Joint press release

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Press release by Siemens Energy and DEWA and Expo 2020 Dubai

Siemens Energy and partners inaugurate first industrial scale Green Hydrogen Project in the Middle East and North Africa

- Project developed in collaboration with DEWA, Expo 2020 Dubai
- Operational experience from the project will be invaluable
- Operational data from green hydrogen electrolysis to be displayed at Expo 2020
- Advances the sustainable energy industry in the region

Siemens Energy, in collaboration with Dubai Electricity and Water Authority (DEWA) and Expo 2020 Dubai, has inaugurated the first industrial scale, solar-driven green hydrogen facility in the Middle East and North Africa. Located at DEWA's Outdoor Testing Facility of the Research and Development (R&D) Centre at the Mohammed bin Rashid Al Maktoum Solar Park in Dubai, this trailblazing Green Hydrogen Project serves as a major milestone in the advancement of the sustainable energy industry in the region.

The plant was inaugurated by His Highness Sheikh Ahmed bin Saeed Al Maktoum, Chairman of the Dubai Supreme Council of Energy, and Chairman of the Expo 2020 Dubai Higher Committee. His Highness Sheikh Zayed bin Sultan bin Khalifa Al Nahyan, Chairman of His Highness Sheikh Sultan Bin Khalifa Al Nahyan Humanitarian & Scientific Foundation; Her Excellency Reem Al Hashimy, Minister of State for International Cooperation and Director General, Expo 2020 Dubai; His Excellency Saeed Mohammed Al Tayer, MD & CEO of Dubai Electricity and Water Authority (DEWA); Dr. Christian Bruch, President and CEO of Siemens Energy, and officials from the public and private sectors were present.

GREEN HYDROGEN PROJECT

The integrated facility was developed with electrolysis, storage, and re-electrification capabilities, to maximize the benefits of the pilot project. Daylight solar power from the solar park will enable the pilot project to produce around 20.5kg/hr of hydrogen at 1.25MWe of peak power. Operational data from the green hydrogen electrolysis will be displayed at Expo 2020, one of the most sustainable World Expos in history and the largest event ever held in the Arab world.

Utilizing this pilot project, DEWA aims to demonstrate the production of green hydrogen from solar power, as well as the storage, and re-electrification of hydrogen. This is a system that allows for buffering renewable energy production, both for fast response applications, as well as for long-term storage. The plant has been built to accommodate future applications and test platforms for the different uses of hydrogen, including potential mobility and industrial uses.

Her Excellency Reem Al Hashimy said: "The Green Hydrogen project is leading by example, showing how technology and collaboration can help build a cleaner, safer and healthier future for everyone. It epitomises the shared desire of Expo 2020 Dubai, DEWA, our Official Sustainable Energy Partner, and Siemens Energy to develop a global culture of innovation and deploy life-changing ideas and technologies around sustainability."

"Expo 2020 congratulates all those involved, and believes this innovative project will inspire many more creative solutions that tackle some of the greatest challenges facing our planet. In less than five months, we will celebrate these ground-breaking collaborations, showcasing the UAE's commitment to the Sustainable Development Goals and creating a meaningful legacy that will have a positive impact beyond the site and the six months of Expo."

"This pioneering project which we have implemented with our strategic partner Siemens Energy is a role model for strategic partnerships between the public and private sectors. Through this pilot project DEWA aims to demonstrate the production of green hydrogen from solar power, its storage and re-electrification. This is a system that allows for buffering renewable energy production, both for fast response applications, as well as for long-term storage. The plant has been built to accommodate future applications and test platforms for the different uses of hydrogen, including

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potential mobility and industrial uses. DEWA has already explored and developed a pilot project for green mobility using hydrogen that can be executed in the near future, in addition to a number of studies, business strategies and a potential roadmap for hydrogen usage. DEWA is building know-how, experience and capabilities to contribute in shaping the clean hydrogen future of the UAE." said His Excellency Saeed Mohammed Al Tayer, MD & CEO of DEWA.

"This landmark Green Hydrogen Project highlights the importance of partnership in driving forward innovative new clean energy solutions and tackling the existential threat from global climate change. As the first industrial scale facility to produce green hydrogen in the Middle East and North Africa, it is an important milestone of the energy transformation. We look forward to working together to decarbonize industries that are hard to abate with renewable energy alone," said Christian Bruch, CEO of Siemens Energy.

"We are delighted about this excellent example of cooperation between German and UAE partners and hope that this is the first of many industrial scale green hydrogen projects in the region. The German government will continue to drive cooperation on hydrogen between the UAE and Germany in the context of our bilateral Energy Partnership and expect further bilateral projects to be launched soon", said Parliamentary State Secretary Thomas Bareiss MdB from the Ministry of Economic Affairs and Energy.

Power for the Green Hydrogen Project will be provided by the Mohammed bin Rashid Al Maktoum Solar Park, which will generate 5,000 megawatts of clean energy by 2030 as the largest single-site solar park in the world.

Hydrogen can be used for re-electrification through gas motors, gas turbines and fuel cells. It can also be used as a feedstock for the chemical industry (e.g. ammonia, syn-fuels, green-chemicals, etc.), as fuel for transportation, a reducing agent for the steel industry, as heat for industrial processes, gas for residential heating and cooking purposes, or energy for export.

Hydrogen technologies will accelerate renewable energy integration and deployment in the region and pave the way for the transition to a sustainable and green economy in the UAE. Hydrogen is a highly efficient energy carrier. Upon combustion, the only byproduct of this zero-emissions fuel is

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water, making it an ideal medium for electrification and the substitution of fossil fuels in industrial processes and other applications by way of sector coupling. It can be transported using existing pipeline infrastructure and/or via trailers and tankers, either as hydrogen or derivatives like ammonia, methanol, etc.

Moreover, hydrogen is very suitable for large-scale, as well as long-term, and high-capacity storage and can provide fast and sustained energy levels, suitable to offset intermittent output from some renewable energy sources. It can be used to fuel gas turbines, which offer the flexibility and fast ramp-up needed to balance volatile power generation from some renewable sources.

The operational experience gained from the Green Hydrogen Project will be invaluable in developing sustainable and carbon-free solutions for numerous industries, which will drive green economic growth for the benefit of future generations.

Against the background of low costs of electricity for solar PV and wind power in the region, hydrogen has the potential to be a key fuel in the energy mix of the future and could open up energy export opportunities for those areas with access to abundant renewable energies.

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Siemens Energy is one of the world's leading energy technology companies. The company works with its customers and partners on energy systems for the future, thus supporting the transition to a more sustainable world. With its portfolio of products, solutions and services, Siemens Energy covers almost the entire energy value chain – from power generation and transmission to storage. The portfolio includes conventional and renewable energy technology, such as gas and steam turbines, hybrid power plants operated with hydrogen, and power generators and transformers. More than 50 percent of the portfolio has already been decarbonized. A majority stake in the listed company Siemens Gamesa Renewable Energy (SGRE) makes Siemens Energy a global market leader for renewable energies. An estimated one-sixth of the electricity generated worldwide is based on technologies from Siemens Energy. Siemens Energy employs more than 90,000 people worldwide in more than 90 countries and generated revenue of around €27.5 billion in fiscal year 2020. www.siemens-energy.com.

About Expo 2020 Dubai

From 1 October 2021 to 31 March 2022, Expo 2020 Dubai will welcome visitors from every corner of the globe to join the making of a new world, as it brings together the planet in one place to reimagine tomorrow.

- With the purpose of 'Connecting Minds, Creating the Future', Expo 2020 will be the world's most impactful global incubator for new ideas, catalysing an exchange of new perspectives and inspiring action to deliver real-life solutions to real-world challenges
- Expo 2020 will provide a visually striking, intellectually enlightening and emotionally inspiring 182 days, as more than 200 participants – including nations, multilateral organisations, businesses, and educational institutions, as well as millions of visitors – create the largest and most diverse World Expo ever
- Expo 2020's sub-themes of Opportunity, Mobility and Sustainability will inspire visitors to preserve and protect our planet, explore new frontiers and build a better future for everyone
- Expo is committed to building a more equitable and just world for everyone, while keeping visitors safe by following the latest guidance of the world's leading medical, science and health experts
- Expo 2020 is the first World Expo to take place in the Middle East, Africa and South Asia (MEASA) region, located on a 4.38 sqkm site adjacent to Al Maktoum International Airport in Dubai South
- Built with a meaningful and measurable long-term legacy in mind, the Expo site will transform into District 2020 – a model global community that will rethink the cities of the future – after Expo 2020 closes its doors

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