Press Release
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Immediate Release

SANEDI receives $100 000 from 1 Million Cool Roofs Challenge

The South African National Energy Development Institute (SANEDI) is one of ten global teams awarded a $100 000 grant by the Million Cool Roofs Challenge to deploy solar reflective coating and/or materials between August 2019 and December 2020.

The 1 Million Cool Roofs Challenge is a $2 million global competition to rapidly scale up the deployment of highly solar-reflective 'cool' roofs in developing countries suffering heat stress and lacking widespread access to cooling services.

Following the grant awards, $1 million will be awarded in 2021 to the team that has demonstrated the best sustainable and transferable model for rapid deployment of cool roofs and best meets the judging criteria. Materials must also meet minimum performance standards and be applied to roofs of buildings regularly occupied by people.

South Africa's benefit

"Reflective roof surfaces not only have an impact on individual buildings, but positioning them across a whole community can have a net effect on reducing the overall local temperature. Furthermore, the use of reflective materials creates sustainable job and skills opportunities for low skilled workers in both rural and urban areas," says Denise Lundall, Project Officer Energy Efficiency Cool Surfaces and Communications at SANEDI.

"The uptake and promotion of cool surfaces has been much more enthusiastic in developed countries than in developing ones. The extraordinarily large cash prizes for the challenge is a strong indication of the conviction the organisers have in cool surfaces to address environmental concerns. The South African government's championing of cool surfaces technology is competing with other national concerns, limiting the budget investment. This cash prize will allow for substantial progress."

Cooling 5000+ people

"The minimum number of buildings to be coated is calculated on the average RDP standard building plans, which is usually 40 to 50 m2 (square metres) per roof. Based on the past project's numbers, this completed project should benefit an estimated 500 dwellings and 385 extensions and backyard additions. Each dwelling has approximately six occupants per two-bedroomed structure.

"We estimate that this low-cost housing project in Groblershoop, Northern Cape has benefitted 2 310 people in residential coated homes, which amounted to 27 500 m2. This excludes the two schools, the day care centre and two municipal offices that were also coated. With these buildings, there is no fixed number of people 'residing' there but the estimate is that ±1 400 people per month benefitted, including staff, pupils and public visitors to offices. When we add the irregular beneficiaries of 1 913, there are an estimated 5 223 beneficiaries.

Benefits

"Cool Roofs is an inexpensive, effective, passive energy, low tech cooling intervention, which allows less heat into the building, making non-air conditioned homes, warehouses and other buildings much cooler."

- Cooler surface temperatures help the roof and any equipment, for example, fan units or air-conditioners (AC) on the roof last much longer.
- Cool roofs allow less heat into the building, making homes, warehouses and other buildings without air-conditioners much cooler.
- In cities, cooling effects vary from city to city, but studies indicate a cooling potential of 2-4 ^{0}C.
- Globally, this system cancels 500 medium- sized coal power plants' worth of greenhouse gas emissions – more than compact fluorescent lamp (CFL), deployment. It is an excellent offset measure.
- Cool surfaces can cut AC energy use by up to 20% on the top floor of air-conditioned buildings, often avoiding cooling loads at peak times.
- Cooler intake air means the AC works less, and energy efficiency contributes to downsizing AC units.

Local employment

"The project will work with local municipality authorities to coat no less than 25 000 m2 of roof area. SANEDI will provide energy efficiency awareness training to the communities for their buy-in. A group of unemployed local residents will be selected, to be professionally trained and certified. On completion thereof they will be employed to apply the specialised coating technology.

"A professional labour management company shall oversee the application and include a 10-year warranty against labour or product failures through annual inspections. A post-implementation measurement and verification to assess beneficiary satisfaction, technology efficacy and longevity will be conducted. Analysed data will be made available to the public.

“We are immensely proud about being chosen from so many other projects and we will devote and exert our energy to achieving the $1 million award in 2021.” concludes Lundall.

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About Million Cool Roofs
The Million Cool Roofs Challenge is a project of the Kigali Cooling Efficiency Program (K-CEP), in collaboration with the Global Cool Cities Alliance, Sustainable Energy for All and Nesta’s Challenge Prize Centre.

About SANEDI
The South African National Energy Development Institute (SANEDI), established by the Government, directs, monitors and conducts applied energy research to develop innovative, integrated solutions to catalyse growth and prosperity in the green economy. It drives scientific evidence-driven ventures that contribute to youth empowerment, gender equity, environmental sustainability and the 4th Industrial Revolution, within the National Spatial Development Plan, through consultative, energy efficient projects. For more information, go to www.sanedi.org.za.