UI
An Avangrid company

Non-Wires Solutions Program

Annual Filing

February 6, 2026

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I. Background

In accordance with Docket No. 24-08-08: Non-Wires Solutions ("NWS") Initiation Phase Final Decision ("NWS Final Decision") issued on December 18, 2024, this annual filing shall meet the requirements for The United Illuminating Company's (hereinafter "UI" or "the Company"") Electric Distribution Company ("EDC") Data Filing, Grid Needs Filing and Narrative Document, and Quarterly Filing[1]. UI will file their first quarterly filing of each year as part of the NWS Annual Filing. Subsequent quarterly filings will be made separately.

The EDC Data Filing is made up of 47 data requests pertaining to system data, financial information, and Distributed Energy Resource ("DER") deployment data. This information will be provided within the context of this filing, while other larger and confidential data will be provided in the Appendices of this filing. Please note that some of the data request responses are confidential and protected via the NWS Final Decision[2]. Responses deemed confidential in accordance with the NWS Final Decision will be withheld from public record.

The Grid Needs Filing is a five (5) year summary of UI's distribution projects that are developed annually with the purpose of identifying possible system needs that could be addressed by an NWS in a more cost-effective manner than traditional "wires" solutions. The Grid Needs Filing is a forward-looking project list for projects above $500,000. Projects between $500,000 and $1,000,000 shall be categorized as "Potential NWS Solicitation Opportunities," whereas projects over $1,000,000 shall be categorized as "Likely NWS Solicitation Opportunities." These projects will also contain a Narrative Document which will be located in Appendix 7 of the NWS Annual Filing package. These projects are subject to stakeholder review process and a question-and-answer period. Approval of these projects is expected by mid-August of each year.

Lastly, the Quarterly Filing is forward-looking and shall contain projects between $250,000 and $500,000 and includes projects that need to be in-service within 12 months, and projects deemed as asset condition, safety, or maintenance related. This filing shall take place on the first Friday of every February, May, August, and November. The Process Monitor will provide their decision on the EDCs quarterly filings by March 31st of each year. This decision shall include the Process Monitor's evaluation of all projects filed in the prior year's NWS cycle and evaluate if the Company made the proper solution

[1] The EDC Data Filing and Grid Needs Filing are due annually on February 8. NWS Final Decision at 4. The Quarterly Filing is due on the first Friday of February. NWS Final Decision Order No. 4
[2] Exhibit A- Requirement for Annual EDC Data Filing clearly identifies the information by PURA permits to be filed under confidential treatment.

selection or not. If the Company did not select the best solution, the Process Monitor is expected to elaborate and provide greater insight and analysis on their suggestion.

II. Company Information

UI is a subsidiary of Avangrid, Inc. that operates approximately 3,600 miles of electric distribution lines and 138 miles of transmission lines across 17 Connecticut towns in the greater Bridgeport and New Haven areas totaling 335 square miles (see Figure 1). UI serves approximately 343,000 customers which is a population of about 780,000.

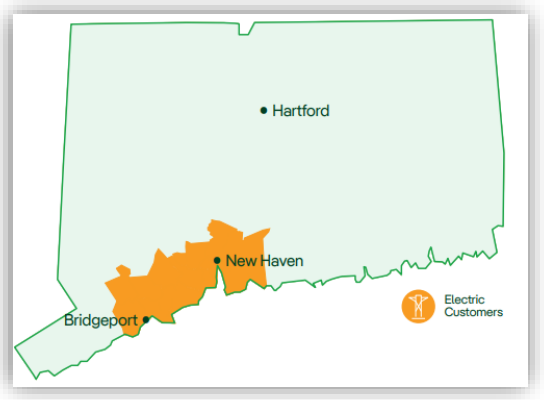


Figure 1: UI's Service Territory

III. EDC Data Filing

a. System Data

1. **System Data Requirement No. 1**: Annual peak load growth; i.e., the circuit, substation, town, operating area, or system level for each of the past 5 years and forecasted load growth for each of the next ten years.

   Response: Please see, *Appendix 1- System Data Requirement No. 1, 2, 6, 9, and 10 (Confidential) Tab Q1*. Please note that this response contains confidential information and is protected via the NWS Final Decision[3]. The information provided reflects the most recently completed 10-year load forecast analysis. The Company's 10-year load forecast is finalized annually in the middle of the first quarter. Therefore, due to the February filing deadline, the forecast is provided through 2034. Also note that peak load growth and forecasts are evaluated and calculated on the substation level at UI.

[3] Id.

2. **System Data Requirement No. 2:** Distribution system circuit capacity, customer count, historic loading for maximum peak day and minimum day for each circuit. Load forecast for circuits if available or used by the EDCs. Justification for exclusion of any omitted circuit load forecasts.

   Response: Please see *Appendix 1- System Data Requirement No. 1, 2, 6, 9, and 10 (Confidential) Tab Q2.* Please note that this response contains confidential information and is protected via NWS Final Decision. Forecasts are evaluated and calculated on the substation level at UI; therefore, load forecast at the circuit level is not available.

3. **System Data Requirement No. 3**: In the NWS Final Decision this System Data Requirement was removed and replaced with "N/A."

   Response: Since System Data Requirement No. 3 states "N/A" and no data requirement is posed, there is no response available.

4. **System Data Requirement No. 4**: Discussion of how DER, and at what level DER is considered, in load forecasting (e.g., distribution feeder, sub-transmission level, distribution substation, bulk distribution substation level, or system-wide) and any expected changes in load forecasting methodology.

   Response: Please see *Appendix 2- 2025 Eversource UI CT DER Forecast Summary* to learn how DERs are included in the overall load forecasting methodology.

5. **System Data Requirement No. 5**: Most recent distribution system annual loss percentage for the prior year (system-wide and by circuit, where available).

   Response: As discussed during technical sessions and written comments in Docket No. 21-05-15RE02 – PURA Investigation into Performance Mechanisms for a Performance-Based Regulation Framework ("PBR") discussion, UI does not have accurate data on system losses at the distribution level with any level of granularity to be meaningful, and does not currently have the means to accurately measure or calculate losses at the desired level of granularity.

   During the August 26, 2024 Technical Session in the aforementioned Docket, the Company maintained that it does not consider a distribution-system losses scorecard to be valid or useful because 1) losses are a small component of overall distribution power flow (typically 2-5% depending on feeder voltage and load profile), 2) the Company has limited or no ability to mitigate a large proportion of the losses (particularly transformer no-load losses), and 3) data and models of

sufficient accuracy do not currently exist to disaggregate losses by equipment and facilitate targeted investment decisions.

6. **System Data Requirement No. 6**: The maximum hourly coincident monthly load, in kilo-volt-ampere (kVA), for the distribution system, in the past 12 months, as measured at the interface between the transmission and distribution system. Indicate if calculated using SCADA data or interval metered data or other non-billing metering / monitoring systems.

   Response: Please see *Appendix 1- System Data Requirement No. 1, 2, 6, 9, and 10 (Confidential) Tab Q6.* Please note that this response contains confidential information and is protected via NWS Final Decision. Please note that this response was calculated using hourly load data from SCADA.

7. **System Data Requirement No. 7**: Total distribution substation transformer nameplate in kVA.

   Response: UI's total distribution substation transformer nameplate rating is 3,159,000 kVA.

8. **System Data Requirement No. 8**: Total distribution line transformer nameplate in kVA.

   Response: UI's distribution line transformer nameplate rating is 4,011,607 kVA.

9. **System Data Requirement No. 9:** List and map of distribution substation transformers (which feed only distribution level customers) that are:
   a. 90-100% within their normal rating;
   b. 80-90% within their normal rating; and
   c. Less than 80% of their normal rating.

   Response: Please see *Appendix 1- System Data Requirement No. 1, 2, 6, 9, and 10 (Confidential) Tab Q9.* Please note that this response contains confidential information and is protected via NWS Final Decision.

10. **System Data Requirement No. 10**: A list of all distribution feeders broken down by distribution feeders that are:
    a. 90-100% within their normal rating;
    b. 80-90% within their normal rating; and
    c. Less than 80% of their normal rating.

    Response: Please see *Appendix 1- System Data Requirement No. 1, 2, 6, 9, and 10 (Confidential*) Tab Q10. Please note that this response contains confidential

information and is protected via NWS Final Decision.

11. **System Data Requirement No. 11:** Utility-wide System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), Customer Average Interruption Duration Index (CAIDI) excluding and including major storms for the past three years.

    Response: Please note that the data provided in this response may be updated and provided as part of the Transmission and Distribution Reliability Performance ("TDRP") filing at the end of March, which will also be filed in Docket No. 26-08-08.

Index Category	Value	2025	2024	2023
SAIDI	Minutes	70	122	56
SAIFI		0.63	0.79	0.75
CAIDI	Minutes	111	154	75
SAIDI (non-storm)	Minutes	35	49	43
SAIFI (non-storm)		0.46	0.61	0.58
CAIDI (non-storm)	Minutes	76	79	74

12. **System Data Requirement No. 12:** Ranking of circuits according to tiers 1, 2, and 3 in the "Worst-Performing Circuits 2.0" program for the past three years outlined by the Authority in Docket No.17-12-03RE08 Decision. Due to the new implementation of that program, three years of data may not be available immediately. Until that information is available for all three years, the EDCs may supplement missing data with contribution to SAIDI and SAIFI including and excluding major storms.

    Response: Please see *Appendix 3- System Data Requirement No. 12 and 14 Tab Q12*. Please note that the data provided in this response may be updated and provided as part of the TDRP filing at the end of March, which will also be filed in Docket No. 26-08-08.

13. **System Data Requirement No. 13:** Number of separately metered electric vehicle level 2 and level 3 (i.e., direct current fast charging or DCFC) charging systems added to the Company's distribution system over each of the past three years.

    Response: Please refer to the table shown below. UI defines "separately metered electric vehicle level 2 and level 3 charging systems" as a network of chargers located behind a customer meter with a separate electric account identified to UI as EV charging only. Some locations may have both level 2 and level 3 chargers. In these cases, the highest level of charger is counted (i.e. level 3).

2025		2024		2023	
Level 2	Level 3	Level 2	Level 3	Level 2	Level 3
31	1	21	8	12	10

14. **System Data Requirement No. 14:** Forecasted electric vehicle load (MW) at the substation level for the next three to five years.

    Response: Please see *Appendix 3- System Data Requirement No. 12 and 14 Tab Q14*.

b. Financial Data

1. **Financial Requirement No. 1:** Historical distribution system spending for the past 10-years, in each category:

    a. Age-Related Replacements and Asset Renewal;
    b. System Expansion or Upgrades for Capacity;
    c. System Expansion or Upgrades for Reliability and Power Quality;
    d. New Customer Projects and New Revenue;
    e. Grid Modernization and Pilot Projects;
    f. Government Mandates;
    g. Metering;
    h. Other.

    Response: UI provides categorized data as requested in the table below for the 10-year period of 2016 through 2025.

NWS Categories	Sum of 2016-2025
Age-Related Replacements and Asset Renewal	$294,691,751
System Expansion or Upgrades for Capacity	$(1,716,683)[4]
System Expansion or Upgrades for Reliability and Power Quality	$ 38,672,625
New Customer Projects and New Revenue	$96,888,295
Grid Modernization and Pilot Projects	$16,737,009
Government Mandates	$112,036,683
Metering	$65,261,161
Others[5]	$519,375,993
Grand Total	**$1,141,946,834**

2. **Financial Requirement No. 2:** Current 5-year Capital Plan.

[4] A credit is observed in category System Expansion or Upgrades for Capacity because an initial distribution/transmission allocation is assumed for study costs. When the study is completed the study costs are transferred accordingly.
[5] Other category is inclusive of all other categories not listed including customer service technology, compliance and safety, operations, etc.

Response: Please reference *Appendix 4- CIP-7 CAPEX - 2026-2030*.

3. **Financial Requirement No. 3:** Documentation for planned distribution capital projects for reliability/capacity/resilience/power quality/interconnection projects exceeding cost of $250,000 including:

    a. Justification/drivers for the project (e.g., see categories listed under Financial Data No. 1);
    b. Timeline for improvement;
    c. Estimate of project cost;
    d. Project scope and key materials (e.g., transformer, etc.);
    e. Identification of project risks (e.g., potential for delays or cost overruns).

    Response: Please refer to *Appendix 5- NWS Quarterly Filing* for projects between $250,000 through $500,000 and Appendix 6- Grid Needs Filing for projects beyond $500,000. Please refer to Appendix 7- Grid Needs Filing Narrative Document.

4. **Financial Requirement No. 4:** Disclose all Unknown Priority Investments over $250,000 from prior years, including:
    a. Justification/drivers for the project (e.g., see categories listed under Financial Data No. 1);
    b. Timeline for improvement;
    c. Estimate of project cost;
    d. Project scope and key materials (e.g., transformer, etc.);
    e. Identification of project risks (e.g., potential for delays or cost overruns).

    Response: Please refer to *Appendix 5- NWS Quarterly Filing* for projects between $250,000 through $500,000. For more detailed information, please refer to Appendix 6: Grid Needs Filing. Please reference Appendix 7- Grid Needs Filing Narrative Document.

5. **Financial Requirement No. 5:** Provide a retrospective analysis of NWS implemented in prior years, including an accounting of their actual costs and the realized benefits.

    Response: This analysis is not provided as no NWS projects have been implemented to date.

6. **Financial Requirement No. 6:** Provide the most up-to-date information on the metrics included in the EM&V plans for each NWS currently in service.

    Response: This analysis is not provided as no NWS projects have been implemented to date.

c. DER Deployment

1. **DER Deployment Requirement No. 1:** Current distributed generation deployment by type (photovoltaic, hydro, wind, etc.), size ((1) 0 kW to 25 kW, (2) more than 25 kW to 200 kW, (3) more than 200 kW to 600 kW, (4) more than 600 kW to 2,000 kW, and (5) more than 2,000 kW), and geographic dispersion (as useful for planning purposes; such as, by planning areas, service/work center areas, cities, etc.).

   Response: Please refer to *Appendix 8- DER Deployment Requirement No. 1 and 2 Tab Q1*.

2. **DER Deployment Requirement No. 2:** Projected distributed generation deployment by type (photovoltaic, hydro, wind, etc.), size (≤100 kilowatt ("kW"), 100kW-1 megawatt ("MW"), >1MW), and geographic dispersion (as useful for planning purposes; such as, by planning areas, service/work center areas, cities, etc.) over the next three and five years, respectively.

   Response: *Please refer to Appendix 8- DER Deployment Requirement No. 1 and 2 Tab Q2*. The data provided includes all distributed generation types. The data was not broken out by distributed generation types because over 95% of the data is made up of solar, battery, or both. A forecast for other distributed generation types is not likely to be accurate due to the very small number of installations historically within the Company's territory. Geographical dispersion is not provided as this data was not previously captured.

   Due to limitations in historical data, some forecasting may be less representative of actual trends. The forecast and historical data provided is subject to change based upon external and unknown factors to UI. Additionally, projections may be revised as newly acquired information, updated records, or refined assumptions become available, ensuring alignment with the most accurate and current data.

3. **DER Deployment Requirement No. 3:** Information on areas with existing or forecasted transient voltage or frequency issues that may benefit from the utilization of advanced inverter technology, energy storage systems, or NWS more broadly; provide information describing experiences where distributed generation installations have caused operational challenges such as power quality, voltage or system overload issues, and associated customer complaints.

   Response: To avoid power quality issues such as flicker and transient overvoltage conditions, UI requires Voltage Fluctuation Analysis when a DER interconnection system impact study is conducted. Voltage Fluctuation Analysis evaluates the rapid change in voltage caused by output changes at the generating station to ensure that transient voltage does not cause excessive voltage swings. The interconnection system impact study also requires a harmonics analysis to

evaluate harmonics injection from a generator and inverter to ensure compliance with Total Harmonic Distortion ("THD") requirements. All DER inverters must comply with cumulative overvoltage contributions and harmonics percentages identified in the Institute of Electrical and Electronics Engineers ("IEEE") Standard 1547−2018.

UI has not identified any applications that required significant upgrades to the distribution system. In most cases, using a grounding transformer in compliance with IEEE 1547−2018 has resolved transient overvoltage voltage issues. UI will consider alternatives to mitigate transient overvoltage issues on a case-by-case basis.

UI forecasts that substations with high DER penetrations significantly exporting onto the transmission system may create transient voltage condition that may be mitigated by advanced inverter technology, energy storage systems, NWS, or traditional solutions such as reconductoring or substation transformer replacement.

4. **DER Deployment Requirement No. 4:** Provide currently available Hosting Capacity Maps for all measures of Hosting Capacity.

   Response: Please refer to UI's Hosting Capacity Map available online at: https://www.uinet.com/smartenergy/innovation/distributed_generation/hostingcapacity

IV. Quarterly Filing

The quarterly filing is forward looking and shall contain projects between $250,000 and $500,000 and includes projects that need to be in-service within 12 months, and projects deemed as asset condition, safety, or maintenance related. This filing shall take place on the first Friday of every February, May, August, and November. The Process Monitor will provide their decision on the EDCs quarterly filing by March 31st of each year.

The NWS Quarterly Filing can be found in *Appendix 5*.

V. Grid Needs Filing

The Grid Needs Filing is a forward-looking project list for projects above $500,000. Projects between $500,000 and $1,000,000 shall be categorized as "Potential NWS Solicitation Opportunities" whereas projects over $1,000,000 should be categorized as "Likely NWS Solicitation Opportunities." These projects are subject to stakeholder review process and question and answer period. Approval for these projects is expected by mid-August of each year.

The Grid Needs Filing can be found in *Appendix 6*, and the narrative document can be found in *Appendix 7.*

VI. Appendices

Appendix 1- System Data Requirement No. 1, 2, 6, 9, and 10 (Confidential)

Appendix 2- 2025 Eversource UI CT DER Forecast Summary

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