



Energy Observatory JOURNAL

February 2026



تُعد نشرة مرصد الطاقة منصة معرفية دورية تقدم لمحات شاملة حول المستجدات في مجال الطاقة عالمياً ومحلياً

تهدف النشرة إلى تسليط الضوء على :

- أحدث التطورات في مجالات الطاقة المتجددة والذرية.
- استعراض التقنيات الحديثة والتحولت العالمية.
- مقالات خبراء
- ملخصات أوراق علمية بارزة
- تقارير متخصصة

تسعى النشرة إلى توفير محتوى غني ومتنوع يلبي احتياجات صناع القرار والباحثين والمهتمين بمجال الطاقة، مما يساهم في تعزيز المعرفة ودعم الابتكار في القطاع.

Renewable Energy News

Saudi Minister of Energy witnesses the Signing of Az-Zour North Phase 2 & 3 IWPP ACWA-GIC Consortium Agreement in Kuwait



Image: Acwapower

Witnessed by His Royal Highness Prince Abdulaziz bin Salman, Saudi Minister of Energy, ACWA Power and Gulf Investment Corporation (GIC) signed the Energy Conversion and Water Purchase Agreement (ECWPA) with Kuwait's Ministry of Electricity, Water and Renewable Energy for the Az-Zour North Phase 2 & 3 IWPP.

The project will be developed on a BOT basis under a 25-year agreement, delivering 2,700 MW of power and up to 120 million imperial gallons of desalinated water per day, and featuring a combined cycle gas turbine power plant alongside a reverse osmosis desalination facility. The total investment exceeds USD 4 billion, with ACWA and GIC holding a 40% stake and the Kuwait Authority for Partnership Projects (KAPP) holding 60%. The project will be executed by an international and local EPC consortium led by SEPCO-III, with GE Vernova supplying turbines and Acwa Operations managing long-term operations.

Source

Renewable Energy News

Saudi Arabia and Türkiye Sign an Intergovernmental Agreement on Renewable Energy Power Plant Projects



Saudi Arabia and Türkiye signed an intergovernmental agreement on renewable energy projects during the official visit of President Recep Tayyip Erdoğan. The agreement was signed by Minister of Energy Prince Abdulaziz bin Salman on behalf of the Saudi side and Minister of Energy and Natural Resources Alparslan Bayraktar on behalf of the Turkish side.

The agreement covers 5,000 MW of solar projects in two phases, including 2,000 MW in Sivas and Karaman for over two million households with an investment of nearly USD 2 billion, and an additional 3,000 MW to follow. Both sides affirmed that this agreement marks a major step in strengthening their investment partnership, reflecting mutual trust and a shared commitment to sustainable, strategic projects that promote knowledge transfer, capacity building, and mutual economic benefits.

Source

Renewable Energy News

Global BESS capacity tops 250 GW, overtaking pumped hydro for first time

Global battery energy storage market gross addition outlook by region, 2024-2034

GW

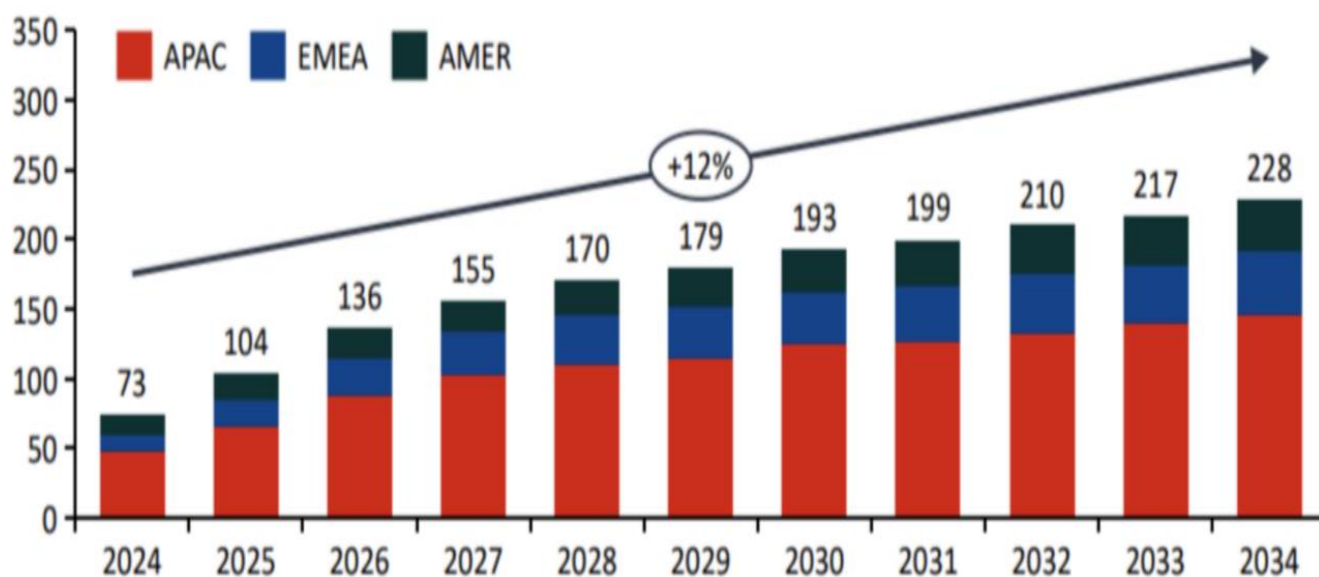


Image: Rystad Energy Storage Solution

Rystad Energy expects global BESS additions to exceed 130 GW/350 GWh in 2026, following a historic milestone in 2025 when operational BESS capacity surpassed 250 GW, overtaking pumped hydro for the first time.

Annual additions topped 100 GW/280 GWh in 2025, nearly triple 2023 levels, making BESS one of the fastest-growing energy technologies this decade. China, the US, the UK, Australia, and Germany lead deployment, with emerging growth in Saudi Arabia, Italy, Chile, and Eastern Europe. Rystad highlights a major shift as BESS is no longer only supporting renewables as it is now beginning to replace gas generation, particularly in Australia and California.

Source

Renewable Energy News

His Royal Highness Prince Abdulaziz bin Salman witnesses the signing of a landmark green ammonia corridor MoU between Acwa and German counterparts



Image: Acwa

Saudi Energy Minister Prince Abdulaziz bin Salman witnessed the signing of an MoU between Acwa and German partners EnBW, ROSTOCK PORT, and VNG to establish a green ammonia supply corridor from Yanbu to Germany's Port of Rostock. The initiative supports Germany's decarbonization strategy and builds on Acwa's Yanbu green hydrogen project, with commercial operations targeted for 2030. A FEED study for the process plants is expected to conclude by mid-2026.

Under the agreement, EnBW will act as offtaker and oversee delivery logistics, Rostock Port will handle operations, and VNG will develop an ammonia cracker to convert imports into green hydrogen for Germany's core network.

Source

Renewable Energy News

Sineng Signs 3GW PV Inverter Supply Contract in Saudi Arabia, Marking Another Strategic Breakthrough in MEA



Image: Sineng Electric

Sineng Electric has signed a 3 GW PV inverter supply contract with Larsen & Toubro for Saudi Arabia's PIF 6 solar project cluster, developed by ACWA Power, PIF, and Aramco Power. The cluster includes the 2.37 GW Bisha project and the 0.664 GW Humaij project. Both will deploy Sineng's 8.8 MW medium-voltage turnkey station solution, integrating central inverters, a transformer, and an RMU to enhance system efficiency and grid performance.

The agreement strengthens Sineng's footprint in the Middle East, where it has secured over 10 GW of contracted capacity. The company highlighted its expanding regional service network and ongoing focus on supporting large-scale renewable deployment across the MEA region.

Source

Renewable Energy News

One-year perovskite solar module testing shows promising outdoor stability



Image: European Commission Joint Research Centre – PV-Magazine

Scientists at the European Commission Joint Research Centre tested two single-junction perovskite solar modules outdoors for one year at the European Solar Test Installation in Italy. They introduced a light-soaking preconditioning method to improve measurement repeatability and address light-soaking effects that can distort performance data. The study focused on both reliable characterization and real-world durability under varying irradiance and temperature conditions.

Results showed mixed outcomes. One module degraded significantly, with efficiency falling below 7%, while the other maintained 12–13% efficiency after peaking above 15%, despite seasonal fluctuations. Researchers consider the findings encouraging but stress that longer-term outdoor studies are needed.

[Source](#)

Renewable Energy News

Longi builds 27.25%-efficient back-contact solar cells with high-resistivity wafers

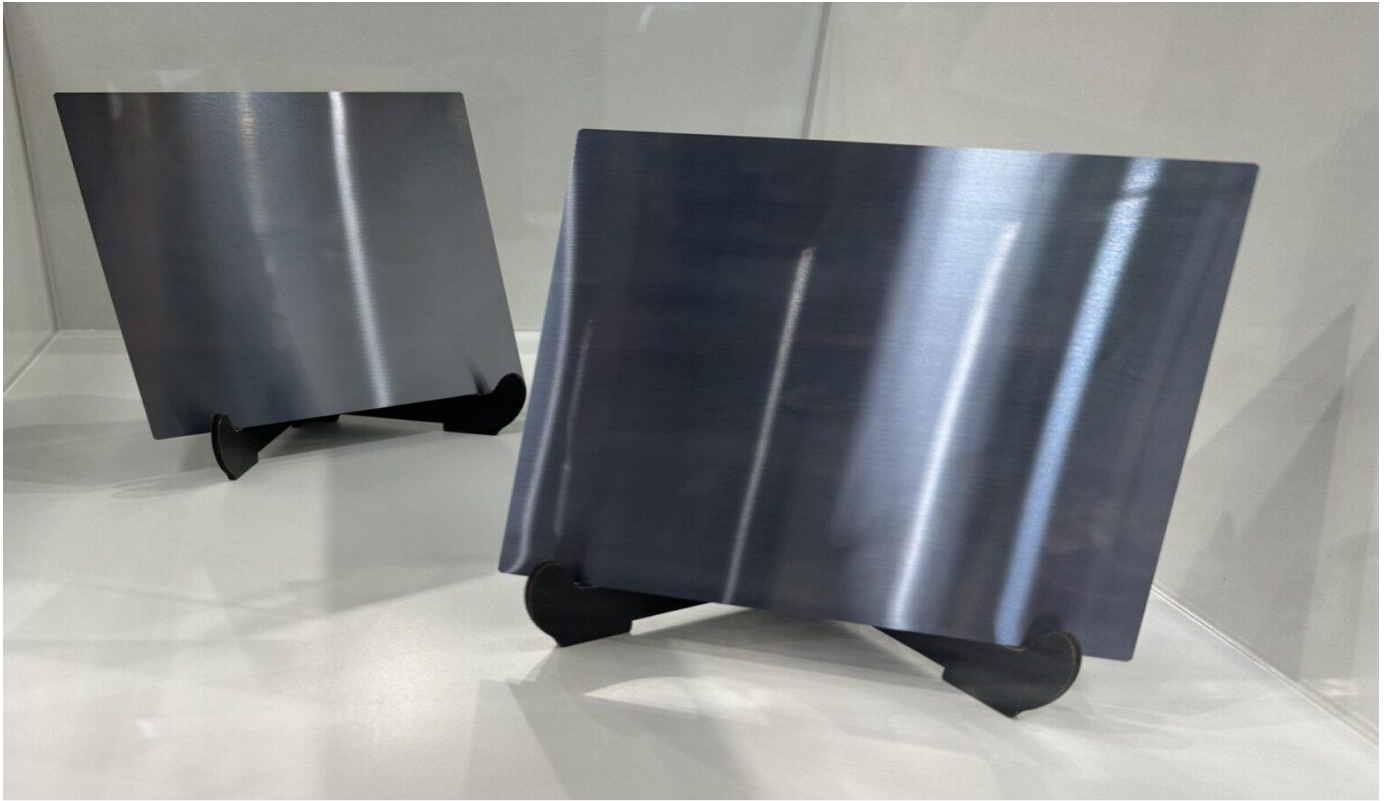


Image: pv magazine

Longi and Sun Yat-sen University have demonstrated that integrating in-situ edge passivation enables high-resistivity silicon wafers to reach their full efficiency potential in hybrid interdigitated back-contact (HIBC) solar cells. Although high-resistivity wafers offer lower recombination and higher theoretical performance, they are more sensitive to edge recombination and mechanical damage, limiting commercial adoption. The team identified that these wafers operate at higher excess carrier densities, making effective edge passivation essential to prevent performance losses.

Using 182 mm × 91 mm HIBC cells, the researchers achieved up to 27.25% efficiency. Edge passivation improved pseudo-fill factor and efficiency more significantly in high-resistivity wafers than in standard wafers, allowing them to surpass low-resistivity counterparts.

Source

Nuclear Energy News

Blue Capsule begins building sodium test loop



Image: A Blue Capsule plant for end users (Blue Capsule)

Blue Capsule Technology has begun constructing ELISE, a full-scale high-temperature sodium test loop in Peyrolles-en-Provence to support development of its sodium-cooled SMR. ELISE will replicate reactor conditions up to 750°C, providing critical thermo-hydraulic and natural circulation data. The company's reactor is designed to deliver 150 MW of industrial heat, 50 MW of electricity, and operate for 60 years using low-enriched TRISO fuel for enhanced safety.

Target applications include cement, hydrogen, chemical, and metal industries, with projected heat costs of USD 60/MWh. ELISE marks the first step toward a non-nuclear prototype by 2030 and commercial deployment in the early 2030s. The project strengthens France's advanced reactor innovation and industrial decarbonisation strategy.

Source

Nuclear Energy News

US microreactor transported by air



Image: The microreactor is loaded into the back of the aircraft (Wendy Day - US Air Force)

Valar Atomics successfully transported its 5 MW Ward250 microreactor prototype—without nuclear fuel—from California to Utah using a US Air Force C-17 aircraft in an operation called Windlord, demonstrating rapid deployment capability.

The reactor will be tested at the Utah San Rafael Energy Lab under the Department of Energy's Nuclear Reactor Pilot Program, which aims to accelerate advanced reactor testing by 2026. Fuel will be delivered separately. The Ward250 can power about 5,000 homes and is designed for both civilian and military applications, enhancing energy security at bases and remote locations. The airlift highlights microreactors' strategic value for resilient, transportable, and independent power generation in defense and infrastructure sectors.

[Source](#)

Nuclear Energy News

US regulator issues licence for TRISO-X fuel facility



Image: The facility is under construction in Tennessee (X-energy)

The US Nuclear Regulatory Commission (NRC) has issued a Special Nuclear Material Licence to TRISO-X, a subsidiary of X-energy, authorising commercial production of TRISO fuel using HALEU at its TX-1 and TX-2 facilities in Tennessee. This marks the first US approval of a Category II fuel fabrication facility and the first new fuel facility licence issued in over 50 years.

The 40-year licence permits TRISO-X to receive, process, and supply fuel for advanced reactors under strict safety requirements. The TX-1 facility will produce enough fuel annually for up to 11 Xe-100 reactors, while TX-2 will expand capacity to support large-scale SMR deployment and strengthen domestic nuclear fuel supply security.

[Source](#)

2 REPORT HIGHLIGHT

1) Report title: Annual Statistical Booklet for Electricity 2024 (Saudi Arabia)



Saudi electricity regulatory authority (SERA) released, the annual statistical booklet for electricity 2024 (the 17th edition) on September 11, 2025. This booklet serves as a key reference for policymaker, stakeholder, researcher and the public by providing annually updated data and comprehensive insights into the performance of Saudi Arabia's electricity sector.

The booklet is organized into five chapters covering electricity generation, peak load, transmission and distribution, consumer and energy sales, and key electricity indicators. The main highlights of the booklet are as follows:

- **Electricity Generation Capacity:** The total generation capacity of all licensees reached 92,527 MW in 2024, with approximately 4.49% (4,148 MW) renewable energy generation capacity.
- **Peak Load (National Grid SA):** The peak load reached 74,771 MW at 15:00 on August 20, 2024, an increase from 70,663 MW on August 27, 2023.
- **Peak Load (Marafiq):** The peak load reached 1,351 MW at 14:13 on August 27, 2024, an increase from 1,321 MW on September 13, 2023.
- **Transmission and distribution Lines:** In 2024, Overhead lines reached 442,411 circuit km, while underground lines reached 467,701 circuit km; of the total, transmission lines accounted for 100,142 circuit km and distribution lines for 809,969 circuit km.

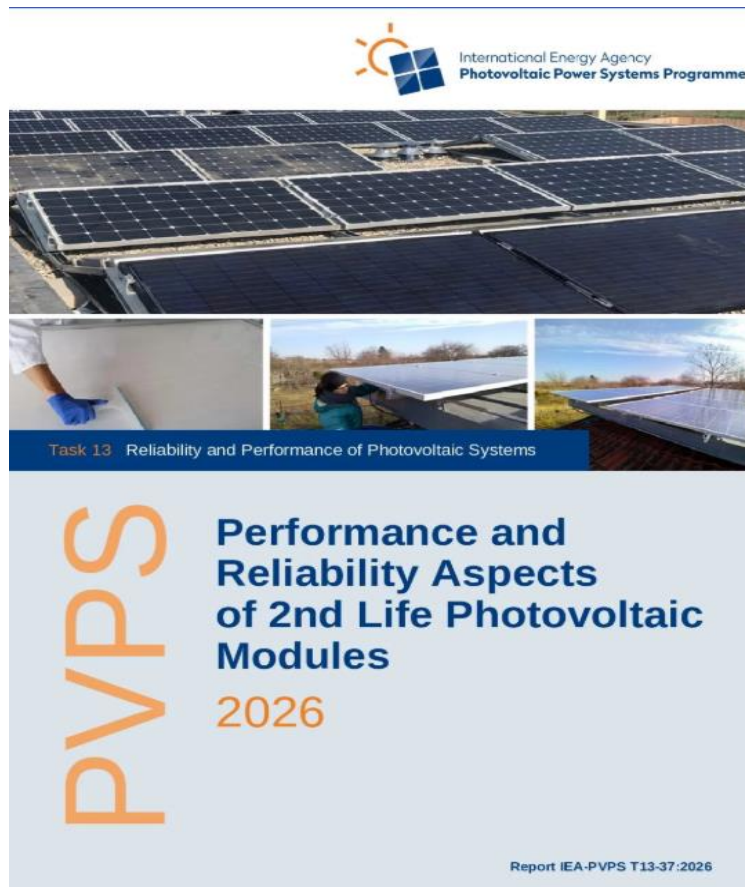
2 REPORT HIGHLIGHT

- **Consumers and Energy Sales:** The total number of consumers was 11,336,215, and energy sales reached 340,430 GWh in 2024.
- **SAIDI (System Average Interruption Duration Index):** The general average for the SEC distribution system improved to 72.98 minutes per consumer in 2024, compared to 82.16 minutes in 2023.
- **SAIFI (System Average Interruption Frequency Index):** The general average for the SEC distribution system improved to 1.58 interruptions per consumer in 2024, down from 1.81 interruptions in 2023.
- **Electricity Consumption per Capita:** The annual electricity consumption per capita in Saudi Arabia was 9,642 kWh in 2024 across all consumption categories (9,703 kWh in 2023). For the residential consumption category alone, the annual electricity consumption per capita was 4,567 kWh in 2024 (4,533 kWh in 2023).

For more detailed information, you can visit SERA website and explore the booklet by clicking on the link below.

2 REPORT HIGHLIGHT

2) Report title: Report title: Performance and Reliability Aspects of 2nd Life Photovoltaic Modules



The International Energy Agency Photovoltaic Power Systems Programme (IEA PVPS) published the report *Performance and Reliability Aspects of 2nd Life Photovoltaic Modules* in February 2026, under Task 13: Reliability and Performance of Photovoltaic Systems.

The report provides a comprehensive technical assessment of repair, refurbishment, reuse, and requalification pathways for photovoltaic (PV) modules, highlighting second life PV as a key enabler of circular economy principles and waste reduction in the rapidly expanding global solar sector.

The key points from the report are as follows:

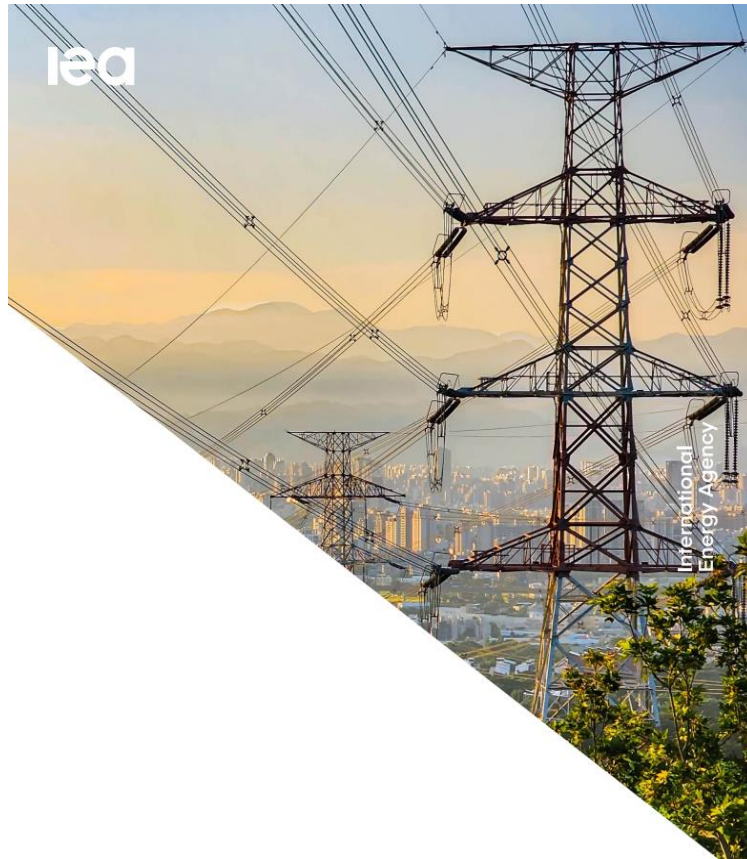
- The rapid growth of global PV deployment makes second life strategies critical to reduce future PV waste streams and extend asset lifetimes.
- Repair, refurbishment, and reuse of PV modules are technically feasible, but their scalability and economic viability vary widely by defect type and context.
- Systematic testing, sorting, and qualification frameworks are essential to ensure the safety, reliability, and bankability of second life PV modules.
- Second life PV can contribute to sustainability goals when supported by appropriate standards, policies, and market mechanisms.

2 REPORT HIGHLIGHT

- The report identifies backsheets, interconnects, solder bonds, junction boxes, bypass diodes, frames, and glass as the most common failure modes addressed through repair and refurbishment strategies.
- Repair approaches range from laboratory scale concepts to multi year field demonstrations, with only a limited subset supported by long term reliability data.
- Backsheet cracking and degradation account for over 40% of observed material defects, and repair coatings have demonstrated successful restoration of electrical insulation and stable performance after 30 months of field operation.
- Field repair of junction boxes and bypass diodes has shown success rates of up to 90% for recently installed modules and approximately 75% for older modules, though long term degradation data remain limited.
- Testing based reuse strategies—using visual inspection, I–V characterization, electroluminescence imaging, and insulation resistance testing—are identified as the most robust and scalable pathway for second life PV deployment.
- Economic feasibility remains a key constraint, as declining costs of new PV modules often limit the competitiveness of labor intensive repair; however, reuse can be viable in repowering projects, remote installations, and policy supported markets.
- The lack of harmonized re qualification criteria, standardized testing protocols, and clear repair guidelines is a major barrier to market uptake and insurance acceptance.
- Design for repairability and design for circularity principles—such as modular designs, reversible adhesives, and replaceable junction box components—are highlighted as critical enablers for future PV sustainability.
- Field demonstrations confirm that second life PV systems can deliver stable energy yields, reduced environmental impact, and enhanced local energy autonomy, when supported by rigorous qualification procedures.
- The report concludes that second life PV is not a universal solution, but a targeted and valuable option when applied selectively under appropriate technical, economic, and regulatory conditions.

For more detailed insights, please visit the IEA PVPS website to access the full report, including detailed technical analysis, case studies, figures, and data tables.

3) Report title: IEA: Electricity 2026



IEA published its annual market outlook “Electricity 2026” in February 2026. The report assesses recent policy and market developments shaping the “Age of Electricity” and provides electricity demand, supply, and power-sector CO₂ forecasts for 2026–2030 at global, regional, and select-country levels. It places special emphasis on grid constraints and system flexibility, including updates on demand response and utility-scale batteries.

Report structure (main chapters): Executive Summary; Demand; Supply; Grids; Flexibility; Emissions; Prices; Reliability; Regional Focus; Annexes

Key points from the report:

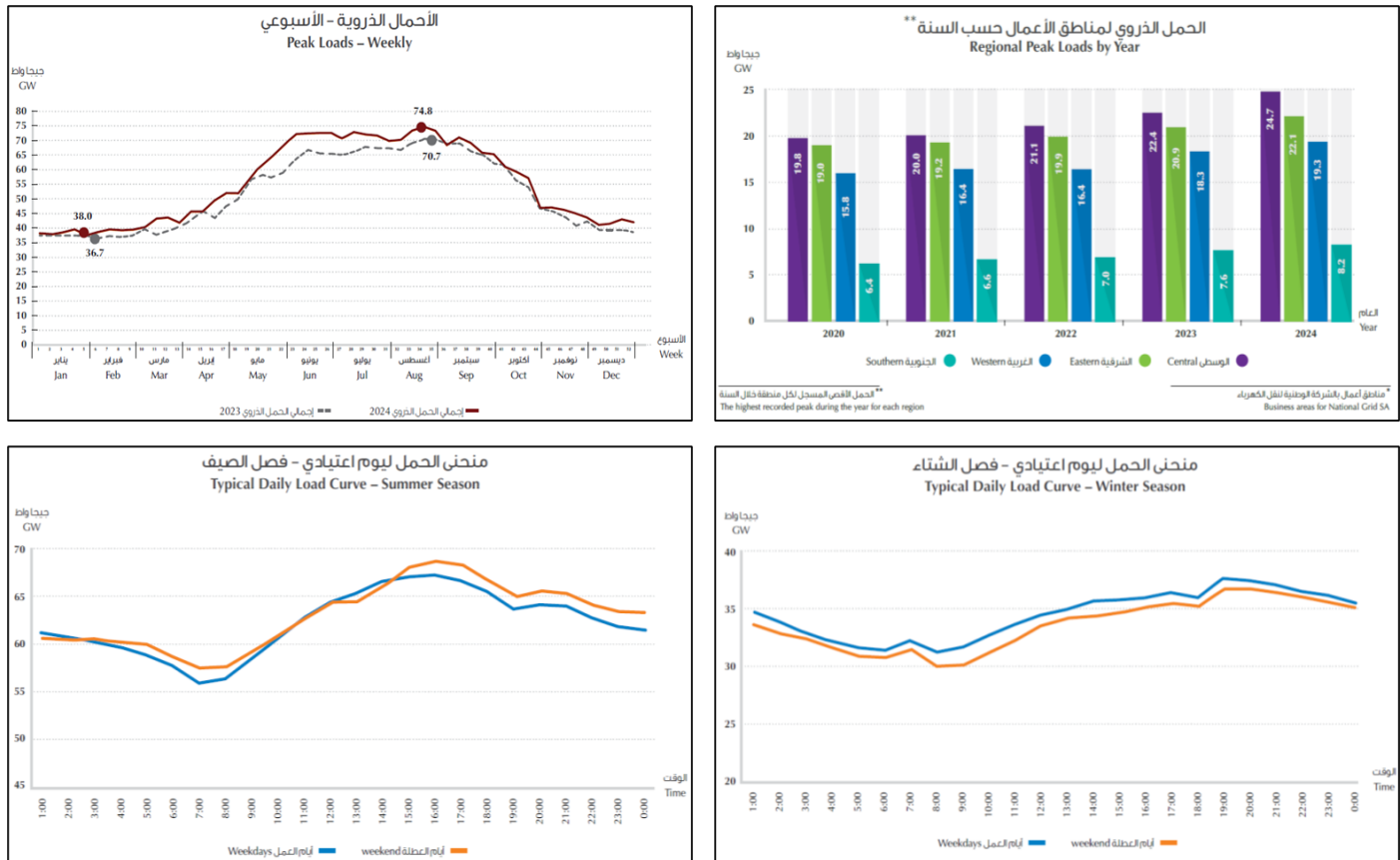
- **Demand grows strongly to 2030:** Global electricity demand is forecast to rise 3.6% per year on average (2026–2030), supported by industry, EVs, air conditioning, and data centres.
- **Supply shift continues:** The share of renewables and nuclear in global generation is projected to keep rising, reaching 50% by 2030.
- **Grids become the binding constraint:** More than 2,500 GW of renewables, storage, and large-load projects are reported as stuck in grid connection queues, with congestion-driven curtailment already rising in many systems.

2 REPORT HIGHLIGHT

- **Grid investment gap:** Meeting demand through 2030 would require annual grid investment to increase by ~50% by 2030 from today's roughly USD 400 billion, alongside scaling grid supply chains.
- **Flexibility is the new priority:** With variable renewables expanding (solar PV + wind share rising from ~17% today to ~27% by 2030), the report highlights flexibility tools—especially demand response and batteries—to manage ramps, congestion, and low-demand/high-output periods.
- **Emissions outlook:** Power-sector CO₂ is expected to plateau through 2030, reflecting faster growth in low-carbon generation and a declining CO₂ intensity of electricity.
- **For more detailed information, you can visit SERA website and explore the booklet by clicking on the link below.**

3 TAKE A LOOK AT DATA VISUALIZATION

1) National Grid SA load curves



The chart above represent National Grid SA's Annual (Weakly) Load Curve, Regional Peak Loads by year, and Typical Daily Load Profiles for summer and winter; providing critical insights into demand patterns that are essential for assessing renewable energy integration and the role of energy storage in balancing variability and managing peak loads.

The following insights can be drawn from the figure:

- **The annual peak load occurred at the end of August**, reaching 74.8 GW, while the annual off-peak occurred at the end of January at about 38 GW, representing a difference of approximately 36.8 GW, with the off-peak level at around 51% of the peak load.
- **Regional peak loads were highest in the Central region** at 24.7 GW, followed by the Eastern region at 22.1 GW, the Western region at 19.3 GW, and the Southern region at 8.2 GW.

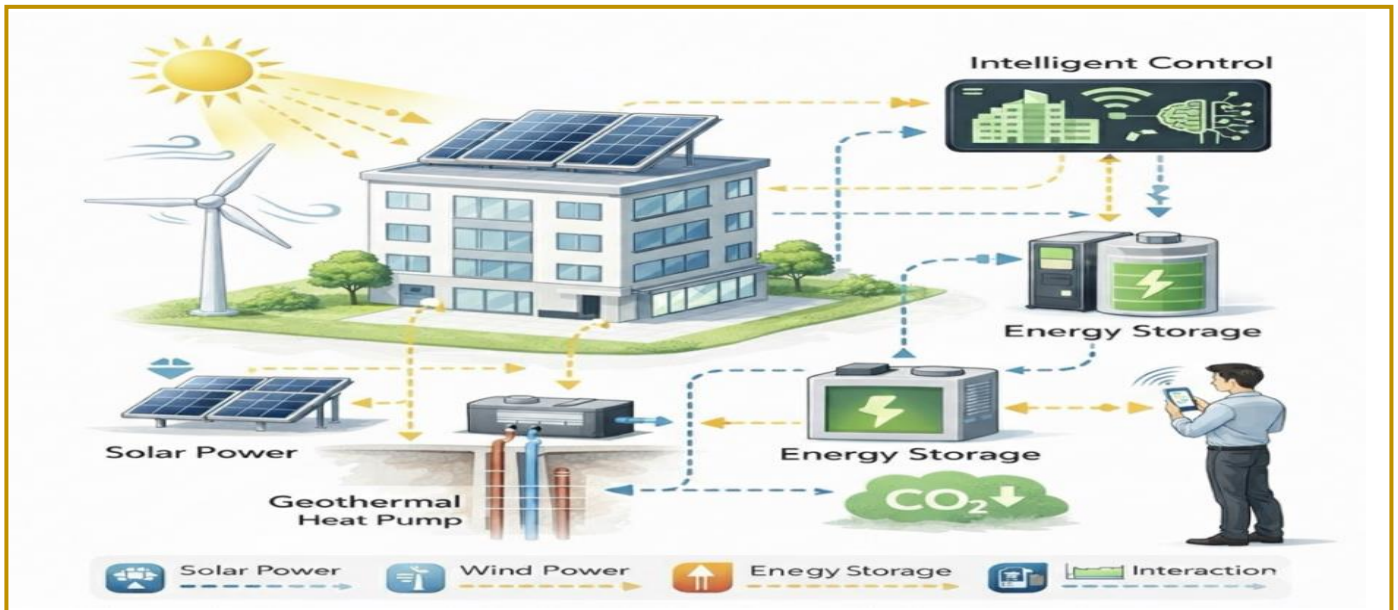
3 TAKE A LOOK AT DATA VISUALIZATION

- **During the summer season**, daily off-peak and peak loads occur around 07:00 and 16:00, respectively, with weekends demand generally higher than on weekdays.
- **During the winter season**, daily off-peak and peak loads occur around 08:00 and 19:30, respectively, with weekends demand generally lower than on weekdays.

The presented charts are part of Saudi electricity regulatory authority (SERA) annual statistical booklet for electricity 2024, which serves as a key reference for policymaker, stakeholder, researcher and the public by providing annually updated data and comprehensive insights into the performance of Saudi Arabia's electricity sector.

4 FOCUS ON SCIENCE

- 1) Paper Title: **New Insights into Hybrid Renewable Energy Systems in Buildings.** by Matteo Manganelli, Cristina Moscatiello



This paper reviews recent advances in hybrid renewable energy systems (HRES) in buildings and emphasizes their role in reducing environmental impact while enhancing energy efficiency and system reliability. Since buildings account for a significant share of global energy consumption and greenhouse gas emissions, they are a central focus of climate mitigation strategies.

Background & Motivation

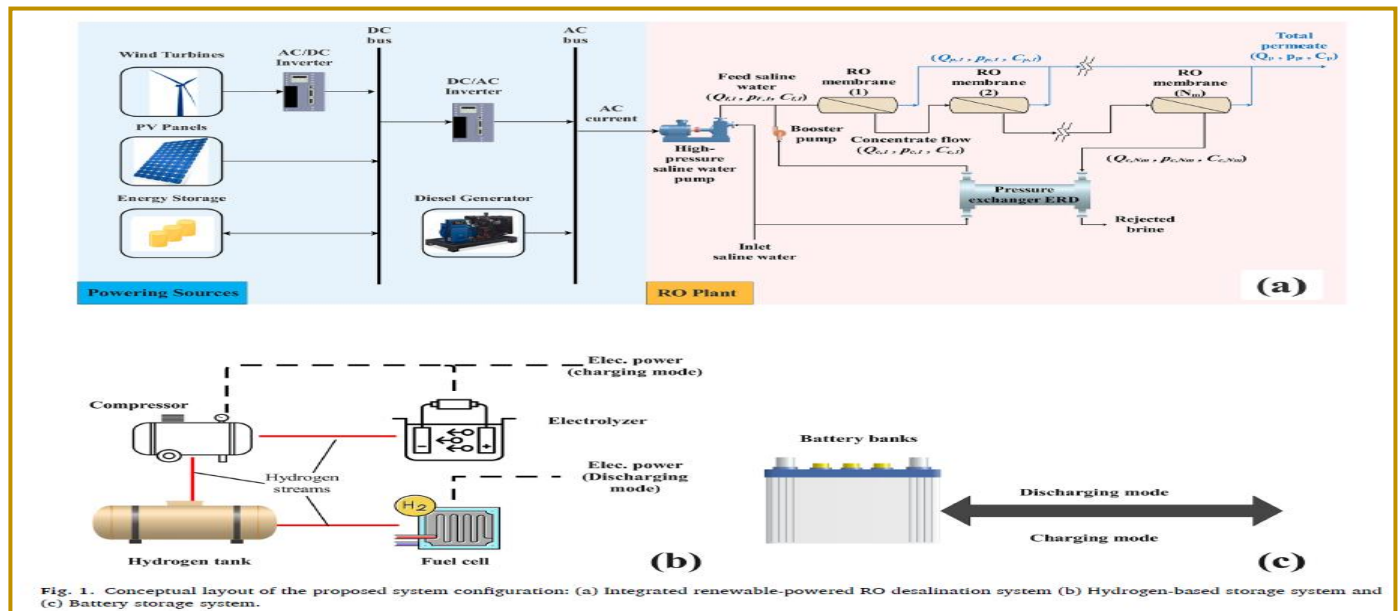
High energy demand and reliance on fossil fuels make buildings a major environmental challenge. Although renewable technologies such as solar and geothermal energy can reduce emissions, their individual deployment is limited by intermittency and low flexibility. Hybrid renewable energy systems overcome these limitations by integrating multiple energy sources, storage technologies, and smart control, enabling more efficient and resilient low-carbon building operation.

Key Findings

The main scientific and environmental insights show that:

- Hybrid systems outperform single technologies in terms of efficiency and emission reduction.
- Advanced control methods, including reinforcement learning, reduce energy use and peak demand while maintaining comfort.
- Energy storage enhances renewable energy integration and lowers dependence on fossil-based electricity.
- Improved modeling and forecasting increase the accuracy of building energy performance assessment.
- Artificial intelligence and digital twins support sustainable building design and operation.
- User-centric approaches improve acceptance of energy-saving solutions.

2) Paper Title: Battery versus hydrogen storage for renewable-powered RO desalination: A techno-economic and environmental analysis in coastal Saudi Arabia. by Omar G. Kaoud, Qais N. Al- Oweiti, Mihammad Elbassoussi



Study evaluates battery and hydrogen energy storage systems for powering reverse osmosis (RO) desalination across ten coastal locations in Saudi Arabia. It applies a multi-scenario optimization framework incorporating PV, wind, hybrid PV/wind, and PV/wind/diesel systems, each paired with battery or hydrogen storage. Using the Artificial Rabbit Optimization algorithm, a four-stage RO design reduced energy consumption by about 41% compared to a single-stage system. Two optimization approaches were used: minimizing Levelized Cost of Water (LCOW) and jointly minimizing LCOW and Annual Carbon Emissions (ACE). Batteries delivered the lowest LCOW at \$1.66/m³, while hydrogen achieved the lowest emissions, highlighting economic-environmental trade-offs.



Eng. Khalid Al Hamdan,

Expert Renewable Energy

February 2026

Turning a Looming Waste Crisis into a Strategic Asset: The Future of Solar PV Recycling in Saudi Arabia

As Saudi Arabia accelerates its transition toward a sustainable energy future under the Saudi Green Initiative (SGI) and Vision 2030, the Kingdom is witnessing an exceptional expansion of solar photovoltaic (PV) infrastructure. With a target of generating 50% of its electricity from renewable sources by 2030, the desert landscape is rapidly transforming through the deployment of millions of PV panels. However, a recent conference paper by Khalid AL Hamdan sheds light on a critical, often overlooked dimension of this green revolution: the massive wave of end-of-life (EoL) waste that follows.

The Accelerated Challenge of Arid Climates

The study highlights a unique challenge for the region. While the global standard for solar panel lifespan is approximately 25 years, the extreme heat, UV exposure, and sandstorms in Saudi Arabia accelerate degradation. AL Hamdan's research suggests an operational lifespan of just 17 years, eight years shorter than conventional models.

This accelerated timeline means the Kingdom will face a significant waste stream much sooner than anticipated. Projections indicate that by 2040, Saudi Arabia could generate nearly 70,000 tons of PV waste annually, potentially reaching 700,000 tons by 2050. Without proactive management, this volume risks becoming an environmental liability, leading to toxic leaching (lead, cadmium) and the loss of critical minerals.

From Waste to Wealth: The Economic Opportunity

The core message of AL Hamdan's paper is transformative: PV waste should not be viewed as a burden, but as a strategic material reserve. The research demonstrates that thermal-mechanical recycling processes can recover up to 92% of PV module materials, including high-value components such as silver, silicon, copper, and aluminum.

Recovered Material	Mass per Ton (kg)	Recovery Rate	Economic & Environmental Impact
Aluminum	100	92%	Saves 97% of energy compared to primary production.
Silver	0.5	90%	Represents only 0.05% of mass but 20% of environmental benefit.
Glass	760	92%	Largest mass fraction; reusable in construction and manufacturing.
Silicon	50	85%	High-value potential for electronic applications.

The economic potential is staggering. Recovered materials are estimated to be worth between \$450 and \$650 per ton of processed waste. For utility-scale sites, the recovery of silver alone can make recycling cost-effective. Furthermore, the study estimates a 7–10-year payback period for recycling infrastructure, which could shorten to 5-7 years when accounting for environmental cost savings.

The Role of Smart Grid Integration

What sets AL Hamdan's proposal apart is the integration of recycling into the Smart Grid. By leveraging Distributed Energy Resource Management Systems (DERMS) and IoT-based monitoring, the Kingdom can:

- Predict EoL: Use real-time data to forecast when panels will fail, optimizing collection schedules.
- Optimize Logistics: Use geospatial modeling to reduce transportation costs.
- Carbon-Neutral Operations: Run recycling facilities on surplus solar power during peak production periods, enhancing grid stability.

Strategic Recommendations for Industry Leaders

For workplace leaders, policymakers, and energy stakeholders, the paper offers a clear roadmap to “close the loop”:

- Implement Extended Producer Responsibility (EPR): Mandate that manufacturers and importers take responsibility for the full lifecycle of their products.
- Localized micro-factories: Establish recycling hubs near major solar installations such as NEOM and Sudair to minimize the carbon footprint of logistics.
- Circular procurement: Mandate the use of recycled materials in new solar PV projects to stimulate a domestic secondary materials market.

Conclusion

The findings of this paper serve as both a wake-up call and a plan. As we build the infrastructure for a renewable future, we must simultaneously develop the capacity to dismantle it responsibly. By integrating advanced recycling technologies with smart grid intelligence, Saudi Arabia has the opportunity to lead the MENA region in circular economy practices, ensuring that the “Green” in the Saudi Green Initiative remains untarnished by the waste of its own success.

This commentary is based on the research paper "Smart Grid-Integrated Solar PV recycling: Potential for CO2 Reduction and Material Recovery in Saudi Arabia" by K. A. Al Hamdan.

Saudi Arabia Green Energy Week 2026

Hosted by Prince Sultan University, this conference focuses on sustainability challenges and interdisciplinary solutions across engineering, policy, urban design, and education.

8–12 February 2026 | Riyadh, Saudi Arabia

[Source](#)

International Conference on Renewable Energy Systems and Applications (ICRESA)

Technical and research conference focused on theory and applications in renewable energy systems, suitable for academics, engineers, and industry researchers.

16 February 2026 | Jeddah, Saudi Arabia

[Source](#)

International Training Course on Nuclear Material Accounting and Control

Hands-on training for facility-level nuclear material control and safeguards implementation.

2–13 March 2026 | Vienna, Austria

[Source](#)

2nd Global Conference on Renewable Energy & Sustainable Development (GCRES2026)

A global forum focusing on clean energy policies, innovative renewable technologies, and the integration of sustainability principles into long-term development strategies.

23–25 March 2026 | Rome, Italy

[Source](#)

International Conference on Safe and Secure Transport of Nuclear Material

Global event addressing regulatory frameworks, physical protection, logistics, and emergency response during transport.

23–27 March 2026 | Vienna, Austria

[Source](#)

World Conference on Renewable & Sustainable Energy (WCRESE-2026)

A global conference focusing on innovation, research, and the practical implementation of renewable and sustainable energy technologies.

6–8 April 2026 | Tokyo, Japan

[Source](#)

National Workshop on Nuclear Security for Major Public Events

Designed for host nations to develop nuclear security strategies and inter-agency coordination for high-profile gatherings.

6–10 April 2026 | Arusha, Tanzania

[Source](#)

Middle East Energy 2026

One of the region's largest energy exhibitions, featuring renewable energy segments and co-located events such as Intersolar Middle East, The Battery Show Middle East, and Energy Storage Middle East.

7–9 April 2026 | Dubai, UAE

[Source](#)

LEAP 2026 – Global Tech & Innovation Festival

A premier global technology conference featuring breakthroughs in AI, sustainability, robotics, and energy tech.

12–16 April 2026 | RECC Malham, Riyadh, Saudi Arabia

[Source](#)

25th World Petroleum Congress – WPC Energy 2026

The world's flagship oil & gas event returns with a focus on energy transition, hydrogen, digitalization, and future fuels.

26–30 April 2026 | Riyadh, Saudi Arabia

[Source](#)

11th International Conference on Sustainable and Renewable Energy Engineering (ICSREE 2026)

A technical conference showcasing advancements in solar, wind, storage, microgrids, and sustainable energy systems.

20–23 May 2026 | San Sebastián, Spain

[Source](#)

Intersolar Europe 2026

Europe's leading solar industry exhibition and conference, featuring innovation in photovoltaics, storage, hydrogen, and solar manufacturing.

22–25 June 2026 | Munich, Germany

[Source](#)

43rd European Photovoltaic Solar Energy Conference and Exhibition (EU PVSEC 2026)

The world's largest scientific conference on solar photovoltaics.

14–18 September 2026 | Rotterdam, Netherlands

[Source](#)

32nd Solar PACES Conference 2026

The premier global conference on concentrating solar power (CSP), thermal storage, and dispatchable solar systems.

15–18 September 2026 | Bad Neuenahr, Germany

[Source](#)

8th RD20 Conference 2026 – Clean Energy R&D Forum

An international dialogue among leading research institutions under the G20 framework.

19–23 October 2026 | Pretoria, South Africa

[Source](#)

Solar & Storage Live Riyadh 2026

A regional showcase of solar PV, battery storage, EV infrastructure, and smart energy innovation.

23–25 November 2026 | Riyadh Front, Saudi Arabia

[Source](#)