

Funding clean-energy solutions

Massachusetts Institute of Technology

The sixth annual MIT Clean Energy Prize (CEP) competition, held Monday night, awarded a total of \$320,000 to five teams that have developed clean-energy startups and innovations.

The contest, co-sponsored by Massachusetts utility NSTAR and the U.S. Department of Energy (DOE) and open to teams from any American university, is the nation's leading student-run energy business-plan competition. Past participants have gone on to raise a total of \$130 million in funding.

More than 50 teams entered this year's contest; 15 semifinalists made it to Monday's grand finale. One finalist was selected in each of three separate categories — renewable energy, energy efficiency, and infrastructure and resources — with each receiving \$20,000. The winners of the Audience Choice Award earned \$10,000.

One team, Picasolar, took home both grand prizes: the DOE Energy Efficiency and Renewable Energy Clean Energy Prize, worth \$100,000, and the NSTAR MIT Clean Energy Prize, worth \$150,000.

Picasolar, a team from the University of Arkansas, developed technology that could improve the efficiency of solar panels and make them cheaper to produce. This team is now automatically a finalist in the energy category of the MIT \$100K Entrepreneurship Competition, whose winner will be selected on May 15.

In his opening remarks, CEP co-founder Bill Aulet, the managing director of the Martin Trust Center for MIT Entrepreneurship, said the contest gives clean-energy entrepreneurs the support and platform to bring their technologies to market. He cited past MIT participants — such as FastCap Systems, Oscomp Systems, Levant Power and FinSix — that got their training and start in the CEP and have since grown into successful companies.

Competitors have often emerged from CEP, Aulet added, with a clearer understanding of what it takes to run a business and commercialize products. "What we're looking to do in this competition is not to [help entrepreneurs] catch a single fish — we're trying to teach a whole bunch of people how to fish," he said.

The competition marked a culmination of the extensive clean-energy innovation and entrepreneurship events held at MIT over the course of the academic year.

MIT power and design

Two MIT teams won in their respective categories: UPower in infrastructure and resources, and Sistene Solar in renewable energy. Another all-MIT team, SunHub, took home the Audience Choice Award.

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UPower, a startup co-founded by students and an alumna of MIT's Department of Nuclear Science and Engineering (NSE), is developing a nuclear generator to be used in places off the power grid — such as a U.S. Army base in Afghanistan. Diesel generators are now generally used to supply electricity to such places.

The team's transportable, solid-state nuclear generator can generate up to 1.75 megawatts of power. It could, in theory, provide 12 years of energy without needing refueling, providing about a 50 percent energy savings over diesel, said UPower CEO and co-founder Jacob DeWitte, a PhD student in NSE. "We like to think of it as a nuclear battery," he said, with the potential to "revolutionize energy."

The startup was co-founded by Joseph Yurko, also a PhD student in NSE, and NSE alumna Caroline Cochran SM '10.

Sistine Solar, co-founded by two students at the MIT Sloan School of Management, hopes to promote clean energy by giving solar panels a facelift with modern designs. Co-founder Senthil Balasubramanian said the company aims to do for solar panels what "Apple did with cell phones" — essentially, spruce up the design to make the products desirable to the masses.

Team members showed renderings of their designs on well-known local buildings, such as the Genzyme Center in Cambridge and the Institute of Contemporary Art in Boston. With its designs, Balasubramanian said, the company — which he co-founded with Ido Salam — aims to help "usher in a new era of clean energy."

SunHub — the winner of last night's Audience Choice Award — offers solar education to homeowners, helping them make better choices when buying solar-energy systems. SunHub team members are David Borrelli, a PhD student in chemical engineering at MIT, and Kevin Yates, an MBA student at MIT Sloan.

The winning team in the energy-efficiency category, Aeolus Building Efficiency, includes MIT mechanical engineering alumnus Michael Gevelber PhD '88. His company's software measures airflow in a building's ventilation and climate-control system, offering ways to reduce energy consumption by up to 20 percent.

CEP's other semifinalists this year were Agira, Inc.; Sodium Energy; PolymerGreen; OpenWater Power; Visolis; Hybrid Wind; Bit Harmonics; SuperRenew; Raja Systems; and Effortless Energy.

State of clean-energy innovation

CEP also attracted a panel of industry experts, moderated by Aulet, who discussed topics including business strategies, carbon taxes and the effect of cheap natural gas on energy policy and renewable-energy technologies.

Panelist Christopher Knittel, the William Barton Rogers Professor of Energy Economics at MIT Sloan, discussed, among other things, how low natural-gas prices may be distracting national policymakers from implementing clean-energy policies.

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In the recent recession, he said, natural gas began replacing coal as fuel for electricity production, and greenhouse-gas levels dropped — possibly making policymakers complacent.

“If you look over the past four years, you calculate the United States’ greenhouse gas emissions, it looks like we’re doing great,” said Knittel, who is also co-director of the Center for Energy and Environmental Research at MIT. “From that perspective, policymakers may look at the landscape and say, ‘Why do we need any additional policies?’”

“So, we’re really at a fork in the road here,” Knittel continued, “where unless policymakers lead us down the right path, it could spell catastrophe for the climate.”

Other panelists included Stanley Kowalski, chairman and founding CEO of FloDesign Wind Turbine; Frank van Mierlo, founder and CEO of 1366 Technologies; and Joel Moxley PhD '07, founder and executive chairman of Foro Energy.

In her remarks, Jennifer Garson of the DOE praised CEP, saying it helps her agency promote clean-energy technologies across the United States. “We find such great value in being involved in these competitions,” she said. “MIT has been really leading the way and has proven to be an excellent model in engaging young startups.”

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