Accelerating Action on Energy Efficiency:

Status and Global Opportunities

Tim Farrell

Senior Advisor

VI Energy Efficiency Policy Dialogue in Latin America and the Caribbean: Energy Efficiency as State Policy, 29-30 October 2015, Aruba

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SUSTAINABLE ENERGY FOR ALL

Accelerating Action on Energy Efficiency

- Copenhagen Centre on Energy Efficiency (C2E2)
- C2E2's Regional Reports - LAC Report
- Global Energy Efficiency Accelerator Platform
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Copenhagen Centre on Energy Efficiency

- Funded by Danish Government and implemented by UNEP, the EE Hub is hosted by the Copenhagen Centre on Energy Efficiency, which is a part of the UNEP DTU Partnership.
- The Centre's prime responsibility is to support SE4ALL's objective of doubling the global rate of energy efficiency improvement by 2030.
- C2E2 also hosts Secretariat of the Global Energy Efficiency Accelerator Platform, one of the flagship programme of the SE4All initiative.

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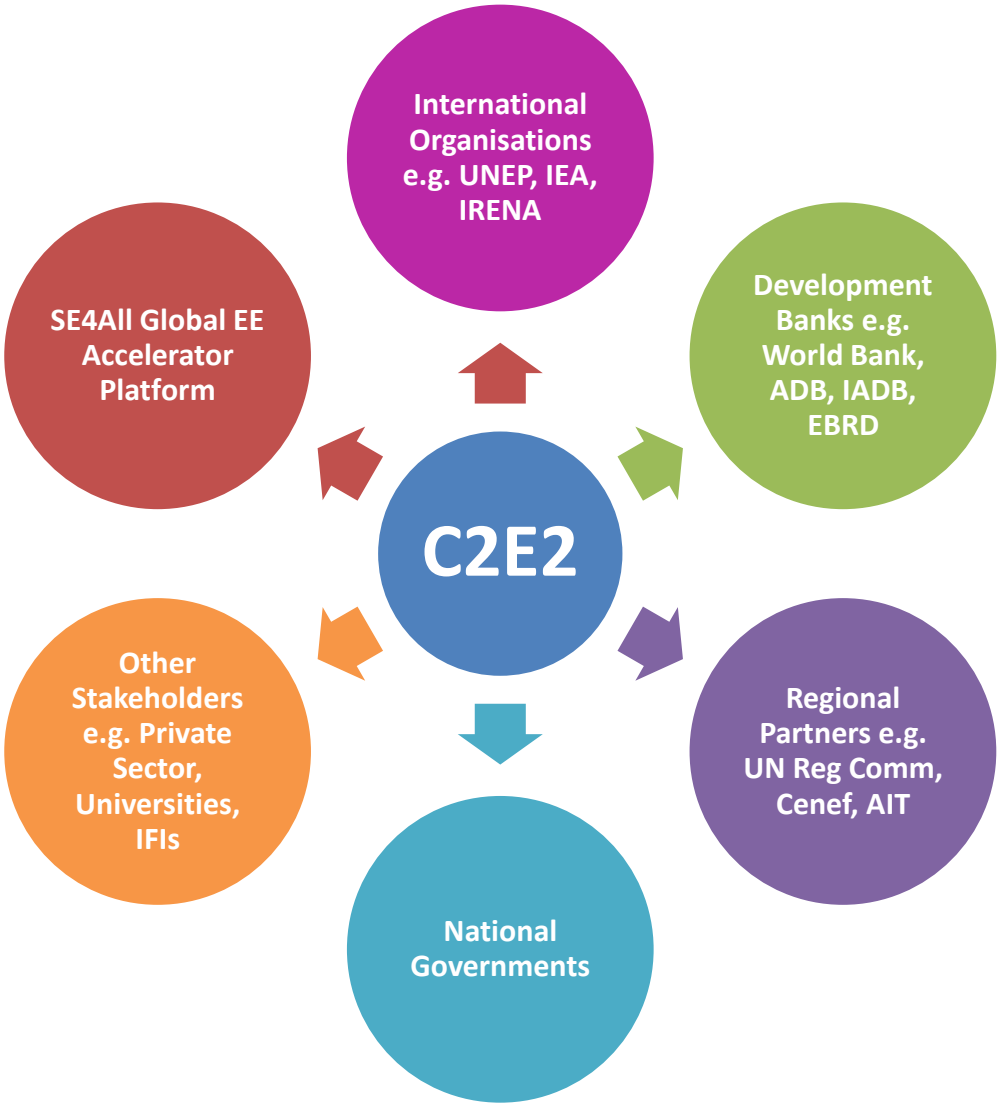
Copenhagen Centre on Energy Efficiency

Key Focus Areas

- Capacity building in target countries
- Private sector engagement (including PPP)
- Championing EE and SE4All objective



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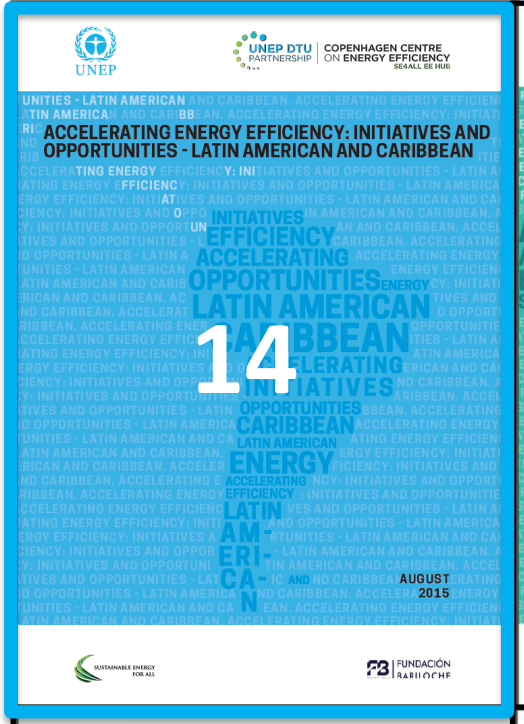
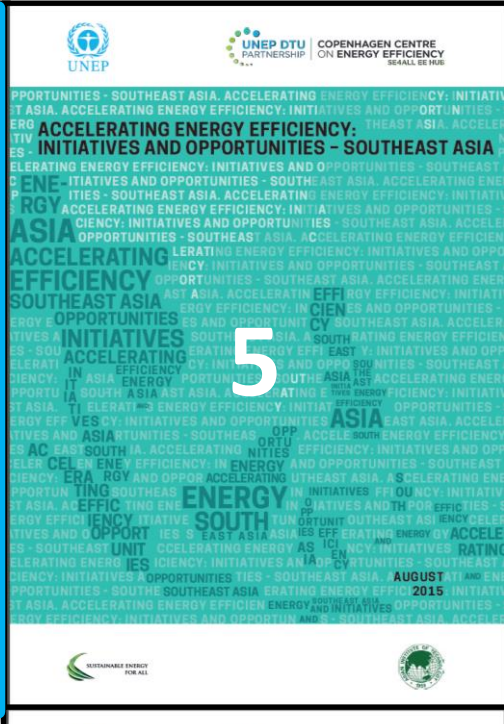
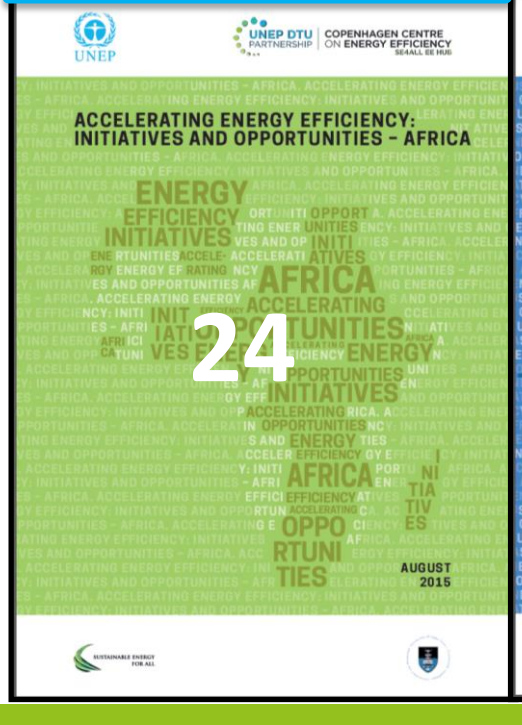
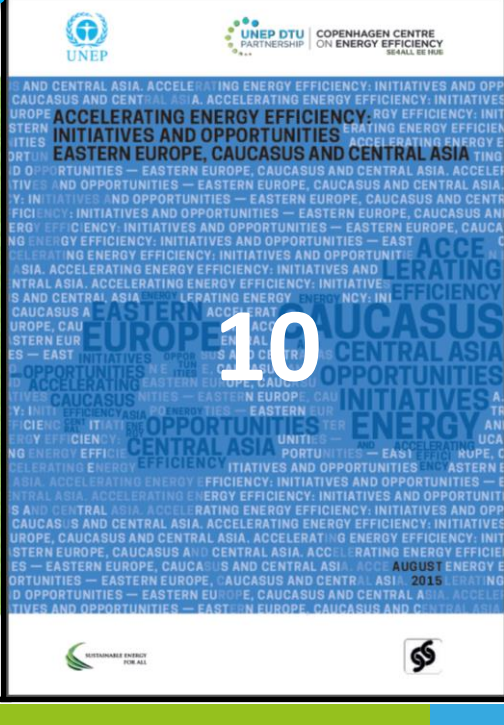
Regional Reports on EE

- Barriers and opportunities to energy efficiency improvement
- Recommended future action in selected countries
- Four regional reports
  - Latin America and Caribbean - Bariloche Foundation
  - Southeast Asia - Asian Institute of Technology
  - Africa - University of Cape Town
  - Eastern Europe, Caucasus and Central Asia - Centre for Energy Efficiency (CENEf)









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LAC Countries Included

- Bolivia
- Chile
- Colombia
- Costa Rica
- Dominican Republic
- Ecuador
- El Salvador
- Guatemala
- Guyana
- Honduras
- Nicaragua
- Panama
- Paraguay
- Uruguay

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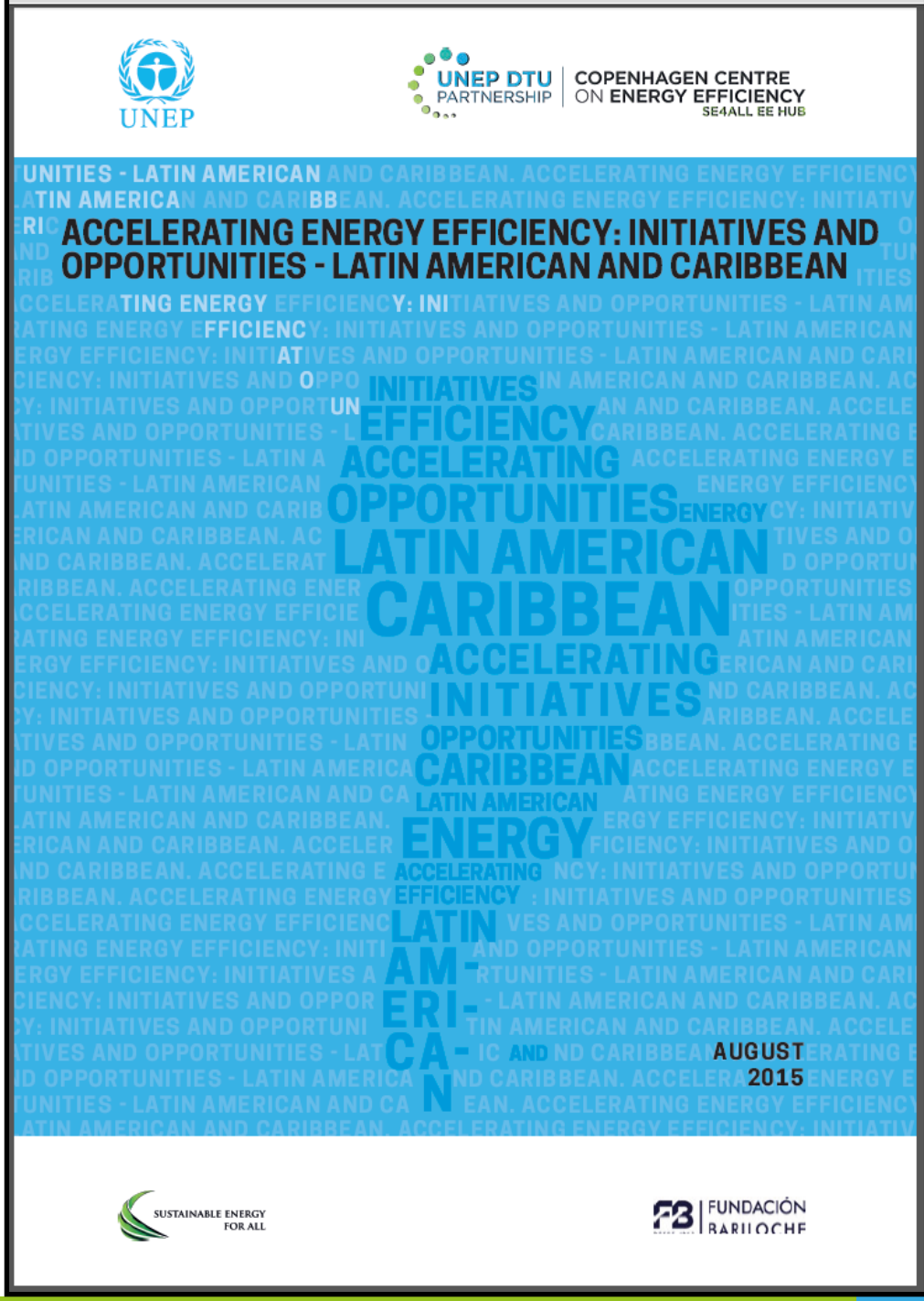

Energy Systems in LAC Region: Snapshot

- Many LAC countries have a vulnerable energy system that are dependent on imported fossil fuels.
- High fuel costs, relative to national income, with price volatility impacts on consumers' energy costs, tariffs and prices.
- Old and inefficient energy supply infrastructure.
- Poor security of supply.
- High levels of technical losses in the power sector.
- Low load factor in power consumption.
- High rates of growth in demand against restrictions on the availability of funds for investments.
- High costs of production and the distribution of power and/or natural gas.
- Low level of access to modern energy sources.
- Generalized (i.e. not targeting specific actors in need) price subsidies for energy consumption.

Energy Systems in LAC Region: Priorities

- Political will is a pre-condition
- Good diagnosis, clear policies and conducive strategies
- Short, medium and long-term targets are needed
- Indicators to monitoring results and strategies
- Responsible and coordinated institutions
- Training, capacity building and institutional reinforcement
- Long-term guarantee of funds is an enabling condition
- Supply side efficiency
- International cooperation should be needs oriented

Energy Systems in LAC Region: Summary

- The programmes, actions and measures implemented should include **quantified targets** for short-, medium- and long-term reach, as well as highlight how energy efficiency can contribute to the **country's goals**.
- Country strategies should define **priorities, accountabilities, policies and resources** in a timetable for the **implementation** of actions and measures to contribute to its fulfilment, as well as **tracking and monitoring** the results.

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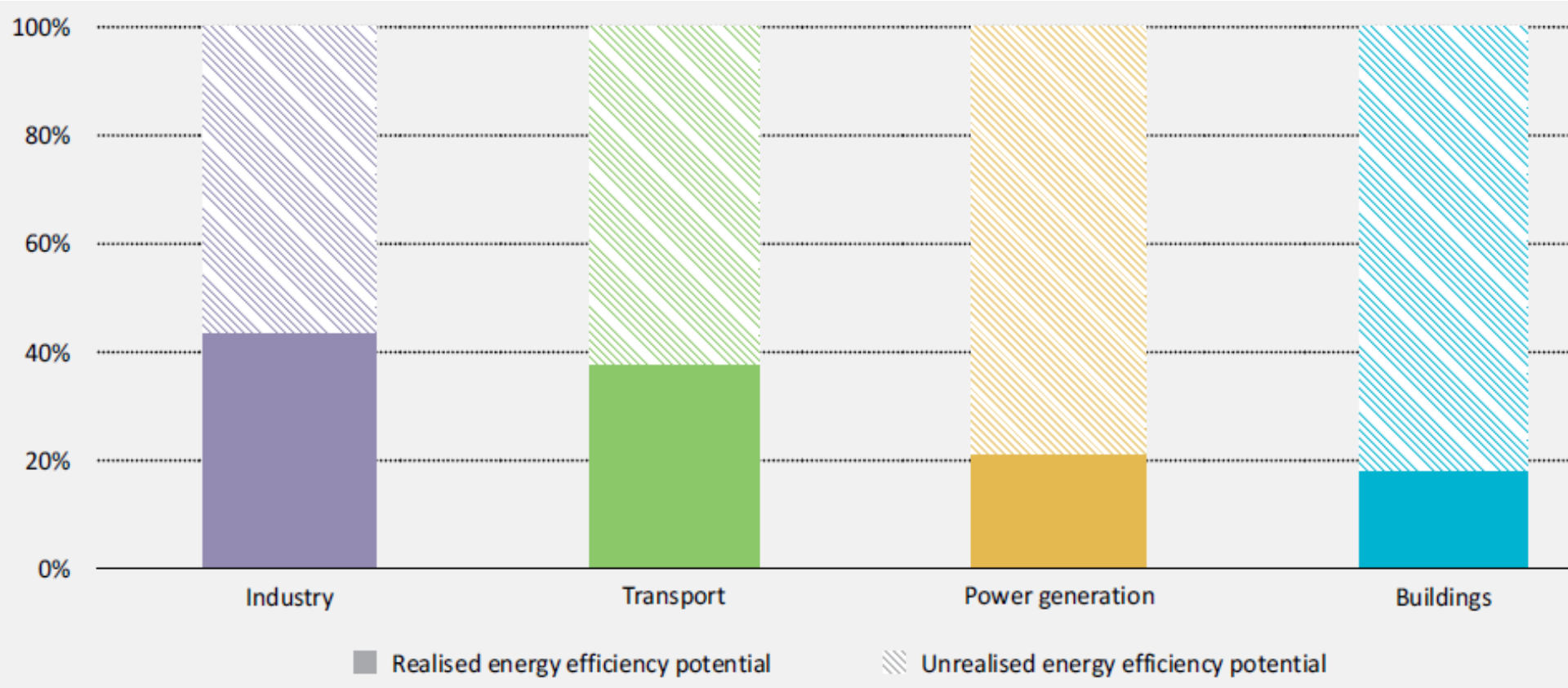
Large energy efficiency potential in sectors



Two-thirds of energy efficiency potential will remain untapped by 2035 without the acceleration of energy efficiency actions.

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Source: *World Energy Outlook*, IEA (2012)

Global Energy Efficiency Accelerator Platform?

- Established to support specific sector-based energy efficiency accelerators.
- Targeting action at various levels - regions, countries, cities and companies.
- A country or city or any other jurisdiction can join one or more accelerators
- Accelerators offer a variety of opportunities- ranging from awareness about the opportunities to capacity building and implementation of real projects
- Opportunities to establish a PPP, collaborate and work with a variety of EE stakeholders, including experts, institutions and businesses
- Access to a variety of resources including tools kits, databases, publications and others

Global Energy Efficiency Accelerator Platform

For more information please email Mark Lister from C2E2: mlis@dtu.dk

Transport and Motor Fuel Efficiency

Improve the fuel economy capacity of the global car fleet

GFEI
GLOBAL FUEL ECONOMY INITIATIVE

Lighting

Global market transformation to efficient lighting

en.lighten

Appliances & Equipment

Global market transformation to efficient appliances & equipment

U4E
United for Efficiency
UNEP

Building Efficiency

Promote sustainable building policies & practices worldwide

District Energy

Support national & municipal governments to develop or scale-up district energy systems

DISTRICT ENERGY IN CITIES

Industrial Energy Efficiency

Implementing Energy Management Systems, technologies & practices

Power Sector

Improving the efficiency of generation, transmission, distribution & end-use

Finance

Accelerating investment in energy efficiency

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SE4All's EE Goal for COP 21

Prior to COP 21, SE4All is seeking GHG emission-reduction commitments from:

- 100 jurisdictions
- 100 companies
- 100 banks

Energy Day – Monday 7 December 2015
Organised by SE4All and IRENA

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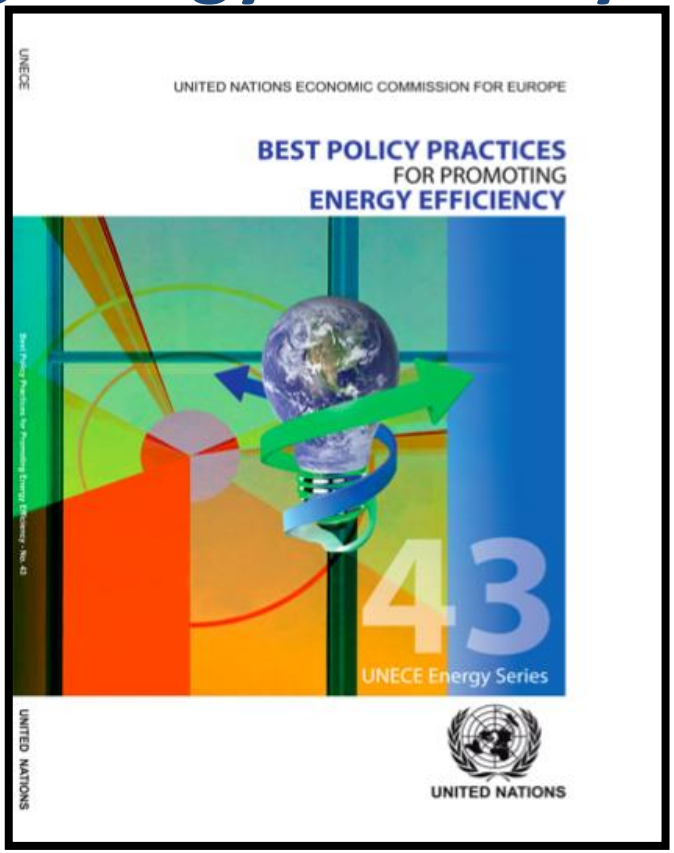
Best Policy Practices for Promoting Energy Efficiency

http://www.energyefficiencycentre.org/Publications

UNITED NATIONS
ECONOMIC COMMISION
FOR EUROPE



Examples of other energy efficiency policy databases

https://www.worldenergy.org/data/energy-efficiency-policies-and-measures/

http://www.iea.org/policiesandmeasures/energyefficiency/

http://www.odyssee-mure.eu/data-tools/

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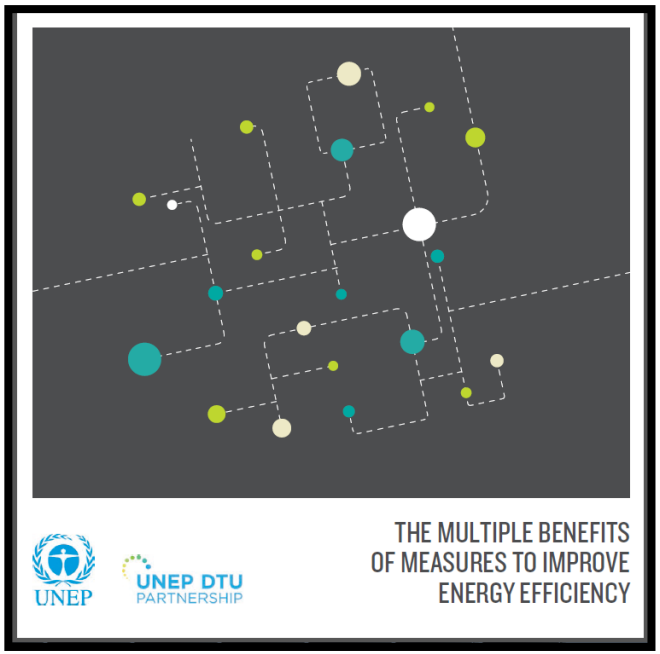
The Multiple Benefits of Measures to Improve Energy Efficiency



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Four key attributes are used to identify best practice policies.

Best practice policies for energy efficiency will each have:

1. Significant outcomes. Demonstrated, quantifiable, ability to contribute to a large energy demand reduction and significant multiple benefits.

2. Complementarity. An easy fit with other national, regional and international efforts for ease of implementation and a supportive complementarity with other policies

3. Political alignment, governance and accountability attributes help ensure policies are politically palatable, likely to persist in multi-layer governance frameworks.

4. Marketability and market impact ensure policies will work in the global and local energy efficient technology markets, attractive to decision-makers, likely to attract finance.

A Structured Framework of Energy Efficiency Policies.

Policies For Household Energy Efficiency

Policies For Transport Energy Efficiency

Policies For Industry Energy Efficiency

Utility Policies for Energy Efficiency

A foundation of Governance and Finance Policies

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The identified policies are best practices because;

- They have been through ongoing policy reviews,
- They have undergone improvement cycles,
- Recognised in international reviews,
- Evolved policies that have a 'survival of the fittest' track record.

The identified policies are augmented with exemplars;

- examples of applications of the policies from around the world that have been evaluated
- can be drawn on by countries as models for local adaptation and application.

Best Practice Policies: Passenger and Freight

- Fiscal policies (taxation and user charges) for transport e.g. France, Ireland
- Passenger Light Duty Vehicle (LDV) Fuel Economy Standards and Labelling e.g. EU, Japan, Caucasus
- Heavy Duty Vehicle (HDV) Fuel Economy Standards and Labelling e.g US, Canada
- Eco-driving e.g. Canada
- Public Transport and low energy modes e.g. Poland, Nigeria

So, how good are these policies?

Energy efficiency standards and labelling (EESL) programs since the 1970s, from 80 countries, more than 50 different types of appliances and equipment.

"the cornerstone" of most national energy efficiency programs,

- Save 10% to 25% of national / sectoral energy consumption.
- Benefits outweighed the additional costs by at least 3 to 1,
- Little long-term impact on appliance price trends,
- EESL programs have been very successful in fostering innovation, expanding existing markets and opening up new market opportunities,
- Multiple benefits; Enhanced employment: 800,000 direct jobs created by EESL programs in the EU, 340,000 jobs in the US.

http://www.iea-4e.org/document/359/achievements-of-appliance-energy-efficiency-standards-and-labelling-programs-a-global-assessment

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Readiness for Investment in Sustainable Energy (RISE)

RISE is a tool to help assess government support for sustainable energy investments

- A suite of indicators assessing policies, regulations, and support mechanisms for private investments
- Separate sections cover each of the three SE4All pillars; renewable energy, energy efficiency and energy access
- Results are published in a report and data is available online at **http://rise.worldbank.org**
- Pilot was conducted in 17 countries in 2014, first full global edition covering 110 countries in early 2016
- Annual/bi-annual updates will ensure information is up-to-date and RISE is a living resource

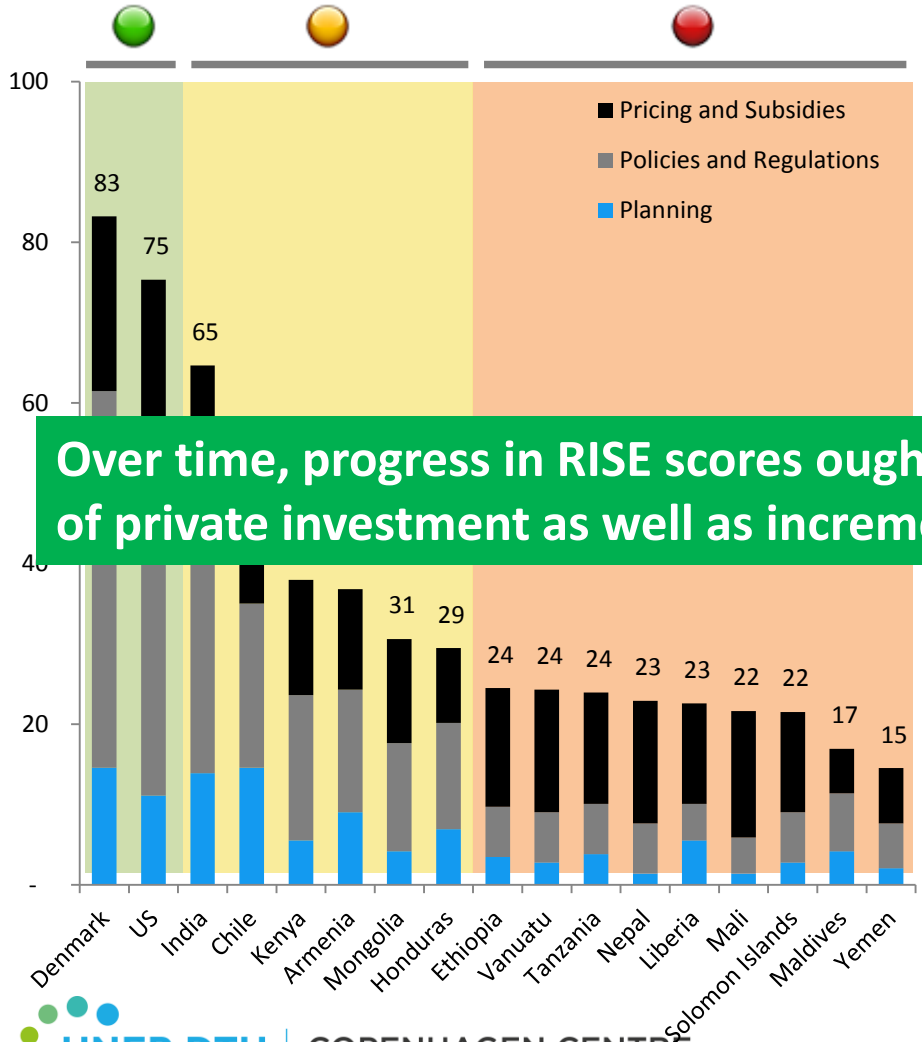
Target audience

RISE is primarily a tool for policymakers – but it can benefit investors and anyone else with an interest in sustainable energy

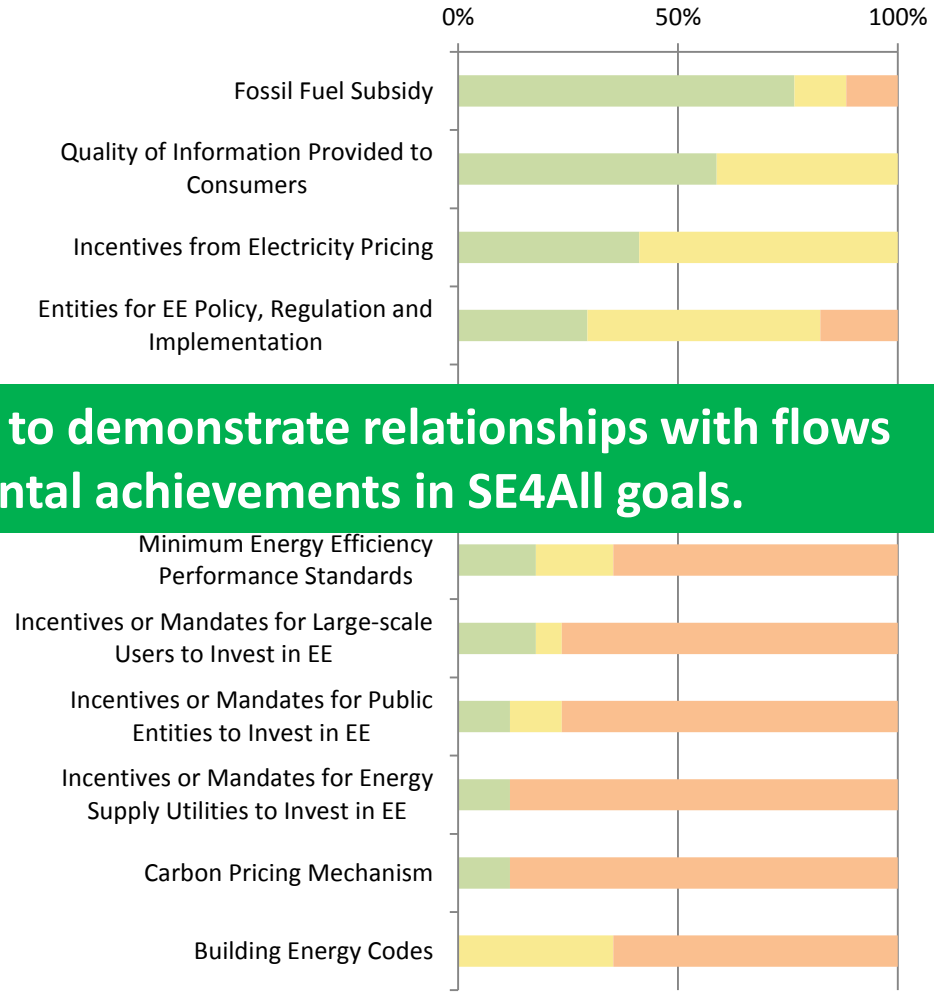
Policymakers	• Design energy policies to achieve national and global sustainable energy objectives • Identify best practices to support private energy investments and meet SE4All goals
Investors and developers	• Access to free, validated data on power sector policies and regulations for over 110 countries • Identify countries that prioritize sustainable energy • Receive support from new and more effective policies
Donors and funding agencies	• Identify potential high-impact policy reforms in each country • Evaluate the success of a range of policy design elements
Other stakeholders	• Get access to a wealth of information on energy sector structure and policy around the world • Compare country policy frameworks quickly and easily

Readiness for Investment in Sustainable Energy (RISE)

RISE energy efficiency score



Proportion of countries in traffic lights



Over time, progress in RISE scores ought to demonstrate relationships with flows of private investment as well as incremental achievements in SE4All goals.

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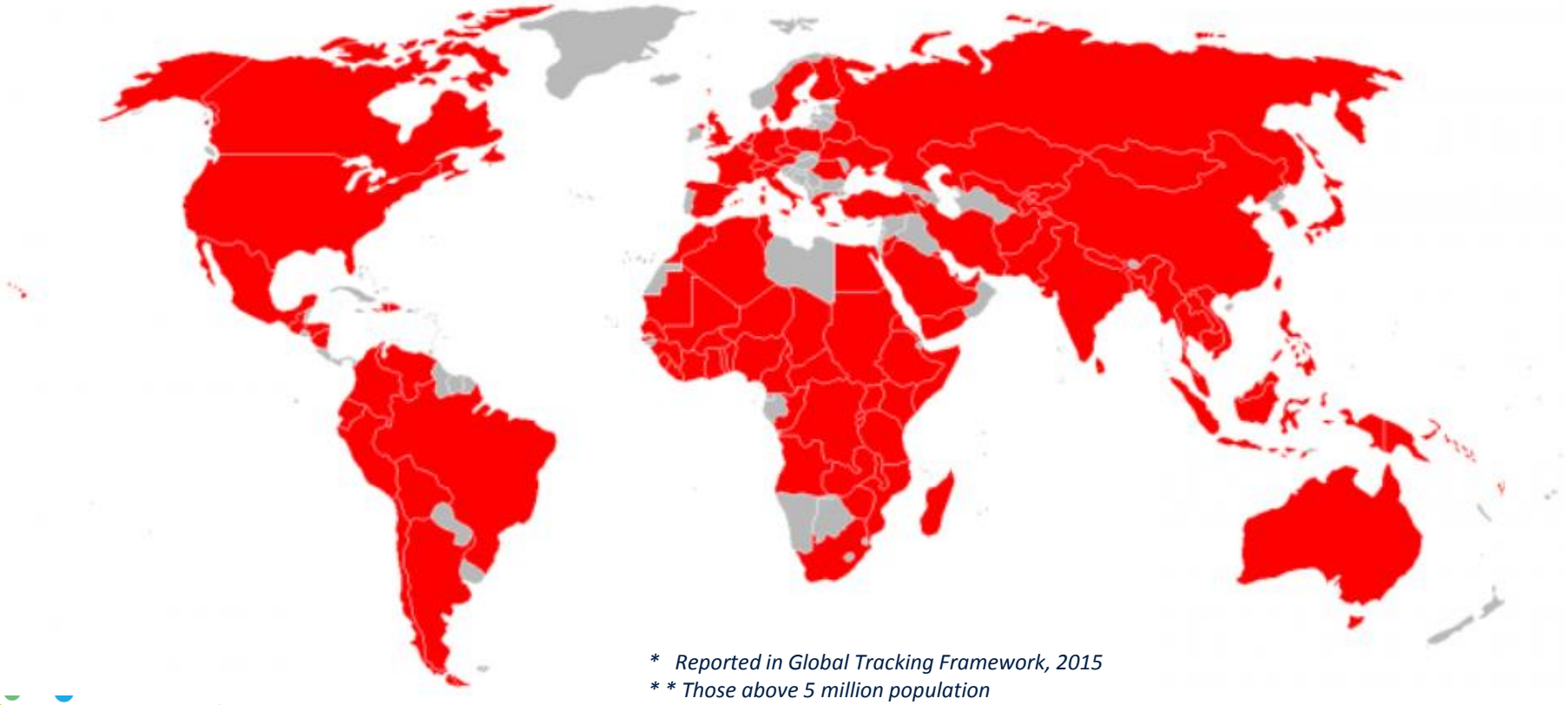
http://rise.worldbank.org/

WORLD BANK GROUP

Global Rollout will cover 110 countries

RISE will cover 110 countries – including top 50 SE4All "high impact"* for each pillar and 78 SE4LL opt-in countries**

96% global population | 91% global energy consumption | 97% global access deficit



** Reported in Global Tracking Framework, 2015*

** * Those above 5 million population*

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Climate Technology Centre & Network (CTCN)

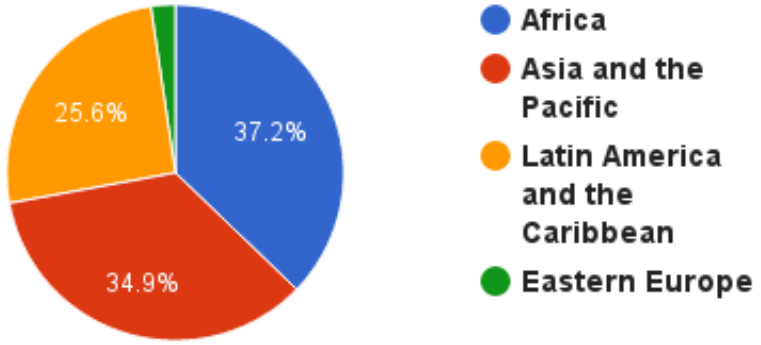
Mission:

Stimulate technology cooperation and enhance the **development and transfer of technologies** to developing country Parties at their request.

Services:

1. Technical assistance
2. Capacity building
3. Networking – linking with finance opportunities

Distribution of CTCN requests by region



Value proposition:

Unlocking barriers to investment climate smart technology solutions

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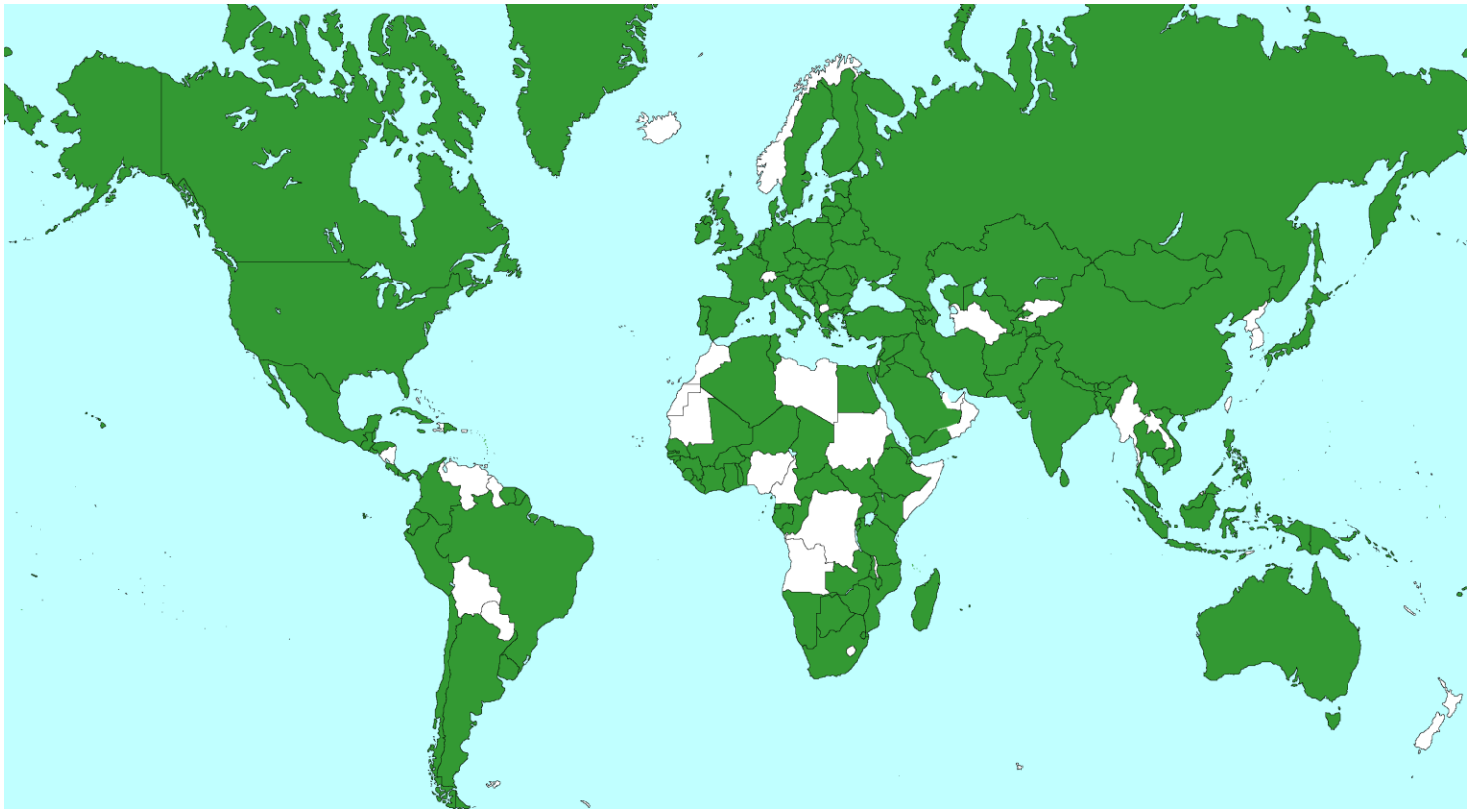
United Nations Framework Convention on Climate Change

UNIDO

CTCN Structure: National Designated Entities (NDEs)

132 nominated by UNFCCC National Focal Points as of 2 September 2015.
National climate technology coordinators in context of UNFCCC.



Examples of CTCN Requests in LAC Region

Country	Request
Colombia	Monitoring and evaluation of national promotion policies for energy efficiency (EE) and renewable energy (RE) against national targets
Dominican Republic	Efficient lighting (NAMA design)
Uruguay	Replacement project of fluorinated refrigerants for end users of refrigeration equipment in the dairy sector in Uruguay
Chile	Introducing refrigerants with low GWP in the food sector

Capacity Building: CTCN Regional Forums

LATIN AMERICA

- October 26-28, Costa Rica (with IADB, CATIE, Bariloche Foundation, Network Members)

CARIBBEAN SIDS

- October 28-30 2015, Barbados

www.ctc-n.org

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UNEP

United Nations Framework Convention on Climate Change

UNIDO

Thank you

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Transport and Motor Fuel Efficiency

The Global Fuel Economy Initiative (GFEI) was established in 2009 with the primary aim to:

- reduce emissions
- at least double the efficiency of the global vehicle fleet from an average of 8L/100 km in 2005 to 4L/100 km by 2050
- halve new light duty vehicle fuel economy (in l/100km or gCO_2/km) by 2030

Governments joining the GFEI are committing to develop national fuel economy policies

more than 40 countries joined

Expected savings: 1 Gt CO2 by 2025 and 2 Gt CO2 - by 2050

Instruments Supported

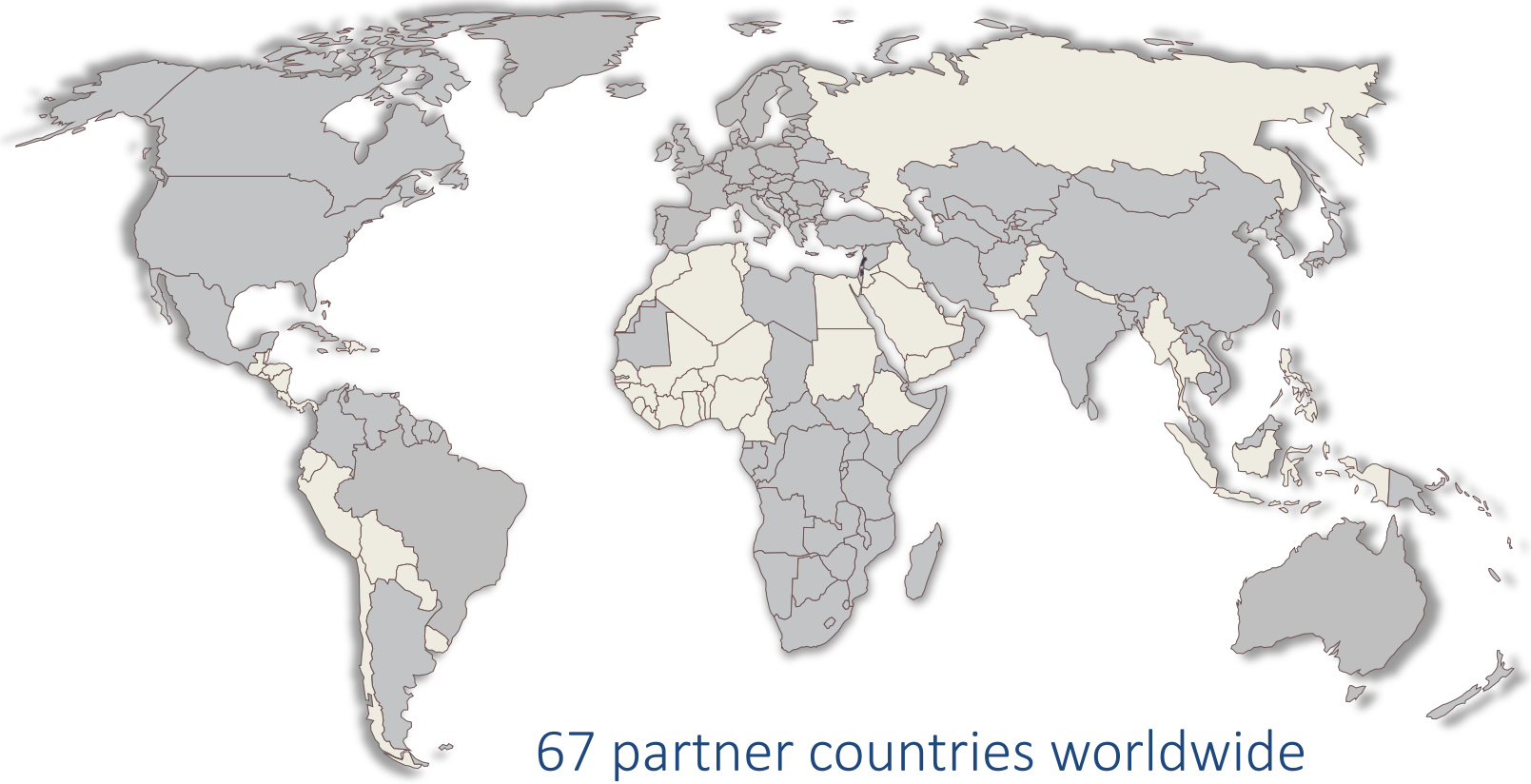
Regulatory policies: National Standards, Import Restrictions, Technology Mandates

Economic instruments, Traffic control measures, Information Technology

FIA Foundation for the Automobile and Society | UNEP | International Transport Forum | iea International Energy Agency | icct | ITS UCDAVIS Institute of Transportation Studies

Lighting - en.lighten Global Partnership

Goal: To accelerate a global market transformation to environmentally sustainable, energy efficient lighting technologies, as well as to develop strategies to phase-out inefficient incandescent lamps.



67 partner countries worldwide

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Appliances and Equipment Accelerator

- An integrated policy approach to transform markets

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Minimum Energy Performance **Standards**

Supporting policies promoting demand for efficient products incl. innovative financing mechanisms, loans and grants

Successful market transformation

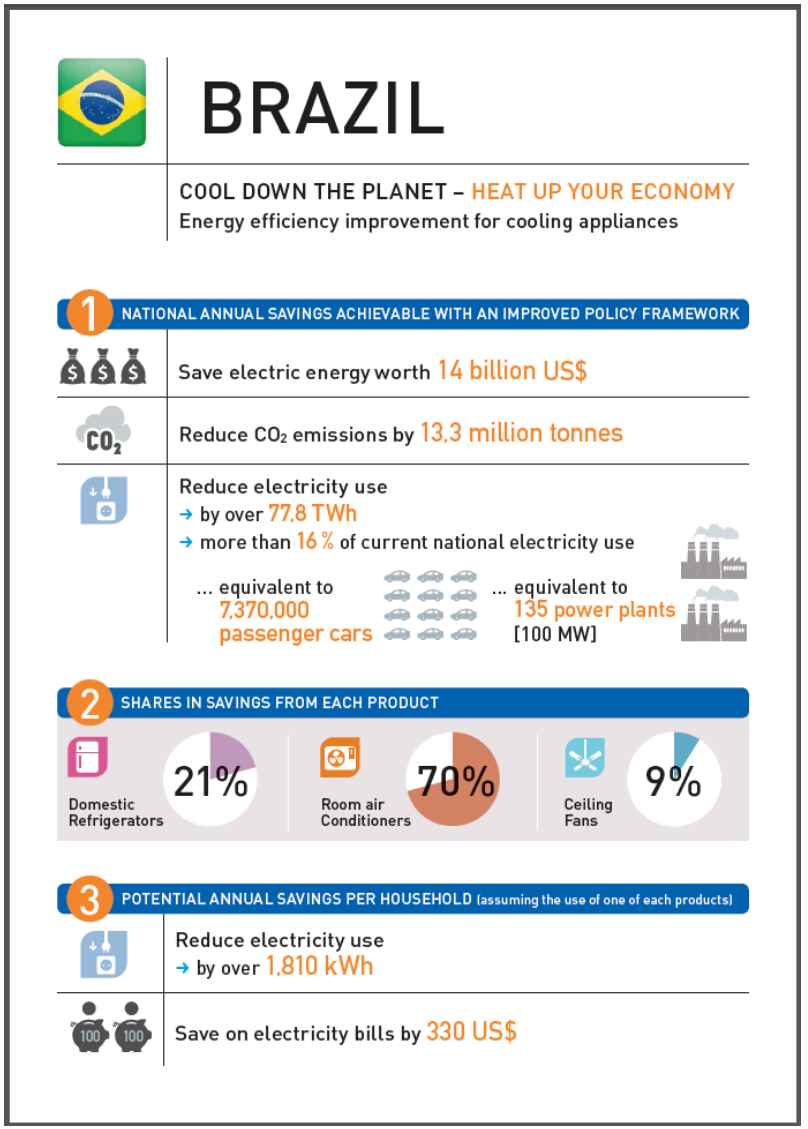
Monitoring, verification and enforcement programmes discouraging non-compliant products

Environmentally sound life-cycle management mercury, electronic waste, ozone depleting substances...

1. Development of knowledge and tools by the "Centre of Excellence"
2. Support to all partner countries to develop and implement the integrated policy approach
3. Implementation of national (regionally harmonized) projects

Appliances and Equipment Assessments

- 33 Country Assessments have been completed in Latin America and Caribbean Region
- Transition to best available energy efficient refrigerators, air conditioners and electric fans in households in the LAC region could result in annual energy savings of **138 TWh - equivalent to USD 20 billion.**



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Buildings Accelerator

Light Touch

Commitment | Assessment | Development | Implementation | Improvement

Deep Dive

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Building Partnership in Mexico City

Commitment from city to:

- Implement a building energy code
- Retrofit public buildings

Launch event and workshop for common vision – 19 March 2015

- 100 Participants – including 25 city government, 5 federal government, 20 businesses, 8 finance, 21 consultants

Action plan now underway:

- 4 workgroups chaired by Mexico City staff and an SE4All partner, project managed by WRI/CTS EMBARQ

District Energy Accelerator

The Impact of Leapfrogging to Modern District Energy Systems

Savings on electricity bills increase purchasing power

Free power generation capacity for development

Meet Tomorrow's Energy Needs by Leapfrogging to Modern District Energy Systems Today!

Reduce CO_2 emissions & mitigate climate change

Accelerate economic development

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DISTRICT ENERGY IN CITIES

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Industrial Accelerator

Support for development and formulation of EE policies

- Integrated policy and investment roadmap that provides innovative tools and instruments to promote successful polices under local circumstances at regional, national, and subnational levels

Capacity building for adoption of EnMS

- Training of public and private officials via “train the trainer” approaches, and on-the-ground region and sector-specific pilots

Financing solutions for the development and implementation of Accelerator goals

- Financial institutions mainstream EE financing into standard loan operations, coupled with technical and EnMS implementation assistance

Knowledge-sharing and information dissemination

- Platform for knowledge exchange for best practices in policy design and implementation, fostering south-south collaboration to address information barriers

Institute for Industrial Productivity

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