Harmonising Cooling MEPS in SADC – Energy Efficiency and Low GWP Refrigerant Transition

Readlay Makaliki|SACREEE|19 May 2026

About SACREEE

- SACREEE was established in 2015 by the **SADC Energy Ministers** with a mandate to promote:
  - increased access to modern energy services
  - improved energy security across the SADC Region,

  through the promotion of market-based adoption of
  - renewable energy,
  - energy efficient technologies and
  - energy services.
- In 2017, SADC Energy Ministers mandated SACREEE to support SADC Secretariat in monitoring the implementation of the **Regional Renewable Energy and Energy Efficiency Strategy and Action Plan (REEESAP, 2017-2030)**.

SACREEE is a subsidiary organization of **SADC,** comprising **16 Member states**

SACREEE is established through an **Inter-Governmental Memorandum of Agreement (IGMoA)**

Partnerships are key! The SACREEE funders on establishment include

AUSTRIAN DEVELOPMENT COOPERATION

GNESEC Global Network Regional Sustainable Energy Centres

Project Overview

EAC: *Burundi,* ***Dem. Rep of the Congo,*** *Kenya, Rwanda, South Sudan,* ***Tanzania****, Uganda,*

SADC: *Angola, Botswana, Comoros,* ***Dem. Rep of the Congo,*** *Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa,* ***Tanzania****, Zambia, Zimbabwe*

Project Partners:

EACREEE Building a Sustainable Energy Future

SACREEE SADC CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY

U4E United for Efficiency

With technical support of:

BERKELEY LAB

UNIDO UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION Progress by innovation

Clean Cooling COLLABORATIVE

Funders

gef

Department for Environment Food & Rural Affairs

Countries:

- East African Community (EAC) and Southern African Development Community (SADC)
- Total of 21 countries (16 SADC & 5 EAC)

Objective:

- Development of regionally harmonized Minimum Energy Performance Standards and Labelling

SADC STAN SOUTHERN AFRICAN DEVELOPMENT COMMUNITY COOPERATION IN STANDARDIZATION TOWARDS COMMON STANDARDS

Technologies:

- Room Air Conditioners
- Residential Refrigerators

Scope of Products Covered

REFRIGERATORS
one or more chilled compartments, generally at various temperature zones between 0°C and 14°C, and which may include an ice-making section

FREEZERS
one or more frozen compartments, usually between -18°C and -6°C

FRIDGE-FREEZERS
combination of both chilled and frozen compartment(s) in the same appliance

85

Single Split

Window/ self-contained

Portable

Type of Refrigeration System

Vapour Compression

Rated volume

10 Liters (L) and at or below **1,500 L,**

Electricity connection

powered by **electric mains** and offered for sale or installed in any application.

Covered	Not covered
• Electrical single-phase • Non-ducted single-split • Self-contained • Portable • Air-cooled ACs, air-source HPs • Rated cooling output ≤ 16 kW	• Rated cooling output > 16 kW • Water-cooled ACs, water-source HPs • Multi-split ACs and HPs • Ducted equipment

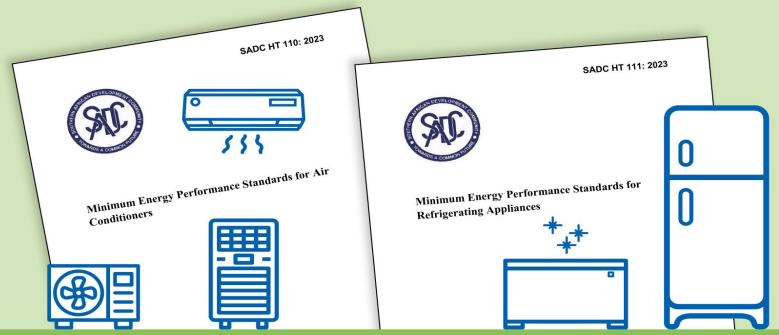
SADC Savings Potential

WHAT ARE THE SADC HARMONIZED MEPS FOR COOLING PRODUCTS?

Single standards which specify the performance and labelling requirements agreed by the 16 SADC Member States for adoption at a national level:

SADC HT 110: 2023,
Minimum Energy Performance Standards for Air Conditioners

SADC HT 111: 2023,
Minimum Energy Performance Standards for Refrigerating Appliances



November 2023: Approved by the SADCSTAN Executive Committee after an extensive consultation process with Member States.

January 2024: Formally handed over to Member States for implementation.

Developed by SACREEE and SADCSTAN with technical support from U4E.

By 2040, the adoption and implementation of the new standards by Member States is forecast to result in annual savings of:

8 TWh on electricity consumption (equivalent to 4 power plants of 500 MW)

US$840 million reduction on electricity bills

6.5 million tonnes of CO_2 avoided (equivalent to more than 3.6 million cars)

SADC Cooling MEPS

WHAT ARE THE REQUIREMENTS OF THE SADC HARMONIZED MEPS FOR COOLING PRODUCTS?

RESIDENTIAL REFRIGERATING APPLIANCES						
SCOPE AND PRODUCT CATEGORIES	REFRIGERATORS | REFRIGERATOR-FREEZERS | FREEZERS					
MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)	MINIMUM R REQUIREMENTS FOR REFRIGERATING APPLIANCES					
	CATEGORY	2024	2027			
	Refrigerators	1.00	1.25			
	Refrigerator-Freezers	1.00	1.25			
	Freezers	1.00	1.25			
PERFORMANCE LABELLING REQUIREMENTS	LABELLING REQUIREMENTS FOR REFRIGERATING APPLIANCES					
	CATEGORY	LOW	INTERMEDIATE 1	INTERMEDIATE 2	HIGH	
	Refrigerators	$1.00 \leq R < 1.25$	$1.25 \leq R < 1.50$	$1.50 \leq R < 1.75$	$1.75 \leq R$	
	Refrigerator-Freezers	$1.00 \leq R < 1.25$	$1.25 \leq R < 1.50$	$1.50 \leq R < 1.75$	$1.75 \leq R$	
	Freezers	$1.00 \leq R < 1.25$	$1.25 \leq R < 1.50$	$1.50 \leq R < 1.75$	$1.75 \leq R$	
TEST METHODS AND EFFICIENCY METRICS	IEC 62552: 2015 (Part 1,2,3)	$AEC_{MAX} = M \times AV + N$	$R = \frac{AEC_{Max}}{AEC}$			
REFRIGERANT REQUIREMENTS	GWP 20 or less	ODP 0				

The MEPS and labelling are based on the U4E model regulation guidelines

SADC Cooling MEPS

WHAT ARE THE REQUIREMENTS OF THE SADC HARMONIZED MEPS FOR COOLING PRODUCTS?

AIR CONDITIONERS						
SCOPE AND PRODUCT CATEGORIES	DUCTLESS AIR CONDITIONERS (ACS) | SPLIT, SELF-CONTAINED, PORTABLE ACS TYPES					
MINIMUM ENERGY PERFORMANCE STANDARDS (MEPS)	DUCTLESS SPLIT AND SELF-CONTAINED			PORTABLE		
	CATEGORY	YEAR 1 (2024)	YEAR 2 (2027)	CATEGORY	COOLING	
	CC ≤ 4.5 kW	CSPF 4.50	CSPF 6.10	All	EER 3.10	
	4.5 kW < CC ≤ 9.5 kW	CSPF 4.20	CSPF 5.10			
	9.5 kW < CC ≤ 16.0 kW	CSPF 3.80	CSPF 4.50			
PERFORMANCE LABELLING REQUIREMENTS	MEPS FOR SPLIT & SELF-CONTAINED					
		YEAR 1	YEAR 2			
	CATEGORY	LOW	INTERMEDIATE 1	INTERMEDIATE 2	HIGH	
	CC ≤ 4.5 kW	4.50 ≤ CSPF < 6.10	6.10 ≤ CSPF < 7.10	7.10 ≤ CSPF < 8.00	8.00 ≤ CSPF	
	4.5 kW < CC ≤ 9.5 kW	4.20 ≤ CSPF < 5.10	5.10 ≤ CSPF < 6.40	6.40 ≤ CSPF < 7.60	7.60 ≤ CSPF	
	9.5 kW < CC ≤ 16.0 kW	3.80 ≤ CSPF < 4.50	4.50 ≤ CSPF < 5.80	5.80 ≤ CSPF < 7.10	7.10 ≤ CSPF	
TEST METHODS AND EFFICIENCY METRICS	DUCTLESS SPLIT AND SELF-CONTAINED		PORTABLE			
	ISO 5151 & ISO16358 (Part 1,2,3)	CSPF (cooling-only ACs)	ISO 18326	EER (cooling-only ACs)		
REFRIGERANT REQUIREMENTS	DUCTLESS SPLIT		SELF-CONTAINED AND PORTABLE			
	GWP 750 or less	ODP 0	GWP 150 or less	ODP 0		

The MEPS and labelling are based on the U4E model regulation guidelines

Refrigerant Requirements

Household Refrigerators

- Requirements for ozone depletion potential (ODP) and global warming potential (GWP) over a 100-year time horizon.
- Refrigerant designation (ISO 817:2014, Refrigerants - Designation and safety classification)
- Safety requirements (IEC 60335-2-24:2020, Household and similar electrical appliances - Safety - Part 2-24: Particular requirements for refrigerating appliances, ice-cream appliances and ice makers.

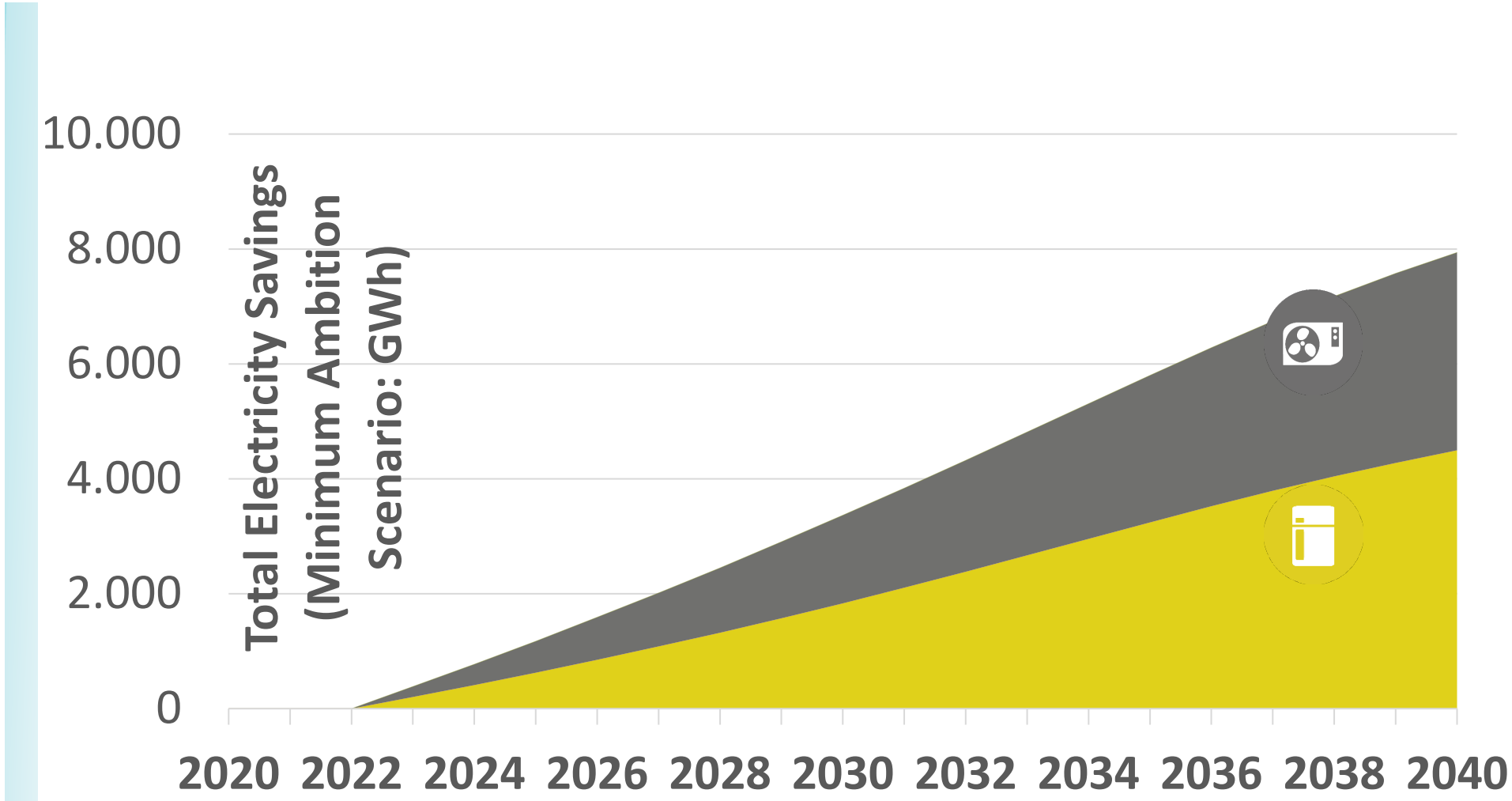
Ref Type	GWP	ODP
ALL Types	20	0

Room Air Conditioners

- Refrigerant GWP values refer to those specified in the IPCC's Fourth Assessment Report on which the GWPs of HCFCs and HFCs listed in Annex C and Annex F of the Montreal Protocol are based. The GWP values of refrigerants not included in the IPCC fourth assessment can be based on the latest IPCC assessment report.
- All units shall comply with standard ISO 5149 or IEC 60335-2-40:2018, a subsequent revision, or a nationally-modified edition of ISO 5149 or IEC 60335-2-40
- ISO 5149: Refrigerating Systems And Heat Pumps - Safety And Environmental Requirements
- IEC 60335-2-40: Household and similar electrical appliances - Safety - Part 2-40: Particular requirements for electrical heat pumps, air-conditioners and dehumidifiers

Category	GWP	ODP
Self-Contained & Portable	150	0
Ductless Split	750	0

SADC Savings Potential



THANK YOU & PLEASE

SACREEE with us…

Ausspann Plaza No. 1
No. 11 Augustino Neto Street
Ausspannplatz
Windhoek, NAMIBIA
Tel: +264 (61) 300 051
info@sacreee.org

www.sacreee.org

@SACREEE_SADC

SACREEE

GN SEC Global Network Regional Sustainable Energy Centres