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

SEERmap Project Meeting

22-23 / September / 2016

Belgrade, RS

REPUBLIC OF ALBANIA

MINISTERIUM FÜR EIN LEBENSWERTES ÖSTERREICH

UNIVERSITETI POLIS

Co-PLAN

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

Introduction of Co-PLAN: Institute for Habitate Development

Established in 1995 as a non-profit organization, Co-PLAN core expertize:

- 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 Secor - Pilot Project
- Empowering Environmental Local Governance Performance
- Sustainable Energy for Albania
- Albania Renewable Potential Estimation

II. Name of project participants

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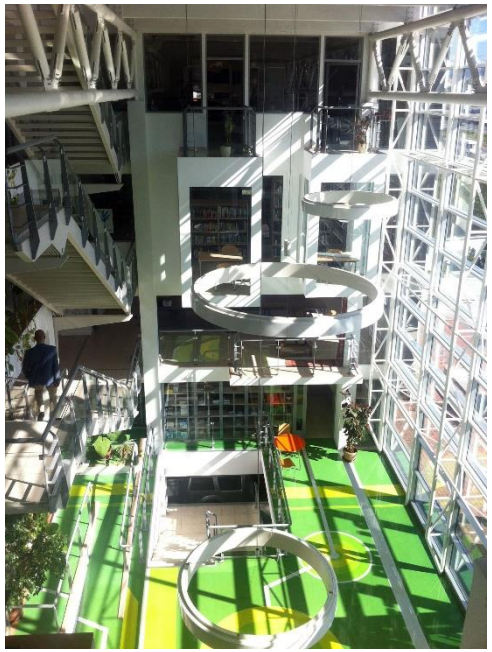
Introduction of POLIS: International School of Architecture & Urban Development Policies

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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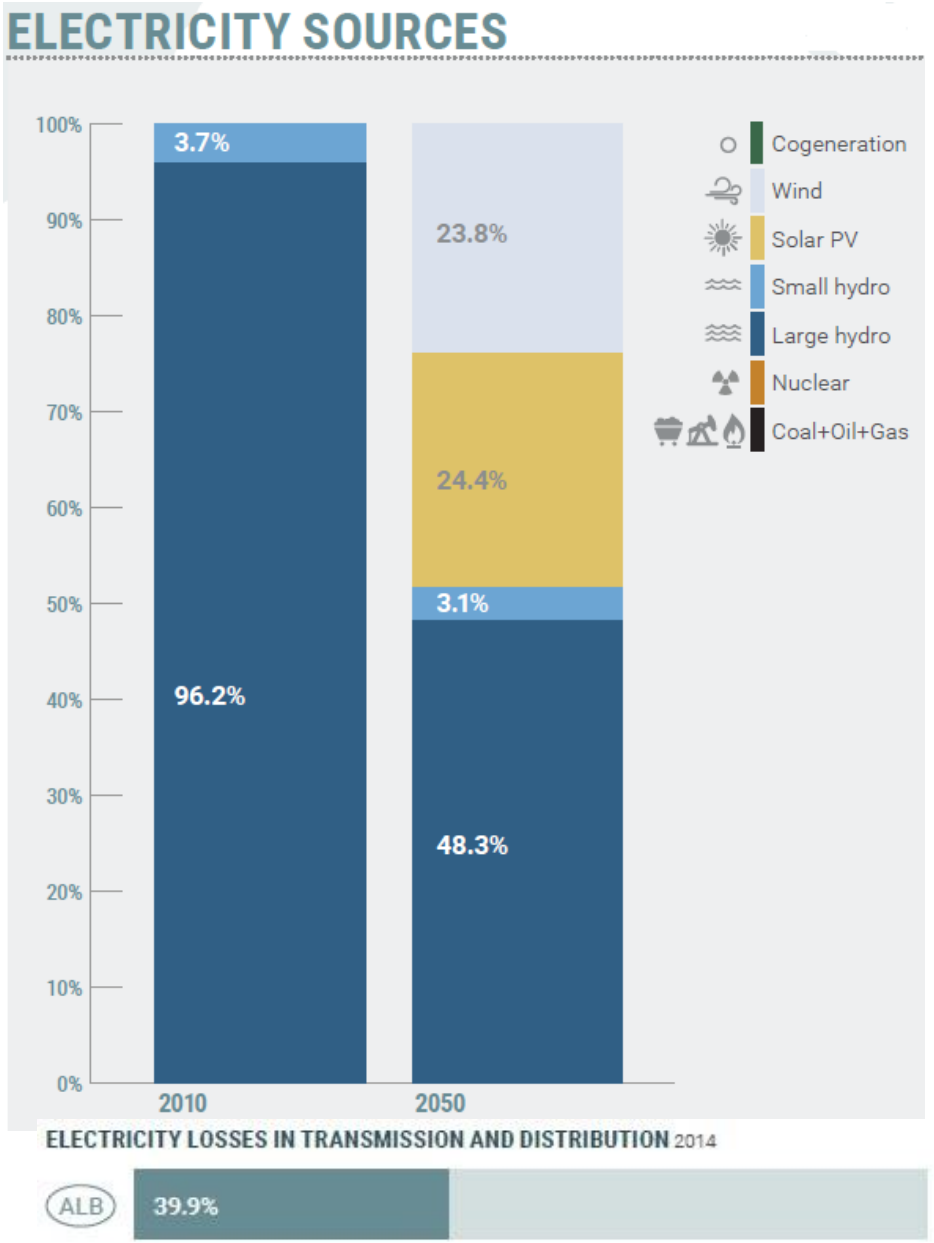
General description of Albanian Electricity Sector:

Governance: Parliamentary Republic
Area: 28,748 km²
Population: 2.9 milion *(2014, World Bank)*
Capital: Tirana
GDP: 13,2 billion *(2014, World Bank)*

ENERGY SECTOR:

- Hydro Power Plants produces 78% of Country General Demand
- Estimated CO_2 emission per capita = 1.65tones
- Average Country Altitude = 708masl
- Mediterrian Climate: 287 clear sun days/year
  1485mm/year avg. rain precipitation *(3000mm 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

Relevant Recent Policy Decisions: Energy Efficiency Law

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**

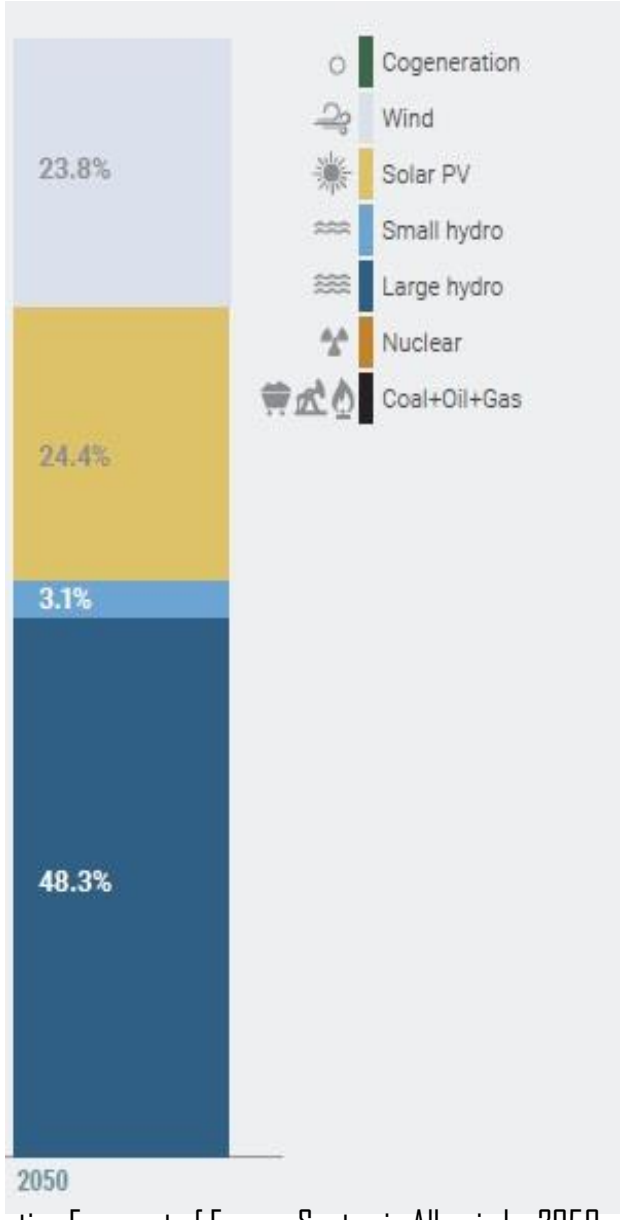
Shkopeti HPP Basin - 2015

Relevant Recent Policy Decisions – Renewable Energy

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

State of Compliance and Upcoming Decisions: Energy Efficiency Law

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 i**mplementation** 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**.

State of Compliance and Upcoming Decisions – Renewable Energy

1) National Renewable Energy Action Plan

a) In **Jan 2016**, **Albania's Council of Ministers adopted** the **National Renewable Energy Action Plan** as required by Renewable Energy Directive 2009/28/EC. **Its submission to the Secretariat in English is pending**.

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**.

State of Compliance and Upcoming Decisions – 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.

State of Compliance and State of Compliance– Renewable Energy

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**;

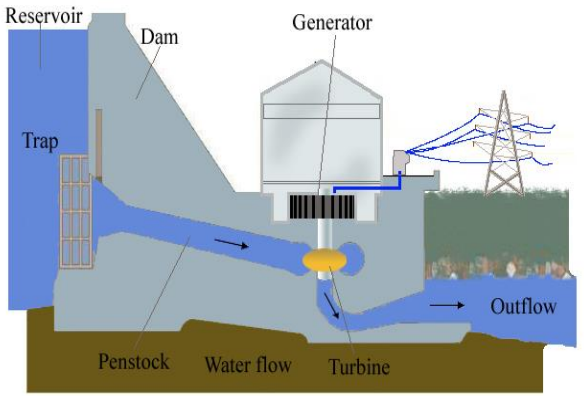
4) To **promote** clean **technologies** for **utilisation** of **renewable energy** sources.

Renewable Energy: Capacity Expansions

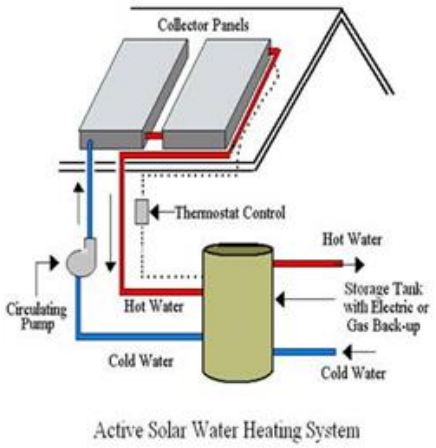
1) **Renewable** energy **target** of **Albania is 38%** by **2020**

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 billon Kwh **only 35 % are used. Albanian Government**, has issued up to about 200 concession with total cost of investment 2.8 billion Euro.



Renewable Energy: Capacity Expansions Cont.



Active Solar Water Heating System

4) Solar

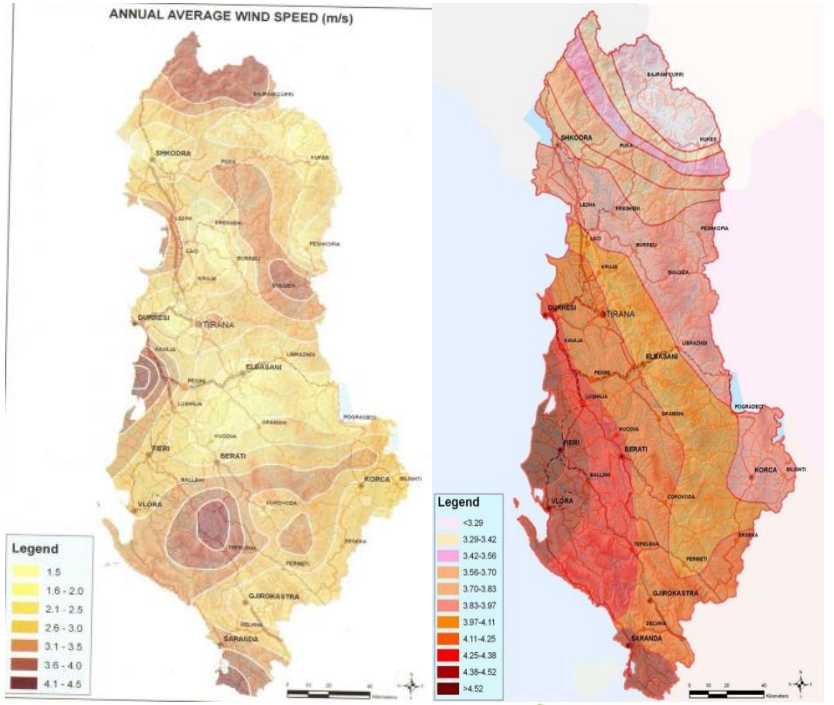
- **Average solar radiation** is **1500 kWh/m2** per year and Maximal radiation is **2200 kWh/m2 per year**

- **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.**

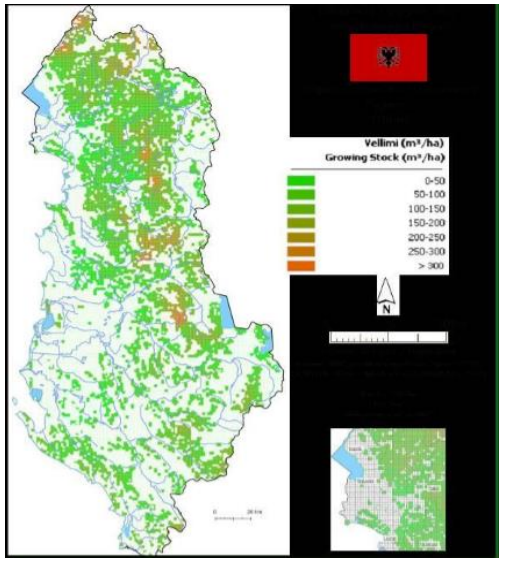
- **Albania** have average **4200 hours** with wind per year. Actually in **Albania Territory in under survey for potential**.



Renewable Energy: Capacity Expansions Cont.

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**

Burimet dhe puset gjeotermalë kryesorë në Shqipëri

Environmental Standart:

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 assessme**nts, an **greenhouse gas emission**.

Oil Refinery in Ballsh Albania.

Electricity Demand Growth in the Long Term:

1) To i**nvestigate** 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 it's 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 emmisions** 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