HELD UNDER THE PATRONAGE OF THE GOVERNMENT OF NAMIBIA

Global African Hydrogen Summit
#GAH2S

3 - 5 September 2024
Windhoek, Namibia

Hosted By
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Ministry of Mines & Energy

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Investor Requirement for a Bankable African Green Energy Project

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Global African Hydrogen Summit

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Introduction

The ongoing energy transition from fossil fuels to renewable energy sources is occurring simultaneously with high growth in demand for power within Africa, as a result of the rapidly growing population, continued urbanisation and increasing economic development and industrialisation. With more than 600 million people across Africa lacking access to electricity, the IEA estimates that Africa will need to double its electricity generation capacity by 2040 to meet growing demand. In addition to meeting growing domestic demand, the African continent has been identified as an attractive source for renewable energy for export to other regions looking to reduce their reliance on fossil fuels and meet net-zero targets.

These factors have led to increasing investment in projects based on the attractive geographic conditions for wind, solar and hydropower across Africa. Notable recent examples include the Lake Turkana Wind Power in Kenya (310 MW), the Ouarzazate Solar Complex in Morocco (510 MW, largest in the world), and the Grand Ethiopian Renaissance Dam (GERD) in Ethiopia (5.15 GW), which have greatly increased the available power to local populations. However, numerous projects are also in development based on the export of energy from Africa to Europe – this may be either through direct transfer of electricity, such as the XLinks project, which is planned to supply renewable electricity to the UK from Morocco by subsea cable, or via conversion of renewable energy into fuels such as green hydrogen and ammonia for export, for which there are numerous projects in development in countries such as Namibia, Mauritania, Morocco and Egypt.

Further to the projects under development, there is a clear commitment from multiple parties to making finance available for such projects. Most development banks, bilateral aid and export credit agencies, and development finance institutions have a clear mandate to facilitate the energy transition, and many will provide preferable terms to projects which can help achieve net zero targets. In addition, there are now numerous climate investment funds and venture capital funds dedicated to investments in green energy, including throughout the development stage.

For a green energy project in Africa (as elsewhere in the world) to be considered fully bankable, project development will need to reach certain milestones or have a well-defined roadmap to achieving these. This includes elements such as receiving necessary permissions from relevant authorities, completion of feasibility studies, selection of relevant technologies, execution of basic or front-end engineering defining the project scope, and appointment of contractor(s) for EPC execution of the project. Even at this well-developed stage, there will be various risks identified which require mitigation to attract financing.

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Technical Risks

Investors (equity and debt) will consider the technical and commercial risk factors ahead of committing financing to a project such as this, and the nature of energy transition projects presents some unique challenges compared to traditional fossil fuel-based projects, particularly in an African setting.

Technical risks include:

Technology scale-up

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Integration and interfaces

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Availability of infrastructure

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Operations and maintenance

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Technology scale-up:

For energy transition projects such as green hydrogen, many of the proposed projects are of a larger order of magnitude than observed before, which presents some scale-up risk. This can be mitigated by technology providers taking stakes in the project, and by providing robust guarantees on the operation.

Integration and interfaces:

Many green energy projects require integration of several elements, e.g., wind and solar projects integration with electricity distribution, green hydrogen production with storage and distribution facilities. Interface risks can be mitigated through implementing the different elements as a single project, and minimising the contracting parties, although this presents a challenge given the magnitude of the works and the capital investment requirements, particularly where extensive supporting infrastructure is required as part of the project.

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Availability of infrastructure:

Green energy projects are often located in remote or less developed regions, where there are suitable geographical conditions but little existing infrastructure. Support by local authorities in developing infrastructure, and by experienced contracting parties in the region can help mitigate risks in this area.

Operations and maintenance:

The project locations can also add to challenges in O&M of facilities following construction, adding to the operating costs – this is particularly true in Africa where there is less industrial heritage than other regions, making sourcing of equipment and appropriately qualified staff more challenging.

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Commercial Risks

In addition to these technical elements, ahead of financial commitment, investors will also require an environmental and social impact assessment (ESIA) to have been completed, in line with relevant national and international standards. Where international lending is being sought, the ESIA and the environmental and social management plan (ESMP) for the project may need to be compatible with the Equator Principles and the IFC Performance Standard, to which the majority of major international banks are signatories. Support of the relevant national and local government can help provide comfort in relation to permitting.

The commercial risks around product offtake are often more challenging for green energy projects, and these will also be considered by investors:

Available market

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Customer offtake

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Pricing

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Available market:

Current demand for green energy is relatively low compared to anticipated future demand. Comfort on future availability of demand is provided by separate infrastructure investments (e.g., in power networks) and government legislation – for example, the EU 'Fit for 55' plan including the emissions trading scheme (ETS) and carbon border adjustment mechanism (CBAM).

Customer offtake:

Where markets are not yet established, such as where power infrastructure is required or for legislation-driven products (e.g., green hydrogen, sustainable aviation fuel (SAF)), contractually commitment by a customer for product volumes mitigates market risk – the offtaker may also contribute equity to the project to provide further comfort.

Pricing:

In light of the above points, there is a lack of clarity on future pricing levels for green energy products. Risk mitigation to investors can be achieved by assessing the cost of production, or in the case of green hydrogen the levelized cost of hydrogen (LCOH) to provide comfort on the competitiveness of the project.

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Summary

If global sustainability goals are to be met, the development of green energy projects in regions such as Africa will be required, and the necessary capital for such projects made available. Such projects have a different risk profile to traditional energy projects, particularly noting the lower maturity of the technologies and the absence of an established market. However, investment can be achieved if risk mitigants are in place, such as contractors and offtakers taking an equity stake in the project and gaining clear support from local and national governments. Where projects can be demonstrated to have mitigated against the various risks posed, there are now sources of finance available to help support the energy transition in Africa.

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