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Students present their green city solutions

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Catching smoke: A smoke-catching device using the wet scrubber method invented by students from state vocational high school SMK 2 Cimahi, West Java, is on display at the Green City Indonesia exhibition at Atma Jaya Catholic University last December. The device won second place in the senior high school category.

Innovation is not limited by age or profession. Even students can come up with feasible solutions for the environmental problems faced by cities today; cities that aspire to become green ones. A group of three high school students recently offered a solution to haze-stricken cities in Sumatra and Kalimantan in a device that could clean their air. Using a "wet scrubber" method, the students' smoke-catcher is a box with ventilation screens and a water filtration system attached to it.

The water filter is connected to power to run the sprinklers inside the box that dilute particles of smoke and then recycles water to make it sustainable," explained Dhea Nur Kusmawangi, a student of mechatronics engineering at state vocational high school SMK 2 Cimahi in West Java. Dhea, Mei Anggara and Dhafin Muhammad won second place in the high school category of a competition jointly held by the German-Indonesian Chamber of Commerce and Industry (EKONID) and Atma Jaya Catholic University.

The award ceremony opened the Green City Indonesia seminar and exhibition series, themed "Green City, Solutions for the Future", held at the Atma Jaya campus on Jl. Jenderal Sudirman, South Jakarta, on Dec. 2-5, 2015. Their school mates Hafiz, Gugum and Dennis won third place for their invention of a solar cell-powered Ion Tree that kills airborne germs.

The Ion Tree is multifunctional. It can also be used as a street light," said Dennis. An all-girl team from SMA Pembangunan Jaya high school won first prize for their Bintaro Ecoshower, which saves water by recycling grey water.

In the university category, a team from President University in Bekasi, West Java, took third place with their alternative-energy innovation while the Yogyakarta-based UPN Veteran team won second place with an electrocoagulation technique for cleaning polluted rivers. The team from the University of Indonesia won the competition with new insulation technology for energy efficiency in buildings.

Dean of Atma Jaya school of engineering, Hadi Susanto, the organizer and a judge of the competition, said that the winners had met the criteria — originality and feasibility.

The competition, for which preliminary selection started in October, focused on four vital topics for green development: alternative energy and energy efficiency, clean technology for water and waste treatment, mass transportation and personal and communal solutions.

"We target high school and university students because we want to raise awareness of the importance of living in sustainable cities from an early age," said Hadi. "The green city concept should be immediately implemented in urban areas and we want the younger generations to actively participate in the development of a forward-thinking city.

"Indonesia is facing huge challenges in areas of waste management, wastewater treatment and air quality improvement as well as clean water and energy supply. By 2025, it is estimated that nearly 68 percent of the population will live in urban cities, compared to 54 percent in 2015.

Studies say that cities are responsible for 70 percent of the country's energy consumption and are the main contributor of greenhouse gas emissions.

Indonesia has set a target of reducing CO2 emissions by 26 percent by 2020 and of increasing alternative energy supply to 25 percent of overall supply by 2025. The prototypes of the students' green city solutions were displayed at the exhibition, side by side with booths of German companies showcasing the latest technology used in green buildings.

EKONID managing director Jan H. Rönfeld said that the profile of the winners and their works would be circulated among the chamber's members might be interested in adopting the technology or mass-producing the devices.

"Indonesia is in transition to become a more modern and urbanized country. Modern technology will be essential in adding value to the economy, creating high-quality products at international standard and creating a modern and sustainable environment," he said at the opening of the event.

Green City Indonesia was the last leg of the four-month German Season organized by EKONID, the German Embassy and the Goethe Institute Indonesia that aimed to enhance cooperation and innovation.

Also attending the opening of the event was German Embassy Chargé d'Affaires Thorsten Hutter, Goethe director Heinrich Bloemeke and Sutanto Soehodho, Jakarta deputy governor for industry, trade and transportation.

"Jakarta is the most progressive city in terms of developing a modern and green city. We welcome ideas and innovations for achieving that," said Sutanto.