



Market Transformation Opportunities for Energy Efficient Lighting, Appliances and Equipment

Ministerial Thematic Forums for the High-level Dialogue on Energy
22nd June 2021

Soledad GARCIA, United for Efficiency





Supporting Countries to Save 20% of their Electricity

By accelerating the Global Transition to [much more energy efficient lighting and appliance technologies](#) by strengthening country capacities around the world, as well as ensuring environmentally sound management practices. Building synergies among stakeholders, sharing knowledge and information, helping create strategic policy and regulatory frameworks, and addressing technical and quality issues.



Electric
Motors



Light
Bulbs



Residential Refrigerators



Room Air
Conditioners



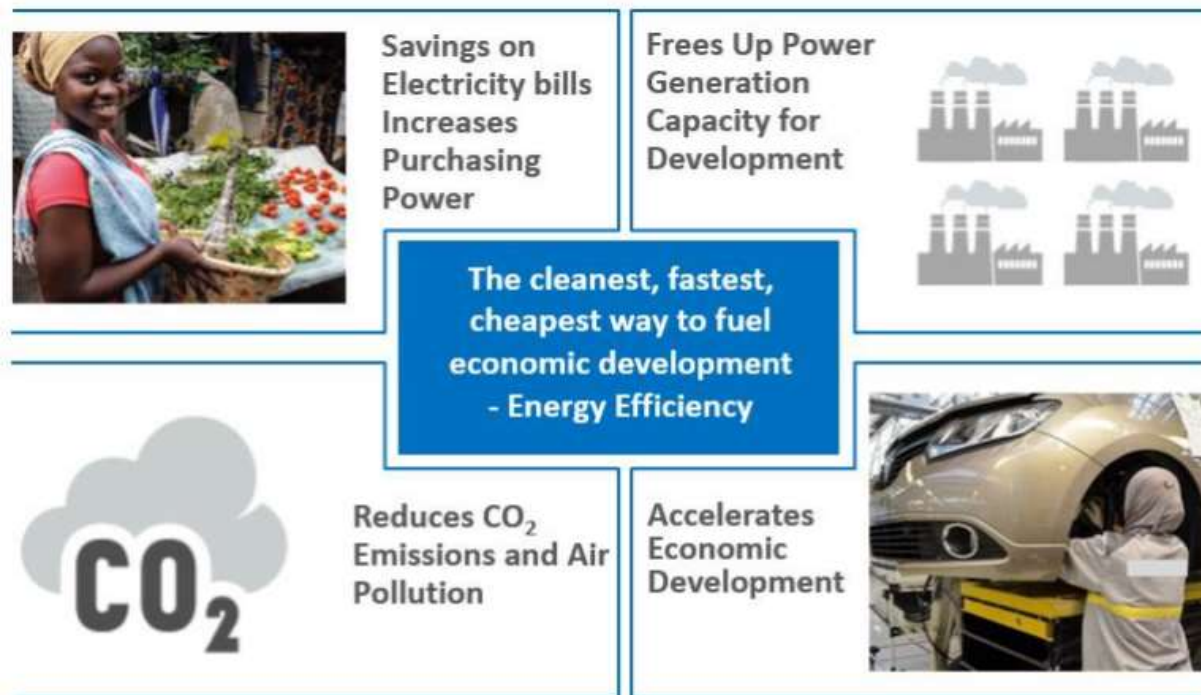
Distribution
Transformers

OUR MISSION:

Support the second goal of the UN Secretary General's SE4ALL initiative: to **double the global rate** of improvement in energy efficiency by providing assistance to developing countries and emerging economies to **move their markets to energy-efficient appliances and equipment**.



WHY ENERGY EFFICIENCY?



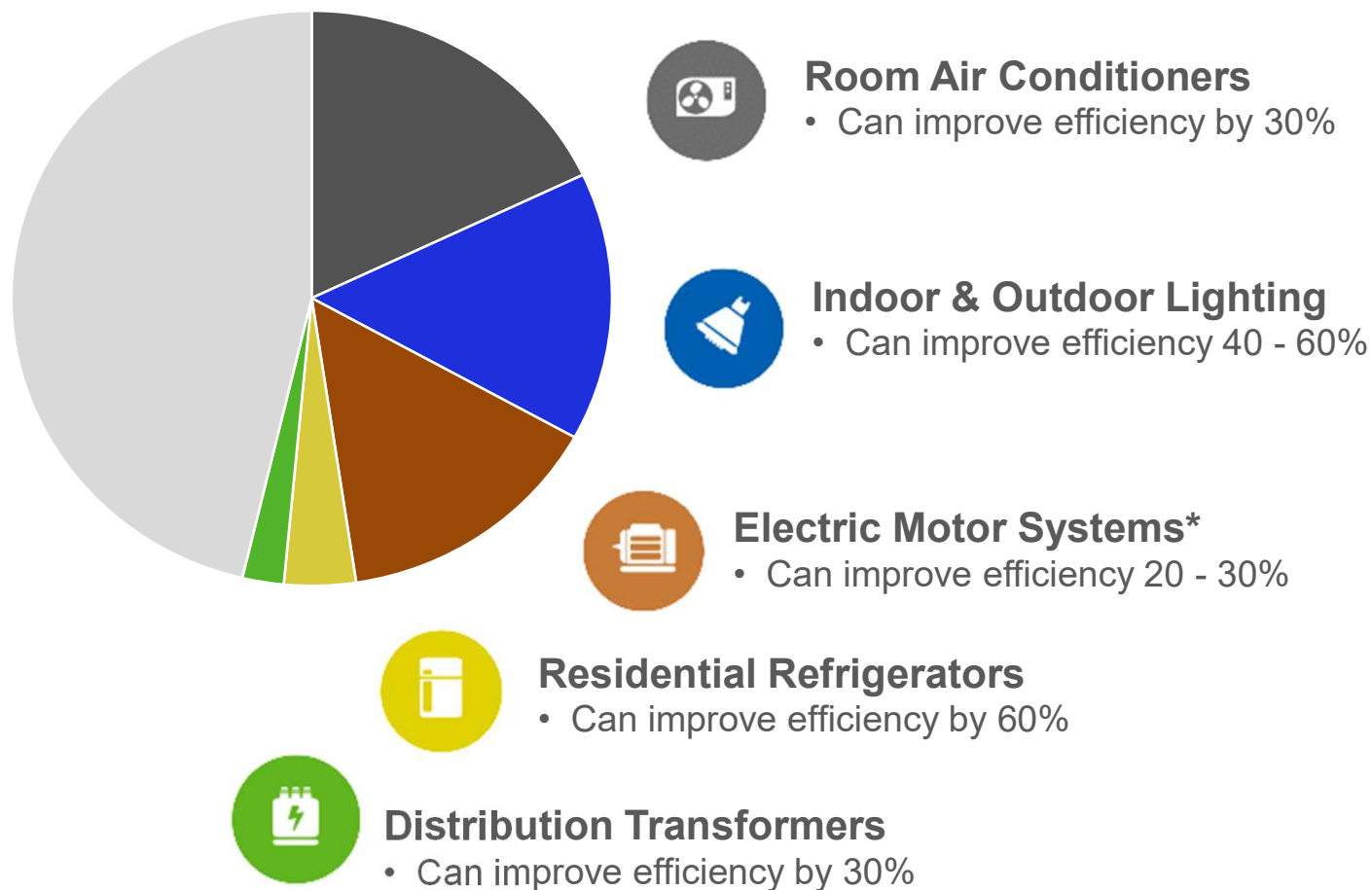
A global transition to high efficiency products will make possible:

- ✓ for people to enjoy the benefits of their increased incomes,
- ✓ for governments in reaching their economic and environmental ambitions.
- ✓ Minimize the impact on climate change and contribute towards meeting the 2°C climate target



HOW DO WE FULFILL OUR MISSION?

WE TACKLE THE 5 PRODUCTS THAT USE MORE THAN 50 % OF GLOBAL ELECTRICITY:



We inform policy makers of the potential environmental, financial and economic savings of a transition to high-efficiency products

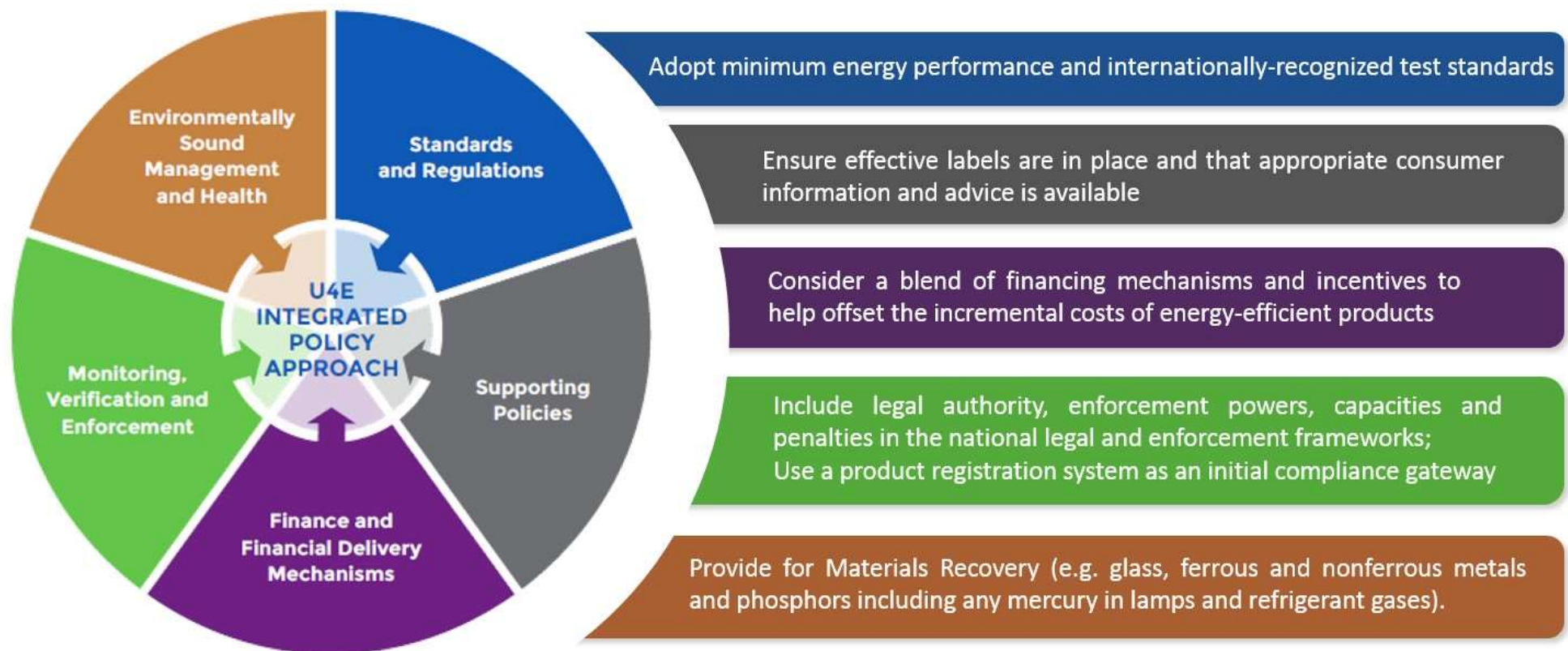
We identify and promote global best practices in transforming markets

We offer tailored assistance to governments to develop and implement national and regional strategies and projects to achieve a fast and sustainable market transformation

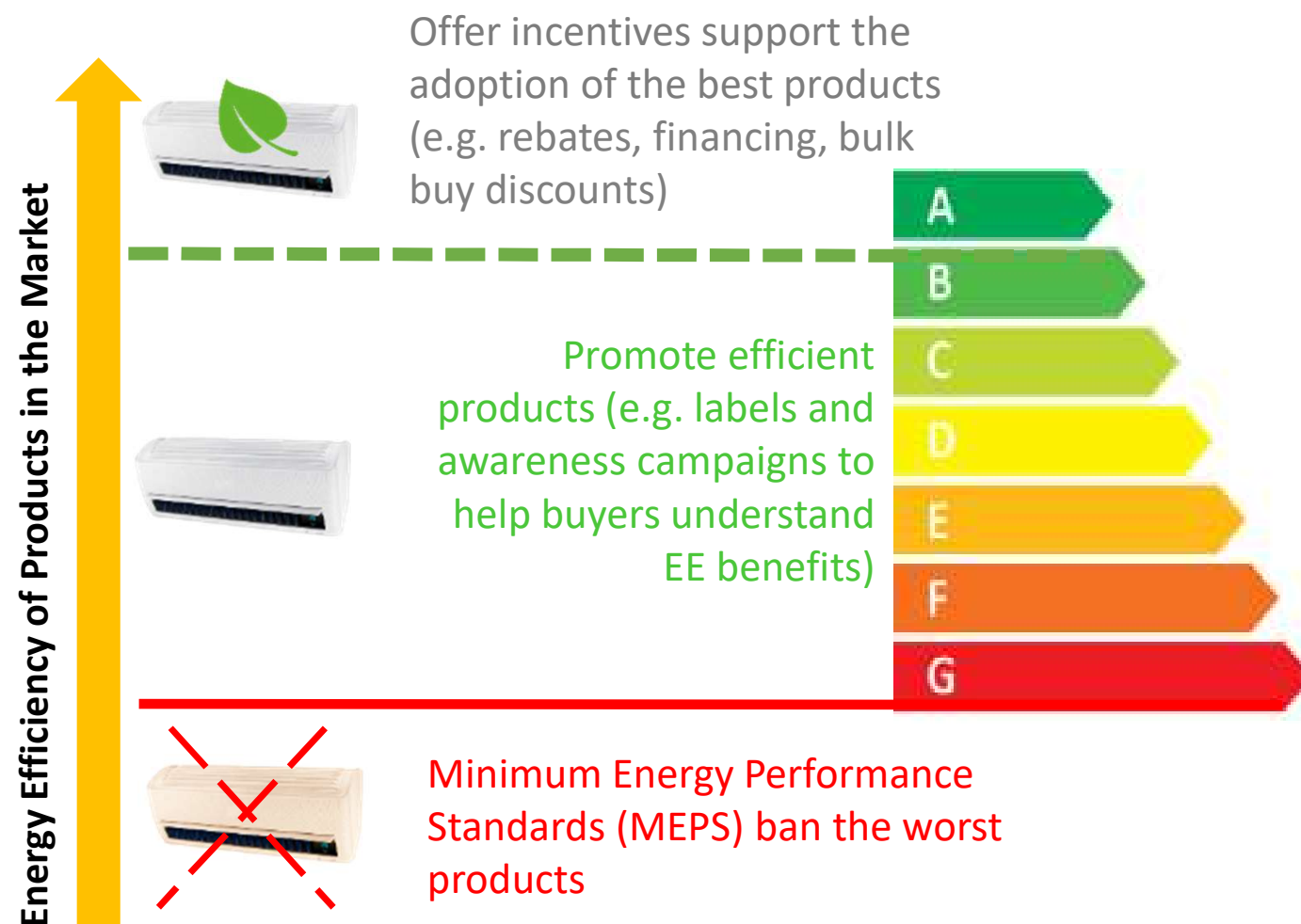


STRATEGIC 5-YEAR INTEGRATED POLICY APPROACH PROGRAMMES WORK

U4E implements a proven *Integrated Policy Approach* for product market Transformation



STANDARDS, LABELLING, GREEN PUBLIC PROCUREMENT AND MARKET BASED INCENTIVES WORK



Monitor the market for MEPS compliance, test the products and enforce the rules

+

ESM for Recycle & dispose old products in a sustainable way



WHO WE WORK WITH – U4E PROJECT PARTNERS INCLUDE:

MANUFACTURERS & INDUSTRY ASSOCIATIONS

OSRAM

SANHUA

Cu International Copper Association
Copper Alliance

GREE

Electrolux

mabe

B/S/H/ arçelik

Whirlpool
CORPORATION

signify

ABB

TECHNICAL ORGANISATIONS & INITIATIVES

BERKELEY LAB

olade

COPENHAGEN CENTRE ON ENERGY EFFICIENCY
SE4ALL EE HUB

SACREEE
SADC CENTRE FOR RENEWABLE ENERGY & ENERGY EFFICIENCY

RCREEE
Regional Center for Renewable Energy and Energy Efficiency

EACREEE
Building a Sustainable Energy Future

giz

clasp

African Energy Commission

NRDC

GELC

CARBON TRUST

IIEC
International Institute for Energy Conservation

BASE

AMBILAMP
WORLDWIDE LAMP

ASIAN CENTRE FOR ENERGY
ACE

top ten

EESL

4E

ONIS

FUNDERS, FINANCIERS & IMPLEMENTING AGENCIES

UN environment
United Nations Environment Programme

UNDP

gef

KIGALI
COOLING EFFICIENCY PROGRAM

GREEN CLIMATE FUND

AFRICAN DEVELOPMENT BANK

GLOBAL CLIMATE PARTNERSHIP FUND
managed by responsAbility

Sida
SWEDISH INTERNATIONAL DEVELOPMENT COOPERATION AGENCY

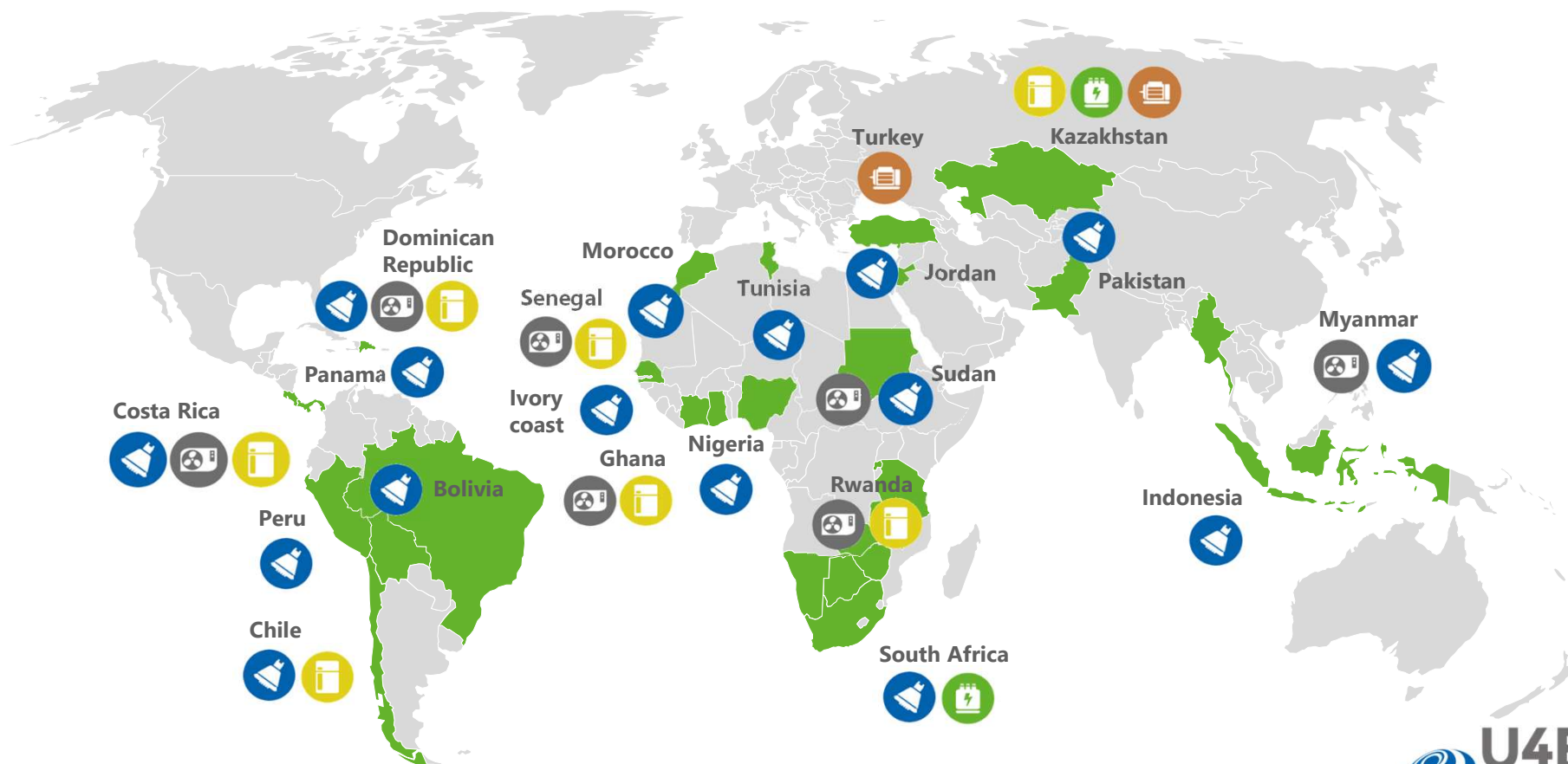
DEVELOPMENT BANK OF RWANDA
www.dbrd.rw

BRD
We empower you



NATIONAL – WHERE DO WE WORK?

U4E National Projects



*Dominican Republic, Bahamas, Barbados, Saint Lucia, Jamaica

WHERE DO WE WORK – U4E SCOPE OF SUPPORT:

U4E provides support at various levels



GLOBAL

- 155 Country Savings Assessments
- 6 Policy Guides
- 5 Model Regulation Guidelines
- Product Registry System
- Communications and outreach
- www.united4efficiency.org



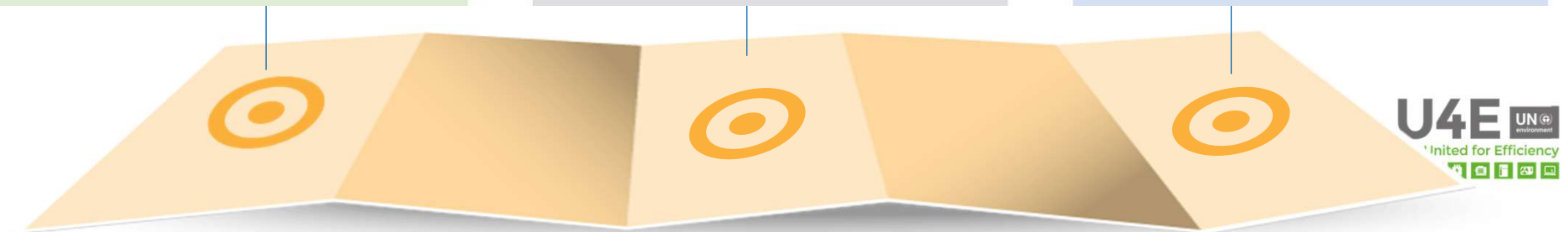
REGIONAL

- Regional Market Assessments
- Regional Capacity Building for Policy Makers
- Regional Harmonization Projects.



NATIONAL

- National Strategies
- National Training for Policy Makers and Practitioners
- Implementation Technical Assistance
- Project development and Fund raising support





GLOBAL - U4E International Tools & Resources

10

Procurement Specifications Guideline and Financial Manuals

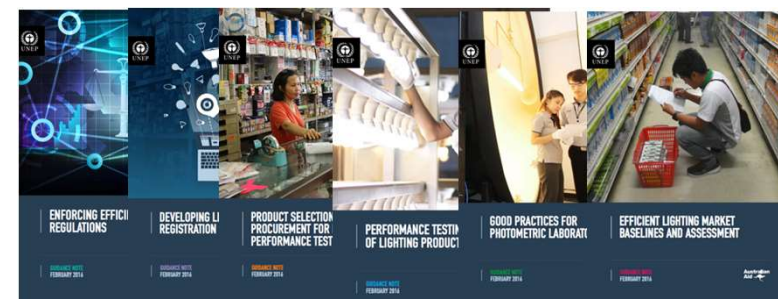
+155 Country Saving Assessment



5 Policy Guides for selected products



Model Regulation Guidelines





GLOBAL – Country Savings Assessment

11

Overview report:

- Summary of key benefits by 2030
- Higher ambition and other benefits
- Detailed benefits in 2030/40 by product
- Assumptions and methodology

Product reports:

- Summary of key benefits by 2030
- Detailed benefits in 2030/40 by product
- Assumptions and methodology

Regional report:

- Summary of key benefits by 2030
- Higher ambition and other benefits
- Detailed benefits in 2030/40 by country
- Detailed benefits in 2030/40 by product
- Assumptions by products
- Country data and methodology





GLOBAL - New Global Model Regulation Guidelines

- helping **inform regulatory authorities and policy makers** in developing and emerging economies.
- guideline on setting a **minimum efficiency floor** to prohibit future sales of inefficient products from the market.
- use proven **best practices** and tap into global policy and technology trends
- to **harmonize requirements** to reduce trade barriers and unlock economies of scale to make products more affordable

A range of stakeholders, including governments, manufacturers, technical institutions and environmental groups have contributed to their development.





GLOBAL – Sustainable Public Procurement Guides

- **Green Public Procurement Guidelines and Specifications** (expected launch Q2 2021).
- **Intended for:** Public Procurers, Lighting and Cooling Technical Personnel, Policy Makers and related officers involved in procurement activities.
- **Scope**
 - ✓ **Lighting:** Office / Large Buildings lighting luminaires (LED luminaires and LED tubes) and all Street/ Outdoor lighting luminaires.
 - ✓ **Refrigerator appliances:** Domestic Refrigerators and Freezers, Commercial / Professional Refrigeration Appliances, Vending Machines, Laboratory Grade Refrigerators.
 - ✓ **Toolkit:** Key sustainable considerations (environmental, social and economic), current barriers for its deployment (financial, awareness, capacity and regulatory), Economic analysis of delivery models and overall recommendations for the tendering process.
- **Technical Criteria Included:**



Efficacy of the Luminaire

Lifetime

Quality of light
(e.g CCT, CRI, Tolerances)

Electrical parameters (e.g. Fundamental Power Factor, Standby Power)

Health criteria

Dimming, Performance criteria (installation)

Environmental Sound Management



Energy Efficiency

Lifetime

Volume

Refrigerants

Food Preservation

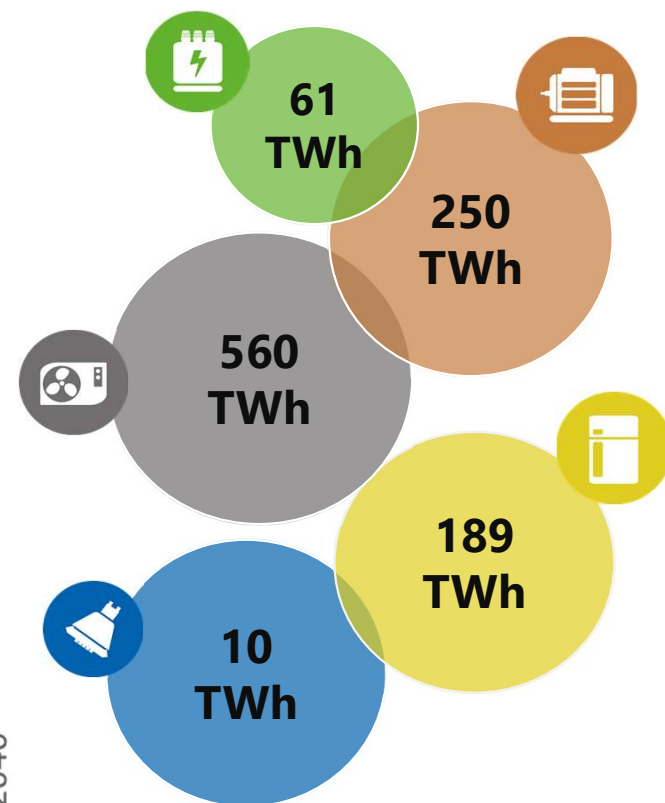
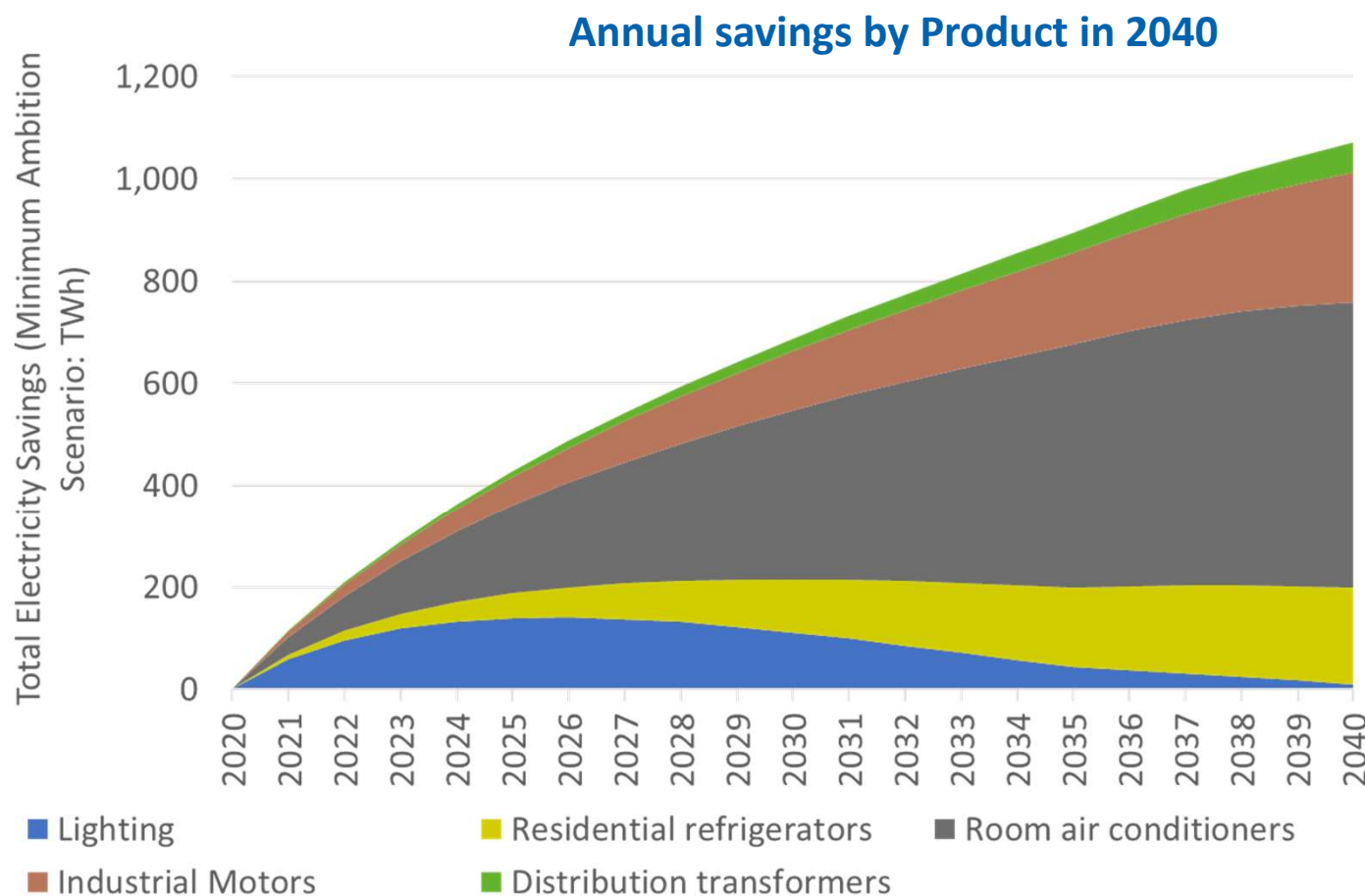
Smart Controls and Lighting

Reparability



Potential Energy, Economical and Environmental Savings:

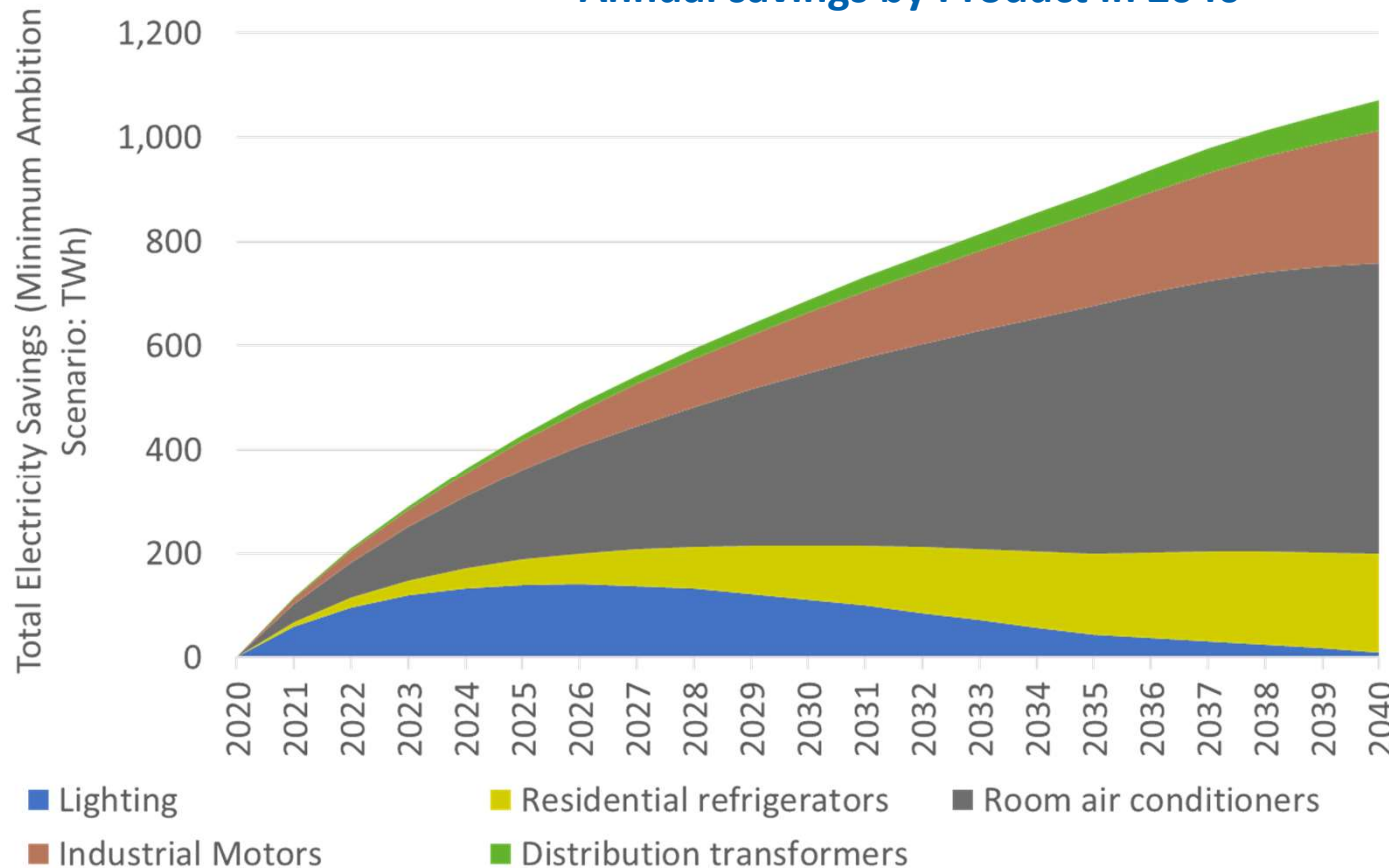
Saving Opportunities from Energy-Efficient Lighting, Appliances and Equipment worldwide



Potential Energy, Economical and Environmental Savings:

Saving Opportunities from Energy-Efficient Lighting, Appliances and Equipment worldwide

Annual savings by Product in 2040



Annual Savings in 2040:

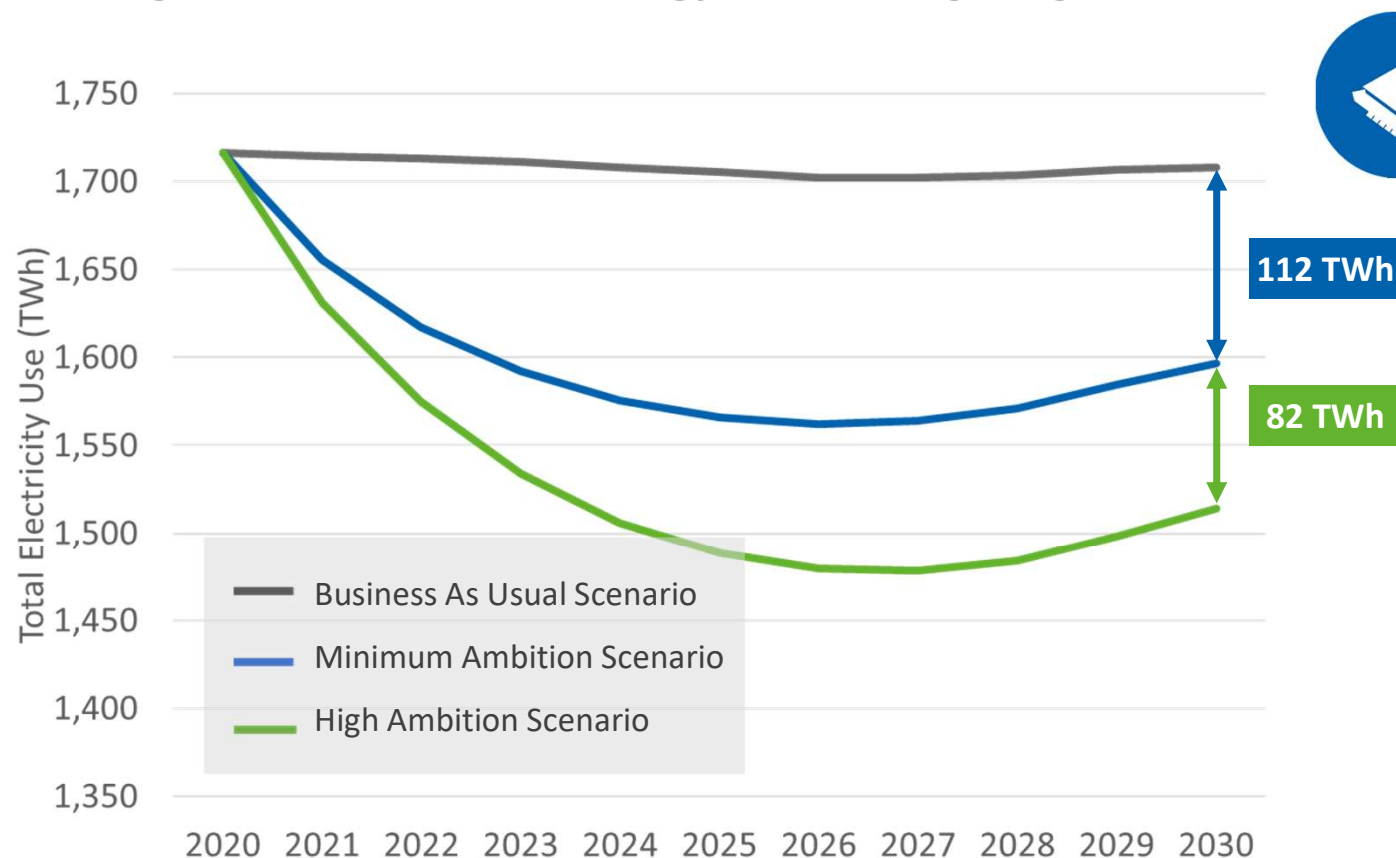
1,100 TWh of electricity consumption, which is equivalent to:

- **490 Power stations** [500 MW each]
- **940 Million tonnes of CO₂**
- **95 Billion USD on electricity bills**



Potential Energy, Economical and Environmental Savings:

Saving Opportunities from Energy-Efficient Lighting worldwide



Annual Savings in 2030:

112 TWh of electricity consumption, which is equivalent to:

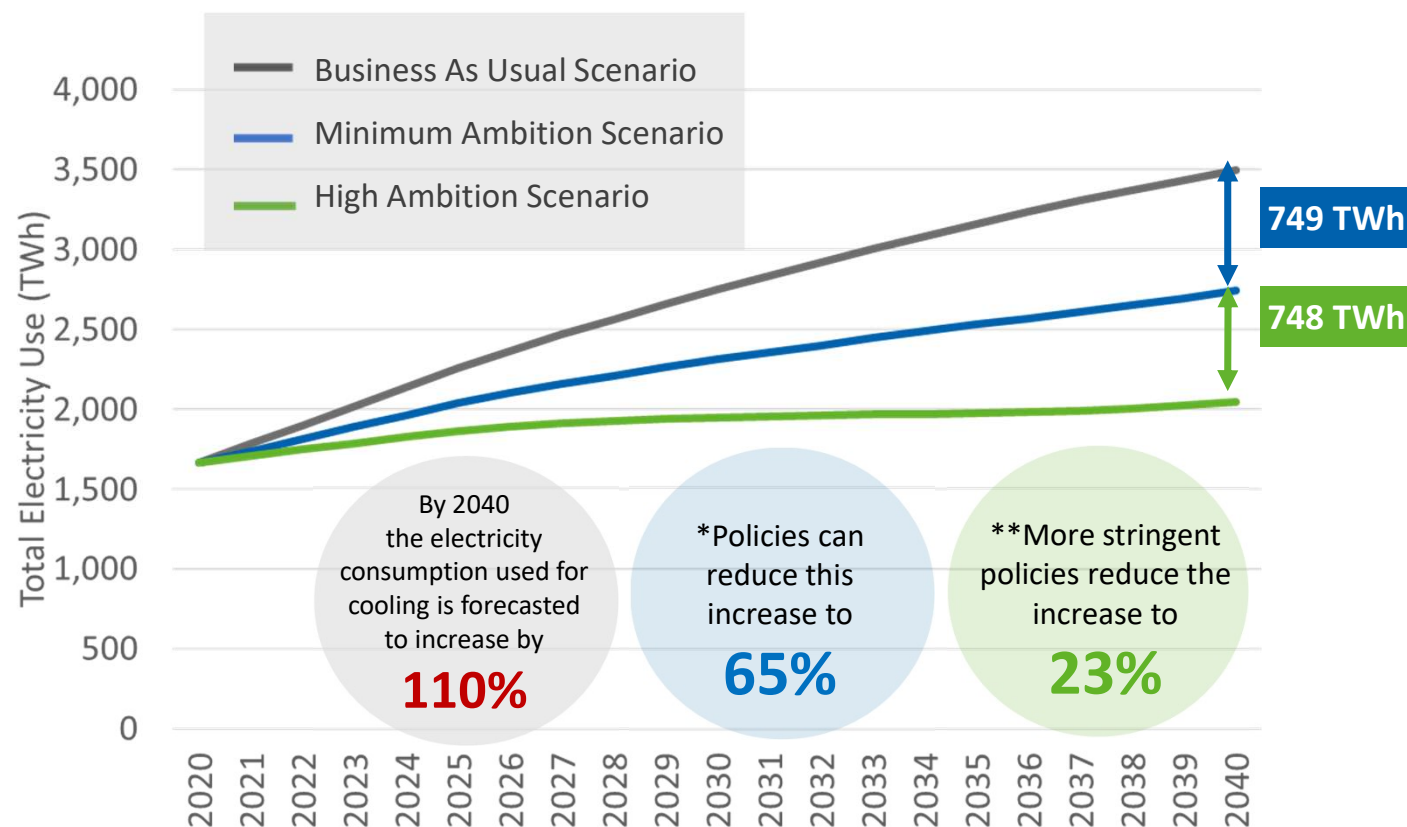
- **51 Power stations** [500 MW each]
- **98 Million tonnes of CO₂**
- **9 Billion USD on electricity bills**

Savings refer to the 156 developing countries and emerging economies that had been assessed for the U4E Country Saving Assessments and the Minimum Ambition Scenario.



Potential Energy, Economical and Environmental Savings:

Saving Opportunities from Energy-Efficient Cooling Appliances worldwide



*Minimum Ambition Scenario

**High Ambition Scenario

Savings refer to the 156 developing countries and emerging economies that had been assessed for the U4E Country Saving Assessments.

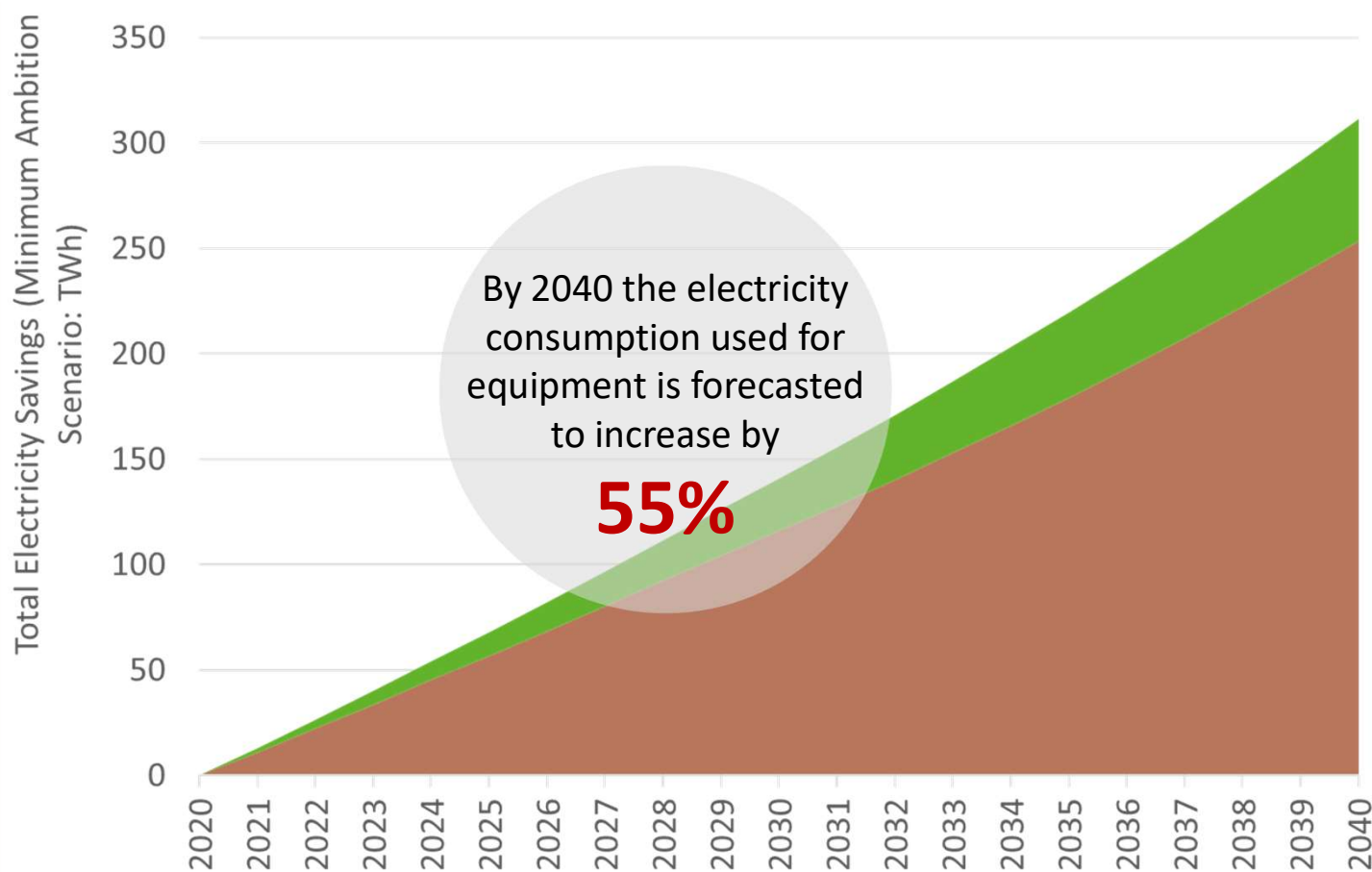
Annual Savings in 2040:

Electricity Savings (TWh)	560	189
<i>equivalent to:</i> Power Stations (500 MW)	256	86
Millions of CO ₂	486	153
billions of USD in electricity bills	51	18



Potential Energy, Economical and Environmental Savings:

Saving Opportunities from Energy-Efficient Equipment worldwide



Savings refer to the 156 developing countries and emerging economies that had been assessed for the U4E Country Saving Assessments and the Minimum Ambition Scenario

Annual Savings in 2040:

311 TWh of electricity consumption, which is equivalent to:

- **142 Power stations** [500 MW each]
- **289 Million tonnes of CO₂**
- **26 Billion USD on electricity bills**





Bolivia



**UNITED FOR EFFICIENCY
IN BOLIVIA**

PROJECT AT-A-GLANCE

Delivering the transition to energy efficient lighting

GEOGRAPHICAL SCOPE

Latin America and the Caribbean



For more information, please visit:
www.united4efficiency.org

TARGETED PRODUCT
Lighting
GEF project ID 5299

STATUS ACTIVE		IMPLEMENTING PARTNER	PARTNERS
STARTING DATE APRIL 2021	CLOSING DATE MAY 2024	United Nations Environment Programme	Ministry of Hydrocarbons and Energy, Ministry of Environment and Water, Municipality of La Paz, Signify (previously Philips Lighting), National Lighting Test Center (NLTC), China, ECONOLER
TOTAL PROJECT COST \$13.5 million GEF grant and co-financing		TEAM LEADERS Paul Kellett (U4E Global Programme Manager) paul.kellett@un.org Roberto Borjabad (U4E LAC Regional Coordinator) roberto.borjabad@un.org Ruben Paredo Grageda (Coordinator Min. of Hydrocarbons and Energy) rparedo@hidrocarburos.gob.bo Ivan Saúl García Coca (Coordinator Min. of Environment) garciaococai@gmail.com	
DONOR Global Environment Facility (GEF)			

KEY PROJECT OBJECTIVES

From tackling current barriers and based on U4E Country Assessments, the reduction potential range in electricity consumption, monetary savings and GHG emissions mitigation in Bolivia due to a market transformation to energy efficient lighting – compared with current values, with a Best MEPS Scenario – is very significant by 2030.

Annual Savings:		
 120,000 tonnes of CO ₂ avoided annually (equivalent to 71,000 cars)	 Over 15 million US\$ savings in annual electricity costs	 180 GW on annual electricity savings (Avoided investment costs for 2 power plants of 20 MW each).



Pakistan



**UNITED FOR EFFICIENCY
IN PAKISTAN**

PROJECT AT-A-GLANCE

Delivering the Transition to Energy Efficient Lighting in Residential, Commercial, Industrial, and Outdoor Sectors in Pakistan

GEOGRAPHICAL SCOPE

National project






For more information, please visit:
www.united4efficiency.org

TARGETED PRODUCT
Lighting
GEF project ID 5799

STATUS ACTIVE		TEAM LEADER	IMPLEMENTING PARTNER
STARTING DATE FEBRUARY 2019	CLOSING DATE NOVEMBER 2020	Paul Kellett paul.kellett@un.org	United Nations Environment Programme
TOTAL PROJECT COST \$7.4 million		DONOR Global Environmental Facility	PARTNERS National Energy Conservation Centre (ENERCON), Ministry of Water & Power (MOPC) and International Institute for Energy Conservation (IIEC)
			

KEY ACHIEVEMENTS TO DATE

From tackling current barriers and based on U4E Country Assessments, the reduction potential range in electricity consumption, monetary savings and GHG emissions mitigation in Pakistan due to a market transformation to energy efficient lighting – compared with current values, with a Best MEPS Scenario (2016 levels) – is very significant by 2030:

Annual Savings:		
 4.1 TWh on annual electricity savings (Avoided investment costs for 2 power plants of 500MW)	 2.2 megatonnes of CO ₂ avoided annually (equivalent to more than 1.2 million cars)	 Over \$450 million savings in annual electricity costs



Costa Rica



**UNITED FOR EFFICIENCY
IN COSTA RICA**

PROJECT AT-A-GLANCE

Development of a market for energy efficient lighting, air conditioners and refrigerators in Costa Rica

GEOGRAPHICAL SCOPE

Latin America and the Caribbean



For more information, please visit:
www.united4efficiency.org

TARGETED PRODUCTS
Refrigerators Lighting Air Conditioners
GEF projects ID 9383

STATUS ACTIVE		TEAM LEADERS	PARTNERS
STARTING DATE JANUARY 2019	CLOSING DATE JANUARY 2022	Paul Kellett (U4E Program Manager) paul.kellett@un.org Roberto Borjabad (U4E LAC) roberto.borjabad@un.org	Central American Bank of Economic Integration (CABE); Costa Rican Institute of Electricity (ICE); Rural Electrification Cooperative of San Carlos (COOPELESCA); Rural Electrification Cooperative of Guanacaste (COOPEGUANACASTE RL); Public Service Company of Heredia (ESPH); National Company of Force and Light (CNFL); National Lighting Test Center (NLTC); Whirlpool
TOTAL PROJECT COST \$6.97 million GEF grant and co-financing		DONOR Global Environment Facility (GEF)	OTHER EXECUTING PARTNERS Ministry of Environment and Energy (MINAE); Central American Bank of Economic Integration (CABE)
IMPLEMENTING PARTNER United Nations Environment Programme			

KEY PROJECT OBJECTIVES

The project will start implementation in June 2019, and aims to achieve:

 330,328 tCO₂eq of Direct GHG emission reductions and 98,537 tCO₂eq indirect emissions reductions over the period 2021-2035.	 More than 4,477,000 MWh from direct energy savings by the year 2035.	 Over 110 million USD monetary savings in annual electricity costs by 2030.
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National - Pakistan EE Lighting Project

“Delivering the Transition to Energy Efficient Lighting in Residential, Commercial, Industrial, and Outdoor Sectors”.

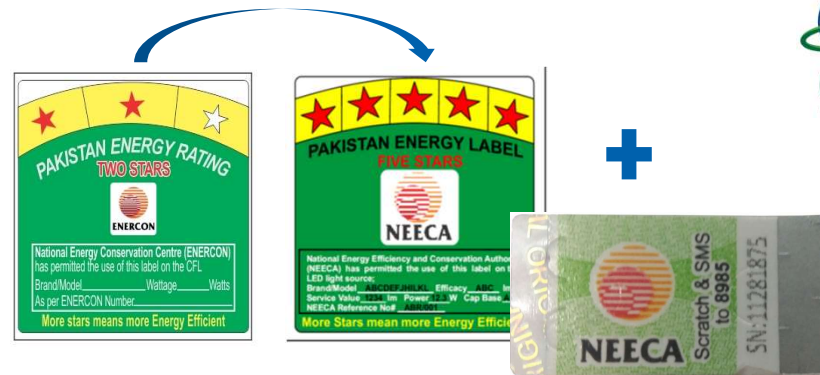


Main achievements

- Development and implementation of **first ever Minimum Energy Performance Standards (MEPS)** for Energy Efficient LED Lighting (Bulbs, Downlights, Tubes and Outdoor Lighting), which came into force in December 2020, and development of **technical recommendations for Sustainable Public Procurement (SPP) for Street and Office Building Lighting**.
- Development of **mandatory and common Labeling scheme** for LED products and **rescaling from three (3) to five (5) step label** to ensure compliance with lighting MEPS and implementation of **security/verification sticker** (affixed with the Labelling) **with unique security scratch code** for the user's instant digital verification with mobile phone (SMS) and income to finance MVE activities.



Q1 2019
–
Q3 2021





National - Pakistan EE Lighting Project

“Delivering the Transition to Energy Efficient Lighting in Residential, Commercial, Industrial, and Outdoor Sectors”.



Main achievements

- Development of **process and procedures to ensure compliance with lighting MEPS and labeling**, including technical support to Testing Laboratories, such as update of the HS Codes and PRS.
- Proposal of an **operational framework to establish a collection scheme**, recycling facilities and/or sound disposal systems, to ensure the sustainable end of life treatment of spent lamps (including Extended Producers Responsibility).
- Development of **administrative and operational procedures to establish a Revolving Loan Fund** (Guarantee Loan Fund), including the provision of technical assistance for capacity workshops for On-lending entities for the loan programme.
- Development and provision of technical assistance for **the implementation of a pilot demonstration programs** for local appropriate LEDs and lighting controls. Communication and awareness campaigns



Q1 2019
–
Q3 2021





REGIONAL – Activity examples

Twinning Meetings



Technical Capacity Buildings and Study Tours



Energy Efficiency Workshops



Multiple benefits from Regional Energy Efficient Market Transformation Programmes

- 
1. **Reduction of commercial barriers** which impede a much bigger market demand, making it more affordable and attractive for investment for consumers and institutional procurers.
 2. **Encouragement for countries lagging behind** on their policies and regulations to bridge the gap regarding their neighbors and accelerate policy adoption process.
 3. **Efficient use of limited resources** through economies of scale for spreading the market transformation costs.
 4. Fostering **intelligent agreements between countries** to share capacities, tools, methods and infrastructure.
 5. **Prevention of duplication of efforts** from isolated approaches and opportunities for peer learning from common energy efficiency issues.
 6. **Better mapping, tracking and visibility** of on-going and future projects otherwise scattered and overlapped.
 7. Achieve **greater impact** of activities through engagement of a wider net of national and regional stakeholders.

KNOW MORE ABOUT U4E AND JOIN US:

Check our website

<http://united4efficiency.org/>

Find out tools, policy guides and policy briefs, webinars, model regulations, country assessments and news releases on our official website.

U4E introduction video

Need a quick introduction to our project? Our three minute general video is at:

[EN http://united4efficiency.org/accelerating-the-transition-to-high-efficiency-products/](http://united4efficiency.org/accelerating-the-transition-to-high-efficiency-products/)

Regional Compact for Higher Performance “Eco-Efficient” Lighting, Appliances and Equipment for all.

23 June 2021, 12.45 – 14.00 EST (New York)

Register at: <https://united4efficiency.org/regional-compact-for-higher-performance-eco-efficient-lighting-appliances-and-equipment-for-all/>

UN 
**environment
programme**

50 
1972-2022



**WE NEED MORE
ENERGY EFFICIENCY
TO COOL THE WORLD**





Contact

TRANSFORMING

MARKETS

TO ENERGY-EFFICIENT

PRODUCTS



PHONE



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WEBSITE

united4efficiency.org