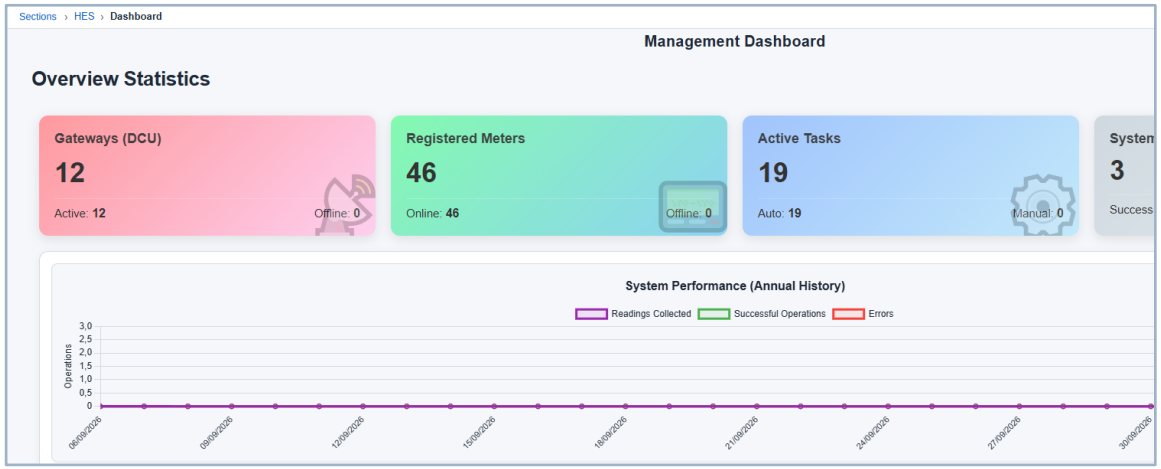
SMART ELECTRICITY METERING PLATFORM

FUTURE-F HES

Unified management of metering data, smart meters and the distribution network

AMI Platform Capabilities | Commercial Overview



What Does HES Deliver to Utilities?

Practical value in day-to-day operations, data management and network control

Data completeness

Centralized meter reading and monitoring of data collection across the entire meter fleet.

Operational control

Event logs, remote commands and management of meter groups through a single interface.

A foundation for loss reduction

Analysis of energy imbalances across network segments and identification of potential tampering.

Actual benefits depend on meter capabilities, source data quality and deployment scope.

From Common Challenges to Practical HES Solutions

Each operational challenge is addressed by a specific platform capability

Missing or delayed readings	→ Scheduled data collection, communications and status monitoring
Time-consuming field operations	→ Remote relay control, tariff configuration and firmware updates
Difficulty identifying energy imbalances	→ Network hierarchy, consumer groups and feeder-level analysis
Fragmented information systems	→ Data export and integration with MDM and billing systems

Proving the Value: Pilot Deployment in a Selected Network Area

A clear path from technical integration to a decision on scaling

01

Define the scope

Select the area, meter types, communication channels and target processes.

02

Connect the data

Configure polling, events, operator roles and data exports.

03

Measure KPIs

Assess reading success rates, operation times, event coverage and energy imbalance data.

04

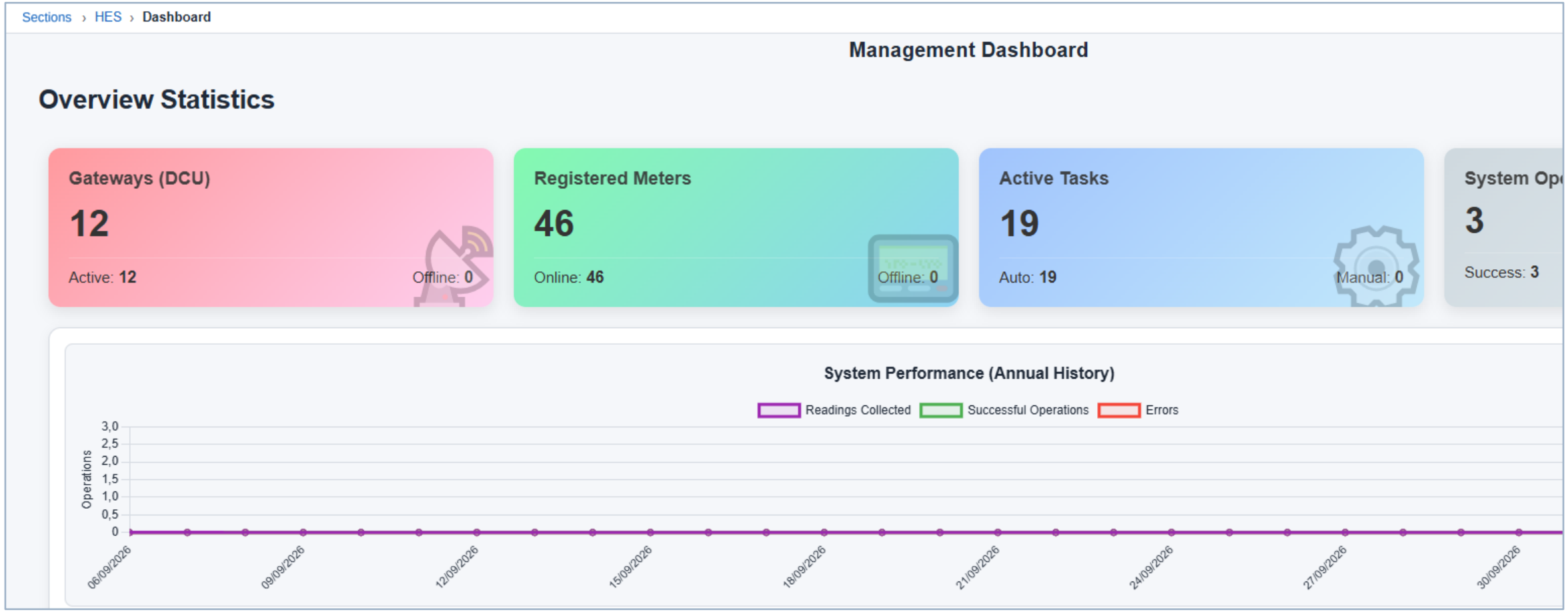
Make a decision

Compare results with the baseline and define the rollout phases.

KPIs and target values are agreed with the customer before the pilot begins.

A Unified Data Environment for Utilities

HES brings together meter reading, remote control and data exchange with enterprise systems. Operators can manage the entire meter fleet from one interface.

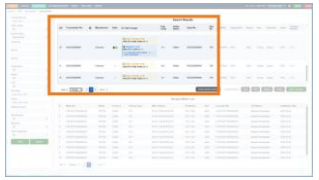


Field layer
Polling of data concentrators and electricity meters.

Integration layer
Data exchange with external MDM and ERP systems.

Automated Meter Reading Without Manual Site Visits

Operators schedule periodic polling of all meters connected to a concentrator. Recurring data collection can be managed centrally.



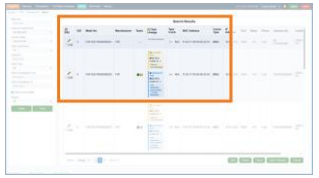
Zoomed area shown

Search Results

gid	Concentrator No.	Manufacturer	Tasks	Task Lineage	Task Comb	Online Status	Asset No	Box No	S
				DIRECT GATEWAY TASK Real DCU Daily Tasks (ID: 4)					
10	GW2320000904	Comcore		HIERARCHY TASK Main DCU Comb (ID: 1) Path: Substation North (110kV) ▶ Feeder Vazrazhdane	4	Online	GW2320000904	700	0(
11	GW2320000905	Comcore	---	DIRECT GATEWAY TASK Real DCU Daily Tasks (ID: 4)	4	Online	GW2320000905	700	0(
12	GW2320000906	Comcore	---	DIRECT GATEWAY TASK Real DCU Daily Tasks (ID: 4)	4	Online	GW2320000906	700	0(

Total 12 | 25/page | < 1 > | Go to 1 | Bind/Unbind Meters

Operators can also configure individual polling tasks for meters connected through a concentrator or directly via cellular communications.



Zoomed area shown

Search Results

Edit	GID	Meter No.	Manufacturer	Tasks	Task Lineage	Task Comb	MAC Address	Comm Type	IP Addre
Edit	3	FSF102172600000201	FSF	---	*No tasks assigned*	0 N/A	f1:02:17:26:00:00:02:01	**DCU**	10.0.1.
Edit	4	FSF102172600000202	FSF		GATEWAY TASK **Main DCU Comb** (ID: 1) Gateway: GW2320000903 HIERARCHY TASK **Main DCU Comb** (ID: 1) Path: **Substation North (110kV) ▸ Feeder Oborishte**	0 N/A	f1:02:17:26:00:00:02:02	**DCU**	10.0.1.

e.g. 50.000000

e.g. 36.000000

Ignore Inherited Tasks

This node will NOT inherit any tasks from its parent branches.

Assigned Task Combinations

Manage Combinations

Main DCU Comb
ID: 1 System Task

Cellular Comb
ID: 2 System Task

Hierarchy Comb
ID: 3 System Task

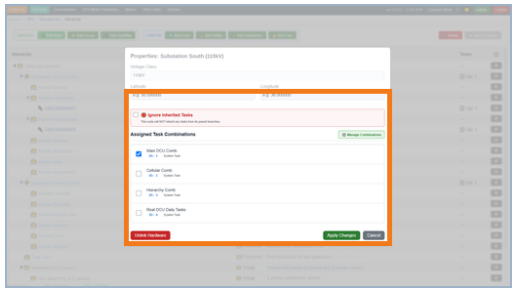
Real DCU Daily Tasks
ID: 4 System Task

Unlink Hardware

Apply Changes

Cancel

Polling tasks can be assigned at different network hierarchy levels: utility, substation, feeder or concentrator. Tasks apply to meters under the selected node and its subordinate levels. Individual meters can be excluded as required.



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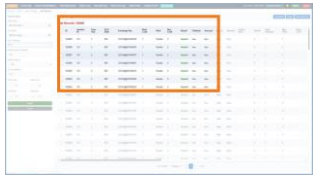
Monitor Communications Quality and Data Collection Completeness

HES tracks the reliability of data exchange between concentrators and meters.



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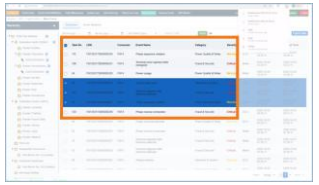
UDP Exchange Monitor Search by Exchange Key...

Total Records: 162899

ID	Session ID	Sess Seq	DCU Addr	Exchange Key	Kind Code	Kind	Res Code	Result	Finished	Success	Faile
162899	121	2	905	233:97@627649339	1	Routed	2	Replied	true	true	false
162898	121	2	905	233:96@627649203	1	Routed	2	Replied	true	true	false
162897	121	2	905	233:95@627648797	1	Routed	2	Replied	true	true	false
162896	121	2	905	233:94@627648661	1	Routed	2	Replied	true	true	false
162895	121	2	905	233:93@627648510	1	Routed	2	Replied	true	true	false
162894	121	2	905	233:92@627648349	1	Routed	2	Replied	true	true	false
162893	121	2	905	233:91@627648223	1	Routed	2	Replied	true	true	false

Metering Data for Billing and External Systems

Data displayed in the HES interface can be exported on operator request for subsequent transfer to external systems.



Zoomed area shown

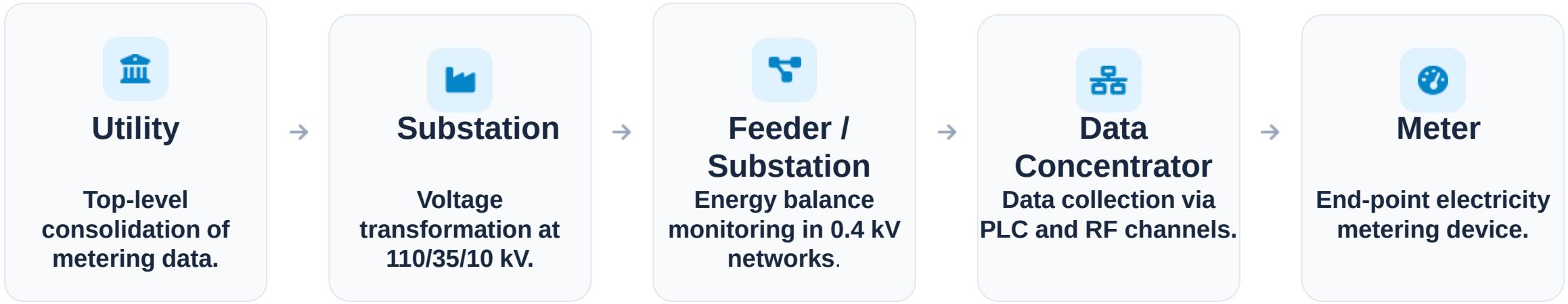
	Task No	LDN	Consumer	Event Name	Category	Severity
☐	115	FSF303172600000234	FSF4	Phase sequence violation	Power Quality & Relay	Warning
☐	106	FSF302172600000231	FSF4	Terminal cover opened while energized	Fraud & Security	Critical
☐	94	FSF302172600000228	FSF4	Power outage	Power Quality & Relay	Warning
☑	84	FSF302172600000224	FSF4	Critical meter error	Hardware & System	Critical
☑	121	FSF303172600000236	FSF4	External magnetic field influence detected	Fraud & Security	Critical
☑	91	FSF302172600000227	FSF4	Phase sequence violation	Power Quality & Relay	Warning
☐	120	FSF303172600000236	FSF4	Phase reverse connection	Fraud & Security	Critical

Data Export for Existing IT Workflows

Exported data can be transferred to external systems in the supported formats.

	A	B	C	D	E	F	G	H	I
1	Task No	LDN	Consumer	Event Name	Category	Severity	Source	Happened Time	Upload Time
2	115	FSF303172600000234	FSF4	Phase sequence violation	Power Quality & Relay	Warning	DCU	04.10.2026	16:38:11
3	106	FSF302172600000231	FSF4	Terminal cover opened while energized	Fraud & Security	Critical	Meter	04.10.2026	15:32:11
4	94	FSF302172600000228	FSF4	Power outage	Power Quality & Relay	Warning	Meter	04.10.2026	15:29:11
5	84	FSF302172600000224	FSF4	Critical meter error	Hardware & System	Critical	DCU	04.10.2026	15:32:11
6	121	FSF303172600000236	FSF4	External magnetic field influence detected	Fraud & Security	Critical	DCU	04.10.2026	02:37:11
7	91	FSF302172600000227	FSF4	Phase sequence violation	Power Quality & Relay	Warning	Meter	03.10.2026	23:29:11
8	120	FSF303172600000236	FSF4	Phase reverse connection	Fraud & Security	Critical	DCU	03.10.2026	09:31:11
9	86	FSF302172600000225	FSF4	Power overload detected	Power Quality & Relay	Warning	DCU	03.10.2026	03:28:11
10	90	FSF302172600000226	FSF4	Phase reverse connection	Fraud & Security	Critical	Meter	03.10.2026	02:39:11
11	74	FSF302172600000221	FSF4	External magnetic field influence detected	Fraud & Security	Critical	Meter	03.10.2026	01:29:11
12	93	FSF302172600000228	FSF4	External magnetic field influence detected	Fraud & Security	Critical	Meter	02.10.2026	20:28:11
13	88	FSF302172600000225	FSF4	Replace battery	Hardware & System	Warning	DCU	02.10.2026	08:31:11
14	107	FSF302172600000231	FSF4	Firmware update successful	Hardware & System	Info	DCU	02.10.2026	00:32:11
15	34	FSF103172600000209	FSF4	Network connection established	Communication & Modem	Info	DCU	01.10.2026	22:29:11
16	95	FSF302172600000228	FSF4	Replace battery	Hardware & System	Warning	DCU	01.10.2026	17:37:11
17	72	FSF302172600000221	FSF4	Network connection established	Communication & Modem	Info	DCU	01.10.2026	16:28:11
18	140	FSF303172600000241	FSF4	Phase reverse connection	Fraud & Security	Critical	DCU	01.10.2026	15:29:11
19	123	FSF303172600000236	FSF4	Phase sequence violation	Power Quality & Relay	Warning	DCU	01.10.2026	13:27:11
20	96	FSF302172600000228	FSF4	Critical meter error	Hardware & System	Critical	DCU	01.10.2026	07:27:11
21	87	FSF302172600000225	FSF4	Firmware update successful	Hardware & System	Info	Meter	01.10.2026	06:40:11
22									

Full Network Visibility: From Utility to Individual Meter



Network structure represented as a hierarchical tree

Flexible addition, removal and modification of network nodes

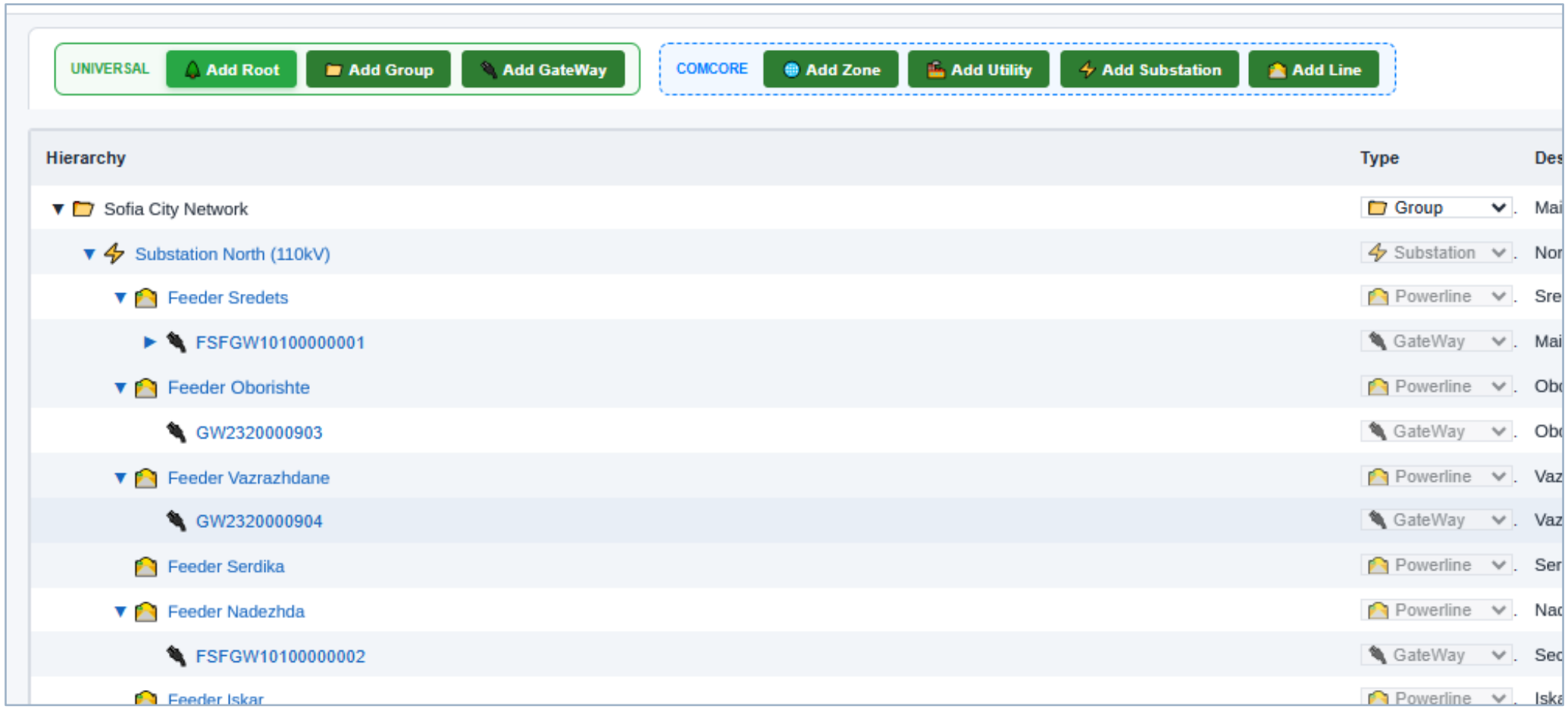
Multiple operators can work with the component tree simultaneously

Manage the Distribution Network Through a Single Interface



Zoomed area shown

HES enables users to create, remove and edit a hierarchical network structure including utilities, substations, feeders, concentrators, meters and logical groups. Polling tasks can be configured for any selected network level.



Comprehensive Data for Revenue Metering

Data collection from meters produced by different manufacturers

Interval profiles

Automatic collection of active and reactive power interval values at 10, 15, 30 or 60-minute integration periods.

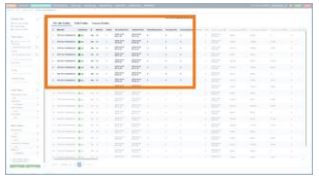
Billing readings

Collection of cumulative energy readings by tariff period at a specified billing time.

Power quality parameters

Monitoring of voltage, current and network frequency.

Storage and display of daily electricity metering data (Daily Billing), including tariff periods.



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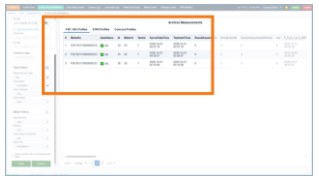
Archive Measurements

FSF / INC Profiles | STAR Profiles | Comcore Profiles

#	MeterNo	dataStatus	Id	MeterId	TaskId	ServerDateTime	TaskstartTime	ResultAssesment	forceExecute	forcemeasurement
1	FSF103172600000218	OK	394	20	1	2026-10-05 00:07:26	2026-10-05 00:07:26	0	0	0
2	FSF302172600000223	OK	395	25	1	2026-10-05 00:09:09	2026-10-05 00:09:09	0	0	0
3	FSF303172600000233	OK	396	35	1	2026-10-05 00:15:32	2026-10-05 00:15:32	0	0	0
4	FSF103172600000218	OK	391	20	1	2026-10-04 00:07:26	2026-10-04 00:07:26	0	0	0
5	FSF302172600000223	OK	392	25	1	2026-10-04 00:09:03	2026-10-04 00:09:03	0	0	0
6	FSF303172600000233	OK	393	35	1	2026-10-04 00:15:29	2026-10-04 00:15:29	0	0	0
7	FSF103172600000218	OK	388	20	1	2026-10-03 00:08:57	2026-10-03 00:08:57	0	0	0
8	FSF302172600000223	OK	389	25	1	2026-10-03 00:09:19	2026-10-03 00:09:19	0	0	0
9	FSF303172600000233	OK	390	35	1	2026-10-03 00:10:02	2026-10-03 00:10:02	0	0	0

Storage and display of monthly electricity metering data (Monthly Billing).



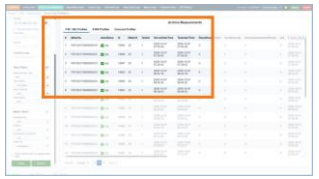
Zoomed area shown

Archive Measurements

FSF / INC Profiles | STAR Profiles | Comcore Profiles

#	MeterNo	dataStatus	Id	MeterId	TaskId	ServerDateTime	TaskstartTime	ResultAssesmer
1	FSF103172600000218	OK	34	20	1	2026-10-01 00:07:16	2026-10-01 00:07:16	0
2	FSF302172600000223	OK	35	25	1	2026-10-01 00:08:57	2026-10-01 00:08:57	0
3	FSF303172600000233	OK	36	35	1	2026-10-01 00:10:09	2026-10-01 00:10:09	0

Storage and display of load profiles (Load Profile 1).



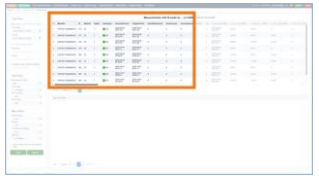
Zoomed area shown

Archive Measurements

FSF / INC Profiles | STAR Profiles | Comcore Profiles

#	MeterNo	dataStatus	Id	MeterId	TaskId	ServerDateTime	TaskstartTime	ResultAsses
1	FSF103172600000218	OK	13905	20	1	2026-10-07 07:05:04	2026-10-07 07:05:04	0
2	FSF302172600000223	OK	13906	25	1	2026-10-07 07:09:03	2026-10-07 07:09:03	0
3	FSF303172600000233	OK	13907	35	1	2026-10-07 07:28:43	2026-10-07 07:28:43	0
4	FSF302172600000223	OK	13903	25	1	2026-10-07 06:45:19	2026-10-07 06:45:19	0
5	FSF303172600000233	OK	13904	35	1	2026-10-07 06:45:25	2026-10-07 06:45:25	0
6	FSF302172600000223	OK	13901	25	1	2026-10-07 06:09:03	2026-10-07 06:09:03	0
7	[illegible]	OK	[illegible]	[illegible]	1	2026-10-07	2026-10-07	[illegible]

Storage and display of current and voltage profiles (Load Profile 2).



Zoomed area shown

Measurements with R-meter by ... on 2026-10

#	MeterNo	Id	MeterId	TaskId	dataStatus	ServerDateTime	TaskstartTime	ResultAssesment	forceExecute	forcemeasuremen
1	FSF103172600000218	376	20	1	OK	2026-09-29 00:07:53	2026-09-29 00:07:53	0	0	0
2	FSF302172600000223	377	25	1	OK	2026-09-29 00:11:38	2026-09-29 00:11:38	0	0	0
3	FSF303172600000233	378	35	1	OK	2026-09-29 00:12:00	2026-09-29 00:12:00	0	0	0
4	FSF103172600000218	379	20	1	OK	2026-09-30 00:07:11	2026-09-30 00:07:11	0	0	0
5	FSF302172600000223	380	25	1	OK	2026-09-30 00:08:48	2026-09-30 00:08:48	0	0	0
6	FSF303172600000233	381	35	1	OK	2026-09-30 00:16:05	2026-09-30 00:16:05	0	0	0
7	FSF103172600000218	382	20	1	OK	2026-10-01 00:07:11	2026-10-01 00:07:11	0	0	0
8	FSF302172600000223	383	25	1	OK	2026-10-01 00:08:51	2026-10-01 00:08:51	0	0	0
9	FSF303172600000233	384	35	1	OK	2026-10-01 00:10:03	2026-10-01 00:10:03	0	0	0

Remote Meter Management Without Site Visits

Relay control

Remote connection and disconnection of customer loads on operator command.

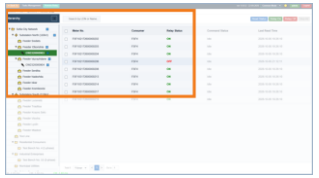
Power limits

Configuration of power thresholds used to control the meter disconnect relay.

Tariff schedules

Remote upload of daily and seasonal tariff schedules to meters.

Manual and group control of electricity meter relays is supported.



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Sections › HES › Operations › **Remote Relay**

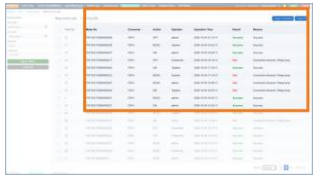
Hierarchy

- Sofia City Network
  - Substation North (110kV)
    - Feeder Sredets
    - Feeder Oborishte
      - **GW2320000903**
    - Feeder Vazrazhdane
      - GW2320000904
    - Feeder Serdika
    - Feeder Nadezhda
    - Feeder Iskar
    - Feeder Kremikovtsi
  - Substation South (110kV)

Search by LDN or Name...

Meter No.	Consumer	Relay Status
FSF102172600000202	FSF4	ON
FSF102172600000203	FSF4	ON
FSF102172600000204	FSF4	ON
FSF102172600000206	FSF4	OFF
FSF102172600000208	FSF4	ON
FSF103172600000213	FSF4	ON
FSF103172600000214	FSF4	ON
FSF103172600000217	FSF4	ON

A log records meter relay connection and disconnection events.



Zoomed area shown

arch by LDN...

Export Selected | Export All

Meter No	Consumer	Action	Operator	Operation Time	Result	Reason
FSF102172600000206	FSF4	OFF	admin	2026-10-05 21:12:11	Success	Success
FSF303172600000236	FSF4	READ	System	2026-10-05 19:02:11	Success	Success
FSF302172600000227	FSF4	ON	admin	2026-10-05 18:44:11	Success	Success
FSF103172600000217	FSF4	OFF	Grebeniuk	2026-10-05 18:19:11	Fail	Connection timeout / Relay busy
FSF303172600000242	FSF4	ON	Topalov	2026-10-05 17:38:11	Success	Success
FSF103172600000212	FSF4	READ	System	2026-10-05 17:34:11	Fail	Connection timeout / Relay busy
FSF102172600000207	FSF4	READ	admin	2026-10-05 16:46:11	Fail	Connection timeout / Relay busy
FSF303172600000235	FSF4	ON	Topalov	2026-10-05 16:42:11	Fail	Connection timeout / Relay busy
FSF102172600000201	FSF4	READ	admin	2026-10-05 16:02:11	Success	Success
FSF302172600000227	FSF4	ON	admin	2026-10-05 15:55:11	Success	Success

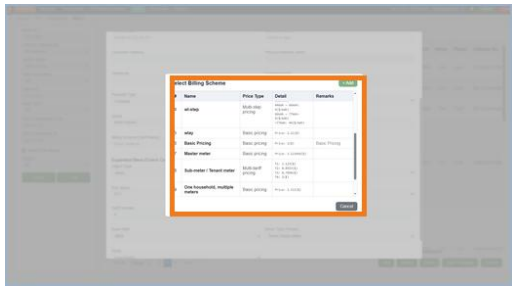
Select Billing Scheme

+ Add

#	Name	Price Type	Detail	Remarks
4	**wl-step**	Multi-step pricing	44kWh ~ 66kWh: 4($/kWh) 66kWh ~ 77kWh: 4($/kWh) >77kWh: 44($/kWh)	
5	**wlay**	Basic pricing	Price: 2.21($)	
6	**Basic Pricing**	Basic pricing	Price: 1($)	Basic Pricing
7	**Master meter**	Basic pricing	Price: 1.123456($)	
8	**Sub-meter / Tenant meter**	Multi-tariff pricing	T1: 1.123($) T2: 0.8923($) T3: 0.7894($) T4: 1($)	
9	**One household, multiple meters**	Basic pricing	Price: 1.112($)	

Cancel

Remote uploading of tariff schedules to electricity meters is supported.



Zoomed area shown

Early Detection of Events and Potential Tampering

Tamper sensors

Detection of terminal cover and meter enclosure opening, with alarm event generation.

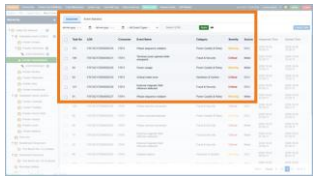
Magnetic field exposure

Detection of external magnetic fields as a possible indicator of meter tampering.

Last Gasp — Power Loss

Transmission of an emergency message on power failure using backup energy stored in a supercapacitor.

The platform maintains a log of meter events, including terminal cover opening, magnetic field exposure, power outages and firmware updates.



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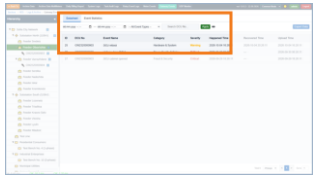
Datasheet | Event Statistics

dd.mm.yyyy --:-- - dd.mm.yyyy --:-- | -- All Event Types -- | Search LDN... | Apply

Task No	LDN	Consumer	Event Name	Category	Severity	Source
115	FSF303172600000234	FSF4	Phase sequence violation	Power Quality & Relay	Warning	DCU
106	FSF302172600000231	FSF4	Terminal cover opened while energized	Fraud & Security	Critical	Meter
94	FSF302172600000228	FSF4	Power outage	Power Quality & Relay	Warning	Meter
84	FSF302172600000224	FSF4	Critical meter error	Hardware & System	Critical	DCU
121	FSF303172600000236	FSF4	External magnetic field influence detected	Fraud & Security	Critical	DCU
91	FSF302172600000227	FSF4	Phase sequence violation	Power Quality & Relay	Warning	Meter

The platform maintains a log of concentrator events, including enclosure opening, power outages and firmware updates.



Zoomed area shown

its

Datasheet | Event Statistics

dd.mm.yyyy --:-- — dd.mm.yyyy --:-- | -- All Event Types -- | Search DCU No... | Apply

ID	DCU No	Event Name	Category	Severity	Happened Time
25	GW2320000903	DCU reboot	Hardware & System	Warning	2026-10-04 16:26:11
26	GW2320000903	Voltage drop (DCU)	Power Quality & Relay	Critical	2026-09-30 06:26:11

Targeted Management of Customer Groups

Customer segments

Grouping of residential customers, small businesses, industrial facilities and public institutions.

Billing groups

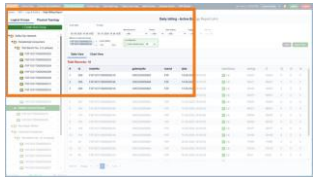
Grouping of meters by billing periods, payment status and payment schedules.

Dynamic lists

Creation of groups of customers with outstanding balances for applicable load-restriction scenarios.

Groups support analysis, reporting and execution of bulk commands.

HES organizes meters into logical groups within a separate hierarchical tree. Groups can be defined by geography, distribution service area, customer category or overdue payment status.



Zoomed area shown

Sections › HES › Logs & Archive › Daily Billing Report

Logical Groups | Physical Topology

+ Create Root Group

- Sofia City Network
  - Residential Consumers
    - Test Bench No. 4 (1-phase)
      - FSF102172600000202
      - FSF102172600000203
      - FSF102172600000204
      - FSF102172600000206
      - FSF102172600000208
      - FSF103172600000213
      - FSF103172600000214
      - FSF103172600000217

Daily billing - Active Ener

From Date: 05.09.2026 19:46:0(To Date: 05.10.2026 19:46:0(

Manufacturer: ---All--- Phase: ---All--- Data Status: ---All--- Trigger: ---All---

Meters in Selected Group: FSF103172600000219, FSF303172600000236

Limits (kWh): Min Max

Live Monitor: Auto-refresh every 30 s

Table View | Chart View

Total Records: 18

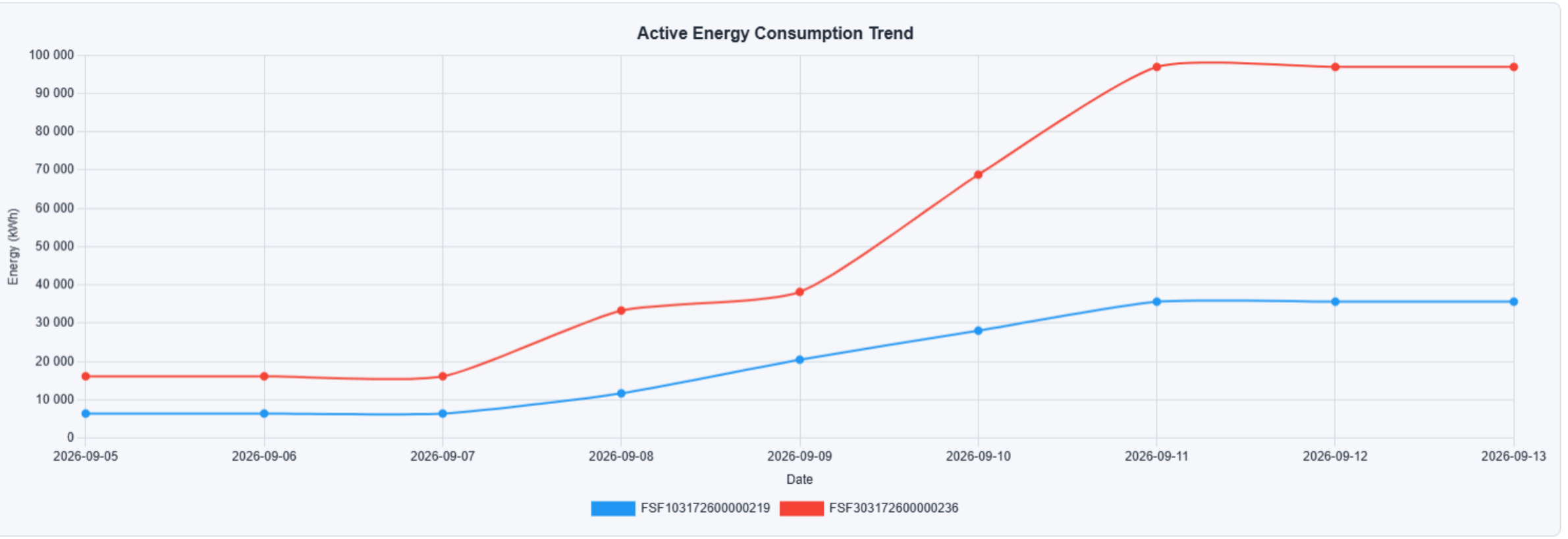
#	id	meterNo	gatewayNo	manuf	date
1	269	FSF103172600000219	GW2320000903	FSF	14.09.2026,
2	296	FSF303172600000236	GW2320000904	FSF	14.09.2026,
3	268	FSF103172600000219	GW2320000903	FSF	13.09.2026,
4	295	FSF303172600000236	GW2320000904	FSF	13.09.2026,

HES presents electricity consumption data in tables and time-series charts. Operators can identify exceedances of configured consumption limits and export charts to files.

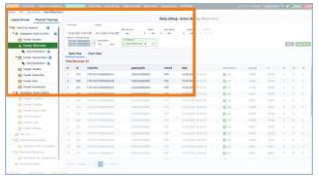


Zoomed area shown

tal 18 25/page < 1 > Go to 1



Operators can switch between the logical-group tree and the physical network topology tree, and generate meter-reading reports for any selected hierarchy level.



Zoomed area shown

Sections › HES › Logs & Archive › Daily Billing Report

Logical Groups | Physical Topology

- Sofia City Network
  - Substation North (110kV)
    - Feeder Sredets
    - Feeder Oborishte
      - GW2320000903
    - Feeder Vazrazhdane
      - GW2320000904
    - Feeder Serdika
    - Feeder Nadezhda
    - Feeder Iskar
    - Feeder Kremikovtsi
  - Substation South (110kV)

Daily billing - Active Ene

From Date: 05.09.2026 19:46:0(To Date: 05.10.2026 19:46:0(

Manufacturer: ---All--- Phase: ---All--- Data Status: ---All--- Trigger: ---All---

Meters in Selected Group: FSF102172600000202, FSF102172600000203, FSF102172600000204

Limits (kWh): Min Max

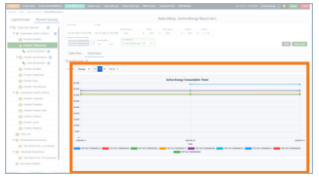
Live Monitor: Auto-refresh every 30 s

Table View | Chart View

Total Records: 81

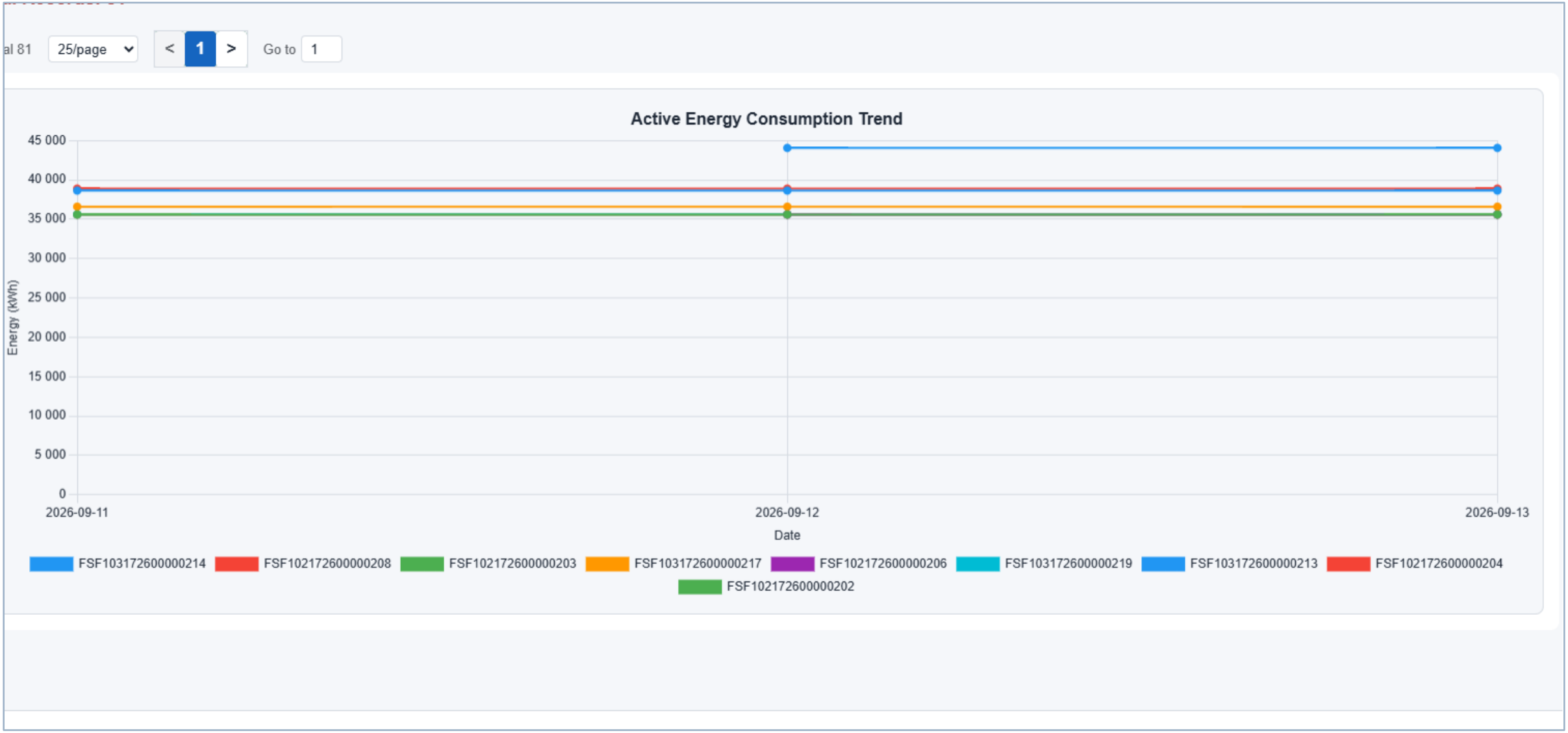
#	id	meterNo	gatewayNo	manuf	date
1	275	FSF103172600000214	GW2320000903	FSF	14.09.2026,
2	284	FSF102172600000208	GW2320000903	FSF	14.09.2026,
3	281	FSF102172600000203	GW2320000903	FSF	14.09.2026,
4	278	FSF103172600000217	GW2320000903	FSF	14.09.2026,

Meter readings in the physical network topology tree can be viewed in tables and charts. Results can be exported to a file.

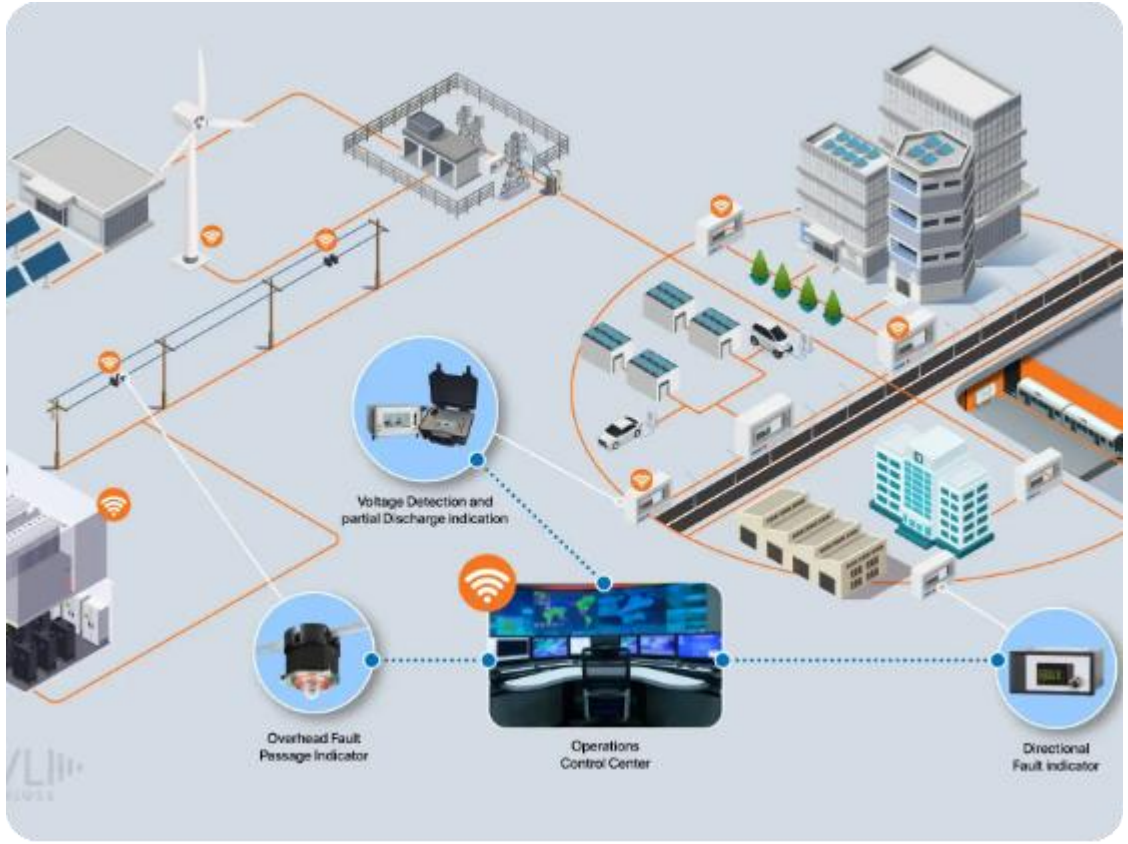


Zoomed area shown

al 81 25/page < 1 > Go to 1



Identify Problem Areas Within the Network



GIS locations and geographic areas
Display meters on an interactive map, with filtering by district and street.

Feeder-level metering and energy balance
Compare energy supplied from a distribution substation with aggregated customer consumption to identify imbalances.

Service-area and branch assignments
Restrict operator access according to geographic areas of responsibility.

Meters can be geolocated and displayed with their status on a map, with filtering by city streets and districts.



Zoomed area shown

Sections › HES › Management › GIS

The Keyword

- Sofia City Network
  - Substation North (110kV)
    - Feeder Sredets
    - Feeder Oborishte
      - GW2320000903
    - Feeder Vazrazhdane
      - **GW2320000904**
    - Feeder Serdika
    - Feeder Nadezhda
    - Feeder Iskar
    - Feeder Kremikovtsi
  - Substation South (110kV)
    - Feeder Lozenets
    - Feeder Triaditsa

Secure Meter Fleet Management and Updates

Secure DLMS/COSEM communications

HLS authentication and protected data exchange using AES-GCM-128.

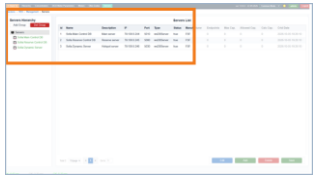
Bulk firmware updates

Remote group updates of meter firmware without visiting the installation site.

Data redundancy and load balancing

Multi-server architecture supporting horizontal and vertical scaling.

The system provides redundant data storage and distributes network traffic across multiple servers.



Zoomed area shown

Sections › HES › Management › Servers

Servers Hierarchy

Add Group | Del Group

- Servers
  - Sofia Main Control DB
  - Sofia Reserve Control DB
  - Sofia Dynamic Server

Servers List

id	Name	Description	IP	Port	Type	Status	Manufac
1	Sofia Main Control DB	Main server	79.100.6.244	5010	wsDBServer	true	FSF
2	Sofia Reserve Control DB	Reserve server	79.100.6.245	5080	wsDBServer	true	FSF
3	Sofia Dynamic Server	Hotspot server	79.100.6.246	5030	wsDBServer	true	FSF

1.·Login·—·DCU·initiated¶

[09:26:48.046]·37.63.84.241:59559-->·37.63.84.241:50394·|·Sent:·44·bytes: ····00·01·00·01·00·01·00·24·F4·01·41·00·02·02·09·06·06·21·11·25·20·00·09·14·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00·00¶

[09:26:48.673]·37.63.84.241:50394-->·37.63.84.241:59559·|·Sent:·12·bytes: ····00·01·00·10·00·01·00·04·F0·01·41·00¶

2.·GetTerminalInfo·request·—·server·initiated¶

[09:26:49.678]·37.63.84.241:50394-->·37.63.84.241:59559·|·Sent:·21·bytes: ····00·01·00·01·00·01·00·0D·C0·01·46·00·01·00·01·60·01·05·FF·02·00¶

[09:26:49.793]·37.63.84.241:59559-->·37.63.84.241:50394·|·Sent:·52·bytes: ····00·01·00·01·00·01·00·2C·C4·01·46·00·02·06·09·04·54·44·31·32·09·08·30·30·30·30·30·30·30·31·09·04·56·31·2E·36·09·03·19·11·25·09·04·56·31·2E·30·09·03·16·04·19¶

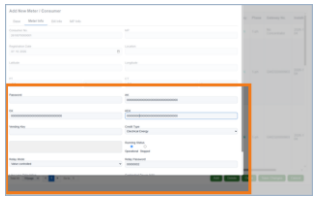
```
[LOG] --> Data found. Redirecting to 119.13.88.220:7951
[18:17:42] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 44 bytes:  00 01 00 01 00 01 00
[18:17:42] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 12 bytes:  00 01 00 10 00 01 00
[18:17:46] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 44 bytes:  00 01 00 01 00 01 00
[18:17:47] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 12 bytes:  00 01 00 10 00 01 00
[18:17:51] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 66 bytes:  00 01 31 6C 00 01 00
[18:17:55] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 66 bytes:  00 01 31 6C 00 01 00
[18:18:52] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 15 bytes:  00 01 00 01 00 01 00
[18:18:53] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 13 bytes:  00 01 00 10 00 01 00
[18:19:59] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 15 bytes:  00 01 00 01 00 01 00
[18:20:06] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 13 bytes:  00 01 00 10 00 01 00
[18:20:14] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 21 bytes:  00 01 00 01 00 01 00
[18:20:23] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 52 bytes:  00 01 00 01 00 01 00
[18:20:23] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 21 bytes:  00 01 00 01 00 01 00
[18:20:26] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 52 bytes:  00 01 00 01 00 01 00
[18:21:30] 78.90.62.154:17863 -> 119.13.88.220:7951 | Sent: 15 bytes:  00 01 00 01 00 01 00
[18:21:30] 119.13.88.220:7951 -> 78.90.62.154:17863 | Sent: 13 bytes:  00 01 00 10 00 01 00
```

HLS meter authentication and encrypted data exchange are supported. The screen shows an example of message exchange with a data concentrator (DCU) during authentication.

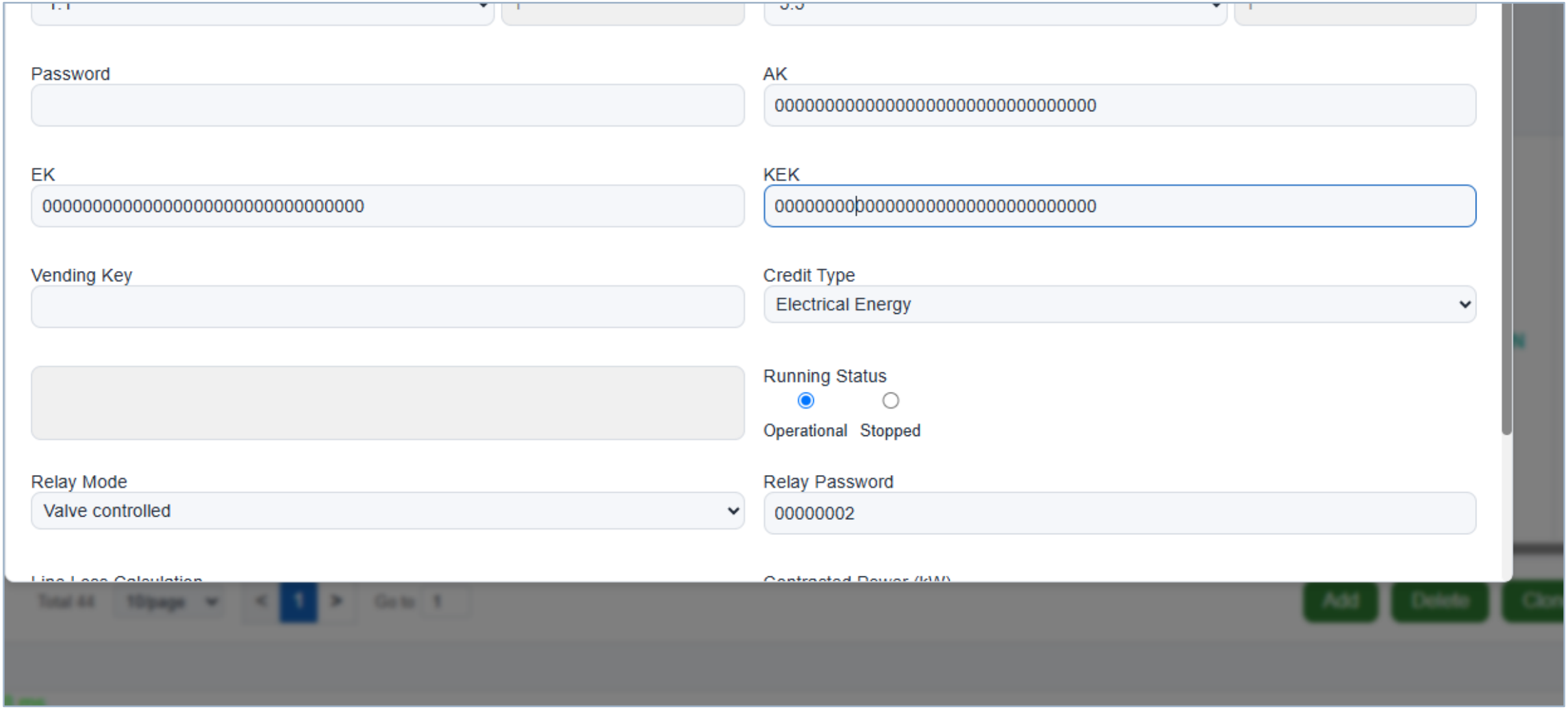


Frame log: left part shown

The configuration database stores AK and EK keys, as well as a Key Encryption Key (KEK). During normal communication, keys are not transmitted in plaintext; they are used by the meter and the polling system to protect exchanged data.



Zoomed area shown



Integration Without Replacing Existing IT Systems

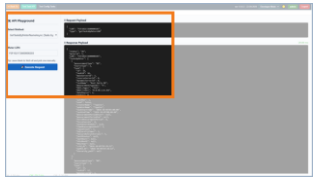
WebSocket and API

Measurement data delivery to external applications via WebSocket in JSON format.

Integration with external billing systems

Export of archived metering data to billing and energy balance calculation systems.

Registered third-party applications can receive data through an API using the WebSocket protocol and JSON format.



Zoomed area shown

Sections › HES › Tests › Test Task API

🛠 API Playground

Select Method:

GetTasksByMeterNameAsync (Tasks by

Meter LDN:

FSF102172600000203

Tip: Leave blank to fetch all and pick one manually.

🚀 Execute Request

⬆ Request Payload


```
{
  "LDN": "FSF102172600000203",
  "type": "getTasksByMeterLDN"
}
```


⬇ Response Payload


```
{
  "status": "ok",
  "meterId": 5,
  "LDN": "FSF102172600000203",
  "TasksByMeter": [
    {
      "measurementType": "RD",
      "SourceType": 2,
      "Task": {
        "id": 16,
        "taskId": 16,
        "mainServerId": 1,
        "reserveServerId": 0,
        "dynamicServerId": 0,
        "taskName": "Real Daily RD",
        "measurementTypeIds": "1",
        "OBIS_Pages": "TD12",
        "OBIS_Codes": "0.0.98.2.0.255",
        "dataSource": 2,
        "status": 0,
        "enabled": true,
```

Data can also be delivered to external systems and users as export files in supported formats through various communication channels, including email and FTP.



Zoomed area shown

Export Selected | Export All

Consumer	Action	Operator	Operation Time	Result	Reason
FSF4	OFF	admin	2026-10-05 21:12:11	Success	Success
FSF4	READ	System	2026-10-05 19:02:11	Success	Success
FSF4	ON	admin	2026-10-05 18:44:11	Success	Success
FSF4	OFF	Grebeniuk	2026-10-05 18:19:11	Fail	Connection timeout / Relay busy
FSF4	ON	Topalov	2026-10-05 17:38:11	Success	Success
FSF4	READ	System	2026-10-05 17:34:11	Fail	Connection timeout / Relay busy
FSF4	READ	admin	2026-10-05 16:46:11	Fail	Connection timeout / Relay busy
FSF4	ON	Topalov	2026-10-05 16:42:11	Fail	Connection timeout / Relay busy
FSF4	READ	admin	2026-10-05 16:02:11	Success	Success

Statistical data can be presented not only in tables but also as bar charts, pie charts and Gantt charts. Results can be saved to files for subsequent use.



Zoomed area shown

Datasheet | Event Statistics

mm.yyyy --:-- - dd.mm.yyyy --:-- -- All Event Types -- Search LDN... Apply Export Data

Severity Distribution

Info Warning Critical

Events by Type

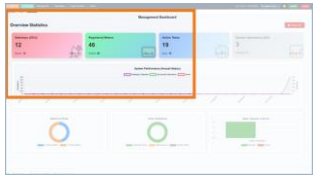
Fraud & Security
Power Quality & Relay
Hardware & System
Time, Logs & Config
Communication & Modem

0 1 2 3 4 5 6 7 8 9 10 11 12

Events Timeline (Daily)

9 8 7 6 5 4 3 2

The home page features interactive widgets and provides quick access to managed assets.



Zoomed area shown

Sections › HES › Dashboard

Management Dashboard

Overview Statistics

Gateways (DCU)

12

Active: 12 Offline: 0

Registered Meters

46

Online: 46 Offline: 0

Active Tasks

19

Auto: 19

System Performance (Annual History)

Readings Collected Successful Operations Errors

Operations

3,0
2,5
2,0
1,5
1,0
0,5
0

Let’s Explore What HES Can Do for Your Utility

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