



THE NEW RENEWABLE WAVE

**NEW TECHNOLOGIES AND HOW WILL
SERVICE SUPPORT WILL BE SHAPED**

Energynomics, Bucharest 6th October 2022



FOREIGN OFFICES



SALES OFFICES EUROPE AND ASIA

- ▷ České Budějovice ▶ Czechia
- ▷ Prague ▶ Czechia
- ▷ Warsaw ▶ Poland
- ▷ Bratislava ▶ Slovakia
- ▷ Kyiv, Lviv ▶ Ukraine

- ▷ Budapest ▶ Hungary
- ▷ Sønderborg ▶ Denmark
- ▷ Stockholm ▶ Sweden
- ▷ Tallinn ▶ Estonia
- ▷ Vilnius ▶ Lithuania

- ▷ Bucharest ▶ Romania
- ▷ Plovdiv ▶ Bulgaria
- ▷ Tbilisi ▶ Georgia
- ▷ Tashkent ▶ Uzbekistan
- ▷ Almaty ▶ Kazakhstan

BASIC FACTS



**Huawei VAP
from 2016**

Over **99%** of
turnover made
on HUAWEI

**15 Foreign
Offices**



7.400+ MW
Huawei inverters
delivered 2016

116 MWh BESS

400+ M EUR
revenue plan in
2022



105
Employeess

29
Tech&Solution
team

1/3 belongs to
Tech & Solution



120
Trainings

3600
Trained
Installers
In 2021

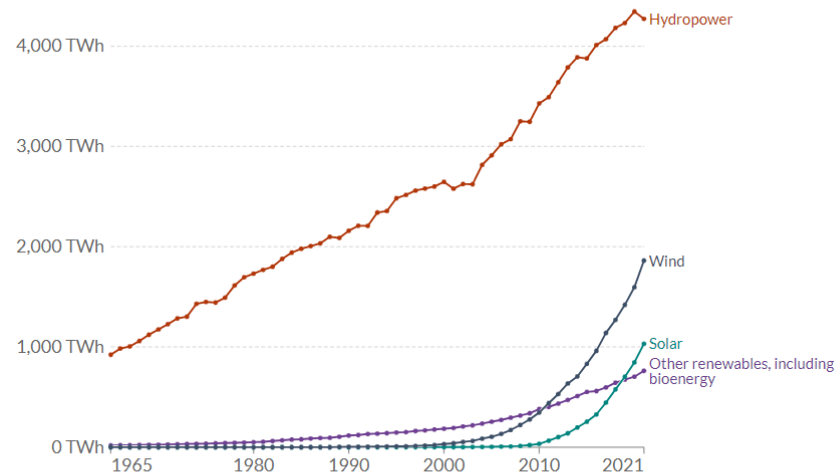
Renewable energy production World-Romania

2021 – World – 1032 TWh

2021 – Romania – 1,7 TWh

Modern renewable energy generation by source, World

[Change country](#)



Source: Our World in Data based on BP Statistical Review of World Energy & Ember [OurWorldInData.org/renewable-energy](https://ourworldindata.org/renewable-energy) • CC BY

1965 2021

CHART

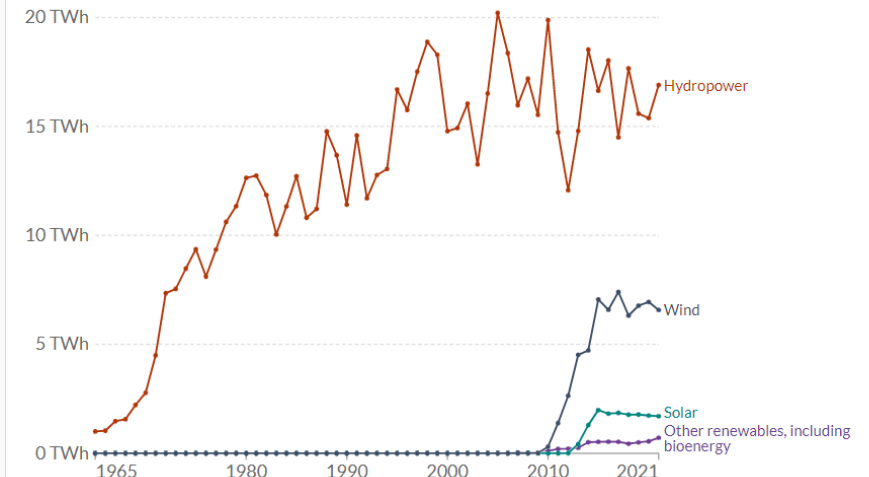
TABLE

SOURCES

DOWNLOAD

Modern renewable energy generation by source, Romania

[Change country](#)



Source: Our World in Data based on BP Statistical Review of World Energy & Ember [OurWorldInData.org/renewable-energy](https://ourworldindata.org/renewable-energy) • CC BY

1965 2021

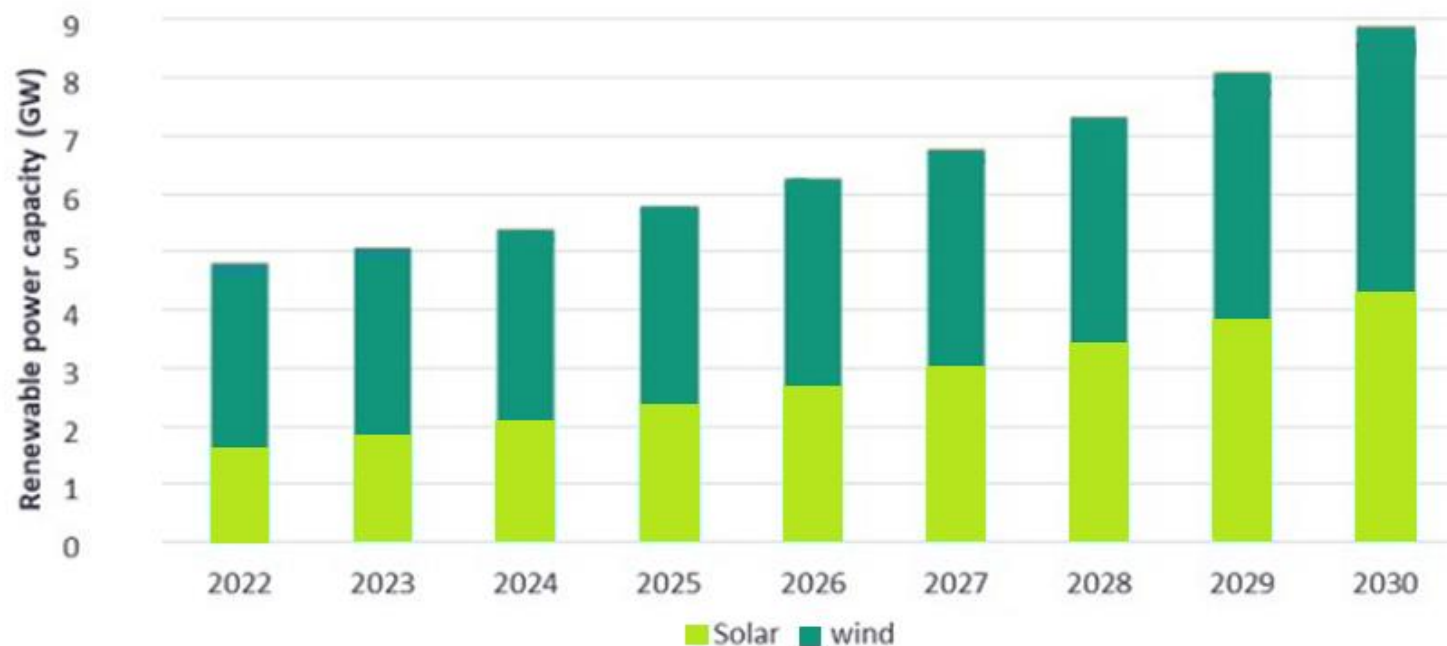
CHART

TABLE

SOURCES

DOWNLOAD

Romania renewable energy market 2022 - 2030

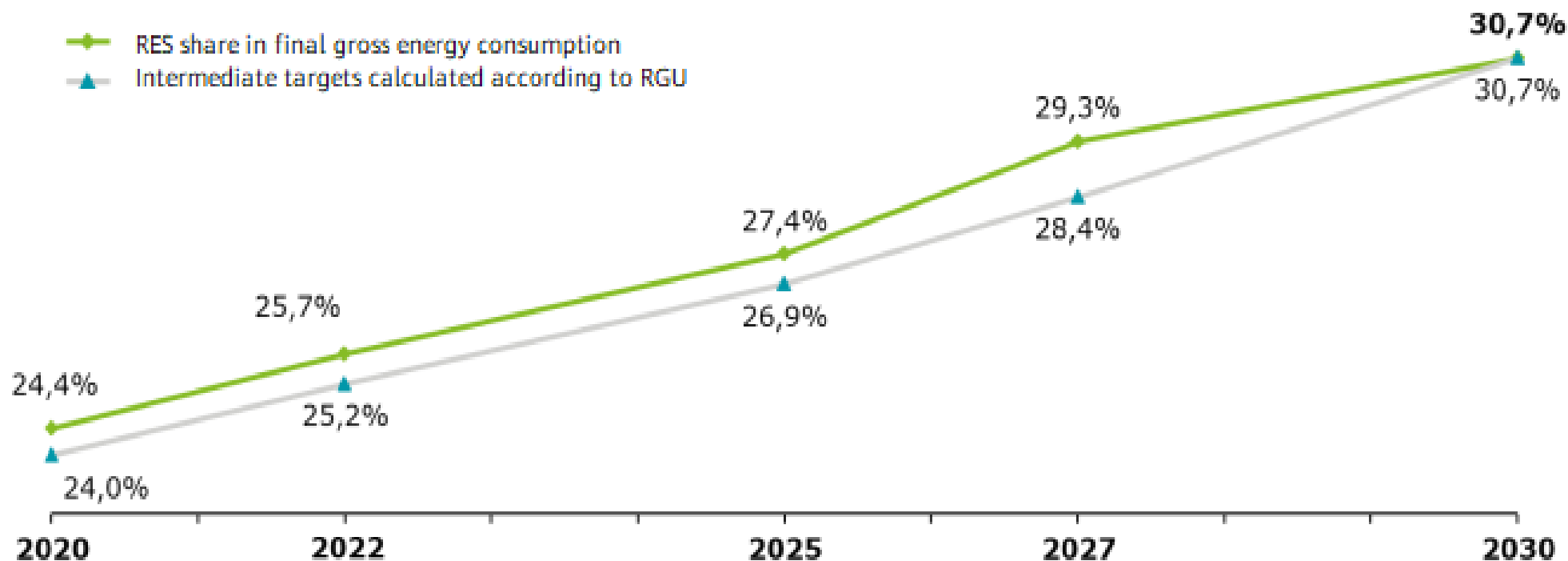


The National Integrated Plan in the field of Energy and Climate Change 2021-2030

Solar:

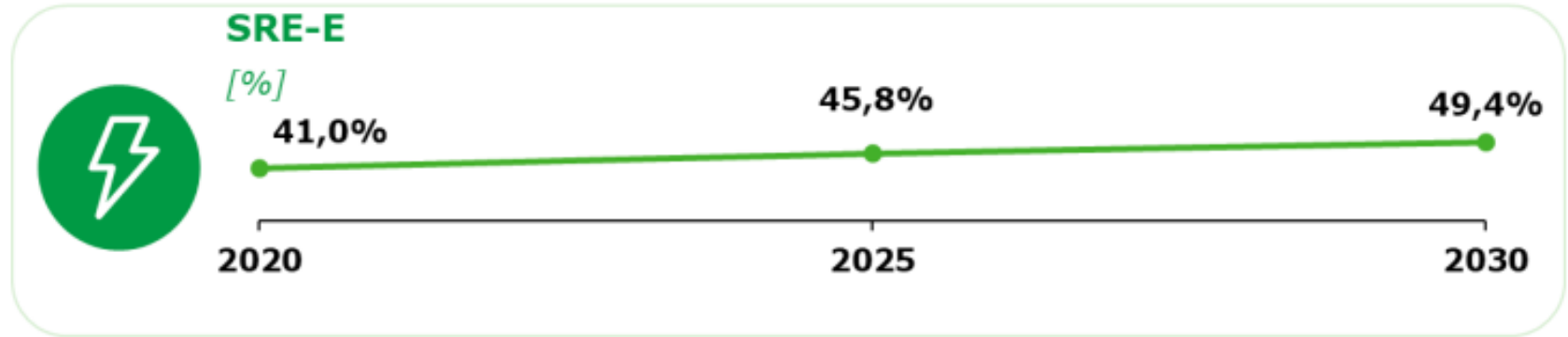
- + 994 MW additional installed capacity in 2022 compared to 2020;
- + 1,037 MW additional installed capacity in 2025 compared to 2022;
- + 528 MW additional installed capacity in 2027 compared to 2025;
- + 1,133 MW additional installed capacity in 2030 compared to 2027.

Romania indicative trajectory of RES share in final energy consumption, 2021 - 2030

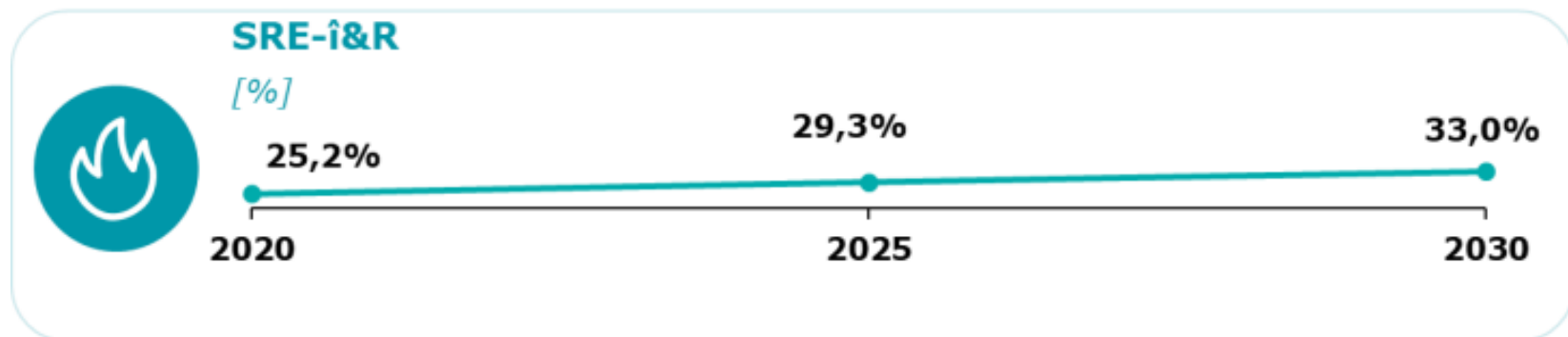


- By 2025 the trajectory must reach the target of at least 43% of growth total foreseen for the period 2020-2030, compared to the target foreseen for the year 2020 (24%);
- By 2027 the trajectory must reach the target of at least 65% of growth total foreseen for the period 2020-2030, compared to the target foreseen for the year 2020 (24%)

The indicative trajectory of the share of energy from renewable sources in the gross final consumption of electricity, 2021 - 2030



The indicative trajectory of the share of energy from renewable sources in the gross final consumption of energy in the heating and cooling sector, 2021 - 2030



Residential - C&I

LUNA 2000 - 5-10-15-20-25-30 kWh

6 x 5 kWh power pack

400 V, 50Hz inverter 3-10kW

Availability - NOW



LUNA2000-5/10/15-50
Technical Specification

	LUNA2000-5-50	LUNA2000-10-50	LUNA2000-15-50
Technical Specification			

Performance			
Power module	LUNA2000-5kW-CD		
Number of power modules	1		
Battery module	LUNA2000-5-ED		
Battery module energy	5 kWh		
Number of battery Modules	1	2	3
Battery usable energy ¹	5 kWh	10 kWh	15 kWh
Max. output power	2.5 kW	5 kW	5 kW
Peak output power	3.5 kW, 10 s	7 kW, 10 s	7 kW, 10 s
Nominal voltage (single phase system)	450 V		
Operating voltage range (single phase system)	350 ~ 500 V		
Nominal voltage (three phase system)	600 V		
Operating voltage range (three phase system)	600 ~ 980 V		

Huawei EV Charger

Availability - soon



LUNA 2000 - 200-400-600-800 kWh

12 x 16,35 kWh power pack

1 x 400V, 50Hz PCS 100KTL, ON/OFF

GRID

Availability - Q3 2023




More Energy


Smart O&M


Safe & Reliable

Battery Module Parameters	
Cell type	LFP 3.2V / 320 Ah
Combination mode	16 S 1 P
Rated voltage	51.2 V
Rated capacity	16.38 kWh
Charge/discharge ratio	≤ 1 C

Battery Rack Parameters	
Battery rack config.	12 S
Rated voltage of the battery rack	614 V (battery side) / 645 V (DCDC side)
Working voltage of the battery rack	340 V ~ 790 V
Maximum capacity of the battery rack	196 kWh
Battery rack controller capacity	98 kW@0.5C
Charge/discharge ratio	≤ 0.5 C

Energy Storage System Parameters	
Energy storage system configuration	192 S 1 P
Rated voltage on the DC side	614 V
Maximum voltage on the DC side	1100 V
Maximum battery capacity of the energy storage system	196 kWh
Dimensions (W x H x D), excluding DC/DC	1800 x 2100 x 950 mm
Dimensions (W x H x D), including DC/DC	2150 x 2100 x 950 mm
Weight of the energy storage system	< 26 t
Operating temperature range	-30 °C ~ 55 °C
Storage temperature range	-40 °C ~ 60 °C
Operating humidity range	0 ~ 100% (non-condensing)
Maximum operating altitude	4,000 m
Battery temperature control mode	Industrial-grade air conditioner



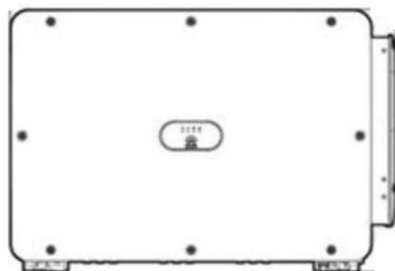
Large scale utility

SUN2000 – 330KTL-H1

800V string inverter

Nominal power – 300kW

Availability - Q2 2023



LUNA 2000-2MWh

6 x 21 x 16,35 kWh power pack

1-10 x 800V, 50Hz PCS 200KTL, ON

GRID

Availability - NOW



More Energy



Optimal Design



Simple O&M



Safe & Reliable

Efficiency	
Max. Efficiency	≥99.0%
European Efficiency	≥98.8%
Input	
Max. Input Voltage	1,500 V
Number of MPP Trackers	6
Max. Current per MPPT	65 A
Max. Short Circuit Current per MPPT	115 A
Max. PV Inputs per MPPT	4/5/5/4/5/5
Start Voltage	550 V
MPPT Operating Voltage Range	500 V ~ 1,500 V
Nominal Input Voltage	1,080 V
Output	
Nominal AC Active Power	300,000 W
Max. AC Apparent Power	330,000 VA
Max. AC Active Power (cosφ=1)	330,000 W
Nominal Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	216.6 A
Max. Output Current	238.2 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Total Harmonic Distortion	< 1%

Battery Container	
DC Rated Voltage	1,200 V
DC Max. Voltage	1,500 V
Nominal Energy Capacity	2,064 kWh
Rated Power (0.5C)	344 kW * 3
Rated Power (1C)	344 kW * 6
Container Configuration (W x H x D)	6,058 x 2,896 x 2,438 mm
Container Weight	≤ 30 t
Operation Temperature Range	-30°C ~ 55°C
Storage Temperature Range	-40°C ~ 60°C
Operation Humidity Range	0 ~ 100% (Without Condensation)
Max. Operating Altitude	4,000 m
Cooling Method	Smart Air Cooling
Fire Extinguishing	FM-200 / Novec 1230
Communication Interface	Ethernet / SFP
Communication Protocol	Modbus TCP
Protection Degree	IP55
Certificates (more available upon request)	
Environment	RoHS6
Safety & Electrical	IEC62477-1, IEC62040-1, IEC61000-6-2, EN55011, UL9540A, UN3536, etc.





SERVICE SUPPORT

CHALLENGES & SOLUTION

CHALLENGIES OF SERVICE AND SOLUTION SUPPORT

- ▶ RESIDENTIAL MARKET – FAST GROWTH OF SERVICE CASE
- ▶ FRAGMENTED REGION – DIFFERENT LANGUAGES AND SKILLS OF INSTALLERS
 - ▷ DIFFERENT LANGUAGES
 - ▷ DIFFERENT TECHNICAL SKILLS OF INSTALLERS ACROSS THE REGION
 - ▷ HIGH QUALITY SOLUTION – PREVENTION OF FUTURE SERVICE ISSUES
- ▶ HIGH QUALITY SOLUTION – PREVENTION OF FUTURE SERVICE ISSUES ON C&I AND UTILITY SCALE PROJECT
- ▶ HOW TO IDENTIFY WEAK POINTS OF SERVICE SUPPORT LEVEL
- ▶ SERVICE CALLS FROM END USERS – RESIDENTIAL OWNERS
- ▶ EFFICIENT COMMUNICATION WITH BIG NUMBER OF INSTALLERS

OUR GOAL?

- ▶ INCREASE OF CUSTOMER'S SATISFACTION AND EFFICIENCY TO HAVE LOYAL CUSTOMERS HIGHER MARKET SHARE

CUSTOMER CARE – SOLUTION AND SERVICE

SOLUTION – Team of Solution managers available to clients

3 - STEP SUPPORT

- ▶ **Support within sale** – optimal energetic solution based on client requirement, support with products choice and correct feature of PV system and BESS
- ▶ **Solution Study** – measurement and evaluation of the client consumption, visualisation of statistic data and proposal for optimise solution with the target to save input costs or energy independence from the grid
- ▶ **Design Support** – technical support for strategic partners with correct design based on Huawei products

SERVICE – Team of Support Engineers available to the clients

4 - LEVEL SUPPORT

- ▶ **Level 1 – INSTALLERS** - training of installers together with Tier 2 partners
- ▶ **Level 2 – TIER 2 PARTNERS** - constant training by Photomate and Huawei Team
- ▶ **Level 3 – PHOTOMATE Zendesk TAC (Technical Assistance Center)** – direct support of customers via hotline 8/5
- ▶ **Level 4 – HUAWEI TAC** – support of Huawei with special cases

PERSONAL IMPROVE OF TECHNICAL TEAM

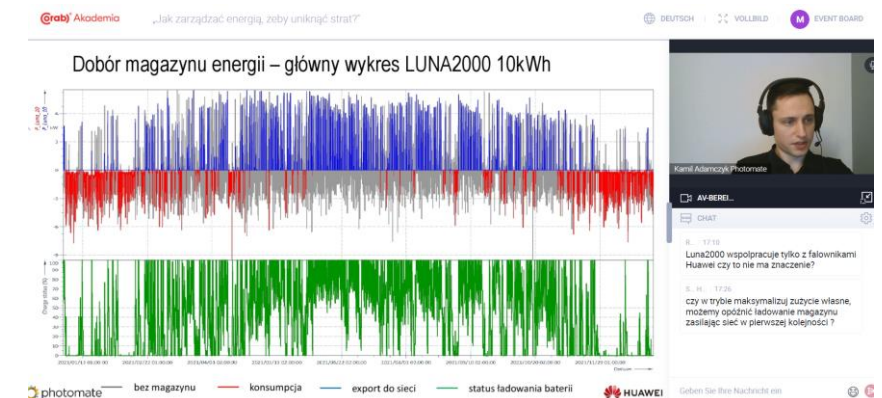
PERSONAL IMPROVE OF TECHNICAL DEPARTMENT



2020
6 PERSONS

2021
10 PERSONS

2022
29 PERSONS



HOW TO HANDLE INCREASE OF SERVICE CASE?

A: PROFESSIONAL TICKETING SYSTEM

ZENDESK - ticketing system

- ▶ Hotline for 21 countries with 9 phone numbers
- ▶ Redirection of calls based on requirement
- ▶ Automatic redirection of emails to country tech. support engineers
- ▶ Record of every call or email and communication history
- ▶ Support for social media communication
- ▶ General statistics of service task data
- ▶ Sort of information based on technical or commercial requirement
- ▶ Available statistics based on interest of evaluation
- ▶ Region / personal quality / quantity / products / reaction time / satisfaction rate etc.



photomate

TECHSUPPORT
service@photomate.eu

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 SWEDEN +46850282345	 UKRAINE +380 89 324 3815
 BALTICS, EURASIA, MOLDAVA +38 097 952 87 56	

CSP-PHOTOMATE Zendesk TAC

► TOTAL STATISTICS

► STATISTICS BY REGION

Tickets by region

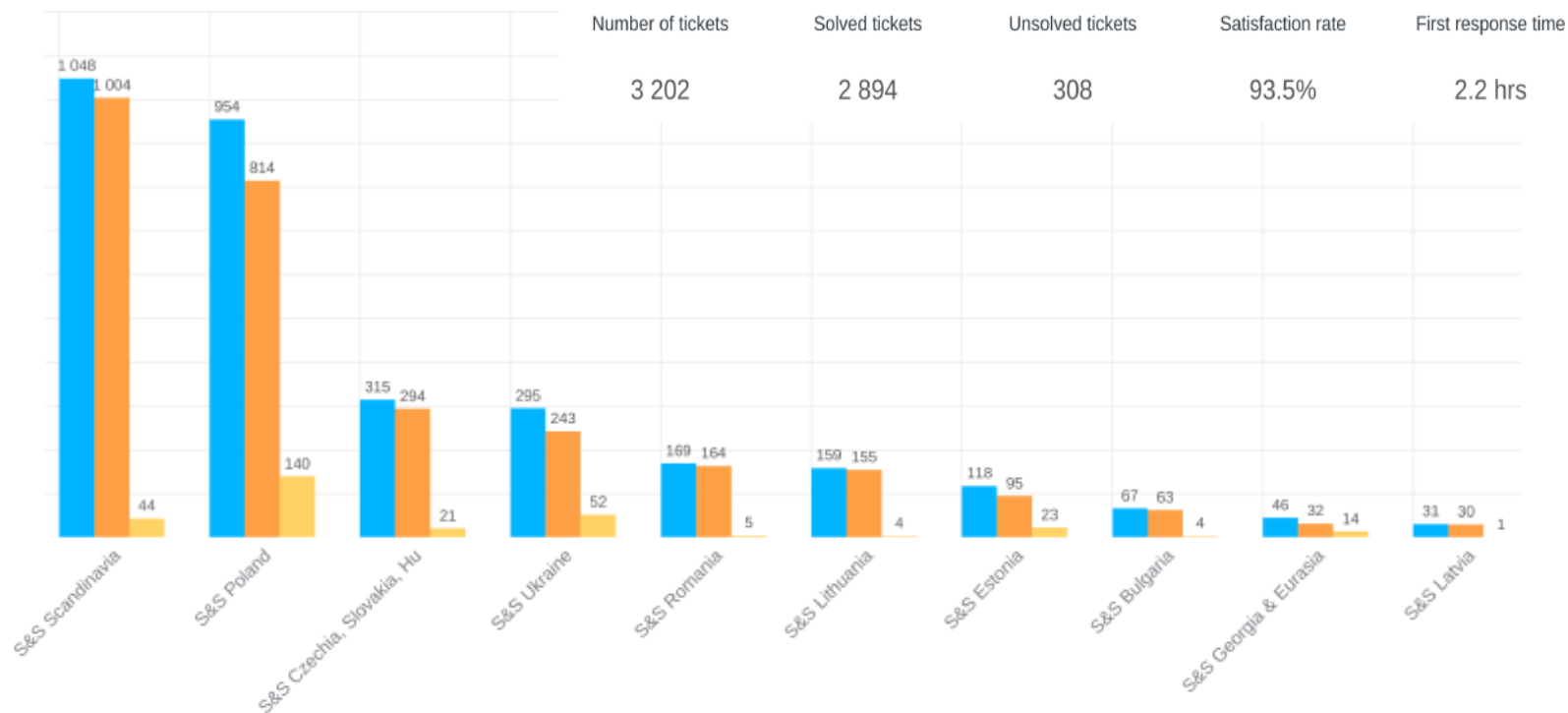


Time filters

Currently viewing: 01/01/2022 — 30/06/2022

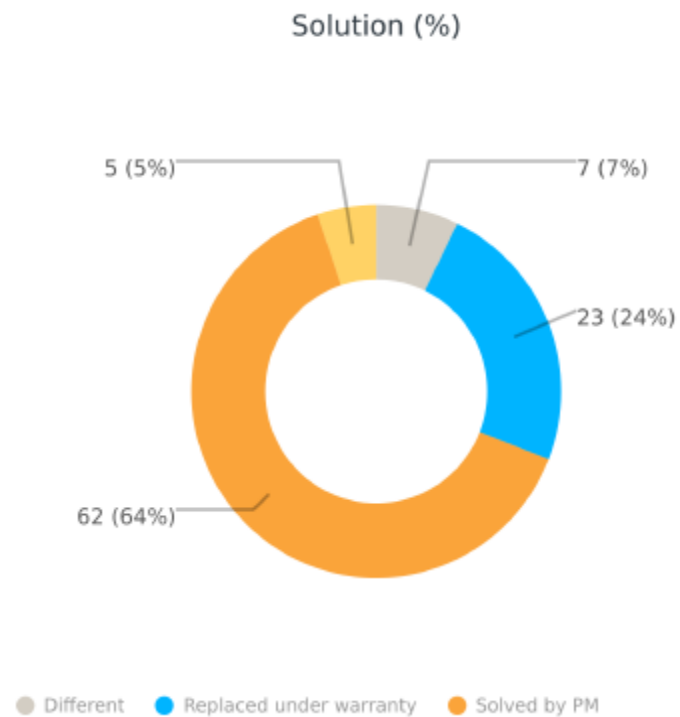
Time ▼

● Tickets ● Solved tickets ● Unsolved tickets

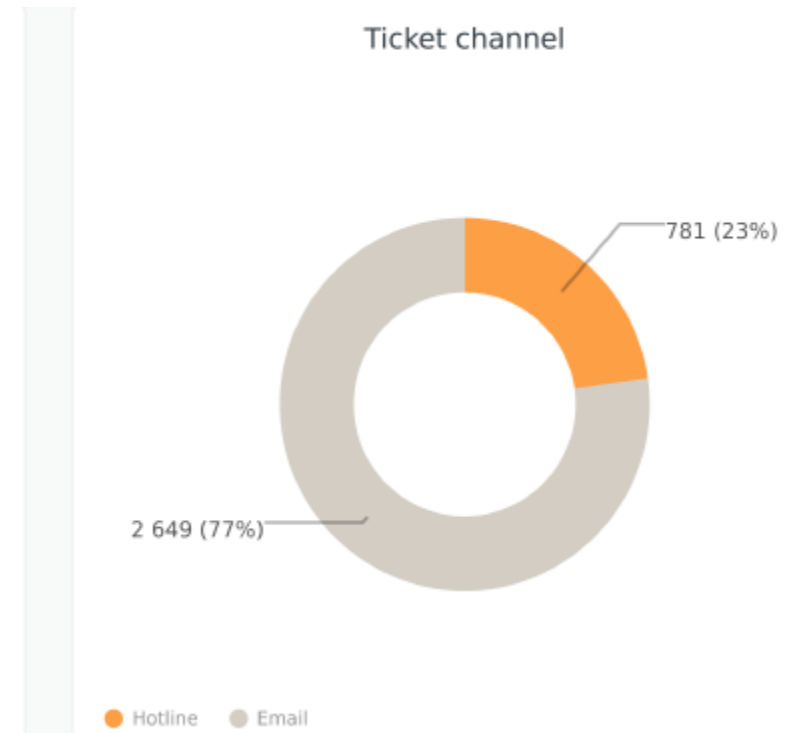


CSP-PHOTOMATE Zendesk TAC

► SOLUTION OF SUPPORT



► TICKET CHANNEL



CSP-PHOTOMATE Zendesk TAC

- ▶ TOTAL STATISTICS
- ▶ STATISTICS BY REGION



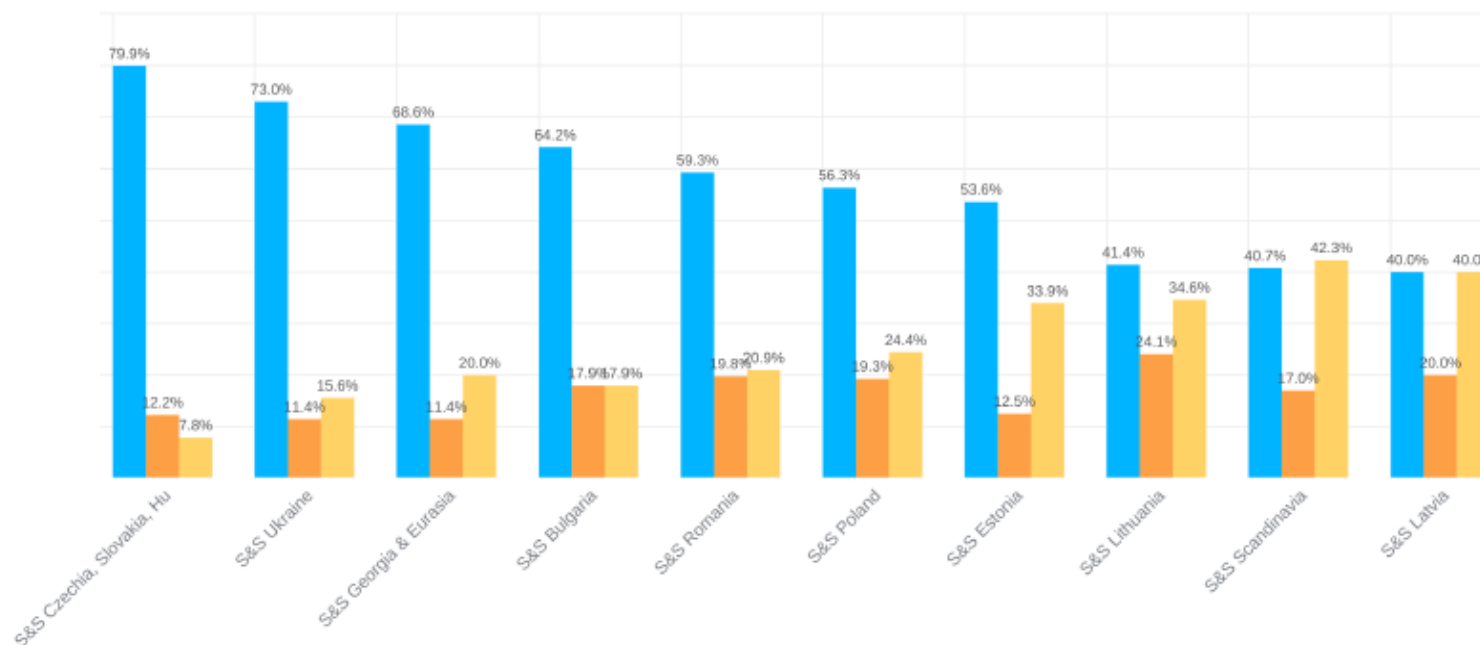
- ▶ TICKET CHANNEL
- ▶ SOLUTION OF SUPPORT

CSP-PHOTOMATE Zendesk TAC

► REPLIES DISTRIBUTION – EVALUATION OF RESPONSES QUALITY

Replies distribution

● 1 response ● 2 responses ● more than 2 responses

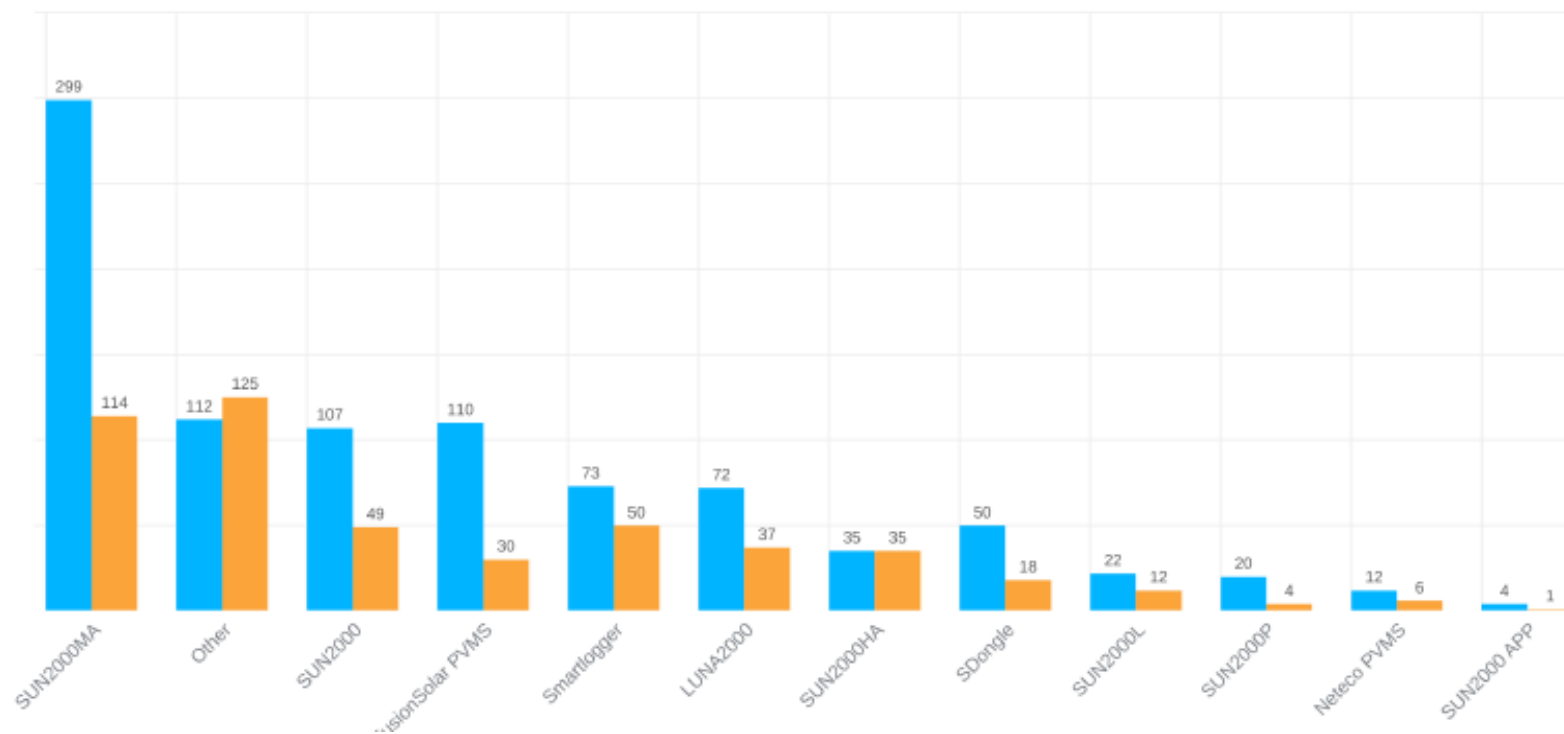


CSP-PHOTOMATE Zendesk TAC

► TICKET/DEVICE TYPE - EVALUATION OF PRODUCTS / O&M DOCUMENTATION QUALITY

Tickets/Device type

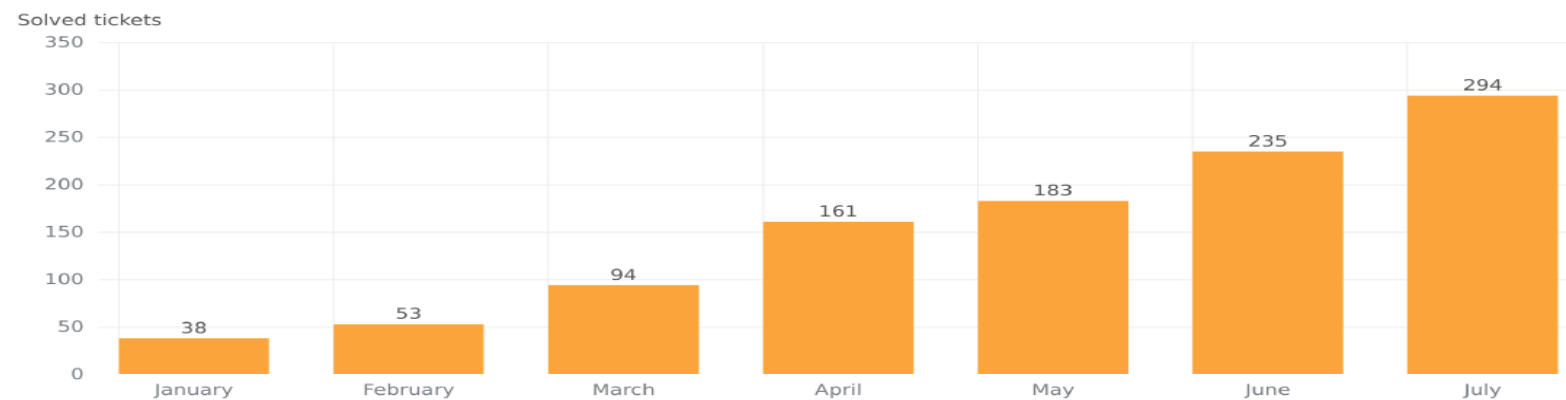
● Problem ● Question



CSP-PHOTOMATE Zendesk TAC

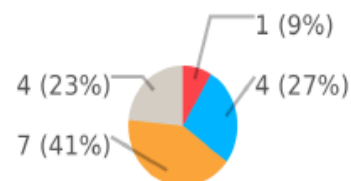
► INTERNAL SERVICE REPORT

► STAFF EVALUATION



Average of solved tickets/day

● Bartłomiej Ścisiel ● Damian Marczyk ● Kamil Adamczyk



CSP-PHOTOMATE Zendesk TAC

- ▶ INTERNAL SERVICE REPORT
- ▶ STAFF EVALUATION
- ▶ CUSTOMER SATISFACTION EVALUATION / AGENT





LOCAL LANGUAGE SUPPORT

► MANAGEMENT



► POLAND



► UKRAINE



► CZECH REP., SLOVAKIA



► BULGARIA



► ROMANIA



► SCANDINAVIA



► BALTICS



► HUNGARY



► GEORGIA





COMMUNICATION PORTAL & KNOWLEDGE DATABASE FOR INSTALLERS



PROFFESIONAL INSTALLERS HELP CENTER

WEB DATABASE



photomate.zendesk.com



CSP PROGRAM: WAY TO INCREASE QUALITY OF SUPPORT TO HUAWEI CUSTOMER



CSP: Customer Service Program



PHOTOMATE VAP certified as first 3*CSP In the region of east Europe and Euroasia

- ▶ Totally 16 countries certified
- ▶ Certification applied from 10/2021
- ▶ Grow support of quality and more professional services to the clients
- ▶ CSP program allows return of investment back into HR and technical tools of VAP for service
- ▶ VAPs certified as Huawei's CSPs covers basic services required by lower-level partners, installers, or end customers, including on-site or remote training, installation and commissioning support
- ▶ It proactively maintains good customer satisfaction, and ensure a win-win situation between Huawei and VAPs



THANK YOU
FOR YOUR ATTENTION

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