

Hanwha Newsletter

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Hanwha Q CELLS Japan is Japan's Leading Module Supplier for 2017



Hanwha Solar Forest Helps Make the World Greener

- Hanwha Solar Forest's reforestation projects are praised at the United Nations Headquarters
- Hanwha is the first to use solar energy to power reforestation projects



Hanwha Group, South Korean government ministers, NGOs, and UN affiliates spoke about progress towards achieving the UN's Sustainable Development Goals

Hanwha Group recently participated in a meeting organized by the South Korean Ministry of Foreign Affairs at the UN's High-Level Political Forum 2018 at UN Headquarters in New York. During this meeting, Hanwha Solar Forest -Hanwha's global reforestation efforts- was cited as a model for how corporate partnerships can positively contribute to sustainable development.

No one will be left behind

The UN's High-Level Political Forum (HLPF) is where member nations gather to conduct an annual progress review of the UN's 2030 Agenda. Conceived in 2015, the Agenda aims to achieve global equality by the year 2030 through 17 Sustainable Development Goals - including affordable and clean energy and climate action.

During this year's HLPF, Hanwha Group participated in a meeting titled "The Power of Partnerships: Finding Inclusive Solutions for Sustainable Societies". 70 participants, including Hanwha Group, South Korean government ministers, NGOs, and UN affiliates spoke about progress towards achieving Sustainable Development Goal 17: "Global Partnership for Sustainable Development".

A productive partnership

Hanwha Solar Forest campaign aims to raise public awareness on environmental concerns such as air and water pollution, insecticides, and soil erosion. The campaign partners with Tree Planet, a South Korean social enterprise, to crowdsource reforestation projects all over the world. Together, the two companies are encouraging younger generations to act on environmental issues.

Since Hanwha Solar Forest began in 2011, more than 490,000 trees have been planted in six new forests in China, Mongolia, and South Korea. This is enough to cover more than 180 football fields. A seventh forest will be planted near Incheon, a major city in South Korea, in the second half of 2018 to help reduce dust levels.

Innovating reforestation

Hanwha's expertise in solar energy helped address a major drawback of reforestation projects: the reliance on fossil fuel-burning energy. For example, at a reforestation project in the Chinese region of Ningxia, Hanwha donated an 80 kW solar plant to power a seedling nursery. This was the first time that a reforestation project relied on renewable energy and the innovation was highly lauded by the United Nations Convention to Combat Desertification.



Hanwha's donation of a solar power plant to this seedling nursery in Ningxia, China, marked the first time ever that a reforestation project was powered by renewable energy

"As the world's leading solar energy solutions provider, Hanwha takes climate change very seriously," says Hanwha Communications Committee Director Gaz Shin, who attended the meeting at UN Headquarters. "Hanwha will take the lead in finding solutions to address the major environmental problems today." ■

Sharing Light and Hope Through the Sun



For the people of Nkhoma, Malawi, small solar lamps like this make a world of difference in their lives.



Nkhoma received 50 Solami solar lamps assembled by **Hanwha Q CELLS** employees, as part of the company's ongoing efforts to help others by harnessing the power of the sun.



Once assembled, each solar lamp was individually decorated with messages of hope and love.



The Solami solar lamps are small, but they make a huge impact on life in Nkhoma. They can provide up to 12 hours of light on a single charge, allowing villagers to carry on with their lives after the sun goes down.



600 million people in Africa don't have access to electricity. High-quality solar lamps like Solami provide a reliable and affordable source of light that also give people the hope for better lives.



As the world's leading solar energy solutions provider, **Hanwha Q CELLS** is dedicated to using photovoltaic technology to improving people's lives no matter where they are. ■



Hanwha Corporate Film 2018

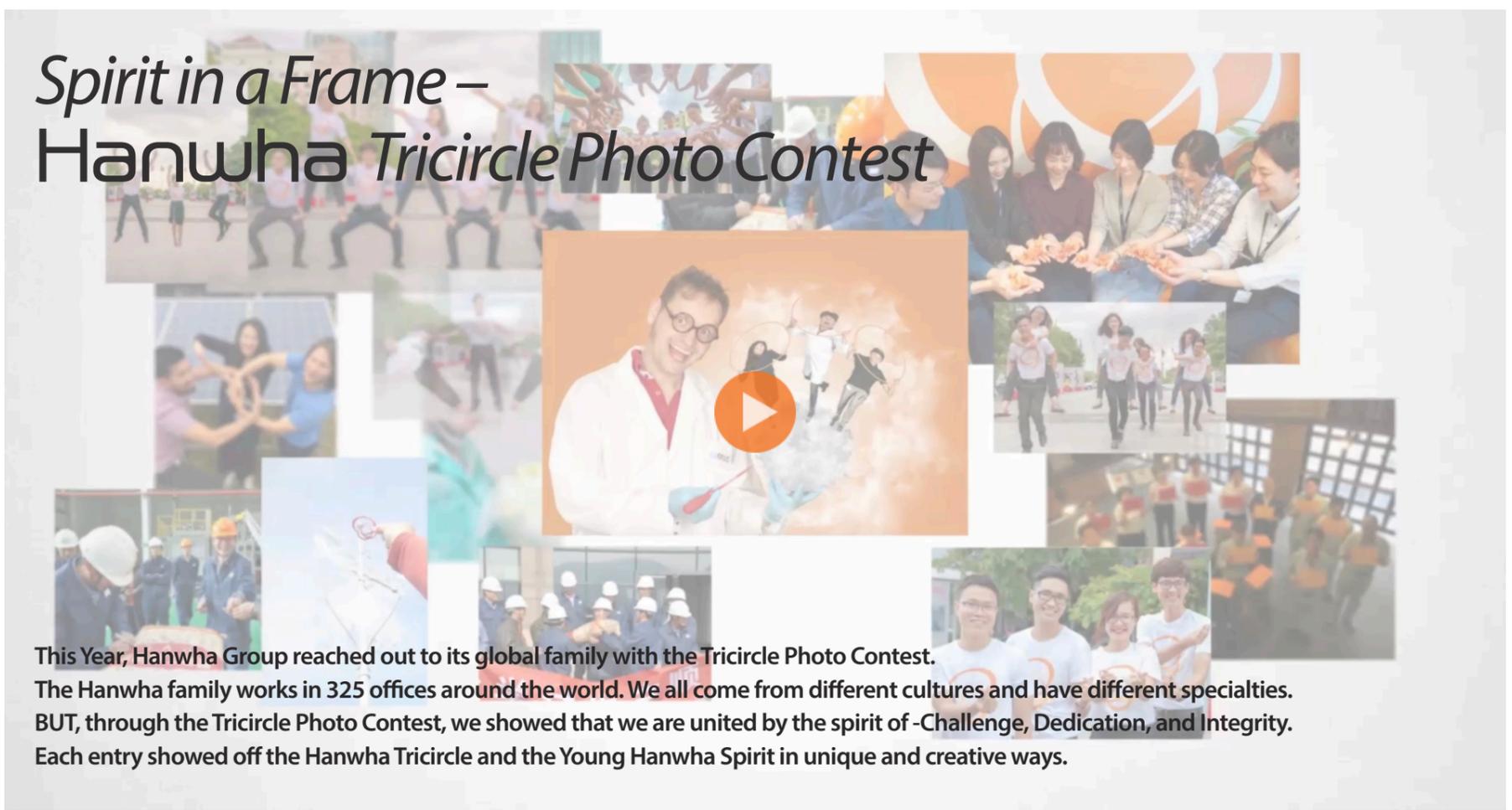
A video player thumbnail for the Hanwha Corporate Film 2018. The background is a dark, warm-toned image of a hand holding a pen over a sketchbook. The sketchbook shows several drawings of human faces and architectural plans. A large orange play button icon is centered over the sketchbook. The text 'Hanwha Corporate Film' is written in a white, serif font at the top left.

Hanwha Corporate Film

At Hanwha Group, we are many different people with different specialties united under a single banner. This is an update of Hanwha Group's 2017 Mercury Excellence Award-Winning Corporate Film.

To watch the video, please go to : <https://www.hanwha.com/en/corporatefilm2018> ■

Hanwha Tricircle Photo Contest

A video player thumbnail for the Hanwha Tricircle Photo Contest. The background is a collage of various photos showing people in different settings: some are working together, some are in a lab, some are in a construction site, and some are in a group setting. A large orange play button icon is centered over the collage. The text 'Spirit in a Frame – Hanwha Tricircle Photo Contest' is written in a black, serif font at the top left.

**Spirit in a Frame –
Hanwha Tricircle Photo Contest**

This Year, Hanwha Group reached out to its global family with the Tricircle Photo Contest. The Hanwha family works in 325 offices around the world. We all come from different cultures and have different specialties. BUT, through the Tricircle Photo Contest, we showed that we are united by the spirit of -Challenge, Dedication, and Integrity. Each entry showed off the Hanwha Tricircle and the Young Hanwha Spirit in unique and creative ways.

To watch the video, please go to : <https://www.hanwha.com/en/contestvideo2018> ■

Explore This Month's News of Hanwha and Its Affiliates, Taking the Initiative in All Corners of the World



Germany



Hanwha Q CELLS GmbH

Hanwha Q CELLS Powers Iconic Øresund Bridge and Tunnel

A custom solar system featuring high quality Hanwha Q CELLS solar modules came online in June of 2018 to provide electricity to the world-famous Øresund Bridge and Tunnel that connects Denmark and Sweden. The 864 Q.PEAK BLK-G4.1 solar modules installed on this iconic structure can provide up to 255 kW of electricity per year, the equivalent of powering 45 urban households with clean energy.

SolarFuture and Solarpark DK, which jointly ran the solar system installation project, chose to use Hanwha Q CELLS' solar modules because of the superior performance, high reliability, design aesthetics, and warranty terms.

"The climate conditions on the bridge were an important consideration," says Mads Christensen, CEO at SolarFuture, adding, "Modules from Hanwha Q CELLS are designed to withstand even the harshest weather conditions."



The installation of the solar system came as a result of Øresundbro Konsortiet, the consortium managing the Øresund Bridge and Tunnel, looking at ways to increase revenue. With the use of solar energy, the bridge's overall electricity costs will be significant reduced.

"Our focus has always been to repay the bridge's loans within 30 years after its opening, with most of our revenue being derived from road traffic," says Bengt Hergard, Property Director at Øresundbro Konsortiet. He also stated that "we are also considering other ways to generate more revenue, thus using clean solar energy to reduce our energy bill was the next logical step for us."



Korea



Hanwha Total Petrochemical Daesan Plant to Get Even Smarter

As part of its ongoing smart plant initiative, Hanwha Total Petrochemical entered into a Memorandum of Understanding (MOU) with LG Uplus to form a business alliance to develop and roll out IoT projects that can be implemented at Hanwha Total Petrochemical's Daesan Plant by 2019.

Yoon Young In, Hanwha Total Petrochemical Daesan Complex General Manager, and Jun-Il Gong, Senior Managing Director at LG Uplus Corp., signed the MOU at a signing ceremony in Daesan.

In 2017, Hanwha Total Petrochemical became the first Korean petrochemical company to implement a P-LTE network at its Daesan Plant. This network became the basis for the company's efforts to create Korea's first smart plant.



The P-LTE network at the Daesan Plant is currently being used for workers' explosion-proof smartphones, wireless CCTV, and drone-based facility checks. Hanwha Total Petrochemical is currently working to increase the network's range and efficiency through its MOU with LG Uplus.



Mexico



Hanwha Advanced Materials

Hanwha Advanced Materials Mexico S. De R.L. De C.V.

Hanwha Advanced Materials Mexico Cheers on El Tri and the Red Devils

There was much excitement at Hanwha Advanced Materials Mexico (HAMX) at the recently concluded 2018 FIFA World Cup in Russia. On June 27, two big screens were installed at the HAMX plant for all employees to catch the match between El Tri (the Mexican team's popular moniker) and Sweden in the final Group F match. There was a party atmosphere as employees got warmed up with a foosball tournament, but the mood soon turned to despair and confusion when Sweden won the match 3-0. Unsure of which teams in Group F would advance to the next stage, everyone at HAMX soon turned to the other Group F match played that day and cheered on for South Korea as it played Germany in a dramatic showdown.



There was much rejoicing as HAMX, and the entire country of Mexico, soon realized that South Korea's shocking 2-0 win over Germany allowed El Tri to advance to the Round of 16.



Saipan



Hanwha Hotels & Resorts

Saipan World Resort

A Little Penguin Welcomes Little Guests to Hanwha Saipan World Resort

The cute and cheerful characters of Pororo the Little Penguin, a popular Korean children's television show, danced through the lobby of Hanwha Saipan World Resort to celebrate the opening of Pororo Kids Park, an indoor play area, on July 21. Young children cheered in delight as they got the chance to meet and play with their favorite characters. Pororo Kids Park is the latest fun addition to Hanwha Saipan World Resort, catering primarily to the majority of guests, which are families with young children. Hotel bookings are expected to go up as a result. The park's opening is also a part of a broader trend within the Saipan hotel industry to develop attractions that appeal to younger guests. The new attraction



isn't just for kids as parents can also join their children in the play area, and revisit the fun and laughter of their own childhoods. "Everyone here at Hanwha Saipan World Resort worked hard to make sure our newest attraction meets our guests' expectations," said the manager of Pororo Kids Park. "We want our little guests to come, have fun, and take part in all the entertainment programs we have to offer."



United States of America



Hanwha Advanced Materials

Hanwha Azdel

Hanwha Azdel Shows Appreciation for Employees with Summer BBQ Party

It has been an incredibly hot summer, but Hanwha Azdel made the heat easier to bear by throwing a barbecue party for its employees recently. Everyone got to tuck into delicious smoky meats before washing it all down with ice cream for dessert.

The party was a great way for Hanwha Azdel to show its appreciation for everyone's hard work and dedication, especially towards those who work in the manufacturing plant in the intense heat.





Hanwha Q CELLS USA

Hanwha Q CELLS USA Approaches Completion of Wheats Project in San Joaquin, California

Hanwha Q CELLS USA is on track to complete work on the Wheats Project in San Joaquin, California by mid-September of 2018. Once online, the solar farm will provide up to 25 MWdc of solar energy. The facility, to which Hanwha Q CELLS USA provided EPC services, also features a new substation with a 70 kV gen-tie line.

The Wheats Project is one of several renewable energy projects being undertaken in the San Joaquin area. Residents' wholehearted embrace of clean energy sources to combat climate change is a testament to San Joaquin's motto of: "Everything is Possible".



This project is particularly notable as most of the labor force employed live in and around the San Joaquin area, providing a welcome boost to the local economy.

Hanwha Q CELLS USA is excited for yet another successful project, and will be looking forward to seeing more successes and achievements throughout the rest of 2018.



Vietnam



Hanwha Life Insurance Vietnam Ltd.

Hanwha Life Vietnam Doubling Down with Capital Injection

Hanwha Life Vietnam recently received a new license from the Vietnamese Ministry of Finance, allowing the company to dramatically increase its chartered capital. With the injection, Hanwha Life Vietnam's available capital more than doubled from VND1.9 trillion (US\$82 million) to VND4.9 trillion (US\$211 million), propelling it into the top 3 of the Vietnamese insurance market.

This increase in capital demonstrates Hanwha Life Vietnam's long-term commitment to Vietnam. By establishing a stronger financial base in the country, Hanwha Life Vietnam can now increase its local investments and boost its development services.

"Strong financial resources are vital in order for a life insurance company to help its customers," says Back Jong Kook, CEO of Hanwha Life Vietnam. He added, "The increase in our capital allows us to provide better assistance to our customers and address their needs."

Hanwha Life Vietnam has shown impressive growth over the past five years. From 2014 to 2017, premiums grew by 41% while revenues grew by 54%. Both were significantly higher than the averages for the Vietnamese life insurance market (which grew by 33% and 30%, respectively).

With the sustained growth and significant capital injection, Hanwha Life Vietnam aims to act as a regional hub from which Hanwha Group as a whole can invest and develop in Southeast Asia. ■



Hanwha Q CELLS Japan is Japan's Leading Module Supplier for 2017

- Japan's preference for high quality products aligns perfectly with Q CELLS' "Engineered in Germany" solar product portfolio
- Hanwha Q CELLS Japan provides solutions that meet the needs of Japan's growing residential sector and has been the leading overseas solar module supplier there since 2013



24 MW Hanwha Solar Power Kitsuki PV power plant in Kitsuki, Oita prefecture in south-western Japan can generate enough to power more than 7,000 local households

Hanwha Q CELLS Japan Co., Ltd. is now the leading solar module supplier in Japan, with 770 MW of module shipments in 2017. This growth builds upon a strong showing for Hanwha Q CELLS Japan in 2016, when the company was the second largest module supplier with 700 MW of shipments.

Hanwha Q CELLS Japan first entered the Japanese solar market in 2011. In 2012, the Company delivered a relatively modest 50 MW of modules, before rising to become the leading overseas player in 2013 with shipments of 500 MW.

Japanese appetite for high quality products matches the ethos of Hanwha Q CELLS Japan

Non-domestic solar module suppliers have long struggled to gain secure footing in the Japanese PV market. A combination of strong domestic brands and a historical preference for high quality products has meant that Japanese end consumers, distributors and installers have rarely chosen a non-Japanese solar module.

That attitude is changing. The product portfolio offered to Japanese customers by Hanwha Q CELLS Japan is defined by its slogan "Engineered in Germany" and proprietary Q.ANTUM technology. All Hanwha Q CELLS' modules go through stringent quality tests, which are three times stricter than global testing standards, in order to meet the exacting standards and preferences required in Japan.

Awards and accolades bestowed upon Hanwha Q CELLS' modules - including the recent Intersolar Award 2018 in the category of Photovoltaics for the Q.PEAK DUO-G5 half-cell module, and the "Top Brand PV Europe Seal 2018" award from EuPD research - serve to underline the excellence in reliability, performance, quality and innovation that Japanese customers appreciate.

Hanwha Q CELLS Japan provides localized products and solutions, such as smaller 32- and 48-cell modules that are better suited to Japanese residential rooftops. The Q.HOME+ all-in-one storage solution, which is comprised of a battery,

inverter, and energy management system, is also available in Japan.

Furthermore, Hanwha Q CELLS Japan operates one of the largest sales networks in Japan, with a Tokyo HQ and four additional sales branches in Fukuoka, Osaka, Nagoya and Sendai. Hanwha Q CELLS Japan's technical support center is located in Tsukuba. With such a broad presence, Hanwha Q CELLS Japan can provide its customers with all the support they require.

Residential growth equals residential strength for Hanwha Q CELLS Japan

The residential PV sector is enjoying a renaissance due to the Japanese government's Zero Energy House (ZEH) directive. The ZEH states that more than half of new homes built by 2020 should have zero emissions. According to consulting firm RTS Corporation, residential installations will play a leading role in pushing 2018 PV installations in Japan to as high as 7.5 GW - up from 2017.

In the residential market last year, Hanwha Q CELLS Japan's Q.PEAK was the most preferred module and won the 'Smart HIT Award 2017' by Smart House Magazine. The Q.PEAK series uses Hanwha Q CELLS' proprietary Q.ANTUM (PERC) monocrystalline cell technology to deliver efficiencies of up to 18.6%, offering outstanding yields over smaller surface areas.

Hanwha Q CELLS, together with Hanwha Q CELLS Korea, is the world's largest manufacturer of PERC solar cells, with annual production capacity of over 6 GW. Inventor of PERC and recent Global Energy Prize winner, Dr. Martin Green predicts that PERC technology will be the direction in which the rest of the industry will go. "Hanwha Q CELLS has definitely led the way in getting PERC into production," says Dr. Green.

Dong-in Shin, the Head of Sales for Hanwha Q CELLS Japan, said, "Securing leading market share in a competitive, high quality solar market such as Japan is testament to the extensive effort put in by the Hanwha Q CELLS R&D team to ensure that our module products are continually the best-in-class."

“As a non-domestic company, thriving in the Japanese solar market is incredibly challenging, which is why Hanwha Q CELLS Japan has taken great care to understand the needs of end customers in Japan, examining closely which solutions, products and services would best fit their needs, and why we have duly delivered. Our aim now is to continue to strengthen this market-leading position in Japan and further build strong relationships throughout the country.” ■