How will the Middle East and Other Resource-Rich Countries Respond to the Global Carbon Neutral Movement?

Tatiana Mitrova*

Now, in the 21st century, humankind faces the threat of global climate change induced by anthropogenic GHG emissions. As concerns about this challenge are growing, there is increasing pressure from key stakeholders (population, representatives of civil society and NGOs, investors, etc.) on governments to ensure immediate action adequate to the scale of this threat.

To address this threat, the global community is undertaking efforts to reduce these emissions, focusing mostly on those of carbon dioxide (decarbonization), methane emissions are also a separate issue for the oil and gas industry.

Adopted internationally in 2015, the Paris Agreement aims to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels in order to improve adaptability to the consequences of climate change. The Agreement also aims to transition to low-carbon development. At the same time, the UN adopted Sustainable Development Goals, e.g., to take urgent action to combat climate change and its impacts (Goal 13) and to ensure access to affordable, reliable, sustainable, and modern energy for all (Goal 7).

As of today, 189 states have joined the Paris Agreement (including Russia, the USA rejoined the Agreement in February 2021).[1] All member countries are voluntarily committed to reducing net atmospheric emissions of CO_2 and other GHG. So far, more than 130 countries have stated their goals to achieve carbon neutrality (i.e., net-zero CO_2 emissions) by 2050.

Given this new environment, resource rich countries such as Russia, Saudi Arabia and other Gulf producers face new challenges. First of all, their key customers announce carbon neutrality and plans to reduce dramatically their consumption of hydrocarbons. For example, late in 2019, the European Union announced a comprehensive legislative initiative, the European Green Deal, which focuses on having all EU member states achieve 100% climate neutrality by 2050. On September 17, the European Commission presented its 2030 Climate Target Plan, in which the main objective is the reduction of greenhouse gas (GHG) emissions to at least 55% below 1990 levels by 2030[2] instead of the 40% proposed in 1990. In October 2020, the European Commission presented a new

* Professor and Research Director, Energy Center, SKOLKOVO Business School

1 https://unfccc.int/process/the-paris-agreement/status-of-ratification

2 https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=EU%20Commission%20Unveils%20EU%20Climate%20Target%20Plan%202030_Brussels%20USEU_European%20Union_09-26-2020#:~:text=On%20September%2017%2C%20as%20part,existing%20target%20of%2040%20percent.

strategy for methane emission reduction. The draft legislative policy called the Carbon Border Adjustment mechanism (CBAM), which will establish the carbon price for importing certain goods into Europe, was published in July 2021.

And it's not only EU: in September 2020, China announced its commitment to achieving carbon neutrality by 2060 and to pursuing green development.[3] In October 2020, Japan and South Korea made similar commitments to carbon neutrality by 2050. Canada in January 2021 also announced carbon neutrality by 2050.[4] The new US administration is also preparing ambitious Climate Plan and regards CBAM.

Many Paris Agreement signatories have either already launched CO_2 emissions trading systems (or some other forms of carbon pricing and taxing) or are set to do so in the near future. Many are introducing bans on the use of combustion engines, setting targets for the proportion of renewable energy sources in their national energy balance, or setting targets for the proportion of low-carbon fuels in their fuel suppliers' basket. As is clear, various decarbonization initiatives are gradually taking shape throughout the world.

Reducing GHG emissions is becoming an important objective not only for governments but also for businesses in all sectors and for the investors, who are starting to consider the climate risks of potential investments and are starting to withdraw from those that produce high emissions, in particular, the ultra-heavy oil, Arctic oil and tar sands. For instance, major global investors, such as BlackRock, the World Bank, JP Morgan, the Swedish pension fund Sjunde, the Norwegian Government Pension Fund Global, Goldman Sachs, Deutsche Bank, BNP Paribas, Societe Generale, the European Investment Bank, Allianz, and more, have all made statements saying as much and launched corresponding initiatives. Worldwide, thousands of corporate and private investors, whose joint asset control amounts to more than $14 trillion, have committed to divesting from the fossil fuel industry.

Given all this, the development prospects of the oil and gas producing countries, one of the noticeable GHG emitters that accounts for 12% of global GHG emissions, are directly dependent on their ability to decarbonize.

Decarbonization of the hydrocarbon producing economies is not an easy task: they are heavily dependent on oil and gas export revenues, many of them have "Dutch disease" and their economies (and energy sectors) are not really diversified well to be prepared for the Energy Transition. Energy sectors of the oil and gas producing countries in the MENA and CIS regions have two main options to diversify their revenues and to reducing their carbon intensity:

[3] China pledges to become carbon neutral by 2060. September 22, 2020. https://www.theguardian.com/environment/2020/sep/22/china-pledges-to-reach-carbon-neutrality-before-2060

[4] https://ihsmarkit.com/research-analysis/canada-upgrades-decarbonization-plan-.html

1. Decarbonization of oil and gas sectors. There are already plenty of methods known how to decarbonize molecules:
   - Operational methods
     - Operational efficiency improvement. Although the primary objective of operational excellence is lowering production costs, in many cases those initiatives also result in carbon footprint reductions. This is a primary short-term focus with the lowest, or even zero, additional financing.
     - Recycling, reuse, and the utilization of secondary energy sources. Oil and gas companies are becoming more active in using the circular carbon economy principles. They use and process CO_2, convert the emissions into products with a smaller carbon footprint, and minimize their carbon footprint by reusing materials and resources.
     - Energy efficiency. The efficient use of energy resources by oil and gas companies is one of the cheapest methods for reducing GHG emissions. IN the short-term majority of the oil and gas companies focus their decarbonization efforts on efficient energy and resource use. According to some of the companies that participated in this research via interviews, up to 40% of decarbonization opportunities are commercially viable even without additional financing.
   - Effective monetization of methane and APG. Methane leaks and APG flaring account for up to 45% of total industry emissions, which is why reducing them is a top priority, especially assuming that it is a relatively easy thing to do, for which companies have technologies available. This is also a primary focus of several syndicated initiatives, such as the Oil and Gas Climate Initiative (OGCI)[5], Global Methane Alliance[6] and Methane Guiding Principles[7], who work in conjunction with oil and gas companies. Initiatives like these often represent low, or even no, cost options for reducing GHG emissions.
   - Shifting to low carbon energy sources. More and more, oil and gas companies are focusing on renewable energy and electricity storage for their own operations, biofuels as a substitute for traditional feedstock, and also low-carbon fuels for the marine transportation of their products.
   - Corporate strategy methods of decarbonization
     - Optimized portfolios include divestments (removing unattractive, carbon-intensive assets), M&As allowing for resource quality improvement and diversification within the new less carbon-intensive business (first of all increasing their activities in natural gas and NGLs), restructuring, development of the petrochemical business, and creation of corporate venture capital funds focused on innovation in the fields of methane leakage

[5] https://oilandgasclimateinitiative.com/
[6] https://www.ccacoalition.org/en/activity/global-methane-alliance
[7] https://methaneguidingprinciples.org/

reduction, operational efficiency, CCUS, hydrogen technologies, and more. A few important emerging aspects of corporate decarbonization strategies include industrial cooperation on R&D, venture investments, and the piloting of deep decarbonization projects in order to increase the quality and speed of these new technologies' developments and to understand whether these tools may fit well into the longer-term plans of a company.

- Oil and gas companies are becoming increasingly interested in the petrochemical and chemical industry, as well. They see the potential for synergy through integration with oil refining systems, as well as potential for the monetization of available raw hydrocarbons, improvement of output marginality, and realization of decarbonization goals.

- Trading and offsetting carbon credits is taken with a caution, with a selective approach taken to the origin and verification of credits or offsets. "Reduce what you can, offset the rest" emerges as a prevailing approach.

- Increasingly, oil and gas companies are looking into projects focused on nature-based carbon sinks, albeit with apprehension in the selection of the project and of the project partners due to the inherent difficulty of measuring the impact of nature-based carbon sinks, as well as the negative publicity associated with not yet matured projects.

- Finally, most of the oil and gas producers have deep decarbonization visions and strategies involving carbon capture, utilization, and storage (CCUS) projects and the use of hydrogen as fuel. There are Middle Eastern and Russian companies with projects in various stages of construction and operation. These projects currently rely on extensive government subsidies and would not be feasible without such support. However, the total capacity of operating assets is far below the forecast demand for decarbonization methods. Today's operating CCUS projects have an annual CO_2 capacity of just 10 Mt. By 2050, the annual volume of CO_2 capture and storage in volumetric equivalent may reach 4,6GtCO_2 per year, which is comparable with the scale of today's global oil industry annual production. It is representing a new, major diversification opportunity for the oil and gas industry.

2. Diversification of the fuel mix and development of RES supports diversification of the whole economy, thus providing for financial sustainability of the resource-rich countries and reduction of their carbon footprint. All economies in the Middle East (which enjoy high level of insulation) as well as Russia (which has the largest wind potential in the world) are keen to develop their domestic renewable sectors. They create special programs and stimulus in order to incentivize such projects, and indeed there is a visible progress made in this direction.

Summing up, movement to net zero is irreversible and it creates an existential threat for the resource-rich countries such as Russia or Middle-Eastern oil and gas producing economies. Nevertheless, this situation is not hopeless, there are different opportunities for these countries to adapt to the new reality and to create new drivers for their economic growth and prosperity.

Writer's Profile

Tatiana Mitrova

Senior Research Fellow in the Oxford Institute for Energy Studies (OIES), Scientific advisor at the Energy Research Institute of the Russian Academy of Sciences (ERI RAS), Visiting Fellow at the Center on Global Energy Policy at Columbia University, Distinguished Research Fellow at Institute of Energy Economics, Japan (IEEJ). Leader of the annual "Global and Russian Energy Outlook up to 2040" project. Independent Director at Schlumberger Limited and NOVATEK.

- Twenty-five years of experience in dealing with global and FSU energy markets development. Profound knowledge of energy transition - new energy technologies, market organization, corporate strategies and geopolitical consequences.
- Seven years as Independent Director in international public energy companies.
- Strong focus on ESG and corporate climate strategies.

Head of Supervisory Board of "Women in Energy in Russia" Association. Dr. Mitrova is a graduate of Moscow State University's Economics Department. Visiting Professor at the Institut d'Etudes Politiques de Paris (Sciences Po) Paris School of International Affairs.