Operating in over 70 countries worldwide, Shell is a global group of energy and petrochemical companies. The company aims to maintain their position as a ‘leader in the oil and gas industry, while helping to meet global energy demand in a responsible way.’ Innovation and advanced technologies play a crucial role in the energy transition from oil and gas to alternative energy sources, so research and development (R&D) is a key activity for Shell. In 2015, the company invested $1.1 billion in R&D. R&D activities aim to address the need for more energy while reducing the environmental impact.

Shell currently uses their own materials data (both from experiments and simulations), and integrates it with some purchased third party databases for materials simulations. Looking forward, Dr. Sanyal noted that Shell do foresee using open-access databases in future. In the medium term, NOMAD could improve the way in which users can access/use/exploit materials data by providing user interfaces equipped with search engines to enable access/navigation.

In order to better understand and target industry needs in terms of data and analytics tools, Dr. Sanyal recommended establishing a point of contact (POC) within both Shell and NOMAD to enable more frequent and in-depth exchange.

Stages of low-carbon research & development investment

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