Little Box Challenge wikipedia

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Today, Google and the IEEE are proud to announce that the grand prize winner of the $1 Million Little Box Challenge is CE+T Power"s Red Electrical Devils. The Red Electrical Devils (named after Belgium"s national soccer team) were declared the winner by a consensus of judges from Google, IEEE Power Electronics Society and NREL. Honorable mentions go to teams from Schneider Electric and Virginia Tech"s Future Energy Electronics Center.

Schneider, Virginia Tech and The Red Electrical Devils all built 2kW inverters that passed 100 hours of testing at NREL, adhered to the technical specifications of the competition, and were recognized today in a ceremony at the ARPA-E Energy Innovation Summit in Washington, DC. Among the 3 finalists, the Red Electric Devils" inverter had the highest power density and smallest volume.

Impressively, the winning team exceeded the power density goal for the competition by a factor of 3, which is 10 times more compact than commercially available inverters! When we initially brainstormed technical targets for the Little Box Challenge, some of us at Google didn"t think such audacious goals could be achieved. Three teams from around the world proved decisively that it could be done.

Congratulations again to CE+T Power"s Red Electrical Devils, Schneider Electric and Virginia Tech"s Future Energy Electronics and sincere thanks to our collaborators at IEEE and NREL. The finalist"s technical approach documents will be posted on the Little Box Challenge website until December 31, 2017. We hope this helps advance the state of the art and innovation in kW-scale inverters.

The challenge was to build a power inverter that was about one tenth the size of the state-of-the-art at the time. It had to have an efficiency greater than 95 percent and handle loads of 2kW. It also had to fit in a metal enclosure of no more than 40 cubic inches (the eponymous "little box") and withstand 100 hours of testing.[3]

The goals of the competition were lower cost solar photovoltaic power, more efficient uninterruptible power supplies, affordable microgrids, and the ability to use an electric vehicle"s battery as backup power during a power outage. Google also hoped a smaller inverter could make its data centers run more efficiently.[1]

More than 100 international teams from university researchers and students to large companies and garage tinkerers entered the Google Little Box Challenge competition. Eighteen finalists were chosen in October 2015. These 18 teams entered the Challenge"s final stretch by submitting their competition prototypes, which underwent Google"s stringent test regimen. The results of this worldwide competition were announced at the ARPA-E 2016, March conference. Of the 18 finalists, only 3 teams passed every one of Google"s test requirements, those being the top three finishers.

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