

Review of Implementation of OSCE Commitments
**“Increasing stability and security: Improving the environmental footprint
of energy-related activities in the OSCE region”**

ENGLISH only

Presentation by

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Good afternoon excellencies, ladies, and gentlemen.

I would like to thank the Government of Ukraine and the OSCE Secretariat for inviting the United Nations Economic Commission for Europe (UNECE) to address today's meeting. Also, I would like to thank the Government of the Czech Republic for its hospitality.

It is a pleasure to present our study on energy and environment to you at the 21st OSCE Economic and Environmental Forum. The topic of this Forum – “Increasing stability and security: Improving the environmental footprint of energy-related activities in the OSCE region” - combines many challenging and important environmental and energy policy issues.

This morning our executive secretary addressed this body during the high level segment. I would like to briefly revisit some of the topics that he raised since his remarks captured the broad themes of the study. I will then review the findings and conclusions of the study, explore some possible next steps, and respond to questions you may have. I would also seek your advice on how we might proceed in the future.

The challenge of climate change is enormous and the time to act is now and action must be on a scale that addresses the challenge. That is the theme of our coming meeting in November of our Committee on Sustainable Energy. Change will not come overnight and policy responses must be bold if the world is to get on the path to a sustainable future. Our member States, OSCE participating states, must reduce the environmental footprint of their energy activities, which at the same time can address energy security, environmental and economic challenges.

There is need to:

- address market failures that hinder cost-effective improvement of energy and carbon intensities, for example
 - subsidies not only of fossil fuels, but also of consumer tariffs and even renewables;
 - market structures that hinder innovative new entrants
- invest in end-use energy efficiency
 - the subject of the report we presented at the 19th Economic and Environmental Forum
 - We are acting with a range of players to try to double the rate of uptake in energy efficiency investments
- improve the efficiency of existing coal-fired power stations – the current world average efficiency is roughly 28%, whereas the best plants achieve upwards of 45%.
- progressively switch to natural gas away from coal – a phenomenon we already witness in the US market that is price and market driven.

- develop the technologies of renewable energy further so they can contribute to cost-effective attainment of environmental goals – renewables are an important component of the future energy mix, but at the same time we cannot afford to create an industry that depends on subsidies forever.
- put in place systems of smart grids, smart cities, smart everything that allow renewables to play a bigger role, and in the interim use natural gas as an efficient back-stop for intermittent renewables.
- pursue and develop projects that cost-effectively capture and store carbon
- if countries wish to maintain the nuclear option, it is easy to say but hard to do. It can only happen if the nuclear sector meets its safety obligations and can be cost competitive.

Each technology has a role to play, there is no single solution.

The goals of the Secretary General’s Sustainable Energy for All Initiative include

- ensuring access to modern energy services,
- improving, i.e., reducing, the energy intensities of national economies, and
- encouraging renewable energy technology as an instrument in decarbonizing the energy sector.

The challenge is to meet these goals with rational, effective policies. A shift to green that does not consider social and economic consequences may discredit the legitimate contributions of new technologies and delay effective progress in meeting targets.

In other words, one should proceed with caution, but today's general directions appear clear:

- promulgate sensible economic, energy, and environmental policies,
- address market failures,
- build capacity for technology transfer,
- develop normative instruments that can guide investment, and
- develop financial instruments that are appropriate for local circumstances.

The work that is being done must be seen as benefiting society if policies are to be sustained.

What activities comprise the energy sector?

- Looking for and developing primary energy supply: oil and gas, coal, nuclear fuel, but also all of the energy industry input components of machinery, factories, steel for windmills, copper, gallium arsenide for solar photovoltaics.
- Gathering and transport: trucks and rails and pipelines
- Transformation, transportation, and distribution
- Final consumption

Just thinking of the direct activities is already a large task. When all of the ancillary services and activities are considered, one can begin to appreciate the importance of energy not only to support economic activity but also as a significant part of economic activity.

Opportunities exist throughout the energy value chains to reduce the environmental impacts on air, water, soil, and a range of other aspects. Realizing these opportunities not only will help protect or improve the environment, but can also improve overall system efficiency, enhance acceptance of energy solutions by the public, improve security and stability, and

even improve energy economics in some cases. Improving the environmental footprint of energy related activities in our region involves efforts to:

- Reduce the environmental impact of primary energy production, in the development, production and transport of natural gas, oil, coal, biomass, and uranium.
 - These efforts may include reducing GHG emissions from coal mines, such as management of methane or optimal development of coal resources. UNECE has expert groups working on these subjects.
 - The efforts can include reducing leaks in the gas transportation and distribution networks and gas production, a topic for our working party on gas
 - The efforts include as well land reclamation and improved water management. Notably this is a concern for development of shale oil and gas, where the anti-shales say the risks and damages are unacceptable and the pro-shales say the risks and damages can be moderated if not eliminated by application of the right practices. Clearly there is space for a dialogue possibly leading to development of best practice guidances for unconventional fuels. The same could be said for e&p more broadly to cover spills, leaks, and so forth.

- Improve the environmental footprint of energy transformation to electricity and heat.
 - Improvements may come at the end with emissions control at power plants – not only CO₂ but also SO₂, NO_x, ash, particulate matter, and other pollutants.
 - Or by improving the technology used for the transformation. Increasing the efficiency of old power plants with new technology could have a major effect. As I mentioned, the average efficiency of coal plants worldwide is 29%, whereas the best technology available has efficiencies upwards of 45%. Our work involves not only dissemination of best practices and best technology, but also assisting with energy policy formulation and financing.
 - Switching out coal with natural gas in the power sector has been a major factor in the environmental performance in the US over the past decade, and this plays out strongly in the statistics for the carbon intensity of the energy sector. This has not happened by government fiat. Instead, it has been the availability of gas at prices that beat coal prices even without a real price on CO₂. That fact alone argues for both appropriate pricing formulas for natural gas and for serious consideration of a price on carbon dioxide to replace subsidies of non-fossil alternatives.
 - Or implement combined heat and power plants, distributed generation, deployment of cost-effective renewable energy, smart grids, energy efficiency, smart cities, and other new technology as it develops.
 - Cost-effective renewables are those that achieve grid parity without subsidies. Story of the investment bank on access. Challenges for renewables are access terms, best policy practices, and costs.
 - If Europe were one big copper plate, the system would be extremely efficient, and renewables could penetrate easily. But we do not have a copper plate. The network, while dense, resulted from the organic growth of networks taking account of economic and geological realities. Constraints exist between Spain and France, within Italy, and throughout the FSU for example. Nevertheless, if we could get the rules of the game right and apply them fairly, we could improve the technical, economic, and environmental efficiency of what should be a single energy market from the Atlantic to the Urals.

Normative instruments like best practices, along with performance benchmarking, or well-designed regulatory schemes could enhance performance. Investing in appropriate best technology, enabling finance, applying modern management skills: all of the efforts are necessary if we are to reduce the environmental footprint of energy activities and thereby

enhance both stability and security. And this conclusion applies not only within OSCE/UNECE, but globally, with systematic sharing of experience for optimal global impact.

Finally, we can dwell for a moment on new technologies. These have been mentioned here and there, but as a category they are intriguing. CCS, batteries, smart everything. What else might there be? We do not know, and it is impossible to know the future. It is incumbent on governments, however, to ensure that innovators be encouraged to innovate and empowered to bring their alternative approaches to the market.

Energy security is a priority for the majority, if not for all, UNECE member states. It has been in the past and it is expected to be in the future. It is not surprising then that UNECE's mandate and expertise includes energy - specifically, the ability for UNECE members to secure affordable and sustainable energy supply. UNECE, with its sister UN agencies that have strong energy programmes, collectively known as UN Energy, can collaborate with OSCE and other relevant international organizations such as the Energy Charter Secretariat to help our respective member States procure a secure energy supply. UNECE contributes to that dialogue from a technical/economic/sustainable development perspective, while OSCE provides a high-level platform to bring member States' political engagement.

The mandate, though simply stated, is in fact complex. It includes security. It includes affordability. And, it includes sustainability.

First, security. Energy supply is considered secure if it meets demand in an environmentally sustainable manner at price levels that do not damage the economy or destabilize the political system. Such a definition implies supply that is robust in the face of disruptions, whether physical or political, at prices that are "affordable". In this context, energy security requires investment, diversification of primary fuels, technology and flexibility. *Above all, it requires governments to put in place the policies and regulations that empower producers and consumers to respond to a dynamically changing environment.*

Second, affordability. This concept is challenging. It implies that end-use prices should be affordable - without considering the ability to pay or the cost of supply. But the term is nuanced. Affordability takes account of life-cycle costs, including returns on investment, and both the resources and requirements of the buyer. Ensuring affordability is equivalent to ensuring that investments are made throughout the value chain - from primary energy development to final consumers - and that all involved have fair access to energy markets. *Above all, it requires governments to put in place the policies and regulations that empower producers and consumers to respond to a dynamically changing environment.*

Finally, UNECE mandate includes sustainability. Sustainability has three inter-related dimensions:

- Economic, where investment and consumption decisions are made in a framework of sensible policies. One cannot oblige buyers or sellers to take decisions that run counter to their economic self-interest
- Environmental, where sustainable resource use meets human needs while preserving the environment so that the needs can be met not only in the present, but also in the future
- Social and political, where policies and programs are sustained over time because they are perceived as working for the welfare of society and are therefore supported by the people.

The energy sector is at the nexus of economic and environmental sustainability. The world is changing rapidly in terms of environmental considerations, technological progress, and globalization. And the pace of change is accelerating.

The economic challenge is to secure affordable and sustainable energy services for energy consumers. However, because the world is changing so rapidly, governments cannot afford to bet on specific technologies. It is investors who should be putting their capital at risk. *Governments should focus on providing a long-term, stable framework for all energy chains from the source to final use to ensure “proper” investment and consumption decisions.*

You will read in our report that OSCE participating countries have been doing pretty well vis-à-vis their commitments, though there is more to be done. Statistics are always dangerous since the choice of start and end dates has an effect on the conclusions. So does the choice of indicators.

What jumped out at me in re-reviewing the study was the extent to which prices are an effective tool for bringing about sustained change, and market prices that reflect supply and demand considerations including environmental costs are that much more effective.

Adam Smith’s invisible hand may have been dirtied by unfortunate and often unrelated episodes such as Enron, but maybe it is time to wash that hand while recognizing that governments have a role in designing, monitoring, and regulating markets so that they work properly.

The purpose of the study has been to review the implementation of the OSCE commitments in the economic and environmental dimension relevant to increasing stability and security by reducing the environmental impacts of energy-related activities in the OSCE/UNECE region.

The key challenges we face include:

- A lack of awareness of the need to reduce emissions, notably regarding climate change and the need for a global response.
- The on-going economic downturn.

The opportunities we hold include:

- Growing awareness in some countries of the urgency to address environmental challenges, notably local issues such as urban pollution
- Technological developments
- Economies of scale and lower costs
- Improved primary energy mix

Main conclusions of the study.

- First, increase awareness, which enables populations to support their governments’ actions;
- Second, facilitate deployment of the new technology that is needed. Deployment means ensuring adapted technology is available along with needed finance and management capacity;
- Third, development and dissemination of comprehensive solutions through engaged dialogue at OSCE, UNECE and other international partners;
- Fourth but not last, engage strongly with all stakeholders, particularly the private sector, to ensure that changes take place at the scale needed to meet the challenge.

Structure of the report

Introduction: Review of the OSCE commitments with regard to energy

Part I: Assessment of progress in fulfilling these commitments

The energy landscape and trends of the OSCE area

Energy, environment and security overview

Part II: Energy diversification and renewable energy

Primary fuel mix diversification and international co-operation and energy security

Fossil fuel-fired power plants in the energy mix and their environmental impacts

Enhancing the contribution of renewable energy to sustainable development

Conclusions, recommendations, future steps

Next steps

1. Increase awareness, which enables populations to support their governments' actions
2. Facilitate deployment of the new technology that is needed through insuring the needed technology transfer and finance
3. Develop and disseminate comprehensive solutions through engaged dialogue at OSCE, UN and other international partners
4. Engage strongly with all stakeholders, particularly the private sector, to ensure that changes take place at the scale needed to meet the challenge.

THANK YOU!