

Speaking Notes – Kazakhstan (9-12/6/2017)

PROMOTING NEW TECHNOLOGIES & INNOVATIONS

Thank you for this invitation and the opportunity to express my thoughts and ideas on this extremely important subject, such as Innovation and the promotion of new technologies.

Dear honourable organizers and guests,

Global Energy Outlook & Trends

The world is undergoing through tremendous changes in all aspects. The energy sector could not be the exception to this trend. The energy sector has a global impact in political, economic, environmental, geopolitical and stability aspects, as well as in the everyday life of the citizens. The scarcity of the resources and the global warming issues mainly caused by global greenhouse gas emissions come from activities related to energy production and consumption (60%). The previously mentioned objectives create a framework that requires common immediate and organized actions towards the energy transition through decarbonization / “greening” of the economies and increased energy efficiency.

Undoubtedly, the biggest event in 2016 that will affect the energy policies of the coming years is the implementation of the new major agreement on the fight against climate change. 196 countries and parties signed the agreement at the Paris Conference (COP21) in 2015. The withdrawal of the USA from this agreement is undoubtedly a

relatively sad development. The Paris Agreement aims to keep global warming at 2° C levels, with 1990 as a reference year, which is the level of security to avoid the most negative effects of climate change.

The targets are ambitious and the efforts that all countries must put forward are challenging, especially taking into account the destabilized environment globally. Within this frame, the global leaderships should take the necessary initiatives so as to move forward towards a sustainable energy model with a global perspective that should ensure that we deliver a better and safer future for the next generations to come. The question on which is the most beneficiary way to move forward is of crucial importance.

EU Trends

As mentioned previously, based on the Paris Agreement, the European Commission is strongly shifting towards Clean Energy through the introduction of the Clean Energy Package, with a prospect of achieving ambitious targets for 2030, following the ones agreed for 2020.

The Clean Energy Package Targets

The EU has committed to cut CO₂ emissions by at least **40%** by 2030 (decarbonization), while modernizing the EU's economy and delivering on jobs and growth for all European citizens. Today's proposals have three main goals:

1. Putting energy efficiency first

- ✦ 30% energy efficiency target, following the 20% target for 2020.

2. Achieving global leadership in renewable energies

- ✦ 27% RES share in the final energy consumption
- ✦ Action needed in the electricity sector, transport as well as heating and cooling

3. Providing a fair deal for consumers

Consumers are active and central players on the energy markets of the future. Consumers across the EU will in the future have a better choice of supply, access to reliable energy price comparison tools and the possibility to produce and sell their own electricity. Increased transparency and better regulation give more opportunities for civil society to become more involved in the energy system and respond to price signals. The package also contains a number of measures aimed at protecting the most vulnerable consumers.

It is obvious, that in order for the EU member states to achieve their national goals and contribute to the abovementioned targets, it is of utmost importance to promote innovation, synergies and the use of new technologies. For this reason, funding Research and Development of new technologies as well as taking advantage of the rapid big data innovation in the energy sector, with special care to energy infrastructure, for instance in networks etc..

The Greek Case – Sustainability, RES penetration & Innovation

Greece strongly supports the ambitious efforts towards the creation of the Energy Union and the implementation of the Clean Energy Package. We believe that coordinated action in the fields of Energy and Climate at a European level, will result in actual benefits for the European citizens and the European Union as a whole.

The transition to clean energy is a top priority in our political agenda. This due to the fact that we consider the energy transition process not only as a necessity and a tool to adapt to climate change, but also as an opportunity for the creation of niches in the market economy and also in the creation of niches for active participation. We strongly support growth that is sustainable in all social, environmental and economic terms.

We are in favor of "greening" the economy by enhancing the penetration of Renewable Energy Systems (RES) in the energy sector by inducing private investments. Focal in our energy policy is the empowerment of the consumer role, the further increase of the RES technologies in the Greek energy mix, with great attention to security of supply through the promotion of new technologies and innovation.

Greece, due to its morphology, with a lot of remote islands, faces multiple challenges in the energy playground. For this reason, we are prioritizing actions oriented towards high penetration RES projects in islands that could be used as test-beds for new and innovative energy solutions, by enhancing state of the art technologies and human capital, while solving the important issue of security of supply. Additionally, multiple possible solutions are evaluated on the issue of the island interconnections. In this context, we welcome the recently signed Political Declaration on Clean Energy for the EU Islands, which will promote those actions, alongside with the organization of the Forum of the Energy Island Initiative in Chania, Greece this coming September.

Currently, we are in an ongoing process of planning our long term National Energy Strategy in accordance with our commitments to the

European Energy targets that have been set for 2020 and of course from our commitments under the Paris Agreement for Climate Change. We are proceeding well with regard to our national RES energy target for 2020, we are willing to accelerate the pace for the penetration of renewables until 2020 and we are also setting more ambitious targets for 2030.

One important initiative, deriving also from European Directives, is the creation of a new legislative framework for Local Energy Communities, empowering consumers, local communities and SMEs to participate in the energy market, taking advantage of the new technologies and implementing innovative solutions, while increasing the local acceptance of the Renewable technologies. Allow me to refer to some more concrete examples in Greece.

Tilos – An example of innovation and synergies in Greece

A small island in Greece's Dodecanese is about to play a major international role. Tilos, surrounded by the larger and more well-known Rhodes, Symi and Kos islands, is about to approve an ambitious renewable energy program, with the creation of the country's first hybrid, renewable energy-based battery station and smart microgrid. The program vies to make the island independent in the energy sector in a few years. Tilos currently relies on oil-based electricity from neighbouring Kos via an undersea cable that is however vulnerable to faults, especially with rough sea. The project 'Tilos' (Technology Innovation for the Local Scale) provides for the construction, starting this summer, of an hybrid battery-based storage system to turn the island into a resilient RES-based microgrid using only wind and solar power -

the island is one of Europe's most windy and sunny areas. The project is a first in Greece, involving 13 partners from seven countries, including Italy, under the supervision of the University of Piraeus. The project vies to immediately cover 70% of local demand with the aim of reaching the 100% target in the future. Thanks to the project, Tilos is one of 12 finalists in four categories for the EU Sustainable Energy Awards, among the group of 'Energy islands'. The award ceremony is scheduled on June 20.

Moreover, we are transforming our national electricity market in order to move towards the **"Target Model"** that has been proposed by the European Commission for the creation of a single European electricity market. So, the Greek government is working towards opening our national market to multiple suppliers and thus improving market competition, which will also entail lower prices for the end consumers.

It is of high importance to address that energy transition cannot be successful, unless an energy market that reaches high environmental standards, with efficient and reliable services at a low cost exists. Thus, it is crucial that we invest in energy infrastructure, such as smart grids and smart meters, setting those initiatives at the center of our strategic planning. Smart grids transfer renewable energy to consumers due to higher network flexibility and the consumer receives accurate information regarding his consumption, making "smart" choices for the energy the consumer uses or provides to the network. On the other side, we are able to efficiently take advantage of the network operation, implement automated solutions that balance the system independent of the different energy technologies, as well as avoid costly investments for

grid expansion, having a positive effect on the consumers' electricity bills. Only in Europe, 600bil. Euros will be invested in the Energy Networks until 2020, whereas 62 billion Euros are to be invested in digitalization of the European network operations. Greece is expected to benefit from new jobs in the "smart grids" sector that accounts up to 2,5%. Additionally, new business opportunities will be created for SMEs, in relation to applications for Smart Grids. Research and Development from educational and research institute will have a central role in those developments.

To conclude

The world is changing and faces tremendous challenges that must be confronted and answered, by taking the necessary initiatives in order to succeed. Innovation and the promotion of new technologies are the key driver for the successful transition to the new era. We consider energy transition as a great opportunity for the creation of niches in the market economy by enabling the citizens to take an active role in the market, promoting synergies, implementing innovative solutions, adding value, creating jobs and growth with a European and global perspective.

Finally, Greece, due to its geographical position, in the borders between East and West Europe, is ready and able to make the necessary steps forward, establishing itself as a politically and economically stable energy hub in a generally destabilized area, which can contribute to the energy transition to the maximum degree. We are fully committed into supporting promoting new technologies and innovation through active participation of the citizens. Innovation is the best way forward, in order to move to a sustainable growth model that empowers consumers to

take an active role in the energy market, promote synergies, create jobs
and achieve the targets that we set.

Thank you for your attention.