مدينة الملك عبد الله للطاقة
الذرية والمتجددة K•A•CARE

Energy Observatory
JOURNAL

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Renewable Energy News

Saudi Arabia, Kenya discuss energy cooperation

Saudi Energy Minister Prince Abdulaziz bin Salman meeting with Davis Chirchir, his Kenyan counterpart. SPA

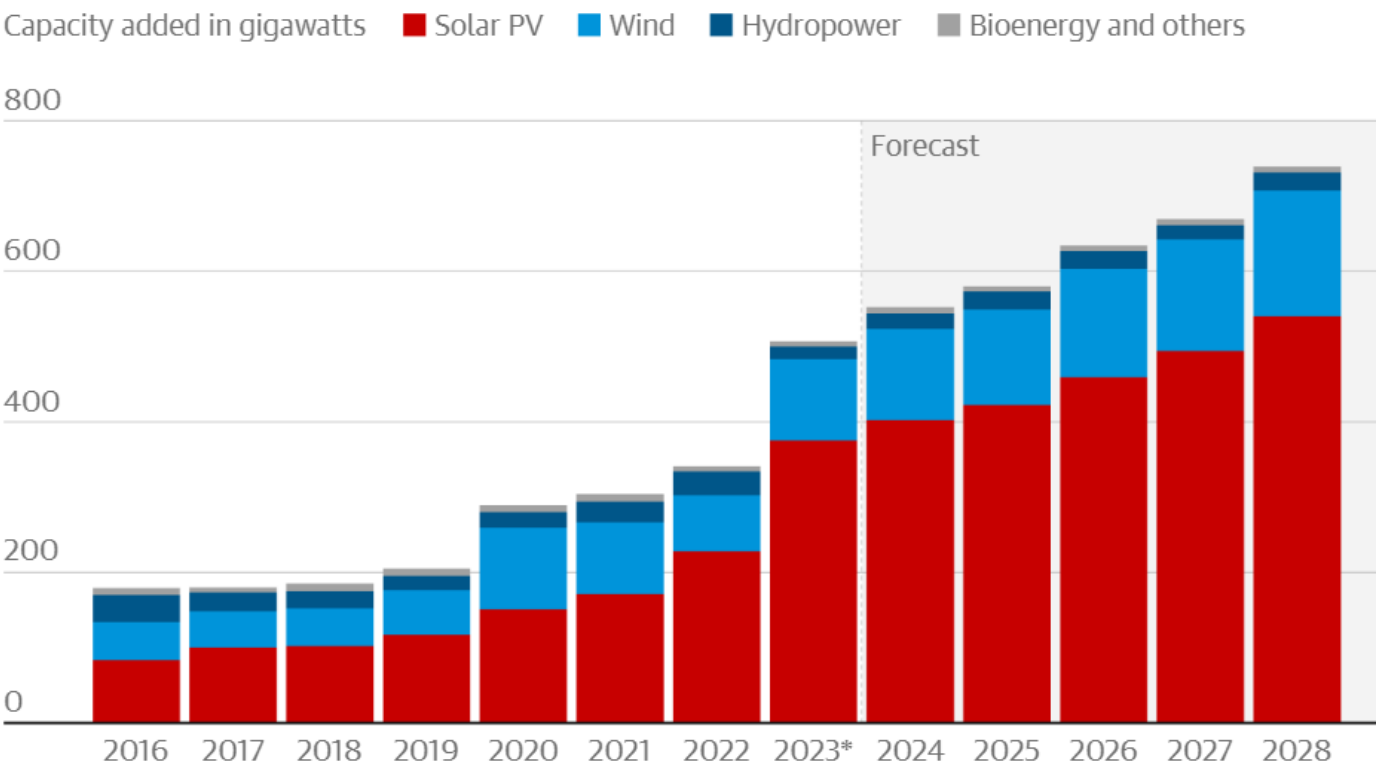
Saudi Arabia and Kenya are strengthening trade ties, particularly in energy sectors, following a meeting in Riyadh. Discussions centered on the "Empower Africa" initiative, with a focus on clean energy, petroleum, and efficiency. Kenya, aiming for 100% clean energy by 2030 to reduce greenhouse emissions, currently achieves over 92% renewable energy.

The collaboration explores exchanging expertise and advancing in energy, communication, e-health, and online education. Kenya's energy development goals align with its Vision 2030 and the Big 4 Agenda, treating energy security as a national priority and a driver for socio-economic growth.

Source

Renewable Energy News

World's renewable energy capacity grew at record pace in 2023



Guardian graphic. Source: IEA. *2023 capacity estimated.
Note: IEA main case projection shown assuming growth trajectory under existing policies and market conditions

In 2023, global renewable energy capacity saw its fastest growth in 20 years, a 50% increase to 510 gigawatts, marking a 22-year streak of record-setting growth. This surge, led by solar power—mostly from China—brings closer the Cop28 climate target of tripling renewable capacity by 2030.

The IEA report predicts renewables could surpass coal in global electricity generation by 2025, reaching over 42% by 2028. Challenges include financing and regulatory frameworks in emerging economies, and temporary cost increases in wind power. The IEA emphasizes the importance of scaling renewable energy, particularly in developing regions, to achieve climate goals.

Source

Renewable Energy News

Saudi Arabia's KAUST Researchers Chart Path To Global Adoption Of Perovskite/Silicon Tandem Solar Cells

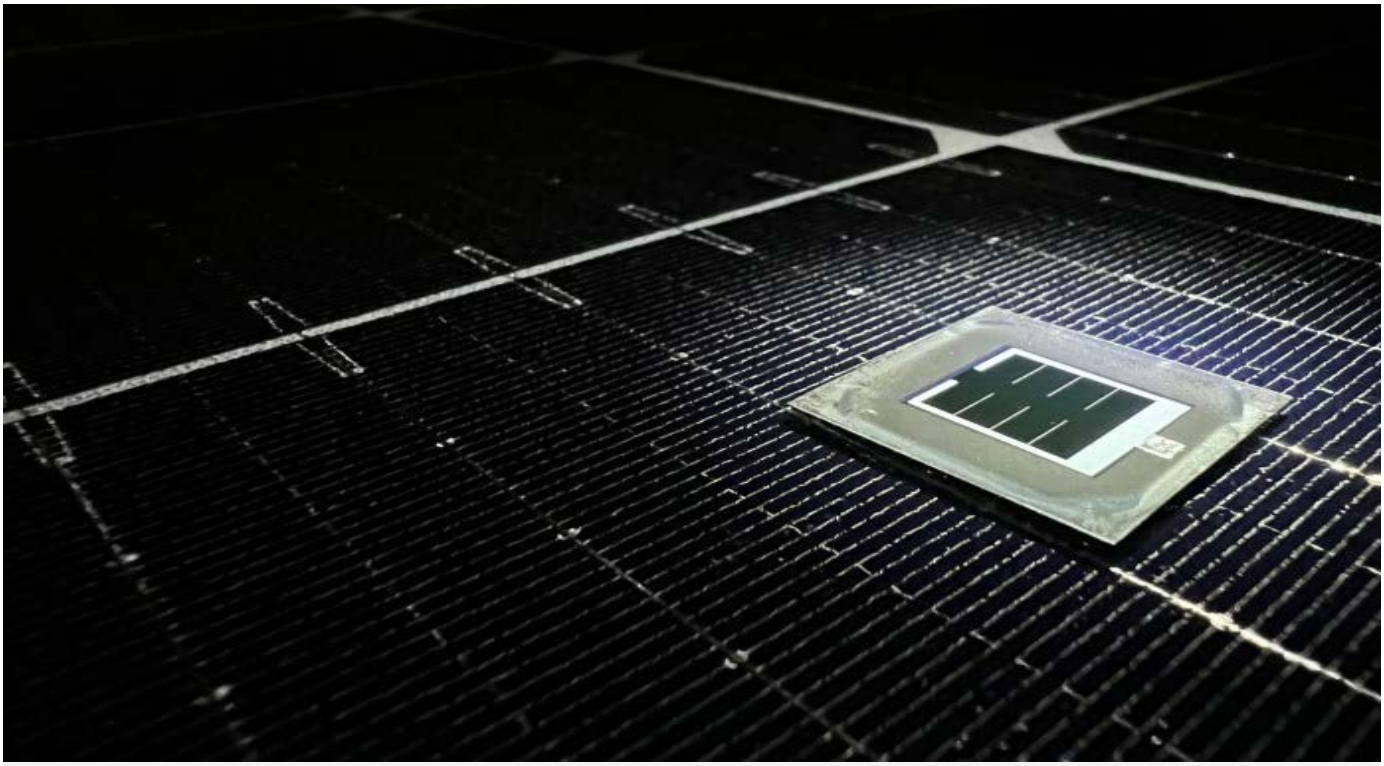


Image: A file photo of A perovskite/silicon tandem solar cell. (solarquarter)

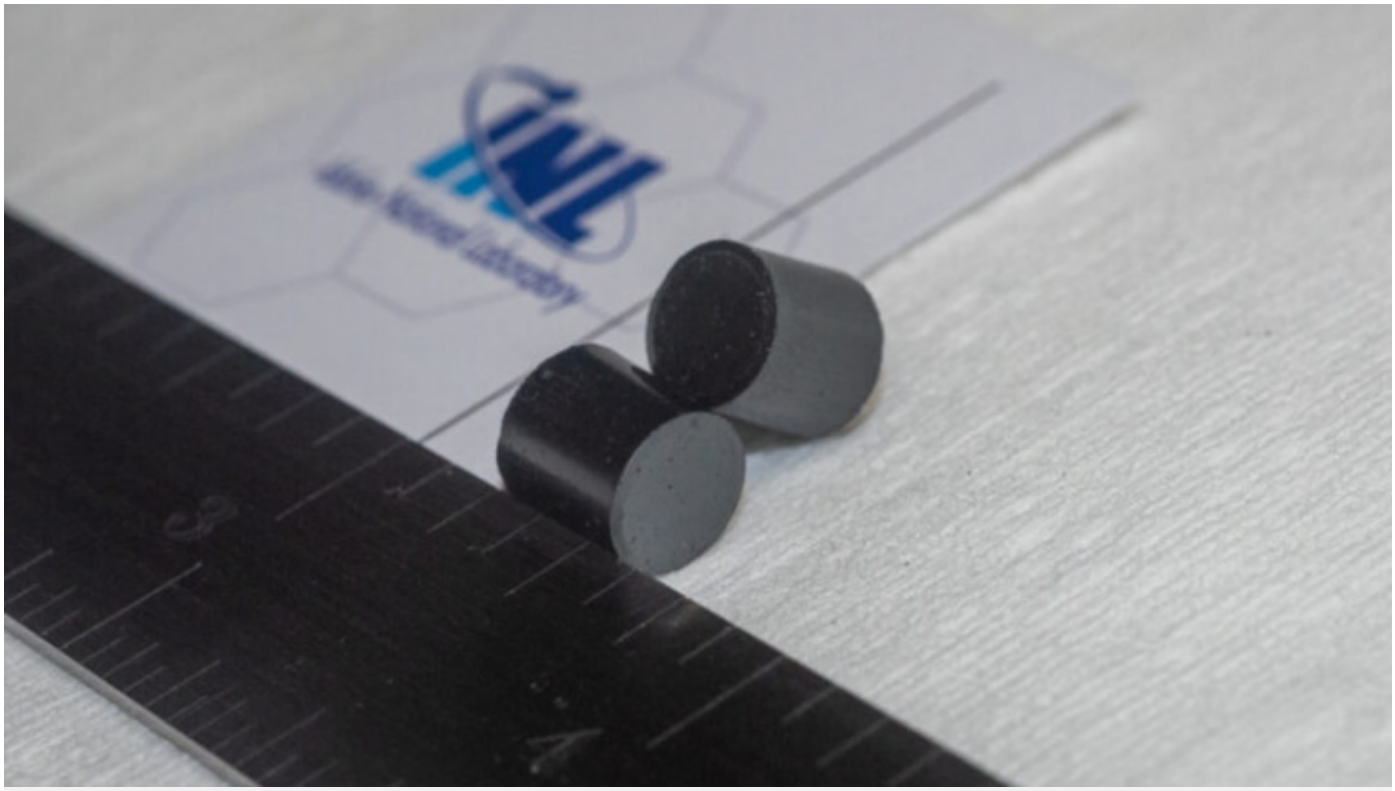
Professor Stefaan De Wolf and the KAUST Photovoltaics Laboratory have published a roadmap in Science for advancing perovskite/silicon tandem solar cells, crucial for global clean energy. Their research, achieving world-record efficiency in 2023, addresses challenges in commercialization, such as adapting to varying climates and ensuring long-term stability.

They propose solutions for high production costs and potential hazards, aiming to make this technology affordable and widespread. This aligns with KAUST's commitment to green technology and a carbon-free future, with the market potential exceeding $10 billion in a decade.

Source

Nuclear Energy News

UK to launch HALEU production program



HALEU fuel pellets produced at the Idaho National Laboratory in the USA (Image: INL)

The UK government has announced a GBP300 million investment to launch a program for producing high-assay low-enriched uranium (HALEU), making the UK the first European country to do so.

This investment will support domestic production of HALEU as part of plans to help deliver up to 24 GW of nuclear power by 2050. Additionally, GBP10 million will be invested to develop skills and sites to produce other advanced nuclear fuels in the UK. HALEU will be used in the advanced nuclear fuel required for most of the next-generation reactor designs currently under development.

Source

Nuclear Energy News

Chinese Firm Aiming for Mass Production of Nuclear Batteries.

The BV100 battery (Image: Betavolt)

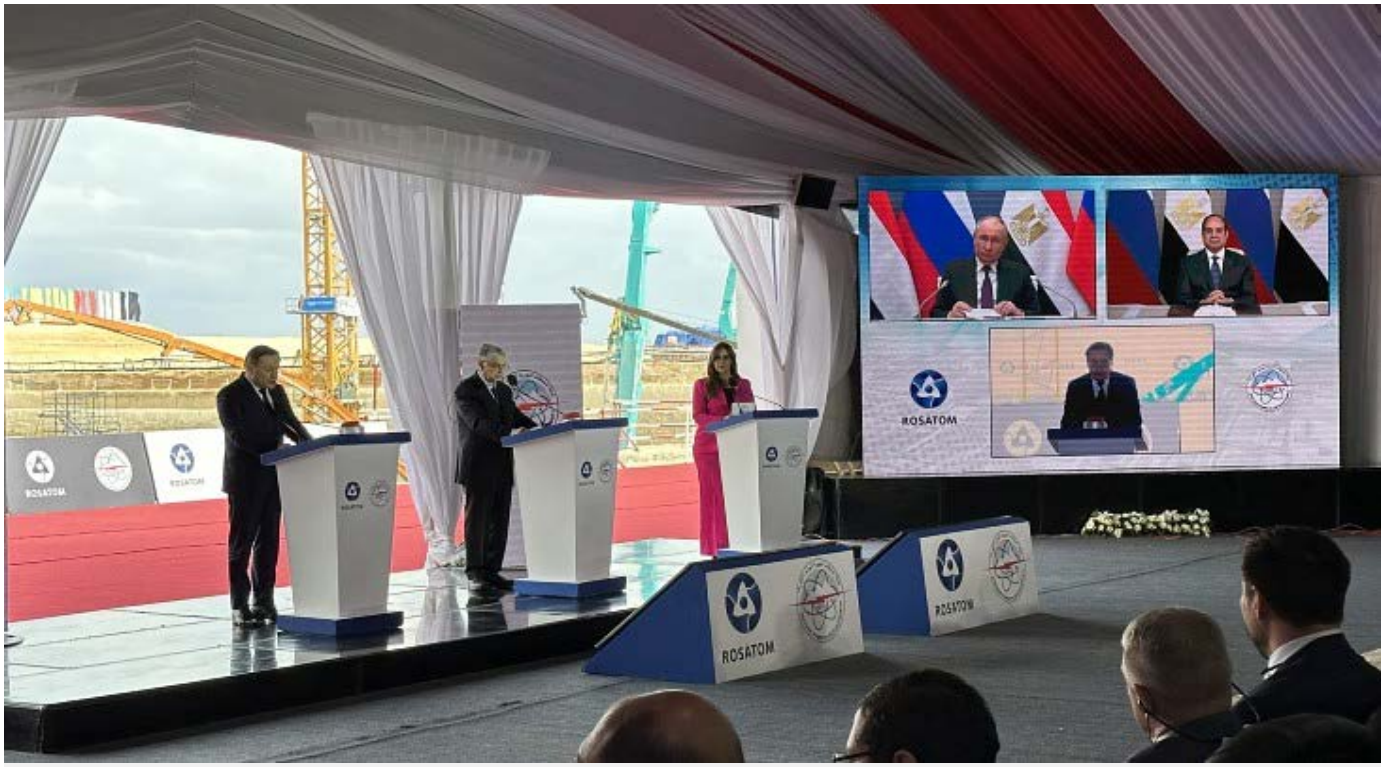
Betavolt is launching a nuclear battery that uses a unique single-crystal diamond semiconductor and a nickel-63 sheet to generate an electrical current. The battery is modular and can be used in series and parallel to create products of different sizes and capacities. The company claims that its batteries are safe, environmentally friendly, and suitable for use in medical devices.

Betavolt plans to continue researching other isotopes to develop nuclear energy batteries with higher power and a longer lifespan. The first battery to launch will be the BV100, which can generate 100 microwatts, with a voltage of 3V for 50 years without the need for charging or maintenance.

Source

Nuclear Energy News

Egypt and Russia Start Building El Dabaa Nuclear Plant Unit 4.



The presidents joined the ceremony via video link (Image: Rosatom)

Egypt and Russia's presidents marked the start of construction for El Dabaa unit 4, the final unit of Egypt's first nuclear power plant. The Rosatom-led project, located 320 km northwest of Cairo, will comprise four VVER-1200 units.

The project is progressing faster than the agreed schedule, with all four units under construction simultaneously. The nuclear power plant is expected to represent 9% of Egypt's electricity by 2030, directly displacing oil and gas. The bilateral contracts stipulate Rosatom will build the plant and supply Russian nuclear fuel for its entire life cycle, among other things.

Source

Nuclear Energy News

Westinghouse and Prodigy Collaborate on Floating Nuclear Plant.

How a Prodigy Microreactor Power Station might look (Image: Westinghouse)

Westinghouse and Prodigy have teamed up to develop a Transportable Nuclear Power Plant (TNPP) featuring Westinghouse eVinci microreactors. The project aims to deliver a first project in Canada by 2030. The TNPP, which is part of Prodigy's Microreactor Power Station, can integrate a single or multiple eVinci microreactors, and would be prefabricated and transported to a site for installation on land or at the shoreline.

The companies have already completed conceptual engineering and regulatory studies, and now plan to complete the TNPP design, progress licensing and site assessments, and develop a nuclear oversight model for TNPP manufacturing, outfitting, and transport.

Source

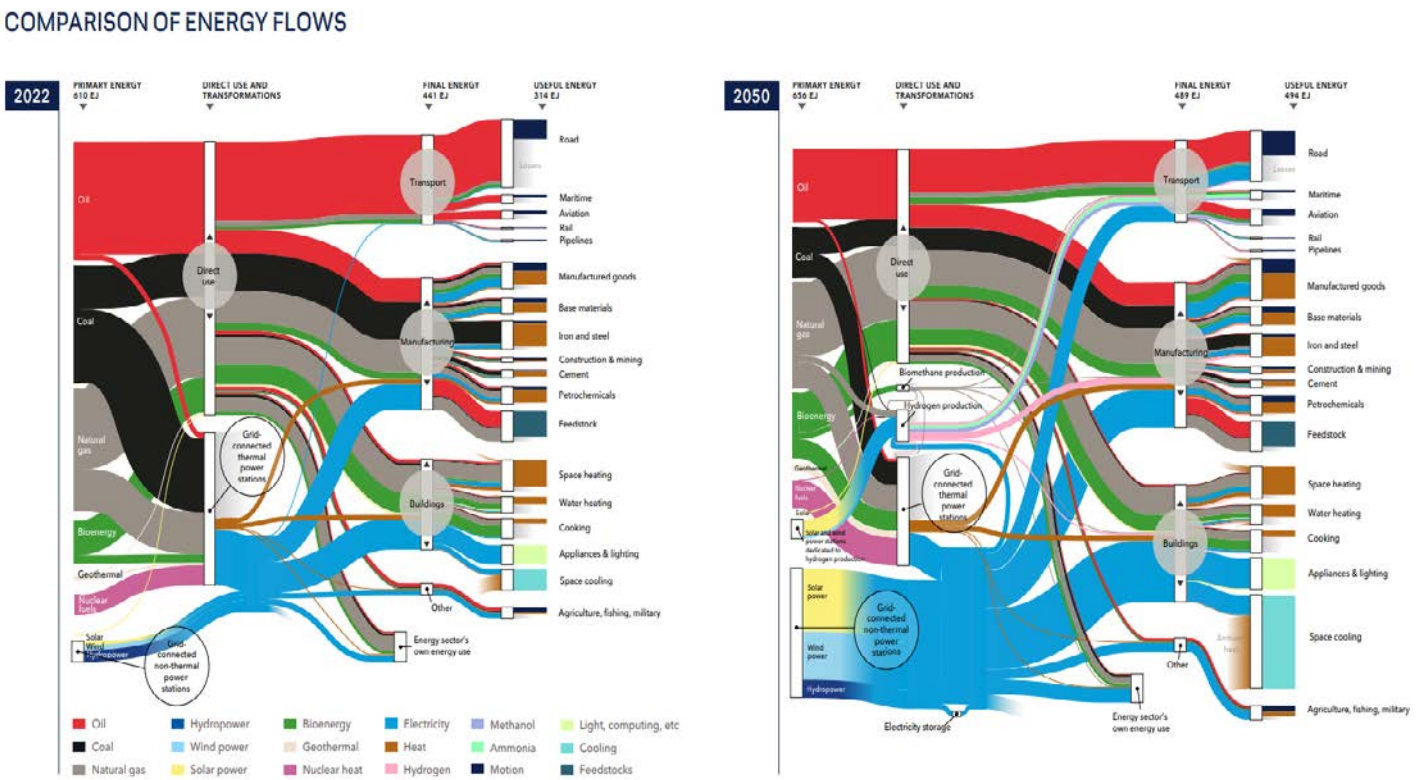
Report title: ENERGY TRANSITION OUTLOOK 2023

The DNV Energy Transition Outlook 2023 aims to provide a detailed forecast of global energy supply, demand, and technological developments up to 2050. It evaluates the current state and future trajectory of the energy transition, with a focus on how renewable energy sources, policy decisions, and energy security concerns are shaping this landscape. The report highlights the challenges and opportunities in achieving a sustainable energy future, emphasizing the need for more ambitious policies and actions to mitigate climate change and promote a more equitable global energy transformation.

Prepared by: Mohammed Al Essa

Source

Flow of global final to useful energy demand through conversions by end-use equipment in 2022 and 2050



Historical data source for final energy: IEA WEB (2023), useful energy: DNV's own estimates

DNV's Energy Transition Outlook 2023 shows an infographic of two Sankey diagrams of the energy flows in 2022 and 2050. It shows the flow of energy from its primary sources to its end use and applications. It is a representation of what could be the state of energy in 2050 (based on DNV's prediction) where there is significantly more reliance on sustainable sources. It's important to note that DNV states that the amount of primary energy increases by 7-8% from 610 EJ to 656 EJ, while the amount of energy in the end use increases by around 57% from 314 EJ to 494 EJ, which means that the big factor in this change is the energy efficiency aspect.

Prepared by: Mohammed Al Essa

Source

Role of energy efficiency and distributed renewable energy in designing carbon neutral residential buildings and communities: Case study of Saudi Arabia

Moncef Krarti a,⇑ , Mohammad Aldubyan b a Building Systems Program, CEAE Department, University of Colorado, Boulder, CO, USA b KAPSARC, Riyadh, Saudi Arabia

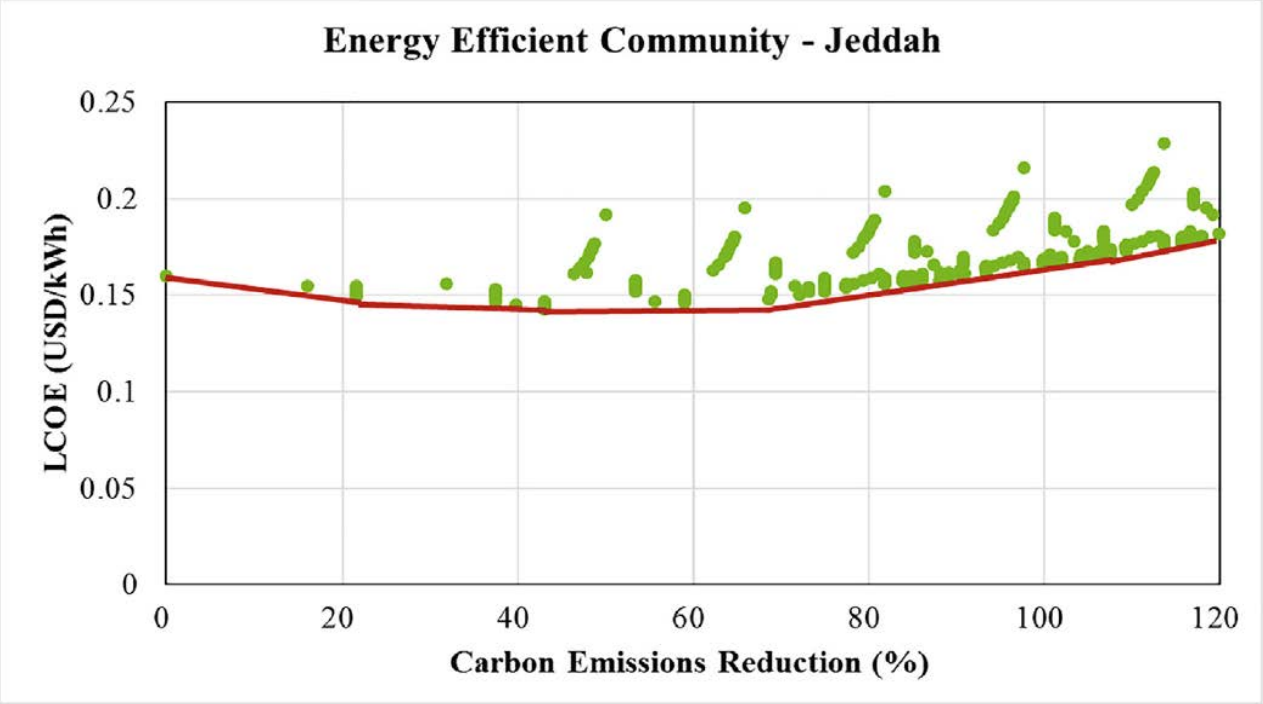


Fig. 11. Optimal paths for carbon neutral design for EE community in Jeddah.

This paper summarizes a study that assesses the effects of enhancing the energy efficiency of homes on the development of carbon-neutral, grid-connected residential areas in Saudi Arabia. The study incorporates both photovoltaic (PV) systems and wind turbines as local renewable energy sources to attain carbon neutrality in these communities. It explores various levels of energy efficiency in the housing units within these communities.

The study employs a cost optimization strategy to design carbon-neutral communities, taking into account the expenses associated with on-site power generation and grid electricity rates. The findings show that carbon-neutral residential communities are feasible across all regions of Saudi Arabia, but their cost-effectiveness varies based on local solar and wind resources, grid electricity prices, and the installation costs of solar panels and wind turbines. Additionally, the study reveals that the cost-effectiveness of these communities can be greatly enhanced, including a potential reduction in capital costs of over 50%, by reducing electrical loads in the communities through energy-efficient measures in individual homes.

Source

Prepared by: Mohammed Al Essa

6 EVENTS

5th FANUS (Federation of African Nutrition Societies) Conference (Organized in Cooperation with the IAEA)

The 5th Annual FANUS Conference (Federation of African Nutrition Societies) will be held from 19 to 24 November 2023 in Dakar, Senegalese. The conference will bring together around 500 nutrition experts from all over the world. The theme of this year's conference is "A Multisectoral Approach to Strengthening Food Systems and Achieving Sustainable Nutrition Targets in Africa." The programme will include the opening ceremony, Plenary Sessions, Scientific/Technical Sessions, Workshops, Symposium, Special Presentations, Exhibitions, Networking, Social and Sightseeing Tours among others. The programme will be a one-of-a-kind and valuable experience that consolidates efforts to overcome malnutrition in Africa.

19-24 November 2023, Dakar, Senegal

Source

Technical Meeting on Good Practices in and Lessons Learned from the Long Term Operation of Nuclear Power Plants

The event's goal is to offer a global platform for exchanging best practices and insights gained from long-term nuclear power plant operation. Reviewing a draft publication tentatively titled "Good Practices and Lessons Learned from the Long Term Operation of Nuclear Power Plants" will also be possible during the event.

21 – 24 Nov 2023 , Gyeongju-si, Republic of Korea

Source

International Conference on Research Reactors: Achievements, Experience and the Way to a Sustainable Future

The objective of the Conference is to foster exchange of information on operating and planned research reactors. It is a forum in which reactor operators, managers, users, regulators, designers and suppliers can share experience in all relevant areas including safety, security, operation, fuel front and back-end options, utilization, infrastructure and capacity building, and management, and showcase how achievements and experience attained with research reactors in these areas, contribute to a sustainable future.

27 November – 1 December 2023, Dead Sea, Jordan

Source

COP28 UAE - United National Climate Change Conference

ICONS 2024 will provide a global forum for ministers, policymakers, senior officials and nuclear security experts to discuss the future of nuclear security worldwide, whilst providing opportunities for exchanging information, sharing best practices and fostering international cooperation.

20-24 May 2024, Vienna, Austria

Source

Saudi Arabia Smart Grid 2023

With more than 2500 participants and 70 exhibitors, this prestigious event provides an excellent opportunity to promote products, services, ideas and business in a comprehensive way as it attracts the attention of the regional governmental, scientific, business and technological community.

18 – 20 December 2023, Riyadh

Source

Decommissioning Conference

The event focuses on contemporary challenges, innovations, and accomplishments in nuclear decommissioning. Industry leaders, including keynote speaker Bryan Hanson, will discuss the sector's future. Attendees can network, undergo professional training, and take a technical tour of the San Onofre Nuclear Generating Station. A full-day decommissioning training by NEI and EPRI covers transitioning from operations to decommissioning, risk management, groundwater protection, and the complex license termination process. The conference is relevant for domestic and international decommissioning communities, regulatory bodies, and media representatives.

Jan. 30–Feb. 1, 2024, Oceanside, California

Source

6 EVENTS

Intersolar Middle East

Intersolar Middle East is held in Dubai World Trade Centre Dubai on 16 to 18 April 2024 showing the companies news of United Arab Emirates and internationals related to sectors Solar energy, Renewable energies.

April 16–18, 2024, Dubai World Trade Center

Source

26th World Energy Congress 2024

The 26th World Energy Congress is a critical turning point for leadership on clean and inclusive energy transitions worldwide and an opportunity to spring forward in redesigning energy for people and planet.

22-25 April 2024, Rotterdam, Netherlands

Source

International Conference on Nuclear Security: Shaping the Future

ICONS 2024 will provide a global forum for ministers, policymakers, senior officials and nuclear security experts to discuss the future of nuclear security worldwide, whilst providing opportunities for exchanging information, sharing best practices and fostering international cooperation.

20-24 May 2024, Vienna, Austria

Source

Nuclear Innovation Conference

The Nuclear Innovation Conference 2024 (NIC2024), hosted by NRG|PALAS in collaboration with the IAEA, emphasizes the importance of nuclear energy in achieving energy security and meeting climate goals. The conference aims to facilitate collaboration to address the evolving landscape of nuclear energy. Seeks to bring together key players in the nuclear industry, fostering collaboration and showcasing high-potential initiatives. The content of the conference, supported by NRG|PALLAS's expertise and partnerships, reflects a collective vision for a sustainable future in nuclear energy. Participants can engage in presentations and discussions with global representatives from energy utilities, vendors, regulators, and other stakeholders, providing a unique opportunity to expand networks and contribute to the progression of nuclear energy.

5-6 June 2014, Amsterdam, Netherlands

Source

International Conference on Nuclear Knowledge Management and Human Resources Development

The International Atomic Energy Agency (IAEA) is organizing the Nuclear Knowledge Management and Human Resources Development Conference in response to challenges and opportunities in the evolving global nuclear landscape. The event aims to address the need for a knowledgeable and experienced multigenerational workforce in the nuclear industry, emphasizing the importance of preserving and transferring knowledge as experienced professionals approach retirement. The conference will review global developments, discuss challenges and opportunities, and provide practical solutions for organizational, national, and international levels. Targeting professionals from various sectors, the conference will focus on sustainability by following 'green meeting' guidelines, incorporating paper-smart documentation, waste reduction, and environmentally friendly catering.

1-5 July 2024, Vienna, Austria

Source