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Strategy Council

# Greece' s Long Term Energy Plan Meeting a Sustainable and Competitive Energy Challenge

D. A. Beis

Scientific Secretary  
National Energy Strategy Council

## GREEK-ALBANIAN COOPERATION IN THE ENERGY SECTION

A One Day Conference Convened  
By the Institute of Energy for South East Europe (IENE)



## World energy long term challenges

- Ensuring secure, clean and affordable energy as we become increasingly dependent on imports of every kind of energy products
- Tackling climate change by reducing carbon dioxide emissions both in the global context as well as the local one



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# European Union Energy Policy Core Objectives

- ❖ **Sustainability**
- ❖ **Competitiveness**
- ❖ **Security of supply**



## Priority areas of the European Energy Policy (1/2)

- Completing the internal energy market
- Solidarity between Member States
- EU at the forefront of tackling climate change
- Consider the future of nuclear energy
- Use of clean fossil fuels technologies



## Priority areas of the European Energy Policy (2/2)

- Implement a common international energy policy
- Improvement of public understanding regarding energy supply and demand mechanisms.
- Develop energy technologies



## Energy Policy Objectives for Greece

1. Security of energy supply through fuel diversification and empowering of Greece's geopolitical position
2. Energy efficiency and saving
3. Sustainable development and environmental protection
4. Promoting the competitiveness and productivity of national economy and regional development via the contribution of the energy sector



# Security of Supply



## EU Policy in Security Of Supply (1/2)

- Promotion of a broad mix of energy sources.
- Seeking diversity in suppliers, transport routes and transport mechanisms.
- Building reliable partnerships with supplier, transit and consumer countries.
- Keeping emergency stocks of gas and oil and ensure investments in electricity networks.
- A coordination mechanism has been set up so that Member States can react uniformly and immediately in emergency cases.





# Greek Strategy for Security of Supply

- (1/2) Maximal utilization of the domestic resources of Renewable Energy Sources for the replacement of imported energy.
- Balanced utilization of domestic lignite deposits (replacement of old technology units).
- The introduction of coal for the diversification of fuels.
- The adoption of an upper limit for the penetration of natural gas in electricity production.
- The reduction of oil use for both the transport sector and electricity generation in the mainland and the islands.



# Greek Strategy for Security of Supply (2/2)

- The creation of sufficient reserve capacity in electricity generation.
- The development of the country's energy interconnections, for electricity, natural gas and petroleum.
- The amelioration of the country's autonomy (in case of unstable international conditions) concerning the imported primary fuels and the preservation of adequate reserves.
- The promotion of energy efficiency in its primary form and in the final consumption.

# Energy saving



## EU Policy in Energy Saving (1/2)

- **Improving energy performance.** (Effective action on energy-consuming equipment and appliances requires steps on two fronts: standards for the energy yield of appliances and an appropriate, consumer-focused system to label and evaluate energy performance.)
- **Improving energy transformation.** (The energy transformation sector uses around one third of all primary energy, yet the average energy yield for transformation facilities is around 40%.)
- **Limiting the costs linked to transport.** (With almost 20% of total primary energy consumption and the fastest growth in consumption, the transport sector represents both a major environmental risk (greenhouse gas emissions) and one of the main factors of dependency on fossil fuels)



## EU Policy in Energy Saving (2/2)

- **Financing, incentives and fares.** (The Action Plan includes several types of measures to facilitate investments designed to boost energy efficiency.)
- **Changing behaviour.** (The Commission plans a number of educational measures to raise public awareness of the importance of energy efficiency, including education and training programmes on energy and climate change issues.)
- **Adapting and developing international partnerships.** (The Commission considers that European development and trade policies, agreements, treaties and other international instruments represent other ways to promote the spread and use of high energy yield technologies and techniques at global level.)



## Greek Measures in Energy Saving (1/7)

### **Horizontal Measures**

- Establishment of a new structure for Energy Saving related actions
- Country-wide Energy Saving campaigns (E-learning, Energy Forums, Exhibitions etc)
- New financial programs supporting energy saving technologies and research. (CHP, building sector etc)

### **Interdisciplinary**

- Introduction of energy efficiency regulations.
- Promotion of the Natural Gas & LPG usage.



## Greek Measures in Energy Saving (2/7)

- Promotion of Energy Saving Electric Appliances.  
(Separating electric appliances efficiency into 3 different categories; A, A+ and A++)
- Introduction of financial incentives for the replacement of energy appliances.
- Installation of new “smart” metering devices supporting both LPG and Nat Gas.
- Promotion of new Combined Heat and Power Technologies.

### Houshold

- Energy upgrade of building insulation cover.
- Financial incentives for the replacement of boilers.



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## Greek Measures in Energy Saving (3/7)

- Compulsory installation of solar panel systems in new high store buildings.
- Tax free allowances for the use of energy saving equipment
- Energy Upgrade for Council Houses.
- Compulsory installation of solar panel systems in manufacturing plants greater than 1,000 meter square.
- Introduction of new volunteer energy programmes. (Greenbuilding, Greenlight etc)





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## Greek Measures in Energy Saving (4/7)

### Tertiary Sector

- Compulsory installation of main solar panel assisted boilers for heating water.
- Green procurement in Public Buildings.
- Introduction of energy saving information desks for every town.
- Replacement of all the low efficiency light bulbs from the public buildings.



## Greek Measures in Energy Saving (5/7)

### Manufacturing

- Introduction of new energy saving programs for manufacturing plants. (Motor Challenge etc)
- Promoting motives for the establishment of a new energy saving manufacturing system.

### Transport

- The reformation of the Public Transport route planning.
- New transport related constructions.



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## Greek Measures in Energy Saving (6/7)

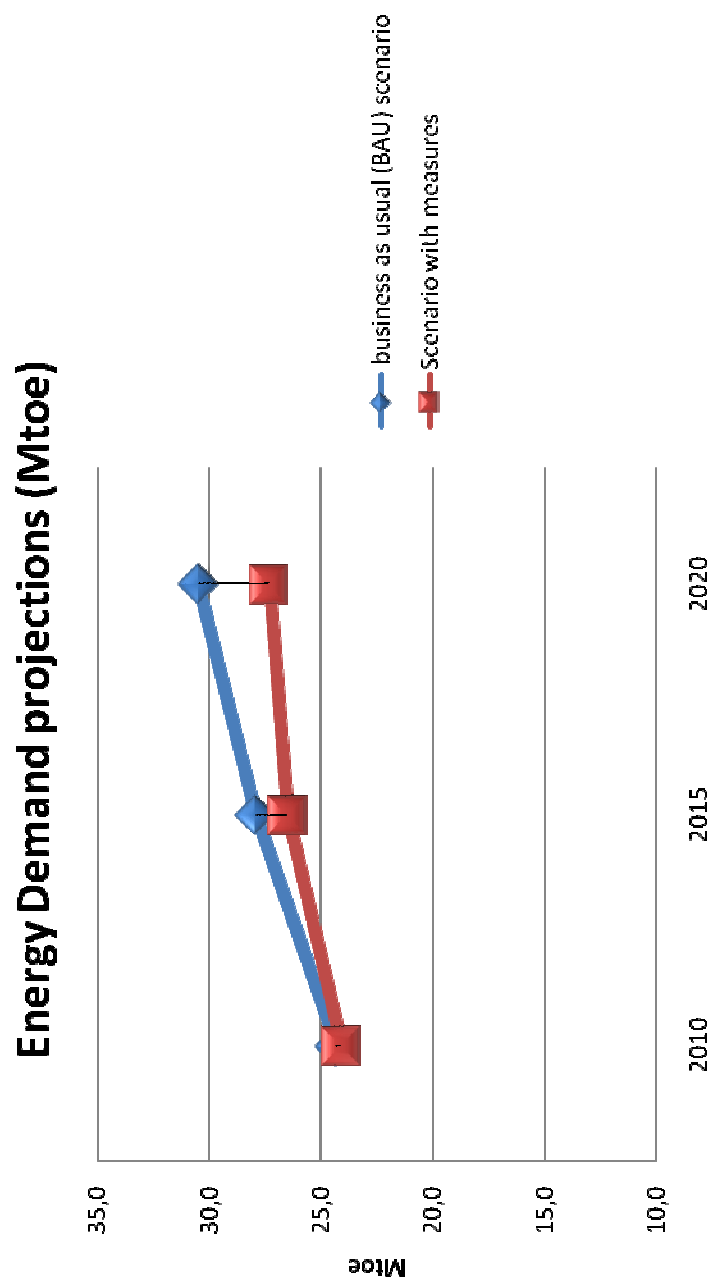
- Urban mobility plans.
- Promotion of the economic, ecologic and safe steering attitude.
- Replacement motives for the middle and heavy weight vehicles.
- Replacement motives for the every day personal vehicles with environmental friendly ones. (Hybrid etc)
- Introduction of energy label in cars.



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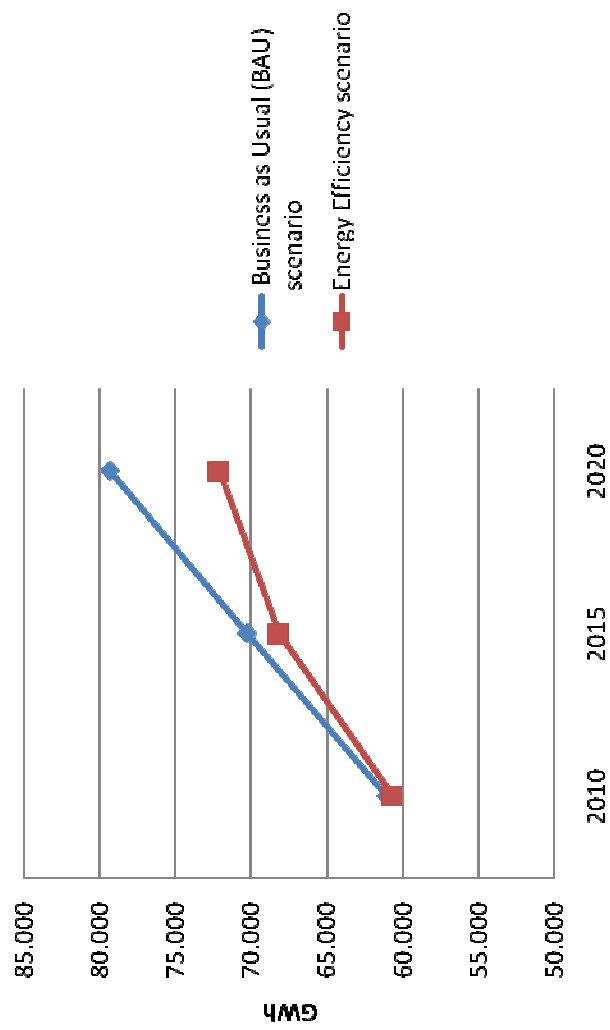
## Greek Measures in Energy Saving (7/7)

- Introduction of better energy efficient vehicles in the Public Sector.
- Introduction of taxation on vehicles with high CO2 emissions.





## Electricity Demand projections for the interconnected system (GWh)





## European Strategic Energy Technology Plan : Low Carbon Future

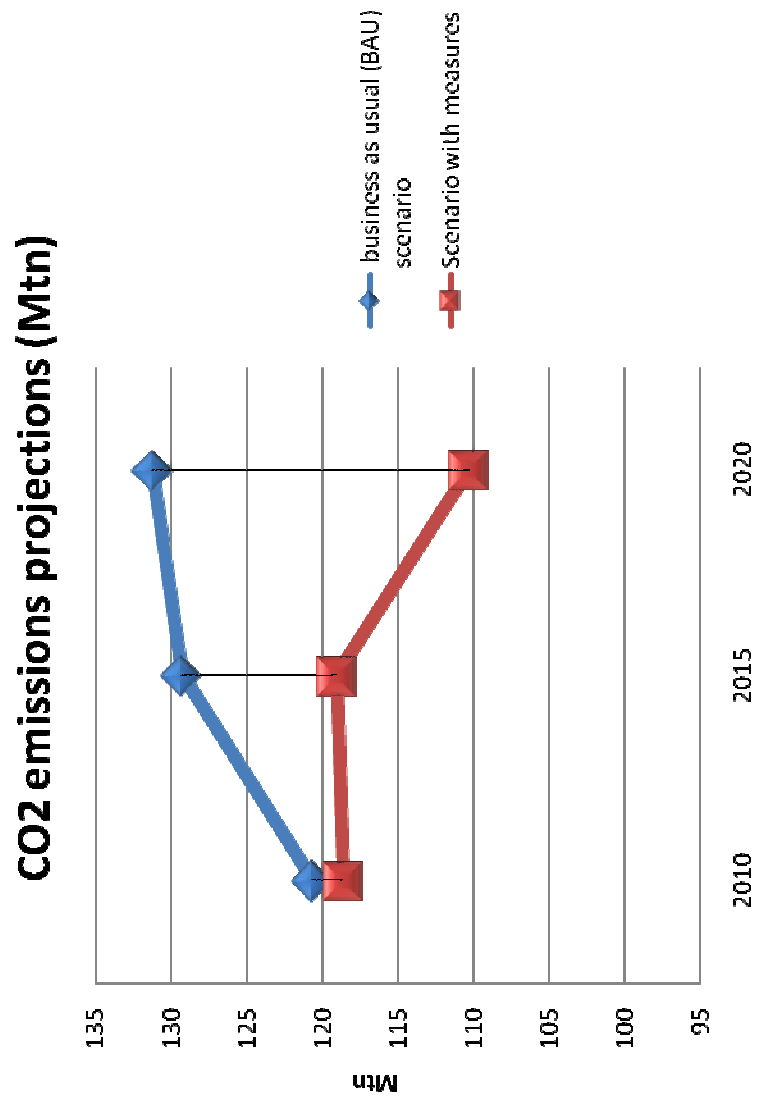
- “to accelerate the development and deployment of cost-effective low carbon technologies”
- Aiming at near-zero emissions from coal after 2020 via development of technological demonstration - clean coal technologies (e.g. IGCC, low-NOx burners)
  - Carbon Capture and Storage technologies
- Best Available Technology (BAT) → Modernising EU's stock of coal-fired plants
- Reduce carbon emissions AND create jobs



## Renewable Energy Road Map

- “an essential alternative to fossil fuels”
- Reduce EU’s carbon emissions AND fuel import dependency
- EU binding target: 20% share of energy from renewable sources in the overall energy mix by 2020
  - 18% target for Greece by 2020
- electricity production: wind, solar, hydro, tidal, geothermal and biomass power
- transport : biofuels target 5,75% share by 2010







## Measures in Greece for the achievement of the 3 20's (1/2)

- The Incorporation of all Directives concerning Energy Activities in the domestic legislation.
- The introduction of new legislation for urban planning which clarifies the rules for the development of energy investments, especially those concerning Renewable Energy Resources.
- The adoption and promotion of specific measures concerning energy efficiency in all the sectors of activity:
  - Households
  - Transports
  - Industry
  - Tertiary sector



## Measures in Greece for the achievement of the 3 20's (2/2)

- The introduction of funding mechanisms for the promotion of energy investments, energy efficiency activities and activities concerning green technologies.
- The adoption of transparent and efficient mechanisms for the implementation of the Directives related to the European Emissions Trading Scheme.



## Greece's Long Term Electricity Production Objectives

- 1/3 of total production to be achieved by renewable sources
- 1/3 of total production to be achieved by natural gas depending on the availability of more than present pipelines
- The rest of the production to be covered by the use of indigenous sources and imported coal with best available carbon reduction technologies