Introduction of POLIS UNIVERSITY & Co-PLAN “Institute for Habitat Development” and key policy issues in the electricity sector of ALBANIA

SEERmap Project Meeting
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Presentation Overview

1) Introduction of **Co-Plan**: Institute for Habitat Development

2) Introduction of **Polis**: International School of Architecture & Urban Development Policies

3) General Description of Albanian Electricity Sector

4) Key Policy Issues in the Electricity Sector

5) Inputs to Long term Electricity Scenarios

6) Country Specific problems
Established in 1995 as a non-profit organization, Co-PLAN core expertise:

- Spatial Planning and Land Development,
- Urban and Regional Governance
- Urban Environmental Management,
- Public Policy Research

I. Relevant projects

• Territorial Plans for 5 Municipalities under PLGP Programme – USAID
• Energy Efficiency Summer School – Energy Community Project
• Developing & Adopting Professional Programs for Energy Efficiency in the Western Balkans – TEMPUS
• Public – Private Partnership for City Lightning
• Reducing Energy Use in the Residential Sector - Pilot Project
• Empowering Environmental Local Governance Performance
• Sustainable Energy for Albania
• Albania Renewable Potential Estimation

II. Name of project participants

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Introduction of **POLIS: International School of Architecture & Urban Development Policies**

By early 2000, Co-PLAN established the “Training and Exchange Center” which in 2006 was further extended into “POLIS International School of Architecture and Urban Development Policies”.

- Energy Efficiency - HVAC
- Civil Engineering
- Environmental Studies
- Architecture and Urban Planning
- Art and Design
- Real Estate and GIS Application
- Environmental Management Department
- Structural and Geotechnical Studies

I. Relevant projects

- General Urban Plan (*Shkodra Municipality*)
- Energy Community Summer School
- Developing & Adopting Professional Programs for Energy Efficiency in the Western Balkans – TEMPUS
- Energy Efficiency Audits, Material Laboratory Analysis

II. Name of project participants

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General description of Albanian Electricity Sector:

Governance: Parliamentary Republic
Area: 28,748 km²
Population: 2.9 million (2014, World Bank)
Capital: Tirana
GDP: 13.2 billion (2014, World Bank)

ENERGY SECTOR:

- Hydro Power Plants produces 78% of Country General Demand
- Estimated CO₂ emission per capita = 1.65 tones
- Average Country Altitude = 708 masl
- Mediterranean Climate: 287 clear sun days/year
  1485 mm/year avg. rain precipitation (3000 mm in North)
- Estimated Oil Reserves = 400 million ton
- Oil Production = 1,386 million ton/year
- Estimated Natural Gas Reserves = 850 million m³
- Available Electricity during 2015 = 7.265 TWh
- Electricity Production = 5,865 TWh
- Imported Electricity = 2.355 TWh
- Exported = 0.955 TWh
- Estimated Losses = 2.195 TWh
- Electricity Billing Tariff = 126.5 ALL/kWh ≈ 0.11$/kWh
Key Policy Issues in the Electricity Sector

1) Relevant Recent Policy Decisions

2) State of Compliance and Upcoming Decisions
In Nov 2015, new Energy Efficiency Law was adopted and published in Official Gazette, and it is complaint with the Directive 2006/32/EC.

Law Aims:

- To provide Energy savings target,

- To develop Energy Efficiency Action Plan (EEAP)

- To include Energy audits and promotion of the market for energy services.

- Establishment of an energy efficiency fund and an energy efficiency agency
1) In 2013, a new law on Renewable Energy was approved to implement Directive 2009/28/EC.

Law Aims:

• Increase the **diversification of energy resources** and provide efficient energy supply in the country;

• Reduce **greenhouse gas emissions** and protect the environment in compliance with the country’s international commitments; and

• Promote **clean technologies** for utilisation of renewable energy sources.

• Preparation and the approval of the **National Action Plan for Renewable Energy (NREAP)**, which establishes national objectives of renewable energies.

Diversification Forecast of Energy Sector in Albania by 2050
1) **Albania needs to improve and adopt immediately** the second Energy Efficiency Action Plan (EEAP), following the requirements of Directive 2006/32/EC and the template developed by the Energy Community Energy Efficiency Coordination Group;

2) **Setting up of a dedicated Energy Efficiency Agency** and an Energy Efficiency Fund, which will enable the effective implementation and financing of measures and projects in the field of energy efficiency in Albania.

3) With regard to energy efficiency in buildings, the adoption of the Law on the Energy Performance of Buildings is still pending, and thus compliance with Directive 2010/31/EU still needs to be achieved.

1) National Renewable Energy Action Plan

2) Feed-in tariff
   a) An attractive feed-in tariff is already in place for small hydro generators, but the government is still in the process of determining the incentive mechanism for encouraging more immediate investment in renewable energy technologies.

   b) Adequate support mechanisms for energy from renewable sources like wind, biomass, solar PV as well as from renewable sources used for heating and cooling and transport should be adopted by ERE within the implementation process of the revised Law on Renewable Energy.

3) Grid Access and Operation of the Grids
   a) Transmission and distribution system operators have to improve the methodology determining the costs of connection to the grid or grid reinforcements and the transparency towards investors.

   b) Currently, Albania fails to implement in practice the requirements related to grid access detailed in Article 16 of the Renewable Energy Directive.

4) Guarantees of Origin
   a) Legislation related to the issue, transfer and cancellation of guarantees of origin remains to be adopted by ERE as the designated body. Currently, there is no compliance with this requirement.

5) Transport

a) The 2013 Law on Renewable Energy transposes the 10% renewables target by 2020 in the transport sector from Directive 2009/28/EC. Beyond target transposition, other requirements with regard to biofuels have not been complied

b) Without a certification scheme in place and regardless of the actual biofuels production and consumption, uncertified quantities cannot be counted towards meeting the renewables energy targets or be exported to the EU market.
Inputs to Long-Term Electricity Scenarios

1) Network Development,

2) Renewable Energy Support Schemes and Capacity Expansions Plans,

3) Coal/Lignite expansion,

4) Carbon taxation and its timing of introduction,

5) Electricity demand growth in the long term,

6) Environmental standards (e.g. Large Combustion Plant Directive /Industrial Emissions Directive).
Network Development:

1) To investigate upgrading the Structure of Transmission Sector in response to new renewable energy generating stations;

2) To analyse Cross Border Issues relating to interconnection capacity, transmission congestion and trade restrictions;

3) To examine High level of distribution losses that require significant power imports

4) To analyse the increment of the security and reliability of the energy supply in general and electricity in particular, in national and regional levels;
Renewable Energy Support Schemes:

1) To identify various form of investment in energy from renewables sources;

2) Adequate support mechanisms schemes for electricity from renewable sources like wind, biomass, solar PV should be investigated;

3) To investigate the diversification of energy resources and provide efficient energy supply in the country;

4) To promote clean technologies for utilisation of renewable energy sources.
1) **Renewable energy target** of Albania is **38%** by **2020**

2) **Energy system** in Albania will **continue expansion of hydropower**, with additional **capacity of 1270 MW** by 2020 including **wind and solar energy**

3) **Hydro Power**: Potential is **16 billion Kwh only 35 % are used**. **Albanian Government**, has issued up to about **200 concession** with total cost of investment **2.8 billion Euro**.
4) Solar

- Average solar radiation is 1500 kWh/m² per year and Maximal radiation is 2200 kWh/m² per year

- In 2013, a total of 120 000 m² were installed (60% by services, 40% by households),

5) Wind

- The average speed of wind, is around 4-6 m/s (10 m height), and the average energy density is 150 W/m².

- Albania have average 4200 hours with wind per year. Actually in Albania Territory in under survey for potential.

6) Biomass

- Forests cover 36% of the land area of Albania. Total proven reserves on wood as fuel is about 6 Mtoe. Wood production for energy in 2014, was 210 Ktoe.

7) Geothermal

- The geothermic situation of Albania presents two directions for use of geothermic energy: a) The thermal sources with low enthalpy, b) The usage of the depths of the abandoned wells

- Albania, actually is in the feasibility phase of assessment of the geothermic energy use potential
1) To investigate **strategies** on **how to reduce greenhouse gas emissions** and **protect the environment** in compliance with the country’s international commitments under the **Kyoto Protocol** and other international treaties;

2) To **support** the **authorities** to **understand and implement** the **EU requirements**, in particular the requirements with respect to land acquisition, **occupational health and safety**, **strategic environmental assessments**, and **greenhouse gas emission**.
Electricity Demand Growth in the Long Term:

1) To investigate the measure needed to increase efficiency and develop alternative sources of energy;

2) Strengthening the reliability of energy supply by making effective use of existing energy sources, building new generating stations, diversifying energy supply and connecting the country to regional electricity networks;

3) Encouraging the use of renewable energy sources (including solar, hydro, wind and biomass) to ensure the maximum use of local energy sources;

4) Establishing an attractive environment for foreign investors to enable, through advanced techniques, the efficient utilisation of internal energy sources and increase domestic generation.
Carbon Taxation and its Timing of Introduction:

1) To further improve air pollution taxes based on emissions, taxes on fossil fuels, and tax differentiation for more polluting fuels;

2) To support the implementation of legal framework on carbon taxation;

3) To support monitoring of CO2 emissions in compliance with the country’s international commitments;
Coal and Lignite Expansion:

1) Coal is one of largest energy sources of Albania and it is spread in four main basins. The forecasted coal reserves are around 226.49 Mtoe;

2) Supply and use of coal has dropped from around 2 million tons of coal or 19% of the primary energy supply in 1990 to 27500 TOE or 4% of the primary supply in 1995. In the year 2001 it accounted for only 1.1% of total energy sources.

3) Considering the Albanian power system, the structure of the local electricity generation heavily relies on the operation of the hydro power plants, the penetration of the coal fuel power plants in Albanian power system will be one of the most important challenges to be faced;
Country Specific Problems

1) Electricity Generation and Renewables,

2) Energy Efficiency
Specific Problems – Electricity Generation and Renewables:

• The actual energy in Albania is currently based completely at the hydro energy. On the other side it is limited with a considerable number of problems related to the network loss and leading to a multiyear energy crisis;

• One of the main challenges of the Albanian energy sector is the diversification of the energy sources and the fulfilment of the needs by own country resources, decreasing the import dependence.

• The utilization of renewable resources is an important factor for diversification of the energy sources and reduction of emissions of CO2 gasses

• Support schemes for renewable technologies other than hydropower have to be adopted to tap the renewable energy potential in the country.
Specific Problems – Energy Efficiency:

- High energy intensity due to inefficient generation and transmission processes, old buildings, not end-use energy efficiently consumption;

- Not implementation in place of the Energy Efficiency law and limited number of energy auditors;

- The municipalities (ROLE) should integrate energy efficiency into the municipal development plans as one of the key components of the local development agenda;

- There is need to collect and analyse the energy data in each major economic sector, to project future trends, to identify and assess the energy efficiency potential, and to indicate the measures to be implemented;
Specific Problems – Energy Efficiency:

- Legal framework harmonised with EU directives and strictly implementation;

- Increasing of the institutional responsibilities on Energy Efficiency

- The transition from subsidy (state grant) funds to loan funds, Banks to be involved in the process of energy efficient investments.

- Legal authority to be established for ESCOs to implement projects;
Thank you for your Attention