

MISTRA ANNUAL PGM ROUNDTABLE

WELCOME NOTES

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06 September 2023

For those who are involved in, or are keen observers of, the Hydrogen Economy, there are a number of placenames that have come to symbolise South Africa's climb towards the summit of technological maturity and practical application.

Besides the research centres of excellence, among names that come to mind are: Boegebaai, Saldanha, Dube Trade Port, Mokgalakwena, Sasolburg, Vaal Triangle, Coega and Secunda. These are places where South Africa's Hydrogen Society Roadmap is coming to life.

Since our last Roundtable, many notable events have been recorded. To quote just two of them:

- At the April Investment Conference, the biggest commitment by far was the R105-billion Hive Hydrogen project, to construct a green hydrogen and ammonia production plant at the Nqurha Special Economic Zone. This will also desalinate seawater in quantities that could meet a large part of the water needs of Nelson Mandela Bay.
- The second one is an announcement about two weeks ago that SASOL had in June produced its first green hydrogen at Sasolburg as part of repurposing a water-splitting electrolyser.

These are just two instances of practical progress, in the steady emergence of South Africa's hydrogen economy.

The question has, however, been posed: are we moving fast enough across the whole front of the Roadmap, for us confidently to say that we are on track to meet the targets we have set ourselves!

Let me cite some examples from other countries to illustrate this point. In Namibia, the Hyphen Hydrogen Energy project has been launched, to produce green ammonia and reach full-scale production before 2030. Egypt's green hydrogen projects have been launched. Inner Mongolia has started construction of facilities to generate green hydrogen. South Korea is moving ahead to build six hydrogen cities.

One can go on and on about taxis in Germany; China's first mass-produced passenger Fuel Cell Electric Vehicle; the mature initiatives in Tokyo and other parts of Japan; and practical projects in Canada, Greenland, India, Portugal, Australia and elsewhere. It is estimated that there are currently some 400 fuel cell light vehicle models across the globe. And the Total Cost of Ownership of these vehicles is projected to decline to less than that of battery-electric vehicles by 2026, and internal combustion engines the following year.

Combined with the Inflation Reduction Act in the United States and similar measures in Europe, many argue that, in the words of Mining Weekly (2023/07/26), 'the challenge of producing green hydrogen economically is now done and dusted'. What is required is the necessary infrastructure for full-scale operationalisation.

As we all know, PGMs play a central role in all these initiatives. And there is much more besides, including new applications such as PGM-containing computer chips, more efficient lithium batteries and carbon capture technologies.

There are many other issues that should exercise our mind.

For instance, one of the current constraints is the risk aversion of financial institutions due to uncertainty around pricing and offtake demand – so, how do we ensure an enhanced partnership with Development Finance Institutions?

The other issue pertains to regulation and standards. As we may be aware, the Hydrogen Council and the United Nations' UNIDO last month signed a joint declaration on the development of a standard methodology under the auspices of the International Organisation for Standardisation (ISO).

In this year's Roundtable, we also aim to reflect on sustainable mining practices, and one good example in this regard is the Mogalakwena fuel cell truck and other applications which can drastically cut carbon emissions, with diesel use constituting about 80% of emissions in most mining operations.

Local compacting and global security of supply are also matters requiring constant attention.

As with previous Roundtables, we expect vibrant discussion on these and other issues – the better for our country to take its rightful place in the global Hydrogen Economy and other PGM applications. At the core of all this is the need to ensure that the low-carbon transition becomes a platform for South Africa's new industrialisation drive.

It is in this spirit that the Mapungubwe Institute welcomes you all.

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