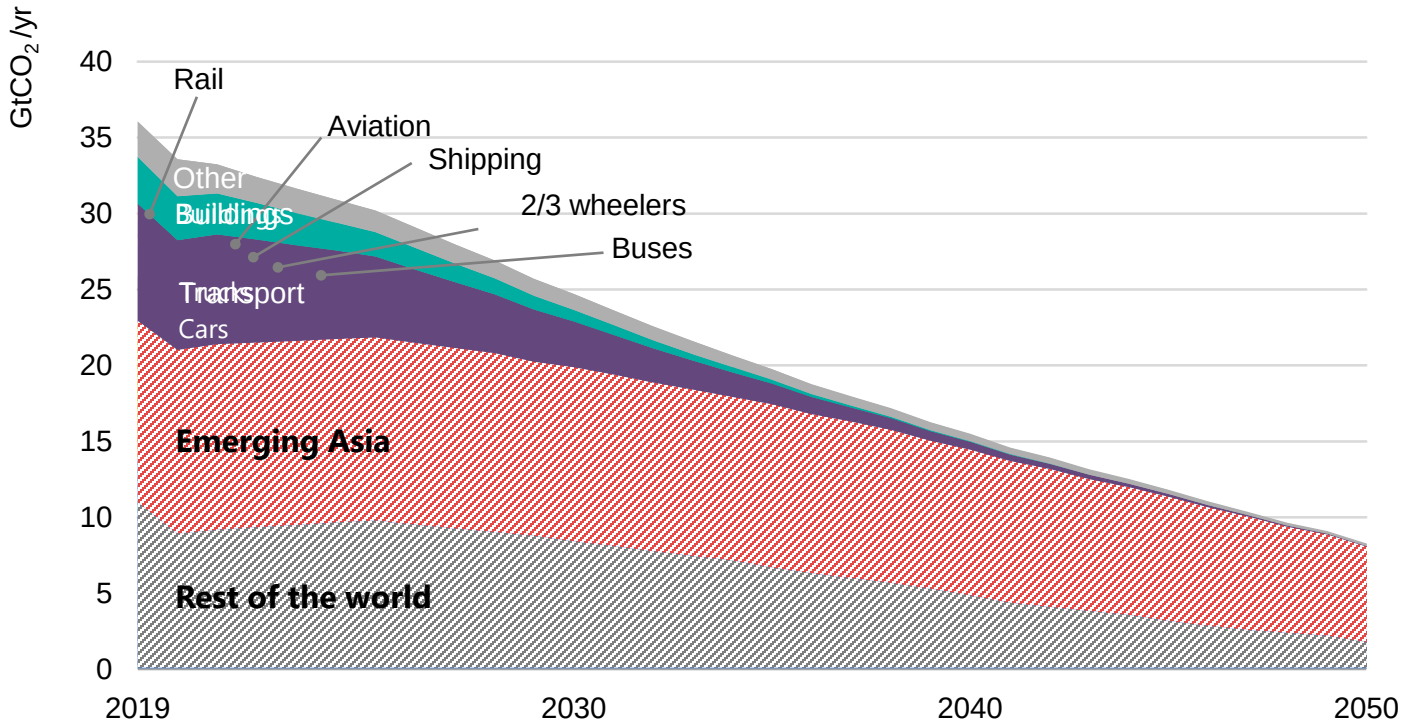
International Energy Agency

Energy Technology Perspectives 2020

Dr. Timur Gül, Head Energy Technology Policy Division, IEA

20th Annual IEA-IETA-EPRI Workshop on Greenhouse Gas Emission Trading, 23 October 2020

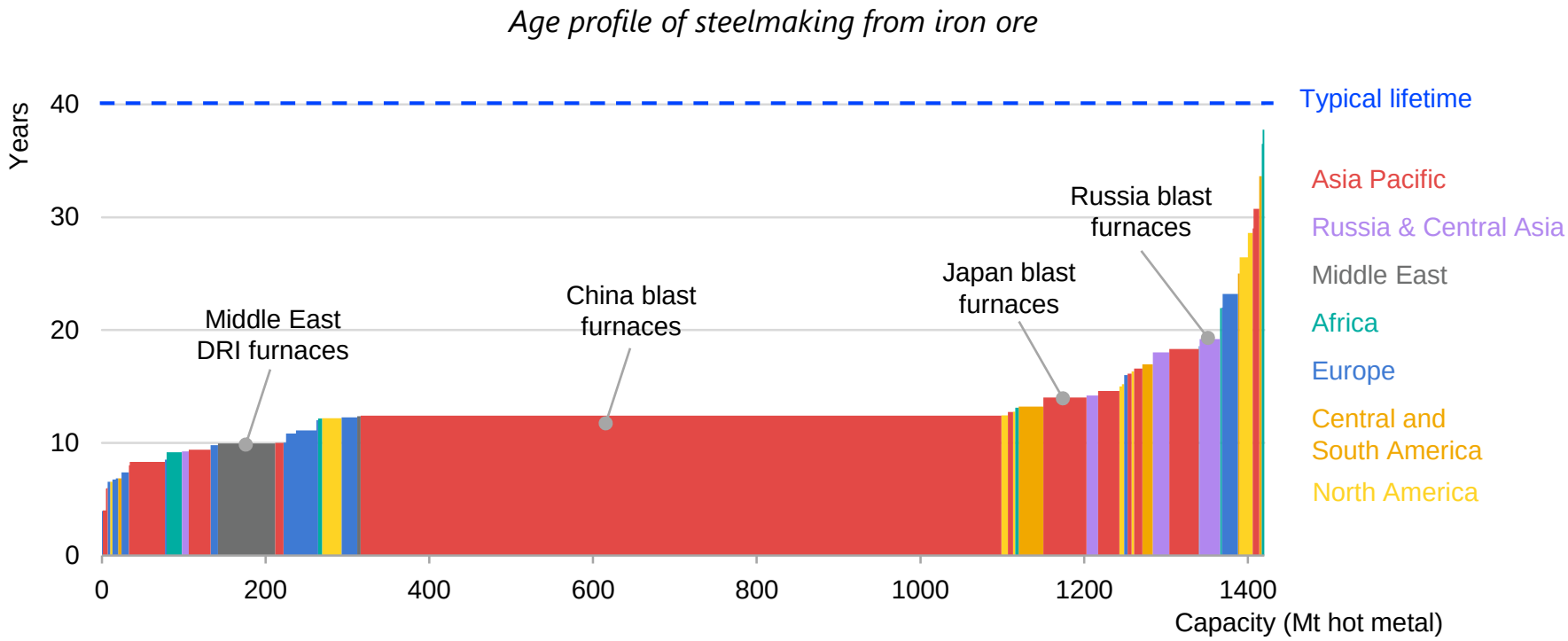
Our existing energy infrastructure is too big to ignore



Reaching net-zero emissions requires tackling emissions from long-lived assets in power generation and heavy-industries. In emerging Asia, 80% of existing coal power capacity was built in the past 20 years.

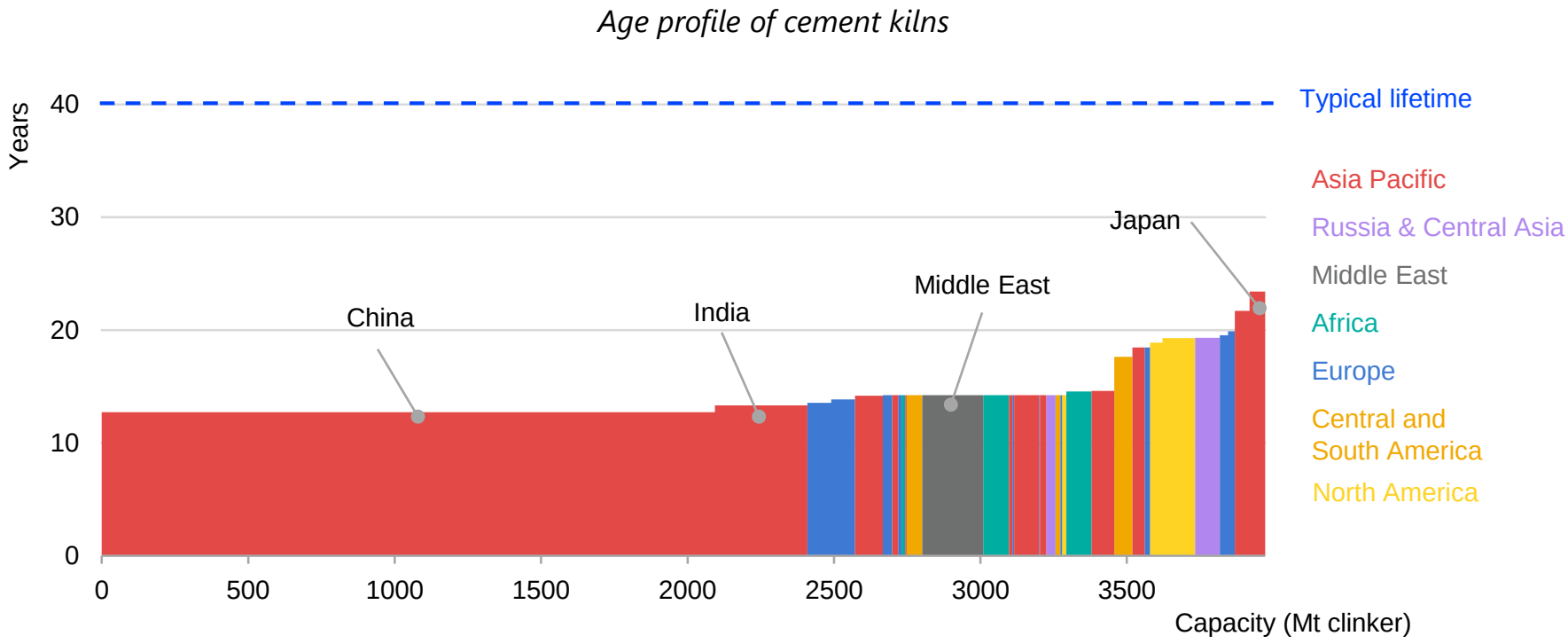
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Many industry assets are still young – iron and steel production



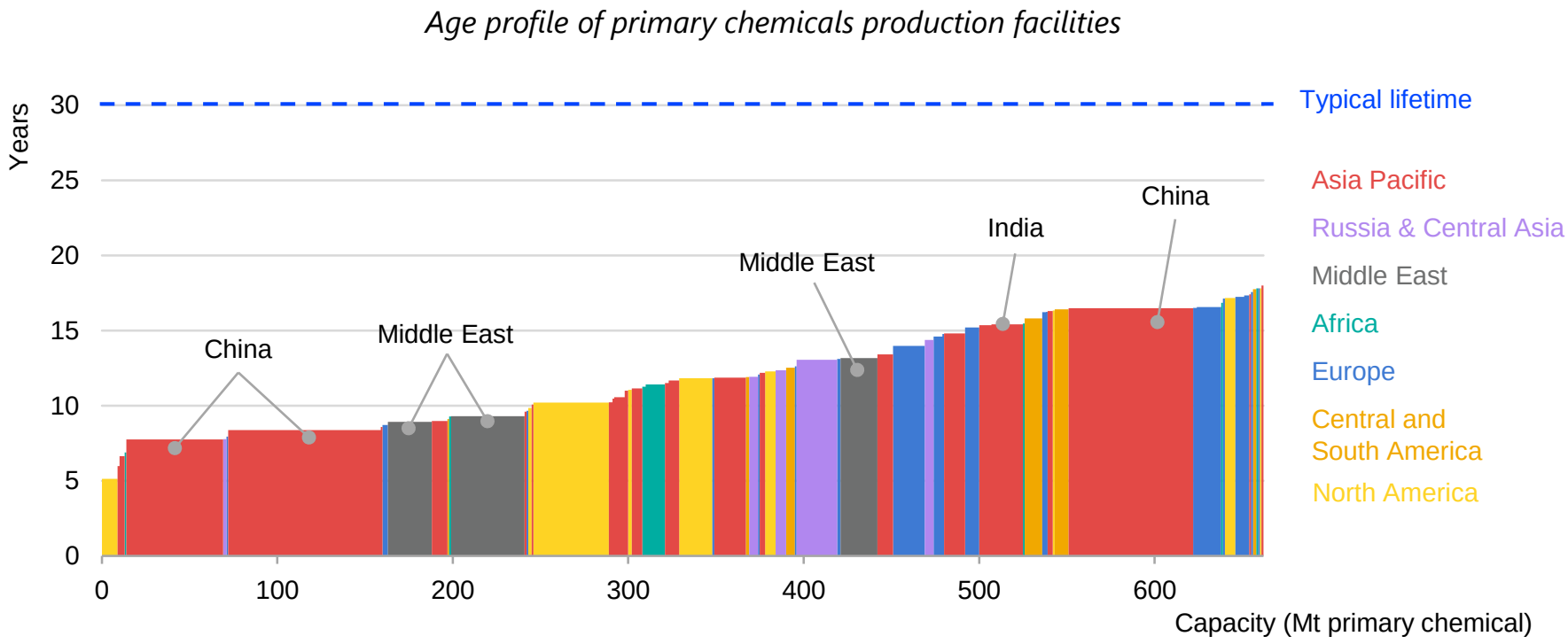
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Many industry assets are still young – cement production



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Many industry assets are still young – chemicals production

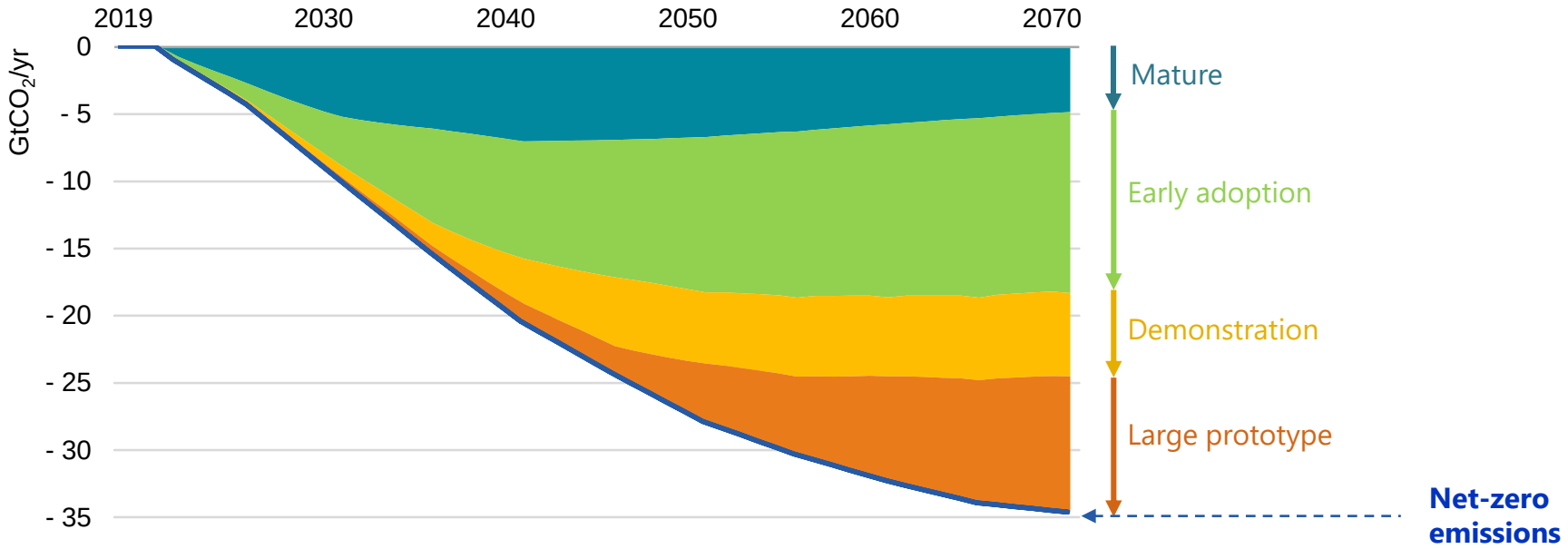


China's middling-to-young production capacity accounts for upwards of 50% of the global total in key industrial sub-sectors. India and the Middle East are also key regions.

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Net-zero emissions is not viable without a lot more innovation

Global CO_2 emissions reductions in the Sustainable Development Scenario, relative to baseline trends

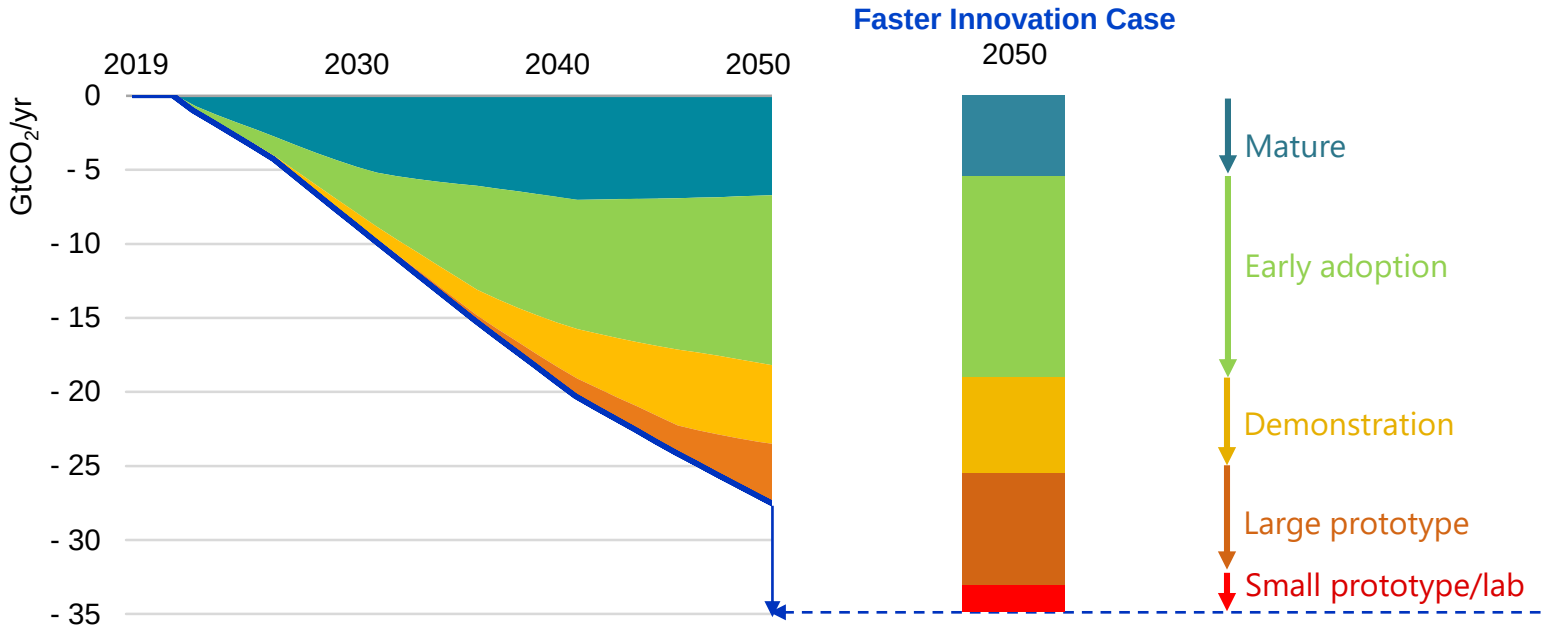


Technologies at prototype or demonstration stage today contribute almost 35% of the emissions reductions to 2070; a further 40% comes from technologies that are at early stages of adoption.

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Net-zero emissions is not viable without a lot more innovation

Global CO_2 emissions reductions in the Sustainable Development Scenario, relative to baseline trends



Rapidly commercialising today's newest & most promising technologies would help save enough CO_2 emissions to reach net-zero by 2050. Lack of policy support could delay achieving net-zero emissions.

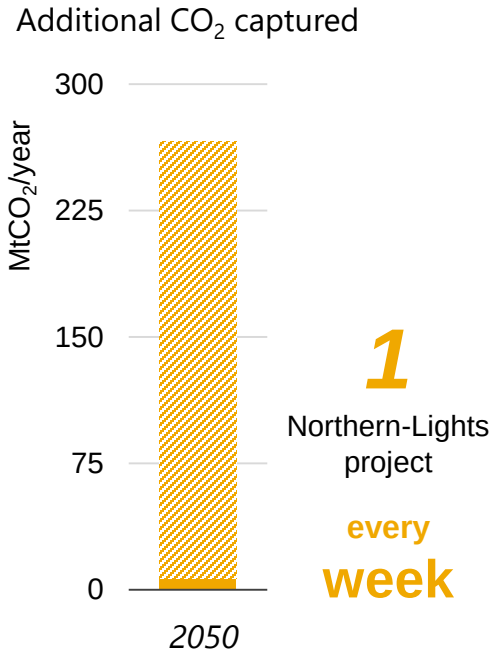
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Net zero requires a major push to build clean energy infrastructure

Selected indicators to reach net-zero emissions by 2050 through technology



Northern-Lights CCS plant



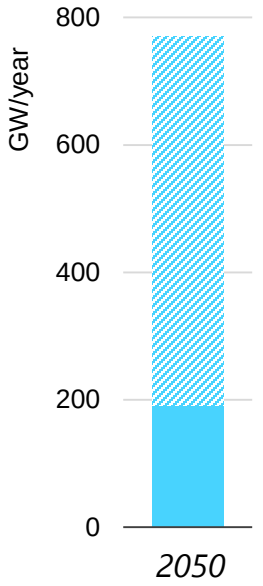
Reaching net-zero emissions by 2050 would require a rollout of clean energy technologies & enabling infrastructure at unprecedented scale. Significant changes to consumer behaviour can moderate – but not eliminate – the needs.

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Net zero requires a major push to build clean energy infrastructure

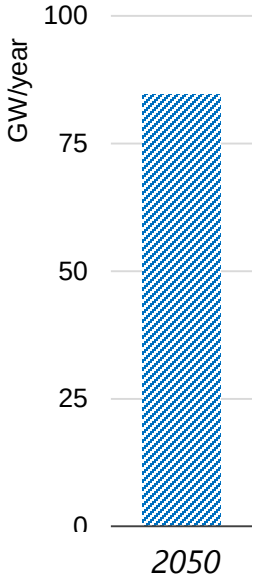
Selected indicators to reach net-zero emissions by 2050 through technology

Renewable capacity additions



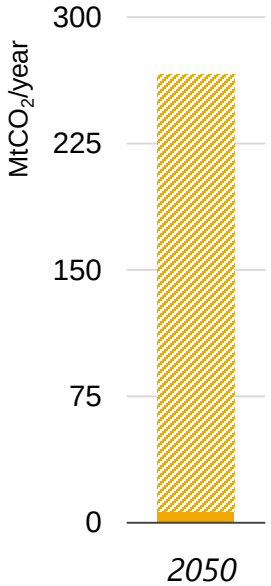
The largest **solar park** every **2 days**

Electrolyser capacity additions



The largest **electrolyser** in operation today every **hour**

Additional CO_2 captured



1 Northern-Lights project every **week**

Reaching net-zero emissions by 2050 would require a roll out of clean energy technologies & enabling infrastructure at unprecedented scale. Significant changes to consumer behaviour can moderate – but not eliminate – the needs.

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