

The role of sectoral integration in the clean energy transition

Capital Suits 1 & 2, World Future Energy Summit, ADNEC, Abu Dhabi, 14 January 2019, 14.00 – 17.00

Concept Note

The European Union has set achieving ambitious targets for the greenhouse gas emission reductions, renewables and energy efficiency for 2030 and 2050 in line with the Paris Agreement. In this context, the European Union has agreed on a new regulatory framework to support its clean energy transition for the period from 2020 to 2030 and has communicated its ambition to create a climate neutral economy by 2050. The sectoral integration of the different energy producing and end-use sectors is central within both the regulatory framework for 2030 as well as Europe's long-term decarbonisation strategy.

Sectoral integration refers to coupling the energy consuming sectors - buildings (heating and cooling), transport, and industry - with the power producing sector through smart infrastructure, increasing the penetration of renewable energy and thus decarbonising the economy. Adopting an integrated approach makes the energy transition towards a low-carbon economy faster and more cost-effective. Renewable energy has already transformed the electricity sector and will continue to do so. However, emissions in the transport, domestic and industrial sectors remain stubbornly high. Finding ways to use green electricity in these sectors is important and could ease the integration of ever larger amounts of variable renewable electricity. Smart infrastructures, power to heat, power to gas and power to mobility (power-to-x) are all elements of sector coupling making the energy system more efficient.

Sectoral integration is manifested in a number of concrete developments. First, large scale electrification of the most carbon intensive energy uses can significantly contribute to decarbonising final energy consumption in buildings, transport and for heating applications in the industry in a cost-efficient manner. Second, smart electricity and smart thermal grids at both local and European level enable flexibility and the most cost-effective use and form of renewable energy across different sectors, applications, time and space. Third, digitalisation is used to enhance the integration of variable and local renewables by enabling a better match between supply and demand according to the specific climate conditions.

The aim of the EU Energy Day is to discuss how a more integrated approach towards the clean energy transition could be adopted on a global scale, including the countries belonging to the GCC region. Topics to be discussed are the role that cheap renewable power can play in connecting the electricity sector with the transport and heating and cooling sectors, the role that other energy carriers - like hydrogen and power-to-gas - can play as key enablers for the decarbonising the industry and transport sector, and the role of digitalisation and smart infrastructures.

The EU Energy Day programme will include policy experts from both the EU and GCC region to share experiences and visions about the policy framework currently in place as well as potential recommendations to further improve it, as well as experts from industry, academia and other stakeholder groups to investigate technologies- and sectors-specific experiences and solutions related to the topic of sectoral integration.