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The MIT Clean Energy Prize (MIT CEP) is a venture creation and innovation competition to encourage innovation in the energy space, specifically with regard to clean energy. The Competition invited student teams from any US university to submit student-led ventures that demonstrate a high potential of successfully making clean energy more affordable, with a positive impact on the environment. By focusing on student ventures, the MIT CEP aims to educate the next generation of clean energy entrepreneurs. Teams receive valuable mentoring and hard deadlines that complement the cash prize to accelerate development of ventures. The competition is a year-long educational process that culminates in the selection of five category finalists and a Grand Prize winner and the distribution of cash prizes to each of those teams. Each entry was submitted in one of five clean energy categories:

Renewables	Included but not limited to the use of solar, wind, hydro, biomass and geothermal energy
Clean Non-Renewables	Included but not limited to opportunities to improve the efficiency or reduce the environmental impact of natural gas, coal, petroleum oil, fuel cells, waste-to-energy technologies, and nuclear fuel
Energy Efficiency	Included but not limited to consumer end-use energy efficiency, conservation, demand management, supply chain infrastructure, architectural products and building design, and other stationary infrastructure development
Transportation	Included but not limited to vehicles and system designs in road, rail, air, and marine transportation and transportation fuels
Deployment	Included entries falling under any of the other CEP domains (renewable, clean non-renewables, energy efficiency and infrastructure, or transportation), but limited to services, processes, and deployment of existing technologies

All the scientific development was done by the student-led teams. The MIT CEP did not participate in the development of any technology.

The MIT Clean Energy Prize has, with over $800,000 in prize money since its inception, seen dozens of teams raise cumulatively over $90 million in funding.

The entries in each category are named below, along with a brief public description submitted by the team and the respective universities of the students that composed the teams.

RENEWABLES

Effimax Solar, University of North Dakota, Illinois State University, University of Illinois at Urbana-Champaign & Penn State, Renewables Semifinalist

Effimax Solar is comprised of five graduate students and recent alumni with a wide variety of backgrounds and majors. Its team leader, Yi Chen, is a Ph.D. student at the University of Illinois and the developer of the team's core technology. Each team member brings a unique skill set to the table, and with the direction from the team's distinguished advisor, Professor Logan Liu, the company possesses the leadership necessary to start up its business and manage it to fruition. Effimax Solar seeks to sell and implement innovative silicon nanotexturing technology at solar cell manufacturing plants across the globe. Based on photovoltaic research at the University of Illinois, its technology produces silicon cells that possess higher efficiency, drastically lower manufacturing costs, and a higher incurred productivity than current mainstream methods. Effimax aims to decrease the exorbitant costs traditionally associated with solar power, making a global shift toward clean, renewable energy a financially realistic possibility.

New Power Energy Systems, University of Northern Virginia & University of Pennsylvania, Renewables Semifinalist

The New Power Energy Systems team brings a wide variety of experience from technology to business development and product management to IP licensing and marketing. The team members also bring a combination of entrepreneurship and industry experience, having run companies and having worked in a few companies before. To complement their skill set and knowledge, they have built a strong advisory team who advises them on issues related to the solar area and on areas such as manufacturing. New Power Energy Systems has developed a tracking and heat dissipation systems for concentrated photovoltaic solar that is less costly and more efficient than the existing systems. So far, the team has filed provisional patents, spoken to customers and manufacturing partners, developed an advisory team, and built a prototype; it is now looking for funding to build a pilot.

S2E Solar, Northwestern, Renewables Semifinalist

S2E makes and sells S2E Solar Film™ — a proprietary "window electrode" product that enables solar shingles for rooftop electricity generation to be 50% less expensive than existing solar cells and lower cost than grid electricity. The foundational IP behind S2E Solar Film was invented at Northwestern University.

Ubiquitous Energy, Harvard & MIT, Renewables Category Winner & Grand Prize Runner-Up
Ubiquitous Energy transforms any paper or textile surface into a renewable energy source by depositing ultra-lightweight and ultra-flexible solar cells that retain the feel and performance of the underlying substrate. Products composed of these ubiquitous materials become convenient new formats for distributing energy to consumers.

Zolar Chiller, MIT, Renewables Semifinalist
The Zolar Chiller is a portable, solar, adsorption chiller that brings self-contained cooling to areas without access to electricity. The primary focus of the Zolar Chiller is to preserve food and vaccines in developing countries, although the technology has further applications in military and consumer markets. The team is composed of Andrej Lenert, Matt Thoms, and Tom Humplik, graduate students in mechanical engineering at MIT.

Clean Non-Renewables

Transatomic Power, MIT, Clean Non-Renewables Semifinalist
Transatomic Power's innovative nuclear reactors turn nuclear waste into a safe, clean, and scalable source of electric power. It is a nuclear reactor design company founded in 2010 by two MIT nuclear engineering Ph.D. students. Its SHIVA reactor, a 200 MW molten salt reactor, can be fueled entirely by the high-level nuclear waste produced by conventional nuclear power plants. Installing the team's reactors on existing nuclear power plant sites will increase the plants' electric capacity by up to 60%, all from waste that they currently have to pay to dispose of.

PK Clean, MIT, Clean Non-Renewables Category Winner and Grand Prize Runner-Up
PK Clean is able to transform the most painful form of waste into the most useful type of energy. Its vision is to turn landfill plastics into a $7 billion annual oil market. Its first target is the metal recycling industry, which represents a $1 billion opportunity. PK Clean will slash its metal recycling customers' waste fees from $50/ton to $10/ton, saving millions. Simultaneously, the team will sell the renewable fuel to refineries.

Cambridge Innovation Group (CIG), Harvard & MIT, Clean Non-Renewables Semifinalist
Cambridge Innovation Group (CIG) was established in 2010 in Massachusetts. It is a startup that focuses on the research, development, investment, and licensing of clean energy technologies in the United States and China. The team is comprised of Ph.D., MBA, and M.Eng candidates from Harvard and MIT. Its first product is iShine, an irradiation-assisted anti-corrosion technology that was invented at Harvard.

Greenbrook Corporation, MIT, Clean Non-Renewables Semifinalist
Greenbrook Corporation's founding team is well-rounded and includes the technology's inventor and owner, an expert process engineer, and individuals with experience with venture-backed startups and extensive oil and gas industry knowledge. The company is advised by MIT professor Gang Chen, in whose laboratory the technology was developed, along with Tony Meggs, former head of technology of BP and an expert in the oil and natural gas industries.

C5 Bio, MIT, Clean Non-Renewables Semifinalist
C5 Bio is a dedicated team of experienced individuals from multiple disciplines, with backgrounds in engineering, entrepreneurship, petrochemicals, research, sustainability and business development hard at work solving a key challenge faced by a $1 billion business by developing and commercializing a bio-derived chemical that is the cornerstone of the business – at half the current cost and in a more sustainable and environmentally friendly manner.

Energy Efficiency and Infrastructure

Arctic Sand, MIT, Energy Efficiency and Infrastructure Semifinalist
Co-founder Nadia Shalaby, CEO, a Harvard Ph.D. and MIT Sloan Fellow, has been building teams to advance cutting-edge technology for 20+ years, and co-founder David Giuliano, CTO, is the core inventor and technology visionary, with deep power electronics experience and broad knowledge of semiconductor technology. John Bendel, VP Business Development, brings 30+ years of growing semiconductor product lines, lately to $450 million per year, while John Newton, VP Products, MIT M.S., spent 25+ years bringing products to market across analog, mixed signal, and RF technologies.

CoolChip Technologies, MIT, Energy Efficiency and Infrastructure Category Winner and Grand Prize Winner
CoolChip Technologies was founded in mid-2010 — catalyzed by the commercial opportunities and related research at national laboratories and MIT — with the vision of breaking down the "thermal brick wall" and enabling the next generation of high-performance computing and data center energy efficiency. Its team is comprised of entrepreneurs, MIT faculty, R&D center directors, and experienced senior-level executives

with a common goal: to commercialize laboratory technology addressing electronics thermal management issues that are hampering the next-generation technology nodes.

POW Solutions, Carnegie Mellon University, Energy Efficiency and Infrastructure Semifinalist
POW (Power Optimized Workloads) Solutions is building an enterprise software platform that allows IT data centers to execute incoming workloads in the most energy-efficient way possible. It achieves this by 1) dynamically and intelligently managing server speed (in GHz) and 2) by determining the exact number of servers that are needed at any point, given an incoming workload (demand). Initial implementations of POW's technology have shown up to a 30% decrease in response time (for the amount of power) or up to 30% decrease in power consumption (with next to no impact on job response time). The team consists of entrepreneurs, computer science professors, and Ph.D. and undergraduate students, as well as undergraduate and graduate electrical engineering students. POW Solutions is currently being incubated within Carnegie Mellon University with an expected company formation and spin-out in mid-spring 2011.

Smarter Shade (Lono LLC), University of Notre Dame, Energy Efficiency and Infrastructure Semifinalist
Imagine – with the touch of a button, having instant control over the amount of light coming through the windows of your home, office or vehicle. Using Smarter Shade's proprietary light-control technology, products like windows, skylights and rearview mirrors can be adjusted to go from clear to dark, with adjustable tint in between, all without power and for a fraction of the price of other smart glass technologies.

Thermeleon, Harvard Law School & MIT, Energy Efficiency and Infrastructure Semifinalist
Thermeleon is developing a thermally responsive, color-changing roof that is white on hot days and black on cold days to conserve a building's energy.

Transportation

MODRide, Harvard & MIT, Transportation Semifinalist
MODride (Mobility-On-Demand Ride) builds on research conducted at the MIT Media Lab's SmartCities group (http://cities.media.mit.edu/). In partnership with General Motors, the team has created a number of breakthroughs which will define the new era of clean, urban auto transportation.

BioGreen, Penn State, Transportation Semifinalist
BioGreen is a catalyst technology company involved in commercializing its patent-pending one-step process to convert a wide variety of cellulosic biomass into transportation fuel and value-added chemicals and solvents.

General Cryogenic, MIT, Transportation Semifinalist
General Cryogenic designs lightweight, on-board cryogenic fuel systems that improve liquid natural gas (LNG) vehicle fuel efficiency through substantial reductions in fuel venting and greenhouse gas emissions. General Cryogenic's systems are applicable to LNG ground vehicles and will make natural gas a viable fuel for commercial aircraft.

Righteous Wheels, University of Vermont, Transportation Semifinalist
Righteous Wheels is a small startup with the focus on developing energy-efficient mass-market technologies for road vehicles. The principals are Prof. Dryver Huston and Stephen Pearson, from the University of Vermont Mechanical Engineering program. They are both committed to this effort and helping the environment, and they love people who live righteous, green lifestyles.

Made in the Commonwealth, Boston University & MIT, Transportation Category Winner & Grand Prize Runner-Up
Made in the Commonwealth (MitC) will develop and utilize innovative technology and idle industrial infrastructure to be the first renewable, synthetic, ultra-low-sulfur jet fuel refinery. Ultra-low-sulfur jet fuel is used in aviation and is critical in Massachusetts to create "New England-grade" diesel fuels and to meet the Massachusetts renewable fuel mandate that 5% of diesel be renewable by 2013. MitC will put the state at the leading edge of renewable energy and transportation technology, while creating jobs and reducing the state's dependence on foreign sources of fuel.

Deployment

Access:wind, Harvard & MIT, Deployment Semifinalist
Access:wind has developed a breakthrough innovation on existing technologies that is far more cost-effective than any other household electricity option currently available. It works with auto mechanics and small manufacturers in East Africa to meet enormous demand for low-cost renewable energy in emerging economies with local jobs, local skills and local products.

AmpCast, MIT & University of the Pacific, Deployment Semifinalist
AmpCast is a scalable solar energy prediction and management system that empowers homeowners and electric utilities alike to treat solar energy as a robust, dependable alternative to fossil fuels.

Green Glove Energy Efficiency, MIT & The Fletcher School, Tufts University, Deployment Semifinalist
Green Glove Energy Efficiency is a premium energy efficiency service that uses a hybrid service and lead generation model to solve the key barriers facing widespread implementation of energy efficiency technologies in affluent residential markets. There are three elements to its business model: providing target customers with simple, non-invasive home energy efficiency services; establishing a brand around intimate customer relationships, which also enables consumers to demonstrate their environmentally conscious actions within their community; and providing customers with the information and guidance they need to decide on larger-scale home efficiency improvement opportunities.

LinkCycle, MIT, Deployment Category Winner and Grand Prize Runner-Up
LinkCycle brings a novel approach to assessing the environmental performance of industrial products by bringing the life cycle assessment (LCA) methodology to a collaborative, web-based environment. This allows the quantity of data to improve over time. Data quality also improves, because LCA standards are embedded in the functionality of the tool, which provide guided and easy-to-perform analysis. This significantly reduces the primary costs of conducting LCA of products – opening the market up to small and medium-size businesses. Collectively, Sahil and Alex bring together extensive LCA experience from within industry and academia, including co-founding a previous carbon management startup, and publishing 10+ academic papers.

Sulico, MIT, Deployment Semifinalist
Sulico is a for-profit social venture that will provide community-centric solar energy production and will distribute energy as a service for rural Africa. Its team has a wide range of experience in energy and Africa across a range of expertise.