

# Renewable Energy Transitions in a Period of Debt Distress in Southern Africa

THE ROLE OF DEVELOPMENT FINANCE  
INSTITUTIONS



## *A Report By*

Magalie Masamba<sup>1,3</sup>, Eugenia Masvikeni<sup>2</sup>, Kudakwashe Ndhlukula<sup>2</sup>, Xinyue Ma<sup>4</sup>,  
Cecilia Springer<sup>1</sup>, Daniel Bradlow<sup>3</sup>, Kevin Gallagher<sup>1</sup>

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### **Global Development Policy Center**

Boston University  
53 Bay State Road  
Boston, Massachusetts 02215  
Tel: +1 617-353-7766  
[www.bu.edu/gdp](http://www.bu.edu/gdp)  
Email: [gdp@bu.edu](mailto:gdp@bu.edu)  
Twitter: @GDP\_Center  
Facebook: @GDPCenter

<sup>1</sup> Boston University Global Development Policy Center <sup>2</sup> SADC Centre for Renewable Energy and Energy Efficiency  
<sup>3</sup> International Development Law Unit of the Centre for Human Rights, University of Pretoria <sup>4</sup> Rocky Mountain Institute

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# EXECUTIVE SUMMARY

## Introduction

In 2020, the SADC Centre for Renewable Energy and Energy Efficiency (SACREEE), the SADC Development Finance Resource Centre (DFRC), the University of Pretoria Centre for Human Rights (CHR) and the Development Bank of Southern Africa (DBSA) collaborated with the Boston University Global Development Policy Center (GDP Center) to produce a report entitled *Expanding Renewable Energy for Access and Development: The Role of Development Finance Institutions in Southern Africa*. That report provides a roadmap for how the Southern African Development Community (SADC) region could expand the use of renewable energy (RE) to increase energy access and spur economic development. It projects that the region could attain full energy access and 53 percent renewable energy capacity by 2040 while on its way towards zero-carbon growth.

With the COVID-19 pandemic, however, there is increasing concern that SADC countries have become economically vulnerable and increasingly less able to take on more external debt. Without creative thinking and new policy, this situation could derail the region's prospects for a much-needed surge in renewable energy capacity.

The COVID-19 lockdown has been disruptive to the energy sector and its impact has been noticed across the entire electricity value chain, from the utility level to the national and regional levels as well as in the development finance institution (DFI) space. However, the magnitude of the impact has varied across stakeholders. Electricity demand and consumption were quite sensitive to the lockdown restrictions. Response to policy initiatives designed to stimulate private sector uptake of renewable energy projects was delayed and project development and implementation activities were affected. The greatest impact was on RE capacity development.

Access to clean, reliable, affordable and available electricity in SADC countries is critical for socio-economic growth and development. This requires the pooling of technical and financial resources to address massive investment gaps. But it is also an opportunity to explore innovative approaches to financing and de-risking projects and to improving their overall contributions towards economic development—a role for which DFIs are well suited.

Electrifying SADC countries with clean energy from renewable sources is a major regional goal, but how can it be financed now that the COVID-19 pandemic has made it harder for countries to repay their debts or to justify accumulating more debt?

With this background in mind, SACREEE, CHR and the GDP Center collectively developed three policy briefs which were preceded by three online workshops held between June and October 2021. This report is a synthesis of those policy briefs, which will be presented to the DFRC Chief Executive Officers' Forum in June 2022.

## Approach

Three private virtual thematic workshops were convened by SACREEE, CHR and the GDP Center. At each workshop, three or four speakers shared their expert views and deliberated on a topic. Each workshop ended with a question-and-answer session. Table 1 below displays the workshops' topics, convening institutions and participating organizations. Each workshop was organized around specific guiding questions, which are detailed in each policy paper and aggregated in the Appendix. The workshop was held under Chatham House rules.

**Table 1: Policy Workshop Themes and Conveners**

Workshop #	Date	Theme	Convener	Panellist institution types
1	09/06/2021	COVID-19 Impact on the SADC Energy Sector	SACREEE	Regulators, utilities, DFIs
2	14/07/2021	SADC's Debt Conundrum and Its Impact on Financing the Region's Renewable Energy Transition: Challenges and Opportunities	Centre for Human Rights, University of Pretoria	Industry groups, philanthropic foundations, law firms
3	21/10/ 2021	The Role of Development Finance Institutions in Financing Renewable Energy in the COVID-19 Era	GDP Center, SADC-DFRC	DFIs, academic institutions

Source: Authors' elaboration.

## Findings and Synthesized Policy Recommendations

Deliberations during the three policy workshops produced some key findings on the pandemic's impact on the acceleration of RE in the SADC region. Policy and regulatory gaps remain a major challenge and it is evident that an enabling environment could unlock private sector investment in the RE sector to close the funding gap. The pandemic has affected the sovereign and corporate debt landscape in SADC countries and has complicated the risk-assessment process, thereby changing the way financiers view the risks associated with projects. While there was still some appetite and potential financing for bankable projects, it was not clear whether the pandemic's adverse impacts on the debt landscape and on the RE sector have been underestimated. Bankability remained a key component that determined project attractiveness and a country's debt landscape and political risk remained key considerations. DFIs were well placed to both mobilize and catalyze private resources through support for mechanisms to enhance the enabling environment to better leverage private investment. National DFIs are undergoing reforms, restructurings and recapitalizations to make them more efficient. While the workshops considered how to better leverage private and equity investment, credit and currency risks—among others—are likely to drive up cost of capital, affect long term returns and eventually undermine private sector investment if the debt issue is not addressed.

Several key policy recommendations that could be informative for DFIs' resource mobilization efforts emerged repeatedly.

Policy recommendations emerging from the first policy brief ranged from introducing fiscal incentives to support RE development, to promoting more active private sector participation through enabling regulatory frameworks which would include redesigning market structures, strengthening regional

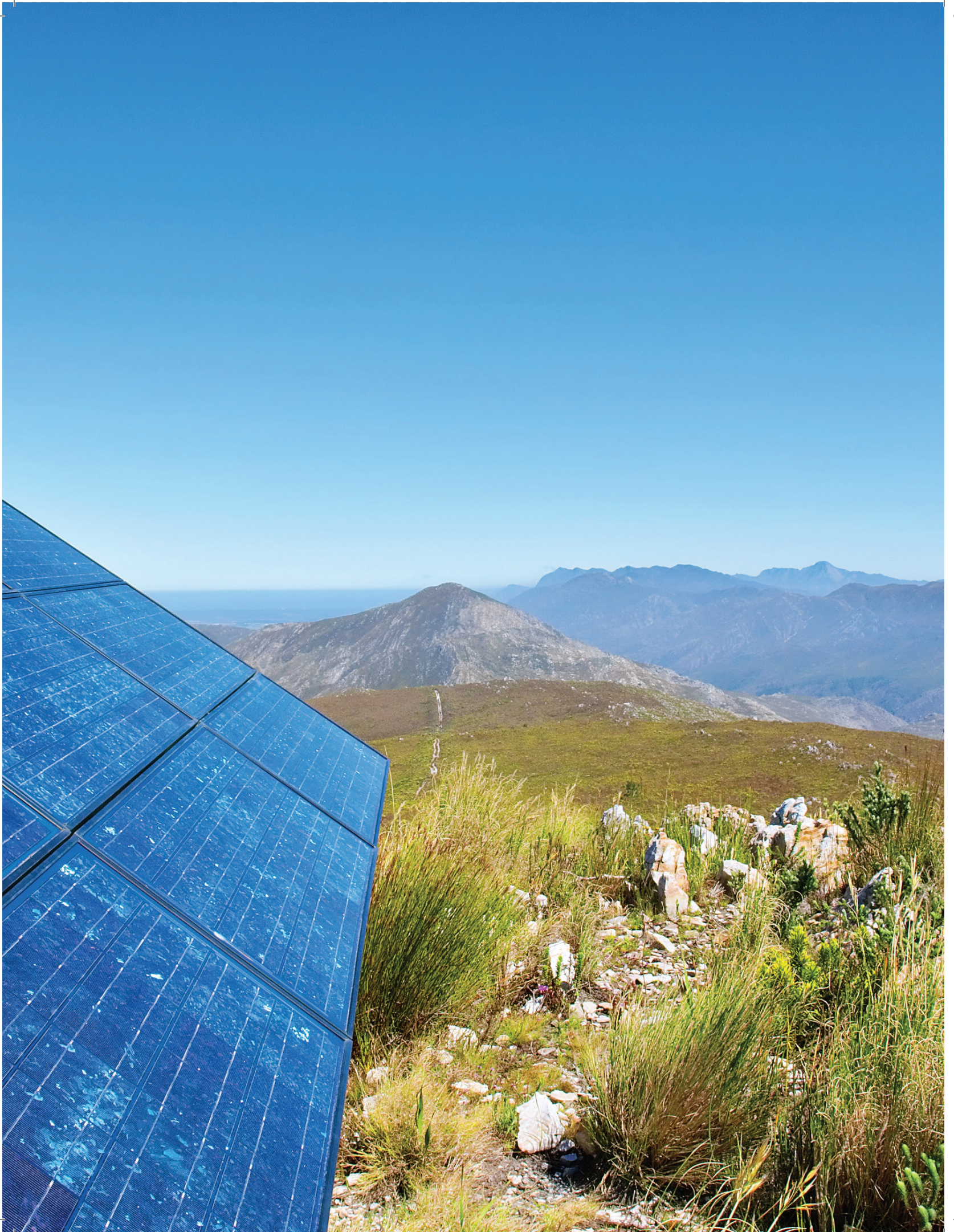
integration, accelerating adoption of smart grids, developing more innovative financing models and shifting to more cost-based tariffs.

The second policy brief's recommendations highlighted the need for (a) adequate project risk management, (b) further investigations into whether the COVID-19 pandemic had affected bankability and, if so, the extent to which it had done so, (c) creative financing mechanisms and means by which the private sector could supplement gaps in official financing and (d) project design that promotes transparency, accountability and inclusiveness.

The third policy brief's recommendations include (a) maximizing debt financing instruments, (b) increasing the role of DFIs in mobilizing and catalyzing private sector resources, (c) pre-investment support to ensure project bankability, (d) local financing options, (e) cooperation and collaboration among DFIs, (f) investing in small-scale renewable energy projects and (g) prioritizing regional project surveillance and monitoring.

All recommendations will be presented at the DFRC Subcommittee Forum planned for June 24, 2022, in Gaborone, Botswana. This is a platform at which DFI Chief Executive Officers will discuss strategic issues within the DFI mandate to promote effective mobilization of resources by the financial sector. Specifically, the DFIs are mandated to raise investment to stimulate sustainable and inclusive growth, generate employment and alleviate poverty, in line with SADC objectives under the Revised Regional Indicative Strategic Development Plan 2020-2030. Collaboration within the DFRC is an important means of enhancing its policy and research capacity.

The report presents an opportunity for further in-depth debates on the debt conundrum, the debt sustainability framework and how DFIs could play a role in debt relief by addressing debt sustainability and promoting a green and inclusive recovery that supports RE development despite ongoing pandemic-related challenges.





# THE IMPACT OF COVID-19 ON THE SADC ENERGY SECTOR

PREPARED BY SACREEE

## Introduction

This policy brief is the first of three policy briefs exploring the role of DFIs in the RE transitions of the SADC countries. The brief discusses the impact of the COVID-19 pandemic on the RE sector in the SADC region. It draws from a panel discussion led by regulators, utilities and DFIs.

The brief seeks to establish whether the region is still on track to meet a 53 percent RE target by 2040 (Munoz et al., 2020) set out in 2017 by the Southern African Power Pool (SAPP). Before the COVID-19 pandemic, it was clear that this target depended on SADC countries aligning themselves with the newly proposed SADC Regional Development Fund and on the willingness of local, regional and global DFIs to provide funding.

The brief further seeks to establish whether development funding for RE has been affected by the pandemic. It concludes with a discussion of the Electricity Control Board of Namibia's modified single-buyer (MSB) model as an innovative electricity market model designed to unlock RE investment in the SADC region.

The pandemic disrupted the energy sector, including disruptions to equipment supply chain logistics, billing, project implementation and energy consumption (with depressed consumption affecting revenue collection).

DFIs, regulators and regional electricity market integration institutions are key stakeholders in the region's access to and delivery of RE. Questions posed in the workshop, listed below, concerned the roles these stakeholders play and their responses in the wake of the pandemic. The following set of questions guided the discussion:

1. Is SADC on track for the 53 percent renewable energy target by 2040? What challenges could affect the attainment of the target?
2. What is the impact of COVID-19, if any, on attaining the 53 percent target?
3. How has COVID-19 affected development finance in the power sector? How can DFIs accelerate RE financing to reach the 53 percent RE target by 2040?
4. Have there been any revisions of the funding targets and funding policies to address any challenges that may have been presented by the pandemic?
5. To what extent has the COVID-19 pandemic impacted electric utility licensees and consumers?
6. What measures have regulatory institutions put in place to mitigate the impact?
7. What innovative instruments can regulators provide to the power sector to attain the 53 percent RE target by 2040?

## Impact of COVID-19 on Power Supply in the SADC Region

Nine of the 12 SAPP members are grid-interconnected, and peak demand is 60,000 megawatts (MW), while the installed capacity is 58,000MW. This leaves a 2,000MW shortfall; the winter ordinarily brings supply constraints. Electricity trading on the SAPP market is conducted through bilateral contracts and a competitive market that includes day-ahead and intra-day trading.

In the third quarter of 2020, the SADC Secretariat—in collaboration with SACREEE, SAPP and the Regional Electricity Regulators Association of Southern Africa and with financial support from the World Bank—conducted a “COVID 19 Regional Power Assessment.” The study identified short-term, medium-term and long-term<sup>1</sup> impacts of the pandemic. Lockdown restrictions in early 2020 had a significant impact on regional economies and the energy supply industry sector. A reduction of as much as 14 percent in power demand was noted in April 2020 in comparison to the same period in 2019.

The financial sustainability of utilities was threatened during the first four months of the lockdown and revenue losses were reported as demand for and consumption of electricity declined significantly. The economic downturn brought on by regional-level restrictions affected not only billing logistics but also users’ ability to pay. Electricity consumption declined across all economic sectors and users. At the regional level, there was a marked decline in power trading due to reduced demand from decreased economic activity.

Project development was affected at two levels. Projects under implementation were delayed due to supply chain disruptions, import restrictions and disruptions and delays in equipment procurement logistics. Imported equipment could not be delivered on time due to shipment delays (for example, in Mozambique and Zambia). The movement of contractors to project sites was restricted alongside equipment shortages. Similarly, maintenance and refurbishment were temporarily halted or deferred due to lack of materials and restricted movement of contractors. The immediate response to these disruptions was a shift to limited domestic production of equipment.

There were noticeable patterns of urban-rural migration as people tried to escape lockdown restrictions by returning from urban to rural areas. This, in turn, increased the demand for solar home systems and rooftop photovoltaic (PV) installations. A positive development was that those installations in rural areas continued to operate when people returned to cities.

There was also prioritization of electricity access for health services in rural areas as a short-term measure. Health institutions were mainly powered by renewable energy mini-grids and standalone systems.

One of the immediate responses to the pandemic was government fiscal support to utilities to keep them operational and avert further revenue loss. Affected utility employees were granted exemption from travel bans to enable them to travel to sites to resume work. The impact of COVID-19 on power sector employees was therefore less significant than in some other sectors.

Mitigation measures and strategies for recovery from the pandemic were centered on addressing the energy sector’s key strategic objectives: ensuring a secure energy supply, improving access to modern energy services, tapping the region’s abundant RE resources, encouraging investment in energy infrastructure and ensuring environmental sustainability.

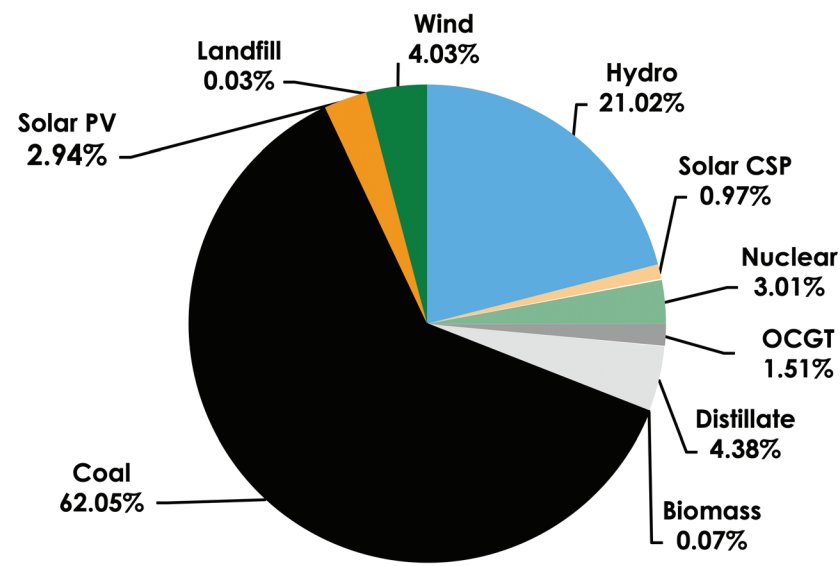
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<sup>1</sup> “Short-term” refers to a period lasting less than one year, “medium-term” to a period of one to three years, and “long-term” to a period longer than three years.

In the medium term, smart grid technologies were introduced to control and operate electricity networks; some projects were thus implemented much earlier than planned. Remote reading for some substations and metering stations minimized manual and physical operator interventions.

Notwithstanding the COVID-19 disruptions, there was optimism concerning reaching the 53 percent RE generation target for the SADC region by 2040. While the region's generation mix is still largely dominated by coal, the share of RE has steadily increased from about 16 percent a decade ago to 28 percent<sup>2</sup> in 2021, driven mainly by hydropower, PV, concentrated solar power (CSP) and wind.

**Figure 1: SADC Region Electricity Generation Mix**



Source: SAPP, 2021.

Demand for electricity has gradually been returning to pre-pandemic levels, driving RE projects back into line with the region's medium- to long-term transition pathway.

The disruptions caused by the pandemic necessitated a review of the power sector's master plans to focus on more RE both as a component of the energy mix and as a driver of national economic development.

Funding models such as public-private partnerships and private sector funding will be key in ensuring increased electricity access in the region, which is already seeing increased participation by independent power producers (IPPs). It is likely that variable RE projects in the future will be developed predominantly as IPP projects. More countries in the region are moving towards procurement of variable RE projects in a more structured manner through a competitive tendering approach underpinned by long-term power purchase agreements, mostly with state-owned utilities as off-takers.

## Impact of COVID-19 on DFIs' Support for Renewable Energy

There are strong links between this policy brief and the third one—on the role of DFIs in financing renewable energy—which offers a more extensive discussion by several DFIs. In that presentation, the Development Bank of Southern Africa (DBSA) noted some of the effects of the pandemic on the

<sup>2</sup> Including hydropower.

financing of projects along the project development cycle; these are summarized below. Note that some of the highlighted issues are not unique to the DBSA.

### IMPACT OF COVID-19 ON PROJECT DEVELOPMENT

DFIs noted that COVID-19 lockdown restrictions could affect projects under construction and implementation in two important ways: disruption in equipment procurement logistics and in the flow of projects submitted for funding. It was noted that the delays due to supply logistics were minimal and had not had any significant impact, as developers managed to recover the lost time. Electricity was deemed an essential service and restrictions on that sector were lifted. There was no effect on the flow of project submissions; developers and project sponsors continued to package their projects.

### BARRIERS FOR RENEWABLE ENERGY FINANCE

Various barriers experienced by the private sector and project developers affected—directly or indirectly—project bankability, but were not a consequence of the pandemic.

Regulatory and policy barriers to investment continued to impede private sector participation. Development and transaction costs, partly due to lengthy bidding and procurement processes, tend to be highly restrictive for the private sector. Transactions are generally diverse, as they must be tailored to suit individual projects, often resulting in diverse and inconsistent standards, which can be time-consuming for project developers to address and therefore constrain bankability. An enabling environment to a large extent sets the pace of initial project development and can also facilitate project preparation to ascertain bankability. While there are many opportunities, bankable projects tend to be limited in the SADC region.

The private sector prefers funding models that allow them to seek high rates of return. For instance, a project internal rate of return of 10-15 percent may not be sufficiently appealing, as RE projects must compete with other high-return infrastructure asset classes. DFIs may therefore be forced to impose high transaction costs to ensure full cost recovery. Financing models need to be looked at in a more holistic manner to resolve this challenge. Risk mitigation elements and instruments to mobilize concessionary capital are key to achieving risk-adjusted returns.

Patient capital instruments are key and there is a need to match financing instruments to the needs of a project throughout its lifecycle.

Project definition is straightforward for most RE technologies. However, the process of evaluating and financing concentrated solar power tends to be complex. Therefore, streamlined facilities and adequate expertise for transactions structuring is requisite.

### FUNDING FACILITIES

DFIs generally use project preparation, long-term capital and credit enhancement instruments to de-risk projects and ensure their bankability. For example, in the case of captive power projects being developed by mining houses, the financial sector looks to have projects underpinned by secured power purchase agreements, the acquisition of which could benefit from project preparation facilities at DFIs.

Longer-term facilities are important to bring projects to bankability because they offer long-term tenors. The DFIs can therefore provide an extension to the tenors of commercial bank funding to capitalize private sector investment.

Credit enhancement instruments are critical for bridging the mismatch and strain usually caused by commercial bank instruments, which do not offer long-term tenors.

Climate funds are useful as they contain an element of concessionality to ensure bankability. The DBSA specifically administers two such funds:

- The DBSA Climate Finance Facility (CFF), to accelerate RE finance—mainly to leverage private sector funding and provide credit enhancement.
- The Embedded Generation Investment Programme (EGIP), to provide credit support for non-sovereign funds projects to enhance viability and bankability.

## LENDING POLICIES AND TARGETS UNDER COVID-19

Because infrastructure projects naturally entail long-term commitments, funding adjustments and lending policies remained largely unchanged under COVID-19. The effects of the pandemic have, however, made DFIs more vigilant in tracking market signals.

Increasing installed RE capacity remains a priority for DFIs. The DFIs (DBSA, in particular) are developing a series of interventions to ensure low-carbon pathways are part of a just transition. Such interventions emphasize a combination of funding instruments and communities' livelihood support.

Short-, medium- and long-term policies for DFIs, national development banks and multilateral finance institutions financing interventions could include public-private partnerships and private sector participation and DFIs should continue to drive the process.

A blended platform between DFIs and climate finance has emerged. Currency risk was a common challenge in most countries and was not necessarily a COVID-19 era phenomenon. Lending for RE projects is generally based in local currency. Loans to countries in the South Africa Customs Union—namely Botswana, Eswatini, Lesotho, Namibia and South Africa—were in local currency and the impact of currency exposure was insignificant. Furthermore, most lending was based on project finance structures which include hedging instruments. Blended financing was particularly key in minimizing currency exposure, especially for projects using multiple currencies.

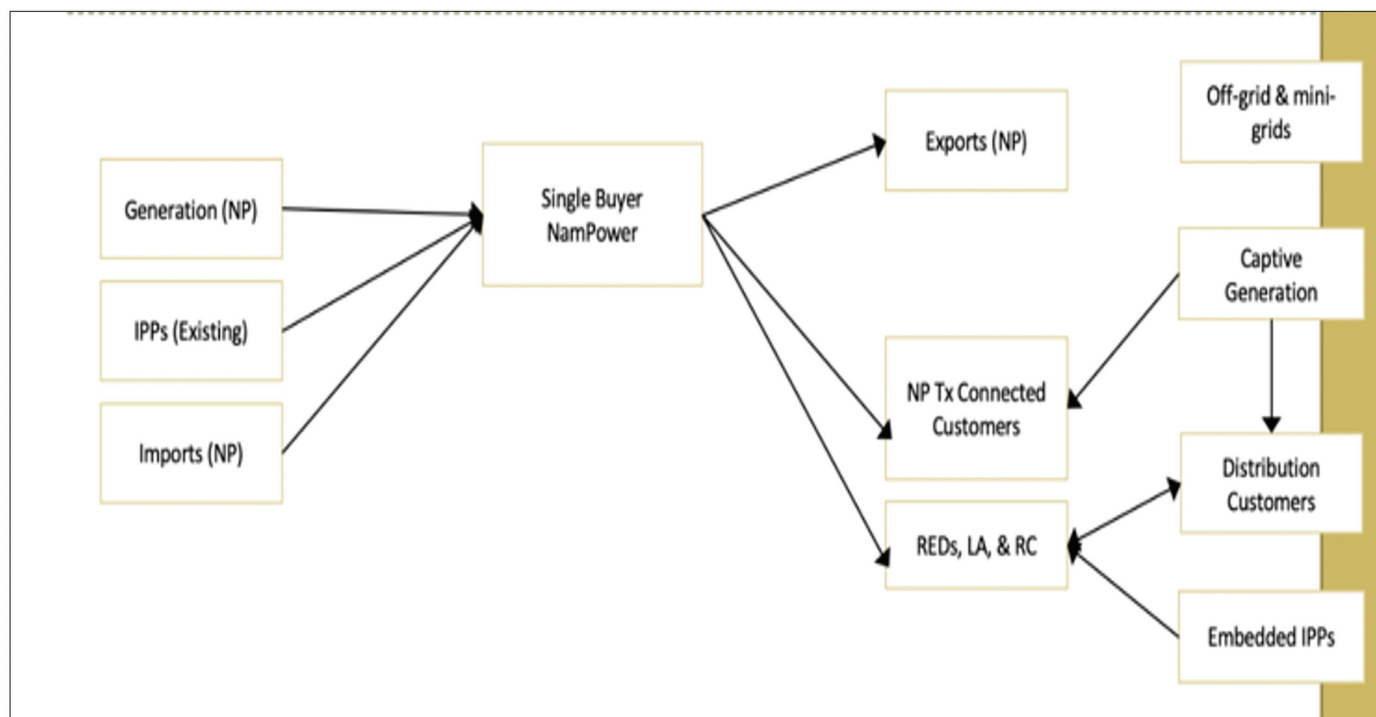
In promoting private sector participation in the RE sector, streamlining financing to ensure bankability of projects and risk mitigation should remain at center stage.

## Innovative Market Structures to Avert Impact of COVID-19 on the RE Sector

When new market space is needed to attract and regulate private investment for RE and energy transition, the electricity market structure will require adjustment. It is also important to adapt market frameworks according to national characteristics and needs.

In July 2021, Namibia rolled out a new phase of an innovative electricity market structure under the phased Namibia Modified Single-buyer (MSB) model. The MSB builds on the existing single-buyer model shown in Figure 2 but allows transmission consumers and private generators to transact directly.

**Figure 2: Original Single-buyer Model Market Structure**



Source: Electricity Control Board of Namibia, 2021.

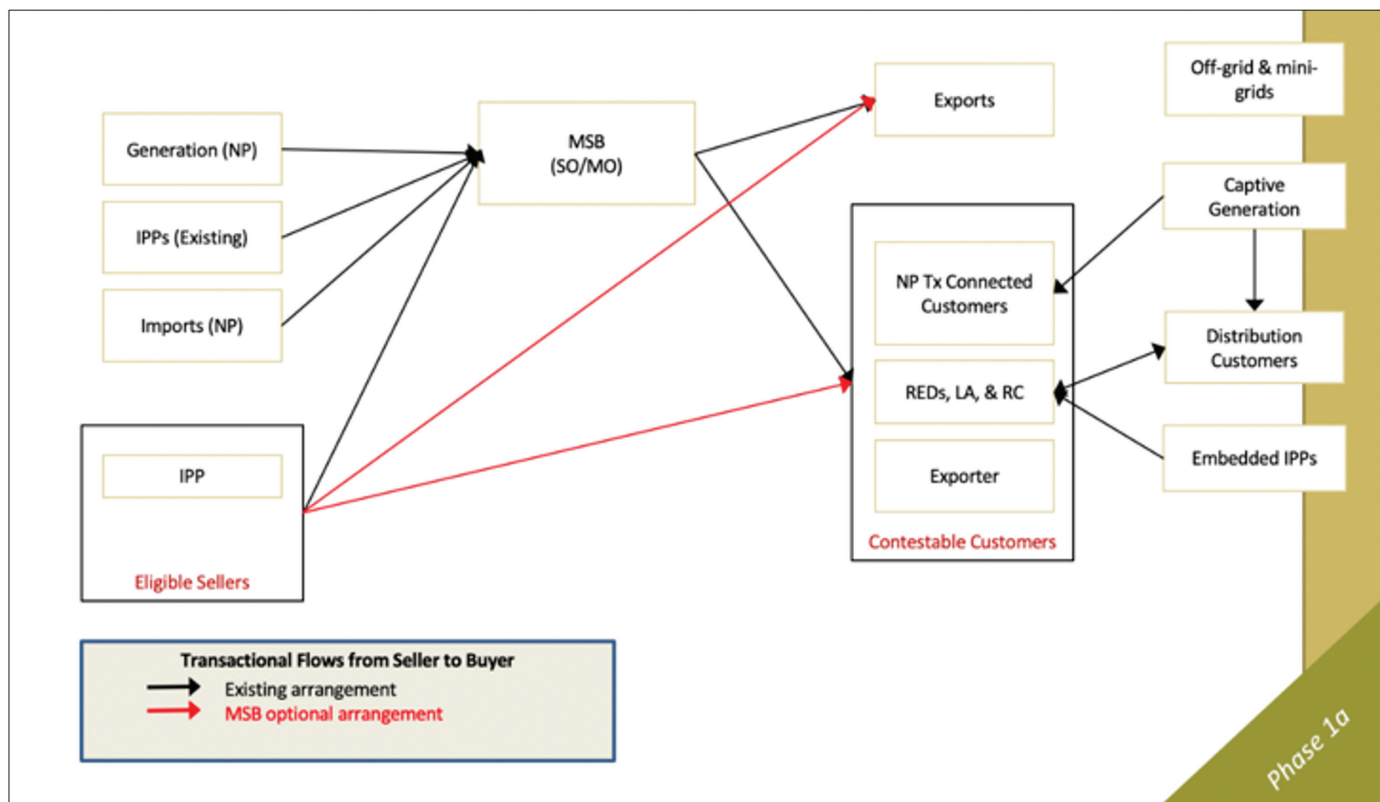
The model is a customized market platform based on international best practices, and it addresses challenges in the previous single-buyer model, like the constraints of a monopoly electricity market structure, slow decision making and reliance on imports. However, the new model does not extend to unbundling or privatizing existing entities.

Under the new model, at least 30 percent of the target sales volume will be supplied by private transmission players through the contestable market. NamPower, as the national utility, remains the supplier of last resort. The model ensures that all commitments are met through the balancing mechanism and wheeling framework, with the utility bearing the cost of deviation. The platform aims to make Namibia an energy self-sufficient country and to create capacity to trade electricity on the SAPP, thus promoting regional integration.

The MSB model operates under a phased approach. Phase 1a (Figure 3) and Phase 1b (Figure 4) were introduced between September 2019 and 2020 and in July 2021, respectively. Phase 1a comprises generators which have now been migrated to the MSB model. Phase 1b incorporates distribution customers who will be migrated to Phase 2, allowing private players to import power. The new market structure will enable electricity distributors to procure their own energy and customers who opt to generate or procure their own energy will have access to the transmission and distribution network at a fee.

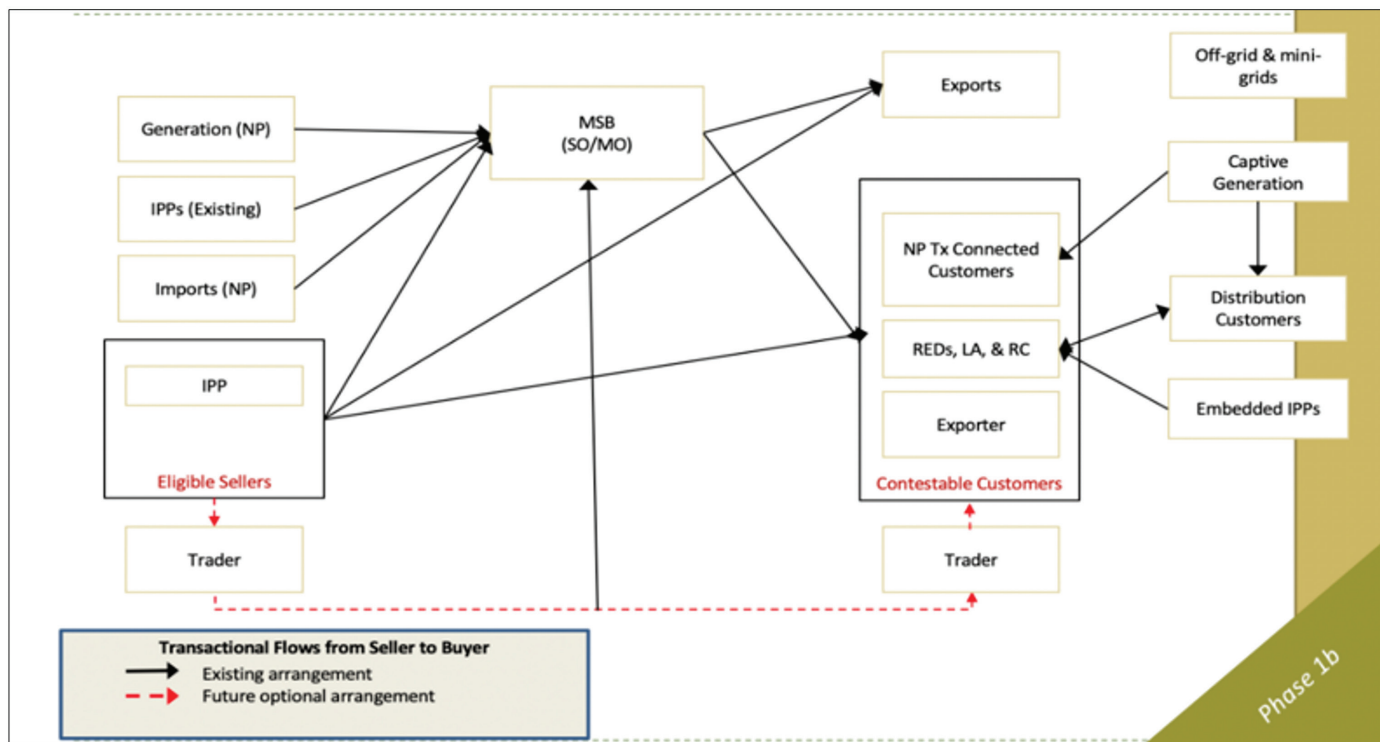
An IPP has three options—namely, selling power to the MSB, selling it to customers and exporting. Through the new model, IPPs have access to both the distribution and transmission networks and can unlock 400MW of PV capacity that could not otherwise have been provided by the utility.

Figure 3: Current Modified Single-buyer Model Market Structure (Phase 1a)



Source: Electricity Control Board of Namibia, 2021.

Figure 4: Modified Single-buyer Model Market Structure (Phase 1b)



Source: Electricity Control Board of Namibia, 2021.

The phased approach is intended to enhance implementation with risk management interventions while allowing for industry to both take control of the process and build staff capacity for all key institutions.

Namibia's MSB model is transitioning and is mainly driven by the need to encourage private sector investment through IPPs; reduce funding commitments by the Government of Namibia; accelerate the development of national resources to become more self-sufficient; diversify the energy mix; ensure affordability through new technologies and increased competition; and eliminate the conflict of interest inherent in NamPower, being both a monopoly generator and a transmission entity for electricity.

The MSB's measures of success are energy availability with tariff containment and affordability, improved self-sufficiency, reduced funding burden for the government, increased private sector investment, diversified energy mix and competition and choice with the resulting improvements in efficiency.

With clear commitment by the regulator to create an efficient market that could allow entry by other players, the country has already seen around 154MW from PV installed by IPPs. Namibia also sees opportunity in tapping into the SAPP market and supplying the region, taking advantage of its own high solar irradiation levels.

The migration of the Namibia energy sector from a single-buyer model to an MSB model is an innovation that could be modified to suit local characteristics of other countries in the region. The MSB model is aligned to Namibia's national development plans and its energy policy, as well as IPP policy and was specifically designed in accordance with the principles of fairness, efficiency, simplicity and ease of implementation. One of its main features is that it will enable and promote development plans specifically for export.

## Conclusion and Policy Recommendations

The COVID-19 lockdown has been disruptive to the energy sector and its impact has been felt across the entire electricity value chain—at the utility, national and regional levels and in the development finance space. However, the magnitude of the impact varied across stakeholders. Electricity demand and consumption was quite sensitive to the lockdown restrictions. Response to policy initiatives designed to stimulate private sector uptake of RE projects was delayed and project development and implementation activities were impacted, the latter particularly in the development of RE capacity.

### **Key recommendations:**

- The policy and regulatory environment remains a major challenge and there is evidence that an enabling environment could unlock private sector investment in the RE sector, helping the SADC region reach its 2040 target of a 53 percent contribution of RE to the power mix. Power sector master plans or integrated resource plans would need to be revised to reflect an accelerated transition to RE in line with that target.
- Governments need to introduce fiscal incentives which include the waiver of duties and taxes on energy efficiency and RE products as a medium- to long-term intervention to increase the adoption of RE technologies and a transition to a sustainable energy future.
- Further promotion of more active private sector participation is critical in attaining the 2040 RE target.



- It is important to redesign market structures and frameworks to attract the private sector. The Namibian MSB model could be customized to local market conditions to accelerate the region's use of RE.
- Regional integration needs to be strengthened to increase security of supply and to mitigate supply shocks. An integrated market will require more variable RE capacity.
- Innovation and faster adoption of smart grids to manage power systems remotely for activities, such as meter reading, which were restricted during COVID-19 lockdowns should be prioritized.
- Additional innovative financing models and policy and regulatory frameworks should be designed to achieve the 2040 RE target.
- Transition to cost-reflective tariffs remains critical to attract private sector investment.
- There is a need to develop financial models that absorb high transaction costs and that de-risk projects while striking a balance with the expected high rate of return for investment.

According to the earlier report by SACREEE, CHR, the GDP Center and others, an estimated \$52.8 billion in investment will be required to meet the 2040 target of 53 percent contribution from renewables. As this workshop discussion showed, there are several financing players on the market to mobilize resources and, with the right policy and regulatory environment, the target is attainable.



# SADC'S DEBT CONUNDRUM AND ITS IMPACT ON FINANCING THE REGION'S RENEWABLE ENERGY TRANSITION – CHALLENGES AND OPPORTUNITIES

PREPARED BY THE INTERNATIONAL DEVELOPMENT LAW UNIT OF THE CENTRE FOR HUMAN RIGHTS, UNIVERSITY OF PRETORIA

## Introduction

This policy brief is the second of a three-part series based on three workshops on the role of DFIs active in the SADC region in a shift toward more RE in the region amidst looming debt distress and economic downturns. The views in this brief are based on ideas shared by experts and workshop participants in a private workshop hosted by the International Development Law Unit of the Centre for Human Rights. Experts from the energy, financial and legal sectors shared their ideas.

The first policy brief in the series, by SACREEE assessed the impact of the COVID-19 pandemic on the SADC's RE sector and noted the disruptive impact across the region's entire electricity value chain. Flowing from that initial assessment, this policy brief focuses on the economic impacts of the pandemic; in particular, on financial issues including sovereign debt distress and the changing priorities of financial institutions. The brief is also forward-looking, attempting to lay the groundwork for a discussion of possible solutions. In exploring this broad topic, the brief responds to the following enquiries that guided the workshop:

1. To what extent are the current debt constraints/financing gaps caused by the COVID-19 pandemic affecting financing of RE sector projects?
2. How can SADC countries make the best use of domestic and international sources to finance RE projects? How can they manage the key risks of each of these sources?
3. What are some of the creative financing mechanisms SADC countries can use to finance RE projects?
4. What role can or should the private sector play in filling the financing gap for RE projects?

This brief is divided into three sections: the first (above) briefly places the SADC's RE situation in context, the second addresses the questions listed above and the third offers policy recommendations.

## Addressing Four Fundamental Questions on COVID-19, the Sovereign Debt Crisis and RE Financing

Despite some progress in the energy sector, access to reliable, affordable and clean energy is still among the significant challenges in SADC countries, especially with vulnerable rural communities.

The ever-growing need for access to electricity and the twin need for a transition to renewable energy require not only technical solutions, but also financial ones. The first policy brief demonstrated that electrifying the region is a major challenge and that transitioning to RE will require significant financing.

Meanwhile, the need to fill the region's electricity deficit—and to do so with clean energy—is only one of many development objectives for SADC countries. Other priorities include the fight against poverty, the broader need for infrastructure development, unemployment and now the fight against the COVID-19 pandemic and the social, health and economic crises it has caused. The pandemic has undoubtedly slowed the region's development plans. Further, it has major debt implications. With the region's competing priorities and limited government financial resources, it becomes more difficult—but still essential—to find the resources for financing RE projects. This was a key topic during the workshop.

#### TO WHAT EXTENT ARE THE CURRENT DEBT CONSTRAINTS/FINANCING GAPS CAUSED BY THE COVID-19 PANDEMIC AFFECTING THE FINANCING OF RE PROJECTS?

The pandemic has caused constraints in the public finances of Africa broadly and in the SADC region, in particular. Some SADC countries have experienced declines in national revenues due to declining exports and shrinking national economies, while others are struggling with unsustainable debt and, in some cases, sovereign downgrades. The fiscal and public debt impacts, however, vary with a given country's fiscal health. Some SADC countries were already battling with mounting public debt before the pandemic and had already substantially exceeded debt-to-GDP levels of 60 percent. It is anticipated that debt levels will only grow as a result of the pandemic. Zambia, whose debt was considered unsustainable even before the pandemic, was the first African country to default on a debt repayment in 2020 (African Development Bank, 2021).<sup>3</sup> In November 2020, South Africa's long-term foreign-currency and local-currency issuer ratings were downgraded from Ba1 to Ba2 (Moody's, 2020). Other countries, including Mozambique and Angola, have been showing signs of potential debt distress with troubling debt figures. The region's weak debt and fiscal health will undoubtedly put pressure on some sectors, including RE.

Despite the evident debt constraints caused by the pandemic and their impact on the RE sector, the presenters at the workshop agreed that bankable, well-structured and financially viable projects may still attract the requisite financing. For example, South African commercial banks are still well capitalized and have sufficient liquidity and appetite for bankable RE assets. They also have mandates to add more investments in the RE sector, in line with their new sustainable growth priorities.

Workshop speakers observed that projects already underway have mostly proceeded without interruption. One reason is that infrastructure project developers providing equity tend to take a very long view and have therefore continued with those already under development. In addition, there still seems to be interest on the part of financiers and equity investors in exploring new opportunities.<sup>4</sup>

Workshop participants observed that the impact of the current debt constraints caused by COVID-19 on RE project financing and deal flow seems to be more indirect than direct, mostly affecting the financial strength of the projects' off-takers. In Africa, off-takers' creditworthiness was a challenge

<sup>3</sup> Zambia defaulted on a Eurobonds payment on November 13, 2020 (African Development Bank, 2021).

<sup>4</sup> In South Africa, for instance, efforts were made in 2021 to ensure renewed investment in the RE sector despite evident economic constraints in the country. In June 2021, the President of South Africa announced the amendment of Schedule 2 of the Electricity Regulation Act to increase the National Energy Regulator of South Africa licensing threshold for embedded generation projects from 1 MW to 100 MW (Ramaphosa, 2021).

even before the pandemic, but the risk may have been exacerbated by the economic impact of COVID-19. Thus, a major indirect debt-related impact on renewable energy projects is the heightened risk of electricity tariff increases. The potentially heightened off-taker risks may, in turn, make financial institutions (commercial or multilateral) a bit more conservative in assessing a project's risk profile.

#### HOW CAN THE SADC COUNTRIES MAKE THE BEST USE OF DOMESTIC AND INTERNATIONAL SOURCES TO FINANCE RE PROJECTS? HOW CAN THEY MANAGE THE KEY RISKS OF EACH OF THESE SECTORS?

Workshop presenters noted that most RE generation projects follow the project finance structure model.<sup>5</sup> This financing technique depends on projected earnings over the life of the project, which depend in turn on the financial strength of the project off-takers. SADC governments therefore need to provide an enabling environment and to demonstrate off-takers' creditworthiness for their RE projects to be bankable. If off-takers' creditworthiness is insufficient, they will need to be supported by a guarantee from the national treasury, a multilateral development bank or political risk insurance. Workshop presenters also noted that there are various multilateral development banks (MDBs), bilateral DFIs and political risk insurers, in both the public and private sectors, that can provide this support.<sup>6</sup>

On the debt component of project financing, experts in the workshop pointed out that, generally, 65 to 80 percent of a project's capital cost is funded with long-term project debt. The question then is how to optimize the domestic and international funding mix during the COVID-19 era when financial institutions may be more conservative in assessing the risk profiles of RE projects. Workshop presenters worried that many power purchase agreements in the SADC region are denominated in foreign currency (especially US dollars), creating currency risks which, during the pandemic, have made it harder for countries in the region to repay foreign currency debts. Structuring the funding arrangements of RE projects to achieve a good mix between foreign currency and local debt requires the additional participation of local banks. The optimum funding mix will depend on the liquidity of financial institutions in a given country and their risk appetites. This raises further questions on the local capacity of long-term funding in SADC countries and the maturity of the financing that local and regional banks in those countries can provide.

#### WHAT ARE SOME OF THE CREATIVE FINANCING MECHANISMS THAT SADC COUNTRIES CAN USE TO FINANCE RE PROJECTS?

Despite the undeniable debt impacts of the COVID-19 pandemic, the region still has potential to attract financing for RE projects. In fact, structuring and optimizing the funding mixes for these projects will often assign a key role to DFIs. Although DFIs and commercial banks have different mandates, both have a role in funding a low-carbon economy and funding bankable projects. Beyond debt financing, grants and credit enhancement, there are other creative mechanisms that may be used.

These alternatives include "put option agreements" as a tool to enhance the creditworthiness of off-takers. In one example given during the workshop, a project in West Africa secured the monthly payments for power with a letter of credit. If non-payments fully depleted the letter of credit, the power

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<sup>5</sup> Project finance is a form of non-recourse financing. The World Bank notes that "off-balance-sheet financing of the project . . . will not affect the credit of the shareholders or the government contracting authority, and shifts some of the project risk to the lenders in exchange for which the lenders obtain a higher margin than for normal corporate lending" (World Bank, 2022).

<sup>6</sup> The role of the multilateral development banks with respect to credit enhancement will be addressed in more detail in the final policy brief in this series.

purchase agreement could be terminated, which would involve a termination payment sufficient to repay project debts and compensate the equity investors. If that project ran into difficulty, the lenders would depend on that termination payment to recover their loans. Lenders wanted this termination payment to be guaranteed by the Treasury, which was unwilling to do so. The resulting impasse was resolved by including a put-call option agreement so that if the termination conditions are met, the sponsor can put the project to the government, which would be obligated to purchase it. Note that the economics of the put-call option agreement do not necessarily vary from the economics of the alternative (a sovereign guarantee arrangement), but characterizing it differently made all the difference in terms of the political perception of the project in the eyes of the government and the International Monetary Fund (IMF).

Another increasingly explored option is to relax the public utility's monopoly in intermediating between the power producer, the power purchaser and other retail customers. This would be done through a so-called corporate power purchase agreement, by which a project concludes a direct sales contract with a creditworthy commercial off-taker, such as a manufacturing firm or a mine. Note, however, that this option is not without controversy, because it could remove a well-paying customer from the public utility's customer base. However, this option is becoming increasingly popular in the United States and Latin America and may offer a way to tackle the challenge of public creditworthiness in the SADC region.<sup>7</sup>

#### WHAT ROLE CAN OR SHOULD THE PRIVATE SECTOR PLAY IN FILLING THE FINANCING GAP IN RE PROJECTS?

The question of the role of the private sector in infrastructure was a controversial one at the workshop, as some—but certainly not all—saw it as insinuating that the private sector has a “duty” in infrastructure development. However, one presenter noted that, generally, it is the role of government to identify projects, ensure early stage RE projects have the appropriate funding mechanisms and get them to a point at which they reach financial close and commissioning.

One way to answer this question of the private sector's role is to go back to the primary objective of the private sector—profit-making. As such, development activities such as buildout of energy infrastructure in poor regions have not been seen as a historical responsibility for the private sector. This again raises the issue of the identification, preparation and development of bankable projects to attract project finance and other forms of financing. DFIs can play a role in delivering both financial and technical assistance on project identification and preparation to generate bankable projects. The role of DFIs is discussed further in the third policy brief of this series. With bankable projects, governments in the region can tap into the capital and technology of the private sector, as well as its project construction, operation and maintenance expertise. The capacity of the private sector to lead power generation into a clean energy future is well demonstrated around the world, with the appropriate government policies and support, including supportive regulatory reforms.

### Conclusion and Policy Recommendations

Electrifying SADC countries with clean energy from renewable sources is among the region's top priorities. This inevitably leads to the question of how to finance projects. The COVID-19 pandemic affected the ability of countries to repay their debts and made it more necessary to closely scrutinize

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<sup>7</sup> For a discussion on the potential of a modified single-buyer model to alleviate some of the challenges in the sector, see the first policy paper.

the accumulation of more debt. This policy brief sought to explore the effect of the region's pandemic-altered debt landscape on financing RE projects. This brief also contributes to the exploration of options in the sector. From the discussion, the following conclusions and recommendations emerged:

- While COVID-19 has affected SADC's debt landscape, with respect to both sovereign and corporate debt, there is still interest in and potential financing for bankable projects. However, the pandemic may change the way financiers view such projects' risks.
- It is unclear whether or not COVID-19's adverse impacts on the debt landscape and on the RE sector are underestimated. Thus, while bankability remains a key component that makes projects attractive, a country's debt landscape and political risk are also important. As a country's debt increases, so does the need for projects to adequately address these risks.
- The workshop revealed the need to further explore creative financing techniques. While the workshop touched on various financing options, there are additional creative mechanisms, such as private sector financing to supplement gaps in financing.
- While creative financing mechanisms should be sought, they should be used judiciously to ensure value for money. It is also critical that projects be designed to promote transparency, accountability and inclusiveness.

While workshop discussion of the debt conundrum focused on how to better leverage private and equity investment, this policy brief has shown that if the debt issue is not addressed, credit and currency risks might drive up the cost of capital, affect long-term returns and eventually undermine private investment. The workshop discussion raised additional questions about how to transcend the current Debt Sustainability Framework led by the IMF and the World Bank<sup>8</sup> and how DFIs could play a role in debt relief, a topic discussed in the third policy brief.

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<sup>8</sup> Specific policies to address this topic include incorporating public assets into the measurement of debt sustainability (Boston University Global Development Policy Center, 2022) and linking debt relief with green and inclusive recovery through guarantee facilities (Volz et al., 2020).





# THE ROLE OF DEVELOPMENT FINANCE INSTITUTIONS IN FINANCING RENEWABLE ENERGY IN THE COVID-19 ERA

PREPARED BY THE BOSTON UNIVERSITY GLOBAL DEVELOPMENT POLICY CENTER

## Introduction

This is the third and final policy brief of a three-part series examining the role of DFIs in developing and scaling up the RE sector in the SADC region in the aftermath of the COVID-19 pandemic and its debt-related and sector-related impacts. This series builds on a 2020 study of the extent to which various DFIs were financing RE in SADC countries, the impediments to a clean energy transition and strategies to overcome them (Boston University Global Development Policy Center, 2020).

The pandemic's impact on the energy sector necessitates engaging with the subject of SADC's energy transition in the current fast-changing debt, fiscal and sectoral landscape. It also necessitates exploring the role of DFIs in financing the region's energy transition in the context of COVID-19. The first policy brief therefore examined the effects of the pandemic on the SADC energy sector. The second explored SADC's debt conundrum and its impact on financing the region's RE transition. This policy brief focuses on the role of DFIs in RE financing and the innovations they are introducing to operate in this new environment. The three policy briefs share the findings and insights from a series of three private, virtual seminars conducted over the second half of 2021. The presentations in the third workshop of the present series, made by experts from the leading DFIs active in the SADC region and from an academic institution researching this issue, explored the following questions:

1. What is the current state of DFIs in the SADC energy sector? How does it compare with pre-pandemic performance?
2. What are the main problems in financing clean energy in SADC countries? What are DFIs doing to solve these problems and scale up RE investment?
3. Within DFIs, what are some lessons learned and plans/suggestions going forward in scaling up RE investment? What must governments, the private sector, other international organizations and other entities aside from DFIs do for this scaling to be accomplished?

## WHAT IS THE CURRENT STATE OF DFIs IN THE SADC ENERGY SECTOR? HOW DOES IT COMPARE WITH PRE-PANDEMIC PERFORMANCE?

The transition to RE has gained momentum in SADC. Based on the Southern African Pool Plan of 2017's high-renewables scenario, SADC countries may achieve a 53 percent share of RE in the regional generation mix by 2040. It has been estimated that to meet this ambitious target, SADC countries would need to add 60.7 gigawatts (GW) of RE installed capacity, or 2.8 GW per year to 2040 (Muñoz

et al. 2020). Achieving these ambitious targets will require prioritizing RE projects and the significant mobilization of resources to finance them. SADC countries have increased their reliance on debt to mobilize resources for crisis recovery and resilience. Development and scale-up of the RE sector in SADC countries also requires mobilizing resources and developing new industries that can absorb labor from transitioning fossil fuel industries and tackle any broader macro-economic and livelihood implications of the transition to clean energy.

The pandemic has worsened an already difficult debt landscape. While it is hoped that countries will meet the target of 53 percent renewable energy capacity by 2040, the pandemic has had a devastating impact on the SADC region and its energy sector. The effect of the pandemic on the energy sector has been highlighted in the first policy brief and the debt impact discussed in second policy brief in this report. SADC countries have experienced an erosion of their fiscal space and a decline in revenue sources and have become heavily indebted. In 2020, the sub-Saharan region's economic growth improved from an initial hit from the pandemic, but still lagged projections—GDP had been projected to increase from -1.7 percent in 2020 to 3.7 percent in 2021, versus an average increase of 6.4 percent in emerging markets and developing countries over the same year (IMF, 2021).

The dwindling government fiscal spaces that SADC countries find themselves in and the growing debt burdens and declining revenue sources put DFIs at the center of raising financial resources to support national efforts at recovery and meeting the region's energy targets. Recent years have seen steps in sub-Saharan Africa to revitalize, re-mandate, recapitalize and restructure national DFIs, including restructuring the TIB [Tanzania Investment Bank] Development Bank and the Lesotho National Development Corporation and recapitalization of the Infrastructure Development Bank of Zimbabwe. These national DFIs may also play a more significant role in increasing RE sector investment if they undergo sufficient reform to strengthen them to play an intermediary role with international DFIs and MDBs in mobilizing resources to finance RE projects.

Local DFIs in the region have also been affected by COVID-19, which may affect their capacity to extend the financing for projects, including RE projects. Substantial investments will be needed to meet the region's growing energy needs.

The primary and conventional role of DFIs operating in the region is raising resources. One crucial mechanism is the SADC Protocol on Finance and Investment, which establishes a DFI Network to pool resources from within and outside the region to finance development projects (SADC, 2006). Historically, MDBs and DFIs have provided direct loans and co-financing for individual projects; they are also becoming more involved in de-risking projects (including project preparation) and credit enhancement.

#### WHAT ARE THE MAIN PROBLEMS OF FINANCING CLEAN ENERGY IN SADC COUNTRIES? WHAT ARE DFIs DOING TO SOLVE THOSE PROBLEMS AND SCALE UP RE INVESTMENT?

Financing clean energy in SADC countries has raised various concerns about the financial and fiscal landscape and enabling environment (including the legal and regulatory environments).

First is the prevalence of underdeveloped capital markets and low savings ratios. The state of the region's capital markets hinders DFIs from raising resources on the domestic markets. However, the region's more developed capital markets (for instance, South Africa, and, to a lesser extent, Zimbabwe and Mauritius) may allow DFIs to mobilize resources; for instance, by floating green bonds. However, these may require government support, in the form of guarantees, to lower the cost of borrowing and to promote the instruments' tradability if the fiscal space allows. In 2019, the New Development Bank

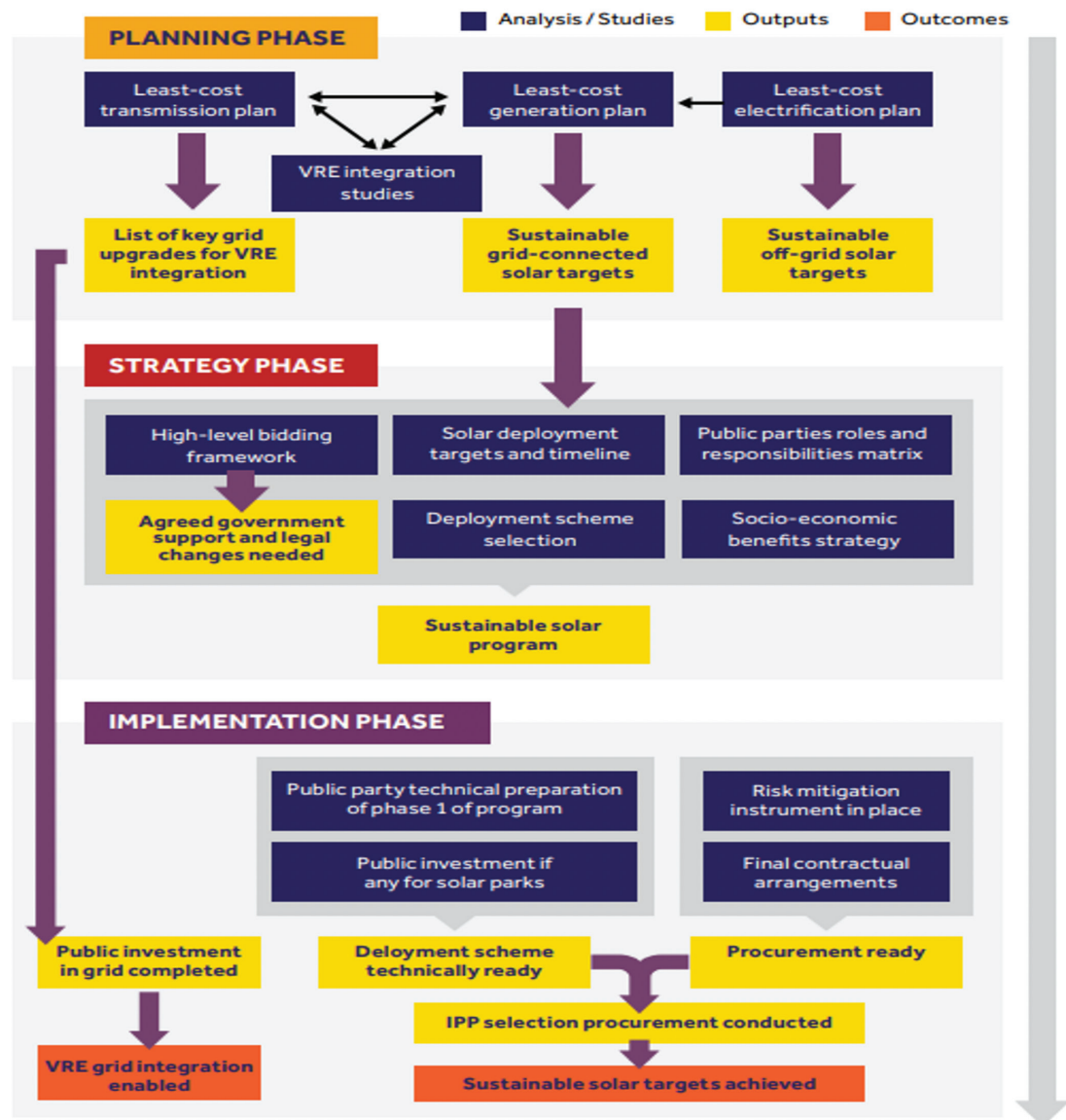
(NDB) debuted a South African rand (ZAR) bond program with a maximum size of ZAR 10 billion (around \$620 million) and with unlimited validity (NDB, 2019). Although the program has been listed on the Johannesburg Stock Exchange, it has thus far not raised any financing, due to adverse pricing. Mobilizing resources from capital markets, which DFIs like the NDB are exploring, also addresses the concern about financing projects in foreign currency that carries a foreign currency risk. However, weaker capital markets hinder local currency financing, as is evident from the high cost of raising local finance even in the South African market. Local currency financing may also be more sustainable for funding small-scale projects. In this respect, tapping into local institutional investors—such as pension funds, sovereign wealth funds and insurance companies—offers an opportunity to catalyze more private investment. Pension funds may play an important role here, having already been a primary source of long-term finance in the region.

Another major challenge in financing RE projects is the enabling environment, including the legal and regulatory frameworks, which may not be conducive enough to enable sufficient private sector participation. Many African countries, including those in the SADC region, are plagued with a weak enabling environment, an absence of open and competitive project procurement and lack of access to risk mitigation coverage, especially for off-taker risks. These concerns are related to the ongoing technical challenges of integrating RE into the electricity grid. Taken together, these challenges hinder the identification and development of pipelines of bankable projects. The World Bank and other DFIs have responded by launching the Sustainable Renewables Risk Mitigation Initiative (SRMI), which provides a comprehensive and integrated support approach so governments can harness RE resources by unlocking private sector investments and optimizing risk mitigation to attract private finance and maximize the socio-economic benefits of RE projects (World Bank, 2019b). Figure 5 below highlights the process applied in the SRMI. This integrated support includes upstream and downstream technical assistance and the provision of climate finance for critical public investment and risk mitigation coverage. The SRMI Facility (Phase 1), funded by the Green Climate Fund, targets (among others) three SADC countries (Botswana, Democratic Republic of Congo (DRC) and Namibia). In the DRC, for instance, the SRMI approach is being used to develop a large-scale solar/battery mini-grid public-private partnership project of 100 MW and 140-megawatts per hour (MWh) of storage to connect an estimated 1.5 million people. The project seeks to mobilize resources, enhance grid infrastructure and resilience, provide comprehensive technical assistance and make use of tailored risk mitigation from demand risk on earlier years of the project through a reimbursable fund (Green Climate Fund, 2021).

According to the funding proposal, the scope of the SRMI project in Botswana comprises (a) a park with shared infrastructure for 200 MW of CSP and 100 MW of wind, variable RE integration, grid upgrades including 50 MWh of storage and electrification for an estimated 600,000 people and (b) a risk mitigation instrument covering liquidity/termination for private investors competitively selected for the CSP and/or wind projects (World Bank, 2019b). The SRMI Facility is used in Namibia to provide electricity for an estimated 1 million people. The project entails developing park shared infrastructure for 200 MW of CSP and 200 MW of wind and measures for integrating these variable electricity sources, including energy storage capacity. The Botswana and Namibia SRMI Facilities specifically highlight the provision of risk mitigation instruments to cover liquidity and termination for private investors (World Bank, 2019b).

The final major challenge is that projects fail to attract investment because they are poorly structured and packaged for bankability. DFIs can provide technical assistance and capacity development in the preparation, evaluation and structuring of high-quality RE projects and can help mitigate their real and perceived risks. These measures, in turn, can catalyze private sector investment. DFIs can and should also play an advisory role in developing national strategies and policies.

Figure 5: Sustainable Renewables Risk Mitigation Initiative Process Framework



Source: World Bank, 2019a.

## Conclusion and Recommendations

Access to clean, reliable, affordable and available electricity in SADC countries is critical for the region’s development and socio-economic growth. This requires pooling technical and financial resources to address the massive investment gaps. However, it is also an opportunity to explore innovative approaches to financing, de-risking and improving the overall development impact of projects; a role for which DFIs are well suited. This policy brief therefore makes several recommendations on the role of both international and national DFIs in mobilizing finance in the RE sector in SADC countries:

- The RE sector in SADC countries faces significant financing gaps that DFIs should fill, which can be done by direct investment and by developing instruments to de-risk projects—such as guarantees for RE projects—to address credit risks, currency risks and so on.

- To fill the financing gap in the RE sector, DFIs are well placed to mobilize and catalyze private resources; for example, through support for mechanisms to enhance the enabling environment to better leverage private investment.
- Pre-investment support is needed to identify, prepare and develop bankable projects. DFIs should play a leading role in providing technical support and capacity building (on the development of project business cases, project identification, preparation and procurement) to increase the pool of bankable projects in the SADC region.
- To mobilize resources for RE projects, DFIs should explore local financing options that leverage the capacity of local institutional partners, such as pension funds and insurance companies.
- In past years, national DFIs have undergone reforms, restructurings and recapitalizations to become more efficient. This presents an opportunity for greater cooperation and collaborations, as these DFIs can now act as intermediaries to larger international DFIs and MDBs.
- Increase investment in small-scale RE projects to enhance energy access and energy security.
- Enhance project surveillance and monitoring in the SADC region. DFIs operating in the region should develop a robust database of DFI-funded projects, including RE projects, which will help monitor project implementation and performance. The database could be managed by the SADC Development Finance Resource Centre.

## CONCLUSION

Access to clean, reliable, affordable and available electricity in SADC countries is critical for the region's development and socio-economic growth. The COVID-19 pandemic has had major effects on the energy sector in the SADC region, with repercussions for financing for renewable energy. As the first policy brief has shown, these disruptions have varied across different stakeholders. Renewable energy projects could not fully benefit from policy initiatives designed to stimulate private sector engagement, and overall, RE project development and implementation were slowed. In addition, ongoing debt challenges in SADC countries could drive up the cost of capital and undermine private investment. However, taken together, these policy briefs highlight ways to enhance the SADC policy and regulatory environment and encourage further engagement by DFIs, in order to keep RE development on track to meet the target of 53 percent renewable energy generation by 2040.

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# APPENDIX

**Table A1: Policy Workshop Guiding Questions**

Policy Workshop	Guiding Questions
<b>Policy Workshop 1</b> COVID-19 Impact on the SADC Energy Sector	i. Is SADC on track for the 53 percent renewable energy target by 2040? What challenges could affect the attainment of the target?
	ii. What is the impact of COVID-19, if any, on the attainment of the 53 percent target?
	iii. How has COVID-19 affected development finance in the power sector? How can DFIs accelerate RE financing to reach the 53 percent RE target by 2040?
	iv. Have the funding targets and funding policies been revised to address any challenges presented by the pandemic?
	v. To what extent has the COVID-19 pandemic affected utility licensees and the consumers?
	vi. What measures have regulatory institutions put in place to mitigate this impact?
	vii. What innovative instruments can regulators provide to the power sector to attain the 53 percent RE target by 2040?
<b>Policy Workshop 2</b> SADC's Debt Conundrum and Its Impact on Financing the Region's Renewable Energy Transition: Challenges and Opportunities	i. To what extent are the current debt constraints/financing gaps caused by the COVID-19 pandemic affecting financing of RE sector projects?
	ii. How can the SADC countries make the best use of domestic and international sources to finance RE projects? How can they manage the key risks of each of these sources?
	iii. What are some of the creative financing mechanisms that SADC countries can use to finance RE projects?
	iv. What role can or should the private sector play in filling the financing gap for RE projects?
<b>Policy Workshop 3</b> The Role of DFIs in Financing Renewable Energy in the COVID-19 Era	i. What is the current state of DFIs in the SADC's energy sector? How does it compare with pre-pandemic performance?
	ii. What are the main problems in financing clean energy in SADC countries?
	iii. What are DFIs doing to solve those problems and scale up RE investment?
	iv. Within DFIs, what are some lessons learned and plans/suggestions going forward in scaling up RE investment?

Source: Authors' elaboration.

