

ESMAP KNOWLEDGE EXCHANGE FORUM WITH BILATERAL  
AGENCIES

AFD, PARIS, NOVEMBER 27-28, 2012

IVAN JAQUES

# Overview of Energy Efficiency in Cities



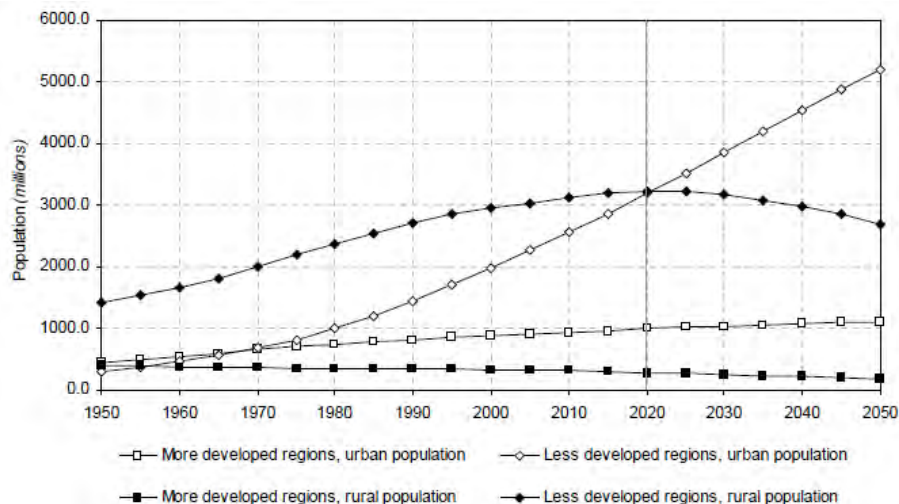
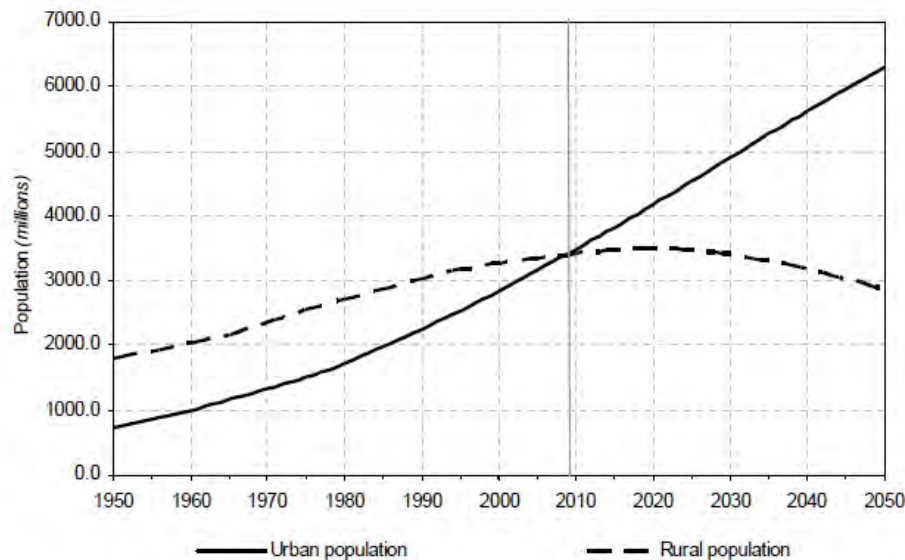
# Agenda

- TRENDS
- THE IMPORTANCE OF CITIES
- ENERGY EFFICIENT CITIES INITIATIVE (EECI) AT ESMAP

# TRENDS

# Trends

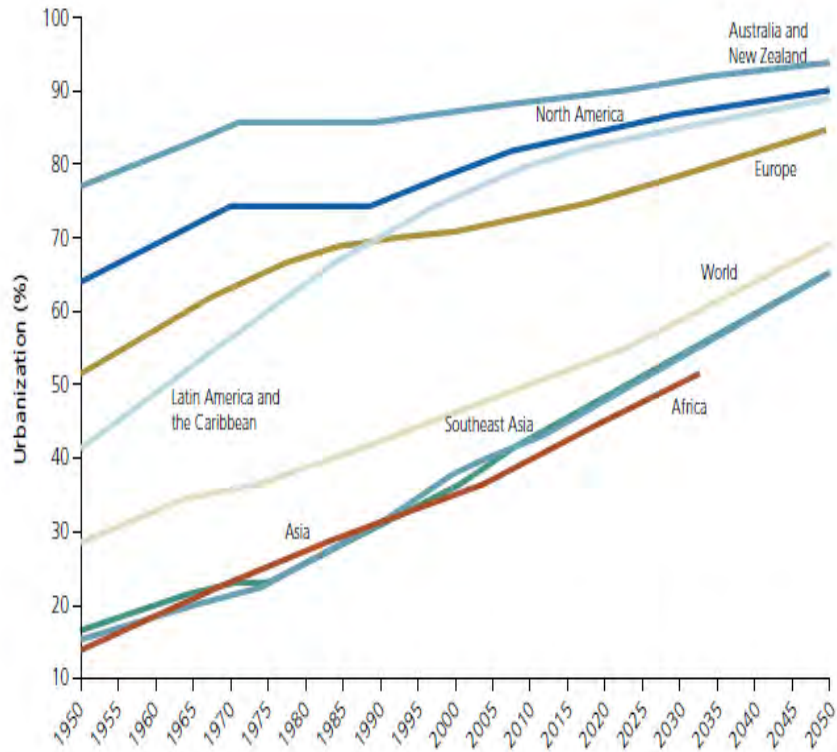
## URBANIZATION POSES MAJOR CHALLENGES ...



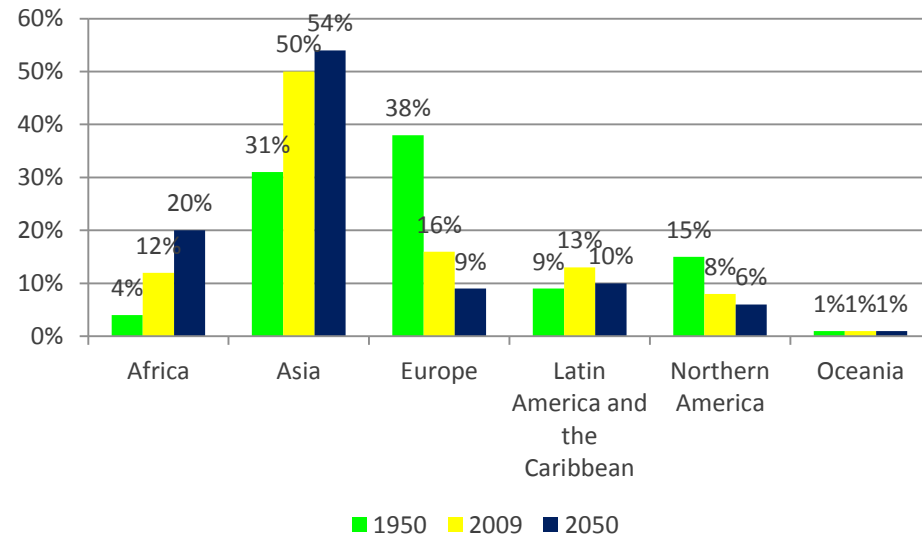
- 3.7 billion people live in urban areas (50% urban)
- 2.5 billion more in the next 40 years
- 70% urban by 2050
- China will double its housing stock between 2000 and 2015

# Trends

## URBANIZATION POSES MAJOR CHALLENGES ... ESPECIALLY IN DEVELOPING COUNTRIES



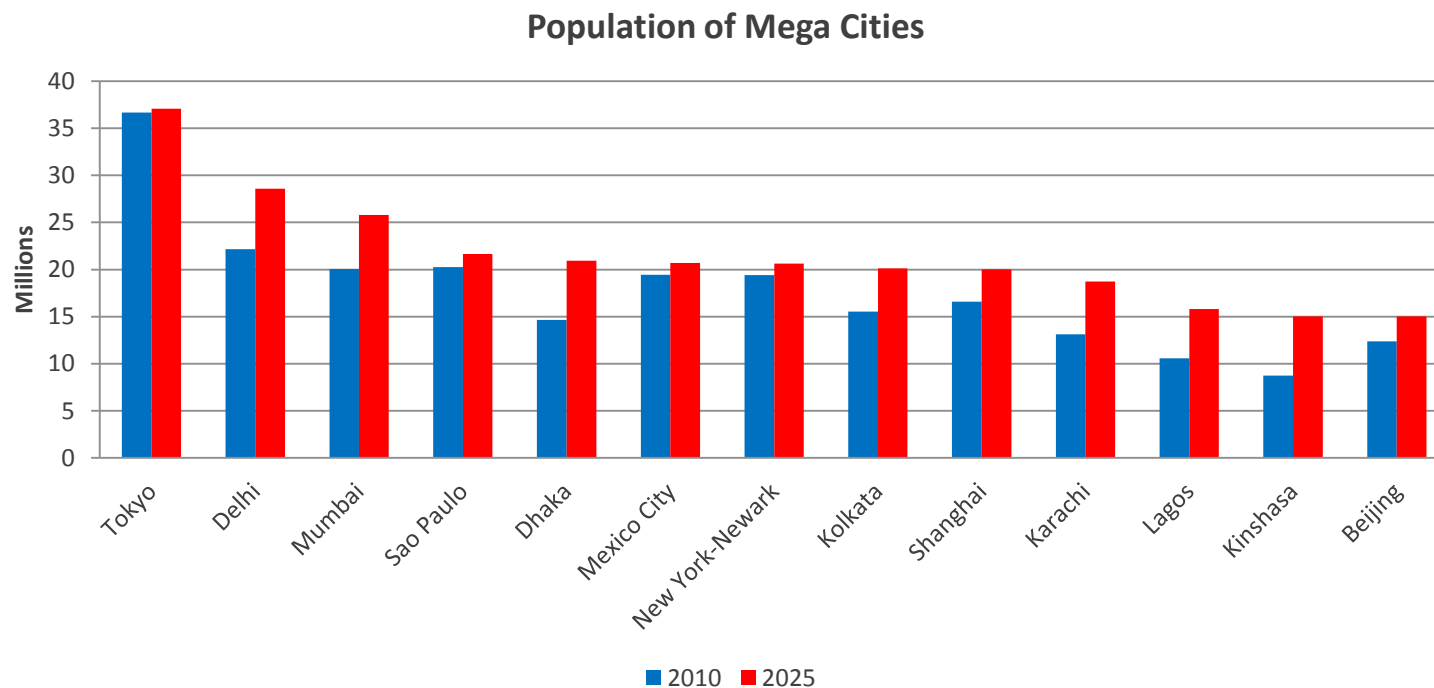
Distribution of the world urban population by major area



Source: "World Urbanization Prospects: The 2009 Revision". Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, 2010

# Trends

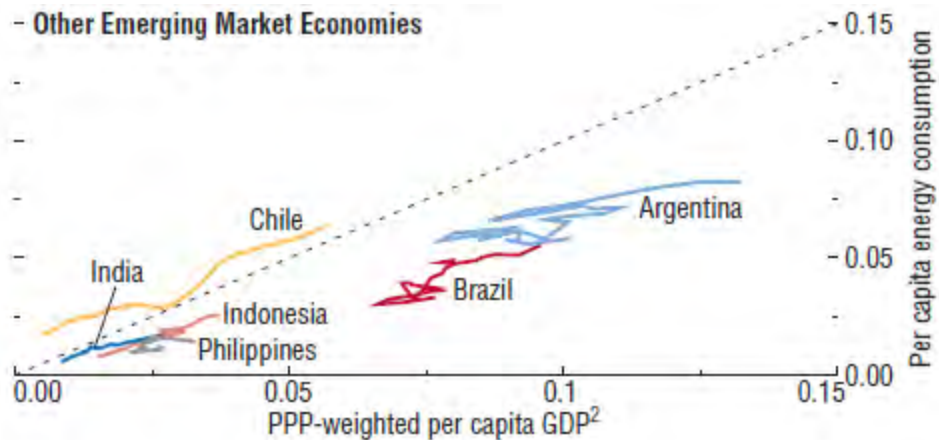
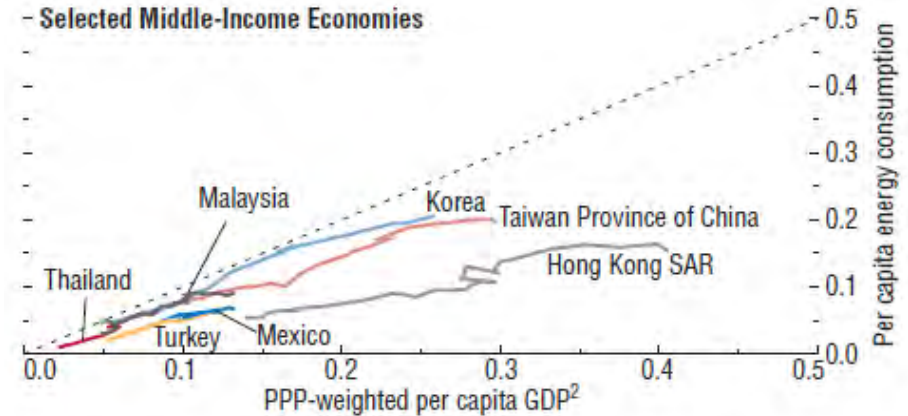
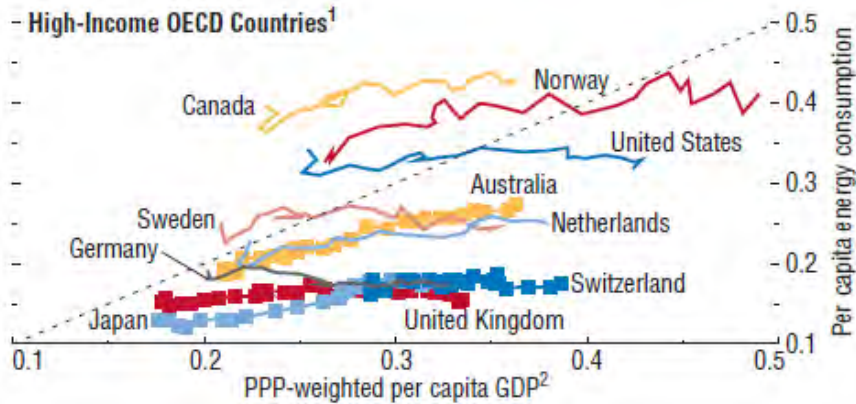
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# Trends

## RIISING INCOMES TOO ...



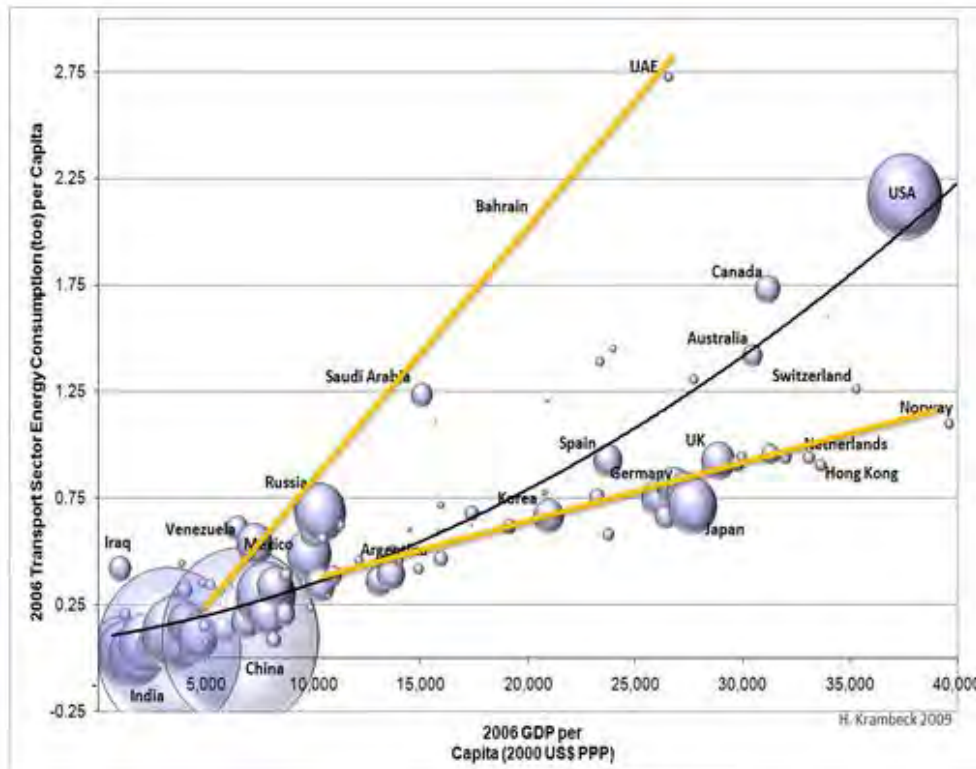
Note: Per capita GDP in hundred thousands of 2005 U.S. dollars and per capita energy consumption in billions of BTU  
 Source: "World Economic Outlook 2011", IMF 2011.



# Trends

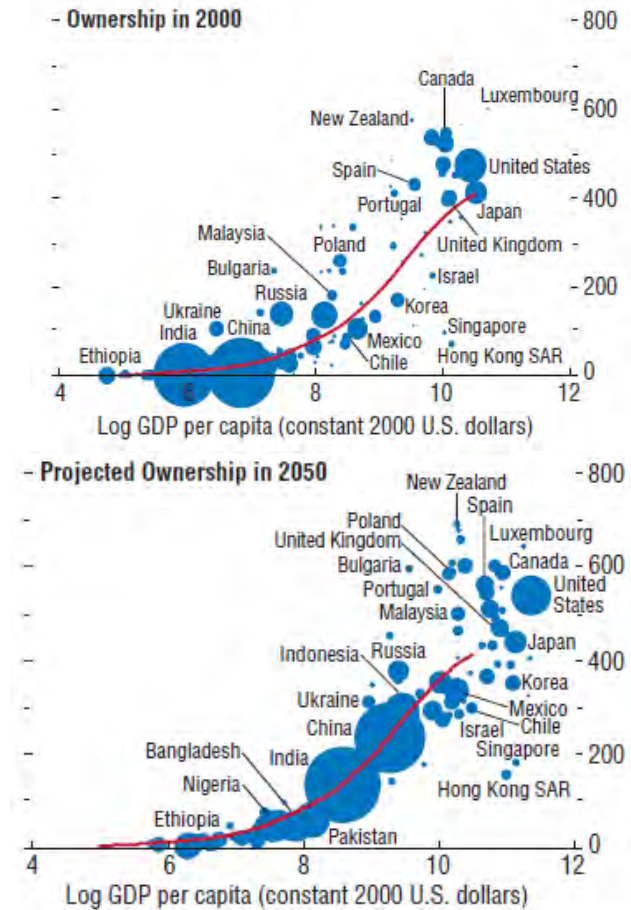
## RIISING INCOMES TOO ...

Transport energy consumption per capita vs GDP per capita



Source: H. Krambeck, World Bank, 2009

Car ownership vs GDP per capita



Source: "World Economic Outlook 2008", IMF 2008.



# Trends

## LAGOS RANKED 3RD LEAST HABITABLE PLACE ON EARTH

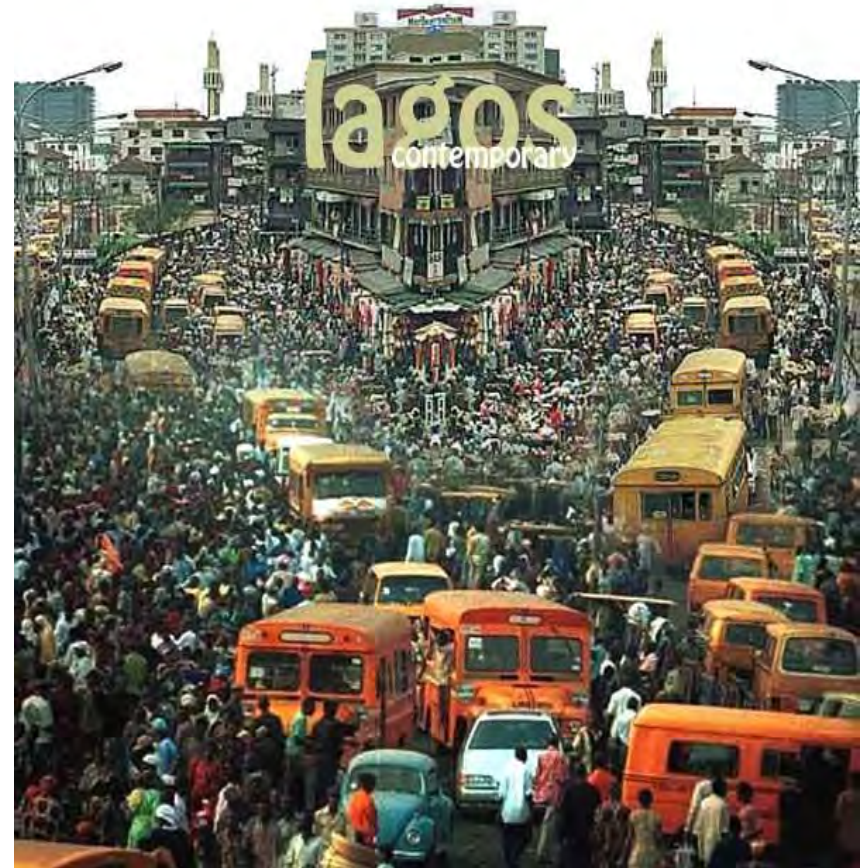
Posted by: Editor on August 17, 2012 in News 5 Comments

By Ibiene George



The **Economist Intelligence Unit**, according to the **BBC** has placed **Nigeria's** economic capital, **Lagos** as the third worst place in the world to live in.

Source: The Economist / Nigerian Entertainment Today

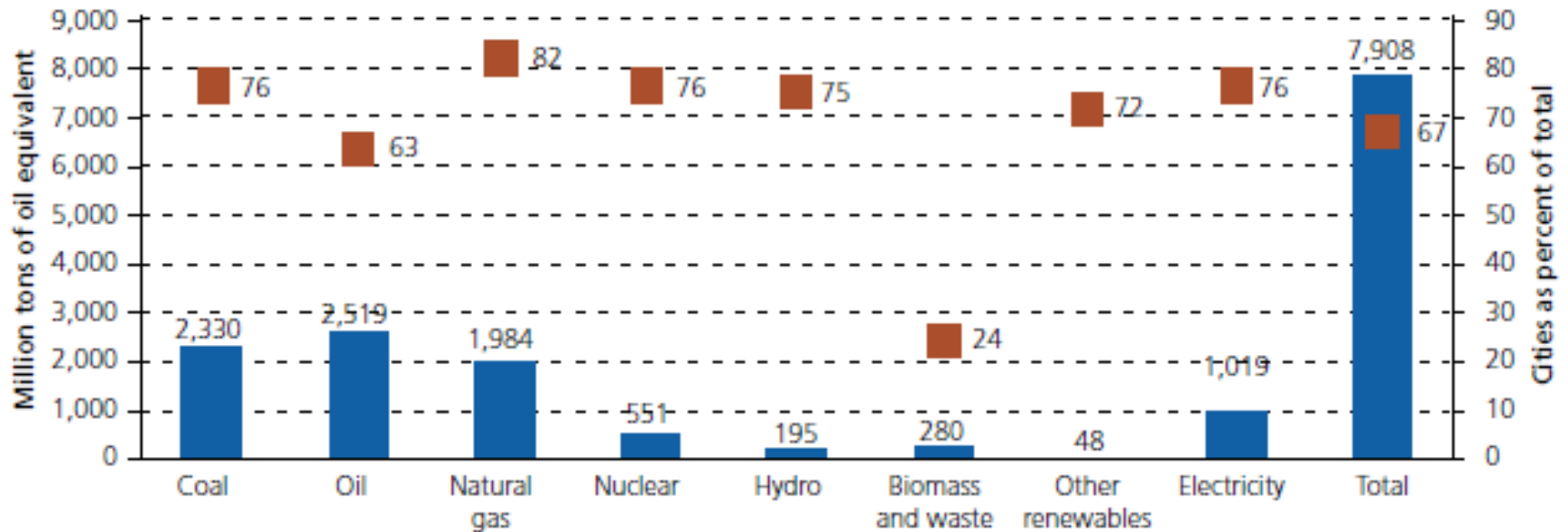


Soure: <http://fivesenseslagos.blogspot.com.ar/>

# THE IMPORTANCE OF CITIES

# The importance of cities

CITIES ACCOUNT FOR 70% OF THE WORLD'S ENERGY CONSUMPTION ... AND GROWING RAPIDLY!



Source: IEA, 2008

# The importance of cities

THEY ARE KEY FOR REALIZING THE SIGNIFICANT ENERGY EFFICIENCY POTENTIALS THAT EXIST

- Most of the growth in energy consumption will be in cities of developing countries
- Main energy efficiency improvements will come from **(1) buildings, (2) industry, (3) transport** (WEO 2012, IEA)
- Buzz words: urban metabolism, lock-in, path dependency, inertia
- Key message: Do it right from the start!

# The importance of cities

## HOW ARE CITIES DEALING WITH THIS CHALLENGE?

- Cities as systems (inhabited by people)
  - Buildings
  - Public lighting
  - Transport
  - Water and wastewater
  - Power & heat
  - Solid waste
  - Industry
- Provision of services: access, security, reliability and affordability but also sustainability
- What to prioritize?
- Where to start?
- How to plan?
- How to finance?
- How to implement?
- What are the best practices?
- ... ?
- You cannot manage what you cannot measure

# The importance of cities

## HOW ARE CITIES DEALING WITH THIS CHALLENGE?

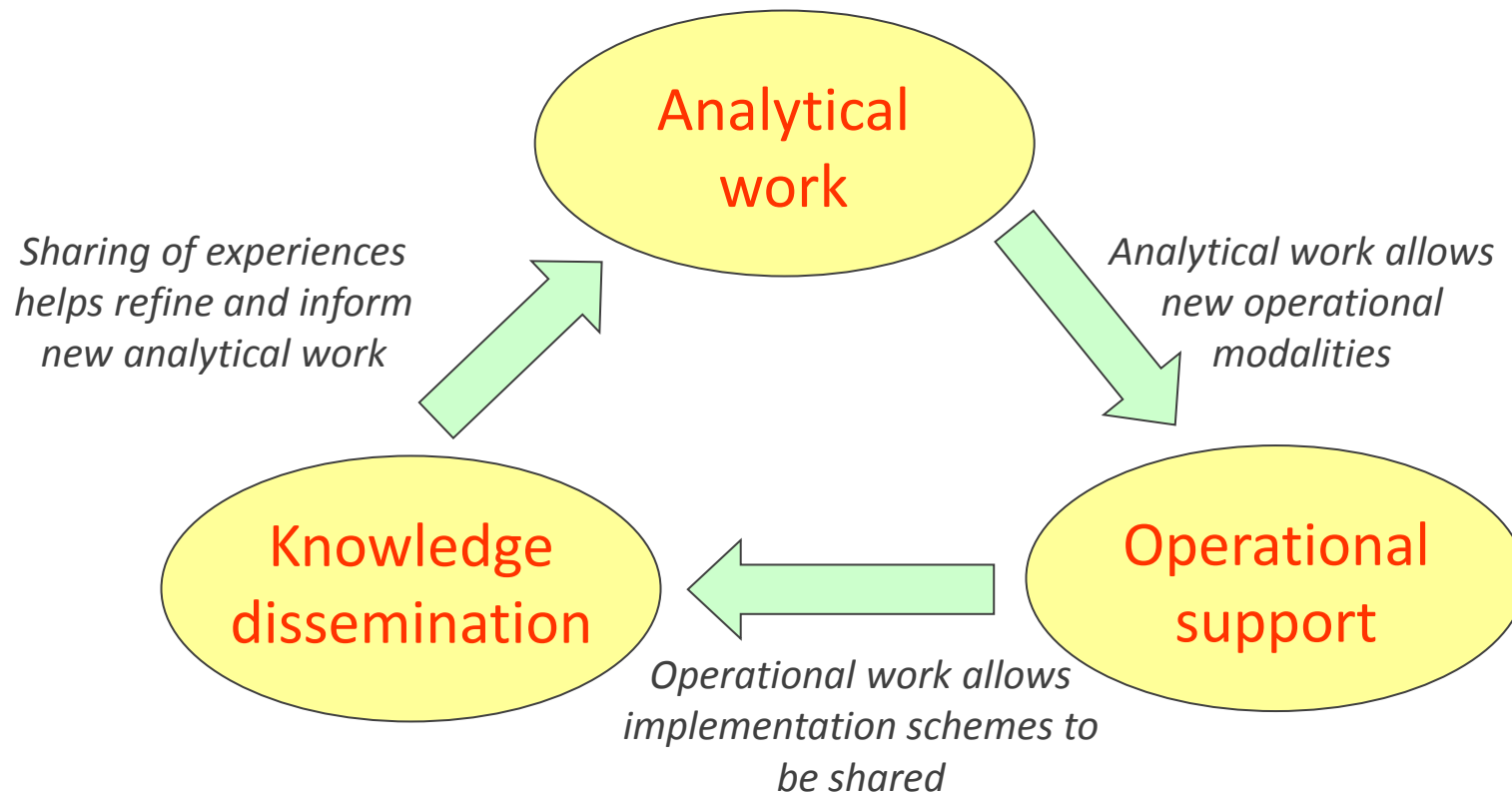
- Cities are willing to take the challenge, but need support (technical, financial, political, etc.)
- Cities learn from each other, share experiences and best practices
  - ICLEI
  - C40
  - Partnership for Sustainable Cities (in formation)
  - Etc.



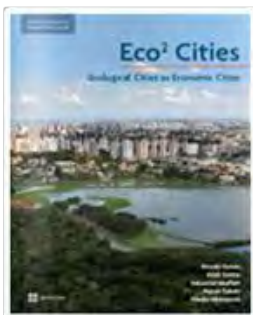
# ENERGY EFFICIENT CITIES INITIATIVE AT ESMAP

# EECI

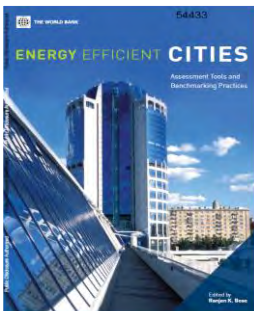
- The Energy Efficient Cities Initiative (EECI) was launched in 2008 to mainstream and scale-up EE in urban settings
- Key features of EECI:
  - Clients are city mayors and municipal bodies
  - Demand-driven
  - Focus on innovation and results
  - Partnerships



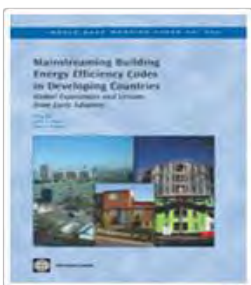
## ANALYTICAL WORK



*Eco2 Cities: Ecological Cities as Economic Cities* provides an overview of innovative ideas and best practice on sustainable cities. ESMAP prepared the chapter on urban energy use.

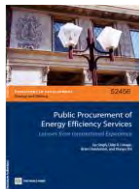


*Energy Efficient Cities: Assessment Tools & Benchmarking Practices* offers analytical tools and policy insights from integrated assessments of new cities to the impacts of socioeconomic, climate, and demographic changes on existing cities.

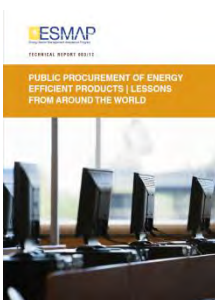


*Mainstreaming Building Energy Efficiency Codes in Developing Countries* summarizes global best practices and lessons from developing countries in design and implementation of building codes.

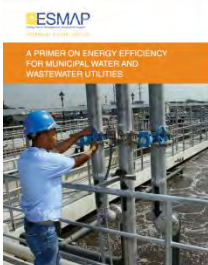
## ANALYTICAL WORK



***Public Procurement of Energy Efficient Services*** looks at energy savings performance contracts (ESPCs) as a means of overcoming the hurdles implementing energy efficiency in public facilities.



***Public Procurement of Energy Efficient Products*** assesses global experiences with energy efficient purchasing (EEP) as a tool to help governments improve the efficiency of their facilities and public services.



***A Primer on Energy Efficiency for Municipal Water and Wastewater Utilities*** looks at opportunities, approaches and lessons for realizing vast energy savings potential in the water sector.



***Best Operational and Maintenance Practices for City Bus Fleets to Maximize Fuel Economy*** presents a set of specific actions municipal bus operators can take to improve fuel efficiency through improved maintenance and driver training.

- Case studies database (26 cases available)
  - Building & Heating
  - Solid Waste
  - Transport
  - Water/Waste Water
  - Public Lighting
  - Urban Planning
  - Financing
  - Procurement
- Energy efficient cities guidance notes for Mayors
- Capacity building for Energy Efficient Urban Transport Planning
- E-learning course for energy efficiency in public buildings (together with World Bank Institute)



- Provided support of WB projects, including:
  - China
  - Macedonia
  - Mexico
  - Ukraine
  - Russia
  - Uruguay
  - India
  - South Africa
  - Etc.

- **Strong demand from cities**
  - Strong desire to reduce energy costs through energy efficiency (EE) improvements
  - Lack of a rapid decision-support tool to identify major EE interventions across urban sectors
  - Desire to learn from peer cities and international best practice
- **Key advantages of TRACE**
  - Cross-sectoral
  - Focuses on areas under the control of the city authority
  - Relatively low data requirements, low cost, intuitive and quick to implement
  - Strong ownership of cities



MORE INFORMATION ON EECI | ESMAP Website  
<http://esmap.org/esmap/EECI>



TO GET TRACE AND SUPPORT | ESMAP Website  
<http://esmap.org/esmap/TRACE>

TRACE TRAINING | E-learning course available at:  
<http://vle.worldbank.org/moodle/course/view.php?id=605>

[esmap@worldbank.org](mailto:esmap@worldbank.org)

# Thank You.

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