



Clean Captive Installations in sub-Sahara Africa

Webinar

Summary of the South Africa country study and Call for Proposals

FS-UNEP Collaborating Centre

22nd July, 2021 | Total duration - 70 minutes

Supported by:



based on a decision of the German Bundestag



Frankfurt School
FS-UNEP Collaborating Centre
for Climate & Sustainable Energy Finance



Webinar | Agenda

Session 1

START	TOPIC	PRESENTER
5 minutes	WELCOME Opening remarks on the progress of CCI project	MESERET ZEMEDKUN (UNEP) DIANA KOLLANYI (FS-UNEP Collaborating Centre)
25 minutes	OPEN CALL FOR PROPOSALS Introduction to the framework document, application process, selection criteria, application timelines, application forms	MADHUMITHA MADHAVAN (FS-UNEP Collaborating Centre)
15 minutes	SOUTH AFRICA COUNTRY STUDY REPORT Overview of South Africa Energy sector and its potential for Clean Captive Power Installations	CAROLINA MERIGHI (UNEP)
30 minutes	Q&A SESSION	Open to all participants
Session will be moderated by DIANA KOLLANYI (FS-UNEP Collaborating Centre)		



Webinar | Agenda

Session 1

START	TOPIC	PRESENTER
5 minutes	WELCOME Opening remarks on the progress of CCI project	MESERET ZEMEDKUN (UNEP) DIANA KOLLANYI (FS-UNEP Collaborating Centre)
25 minutes	OPEN CALL FOR PROPOSALS Introduction to the framework document, application process, selection criteria, application timelines, application forms	MADHUMITHA MADHAVAN (FS-UNEP Collaborating Centre)
15 minutes	SOUTH AFRICA COUNTRY STUDY REPORT Overview of South Africa Energy sector and its potential for Clean Captive Power Installations	CAROLINA MERIGHI (UNEP)
30 minutes	Q&A SESSION	Open to all participants
Session will be moderated by DIANA KOLLANYI (FS-UNEP Collaborating Centre)		

Open call for proposal | Framework document

Introduction

Aim of launching the call for proposals

1

Background

- Lack of reliable and affordable energy
- Grid is unreliable, outages occur often
- High energy costs and lack of infrastructure

2

Objectives

- Strengthen ability to move towards low carbon-emitting development strategies
- Enhance clean captive energy installations for industries
- Raise awareness and disseminate clean modern energy technology

Support for applicants

3

Advisory support: Tools and guidelines for financial and economic viability assessments

4

Financial support: Results-based **grants** to share costs (up to US\$ 300,000) for the following types of projects:



Type I: Captive solar PV plant at a site for C&I clients



Type II: Create a financing vehicle/ instrument dedicated to captive solar PV projects



Type III: Capacity building, trainings/ certification with specific focus on captive solar PV financing

Expected outcomes

5

Implementation of several **pilot projects** that have:

- **Innovative business models**, address the market barriers for captive solar
- **Replicable and scalable concepts** and structures

Webinar | Agenda

Session 1

START	TOPIC	PRESENTER
5 minutes	WELCOME Opening remarks on the progress of CCI project	MESERET ZEMEDKUN (UNEP) DIANA KOLLANYI (FS-UNEP Collaborating Centre)
25 minutes	OPEN CALL FOR PROPOSALS Introduction to the framework document, application process, selection criteria, application timelines, application forms	MADHUMITHA MADHAVAN (FS-UNEP Collaborating Centre)
15 minutes	SOUTH AFRICA COUNTRY STUDY REPORT Overview of South Africa Energy sector and its potential for Clean Captive Power Installations	CAROLINA MERIGHI (UNEP)
30 minutes	Q&A SESSION	Open to all participants
Session will be moderated by DIANA KOLLANYI (FS-UNEP Collaborating Centre)		

Framework document | Activities eligible for grant support

Overview

Type 1 Transaction costs		Type 2 Financing vehicle/instrument		Type 3 Capacity building	
Advisory Services	Financial modelling	Financial structuring	Due diligence costs	Fee for trainers	Training materials
Business plan	System design	Defn. of technical standards	Defn. of investment criteria	Rent or purchase of equipment	Participant's expenses
Permits	Legal advisory	Financial modelling	Business plan	Training Fees	Rent for training premises
PPA structuring	Due diligence costs	Legal costs	Other set-up costs		
Studies and assessments	Other transaction costs				

Framework document | Activities eligible for grant support

Type 1 | Transaction costs – sample costs

Advisory Services



Support fund-raising process



Connect applicants to FIs



Structure and negotiate contracts

Financial modelling



Audit



Analyse profitability, sensitivity, cash flows



Assess financing alternatives

Legal Costs



Support in structuring PPA or lease contracts



Advise in negotiation



Draft & review agreements

PPA structuring



Analyse needs from all parties to reach agreements



Negotiate term-sheets



Support & structure closing of agreement

System design



Analyse structural costs



Design concepts and details



Prepare documentations

Studies and assessments



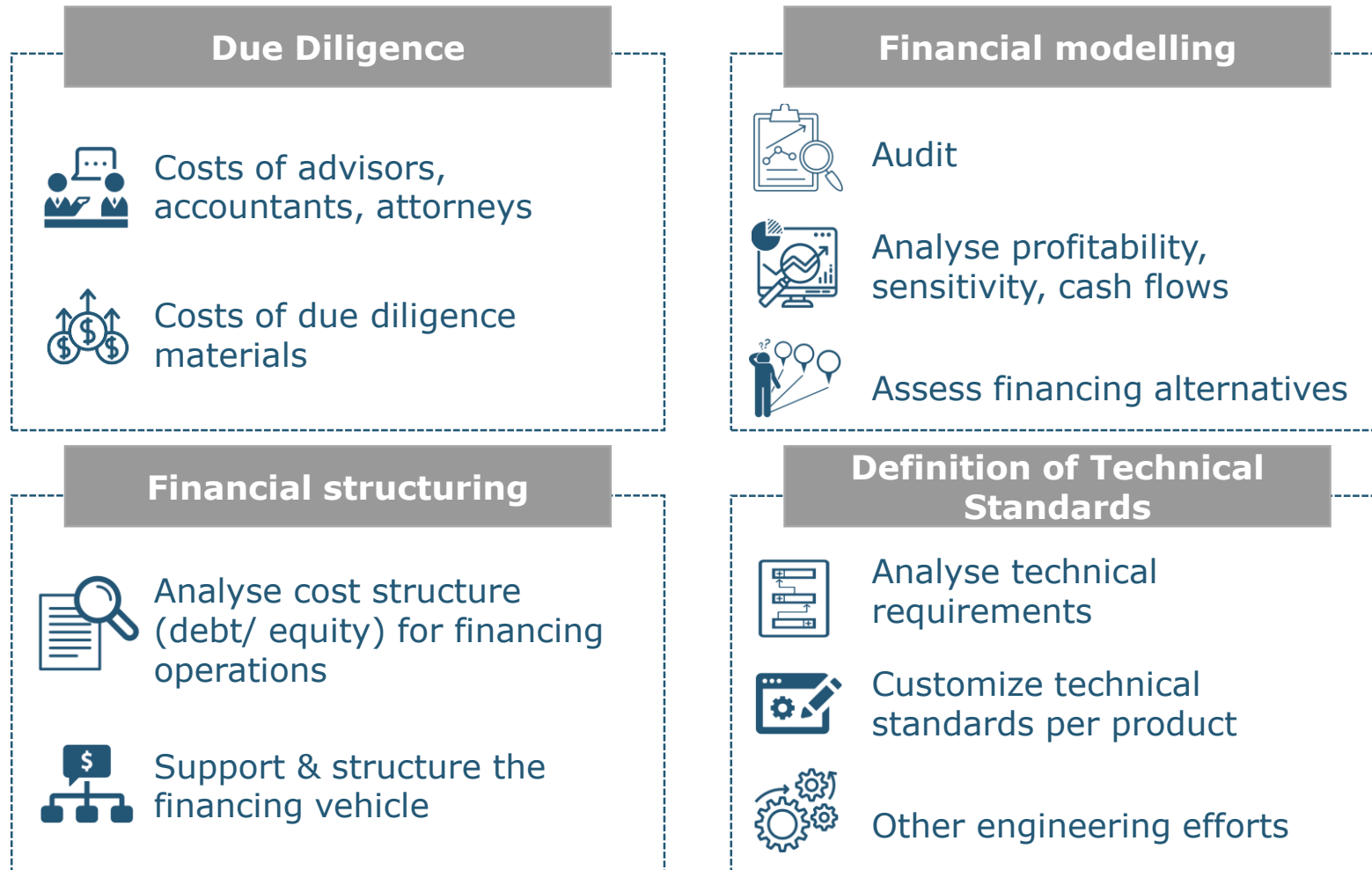
Study & assess project feasibility



Support in reviewing, structuring, etc. of business plan

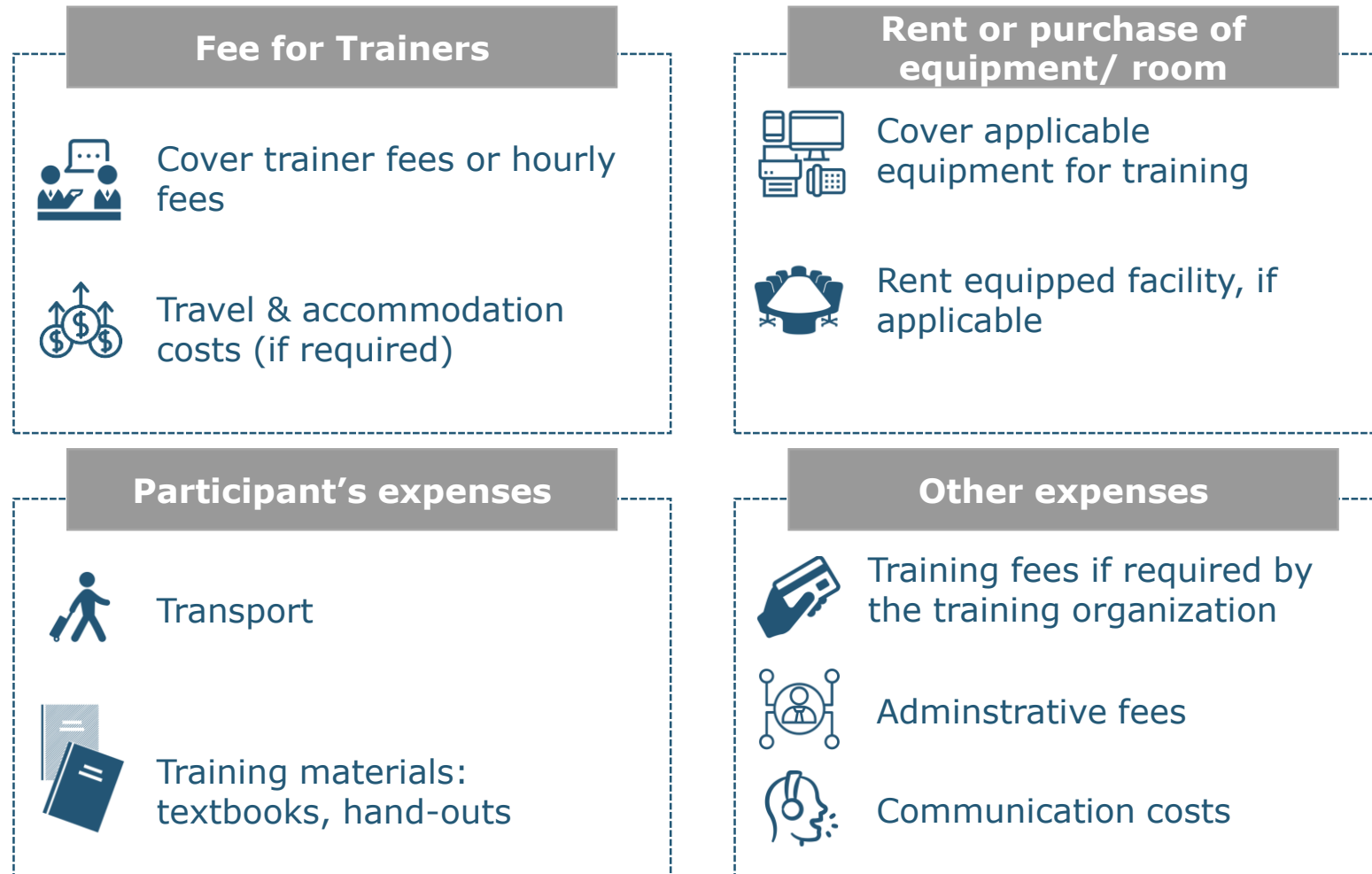
Framework document | Activities eligible for grant support

Type 2 | Financing vehicle/instrument – sample costs



Framework document | Activities eligible for grant support

Type 3 | Capacity building – sample costs



Framework document | Activities eligible for grant support

Conditional grant support

Type 1 | Transaction costs

Conditional funding support:

- Max grant amount that can be availed per project is USD 300K for transaction costs; **AND**
- At least 25% of transaction cost should be own contribution; **AND**
- Total transaction cost to not exceed 25% of equipment and installation costs

Type 2 | Financing vehicle/instrument

Conditional funding support:

- Max grant amount that can be availed per project is USD 300K; **AND**
- At least 25% should be own contribution

Type 3 | Capacity building

Conditional funding support:

- Max grant amount that can be availed per project is USD 300K; **AND**
- At least 25% should be own contribution; **AND**
- Applicant provides detailed plan to increase RE activity in next 5 years

Framework document

Application process

How to apply



Download relevant application form from CCI website i.e. **Type1 or Type 2 or Type 3**



Fill application form in English, attach supporting docs and **submit to** info@captiverenewables-africa.org

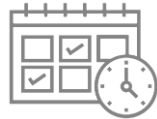


One-step process
CCI team will contact lead applicant if further info. necessary

Who can apply



Consortium, Joint Venture or association
Identify lead contact applicant for comm. & grant contracting



Pilot project to be **implemented within 18 months**. *Projects that are highly time sensitive may refrain from applying*



Agree to knowledge sharing to disburse info. and enhance faster uptake of clean captive renewable energies

When to apply

Applicants may reach out to project team to clarify outstanding questions throughout this period

22 Jul 2021

Launch of Open Call for Proposal through online Webinar

22 Jul 2021

CCI project team to publish Open Call for Proposal documents on website

13 Aug 2021

Last day for applicant to clarify questions with CCI project team

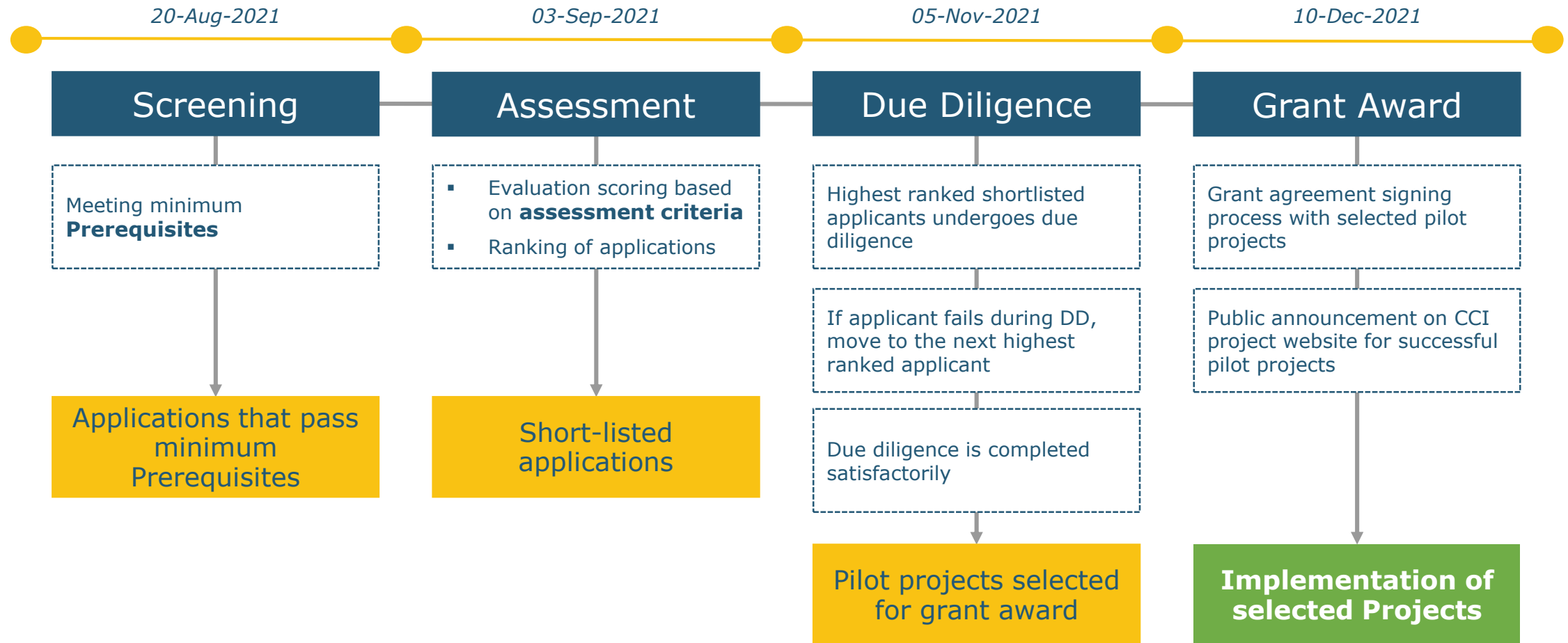
20 Aug 2021

Final application deadline for submission of requested documents



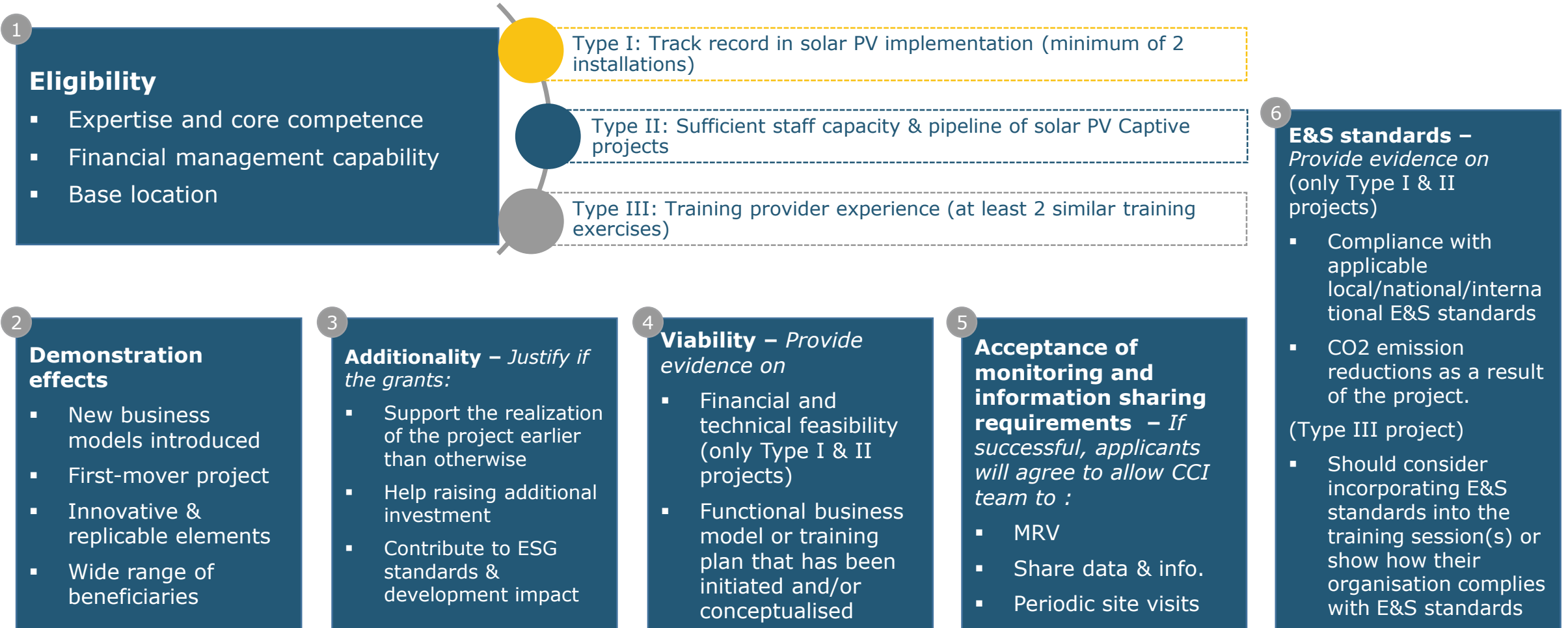
Framework document

Selection and implementation process



Framework document

Criteria for selection | Prerequisites



Framework document

Criteria for selection | Assessment criteria

1

Demonstration effects

Applicants are scored on the basis of their description of project characteristics such as replicability/scalability, innovativeness, learning potential that result from implementing the project.

2

Additionality – Applicants are scored on the basis of their justification for the grant support request through their description of how the support would contribute, for instance, to increasing the project's opportunity of raising additional investment or financing, or lead to improved ESG standards, or lead to local capacity development, or quicker realisation of emissions reduction, etc.

3

Viability – *Provide evidence on*

- Technical feasibility (Type I & II projects)
- Financial feasibility: profitability, metrics, financial commitment, etc. (Type I & II projects)

4

Monitoring Requirements & Information Sharing:

- Consider applicants agree to sharing data and information publicly

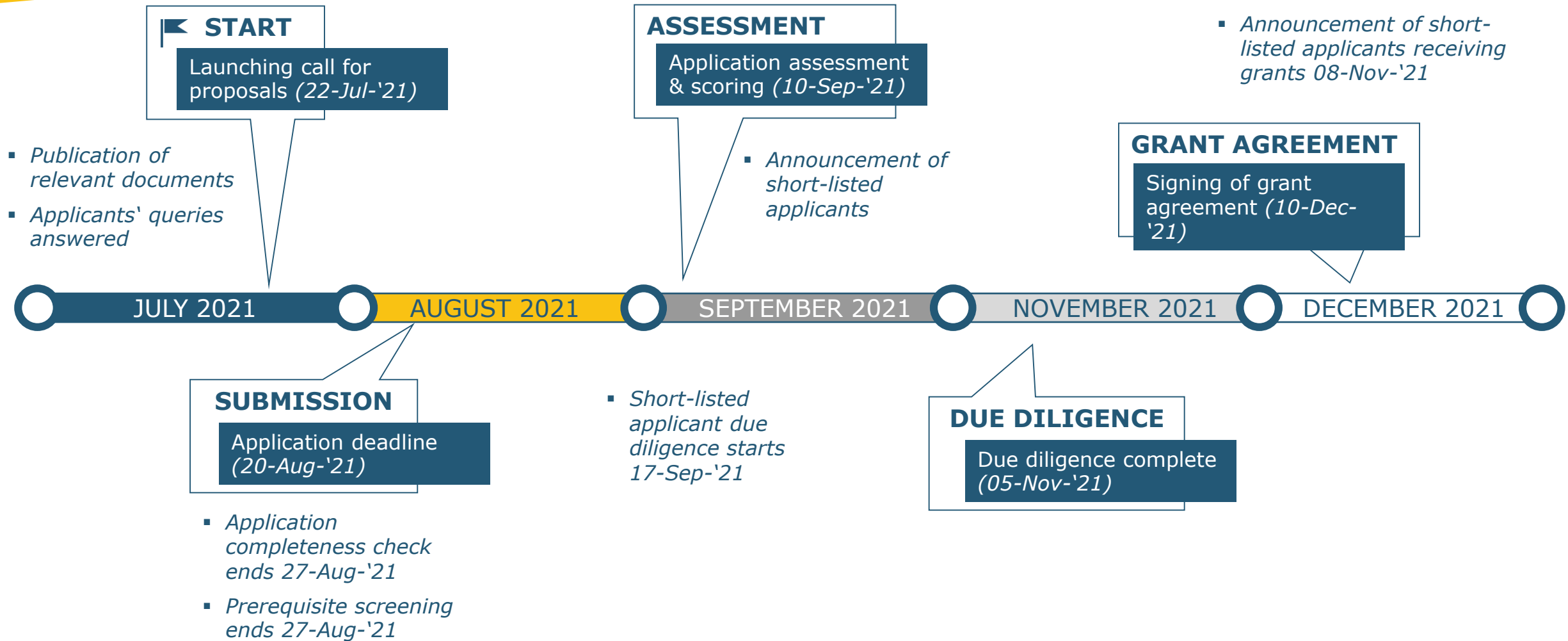
5

ESG standards

- CO₂ Emissions reduction efficiency ratio
- Positive environmental and gender impacts
- Align with development priorities

Framework document

Application process | Timeline



Application forms

Type 1 or Type 2 or Type 3

General Guidelines

- Application forms (for all 3 Types of Projects) are to be filled and submitted ELECTRONICALLY
- All questions are mandatory and must be answered as guided in the available spaces provided and based on the project's aspects
- All relevant documents need to be attached as indicated at the end of the application

Main project aspects in Application Form

- **Info on Lead Applicant:** mandatory to clearly provide the contact details of the applicant
- **Info on Project Characteristics** (Type I and II): information on current situation, location, type of C&I user, proposed business model, etc.
- **Info on Capacity Building** (Type III)
- **Technical Viability** (Type I and II)
- **Financial Viability**
- **Info on Participants and Capacity Building** (Type III)
- **Monitoring, Verification, Reporting**
- **E&S and Gender Impact**

Checklist of Attachments

- Certificates (or equivalent)
- Tax compliance, ETR registration, permits, license, etc.
- Agreements between the company and project partners (or training provider)
- Company references and/or key expert CVs (where applicable)
- Detailed cost breakdown
- Detailed implementation plan
- Audited financial statements (going back 3-5 years)
- CO₂ emissions reduction calculation with assumptions
- Technical assessment design, data sheet, etc.
- Others

Webinar | Agenda

Session 1

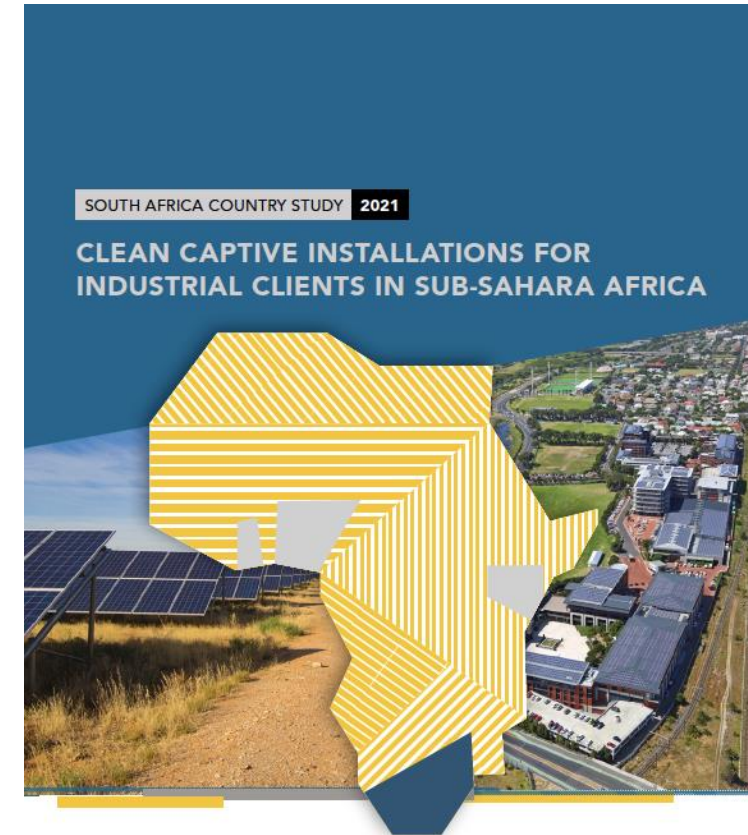
START	TOPIC	PRESENTER
5 minutes	WELCOME Opening remarks on the progress of CCI project	MESERET ZEMEDKUN (UNEP) DIANA KOLLANYI (FS-UNEP Collaborating Centre)
25 minutes	OPEN CALL FOR PROPOSALS Introduction to the framework document, application process, selection criteria, application timelines, application forms	MADHUMITHA MADHAVAN (FS-UNEP Collaborating Centre)
15 minutes	SOUTH AFRICA COUNTRY STUDY REPORT Overview of South Africa Energy sector and its potential for Clean Captive Power Installations	CAROLINA MERIGHI (UNEP)
30 minutes	Q&A SESSION	Open to all participants
Session will be moderated by DIANA KOLLANYI (FS-UNEP Collaborating Centre)		



Country study | South Africa

Introduction

The South Africa Country report presents the state of the clean captive installations market in South Africa, with a focus on the commercial and industrial market and solar photovoltaic (PV) technology.



Download from website:
captive renewables-africa.org/publications/

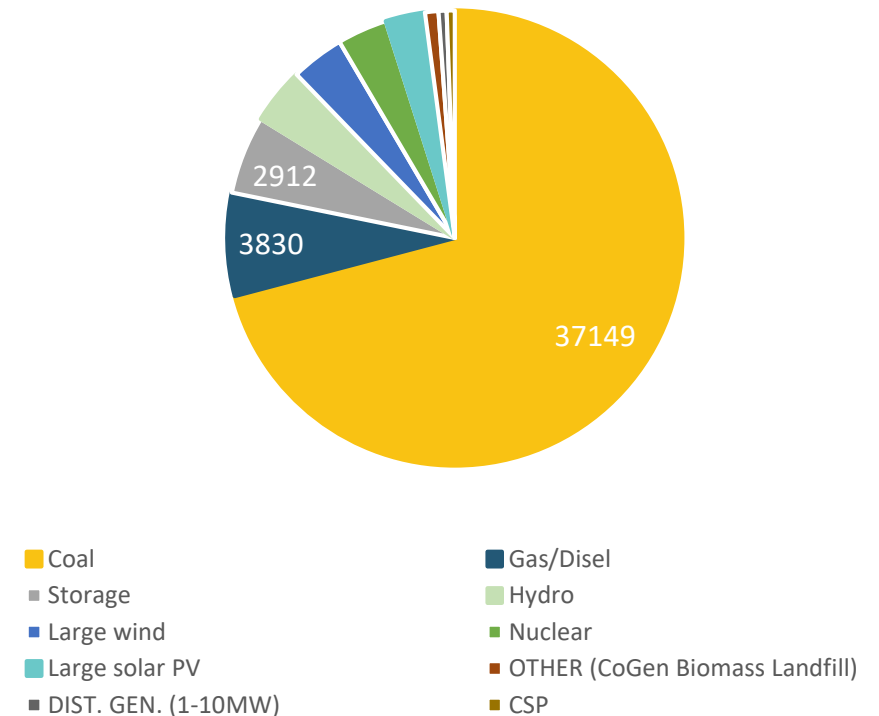
Country study | South Africa

Energy profile

Coal represents around 85 per cent of the electricity generation mix in South Africa.

Energy indicator	Result
Access to electricity	84.2%
Electrification – urban areas	93.5%
Electrification – rural areas	66.9%
Average cost of generation	US\$ NA per kWh
Total electricity generation	21 923 GWh
Total electricity consumption	19 585 GWh
Electricity exports	1 264 GWh
Electricity imports	692 GWh
Electricity total installed capacity	12 522 MW

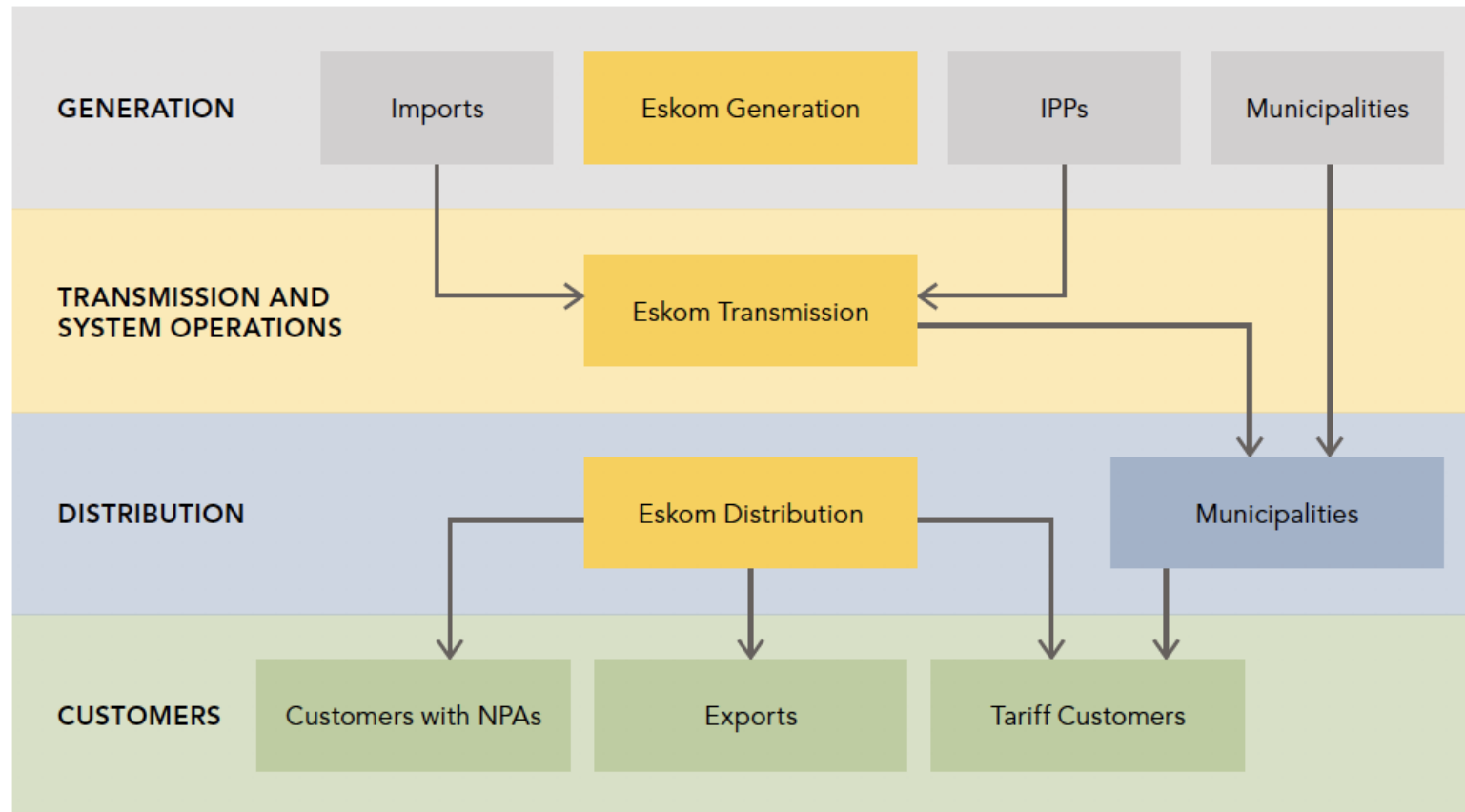
South Africa's estimated electricity supply capacity as of 2018 (MW)



Country study | South Africa

Power sector structure

Structure of the power sector post-privatization in South Africa

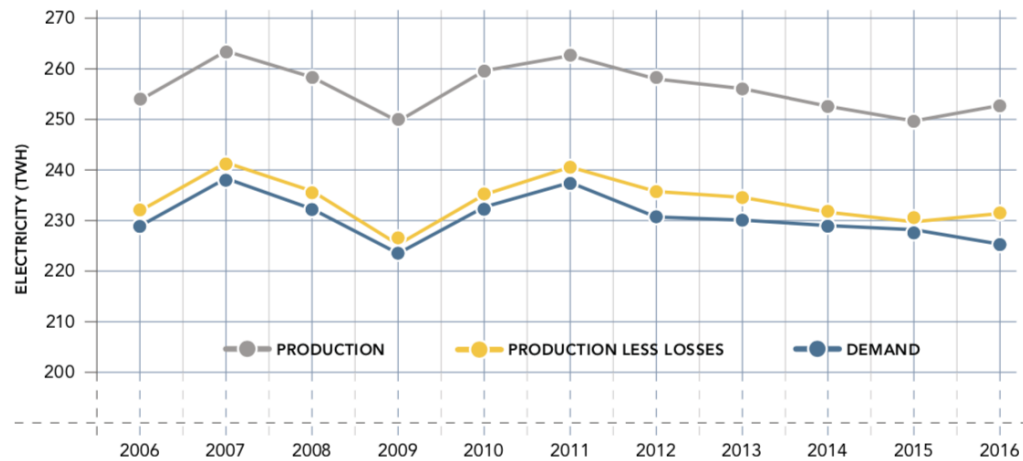


Note: IPPs = independent power producers; NPAs = Negotiated Pricing Agreement.

Country study | South Africa

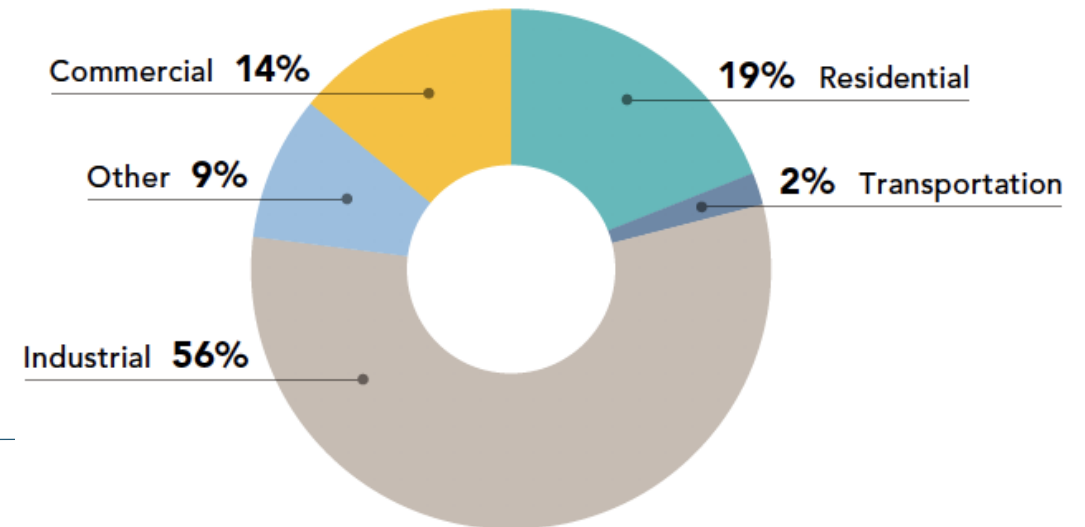
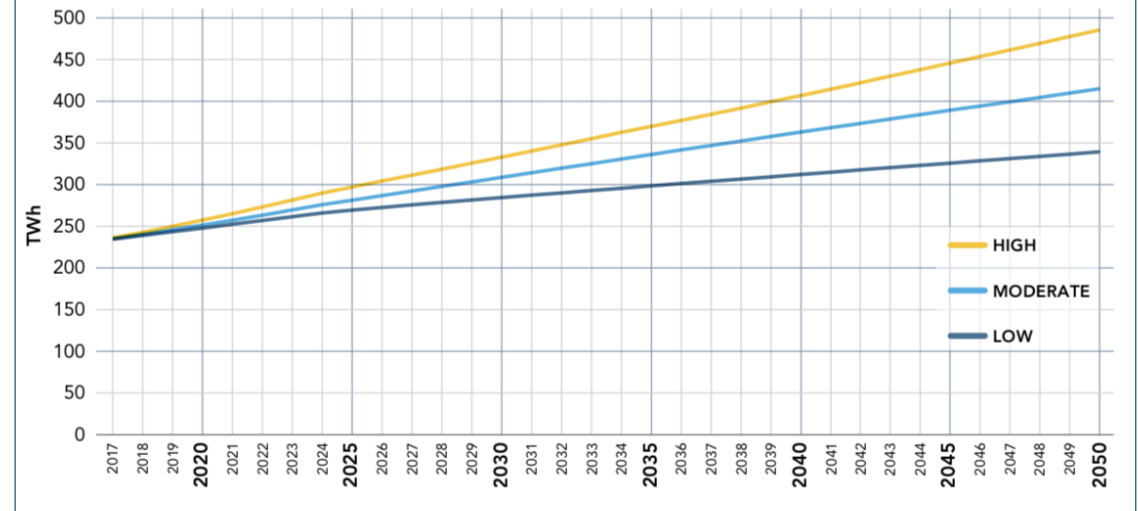
Electricity demand

South Africa's electricity supply and demand (TWh) (2006-2016)



Electricity consumption shares by sector in 2019 (per cent)

Demand forecast based on three main scenarios (TWh)



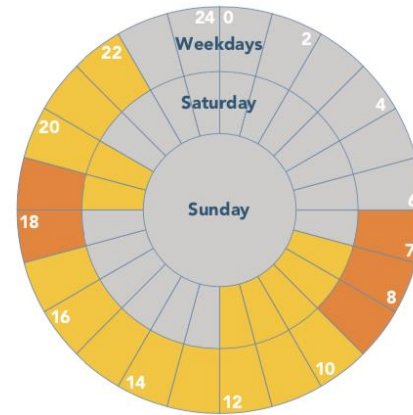
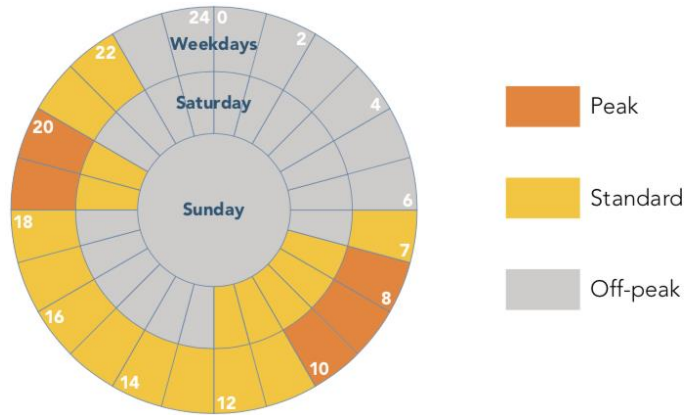
Country study | South Africa

Electricity sales

Eskom's time-of-use periods

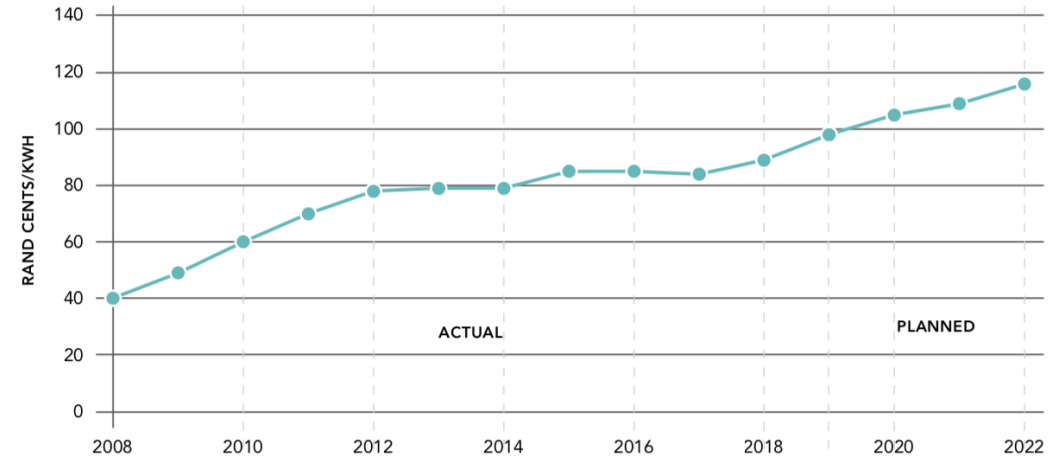
Low-demand season (Sep-May)

High-demand season (Jun-Aug)

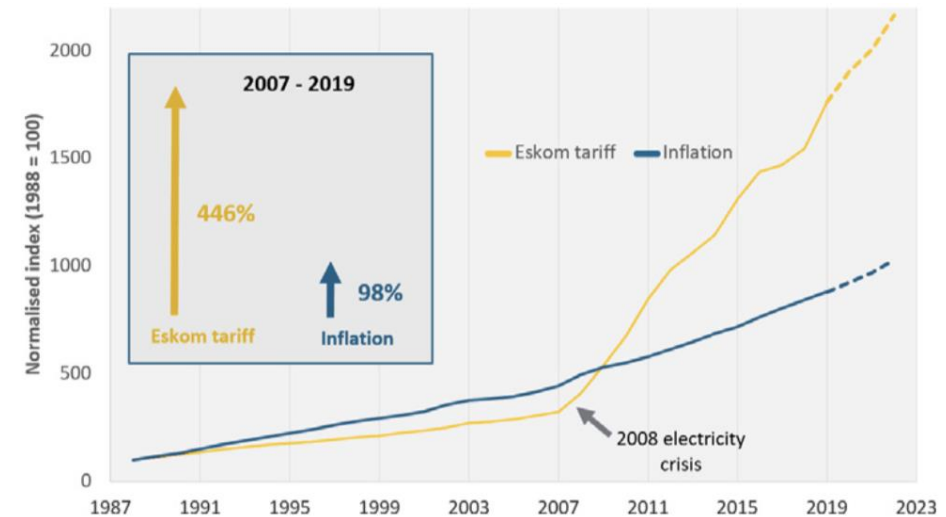


Eskom Energy Charge/ Time-of-use Period	Low Season Sep-May (Rand/KWh)(and US\$/KWh)	Winter High Season Jun-Aug (Rand/KWh)(and US\$/KWh)
Peak	R0.98-R1.12(\$0.070-\$0.080)	R3.00-R3.43(\$0.21-\$0.24)
Standard	R0.67-R0.77(\$0.048-\$0.055)	R0.91-R1.04(\$0.065-\$0.074)
Off-peak	R0.43-R0.49(\$0.031-\$0.035)	R0.49-R0.56(\$0.035-\$0.040)

Eskom's average electricity tariffs (R cents/kWh)



Eskom's average tariff vs. inflation (CPI)



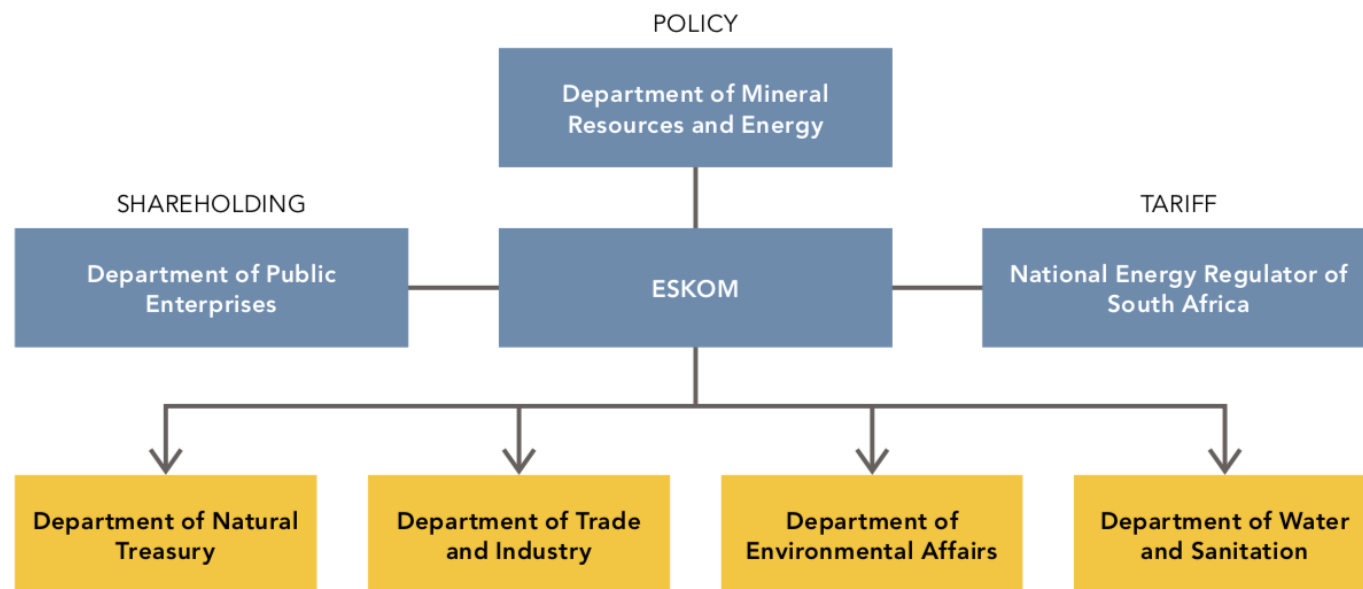
Country study | South Africa

Energy policy and regulatory framework

Key wheeling requirements according to Eskom

Key Wheeling Conditions For Projects	Relevance For Clean Captive Power In The Commercial And Industrial Sector
The generator must have an approved licence to generate and trade or for registration from the NERSA.	Projects over 1 MW need a licence to wheel.
The generator must sign the Connection and Use of System Agreement (CUOSA) with the grid operator.	This agreement is required for all wheeling projects.
The third-party access will be implemented initially up to an overall limit of 300 MW (as per NERSA's current rules).	Projects must be less than 300 MW.
The generator/load must be on a voltage higher than 1 kV.	Low-voltage projects are not currently allowed to wheel.

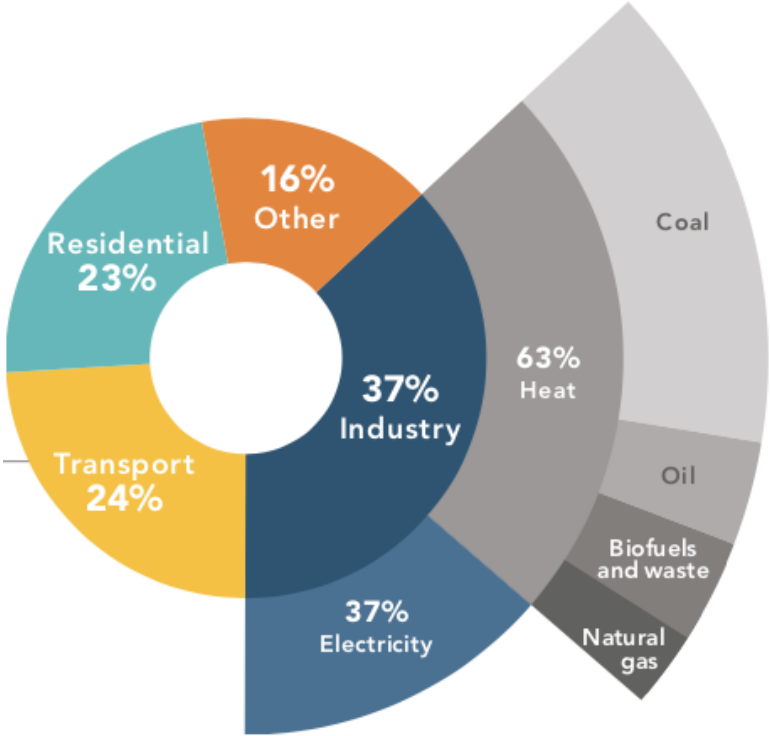
Legislative landscape of South Africa's electricity supply industry



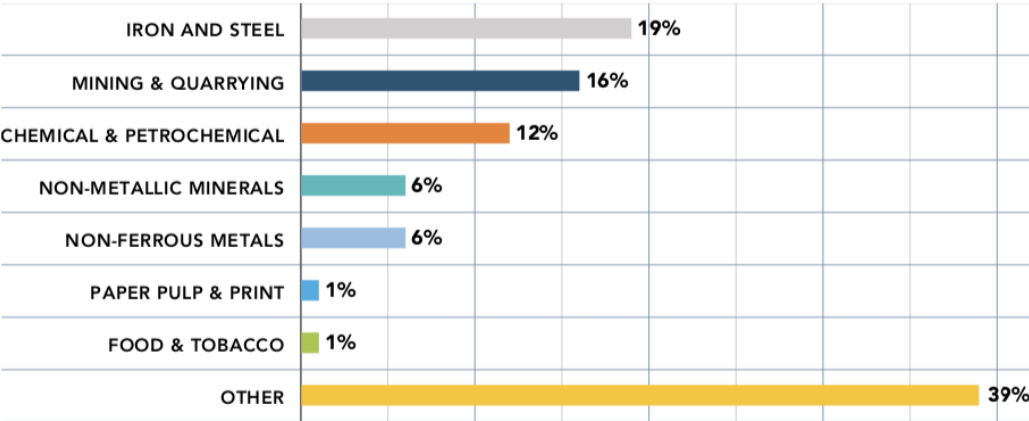
Country study | South Africa

South Africa market potential for captive power

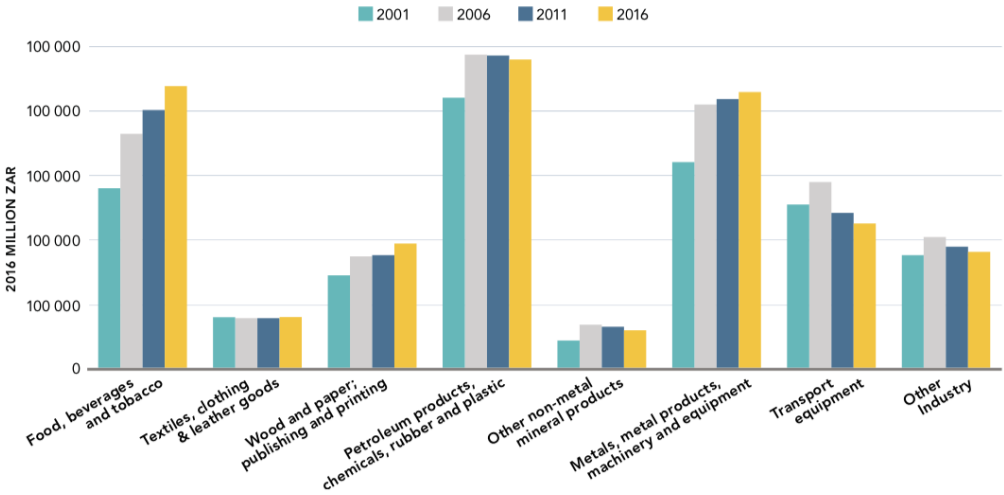
South Africa’s energy consumption by sector in 2015 (total: 3,131 petajoules) (per cent)



South African industrial energy demand by sector, share as of 2015



Overview of South African manufacturing output by value, 2001 to 2016 (million ZAR)



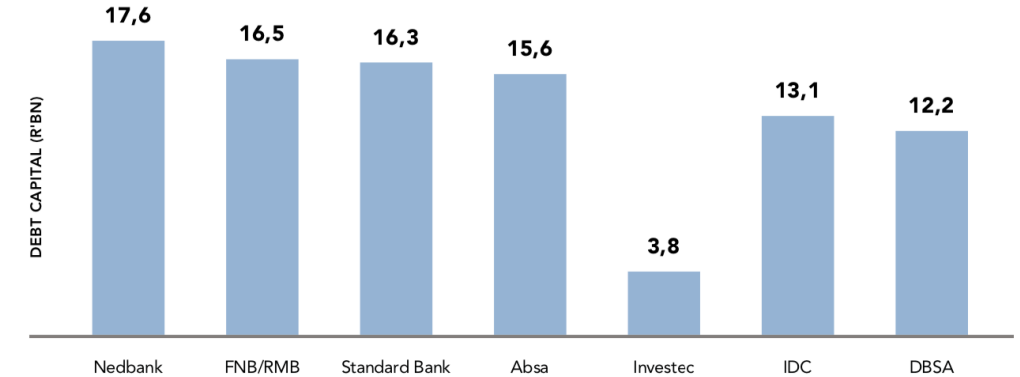
Country study | South Africa

Financing clean captive power

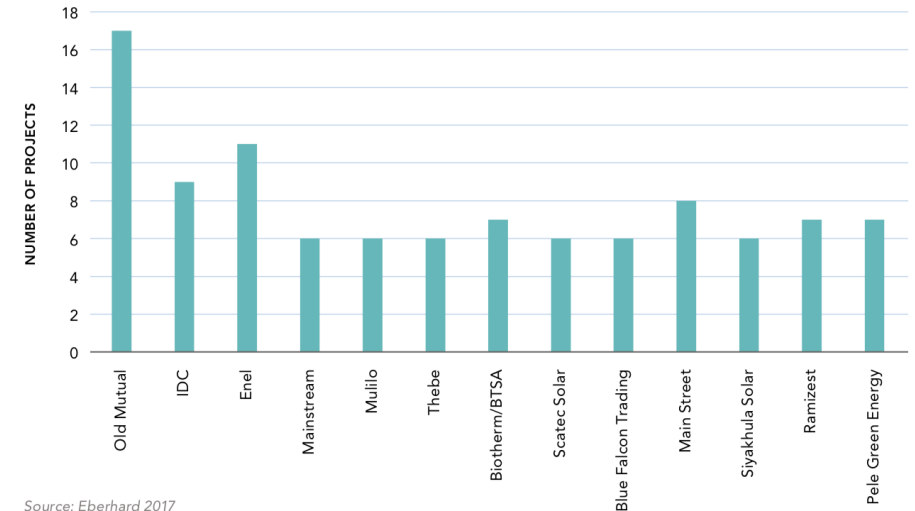
Financing schemes for small-scale renewable energy

Retail Bank	Debt Term	Loan	Security	Limits
ABSA	5-10 years	Funds up to 100 per cent of installation, with no down payment required.	Project-specific and additional security not necessarily required. Installation is part of collateral.	Typically individual projects from 30 kWp to 1,000 kWp.
Standard Bank	Up to 10 years	Finances at 60 per cent debt and 40 per cent equity. Also offers asset-based finance and term loans up to 100 per cent of the project cost.	Security is usually taken against the underlying balance sheet of the client, but can also use assets for security.	No minimum size, but must be the sole primary banker.
FNB/RMB	Up to 10 years	Funds up to 100 per cent of installation with no downpayment required; depends on borrowers' creditworthiness.	Collateral-based contractual agreement.	Typical finance for projects up to 999 kWp; case-by-case evaluation for larger investments.
Nedbank	Up to 10 years	Up to R50 million (or around US\$3 million).	Utilizes equity in commercial property as collateral.	N/A

Major South African debt providers in REIPPPP Rounds 1-3 (billion ZAR)



Major equity providers in REIPPPP Rounds 1-4 (No.)



Source: Eberhard 2017

Conclusion

- South Africa has a **severe undersupply of electricity production and occasional load shedding**. → This situation could benefit the **clean captive installations market**.
- The financing sector has **limited capability** to provide financing to the informal sector. → There is a **financing gap** in the **small to medium projects**, while commercial banks lack affordable and scalable funding solutions to finance clean captive power.
- There is a lack of consensus around political support for renewable energy. Moreover, the main barrier relates to regulatory uncertainty including the **bottleneck in approval of licencing for projects over 1 MW** and the need for **a streamlined wheeling approval process**.
- Opportunities for clean captive occur in the industrial sector, agriculture sector and small and medium enterprise sector. → A pilot installation of renewable energy technology should consider a **nuanced approach beyond what is already commercially mainstreamed** to maximize the potential impact of the project.

Webinar | Agenda

Session 1

START	TOPIC	PRESENTER
5 minutes	WELCOME Opening remarks on the progress of CCI project	MESERET ZEMEDKUN (UNEP) DIANA KOLLANYI (FS-UNEP Collaborating Centre)
25 minutes	OPEN CALL FOR PROPOSALS Introduction to the framework document, application process, selection criteria, application timelines, application forms	MADHUMITHA MADHAVAN (FS-UNEP Collaborating Centre)
15 minutes	SOUTH AFRICA COUNTRY STUDY REPORT Overview of South Africa Energy sector and its potential for Clean Captive Power Installations	CAROLINA MERIGHI (UNEP)
30 minutes	Q&A SESSION	Open to all participants
Session will be moderated by DIANA KOLLANYI (FS-UNEP Collaborating Centre)		



SESSION 2 – TOOLS

Pre-recorded session available on website

Topics covered:

- Presenting **different tools** developed for captive solar PV solutions in the C&I sector

Thank you for your patience!



UN Environment (UNEP)



Myriem Touhami



Meseret Zemedkun



Rakesh Shejwal



Carolina Merighi

FS-UNEP Collaborating Centre



Tobias Panofen



Diana Kollanyi



Christopher Ahlfeldt



Maria Baez



Madhumitha
Madhavan

Yamini Jain


Adwait Sompura

For further information please visit:

www.captiverenewables-africa.org

Please contact us if any queries:

info@captiverenewables-africa.org

Supported by:
 Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety
based on a decision of the German Bundestag



Frankfurt School
FS-UNEP Collaborating Centre
for Climate & Sustainable Energy Finance

