Overview of Lighting Markets in SICA countries

A presentation to Grupo Técnico de Eficiencia Energética (GTEE)

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Scope of the Market Assessment

- Light sources that are used in domestic, commercial, industrial and outdoor applications.

Incandescent

Halogen

Compact Fluorescent

LED lamps

Linear Fluorescent

HID lamps

Methodology

1. Interviews with 16 national experts
2. Literature review, web-crawling
3. Analysis & Results

Country	Expert Interviewed	Organization
Costa Rica	Mario Alberto Marín	Compañía Nacional de Fuerza y Luz S.A. (CNFL)
Costa Rica	Heyleen Villalta Maietta	Laboratorio de Eficiencia Energética, ICE
El Salvador	Mario Ángel Cáceres Rodas	Consejo Nacional de Energía (CNE)
El Salvador	Vidal Hernandez	Sylvania
El Salvador	Víctor Méndez	DELSUR
Guatemala	Jesús Alvarez	Ministerio de Energía y Minas
Honduras	Javier Zablah	Dirección de Energía Renovable y Eficiencia Energética
Honduras	Jhesset Fortín	Suministros Eléctricos SRL
Nicaragua	Shuyan Delgado	Ministerio de Energía y Minas
Panamá	Rafael Sanson	Autoridad Nacional de los Servicios Públicos (ASEP)
Panamá	Mario Naranjo	Katia de Cobas
Panamá	Charlie Sotelo	Sindicato de Industrias de Panamá
República Dominicana	Ana Santana	Ministerio de Energía y Minas
República Dominicana	Genris Reyes	Comisión Nacional de Energía
República Dominicana	Wikis Cedaño	ESC Group
Regional	Lina Pulgarin	Signify/Philips Lighting

Development of country profiles – Example

3.2 Country Profile Summary: El Salvador

Capital:	San Salvador
Language:	Spanish
National currency:	United States dollar (USD)

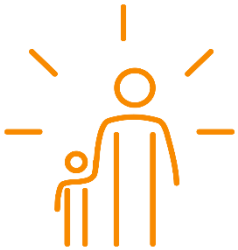
Table 8. At-a-glance Information on El Salvador

Indicator	2018
Population total[1]	6,420,000
Population growth (annual %)[1]	0.5%
Urban Population, % of Total[2]	67.2%
Rural Population, % of Total[2]	32.8%
GDP (Current US$)[1]	26,000,000,000
GDP Growth (annual %)[1]	2.5%
GDP per capita (current US$)	$4,050
GDP Annual Growth Rate Forecast in 2019[1]	2.6%
Inflation, GDP deflator (annual %)[1]	1.9%
Electrification Rate[3]	96%

Sources: 1. World Bank Group, World Development Indicators Database, accessed September 2019; 2. World Bank staff estimates based on the United Nations Population Division's World Urbanization Prospects @IndexMundi, accessed September 2019; 3. IEA, Energy Access Outlook 2017.

Map source: Wikipedia.

Country profiles summary

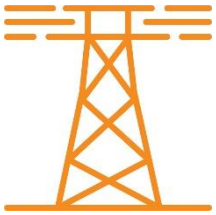


Population

- Ranging from 380K in Belize to 17M in Guatemala

Urban vs. Rural

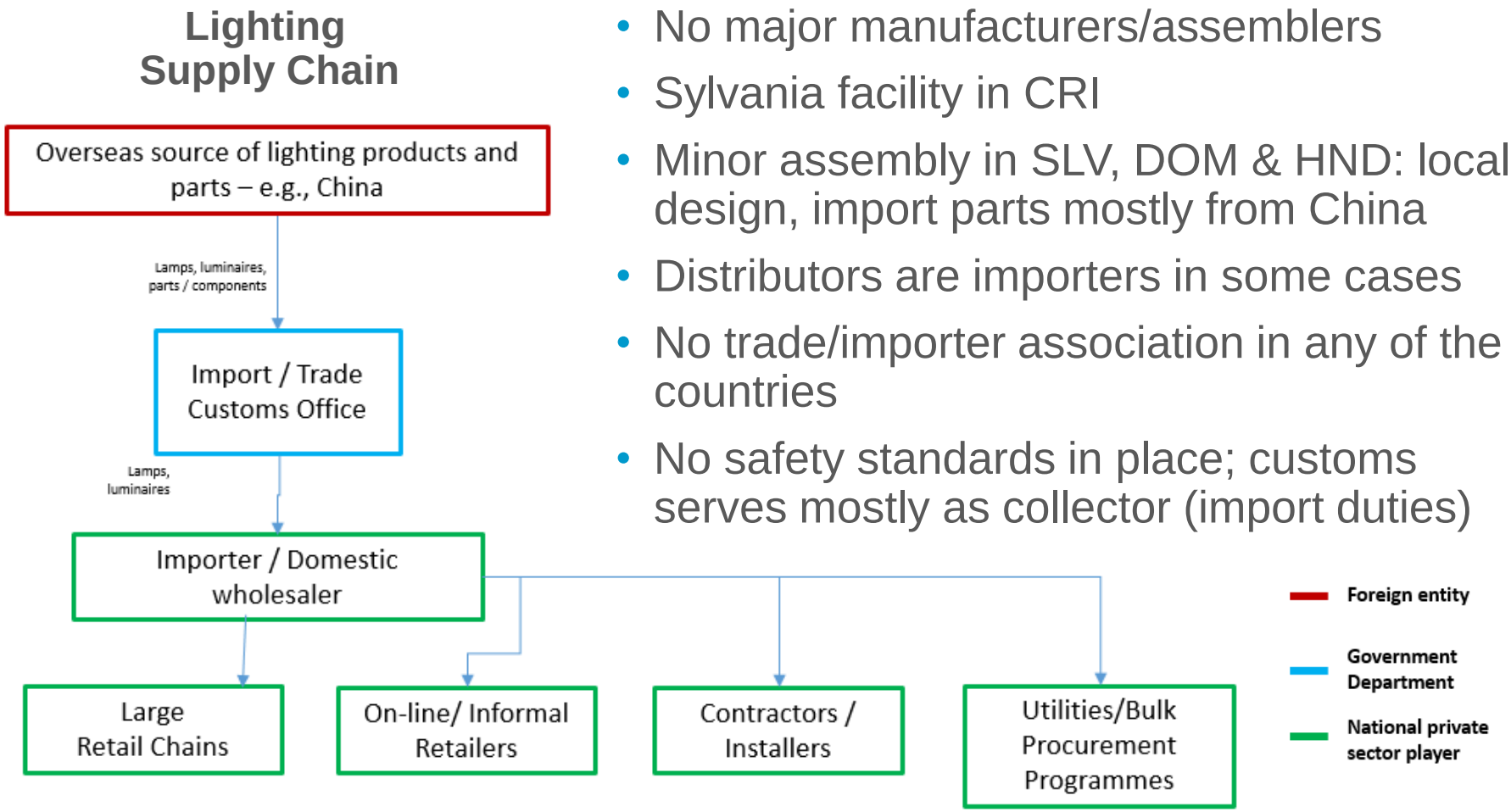
- Large % of rural population in some countries (Guatemala, Belize, Honduras, Nicaragua)



High electrification rates

- >95% in average, expect Honduras

Lighting Market Supply Chain Overview



- Mainly import markets
- No major manufacturers/assemblers
- Sylvania facility in CRI
- Minor assembly in SLV, DOM & HND: local design, import parts mostly from China
- Distributors are importers in some cases
- No trade/importer association in any of the countries
- No safety standards in place; customs serves mostly as collector (import duties)

Brands found in the SICA Markets

- Philips and Sylvania have largest market shares
- Other brands: GE Lighting, Panasonic, Hubbel, Lithonia, LUG, Rayovac, Tecnolite, Earthtronics, Westinghouse, Magnum…with smaller presence
- Growing imports from *white brands* coming form China with concerns associated to quality and durability

Residential Sector Characteristics in SICA

LED penetration trends – two stories in the residential sector

Countries with high penetration

- LED prices have come down significantly in the past 2 years, accelerating a transition to more efficient lighting
- Most distributors are depleting stocks and only importing LEDs

Countries with low penetration

- CFLs still have a large percentage of the stock and market share
- Incandescent lamps common in rural areas and low-income households

Residential Sector Characteristics in SICA

Countries with high penetration

LED prices have come down significantly in the past 2 years, accelerating a transition to more efficient lighting

Most distributors are depleting stocks and only importing LEDs

El Salvador :

- LEDs currently account for 80-85% of the market
- Consumer awareness raising campaigns by the gov and distributors displaying more prominently LEDs on retailer stores have shifted the market in 2 years

Honduras:

- Estimates that by 2020 there will only be LEDs available for sale
- Tax incentives, high electricity bills and consumer awareness campaigns played a role in the transition

Residential Sector Characteristics in SICA

Countries with low penetration

- CFLs still have a large percentage of the stock and market share
- Incandescent lamps common in rural areas and low-income households

- Lack of information and understanding of LED technology
- Low awareness on the benefits of LEDs (both economic – electricity bill savings - and environmental – mercury content)
- Electricity rates highly subsidized

Street Lighting Sector Characteristics in SICA

Street lighting - two different structures

- Municipalities have legal autonomy with some collaboration with utilities or distribution companies when issuing tenders – CRI, SLV, DOM, GTM
- Distribution companies own the system and are responsible for developing procurement specifications – PAN, HND, NIC

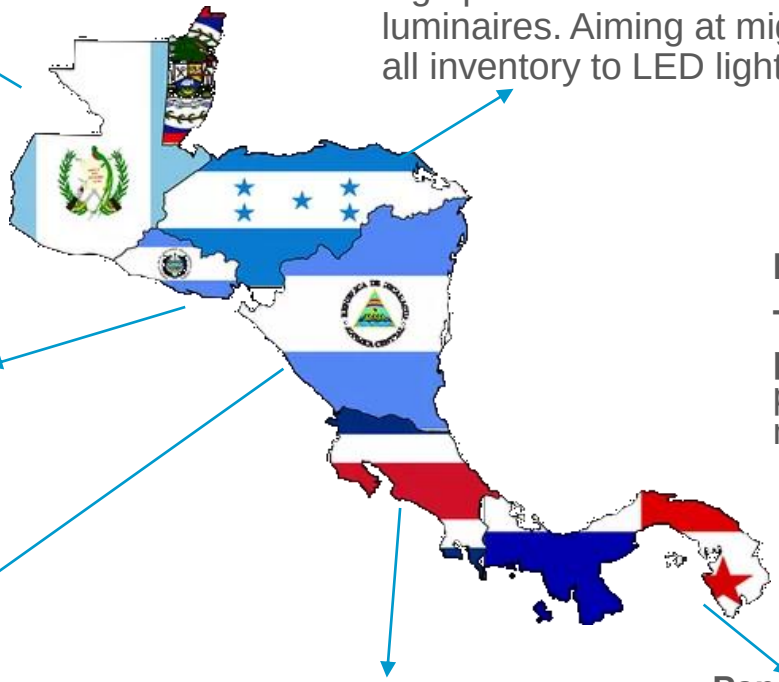
- High percentage of mercury vapor and high pressure sodium in the stock
- Although almost all new tenders require LED
- Some regulatory frameworks serve as a disincentive to LED replacements (slow to recognize replacements to reward municipalities, do not transfer savings to consumers, or simply do not benefit the utility)

Street Lighting Trends and Findings in SICA

Guatemala

Almost 50% of the stock is LED, followed by mercury vapor and CFLs

Honduras brilla - ban the installation of 400W and 250 W high pressure sodium luminaires. Aiming at migrating all inventory to LED lighting



El Salvador

LEDs account for 34%. High pressure sodium has almost disappeared, while mercury vapor and CFLs account for 65% of the market

Dominican Republic

There is still very low penetration of LEDs. High pressure sodium (60.6%) and mercury vapor lamps (27.5%)

Nicaragua

High pressure sodium (84%) with **little penetration of LEDs**

Costa Rica

High pressure sodium (73%) with **some penetration of LEDs (15%)**

Panama

Distribution companies should use high pressure sodium luminaires and eliminate mercury. In the tariff period 2018-2022 planned **replacement of 10% sodium by LEDs.**

Regulatory Frameworks

Policies Supporting a Transition to Energy-Efficient Lighting

Country	Policies
Costa Rica	• Ministry of Environment and Energy (MINAE) defined a Directive that applies at the national level to government institutions: requires the purchase of efficient equipment and defines guidelines by technology • INTECO has issued energy efficiency standards for indoor and outdoor lighting including minimum energy performance standards and labeling requirements, but these standards are voluntary
El Salvador	• National program called “Program El Salvador ahorra energía” with very effective awareness raising campaigns, a magazine and a National Energy Efficiency Award • No current regulation for lighting products
Guatemala	• National Energy Efficiency Plan has guidelines that promote the supply of products with efficient technologies. • No preferential tariff that applies to low-consumption lamps or luminaires, or a national energy efficiency standard
Honduras	• The government is targeting a phase out of fluorescent lighting due to its mercury content and emphasizing LED replacements through a program of the Secretary of Energy • A ban on incandescent lamps has been in place since January 1, 2010 – the Executive Decree (Decreto Ejecutivo PCM-112-2007) prohibits the purchase, sale and entry of incandescent lamps in the national territory. • LED technologies are exonerated from import duties

Regulatory Frameworks

Policies Supporting a Transition to Energy-Efficient Lighting

Country	Policies
Nicaragua	• The National Program for Sustainable Electrification and Renewable Energies (PNESER) has replaced conventional technologies by more efficient ones in the government, residential, and public lighting sectors. • Tax incentives for lighting products in Nicaragua provided an exemption to the value added tax (VAT) on some lighting technologies until 2016 • NTON 10 006-07 for incandescent lamps (NTON 10 006-07 EFICIENCIA ENERGÉTICA. LÁMPARAS INCANDESCENTES DE USO DOMÉSTICO Y SIMILARES. ESPECIFICACIONES Y ETIQUETADO) to restrict the use of incandescent lamps for domestic and similar uses.
Panama	• The Rational and Efficient Use of Energy Law (UREE Law) signed in 2012 covers different topics, from energy-efficiency, reducing pollution, and the labelling of products. • LED technologies are exonerated from import duties • No labeling for lighting products yet
República Dominicana	• Law in 2005 (Res No. 376-05) establishes the zero rate in the importation of light bulbs, tubes and lamps in order to reduce the use of incandescent lamps and encourage zero tariffs for CFLs and tubular fluorescent lamps • Two voluntary standards for CFLs • Education campaigns to state, governmental institutions and consumers to promote the transition to LED lamps

Regulatory Frameworks

Minamata Convention Signatories

Country	Minamata Convention on Mercury Signatories	
	Signature	**Ratification, Acceptance (A), Approval (AA), Accession (a)**
Belize		
Costa Rica	10/10/2013	19/01/2017
El Salvador		20/06/2017 (a)
Guatemala	10/10/2013	
Honduras	24/09/2014	22/03/2017
Nicaragua	10/10/2013	29/10/2014
Panama	10/10/2013	29/09/2015
República Dominicana	10/10/2013	20/03/2018

- **CFLs and LFLs are currently treated as normal residues –** in other words, there is no proper end of life treatment for this technology that contains a hazardous material like mercury

Barriers to a Transition to Energy-Efficient Lighting

- **Lack of regulation & incentives**
- **Lack of awareness** on the benefits of LEDs (economic and environmental) or **lack of information**
- **Price** for low income households
- **Electricity tariff subsidies** - low-consumption residential customers subsidized, reducing concerns about keeping track of or lowering consumption
- **Quality concerns –** there are cheap low quality LED luminaires and lamps on the market. Flickering problems and lower duration have been reported
- **Poor quality of the electrical grid -** a disincentive to promote the purchase of good quality products

Practices or conditions Encouraging a Transition to Energy-Efficient Lighting

- **Consumer awareness raising campaigns** successful at influencing consumer behavior and increasing adoption of LED technologies
- **Replacement programs** targeting low income households
- Government driven **initiatives considering environmental benefits** – no need to deal with mercury-content disposal and treatment
- **Tax incentives**
- **Electricity rates reflecting real cost** where consumers need to follow closely their consumption
- **Robust distribution chain** strongly promoting LEDs by taking away space from the old technologies and making LEDs more accessible to the public, or conducting trainings
- Technology **prices have gone down significantly** in 2018-2019

Key takeaways

- The transition to LEDs is already happening in Central America
- Some countries have accelerated the transition through effective government initiatives (tax incentives), robust supply chains & consumer awareness campaigns
- Prices are significantly down making the economic case for most users
- One of the main barriers cited by most experts is the lack of regulation that allows imports of cheap, low-quality products (which can eventually erode consumer confidence)

Considerations

- A Regional Technical Regulation for both indoor and outdoor luminaires will address some of the critical barriers
- Central American countries need to think about:
  - Cost-effective mechanisms for certification & conformity assessment
  - Facilitate regional trade (use of product registry)
  - Cost-effective mechanisms for market surveillance
- Street lighting procurement is not regulated at the state level so there is an opportunity (or an effort) to work with municipalities and utilities in promoting the use of the RTCA in their tenders
- Opportunities to facilitate a transition in rural or low-income households via replacement programs, on-bill financing or government bulk buys

Thank you, any questions?

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