Question: “What is the most burning and urgent single energy challenge in today’s world and how do you think governments and businesses should effectively address them?”

**BURNING HEAT OF THE SUN**


-Voltaire

In this paper, I will seek an answer to the following question: “What is the most burning and urgent single energy challenge in today’s world and how do you think governments and businesses should effectively address them?”

In today’s world, climate change is the major challenge for the energy sector. Particularly since the beginning of the 20th century, anthropogenical impacts to the world’s climate cause serious changes. Thus, this affects all of our lives in many dimensions as well as animal habitats and natural vegetation. Healing the world is a long process. Because of this very reason, I point out that the climate change is the most challenging issue of energy sector. It resembles the medical treatment process of a cancer patient; being late to diagnose means lesser lifetime for the patient.

While seeking a solution to this issue; firstly, a conceptual framework in terms of Rosecrance’s concept of “trading state” will be introduced. Secondly, after mentioning severity of climate change/global warming, energy sector’s share of global greenhouse gas emissions and major states’ action plans to cope with the climate change will be mentioned. Finally, some suggestions will be given about how governments and private sector should act in order to manage this issue.

Starting from mid-1980s, a new trading world has begun to influence global politics according to Rosecrance. Escalating economic interdependence and cooperation strategies drive states to transform into a “trading state”. In order to become a trading state, states should settle productive and trading energies of people free and encourage them to find markets for their goods. Leaving merchantalist controls behind and freeing private sector to create or find its own market is substantial but not sufficient. Governments should also encourage their private sectors to increase in trade and should consider private sector representatives as a third party in diplomatic relations in order to attain peace and prosperity both regionally and globally.

Considering energy trade’s internationality, terms of “trading state” are even more important. Energy sector’s representatives should be eager to develop cooperation with officials, either domestically or internationally, according to the good governance principles. By adopting the trading state concept politically and implementing transparency, accountability, participation and effectiveness between energy sector representatives and government officials would lead the way for working together on critical issues such as; energy trade, energy security and climate change.

As of 2015, we live in the hottest decade throughout the modern human history. In the last fifteen years of our lives, 10 hottest years have occurred according to the recorded history of world’s climate. Melting glaciers, rising sea levels, warmer sea surface and deforestation destroy animal habitats as well as human health. Unless we reduce greenhouse gas emissions, scientists indicate
that Earth may warm up to 9 °C by the end of the 21st century. Main risks of global warming could be divided by three categories. First, we are already observing direct impacts on human health such as; deadly heat waves, decrease in air quality and an increasing trend of infectious diseases, food and water-borne illnesses. Secondly, intense rainstorms and hurricanes, melting glaciers and rising of sea levels, increasing drought and wildfire cases are the another outcome of global warming. Lastly, damaged ecosystems affect more than one million species. Global warming does harm to all aspects of human and animal life, in short to the Mother Earth.

Approximately 80% of total greenhouse gas emissions are being generated by total world energy consumption. Fossil fuels are still the most dominant energy commodity and meet more than 80% of total energy demand. Fossil fuel combustion causes 90% of energy-related greenhouse gas emissions. Thus, carbon dioxide has the lion's share of emissions among methane and nitrous oxide. Global CO₂ emissions mostly comprise of power generation, transport, industry and buildings. Total CO₂ emissions have increased rapidly (more than 50%) over the past quarter-century. United States, China and India hold the half of the global CO₂ emissions. Between 1990 and 2014, China and India augmented their total CO₂ emissions almost three times and two-and-a-half times respectively. Particularly China's extreme economic growth, together with the growing economies of developing countries, have considerably enhanced the global energy demand.

International concern about global warming is not new, however, efficient policies are still immature. After the first establishment of Intergovernmental Panel on Climate Change; first remarkable advancement to cope with global warming was the establishment of United Nations Framework Convention on Climate Change, in 1994. Second, Kyoto Protocol was adopted in 1997 with the aim of reducing/stabilizing counterparty countries' greenhouse gas emissions. UNFCCC's principles were the main determinatives of Kyoto Protocol's structure. In 2005, Kyoto Protocol entered into force and subsequently a set of progressions such as; Cancun agreements and Doha Amendments have come after.

Major emitter states, such as; United States, China, India, European Union and Russia submitted their Intended Nationally Determined Contributions to UNFCCC ahead of 21st annual Conference of Parties. According to these scenarios, states aim to reduce considerable amount of their greenhouse gas emissions. United States pledges to reduce its emissions by 28% below 2005 levels by 2025. China aims to cut its emissions per unit of gross domestic product by 60% from 2005 levels and the third giant greenhouse gas emitter India’s aspiration is to reduce carbon-intensity emissions by 35% from 2005 levels, by 2030. On the other hand, governments have already adopted to limit global warming less than 2 °C. Together with the emerging international perception about necessity of taking concrete steps and as it can be seen above, governments’ contributions to cope with high rates of greenhouse gas emissions paint a promising picture.

Climate change offers essential changes in energy markets. Reducing greenhouse gas emissions is not an easy target. Therefore governments and energy sector should work together according to the terms of trading state and good governance principles. Renewable energy production costs are still high and fossil fuels still play the most attractive role. Governments should consider the pitfalls of energy sector’s clean energy transition and should implement some necessary financial and regulative concessions in order to assist them to transit into clean energy and/or to achieve low emission rates. On the other hand, energy companies should act well-
intentioned and should not hesitate to leave their short term goals and should be open the transformation in order to obtain environmental security.

Another obstacle to achieve climate change goals is the inequality between developed and developing countries. Developed countries have more efficient tools to implement policies for green energy transition. Market conditions of these countries are far more competitive and produce great extent of value-added goods. Allocated investments to research and development activities are beyond comparison. As not having these privileges, developing economies may resist to reduce greenhouse gas emissions. In addition, developing countries, justifiably, do not see themselves as the main causing agent. India’s minister of environment, Prakash Javadekar’s expressions were a fair example for the subjected argument: ‘’India is not part of the problem, but we want to be part of the solution.’’

In order to surpass this obstacle, multi-dimensional contacts; which contains governments, energy sector representatives and civil society, should be augmented. International entities, such as UNFCCC, should be more operational and other cooperation and dialog mechanisms should be implemented as well. Within the context of increasing global interdependency, mutual benefits between energy markets may solve fundamentals of bilateral tensions about climate change between developed and developing countries. On the one hand, governments should lead the way to reduce carbon emissions of energy companies by creating domestic and international occasions. Unless energy business remains profitable at low carbon emission rates, it seems tough to achieve greenhouse gas emission goals.

Climate change is a vital challenge for both energy sector and governments. As it is a global problem and affects all of our lives equally, civil society and enhanced social awareness plays a substantial role. Civil society entities should promote energy efficiency in daily life activities.

In conclusion, Earth is continuing to warm up by unnatural ways. During the period of past quarter-century, we damaged to the Mother Earth a lot, however this is not irreversible. Thus, all counterparts of the climate change action should act responsibly and take necessary measures as soon as possible. As Voltaire says; “Men argue, nature acts.”

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