

Young Scientists find impressive solutions to local challenges at the Eskom Expo

This year the Eskom Expo for Young Scientists International Science Fair has unearthed talented young scientists with bright ideas to help solve common challenges that South Africans face.

These budding scientists have been recognised and rewarded at the Eskom Expo's Special Awards ceremony held on Friday 27 September. The awards were presided over by Minister of Public Enterprises Malusi Gigaba, who is a major proponent of youth development.

Minister Gigaba said: "I would like to express government's sincerest support for your efforts. What fascinated me most about the Eskom Expo is that you're not just thinking about problems but you're thinking about how to solve them." "

This year 79 special awards were awarded to some of the most outstanding participants in South Africa's largest school-level science fair. The special awards are sponsored by Eskom and several other organisations and universities. Prizes include books, laptops, iPads, cash prizes and university bursaries.

The Eskom Expo, which is endorsed by the Department of Science and Technology, sees learners from 29 regions across the country competing for a ticket to the prestigious Eskom Expo for Young Scientists International Science Fair (ISF). Of the 5604 learners who participate at a regional level only the top 878 are selected to represent their regions at a national level.

At the ISF these learners present their projects to a panel of judges that included professional scientists and educators in a bid to take home a medal or special prize or a prized ticket to an International Science Fair like the 2014 Intel International Science and Engineering Fair in Los Angeles, California.

The most prestigious special awards are awarded by Eskom to the Best Female Project, Best High School Development Project, Best Primary School Development Project, Best Energy Project and Best Energy Efficiency Project. They each win a Toshiba laptop and the development winners also win a mobile science kit to upgrade the science facilities at their schools.

Eskom Group Executive of Sustainability and Eskom Expo champion, Dr Steve Lennon: "These learners have put in lots of time and effort into their projects and it is great to see so many passionate young scientists. I am inspired, as the challenges we are faced with in society can be dealt with through science and technology and these young people will be helping to find those solutions."

This year the Eskom Special Award for Best Female project went to Namita Biju, a Grade 8 learner from Zinnivale Secondary School in Rustenberg. She wanted to determine which biomass produced the most methane gas using a biogas. She compared the effectiveness of cow dung, horse dung, rotten bananas and apples and found that cow dung was most effective.

She said: "I feel overwhelmed and shocked! I didn't expect this because the other projects are beyond my imagination."

The Eskom Special Award for Best High School Development Project was given to Pule Liatile and Mawethu Ndiki for their project titled "The mechanics of a falling water droplet."

The pair of Grade 11 learners from Harmony High School in Welkom, Free State are interested in maths and water. They studied the behaviour of the water droplet to determine if there is a relationship between the height and depth of a crater and rebound created by a water droplet.

First time competitor Mawethu was overwhelmed at winning this award, he said: "This is awesome. It isn't often when you do something for the first time and you do it well."

Pule added: "The Eskom Expo presents a platform to view the ideas of your peers and it makes you part of the nation-building process, through the Eskom Expo we can be part of

developing the country.”

The Eskom Award for Best Energy Project was awarded to Danielle Jacobson for her project titled “Use of nanotechnology in the optimisation of microbial fuel cells”. Danielle is a Grade 12 learner from Camps Bay High School in Cape Town.

Danielle was participating for the second time and used her previous experience and the exposure she gained at the Intel International Science Fair in Phoenix Arizona to improve on her project.

She investigated how bacteria and Nano fibre electrodes could be used to increase the electrical output of microbial fuel cells. She maximised the area of the electrode to make it viable for commercial use in the future and this year included yeast particles treated with superparamagnetic nanoparticles to increase the voltage and current outputs of the microbial cell.

Danielle said: “This year has been great, I have had more discussion and engagement with judges and I have had useful feedback, suggestions and questions. Going to Intel ISEF really opened my eyes. There are lots of normal kids doing mindboggling work and it really inspired me to think that I can do that too.”

The Eskom Award for Best Energy Efficiency Project was awarded to Gaby Hattingh and Jessica Muller for their project “Portable heat starting at your feet”.

The Grade 10 learners from Eunice High School in Bloemfontein developed a portable, cost-effective and energy efficient heater designed to be placed under a carpet to heat your feet. They were inspired to invent a heater they could use in their draughty classrooms.

Gaby said: “This is the first year we have made it to finals. It’s been very interesting, especially the people you meet at the International Science Fair and I definitely hope I can come again.”

The Eskom Award for the Best Rural Primary School went to Little Flower Combined School from Southern KwaZulu-Natal.

The winner of the Eskom Award for the Best Rural High School was awarded to Focused High School from Umthatha for their impressive array of submissions to this year’s Eskom Expo. This year has been a momentous year for the Eskom Expo as not only has it seen an impressive number of projects submitted by 483 females but it is also the second year that international participants from Ghana, Botswana, Namibia, Rwanda, Malawi, Tanzania, Swaziland and Lesotho have attended the expo.

Parthy Chetty, Eskom Expo for Young Scientists Executive Director said: “South Africa wants to establish itself as a hub of science research and excellence. In order to do that South Africa needs to be producing outstanding scientists, researchers and technicians and attract top talent from around the world. By hosting young scientists from Africa we are exposing them to the exciting world of science in South Africa and we are starting to make that vision a reality.”

This science fair exposes learners to the exciting world of science and it opens their eyes to the many career opportunities in science, technology, engineering, mathematics and innovation (STEMI). By actively encouraging the youth of South Africa to pursue STEMI careers, Eskom aims to address the country’s shortage of skills in the field of science. Learners also gain several important life skills including critical thinking, problem-solving as well as discipline, presentation skills, the importance of team works as well as learning to interact with people from a variety of backgrounds.

An integral part of the Eskom Expo is the Intel Educator Academy which aims to train and equip educators and explore proven, innovative methods of engaging students in the study of science and maths.

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For more information contact National Science Fair Director for Eskom Expo for Young

Scientists: Priscilla Moodley on: +27 11 894 1365 or email priscilla@exposcience.co.za <<mailto:priscilla@exposcience.co.za>> .

To arrange interviews contact: Silindile Nyathikazi on 071 291 9959 or silindile@groundedmedia.co.za <<mailto:silindile@groundedmedia.co.za>>