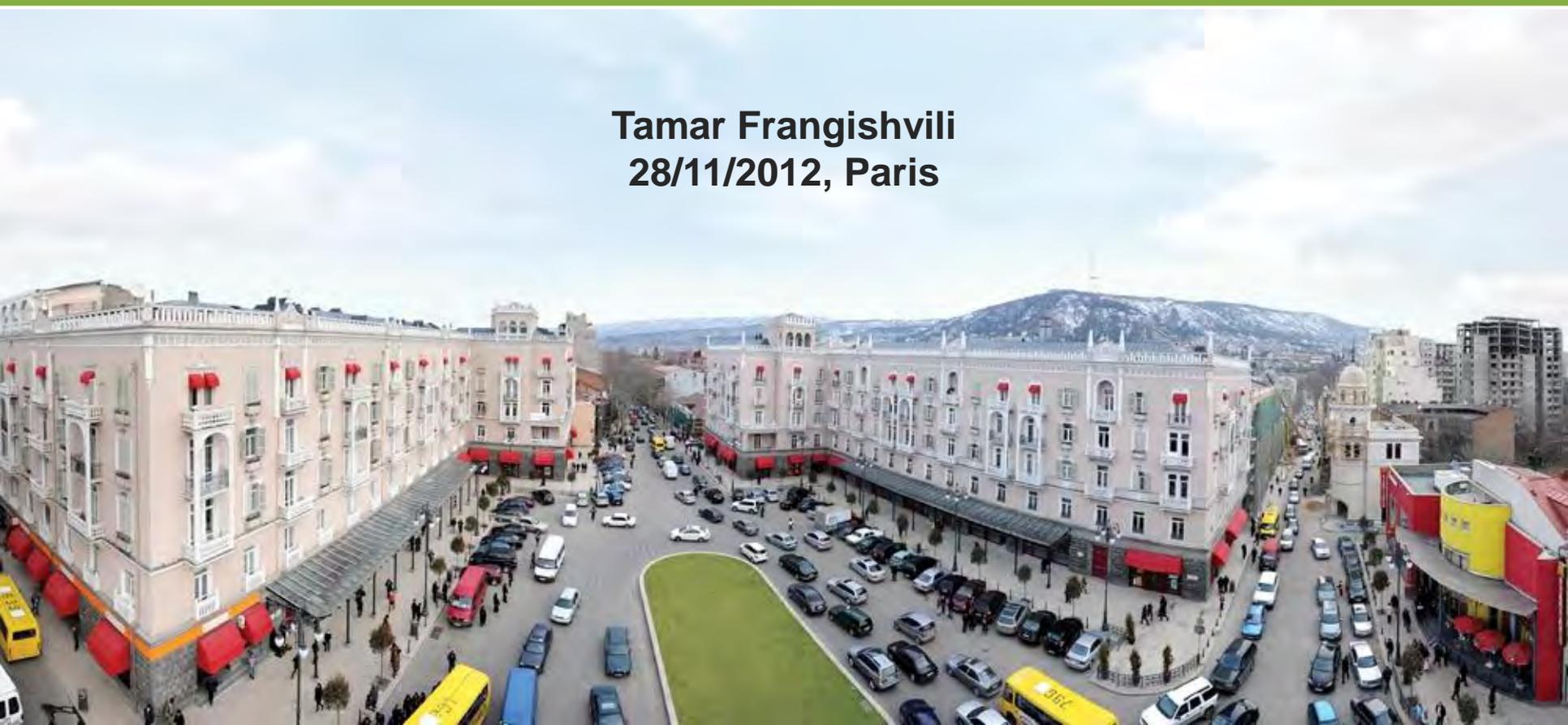




Tbilisi Energy Policy & TRACE Tool

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Overview

- Tbilisi - Capital since 5th century, AD
- 1.2 million population on 500 sq. km (26% of country population, 43% of urban population)
- Density: 2,305 per sq. km
- 64% of total goods and services produced in the capital
- Strategic location in the Region





Energy Strategy

- Tbilisi in Covenant of Mayors (since March, 2010)
- Tbilisi Sustainable Energy Action Plan (SEAP) submitted in March 2011
- Target: To Reduce 25% of CO2 Emissions by 2020

http://www.eumayors.eu/participation/covenant_map_en.html





Sustainable Energy Action Plan (SEAP)

Approach & Methodology:

- Long-Range Energy Alternatives Planning System (LEAP)
- Business As Usual Scenario

Sectors:

- Transport
- Buildings
- Infrastructure





TRACE Study for Tbilisi

- Technical Assistance
- Software Platform
- Accumulated Data for Benchmarking

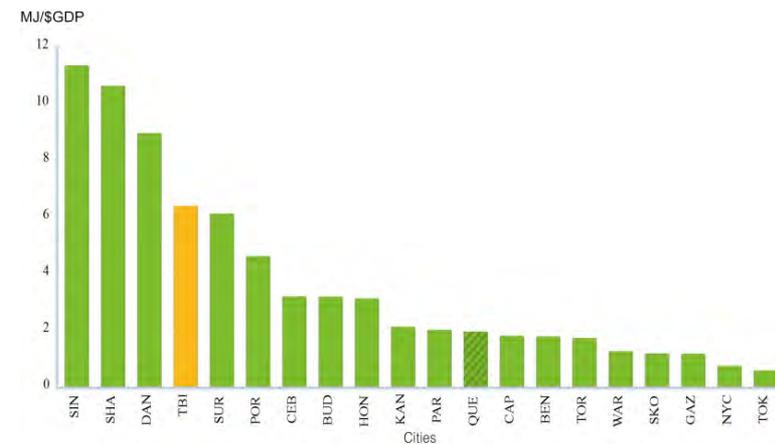
<http://esmap.org/esmap/TRACE>





TRACE Study highlights for Tbilisi

- Less energy use per capita
- Good performance of municipal buildings in electricity & heating consumption
- Relatively efficient public lighting system
- Energy Intensive City Economy
- Remarkably higher energy use in the transport sector



Primary Energy Consumption per GDP (MJ/\$GDP)



Sectors for More Action

Energy Efficiency Priority Areas in Tbilisi

Sector	Energy Consumption (US\$)	Relative Energy Intensity (%)	Level of local control (from 0-no control, to 1-full control)	Savings Potential (US\$) [PRIORITY]
private vehicles	536,923,033	31.2%	0.25	41,954,054 [PRIORITY 1]
Public Transportation	58,179,524	20.2%	0.74	8,596,675 [PRIORITY 2]
Public Lighting	3,643,708	42.1%	0.95	1,460,484 [PRIORITY 3]
Solid Waste	494,940	44.7%	0.95	210,377 [PRIORITY 4]
Municipal Buildings	1,657,950	3.5%	0.95	56,172 [PRIORITY 5]



TRACE Study recommendations & case studies

Traffic & Transport

- Public Transport Development
- Non-motorized Transport Modes
- Traffic Restraint Measures
- Parking Restraint Measures

Street Lighting

- Street Lighting Timing
- Street Lighting Audit and Retrofit
- Procurement Guide for New Street Light Installation

Waste Management

- Waste Landfill Gas Capture
- Fuel Efficient Waste Vehicle Operations

Municipal Buildings

- Municipal Offices Audit and Retrofit



Tbilisi CA Follow-Up

Transport Sector

- Common Electronic ticketing system
- Real time display boards for bus arrival
- Pilot Bicycle lane
- Parking Restraint
- Green Wave
- Upgraded municipal bus and minibus Stock (Euro 4 standard)
- Tunnels

Municipal Buildings

- Double glazed windows
- Sensor based in door Lighting
- Energy Efficient Measures in Municipal Buildings

Street Lighting

- Audit for retrofitting street lighting

Waste Management

- Methane Collectors at New Landfill of Norio



Challenges to improve overall performance

- More Institutional Support Required
- Low Access to Private Performance
- Lack of Funds/investment
- Lack of Monitoring
- Lack of Expertise
- Natural Barriers





Thank You!

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