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ABSTRACT

How do energy transitions deviate from historical technology trends? Insights from a technical CO₂ reduction potential study on the Japanese building sector

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The energy transition is a systemic change in our energy systems to realise the sustainability of society. This presentation takes the Japanese building sector as an example to discuss the question “how do energy transitions deviate from historical technology trends?” The Japanese building sector accounted for 36% of the national carbon dioxide emission in the year 2013. The target of the reduction in the sector for the year 2030 is about 40%. The presenter estimated the diffusion of key technologies and the resultant reduction in carbon dioxide emission by using a bottom-up engineering model to evaluate the feasibility of the reduction target. Based on the result and insights in the Japanese building sector, the presenter discusses the challenges to realise energy transitions for sustainability.