



TrueLoad

Real Data. Real Fast. Capacity Confirmed.

Service Adequacy Evaluation Tool

User Guide

v 1.0

Quick Start: The Six Steps

Complete these steps in order for every project. Detailed instructions for each step follow in the sections below.

1

Request AMI Data from the Utility

Ask your customer to email their utility requesting 12-13 months of interval data. Use the template in Section 2. The utility sends the data file directly to you.

2

Create a New Project

Click New in the top navigation bar and name the project. One project per job site.

3

Fill In Project Info and Service Info

Enter customer information, your preparer details, and the existing service specifications (main breaker size, voltage).

4

Enter Proposed Equipment

Add each piece of new electrical equipment you are installing and mark whether it is concurrent with the measured peak.

5

Upload AMI Data

Upload the data file from the utility. The tool processes it automatically and identifies the peak demand.

6

Review Results and Print Report

Check the Results tab for PASS or FAIL. If the project is ready, mark it complete and print the report from the Report tab.

Section 1: Account Setup

Creating an Account

Go to the TrueLoad application URL and click Sign Up. Enter your email address and create a password. You will receive a confirmation email -- click the link to activate your account.

Logging In

Enter your email and password on the login screen. Use Forgot Password if you need to reset. Your projects are saved to the cloud when you are logged in and are accessible from any device.

Setting Up Your Profile

Before starting your first project, set up your company profile. This saves time -- your name, license number, and company information will auto-populate into every new project.

To access account settings, click the gear icon in the top right corner of the navigation bar. Enter:

- Preparer name and title
- State electrical license number (if applicable)
- Company name and address

Once saved, use the Load My Details button on the Project Info tab to pull this information into any project automatically.

Section 2: Getting AMI Data from the Utility

What Is AMI Data?

AMI (Advanced Metering Infrastructure) data is the interval-by-interval record of electrical demand recorded by your customer's smart meter. TrueLoad uses this data to identify the actual peak demand on the existing service -- which is the basis for the NEC 220.87 evaluation.

You need at least 12 months of data to capture all seasonal peaks. Most utilities provide this data in 15-minute intervals.

How to Request the Data

Your customer must request the data directly from their utility. You should be copied on the request so the utility knows where to send the file.

The process:

- Give your customer the email template below (customized for their utility).
- Your customer sends the email to the utility, copying your email address.
- The utility sends the data file to you (typically within one business day).
- You upload the file to TrueLoad.

Email Template: Green Mountain Power

To: energyinnovationteam@greenmountainpower.com

Subject: AMI Data Request

Dear Green Mountain Power Energy Innovation Team,

Please provide 12-13 months of the most recent 15-minute interval AMI data for my electric account. Compatible formats include: csv, txt, xml, or Excel. This data will be used by my contractor for load calculations.

Account Information:

Full Name: [Customer Name]

Service Address: [Property Address]

Account Number (if known): [Account Number]

Please let me know if you require any additional information. Thank you for your assistance.

Sincerely,

[Customer Name]

Note

Other utilities: Use the same template with the appropriate utility contact information. Ask your utility for their AMI data request process or customer service contact if you are unsure where to send the request.

Not all utilities support direct release of AMI data to contractors. If your customer's utility does not provide the data, contact TrueLoad support for guidance on alternative approaches.

Section 3: Managing Projects

Creating a New Project

Click the green +New button in the top navigation bar. Enter a descriptive name for the project -- include the customer name and address for easy identification later (example: Smith - 45 Elm Street - Heat Pump).

Each job site should be its own project. Do not reuse projects across job sites.

Opening an Existing Project

Click the blue Projects button in the top navigation. This opens the Project Manager, which lists all your projects. Click any project to open it. The active project name is shown in the navigation bar.

You can filter the project list by status: All, In Progress, Completed, or Archived.

Project Status

Active	Project currently being worked on. Auto-saves every 30 seconds.
In Progress	In process but not complete. Fully editable.
Completed	Finalized and locked. Read-only. Use Mark Complete on the Results or Report tab to set this status.
Archived	Stored for long-term reference. Still read-only if previously completed.

Saving

Projects auto-save every 30 seconds. You can also click the Save button in the top navigation at any time. A brief green confirmation message appears after each save.

When logged in, projects are saved both locally on your device and to the cloud. Cloud-saved projects are accessible from any device and are not lost if you clear your browser.

Renaming, Archiving, and Deleting Projects

- **Rename:** Click the Rename icon next to the project name in the Project Manager.
- **Archive:** Stores the project for future reference without deleting it. Use this for completed jobs.
- **Delete:** Permanently removes the project. A confirmation prompt appears before deletion.

Section 4: Project Info Tab

This tab captures identifying information for the project and the report. Fill in all fields before generating a report.

Customer Information

Customer Name	Full name of the property owner or account holder.
Address	Complete street address of the property being evaluated.
City/Town	Municipality.
State	Two-letter state abbreviation. Defaults to VT.
ZIP Code	Postal code.

Preparer Information

Click Load My Details to automatically fill in your name, title, license number, and company information from your account profile. If you have not set up your profile yet, see Section 1.

Prepared By	Your full name.
Title	Your professional title (example: Licensed Electrician).
License Number	Your state electrical license number (if applicable).
Report Date	Date the evaluation is prepared. Format: mm/dd/yyyy.
Company Name	Your business name.
Company Address	Your business address.

Authority Having Jurisdiction (AHJ)

AHJ Jurisdiction	The municipality or jurisdiction where the permit is being filed - if applicable (example: City of Burlington).
Permit/Application Number	The permit or application number if already assigned. Leave blank if not yet known.

Section 5: Service Info Tab

This tab documents the existing electrical service. The service rating and voltage are required for the calculation.

Fields

Service Voltage Description	Text description of the service voltage. Default: 120/240V single-phase. Edit if different.
Voltage (Line-to-Line) *	Select 240V or 208V from the dropdown. This is required. Default: 240V.
Service Rating (Main Breaker) *	The amperage rating of the main service breaker. Common values: 100, 150, 200, 400. This is required.
Panel Bus Rating	The amperage rating of the panel bus bars. If unknown, use the same value as the main breaker.
Service Type	Select Overhead, Underground, or Unknown. For documentation only -- does not affect the calculation.
Installation Status	Fixed to Existing. NEC 220.87 applies only to existing installations.

Note

Fields marked with * are required. The Results tab will not be available until the service rating and voltage are entered.

Section 6: Equipment Tab

This tab is where you build the list of all proposed new electrical equipment being added to the service. Only equipment entered here will appear in the report and calculation.

Adding Equipment

Click the blue Add Equipment button to create a new equipment entry. A new row (on desktop) or card (on mobile) appears. Fill in each field.

Equipment Fields

Equipment Name	A descriptive name for the equipment. Be specific -- use names like Heat Pump - Main Floor or Level 2 EV Charger rather than just Heat Pump.
Type	Select from the dropdown: Heat Pump, Air Conditioner, EV Charger, Hot Water Heater, Electric Range, Electric Dryer, Pool/Spa Equipment, or Other.
Qty	Number of identical units. Default: 1.
Amps (MCA)	The Minimum Circuit Ampacity from the equipment nameplate. Enter this OR kW -- not both.
kW	The kilowatt rating from the equipment nameplate. Enter this OR Amps (MCA) -- not both.
Voltage	Operating voltage of the equipment. Typically 240V for most major appliances. Default: 240V.
Concurrent?	Check this box if the equipment would operate during the same seasonal conditions that produced the measured peak demand. See guidance below.

Concurrent vs. Non-Concurrent

The Concurrent checkbox determines whether a piece of equipment gets added to the service adequacy calculation. This is one of the most important decisions in the process.

- Mark Concurrent if the equipment will operate during the same season as the measured peak.
- Mark Non-Concurrent if the equipment operates in a different season than the measured peak.

Winter peak + heat pump being added	Concurrent -- check the box.
Winter peak + central A/C being added	Non-concurrent -- leave unchecked.
Summer peak + A/C being added	Concurrent -- check the box.
Summer peak + heat pump being added	Concurrent -- check the box.
EV charger (year-round use)	Concurrent with any peak -- check the box.

Note

The tool displays a concurrency guidance reminder at the top of the Equipment tab as a reference.

Strip/auxiliary heat: If a heat pump has auxiliary electric strip heat that can operate independently of the heat pump compressor, enter it as a separate line item.

Always use nameplate values from the equipment data tag -- not estimated or rated values from a brochure.

Editing and Removing Equipment

- Edit: Click directly on any field in the equipment row to modify it.
- Delete: Click the red trash icon at the right end of the row. A confirmation prompt appears before deletion.

Section 7: AMI Data Tab

This tab is where you load the electrical usage data from the utility. The tool processes the file automatically and identifies the peak demand used in the calculation.

Option 1: Upload AMI Data Files (Recommended)

Supported File Formats

- CSV, TXT, TSV
- XML
- Excel (.xlsx or .xls)

Headers are optional. The tool automatically detects the timestamp and demand columns. Any common date/time format is supported.

Uploading Files

Drag and drop one or more files into the upload area, or click Choose one or more files to browse. Multiple files can be uploaded at once -- the tool merges them automatically.

Conflict Resolution Strategy

If you upload multiple files that contain different demand values for the same timestamp, the tool needs to know how to handle the conflict. Select your strategy before uploading:

Maximum (recommended)	Keeps the higher of two conflicting values. Best choice for NEC 220.87 compliance -- it is the most conservative approach.
Average	Uses the average of conflicting values.
First file wins	Keeps the value from the first file uploaded.
Last file wins	Keeps the value from the most recently uploaded file.

What Happens After Upload

The tool automatically:

- Detects and removes exact duplicate records
- Resolves conflicts using your chosen strategy
- Converts kWh interval energy to kW demand where needed
- Identifies the peak demand value and timestamp
- Calculates the measurement period (date range)
- Detects the data interval (typically 15, 30, or 60 minutes)
- Runs data quality checks and generates quality notes

After upload, a summary is displayed showing total data points, peak demand, peak timestamp, and measurement period.

Option 2: Manual Entry

If you do not have an AMI data file, you can manually enter the peak demand. This option is available only when no AMI file has been uploaded. Manual entry requires in situ metering of the service. A minimum 30-day measurement period, with the qualifier that the 30-day period must be "the highest demand that would be expected to occur" — meaning the measurement must capture the expected peak season.

Max Recorded Demand (kW)	Required. The maximum kilowatt demand recorded during the monitoring period. Enter the single highest value from your data source.
Peak Timestamp	Optional. The date and time when the peak occurred. Used to determine the peak season (Winter, Spring, Summer, or Fall), which affects the concurrency analysis.

Note

Manual entry is disabled if AMI data has already been uploaded. To switch to manual entry, click Delete Data first.

If you use manual entry, you are responsible for the accuracy of the demand value. The data quality notes field is a good place to document the source of the value.

Measured Load Information

These fields provide additional context that appears in the report. Some are auto-populated from the uploaded data.

Data Provider	Name of the utility or AMI data source (example: Green Mountain Power).
Measurement Period	Auto-calculated from uploaded data, or enter manually in the format: Jan 1, 2025 - Dec 31, 2025.
Occupancy Status During Measurement	Describe the occupancy during the measurement period (example: Occupied, typical use). Important context if the data period included unusual conditions.
Data Interval (Minutes)	Auto-detected from uploaded data. Common values: 15, 30, 60.
Data Quality Notes	Auto-generated from the upload analysis. Includes compliance checks, gap detection, and anomaly flags. You can add your own notes to this field.

Section 8: Results Tab

The Results tab is available once you have entered a service rating and either uploaded AMI data or entered a manual demand value. All calculations are performed automatically.

Service Adequacy Determination

The determination is displayed at the top of the page:

PASS (green)	The existing service has adequate capacity for the proposed new loads under NEC 220.87.
FAIL (red)	The existing service does not have adequate capacity. A service upgrade or other service adequacy measure would be required (example: smart-switching device which prevents 2 large loads from operating concurrently).

Summary Cards

Two summary cards are displayed below the determination:

Existing Demand

- Max Recorded Demand (kW)
- Max Demand (kVA)
- Peak Season -- Winter, Spring, Summer, or Fall, determined automatically from the peak timestamp
- Peak Time -- Date and time the peak occurred

Service Capacity

- Service Rating (amperes and voltage)
- Service Capacity (kVA)
- Utilization -- the percentage of service capacity consumed by the adjusted demand

NEC 220.87 Load Calculation Summary

This table shows the step-by-step calculation:

Existing Demand	The measured maximum demand from AMI data (kVA).
125% of Existing Demand	Existing demand multiplied by 1.25, per NEC 220.87.
New Concurrent Load	Total kVA of all equipment marked as concurrent.
Adjusted Demand	Sum of 125% existing demand plus concurrent new load.
Service Capacity	Maximum capacity of the existing service (kVA).
Available Margin	Service Capacity minus Adjusted Demand. Positive = PASS. Negative = FAIL.

Equipment Detail Table

Lists each piece of proposed equipment with its calculated kVA and concurrent status. The table totals show all new equipment combined and concurrent-only equipment separately. Only the concurrent total is used in the calculation.

Marking a Project Complete

When the project is ready to finalize, click Mark Complete. A validation check runs automatically:

- Blockers: Critical missing information that must be resolved before the project can be completed (example: no service rating entered).
- Warnings: Important but non-critical issues you should review. Warnings can be acknowledged and bypassed.
- Advisories: Best practice recommendations for a stronger report.

Once completed, the project becomes read-only. A green badge displays on the project. If you need to make changes after completing, click Unlock Project in the orange banner at the top of the screen.

Section 9: Report Tab

The Report tab displays the complete, formatted evaluation report ready for submission. Review the report before printing to confirm all information is correct.

What the Report Contains

- Project information -- customer name, address, permit number, jurisdiction
- Preparer information -- your name, license number, title, and company
- Existing service information -- voltage, service rating, panel bus rating
- AMI data information -- data provider, measurement period, data interval, data quality notes
- Proposed equipment schedule -- all equipment entered, with kVA and concurrent status
- NEC 220.87 load calculation summary -- step-by-step calculation table
- Service adequacy determination -- PASS or FAIL
- Service capacity analysis -- utilization and available margin
- Disclaimer -- scope and limitations of the evaluation
- Signature block -- space for manual signature

Printing the Report

Click the blue Print Report button. The browser print dialog opens. The report is formatted for standard letter-size paper (8.5 x 11 inches).

Select your printer or choose Save as PDF to produce a PDF file for emailing or records.

Note

Complete all fields before printing. Optional fields like Occupancy Status and Data Provider improve the quality of the report and may reduce follow-up questions from the AHJ.

The report includes a disclaimer stating that the evaluation addresses service capacity only under NEC 220.87 and does not waive other Code requirements. Final approval remains with the Authority Having Jurisdiction.

Section 10: Troubleshooting

AMI Data Upload

No valid data found after upload	Verify the file contains both a timestamp column and a numeric demand value column. Open the file in a spreadsheet application to confirm the data is readable.
Peak demand looks wrong	Check the Data Quality Notes field for warnings. Look for anomalies -- unusually high spikes or zero values. Verify the file is in kW or kWh (not some other unit).
Uploaded multiple files but data count is low	The files may cover overlapping time periods. Exact duplicates (same timestamp, same value) are removed automatically.

Calculation Issues

Results show FAIL but I expected PASS	Review: (1) Are all concurrent equipment items correctly marked? (2) Are equipment amp or kW values correct? (3) Is the service rating entered correctly? (4) Does the peak season match the equipment type?
Equipment not appearing in the calculation	Verify that either Amps (MCA) or kW is entered -- not both and not neither. Check that Voltage and Qty are set.
Results tab is not available	The service rating on the Service Info tab is required before results can be calculated. Also confirm AMI data has been uploaded or a manual demand value entered.

Saving and Sync

Project saved locally (cloud sync unavailable)	Your internet connection may be interrupted, or you may have been logged out. Your work is safe in local storage on your device. Log back in to resume cloud sync.
Project shows in list but will not open	Try refreshing the browser. If the issue continues, contact support.

TrueLoad -- NEC 220.87 Service Adequacy Evaluation Tool

This tool provides a service adequacy evaluation aid. Final responsibility for code compliance remains with the licensed preparer and Authority Having Jurisdiction.