



United Nations Environment Programme en.lighten initiative: A Global Transition to Energy-Efficient Lighting

3rd International Forum: Energy for Sustainable Development,
12-14 September 2012, Issyk Kul Lake, Kyrgyzstan



PHILIPS



nLTC National Lighting Test Centre
China



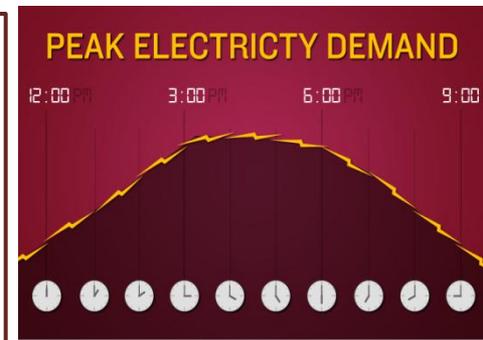
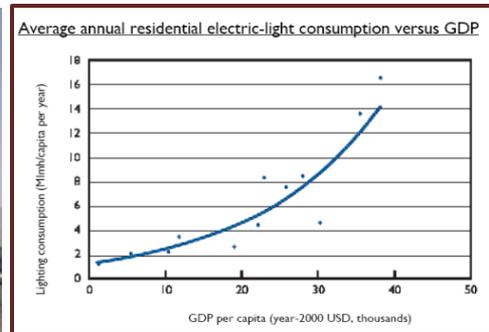
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efficient lighting for developing and emerging countries



Efficient Lighting Offers a Rapid Response To a Global Energy Challenge

- **Lighting power demand and use are increasing.**
- **Lighting is an essential service that significantly affects: peak power, electricity consumption and greenhouse gas emissions associated with fossil fuel sources.**
- **Lighting also affects economic productivity.**
- **Many countries already have aggressive strategies to increase the efficiency of their installed lighting base, via appliance energy efficiency programs and building codes.**





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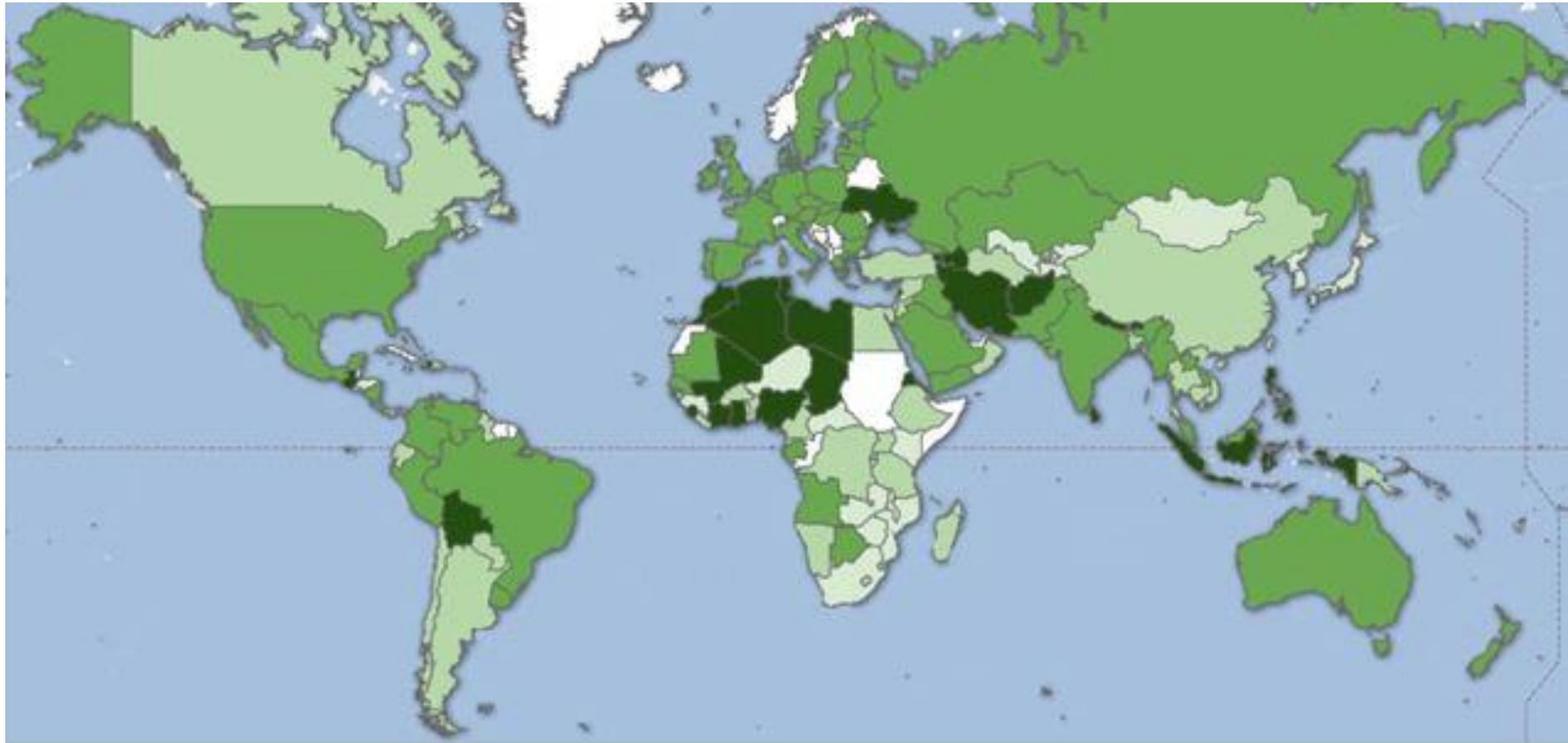


Lighting Assessments: 150 Countries

Results show:

- **5% of global electricity consumption could be avoided through a transition to efficient lighting → annual worldwide savings >110 billion USD**
- **Annual electricity savings of phase-out of inefficient lighting → closing over 250 large coal-fired power plants & avoided investment costs ~210 billion USD**
- **490 Mt of CO₂ savings per year = the emissions of more than 122 million mid-size cars**

Energy Savings, By Country (%)



% of national energy saved: <4.00% 4.01-5.00% 5.01-6.00% >6.01%



Benefits of Efficient Lighting in Eurasian Countries

Country	Financial savings per year (Million USD)	Energy savings per year (GWh)	CO2 reductions per year (kt CO2)	Payback (months)
Armenia	25.4	401.8	53.1	10
Azerbaijan	58.1	1100	454.6	15
Belarus	126.4	2000	595.7	9
Georgia	18.2	350.5	42.3	5
Kazakhstan	167.9	4100	2000	6
Kyrgyzstan	30	229.9	20.4	3
Russia	5600	53200	16 900	8
Tajikistan	6.9	388.3	11.4	23
Turkmenistan	n/a	617.3	503.2	n/a
Ukraine	1700	18 700	7 400	16
Uzbekistan	71.7	1700	750.8	7



United Nations Global Target

- **By 2016*** all countries should have:
 - Phased-out inefficient incandescent lamps
 - Have policy/Standards in place (or in development) to phase-out within an identified timeframe

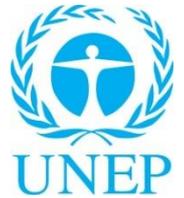
** 31 December 2016*

start
now



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en.lighten 2012 Objectives

- **Facilitate a global agreement to phase out inefficient lamps by 2016.**
- **Harmonize and promote minimum energy performance standards (MEPS).**
- **Function as a global center of excellence.**
- **Encourage global best practices in efficient lighting.**
- **Establish global network of committed stakeholders.**



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en.lighten Global Efficient Lighting Partnership Programme

- **en.lighten Global Efficient Lighting Partnership Programme established in 2011**
- **Nearly 50 developing and emerging countries have joined**
- **Committed to phase out inefficient lamps by end of 2016**
- **UNEP invites countries in Eurasia to join**
- **Private sector partners include: National Lighting Test Center, Osram and Philips**
- **Supported by Global Environment Facility's Earth Fund**
- **Collaborating with other international organizations (International Energy Agency; UNDP; UNIDO; US DOE; World Bank)**



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en.lighten Country Partners as of September 2012

	Latin America & Caribbean	Middle East & Africa	Asia	Eastern Europe & CIS
Country Partner	Belize, Bolivia, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Uruguay	Algeria, Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, Egypt, Ethiopia, Gambia, Ghana, Guinee, Guinee Bisau, Iraq, Jordan, Kuwait, Lebanon, Liberia, Mali, Morocco, Niger, Nigeria, Palestine, Senegal, Sierra Leone, Sudan, Togolese Republic, Tunisia, United Arab Emirates, Yemen	Indonesia, Pakistan, Philippines, Thailand, Tonga	Russian Federation



Why Join the en.lighten initiative?

- **Many developing countries are ready to act now to address climate change. Efficient lighting is a ready solution.**
- **Global best practices in lighting are well-known, but not efficiently transferred to developing countries.**
- **There are many lighting efficiency programmes, but they are dispersed and not consistent in timing or strategy.**
- **en.lighten has momentum and widespread support from industry, experts and early-adopter countries.**
- **Collaboration reduces the cost of market research, national planning and industry readiness.**



Integrated Policy Approach*

Each Partner Country has en.lighten support to develop a National Efficient Lighting Strategy

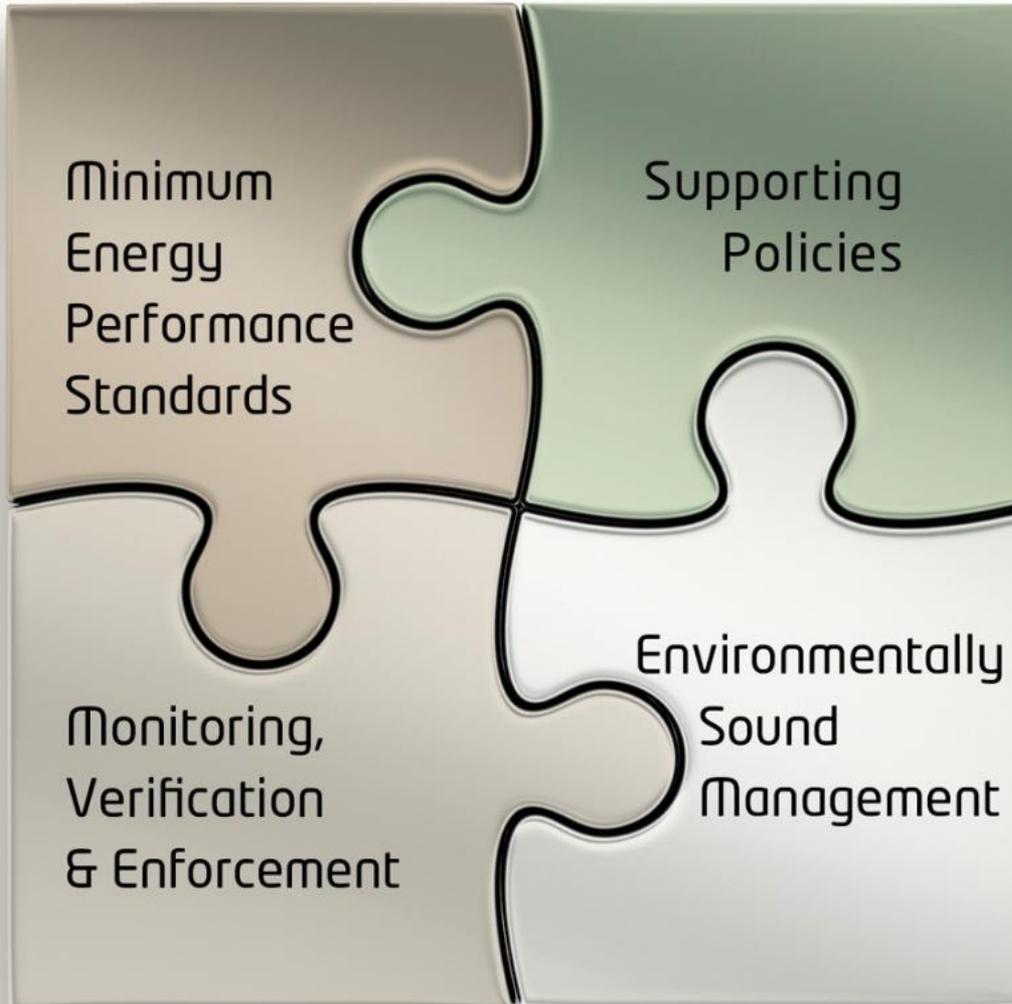
1. Minimum Energy Performance Standards (MEPS) and lighting quality requirements.
2. Supporting policies and activities (DSM; financing and others).
3. Environmentally sound management (full life-cycle, including collection, recycling and treatment programs, with advice on existing international treaties and directives).
4. Monitoring, verification and enforcement (MVE).

*en.lighten requires high-level agreement by Country Partners, with a designated National Coordinator and a national stakeholder steering committee. Ministries may include: energy; environment; finance; commerce/industry; and, health.

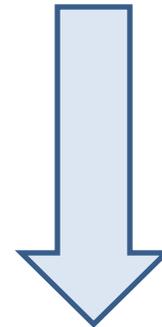


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**INTEGRATED POLICY
APPROACH**



**SUSTAINED
SUCCESS**



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EN.LIGHTEN RESOURCES: EVIDENCE FOR INFORMED POLICY DECISIONS

en.lighten offers technical resources:

- **Country Lighting Assessments (available now)**
- **Global Policy Map (available now)**
- **Efficient Lighting Toolkit (July 2012)**
- **“en.lightened Learning” (August 2012)**
- **Global Status Report (early 2013)**



Thank you...

We look forward to collaborating!

www.enlighten-initiative.org



PHILIPS



nLTC National Lighting Test Centre
China

Back up slides

Who is in the en.lighten Taskforces?

GOVERNMENTS

- Australia
- Brazil
- China
- Cuba
- European Commission
- India
- Japan
- Philippines
- Russia
- Sweden
- South Africa
- UK
- Uruguay
- USA

PRIVATE SECTOR

- OSRAM
- Philips
- European Lamp Manufacturers(ELC)
- Indian Lamp Manufacturers (ELCOMA)
- Chinese Lamp Manufacturers (CALI)

NGOs

- WWF
- Natural Resources Defense Council
- Mercury Policy Project
- European Environmental Bureau
- ECOS
- Clinton Climate Foundation

OTHERS

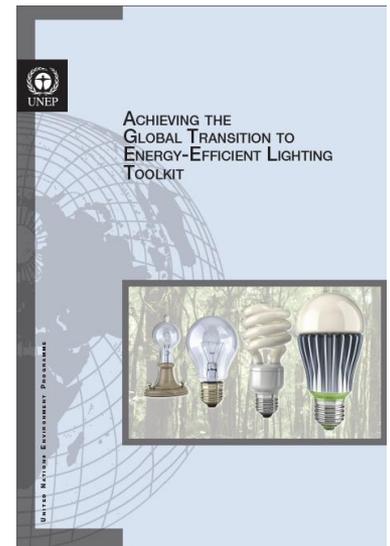
- National Lighting Test Center, China
- World Bank
- UNDP
- Lighting Projects - UNDP/GEF China & Russia
- Asian Development Bank
- TERI, India
- GIZ
- International Electro-technical Commission (IEC)

What is the Global Partnership Program?

- Quick start for efficient lighting action
- Comprehensive policy package
- Provision of technical advice & targeted research
- Support for coordination of regional activities
- Achieve an accelerated phase-out as soon as possible - **2016**

Energy Efficient Lighting Toolkit

- Best practice guidance providing policy and technical tools to promote transition
- For government officials
- Details benefits and barriers to transition & gives guidance on what route to follow on:
 - Policy/Standards
 - Product conformance
 - Environmental concerns
 - Financing
 - Communications and engaging the public



Energy Efficient Lighting Toolkit

Emphasizes phase-out of incandescent lamps as first step to capture full potential of lighting efficiency

Sections include best practices, case studies and suggestions for policies:

- **The rationale for phasing out inefficient lamps; new technologies; vocabulary**
- **Integrated policy approach**
- **Communication campaigns to educate the public and reinforce policy messages**

Multiple formats in 5 languages: slides, pdf, e-book & topical webinars



Kyrgyzstan



The transition to energy efficient lighting in the residential, commercial, industrial and outdoor sectors for all major lamp types would result in the following benefits:

Financial Benefits

30.0 million USD
annual savings



3 months
payback period

Energy Saving Benefits

Potential Savings:

229.9 GWh in annual electricity consumption



Equivalent to:

Power output of 2 small (20MW) power plants

3.4% of total national electricity consumption



19.8 kilotonnes of crude oil

30.2% of electricity consumption for lighting

Climate Change Mitigation Benefits

20.4 kilotonnes annual reduction of carbon dioxide emissions



Equivalent to 5.1 thousand mid-size cars off the road

Other Environmental Benefits



1.1 kilograms of mercury emissions avoided

Example of Country Lighting Assessment

For other countries, please consult:

www.enlighten-initiative.org

COUNTRY LIGHTING ASSESSMENTS: METHODOLOGY

- Residential, commercial/industrial & outdoor sectors.
- Lamps, luminaires and controls.
- Year 2010 (most recent global & country resources).
- Assumptions & private sector data
- Individual countries supplied data & reviewed results.
- Can be updated anytime for most accurate estimates.

Interactive forecasting model :

- Customized scenarios can forecast electricity demand, savings and GHG emissions reductions.
- 20-year horizon will enable policy-makers to consider the impact of various levels of MEPS.

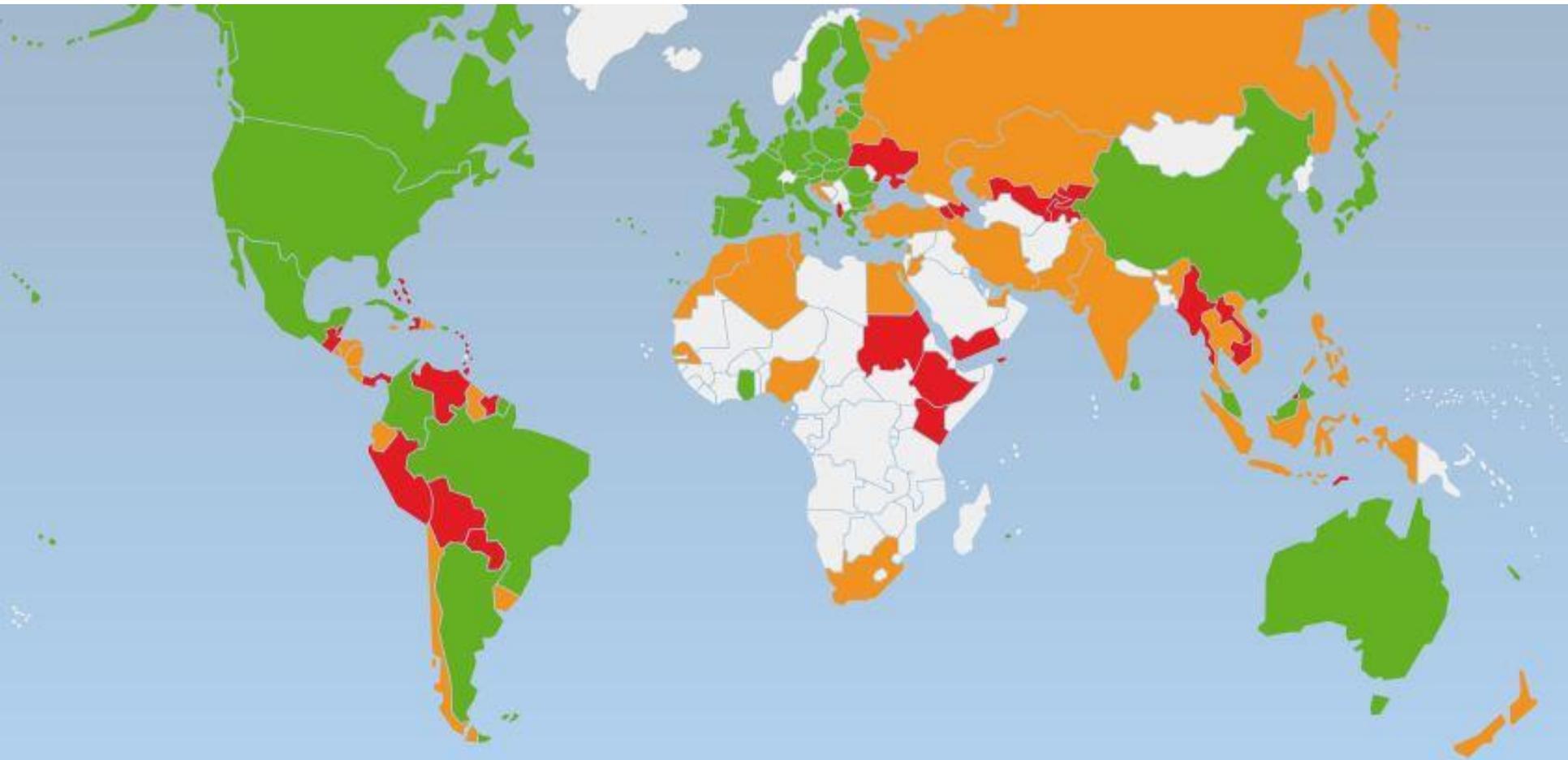
EFFICIENT LIGHTING POLICY MAP

Readiness of countries to transition to efficient lighting in residential sector:

- **Standards**
- **Labels**
- **Supporting policies, including finance mechanisms**
- **Product quality control activities**
- **Environmentally sound management**

Ratings will be regularly updated according each country's progress in achieving a sustainable transition to efficient lighting

EFFICIENT LIGHTING POLICY MAP



Status  "Green" = Advanced activities

Status  "Orange" = Some activities in progress

Status  "Red" = Few, if any, activities

“EN.LIGHTENED LEARNING”

- **Interactive, online resource center for countries to work remotely with en.lighten, its partners, task forces and experts in lighting and policy specialties**
- **Will offer: webinars, tutorials, calculation tools, frequently asked questions, videos and other ways to learn how to develop and implement lighting policies**
- **Learning modules based on the Efficient Lighting Toolkit and other topics as requested**

GLOBAL EFFICIENT LIGHTING CENTRE

UNEP Collaborating Centre, launched in 2011 in Beijing:

- **Partnership between UNEP & National Lighting Test Center**
- **Accredited facility—provides lighting testing, training, advice, quality control & capacity-building**

Supports developing and emerging countries:

- **Helps strengthen national or regional lighting laboratories**
- **Enhances quality control capabilities for lighting**
- **Offers guidance to improve product manufacturing**
- **Develops quality control tests**



**Global
Efficient
Lighting
Centre**