



Energy Efficiency

A New Source of Energy

Juan Pablo Bonilla
SECCI Coordinator

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Sustainable Energy and Climate Change Initiative

Objective

- » Promote technologies and applications of energy efficiency (EE)
- » Expand development and use of renewable energy sources (RE)
- » Expand production and use of biofuels/bioenergy (BI)
- » Promote strategies of climate change (CC) mitigation and adaptation

Mechanisms

- » Support policy reforms on EE, RE, BI, CC
- » Technical assistance, loans and guaranties
- » Support in access to carbon markets

Energy Efficiency (EE)

Priority lines of action

- » Evaluate and identify existing EE potentials
- » Advise governments about best way to make use of EE potentials
- » Identify and promote reforms, norms and political instruments
- » Integrate EE in process of analysis and approval of IDB projects
- » Search for new investment opportunities with clients, making use of a variety of mechanisms
- » Scale up new EE technologies
- » Prepare EE loans and guarantees for the public and private sectors

Energy Efficiency – Why?

Macro economic effects

- » Investments of **1 billion€** in German EE-programs yield revenues of **3.7 billion€** for national economy (Study Wuppertal Institute, 2002)
- » **\$1** additional investment in EE, avoids **> \$2** in investing in electricity supply (IEA World Energy Outlook 2006)
- » **Reduced dependence** on fossil fuel imports
- » Ease of infrastructure bottlenecks => **Enhance energy security**
- » **Less GHG emissions** => Carbon finance

Micro economic effects

- » **Reduced** operational costs
- » **Payback** periods are **shortest** for developing countries
- » **Increased** productivity and **competitiveness**

Successful Examples

- » 16 industrialized countries met **50%** of increasing demand by EE (1990-2005)
- » **US\$180 billion** savings in fuel
Source: International Energy Agency
- » Brazil-PROCEL: **20 billion Reais** avoided in expansion of electricity supply (1986-2007)
Source: PROCEL 2007
- » Mexico-FIDE: **23 million** barrels of oil
Source: FIDE 2007

A new source of energy

Projections

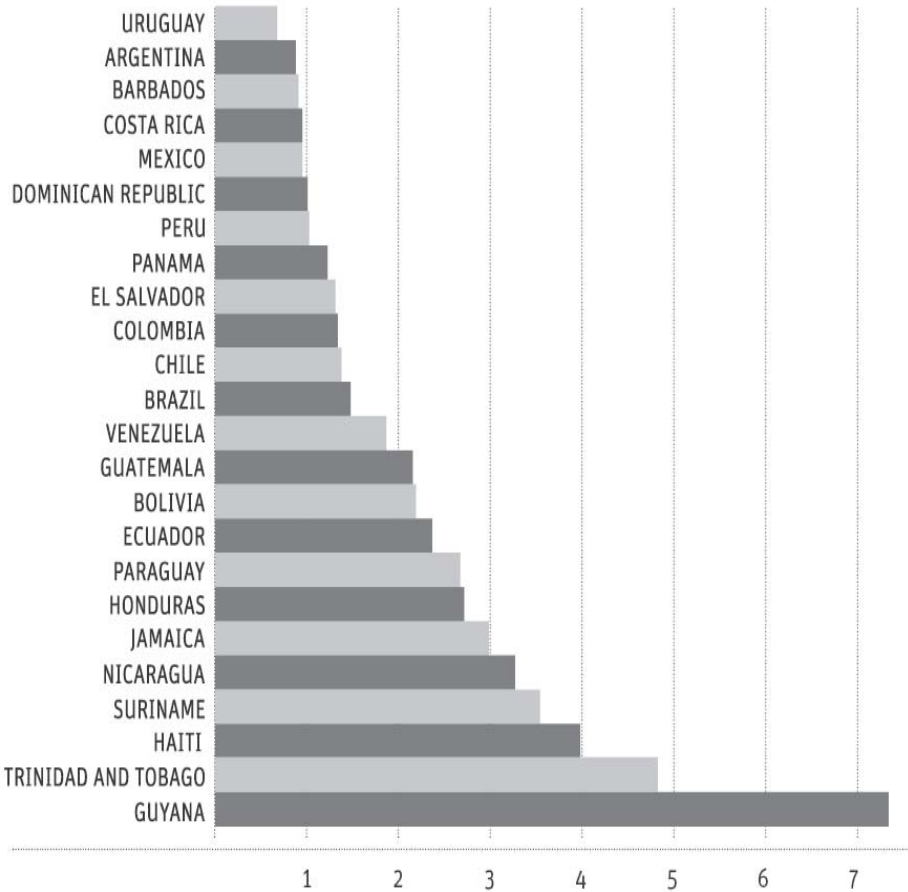
- » LAC energy demand in 2030 will be 75% higher than in 2004
- » Electricity production will expand approximately 50% in next 10 years
- » Transportation fuel use is expected to increase by 70% until 2030

Source: International Energy Agency

Diversification of energy matrix

- » To meet increasing demand, LAC needs to diversify energy matrix and improve efficiency
- » Energy Intensity in LAC differs significantly between countries
- » Within the whole mix, EE is **most cost effective option**

Energy Intensity



Potential

» High energy intensity indicates existing potential

Source: OLADE 2006

» **7%** savings in energy consumption in electric motors (highest single end-use)

» **37%** savings in energy consumption in lighting (second highest single end-use)

2018 Alternative Scenarios

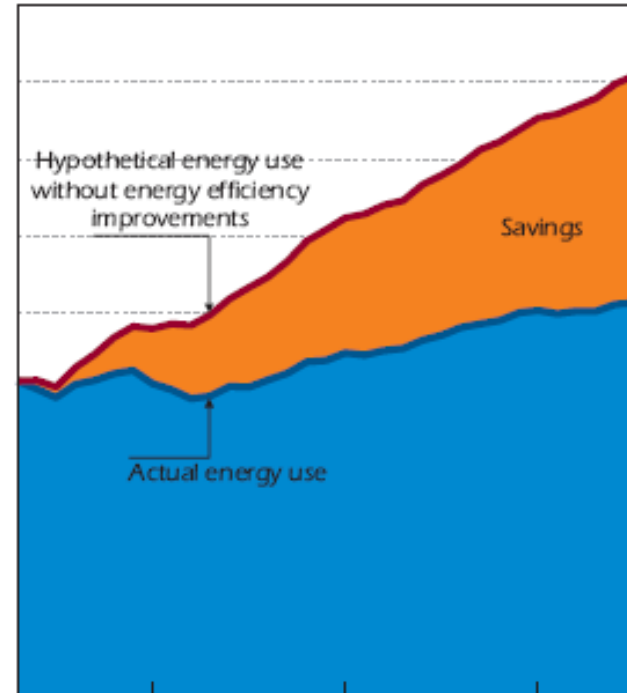
LAC Energy efficiency scenario

- » Part of projected electricity demand increase provided by EE
- » Reducing electricity consumption by 10% in 2018
- » Required estimated EE investments:

US\$17 billion

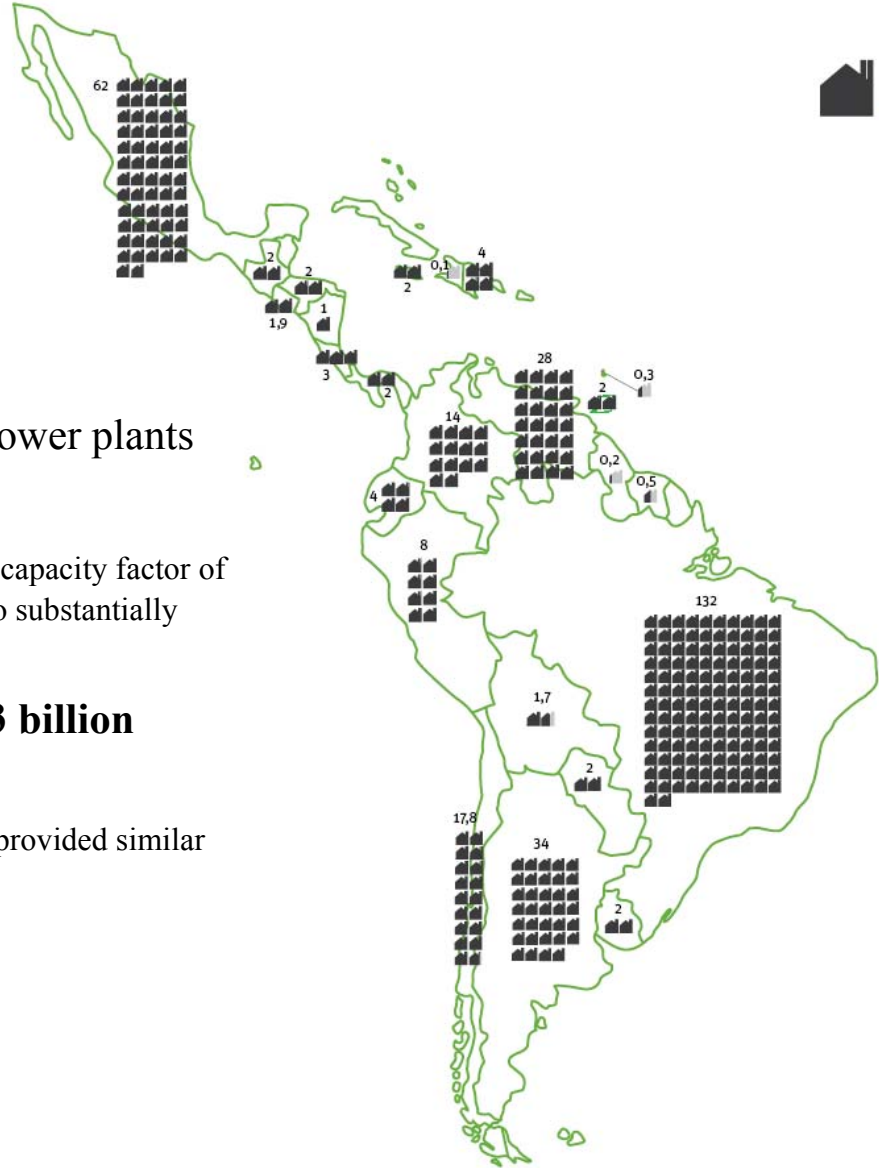
- » Estimated savings by 2018 :

143,000GWh



Business as usual scenario

- » All of 143,000GWh provided by new power plants
- » **328** power plants to be built by 2018
 - 250MW open cycle natural gas plants, operating at capacity factor of 20% assuming a strong load management program to substantially increase load factor
- » Required estimated investments: **US\$53 billion**
 - Estimated investment: 650US\$/kW
 - Source: International Energy Agency
 - Other scenarios considering lower capacity savings provided similar avoided investments

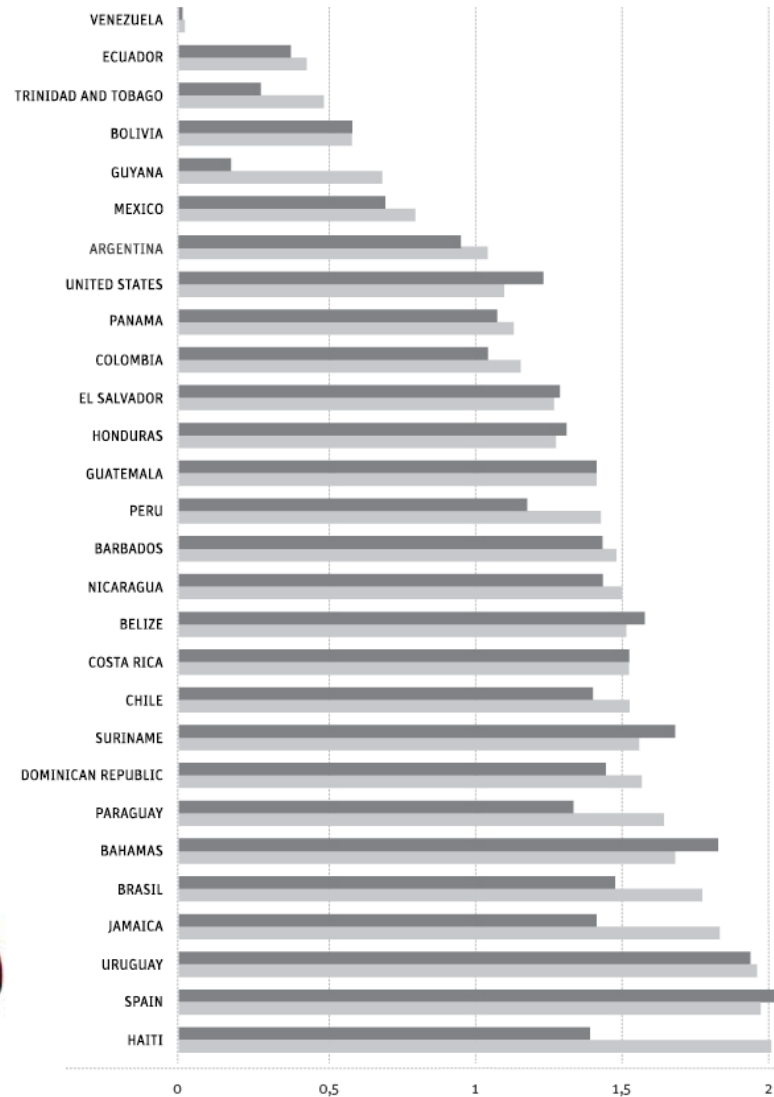


Use Subsidies to Finance EE

- » In 2008 LAC countries spends **US\$50 billion** on transportation fuel subsidies
Source: Financial Times, 2008
- » Subsidies have goal of “protecting” consumers from fuel prices
- » However they also tend to **discourage** investment in EE
- » What if part of US\$50billion were spent on **incentives** for consumers in EE?



Gasoline and Diesel Prices



Gasoline and diesel prices. Prices expressed in US\$/L.
Source: IDB, retail prices in capital cities on August 20, 2008

Conclusions

- » Energy Efficiency is **most cost effective** option to partly meet growing demands
- » Energy Efficiency is the **cleanest source of energy**
- » Energy Efficiency is the quickest source of energy to deploy
- » Amongst others, EE is on the forefront to **secure energy supply**
- » Regulatory, financial and operational **frameworks** need to be established
- » Strong **international cooperation** necessary to support project preparation financing and technology transfer

**IDB is ready to face these challenges.
So let the dialog continue...**



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