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Author: Kristin Engel

ENERGY

SA aims to be a world leader in green hydrogen

KRISTIN ENGEL

kristin.engel@inl.co.za

WHILE rolling blackouts and increasing fuel costs continue to cripple South Africa, delegates at the first Green Hydrogen Summit in Cape Town this week were told it was time to move in a new direction.

The summit was attended by ministers and delegates all eager to see the country's potential as a large-scale, low-cost, green hydrogen production hub and investment destination.

Green hydrogen (GH2) is created when water is split into oxygen and hydrogen using wind or solar energy, and can be used as an alternative fuel to power industrial processes.

Kgosientsho Ramokgopa, head of Infrastructure and Investment in the Presidency, said South Africa was regarded as one of the main future suppliers of green hydrogen products to the world due to the "outstanding potential of renewable energy sources and existing hydrogen production facilities".

Kaashifah Beukes, CEO of the Freeport Saldanha Industrial Development Zone, which is establishing a green hydrogen hub in Saldanha, said green hydrogen could be used as a lever for electricity availability and the strengthening of the grid as the country tackled critical energy challenges.

GH2 has been forecast to play a significant role not only in South Africa, but in global transitions to net zero energy systems as well as decarbonisation in heavy industry, long haul freight, shipping and aviation.

Demand for GH2 products, including ammonia and synthetic jet fuels, is rising as the world focuses on achieving net-zero carbon emissions by 2050.

Beukes said: "We can use green hydrogen to leverage a more resilient

electricity grid and availability. You need a lot of renewable energy in a production system in order to make green hydrogen, but the efficiencies of these systems are not 100%, so there is excess electricity that can be released on to our grid from these projects."

The Western Cape and Northern Cape provinces announced plans to build a green hydrogen corridor.

Premier Alan Winde and Northern Cape Premier Zamani Saul signed a landmark memorandum of understanding as the two provinces were identified as potential GH2 hubs.

President Cyril Ramaphosa delivered the keynote address and said the sector presented a unique opportunity for South Africa to link its mineral endowment with its renewable energy endowment to drive industrialisation.

"South Africa has existing and future potential to produce green hydrogen. It is estimated that South Africa has the potential to produce six to 13 million tons of green hydrogen and derivatives a year by 2050. To do so would require between 140 and 300 gigawatts of renewable energy," he said.

With the summit coming just after COP27, Ramaphosa highlighted that these gatherings of world leaders were becoming ever more urgent given the devastation caused by the increasing frequency and intensity of extreme weather occurrences.

Ramaphosa recently released for public comment a Just Energy Transition Investment Plan as the basis for South Africa's pathway towards a low-carbon and climate-resilient society in which green hydrogen was identified as one of four "big frontiers".

Public Works and Infrastructure Minister Patricia de Lille said there were already a number of green hydrogen projects under way in the country.