The Future of Petrochemicals

Petrochemicals – components derived from oil and gas that are used in all sorts of daily products such as plastics, fertilisers, packaging, clothing, digital devices, medical equipment, detergents and tyres – are becoming the largest drivers of global oil demand, as opposed to cars, airplanes and trucks. This session, hosted by the International Energy Agency (IEA) at the WSDS 2019, will take a deep dive in to the petrochemical sector globally and in India. It will investigate future demand trends for petrochemicals and their implications for the energy system, as well as avenues for meeting growing demand while helping achieve the UN sustainability goals.

In 2018, the International Energy Agency published a report on *The Future of Petrochemicals*, which forms a part of a new IEA series shining a light on "blind spots" of the global energy system.The report is among the most comprehensive reviews of the global petrochemicals sector, and follows other reports in the series, including the impact of air conditioners on electricity demand, the impact of trucking on oil demand, or the role of modern bioenergy in the renewables sector.

Demand for plastics – the key driver for petrochemicals from an energy perspective – has outpaced all other bulk materials (such as steel, aluminium, or cement), nearly doubling since 2000. The dynamism of the petrochemical industry is also driving new trends around the world. After decades of stagnation and decline, the United States has re-emerged as a low-cost location for chemicals production thanks to the shale gas revolution, and is now home to around 40% of the global ethane-based petrochemical production capacity. Meanwhile, the Middle East remains the lowest-cost centre for many key petrochemicals, with a host of new projects announced across the region.

Petrochemical products provide substantial benefits to society, including a growing number of applications in various cutting-edge, clean technologies critical to sustainable energy systems. However, the production, use and disposal of petrochemical-derived products present a variety of climate, air quality and water pollution challenges that need to be addressed. While substantial increases in recycling and efforts to curb single-use plastics are underway, especially in Europe, Japan and Korea, the impact these efforts can have on demand for petrochemicals is far outweighed by sharply increasing plastic consumption in emerging economies.

This session on the future of petrochemicals at the WSDS 2019 will discuss these dynamics, particularly in the context of India. The session will also focus on achievable pathways to reduce environmental impacts of petrochemicals in line with the UN Sustainable Development Goals.