Power Onward™

Power Suite™ ft. GenSize 2.0

26th of June 2025

Welcome!

Cummins PowerHour webinar series is designed to help our engineer partners to…

- Keep up to date on products, technology, and codes and standards development
- Interact with Cummins experts and gain access to ongoing technical support
- Participate at your convenience, live or on-demand
- Earn Professional Development Hours (PDH)

Technical tips:

- Audio is available through teleconference or Zoom application.
- Attendees are in “listen only” mode throughout the event.
- Use the Zoom Q&A Panel to submit questions, comments, and feedback throughout the event. Time is allotted at the end of the PowerHour to address Q&A.
- If the audio connection is lost, disconnected or experiences intermittent connectivity issues, please check your audio connection through the "Join Audio" or "Audio Connectivity" button at the bottom left of the Zoom application.
- Report technical issues using the Zoom Q&A Panel.

Asking a Question:

Q&A Button:

- For technical questions on today's topic
- Ask at anytime
- Not all questions may get answered but we'll do our best!

Chat Button:

- For general Zoom questions

Disclaimer

The views and opinions expressed in this course shall not be considered the official position of any regulatory organization and shall not be considered to be, nor be relied upon as, a Formal Interpretation.

Participants are encouraged to refer to the entire text of all referenced documents. In addition, when in doubt, reach out to the Authority Having Jurisdiction.

Meet your panelists

Cummins instructors

Regine Banzuela
Sales Platform User Experience Leader

Mark Taylor
Product Application Engineer

Sarah Klimczak
Sales Platform User Experience Manager

Luis Fernando Garcia
Sales Application Engineer

Agenda

- **Quick Overview:** What is Power Suite?
- **Power Suite™ Demo:** Live Walkthrough of the Website
- **Features Summary:** What Does the Site Offer?
- **GenSize 2.0 101:** Everything You Need to Know About the New GenSize Tool

What is POWER SUITE™

WHO IS IT FOR?

For businesses and individuals looking to design power systems, Power Suite™ provides a comprehensive package of sales engineering capabilities to enable faster and intuitive product selection. Power Suite™ provides sizing and recommendation, specification generation and technical information tools for generator sets and controls for your unique energy management needs.

OUR GOAL

Our goal is to make Power Suite the central hub for all things power generation, shaped by ongoing input from the community that uses it.

https://powersuite.cummins.com

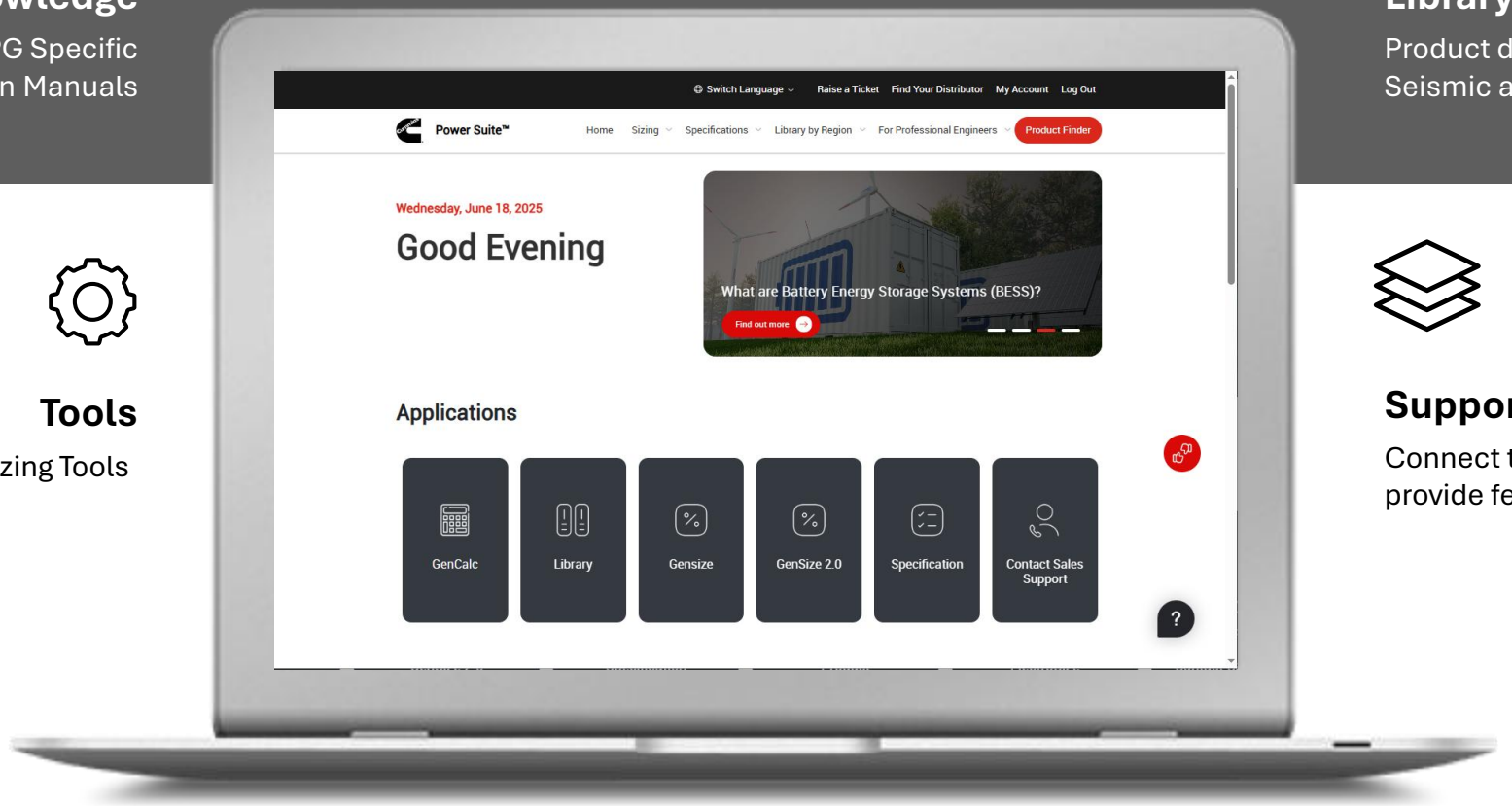
Everything Power Generation

Knowledge

Power Hours, PG Specific News, Application Manuals

Tools

Calculators, Sizing Tools



Library

Product documentations via Seismic and Product Finder

Support

Connect to sales people, provide feedback

Cummins

Let’s see this in action

Power Suite™ Demo

GenSize 2.0

GenSize Overview: What is GenSize?

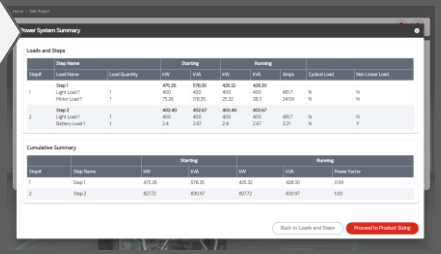
GenSize is Cummins Power Generation's tool that guides users from knowing what loads they need to power, to a recommended Cummins generator set configuration.

Cummins Input: Product Performance Data

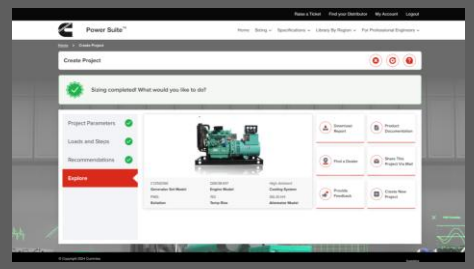
User Inputs:

- Power System Design Requirements
- Load Parameters

GenSize



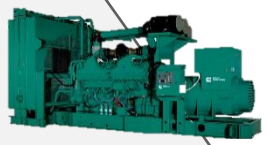
Power System Summary Algorithm

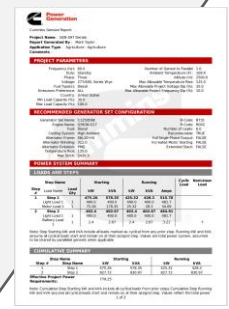


Product Recommendation Algorithm

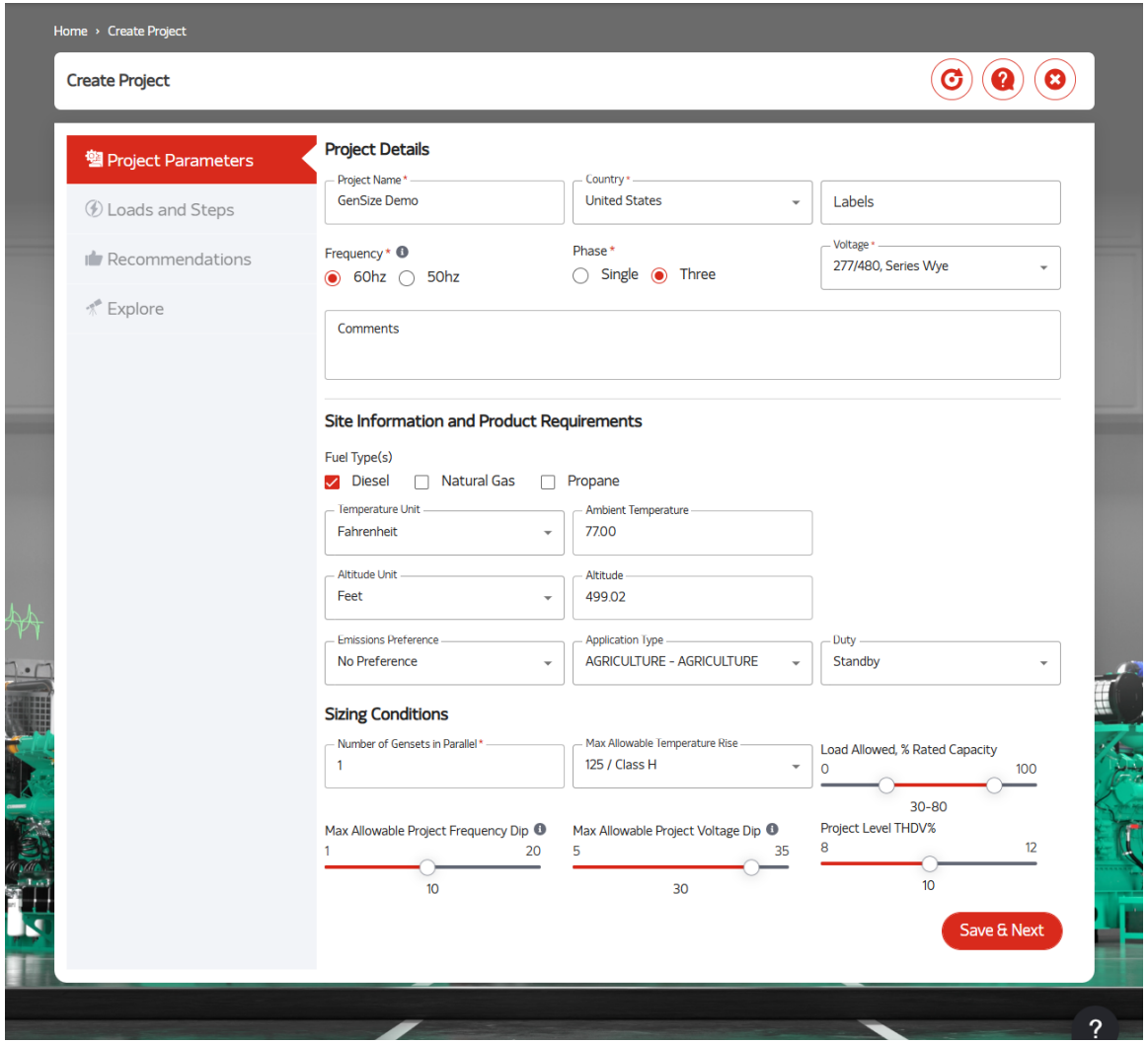
GenSize Output:

- Recommended Cummins Product
- Report on Product Performance





User Inputs: Project Parameters



Details:

Project Details: Top-level information needed to move forward.

Site Information & Product Requirements: Generator set and power system requirements needed for product matchmaking

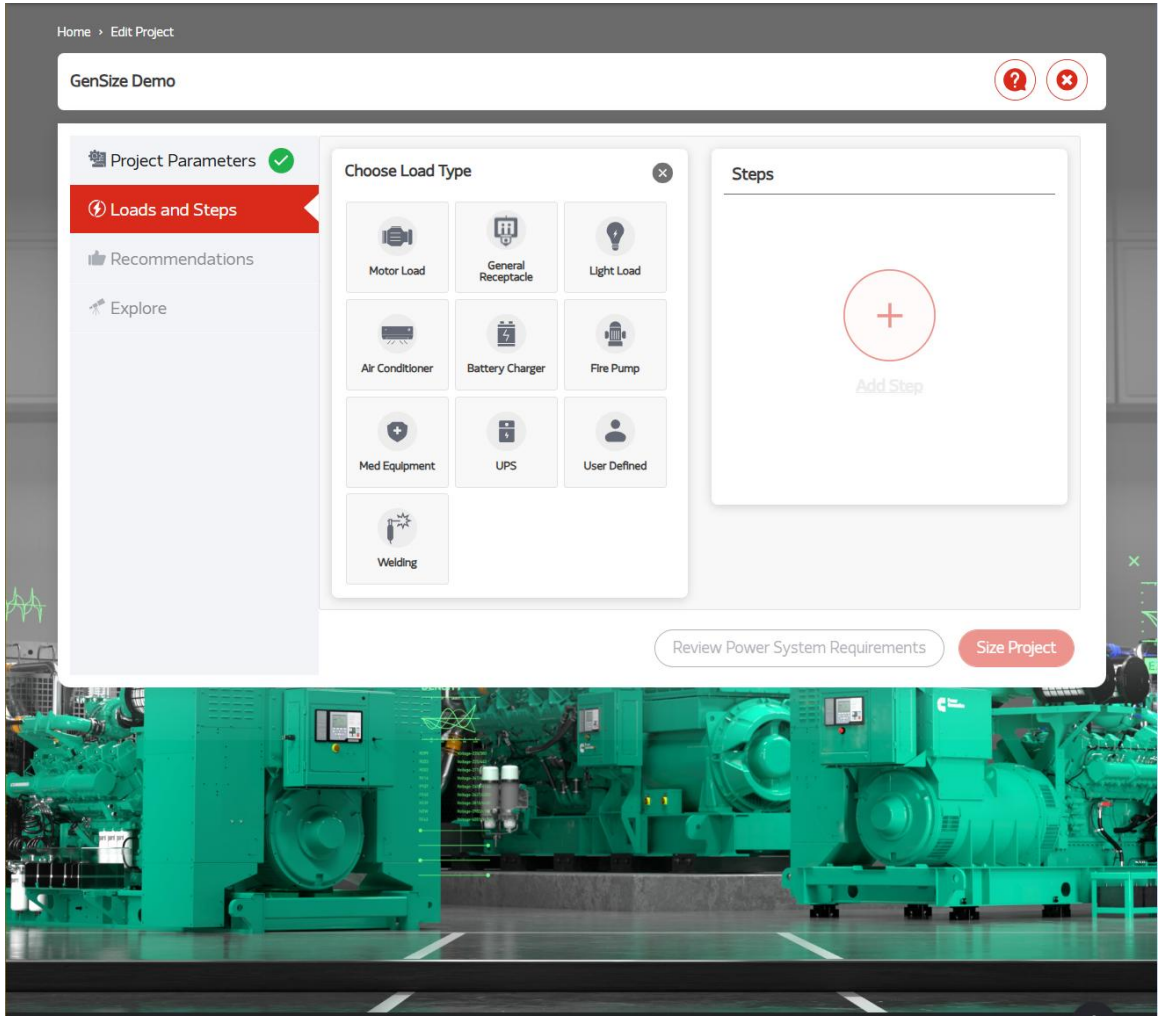
New to GenSize 2.0:

Labels: to organize your project files

Helpful Tips:

Be mindful not to over-constrain product requirements. (e.g. European emissions for a USA-bound product)

User Inputs: Add a New Load



Details:

10 Load types to choose from!

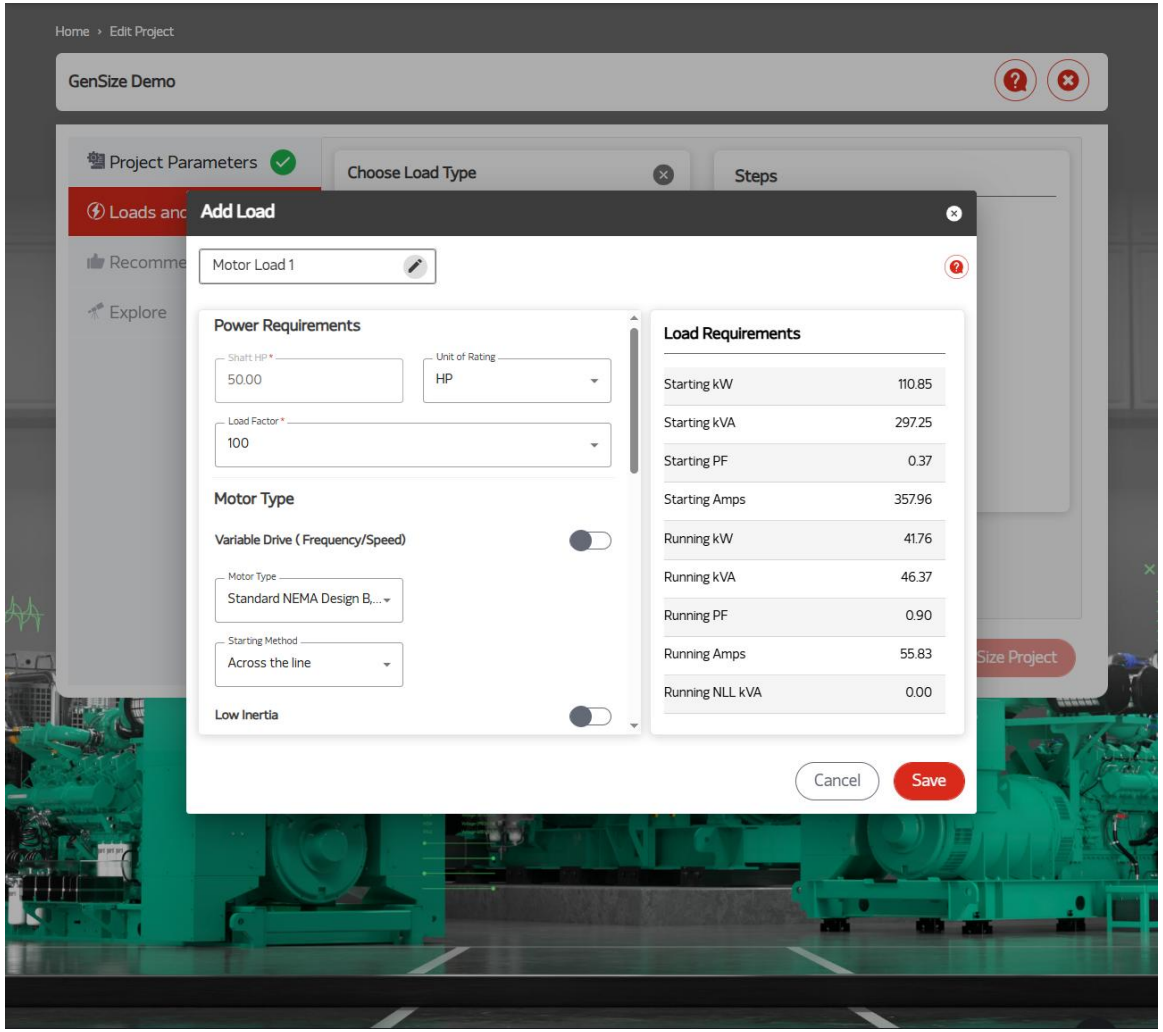
New to GenSize 2.0:

Nothing yet, but stay tuned for a new **electric vehicle load type** in the coming months.

Helpful Tips:

All load types are ultimately means to the same end: Running/Starting kVA and kWe; the most powerful way to add a load type is "**User Defined.**"

User Inputs: Add a New Load



Details:

Provide **Load** inputs in alignment with the power system loads.

Load Requirements (right side) are the load parameters that will be used for sizing.

New to GenSize 2.0:

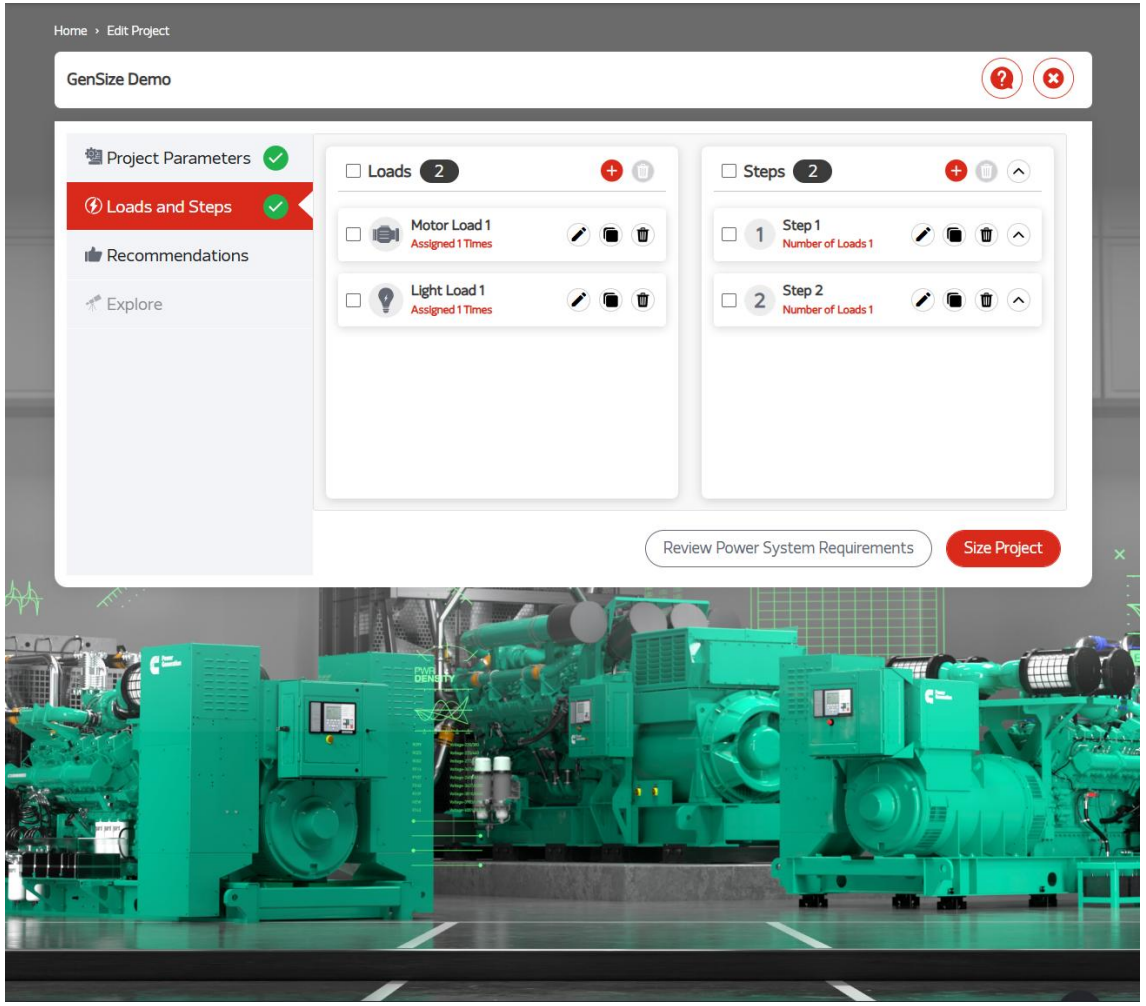
Refreshed user-inface for ease of referencing Load Requirements; otherwise, no change!

Helpful Tips:

There are very few “mandatory” fields.

Many optional fields dynamically populate based on the few mandatory inputs; they can be over-written if necessary.

User Inputs: Add Load Step(s)



Details:

Steps are meant to reflect the power system design, where all loads within a given step are assumed to be started simultaneously.

New to GenSize 2.0:

Refreshed user-inface for ease of assigning loads into steps:

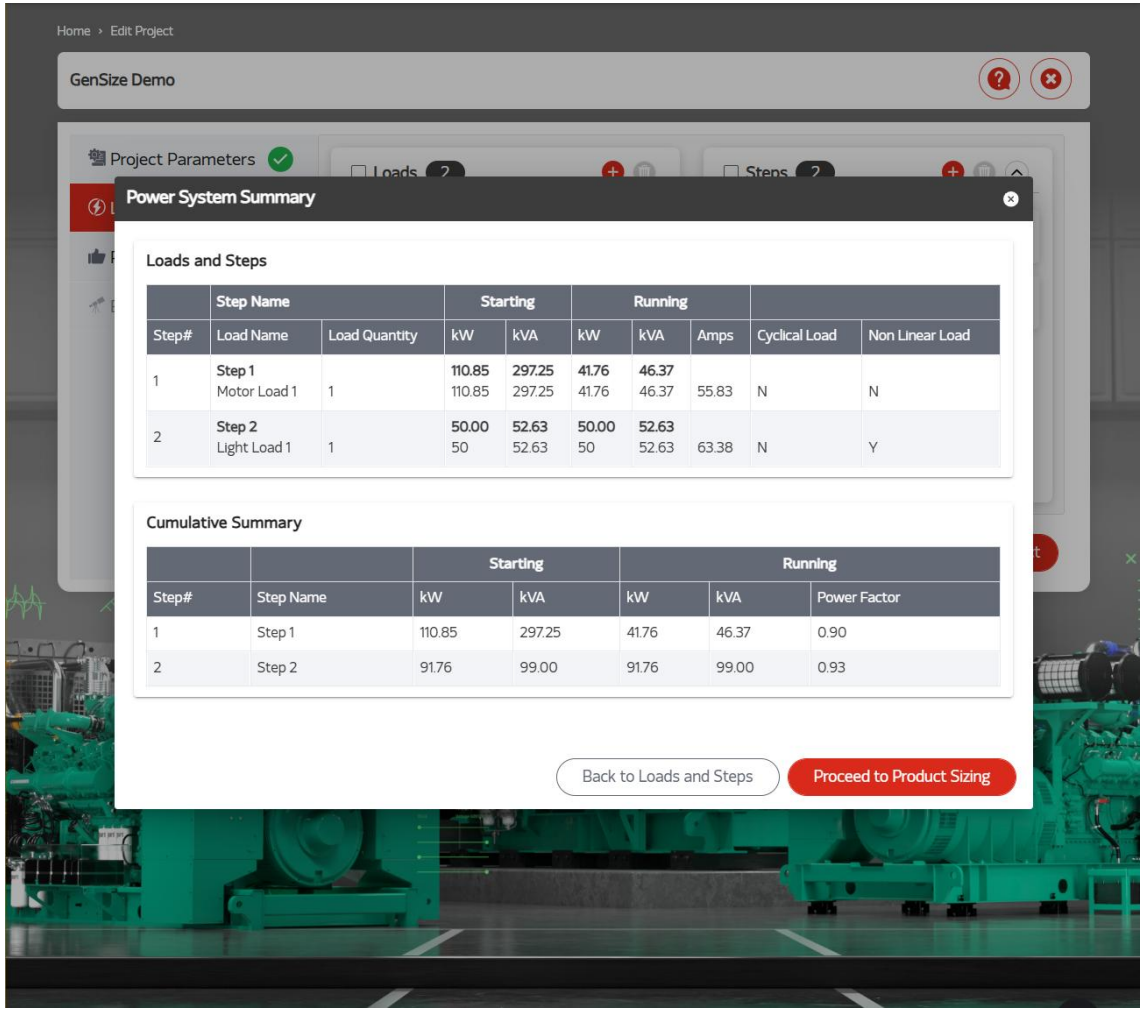
- Drag and drop (one or multiples)
- Text-based interface with quantities

Helpful Tips:

Experiment and learn how changes impact the power system with “Review Power System Requirements” display.

Expand/Collapse All function to review the assigned loads in all steps.

GenSize Outputs: Power System Summary



Details:

This summarizes all subtotals and totals for the power system running / starting kVA and kW

New to GenSize 2.0:

Same information, simplified presentation.
Cyclical loads are now identified as such; no longer identified as “Peak kW and kVA”

Helpful Tips:

Use this screen to understand your design.

Cumulative Summary is an excellent way to understand projects with numerous steps.

Click **Proceed to Product Sizing** if ready to matchmake to a product.

Concept Check: Optimizing Load Steps

		Starting		Running		
Load Name	Load Quantity	kW	kVA	kW	kVA	Amps
Light Load 1	1	50	52.63	50	52.63	63.38
Motor Load 1	1	110.85	297.25	41.76	46.37	55.83

One across-the-line motor load, one light load, each assigned to their own step.
Which sequence may result in a larger-sized generator set?

Cumulative Summary **A**

		Starting		Running		
Step#	Step Name	kW	kVA	kW	kVA	Power Factor
1	Motor Step First	110.85	297.25	41.76	46.37	0.90
2	Light Step	91.76	99.00	91.76	99.00	0.93

Cumulative Summary **B**

		Starting		Running		
Step#	Step Name	kW	kVA	kW	kVA	Power Factor
1	Light Step First	50.00	52.63	50.00	52.63	0.95
2	Motor Step	160.85	349.88	91.76	99.00	0.93

Concept Check: Optimizing Load Steps

		Starting		Running		
Load Name	Load Quantity	kW	kVA	kW	kVA	Amps
Light Load 1	1	50	52.63	50	52.63	63.38
Motor Load 1	1	110.85	297.25	41.76	46.37	55.83

One across-the-line motor load, one light load, each assigned to their own step.
Which sequence may result in a larger-sized generator set?

Cumulative Summary **A**

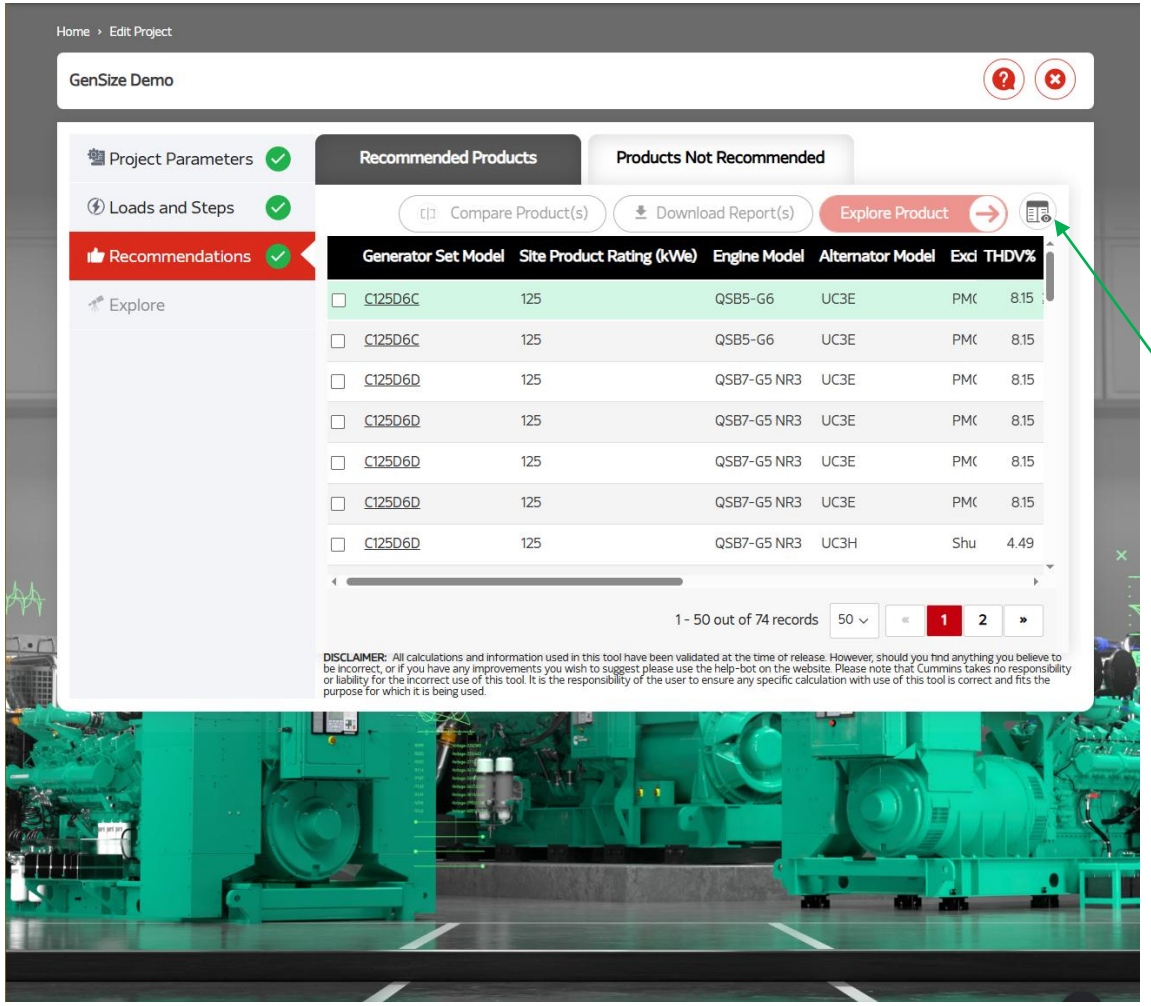
		Starting		Running		
Step#	Step Name	kW	kVA	kW	kVA	Power Factor
1	Motor Step First	110.85	297.25	41.76	46.37	0.90
2	Light Step	91.76	99.00	91.76	99.00	0.93

Cumulative Summary **B**

		Starting		Running		
Step#	Step Name	kW	kVA	kW	kVA	Power Factor
1	Light Step First	50.00	52.63	50.00	52.63	0.95
2	Motor Step	160.85	349.88	91.76	99.00	0.93

The highest kW or kVA seen anywhere is seen during this motor's starting.
Moving the step forward in the sequence reduced the overall burden on the generator set.

GenSize Outputs: Recommended Products



Details:

All product configurations that passed all checks, ordered from generally smallest to largest.

New to GenSize 2.0:

Same information, simplified presentation.

Choose to see more (or less) information in the table.

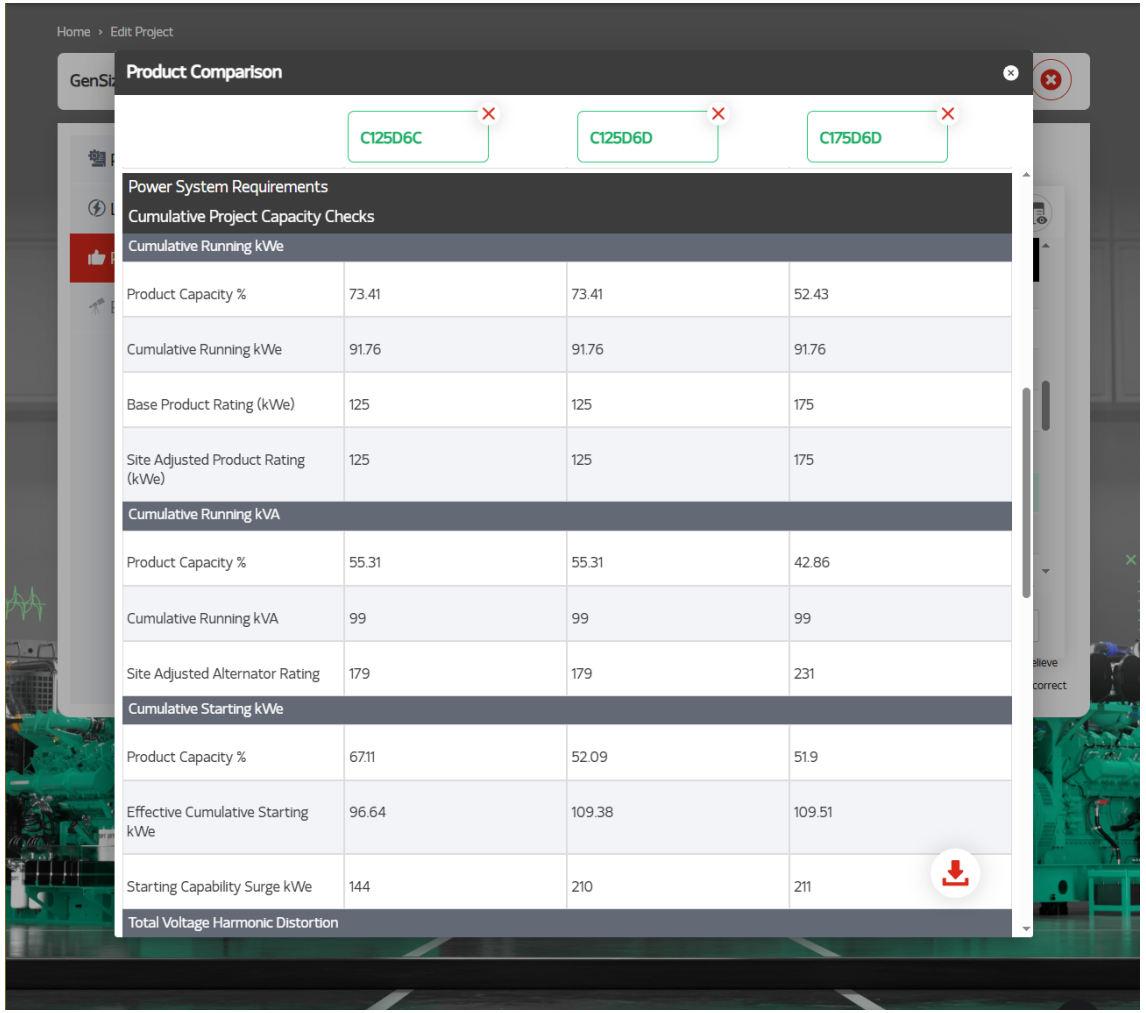
Select up to three configurations to compare (next slide).

Not Recommended Products are in their own list if there is a specific product you are targeting.

Helpful Tips:

Click the **name** of the generator set to see a full detailed breakdown of expected performance.

GenSize Outputs: Compare Products



Details:

Investigate the anticipated performance of up to three configurations in the passing list.

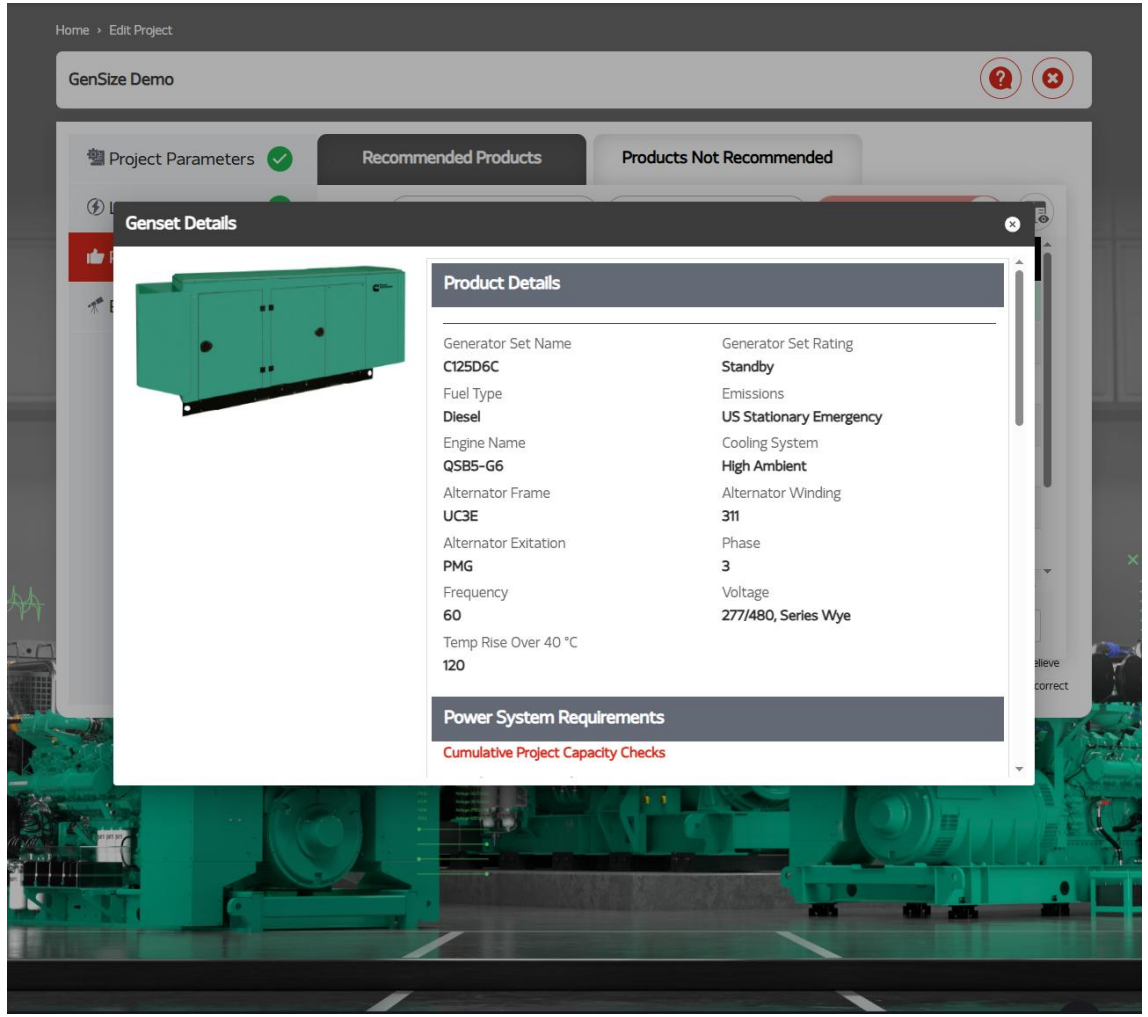
New to GenSize 2.0:

This is all new!

Helpful Tips:

Feeling stuck on making a final selection? Click the download icon to print to PDF for sharing with your team or your Cummins Sales Application Engineer.

GenSize Outputs: Product Details



Details:

Click the **name** of the generator set to see a full detailed breakdown of expected performance.

New to GenSize 2.0:

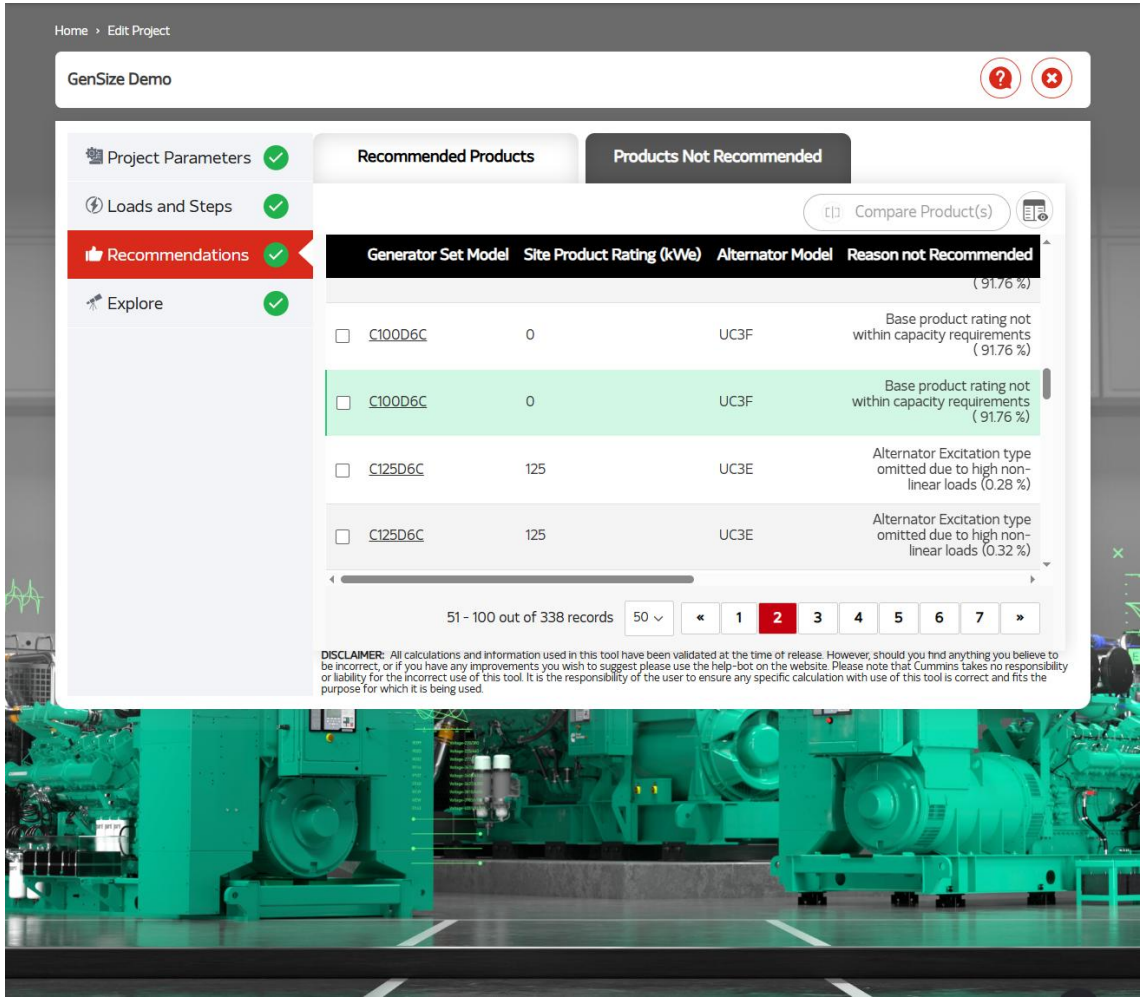
Same information, simplified presentation.

(this was formerly information shown in multiple tabs at the bottom of the screen)

Helpful Tips:

This is the exact same information as the full GenSize Report.

GenSize Outputs: Products NOT Recommended



Details:

All product configurations that did not pass all matchmaking checks, ordered from generally smallest to largest.

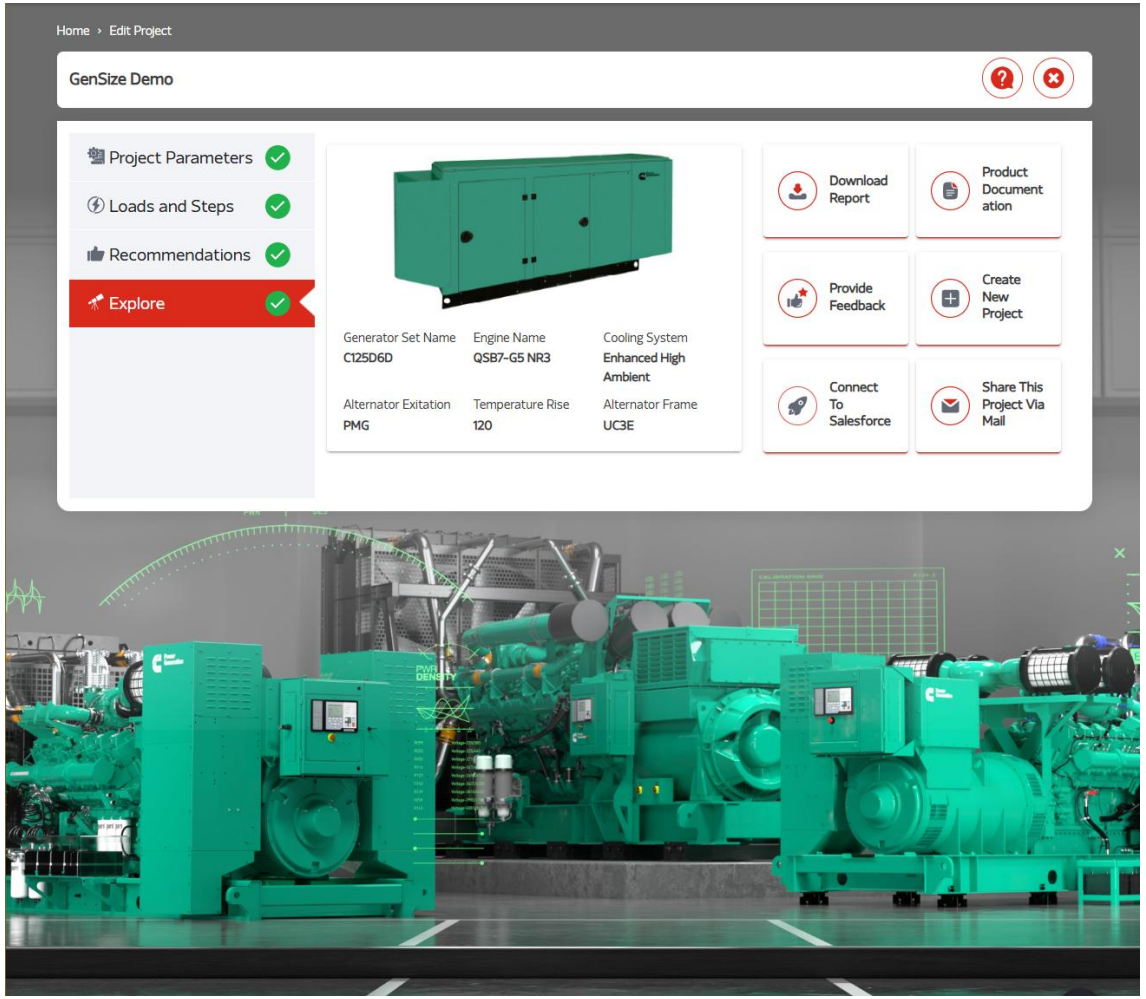
New to GenSize 2.0:

Context and explanations as to why the product was not a match.

Helpful Tips:

Understanding the general matchmaking “sequence of operations” can be helpful if you are really targeting a specific product. (explained in coming section)

GenSize Outputs: Moving Forward with a Product



Details:

Options including downloading the GenSize report, a direct link to the product documentation in the library, and more!

New to GenSize 2.0:

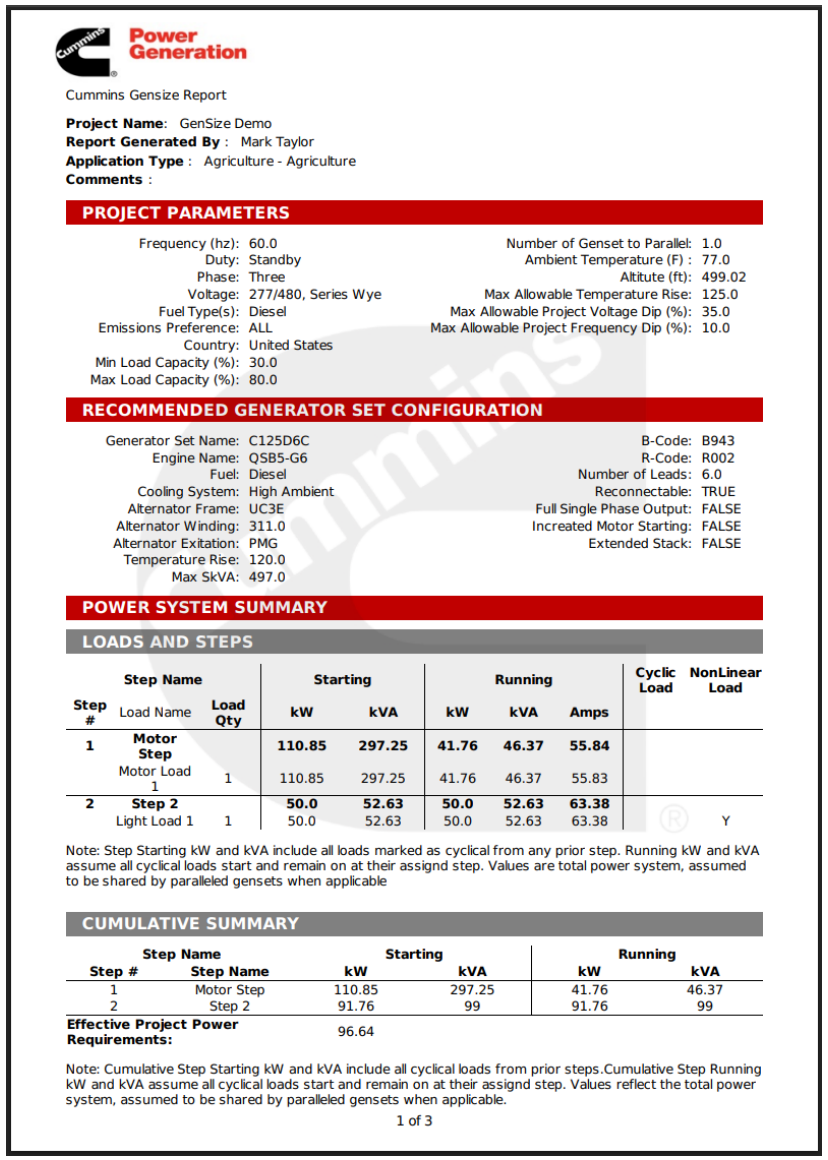
This screen is all new.

GenSize 2.0 saves your results for later reference!

Helpful Tips:

Use the **Share Button** as a shortcut to sharing with others, but this is the same function as sharing from the home screen.

GenSize Outputs: GenSize Report



Power Generation

Cummins Gensize Report

Project Name: GenSize Demo
Report Generated By : Mark Taylor
Application Type : Agriculture - Agriculture
Comments :

PROJECT PARAMETERS

Frequency (hz):	60.0	Number of Genset to Parallel:	1.0
Duty:	Standby	Ambient Temperature (F) :	77.0
Phase:	Three	Altitute (ft):	499.02
Voltage:	277/480, Series Wye	Max Allowable Temperature Rise:	125.0
Fuel Type(s):	Diesel	Max Allowable Project Voltage Dip (%):	35.0
Emissions Preference:	ALL	Max Allowable Project Frequency Dip (%):	10.0
Country:	United States		
Min Load Capacity (%):	30.0		
Max Load Capacity (%):	80.0		

RECOMMENDED GENERATOR SET CONFIGURATION

Generator Set Name:	C125D6C	B-Code:	B943
Engine Name:	QSB5-G6	R-Code:	R002
Fuel:	Diesel	Number of Leads:	6.0
Cooling System:	High Ambient	Reconnectable:	TRUE
Alternator Frame:	UC3E	Full Single Phase Output:	FALSE
Alternator Winding:	311.0	Increated Motor Starting:	FALSE
Alternator Exitation:	PMG	Extended Stack:	FALSE
Temperature Rise:	120.0		
Max SkVA:	497.0		

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

Note: Cumulative Step Starting kW and kVA include all cyclical loads from prior steps.Cumulative Step Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values reflect the total power system, assumed to be shared by paralleled gensets when applicable.

1 of 3

Project Parameters:

A recounting of your initial project input requirements.

Recommended Gen Set Config:

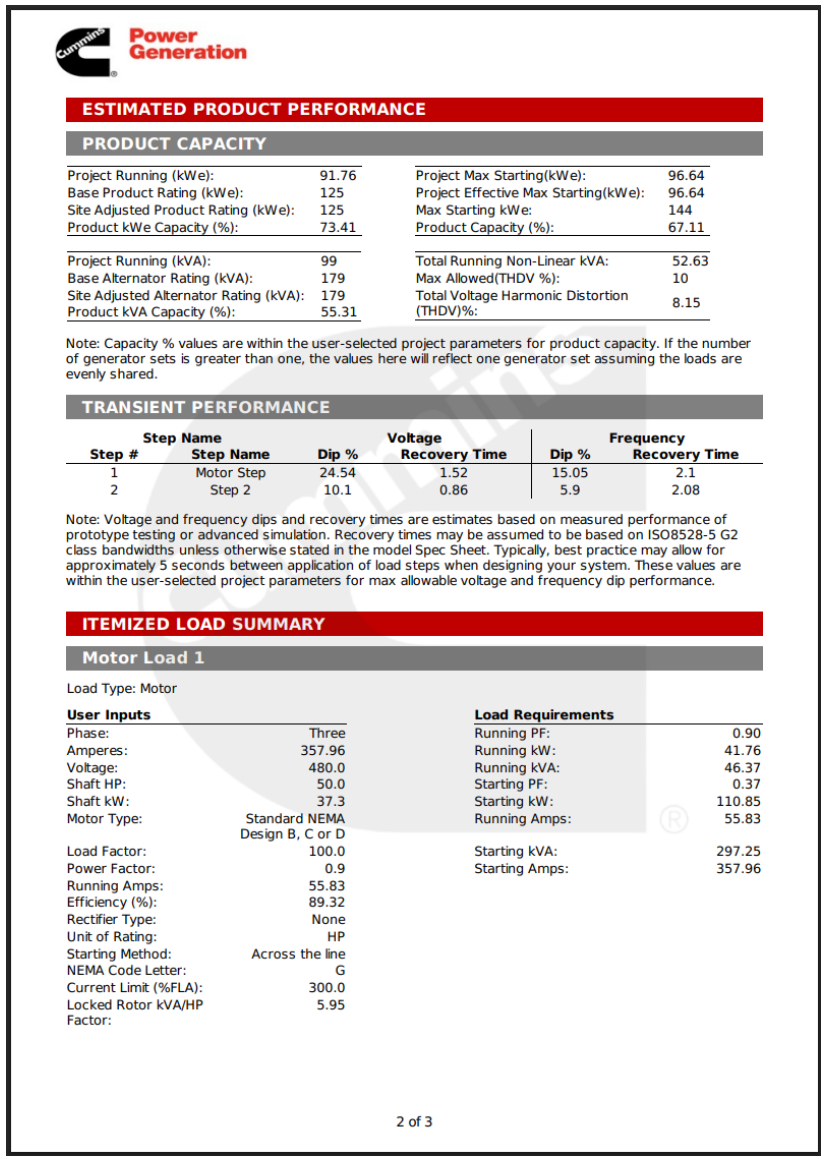
Use this to communicate to Sales to move forward with purchasing guidance.

This report is linked to this configuration of product.

Power System Summary:

A recounting of all the same Power System kW / kVA information that went into product matchmaking.

GenSize Outputs: GenSize Report



Power Generation

ESTIMATED PRODUCT PERFORMANCE

PRODUCT CAPACITY

Project Running (kWe):	91.76	Project Max Starting(kWe):	96.64
Base Product Rating (kWe):	125	Project Effective Max Starting(kWe):	96.64
Site Adjusted Product Rating (kWe):	125	Max Starting kWe:	144
Product kWe Capacity (%):	73.41	Product Capacity (%):	67.11
Project Running (kVA):	99	Total Running Non-Linear kVA:	52.63
Base Alternator Rating (kVA):	179	Max Allowed(THDV %):	10
Site Adjusted Alternator Rating (kVA):	179	Total Voltage Harmonic Distortion (THDV)%:	8.15
Product kVA Capacity (%):	55.31		

Note: Capacity % values are within the user-selected project parameters for product capacity. If the number of generator sets is greater than one, the values here will reflect one generator set assuming the loads are evenly shared.

TRANSIENT PERFORMANCE

	Step Name	Voltage		Frequency	
Step #	Step Name	Dip %	Recovery Time	Dip %	Recovery Time
1	Motor Step	24.54	1.52	15.05	2.1
2	Step 2	10.1	0.86	5.9	2.08

Note: Voltage and frequency dips and recovery times are estimates based on measured performance of prototype testing or advanced simulation. Recovery times may be assumed to be based on ISO8528-5 G2 class bandwidths unless otherwise stated in the model Spec Sheet. Typically, best practice may allow for approximately 5 seconds between application of load steps when designing your system. These values are within the user-selected project parameters for max allowable voltage and frequency dip performance.

ITEMIZED LOAD SUMMARY

Motor Load 1

Load Type: Motor

User Inputs		Load Requirements	
Phase:	Three	Running PF:	0.90
Amperes:	357.96	Running kW:	41.76
Voltage:	480.0	Running kVA:	46.37
Shaft HP:	50.0	Starting PF:	0.37
Shaft kW:	37.3	Starting kW:	110.85
Motor Type:	Standard NEMA Design B, C or D	Running Amps:	55.83
Load Factor:	100.0	Starting kVA:	297.25
Power Factor:	0.9	Starting Amps:	357.96
Running Amps:	55.83		
Efficiency (%):	89.32		
Rectifier Type:	None		
Unit of Rating:	HP		
Starting Method:	Across the line		
NEMA Code Letter:	G		
Current Limit (%FLA):	300.0		
Locked Rotor kVA/HP Factor:	5.95		

2 of 3

Estimated Product Capacities:

Summary of key product matchmaking parameters based on the product and power system.

Estimated Transient Performance:

Voltage and Frequency dips calculated with the Generator set Performance data

Itemized Load Summary:

A full recounting of all load inputs (and outputs) for reference. (Handy if you somehow lose a project file!)

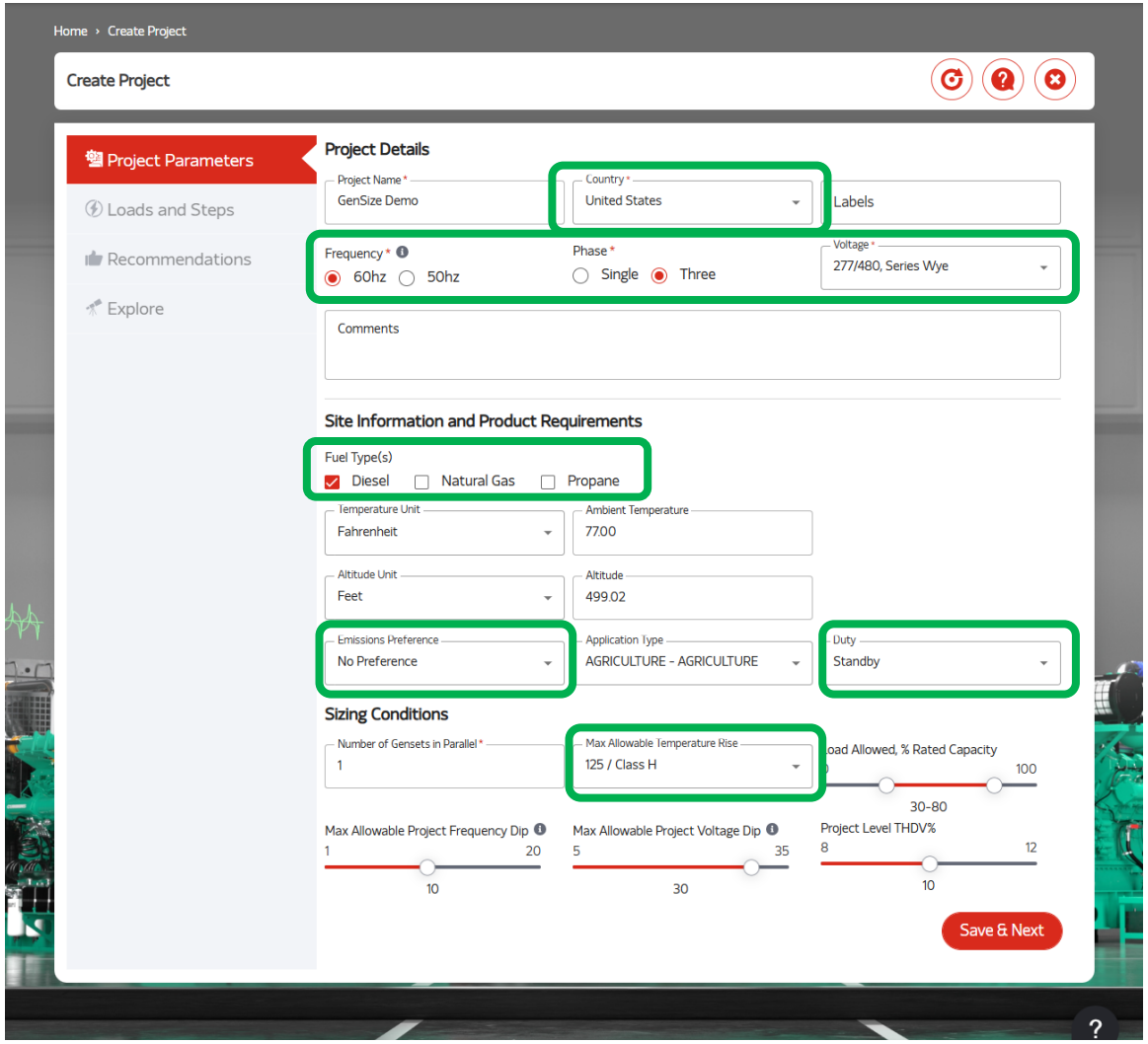
Matchmaking Algorithm: Walkthrough

Recommend smallest Generator Set where its performance passes all phases of matchmaking

In general order, GenSize matchmaking will:

- Align to products that match your Project Parameters
- Check Overall Product Capability (including altitude and temperature derates)
- Evaluate Product Performance against Steps (including transient)
- Estimate Project Total Harmonic Distortion

Matchmaking: Product Parameters



- Directly filter where the product aligns with these Project Parameters:
  - Country
  - Fuel Type
  - Duty Rating
  - Frequency
  - Voltage
  - Phase
  - Emissions Certification
- Filter out all alternator temp rises *greater than* selected “Max Allowable Temperature Rise”
- All configurations that do not pass are **not** considered in matchmaking at all.

Matchmaking: Overall Generator Set Capacities

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

ESTIMATED PRODUCT PERFORMANCE

PRODUCT CAPACITY

Project Running (kWe):	91.76	Project Max Starting(kWe):	96.64
Base Product Rating (kWe):	125	Project Effective Max Starting(kWe):	96.64
Site Adjusted Product Rating (kWe):	125	Max Starting kWe:	144
Product kWe Capacity (%):	73.41	Product Capacity (%):	67.11
Project Running (kVA):	99	Total Running Non-Linear kVA:	52.63
Base Alternator Rating (kVA):	179	Max Allowed(THDV %):	10
Site Adjusted Alternator Rating (kVA):	179	Total Voltage Harmonic Distortion (THDV)%:	8.15
Product kVA Capacity (%):	55.31		

Note: Capacity % values are within the user-selected project parameters for product capacity. If the number of generator sets is greater than one, the values here will reflect one generator set assuming the loads are evenly shared.

- Remove from consideration the “too small” products:
  - Where **Base Product Rating** is insufficient to meet lower band of “% Rated Capacity” of Project Running kWe
- Generator Set **Site-Adjusted Rating** within “% Rated Capacity” of Project Running kWe
  - Altitude and Temperature derates are included here

Cummins

Matchmaking: Overall Generator Set Capacities

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

ESTIMATED PRODUCT PERFORMANCE

PRODUCT CAPACITY

Project Running (kWe):	91.76
Base Product Rating (kWe):	125
Site Adjusted Product Rating (kWe):	125
Product kWe Capacity (%):	73.41

Project Max Starting(kWe):	110.85
Project Effective Max Starting(kWe):	96.64
Max Starting kWe:	144
Product Capacity (%):	67.11

Project Running (kVA):	99
Base Alternator Rating (kVA):	179
Site Adjusted Alternator Rating (kVA):	179
Product kVA Capacity (%):	55.31

Total Running Non-Linear kVA:	52.63
Max Allowed(THDV %):	10
Total Voltage Harmonic Distortion (THDV)%:	8.15

Note: Capacity % values are within the user-selected project parameters for product capacity. If the number of generator sets is greater than one, the values here will reflect one generator set assuming the loads are evenly shared.

- Find **Max Cumulative kWe** as the largest kWe that occurs anywhere in the project.
  - Where applicable, adjust value to an **“Effective Max kWe.”**
- For reference, this compares the “**Maximum Surge Power**” which can be confirmed in Cummins Prototype Test Summary (PTS) Datasheet.
- Further Reading: Cummins White Paper “Specifying & Validating Motor Starting Capability”

Cummins

Matchmaking: Alternator Capacity

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

ESTIMATED PRODUCT PERFORMANCE

PRODUCT CAPACITY

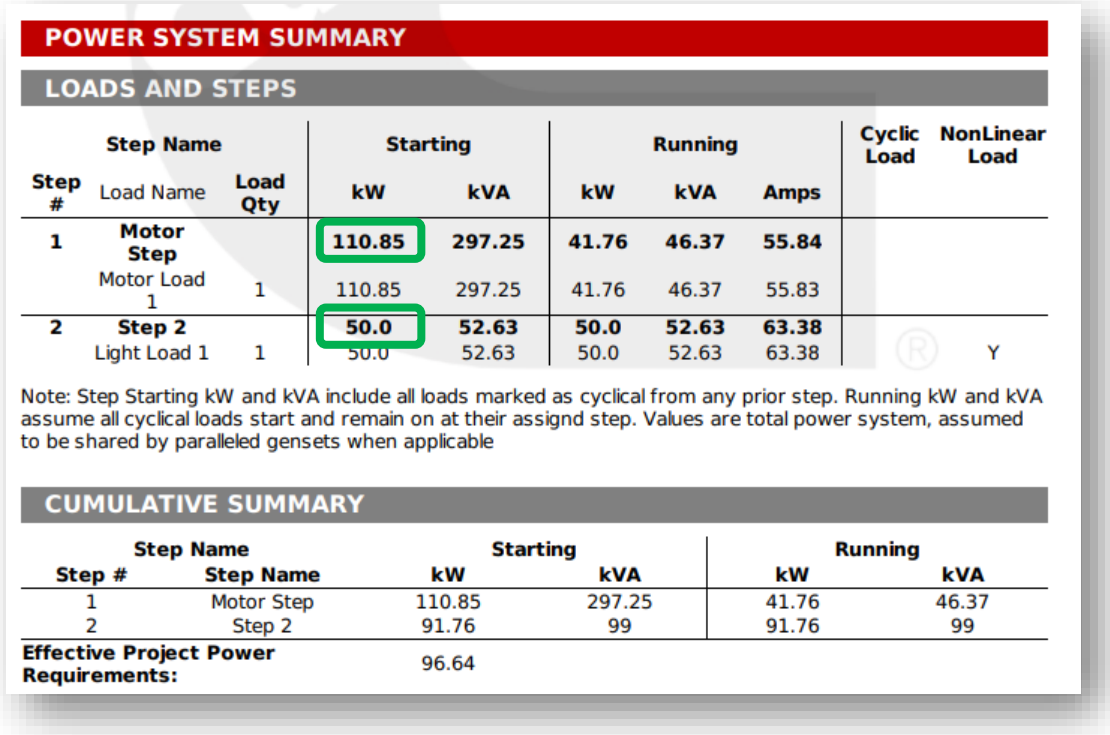
Project Running (kWe):	91.76	Project Max Starting(kWe):	96.64
Base Product Rating (kWe):	125	Project Effective Max Starting(kWe):	96.64
Site Adjusted Product Rating (kWe):	125	Max Starting kWe:	144
Product kWe Capacity (%):	73.41	Product Capacity (%):	67.11
Project Running (kVA):	99	Total Running Non-Linear kVA:	52.63
Base Alternator Rating (kVA):	179	Max Allowed(THDV %):	10
Site Adjusted Alternator Rating (kVA):	179	Total Voltage Harmonic Distortion (THDV)%:	8.15
Product kVA Capacity (%):	55.31		

Note: Capacity % values are within the user-selected project parameters for product capacity. If the number of generator sets is greater than one, the values here will reflect one generator set assuming the loads are evenly shared.

- Derate the **Alternator Rated kVA** for altitude and temperature, when applicable.
- Compare against the **Project Running kVA.**
- For reference, this data aligns to the Cummins Alternator Data Sheet (ADS) while adhering to application guidelines from Stamford and AvK for derates.

Cummins

Matchmaking: Load Step Capability



POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

- Identify the largest Starting kW among all steps
- Compare against product's maximum load step capability.
- This step not displayed in report as it is ultimately redundant with transient analysis.
  - This step is displayed in products not matching, if applicable.

Matchmaking: Alternator LR-kVA Capability

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

- Identify the largest Starting kVA among all steps
- Compare against the alternators' Locked Rotor kVA (LR-kVA) curves to derive anticipated dip %.
- This step not displayed in report as it is ultimately redundant with Generator Set transient analysis.
  - This step is displayed in products not matching, if applicable.

Matchmaking: Transient Step Capability

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

TRANSIENT PERFORMANCE

Step #	Step Name	Voltage Dip %	Voltage Recovery Time	Frequency Dip %	Frequency Recovery Time
1	Motor Step	24.54	1.52	15.05	2.1
2	Step 2	10.1	0.86	5.9	2.08

Note: Voltage and frequency dips and recovery times are estimates based on measured performance of prototype testing or advanced simulation. Recovery times may be assumed to be based on ISO8528-5 G2 class bandwidths unless otherwise stated in the model Spec Sheet. Typically, best practice may allow for approximately 5 seconds between application of load steps when designing your system. These values are within the user-selected project parameters for max allowable voltage and frequency dip performance.

- Evaluate the anticipated Voltage and Frequency Dip Percentage against all Starting kW among all steps.
- Ensure the Dip % values are within Project Parameters.

Matchmaking: Total Harmonic Distortion

POWER SYSTEM SUMMARY

LOADS AND STEPS

Step #	Step Name / Load Name	Load Qty	Starting kW	Starting kVA	Running kW	Running kVA	Running Amps	Cyclic Load	NonLinear Load
1	**Motor Step**		**110.85**	**297.25**	**41.76**	**46.37**	**55.84**		
	Motor Load 1	1	110.85	297.25	41.76	46.37	55.83		
2	**Step 2**		**50.0**	**52.63**	**50.0**	**52.63**	**63.38**		
	Light Load 1	1	50.0	52.63	50.0	52.63	63.38		Y

Note: Step Starting kW and kVA include all loads marked as cyclical from any prior step. Running kW and kVA assume all cyclical loads start and remain on at their assignd step. Values are total power system, assumed to be shared by paralleled gensets when applicable

CUMULATIVE SUMMARY

Step #	Step Name	Starting kW	Starting kVA	Running kW	Running kVA
1	Motor Step	110.85	297.25	41.76	46.37
2	Step 2	91.76	99	91.76	99
Effective Project Power Requirements:		96.64			

ESTIMATED PRODUCT PERFORMANCE

PRODUCT CAPACITY

Project Running (kWe):	91.76
Base Product Rating (kWe):	125
Site Adjusted Product Rating (kWe):	125
Product kWe Capacity (%):	73.41

Project Max Starting(kWe):	96.64
Project Effective Max Starting(kWe):	96.64
Max Starting kWe:	144
Product Capacity (%):	67.11

Project Running (kVA):	99
Base Alternator Rating (kVA):	179
Site Adjusted Alternator Rating (kVA):	179
Product kVA Capacity (%):	55.31

Total Running Non-Linear kVA:	52.63
Max Allowed(THDV %):	10
Total Voltage Harmonic Distortion (THDV)%:	8.15

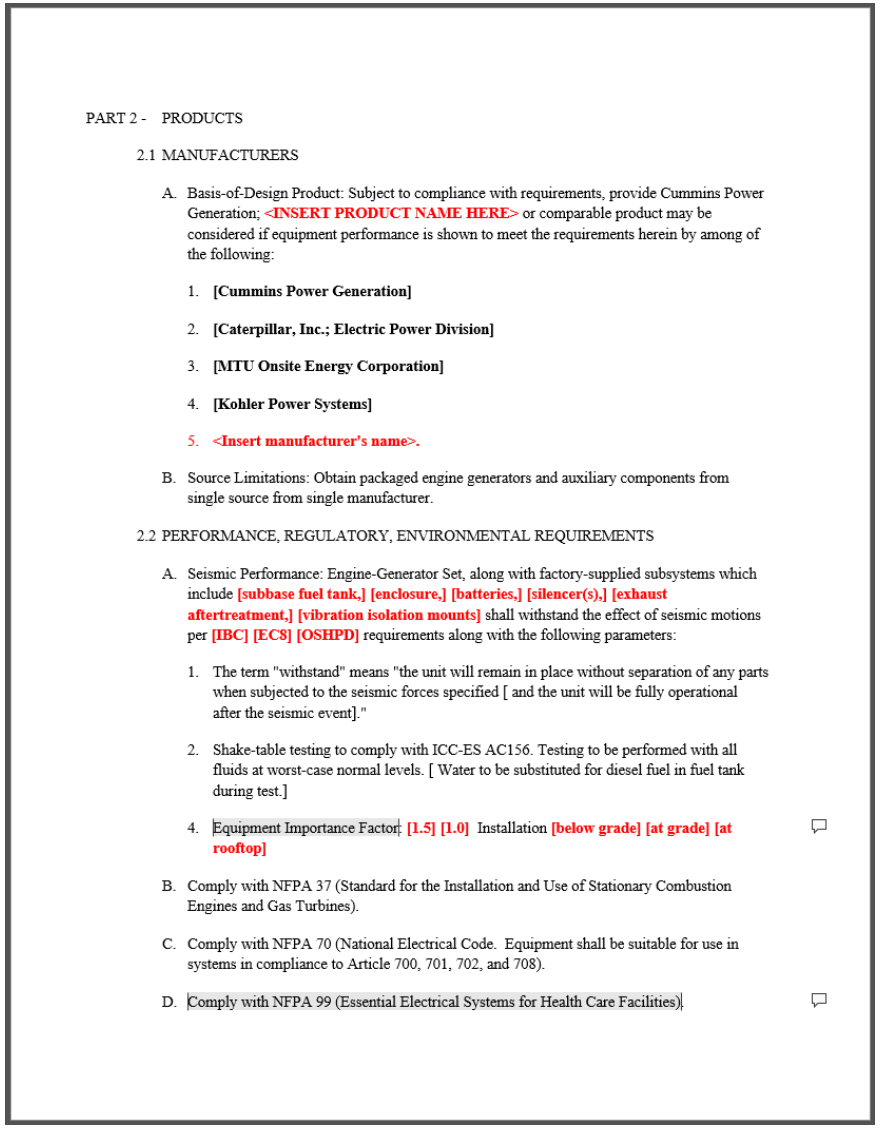
Note: Capacity % values are within the user-selected project parameters for product capacity. If the number of generator sets is greater than one, the values here will reflect one generator set assuming the loads are evenly shared.

- Sum all loads that contain harmonics.
- Evaluate against the alternator base kVA rating & sub transient reactance**.**
- For reference, the data used for the alternator aligns to the Cummins Alternator Data Sheet (ADS)

Cummins

What's Next for GenSize?

- Automated Product Specification with a revised spec template
- Make it easier to connect to a Cummins Salesperson
- Electric Vehicle Charger as a new Load Type
- Translations to other Languages (e.g. Spanish, French, Portuguese, Simplified Chinese, etc)



PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Cummins Power Generation; **<INSERT PRODUCT NAME HERE>** or comparable product may be considered if equipment performance is shown to meet the requirements herein by among of the following:

1. **[Cummins Power Generation]**
2. **[Caterpillar, Inc.; Electric Power Division]**
3. **[MTU Onsite Energy Corporation]**
4. **[Kohler Power Systems]**
5. **<Insert manufacturer's name>.**

B. Source Limitations: Obtain packaged engine generators and auxiliary components from single source from single manufacturer.

2.2 PERFORMANCE, REGULATORY, ENVIRONMENTAL REQUIREMENTS

A. Seismic Performance: Engine-Generator Set, along with factory-supplied subsystems which include **[subbase fuel tank,] [enclosure,] [batteries,] [silencer(s),] [exhaust aftertreatment,] [vibration isolation mounts]** shall withstand the effect of seismic motions per **[IBC] [EC8] [OSHPD]** requirements along with the following parameters:

1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified [and the unit will be fully operational after the seismic event]."
2. Shake-table testing to comply with ICC-ES AC156. Testing to be performed with all fluids at worst-case normal levels. [Water to be substituted for diesel fuel in fuel tank during test.]
4. Equipment Importance Factor: **[1.5] [1.0]** Installation **[below grade] [at grade] [at rooftop]**

B. Comply with NFPA 37 (Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines).

C. Comply with NFPA 70 (National Electrical Code. Equipment shall be suitable for use in systems in compliance to Article 700, 701, 702, and 708).

D. Comply with NFPA 99 (Essential Electrical Systems for Health Care Facilities).

Q&A

Please type your questions, comments and feedback in the **Zoom Q&A** window.

Copy of the presentation, and link to the recording will be provided in a follow up email within a 1-2 business days.

Please complete the brief survey upon exiting the webinar!

Cummins instructors

Regine Banzuela
Sales Platform User Experience

Mark Taylor
Product Application Engineer

Sarah Klimczak
Sales Platform User Experience

Luis Fernando Garcia
Sales Application Engineer

Following This Event…

First Email (ASAP)

1 Professional Development Hour (PDH) Certificate

Second Email (3-5 Business Days)

Video Recording

Copy of slide deck

Please engage with our exit survey!

Power Suite

Power Suite is where to find past PowerHours, Application Manuals, Sizing Tools, Data Sheets, and more!

Please contact us if you have any questions related to the PowerHour webinar (PowerGenChannel@cummins.com)

Cummins White Papers

Click here to subscribe!

Brightest Bulbs Podcast

Click here to hear about the latest innovations in energy and power!

Cummins On-Demand Webinars

Click here for our full webinar library!

Click here to subscribe!

Upcoming Live PowerHour:
Micro Grids – Date TBD


Cummins