victron energy
BLUE POWER

How to achieve Energy Independence?

- The solution is powered by 50 years of know-how, delivering a wide variety of cutting-edge power solutions
- Our radical focus on R&D results in highly relevant features for various markets and specialist niches, providing peace of mind
- Our unique software offers full remote management, monitoring and unparalleled customization capabilities
- Founded and still run by a family of engineers, we are renowned for our world-class technical support and fast, fair repairs worldwide

Reliable power since 1975

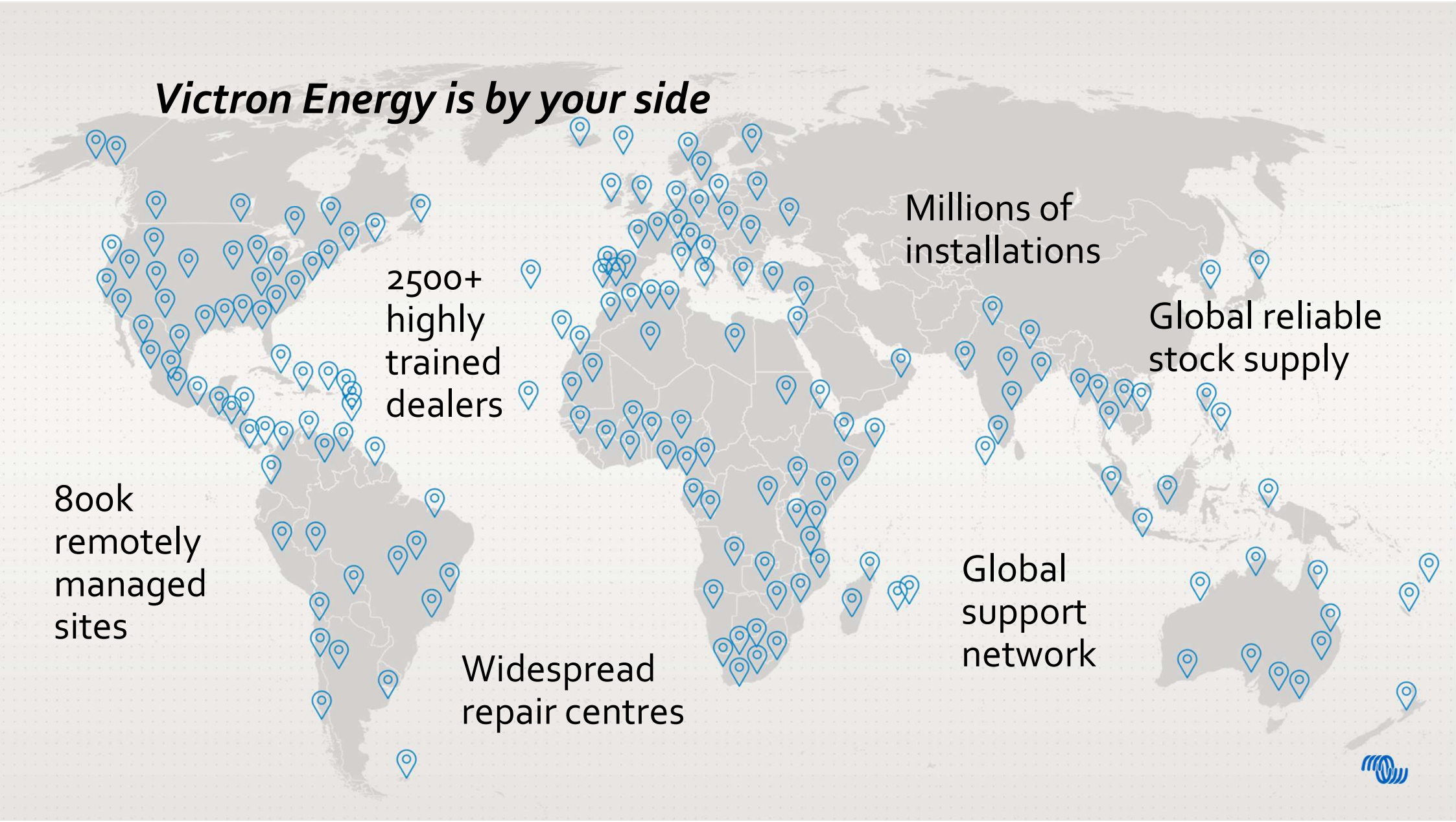
€500M SALES

Designed in **the Netherlands**

Energy. Anytime. Anywhere.

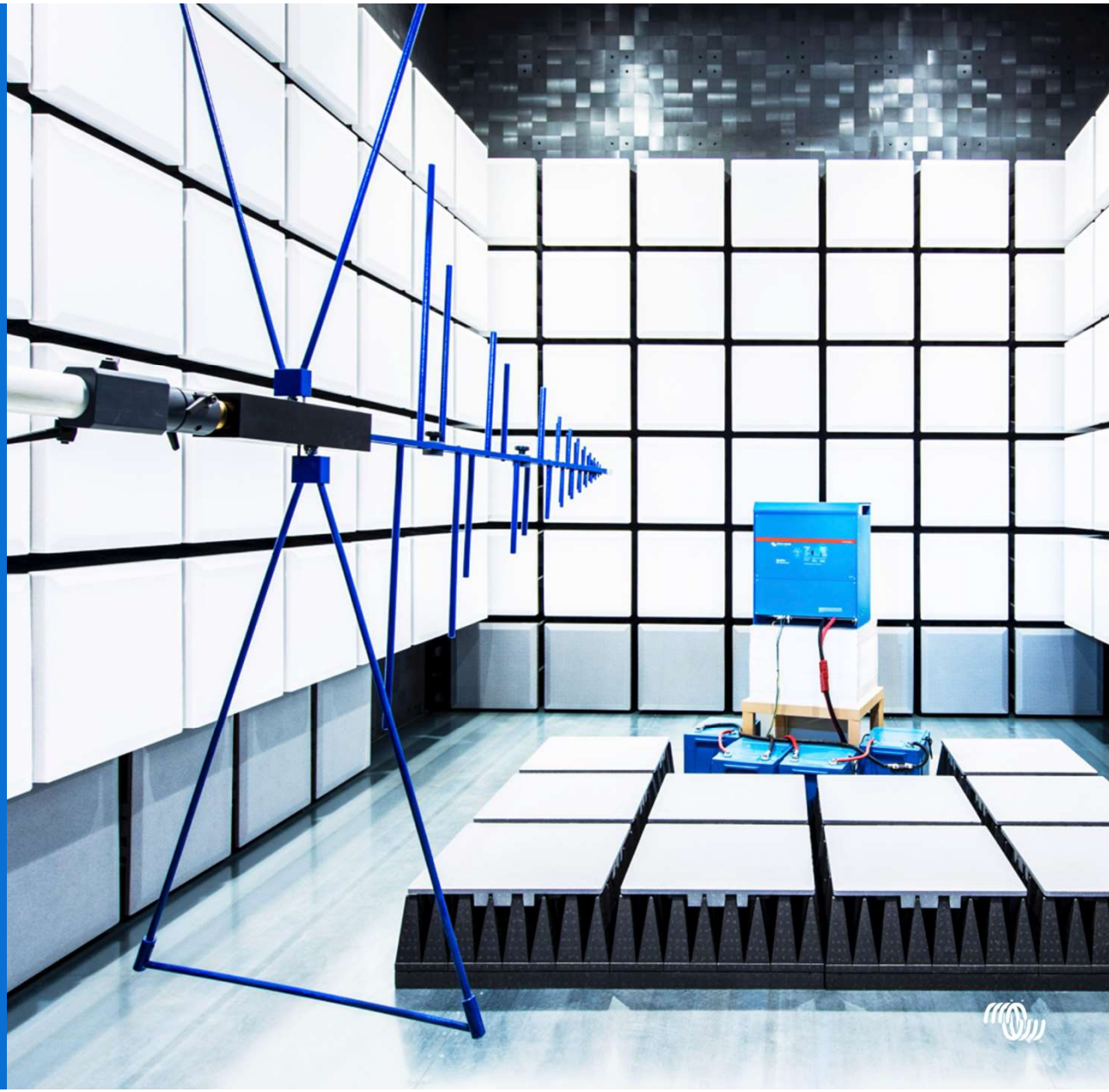
Modular and flexible building blocks

We help our customers achieve energy independence and/or commercial profitability with our robust, modular ecosystem, including inverter/chargers, solar chargers, remote management software and advanced integration options.


Victron Energy is by your side
Millions of installations
2500+ highly trained dealers
Global reliable stock supply
800k remotely managed sites
Global support network
Widespread repair centres

Always innovating

1995	Atlas: inverter/charger in one
2000	Three phase & parallel
2000	PowerAssist
2011	BlueSolar MPPT
2013	ColorControl GX & VRM launch
2014	Lithium batteries
2015	Bluetooth Smart & VictronConnect launch
2019	SmartShunt, Cerbo GX, MFD integration
2020	MultiPlus-II, Venus OS and complete platforms: VictronConnect & VRM
2024	Orion XS, Dynamic ESS with Peak-shaving



The modular ecosystem that solves any power challenge

Our robust and scalable ecosystem of flexible building blocks is engineered for maximum performance with the greatest efficiency. Powered by the latest features, they work seamlessly together and can be managed from anywhere in the world.

Flexible building blocks to master any challenge

Continuous improvements with new features

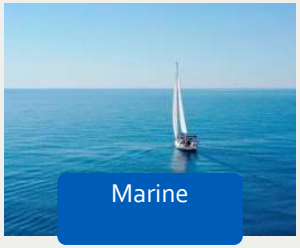
The largest range ensures an ideal fit for any setup

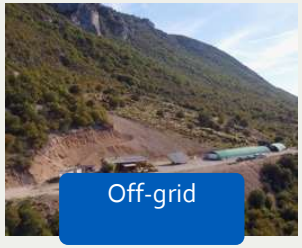
Professional-grade build quality

Dedicated solutions

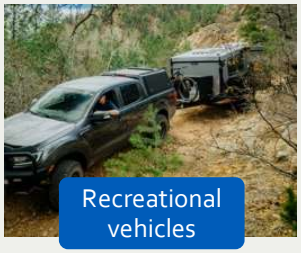
With decades of practical experience in each field, our solutions offer highly relevant features for even the most demanding and specialist use-cases.

Worldwide market leader for yachting power systems.





Worldwide market leader in ambulances.



Uninterrupted business. Lower total-cost-of-ownership.

Our family-run business is globally recognised for its unwavering dedication and commitment to delivering cutting-edge and extremely resilient solutions.

Radical focus on innovation
We consistently deliver new, highly relevant solutions and keep our products up-to-date with the latest features.

Unmatched reliability
Decades of experience and customer feedback ensure unmatched reliability in even the harshest climates.

Cost-effective solutions
The unique combination of durability, advanced monitoring and remote support lowers total cost-of-ownership.

Industry-leading monitoring & remote management

Our VictronConnect app and VRM – Remote management portal deliver a game-changing experience, whether for small systems or entire fleets, operated locally or fully managed remotely.

VictronConnect app

VRM - Remote Management portal

1 mln users

"VRM is a total game changer,
it significantly reduces expensive on-site visits"

Imagine it. Build it. Integrate it.

Develop highly sophisticated systems and seamlessly integrate a wide variety of supported hardware and software through our open architecture.

Software integrations

- MFD app
- **Node Red**
- NMEA2000
- SignalK
- Garmin RV
- RV-C
- **Dynamic ESS**
- **Modbus**
- **CAN bus**
- **APIs**

Third party hardware integrations

- Supported lithium batteries
- AC-PV manufacturers
- Digital generator control with FisherPanda, ComAp, DSE, Deif
- WakeSpeed alternator integration

Unlock commercial profitability with customisations

Our cutting-edge customisation and integration capabilities provide substantial business benefits and offer significant cost savings.

VENUS OS

with Node-RED built-in

- Create advanced automation flows based on system data, connected devices, sensors, APIs and online services
- 'Low-code' programming for event-driven applications
- Save significant grid, fuel and maintenance costs

"My competitive edge has significantly improved thanks to their flexible and open software"
Rune Eilertsen, HGSystem ApS

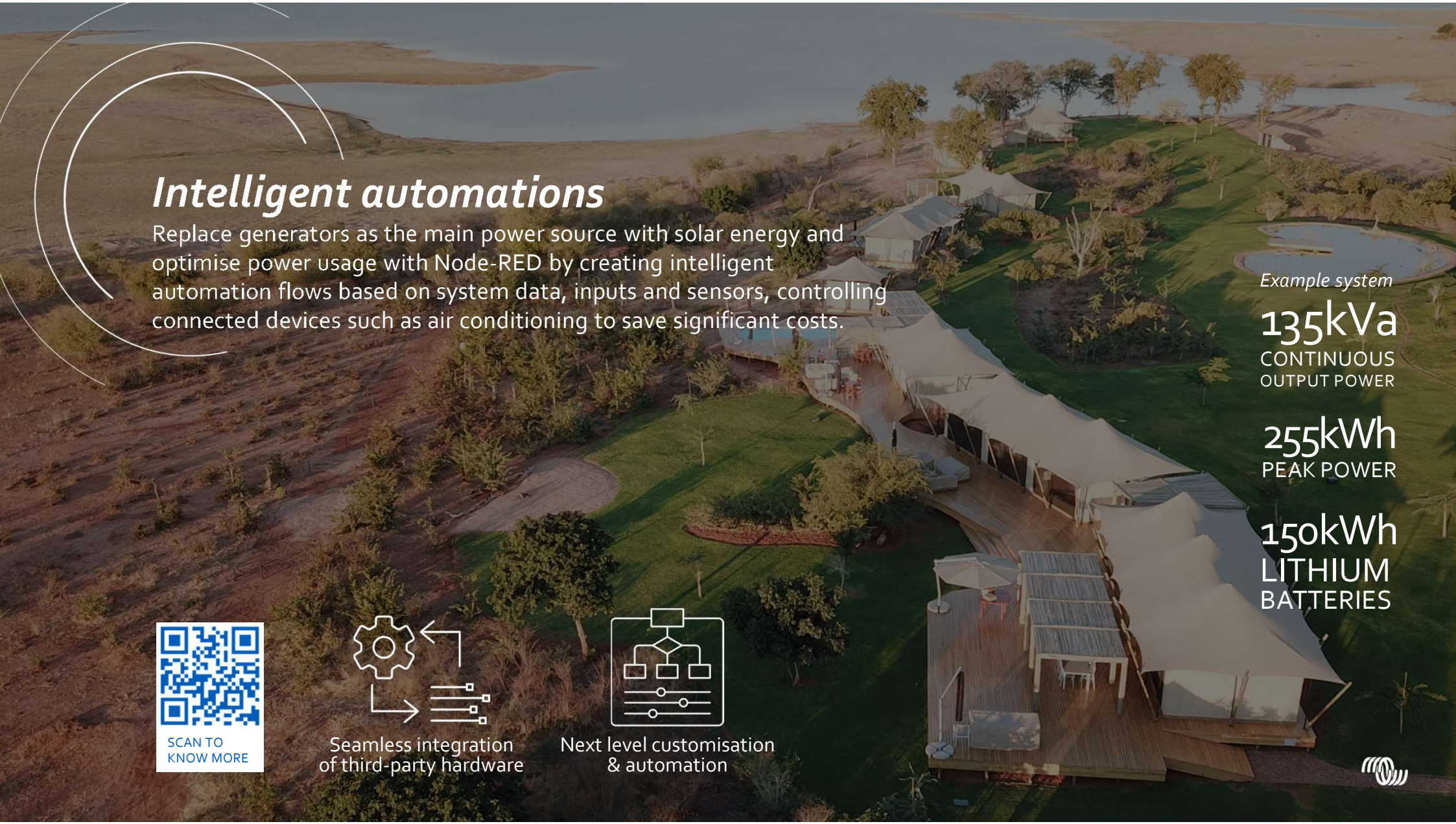
Peak shaving

Significantly reduce utility connection costs by using battery power to shave off high-power peak loads and avoid paying peak rates for incidental peak usage. Peak shaving also ensures business continuity in areas where the grid can't meet demand.

SCAN TO KNOW MORE

Peakshaving high-power loads

Avoid paying peak-rates for incidental peak usage


Intelligent automations
Replace generators as the main power source with solar energy and optimise power usage with Node-RED by creating intelligent automation flows based on system data, inputs and sensors, controlling connected devices such as air conditioning to save significant costs.
Example system
135kVa
CONTINUOUS
OUTPUT POWER
255kWh
PEAK POWER
150kWh
LITHIUM
BATTERIES
SCAN TO
KNOW MORE
Seamless integration
of third-party hardware
Next level customisation
& automation

Fuel reductions

Instantly save up to 80% on generator fuel costs with our hybrid generator concept. Efficiently manage entire fleets remotely and provide proactive maintenance. Calculate your savings with our VRM generator report.

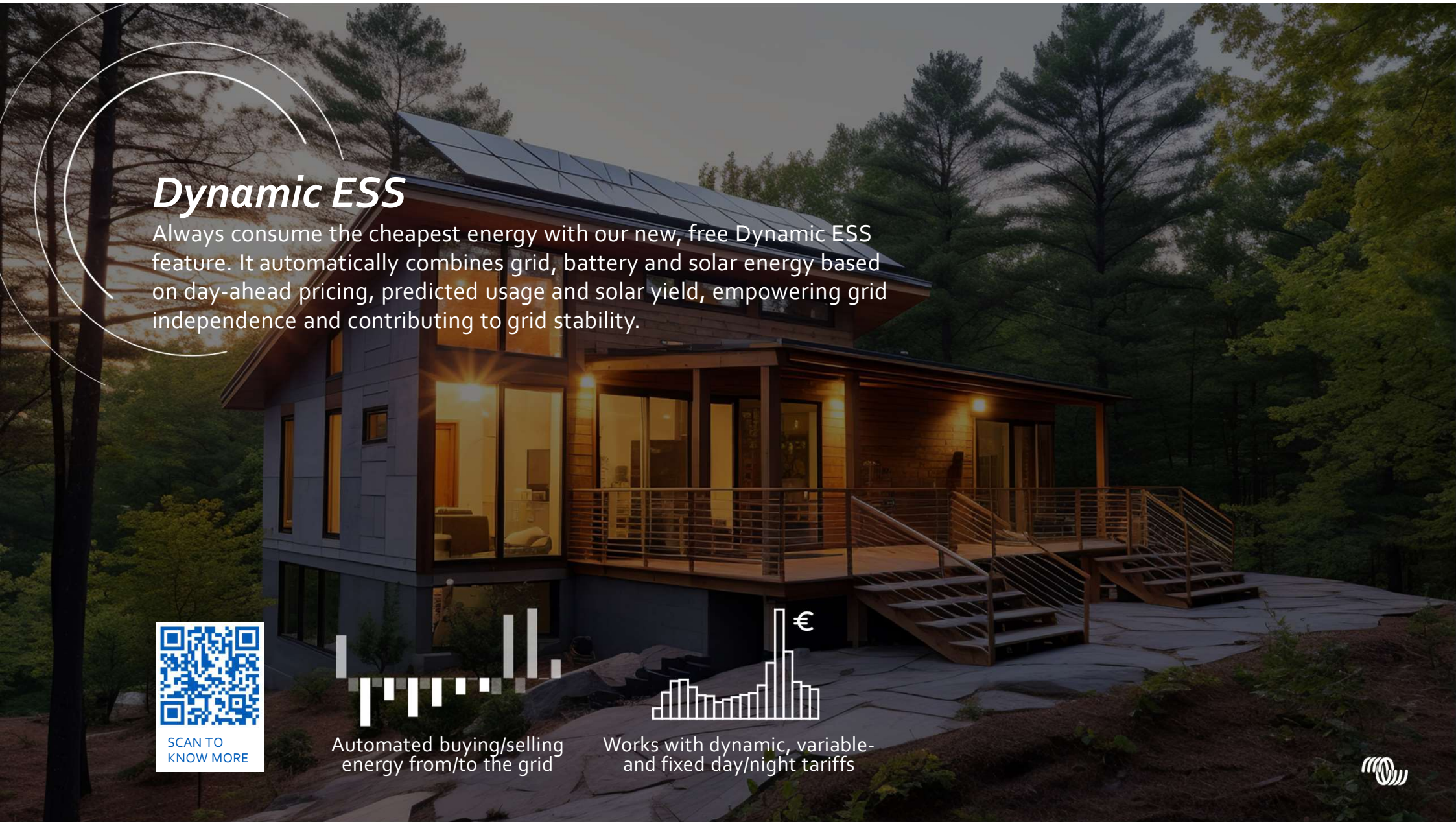
"Reliability means profitability"

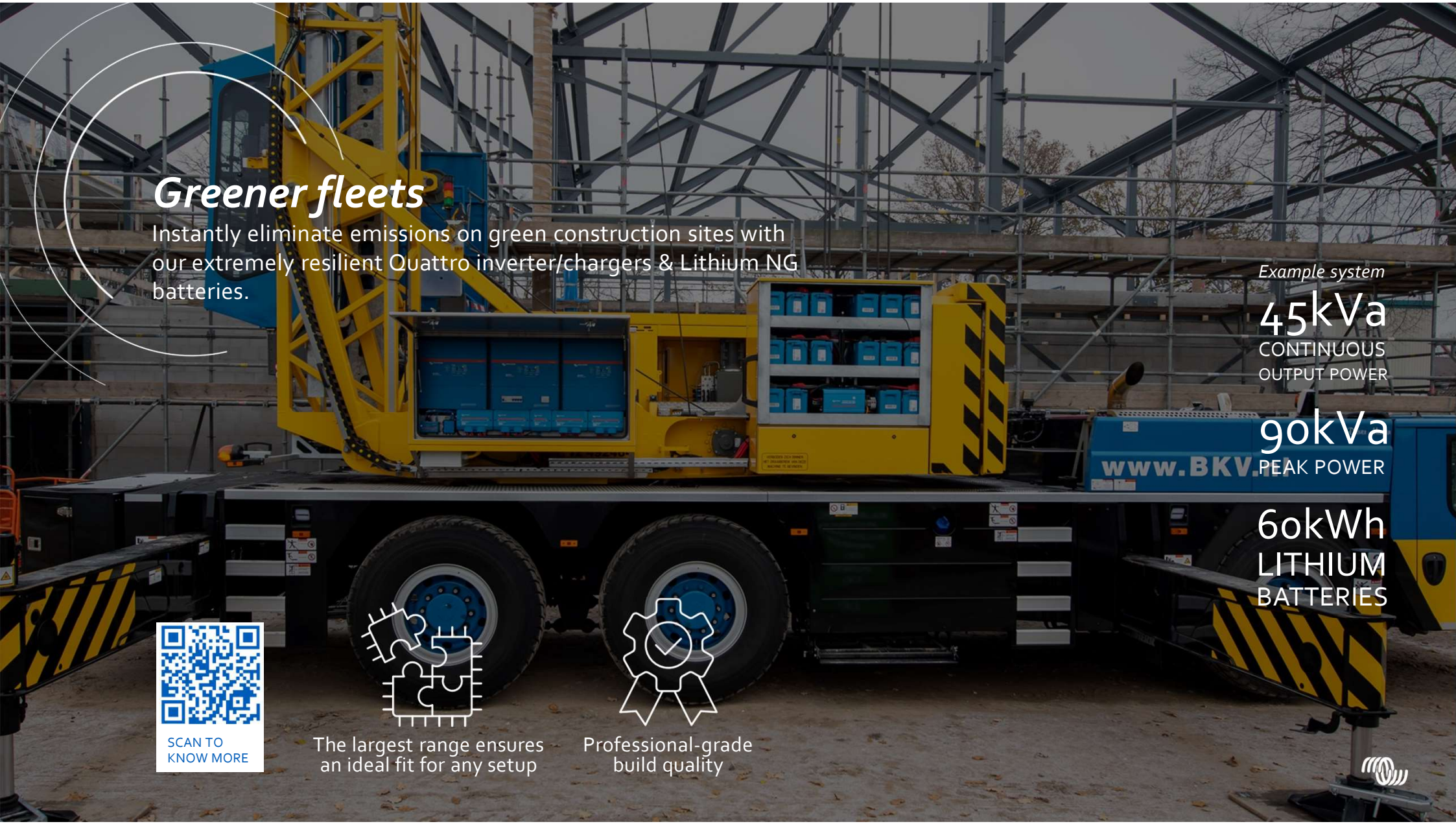
Andy Perry, co-founder of Power Saving Solutions UK

SCAN TO KNOW MORE

Most powerful monitoring solution on the planet

Intelligent ecosystem actively optimises performance


Dynamic ESS
Always consume the cheapest energy with our new, free Dynamic ESS feature. It automatically combines grid, battery and solar energy based on day-ahead pricing, predicted usage and solar yield, empowering grid independence and contributing to grid stability.
SCAN TO KNOW MORE
Automated buying/selling energy from/to the grid
€
Works with dynamic, variable- and fixed day/night tariffs



Greener fleets

Instantly eliminate emissions on green construction sites with our extremely resilient Quattro inverter/chargers & Lithium NG batteries.

Example system

45kVa
CONTINUOUS OUTPUT POWER

90kVa
PEAK POWER

60kWh
LITHIUM BATTERIES

SCAN TO KNOW MORE

The largest range ensures an ideal fit for any setup

Professional-grade build quality

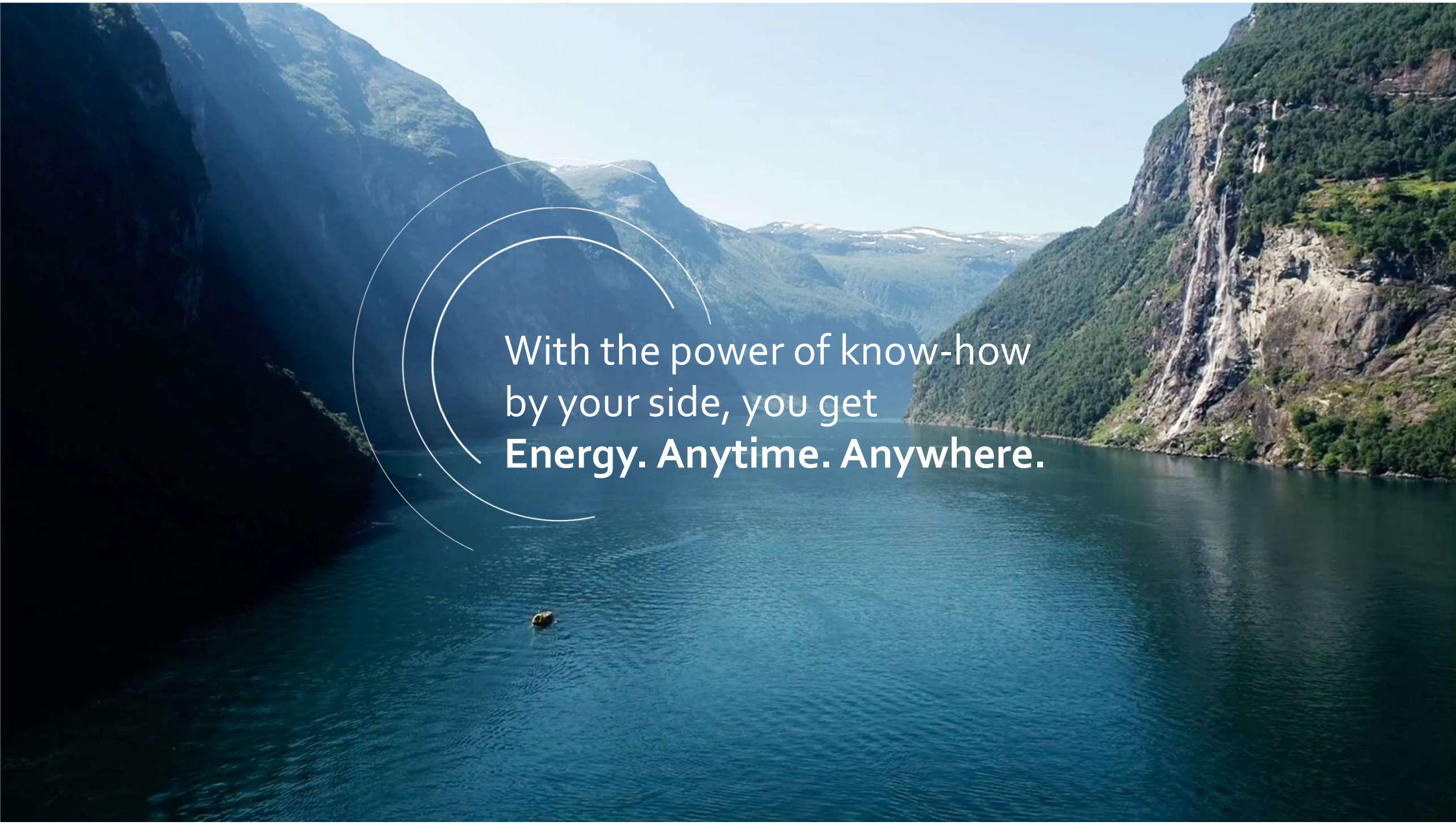
More business to you, if your systems turn blue

Our company was built on positive word-of-mouth. Partnering with Victron Energy lets you leverage top-tier tech and support for optimal performance and satisfaction.

Doing business with Victron Energy leads to:

- Satisfied customers thanks to robust and customisable products
- Remote (fleet) management enabling perfect after-sales service
- Satisfied customers becoming loyal ambassadors
- Returning customers thanks to upgradable, scalable solutions
- Ease of doing business thanks to a streamlined ordering process

Durability + Remote support + Advanced customisation = Lower total cost-of-ownership


With the power of know-how
by your side, you get
Energy. Anytime. Anywhere.

Dynamic ESS

Who is Dynamic ESS For?

For those interested in:

- Taking Control of their own Energy
- Ensuring Uninterrupted Power Supply for Critical Loads
- Energy Trading
- Lowering Grid energy costs
- Contributing to Grid Balancing Efforts
- ✓ Not only for use in Europe!

***Differences** between ESS and Dynamic ESS*

The **ESS** stores surplus (PV) energy for later usage during the day or night.

- The goal is to minimize grid usage regardless of energy tariff fluctuations.

Dynamic ESS aims for optimal usage of energy considering financial factors.

- The battery may be charged from the grid with the lowest tariff and
- Discharged to the load when the grid tariff is higher

*For latest: see Manual

Dynamic ESS Use Cases

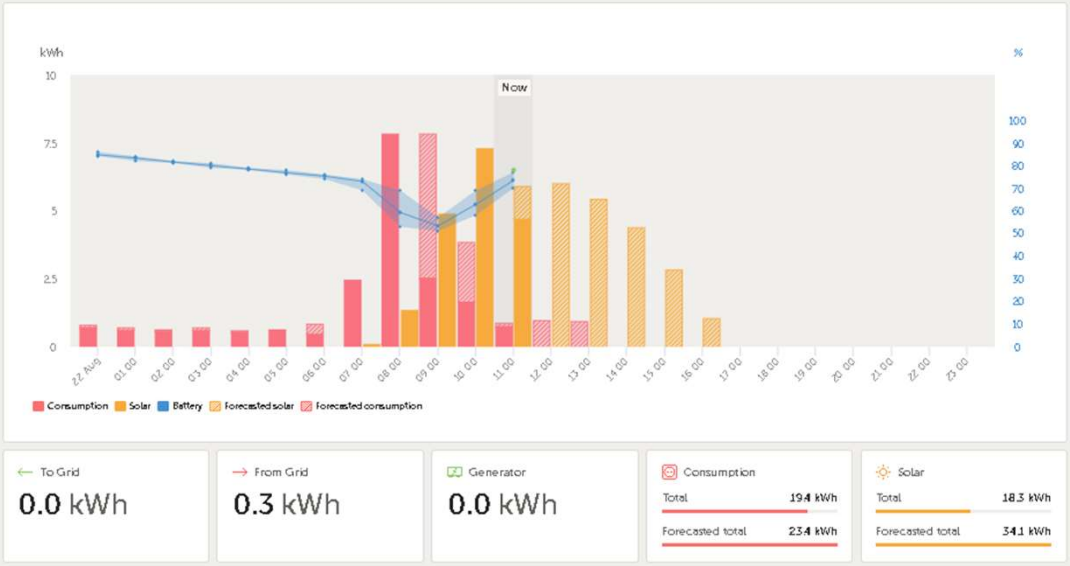
Two use cases:

- Customers in Europe with day-ahead prices
- Fixed Tariffs periods: Including day/night/weekday/weekend tariffs

Dynamic ESS logic explained

This information sets the system capacity and is used by the algorithm

- First getting hold of costs/resources:
- kWh price
- Energy providers fee
- Cycle cost of the battery
- Load profile of the system (forecast)
- Solar (forecast)
- Installation criteria



Operating Mode

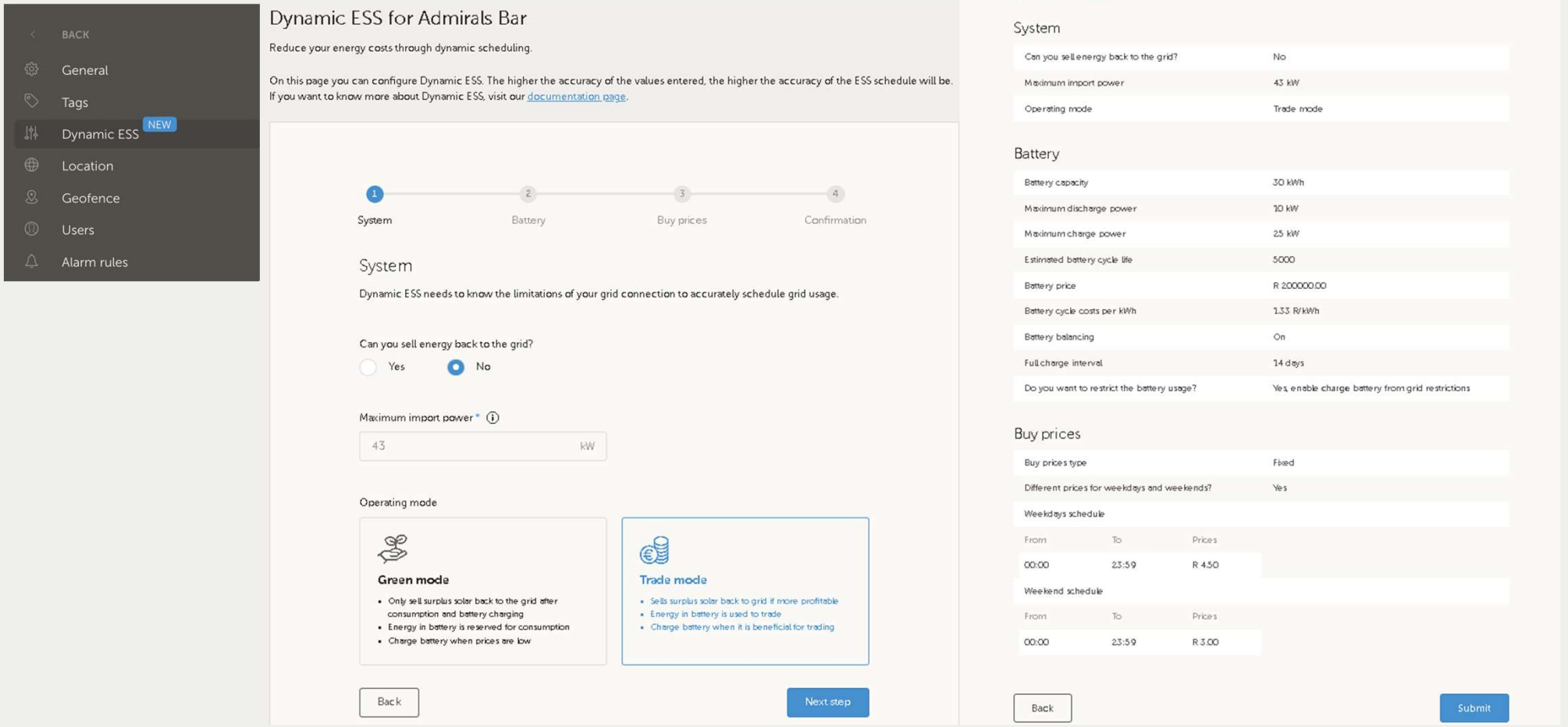
Green mode

- Only sell surplus solar back to the grid after consumption and battery charging
- Energy in battery is reserved for consumption
- Charge battery when prices are low

Trade mode

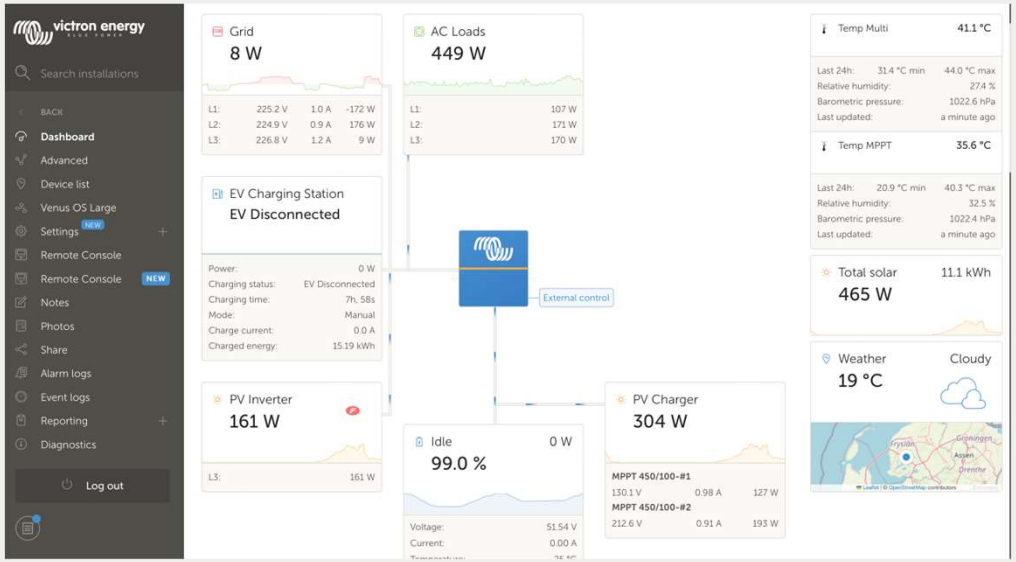
- Sells surpluss solar back to grid if more profitable
- Energy in battery is used to trade
- Charge battery when it is beneficial for trading

Configuring Dynamic ESS Settings



Dynamic ESS USPs

- No subscription needed - portal/firmware is free of charge
- Self-configurable
- Adaptive to load profile
- Decreases the overall energy cost
- Peak shaving feature is included



Training Overview

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BLUE POWER

Training Showcase

Victron Energy is focussed on providing training, working with its network of customers there are many different events taking place worldwide. Mainly training is provided in English, in some cases translators are used.

- Market focussed training events like: Solar off grid, Energy Storage, Marine, Automotive and more
- Training tours: Mobile tour travelling to provide training to installers
- Classroom based theory and practical product training for small to large groups
- Technical Theory and Hands on training for projects, organisations, tertiary institutes and more
- Advanced product and systems training for larger systems used in Mini grid type applications

All levels of training require students to have application experience, a technical background and a good understanding of electrical conditions in Solar and battery-based systems.

South Africa Training tour 2023

103 Training days provided in 2023

South Africa Training tour 2023

South Africa Training tour 2023

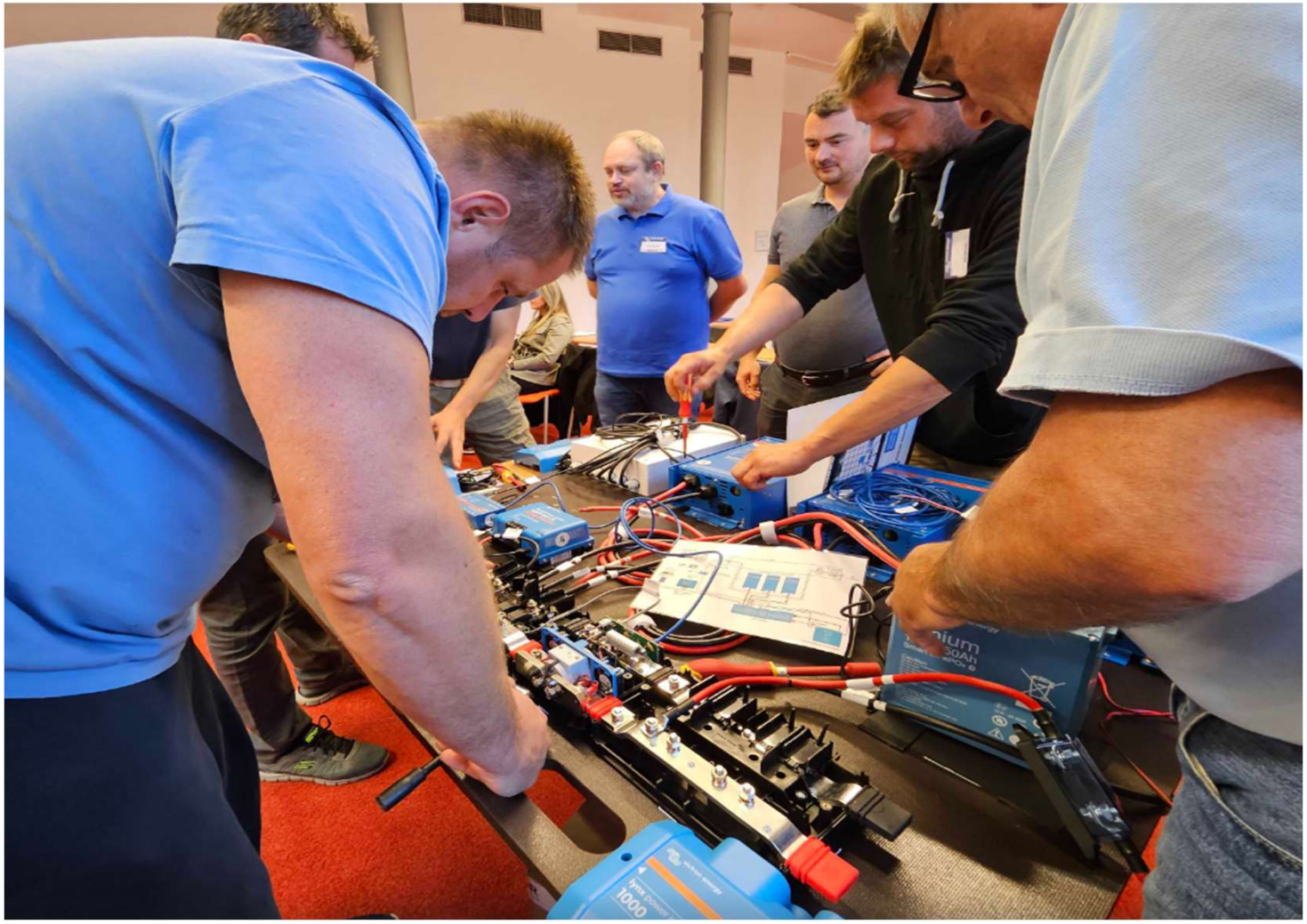
Solar MC
Solar MC
Solar MC

Zimbabwe Training tour 2023

Theory and Practical Training

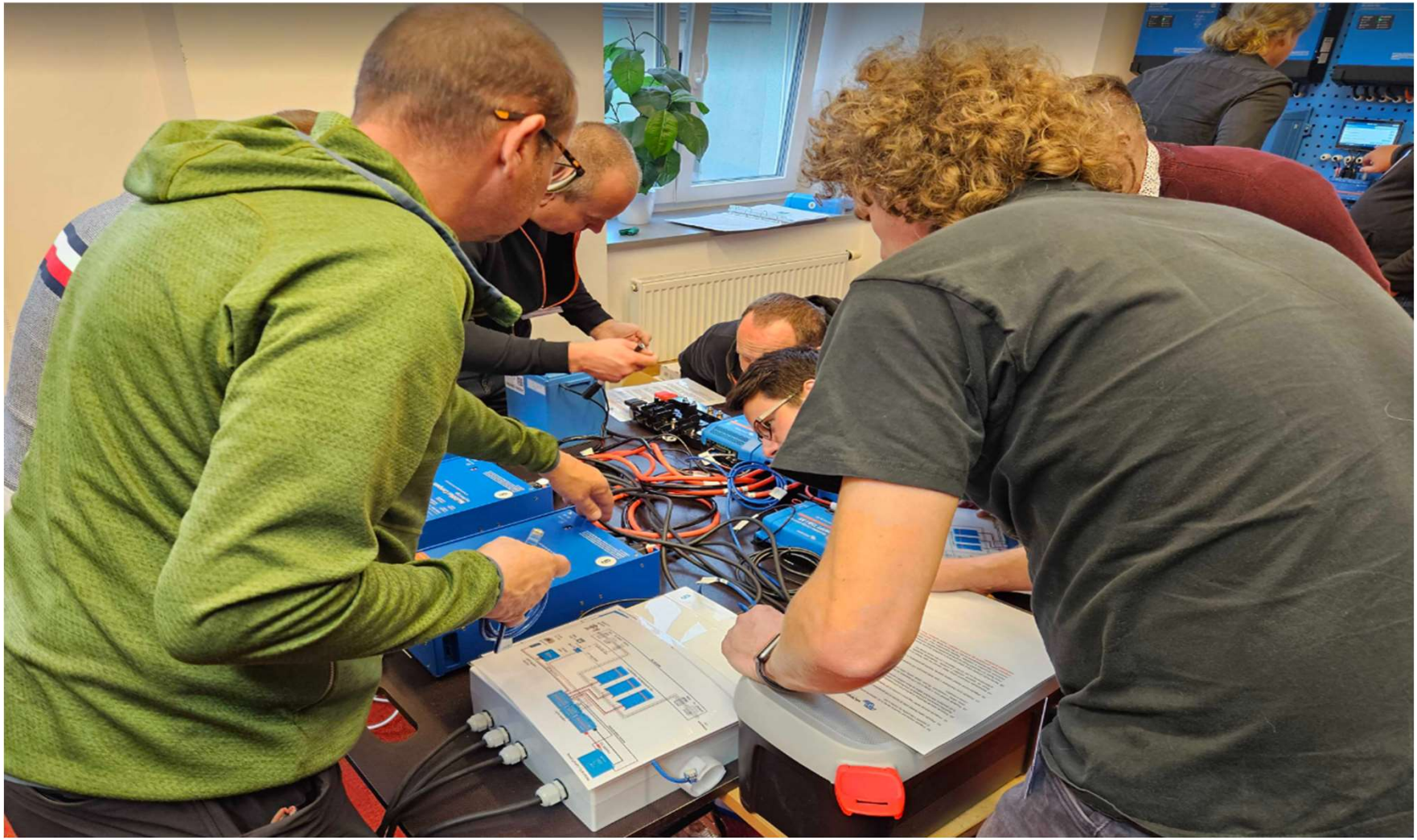
Hands on and Practical Training

Hands on and Practical Training



Solar systems, design and Installation training

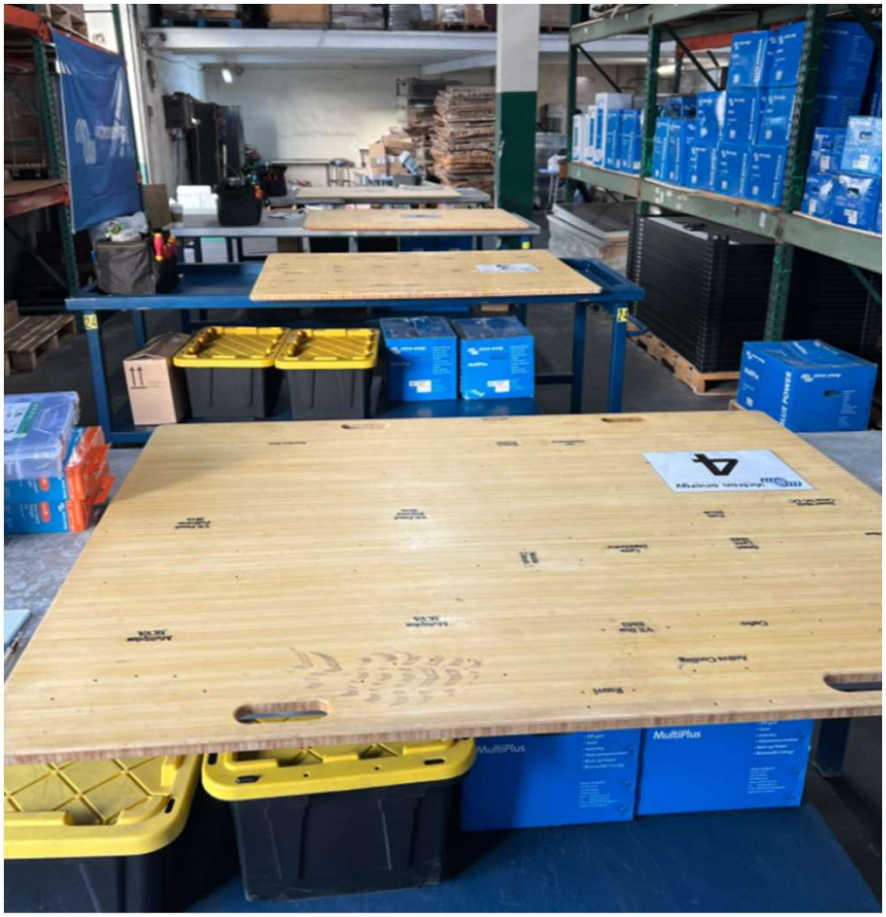
Hands on Installation Training



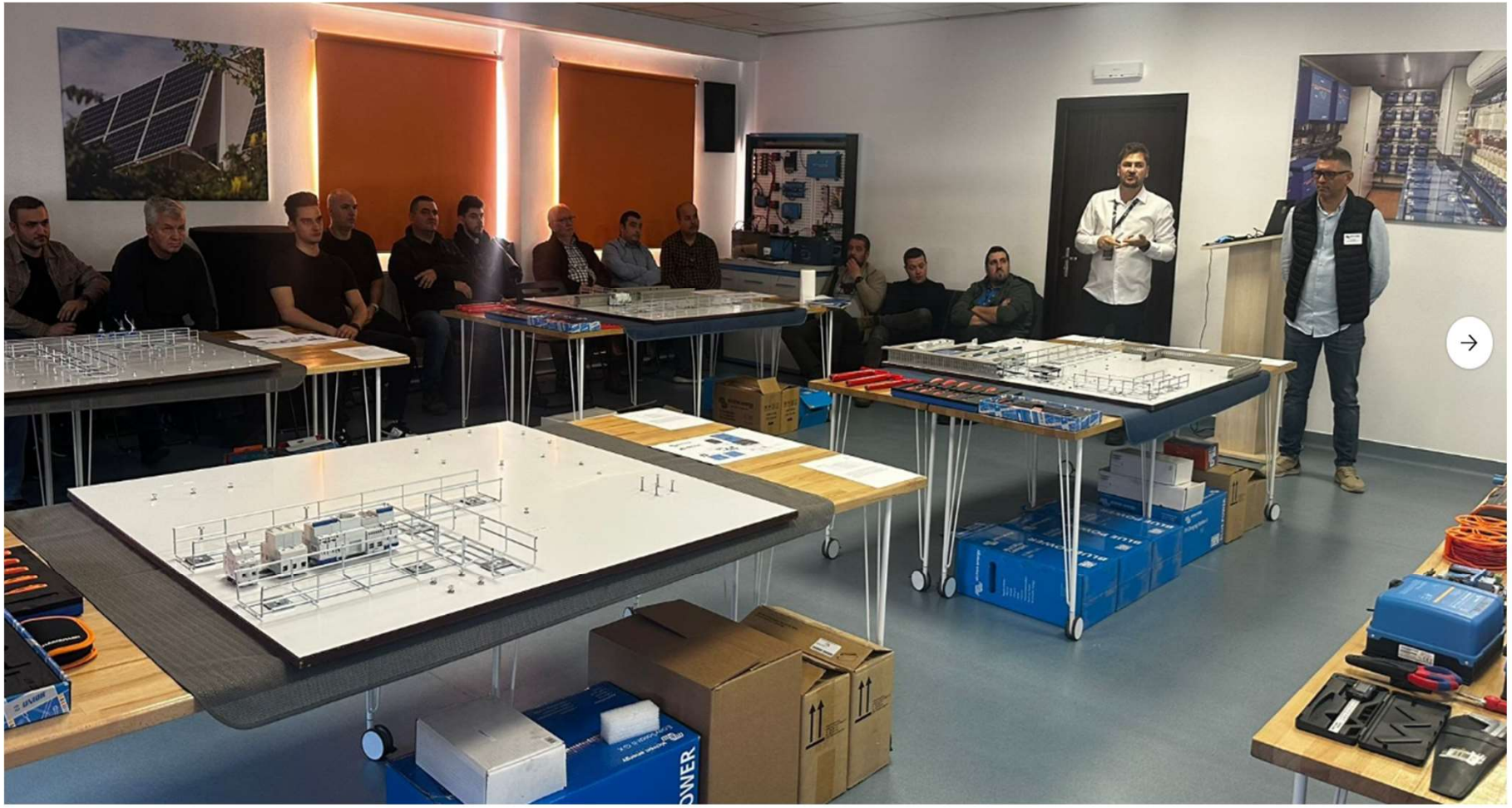
Advanced Energy Storage System and EV Charging training

Hands on and Practical Training

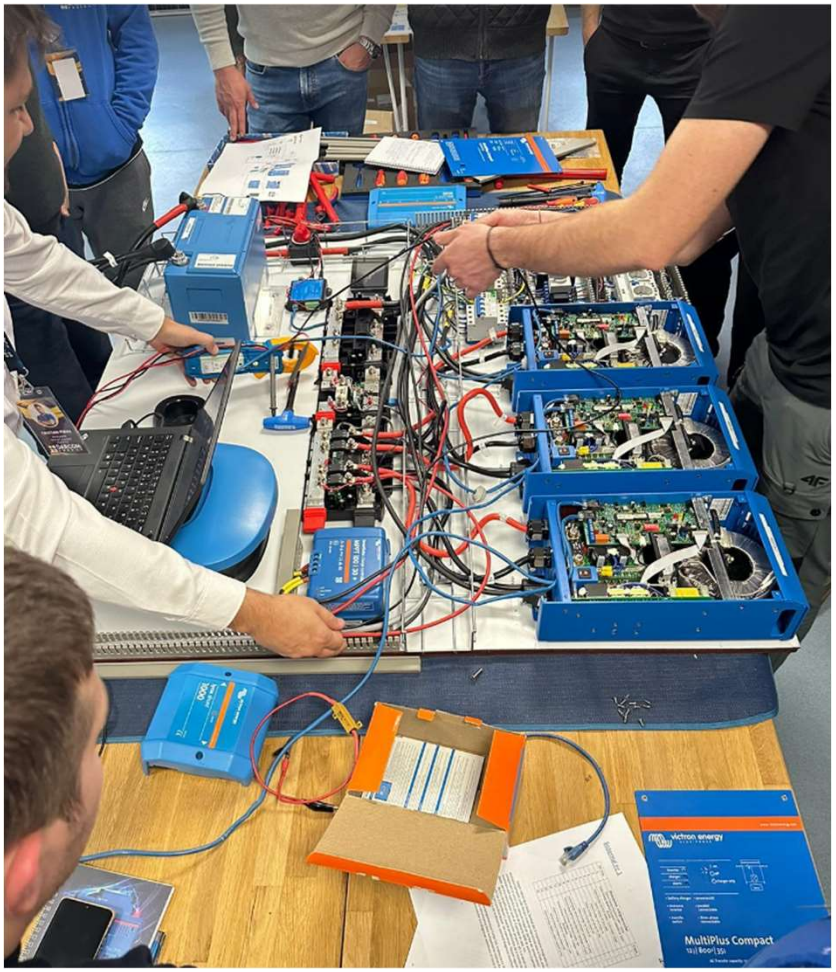
Hands on and Practical Training



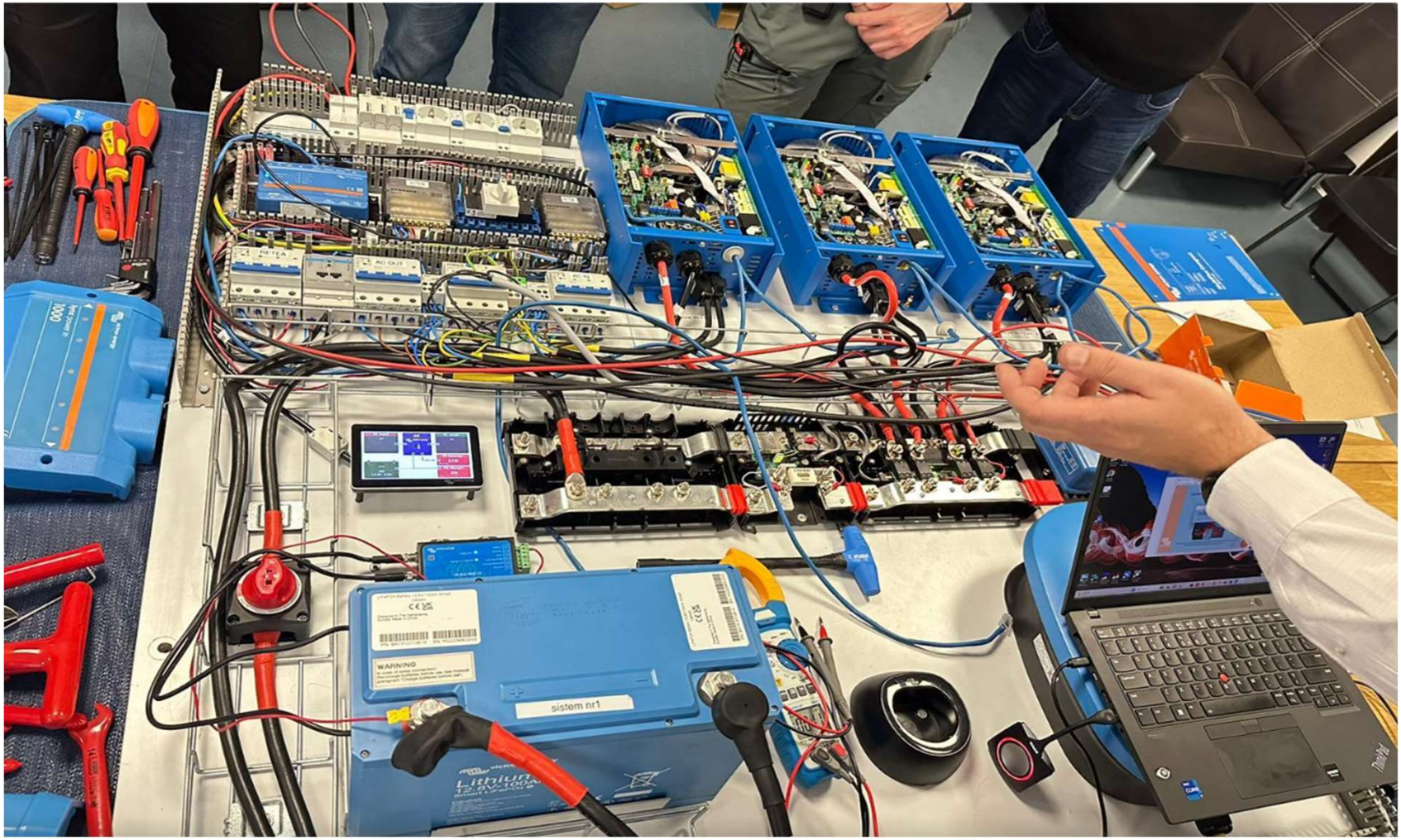
Solar systems, design and Installation training



Solar systems, design and Installation training



Installation and configuration training



Theory and Practical Training

Hands on Practical Training

Solar systems, design and Installation training

Solar systems, design and Installation training

Victron Professional

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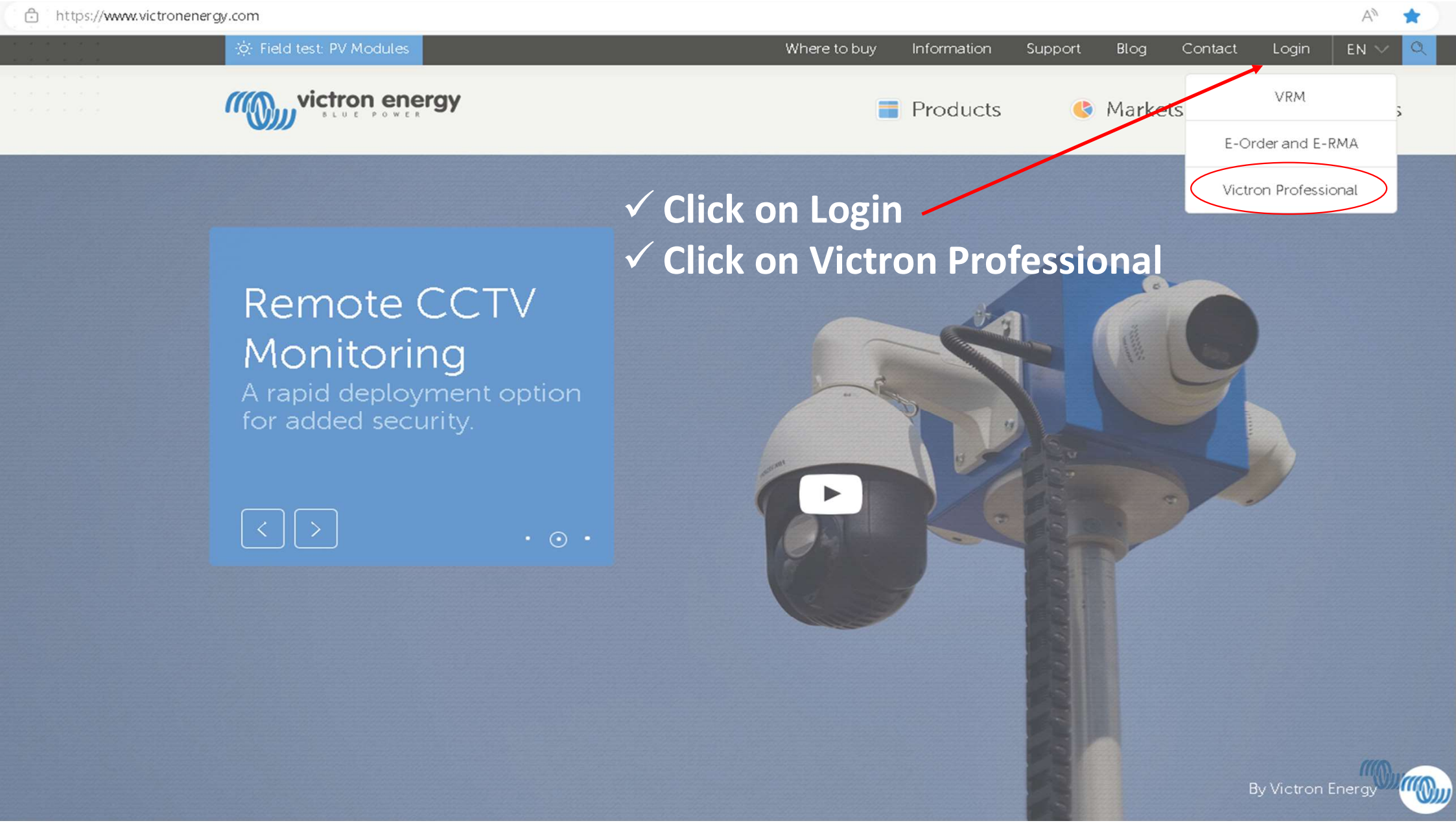
What is Victron Professional?

This Online resource is main resource for information about Victron products

The Portal contains a wide range of information:

- Product Videos, Technical videos, Webinar recordings, customer stories(case studies) and more
- Information page about Victron Live and webinar training events around the world in all languages
- Online Training Academy
- Specific product sections – Firmware files, dropbox links with all manuals and datasheets
- Repair documents


https://www.victronenergy.com
Field test: PV Modules
Where to buy
Information
Support
Blog
Contact
Login
EN
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Products
Markets
VRM
E-Order and E-RMA
Victron Professional
✓ Click on Login
✓ Click on Victron Professional
Remote CCTV Monitoring
A rapid deployment option for added security.
By Victron Energy

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English

Login

Welcome to the Victron Professional Portal

If you already use E-order you can log in with those credentials here as well.

Email address

Your email address

Password

Your password

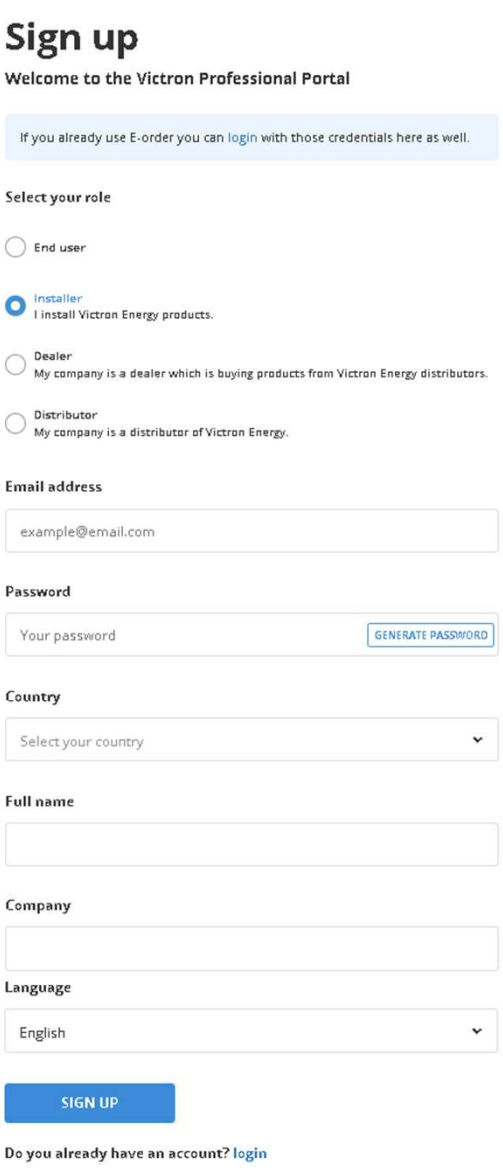
Forgot password?

LOGIN | EMAIL ME A LINK TO LOGIN

No account yet?

Sign up today and get access to events, online training, and stay updated about the latest developments with regular updated video's and news articles

✓Click on 'Sign up'



1. Select ‘Installer’

2. Enter all your contact and company details accurately

3. Click on ‘Sign up’

https://professional.victronenergy.com

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- Overview
- Videos
- Blog
- Events
- Online training
- Dropbox
- Firmware
- Repair docs
- Media assets
- E-order
- Latest news
- Developers
- Account overview
- Check training ID

André du Rand
Sales

- Dashboard
- Logout

English

UPCOMING EVENTS

Bases d'un systeme victron -Formation pratique s41 -Module 1
France, Sainte Tulle
Oct 10th, 2023 - Oct 11th, 2023

Victron Energy 2-Day Hands-on Training - hosted by FreedomVanGo
United States of America, Jacksonville, FL
Oct 12th, 2023 - Oct 13th, 2023

Komponenten und Anlagen überwachen - eine Komplettübersicht
Webinar
Oct 13th, 2023 - Oct 13th, 2023

Victron Energy Training Tour - Omnisolar
South Africa, George
Oct 16th, 2023 - Oct 17th, 2023

Supervision et autoconsommation - Formation pratique s42 - Module 2
France, Sainte Tulle
Oct 17th, 2023 - Oct 18th, 2023

View all events

Now you are ready to go, Congratulations!

LATEST NEWS

Victr

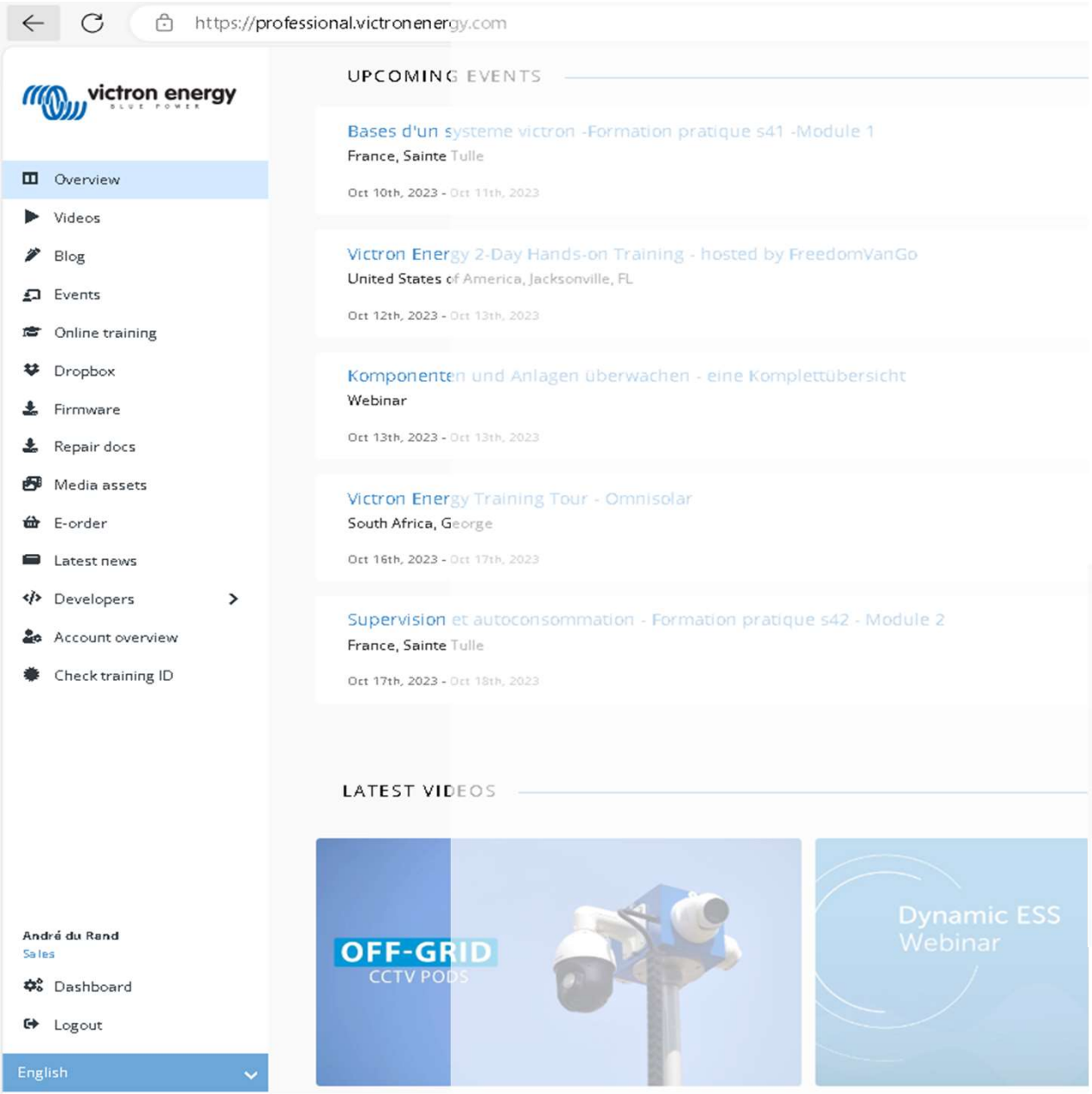
VictronConnect v5.96 - Small i

A new version of the VictronConnect.

This version, as well as other recent r
most important one are:

Fix issues with firmware updates on t
Fix Bluetooth connection issues on ce
Fix login ...

LATEST VIDEOS



Online Training

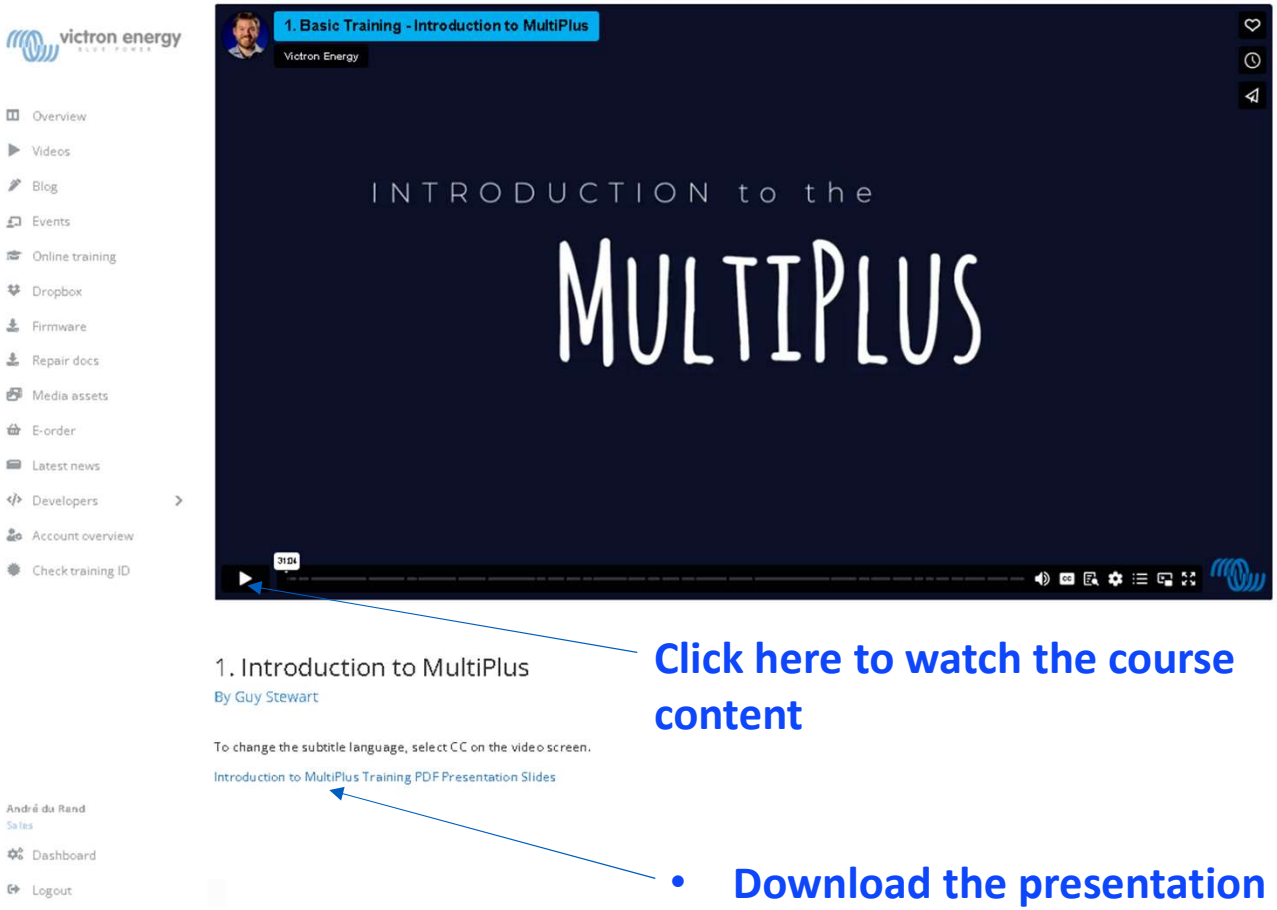
- Certificates for completion
- No costs involved
- Mobile device ready
- Several types of training available

Basic training ⊕

Theory ⊕

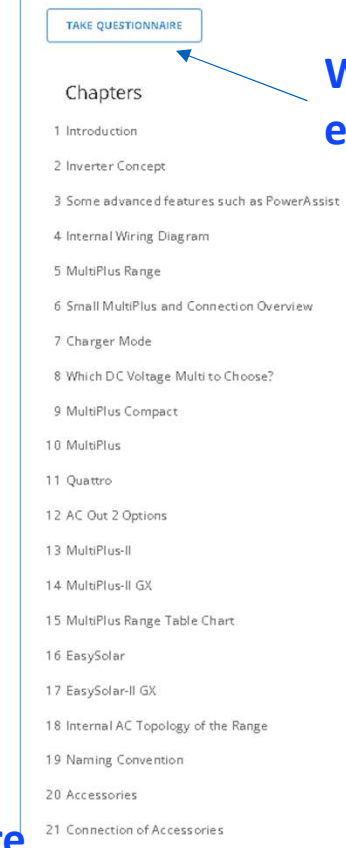
Advanced training ⊕

Installation examples ⊕



Click here to watch the course content

- **Download the presentation here**

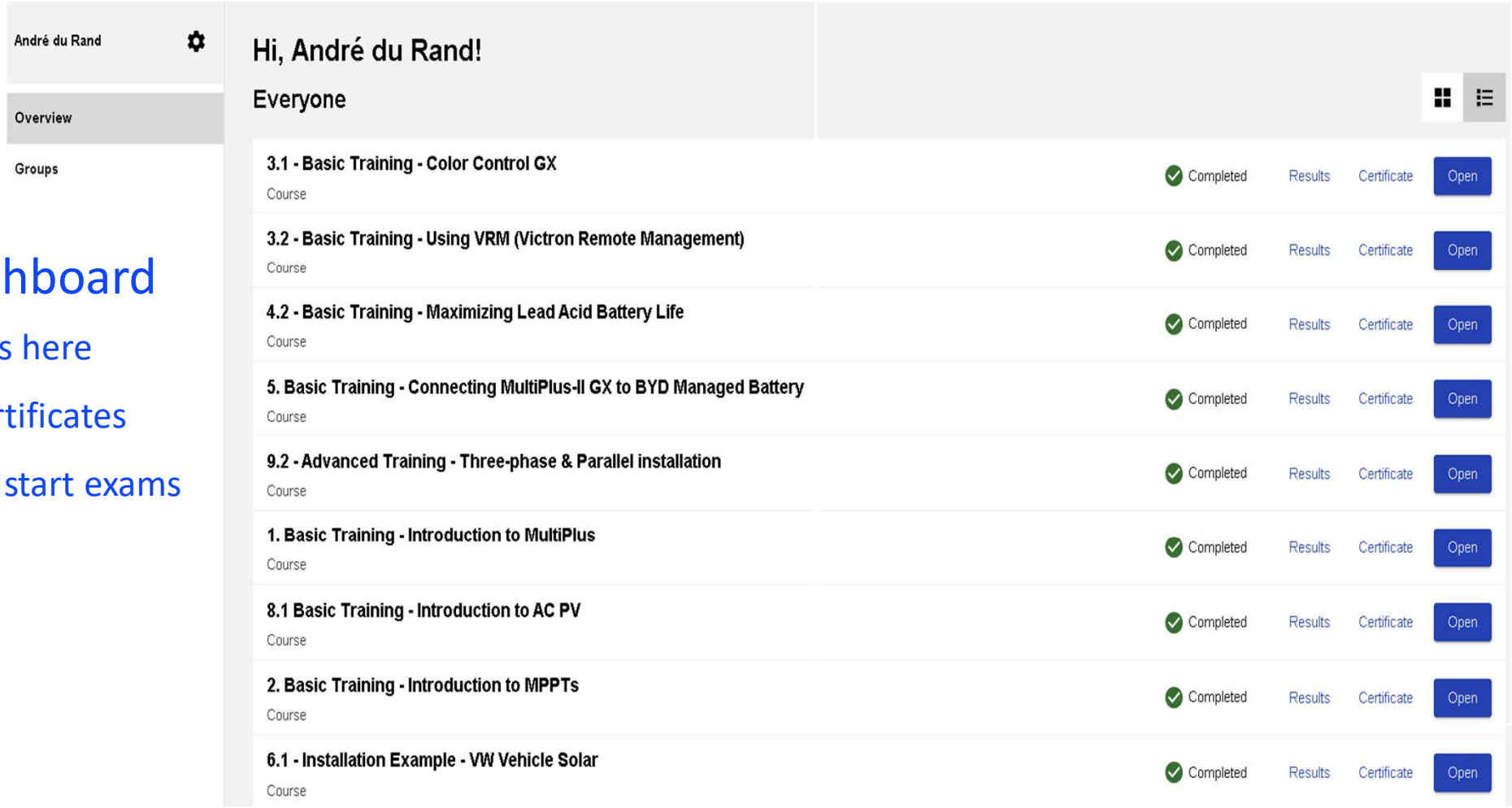


When ready for the exam click here

Course Chapters, click on the chapter to view it.

Training Dashboard

- Review results here
- Download certificates
- Click Open to start exams



Victron Energy Product Training

2024

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*Inverter/charger range – **VE.Bus products***

Multiplus Quattro

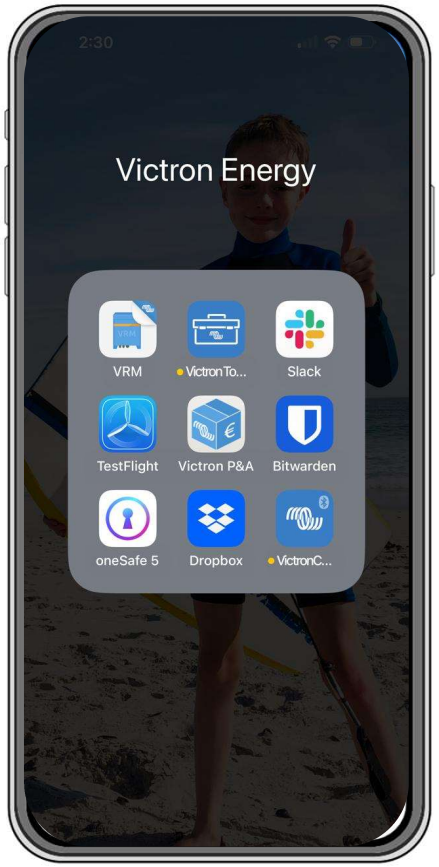
Inverter/chargers										
12 V	500	800	1200	1600	2000	3000	5000			
24 V	500	800	1200	1600	2000	3000	5000	8000		
48 V	500	800	1200	1600	2000	3000	5000	8000	10.000	15.000

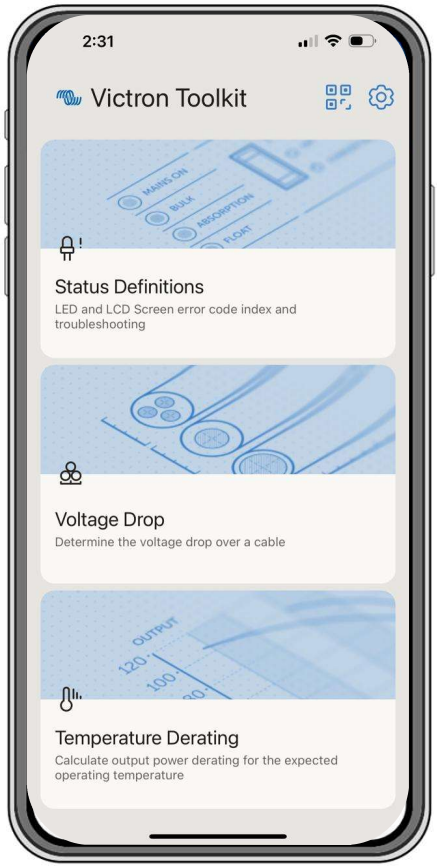
Multiplus Multiplus II Quattro II

Technical Datasheet

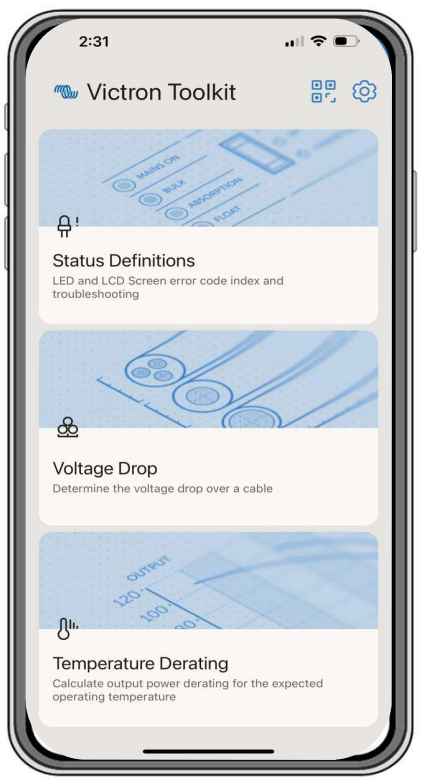
- Get to know the Datasheet
- Product features are linked to white papers
- ‘Add on’ options are shown
- Technical Characteristics indicate limitations and possibilities

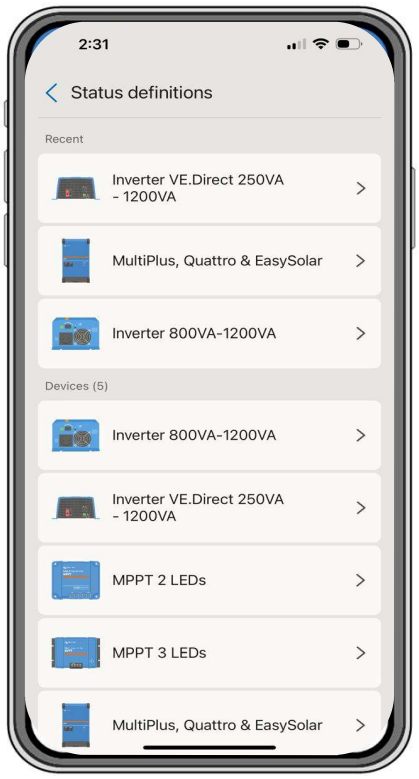
LED Status Indication – **Victron Tool kit App**

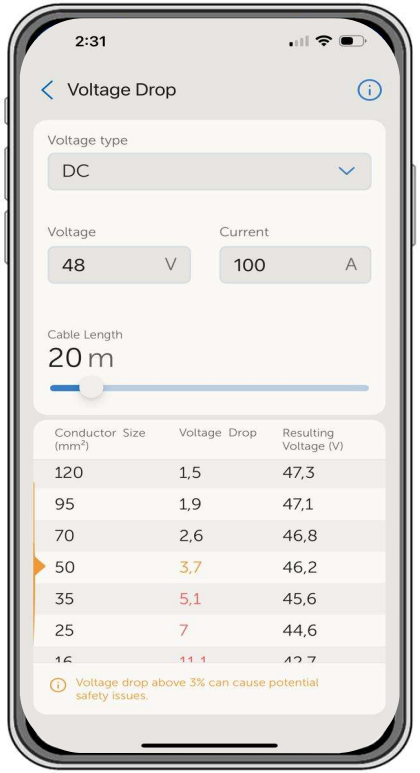


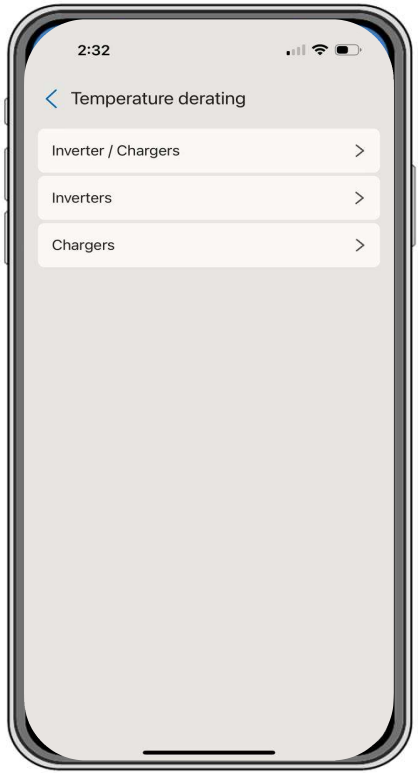


LED Status Indication – **Victron Tool kit App**









All-in-one, Hybrid Products

EasySolar-II GX Overview

This All-in-one Power solution has the following products integrated:

1. A Multiplus-II
2. A SmartSolar MPPT
3. A GX Device with 2 x 16 Character display

- The Display provides information about the integrated components and the connected LiFePo4 battery

- Internal Wifi hotspot is for installers to configure the GX device settings and configure remote monitoring access

- Communication for Inverter/charger is still VE.Bus

EasySolar-II Overview – GX Device

Models:
48V 3kva
48V 5kva
✓ Can be used in multiple unit systems

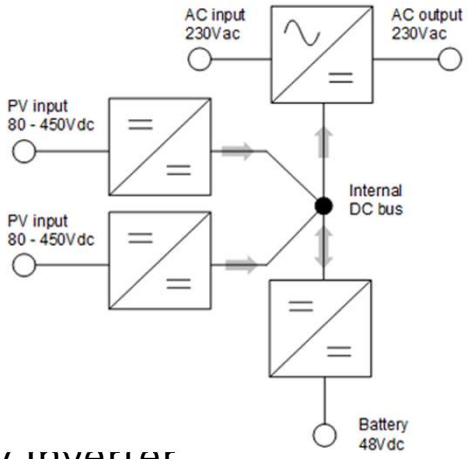
1. 2 x 16 Character display
   - ➢ Solar Power, Voltage and Charge state (if connected)
   - ➢ ESS/DVCC reason codes (if active)
   - ➢ Solar Daily Yield
   - ➢ Inverter/charger charge state (eg Bulk, ESS)
   - ➢ Battery State of Charge, Power and Voltage
   - ➢ Network IP Address and Connection Type (if connected).
   - ➢ AC input and output Power

✓ No settings possible from this screen

Multi RS Solar 48/6000 – 450/100

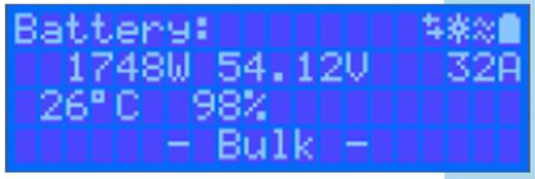
Inverter/Charger with 450VDC 6kWp PV input.

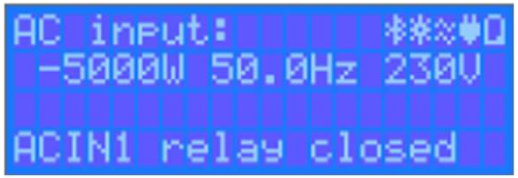
- High efficiency, 96,5 % at 1 kW load
- 11 KG weight
- 120V PV Start up Voltage
- 2 Tracker inside, 2 PV Inputs
- Max short circuit curent input 18A
- Very low self consumption
- Can work without batteries also – like a PV inverter



Multi RS Solar 48/6000 – 450/100

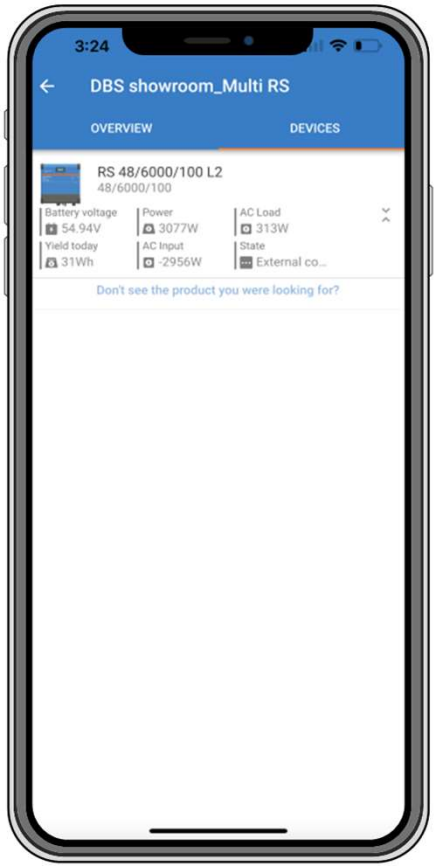
1. Monitoring with Product Display

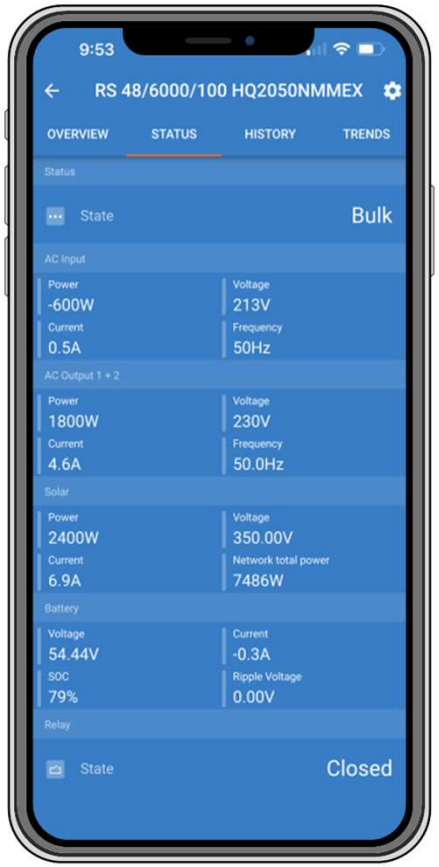


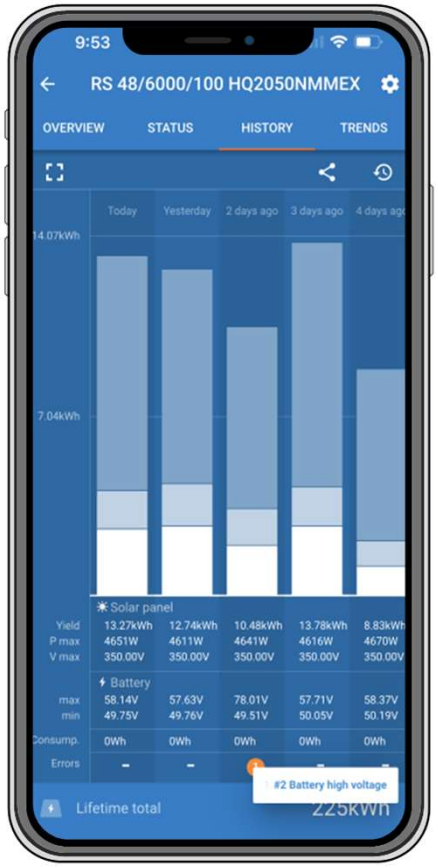


Multi RS Solar 48/6000 – 450/100

2. Monitoring with VictronConnect



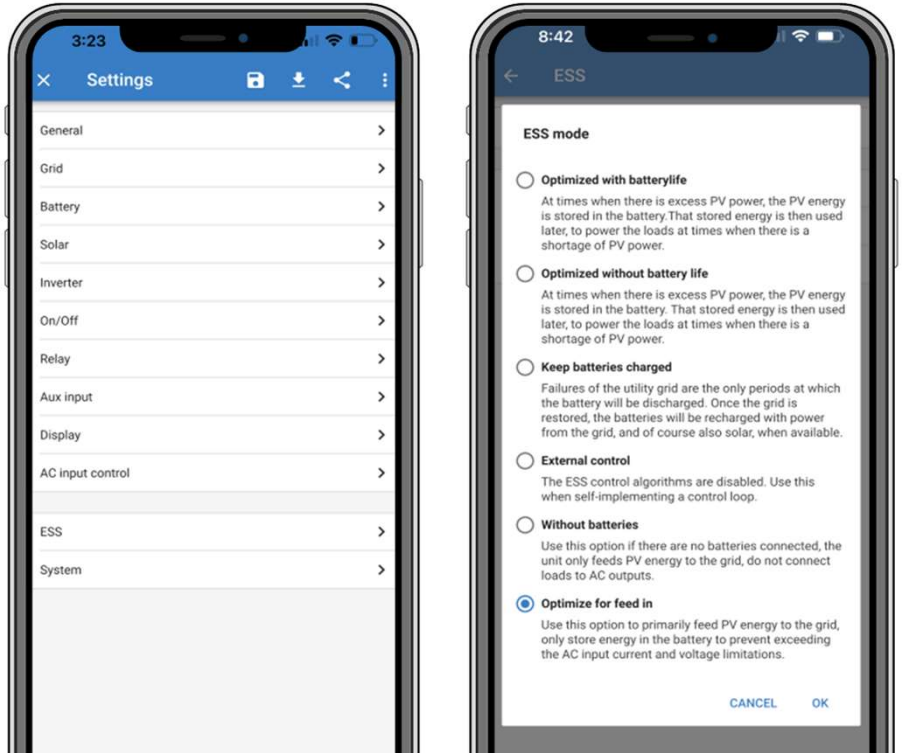




Multi RS Solar 48/6000 – 450/100

Configuration with VictronConnect

1. On site
2. Remotely through connected GX Device



NEW product for 2025 Multi RS

Status & Planning

- Field tests in progress
- Release in Q1 2025
- 19inch rack Mount

Multi HS19 15kW New for 2025

High Efficiency

Three-phase 15 kW
inverter/charger

800V Battery

4 MPPT trackers
Up to 1000VDC
40 kWh Solar total

Multi HS19 15kW

- Battery
  - 800V nominal (650 - 1000V)
  - 41A max charge current
- 4 MPPT trackers:
  - 1000 Voc
  - 14 Amps each
  - Approx. 32 kW solar total

- 1 x AC IN & 2 x AC OUT
- 25A RMS/Phase nominal
- 45A Peak AC Current for 3 seconds

4U 19” rack mount

Later:

- Parallelable
- External transfer switch (optional)

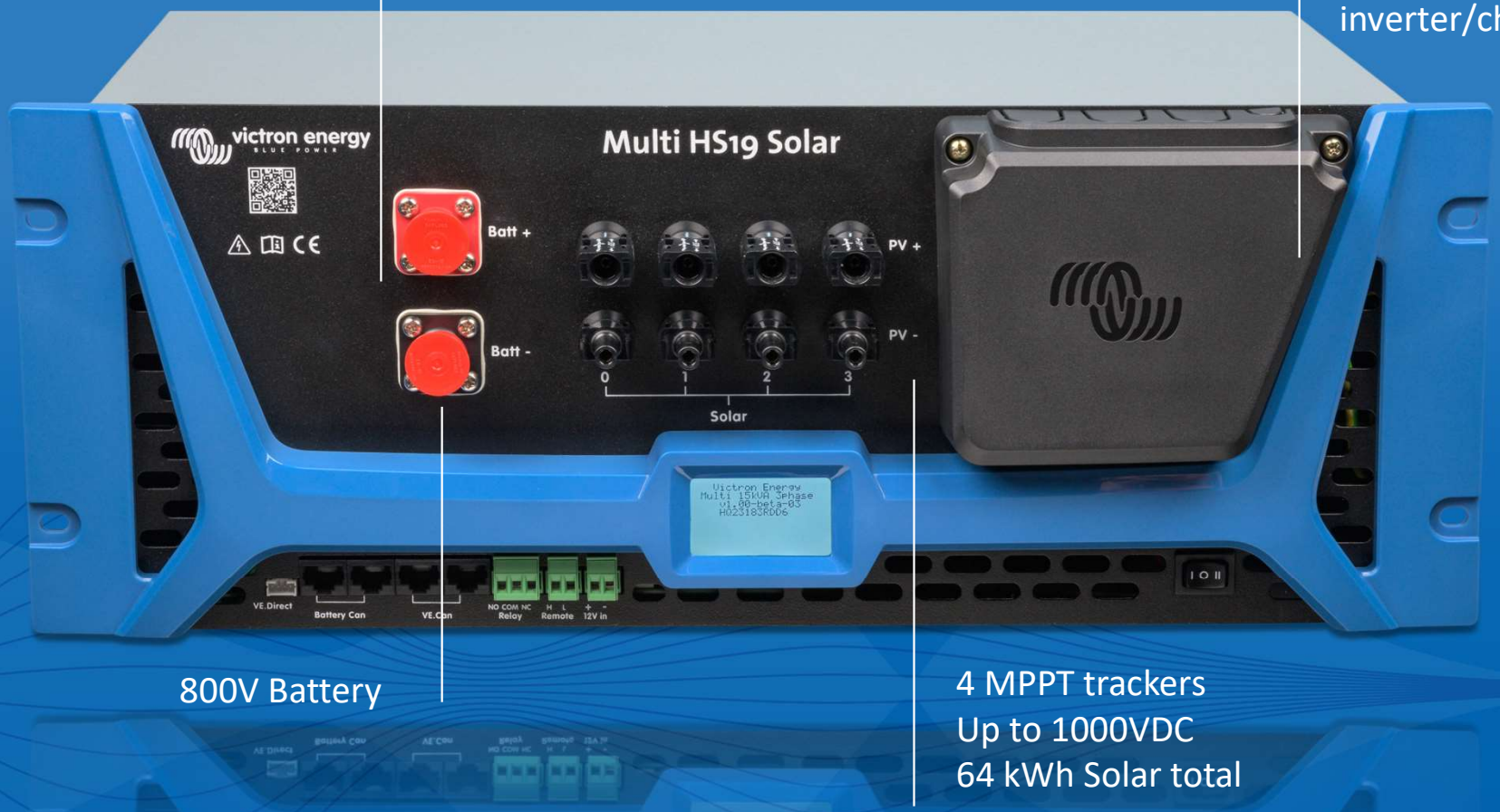
Status:

- Expected release: late 2024
- ESS certification: still later

Multi HS19 30kW

High Efficiency

Three-phase 30 kW
inverter/charger



800V Battery

4 MPPT trackers
Up to 1000VDC
64 kWh Solar total

Multi HS19 30kW

- Battery
  - 800V nominal (650 - 1000V)
  - 76A max charge current

- 4 MPPT trackers:
  - 1000 Voc
  - 20 Amps each
  - Approx. 64 kW solar total

- 1 x AC IN & 2 x AC OUT
- 50A RMS/Phase nominal
- 90A Peak AC Current for 3 seconds

5U 19” rack mount

Later:

- Parallelable
- External transfer switch (optional)

Status:

- Expected release Q2 2025

MPPT Solar Charger range

BlueSolar											
75 V	10	15									
100 V		15	20	30			50				
150 V					35	45		60	70		100 VE.Can
250V									70VE.Can		100VE.Can

SmartSolar											
75 V	10	15									
100 V			20	30			50				
150 V					35	45		60	70	85	100
250 V					35	45		60	70	85	100

SmartSolar VE.Can											
150 V									70	85	100
250V									70	85	100

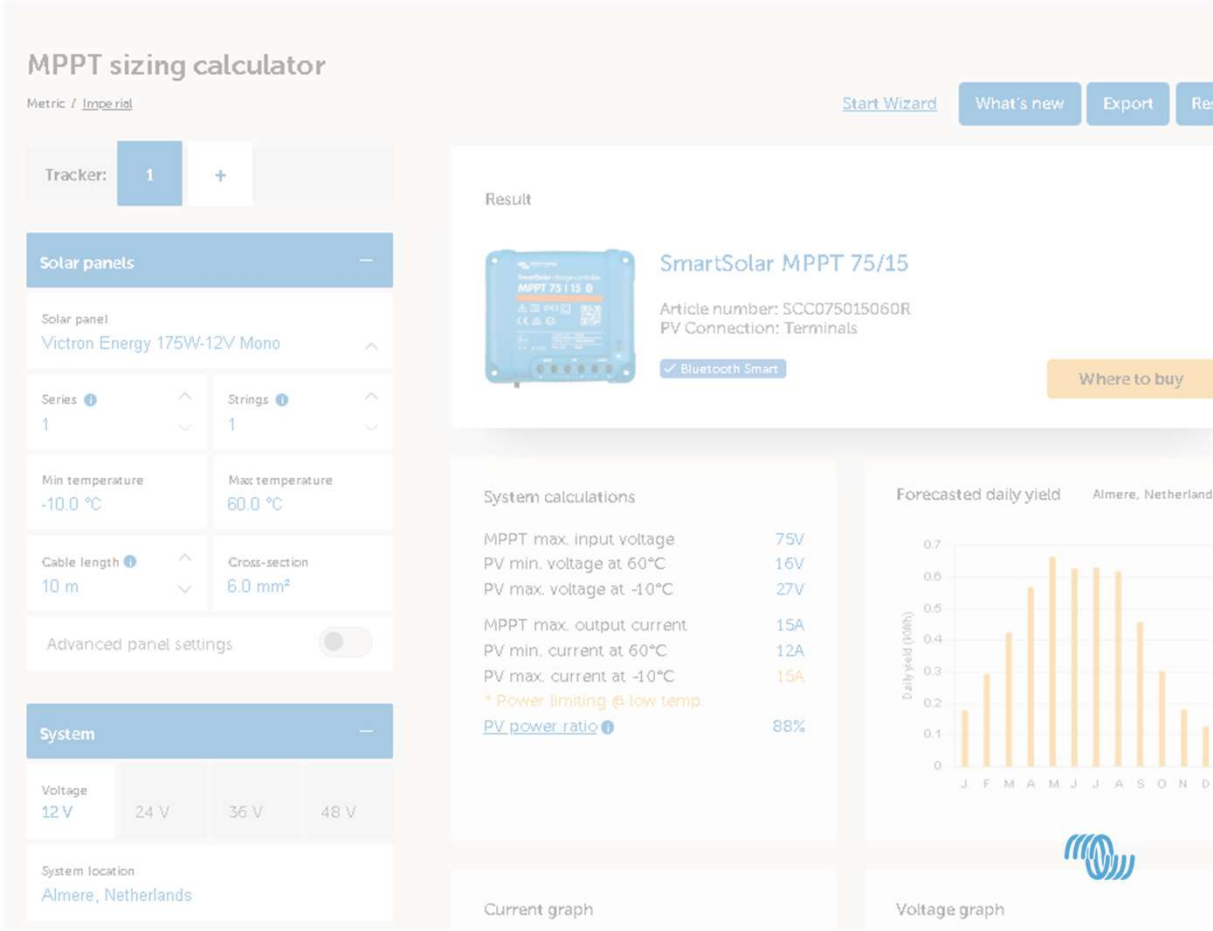
SmartSolar RS												
450 V											100A	200A

MPPT Tools for System Designers and Installers

- Online calculator – Wizard available to size the PV Panel arrangement for MPPT’s

Features:

- Uses Geographic location for irradiance
- All PV panels are available to choose from
- Wizard selects the MPPT for you
- Give it a **Try**



GX Device and Monitoring

GX Device History

Colour Control GX

OCTO GX

MAXI GX

CERBO GX

2013 | 2017 | 2018 | 2018 | 2019 | 2019 | 2020 | 2023

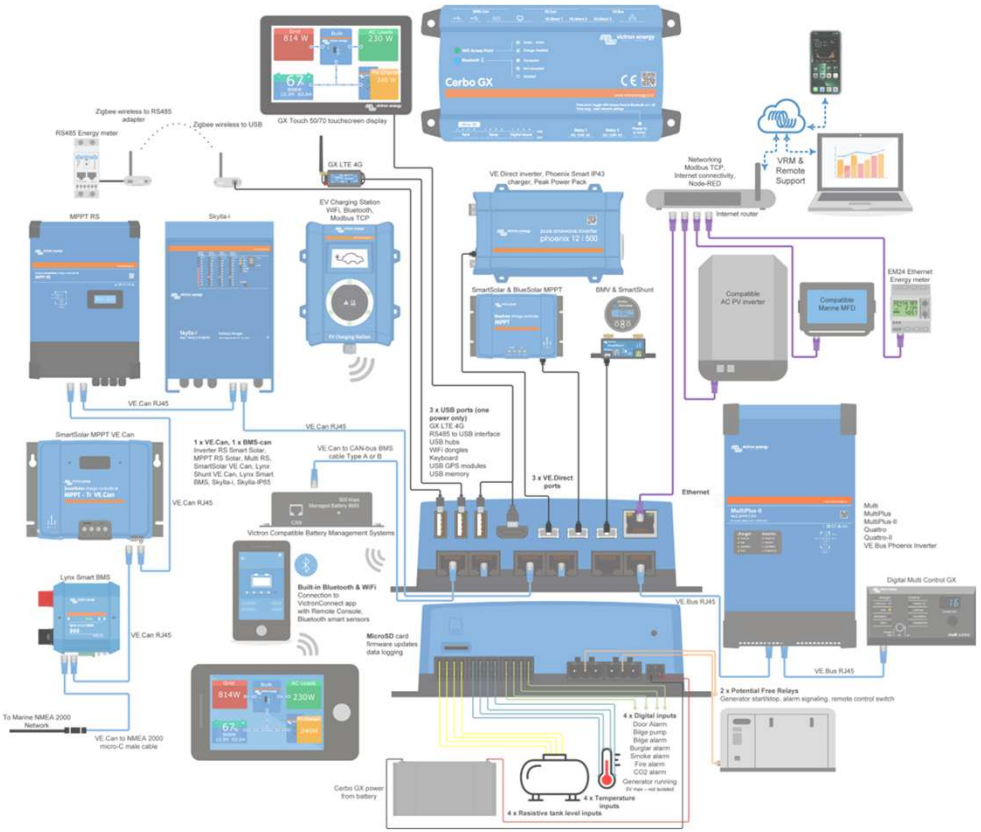
VENUS GX

CANVU GX

MULTIPLUS-II GX

EKRANO GX

Role of the GX device in Victron Systems



When added to standard products, the capabilities increases and becomes a system controller

Connects to several 3rd party products for monitoring and control

Uses IOT topologies, MQTT, Node Red and more

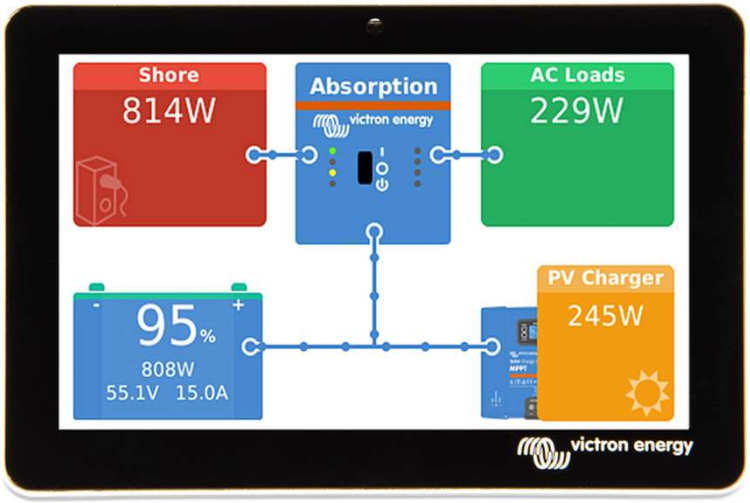
Open-source operating software, ***Venus OS***

Very successful product with a +10 year track record

GX Device Display Overview

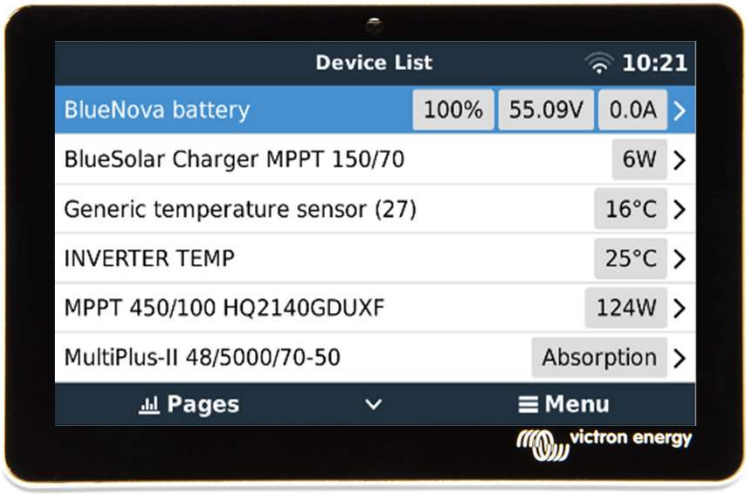
VENUS OS

Overview (Solar)



System overview screen

Device List

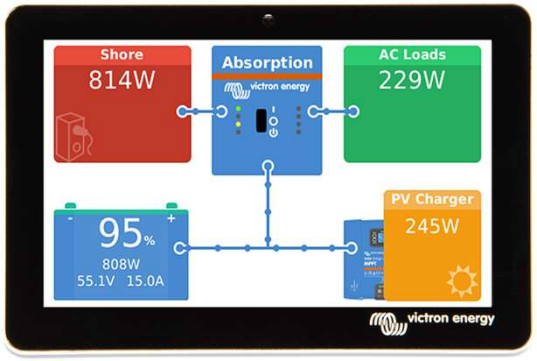


Device list provides settings menu and notifications along with connected devices

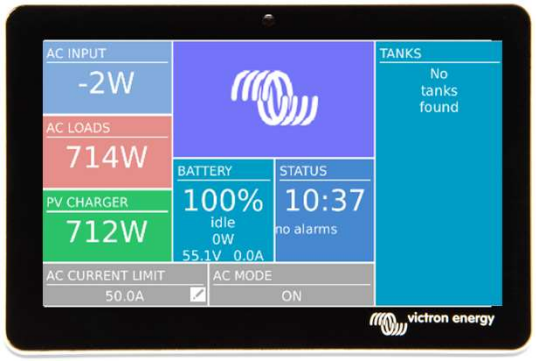
GX Device Display Overview Screens

VENUS OS

Solar

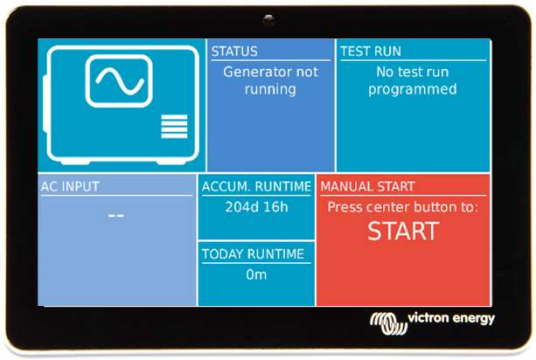


Marine & Automotive

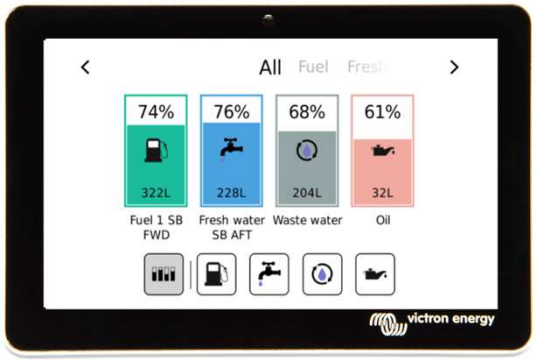


General ‘TAB’ overview

Generator Control



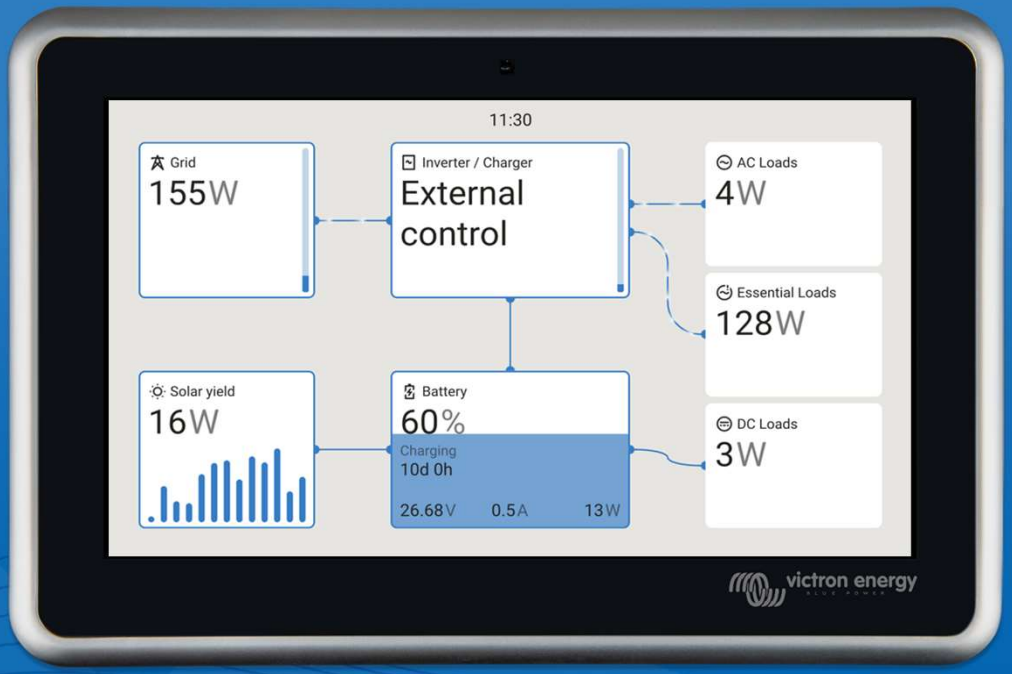
Tanks overview screen



New User Interface

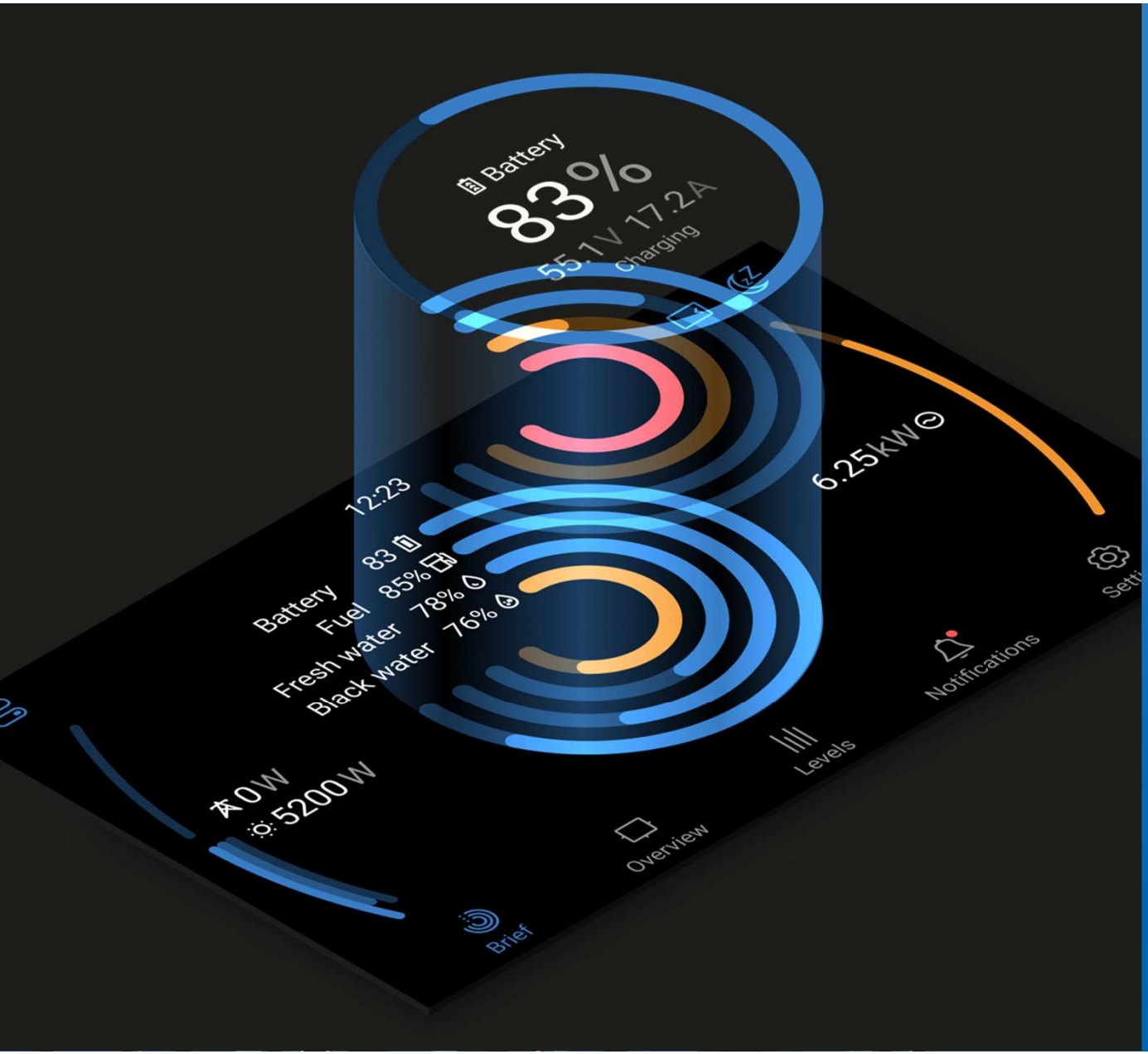
Classic UI

New User interface



New UI

All the key information you need, presented in a clean and simple layout. The centerpiece is a customisable widget featuring rings, giving you quick access to your system insights at a glance.



New Brief Page

All the key information you need, presented in a clean and simple layout. The centerpiece is a customisable widget featuring rings, giving you quick access to your system insights at a glance.

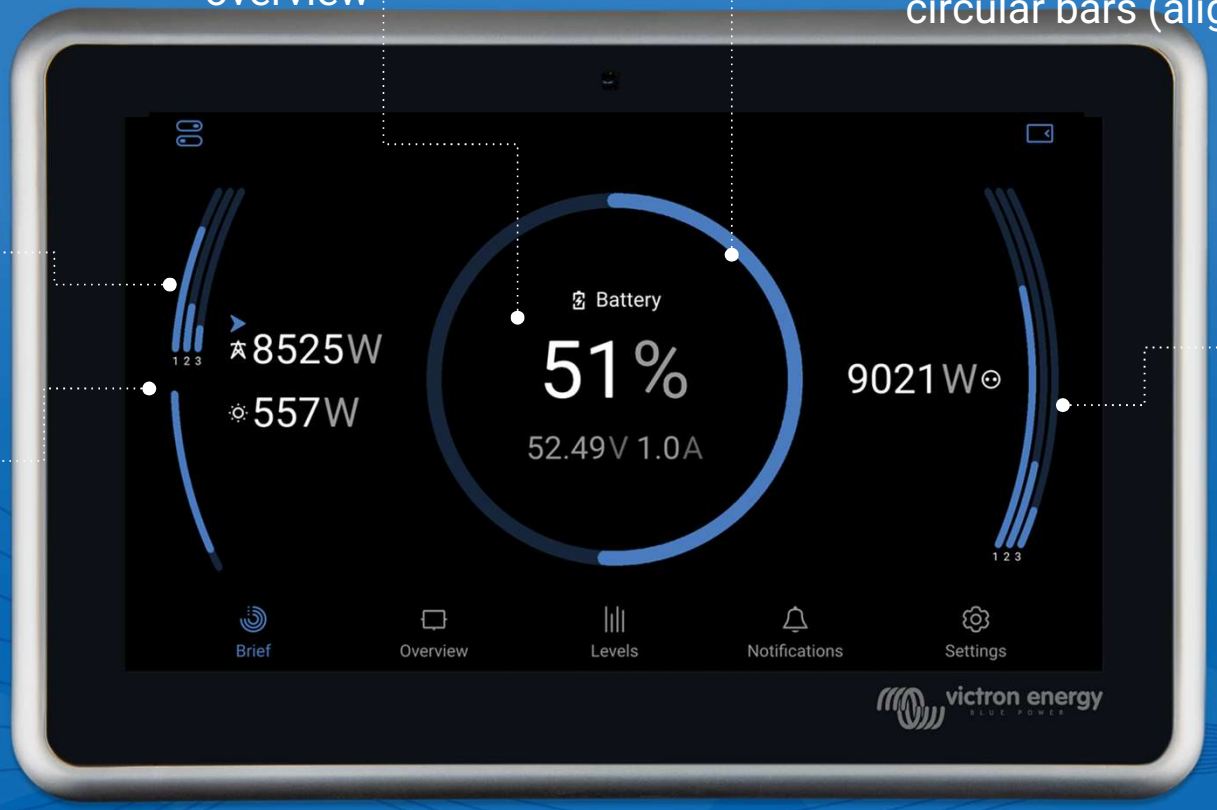
New Brief Page Layout

Power storage overview

Now with configurable circular bars (align)

Coloured bars indicating whether the system is importing from or exporting to the grid.

Power generation overview

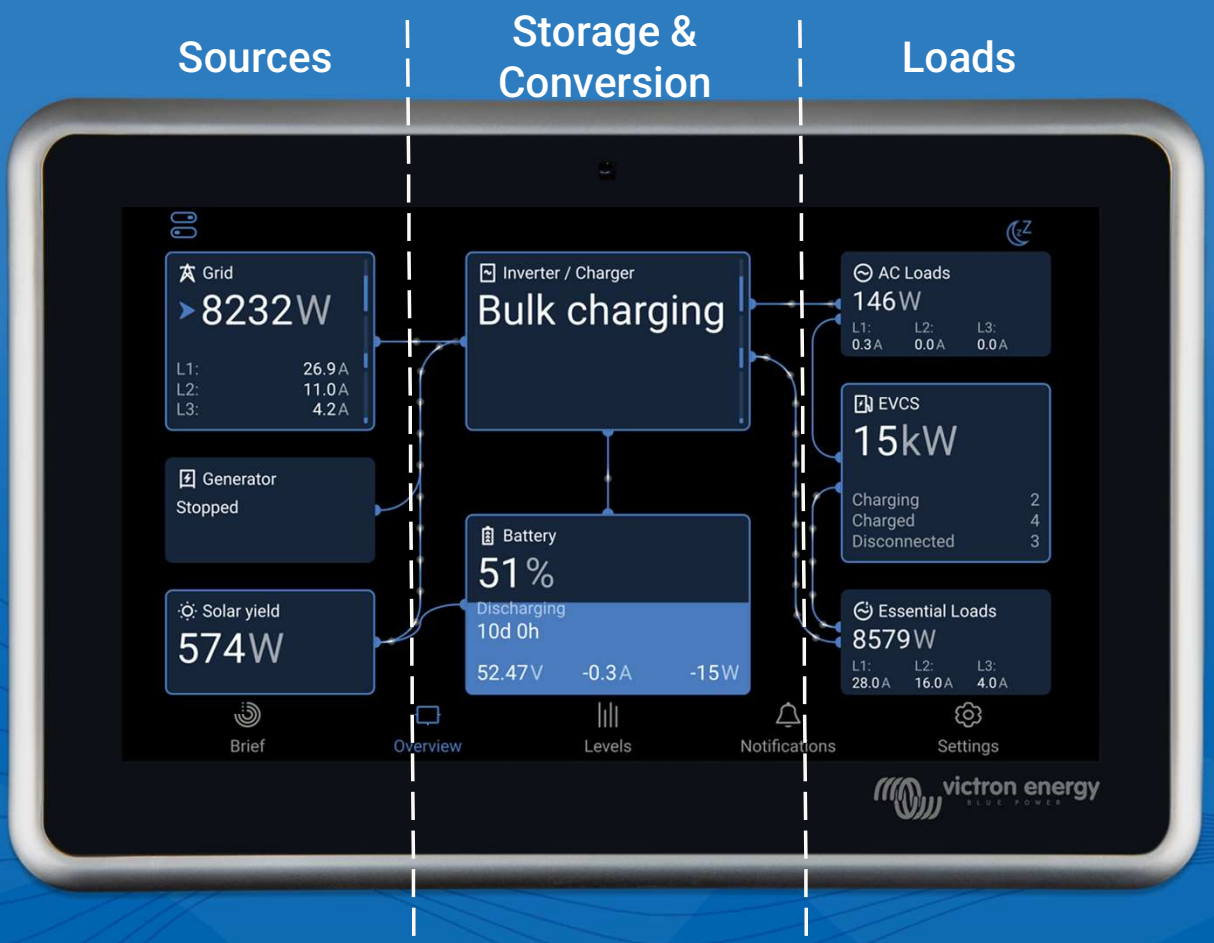


Power consumption overview

Overview Page

Updated overview page layout for a more comprehensive view of your system in one location for easy monitoring and management.

New Overview Page Layout

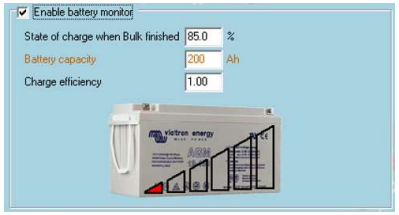


Good news!
The new GX user interface is available. Enhance your experience by activating it.
Click "Next" to make a choice.
Next
esc
What's New
Skip
Welcome!
We're excited to introduce a completely redesigned interface that enhances both the usability and aesthetics of your GX.
With streamlined navigation and a fresh look, everything you love is now even easier to access and more visually appealing.
Back
Next
victron energy

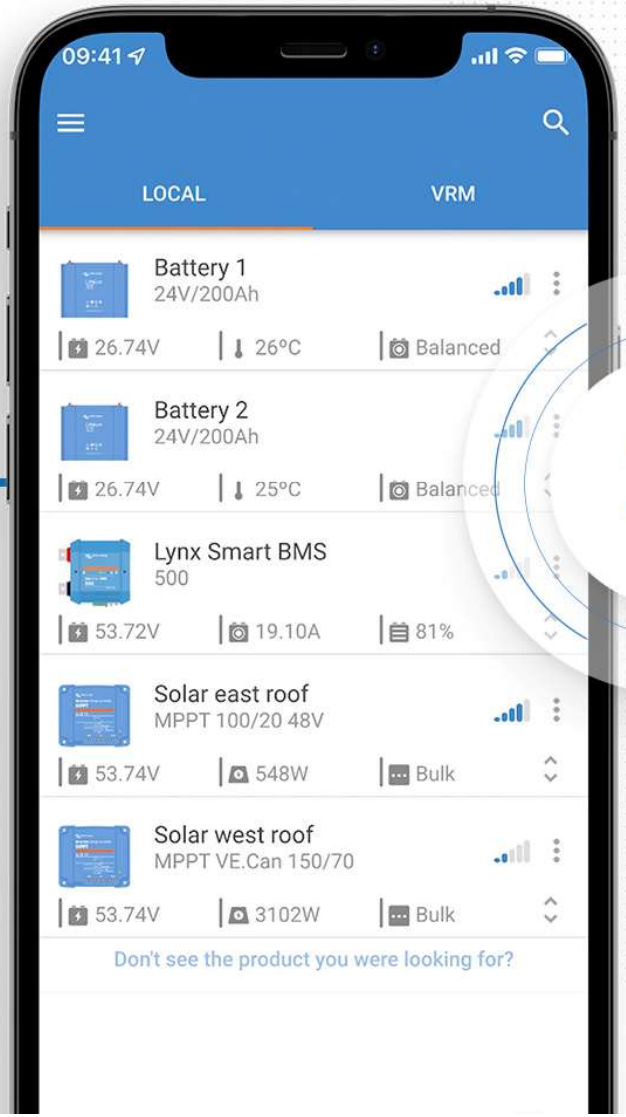
Battery Monitoring

victron energy
BLUE POWER

Battery Monitor options

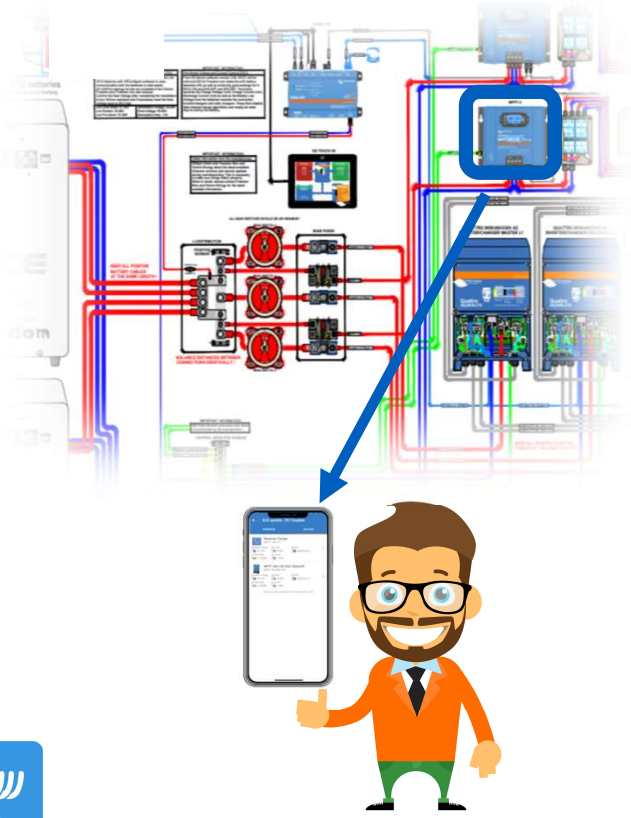
Smart battery	VE.Bus SOC	BMV & SmartShunt	Lynx shunt
• If the battery can generate SOC then use it. • Connects with CAN-bus to a GX Device • Integrated Batteries listed on our website are ideal	• Use in case of no smart battery or DC loads. • Uses MPPT current in SOC calculation • Must have a GX device 	• Use if no smart battery is used and there are DC loads or non-Victron DC sources, like wind power or DC generators 	• Only use if no smart battery is used and there are DC loads or non-Victron DC sources, like wind power or DC generators

VictronConnect



Monitor Smart products in a glance

VictronConnect



VictronConnect - On-site monitoring

- Connect to individual products with Bluetooth
- Configure settings for the product
- Monitor each products operation
- View error codes and see History
- Download settings for use later when fault finding

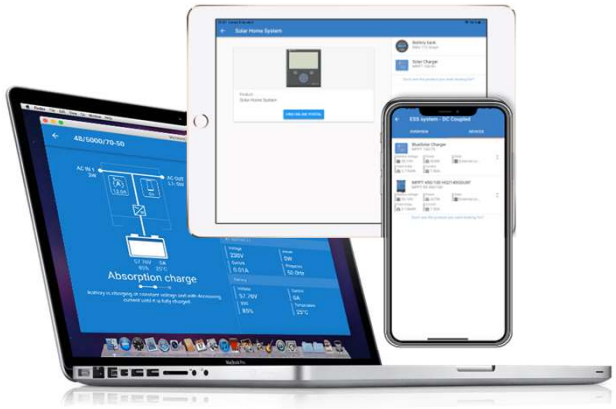
VictronConnect

Versatile application to Monitor, configure, update and diagnose **Smart** Victron products.

Connectivity:

- Bluetooth user to product
- WIFI/LAN network connect to GX Device
- Connect with an interface cable
- Victron Remote Management integration

VictronConnect



- Configuration software to program all Victron Products
- Inverter/charger programming is still limited, no assistants
- Multiple Unit systems, up to 3 units can be configured
- ✓ * **Firmware update** – VictronConnect is the best option – VE-Flash is used on older system only

VictronConnect

Monitoring of Systems and its Components

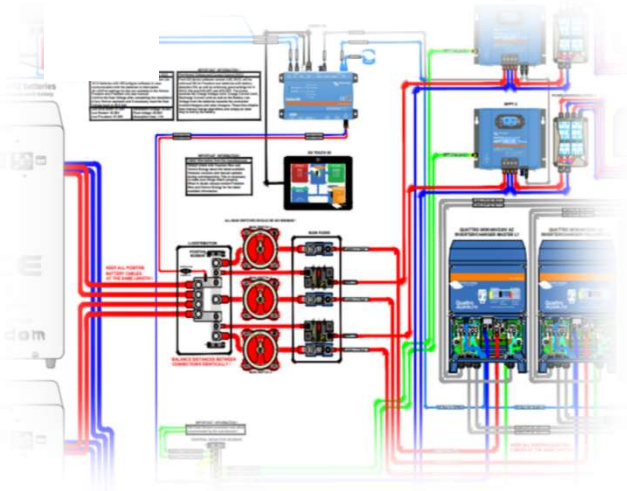
1. On-site monitoring

- Provides information about the system components operation and performance
- Real time feedback during commissioning for analysis and improvements
- Provides notifications to the user for the component's status and performance

2. Remote monitoring (through integrated VRM)

- Provides component and system information overview and control
- Detailed analysis of trends, performance, warnings and alarms
- Remote interrogation of system to improve performance
- Quick support with limited site visits

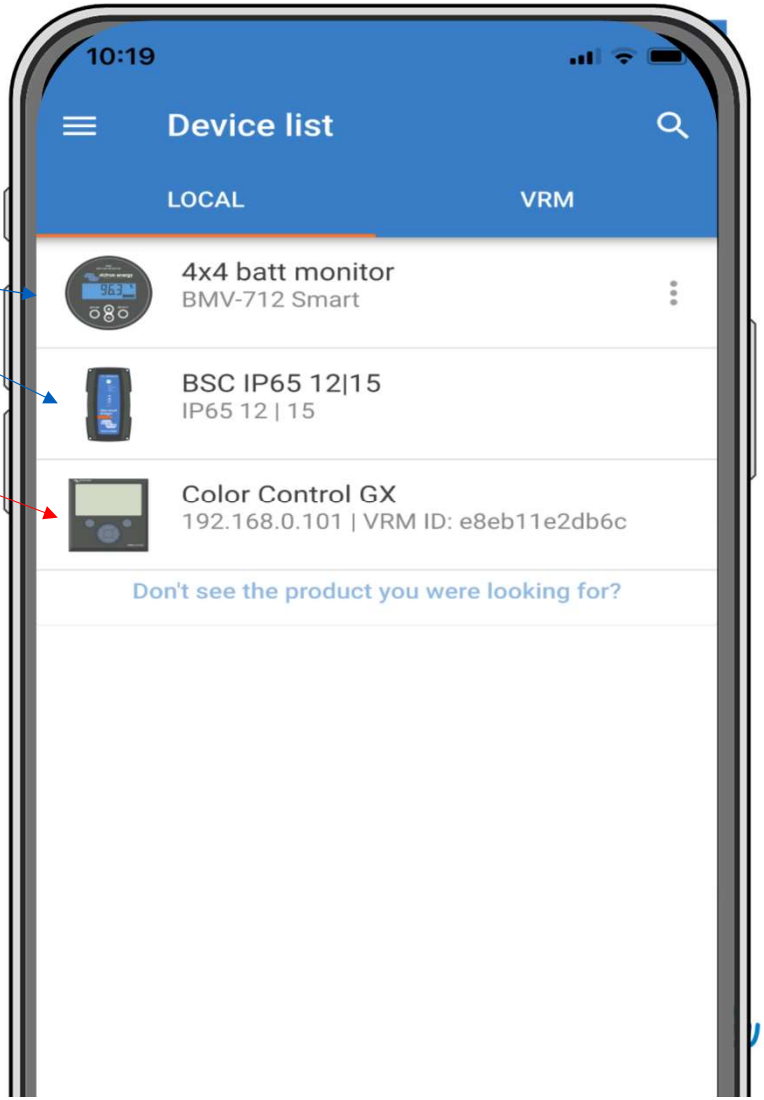
VictronConnect



Bluetooth connected

Shared Wifi connected

Shared Wifi, not needed
to be connected to the internet



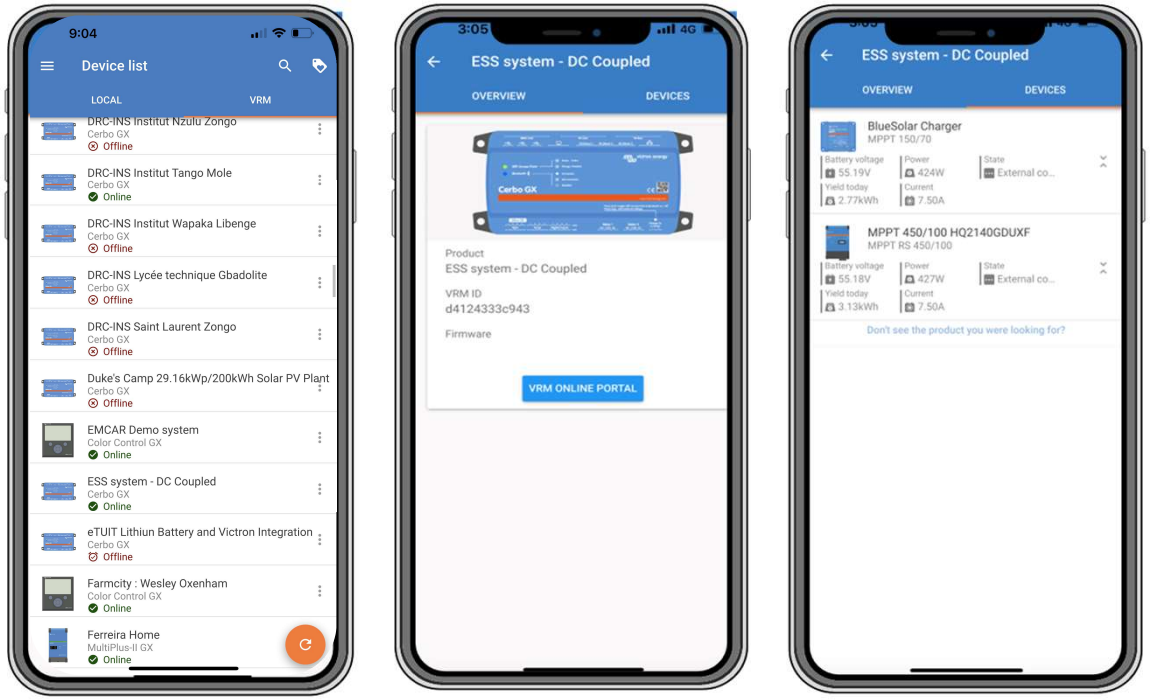
Remote Monitoring – Mobile Device

Remote access to products installed on site

Monitor live operation

View history and error codes

Change settings as required

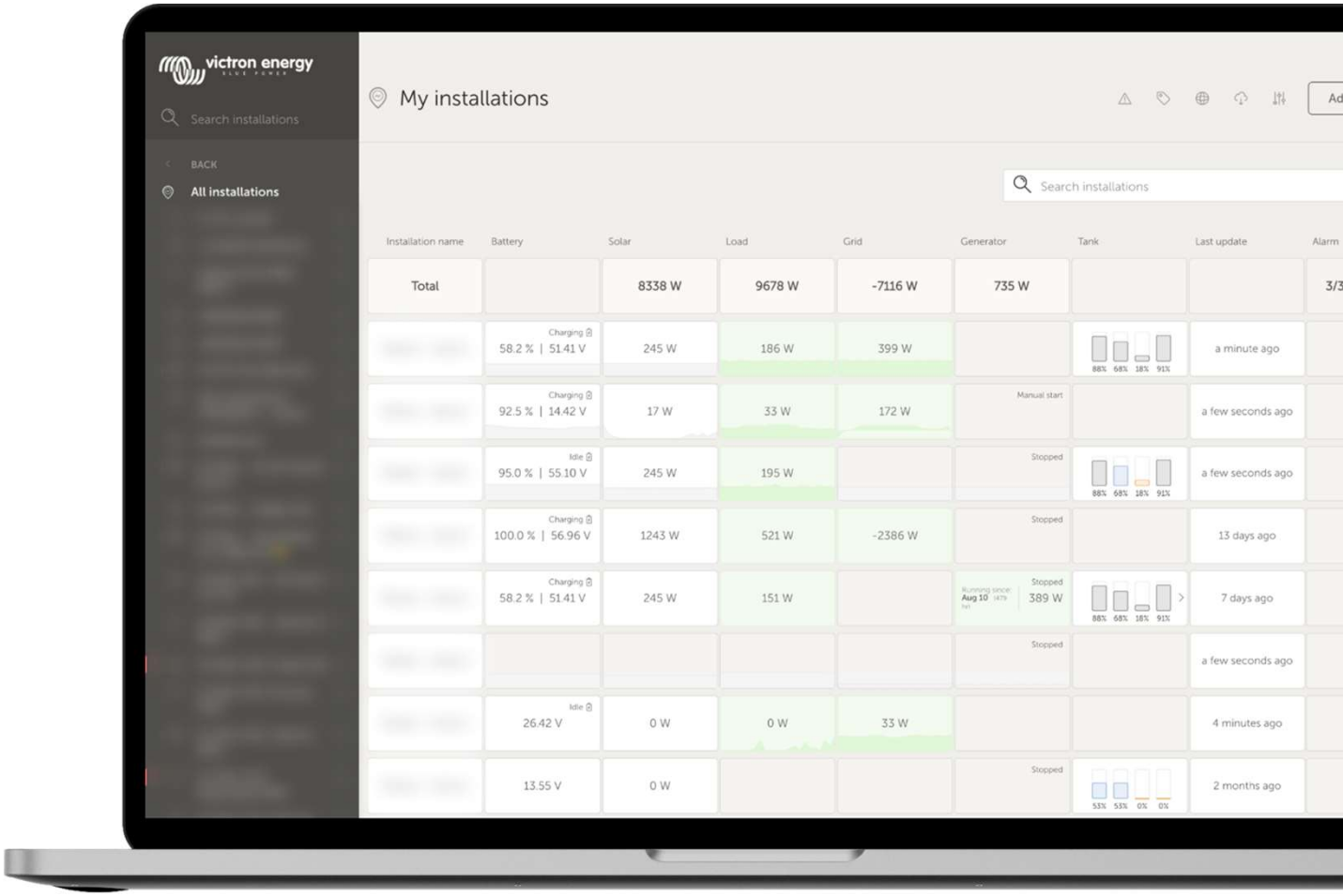


VRM Victron Remote Management

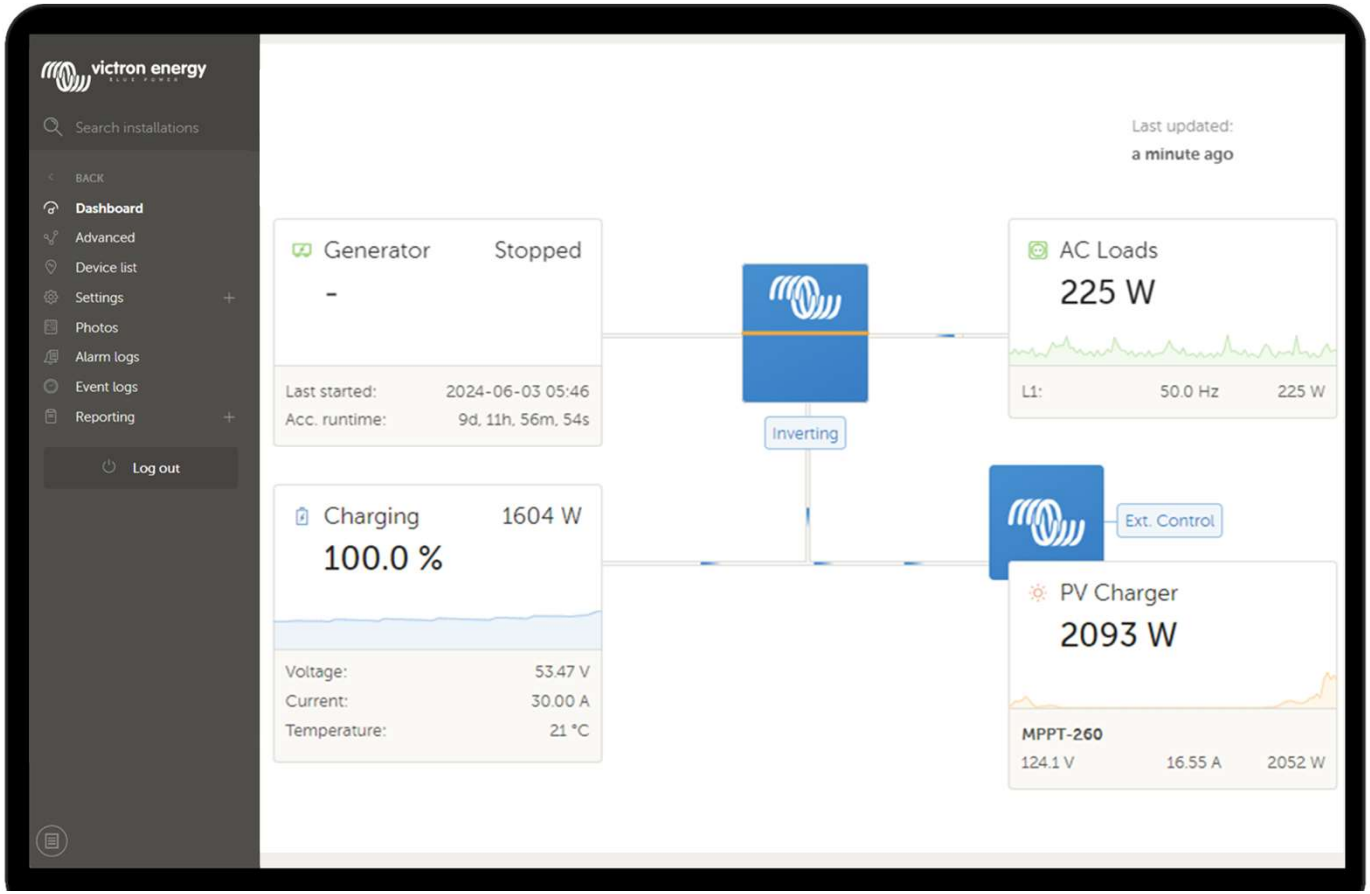
All your systems at a glance

Built for managing:

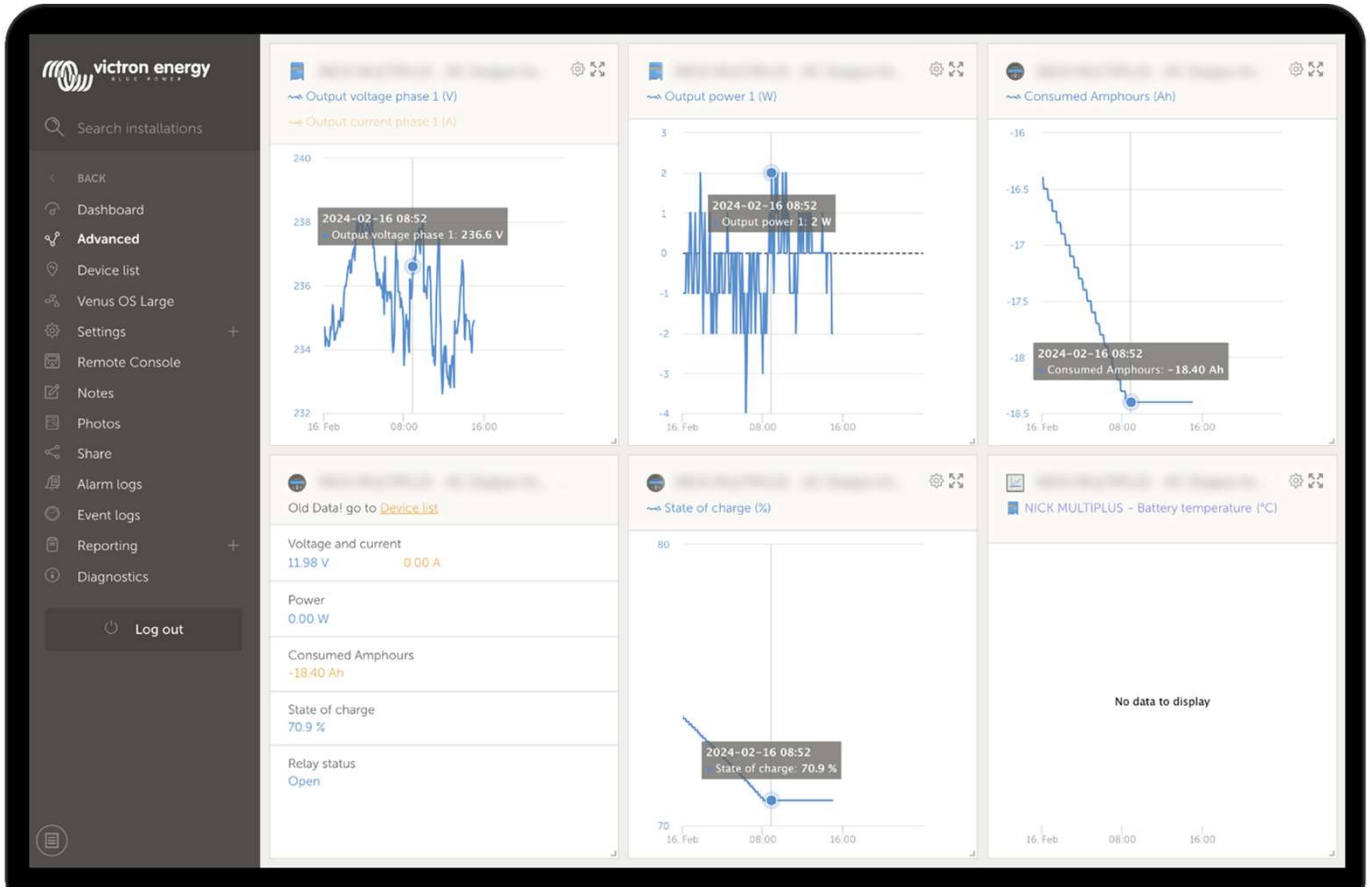
- Large number of ESS systems
- Hybrid generator rental fleets
- Off-grid systems



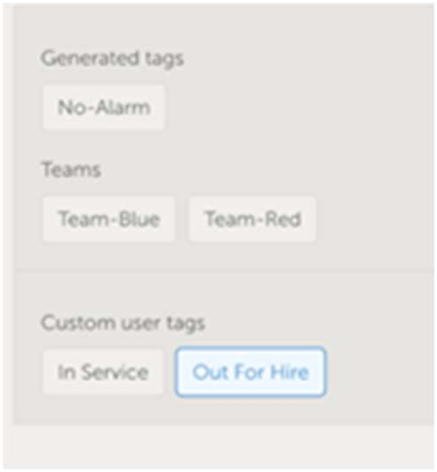
Single system overview

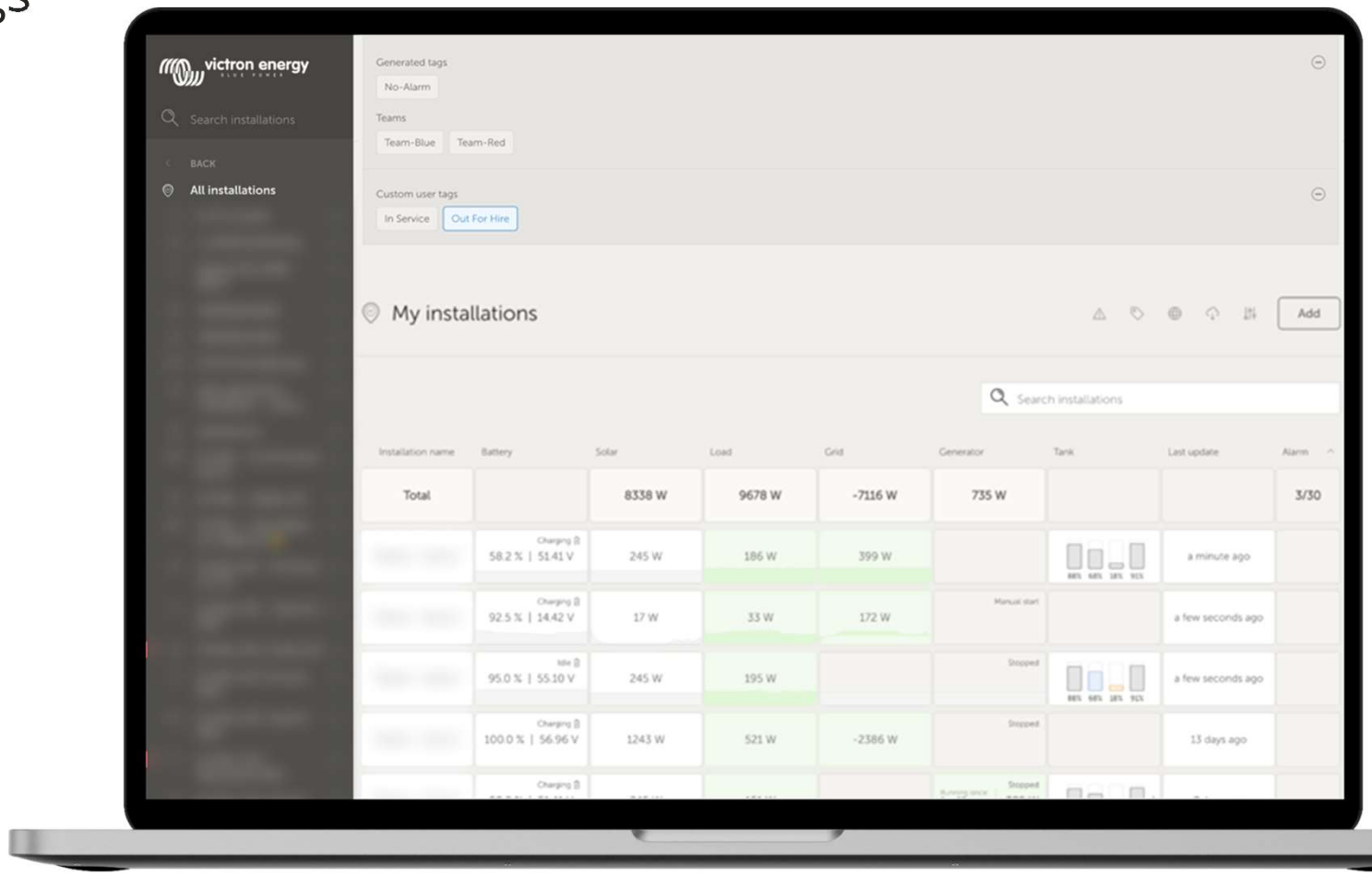


Advanced page – for detailed diagnosis



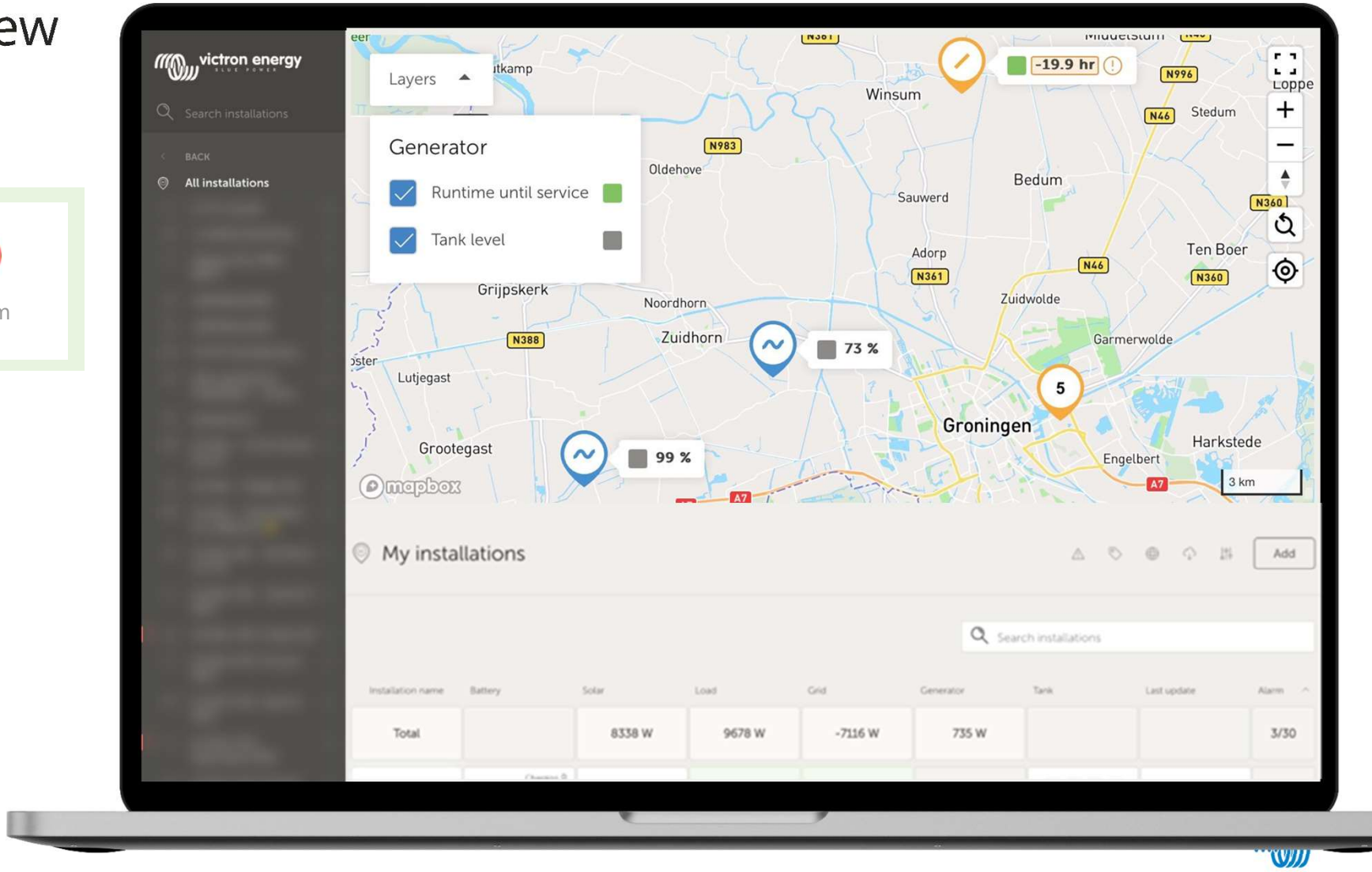
Custom filters with tags





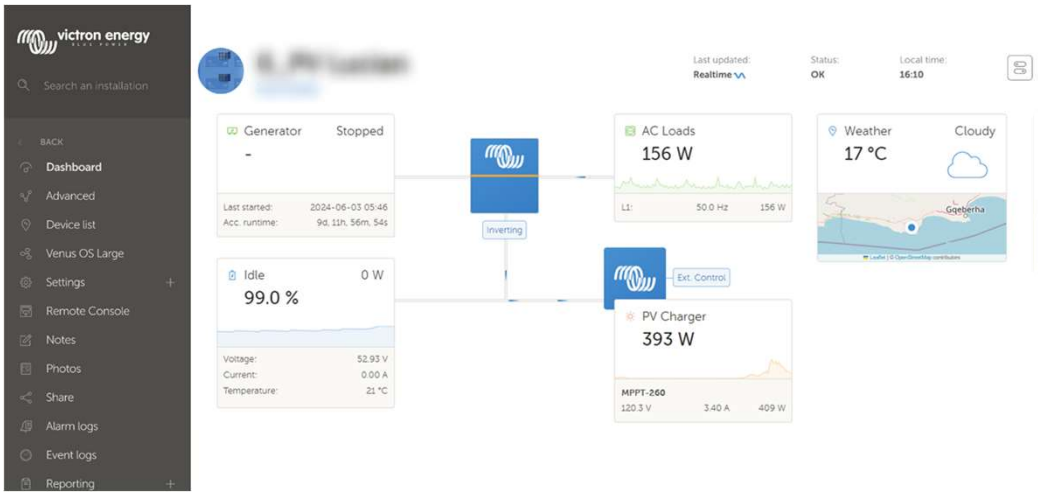
Map overview

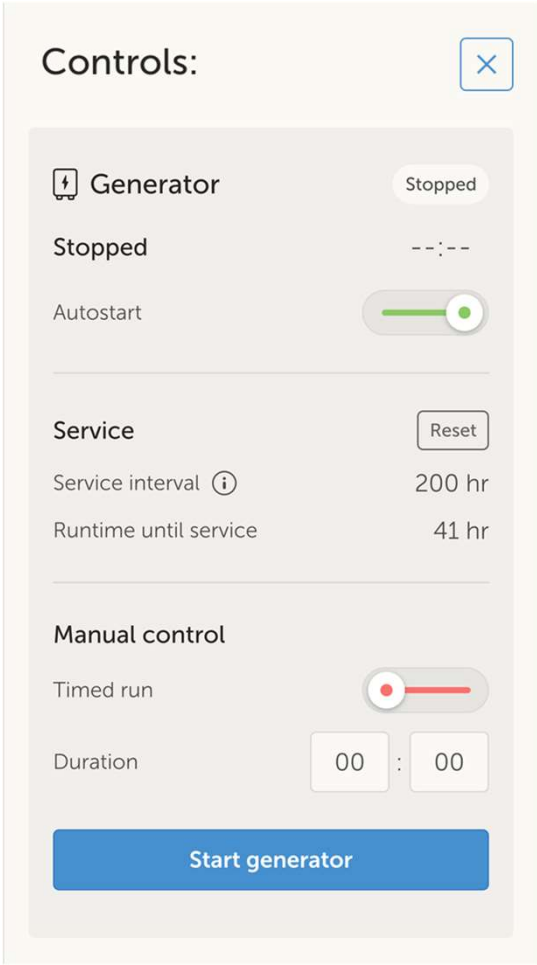
OK Warning Alarm



Remote Control

- Access system controls through VRM





Learn more by clicking this Link

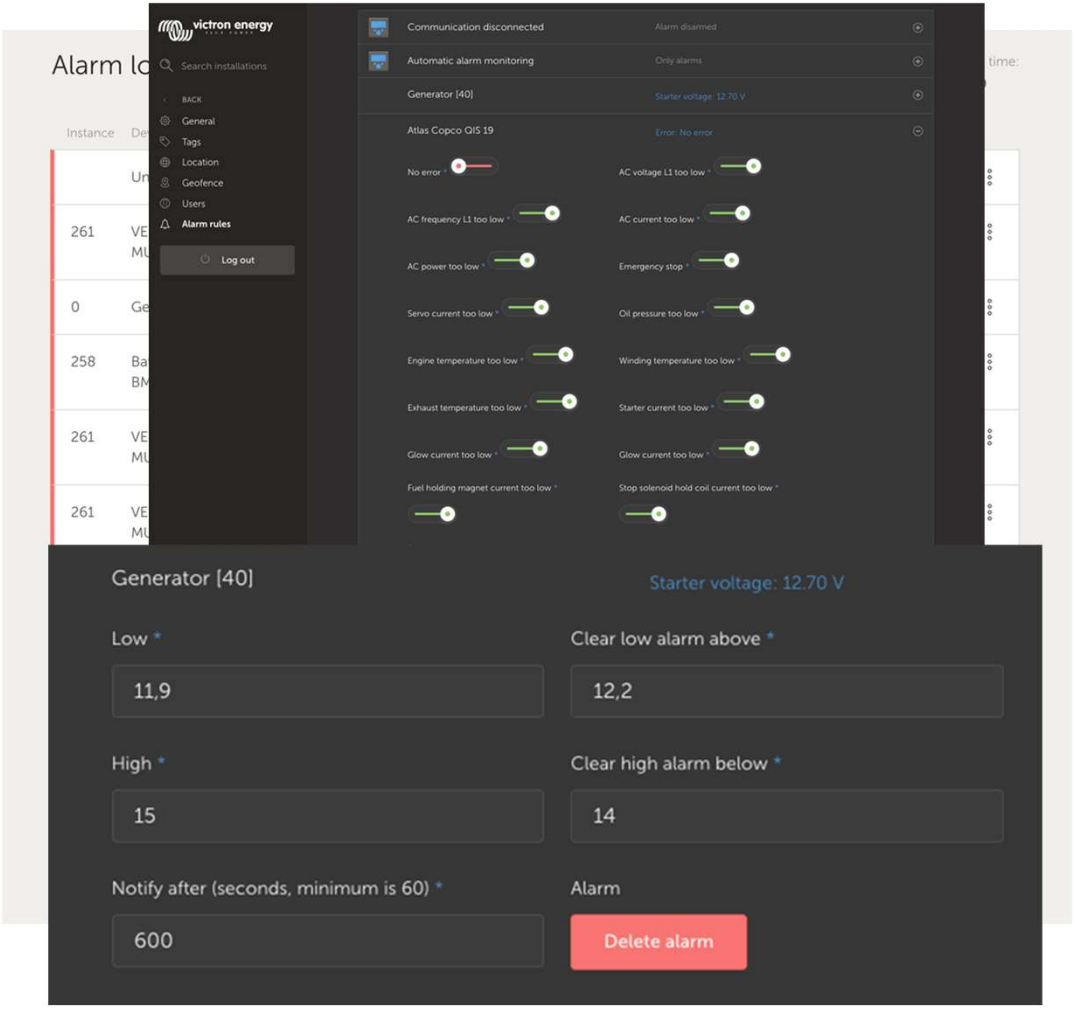
VRM – Alarms and monitoring

VRM Portal constantly monitors your fleet and can notify you of any alarms.

There are four categories of monitoring:

- Internet connection between portal and sites
- Automatic alarm monitoring: a default set on all connected products
- User configurable alarms.

The detailed alarm log provides a full system record for monitoring and compliance



Learn more by clicking this Link

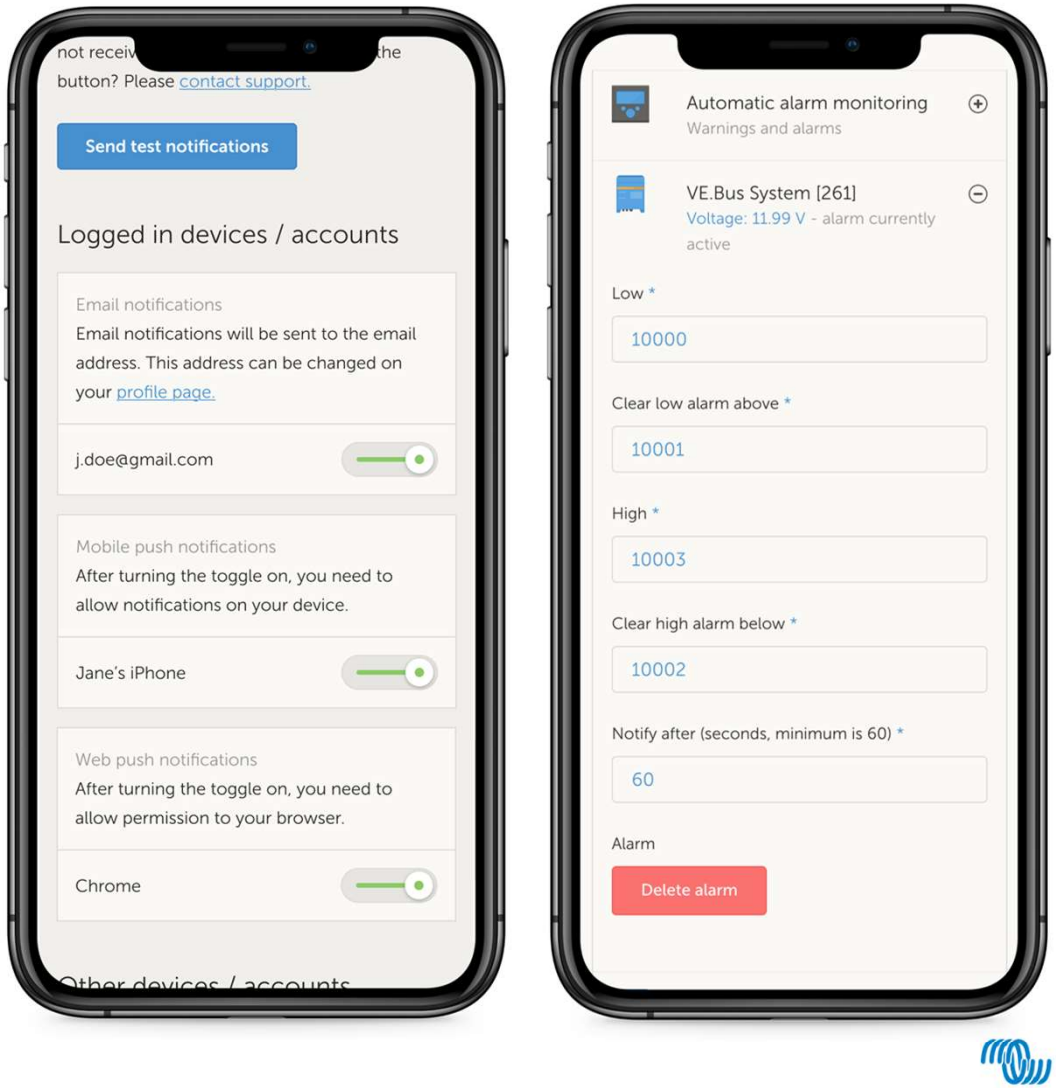
VRM – Notifications

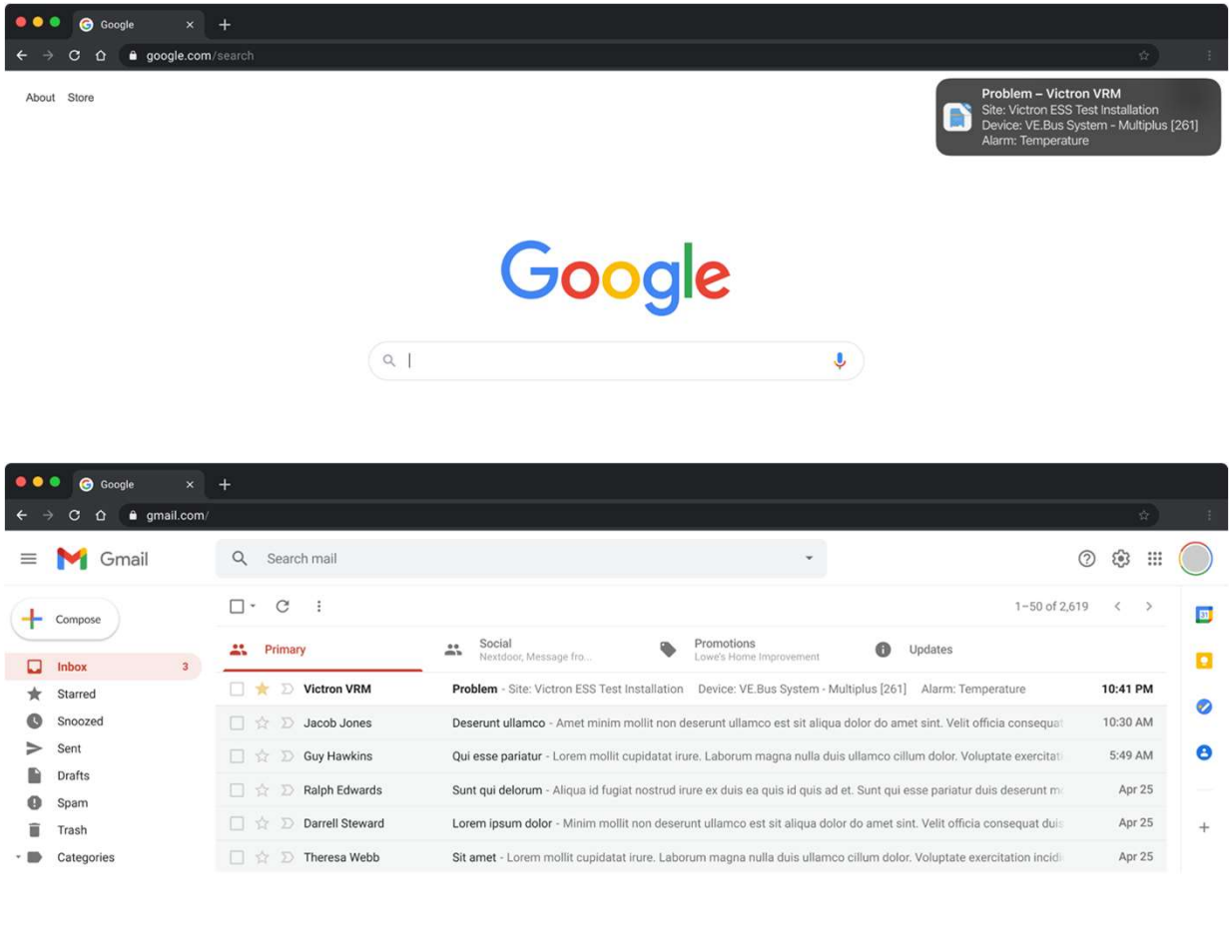
If one of the alarm and monitoring conditions is met, you can be notified in various ways:

- By email
- By push notification on your browser, smartphone, or tablet

Notifications can be tailored to your requirements:

- Choose which users and devices receive alarms from which systems
- Customise alarm parameters from the app or browser




Google
google.com/search
About
Store
Problem – Victron VRM
Site: Victron ESS Test Installation
Device: VE.Bus System - Multiplus [261]
Alarm: Temperature
Google
gmail.com/
Gmail
Search mail
Compose
Inbox 3
Starred
Snoozed
Sent
Drafts
Spam
Trash
Categories
1–50 of 2,619
Primary
Social
Nextdoor, Message fro...
Promotions
Lowe's Home Improvement
Updates
Victron VRM Problem - Site: Victron ESS Test Installation Device: VE.Bus System - Multiplus [261] Alarm: Temperature 10:41 PM
Jacob Jones Deserunt ullamco - Amet minim mollit non deserunt ullamco est sit aliqua dolor do amet sint. Velit officia consequat 10:30 AM
Guy Hawkins Qui esse pariatur - Lorem mollit cupidatat irure. Laborum magna nulla duis ullamco cillum dolor. Voluptate exercitat 5:49 AM
Ralph Edwards Sunt qui delorum - Aliqua id fugiat nostrud irure ex duis ea quis id quis ad et. Sunt qui esse pariatur duis deserunt m Apr 25
Darrell Steward Lorem ipsum dolor - Minim mollit non deserunt ullamco est sit aliqua dolor do amet sint. Velit officia consequat dui Apr 25
Theresa Webb Sit amet - Lorem mollit cupidatat irure. Laborum magna nulla duis ullamco cillum dolor. Voluptate exercitation incidi Apr 25

9:41
10:41
Tuesday, 26 April
Problem – Victron VRM
now
Site: Victron ESS Test Installation
Device: VE.Bus System - Multiplus [261]
Alarm: Temperature

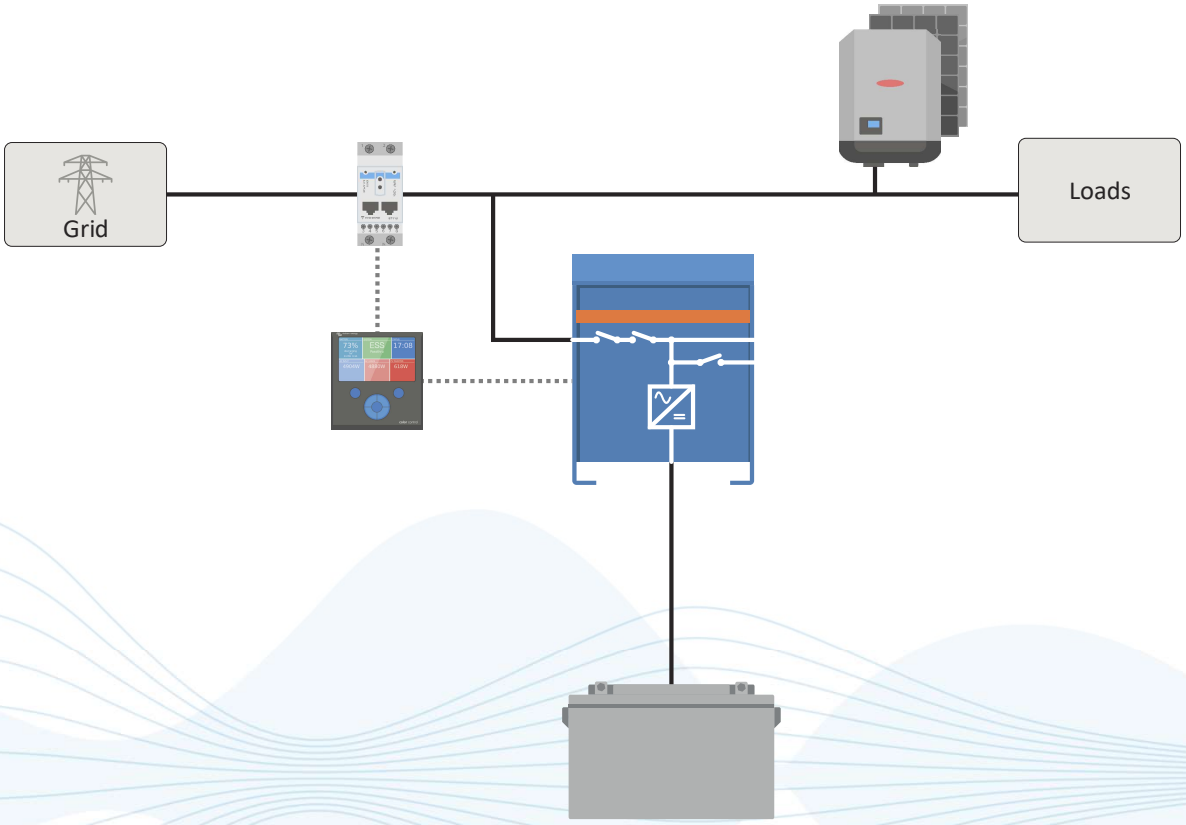
Production report in Excel

Battery %	Battery Voltage	Battery Mode	Load	Solar Yield	Tanks	Temperature
28.84 V	100.0 %	Charging	14 W	46 W	Tank-Fresh Water-89 % | Tank-Waste Water-2 % | Tank-Fuel-30 %	Temp-Battery-21.0 °C | Battery 2-13.0 °C | Te
28.40 V	100.0 %	Idle	17 W	20 W	Tank-Fresh Water-17 % | Tank-Waste Water-50 % | Tank-Fuel-64 %	Temp-Battery-17.0 °C | Te
28.39 V	100.0 %	Idle	11 W	26 W	Tank-Fresh Water-97 % | Tank-Waste Water-2 % | Tank-Fuel-89 %	Temp-Battery-17.0 °C | Temp-Cabin-13.0 °
28.42 V	100.0 %	Idle	20 W	26 W	Tank-Fresh Water-80 % | Tank-Waste Water-19 % | Tank-Fuel-50 %	Fridge-12.1 °C | Temp-Battery-11.0 °C | Te
28.41 V	100.0 %	Idle	9 W	14 W	Fresh water-37 % | Waste water-0 % | Fuel-76 %	
28.39 V	100.0 %	Idle	14 W	14 W	Rain-71 % | Waste-51 % | Fuel-83 %	Battery 1-14.0 °C | Battery 2-14.0
26.77 V	89.4 %	Charging	28 W	233 W	Tank-Fresh Water-10 % | Tank-Waste Water-63 % | Tank-Fuel-75 %	Temp-Battery-20.0 °C | Temp-Cabin-20.0
27.10 V	98.6 %	Charging	1 W	260 W	Fresh water-93 % | Waste water-14 % | Fuel-56 %	
26.97 V	88.9 %	Charging	41 W	273 W	Fresh water-0 % | Waste water-0 % | Fuel-17 %	
26.79 V	93.9 %	Charging	51 W	137 W	Fresh water-65 % | Waste water-0 % | Fuel-80 %	
28.42 V	100.0 %	Charging	-1 W	105 W	Fresh water-62 % | Waste water-90 % | Fuel-6 %	
27.11 V	99.8 %	Charging	24 W	127 W	Fresh water-99 % | Waste water-0 % | Fuel-51 %	
26.38 V	56.7 %	Idle	67 W	87 W	Fresh water-8 % | Waste water-0 % | Fuel-45 %	
26.87 V	87.5 %	Charging	46 W	202 W	Fresh water-99 % | Waste water-0 % | Fuel-75 %	
26.69 V	78.1 %	Charging	18 W	93 W	Fresh water-71 % | Waste water-0 % | Fuel-99 %	
26.77 V	97.2 %	Idle	6 W	59 W	Fresh water-100 % | Waste water-31 % | Fuel-33 %	
27.00 V	95.3 %	Charging	7 W	216 W	Fresh water-44 % | Waste water-0 % | Fuel-70 %	
27.03 V	94.4 %	Charging	21 W	509 W	Fresh water-99 % | Waste water-0 % | Fuel-56 %	
28.39 V	100.0 %	Idle	9 W	14 W	Fresh water-99 % | Waste water-0 % | Fuel-0 %	

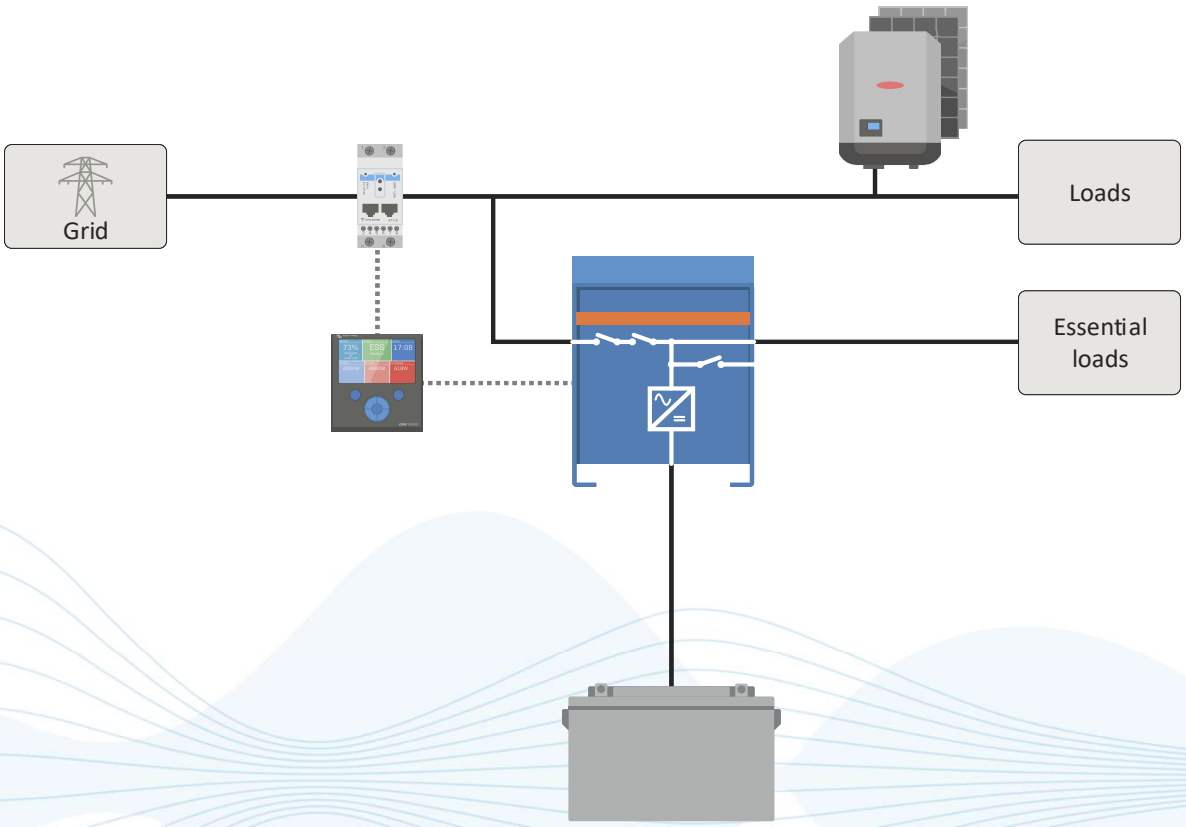
Base

Standard AC-coupled PV

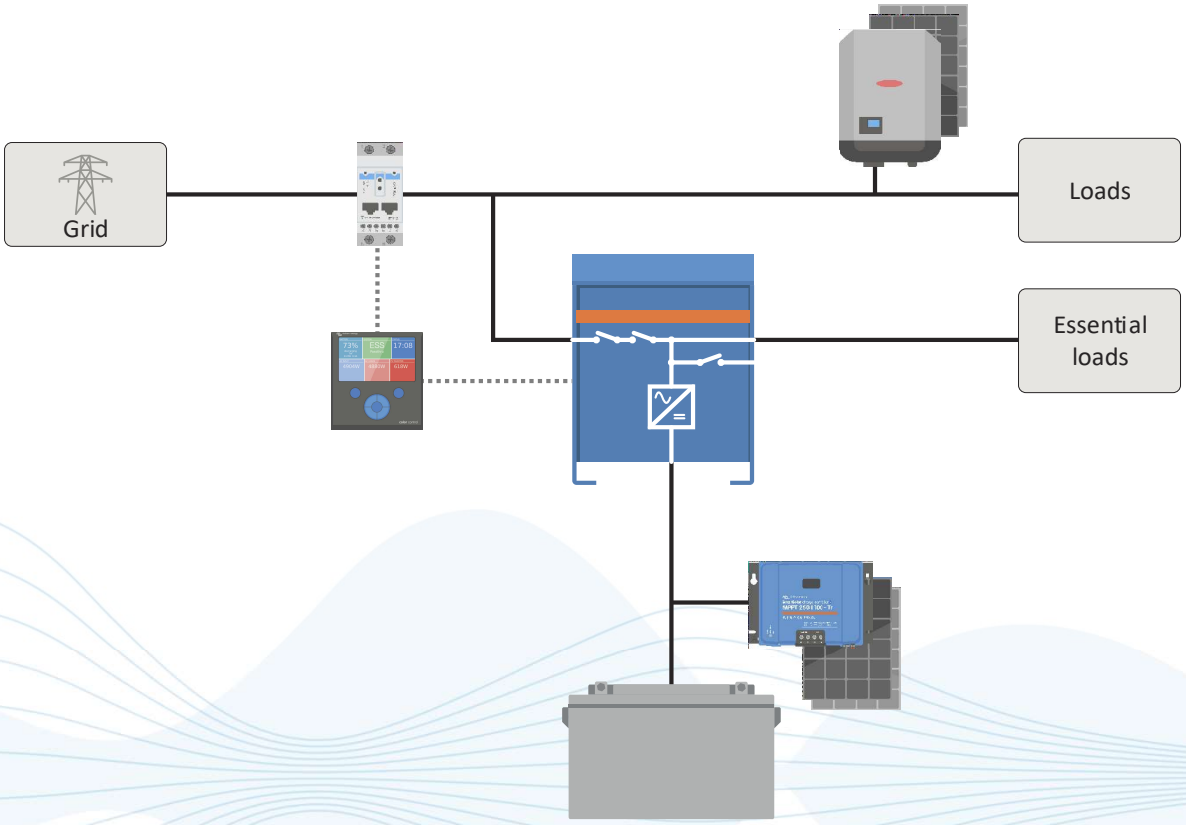
Add energy storage and a meter



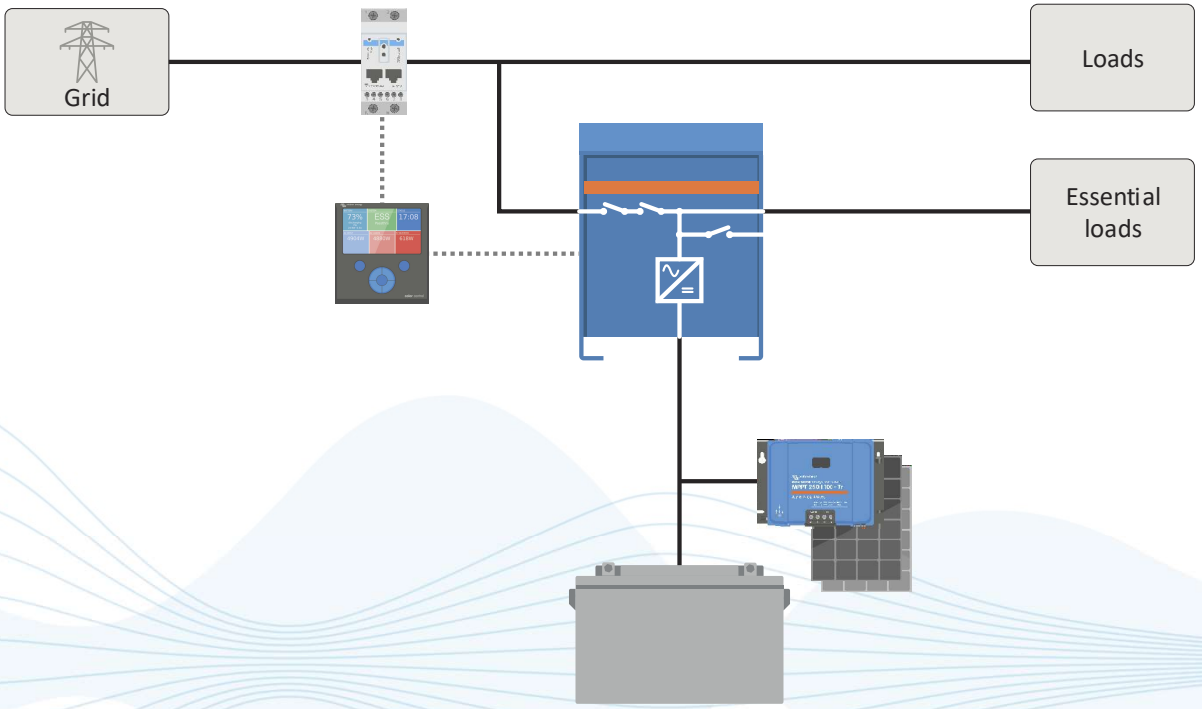
Add essential loads



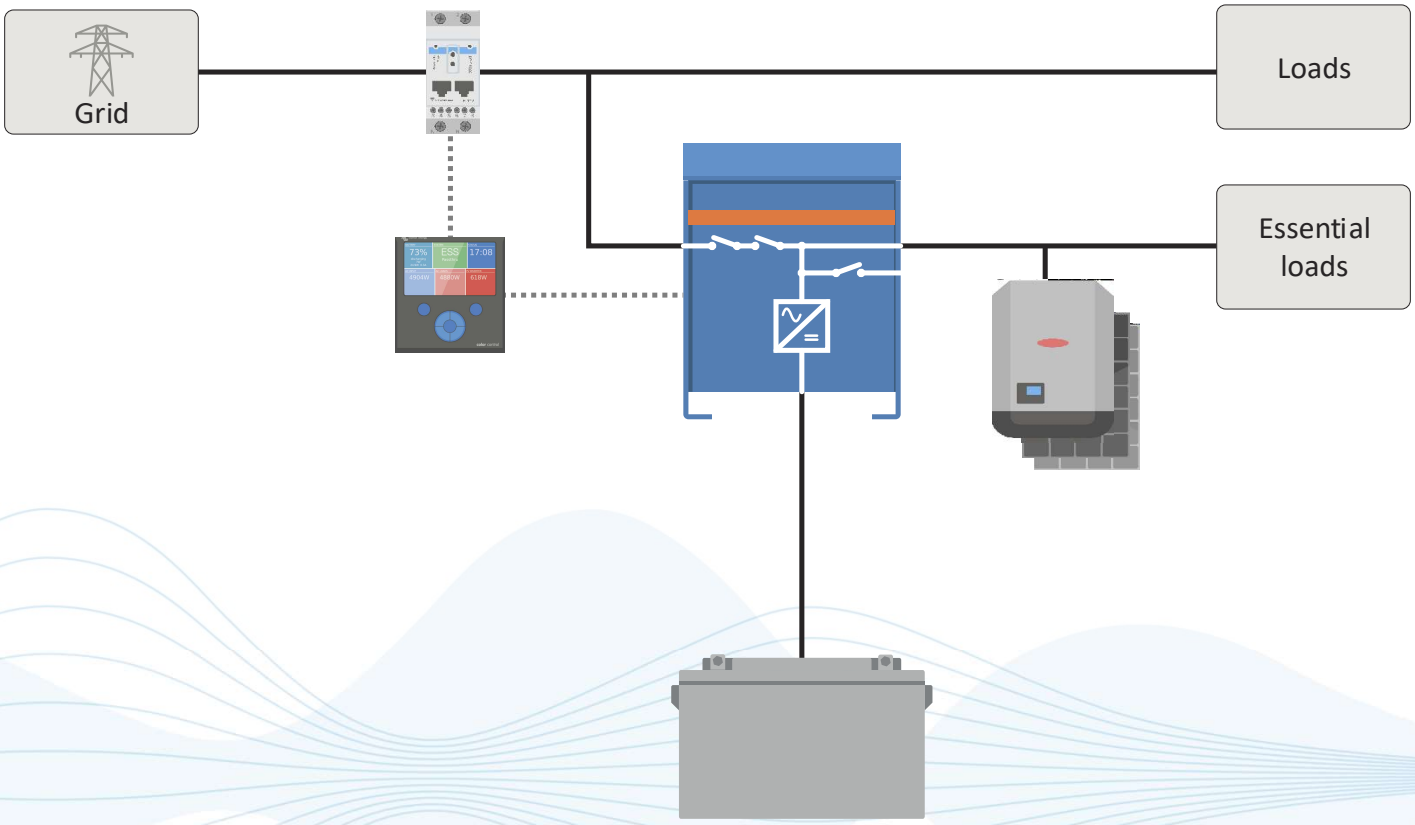
Add DC-coupled PV



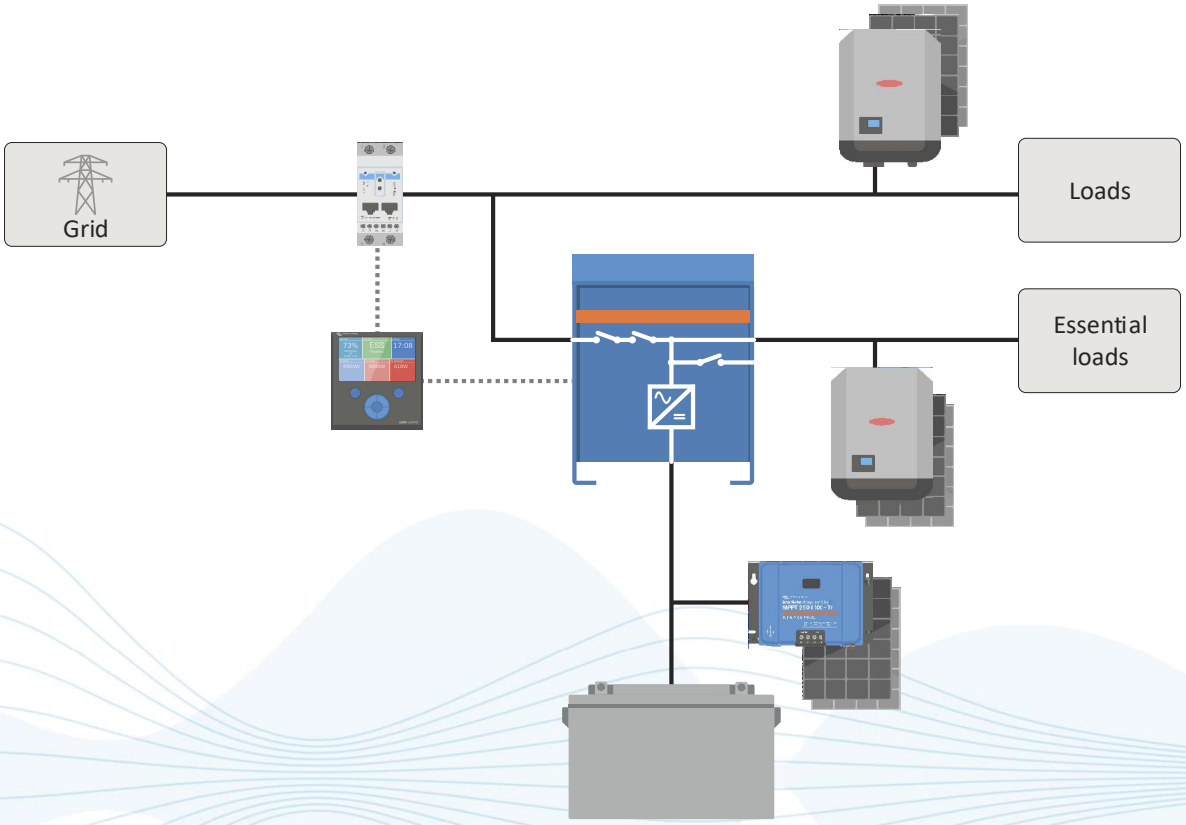
Or use only DC-coupled PV



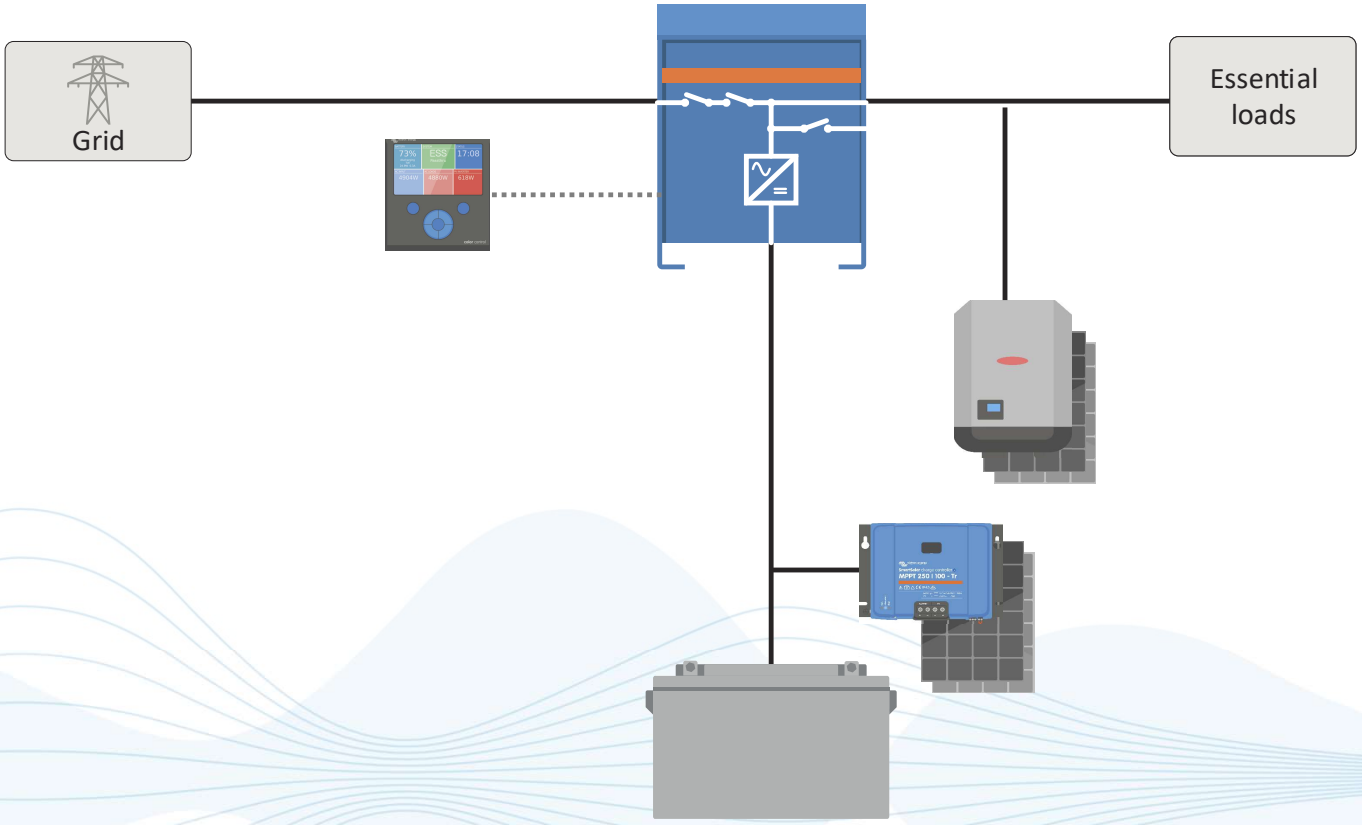
Or AC-coupled PV on output



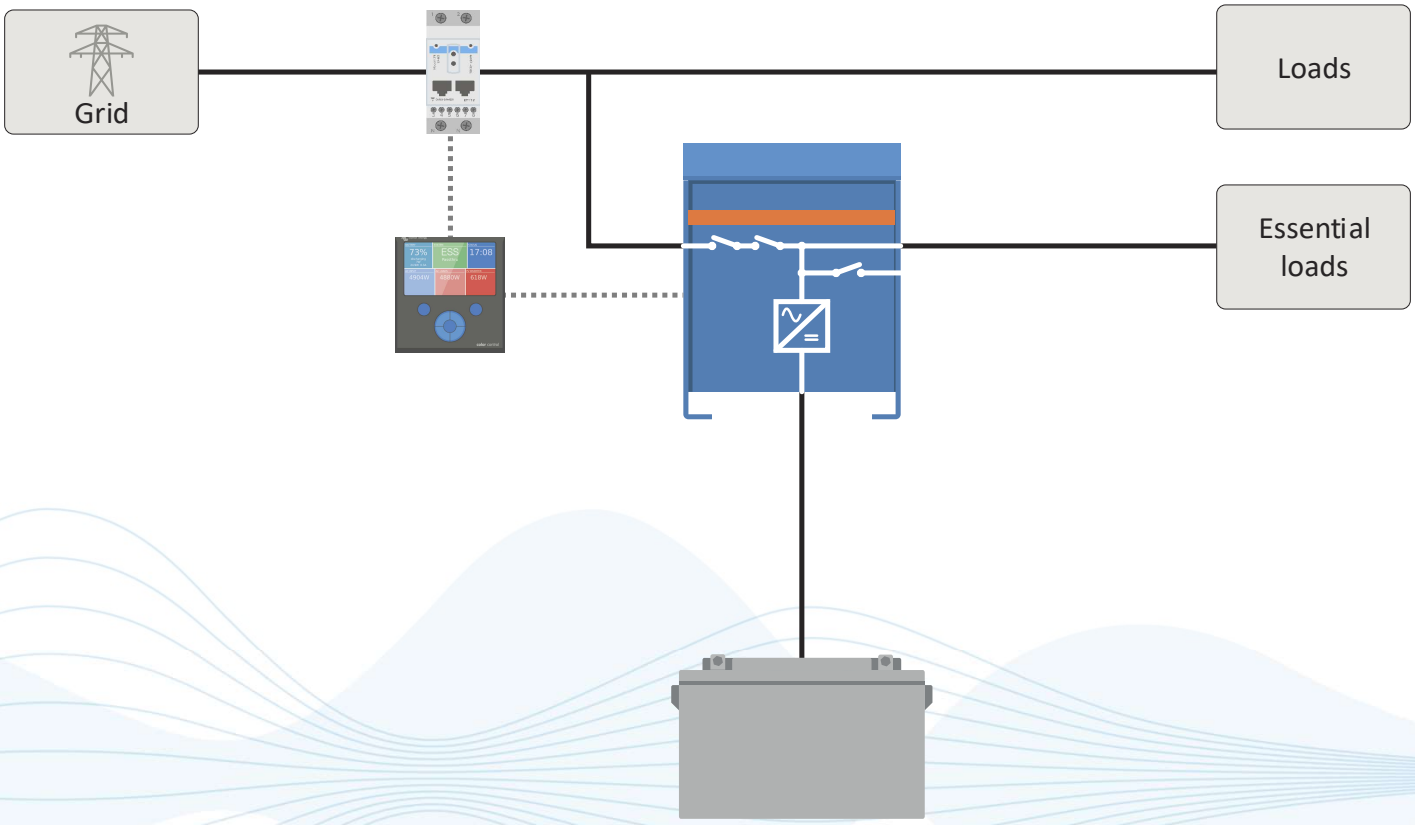
All, or any combination is possible



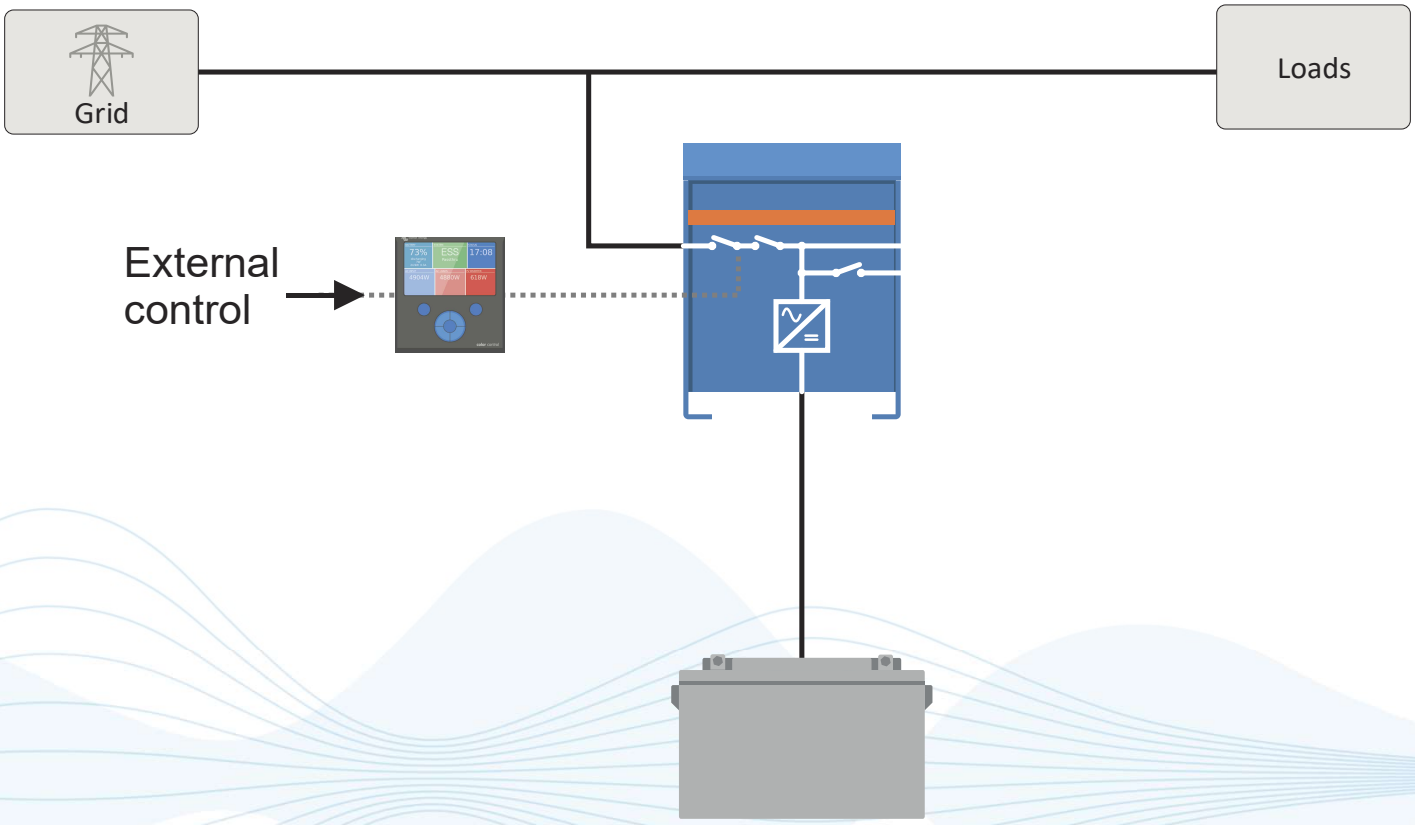
No meter - all loads are essential loads



Pure energy storage, no PV



Pure energy storage with external control



victron energy
BLUE POWER