

## THE EUROPEAN INTEGRATED ENERGY-CLIMATE CHANGE STRATEGY – DIRECT IMPLICATION FOR ROMANIA

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*The European Commission's January 2007 package of energy and climate change measures set out concrete proposals for the content of a new global climate change agreement aimed at limiting the temperature rise to 2°C above the pre-industrial level. The EU Commission proposed that developed countries commit to cut their emissions by an average of 30% from 1990 levels by 2020 and of 50% from 1990 levels by 2050. As a concrete first step the EU would make a firm independent commitment to cut its emissions by at least 20% by 2020. The main energy-related measures proposed in the January 2007 package are energy efficiency increasing, renewable energy source promotion and carbon dioxide capture and storage. These measures, together with others already in place measures, such as the EU Emissions Trading Scheme, would deliver this reduction.*

*The paper presents some of the possible implications of the future EU integrated energy-climate change policy on the short and long term Romanian energy strategy.*

**Keywords:** energy policy, climate change, energy efficiency, renewable sources, Romanian energy strategy.

### Abreviation

GHG - Greenhouse Gases  
HLG - High Level Group  
IPCC - International Panel on Climate Change  
MBI - Market based instruments  
RES - Renewable energy sources

### 1. Introduction

According to the new IPCC projections, the temperature in Europe may climb by a further 4- 7 °C this century as emissions of GHG continue building up.

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Energy accounts for 80% of all GHG emission in the EU; it is at the root of climate change and most air pollution. The present energy policies within the EU are not sustainable. The EU is committed to change - by reducing EU and worldwide GHG emissions to a level that would limit the global temperature increase to 2°C compared to pre-industrial levels.

## **2. The European Commission Communication "Limiting Climate Change to 2°C - Policy Options for the EU and the world for 2020 and beyond".**

Current energy and transport policies would mean EU's CO<sub>2</sub> emissions would increase by around 5% by 2030 and global emissions would rise by 55%. In January 2007 the European Commission launched the Communication "Limiting Climate Change to 2°C - Policy Options for the EU and the world for 2020 and beyond" which has as central parts[1]:

- an EU objective in international negotiations of 30% reduction in GHG emissions by developed countries by 2020 compared to 1990. In addition, 2050 global GHG emissions must be reduced by up to 50% compared to 1990, implying reductions in industrialised countries of 60-80% by 2050;
- an EU commitment now to achieve, in any event, at least a 20% reduction of GHG by 2020 compared to 1990.

These targets could be achieved mainly by promoting RES development, increasing energy efficiency and by the use of the MBI.

### **2.1. Energy efficiency measures at Community, national, local and international level**

For Europe's citizens, energy efficiency is the immediate element in a European Energy Policy. Improved energy efficiency has the potential to make the most decisive contribution to achieving sustainability, competitiveness, and security of supply. The energy intensity during 2002-2004 for different EU Member States is presented in the Fig.1[1].

On 19 October 2006, the Commission adopted the Energy Efficiency Action Plan, containing measures that would put the EU well on the path to achieving a key goal of reducing its global primary energy use by 20% by 2020. If successful, this would mean that by 2020 the EU would use approximately 13% less energy than today, saving € 100 billion and around 780 millions tones of CO<sub>2</sub> each year [1]. However, this will require significant efforts in terms of both behavioural change and additional investment. Key measures include:

- Accelerating the use of fuel efficient vehicles for transport, making better use of public transport; and ensuring that the true costs of transport are faced by consumers;

- Tougher standards and better labelling on appliances;
- Rapidly improving the energy performance of the EU's existing buildings and taking the lead to make very low energy houses the norm for new buildings;
- Coherent use of taxation to achieve more efficient use of energy;
- Improving the efficiency of heat and electricity generation, transmission and distribution;
- A new international agreement on energy efficiency to promote a common effort [1].

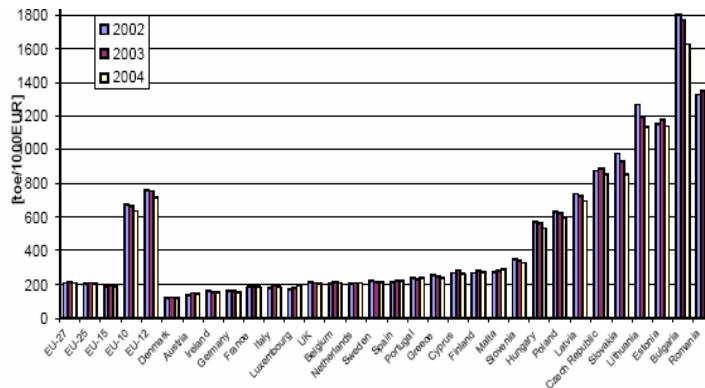


Fig.1- The energy intensity during 2002-2004 for different EU Member States

## 2.2. A longer term target for renewable energy

In 1997, the EU started working towards a target of a 12% share of RES in its overall mix by 2010, a doubling of 1997 levels. Since then, renewable energy production has increased by 55%. Nevertheless the EU is set to fall short of its target. The share of RES is unlikely to exceed 10% by 2010. In the light of the information received during the public consultation and the impact assessment, the Commission proposes in its Renewable Energy Roadmap a binding target of increasing the level of renewable energy in the EU's overall mix from less than 7% today to 20% by 2020. Targets beyond 2020 would be assessed in the light of technological progress [1].

Meeting the 20% target will require a massive growth in all three renewable energy sectors: electricity, biofuels and heating and cooling. The RES share for electricity and respectively for heat and cooling during 1997-2004 and the expected evolution until 2020 are presented in the Fig. 3 and 4.[1] The avoided CO<sub>2</sub> quantities by the use of RES until 2020 in EU-25 are presented in the Fig. 4 [1].

The Commission will set out this architecture in a new RES legislative package in 2007.

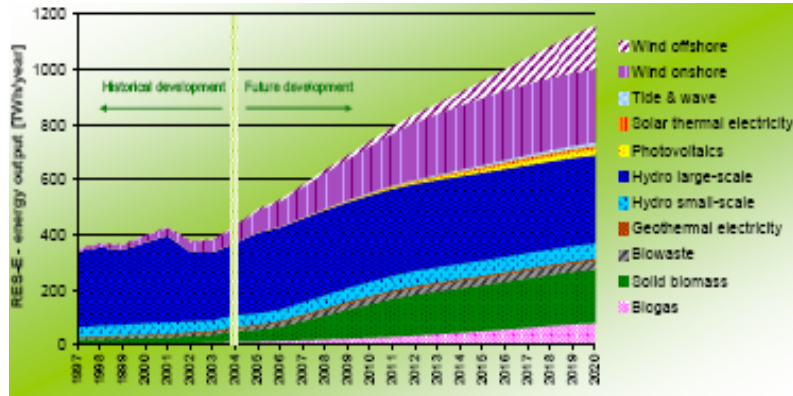


Fig. 2. RES share for electricity during 1997-2004 and the expected evolution until 2020

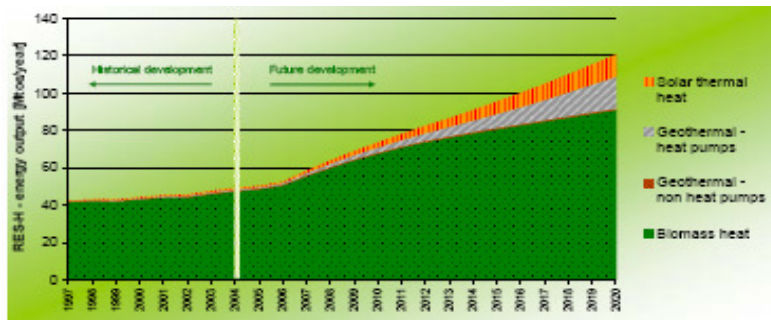


Fig. 3. RES share for heating and cooling during 1997-2004 and the expected evolution until 2020

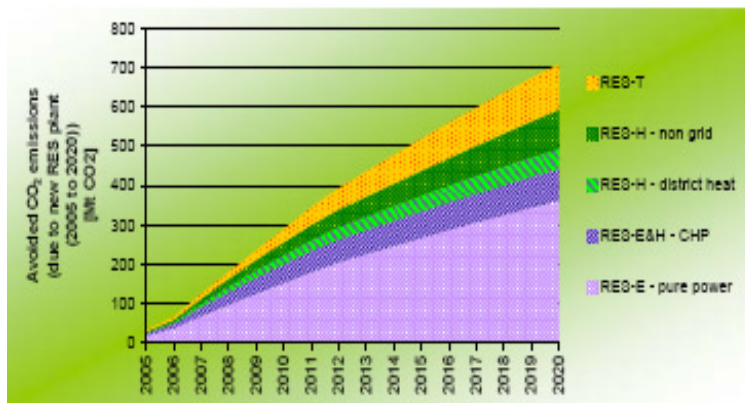


Fig. 4. The avoided CO<sub>2</sub> quantities by the use of RES until 2020 in EU-25

In addition, the Commission proposed to set a binding minimum target for biofuels of 10% of vehicle fuel by 2020 and to ensure that the biofuels used are sustainable in nature, inside and outside the EU.

EU leaders meeting in summit on 8-9 March agreed to binding targets for both carbon dioxide reductions and use of RES by 2020. Both targets will be subject to a burden-sharing arrangement to be decided in separate negotiations, in which some countries will have to do more than others. As a milestone in the creation of an Energy Policy for Europe and a springboard for further action, the European Council adopted a comprehensive Energy Action Plan for the period 2007-2009, based on the European Commission's Communication An Energy Policy for Europe [1].

### **3. EURELECTRIC's viewpoint about post-2012 climate conclusions**

In a EURELECTRIC statement on Electricity and Climate - Beyond 2012, the European electricity industry recognizes that climate change is a serious global environmental, economic, and social challenge, which requires an urgent response from policymakers, businesses and society, and makes a commitment to take action [2]. A parallel statement drawn up jointly with the US, Canadian, Japanese and Australian bodies stresses the need to keep all energy options open in the drive to a low-carbon energy system.

It is imperative to keep open all energy options and, given that the lifetime of power industry's investments span from 20 to 60 years, it is crucial that the industry be given a clear signal as to where it needs to be on carbon dioxide reductions by 2050 and the pathway to that point. EURELECTRIC agree that energy efficiency can be regarded as a "fifth fuel" and further stresses the need for a long-term carbon value to guide investment [2].

Recently EURELECTRIC has announced that the third report of HLG on Competitiveness, Energy and the Environment focus on the adaptation of industry – in particular energy-intensive industry – to energy and climate change challenges. The HLG noted the need to design support measures to extract the greatest value from primary resources both as a material and as an energy source, with a clear reference to the difficulties connected with access to biomass for RES-power generation. The HLG also launched the idea of encouraging the use of carbon footprints within the value chains of energy-intensive sectors, as an instrument to prioritize sectoral options for abatement of GHG emissions [2].

EURELECTRIC reiterates, "Market based approaches, such as emissions trading, are the most appropriate to achieve emissions reductions" and wants to see "an improved EU Emissions Trading Scheme as the basis for a global trading scheme [1]. To facilitate the ongoing application and development of emissions trading as an EU policy tool, "unrestricted access to Kyoto – Join Implementation / Clean Development Mechanism – credits must be provided"[2].

On the other hand, the EURELECTRIC's project "Role of Electricity" investigating the impact of different policies and technologies up to the year 2050, shown that electricity has the potential to contribute substantially to the GHG emissions reduction at reasonable cost to the economy, while, at the same time, help to reduce oil and gas dependency. The project results highlight that only a European energy policy based strongly on demand-side energy efficiency, active development of all low carbon supply sources and exploitation of the synergy between low-carbon electricity supply and efficient electro-technologies will ensure the transition to a low-carbon economy [2].

#### **4. Green Paper on market based instruments for environment and related policy purposes**

The Commission launched this year a broad public consultation on advancing the use of MBI for environment and energy related policy purposes in the Community. MBI, such as taxes, charges, and tradable permit schemes provide a flexible and cost-efficient means for reaching the energy policy objectives. In the Green Paper, the Commission explores a wide range of areas where the use of MBI including taxation could be promoted further, such as energy consumption, environmental impact of transport and other areas of environment policy [1].

The more intensive use of MBI has also been advocated in the EU's 6<sup>th</sup> Environment Action Programme (6<sup>th</sup> EAP) and the renewed EU Sustainable Development Strategy, as well as the renewed Lisbon Strategy for Growth and Jobs [1].

More in particular the green paper explores possible ways forward with the Energy Taxation Directive to make it more supportive of the EU energy and environmental policies in line with the Action Plan for Energy Efficiency. The green paper also addresses broader issues such as environmental tax reforms and role of taxation and fiscal instruments in general in the context of the integrated energy and climate change agenda of the EU [1].

Whether by influencing prices (through taxation or incentives), or setting absolute quantities (emission trading), or quantities per unit of output, MBI implicitly acknowledge that firms differ from each other and therefore provide flexibility that can substantially reduce the costs of environmental improvements. An environmental tax reform shifting the tax burden from welfare-negative taxes, (e.g. on labor), to welfare-positive taxes, (e.g. on environmentally damaging activities, such as resource use or pollution) can be a win-win option to address both environmental and employment issues. At the same time, a long-term tax shift will require relatively stable revenues from the environment related tax base

[1]. An environmental tax reform can also help to alleviate the possible adverse competitiveness effects of environmental taxes on specific sectors.

As well as discouraging environmentally damaging behavior through taxation, Member States may also use fiscal incentives such as subsidies to encourage green behavior, facilitate innovation, research and development, provided that public resources are first generated in some other way (e.g. by taxing environmentally damaging behavior) or that spending is reduced (e.g. by removing environmentally harmful subsidies) [1].

On the other hand EU –ETS, which represent a very successful MBI will be extended to the others CO<sub>2</sub> emitters (aviation, installation under 50 MW<sub>t</sub>) [1].

## **5. Implications for Romania**

There is an increasing global recognition that environmental protection needs to be integrated into economic decisions in order to ensure long term sustainable development. [3].

In the context of the ambitious objectives of the climate and energy agenda of the EU, Romania, as Member State of EU, has to full transpose and implement the EU legislation and policy. The way in which Member States will meet their targets should be set out in National Action Plans to be notified to the Commission. The Plans should contain sectoral targets and measures consistent with achieving the agreed overall national targets. In practice, in implementing their Plans, Member States will need to set their own specific objectives for electricity, biofuels, heating and cooling, which would be verified by the Commission to ensure that the overall target is being met.

For this reason, the new document “Romania’s Energy Strategy during 2007-2020” elaborated by the Ministry of Economy in Finance [4] has to take into account the EU integrated energy-climate change approach. Within its national strategies for energy efficiency and valorization of RES, Romania’s targets are to improve energy efficiency and to increase the share of electricity produced from RES in the national gross electricity consumption. Promoting these targets by using less energy or using more environmental friendly energy, contributes to the reduction of pollutant emissions (especially GHG emissions) at the level of Romanian economy, in compliance with the recommendations of the Spring 2007 European Council.

The estimation of the investments during this period are:

- 2,5 billion Euro in the energy efficiency field, for the valorization of the energy saving potential, respectively for the reduction of the energy lost, estimated at 27 – 35 % from the primary energy resources (industry 20-25%, buildings 40-50%, transports 35-40%);

- 1,8 billion Euro in RES, for new RES-E capacity buildings, to ensure a RES-E share of 33 % in 2010 and 35 % in 2015 from the total national consumption of electricity.

Within Sectoral Operational Programme “Increase of Economic Competitiveness”, approved by EC in July 2007, priority Axis 4: “Increasing energy efficiency and security of supply, in the context of combating climate change” could be financed by the European funds projects aiming to develop activities in the key areas of intervention:

- Efficient and sustainable energy (improving energy efficiency and environmental sustainability of the energy system)
- Valorisation of renewable energy resources for producing green energy.

The proposed monitoring and evaluation indicators until 2015 for these key areas of intervention are:

- number of the projects for improving energy efficiency: 150;
- numbers of the projects for RES valorization: 30;
- total installed capacity of RES valorization plants: 200 MW;
- new created jobs: 200-400.

In addition, the expectations are:

- private investments involved by RES valorization: 168 MEuro;
- the increasing of the national RES-E share at 33% in 2010, respectively at 35% in 2015.

## 6. Conclusions

Energy efficiency increasing, RES use promotion in electricity, heat and cooling and biofuels production, as well as an extended application of MBI by national authorities from EU Member States are key measures for fighting against climate change, according with the recent EU approach.

The climate and energy agenda of the EU has a very ambitious objective - to achieve the reduction of GHG emissions by at least 20% by 2020, and decided overall binding target for RES promotion and energy efficiency for EU.

Romania has to full transpose and implement the EU legislation and policy, setting its own specific objectives.

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