# Title of presentation for 2021 IAEE Virtual Conference: **Net Zero by 2050: a Pathway for the Electricity Sector**

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# Abstract

The presentation provides highlights of the pathway for the electricity sector from the International Energy Agency (IEA) report “Net Zero by 2050: a Roadmap for the Global Energy Sector”. Released on 18 May 2021, it is the first global comprehensive study of how to transition to a net zero energy system by 2050 while ensuring stable and affordable energy supplies, providing universal energy access, and enabling robust economic growth. The report was motivated by the commitments from governments and companies to reach net zero emissions – which cover around 70% of global GDP and CO2 emissions as of May 2021 – and lays out over 400 milestones for the energy sector on the path to net zero emissions by 2050. The report aims to support and inform the discussions at the 26th Conference of the Parties (COP26) of the United Nations Framework Convention on Climate Change, the focal point for strengthening global ambitions and action on climate by building on the foundations of the 2015 Paris Agreement. In the IEA Net-Zero Emissions Scenario (NZE), the electricity sector is the first sector to reach net zero emissions in 2040, taking advantage of a wide set of low-emissions technologies on the market, including solar PV, onshore and offshore wind power, hydropower, bioenergy and other renewables, as well as nuclear power. Innovation will also be critical to achieving net zero emissions, including the use of hydrogen-based fuels and carbon capture, utilization and storage (CCUS) in the electricity sector. A fully decarbonized electricity sector calls for phasing out the use of unabated coal and oil by 2040 and sharply reducing the use of unabated natural gas-fired power plants in the long term. Maintaining electricity security throughout these transitions calls for scaling up investment in clean energy technologies and electricity networks, as well as shifting to new sources of power system flexibility, relying more heavily on demand response and energy storage systems.