48th Meeting of the APEC Expert Group on Energy Efficiency & Conservation

Proposal for the establishment of the SHINE programme in Latin America

ICA-UNEP with the support of CONUEE

11 April 2016 - Tarapoto, Peru

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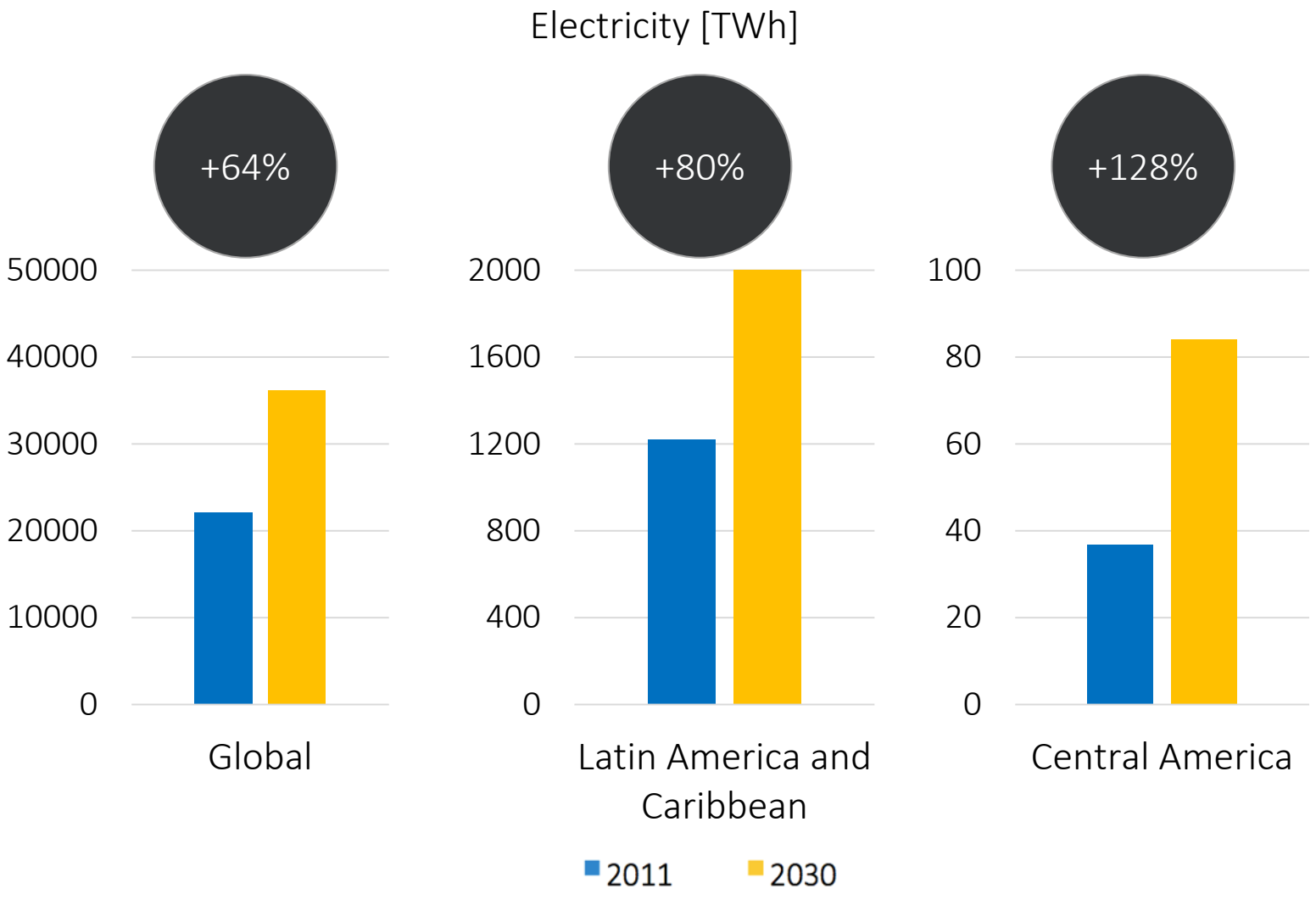
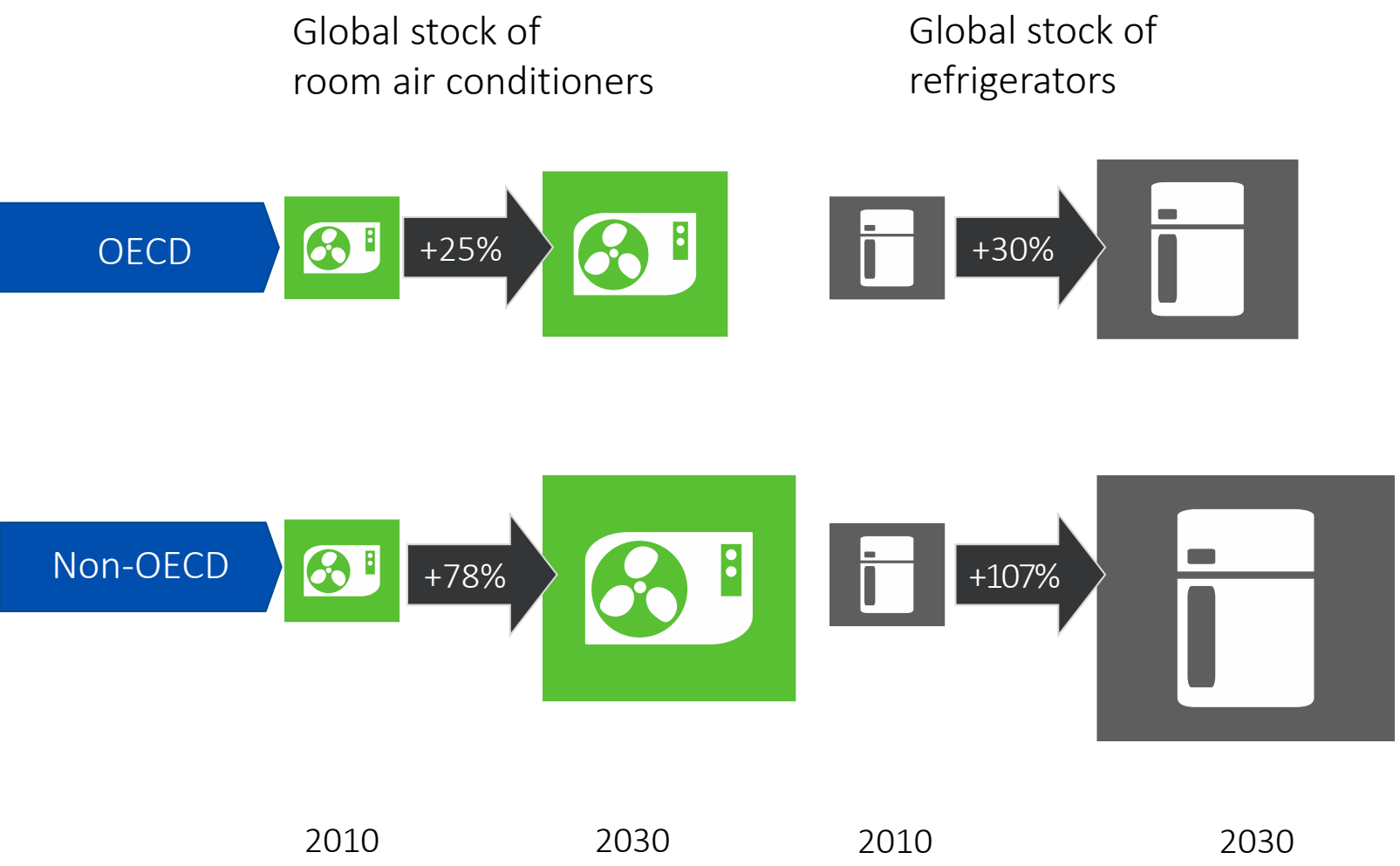
United Nations Environment Programme (UNEP)

Energy demand will double in 2030



Source: IEA World Energy Outlook 2013, World Bank (2011), y Estadísticas del subsector eléctrico, estimaciones de la CEPAL sobre la base de cifras oficiales y el modelo LEAP

Countries Risk Locking-in Inefficient Products



Source: NAMAs in the refrigeration, air conditioning and foam sectors: A technical handbook", GIZ, 2013; LBNL BUENAS, 2014.

Efficient Appliances & Equipment – taking the en.lighten approach to the next *low hanging fruits*

- **UNDP, ICA, CLASP, NRDC and UNEP** launched the United for Efficiency (U4E) in 2014
- The Programme aims to **join forces with private and public sector** to **expand the en.lighten approach to the next *high impact opportunities*,**
- Supporting the second goal of the Secretary General's SE4ALL initiative: **double the global rate of improvement in energy efficiency**
- The en.lighten and U4E initiatives form part of the **SE4ALL Energy Efficiency Accelerators on Lighting and Appliances & Equipment**

The potential annual savings in LAC in 2030 for selected products

Save electricity

→ by over 121 TWh

→ By 6% of future electricity use

→ Equivalent to **Argentina** total electricity consumption in 2015

…and equivalent to

276 power plants [100MW]

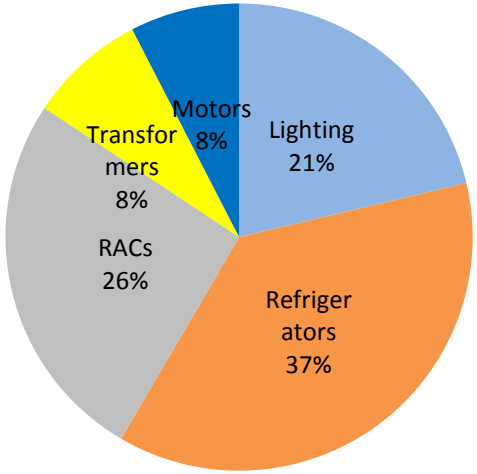
Save 15 billion US$ on electricity bills

Increase grid connection 2 million households

Reduce CO_2 emissions by 33 million tonnes per year

…equivalent to 19 million passenger cars

Share of savings potential



The potential annual savings in Mesoamerica in 2030 for selected products

Save electricity

→ by over 26 TWh

→ By 5% of future electricity use

→ Equivalent to **Costa Rica and Cuba** total electricity consumption in 2015

…and equivalent to

58 power plants [100MW]

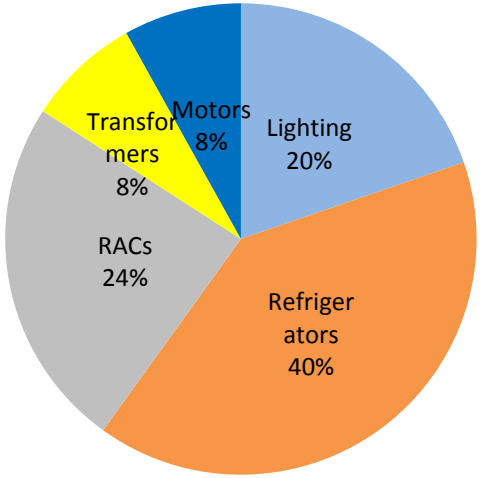
Save 3 billion US$ on electricity bills

Reduce CO_2 emissions by

14 million tonnes per year

…equivalent to 8 million passenger cars

Share of savings potential



The potential annual savings in MERCOSUR in 2030 for selected products

Save electricity

→ by over 80 TWh

→ By 7% of future electricity use

→ Equivalent to **Chile and Uruguay** total electricity consumption in 2015

…and equivalent to

184 power plants [100MW]

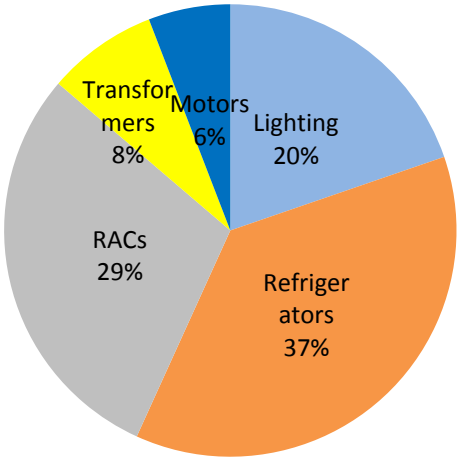
Save 10 billion US$ on electricity bills

Reduce CO2 emissions by

14 million tonnes per year

…equivalent to 8 million passenger cars

Share of savings potential



Country Assessments in the Region

Mexico

Energy efficiency benefits from lighting, residential refrigerators, room air conditioners, distribution transformers and industrial electric motors with the implementation of globally benchmarked minimum energy performance standards

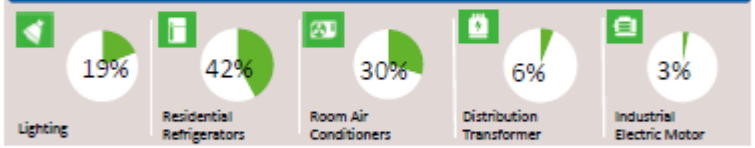
ANNUAL SAVINGS IN 2030

Reduce electricity use
→ by over 12.4 TWh
→ 3.9% of future national electricity use

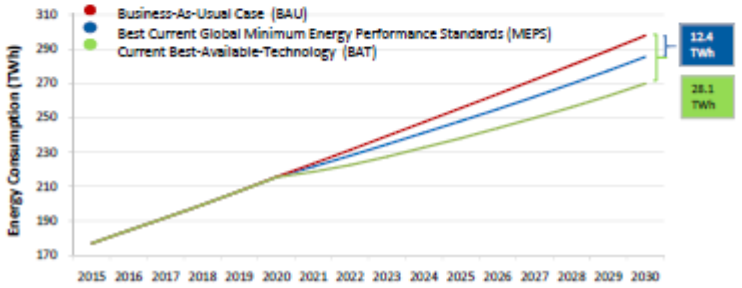
Save electricity worth 1 billion USD
equivalent to 6 Power Plants [500MW]

Reduce CO_2 emissions by 10 million tonnes
equivalent to 5 million Passenger Cars

PERCENTAGE OF EACH PRODUCT'S SAVINGS TO THE COUNTRY'S TOTAL SAVINGS IN 2030



EVEN GREATER SAVINGS POSSIBLE WITH BAT MEPS



THE PATHWAY TO ENERGY EFFICIENCY

ANNUAL SAVINGS IN 2025 and 2030

	Lighting		Residential Refrigerators		Room Air Conditioners		Distribution Transformers		Industrial Electric Motors	
	2025	2030	2025	2030	2025	2030	2025	2030	2025	2030
Electricity (TWh)	2.1	2.3	2.7	5.2	2.2	3.7	0.4	0.8	0.2	0.4
Electricity Bills (million US$)	185.5	207.9	239.2	463.4	192.0	329.1	37.4	70.2	25.8	54.4
CO2 Emissions (million tonnes)	1.7	1.8	2.1	4.1	1.7	2.9	0.3	0.5	0.1	0.3

CUMULATIVE SAVINGS (2020 - 2030)

	Lighting	Residential Refrigerators	Room Air Conditioners	Distribution Transformers	Industrial Electric Motors
Electricity (TWh)	18.80	29.26	22.46	4.67	2.07
Electricity Bills (billion US$)	1.67	2.60	2.00	0.41	0.29
CO2 Emissions (million tonnes)	14.86	23.13	17.75	3.11	1.64

OTHER BENEFITS IN 2030

Direct GHG emissions reduced by → 4.4 million tonnes

Reduced electricity subsidies by → 114.7 million USD

Reduced emissions by → SO_2 9.5 thousand tonnes NOx 5.1 thousand tonnes

Country Assessments in the Region

Peru

Energy efficiency benefits from lighting, residential refrigerators, room air conditioners, distribution transformers and industrial electric motors with the implementation of globally benchmarked minimum energy performance standards

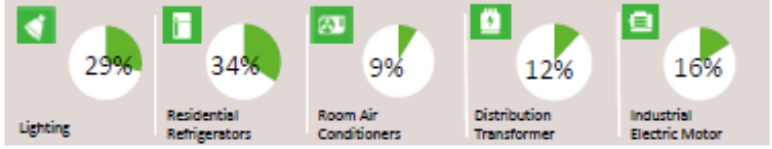
ANNUAL SAVINGS IN 2030

Reduce electricity use
- → by over 3.8 TWh
- → 6.5% of future national electricity use

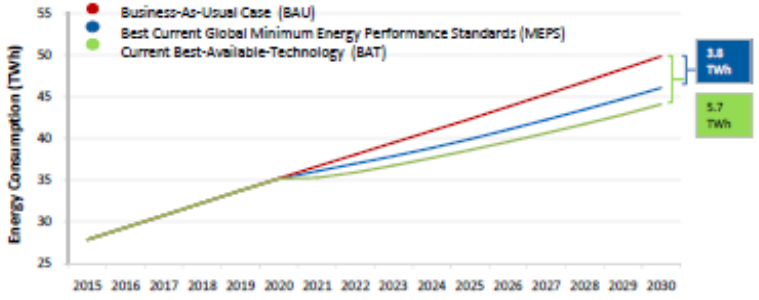
Save electricity worth 500 million USD
equivalent to 9 Power Plants [100MW]

Reduce CO_2 emissions by 1 million tonnes
equivalent to 680 thousand Passenger Cars

PERCENTAGE OF EACH PRODUCT'S SAVINGS TO THE COUNTRY'S TOTAL SAVINGS IN 2030



EVEN GREATER SAVINGS POSSIBLE WITH BAT MEPS



Chile

Energy efficiency benefits from lighting, residential refrigerators, room air conditioners, distribution transformers and industrial electric motors with the implementation of globally benchmarked minimum energy performance standards

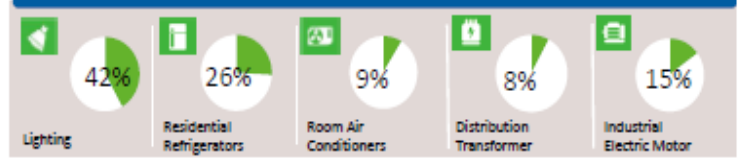
ANNUAL SAVINGS IN 2030

Reduce electricity use
- → by over 5.0 TWh
- → 5.7% of future national electricity use

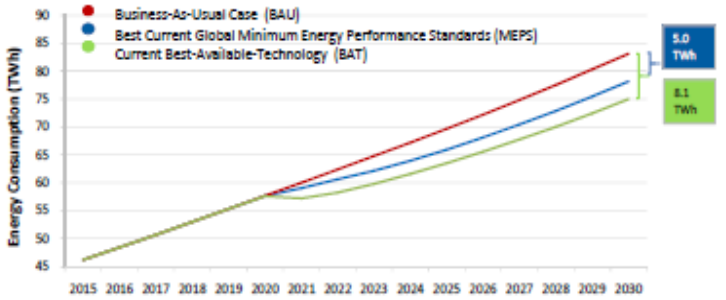
Save electricity worth 1 billion USD
equivalent to 11 Power Plants [100MW]

Reduce CO_2 emissions by 2 million tonnes
equivalent to 1 million Passenger Cars

PERCENTAGE OF EACH PRODUCT'S SAVINGS TO THE COUNTRY'S TOTAL SAVINGS IN 2030



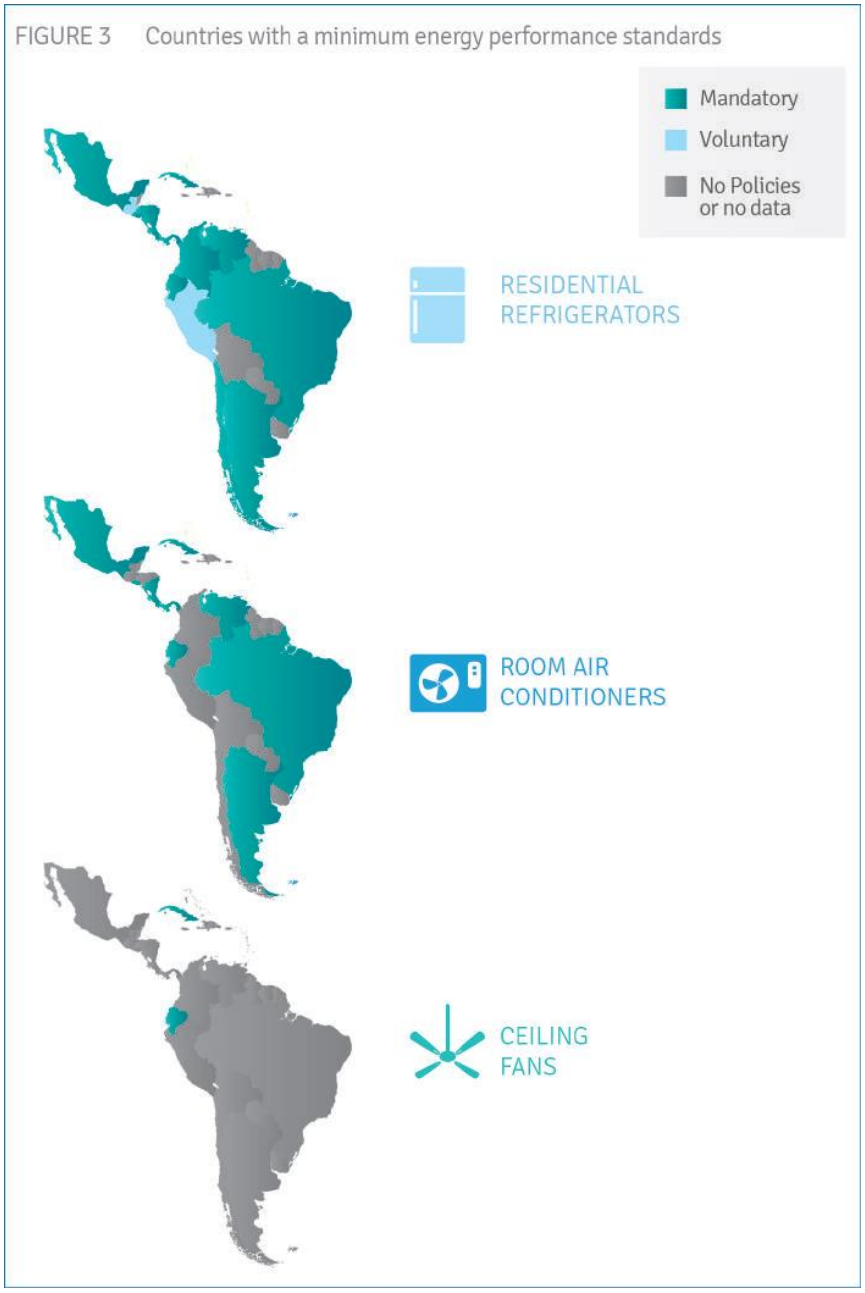
EVEN GREATER SAVINGS POSSIBLE WITH BAT MEPS



National Energy Efficiency Projects

	Country	Project	Components
	Bolivia	Delivering the transition to energy efficient lighting in Bolivia	• National policy and regulation/MEPS • Monitoring Verification Enforcement capacities • Environmentally Sound Management • Lighting innovation LED
	Chile	Delivering the transition to energy efficient lighting in Chile	
		Leapfrogging Chilean' s markets to more efficient refrigerator and freezers	
	Peru	Lighting Market Transformation in Peru	
	Costa Rica	Development of a Market for Energy Efficient Lighting, Air Conditioners and Refrigerators in Costa Rica	• Demonstration projects public sector • Training and information program for market actors • Revolving loan fund • Environmentally Sound Management

LAC Countries with Minimum Energy Performance Standards



Standards Harmonization Initiative for Energy efficiency (SHINE) - History

- EWG 12/2012A: APEC-ASEAN Harmonization of Energy Efficiency Standards for Air Conditioners: Phase 1
- Results:
  - ASEAN countries established the SHINE platform
  - Covering AC, lighting, refrigerator, motors, transformers
  - ASEAN countries harmonized their Standards for ACs
  - SHINE managed by ICA and UNEP
- Objective
  - One of the objectives was to implement pilot in ASEAN and draw lessons for other APEC economies

ASEAN SHINE

Proposal (open for discussion)

Title	Establishment of the SHINE program in Latin America
Sponsor	Mexico (CONUEE)
Co-Sponsors	Open for expressions of interest
Implementing partners	ICA & UNEP
Objective	Reduction of energy consumption, energy costs and greenhouse gases emissions.
Outputs	1. Scoping study to assess the energy saving and GHG emission reduction potential for AC, Lighting, Refrigerator, Electric Motors, and Distribution Transformers assuming economies increase their MEPS 2. Roadmap for the harmonization of standards and promotion of higher efficient technologies 3. Regional stakeholder consultation
Timeframe	18 months (Apr 2017 – Oct 2018)

1. Scoping study

- Scope: ACs, Efficient Lighting, Refrigerators, Electric Motors, Distribution Transformers
- Content:
  - Existing policies and regulatory framework
  - Value chain analysis
  - Analysis of potential for increasing market share of higher efficient tech
  - Policy recommendations
  - Conducted by experts (to be recruited)
  - Consultation with policy makers and industry (2 workshops)

2.Roadmap for the harmonization of standards and promotion of higher efficient technologies

- With assistance from UNEP and ICA experts
- Develop by experts conducting the scoping study, in consultation with policy makers from economies willing to join the SHINE platform
- Action plans (holistic approach) including harmonization of standards, development/adoption of policies, capacity building for testing labs, local manufacturers/importers, consumer awareness campaigns
- Transfer of experience, outputs, knowledge from ASEAN SHINE

Ongoing work in the LAC region

International Energy Symposium in Mexico: Ministers from Mesoamerica debate **the opportunity to strengthening conformity assessment mechanisms** for efficient products commercialized in the region and how regional cooperation will boost, sharing resources and infrastructure to allow its compliance

- International Energy Symposium in Mexico, Mexico City, August 2016
- Countries represented: Panama, Costa Rica, Honduras, El Salvador, Guatemala and Mexico.

Energy Efficiency Minimum Performance Standards for Central America

Central America is developing **technical regulations** that establish **the maximum** permissible **energy consumption limit** for the following appliances:

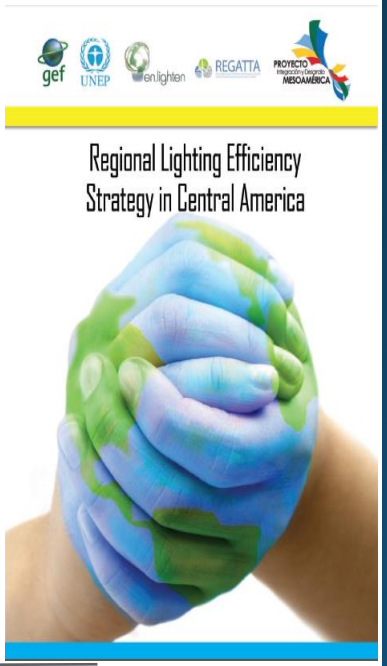
Central A/C, Room, Split y inverter

Refrigerators, cooler-refrigerators, and domestic coolers

General use Lamps, General Lighting LED, Public Lighting

Transformers (Electric Motors)

Impacts of the Regional Lighting Efficiency Strategy in Central America



Reduce electricity use
→ by over 2,4 GWh
→ 5% of regional electricity consumption

…equivalent to
$660 million of investment in new power generation plants

Save US$ 406 million on electricity bills, 15 billion US$ per year

… equivalent to
>1 million passenger cars

Reduce CO2 emissions by 2 million tonnes per year

PROYECTO MESOAMÉRICA
Proyecto de Integración y Desarrollo de Mesoamérica

Thank you!

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Cu International Copper Association
Copper Alliance