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Briefing Note 2: Green hydrogen projects and just transition tools

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A just transition is critical for South Africa as it seeks to decarbonise and move away from coal dependence, which has been central to the country's energy production for over a century. In this context, the development of a domestic green hydrogen value chain has been gaining attention. It may offer opportunities to absorb workers from coal and other affected value chains, create jobs, and build a sustainable energy future. To take advantage of these opportunities, however, stakeholders in South Africa need to understand how green hydrogen projects are unfolding, how they integrate just transition principles, and the barriers they face at the project level.

Internationally, organisations such as the International Renewable Energy Agency advocate for including just transition elements, such as social justice and inclusivity, in green hydrogen development. In South Africa, documents like the Hydrogen Society Roadmap and the Green Hydrogen Commercialisation Strategy emphasise aligning green hydrogen development with just transition goals, but these policies often lack specificity at the project level. Stakeholder consultations and feedback from civil society reflect both optimism and scepticism about the potential of green hydrogen to contribute meaningfully to just transition in South Africa, given concerns about resource allocation, project viability, and social impacts.

To help ensure that green hydrogen developments align practically with the just transition mandate, TIPS recently conducted work with the Stockholm Environment Institute (SEI) on the intersection of green hydrogen project development and just transition tools. The report, which will soon be published, explores the integration of just transition principles within the development of green hydrogen projects in South Africa. It highlights policy frameworks, project-level dynamics, and the challenges and opportunities of combining environmental and social sustainability goals in this evolving landscape.

Green hydrogen projects face several challenges, particularly in achieving cost competitiveness. Currently, their production costs significantly exceed those of traditional grey hydrogen, imposing additional financial pressures. There are also complexities related to land access, regulatory cohesion between different levels of government, and the ability of local municipalities to integrate green hydrogen projects into existing infrastructure. Stakeholder engagement processes have faced criticism for being inconsistent, with some projects lacking clear communication and community involvement throughout their development stages.

Green hydrogen projects in South Africa have approached engagement with vulnerable stakeholders primarily through intermediaries and liaison officers. This method, though practical, often distances project developers from directly interacting with communities and workers. Some developers have established community liaison offices and embedded community-specific engagement tools, which help in disseminating project information and opportunities effectively.

Just transition activities in green hydrogen projects vary widely, depending on the commitment of the project developers. Reskilling and retraining of displaced workers are central just transition tools, with

projects attempting to create employment for nearby communities. Another focus is on providing excess energy and water produced by projects to surrounding communities, which, if properly integrated into municipal systems, can benefit under-resourced areas. Projects also advocate for local procurement to strengthen supply chain development, though the reliance on imports remains high at this stage of green hydrogen development.

The SEI/TIPS report¹ identifies both the potential and limitations of green hydrogen development as a means to support a just transition in South Africa. Although green hydrogen could play a significant role in economic diversification and job creation, there are practical barriers to fully integrating just transition principles at the project level. Many green hydrogen projects are still in pilot stages, focused primarily on proving their commercial viability. This uncertainty limits the commitment to just transition initiatives, which remain voluntary without formal compulsion or harmonised targets.

Some stakeholders express scepticism over resource allocation to green hydrogen given the uncertainties involved, particularly as these projects divert attention from other pressing developmental needs. Moreover, the policy disconnect between national ambitions and provincial and local capabilities hampers effective implementation of just transition principles in these projects. A coordinated, economy-wide approach is required to ensure that just transition tools, such as worker reskilling, economic diversification and community support, are effectively applied.

¹ Patel, M and Maimela, S. 2024. The use of JT tools in GH2 projects: a project-level analysis (forthcoming).