MAPUNGUBWE
INSTITUTE FOR STRATEGIC REFLECTION (MISTRA)

Speech

MISTRA ANNUAL PGM ROUNDTABLE
WELCOME NOTES
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Through the MISTRA Annual PGM Roundtable platform, the Mapungubwe Institute affords partners in this sector the opportunity to reflect on progress that South Africa is making, to translate its hydrogen economy vision into practical programmes and projects.

'More than rocks, mud and dust' is a sentiment that has become standard fare in the discourse on development within South Africa and other parts of the continent.

Two factors attach to this discourse: firstly, the speed with which various technological advances are creating demand for critical minerals; and, secondly, the realisation that the path dependency deriving from the colonial period is undesirable and unsustainable. The question is whether this realisation translates into meaningful action; whether the leadership is able to negotiate complex geopolitical dynamics; and whether we are capable of developing and implementing industrial strategies that facilitate value-added manufacturing.

This applies especially to the hydrogen economy. It also relates to the myriad of new PGM applications such as energy for data centres, batteries with higher energy density and slower discharge, data storage, and palladium-based layering products for the solar industry.

Research is proceeding apace in many parts of world, not only in relation to green hydrogen; but also in these emergent areas. I would argue that, while collaborating with partners across the globe on such research, we should consciously also seek to build capacity within the country – in a quadruple helix approach that brings together government, academia, the private sector and communities. Taking short-cuts in matters such as these, may produce short-term savings. But in reality, the path dependency within developing countries, including South Africa, will be entrenched; and the vortex of relying on the whims and caprices of leaders in other countries will persist.

It is thus a matter of pride that various initiatives are being scaled up at our universities, including the rapid prototyping, testing and training facility at Northwest University, and the modular hydrogen plant at Wits University which will provide a platform for the development of similar capacities.

The helix approach finds expression in initiatives such as the commissioning of a proton exchange membrane electrolyser system by SASOL, with the support of the Department of Science, Technology and Innovation (DSTI), the South African National Energy Development Institute (SANEDI) and the academic sector. Critical in such research in other parts of the world, around which South Africa cannot be left behind, is the development of a new Platform Exchange Membrane that has got the potential to more than halve the cost at stack level – which is the most expensive component in a proton exchange membrane system.

Over the past few years, in these roundtables and in other interactions on green hydrogen, the issue of funding has emerged as one of the binding constraints. Thus, blended finance has become critical; and it is to be welcomed that some R3-billion has now been committed from public and private institutions. Working with partners from the European Union, entities such as the PIC, the IDC, DBSA and Sanlam Life have committed resources to these efforts. But, is this enough?

Beyond research and funding, is the fundamental question of translating strategy and programmes into actual projects. The Hydrogen Society Roadmap (2021), the Green Hydrogen Commercialisation Strategy (2022), and the Critical Minerals and Metals Strategy (2025), all capture detailed pathways for advancement across the value chain. But there are many implementation gaps.

And so, the irony is that perhaps what is needed is a strategy on implementation! This implies putting in place a deliberate programme to upscale on-the-ground operations of the private and public sectors, including major enterprises such as Coega Hyphen with its R100-billion green ammonia project; the Bambili-Hyplat platform to manufacture membrane electrode assemblies; and the Mitochondria undertakings in the Vaal Triangle – all of which are largely black-owned – and added to which is the net-zero industrial corridor linking the Northen and Western Cape provinces, with the potential to attract over a trillion Rand, just to cite few examples.

The challenge is to ensure that the projects in the Deal Book on the first wave of the green hydrogen pipeline, are actually taken up by investors, development partners and potential customers – and that they do not end up like some of the much-vaunted but unimplemented announcements at investment conferences.

These are some of the issues that will exercise our mind in today's roundtable. And there is no reason why our efforts should not be in the same league or even better than initiatives in Europe, the Americas, Asia and indeed parts of Africa such as Namibia, Kenya, Morocco and Egypt.

We have got the natural endowment of rocks, mud and dust. The issue is how, deliberately and systematically, to transform them into sustainable national wealth.

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