

# Government of Rwanda



## **NATIONAL COOLING STRATEGY**



# Rwanda National Cooling Strategy



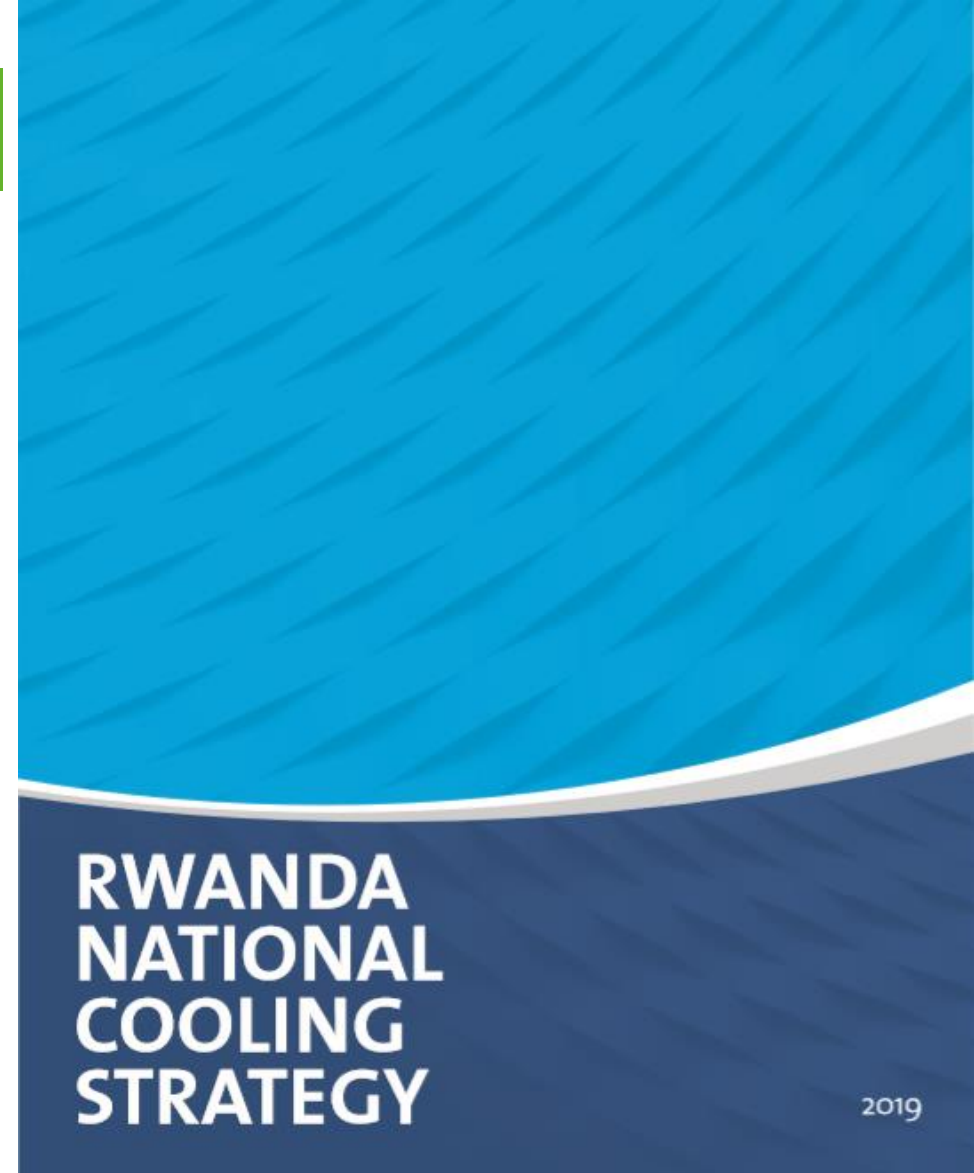
## Background

- The Rwanda National Cooling Strategy was developed by a partnership between the government of Rwanda and UN Environment/U4E in 2019
- Supported by Berkeley Laboratory and Kigali Cooling efficiency program
- Through the **project Rwanda Cooling Initiative (R-COOL)**



## Key Strategic actions

- Well-defined and enforced **Minimum Energy Performance Standards (MEPS) for Air conditioners and Refrigerators**
- A national **product registration system (PRS)**
- An **awareness campaign**
- A **capacity building program**
- An **End-of-product-life recycling** and processing scheme
- Innovative **financial mechanisms**
- **Sustainable Cold-chain**



Ministry of Environment

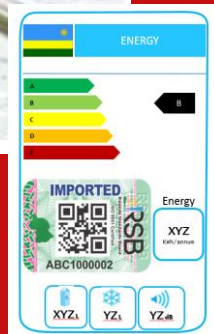




# Purpose of the NCS



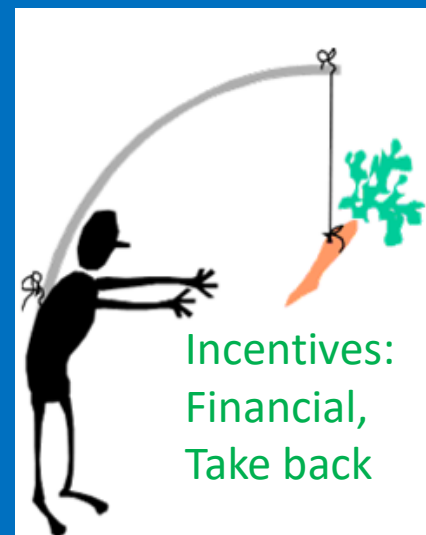
Regulation:  
MEPS, Labels



Information:  
Awareness,  
Capacity Building



- The purpose of the NCS is to transform the market towards **energy efficient** and **climate friendly** cooling across all application of cooling technologies.
- Respond to **Rwanda's commitments** to international treaties such as the **Kigali Amendment** to the Montreal protocol and **Paris agreement**



Incentives:  
Financial,  
Take back

# MEPS for Refrigerators

## General Requirements

Refrigerating Appliances	
<b>Type of products:</b>	Household refrigerators, refrigerator-freezers and stand-alone freezers.
<b>Age:</b>	Only new products.
<b>Product size:</b>	Between 200L to 600L <sup>1</sup>
<b>Refrigerants</b>	GWP limit of 20, maximum charge of 0.15kg. ODP limit of 0.
<b>Foam Blowing Agents</b>	GWP limit of 20. ODP limit of 0.
<b>Safety certification</b>	Conform to safety regulations of both the manufacturing country and Rwanda (e.g. IEC 60335-2-24:2010 /AMD:2017, or a subsequent revision)

## Energy efficiency requirements depending of refrigerator type

Grade	Refrigerators	Refrigerator-Freezers	Freezers
<b>A</b>	$2.00 \leq R$	$2.00 \leq R$	$2.00 \leq R$
<b>B</b>	$1.75 \leq R < 2.00$	$1.75 \leq R < 2.00$	$1.75 \leq R < 2.00$
<b>C</b>	$1.50 \leq R < 1.75$	$1.50 \leq R < 1.75$	$1.50 \leq R < 1.75$
<b>D</b>	$1.25 \leq R < 1.50$	$1.25 \leq R < 1.50$	$1.25 \leq R < 1.50$
<b>E</b>	$1.00 \leq R < 1.25$	$1.00 \leq R < 1.25$	$1.00 \leq R < 1.25$

# MEPS for ACs

## General Requirements

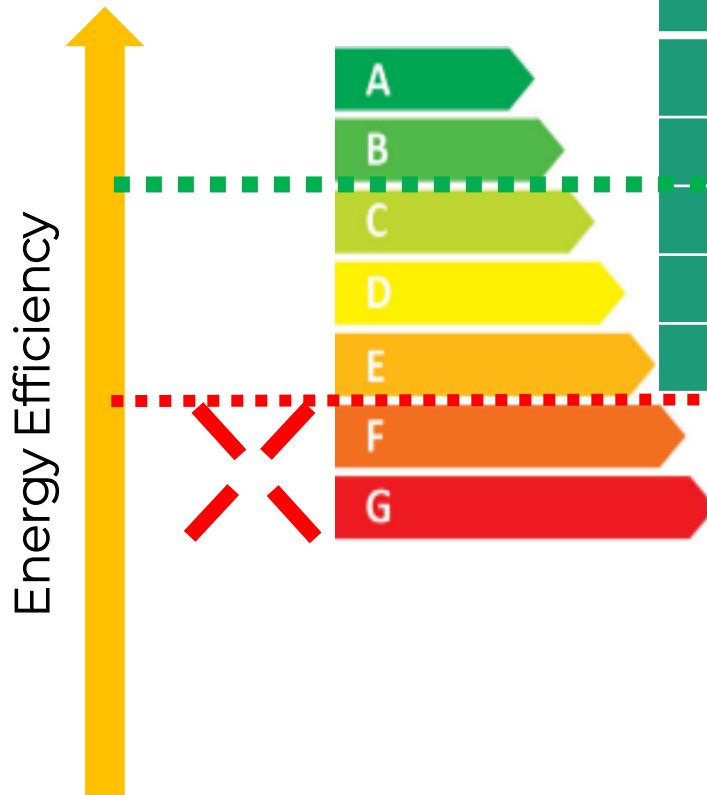
Energy efficiency requirements depending of Acs type

Product Class	GWP	ODP
Self-Contained system	150	0
Split system	750	0

Grade	Rated Cooling Capacity $\leq 4.5$ kW	$4.5$ kW < Rated Cooling Capacity $\leq 9.5$ KW	$9.5$ kW < Rated Cooling Capacity $\leq$ 16.0 KW
A	$6.90 \leq \text{RSEER}$	$6.40 \leq \text{RSEER}$	$5.90 \leq \text{RSEER}$
B	$6.33 \leq \text{RSEER} < 6.90$	$5.91 \leq \text{RSEER} < 6.40$	$5.36 \leq \text{RSEER} < 5.90$
C	$5.75 \leq \text{RSEER} < 6.33$	$5.38 \leq \text{RSEER} < 5.91$	$4.88 \leq \text{RSEER} < 5.36$
D	$5.18 \leq \text{RSEER} < 5.75$	$4.84 \leq \text{RSEER} < 5.38$	$4.39 \leq \text{RSEER} < 4.88$

# Labels

- The label provides a graphical representation of different efficiency levels within the MEPS
- They guide consumers on the choice within the allowed products on the market



Labels help to set incentives or other support to raise the performance ceiling

Grade	Refrigerators	Refrigerator-Freezers	Freezers
A	$2.00 \leq R$	$2.00 \leq R$	$2.00 \leq R$
B	$1.75 \leq R < 2.00$	$1.75 \leq R < 2.00$	$1.75 \leq R < 2.00$
C	$1.50 \leq R < 1.75$	$1.50 \leq R < 1.75$	$1.50 \leq R < 1.75$
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Help consumers make informed purchasing decisions

## Financing Mechanism

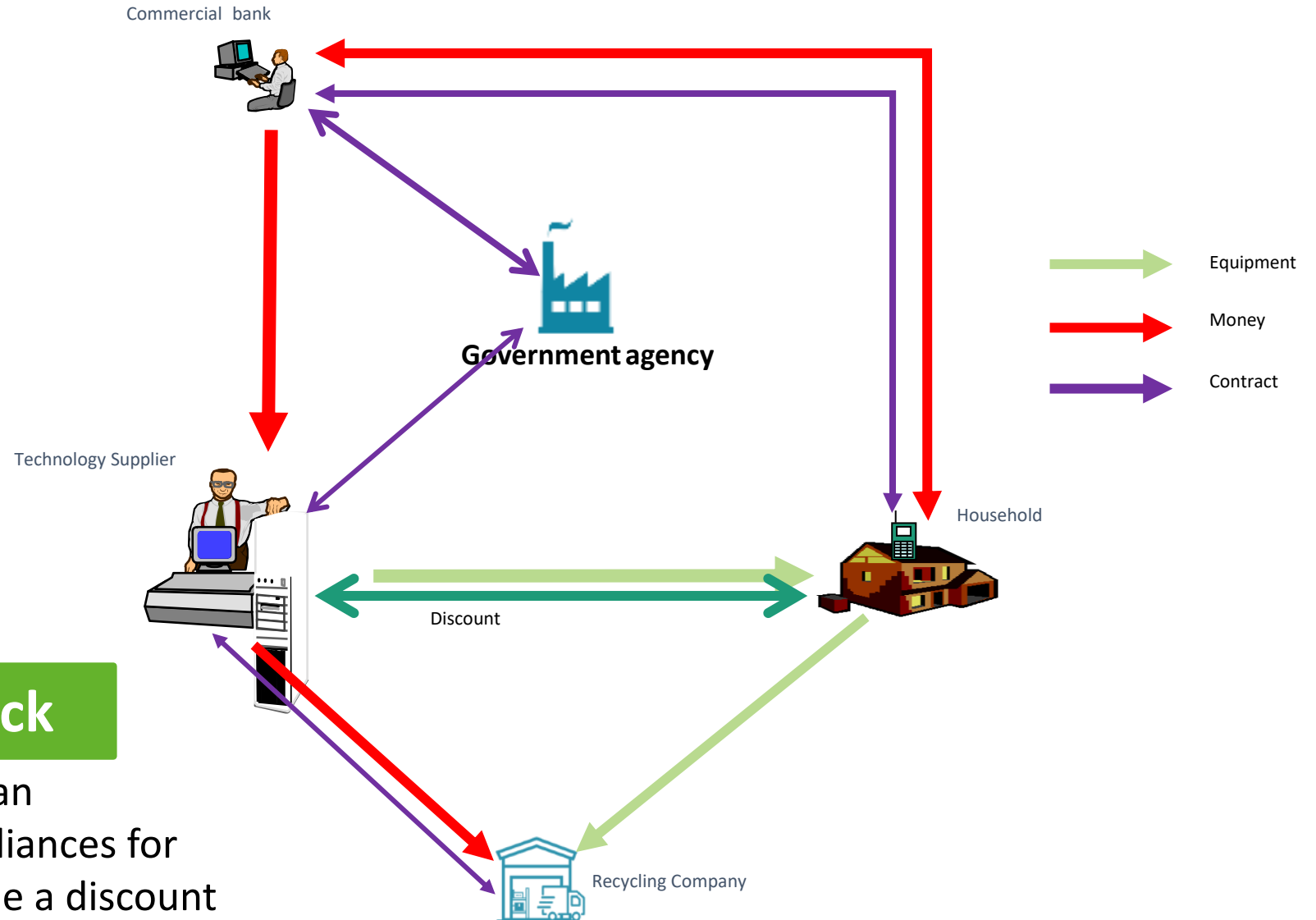
Provision of consumer loans to acquire energy efficient appliances with no collateral

2 mechanisms have been developed:

1. Coolease for large consumers and
2. Green on wage for households

## Disposal and Take back

The financing mechanism offers an opportunity to take back old appliances for recycling and disposal and provide a discount for new ones



## Awareness campaign

- Targeted awareness campaign
- Visual content
- Written content
- Social media influence

## Impact monitoring and reporting



**100**

Total Tweets



**32**

Total Users



**147811**

Total Reach



**167532**

Total Impression



**3**

Total HashTags



**5**

Total Links



**193**

Favorite



**10**

Total Images



# Exciting Opportunities with the GCF Funding



**UNEP and the Rwanda Environment Management Authority mobilized USD \$1 million from GCF Readiness for developing:**

- **Recommendation and solution** to address the implementation gaps, update the **MEPS and Labels** framework and to conduct series of trainings
- A **Market Surveillance Scheme** to oversee products sold in the market and conduct training and implementation
- An **innovative business model** to unlock finance for energy-efficient and climate-friendly cold chain solutions at the Specialized Outreach and Knowledge Establishment.
- A **national communication campaign** to inform end-users on the benefits of energy efficient and climate friendly room air conditioners and refrigerators

**"Considering the development of a full GCF project proposal or exploring alternative funding sources to scale-up deployment of sustainable cooling solutions."**

# Sustainable Cooling and Cold chain



## Approach

- Established in 2020 by Govts of Rwanda and UK, UNEP U4E, Centre for Sustainable Cooling, and University of Rwanda
- Offer a permanent, comprehensive, one-stop shop for technical assistance and access to state of the art facilities
- Hub (HQ at Rubirizi campus in Kigali) to research, develop, and test technologies as well as training (for trainers); network of affiliated Specialized Outreach and Knowledge Establishments (SPOKES) in rural communities throughout Africa to demonstrate and deploy solutions and train locals;
- Over first 5 years by UK Gov support, enables staffing, procurement of equipment, refurbishment of facilities;
- campus and land and new facility construction donated by Rwandan govt;
- equipment donations and other support by industry and academia

# Whole System Approach

ACES will provide the applied research and dissemination, learning and teaching, and industrial collaboration to advance the widespread adoption of energy-efficient and climate-friendly cold-chain solutions in agriculture and health sectors

*Cold storage, alone, is not cold-chain*



## Demonstrate best available technologies

Technologies proven at ACES can then be adapted to local needs and demonstrated at Living Laboratories



## Increase market connectivity and investment

- Develop sustainable business models to attract uptake and investment
- Create added value to farmers by turning food loss into sales, and new product opportunities
- Standards and certifications



## Comprehensive food and vaccine cold-chain design

- Research future-proof, localised solutions for food loss reduction and supply chain resilience
- Sustainable low-carbon, pack-house and logistics design and best practices
- Generation of design data and design of retail, professional and domestic refrigeration
- Integrate renewable energy, e-logistics and other advanced solutions
- Data acquisition and use



## Enhance capacity and raise awareness of rural communities

- Capacity building in the field
- Skills development and innovation support
- Chilling/freezing advice