205
6. Materials (Eversource purchased)		-	$ 289	$ 7,868	-	-	-	$ 8,158
7. Construction (incl contractor sourced material)		$ 5	-	-	$ 2,420	$ 1,234	-	$ 3,659
8. Testing / Commissioning		-	-	-	$ 889	$ 453	-	$ 1,342
9. PMT Project Mgmt Team		$ 38	$ 111	$ 261	$ 255	$ 134	-	$ 800
10. Removals		$ 7	-	-	$ 169	$ 86	-	$ 262
11. Other (including CWIP & Taxes)		-	$ 11	$ 307	$ 14	$ 7	-	$ 339
12. Risks		-	$ 227	$ 393	$ 646	$ 320	-	$ 1,586
Project Directs Total w/Risks	-	$ 130	$ 983	$ 8,887	$ 4,393	$ 2,235	-	$ 16,627
13. Indirects/Overhead		$ 177	$ 514	$ 939	$ 1,392	$ 716	-	$ 3,738
14. AFUDC		$ 10	$ 61	$ 502	$ 1,122	$ 616	-	$ 2,311
Project Total - Baseline Budget	-	$ 317	$ 1,558	$ 10,328	$ 6,907	$ 3,566	-	$ 22,676
15. Contingency		-	$ 7	$ 214	$ 214	$ 88	-	$ 523
Project Total - Approval Level	$ 1,441	$ 317	$ 1,565	$ 10,542	$ 7,120	$ 3,655	-	$ 23,199
16. Reimbursables/Customer Contribution		-	-	-	-	-	-	-
Project Total (less reimbursables)	$ 1,441	$ 317	$ 1,565	$ 10,542	$ 7,120	$ 3,655	-	$ 23,199
Total O&M								-
TOTAL REQUEST	$ 1,441	$ 317	$ 1,565	$ 10,542	$ 7,120	$ 3,655	-	$ 23,199

[redacted] Increase - FF Estimate								
1. ROW / Easements / Land purchases		-	-	-	-	-	-	-
2. Environmental Approvals / Permits		-	47	5	-	-	-	51
3. Project Services		1	57	5	-	-	-	63
4. Siting Approvals / Permits		1	148	14	-	-	-	163
5. Engineering / Design		78	94	33	-	-	-	205
6. Materials (Eversource purchased)		-	289	7,868	-	-	-	8,158
7. Construction (incl contractor sourced material)		5	-	-	2,420	1,234	-	3,659
8. Testing / Commissioning		-	-	-	889	453	-	1,342
9. PMT Project Mgmt Team		38	111	261	255	134	-	800
10. Removals		7	-	-	169	86	-	262
11. Other (including CWIP & Taxes)		-	11	307	14	7	-	339
12. Risks		-	227	393	646	320	-	1,586
Project Directs Total w/Risks	-	130	983	8,887	4,393	2,235	-	16,627
13. Indirects/Overhead		177	514	939	1,392	716	-	3,738
14. AFUDC		10	61	502	1,122	616	-	2,311
Project Total - Baseline Budget	-	317	1,558	10,328	6,907	3,566	-	22,676
15. Contingency		-	7	214	214	88	-	523
Project Total - Approval Level	1,441	317	1,565	10,542	7,120	3,655	-	23,199
16. Reimbursables/Customer Contribution		-	-	-	-	-	-	-
Project Total (less reimbursables)	1,441	317	1,565	10,542	7,120	3,655	-	23,199
Total O&M								-
TOTAL REQUEST	1,441	317	1,565	10,542	7,120	3,655	-	23,199

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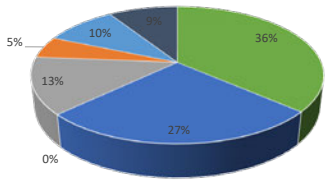
Transmission owner	**Eversource Energy**
Project name	[redacted] **Increase - FF Estimate**
Project no	**CS00683**

Estimate grade	**Planning (-25% to +25%)**
In service date	**5/31/2027**

2.1 Project Cost Summary

	PTF	Non-PTF	Total
Material	-	8,443,023	**8,443,023**
Labor and Equipment	-	6,156,534	**6,156,534**
Right of Way	-	-	**-**
Engineering, Permit, Indirect	-	3,103,589	**3,103,589**
Escalation	-	1,181,144	**1,181,144**
AFUDC	-	2,205,786	**2,205,786**
Contingency	-	2,108,850	**2,108,850**
Total Project Cost	**-**	**23,198,927**	**23,198,927**



2.2 Detailed Cost Summary By Project Element

	Material	Labor and Equip	Right of Way	Eng, Permit, Indirect	Escalation	AFUDC	Contingency	Total	PTF Total
Station	8,443,023	6,156,534	-	3,103,589	1,181,144	2,205,786	2,108,850	**23,198,927**	-
Overhead	-	-	-	-	-	-	-	-	-
Underground	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total	**8,443,023**	**6,156,534**	**-**	**3,103,589**	**1,181,144**	**2,205,786**	**2,108,850**	**23,198,927**	**-**

3.0 Project Milestone Schedule

	Start	Finish	2024	2025	2026	2027			
Approval and permits	8/22/23	1/15/25	■■■■■■■■■■■■	■□□□□□□□□□□□					
Engineering and design	8/22/23	5/5/25	■■■■■■■■■■■■	■■■■■□□□□□□□					
Material	12/20/24	11/13/25	□□□□□□□□□□□■	■■■■■■■■■■■□					
Construction	3/2/26	5/31/27			□□■■■■■■■■■■	■■■■■□□□□□□□			