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# Regional Lighting Efficiency Strategy in Central America

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SEAD

SUPER-EFFICIENT EQUIPMENT AND  
APPLIANCE DEPLOYMENT INITIATIVE



## Leyla Zelaya, Proyecto Mesoamerica

- 20 years of experience in environmental issues, especially solid waste, environmental impact assessment, waste water and chemical safety.
- 14 years of experience in the development of strategic instruments and regional coordination of sectorial issues.
- Experience in Multilateral Environmental Agreements track specifically those related to chemicals management.
- Formulation, management, coordination, implementation and evaluation of policies, programs and regional projects.
- Development of training courses targeting different actors of the regional, national and local levels.
- University Professor

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# **Regional Lighting Efficiency Strategy in Central America**

**Global Approaches to Lighting Regulations  
September 8th, 2015**

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## Political Mandates

XII Summit of Head of State and Government of the Tuxtla Mechanism, Cartagena de Indias, Colombia, October 26, 2010:

CT-2010-67: *"To request the support of the GTI [Interinstitutional Technical Group] together with national authorities, to make actions that promote the production of energy from renewable sources and energy efficiency"*.

This mandate causes the Mesoamerican Program for the Rational and Efficient Use of Energy (PMUREE) and one of its components is the Efficient Lighting.





## Identified barriers

- ▶ High costs of CFL and LED lights in the local and regional market when compared to incandescent lights.
- ▶ Not all countries have an enforcement or monitoring system for lighting products in the market.
- ▶ There is no lighting production in the region.
- ▶ Most countries, except Belize, Honduras and the Dominican Republic have Minimum Energy Performance Standards (MEPS).
- ▶ Costa Rica is the only country that has a system to verify the standards.
- ▶ No treatment plants for light bulb waste, and specifically, mercury waste.



# Main results of the Market survey

## Summary for imported lamps in the region, 2012

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1. 12 MM USD representing 49.1 MM incandescent lamps
2. 66.3 MM USD representing 41.3 MM CFL
3. 54 % are incandescent lamps and 46 % CFL
4. 8.74 MM incandescent lamps in users subsidized or low-income rate

# Goal

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Transform the current global lighting market to one of lighting efficiency by promoting efficient and high-performing lighting technologies and eliminating sources of inefficient lighting.

Description





## Scope

- ▶ Establishing minimum standards for efficiency, quality, safety and environmental impact.
- ▶ A label awarded to lighting devices with the greatest efficiency and quality in the market.
- ▶ Tax breaks for companies that reduce the price of their devices.
- ▶ A program to replace incandescent light bulbs with efficient lighting for low-income families by paying for the cost of turning in their incandescent light bulbs.



# Scope

- ▶ A monitoring, verification and enforcement system to certify lighting devices and compliance requirements, a verification system that shows how devices have complied with requirements and a enforcement system to apply sanctions to those who have not complied.
- ▶ Implementation of a system to collect and recycle lighting devices at the end of their life to avoid contamination of small amounts of mercury into the environment.

# Investment required by the region to implement the strategy

	Amount (US\$)		
Component*	Year 1	Year 2	Year 3
1. Awareness campaign	1,756,800	1,756,800	1,756,800
2. Training	328,000		
3. Technical assistance	540,000		
4. Implementation of replacement programs	17,481,366		
Total investment	20,106,166	1,756,800	1,756,800
Total	23,619,766		

Investment Costs



Indicators of the real impact that will be obtained from implementing the Transition to Efficient Lighting Strategy in the region.

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- ▶ Reduction in energy generation by 3.09 billion kWh/year and in fuel consumption for that generation by 679,747 tons, equal to US\$ 530 million at nominal rates.
- ▶ Reduction in CO<sub>2</sub> emissions by 1,956,499 tons/year.
- ▶ Avoid US\$ 660 million of investments in new generation capacity.
- ▶ Eliminate the current environmental impact of 1.38 tons of mercury in lighting devices that are currently installed and avoid the impact of 0.14 tons of new devices that will be installed.

# Social benefits

Country	User Savings (US\$)	Families
Belize	137,257	6,789
Costa Rica	9,322,524	336,505
El Salvador	9,286,890	966,060
Guatemala	21,636,082	343,149
Honduras	0	1,076,502
Nicaragua	5,274,845	692,037
Panama	10,239,390	640,774
Dominican Republic	24,349,316	524,168

Social Benefits



# Financial evaluation (Reduction in fuel bill)

Country	NPV	TIR	PRI
<b>Belize</b>	US\$ 1,078,339	69%	2.96 years
<b>Costa Rica</b>	US\$ 230,229,179	909%	1.02 years
<b>El Salvador</b>	US\$ 233,479,353	685%	1.04 years
<b>Guatemala</b>	US\$ 272,688,009	557%	1.05 years
<b>Honduras</b>	US\$ 2,264,295	63%	2.06 years
<b>Nicaragua</b>	US\$ 121,036,849	638%	1.05 years
<b>Panama</b>	US\$ 33,277,407	263%	1.25 years
<b>Dominican Republic</b>	US\$ 406,726,347	741%	1.03 years

# Financial evaluation (Savings in subsidies)

País	VAN	TIR	PRI
<b>Belize</b>	US\$168,791	202%	1.69 años
<b>El Salvador</b>	US\$27,976,287	249%	1.22 años
<b>Guatemala</b>	US\$66,802,746	303%	1.15 años
<b>Honduras</b>	US\$10,593,270	209%	1.37 años
<b>Nicaragua</b>	US\$15,057,122	230%	1.29 años
<b>Panam</b>	US\$15,135,403	190%	1.38 años
<b>Dominican Republic</b>	US\$12,862,067	124%	1.83 años

Financial Evaluation





# Approval and ratification of the strategy

- ▶ Approval of the Strategy by Ministers of Energy of Mesoamerica Project, Panama City, December 6<sup>th</sup>, 2013
- ▶ Ratification in XV Summit of Head of State and Government of the Tuxtla Mechanism, Antigua Guatemala, Guatemala, June 26<sup>th</sup>, 2015



## II. ENERGÍA

### CONSIDERANDO:

la conformación de la Agenda Mesoamericana de Energía, la cual incluye la **Estrategia de Iluminación Eficiente de Centroamérica** y el Programa Mesoamericano de Uso Racional y Eficiente de Energía, que complementarán las acciones ya acordadas en el marco del Sistema de la Integración Centroamericana (SICA);

### RESOLVEMOS:

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**SEXTO:** Solicitar a los Ministerios y Secretarías de Energía de Mesoamérica que, con el apoyo del Grupo Técnico Interinstitucional (GTI), se identifiquen las posibilidades de colaboración para fomentar las energías renovables y **eficiencia energética** en los 10 países de Mesoamérica, las cuales contribuyan a la mitigación y adaptación frente al cambio climático desde el sector de Energía.]



# Thank you!

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