5 x More Energy Efficient Split Air-Conditioner is Here!

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Competition by: Global Cooling Prize, www.globalcoolingprize.org
Published: 24 February 2021, IEN Consultants, www.ien.com.my

Get ready for an energy efficiency transformation of the mass market for split air-conditioners. Next month, the winner of the Global Cooling Prize will be announced. But already now, it is clear from the online prototype testing results that super energy efficient split air-conditioners already are a reality.

The Global Cooling Prize was launched in 2018 with Richard Branson as its ambassador. The prize was the brain-child of the Rocky Mountain Institute (RMI), India's Department of Science & Technology (DST), and Mission Innovation. The Global Cooling Prize was motivated by imminent threat of climate change, the projected 4-fold growth in the number of split air-conditioners over the next 30 years, and the low energy efficiency of the currently available split air-conditioners, the best of which only achieves 14% of the maximum theoretical efficiency.

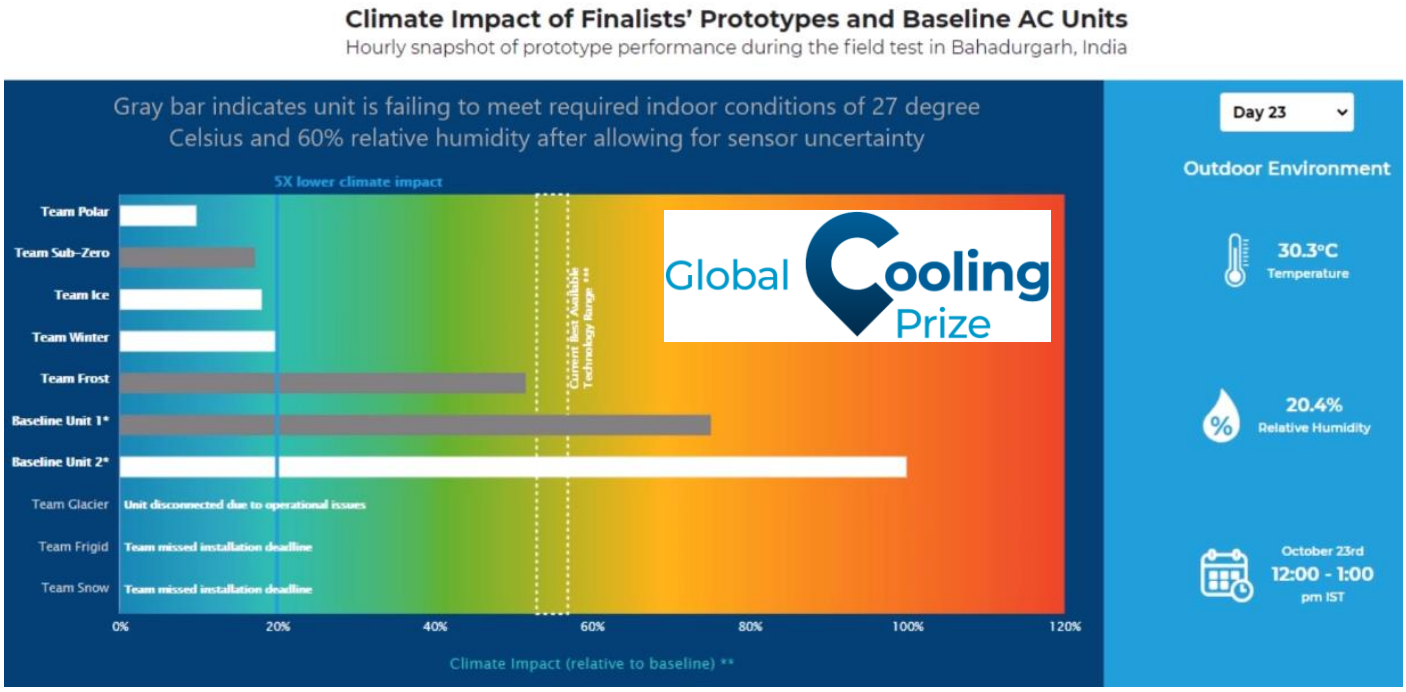

Image 1: Test results of the 8 prototypes under the Global Cooling Prize. Several of the prototypes meet the 5 x less climate change impact, which some do not and two did not make the deadline. A time-lapse video of the 31 days of prototype test results is available here: https://youtu.be/E7abZqoCFqk

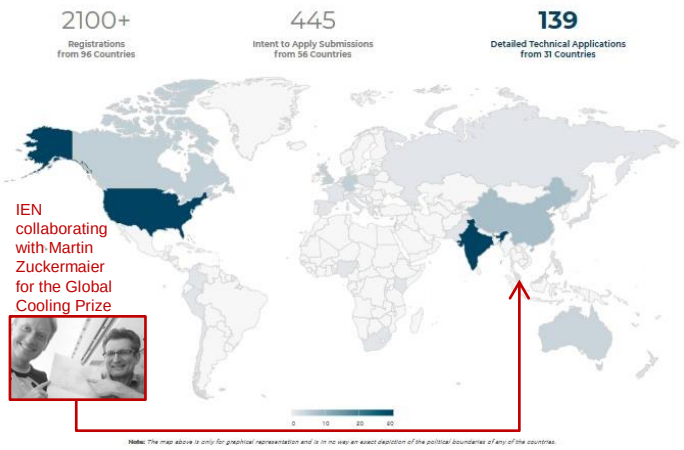

Image 2: Participation in the Global Cooling Prize. Image insert of Martin Zuckermaier collaborating with IEN for detailed technical concept, 1 of just 2 submissions from Malaysia.

The key Global Cooling Prize criterion were:

- 5 x lower climate impact than typical split air-conditioner, namely from improved energy efficiency and reduced global warming potential of the refrigerant
- 2 x cost of typical split air-con, or lower
- 700 W power draw or less
- 5.11 m3 of water may be consumed per year, not exceeding 28 liters per day
- 1.5 RT (5.3 W) cooling at standard outdoor conditions while maintaining indoor conditions at 27°C and 60% RH

Equally important, the split air-conditioning solutions must be scalable and easy to install at existing homes, so it quickly can become a success on the mass market for air-conditioning.

IEN Consultants was among the 139 applicants, who submitted a detailed technical application for the Global Cooling Prize. While IEN was not among the eight finalists, we were pleased to learn that our submission was very similar to cooling concept proposed by three of the eight finalists.

Each finalist was given USD200,000 to develop a prototype, which has been 3rd party field and laboratory tested in India from Sept 2020 – Jan 2021. A month of prototype testing data has been made available at https://globalcoolingprize.org/prototype-performance-dashboard/. One of the prototypes "Team Polar" consistently and convincingly meets the Global Cooling Prize criterion. A couple of the other prototypes also perform well. Let the energy efficient transformation of air-conditioning begin!