

Our past winners and profiles: learn more about the top 5 African Youth Energy Innovators of 2017



First Place:
Patrick Akpan
Innovation: Oil Palm Fruit Boiler



Second Place:
Paseka Litabe
Innovation: Photovoltaic Blinds



Third Place:
Mpumzi Swana
Innovation: Desalination using hydrowave energy



Finalist:
Mbangiso Mabaso
Innovation: EED CITY GAME



Finalist:
Jonathan David Naude
Innovation: Solar Tracking Mechanism

Patrick Akpan, a Mechanical Engineering student doing his PhD at UCT, won the first-ever African Youth Energy Innovator Award in 2017. Patrick's energy efficient fruit palm sterilizer won the award for the best African energy innovation. Palm oil is used in beverages, cosmetic products, cooking and baking. "This idea was conceived some years back but I wasn't getting support on it, so I left it on the shelf. Since then I've met a couple of people at the exhibition who said they would like to work with me, and so I see the product going to the market in the near future," said Akpan.

Africa is experiencing one of the fastest rates of urbanization, this poses many challenges for governments in sectors relating to health, clean water, and sustainable energy resources. The innovation allows vertically mounted solar panels to track and follow the sun around a building, and positions the panels on the side receiving optimal sunlight. The innovation addresses the issue of carbon emissions, reduces smog through the use carbon-free renewable energy and hence minimises health risks.

The innovation creates hydroelectricity for desalination using ocean waves. The solution benefits include:

- Zero carbon emissions
- Addresses water and energy security
- Job creation during construction and operation
- Free source of energy
- Use wave energy and hydro-power
- Consistent and reliable supply
- Modular
- Low operating costs

"The Game That Every Utility Needs" The innovation is a game-based solution aimed at users between 14-27 years, who own a smartphone and love playing games. The game educates them about energy terms by bringing in a fun and competitive component. Customers like local utilities would see an improvement in energy saving campaigns and better customer engagement.

The innovation proposes optimising Solar PV systems by using an improved solar tracking mechanism which typically results in 30-45% higher electricity production, at a feasible cost. The advantages include:

- No software required to operate. No pc-board is required to facilitate the tracking method.
- Does not require additional power source for the tracking mechanism.
- Higher energy efficiency for tracking module and in effect higher output for the solar collector.
- Scalable based on application

What is the Innovation?

Key features

- Compact design
- Requires Fruitlets instead of FFB
- No drive systems required
- Easy to operate and maintain
- Suited for biomass fuel

Key benefits

- Lower steam consumption rate
- Lower fuel consumption rate
- Reduced emissions
- Reduced operating cost

Costing

ACENO ENERGY THE CONCEPT

OFF SHORE NEAR SHORE ON SHORE

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