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**Title- Energy market reforms, R&D expenditures and innovation and challenges:
Turkish experience**

Electricity sector has been in a transformation process in almost three decades. The major transformation started with the liberalization of electricity sector in the late 80s, followed by increasing diffusion of renewable generation technologies, smart-grid applications and consumer focused technologies (electric vehicles, storage etc.). Moreover, environmental degradation, pollution and supply-security concerns limit the available policy options and policy-makers and regulatory authorities have to find new ways to solve these problems.

In this respect, new technologies create opportunities for the sector and consumers. On the other hand, these also challenge the operation of networks, business models of utilities and regulatory approaches. Therefore, it is vital to create a favorable environment for new innovations that can help to transform into a sustainable, environment-friendly sector while assuring the effective functioning of the markets, enhancing the stability of the network with minimum intervention and refraining from wrong signals to the investors.

R&D and innovation can play a significant role to achieve these goals; however, research show that incentive mechanisms are required to support innovation and R&D expenditures. How to design these mechanisms is another challenge and these is no silver-bullet that can solve all the problems. Therefore, we are going to discuss Turkey's experience in electricity market liberalization and incentive mechanisms to understand the regulatory challenges in promoting innovation in electricity markets.