LEDS Global Partnership

Clean Transport Development Webinar Series

Overview of Planning and Financing Sustainable Low-Carbon Urban Transport

Dr. Benoit Lefevre

Director of Transport and Climate Program, CEP – EMBARQ, WRI

www.LEDSGP.org
The Low Emission Development Strategies (LEDS) Global Partnership is a partnership of more than 100 countries and international programs enhances coordination, information exchange, and cooperation to advance climate-resilient low emission growth.

Please visit www.ledsgp.org to learn more about the Partnership or to become a member.
Transport is a key part of

Sustainable & low-carbon
development strategies

Locally & Nationally & Globally
United Kingdom
Turkey
Thailand
Case of Bangkok

Costs as % of regional GDP*

*Median Estimate

Source: World Bank, 2002
Per Capita CO₂ and Per Capita PM Emissions

Fuel Subsidies: A real win-win situation

300 billion US Dollar on fuel subsidies in 2008 (UNEP)

6% global GHG reduction by abolishment of fuel subsidies

Source: IEA, 2008
Linking Low-Carbon Transport Planning & Financing
Local GDP
→ Motorization rate
→ Car use
→ Energy consumption

→ Offer transportation and infrastructure?

• Transport energy consumption and GHG emission cannot be analyzed independently of urban transport and land use characteristics
• Parameters without spatial dimension are not enough
First Level of Analysis: Macro-urban

Average Density - Energy Consumption

Source: Newman & Kenworthy
Spatial distribution

1) Travel
2) Population

Source: Bertaud, 2001
Spatial distribution

1) Travel
2) Population

Source: Bertaud, 2001
The Urban Structure

Source: Bertaud, 2001
What can be done?
Atlanta or Barcelona?

<table>
<thead>
<tr>
<th></th>
<th>Atlanta</th>
<th>Barcelona</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>2,5 million</td>
<td>2,9 million</td>
</tr>
<tr>
<td>Size</td>
<td>4280 km²</td>
<td>162 km²</td>
</tr>
<tr>
<td>Public + Private</td>
<td>7,5 t CO₂/ha/an</td>
<td>0,7 t CO₂/ha/an</td>
</tr>
<tr>
<td>Transport Emissions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Bertaud, 2001
Integrated Approach

Urban transport emission

Reduce demand for mobility

Increase the sustainable transport offer

Land Use policies
1. Primary infrastructure
2. City planning (land use regulations, limits & built-surface ratios)
3. Property and land ownership taxes

Transport Policies
1. Environmental efficiency of vehicles
2. Regulations
3. Economic instruments
4. Mass Rapid Transit (MRT) systems
5. Non-motorised travel
6. Intermodality
7. Parking
Integrated Approach
Tools helping

• To make the right policy decision
• To implement the taken decision (strategy design)
• Software is free to access
• Widely used
  – North America
  – South America
  – Europe
  – Japan
  – United States Environmental Protection Agency
  – World Bank
• Two Examples:
  – Brussels
  – Rio de Janeiro
Tools exist!

Tools helping

• To make the right policy decision
• To implement the taken decision (strategy design)
Stakeholders Map & distribution of capacity to act

Power producers
- Dispatch orders
- submit bids & scheduling needs
- operating rules

NYISO
- Dispatch orders
- negotiated deals
- operating rules

NYS Reliability Council
-咨询 reliability rules
- overarching vision and policy

U.S. Federal Energy Regulatory Commission
- Operating Rules & Authority

NYS Public Service Commission
- consultation on policy and operations

New York State Energy Research & Development Authority
- education/advocacy campaigns

NYS Governor/State Energy Plan
- system benefit charge allocations
- lobbying on policy

NYS Legislature
- policy

New York City
- "intervenor" comments in regulatory proceedings
- lobbying on policy

ESCOs/DNOs
- system benefit charges payments
- electricity sales

customers
- wholesale deals
- bilateral deals

operating rules

customers

Operating Rules & Authority

Advisory Board member comments

Power purchase agreement (w/ New York Power Authority)
Wedge Analysis

Source: GLA, 2004
Accessing Climate Finance to Shift Current Financial Flows
Annual Global Transport Investment by Source

Source: Sakamoto et al., 2010
Sources of Global Transport Spending (2012)

PUBLIC SECTOR
- Domestic Budgets ~ $ 450 billion
- Multilateral & Bilateral ODA ~ $ 14 billion
- Environmental/Climate Funds ~ $ 690 million

PRIVATE SECTOR
- Int’l & Domestic Private Finance ~ $ 530 billion
- Carbon Market ~ $ 75 million
- International Borrowing
- Climate Bond
- User payments

Transport
Sustainable Transport

Carbon finance as an incentive not as a silver bullet!
Carbon finance as an incentive not as a silver bullet!

<table>
<thead>
<tr>
<th>Name</th>
<th>Acronym</th>
<th>Year Created</th>
<th>Admin</th>
<th>Total Spending</th>
<th>Total Spent on Transport</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MULTILATERAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Global Environment Facility</td>
<td>GEF</td>
<td>1991</td>
<td>WB</td>
<td>$4.5 billion</td>
<td>$292.5 million</td>
<td>6.5%</td>
</tr>
<tr>
<td>Clean Technology Fund</td>
<td>CTF</td>
<td>2008</td>
<td>WB</td>
<td>$2.3 billion</td>
<td>$361 million</td>
<td>15.7%</td>
</tr>
<tr>
<td>Global Climate Change Alliance</td>
<td>GCCA</td>
<td>2007</td>
<td>EC</td>
<td>$368 million</td>
<td>$10 million</td>
<td>2.7%</td>
</tr>
<tr>
<td>IDB Sustainable Energy and Climate Change Initiative</td>
<td>SECCI</td>
<td>2007</td>
<td>IDB</td>
<td>$58.7 million</td>
<td>$5.2 million</td>
<td>8.9%</td>
</tr>
<tr>
<td>ADB Climate Change Fund</td>
<td>CCF</td>
<td>2008</td>
<td>ADB</td>
<td>$43.3 million</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
<tr>
<td>ADB Clean Energy Fund (Partnership Facility)</td>
<td>CEF(PF)</td>
<td>2007</td>
<td>ADB</td>
<td>$72.3 million</td>
<td>$900,000*</td>
<td>1.2%</td>
</tr>
<tr>
<td>Partnership for Market Readiness</td>
<td>PRM</td>
<td>2012</td>
<td>WB</td>
<td>$5.25 million</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>BILATERAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Climate Initiative</td>
<td>ICI</td>
<td>2008</td>
<td>BMU</td>
<td>$1.06 billion</td>
<td>$20.49 million</td>
<td>1.2%</td>
</tr>
<tr>
<td>Japan Fast Start Fund Initiative</td>
<td>n/a</td>
<td>2009</td>
<td>JICA</td>
<td>$13.2 billion</td>
<td>Unknown</td>
<td>Unknown</td>
</tr>
</tbody>
</table>

*Estimated
Source: Adopted from Sakamoto, et al 2010
Example funding stream:

- Initial Government Investment
- Climate Fund
- PROJECT PLANNING
- Foreign Direct Investment
- Multilateral ODA
- IMPLEMENTATION
- Domestic Private Investment
- OPERATIONS & MAINTENANCE
- Total Project Resources
Seven Components of Readiness

- Financial Strategy
- Institutional Arrangement
- Enabling Environment
- Data Requirements
- Assessing Co-benefits
- Attracting the Private Sector
- Calculating Emissions

Readiness
Five Most Important Readiness Actions

- Attract the private market
- Focus on institutional capacity
- Plan early and upstream
- Develop a financial strategy
- Gather good data
• Transport is a key part of sustainable & low-carbon development strategies
• Low-carbon transport planning & financing
• Tools exist
• Accessing climate finance to shift current financial flows
# Contacts and Information Resources

<table>
<thead>
<tr>
<th>Website</th>
<th>Speaker</th>
<th>Secretariat</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.ledsgp.org">www.ledsgp.org</a></td>
<td><strong>Benoit Lefevre</strong></td>
<td><strong>National Renewable Energy Laboratory</strong></td>
</tr>
<tr>
<td></td>
<td><a href="mailto:blefevre@wri.org">blefevre@wri.org</a></td>
<td><strong>Sadie Cox</strong></td>
</tr>
<tr>
<td></td>
<td>+1 (202) 729-7722</td>
<td>(<a href="mailto:sadie.cox@nrel.gov">sadie.cox@nrel.gov</a>)</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Ron Benioff</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(<a href="mailto:ron.benioff@nrel.gov">ron.benioff@nrel.gov</a>)</td>
</tr>
</tbody>
</table>