
SKE
lead the change
HUAWEI

Huawei: Leading provider of ICT infrastructure and smart devices

Vision & mission

Bring digital to every person, home, and organization for a fully connected, intelligent world

195,000
employees

170+
countries and regions

No. 96
on Fortune Global 500

No. 2
in R&D investment

54.8%
of employees are in R&D

Huawei company milestones

FusionSolar Continuously Building a Greener and Better Future Together with Our Global Customers

300+ GW
Inverter Shipment
Accumulated

90.7GW
Inverter Shipment
2022,Estimated

6.8GWh
ESS Shipment
2022, Estimated

230 Million tons
Carbon Emissions Reduced

313 Million
Equivalent Trees Planted

SKE | Huawei Value Added Partner in CEE

- **16** SKE Countries

  Albania, Bosnia, Bulgaria, United Kingdom, Greece, Ireland, Kosovo, Croatia, Moldova, Montenegro, Northern Macedonia, Austria, Romania, Serbia, Slovenia, Cyprus

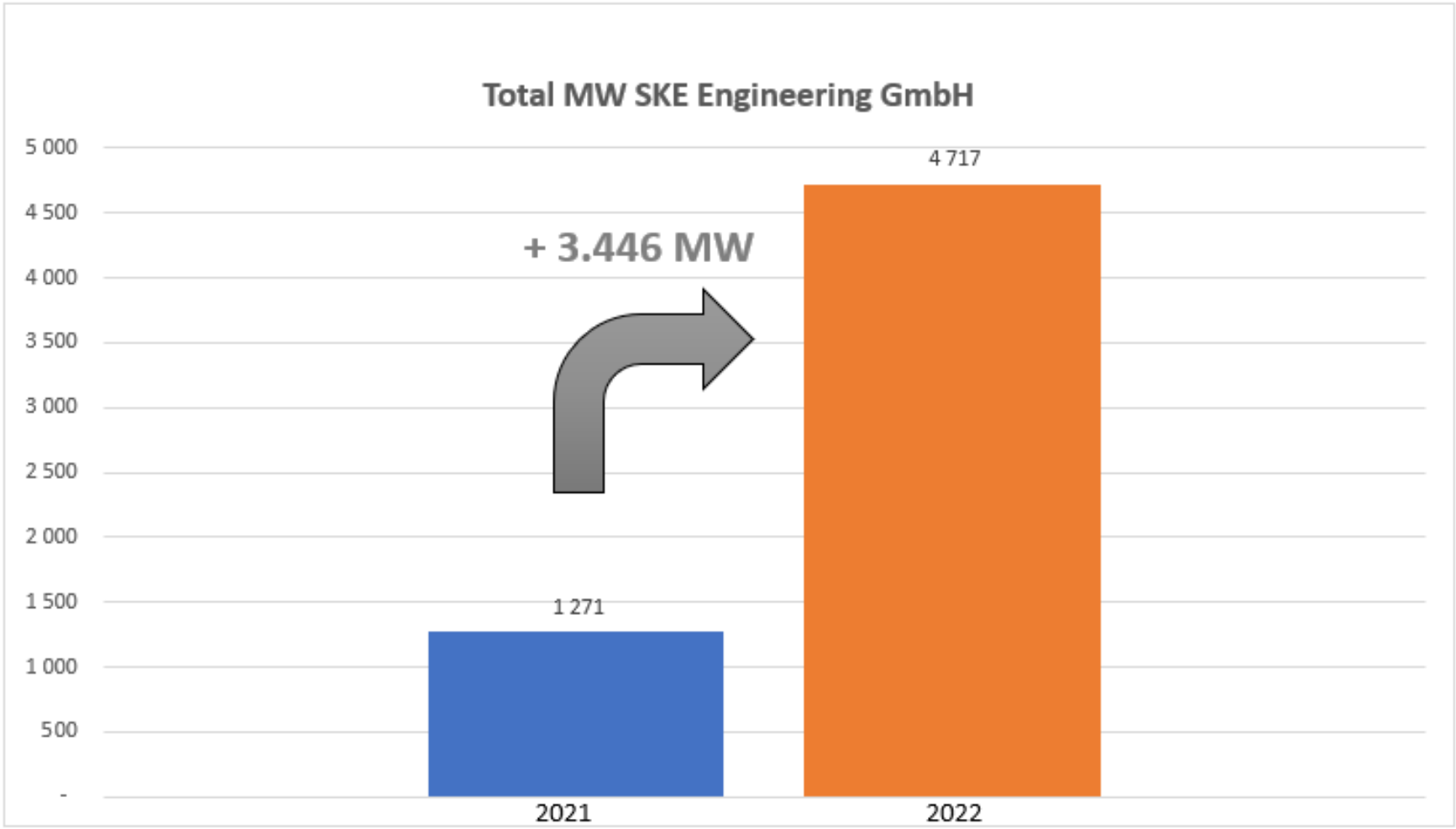
- **5** SKE Offices international

  Austria, United Kingdom, Croatia, Romania, Greece

SKE | Warehouse and Logistic

- Warehouses
  Austria, Romania, United Kingdom
- Up to 250 MW available in stock
- 2,000+ Orders processed per year
- 2,500+ Deliveries sent annually

SKE | Total sales in MW

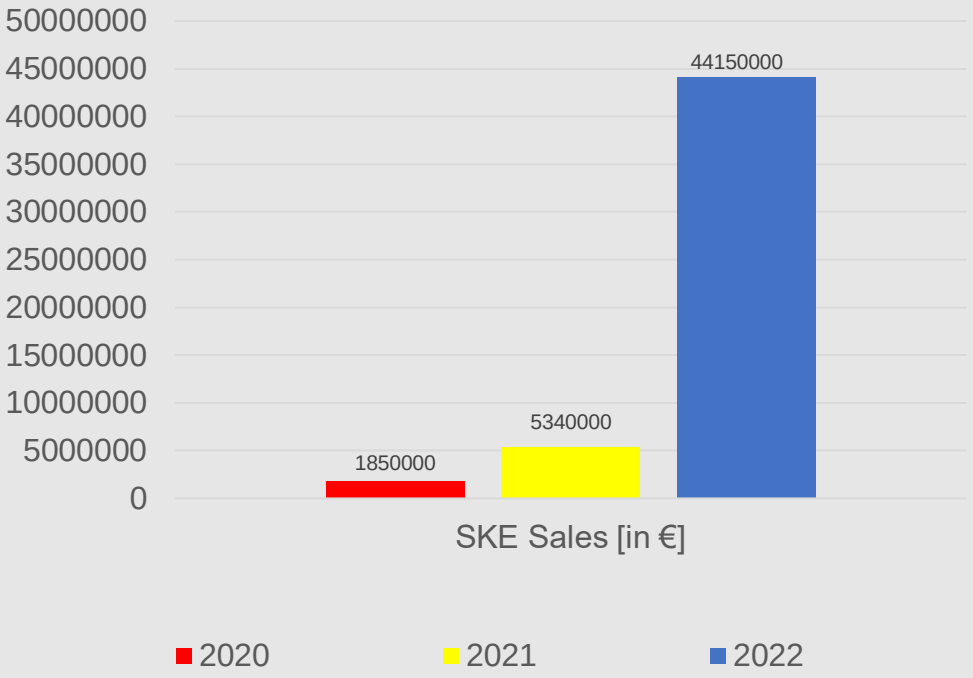


SKE Romania - Company overwiew

- 500MW sold in 2022
- Bucharest office + 2 warehouses (+1500 pallets capacity)
- + 12000 inverters on stock
- 10 Employees (including 2 x Solution Managers + 1 x Service Engineer)
- 1 fully functional laboratory

SKE SOLAR INVERTERS SRL

SKE Romania revenue



ske-solar.com
#weareonefamily

SKE | Service areas & Product range

Huawei FusionSolar
Residential

PV for residential & living areas

Huawei FusionSolar
Commercial & Industrial

PV for commercial & industrial infrastructures

Huawei FusionSolar
Utility Scale

Large-scale photovoltaic systems

FusionSolar, Smart PV Solution for All Scenarios

	Smart String Inverter and Transformer	Smart Array Controller & Smartlogger	Management System
Utility	 330 KTL H1 Inverter SUN2000  Smart Transformer Station STS JUPITER 3000K-H1 STS JUPITER 6000K-H1 STS JUPITER 9000K-H1	 SACU 2000D	 FusionSolar Management System
Commercial & Industry	 Inverter SUN2000 3 Phase 12/15/17/20KTL-M2 12/15/17/20/25KTL-M5 30/36/40KTL-M3 50 KTL-M3 100/115KTL-M2  Optimizer MERC-1100W-P MERC-1300W-P   Smart Dongle  Smart Logger 3000A	
Residential	 Inverter SUN2000 Single Phase Phase 2/3/3.68/4/4.6/5/6KTL-L1 Three Phase 3/4/5/6/8/10KTL-M1  Optimizer 450W-P2 600W-P  Smart Power Sensor  Smart Dongle  Smart Charger	 FusionSolar Cloud

FusionSolar, Storage Solution for All Scenarios

Residential

LUNA2000
5-10-15 kWh
7-14-21 kWh

Commercial & Industrial

LUNA2000 200 kWH 2H1

Smart PCS (100 kW)

Utility

LUNA2000-2.0MWh-1H0/1H1/2H1

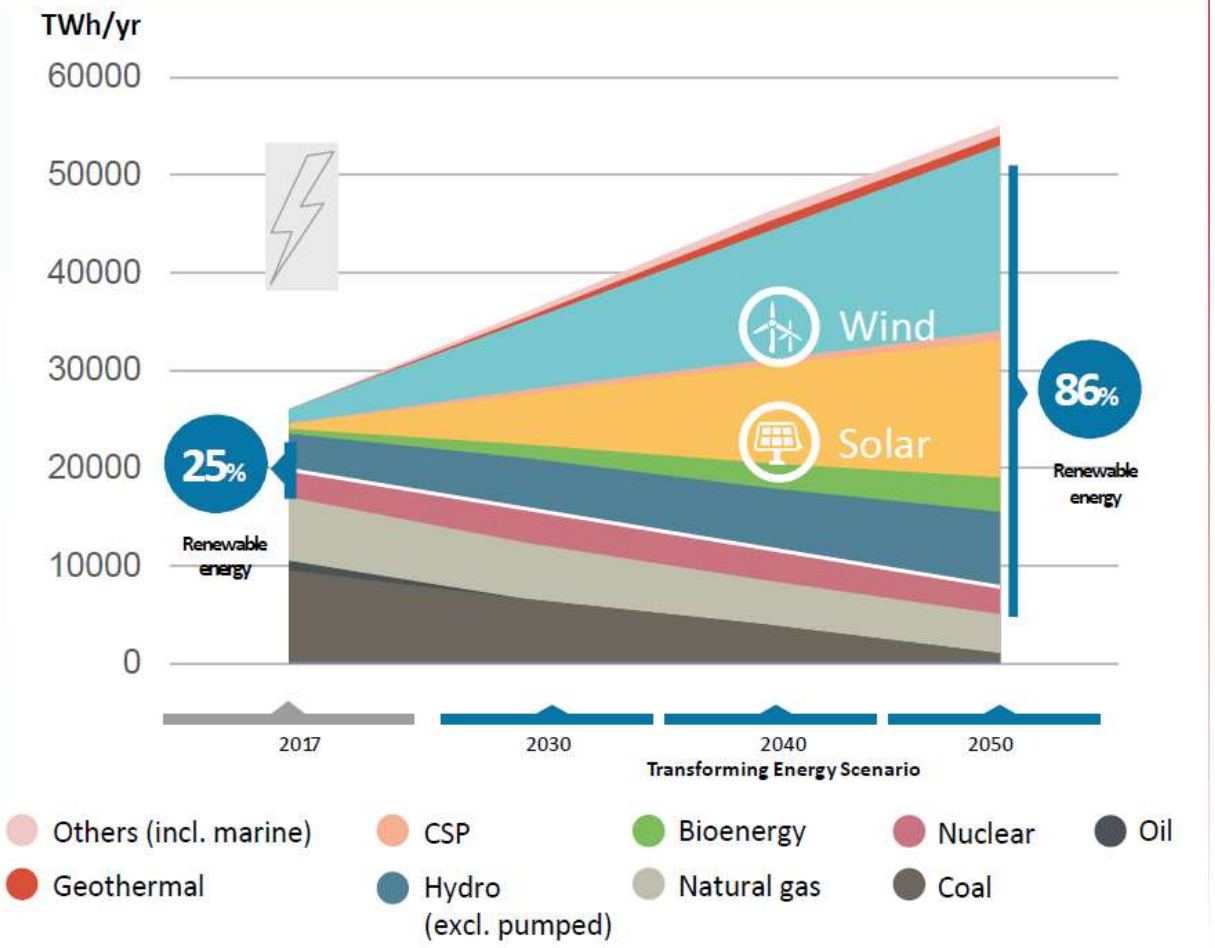
SmartACU2000D
Smart Array Controller

Smart PCS (200 kW)

DC LV Panel

Energy Strategy Transformation: Promoting solar & wind to become the major energy

PV: the major energy supply for power plant installation



Governments & corporations specify low-carbon targets

China

Carbon neutral realized **in 2060**

Peak value **by 2030**, 20% renewable energy

EU

Carbon neutral realized **in 2050**

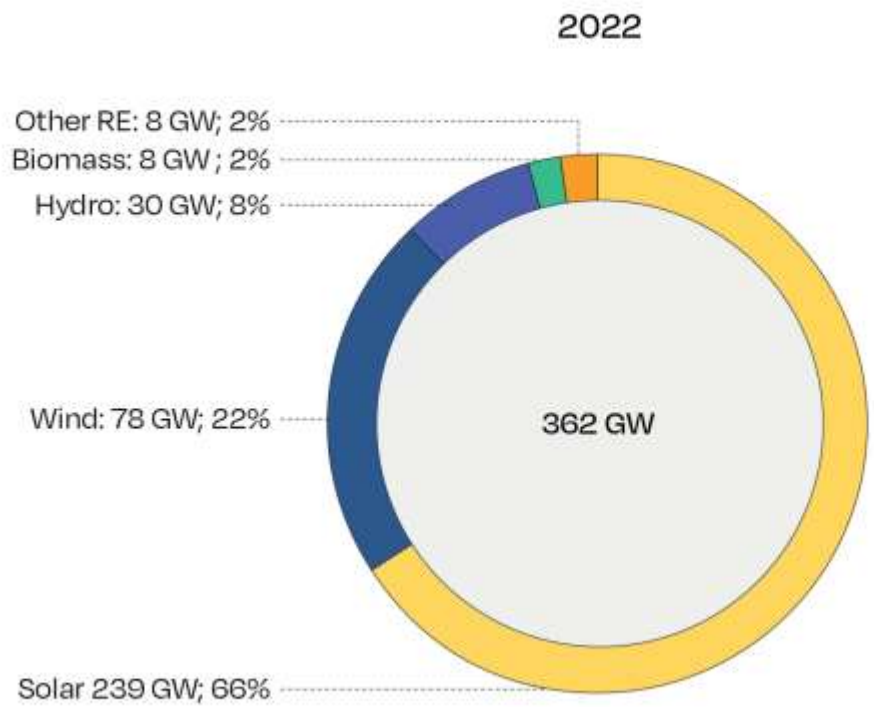
GHG emission -60% **by 2030**, 32% renewable energy

Strategic transformation of energy giants accelerate Carbon Neutral

Various Power consumption companies join RE100 & promise to achieve 100% renewable energy power consumption

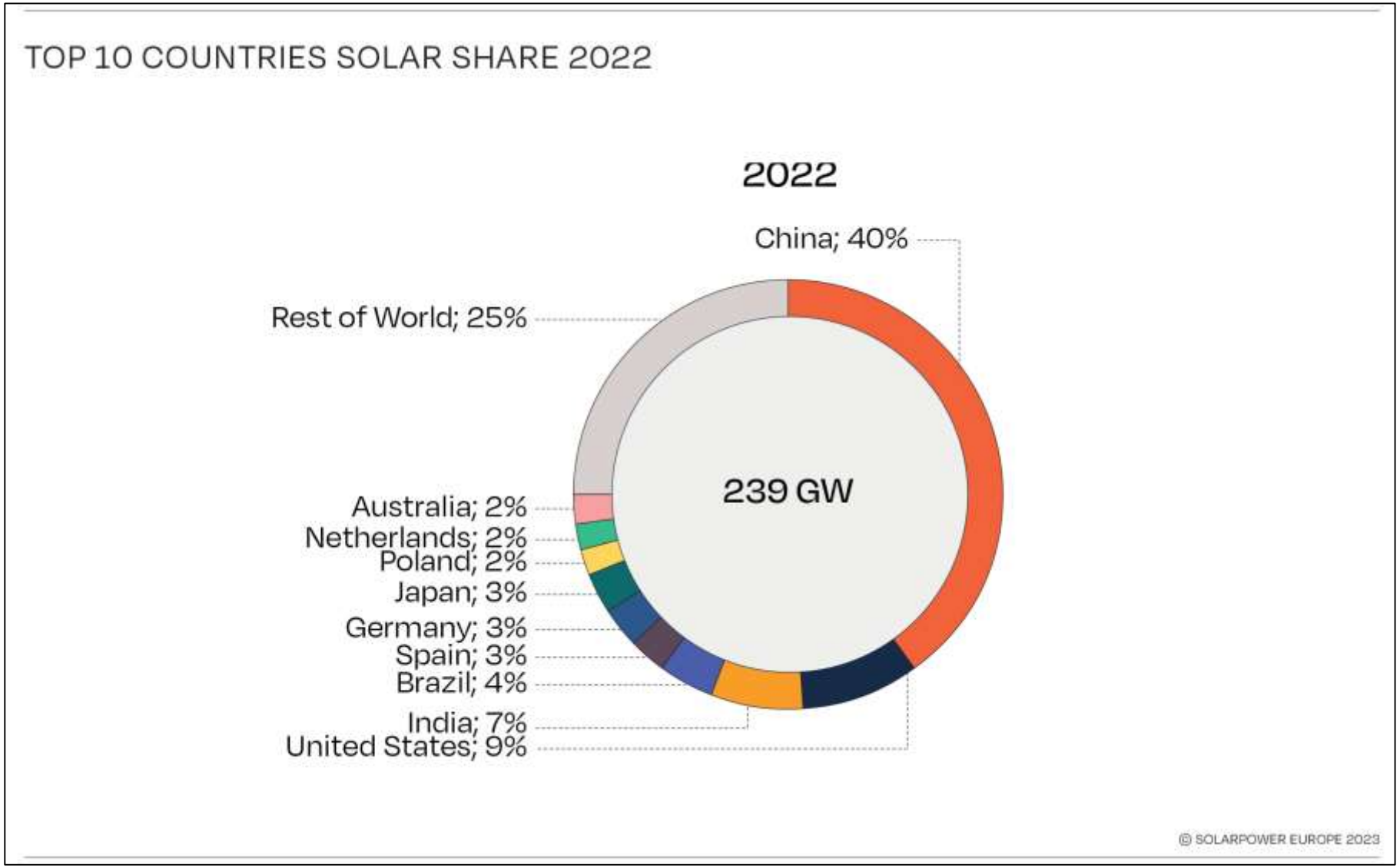
Energy Strategy Transformation: Promoting solar & wind to become the major energy

FIGURE 1 NET RENEWABLE POWER GENERATING CAPACITY INSTALLED IN 2022

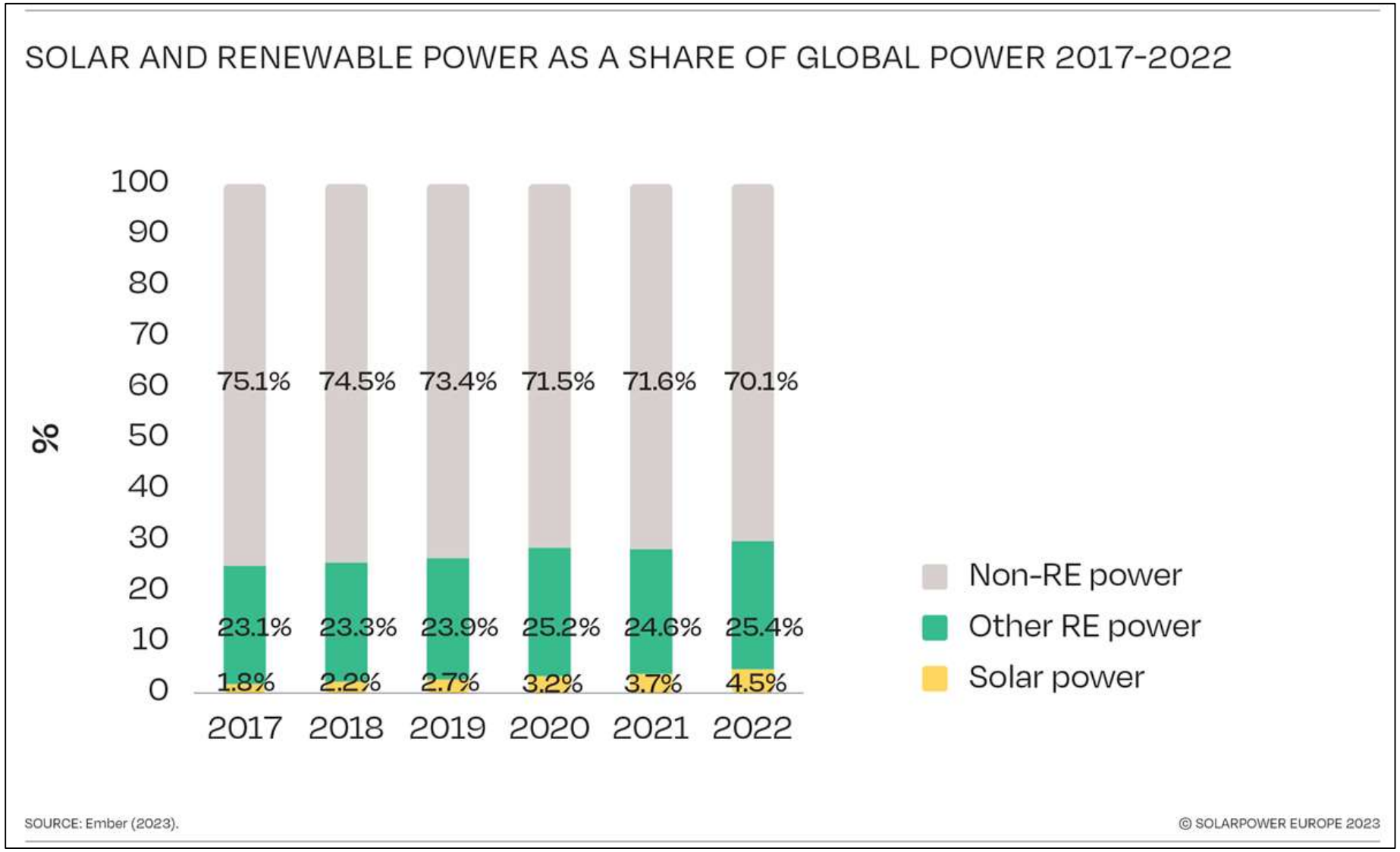


SOURCE: GWEC (2023), IRENA (2023).

Energy Strategy Transformation: Promoting solar & wind to become the major energy

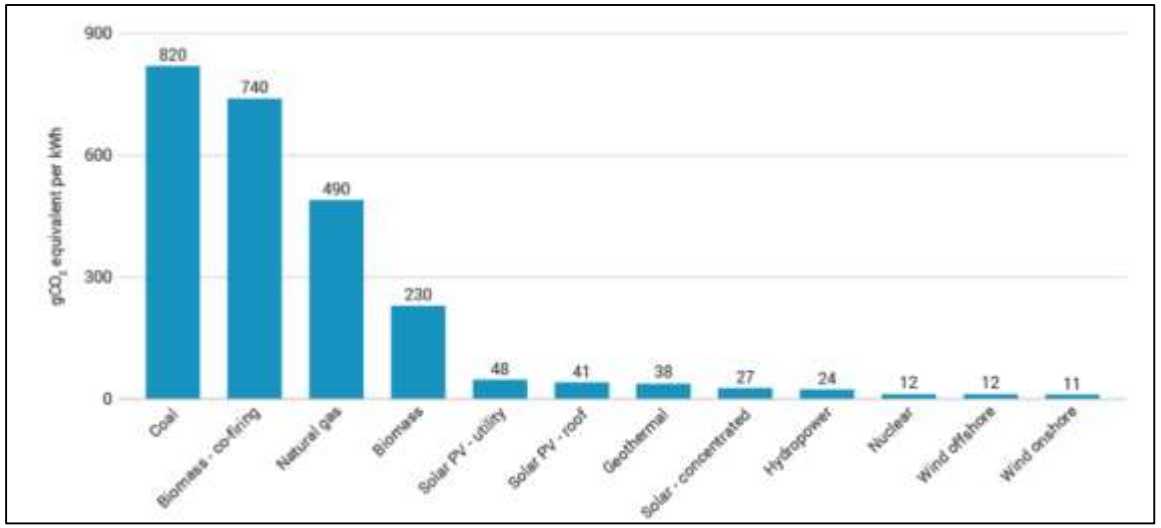


Energy Strategy Transformation: Promoting solar & wind to become the major energy

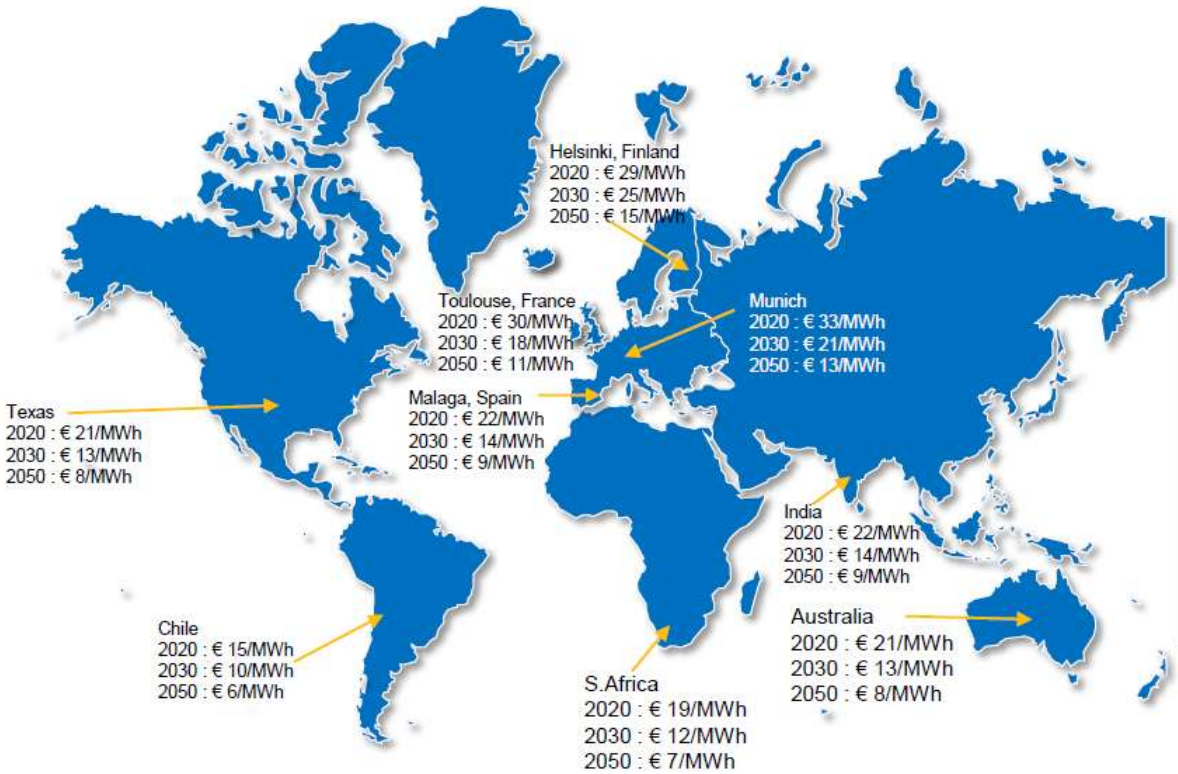


Carbon Dioxide Emissions From Electricity

gCO2 per kWh per energy source.	Min	Median	Max
Wind onshore	7	11	56
Nuclear	3,7	12	110
Wind offshore	8	12	35
Hydropower	1	24	2200
Concentrated Solar	8,8	27	63
Geothermal	6	38	79
Solar PV—rooftop	26	41	60
Solar PV—utility	18	48	180
Biomass—dedicated n	130	230	420
Gas	410	490	650
Biomass—cofiring n.	620	740	890
Coal	740	820	910



LCOE defining the trends



Nominal WACC : 7% WACC
Assume : 100MWp PV plant
CAPEX : 2020 :420 € / kWp
CAPEX : 2030 :280 € / kWp
CAPEX : 2050 :170 €/ kWP
OPEX : 2020 : 9 € / kWp /a
OPEX : 2030 : 6 € / kWP /a
OPEX : 2050 : 4 € / kwp / a
Inflation : 2 %
Lifetime : 30 years
Initial degradation : 2 %
Continued degradation : 0.5 % / a

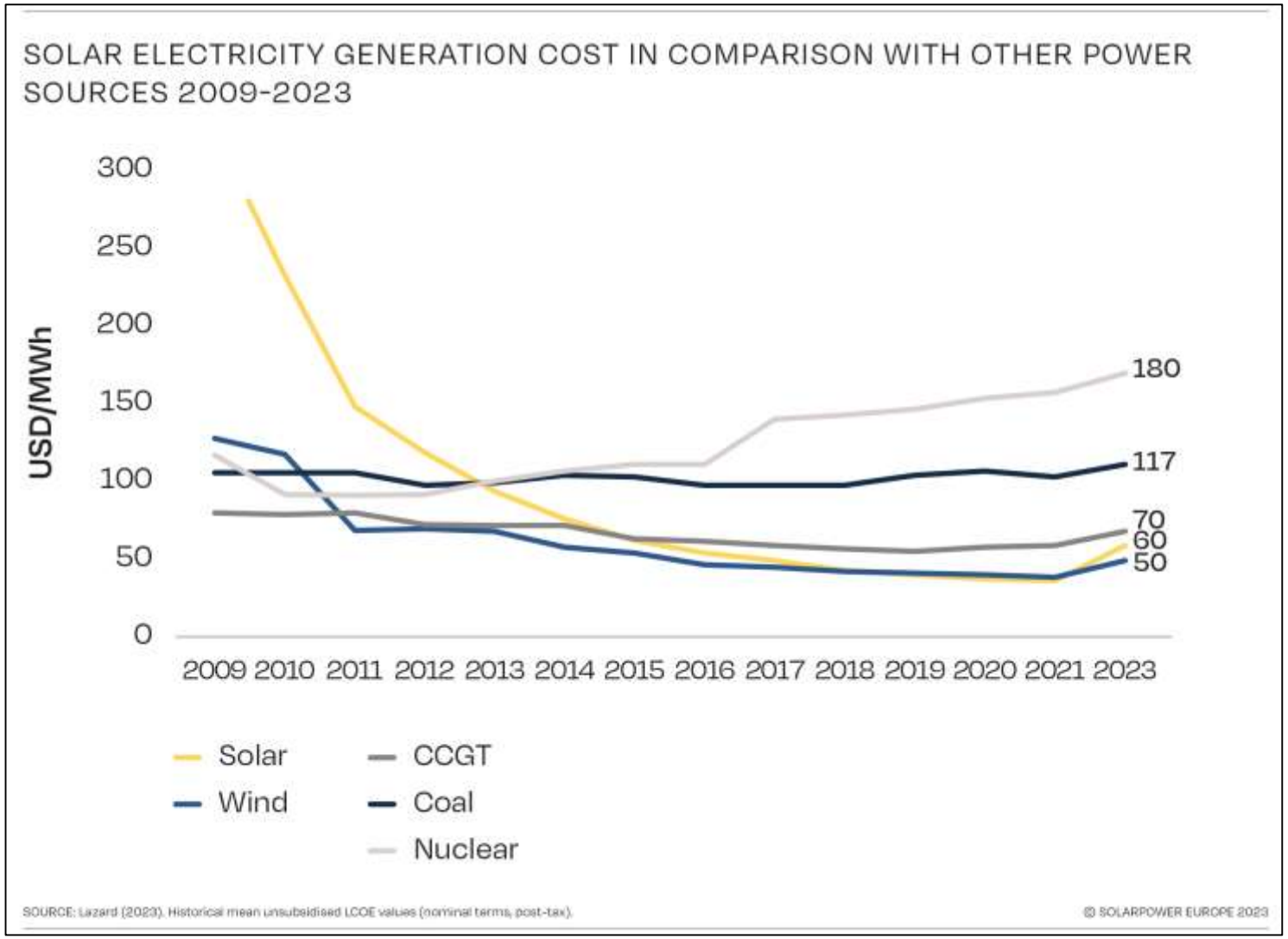
Major steps in technology development cost drivers for anticipated utility-scale PV system LCOE:

- PV module average efficiency will increase from the current 18% to ~30% by 2050. Several factors are increasing the efficiency. Main drivers being:
  - tandem and multijunction cells
  - passivated contacts leading to lower losses
  - new materials, better light management
- Less expensive material use; e.g. silicon cost will be reduced by ~ 80% by 2050 and silver replaced by copper or aluminum
- Larger batches and better manufacturing process leads to higher throughput
- Better optimization and design of the whole PV system and O&M
- Consolidation and value chain logistics optimization; healthy competition will continue
- Bifacial modules increase the yield

Summary of PV technology trends up to 2030

- Share of monocrystalline PV cells to increase to 90% – half of mono will be n-type
- PERC dominating - tandem, heterojunction and IBC cells to increase share to 25%
- Bifacial cells to increase market share up to 70% and bifacial modules to 35%
- Half cells to increase share to 60% – quarter cells will also come to the market
- 5 busbars dominating, increasing to 6+ – eventually busbarless cells will overtake
- 72-cell modules will take over from 60-cells reaching 60% share
- Frameless modules will increase market share to 25%

LCOE comparison



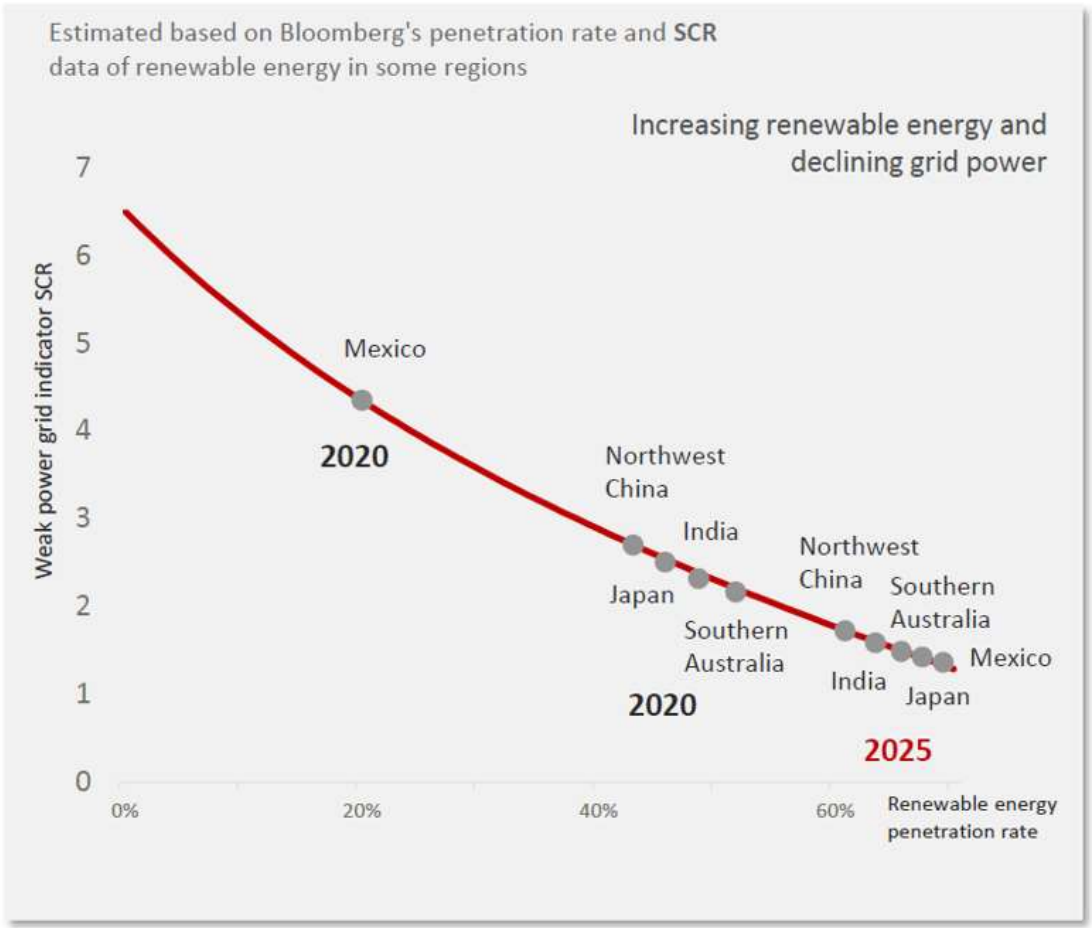
Calugareni 63MWp

- 88 ha area
- Substation: 63MVA 20kV/110kV
- 8 x Huawei STS 6000K-H1
- 248 x Huawei-215KTL-H0 inverters
- 16, 17 or 18 strings/inverter
- 27 pcs of 535W or 540W JASolar panels/string
- Total numbers of panels:116.991
- Single-axis (East-West) tracker system

Calugareni 63MWp

Power grid stability declines, Energy Storage has emerged as a flexible grid-balancing tool

In the next five years, half of global power grids will be declining.



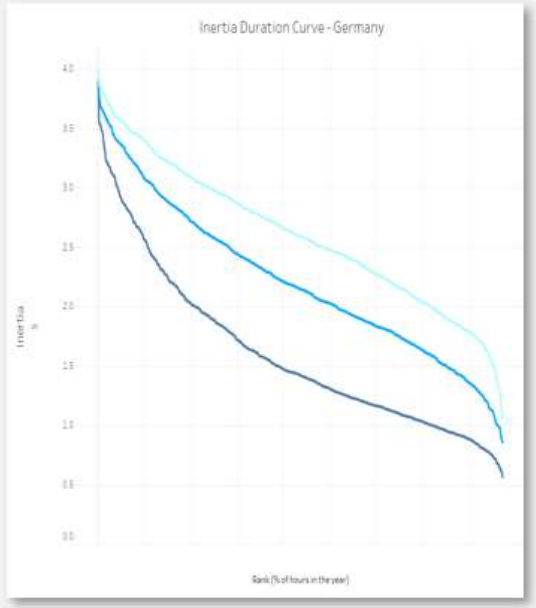
SCR = short-circuit ratio

As Renewable Energy Penetration Rate Rises, Weak Grid Problem Becomes a Global Challenge

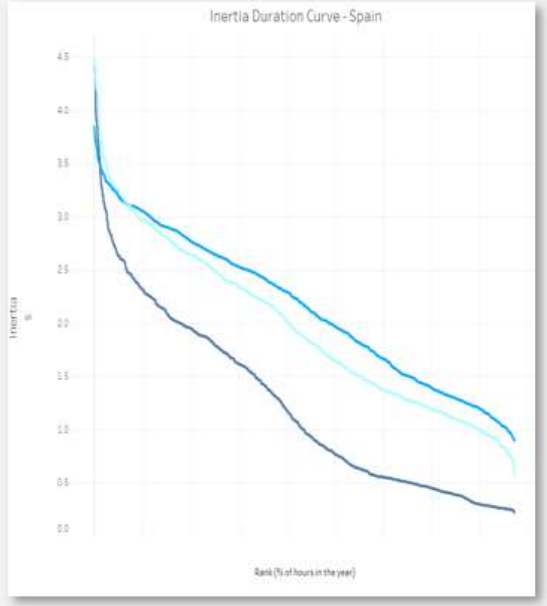
In the next five years, renewable energy capacity will increase rapidly, and the global power grid strength will decrease.

Europe — Entso predicts: The system strength of major EU countries will decline rapidly in the next five years.

Germany: Power grid intensity decreases by 50%.



Spain: Power grid strength decreased by 60%+



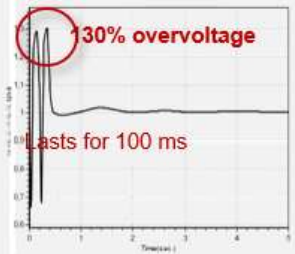
High proportion of renewable energy will pose severe challenges to grid stability

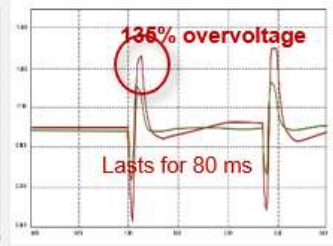
Peak and frequency regulation — Thermal power is approaching the limit of peak regulation

The thermal power operation of a province has reached the limit (40% peak adjustment depth), and no new energy peak adjustment can be performed. The new energy target in 2021 is expected to be impossible to achieve.

Transient voltage — Significant HVDC overvoltage problem

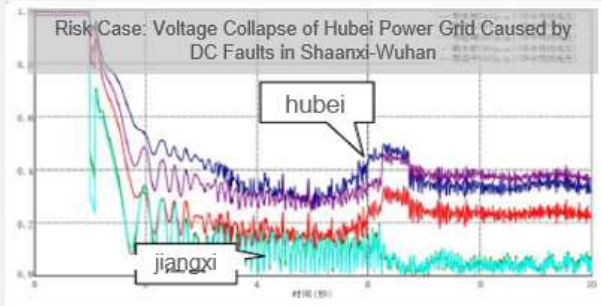
The transient voltage control capability of new energy is weak. During the HVDC fault period, 130% + overvoltage occurs. The power grid limits the power of new energy generation.





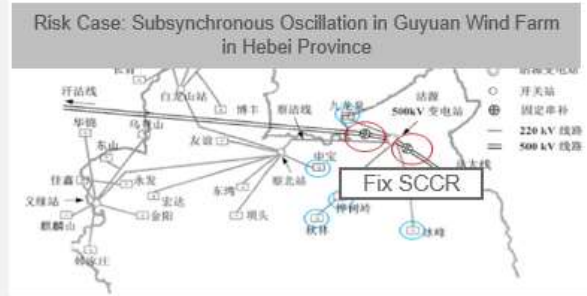
Voltage Stabilized — Insufficient new energy support capability

The new energy has transient power and insufficient voltage support. After the HVDC is faulty, the power is transferred in a large area, causing voltage collapse. Power grids limit new energy



Wide frequency oscillation — Risk of long-distance transmission oscillation

After the proportion of synchronous power decreases, the stability margin decreases, and low frequency/ Subsynchronous/supersynchronous oscillation risks and power grid restrictions



Smart String Energy Storage System Solution has been applied globally

Smart String ESS pilot projects cover five regions: China, Europe, LATAM, MEA, and Africa, promoting the smart string ESS solution with optimal LCOS globally.

Red Sea, Saudi Arabia

PV + ESS Microgrid Project

Capacity: 400 MW / 1.3 GWh

Serving 100% PV + ESS power supply for **1 million people** in Red Sea new city

Grid Forming enabling the world's largest 100% PV & ESS microgrid project

COD: 16 MWh ready around Dec. 2022, others shall be ready around middle of 2023

Thank You!

SKE | lead the change