What do climate neutrality goals mean for national LTES?

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Chair IEA ETSAP TCP Executive Committee
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3rd International Forum on Long–term Energy Scenarios for the Clean Energy Transition

June 8-10 2021

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

MaREI
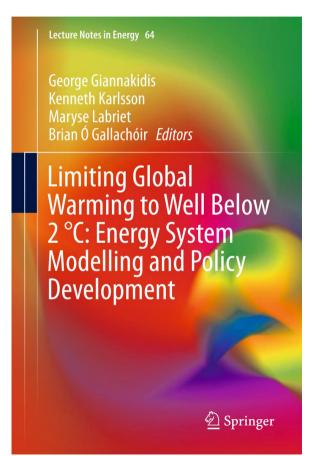Energy · Climate · Marine

IEA-ETSAP Book 2018

- explores feasibility of a well-below-2°C world
- energy system pathways and technology innovations
- behaviour change and the macro-economic impacts
- chapters directly related to the NDCs

www.springer.com/gp/book/9783319744230

Lecture Notes in Energy 64

George Giannakidis
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Limiting Global Warming to Well Below 2 °C: Energy System Modelling and Policy Development

Springer

Climate Ambition – *not just dependent on climate neutrality end point*
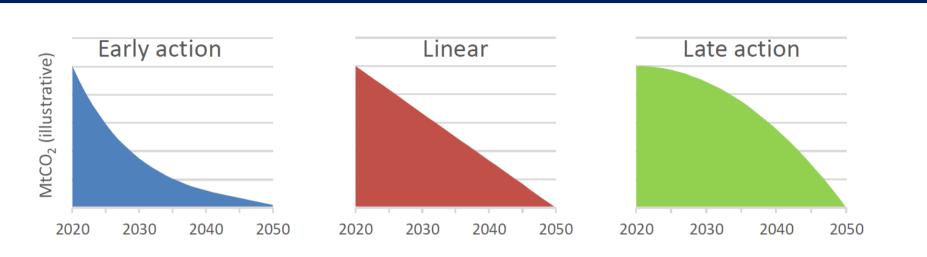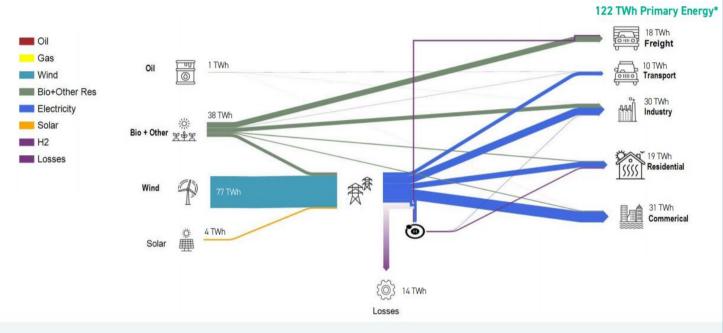

Figure 1: Illustrative decarbonisation trajectories to 2050: each pathway above reaches the same 2050 goal of net-zero CO2 emissions, but in the Late Action pathway, cumulative emissions are double that of the Early Action pathway, leading to double the warming impact.

2050| A Net Zero Energy System by 2050 is possible for Ireland with manageable investment…but it will be hard

122 TWh Primary Energy*

Legend:
- Oil
- Gas
- Wind
- Bio+Other Res
- Electricity
- Solar
- H2
- Losses

Oil — 1 TWh
Bio + Other — 38 TWh
Wind — 77 TWh
Solar — 4 TWh
Losses — 14 TWh

- 18 TWh Freight
- 10 TWh Transport
- 30 TWh Industry
- 19 TWh Residential
- 31 TWh Commercial

There are no regret options | On the road to 2050, no regret options are Energy Efficiency, Electrification and Deployment of Renewables

Investments are manageable | The annual incremental investment over the current level of climate ambition of an 80% reduction in CO2 is approximately 1.4% of GDP

Public and Political support is key | Without societal and political support, a Net Zero energy system cannot be achieved. Engagement and transparency at an early stage with the public is key. Co-benefits must be ensured.

https://www.marei.ie/wp-content/uploads/2021/03/Our-Climate-Neutral-Future-Zero-by-50-Skillnet-Report-March-2021-Final-2.pdf

Primary Energy*
22 MWh/capita

Energy Emissions
0 (-2) Mt

Renewable Energy
100%

Renewable Electricity
+100%

Import Dependence
5%