

Press Release



Leverkusen,
August 3, 2018

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Promotion of two student teams at the Solar Decathlon China competition

Covestro supports sustainable urban development

Innovative material solutions for energy-efficient solar houses

Ongoing urbanization brings with it many challenges, especially in megacities as they are currently developing in countries such as China. Above all, solutions are needed that reduce the energy consumption of buildings and vehicles. The Chinese government is therefore promoting sustainable urban planning concepts and a wider use of renewable energies.

This is the goal of "Solar Decathlon China", a student competition for building concepts that use only solar energy. The venue for this year's "Olympic games for solar energy and green building industry," as the organizers call the Decathlon, is the city of Dezhou. It is also known as the "Sun City" because it is at the center of the Chinese solar industry. 22 student teams from 37 universities from around the world will take part in the competition.

With know-how and material solutions, Covestro supports two student groups in the competition – the joint team of Tongji University Shanghai and TU Darmstadt, and the team Shunya of the Indian Institute of Technology in Mumbai.

Megacities as a challenge and opportunity

"The fast-growing megacities in these two countries present particular challenges to population supply, the development of the infrastructure and climate protection," says Dr. Markus Steilemann, CEO of Covestro. "At the same time, local universities and companies often develop the best solutions for global trends such as progressive urbanization."



Therefore, close cooperation with local partners is particularly important: "Together with them, we develop innovative and sustainable material solutions for energy-efficient buildings. On that basis we want to help shape future habitats and make the world a brighter place," says Markus Steilemann.

With such projects, Covestro is committed to achieving the 17 Sustainable Development Goals (SDGs) of the United Nations. Particular priorities are sustainable cities (SDG number 11) and the use of renewable energy (SDG number 7).

Solar Decathlon China: holistic residential solutions in demand

Each team was to design and build a one- or two-story solar house with a floor space of between 120 and 200 square meters. The solution is evaluated according to ten criteria: architecture, market appeal, engineering, communications, innovation, comfort zone, appliances, home life, commuting and energy performance.

On August 17, the winning concept will be announced. After that the area will be turned into a permanent exhibition for sustainable construction and into the first intelligent low-carbon park in China.

Sophisticated construction concepts

The EnergyPLUS Home 4.0 from Tongji University and TU Darmstadt has a modular structure, so that several units can be combined to form an apartment building. Covestro produces transparent and heat-insulating polycarbonate panels for the façade, as well as polyurethane raw materials for waterbased, yet water-permeable outdoor floor coatings. They are a perfect fit for new city drainage systems like so-called sponge grounds that soak in water and direct it into piping systems underground.

Mumbai's Shunya team's Solarise concept combines regional architectural principles and includes climatic and cultural aspects. It is a net positive energy solar villa with a floor space of 150 square meters, which is suitable for a family of six people comprising all modern amenities for comfortable and sustainable living. Products from Covestro are used in insulating polycarbonate panels on the roof, in polyisocyanurate insulation panels in walls and floors, and in the coating of the steel framework.

In focus: renewable energies

"With the support of the Solar Decathlon China, Covestro also underlines its commitment to the expansion of renewable energies such as solar and wind power," says Dr. Christian Haessler, head of Sustainability at Covestro and former head of its Polymer Research and Development Center in Shanghai. The company was the official sponsor of the Solar Impulse project of the pioneers



Bertrand Piccard and André Borschberg, who for the first time circumnavigated the earth with a solar-powered aircraft. In addition, students from the RWTH Aachen University, who participated in a self-built solar car at the World Solar Challenge 2017 in Australia, arguably the toughest solar race in the world, were supported.

“Covestro is also involved in expanding wind power, especially in China,” adds Christian Haessler. “Together with partners, we developed a new polyurethane composite for rotor blades of wind turbines. These are more flexible and robust than conventional blades and can be made faster and more economically.”

Worldwide competition for solar construction

The first Solar Decathlon events took place from 2002 in the USA. Later offshoots were also established in other regions. The initiator and organizer continues to be the US Department of Energy. This year's Solar Decathlon China will also be hosted by China's Ministry of Energy and other national authorities.

About Covestro:

With 2017 sales of EUR 14.1 billion, Covestro is among the world's largest polymer companies. Business activities are focused on the manufacture of high-tech polymer materials and the development of innovative solutions for products used in many areas of daily life. The main segments served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics, health and the chemical industry itself. Covestro has 30 production sites worldwide and employs approximately 16,200 people (calculated as full-time equivalents) at the end of 2017.

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ro (2018-089E)



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