ENERGY SERVICE COMPANY (ESCO) MARKET DEVELOPMENT IN SOUTH AFRICA

ASSESSMENT OF INNOVATIVE INSTITUTIONAL AND FINANCING STRUCTURES AND ASSOCIATED MECHANISMS TO SUPPORT THE DEVELOPMENT OF THE ESCO INDUSTRY

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Enabling Infrastructure Investment

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ABBREVIATIONS

DMRE	Department of Mineral Resources and Energy
DPWI	Department of Public Works and Infrastructure
DSI	Department of Science and Innovation
EA	Energy audit
ESG	Environmental, social, and governance
EE	Energy efficiency
EPC	Energy performance contracting/contract
ESCO	Energy service company
GHG	Greenhouse gas
HVAC	Heating, ventilation, and air conditioning
NCPC-SA	National Cleaner Production Centre of South Africa
NEES	National Energy Efficiency Strategy
PPIAF	Public-Private Infrastructure Advisory Facility
PSEE	Private Sector Energy Efficiency Programme
SA	South Africa
SAEEC	Southern African Energy Efficiency Confederation
SANAS	South African National Accreditation System
SANEDI	South African National Energy Development Institute
SAPVIA	South African Photovoltaic Industry Association
KPI	Key performance indicator
SEFA	Small Enterprise Financing Agency
MSME	Micro, small, and medium enterprises
BgEEF	Bulgarian Energy Efficiency Fund
PV	Photovoltaic
DBSA	Development Bank of Southern Africa
GCF	Green Climate Fund
CIF	Climate Investment Funds
UNFCCC	United Nations Framework Convention on Climate Change
ITMO	Internationally Transferred Mitigation Outcomes
EEPBIP	Energy Efficiency in Public Buildings and Infrastructure Programme

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EXECUTIVE SUMMARY

The World Bank, through the Public-Private Infrastructure Advisory Facility (PPIAF), is supporting the DMRE and SANEDI to establish a vibrant energy efficiency (EE) market in South Africa (SA) through the implementation of the activity Development of Sustainable Financing Mechanisms for Demand-Side EE Market Transformation in South Africa. As part of the activity, the World Bank has appointed Econoler in partnership with Carbon Trust through the assignment *Energy Service Company (ESCO) Market Development in South Africa* to identify feasible paths for the development of an ESCO industry in SA to effectively contribute to untapping the large-scale demand-side EE market. This report, prepared as a component of the third deliverable of the assignment, is aimed at identifying a potential new financing structure that can support the expansion of the ESCO industry and EE investments in SA more generally.

Based on consideration of the barriers to EE investment and to ESCOs identified in prior stages of the assignment, the Consultant proposes that a new financing mechanism incorporating financial instruments within a self-sustaining institution would be more effective than the introduction of new financial products in the existing financing market. This report examines a shortlist of financial mechanisms and proposes the establishment of a revolving debt fund as the best instrument to address many of the barriers identified. The fund would be similar in concept to the numerous state level revolving loan funds in the United States and other EE focused debt funds used in emerging economies. Considerations for the design of the fund are outlined with a set of design elements proposed for key fund elements including the organisational structure, ownership and governance, management, funding, business model, financial products, and target market. A simple implementation plan is proposed that could allow the fund to be established and become operational within ±18 months.

INTRODUCTION

This report covers Deliverable 3b under Task 2 of the assignment, this being an analysis of the institutional and financial structuring and operational delivery mechanisms for ESCO-based, large-scale EE implementation, and a recommendation for a new financial mechanism. This report includes:

- An assessment of options for introducing financial and non-financial incentive mechanisms;
- Proposed mechanism to mainstream energy performance contract (EPC) lending; and
- Suggestions on operational aspects as well as institutional and financing structures related to the proposed mechanism.

1 FINANCIAL MECHANISMS TO SUPPORT ENERGY EFFICIENCY AND ENERGY PERFORMANCE CONTRACTING

This report identifies financing mechanisms that can serve to offer solutions to the barriers to energy efficiency (EE) investment and the ESCO sector, as identified in the prior task, and proposes a particular mechanism for consideration.

1.1 Analysis of Options to Address Identified Barriers

The evaluation of suitable financial instruments was based on the barriers analysis carried out in the prior stage of the project (see Appendix I for further detail).

The analysis demonstrated that the barriers to financing ESCOs and EE in South Africa (SA) are not absolute constraints, such as regulatory restrictions, insufficient capital in the SA commercial banking sector, or costs of capital. The main barriers are rather "frictional" barriers slowing and reducing investment activity.

- **On the funding side** (particularly for commercial banks), the barriers can be categorised as factors that **increase risk perceptions, increase transaction costs, and reduce the return on effort** and attractiveness of the sector for internal investment in human resources, products, and systems;
- **On the customer side**, identified barriers have similar **negative impacts on risk perceptions and on transaction costs** that decrease demand for ESCO projects.

Combined, these barriers limit capital availability to ESCOs and consequently the ability of ESCOs to implement projects and increase their scale unless they have access to separate financing sources. High transaction costs also reduce the range of viable smaller projects that ESCOs can implement. There is consequently the need for market participants (ESCOs and end customers) to have easier access to debt and quasi-debt; with access to equity remaining a constraint in some areas. To meet these needs, new financial mechanisms should therefore:

- Include risk removal instruments that address both performance and credit risks;
- Assist ESCOs in building track records and stronger balance sheets over time with a view to removing the need for risk reduction instruments in due course;
- Reduce transaction costs and help to overcome financing barriers for smaller projects;
- Support robust project development (especially for larger projects) to reduce real and perceived implementation risks and create greater incentives for financial institutions (FIs) to invest time and effort in the sector.

Prior sector analyses tend to provide a long list of potential financial instruments as possible solutions. However, consideration of these instruments against the barriers shows that they do not provide a nuanced and useful set of solutions. Simply presented as standalone instruments, they are mainly tools already available to current FIs and seem unlikely to create significant market stimulus unless packaged in a well-adapted delivery mechanism.

1.1.1 Integrated Financial Mechanisms

International experience and the understanding gained from the local market review suggests that, for longer-term market support, institutional interventions are preferred to either package a set of financial instruments into an institutional structure or create long-term programmes that change the operational approach of commercial and development FIs.

An initial focus on four mechanisms arose from this analysis, namely:

- A dedicated revolving debt fund;
- Long-term credit lines;
- A dedicated private equity fund;
- A Super ESCO (addressed in Deliverable 3c).

The focus on these mechanisms does not exclude the development of specific financial products, and, in fact, it is suggested that the proposed mechanisms develop or use one or more of the specific financial instruments noted in Appendix I.

Of these four mechanisms, all except for the Super ESCO have been used in SA for either EE or RE, and those experiences were used to learn lessons from successful interventions and avoid repeating unsuccessful ones. A review of these mechanisms is presented in Appendix II and summarised below.

Credit Lines

A credit line is a pre-agreed upon loan amount provided to a local bank with the requirement that the funds then be on-loaned for specific types of investments. In the case of EE, the funds borrowed by the bank would need to all be on-loaned for EE investments and preferentially energy performance contracting (EPC) projects.

- The advantages of a credit line are that its mandate restriction can force the borrowing bank to focus on and identify targeted clients and investments. Concessional elements, such as lower interest rates or longer tenors, can be built into the loan terms.
- The main disadvantages of credit lines are that the loans made by the local bank will often still be made by the same staff and with the same procedures as well as risk assessment and credit considerations that the bank had in place prior to receiving the credit line. The credit line therefore does not necessarily reorient the intermediary FI toward becoming a specialised EE lender.

The balance between advantages and disadvantages will be determined by the specific design and terms of the credit line.

While a credit line does provide incentives for local FIs to focus on the targeted sector, these incentives can often be low, for example where the bank has sufficient capital to deploy already and sufficient demand for investment in other sectors. This currently appears to be the case in SA since there is a considerable focus on RE within local FI clean energy funding. Interviews with local FIs suggest that credit lines can create disincentives as well, such as time-consuming reporting requirements. Commercial banks also noted that, at times, the eventual cost of capital is not substantially concessional after taking into account foreign exchange and transaction costs.

Credit lines have been used in SA with mixed success. The key lesson learned is that a credit line does not in itself address the underlying limitations of FIs in relation to EE investments. Unless a credit line can also establish simple and fast procedures that are adapted to the needs of the EE market, it is unlikely to have a major impact unless it has substantially below market interest rates after accounting for all transaction costs. Below market rates, however, would pose their own concerns around market distortion.

This suggests that credit lines are not a preferred approach to addressing the main barriers identified. This is not to say that there is no role for dedicated credit lines, and they may well play a useful role in supporting EE and ESCO investments if targeted and designed correctly.

Private EE Equity Fund

A dedicated private EE equity fund would have a ring-fenced mandate to only invest in EE, including EPC projects. A typical structure would be a certain amount of committed funding from investors (typically called limited partners) to be invested within the agreed mandate. The fund would typically be managed by a general partner that would oversee the investment process – notably originating, structuring, and managing investments. Private equity funds are generally established for a defined timeframe, often ten years, and would need to invest in and then to divest from their assets before the end of that period.

- An equity fund has the merit of creating a specialised fund manager and team that are incentivised to source EE investments as well as identify and support ESCOs and similar companies. The provision of equity, in other words higher risk funding, would support ESCOs with limited resources and weak balance sheets to implement projects and allow for the raising of lower risk debt.
- Equity funds are, however, not well suited to address many of the barriers identified. As they provide high risk capital compared to debt, transaction costs are generally high with a focus on fewer, yet larger investments. The nature of equity funding, where each investment has a unique structure and legal agreements, also makes it less likely that an equity fund would help to create standardised contracts that would create market norms and standards.

In addition to the above limitations, an equity fund would likely neither address constraints to the larger ESCO market, since such firms are less constrained by lack of equity, nor address direct EE investments from larger firms that would typically seek debt for such investments. To some degree, equity for ESCOs is already available in the South African market for well-developed projects for which structures have been created to bundle EE and small RE projects into financing vehicles.

An equity fund is also likely to be difficult to structure as a revolving fund with a continuous disbursement of funds because there is often a longer lifecycle for the implementation and return of equity investments.

None of the above reasons are fatal flaws, and there may be a role for an EE-focused private equity fund to support the ESCO and EE investment market. However, such a fund would be less well suited to addressing the identified barriers than a debt fund, as outlined below.

EE Revolving Debt Fund

A dedicated EE debt fund would have a ring-fenced mandate to provide debt and debt-related instruments to EE investments, ESCOs, and projects contracted under EPC arrangements. The fund would have flexibility in the type of financial instruments that it could use and, alongside senior debt, it could provide credit guarantees (in favour of other financiers) and mezzanine finance (in other words, debt that is lower in the order of priority of repayment than main or senior debt). The fund could also be structured to provide support for project development via technical assistance grants or loans for late-stage project development.

- The advantages of a debt fund in terms of addressing identified barriers are flexibility in the scope of lending, including a range of debt or debt-like products suitable for smaller investments and ESCOs as well as larger loans, and the ability to lend to ESCOs or direct corporate loans to clients investing in EE. As with an equity fund, a debt fund could have a specialised manager able to develop a suitably qualified team focused on EE investments and better able to evaluate risk than current FIs. Given the nature of debt instruments, the fund would more likely help establish market standards for the wider EE investment market.
- The disadvantages of a specialised debt fund are that it would not support ESCOs that lack their own equity and those typically smaller ESCOs would still need to raise equity from other sources as required. Depending on the specific design, it would have limited ability to support project development and would rely to a large degree on external parties such as ESCOs or clients to carry out primary project or investment preparation.

As elaborated below, a debt fund could address more of the barriers than other mechanisms and would be well-placed to have a catalytic and multiplier impact on the market, especially if designed as an ongoing revolving fund.

Similar funds have been successful in supporting EE and RE investments in other developed and developing country markets as well as in SA and, consequently, there are good examples from which to draw.

1.2 Use of a Financial Mechanism for Catalytic Impact

It is proposed that any new financial mechanism should be seen as not only an end in itself, but also as helping to catalyse wider impacts in supporting investment in the sector. The proposed financial mechanism, a dedicated EE debt fund, is seen as having both a direct impact in expanding EE investment but is also seen as helping to improve the broader financing environment for EE and for ESCOs and EPC.

The fund is therefore viewed as a mechanism that includes in its design a package of interventions that address the main market barriers or constraints identified and that generate multiplier impacts in addition to the direct benefits of the fund.

Market research, conducted under Task 2 of the project, indicates that constraints to financing, on the side of both customers and financiers, are concentrated on risk aversion and transaction costs. If well designed, a successful financing mechanism can be used to improve data flow on performance and credit risks to the market, thereby reducing risk aversion. The mechanism can also help standardise processes and documentation, particularly around EPC, to develop standard market contracts and standard operating and risk-sharing approaches, thereby reducing transaction costs.

Through these outcomes, the fund can create a virtuous circle with the intention of making it easier for commercial banks and equity providers to finance the sector – outside of the direct investment of the fund. The intended catalytic impact is illustrated in the diagram below.

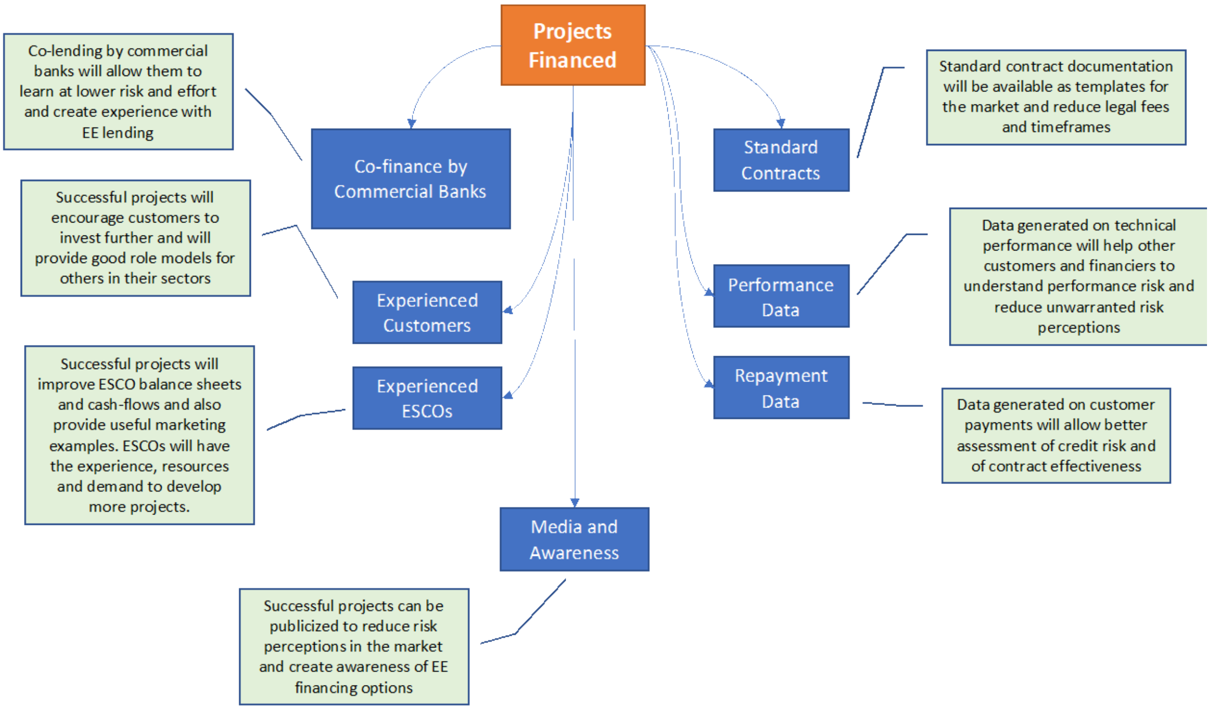

Figure 1: Catalytic Impact of Successful ESCO and EE Financing

This catalytic impact will not be fully realised automatically, and the design and operations of the fund should be targeted at both its direct and indirect impacts. This would include the:

- Development of standard contracts and project documentation and making these available in an open-source format to the market;
- Inclusion of reporting requirements on performance and impacts from recipients beyond financial reporting and, subject to commercial confidentiality requirements, making performance data publicly available;

- A mandated focus on co-lending with commercial banks and DFIs to share lessons and encourage greater attention from those lenders on the EE sector;
- Consideration of guarantee products in consultation with commercial banks, and possibly private equity firms, to ensure that developed products are needed by the banks to encourage lending in the sector;
- Availability of some form of project development support as well as market outreach to support improved project development.

The creation of a self-reinforcing cycle is also well-served by an institutional mechanism with a long lifespan and not one that either is stop-start due to regulatory or financing constraints, such as the Eskom Integrated Demand Management programme, or is short-term, like many donor-funded programmes. A consistent and stable intervention over the long term (more than ten years) is likely to have significant multiplier impacts even if relatively small in absolute funding terms. This would be supported by a revolving facility.

Based on the above analysis, it is proposed that a dedicated EE revolving debt fund be established as a mechanism to catalyse increased investment in the ESCO market and EE investments more generally. This recommendation on the financing structure is supported by Econoler’s international experience and other similar structures internationally and in SA. The proposed fund would not be able to address all the barriers to ESCO market development but would be focused on stimulating investment by the private sector, particularly in the use of ESCO and EPC structures, and in promoting further financial flows to the sector from commercial banks and equity providers.

The fund would be similar in concept to the Energy Efficiency and Renewable Sources Fund of Bulgaria, although it would be tailored to South African circumstances and would also draw on experiences of other similar funds globally. A short overview of relevant international and local experiences from similar funds is provided in Appendix III.

The detailed design considerations and institutional arrangements for the envisaged fund are outlined in the following section.

2 DESIGN CONSIDERATIONS AND PROPOSALS FOR AN ENERGY EFFICIENCY REVOLVING DEBT FUND

The main considerations for the design of the envisaged fund are outlined below along with a proposed fund business model and structure. The proposed options are based on the market assessment carried out, discussions with the Department of Mineral Resources and Energy (DMRE) and the South African National Energy Development Institute (SANEDI), international experience, and industry practices. However, it is noted that some of the options, especially around fund capitalisation and ownership arrangements, may be amended pursuant to further inputs from the National Treasury and other stakeholders.

More detailed design considerations and options are included in Appendix IV, and the subsections below contain summaries of the proposed approaches.

2.1 Design Considerations

The approaches below are proposed as a starting point in the fund establishment process. International experience demonstrates the merits of simple, transparent, and flexible structures, and there does not appear to be the need for complex governance or operating arrangements.

2.1.1 Ownership and Governance

The ownership and governance arrangements of the fund are central to its success and longevity. A key lesson from international experience is that, while government should set the broad objectives and mandate of the fund, the fund itself should have considerable managerial autonomy and flexibility and avoid being politicised or slowed down by bureaucratic governance procedures.

The strategic approach would be to create a stable institution that can act as a positive force in the sector to create and send long-term signals to EE investors as well as deepen skills and experience.

The preferred governance structure is for a publicly owned fund that is established and owned by government or a state-owned entity (SOE) but that has joint governance with its funders and representatives from private sector or independent stakeholders.

Government shareholder representatives would likely be from the DMRE or SANEDI as the relevant line function national authority and agency respectively. Although the fund may be publicly owned, the board may have a majority or minority of state representatives. Typically, if the fund is capitalised with donor grants or equity, funders will seek some form of board representation as well. It is recommended that there also be independent board members experienced in financial management and the energy sector.

It is recommended that the specifics of the funding arrangements be determined in consultation with the National Treasury and, in due course, with potential fund donors.

It appears that there is not a restriction under public finance legislation for international concessional funds from DFIs to be provided directly to a stand-alone fund. Under such circumstances mechanisms can nevertheless be put in place to allow government policy direction and oversight of the fund. However, National Treasury input is recommended to determine the preferred approach.

Whatever approach is used for the capitalisation of the fund, light touch governance is proposed to avoid considerable intergovernmental coordination or day-to-day operational oversight by the fund board. The fund can draw on well-established procedures in private sector fund management whereby the board is constituted as an advisory board and meets no more than quarterly, with operational decisions being made by the appointed manager within the framework of a management agreement and the mandate of the fund.

The board would receive regular, likely quarterly, reports from the fund manager on fund finances, disbursements, guarantees provided, portfolio performance, environmental, social, and governance (ESG) management, prospective financing pipeline, and other key performance indicators (KPIs) such as reduced energy use and greenhouse gas emission reductions.

2.1.2 Management

Based on successful international and local examples in the clean energy sector and industry best practice, it is proposed that fund ownership/governance and management be divided. Under such an arrangement, the fund would be managed by a private sector fund manager appointed for a set term under a competitive process. The manager would be compensated by a combination of fixed fees and a performance incentive structure linked to fund objectives.

The use of a suitably incentivised private manager has been successful in Econoler’s experience globally and the First Fund is a local example of a similar successful structure. The separation between ownership/governance and management is a well-established arrangement in the private sector for both private equity and debt fund management, and there are standard market operating approaches and incentive mechanisms as well as standard legal documentation that can be used for these kinds of management arrangements.

The use of a private manager places the risk of establishing institutional structures and operating procedures on the appointed manager, along with the responsibility for finding and retaining suitably qualified staff. The structure also allows staff incentives to be structured to align with fund KPIs, which is often difficult to achieve in the public sector.

The proposed structure is illustrated in the Figure 2 below.

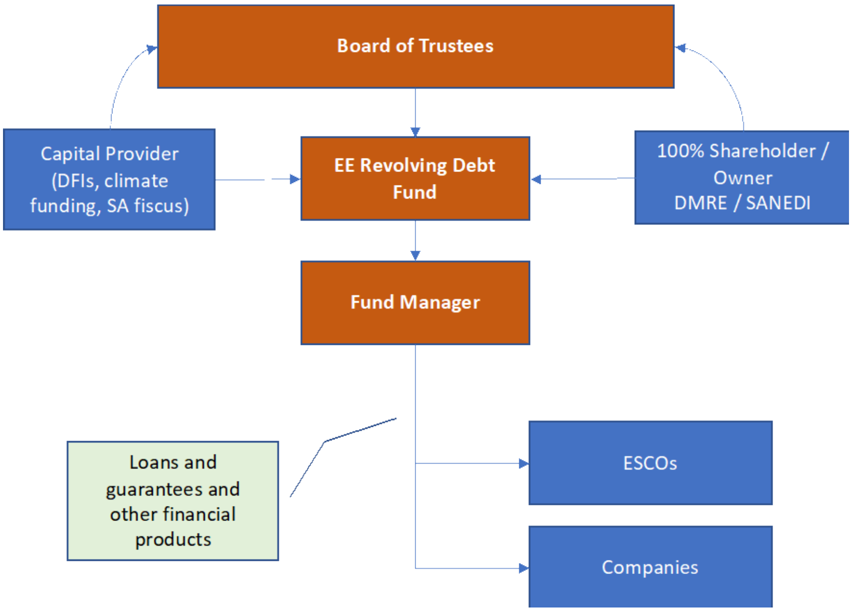

Figure 2: Proposed Fund Ownership and Management Structure

2.1.3 Funding

Initial capital could be provided directly to the entity as equity, concessional debt, or grant funding either directly or via the national government. The final approach will be determined largely by the eventual sources of funding as well as funder requirements and preferences. Whichever approach is eventually used, it is suggested that the fund be structured as a *de facto* non-profit entity with all profits being reinvested in the fund to keep the fund capitalised as a revolving fund.

At this stage, it is not possible to make definitive proposals on the funding arrangements. However, a set of revolving fund basic funding principles is proposed:

- The operating costs of a financially sustainable revolving fund are covered by the returns from its own financial products, these returns being interest and capital payments on debt, guarantee fees, and other fees levied such as raising or commitment fees. The fund would also receive income from interest on unspent fund capital.
- The initial capital would be provided either by the SA fiscus and/or donor or DFI funds, including climate finance sources.
- Seed initial capital in the form of concessional equity, grants, or concessional loans. In either of these cases, initial capitalisation would be junior to any further debt finance raised, effectively acting as first loss capital. Various types of catalytic first loss capital could be suitable[1] and would depend on final fund design and funder negotiations.
- The fund would be able to receive additional grants and loans from other sources, including loans from commercial banks or equity from the private sector if suitably de-risked.

[1] See for example, Global Impact Investing Network, 2013: Catalytic First Loss Capital, Issue Brief, www.thegiin.org.

- Donor funds could be used to cover project development or technical assistance support and further reduce the risk of DFIs and commercial loans.

Ultimately, it needs to be accepted that the eventual funders of the proposed EE fund will have considerable influence over the fund design and structure.

The fund can be a future vehicle for specialised credit lines. Once the fund is established with an experienced and effective manager that properly understands EE lending and the ESCO market, it can easily act as a conduit for financing such as DFI credit lines or further climate finance. In particular, the fund could seek to be a conduit for micro, small, and medium enterprise (MSME) finance such as from the Small Enterprise Financing Agency (SEFA) or similar institutions.

It is difficult to define the initial scale of the fund, but the fund would likely need to comprise at least R 500 M ($30 M) as an initial capitalisation to allow it to generate sufficient resources from reserves and loans to cover its management and operating costs. This is based on a set management fee of 2-4% of assets either as interest on reserves or operating income of R 10 M to R 20 M.

While a R 500 M fund appears to be small given the potential investment needs for EE across multiple sectors, a fund at this scale could still have significant impacts. At a 5x multiplier, which is approximately the amount demonstrated by the Bulgarian Energy Efficiency Fund (BgEEF), it would lead to R 2.5 billon in EE investments and more as it reuses its capital over time. A successful fund that demonstrates the ability to deploy funds into EE investments and a low default rate would also be highly likely to raise further funds either from the fiscus or DFI sources or as debt from commercial banks.

2.1.4 Business Model

The fund would develop debt and debt-like products designed to address risk perceptions and risk aversion in the EE sector, particularly under ESCO and EPC models. These instruments would also be structured to reduce current transaction costs and be as standardised as possible and supported by a well-informed team with access to technical and legal expertise as required.

Although the fund would seek to make a return on its investments to allow it to be financially sustainable, it would not seek to outcompete commercial lenders and would use its instruments to target market gaps and failures.

The fund manager would be incentivised through a variety of KPIs, but a significant portion of manager incentives would be based on suitable finance performance and low default rates. A core component of the business model would be disciplined lending and support for projects to de-risk them and demonstrate commercial viability to the broader financial sector.

One of the proposed objectives of the fund would be to reduce transaction costs and risk perceptions across the entire EE and ESCO sector. To support this objective, an important role outside of the provision of finance would be to develop standard contracts, documents, and procedures that would help develop market standards and thus reduce project costs and encourage broader market development.

As a debt fund, the core of fund products is likely to be term loans advanced to either ESCOs or end customers under EPCs or for direct EE investments. Other debt-like instruments such as performance or credit guarantees are also proposed. In line with the experience of similar funds internationally, a mix of instruments is envisaged, which may evolve over time. Instruments proposed for consideration are:

› **Loans and receivables financing**: Direct term loans to ESCOs and end customers for EE investments. The fund could make these loans concessional through various means such as fixed interest rates, lower fees and charges, and similar benefits. Products could include short to medium-term loans (2-5 years) secured loans, likely the simplest products to be developed, as well as longer-term (5-15 years) non-recourse or project finance loans in support of larger projects.
› **Credit guarantees or credit enhancements** would be instruments made available to ESCOs or end customers to reduce the project risks and thereby allow them to more easily raise debt from commercial banks or equity from other investors.
› **Project development or technical assistance grants or loans** may be provided by the fund. It is relatively typical for such funds to include a defined portion of funding for project development technical assistance. This could either be accomplished as a direct recoverable grant or as a low interest loan.

The above instruments are proposed based on identified barriers and the results of the market assessment. However, since the intention of the instruments are to eventually support greater investment by ESCOs and greater lending by commercial banks, it is critical that instrument design be developed by the fund in consultation with ESCOs and other EE service providers, commercial banks, local DFIs, and funders.

During fund operations, insofar as commercial lenders start to increase their lending in specific EE sectors which are also addressed by the fund, the fund mandate should allow the flexibility for the fund manager to then develop and propose products and services to address remaining under-served market sectors.

2.1.5 Target Market

Although the major target is to support the ESCO market, the fund could also lend directly to end customers, i.e., project owners investing in EE directly. The fund would focus on lending to private sector entities, which could include lending to ESCOs that are undertaking projects for the public sector.

To retain a strong focus on EE, it is suggested that the fund include energy management and behind-the-meter solar photovoltaic (PV) panels, but only if the majority (>50%) of funding is for true EE investments. This would enable mixed energy management investments.

Given the role of the Development Bank of Southern Africa (DBSA) in lending to the public sector and the current difficult state of government and municipal finances, it is proposed that the fund mandate exclude direct lending and the provision of guarantees to the public sector.

There would not be any conflict between the role of the fund and that of a Super ESCO insofar as a Super ESCO develops projects that need debt or credit guarantees. The EE fund could be a possible lender or co-lender to such projects or a guarantee provider.

It is proposed that the fund not be restricted to any market sector and similarly be agnostic to technology as long as the technology is commercially proven. The fund manager would have the flexibility to design specific lending products and associated documentation for technical EE interventions that they feel are sufficiently widespread to be targeted, such as variable speed drives.

2.1.6 Project Size

The size of typical investments would be determined by transaction costs, and the fund would therefore likely tend from medium (R 5-10 M) to large (R 10-100 M) projects, and the fund would likely only support small projects or ESCOs if projects were bundled. Consequently, the fund would not likely support small residential or commercial projects.

Although there would likely be a natural tendency to prefer larger investments, it is envisaged that the fund would be able to reduce transaction costs per rand lent through a lean operational structure and lending approach and therefore be able to support smaller projects than commercial banks or DFIs. As with other similar funds, a practical option to support smaller projects is to bundle them into portfolios.

Consideration should be given to mechanisms that encourage lending to smaller projects, such as by offering project preparation facilities more easily to smaller ESCOs and by establishing loan products for standardised project types. Additionally, the fund manager could have performance incentives to encourage lending to smaller projects and ESCOs.

2.2 Implementation Plan

The basic elements of the proposed implementation plan are outlined below.

Stakeholder Consultation and Approval

It is recommended that, for the detailed design stage, a stakeholder list and consultation plan be established to discuss the specifics of programme design and lay the basis for fundraising. This process would seek to identify any fatal flaws and develop a sufficiently detailed fund proposal to take to potential funders. Suggested stakeholders include:

› The National Treasury
› Commercial banks and the Banking Association of South Africa
› The Association for Savings and Investment South Africa (ASISA)
› The ESCO Association of South Africa
› The National Cleaner Production Centre
› The DBSA and IDC (for insight into other concessional finance facilities and for discussions on Green Climate Fund application procedures)

- The international donor community in South Africa (particularly donors that have supported clean energy in South Africa such as the World Bank, KfW, GIZ, and AFD)
- Private sector debt and equity funds to understand fund structure and operations

Responsibilities and Fundraising Prospectus

Based on the results of the consultation process, a proposed fund structure and allocation of implementation responsibilities can be established. The basic structure outlined in Figure 2: Proposed Fund Ownership and Management Structure further above can be used as a starting point.

The fund structure should form the basis of a fundraising prospectus that will provide a proposed set of fund parameters to be presented to potential funders. Most of the items in the prospectus can be drawn from the design considerations and proposals outlined above, which are likely to have been adjusted to some degree following the consultation process. These would include a fund organogram and governance structure, target fund size, mandate and business model, KPIs (such as - energy savings, GHG savings, types of MSMEs supported, private finance leveraging, default rates, and proposed timeframes).

It is noted that the details of the financial instruments to be offered do not need to be concluded at this stage and that a broad mandate could rather be proposed with final instrument design being completed by the appointed fund manager in discussions with the finance providers based on consultation responses.

Fundraising

Following the development of the prospectus, the fundraising process would be started. In effect, the prior discussions with stakeholders will have already laid the basis for this process but actual fundraising would occur based on the contents of the prospectus.

Fundraising may include submissions to certain formal processes such as applications to the Green Climate Fund (GCF) or Climate Investment Funds (CIF), and suitable support for these may need to be provided by accredited entities under these instruments such as the DBSA, Nedbank, the World Bank, or others. There should also be consideration of some on-budget contribution to the fund from the DMRE or SANEDI.

Establishment

Once there is support for the concept and it is clear that sufficient funds are available, then the fund establishment process can be initiated. This will likely require development funding that will need to be provided either by the DMRE or SANEDI or from supportive prospective investors. These implementation activities will include:

- Appointment of legal advisors for advice on the fund structure as well as drafting of mandate agreements and associated agreements (such as fund constitutional documents, the fund management agreement, and fund contribution agreements for funders);
- Request for Proposals to appoint the fund manager;

› Appointment of fund board directors or trustees.

Timeframes

A target timeframe for the implementation would be as outlined in the table below.

Table 1: Target Timeframe for Each Implementation Step

Implementation Step	Timeframe
Consultation process	Month 1 – Month 4
Fundraising prospectus	Month 5 – Month 7
Fundraising	Month 7 – Month 11
Implementation and legal arrangements	Month 12 – Month 14

It is noted that, in practice, the process would not be fully linear, and some steps would occur at least partly in parallel. In particular, it is recommended that early discussions be started with prospective providers of concessional funds both to assess whether there is likely to be support for the concept and to allow internal procedures to start within these organisations to avoid approval delays.

CONCLUSION

This report, as Deliverable 3b of the assignment Energy Service Company (ESCO) Market Development in South Africa, proposes a revolving debt fund as an institutional and financial mechanism that can address some of the barriers to EE investment and the growth of the ESCO market in South Africa.

The envisaged fund would not address all the barriers identified earlier in the assignment, and other supporting actions should be expanded on and implemented to encourage much needed investment into EE as the first fuel. However, international and local experience suggests that the fund could play a useful and catalytic role in expanding EE investment. There is a need in South Africa for long-term, stable, and financially sustainable support measures for EE investment, and the fund, if designed correctly, could contribute to strengthening the needed institutional ecosystem to support EE investment and the ESCO market in particular.

APPENDIX I
MATCHING FINANCIAL INSTRUMENTS TO MARKET BARRIERS

The starting point for the analysis is the deliverable prior to this report, the barriers analysis report. In that report, options to improve access to finance for energy performance contracting (EPC) were evaluated against the main barriers identified to indicate which options were most likely to be able to address the barriers. That assessment was combined with a consideration of interventions carried out internationally with similar objectives along with experience with interventions in South Africa in similar sectors to determine a proposed institutional and financial mechanism for consideration.

That report indicated that the barriers to EE financing and to ESCOs and EPC in particular are not absolute constraints such as regulatory restrictions, insufficient availability of capital, or capital costs. The barriers identified act more as friction holding back the sector, such as reduced incentives for commercial banks to develop specific financing products and high project transaction costs.

On the funding side (particularly for commercial banks), the barriers are factors that **increase risk perceptions, increase transaction costs, and reduce the return on effort** and attractiveness of the sector for internal investment in human resources, products, and systems.

On the customer side, there are similar **negative impacts on risk perceptions and on transaction costs**, which tend to decrease demand for ESCO projects.

Combined, these barriers limit capital availability to ESCOs and consequently the ability for ESCOs to implement projects and increase their scale unless they have access to separate financing sources. High transaction costs also reduce the range of viable smaller projects that ESCOs can implement. There is consequently a need to facilitate access for market participants (ESCOs and end customers) to debt and quasi-debt; equity is also being a constraint in some areas.

New financial mechanisms should therefore:

› Include risk removal and risk sharing instruments that address both performance and credit risks;
› Assist ESCOs in building track records and stronger balance sheets over time with a view to removing the need for risk reduction instruments in due course;
› Reduce transaction costs and help to overcome financing barriers for smaller projects;
› Support robust project development (especially for larger projects) to reduce real and perceived implementation risks and create greater incentives for financial institutions (FIs) to invest time and effort in the sector.

Existing sector analyses tend to provide a long list of potential financial instruments as possible solutions. However, consideration of these instruments against the barriers indicates that they do not provide a nuanced and useful set of solutions. Simply presented as standalone instruments, they are mainly tools already available to current FIs and seem unlikely to create significant market stimulus unless packaged in a well-adapted delivery mechanism. Table 1 provides an example of this with respect to instruments identified in an IDC report (2012)[2].

Table 2: 2012 IDC Instrument Relevance to Current Market Barriers

	Low interest loans (credit lines)	Takeout financing	Convertible preference shares	Preferred drawing rights	On-bill financing	Project development seed capital	Forfeiting (sale of receivables)	Partial credit guarantees	Small project term loans	Subordinated debt
Perspective of ESCOs										
Project size										
Inexperienced banks										
Weak ESCO balance sheets										
Lack of standardised contracts										
Perspective of Financiers										
Ticket size										
Lack of collateral/resale value										
Weak balance sheets – end clients										
Inexperienced FIs with limited technical skills										
Lack of track record of ESCOs										
Lack of well-developed projects										

Legend	
Does address barrier	
May address barrier	
Does not address barrier	

[2] Industrial Development Corporation, 2012: Developing a vibrant ESCO Market - Prospects for South Africa's energy efficiency future, IDC, Johannesburg.

In Econoler's experience,[3] these barriers are not unique to South Africa, and the firm has found that typically "*local financial institutions (LFIs) handle EE projects, at best, with a great deal of caution and, at worst, with enormous reluctance and suspicion because of the following main factors related to the unique nature of EE projects":*

- A lack of information and awareness about EE;
- The size of EE projects (usually smaller and below the threshold that LFIs are willing to finance on a case-by-case basis);
- Perceived higher transaction costs; and
- Perception of high risk that EE projects can bring to the financial sector.

Similar constraints were identified by the International Energy Agency (IEA),[4] noting the reluctance of LFIs to finance EE "*because of their lack of knowledge and understanding, and their perception of high risk with respect to EE projects*". This affects mostly SMEs whose limited balance sheets lead to further restrictions in the borrowing process.

Integrated Financial Mechanisms

International experience and the understanding gained from the local market review suggests that, for longer-term market support, institutional interventions are preferred that either package a set of financial instruments into an institutional structure or create long-term programmes that change the operational approach of commercial and development FIs.

An initial focus on four mechanisms arose from this analysis, namely:

- **Dedicated revolving debt fund**: An EE and ESCO fund would be mainly focused on the debt and quasi-debt market but could have the flexibility to provide a range of products including debt guarantees and project development support funds.
- **Long-term credit lines**: Credit lines provided to commercial or development finance institutions would be dedicated to EE and/or ESCO investments and could have a concessional component as well as a technical assistance component for internal training and support to FIs and/or ESCOs.
- **Dedicated private equity fund**: An equity fund would have a mandate limited to EE, with a preference for energy performance contracting. The fund could provide equity to projects, energy management companies and end customers directly. It could include a technical assistance or project development component and concessional elements (such as first loss investors) if available.
- **Super ESCO**: A structure could serve to develop and finance projects and consolidate projects into portfolios. The structure would serve to raise debt against its own balance sheet and would contract directly with customers and outsource project delivery to individual ESCOs.

[3] Econoler; "*The Econoler Series - The Energy Efficiency and Renewable Sources Fund 2005-2020, the Bulgarian Green Bank*", https://econoler.com/wp-content/uploads/2021/01/Bulgarie2021.pdf.
[4] IEA, 2011: "Joint Public-Private Approaches for Energy Efficiency Finance", The IEA Policy Pathway series, 2011. Page 9.

The focus on these mechanisms does not exclude the development of specific financial products; moreover, it is suggested that the proposed mechanisms develop or use one or more of the specific financial instruments outlined in Table 1 above. For example, a dedicated debt fund (the mechanism) may create a specific product such as a small project term loan (the instrument) designed for specific technologies and consequently with low transaction costs (for example for variable speed drive replacement projects).

A similar mapping exercise to the above is presented in Table 2 below for the mechanisms under consideration. The packaging of a set of financial instruments into institutional mechanisms makes it more likely that a greater proportion of barriers can be addressed.

Table 3: Adapted EE Finance Mechanism Relevance to Current Market Barriers

	Credit Lines (concessional)	Super ESCO	Specialised EE Debt Fund	EE Equity Fund
Perspective of ESCOs				
Project size				
Inexperienced banks				
Weak ESCO balance sheets				
Lack of standardised contracts				
Perspective of Financiers				
Ticket size				
Lack of collateral/resale value				
Weak balance sheets – end clients				
Inexperienced FIs with limited technical skills				
Lack of track record of ESCOs				
Lack of well-developed projects				

Legend	
Does address barrier	
May address barrier	
Does not address barrier	

Of these four mechanisms, all except for the Super ESCO have already been used in South Africa for either EE or RE, and this experience has also been used to learn lessons from successful interventions and avoid repeating unsuccessful ones.

As per the Terms of Reference for this assignment, a separate assessment of the development of a Super ESCO and its viability in South Africa has been undertaken, is addressed in the accompanying report, Deliverable 3c. A brief evaluation of the three other mechanisms is provided below, followed by an in-depth consideration of a dedicated EE debt fund, which is the proposed mechanism.

APPENDIX II
FINANCIAL MECHANISM REVIEW

International experience and the understanding gained from the local market review suggests that, for longer-term market support, institutional interventions are preferred that either package a set of financial instruments into an institutional structure or create long-term programmes that change the operational approach of commercial and development FIs.

An initial focus on four mechanisms arose from this analysis, namely:

- **Dedicated revolving debt fund**: An EE and ESCO fund would be mainly focused on the debt and quasi-debt market but could have the flexibility to provide a range of products including debt guarantees and project development support funds.
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- **Dedicated private equity fund**: An equity fund could have a mandate limited to EE with a focus on energy performance contracting, and could provide equity to projects, ESCOs and related energy management companies. It could include a technical assistance or project development component and concessional elements (such as first loss investors) if available.
- **Super ESCO**: A structure could serve to develop and finance projects and consolidate projects into portfolios. The structure would serve to raise debt against its own balance sheet and would contract directly with customers and outsource project delivery to individual ESCOs.

The focus on these mechanisms does not exclude the development of specific financial products; moreover, it is suggested that the proposed mechanisms develop or use one or more of the specific financial instruments noted in Appendix I.

Of these four mechanisms, all except for the Super ESCO have already been used in South Africa for either EE or RE, and this experience was used to learn lessons from successful interventions and avoid repeating unsuccessful ones.

Credit Lines

A credit line is a pre-agreed upon loan with an associated borrowing limit and terms; the loan is provided to a local bank with the requirement that the funds can then be loaned to specific types of investments. In the case of EE, the requirement would be that the funds borrowed by the bank all be on-loaned for EE investments or, more specifically, EPC projects.

The advantages of a credit line are that:

- It can only be used for specified investments so it forces the borrowing bank to focus on and identify those clients and investments; and

- Concessional elements such as lower interest rates or longer lending periods can be built into the terms of loans.

On the other hand, the disadvantages of credit lines are that the loans made by the local bank will still be made by the same bank staff under standard operating procedures, risk assessments, and credit considerations that the bank had in place prior to receiving the line of credit. In some cases, a line of credit from an international development finance institution (DFI) will include scope for the appointment of certain temporary technical advisors to assist in loan disbursement. Credit lines will typically be offered under specific reporting requirements and, in some cases, penalties if not fully disbursed.

While credit lines provide some incentives for the local bank to focus on the targeted sector, these incentives can often be low, for example when the bank has sufficient capital to deploy already and sufficient demand for investment in other sectors. Interviews with LFIs suggest that credit lines can create disincentives as well, for example if they require time-consuming reporting requirements and additional or different environmental, social, and governance (ESG) assessments.

Credit lines have been used in South Africa to support investments in various sectors. A recent credit line implemented in the energy sector, including EE, was the SUNREF phase two programme of the French development agency AFD. SUNREF was comprised of[5] "*a credit line provided to a partner bank, IDC, in South Africa,…a technical assistance facility that provides assistance… to banks …and assistance to companies (intended as ESCOs)...and capacity building (through SANEDI)."* SUNREF had a financial capacity of up to EUR 120 million[6] and operated from 2016-2019 and was extended to November 2020.

A Swiss development agency SECO sponsored the technical assistance facility for SUNREF Phase II at EUR 3 million and a consulting firm, the Palladium Group, was appointed to deliver technical assistance that included market research, hands-on support to develop the funding pipeline, as well as scoping and securing the participation of at least two commercial banks. The mandate of SUNREF II included both RE and EE investments.

The recent experiences with SUNREF II have demonstrated important shortcomings:[7]

- Commercial banks did not enrol in SUNREF II. The feedback revealed a high cost of finance from the AFD when taking into account all requirements of the programme, which commercial banks felt would not lead to a competitive product on the market. This was despite many commercial banks seeing "*Energy Efficiency as an opportunity to further support/finance their clients*".

[5] SUNREF South Africa, *Towards a greener future*, https://rise.esmap.org/data/files/library/south-africa/Documents/Energy%20Access/South%20Africa_SUNREF.pdf.
[6] https://www.afd.fr/en/carte-des-projets/supporting-south-african-smes-develop-energy-efficiency-projects, https://www.afd.fr/en/wkgeneratepdf_file/7988.
[7] Report for the World Bank, DMRE, SANEDI, and PPIAF from Carbon Trust and Energy Partners, *Development of sustainable financing mechanisms for demand-side energy efficiency market transformation in South Africa, Report on institutional analysis of energy efficiency market in South Africa*, July 2021.

- A small proportion of EE investment opportunities were identified out of the total opportunities considered, and none was funded due to the abovementioned reason and because "*the lending criteria were deemed too complex*[8] *(i.e. no standard funding package) for the project size targeted. As a result, most projects identified in the pipeline did not qualify.*" The focus of the relevant IDC business units on larger RE investments was likely also a contributing factor.

The key lesson learned is that a credit line does not in itself address the underlying limitations of the financial institution itself. Unless a credit line can also establish simple and fast procedures that are adapted to the needs of EE investments, it is unlikely to have a major impact. Furthermore, a credit line needs to consider the financial competitiveness of the funding with current lending options in the market after accounting for factors such as foreign exchange management (if a non-rand credit line) and other transaction costs.

This suggests that credit lines are not a preferred approach to addressing the main barriers identified. This is not to say that there is no role for dedicated credit lines, and they may well play a useful role in supporting EE and ESCO investments:

- Credit lines can be useful for very large investments for which the high cost of complex credit line procedures is offset by concessional loan terms due to the size of the credit disbursed. The fact that credit lines have had some success with RE lending (PV plants)[9] is instructive in showing that it applies well for large operations that have quite simple technical components or that can be standardised.
- Dedicated credit lines may be useful for targeting specific needed investments, for example for water/wastewater treatment plants, for which there are standard technical operations, the financial needs are high, and payback times may be higher than considered attractive by commercial banks.[10]

Private EE Equity Fund

A dedicated EE equity fund would be a private equity fund with a ring-fenced mandate to only invest in EE, including EPC projects. A typical structure would be the commitment of a certain amount of funding from investors (typically called limited partners), managed by a general partner that would oversee the investment process – originating, structuring, and managing investments. Private equity funds are generally established for a defined timeframe, often ten years, and would need to first invest in and then sell their assets within that period.

The advantages of an equity fund are that it:

- Employs a specialised fund manager that is incentivised to source EE investments and identify and support ESCOs and similar companies. A private equity fund would be able to recruit a

[8] The same was noticed in SUNREF I in Palestine with delays in project verification (source: Econoler).
[9] The same was experienced by SUNREF I in Palestine where only 2 projects out of 136 were related to EE, two to environmental projects, and the remaining were either small-scale net metering and off-grid or utility-scale PV plants (source: Econoler).
[10] Reference: Carbon Trust and Energy Partners "*Sustainable Financing Mechanisms for Demand-side Energy Efficiency Market Transformation In South Africa*", The World Bank, Stakeholder Workshop Meeting, August 2021.

team with specialised EE and finance skills. From the perspective of ESCOs, this would go some way to address the issue of inexperienced lenders as the fund would likely try to work with and educate debt providers to provide debt alongside equity. Its main advantage though is providing equity, in other words higher risk funding, which would support and allow ESCOs with limited resources and weak balance sheets to implement projects.

- The presence of equity support for projects could, to some extent, address the risk of lack of collateral for EE investments as debt providers could seek some security from the fund in the event of project failures.
- Could act as a conduit for concessional capital allowing the fund to provide equity either at a lower cost or through the provision of risk mitigation structures such as first-loss funding, which could make it more likely that projects could secure debt finance as well.

On the other hand, an equity fund fails to address many of the barriers identified:

- Typically, a fund would seek a small number of relatively large investments and would avoid smaller projects.
- Since equity providers are exposed to the highest risk in project failure, there are also generally high transaction costs for equity investments, and such funds are not well suited to small investments although structures can be designed to bundle smaller investments to reduce individual project costs.
- The tendency to seek larger projects would make it less likely that the fund would help to create standardised contracts that would create market norms and standards.
- Although such a fund would be incentivised to seek investments, such funds generally rely on project sponsors to bring them already well-developed projects. This limitation could be partially addressed if the fund is structured with a development mandate that allows it to support sponsors with high risk finance early in the development process, although generally this would only be for a small proportion of the fund capital.

In addition to the above limitations, a private equity fund is not seen as the preferred option because:

- An equity fund would have limited flexibility to address multiple market segments. The primary target market would be ESCOs that do not have sufficient internal financial resources. A private equity fund would be less likely to support investments made by larger ESCOs seeking to deploy their own equity and would more likely seek debt finance. Similarly, customers that invest in their own EE projects through EPC structures would also more likely seek debt than equity for such investments.
- Equity for EE is already available to some extent in the South African market for well-developed projects for which structures have been created to bundle EE and RE projects into financing vehicles.

- An equity fund is less likely to support longer-term, lower return, and deep decarbonisation investments as the fund would seek maximum returns over shorter periods where available. However, it is noted that an equity fund could be established as a permanent capital vehicle whereby investments would not need to be sold, thus enabling longer-term investments.
- A private equity fund is likely to be harder to structure as a revolving fund since there is often a longer lifecycle for return of equity investments.

None of the above reasons are fatal flaws, and there may be a role for an EE-focused private equity fund in supporting the ESCO and EE investment market. However, such a fund would be less well suited to addressing the identified barriers than a debt fund.

EE Revolving Debt Fund

A dedicated EE debt fund would have a ring-fenced mandate to provide debt and debt-related instruments to EE investments, ESCOs, and projects contracted under EPC arrangements. The fund would have flexibility in the type of financial instruments that it could use and, alongside senior debt, it could provide credit guarantees (in favour of other financiers) and mezzanine finance (in other words, debt that is lower in the order of priority of repayment than main or senior debt). The fund could also be structured to provide support for project development via technical assistance grants or loans for late-stage project development.

A typical structure would be the initial capitalisation of the fund through a grant or equity contribution, and the fund could raise further capital through borrowing. The fund would be managed by a professional fund manager under a mandate with suitable fees and performance incentives. The manager would oversee the lending process – originating, structuring, approving, and managing loans. While the manager could be appointed for a defined period, the fund would be structured as a revolving fund – in other words, profits made, and capital returned would be reinvested into the fund for future lending.

The advantages of a debt fund would be:

- Flexibility in the scope of lending, including development of lending products suitable for smaller investments and ESCOs as well as larger loans. It would be able to provide loans to ESCOs for shared savings contracts or direct corporate loans to clients investing in EE.
- Ability to establish a range of debt-like instruments suitable for market circumstances, such as guarantees, mezzanine or subordinate debt, and so forth.
- Would have a specialised manager able to develop not only a suitably qualified team focused on EE, but also specific expertise, processes, and documentation for EE and ESCO lending.
- Specialised lending likely to allow better look-through to both end customers and projects and contract quality to reduce reliance on ESCO balance sheets and physical collateral.
- Could be structured to support project development and, at minimum, provide clear guidance to ESCOs and the broader market as to what would be required in terms of project development to secure finance.

The disadvantages of a specialised debt fund are:

- As a debt provider, it would not be able to support ESCOs that lack their own equity and those smaller ESCOs would still need to raise equity from other sources as required.
- Would have limited ability to support project development and would still rely to a large degree on external parties such as ESCOs or clients to carry out primary project or investment preparation.

The flexibility of a debt fund in terms of its ability to address different market needs and investment sizes is an important advantage in the context of some uncertainty over how the market will develop. The fund addresses more of the barriers than other mechanisms and, as discussed below, would be well-positioned to have catalytic and multiplier impacts on the market, especially if designed as an ongoing revolving fund.

Similar funds have been successful in supporting EE and RE investments in other developed and developing country markets as well as in South Africa, and there are good examples from which to draw.

APPENDIX III
INTERNATIONAL AND LOCAL EXPERIENCE WITH REVOLVING DEBT FUNDS

Case Studies on International and Local Experience

A short overview of relevant international and experience is provided below.

Bulgarian Energy Efficiency Fund (BgEEF)

The Bulgarian Energy Efficiency Fund (BgEEF) is a reference fund, and Econoler has been involved in designing and managing it.[11]

The fund is a financing mechanism for financing commercially viable EE and RE projects. It was established in 2005 under a national EE Act. The BgEEF had an initial capitalisation of $15 M (±R 250 M) through grants from the Global Environment Facility (GEF) via the World Bank, the Government of Austria, the Bulgarian government, and some private companies. The fund also has borrowing powers that allow it to expand its available capital.

The objective of the fund is to develop the Bulgarian EE market. The fund was also assigned additional functions for funding energy generation using renewable sources. The BgEEF effectively serves as a bank, a credit guarantee facility, and a technical advisory company. It achieves these through the provision of two main products:

› Commercial loans – These compete with commercial banks and address the market failures that led to insufficient commercial lending. Loans are offered at commercial market interest rates and typically over seven years. There are some concessional elements such as fixed rates for the full seven year period and no additional penalty charges for early loan repayments.
› Guarantees – These are single project or portfolio guarantees that are classed as first class capital and include:
  - Credit guarantees covering up to 80% of the credit value to secure loans for EE project contractors. These are limited to EUR 400,000 without special approval. They also offer similar guarantees of up to 50% of the credit value on a first-loss basis.
  - Guarantees to a portfolio of ESCO receivables under energy performance contracts covering up to 5% of the delayed payments of the covered portfolio.

The BgEEF is structured as a public-private partnership with an independent fund manager. Econoler, in partnership with two local firms, has been the manager since the start of the fund. The fund is designed as self-sustaining and is effectively a permanent financing vehicle. It is based on principles of transparency in its operations and provides equal opportunities for all groups of clients.

[11] Information on the fund is drawn from an interview with Marko Markov, Econoler S.A,. a prior Executive Director of the fund, held on 8 September 2022 and from Econoler, 2021: *The Energy Efficiency and Renewable Sources Fund 2005-2020*, The Bulgarian Green Bank, Econoler, Quebec.

The fund is overseen by a Donors Assembly that has final control and appoints the Managing Board consisting of 11 members - five government officials and six independent professionals. The Board convenes monthly to approve loan proposals, amendments to lending policy, annual reports, and so forth and oversees the fund manager that handles day-to-day operations such as marketing, lending proposals, and reporting.

A critique of the fund from a previous Executive Director was that the Managing Board is too cumbersome and hinders effective fund operations. The structure is too large and unwieldy as it acts as the fund investment committee and it reviews every lending decision, which slows down fund operations. Similarly, the fund has not used its borrowing powers even though the fund manager wanted to, largely due to bureaucratic problems with the fund Managing Board. In the Executive Director's view, a leaner oversight structure should be in place to improve fund operations and flexibility. He also felt that the fund manager should be appointed for a longer period (it was on a six-month rolling appointment) to prevent impediments to long-term strategic progress.

The fund has a relatively wide mandate and can support investments in EE in industrial processes as well as in private and public buildings and facilities, improvements in heating and cooling efficiency, rehabilitation of municipal facilities, general end-use EE such as control systems, power factor corrections, and fuel-switching, and demand-side off-grid RE generation. It supports investments ranging from EUR 15,000 (R 250,000) to EUR 1,500,000 (R 25 M) although exceptions are possible, and the fund typically requires a 10% equity contribution by the project developer or borrower.

The fund aims to be a lean organisation, and it takes about six weeks to complete the project appraisal process provided that the project developer submits all necessary documents.

Since its creation, the BgEEF has been self-sustaining as a revolving facility. All its funds raised through the initial capitalisation have been fully invested in projects, and the fund relies only on revenues from loan repayments. The fund has historically had a very low default rate on its loans and guarantees.

Between mid-2006 and the end of 2020, the BgEEF provided EE loans to 212 projects, with investments totalling $57.7 million. The fund also provided guarantees to 33 projects, with corresponding investments amounting to $14.7 million. Using only its initial $15 million in capital, the fund has catalysed more than $72 million in EE investments in Bulgaria and achieved 129,160 MWh/year in energy savings and avoided 93,052 kt/year of CO_2eq in emissions.

The fund specifically chose guarantees as a mechanism to support the ESCO market, and its strategy of securing receivables was successful with many projects supported. There have been a few claims but very low losses as funds were typically recovered in due course, and their guarantees did lead to increased lending from commercial banks. Their loan and receivable products have also been successful, in particular lending against the cession of ESCO receivables to the fund.

Over time, the volume of lending of the fund has decreased. This is largely due to the market maturing and greater commercial bank lending as well as increased grant funding to the sector after Bulgaria joined the European Union. Fund lending was also affected by the country's slow economic growth coupled with a string of poor government policies that led to significant reductions in domestic and foreign investments in the private sector.

Some additional lessons from the BgEEF are:

- Despite trying to support smaller ESCOs, fund products were mainly used by larger ESCOs.
- It was very important to engage with commercial banks first in designing products as they are the actual clients.
- It is possible to keep transaction costs low with experienced and competent small in-house staff.
- The key to the success of the fund was the employment of a private fund manager, which brought flexibility, expertise, and proper incentives to continue the fund.
- Fund structure and products were kept simple, and this contributed to their effectiveness and a simpler governance structure would have made it even more effective.
- The fund design enabled flexible funding operations over time and proved critical to its success in changing the market environment in Bulgaria.
- The fund has played an important role in making ESCO-based contracts increasingly popular among contractors and end beneficiaries, thereby boosting the development of the ESCO market in the country.
- The achievements of the fund should be seen not as an end in themselves but the foundation for the future development of Bulgaria's EE market, and the fund should gradually expand the scope of its interventions.
- Innovatively structured EE funding bodies such as the BgEEF can play a major role in identifying and satisfying the financing needs for EE measures in sectors ignored by financial institutions.

The World Bank has commended the BgEEF as a "highly satisfactory (or best practice) operation, whose design and implementation should be disseminated internationally". Econoler stresses the importance of flexibility in fund approaches and being able to respond to market changes. For example, the initial intention of co-financing with commercial banks was not successful. However, the fund was highly successful in identifying another market niche by providing loans and guarantees to public sector EE projects and by actively supporting the preparation of EE projects.

US State Level Revolving Funds

The United States (US) has had long-standing success in the use of state level energy revolving loan funds (RLFs) that use an initial capital fund to offer long-term, low-interest financing for a variety of uses ranging from residential and commercial building retrofits to job creation and industrial energy efficiency.[12]

Since principal and interest repayments are used to reseed the fund, the revolving nature of RLFs allows state programmes to support designated clean energy activities indefinitely. Typically, the interest and fees paid by borrowers support programme administration costs to keep the fund capital base intact.

Most states operate at least one RLF, and they generally significantly focus on EE although some also include other clean energy financing products. RLFs offer states a flexible tool through which they can introduce the market to a variety of clean energy financing approaches such as energy savings performance contracts, on-bill repayment mechanisms, and public-private partnerships.

An interesting element of US RLFs is their source of initial capital. These include some federal funds but also revenues from sources such as environmental fines, fines imposed on oil companies for over-charging in violation of federal price caps, greenhouse gas auction revenues, and/or private capital to establish and grow their loan pools.

Typically, RLFs have standard financial requirements for loan security, have a maximum allowable project payback period, and explicitly stipulate what types of projects are eligible for funding (often including the need to meet certain efficiency or performance standards).

Credit enhancement mechanisms, such as loan loss reserves (LLRs) and interest rate buydowns (IRBs), encourage investing private capital in clean energy projects by guaranteeing a portion of any potential losses (typically 10%) to be recouped by the lender in the event of a default in loan payments in the case of LLRs. In the case of IRBs, other approaches are used such as payment of a portion of the initial loan directly to the private bank to allow the latter to reduce overall interest rates, among other similar approaches.

LLRs and IRBs have been successful in promoting the use of private capital for clean energy upgrades at lower interest rates than would otherwise occur. Recently, there has been a move from IRBs to utilising LLRs because they typically require less capital than IRBs to operate and provide similar results.[13]

First Fund (South Africa)

The First Fund is a privately managed fund with a mandate to finance small-scale RE and EE projects with a cap of 20% on loans for energy efficiency. The fund is also limited to advancing loans to small and medium size businesses (SMEs) with turnover below R 180 M per year.

[12] National Association of State Energy Officials, 2013: State Energy Revolving Loan Funds, www.naseo.org.
[13] https://naseo.org/issues/energy-financing/revolving-loan-funds.

The original intention was to focus on the small-scale Renewable Independent Power Producer Programme (REIPPP) programme for sub-10 MW projects but, due to the failure of that programme to progress, the fund directed its intention to small-scale RE projects outside of government programmes. Consequently, the fund is mainly focused on commercial and industrial (C&I) projects, rooftop PV, but also other technologies and industrial EE.

The First Fund was capitalised with approximately R 300 M from the German development bank, KfW. The KfW capitalisation was in the form of a grant for which KfW does not expect an equity return or a capital redemption. The equity allowed the fund to raise an initial R 1 billion in debt from Rand Merchant Bank (RMB), thus representing an effective leverage of 3.3 times. The First Fund is managed by a private manager and retains an independent investment committee.

The KfW capital does not function as a guarantee but rather as true equity and hence is subordinated to RMB capital and any future debt raised. Any loss on the portfolio as a whole is hence first absorbed by the KfW equity; the KfW equity therefore does not provide any loan specific guarantee or credit support. The seed equity rather creates an equity-to-debt ratio of the fund sufficient to attract commercial capital. The fund expects that, as its loan portfolio increases in size and demonstrates good debt service from borrowers, it will be able to increase the equity-to-debt ratio. It has in fact received additional debt from RMB.

The First Fund has some potential advantages over both commercial banks and larger DFIs in securing deal-flow, which provide a useful example for the proposed EE specific debt fund. These include:

- A small and nimble team that can provide rapid and flexible funding options;
- A focus on smaller firms and specialisation in smaller financing packages;
- Deal executives with specific and in-depth experience in the infrastructure and clean energy sectors;
- Limited policy constraints on lending.

It was also noted that the First Fund strongly focuses on customer credit assessments given that it finances the small-scale sector where there are likely to be greater credit concerns and sometimes more difficult access to market credit information.

APPENDIX IV
DETAILED FUND DESIGN CONSIDERATIONS AND PROPOSALS

It is inevitable that adjustments will be made in the final fund design and additional considerations will be established, for example due to inputs from the commercial banking sector, local DFIs, initial donors, or equity holders in the proposed fund. The approaches below are proposed as a cohesive starting point in the fund establishment process. Most importantly, international experience has shown the merits of a simple, transparent, and flexible structure, and there does not appear to be the need for complex governance or operating arrangements.

Ownership and Governance

The ownership and governance arrangements of the fund are central to its success and longevity. A key lesson from international experience is that, while government should set the broad objectives and mandate of the fund, the fund itself should have considerable managerial autonomy and flexibility and avoid being politicised or slowed down by bureaucratic governance procedures.

This is particularly important in South Africa where many institutional structures in the energy state and state-owned sector have been weakened by poor governance and instability; if established, the fund should be a stable institution that can act as a positive force in the sector to create long-term signals to EE investors as well as deepen skills and experience.

The governance options considered and proposed are outlined in the table below.

Ownership and Governance Options	Proposed Option
Options considered: 1. Publicly owned, established and governed by a government or state-owned entity (equivalent to the Development Bank of Southern Africa's [DBSA] Climate Finance Facility). 2. Publicly owned but with private governance participation, established by government or state-owned entity but with a board that includes both government and funder representatives (private or DFI). 3. Privately owned, donor and funder board (equivalent to the KfW/RMB First Fund).	The preferred option is for a publicly owned fund that is established and owned by government or a state-owned entity but which has joint governance with its funders (if they are not the SA government) and with representatives from the private sector or independent stakeholders. The government shareholder representatives would likely be from the DMRE or from SANEDI as the relevant line-function national authority and agency respectively.

Although the fund may be publicly owned, the board may have a majority or minority of state representatives. The BgEEF board, for example, had a majority of representatives from the original donors to the fund. Typically, if the fund is capitalised with donor grants or equity, the funders will seek some form of board representation as well. It is recommended that there be independent board members experienced in both financial management and the energy sector. Irrespective of the composition, members will have a fiduciary duty to ensure that the fund meets its defined mandate.

It is recommended that the specifics of the funding arrangements be determined in consultation with the National Treasury and, in due course, with potential donors to the fund. One option may be for donor funds to be allocated via the National Treasury through the national budgetary system (see for example the Reconstruction and Development Fund).[14] However, there also may be structures that are compatible with the public finance management legislation in South Africa, which would allow for a more direct flow of funds.

It appears that there is not a restriction under public finance legislation for international concessional funds from DFIs to be provided directly to a stand-alone fund. Under such circumstances mechanisms can nevertheless be put in place to allow government policy direction and oversight of the fund. However, National Treasury input is recommended to determine the preferred approach. This could be a preferred approach as it may be less bureaucratic and time consuming and more attractive to concessional finance providers, but it can also be structured in a way that still allows for government policy direction and fund oversight.

In either case, light touch governance is proposed to avoid requiring considerable intergovernmental coordination or day-to-day operational oversight by the fund board. The fund can draw on well-established procedures from private sector fund management practices whereby the board is constituted as an advisory body and meets no more than quarterly, with operational decisions being made by the appointed manager within the framework of a management agreement.

The board would receive regular, likely quarterly, reports from the fund manager on fund finances, disbursements or guarantees provided, portfolio performance, ESG management, prospective financing pipeline, and other established KPIs such as energy use and greenhouse gas emission reductions.

Management

Based on successful international and local examples in the clean energy sector and industry best practices, it is proposed that there be a separation between fund ownership/governance and management. Under such an arrangement, the fund would be managed by a private sector fund manager appointed under a competitive process.

Fund Management Options	Proposed Option
Options would be: 1. A public sector manager, likely a DFI such as the DBSA or IDC. 2. A private sector fund manager appointed for a set term	A private sector fund manager appointed for a set term via a competitive process and paid partly from fixed fees and partly via a performance incentive. *Management structure to be discussed with the National Treasury, other key stakeholders, local DFIs (primarily the IDC and DBSA), as well as with potential funders.*

[14] National Treasury, 2021: National Treasury Reconstruction and Development Programme Fund, Annual Financial Statements for the Year Ended 31 March 2021, National Treasury, Pretoria.

A public sector manager based in an existing local DFI would face similar problems to that of a credit line in that the existing credit processes and investment procedures would discourage innovation in EE lending. Although the establishment of a new, specialist, EE team could be possible within an existing institution it is less likely to have the flexibility and internal incentives that an independent, private sector manager will have. It would also be more difficult to withdraw the mandate for under-performance from a partner DFI than it would be from a private manager contracted with specific KPIs and for a limited period

In the experience of Econoler, the use of a suitably incentivised private manager has been a simple yet effective mechanism to rapidly establish similar EE financing mechanisms and ensure long-term stability and efficiency. The First Fund in South Africa (initially established by the KfW and the RMB to support small-scale RE projects under the REIPPP programme) is a local example of a similar successful structure.

The separation between ownership and management is also a well-established arrangement in the private sector for both private equity and debt fund management, and there are standard market operating approaches, incentive mechanisms, as well as standard legal documentation that can be used for these kinds of management arrangements.

The use of a private manager places the risk of establishing institutional structures and operating procedures on the appointed manager along with the responsibility of finding and retaining suitably qualified staff. The structure also allows staff incentives to be structured to align with fund KPIs, which is often difficult to achieve in the public sector.

The proposed structure is illustrated in Figure 3 below.

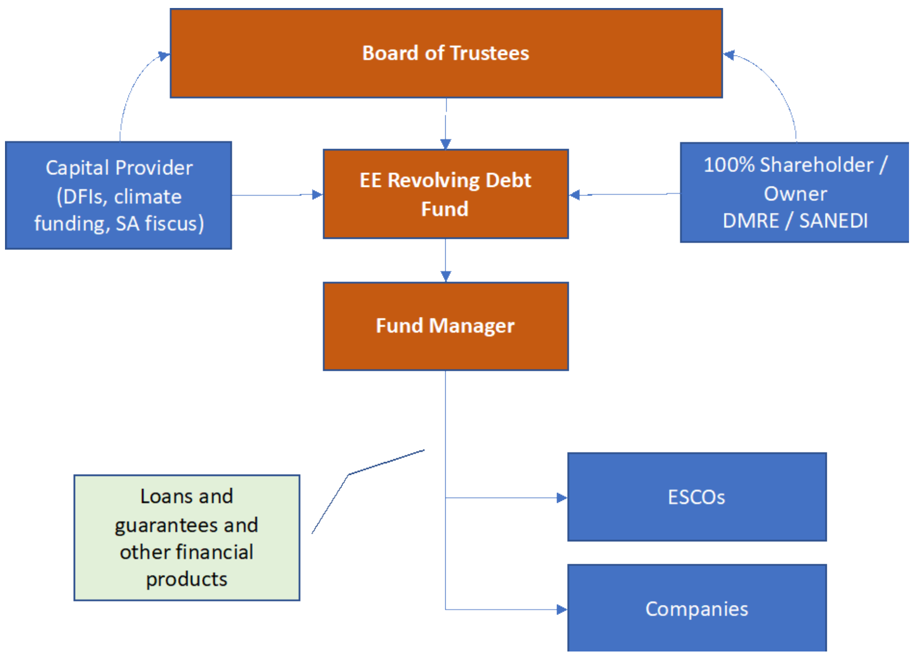

Figure 3: Proposed Fund Ownership and Management Structure

Funding

As noted above, the envisaged structure allows for a separation of funding and ownership. Various alternative funding arrangements are possible - a donor or concessional funder could prefer that their funding be provided to the fund as equity, thus making them the beneficial owner. They could also provide their funding directly to the fund as a grant or a concessional debt. Alternatively, the donor could provide a grant to government that is then passed on to the fund. Although there are legal and tax differences between the options, whichever is selected should not make considerable difference since, in all cases, the fund would effectively be structured as a non-profit entity with all generated profits being returned to the fund to keep the fund capitalised as a revolving fund.

Until such time as there has been meaningful engagement with the National Treasury and a fundraising approach is determined, it is not possible to make definitive proposals on funding arrangements. However, a set of basic funding principles are proposed:

› A financially sustainable revolving fund with operating costs covered by the returns from its own financial products, these returns being interest and capital payments on debt, guarantee fees, and other fees levied such as raising or commitment fees. The fund would also receive income from interest on unspent fund capital.

› Initial capital from either the SA fiscus or from donor or DFI funds, including climate finance. As per international experience, consideration should be given to the use of environmental levies such as carbon tax revenues or environmental fines to capitalise the fund (noting the general principle of non-hypothecation of government revenue).

› Initial capital would be in the form of either concessional equity, grant, or concessional loan. In either of these cases, initial capitalisation would be junior to any further debt finance raised, effectively acting as first-loss capital.

› The fund would be able to receive additional grants and loans from other sources, including loans from commercial banks or equity from the private sector if suitably de-risked.

› Donor funds could be used to cover project development or technical assistance and to further reduce the risk of DFI and commercial loans.

Funding Options	Proposed Option
Funding options include: 1. National fiscus 2. Directed funds from carbon taxes or environmental levies or electricity levies 3. Climate finance 4. DFI grant or equity funds 5. Private sector	Discussions with the National Treasury to further inform preferred options. The World Bank to provide feedback on their potential role in facilitating initial capitalisation.

As discussed in the section below, the EE fund can be a future vehicle for specialised credit lines. Once the fund is established with an experienced and effective manager and a proper understanding of EE lending and the ESCO market, the fund can easily act as a conduit for later financing, such as DFI credit lines or further climate finance. In particular, the fund could seek to be a conduit for micro, small, and medium enterprise (MSME) finance such as from the Small Enterprise Financing Agency (SEFA) or similar institutions.

Discussions with the National Treasury are required to define the fundraising parameters and preferred arrangements. Ultimately, it needs to be accepted that eventual funders of the proposed EE fund will have considerable influence over the fund design and structure.

It is difficult to define the initial scale of the fund, but the fund would likely need to have at least R 500 M ($30 M) as initial capitalisation to allow it to generate sufficient resources from reserves and loans to cover its management and operating costs. This is based on a 2-4% of assets either as a set management fee or as interest on reserves, or R 10 M – R 20 M.

While a R 500 M fund appears to be small given the potential investment needs for EE across multiple sectors, a fund at this scale could still have significant impacts. At a 5x multiplier, which is approximately the scale demonstrated by the BgEEF, it could lead to R 2.5 billion in EE investments and more as it reuses its capital over time. A successful fund that demonstrated the ability to deploy funds in EE investments with a low default rate would also be highly likely to raise further funds, either from the fiscus, DFI sources, or as debt from commercial banks.

As the fund financial products would lead to decreased energy consumption and hence greenhouse gas emission reductions, the fund could also secure carbon finance via the direct use of new mechanisms under the Paris Agreement of the United Nations Framework Convention on Climate Change (UNFCCC). A framework for Internationally Transferred Mitigation Outcomes (ITMOs) is being developed and could potentially be structured either as a source of funding or as incentives for fund clients.

Business Model

The basics of the business model are outlined above and, in summary, the fund would develop debt and debt-like products designed to address risk perceptions and risk aversion in the EE sector, particularly under ESCO and EPC models. These instruments would also be structured to reduce current transaction costs and should be as standardised as possible and supported by a well-informed team with access to technical and legal expertise as required.

Although the fund would seek to make a return on its investments to allow it to be financially sustainable, it would not seek to outcompete commercial lenders and would use its instruments to target market gaps and failures.

The fund manager would be incentivised on a variety of KPIs, but a significant portion of manager incentives would rest on suitable finance performance and low default rates. The mandate of the fund would not be to take unacceptable risk or to lend to non-creditworthy lenders or projects as this would defeat the purpose of a revolving fund and would not, in any case, lead to successfully expanding EE investments. A core component of the business model would be disciplined lending and support for projects to de-risk them and demonstrate commercial viability to the broader financial sector.

One of the proposed objectives of the fund would be to reduce transaction costs and risk perceptions across the entire sector. To achieve this objective, an important role outside of the provision of finance would be to develop standard contracts, documents, and procedures that could help develop market standards and thereby reduce project costs and encourage broader market development. It is proposed that fund documentation be structured as open-source documents that would be allowed to be used by other market participants and, in fact, this is considered a best practice. This could include such documents as:

› Loan agreements;
› Shared savings contracts;
› M&V protocols;
› Technical advisor and mediator terms of references;
› Project financial models.

As a debt fund, the core of fund products is likely to be term loans advanced to either ESCOs or end customers under EPCs or for direct EE investments. Other debt-like instruments such as performance or credit guarantees are also proposed.

As outlined in the table below, a mix of instruments is envisaged and may evolve over time. The core initial instruments are discussed further below.

Business Model Characteristics	Proposed Approach
The fund would have the flexibility to offer a variety of products although the focus would be on debt to ESCOs or end users for investments under EPCs. Products would include: 1. Short (1-2 years) to long-term (>10 years) loans. 2. Financial (loan) or performance guarantees for ESCOs borrowing from other institutions. 3. Project development support facility (capitalised to loan). 4. Co-lending with other financial institutions.	It is proposed that the fund be focused on debt or debt-like instruments but that a flexible business model be followed to allow for both loans and guarantees. As with international examples, the fund mandate would enable it to adjust financial products to changing business circumstances.

Based on the results of the review of other similar funds internationally and the market needs identified in the barrier analysis report, instruments that would be proposed for consideration are:

› Loans and receivable financing: Direct term loans to ESCOs and end customers for EE investments. The fund could make these loans concessional through various means such as fixed interest rates, lower fees and charges, and similar benefits:
  - Initial short to medium-term loans (2 to 5 years) are likely to be the simplest loans to disburse and would be supported by the fund with securities over movable equipment. Security for the loan could also include cession of the shared savings or energy performance contract itself, as well recourse as to the borrower directly.
  - Longer term (5 to 15 years) non-recourse or project finance loans could also be made in support of larger and longer-term projects. Until the fund has a larger capital base, the scale

  of project finance loans would be limited or could be provided as co-finance with commercial banks.
  - Receivable financing is a type of lending whereby ESCOs receive early payments from the fund on their outstanding or future invoices (either payments for EPCs or shared savings contract). The ESCO would cede all or some of its outstanding invoices or expected future payments to the fund for early payments in return for a fee.
- Credit guarantees or credit enhancements would be instruments made available to ESCOs or end customers to reduce project risks and thereby allow them to raise debt more easily from commercial banks or equity from other investors. These have been used successfully by the BgEEF, US revolving loan funds, and other funders in the clean energy sector. These guarantees could be provided on either a single project or portfolio basis.
  - The BgEEF provides credit guarantees for EE loans, in other words an ESCO buys a guarantee (for 0.5% - 2.0% of the loan value), which it then can provide to a bank. The guarantee covers a portion of any losses that the bank may suffer if the counterparty does not or cannot pay or does not pay on time. This significantly reduces the risk to the bank, thus allowing the ESCO to obtain a commercial loan. BgEEF products either cover 80% of the loss on a 50% shared savings basis with the commercial bank or 50% of the loss on a first-loss basis (in other words, the fund pays the first 50% of losses).
  - As noted above, US revolving loan funds typically have similar credit enhancement mechanisms but at lower levels of support. These are referred to as loan loss reserves (LLRs) that similarly encourage private lenders to invest in clean energy projects by guaranteeing a portion of any potential losses to be recouped by the lender in the event of default in loan payments. The portion of losses covered is generally around 10%.
- Performance guarantees may be considered or developed in due course, possibly in partnership with the insurance sector. These are, however, more technical instruments requiring sound analysis of performance risks rather than credit or payment risks and are more like traditional insurance products.
- Project development or technical assistance grants or loans may be provided by the fund. It is relatively typical for such funds to include a defined portion of funding for project development technical assistance. This could either be accomplished as a direct recoverable grant or low interest loan.
  - The role of these funds would be to support the development of well-prepared projects capable of being financed by the fund and other lenders. Care would need to be taken to avoid supporting speculative projects or projects unlikely to ultimately be bankable and some level of financial risk would need to be taken by the sponsor along with the fund.

The above instruments are proposed based on identified barriers and the market assessment results. However, since the intention of the instruments is to eventually support greater investment by ESCOs and greater lending by commercial banks, it is critically important that instruments are designed by the fund in consultation with:

- ESCOs and other EE service providers;

› Commercial banks and local DFIs;
› Donors and/or funders.

As noted above, the EE fund can be a vehicle for specialised credit lines; for example, the fund could act as an intermediary for MSME finance from the SEFA. In such cases, the fund would need to ensure that it had suitable products or could adjust its products to meet the requirements of the credit line provider. For example, in the case of SEFA, the fund would need to ensure that its funding criteria are aligned with the small enterprise requirements of SEFA.

Insofar as commercial lenders start to increase their lending in EE sectors addressed by the fund, the fund mandate should allow flexibility for the fund manager to then develop and propose products and services to address the remaining underserved market sectors.

Target Market

The primary markets of the fund are seen as both ESCOs and end customers with an emphasis on products designed to support ESCO and EPC contract structures.

Target Market Options	Proposed Approach
The primary financing markets of the fund are private end users, project developers, and ESCOs. The fund could either service exclusively the private sector, lend to ESCOs carrying out projects for the public sector, or lend to the public sector itself. The EE fund could be exclusive to EE or could include broader energy management and solar PV bundled with EE with certain restrictions.	Although the intention is to support the ESCO market, it is proposed that the fund also lend directly to end customers, i.e. project owners investing in EE. The fund would focus on lending to private sector entities. However, this could include lending to ESCOs that are undertaking projects for the public sector. Credit guarantees would not be provided to public sector entities. The fund could include energy management and behind-the-meter solar PV, but only if the majority (>50%) of the funding is for true EE investments.

The proposed focus of the fund is on private sector ESCOs and end customers. It is likely that some ESCOs will undertake projects with public sector clients, and the fund would not be prohibited from lending to ESCOs for those projects.

The Energy Efficiency in Public Buildings and Infrastructure Programme (EEPBIP) is designed to provide a loan credit guarantee to the IDC to support it in lending to ESCOs under the programme that is aimed at implementing EE investments in the public sector. The fund therefore should preferably avoid overlap with that programme; however, if a public sector project is not supported under the EEPBIP framework and is being implemented by an ESCO, the fund should not be restricted from lending to that ESCO.

There is no reason to restrict investment to private sector projects; in cases where ESCOs contract with the public sector, the fund could support them as well.

Given the role of the DBSA in lending to the public sector and the current difficult state of government and municipal finances, it is proposed that the fund mandate exclude directly lending and providing credit guarantee products to public sector entities.

There would not be any conflict between the role of the fund and that of a Super ESCO. Super ESCO functions would involve developing, implementing, bundling, and raising finance for large EE projects or project portfolios. Insofar as projects need debt or credit guarantees, the EE fund could be a possible lender or co-lender to projects or a guarantee provider. There will likely be some size differentiation with the fund tending to lend to smaller projects than the projects developed by the Super ESCO. However, there may well be some overlaps in the size range, and there seems to be no reason to preclude the fund from supporting Super ESCO projects.

It is proposed that the fund not be restricted to any particular market sector and be agnostic to technology as long as the technology is commercially proven. The fund manager would, however, have the flexibility to design specific lending products and associated documentation for EE interventions that are deemed sufficiently widespread to be targeted. These could, for example, include relatively simple options such as LED lighting, energy efficient motors, or heating, ventilation, and cooling investments.

Project Size

Since one of the important barriers identified was the relatively high transaction costs of EE projects compared to other clean energy investments, it is envisaged that, with a lean operational structure and lending approach, the fund would be able to reduce transaction costs per rand lent and thereby be able to support smaller projects than commercial banks or DFIs. While it is proposed that this be an important objective of the fund, it is also proposed that there be no specific upper or lower limit to the size of loans provided or to overall project sizes and that this be rather determined in practice.

On the other hand, when considering ways to address barriers to financing, it is important to recognise that the majority of ESCOs in SA are relatively small businesses looking mostly to finance small operations. The mandate and design of the fund would therefore be established to ensure a focus on smaller companies and projects, and this could include, for example, a KPI (for example the number of projects below a certain size) that is linked to financial incentives to encourage the fund manager to support smaller projects.

Project Size Options	Proposed Approach
The project sizes of the fund would be determined by transaction costs and would therefore likely tend to be medium (R 5-10 M) to large (R 10-100 M) projects, and the fund would likely only support small projects or ESCOs if projects were bundled. The fund is not likely to support small residential or commercial projects, for example. Consideration would be given to mechanisms that support smaller ESCOs and projects, such as offering	The fund could have a certain maximum percentage to be lent to any single project to avoid overconcentration risks. The fund manager would have performance incentives to encourage lending to smaller projects and ESCOs. Fund and loan instrument design would also encourage low transaction costs and hence the ability to provide smaller loans (R 0.1 – R 5 M).

Project Size Options	Proposed Approach
project preparation facilities to smaller ESCOs and establishing loans for standardised project types.	

As with other similar funds, a practical option to support smaller projects is to bundle them into portfolios. This has been accomplished in the RE sector where some banks currently finance portfolios of RE power purchase agreements (PPAs) and has also been an approach of the BgEEF and the First Fund for EE projects whereby, for example, the BgEEF advances guarantees to portfolios of smaller investments.

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