

MultiSite Monitor

Server-based Monitoring Software



Remote Monitoring of All Sites in One Tool

Monitor energy and performance on multiple sites

- Statistics on energy produced
- Instant status overview
- KPI (Key Performance Indicators)
- Alarms
- Detect underperforming sites
- Email reports

Product description

Server-based Monitoring Software

The MultiSite software is a server-based tool that gathers statistical data from connected sites and stores it in a database. The software also includes web pages for viewing the data from the database. The tool support up to 25000 connected sites.

Monitor the sites energy performance

The MultiSite software is a tool for monitoring multiple sites' energy performance and status. The site owner gets access to performance data that can be used to evaluate investments in hybrid DC power system and for marketing of site fleet's reduced carbon emission. The instant status of sites makes MultiSitea 1st line site maintenance tool; whenever there is a site in alarm, it is easily seen in the map, the list and top bar. One click in the site's details view will open the site's web pages in a new tab for further investigation of the alarm

Key features

- Easy access
Through web browser for both clients and administrators
- Automatic detection of underperforming sites
Use of battery, energy, generator and network connectivity
- Client monitoring
Not dependent on access to site network
- Comprehensive alarm views
Rolling alarm view, alarm details view and alarm ranking of sites
- Central database server
Holds statistical data, resulting in decreased browsing latency
- Key performance indicators
Set kpi targets and measure site energy and performance
- Email reports
- Site surveillance
Allows for site specific ip cameras to be monitored through multisite monitor
- Battery status
Remaining battery life and battery backup time
- Grid availability
- Cloud computing
Vmware platforms compatible
- Support fqdn

See the last pages for technical specifications

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Specifications				
Available packages	Small	Medium	Large	Enterprise
Included clients/user accounts	2	5	15	15
Maximum no. of clients/user accounts	5	15	30	30
Included sites/connected power system controllers	5	50	200	3000
Max. no. of sites/connected power system controllers	49	199	3000	25000

Support agreements	Limited	Maintenance & Service	
Email support	No minimum response time		Reply within 2 business days
Telephone support (free support hours per year)	-	Small	4h
		Medium	15h
		Large	40h
Support availability	09:00-15:00 CET (not included)	09:00-15:00 CET	
On-site support	-	Upon request	
Free MSM software upgrade	-	Yes	

Server requirements		
Sites	Recommended Server Hardware	Recommended Free Disk Space after installation
0 - 100	2 CPU Cores, 3 GB RAM	100 GB
100 - 250	3 CPU Cores, 5 GB RAM	250 GB
250 - 500	5 CPU Cores, 8 GB RAM	500 GB
500 - 1000	8 CPU Cores, 16 GB RAM	1 TB
1000 - 2000	8 CPU Cores, 32 GB RAM	2 TB
More than 2000	Contact MSM.support@eltek.com	

Client requirements
Web browser with Silverlight (v4.0) plug-in on client computer

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Site and controller requirements	
Eltek system controller with Ethernet and JSON support	General requirement
Smartpack2 Master	All versions
Smartpack (only .242100.118)	WebPower version >4.6 (not compatible with SNMP auto config.)
Smartpack S	All versions
Compack	Firmware version > 1.05
Delta Orion	Firmware version v7.00 or newer
3 rd party controllers/SNMP Devices	SNMP v1, v2c, v3. MIB Compiler and mapping feature in MSM

Network infrastructure requirements			
Bandwidth to sites (no dial-up)	Minimum 256 kB/s		
Daily data usage on each site	Typically from 50kB to 3.0 MB, dependent on configuration		
Maximum response time	700 ms		
Transport layer/MSMJsonService	TCP Port 80 / TLS Port 443	MSM Json Service	TCP port 8082
443 Data Set / Get SNMP, Alarms SNMP Traps	UDP Port 161/162	MSM SNMP Service	TCP port 8083
161/162 Transport layer / MSM Network Utility Service	UDP Port 20034	MSM Network Utility Service	TCP port 8084
Port 20034 Transport layer / MSM SNMP Trap Receiver	TCP port 8083	MSM Northbound Service	TCP port 8085
Transport layer / MSM Restricted Site Service	TCP Port 8087	MSM SNMP Northbound Service	TCP port 8086
8087 Transport layer / MSM SNMP Data Collector Service	TCP port 8088		

Security
User login required, min 4 letters, upper/lower case & number

Features and statistics
Dashboard
Total number of sites connected
Number of sites in alarm
Number of offline sites
Solar energy generated in the last 24 hours

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Features and statistics - Continued	
Map view	List view
Server data update interval every 10 minutes	Site Name
Map data from BING or similar service	IP Address
Use of JPG or BMP image as replacement to BING maps	Controller Type
Site locations	Number of Major Alarms
Visible monitors (6)	Number of Minor Alarms
	Connection Status
	Alarm monitors (6) (default: Mains Voltage, Battery Voltage, Rectifier Current, Battery Temperature, Solar Current)
	SNMP for 3 rd party controllers

Energy trend, single site	
Server data update interval, typical	Daily
Energy from solar, wind, generator, rectifiers, DC load (Multi Tenant) and auxiliary equipment on mains	Pie chart 24h/30d/50w (%) Line chart 30h/30d/30w (kWh)
Generator run time, fuel consumption and efficiency (hybrid sites only)	Line chart 30h/30d/30w (m), (l), (kWh/l)
Battery charge and discharge	Bar Diagram (Ah) total
Battery back-up time	Instant elimination and target (h)
Alarm Report	Hourly
Solar CO2/OPEX savings trends	

Run hours	
Generator, Grid, Battery	Table min/day, Hours/week, Hours/Month
Eltek Cooling box (ECB), Aircondition	Line chart 30d/30w/30months

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Compare (comparison of sites)

Server data update interval, typical	Daily
Energy from solar, wind & renewable in total, Renewable versus total DC system or Mains energy	Site versus Site Group versus Site Group versus Group Bar diagram 30h/30d/30w (kWh), (%)
Energy usage DC Load, Multi tenant: (up to 8 channels)	Site versus Site Group versus Site Group versus Group Bar diagram 30h/30d/30w (kWh), (%)
Generator run time, fuel consumption and efficiency	Site versus Site Group versus Site Group versus Group Line chart 30h/30d/30w (m), (l), (kWh/l)
Battery temperature	Site versus Site Group versus Site Group versus Group Bar Diagram average (°C or °F)
Alarm Report	Hourly

Features and statistics - Continued

KPI view [energy]

Energy (Solar/Wind/Generator/Grid)	Total Last 30 days Average run hours (generator only) Average fuel efficiency (generator only) Low fuel level (generator only)
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KPI view [performance]

Energy	Solar energy Wind energy Grid, other Grid availability
Battery	Near end of life Backup time Average battery temperature Charge condition Symmetry alarms
Generator	Average run hours Average fuel efficiency Low fuel level
Connectivity	Quality Frequent loss of connectivity
Cooling	ECB (Eltek Cooling Box) run time Air conditioner run time

Detection of underperforming sites

Automatic detection of underperforming sites	Use of Battery, Energy, Generator and network Connectivity, Cooling KPI
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Battery status	
Presentation of Battery Condition	Bar diagram Battery Life Days Remaining Battery Backup Time
Smartpower & Grid Services Features	Battery health / quality statistics Battery testing / config Battery detailed test overview with SoH
Grid status	
Grid Availability	Run time Bar diagram 30h/30d/30w (h), (%) Pie chart 30h/30d/30w (h) (%)
Features and statistics - Continued	
Alarms (snmp, eltek / delta)	
Rolling alarm view	See all alarm traps sent from controllers connected to the MSM Filter by status, system template, search on site/ alarm description and time interval
Alarm details view	See all active and historical alarms on a site/group Filter by severity and date Statistics about how long the site has been in alarm, and on which level
Ranking of sites "In Alarm" time (all sites ranked)	Shows an overview of how long a site has been in alarmstate compared to the other sites
Polling alarms (other)	Alarm traps
Logs	
Event log	Log of site status change and email report sent
Change log	Logs when sites are altered: Configuration upload Firmware upgrade SNMP configuration changed
Email reports	
Alarm Report	Active alarm
Underperforming report	Underperforming
Energy report	Hourly, Daily, Weekly interval Daily Energy summary (new) Weekly Energy summary(new) Daily Energy usage per site for last days(new)
Site summary report	Hourly interval, Daily interval, Weekly interval, Monthly interval, Quarterly interval, Yearly interval
Run hour report	Monthly interval
KPI report (global report)	KPI Trigger

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Site surveillance

IP camera integration

Visual surveillance of remote sites

3rd party application support

Launch 3rd party applications through MultiSite Monitor

Ticketing system

Features and statistics - Continued

Site inventory

Serial numbers

Warranty alert

Module type

Part numbers

Hardware version

Software part numbers

Software version

Warranty period

Delivery date

Battery

Serial numbers etc. from Smart batteries

Site management

Deployment of configuration to multiple controllers

(requires controller software v.2.3 or higher)

Automatic SNMP configuration on connected controllers

Compare controller configurations

Show and upgrade controller firmware

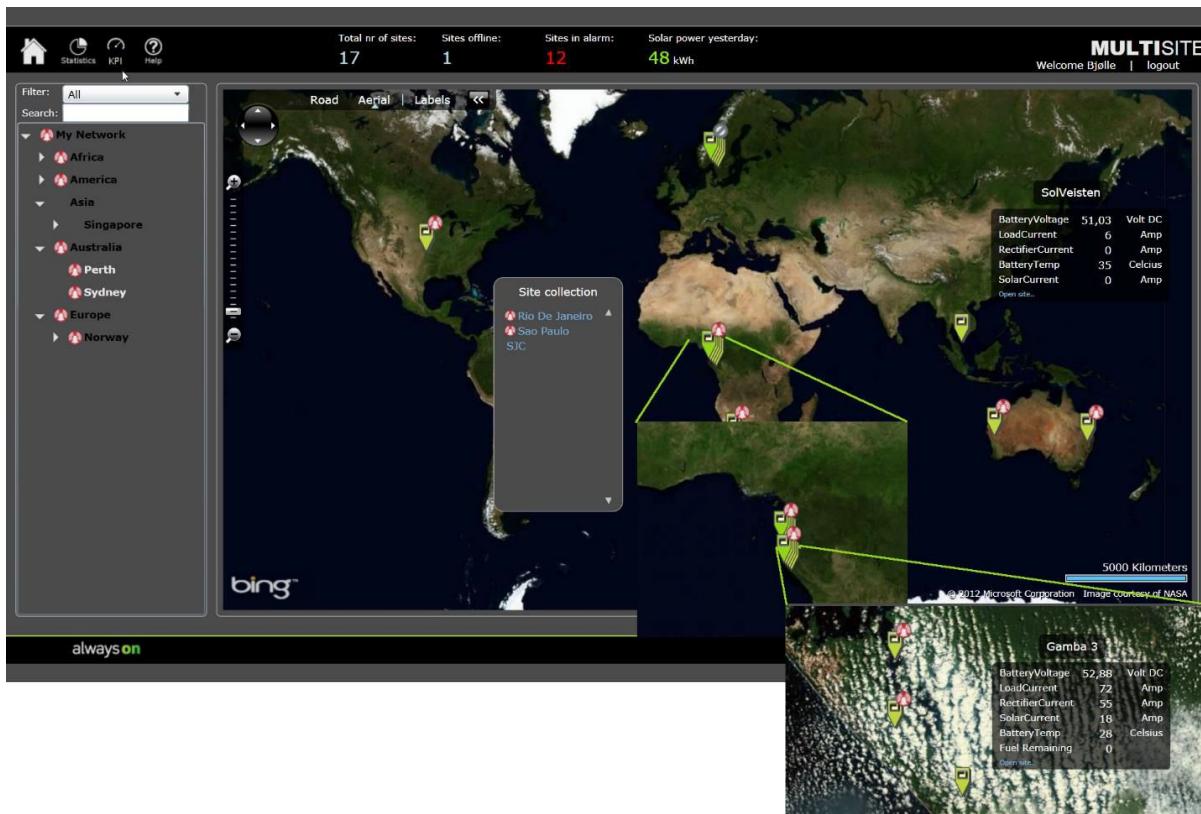
Northbound Communication

EDM Panama (XML format)
SNMP w/MultiSite Monitor KPIs

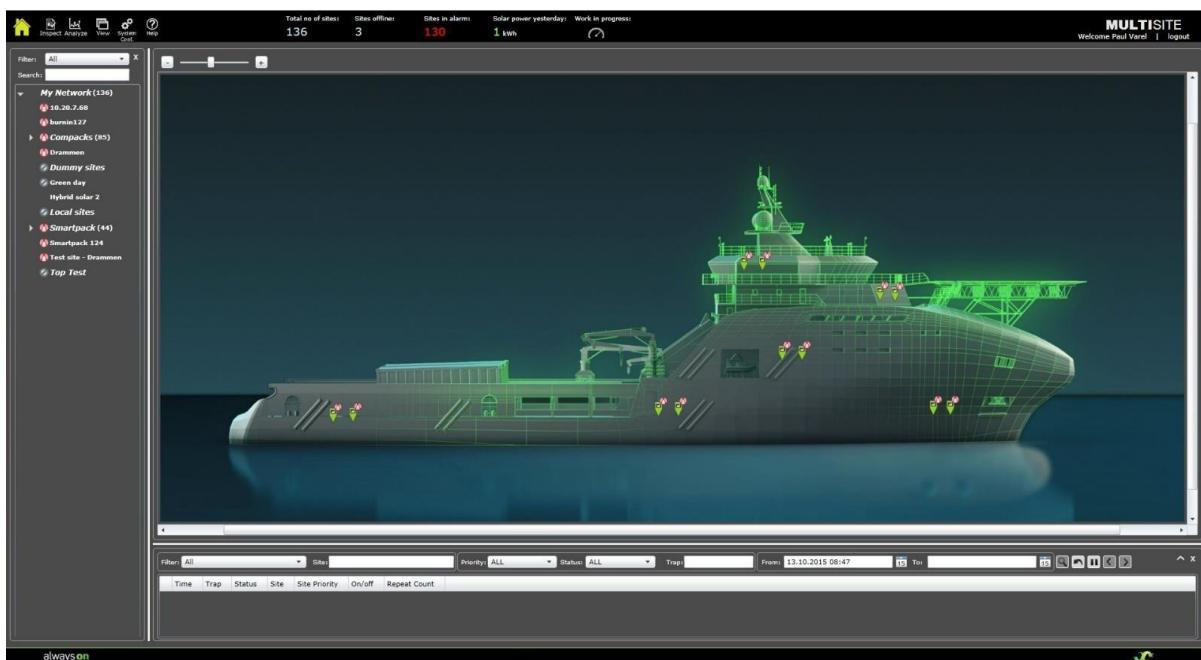
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Map view / dashboard (example)



Custom jpg/bmp view/ dashboard (example)



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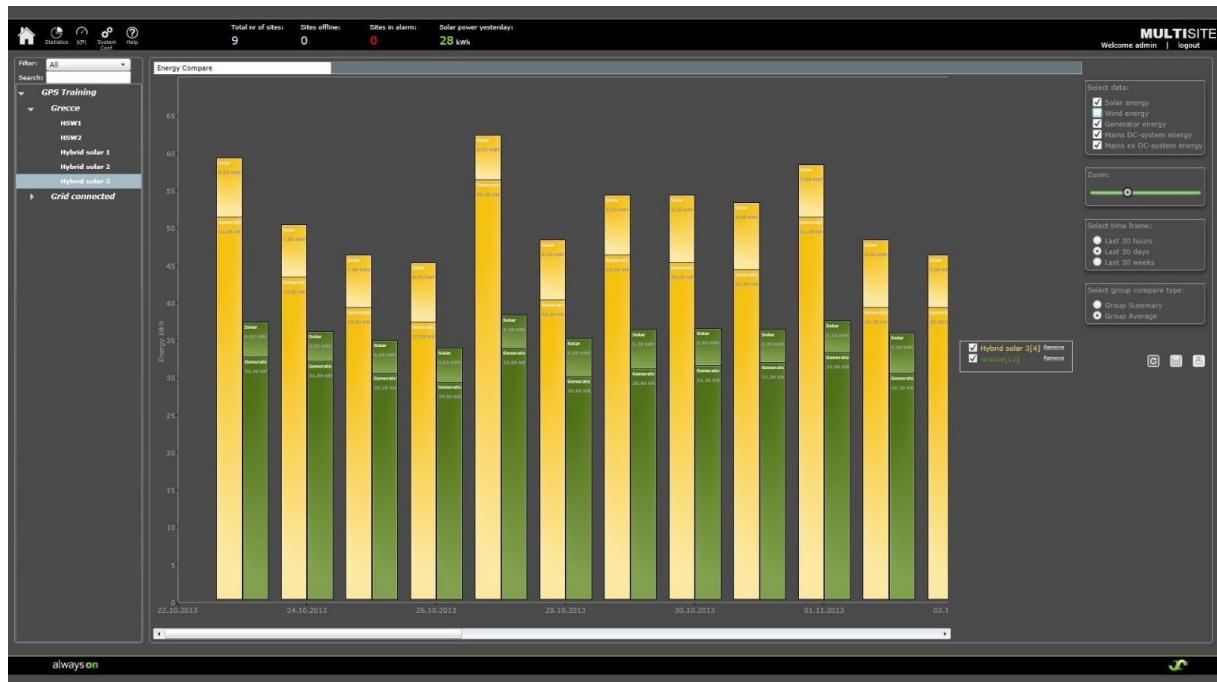
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Energy trend, single site (example)



Compare (comparison of sites) (example)



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Kpi view [energy] & [performance] (example)

The screenshot shows the KPI view with the following data:

Top Header: Total no of sites: 6, Sites offline: 4, Sites in alarm: 1, Solar power yesterday: 56 kWh.

Key performance indicators (KPI's):

Energy source	Total	Last 30 days	Target
Solar	24,6 %	23,8 %	21,9 %
Wind	0,3 %	0,1 %	2 %
Diesel	1,8 kWh/l	0,5 kWh/l	0,1 kWh/l

Performance:

Description	Number of underperforming sites	KPI value	Target
Solar energy	1/6 (16%)	1/6 (2%)	1/6 (2%)
Wind energy	0/6 (0%)	1/6 (2%)	1/6 (2%)
Grid, other	0/6 (0%)	1/6 (2%)	1/6 (2%)
Grid availability	1/6 (16%)	1/6 (2%)	1/6 (2%)

Alarm details view (example)

The screenshot shows the Alarm Details view for the Drammen site. The left sidebar shows a tree view of sites: Live grid sites (1), Live Hybrid sites (5), Americas (1), China (3), Norway (1), Drammen, and Singapore (1). The main area displays the following information:

Monitored since: 27.09.2012, **Number of sites in Alarm:** 0

Total time in Major Alarm: 13,08 %, 2985,23 Hours, **Major Alarm Ranking:** 2

Total time in Minor Alarm: 0 %, 0 Hours, **Minor Alarm Ranking:** No Minor Alarms registered on this site

Total time Offline: 0,01 %, 1,57 Hours, **Offline Ranking:** 8

Active Alarms:

Alarm description	Status	Site	Alarm on time	Last reported	Event Log	Acknowledge alarm
BatteryTemp1.1	Minor high	Drammen	21.05.2015 06:24:04			Ack
LoadFuse 1	Major	Drammen	21.05.2015 06:24:03			Ack
BatteryQuality	Major	Drammen	14.10.2014 10:35:35			Ack
BatteryQuality	Minor	Drammen	14.10.2014 10:35:34			Ack
BatteryTimeLeft	Major	Drammen	25.09.2014 23:44:44			Ack
BatteryTimeLeft	Minor	Drammen	25.09.2014 23:30:39			Ack

Historical Alarms: (This section is currently empty.)

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Alarm ranking (example)

#	Site	Hours in major alarm	Detected major alarm
1	Drammen	793,99	30.04.2015 12:20:09
2	Eltek demo site	684,45	05.05.2015 01:52:37

#	Site	Total % in major alarm	Total hours in major alarm	Monitored since
2	Drammen	13.08	2985.23	27.09.2012 08:46:51
4	Eltek demo site	9,74	489,533	08.10.2014 13:49:44
5	Rooftop Singapore	9,66	1462,2	13.08.2013 15:11:51
6	Top roof	6,05	1086,38	17.04.2013 09:58:33
7	Top roof	1,59	286,183	17.04.2013 09:57:36
8	SJC	0	0,666666	10.09.2013 15:18:15

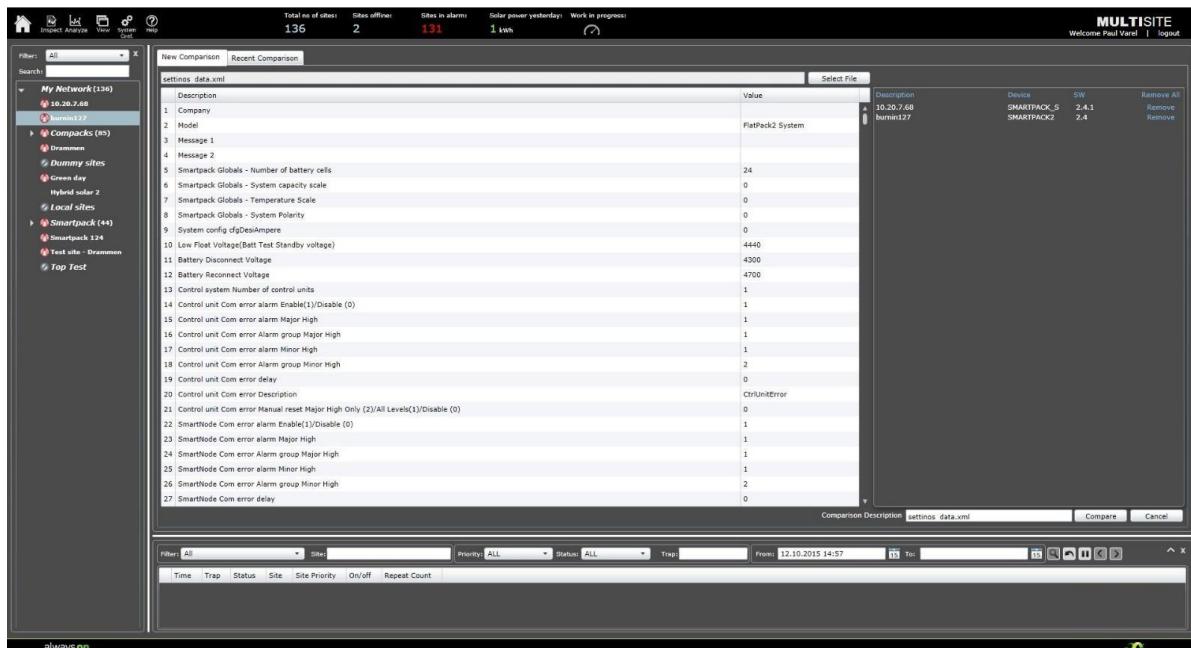
Rolling alarm view (example)

Time	Trap	Status	Site	Site Priority	On/off	Repeat Count
22.05.2015 10:07:05	Heart beat trap	Minor	Drammen	3	On	13244
22.05.2015 10:06:32	BatteryTemp1,I	Minor high	Drammen	3	On	13244
22.05.2015 10:06:31	LoadFuse 1	Major	Drammen	3	On	13244
22.05.2015 10:06:02	Heart beat trap	Minor	Drammen	3	On	13243
22.05.2015 10:05:30	BatteryTemp1,I	Minor high	Drammen	3	On	13243
22.05.2015 10:05:29	LoadFuse 1	Major	Drammen	3	On	13243
22.05.2015 10:04:56	Heart beat trap	Minor	Drammen	3	On	13242
22.05.2015 10:04:27	BatteryTemp1,I	Minor high	Drammen	3	On	13242
22.05.2015 10:04:26	LoadFuse 1	Major	Drammen	3	On	13242

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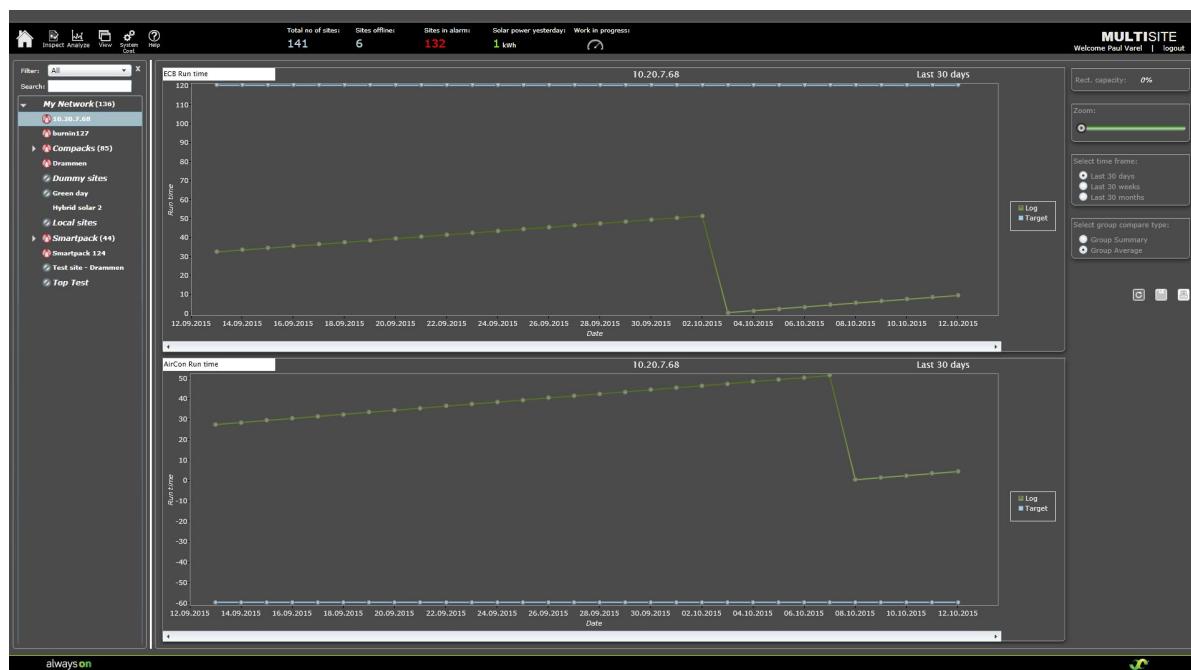
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Compare config



Description	Value
1 Company	
2 Model	FlatPack2 System
3 Message 1	
4 Message 2	
5 Smartpack Globals - Number of battery cells	24
6 Smartpack Globals - System capacity scale	0
7 Smartpack Globals - Temperature Scale	0
8 Smartpack Globals - System Polarity	0
9 System config cfgDesAmpere	0
10 Low Float Voltage/Batt Test Standby voltage	4440
11 Battery Disconnect Voltage	4300
12 Battery Reconnect Voltage	4700
13 Control system Number of control units	1
14 Control unit Com error alarm Enable(1)/Disable (0)	1
15 Control unit Com error alarm Major High	1
16 Control unit Com error alarm Major High group	1
17 Control unit Com error alarm Minor High	1
18 Control unit Com error alarm Minor High group	2
19 Control unit Com error delay	0
20 Control unit Com error Description	CtrlUnitError
21 Control unit Com error Manual reset Major High Only (2)/All Levels(1)/Disable (0)	0
22 SmartNode Com error alarm Enable(1)/Disable (0)	1
23 SmartNode Com error alarm Major High	1
24 SmartNode Com error alarm Major High group	1
25 SmartNode Com error alarm Minor High	1
26 SmartNode Com error alarm Minor High group	2
27 SmartNode Com error delay	0

Eltek cooling box (ecb)



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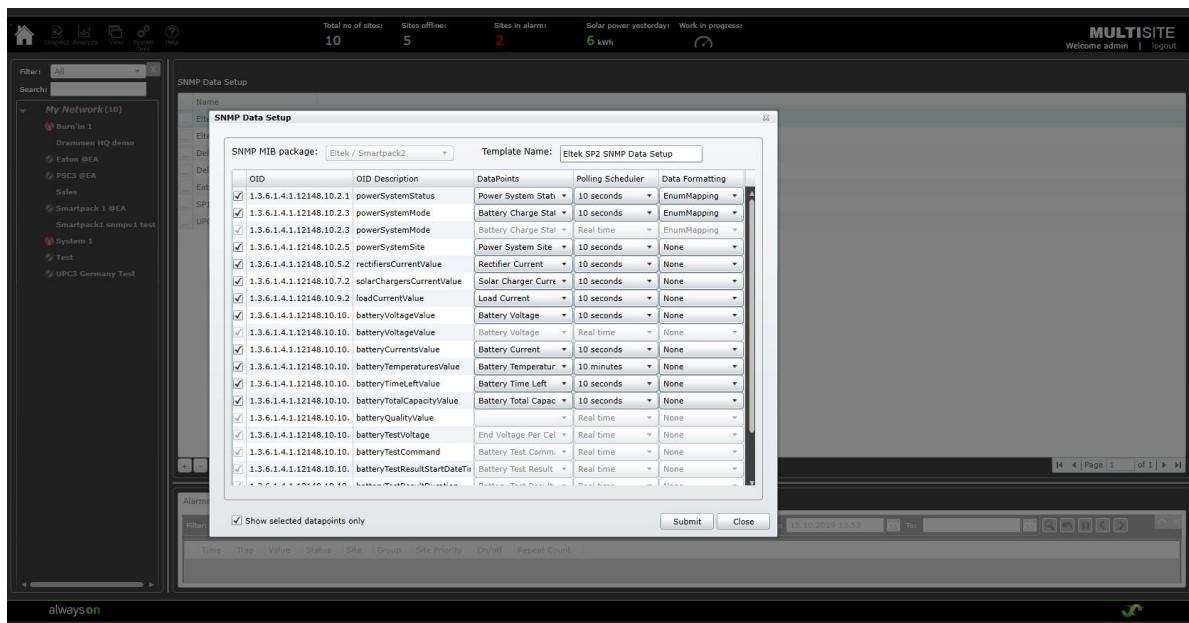
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Energy saving from renewables (example)



Monitoring remote sites by configurable snmp (example)



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