

Reaching Net Zero with Nuclear Energy

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ABSTRACT

The number of countries that have pledged to achieve net-zero emissions has grown rapidly over the last year and now covers around 70% of global carbon emissions. However, the pledges made to date are still not enough to reach net zero emissions by 2050. The International Energy Agency (IEA) has published a roadmap towards net zero by 2050 which calls for huge scale ups of wind and solar this decade, with hydro and nuclear energy providing a foundation for the transition to low-carbon electricity. The IEA forecasts that new nuclear capacity addition will reach 30 gigawatts per year in the early 2030s and that the amount of energy supplied by nuclear power will increase by 40% by 2030 and double by 2050. The goals set by the World Nuclear Association (WNA) are even more aggressive. The WNA Harmony Programme calls for tripling nuclear generation by 2050 to provide 25% of global electricity in order to meet the growing demand for sustainable energy.

What will it take for nuclear energy to meet these targets and help the world achieve its net zero goals? This presentation will cover the technology, business model, finance, regulatory, and stakeholder factors needed to rapidly expand nuclear energy to the levels forecasted. New technology, such as advanced and small modular reactors, will be discussed, along with the necessary infrastructure issues for successful deployment.