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Contribution of Space Activities to Solving Global Societal Issues (2)

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SPACE TECHNOLOGY AND APPLICATIONS TO REVOLUTIONIZE THE ENERGY SECTOR: LESSONS LEARNED FROM INTERNATIONAL MANAGEMENT

Abstract

The European energy sector is undergoing a revolution and transition to the Energy Union, in which energy, and especially electricity, plays a critical role in addressing societal challenges. The changing climate and urbanization require Clean Energy. Meanwhile, the growth in energy consumption due to new energy consumers and increasingly more usage creates scarcity and competition for resources. Due to the growth of renewables and reduction of fossil sources, efficiency matters more than ever. Renewable energy seems to be the answer to "clean energy", yet issues like energy storage or backup capacities remain to be resolved. Meanwhile, digitalization of the energy supply chain creates an additional burden, on the sector to deliver better services while maintaining security proof systems.

The energy sector traditionally has a strong dependency on natural conditions. While predictability is still suboptimal, information derived from space technology and applications can enable the sector to better forecast the energy; storage; and risk preparedness; - needs by mixing multiple datasets. For example, fullness of the dams could be predicted from snow data. This would enable practitioners to plan strategies for seamless energy preparedness. For efficiency it is even clearer: providing more precise location data, definitely can improve the efficiency of oil and gas drilling or determine the optimal locations for wind or solar farms.

The European Space sector can therefore serve, not only as an enabler but as a game changer to revolutionize the European energy sector, by providing economic benefits through direct savings and value-creation. The challenge is to better interconnect the two sectors and the professional communities by data sharing enabling interdisciplinary knowledge. For example, earth observation data available from Copernicus under the EU program via ESA services is freely available and usable. Up till now, the energy sector lacked demand for it. However, triggers will require the Regulators to learn and adapt to the new trends, as they have done for renewables. The sooner, the more competitive edge Europe will gain.

The European Union had some seventy years to build internal markets for different countries. Could the same be done for the interconnection for different sectors? This study analyses the lessons learned from international management and transfers them for into guidelines to inspire policy and decision makers to further stimulate cross-sectoral synergies between the space and energy sector.