

At the 46th Oxford Energy Seminar

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From 7 to 9 September, I had the opportunity to participate in the 46th Oxford Energy Seminar organized by the globally renowned Oxford Institute for Energy Studies (OIES). The Seminar is widely recognized as one of the most prestigious forums in the international energy community, bringing together representatives from OPEC member countries, executives of major international oil companies, policymakers, researchers, and energy industry stakeholders from around the world. Over a period of ten days, participants engage in intensive lectures and discussions on a broad spectrum of energy issues. The faculty and speakers include senior ministers from major oil-producing countries, chief executives of leading energy companies, and distinguished experts in the field. Discussions are conducted under the Chatham House Rule, encouraging frank and substantive exchanges of views among participants. For the author, the Seminar provided a valuable opportunity to gain important insights into rapidly evolving developments in the global energy landscape. Although I was able to attend only the first three days of the program, the discussions offered numerous lessons. In the following pages, I would like to summarize several issues that left a particularly strong impression on me.

The specific themes discussed at the Seminar covered a wide range of topics. Nevertheless, a common concern underlying many of the sessions was the question of how global energy markets may evolve under the impact of the ongoing Strait of Hormuz crisis, what key drivers will shape these changes, and how major countries and energy companies should respond to the resulting challenges. Within this broader framework, various perspectives were presented and debated regarding the energy policies and strategies of major powers, including the United States, China, Russia, and Japan. Furthermore, viewpoints from Middle Eastern oil-producing countries as well as international energy companies added depth and diversity to the discussions, enriching the overall analysis.

With respect to the Strait of Hormuz crisis, the Seminar took place amid escalating exchanges of attacks between the United States and Iran that had begun in late August. Against this backdrop, crude oil prices surged, approaching the psychological threshold of US\$100 per barrel. Unsurprisingly, energy security emerged as one of the central concerns throughout the Seminar. Not only did the issue feature prominently in formal sessions, but it also dominated informal conversations among participants. In both settings, considerable attention was devoted to the future trajectory of the crisis, the implications of rising energy prices and supply insecurity, and the perspectives of both consuming and producing

countries on how best to address these challenges.

One issue that I found particularly intriguing was the argument that efforts to strengthen energy security through energy transition policies may themselves generate new energy security risks. It is now widely recognized that accelerating the deployment of clean energy can contribute to energy security by reducing dependence on fossil fuels, lowering reliance on Middle Eastern oil supplies, and enhancing domestic energy self-sufficiency. At the same time, however, an important concern has emerged: namely, that such a transition may further increase the influence of China, which currently holds a dominant position in many clean energy supply chains, thereby increasing dependence on Chinese production capabilities and technologies.

China's response to the Strait of Hormuz crisis was itself a matter of considerable interest. It has been argued that a substantial reduction in China's oil imports helped alleviate pressure on global oil markets and contributed to moderating the degree of market tightness. As a result, some observers have begun to suggest that China could increasingly play the role of a “swing importer” in the international oil market. Moreover, if the transition toward clean energy intended to strengthen energy security simultaneously reinforces China's dominance in clean energy industries, then the Strait of Hormuz crisis may, paradoxically, enhance China's influence within the international energy system. In this sense, the prominence of China in many of the discussions constituted one of the defining characteristics of this year's Seminar.

Equally noteworthy, however, was the presentation of another perspective regarding the relationship between energy transition and energy security. This perspective focused not on geopolitical dependency, but rather on the systemic consequences of large-scale energy transition. The first aspect concerned renewable energy, which is expected to play a crucial role in the transition toward cleaner energy systems. An important question raised during the Seminar was whether the increasing share of renewable energy could contribute to greater instability in fossil fuel markets and result in higher price volatility. The expansion of renewable energy tends, in aggregate, to suppress demand for fossil fuels. At the same time, renewable sources such as solar and wind power are characterized by intermittent supplies. Consequently, fluctuations in renewable generation may lead to substantial short-term variations in demand for fossil fuels, widening the amplitude of price movements. This perspective suggests that the energy transition could unintentionally increase market volatility during the transition period.

Furthermore, uncertainty regarding the future trajectory of fossil fuel demand may complicate investment decisions. When demand becomes increasingly difficult to predict and is expected to decline over the longer term, energy companies may become more hesitant to undertake the investments necessary to ensure stable supply. The combined effects of fluctuating demand, investment uncertainty,

and structural market transformation could amplify price volatility in fossil fuel markets. During what is likely to be a prolonged transition period, such developments may introduce new sources of instability into the global energy security environment.

A second issue concerned the energy security implications of increasing electrification. Energy transition, by its very nature, promotes greater electrification across the economy. Under ambitious decarbonization pathways, including those aimed at achieving carbon neutrality, electricity could account for nearly half of final energy consumption. Historically, such a high level of dependence on a single energy form has been exceedingly rare. Notable exceptions include the heavy dependence on coal during the early twentieth century and the extensive reliance on oil prior to the first oil crisis of 1973. The higher the degree of dependence on a particular energy source, the more critical the challenge of ensuring its secure and reliable supply becomes. It was precisely this reality that made the first oil crisis a truly global disruption.

The challenges associated with a highly electrified economy differ in important respects from those associated with oil dependence. Whereas disruptions in the international oil market are transmitted globally through highly integrated trade networks, disruptions within electricity systems primarily affect consumers, industries, and economic activities connected to those specific systems. Ensuring reliability therefore requires not only sufficient generating capacity but also resilience throughout the entire supply chain. Around the world, planners and policymakers are already confronting increasingly complex challenges in maintaining adequate power supplies while accommodating growing demand. These challenges are further compounded by the increasing frequency and severity of extreme weather events, natural disasters, and cybersecurity threats. Ensuring reliable electricity supply in a world characterized by extensive electrification is likely to become one of the most important policy issues of the coming decades. This challenge is becoming even more significant as the ongoing “new information revolution,” including the expansion of artificial intelligence and digital infrastructure, drives rapid growth in electricity demand.

The Strait of Hormuz crisis is fundamentally an energy security challenge rooted in geopolitical risk. Likewise, many contemporary concerns related to clean energy supply chains and critical minerals, including rare earth elements, are closely associated with geopolitical considerations. The two issues discussed above, however, suggest that energy security challenges may increasingly arise not only from geopolitics but also from systemic vulnerabilities embedded within the energy transition itself. Although these vulnerabilities are not entirely separate from geopolitical developments, they represent a distinct category of risk. If geopolitical tensions remain elevated while systemic vulnerabilities within energy markets continue to intensify, energy security will become an increasingly complex and difficult policy challenge. Under such circumstances, ensuring reliable access to energy at affordable prices will be

more important than ever for sustaining economic prosperity and social well-being. Efforts to strengthen energy security can therefore no longer be regarded as a matter of future concern. Rather, they constitute an urgent and immediate priority for governments, industries, and societies alike.

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