

Ireland's Latest Energy Statistics & Projections

SEAI Energy Show 2024

Lee Carroll
Emma Lynch

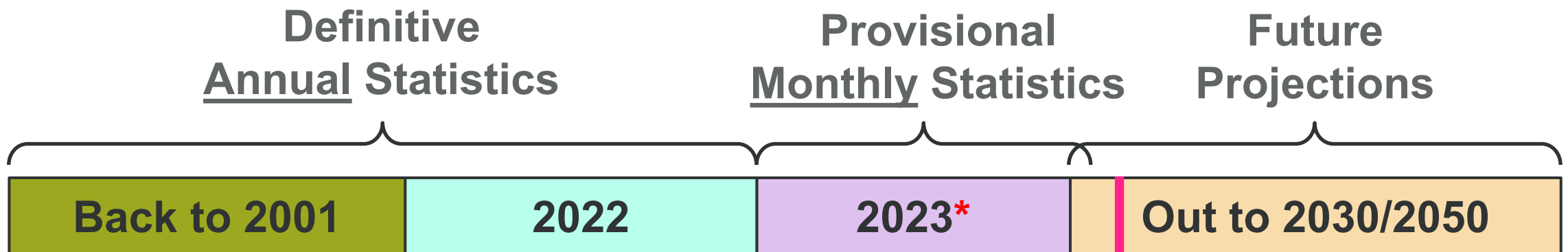
Energy Statistics Team, SEAI
Energy Modeling Team, SEAI

21-MAR-2024

Energy Statistics & Projections – What’s the Difference?!

The *Sustainable Energy Act* (2002) :

- National Energy Statistics (**Measured Past**) → Lee & Co.
- National Energy Projections (**Modelled Future**) → Emma & Co.



*Definitive Annual Data for 2023 in MAY & SEP-2024

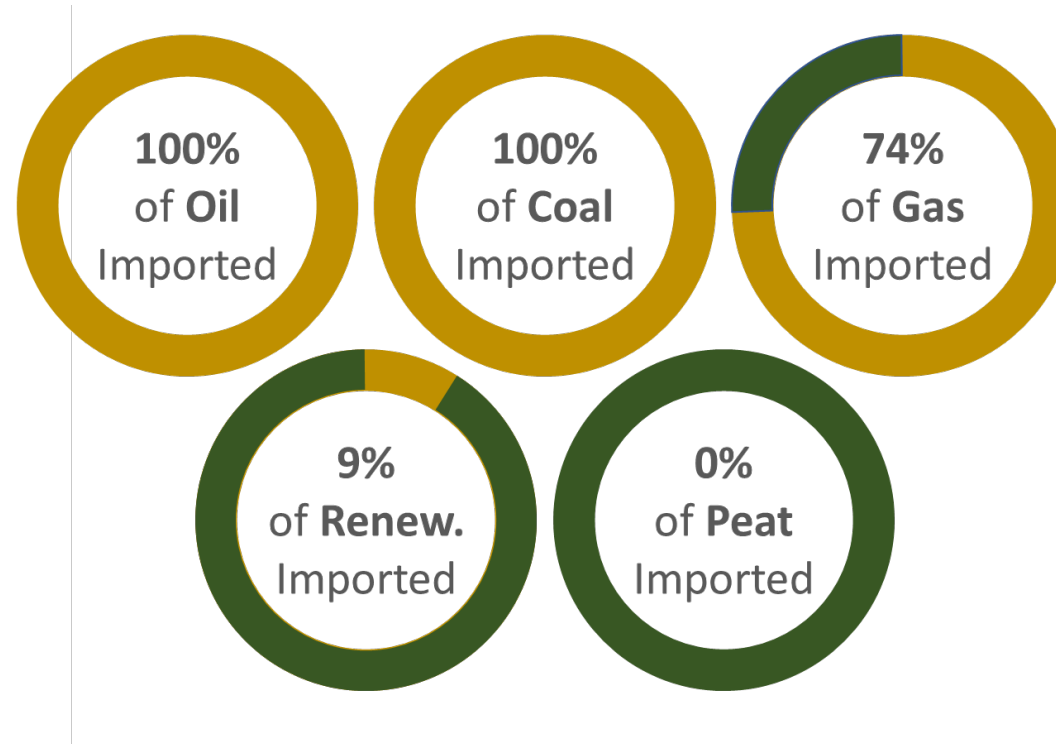
Energy Statistics

Measuring Past Reality

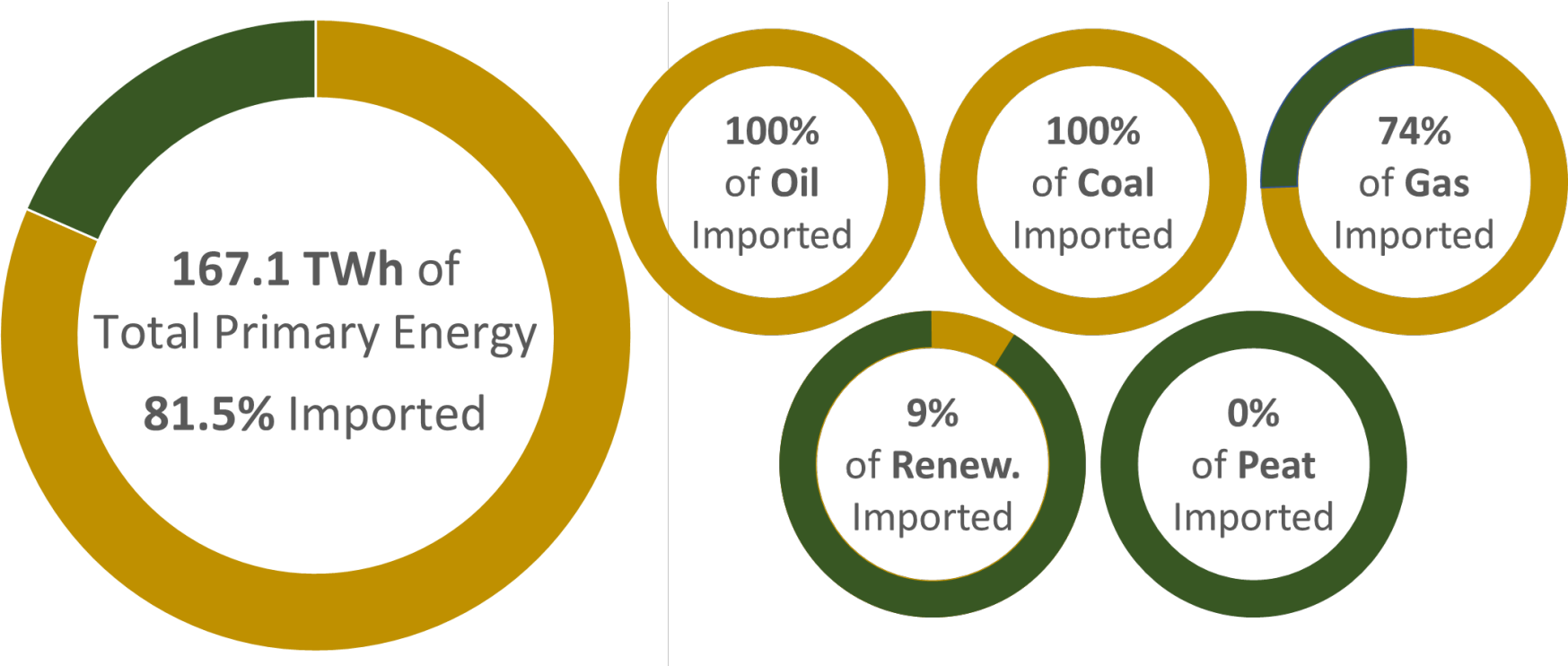


Lee Carroll Head of Energy Statistics, SEAI

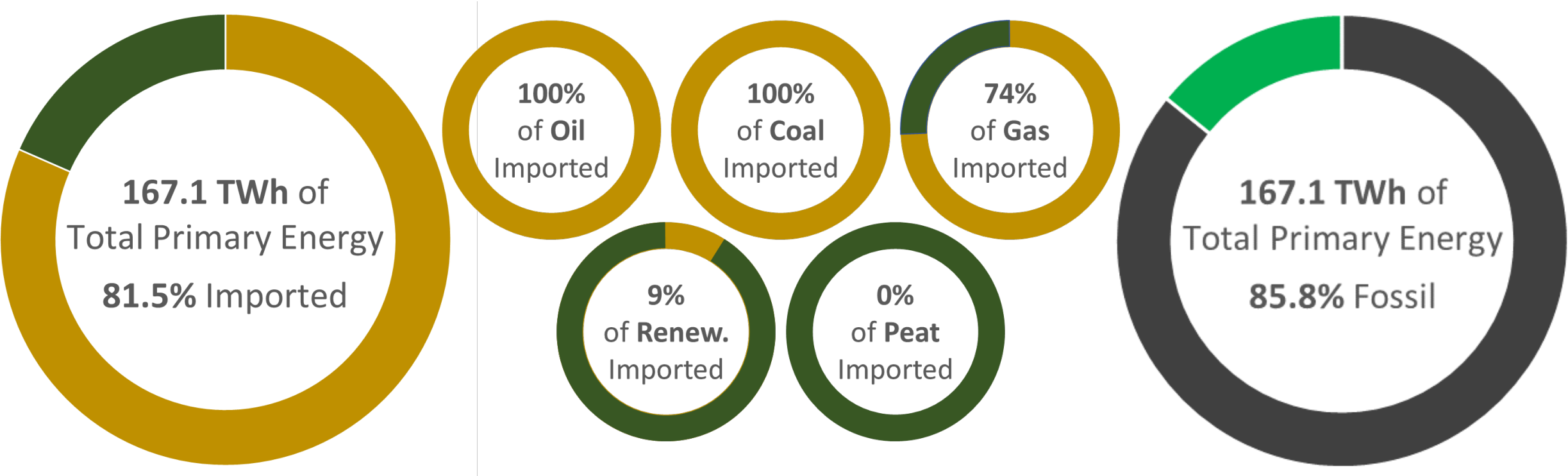
Energy Dependencies – Import & Fossil Fuels



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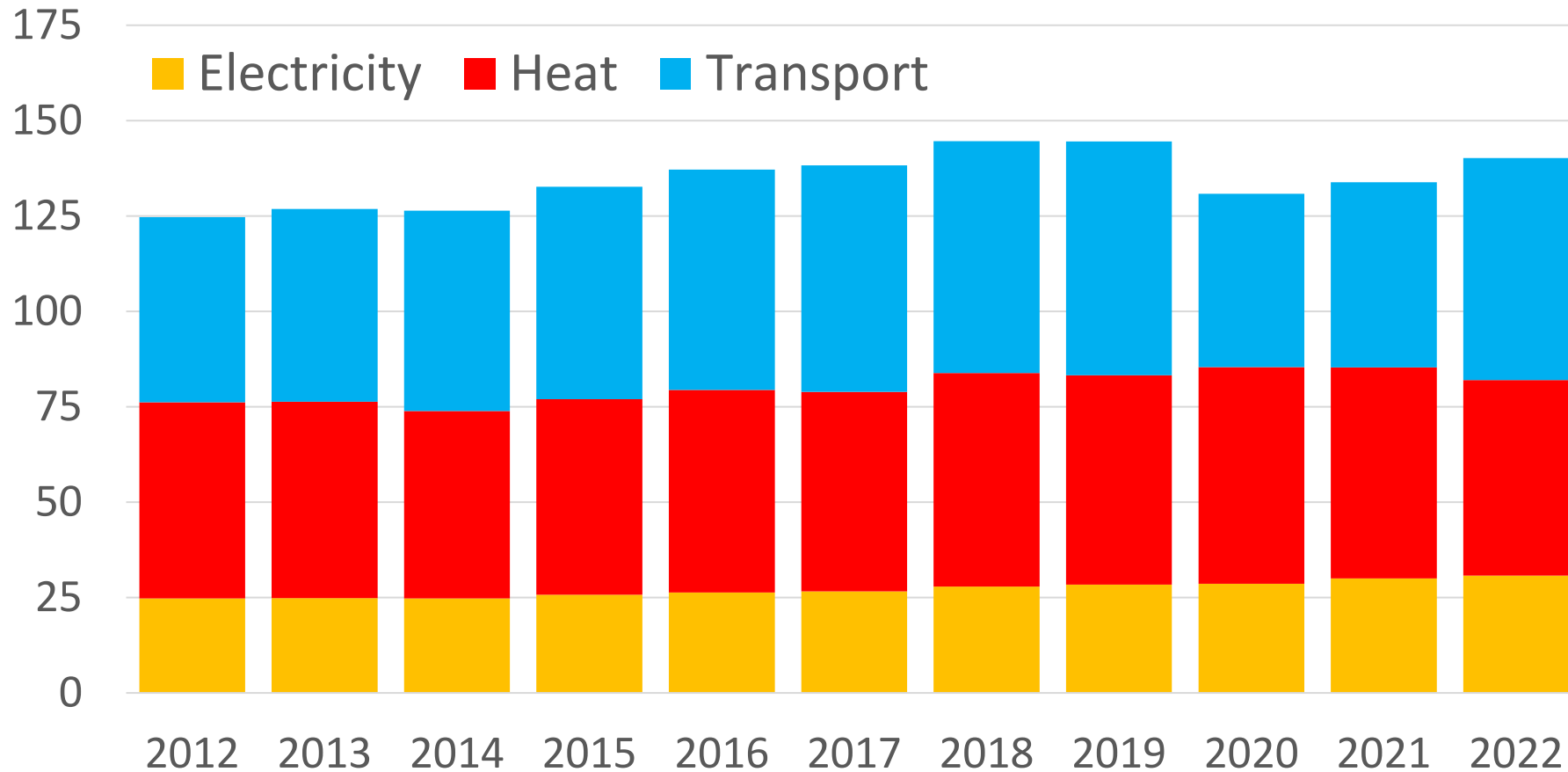


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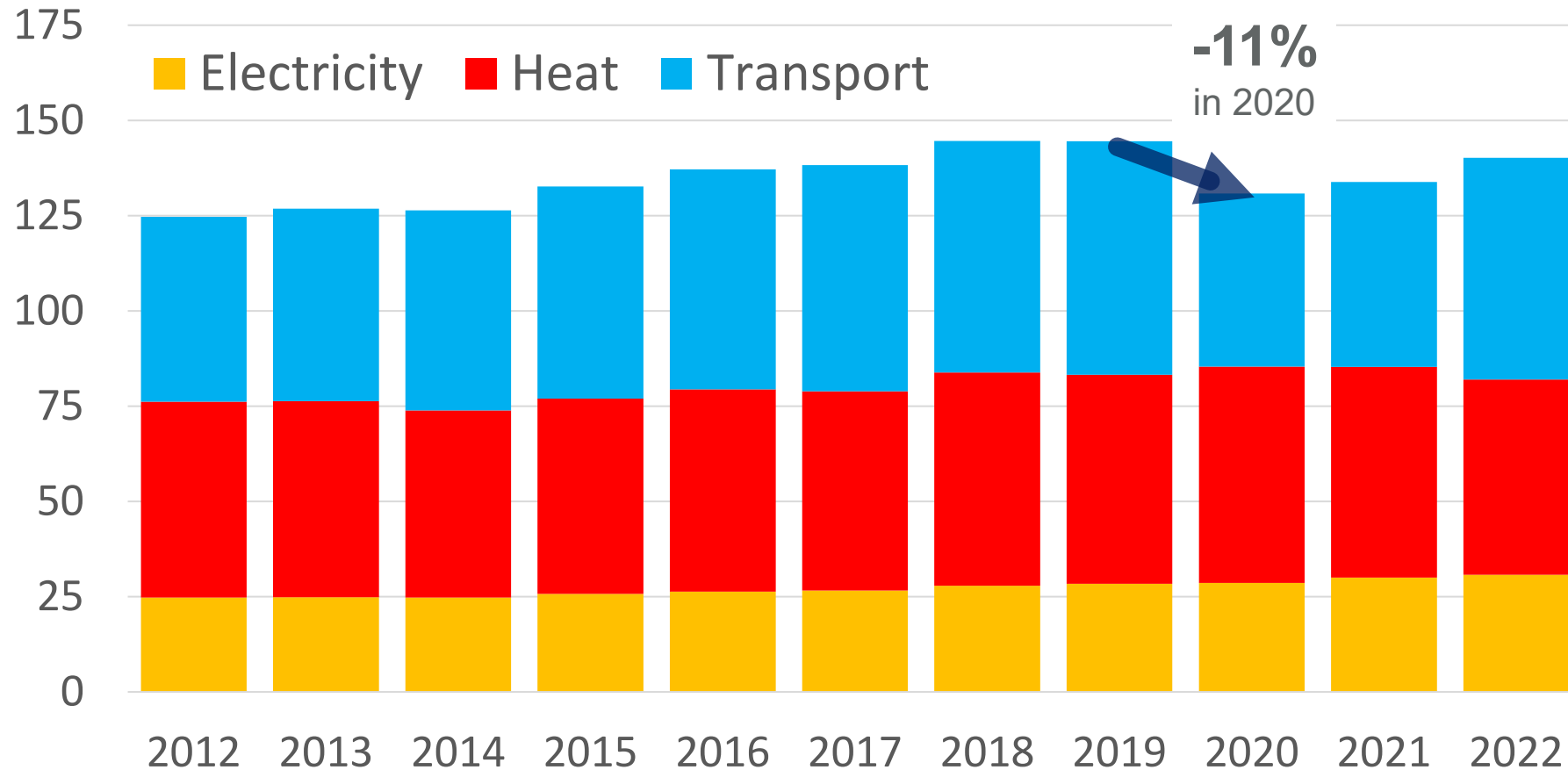
Ireland's Energy Demand – Transport, Electricity, and Heat

Ireland's Energy Demand by Mode (TWh)



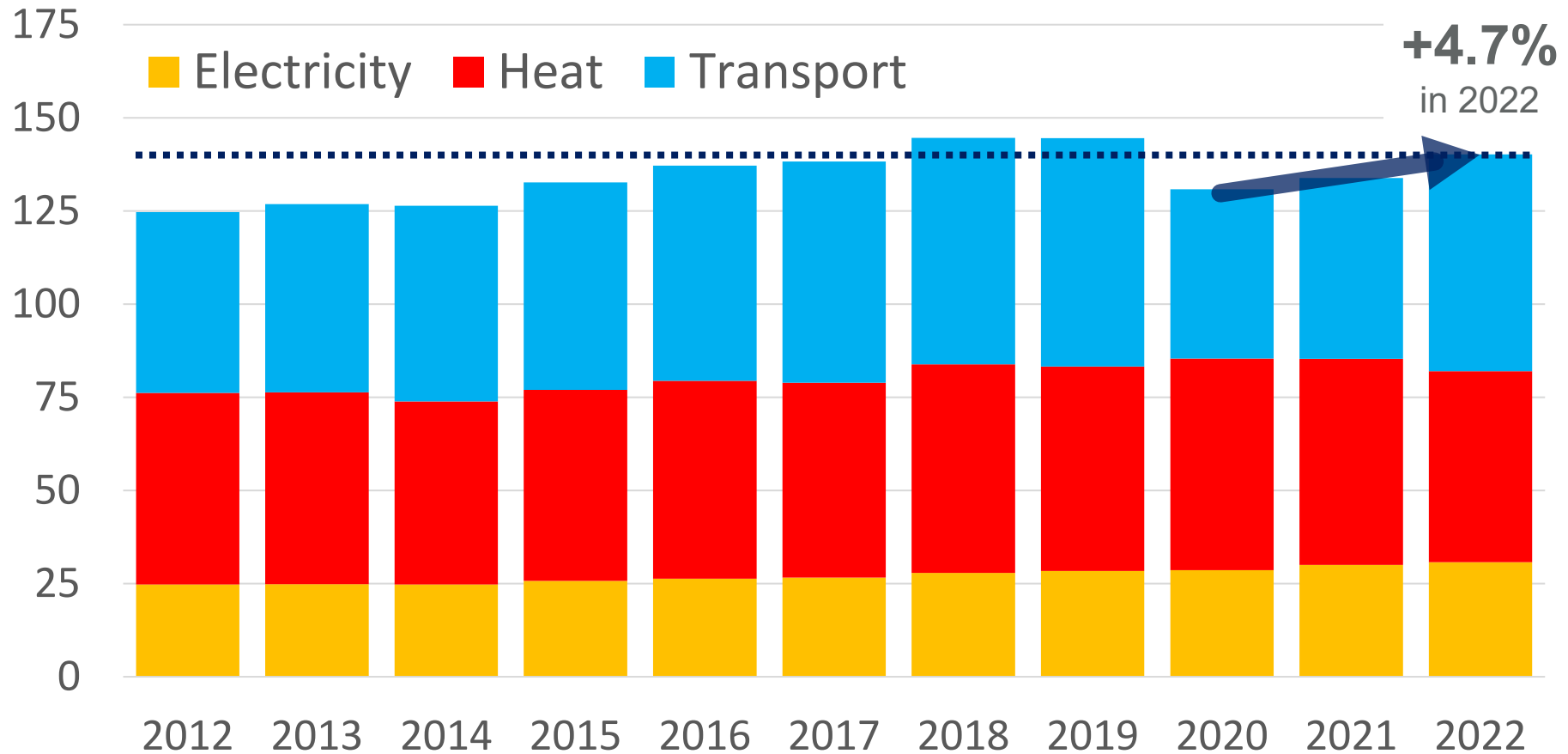
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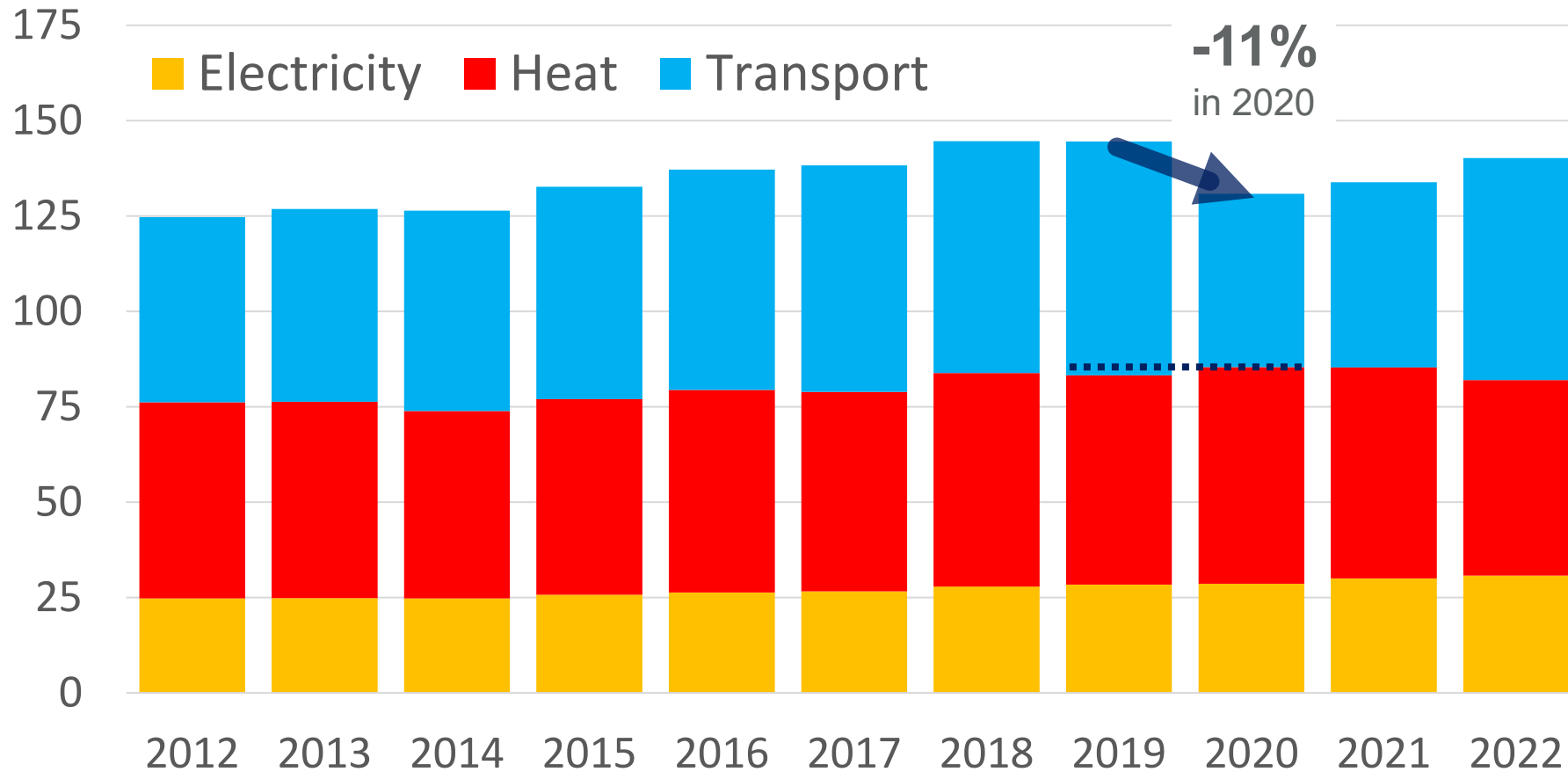
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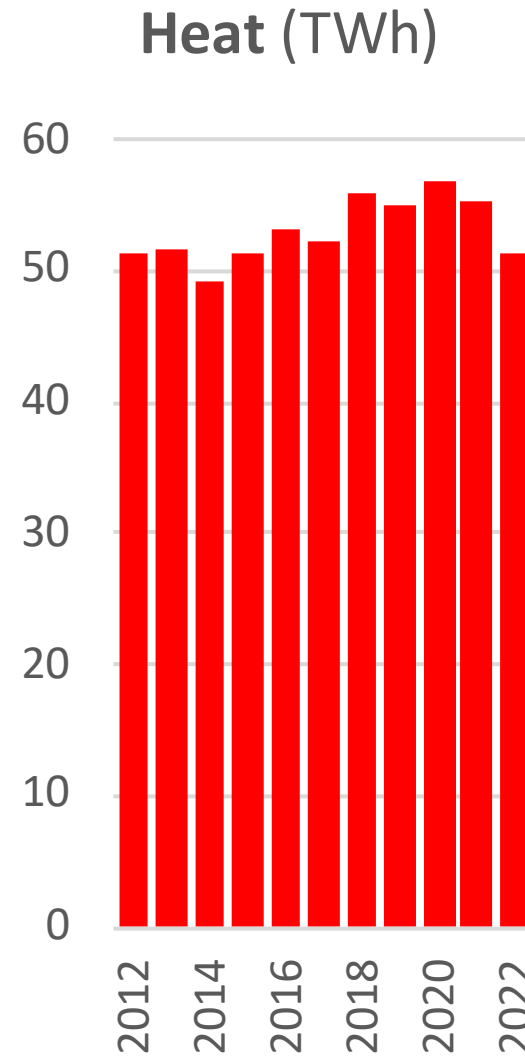
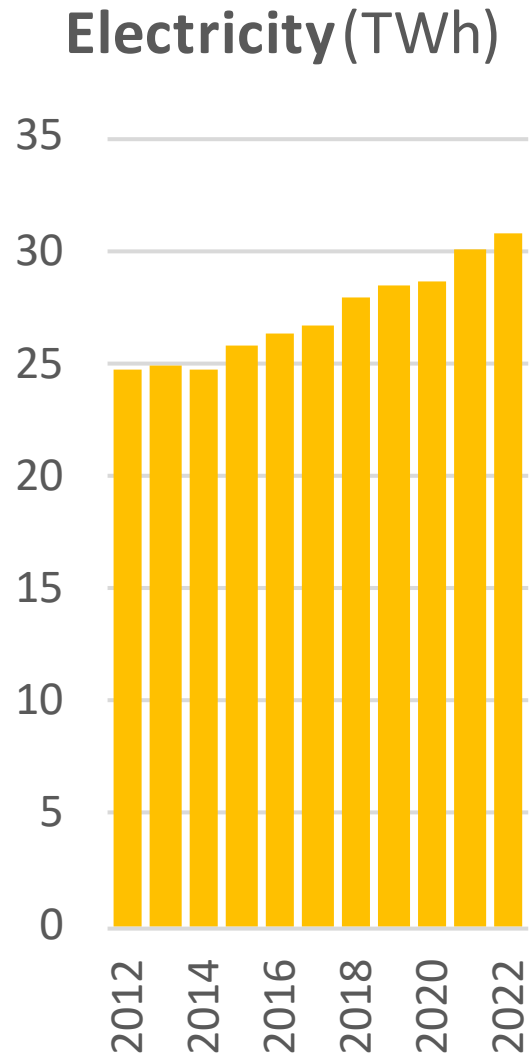
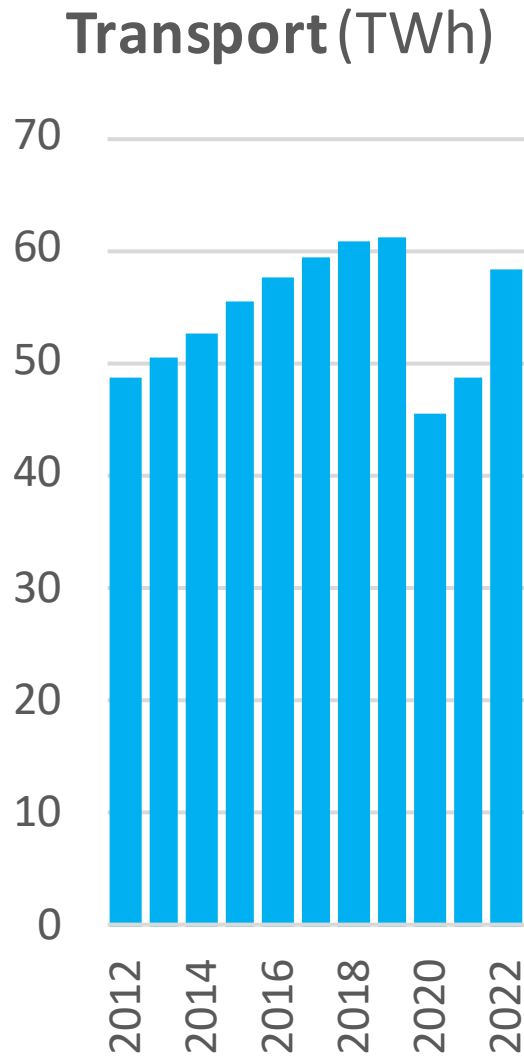


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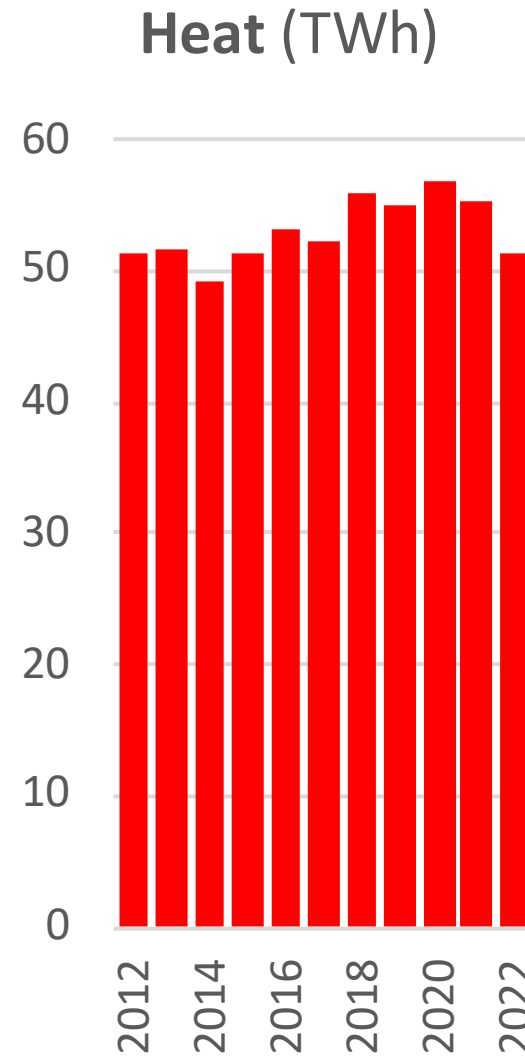
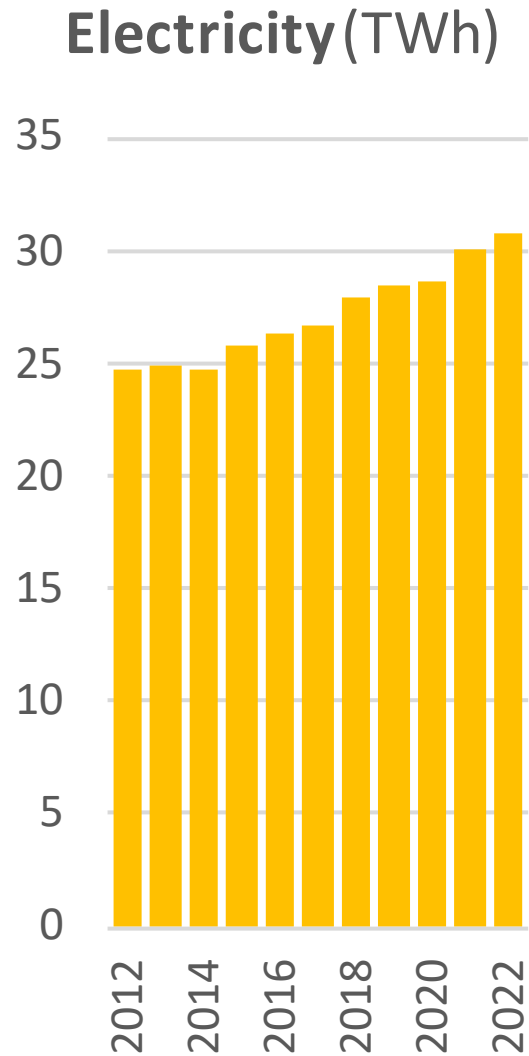
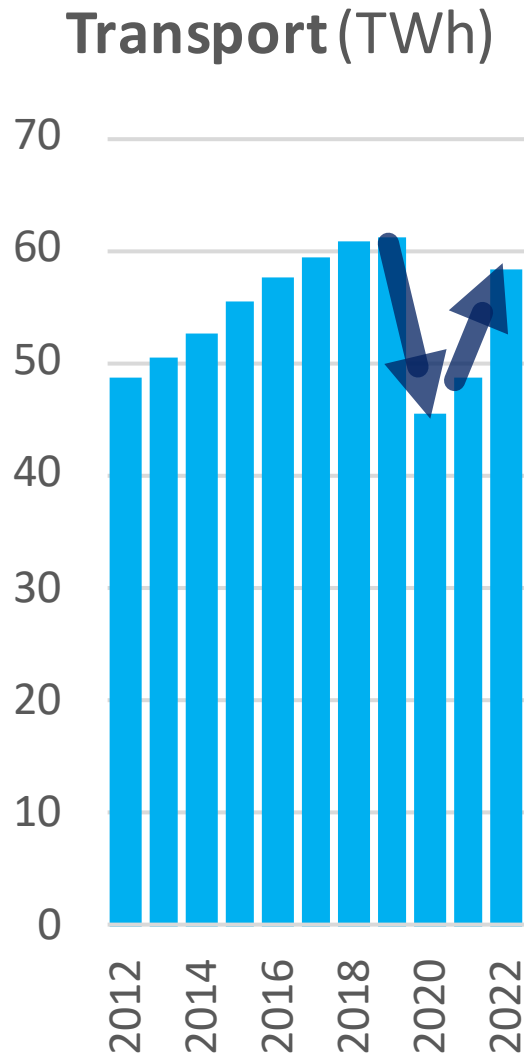
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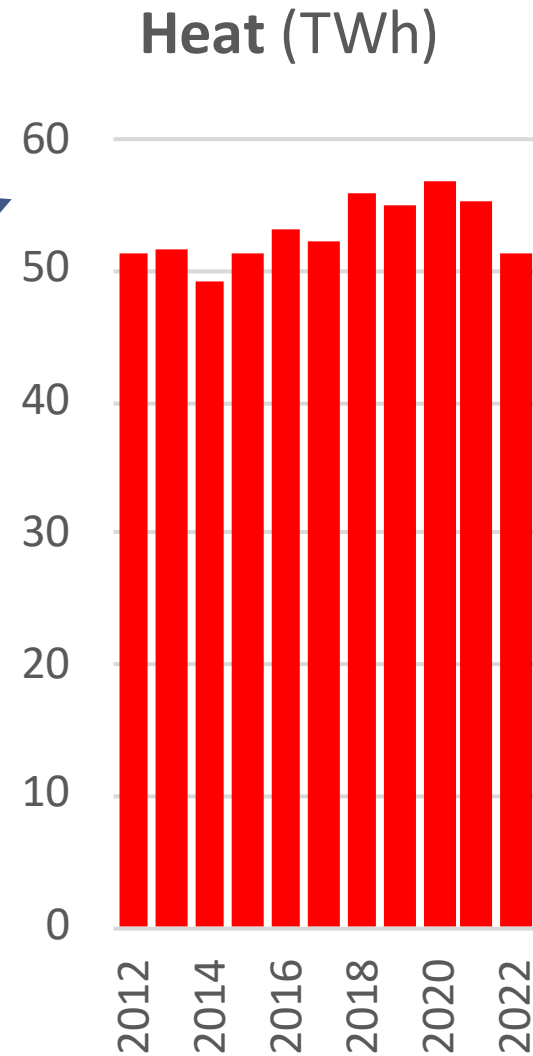
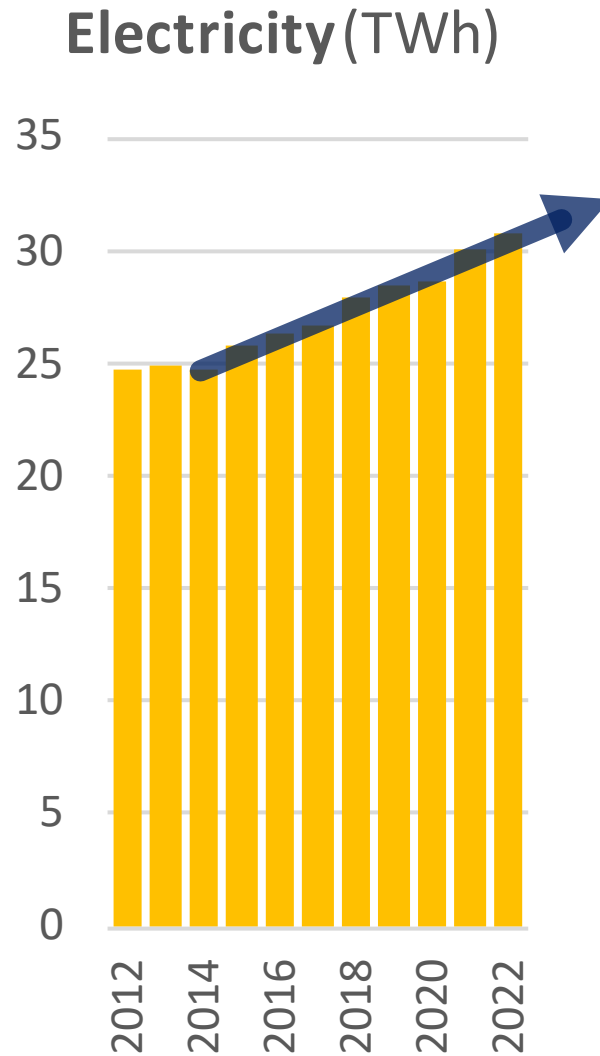
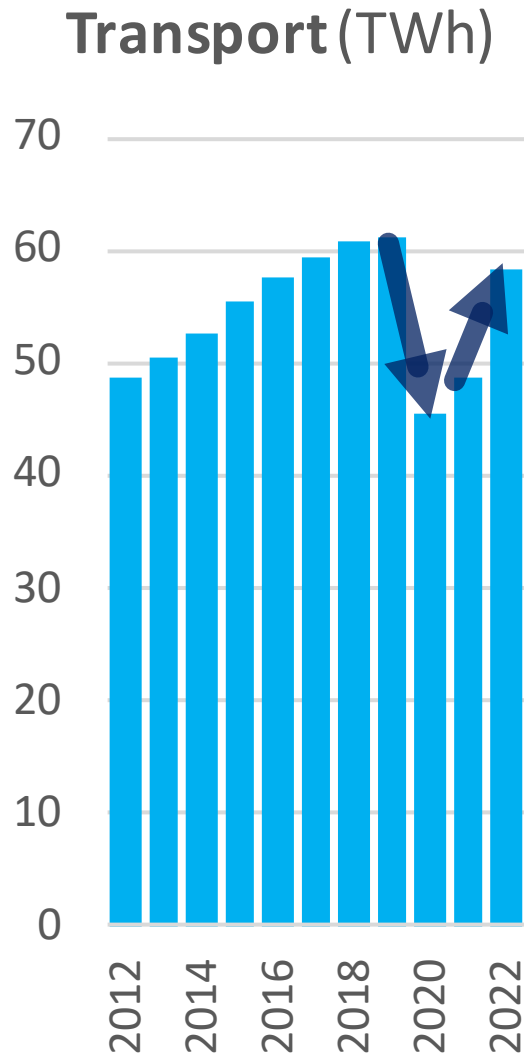
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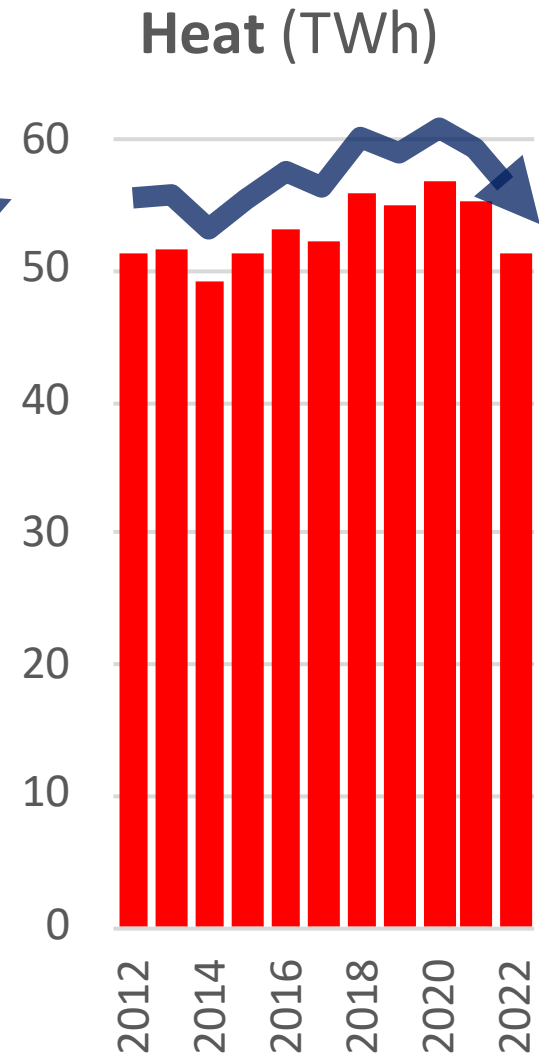
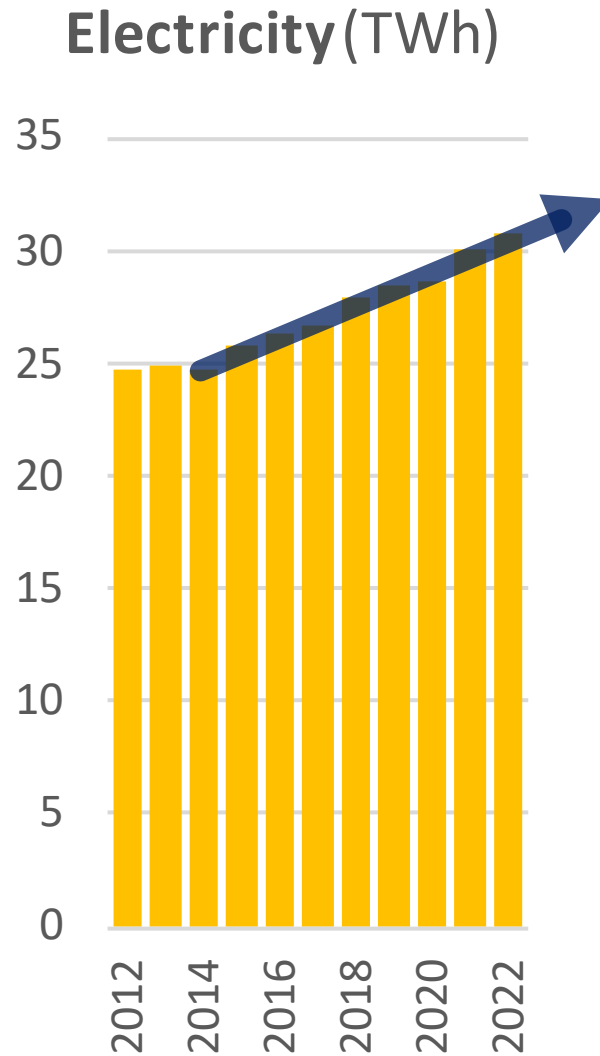
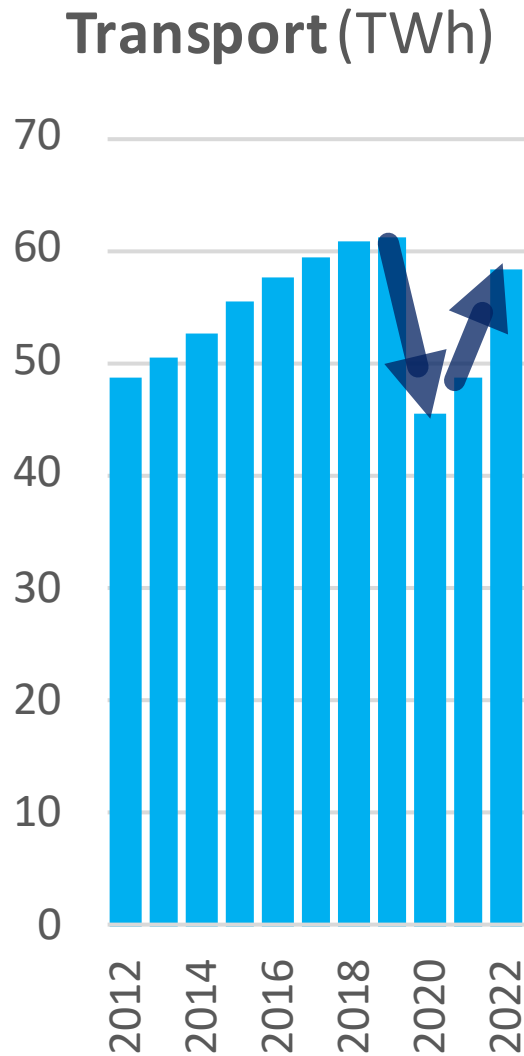
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Ireland's Energy Emissions in 2022

2021 to 2022 Changes in Energy Emissions (MtCO₂)



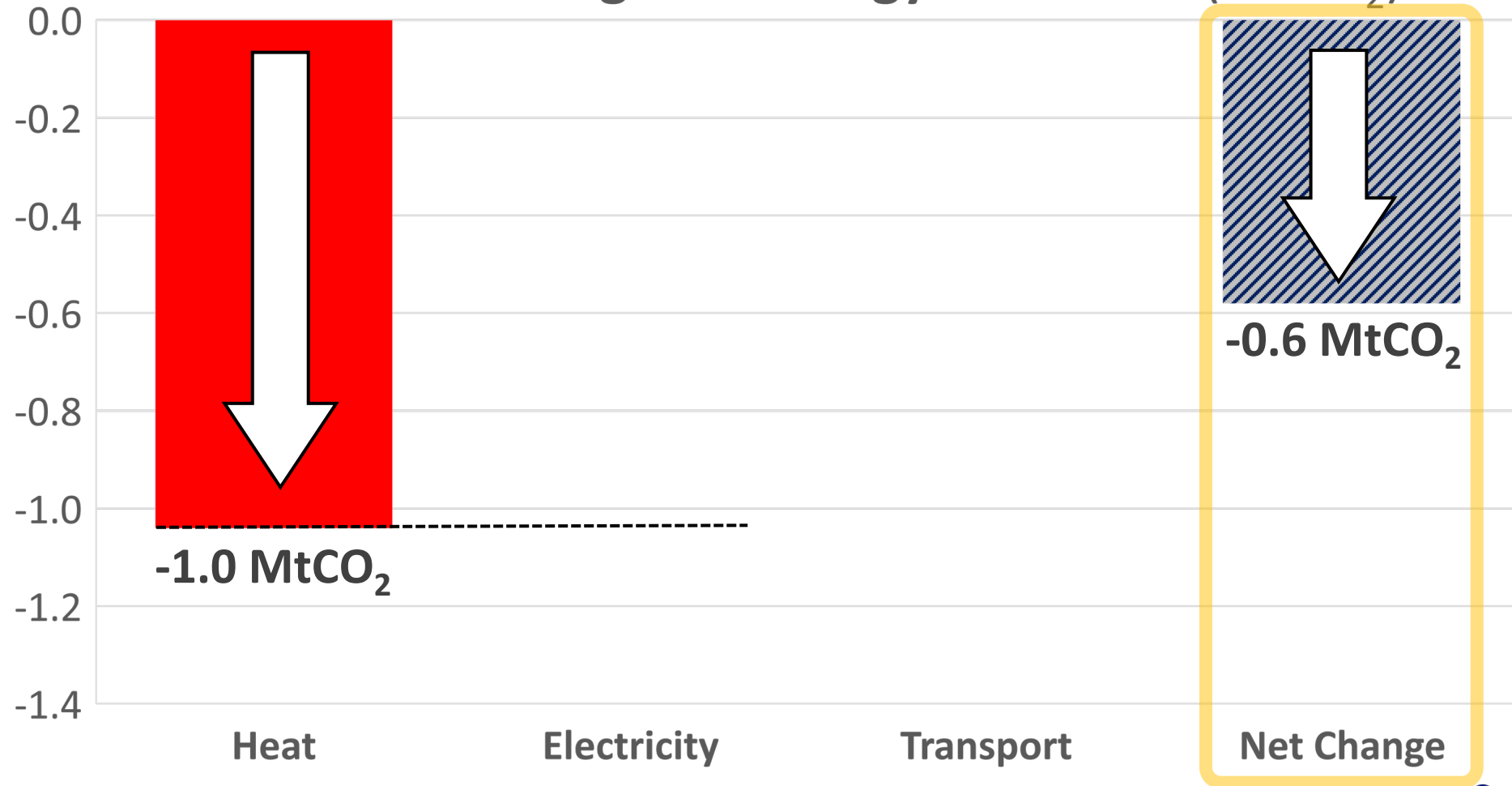
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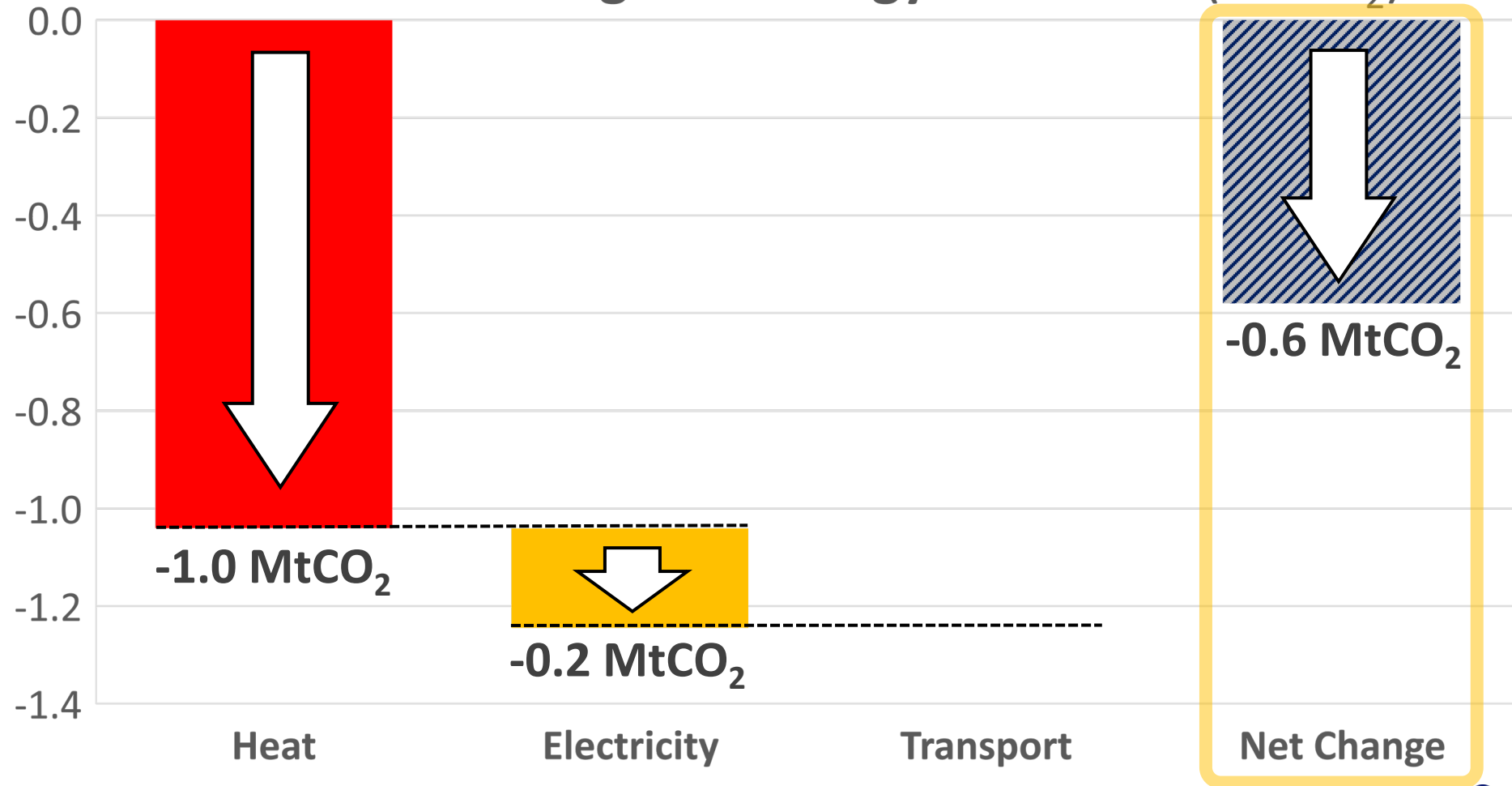
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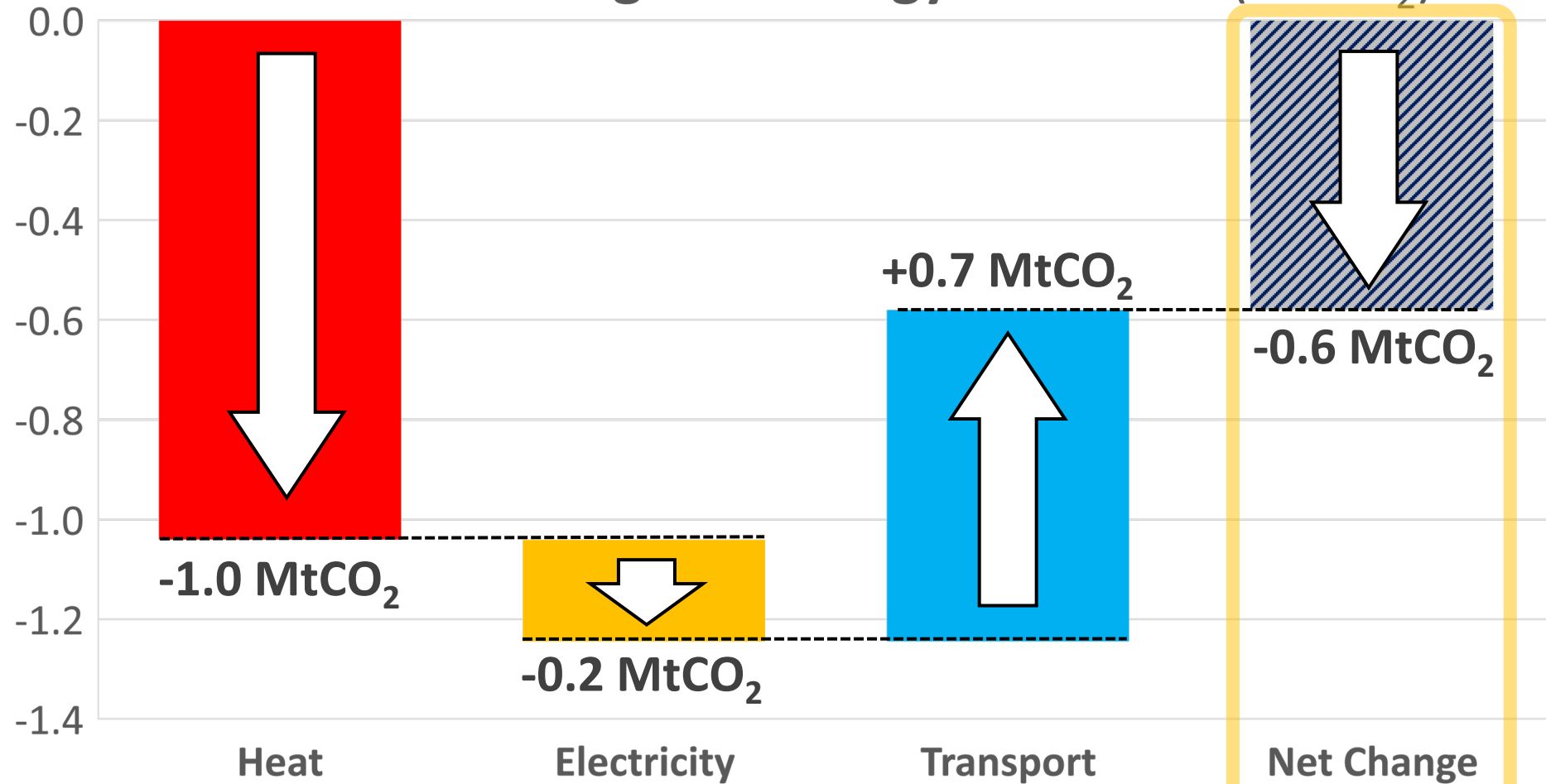
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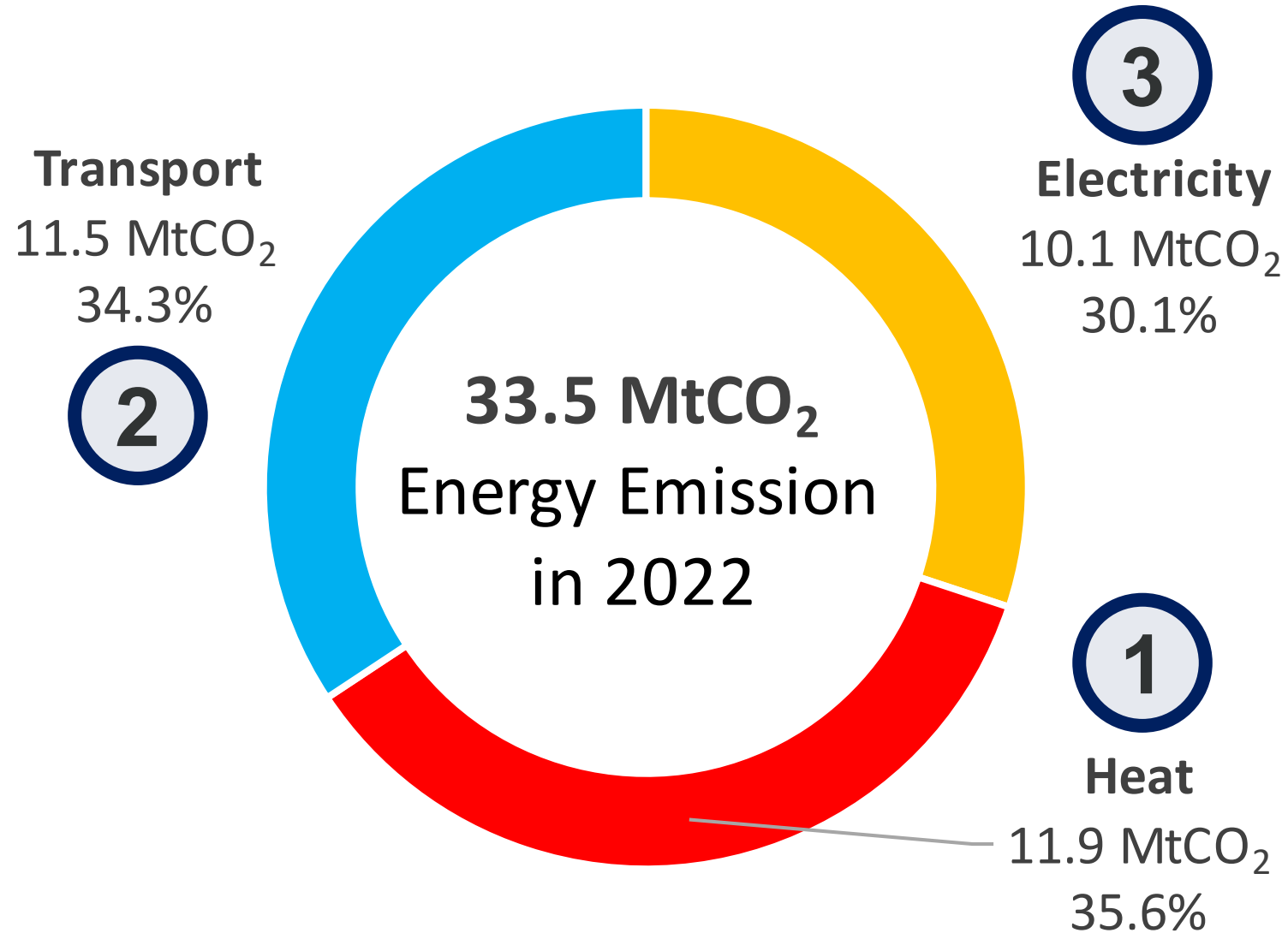


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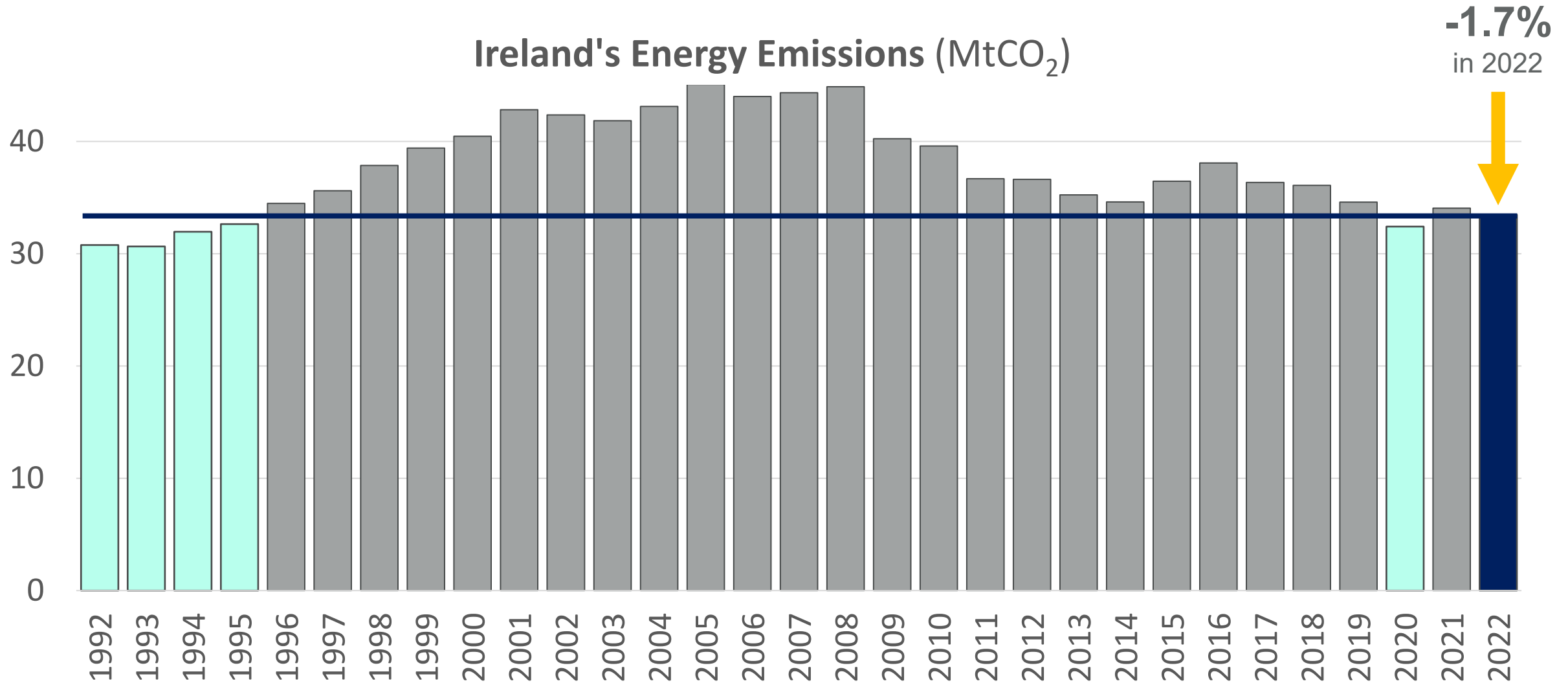


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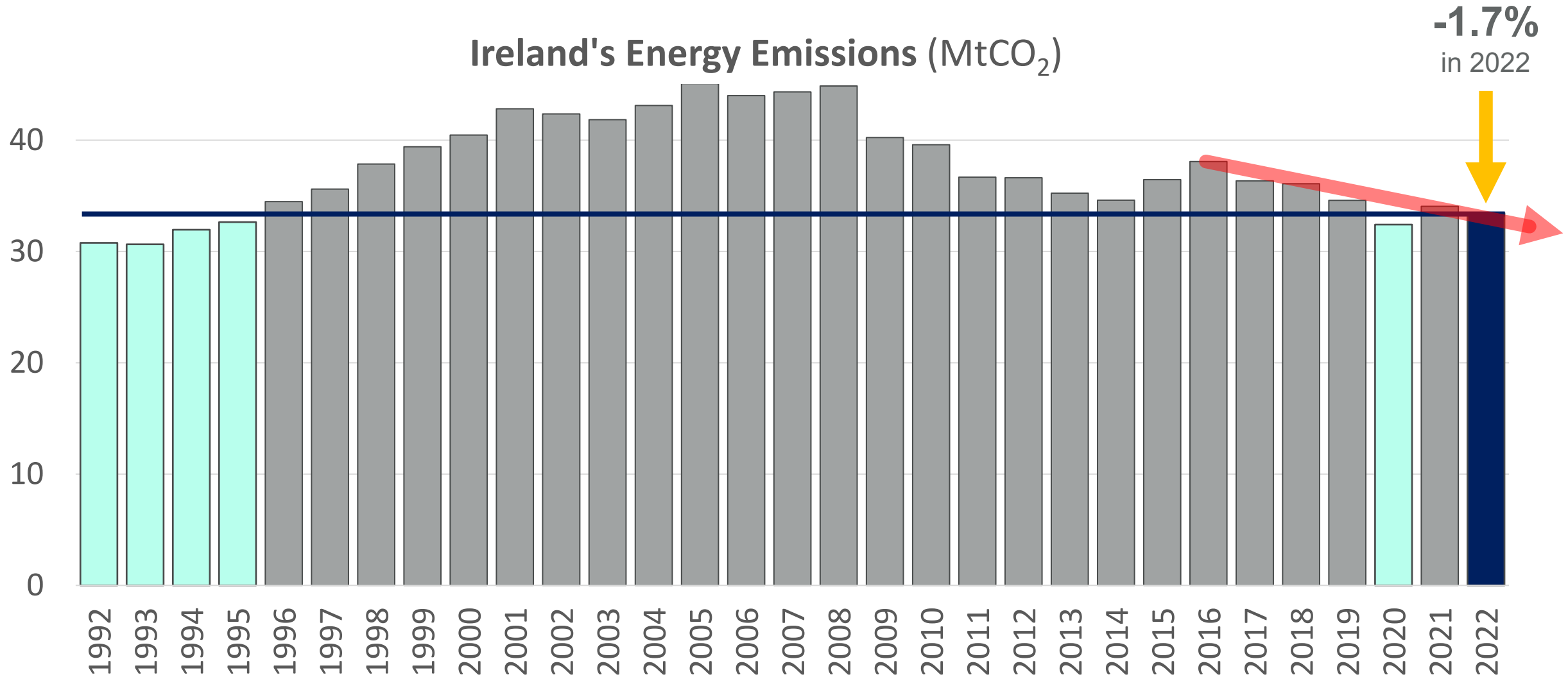
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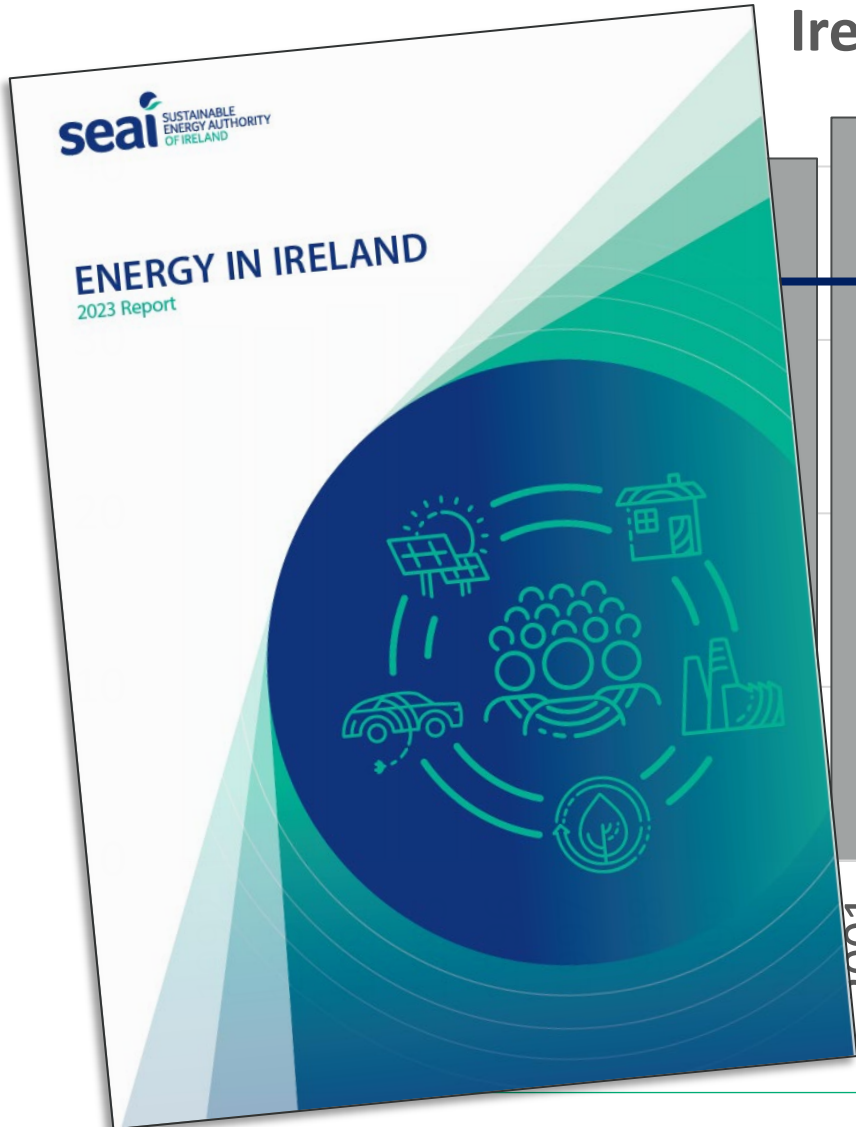


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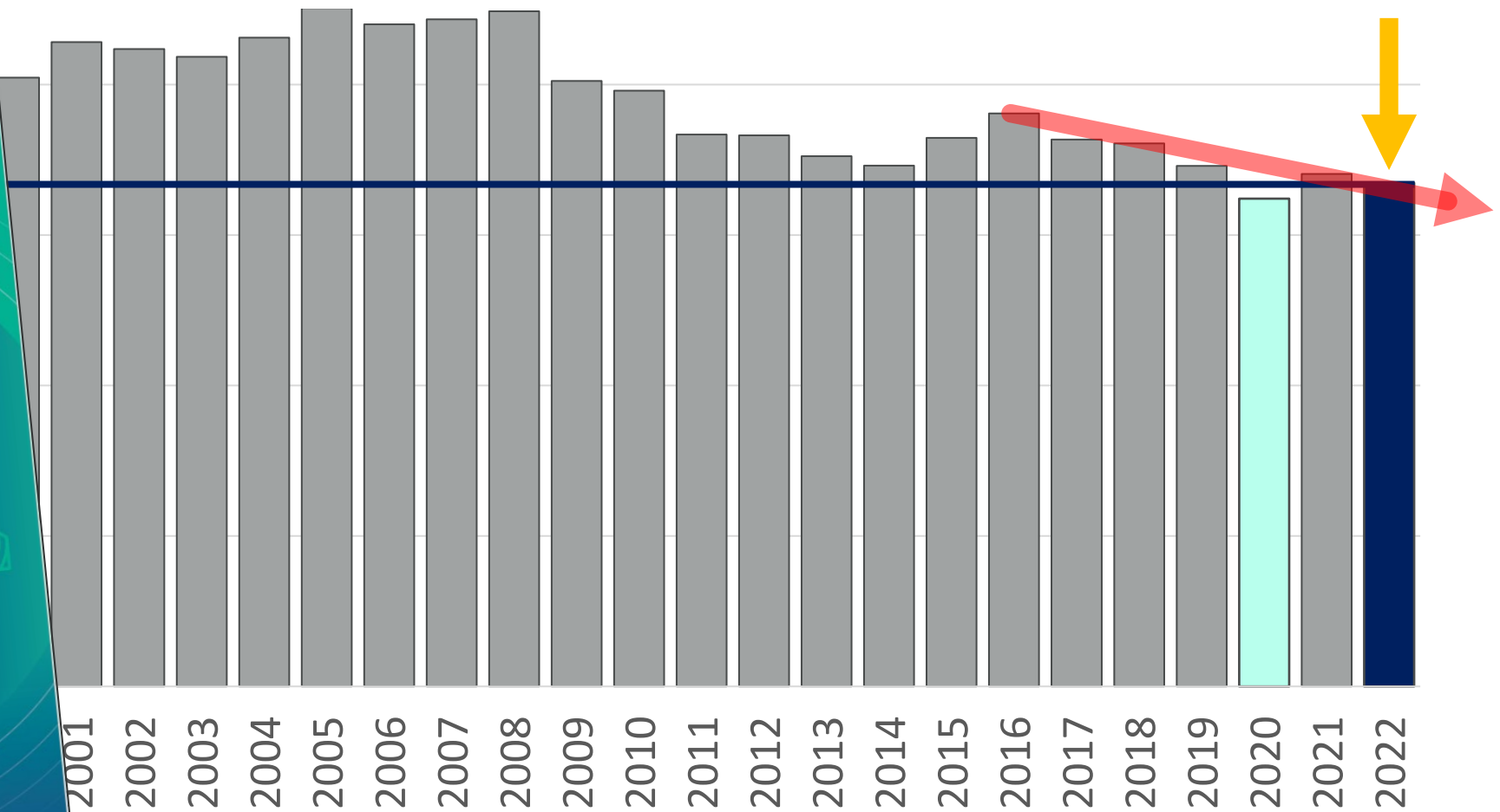
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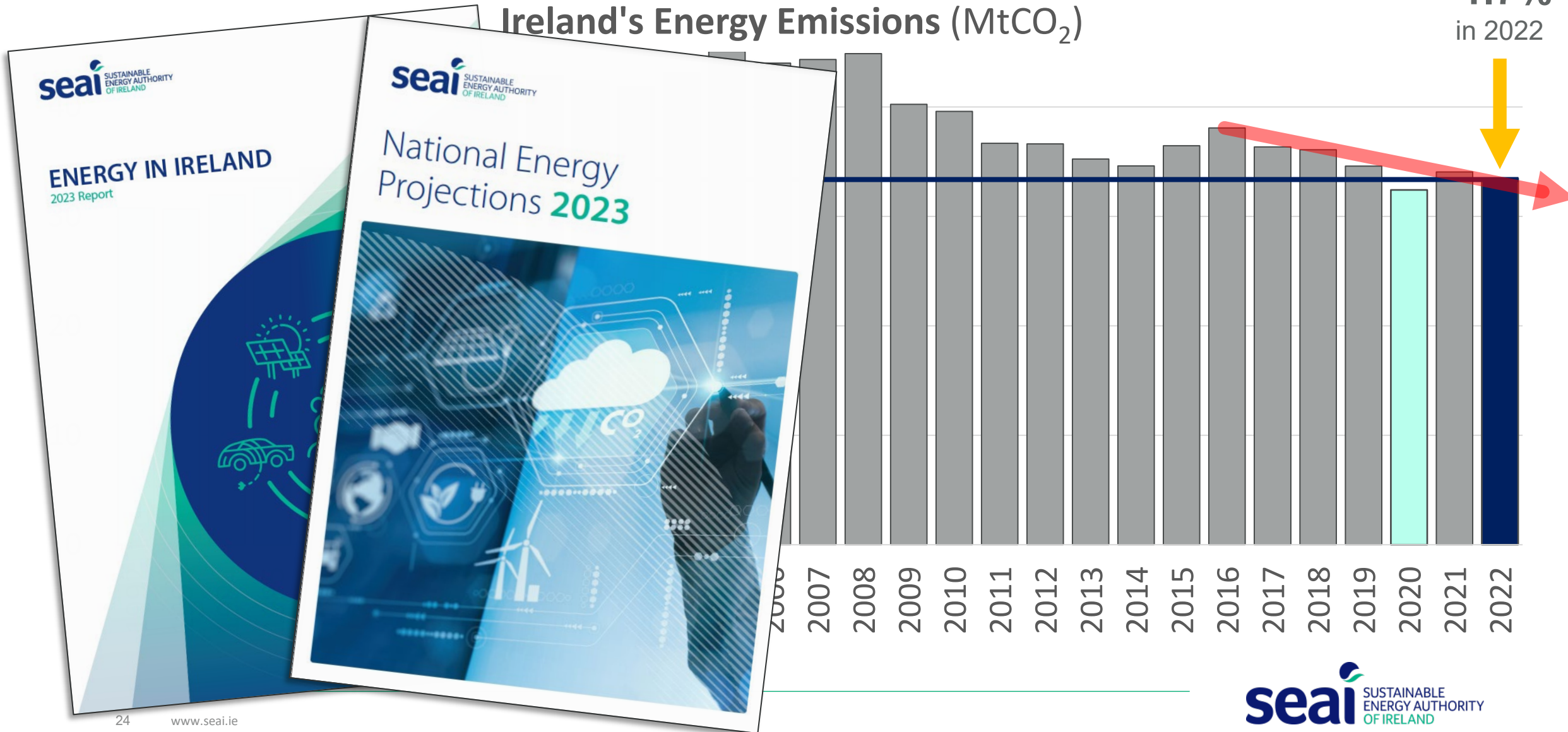


-1.7%
in 2022

Ireland's Energy Emissions in 2022

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seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

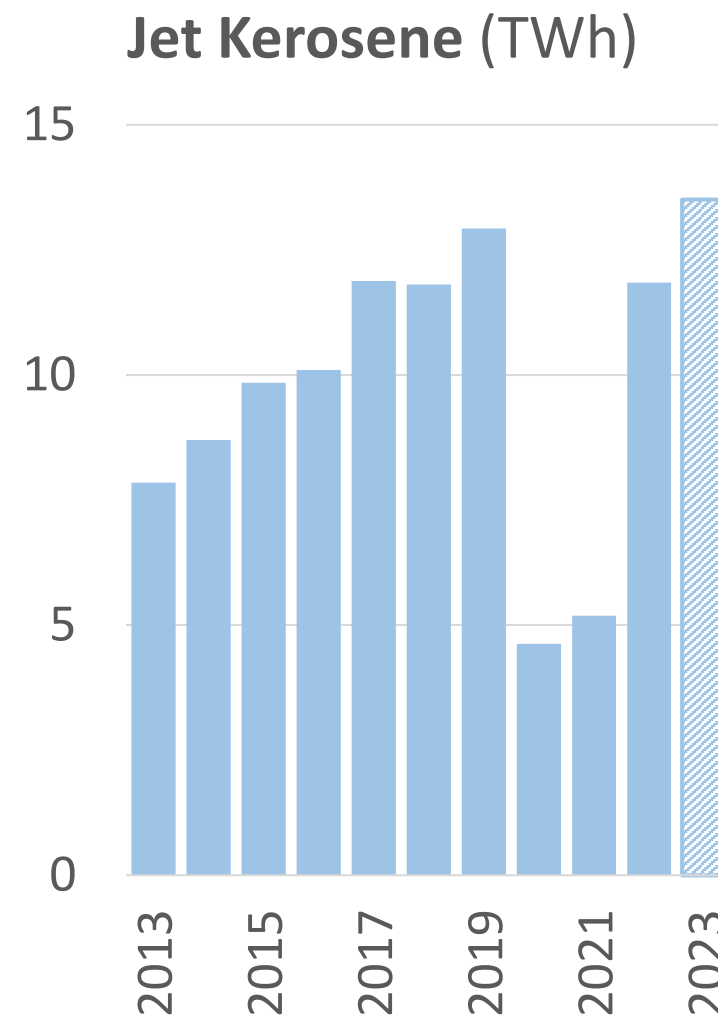
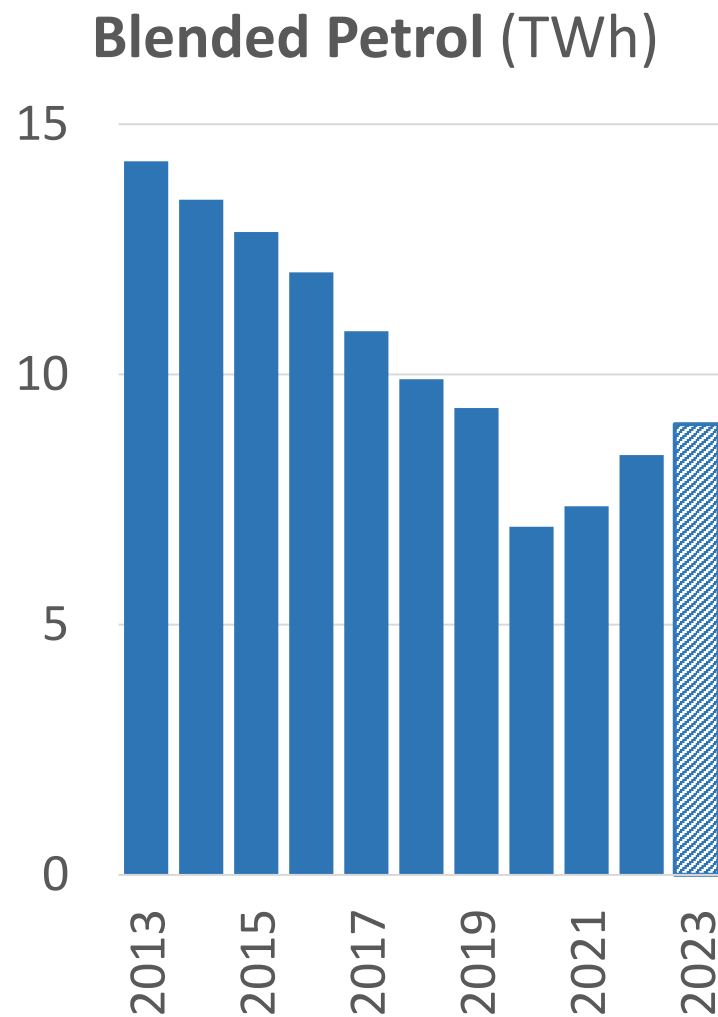
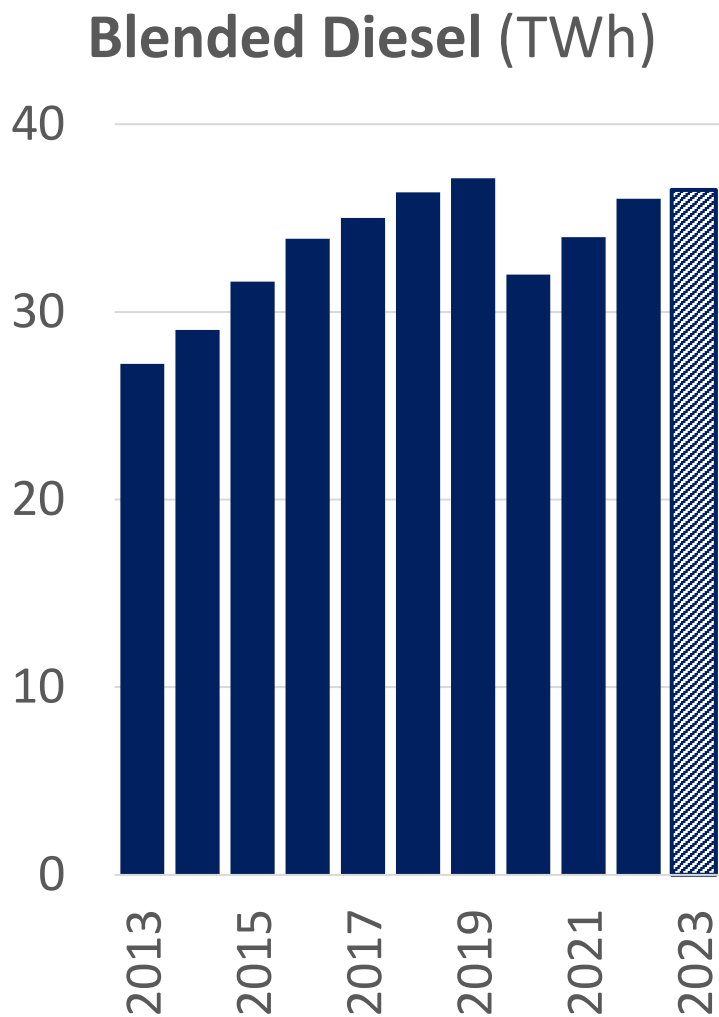
ENERGY IN IRELAND
2023 Report

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

National Energy Projections 2023

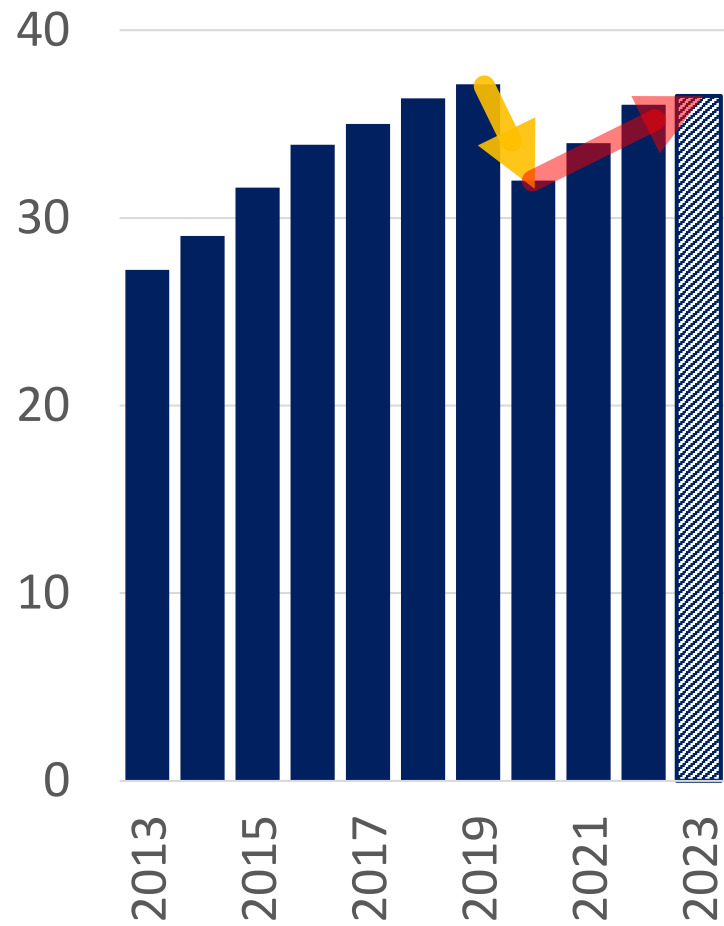
Trends in Transport

Trends in Transport – Energy Demand

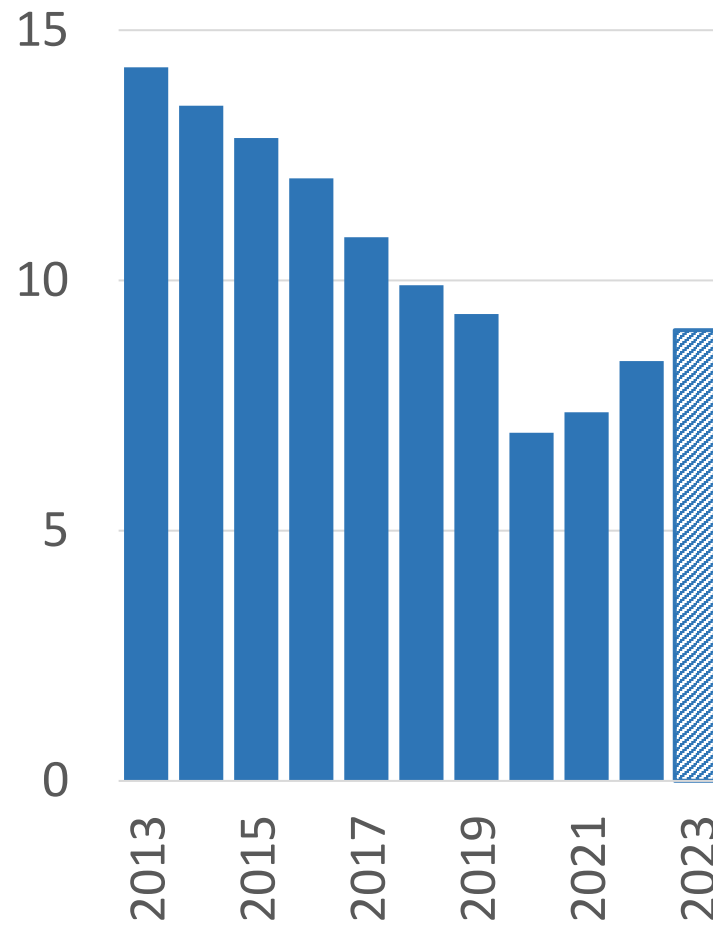


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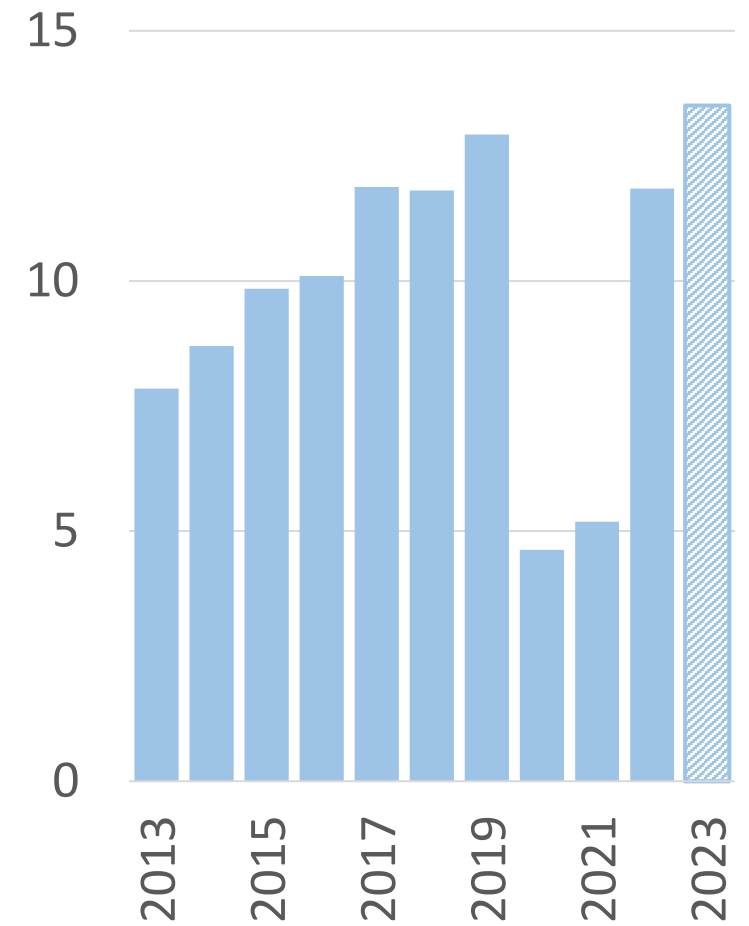
Blended Diesel (TWh)



Blended Petrol (TWh)

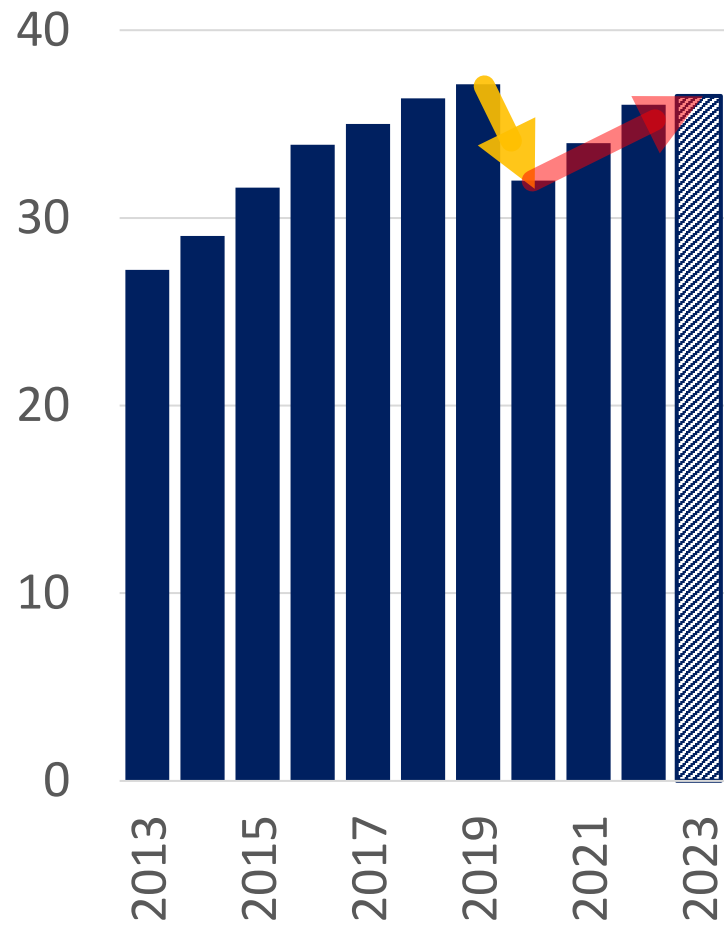


Jet Kerosene (TWh)

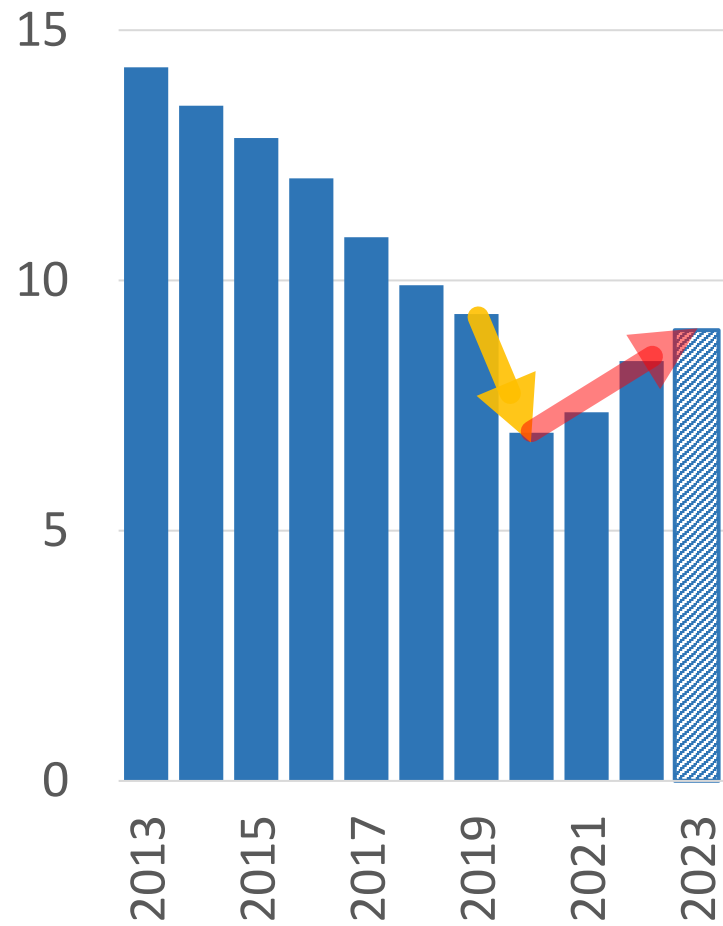


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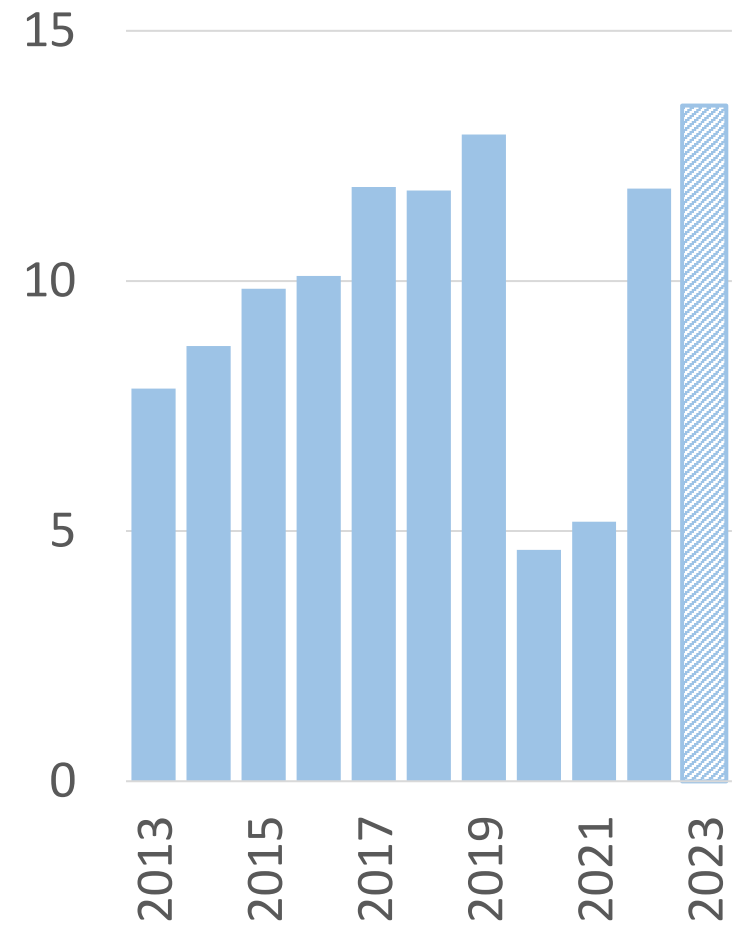
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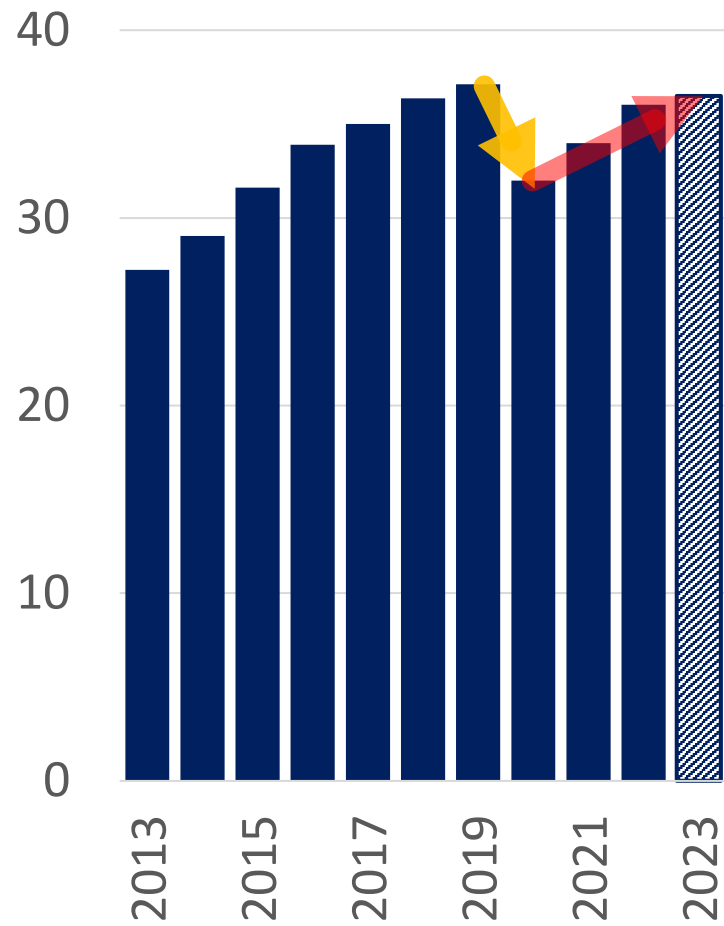


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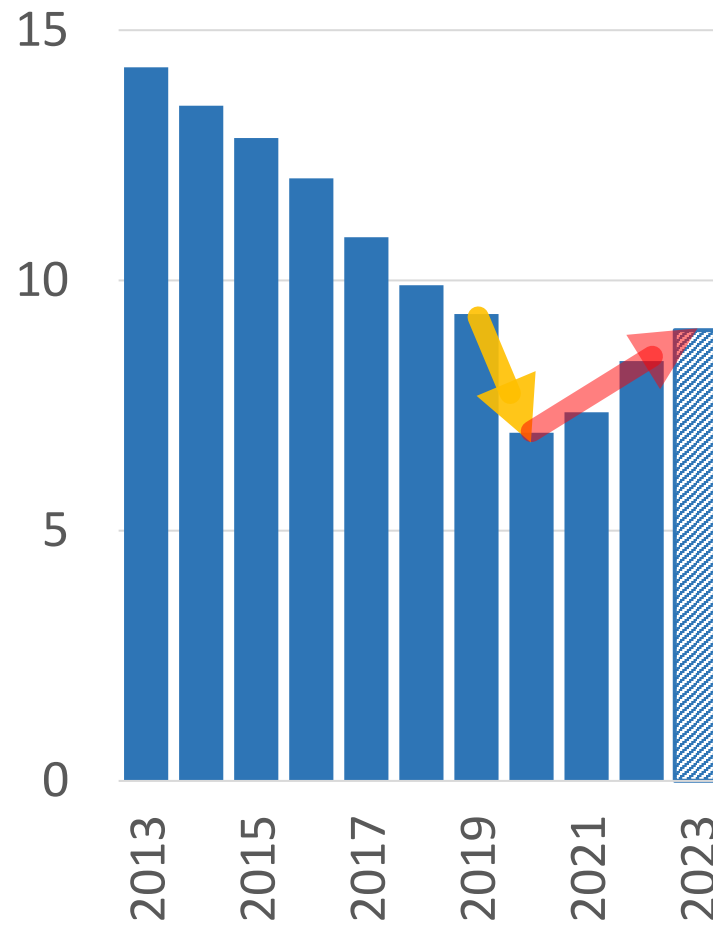


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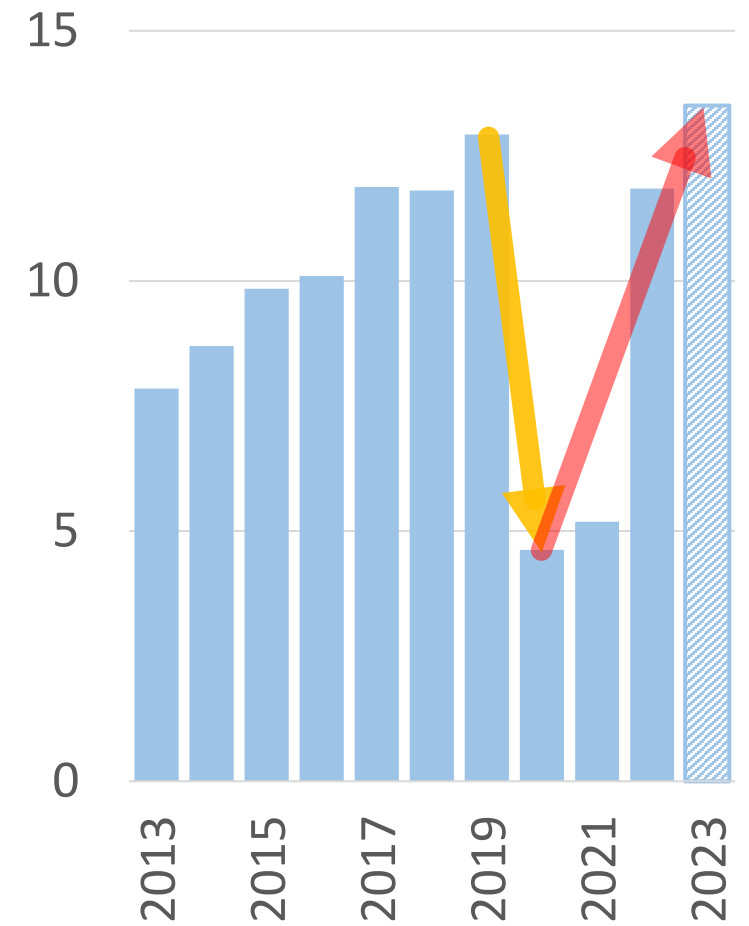
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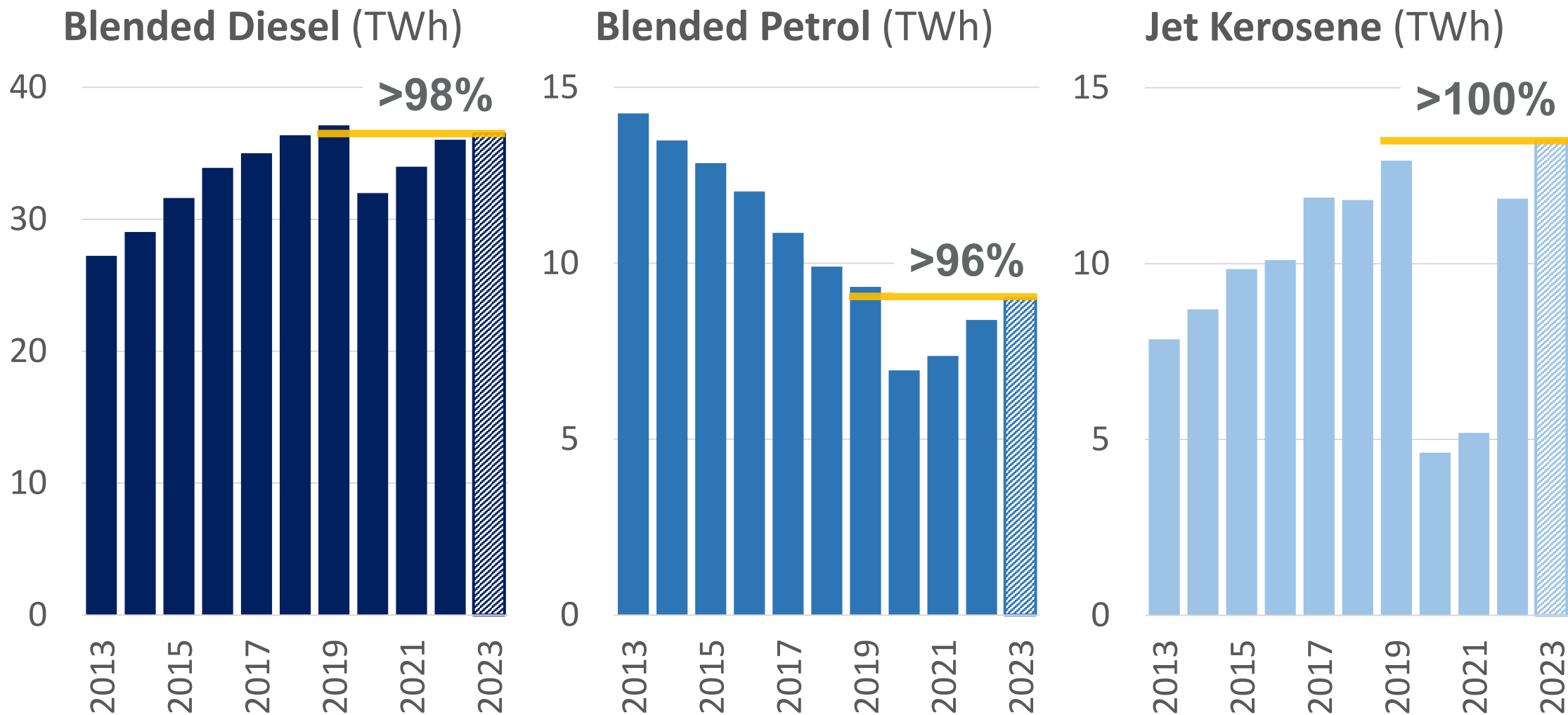
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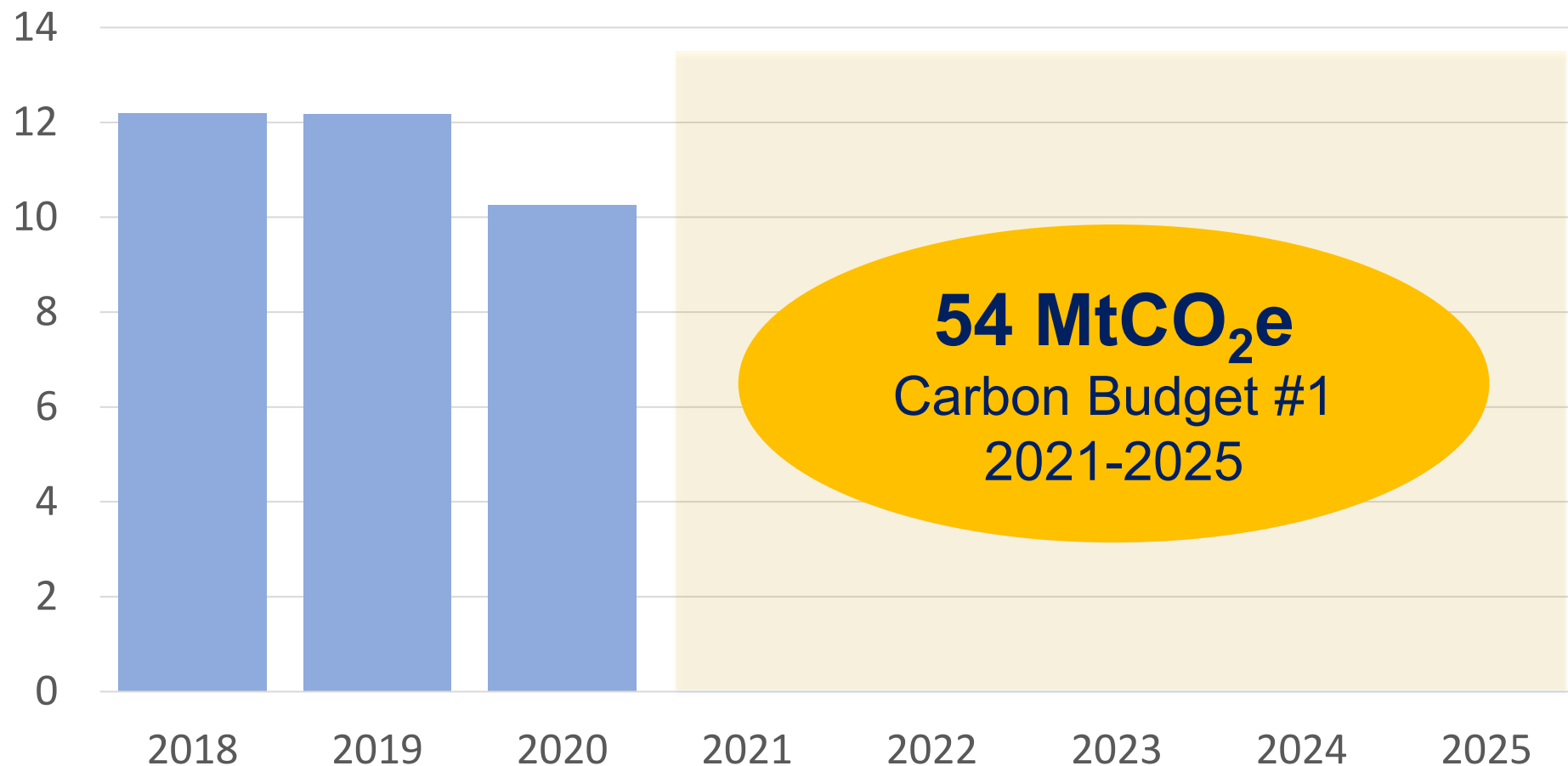


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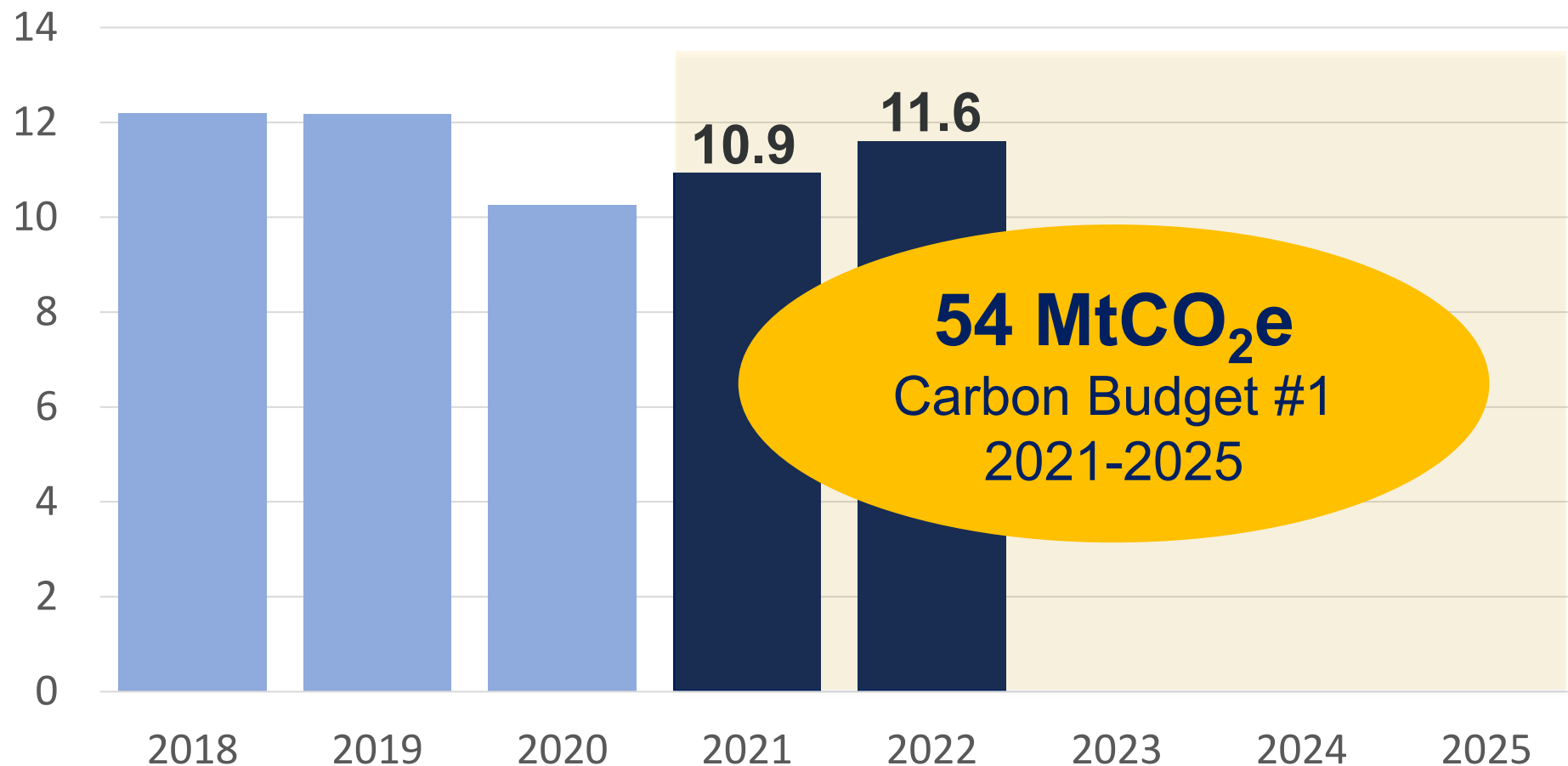
Trends in Transport – Emissions

Transport Emissions (MtCO₂e)



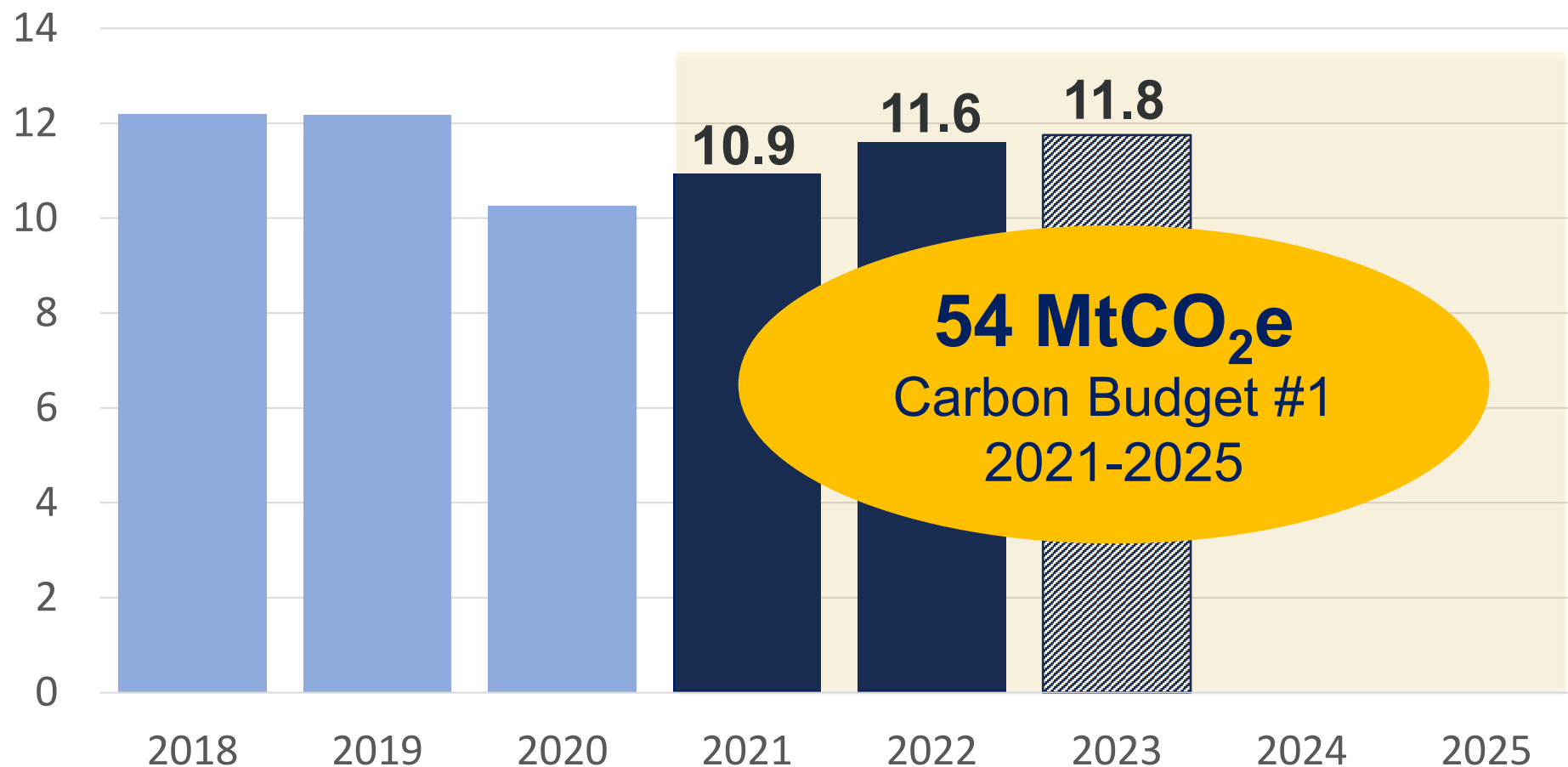
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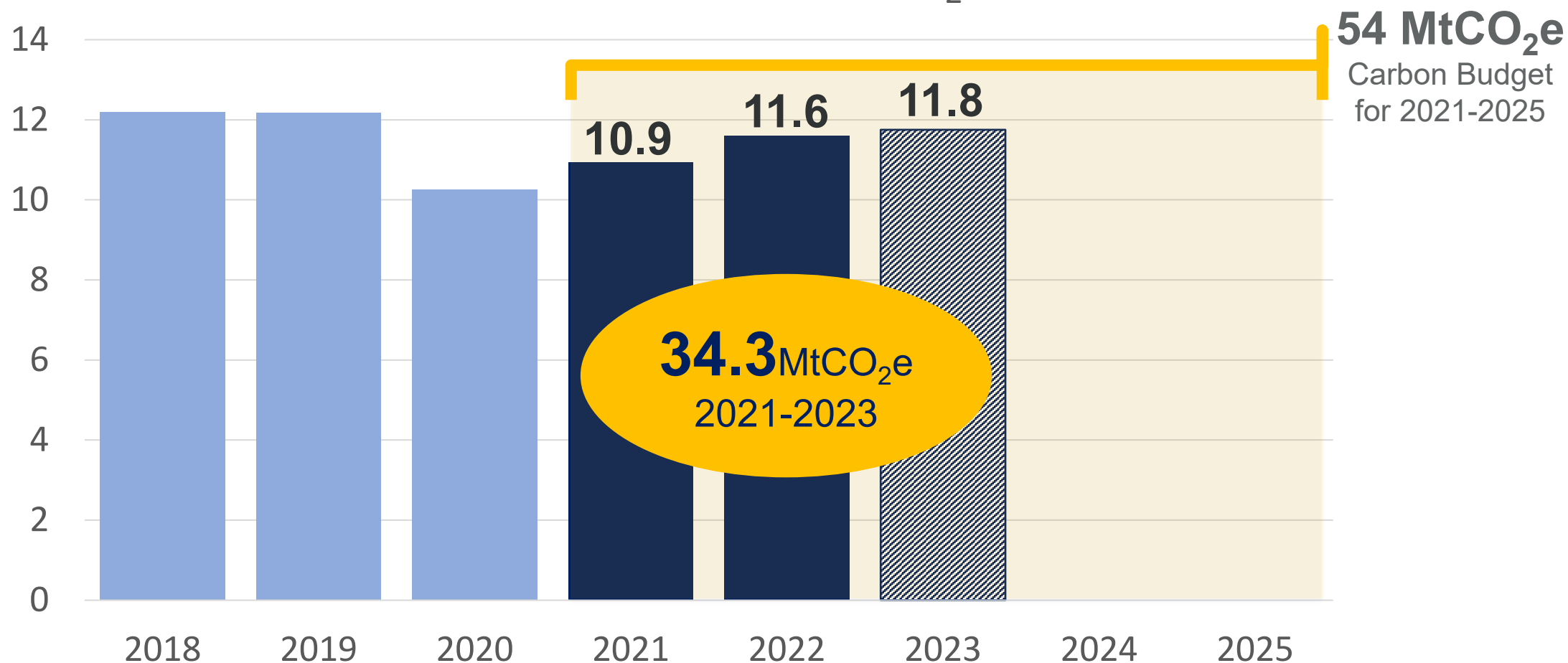
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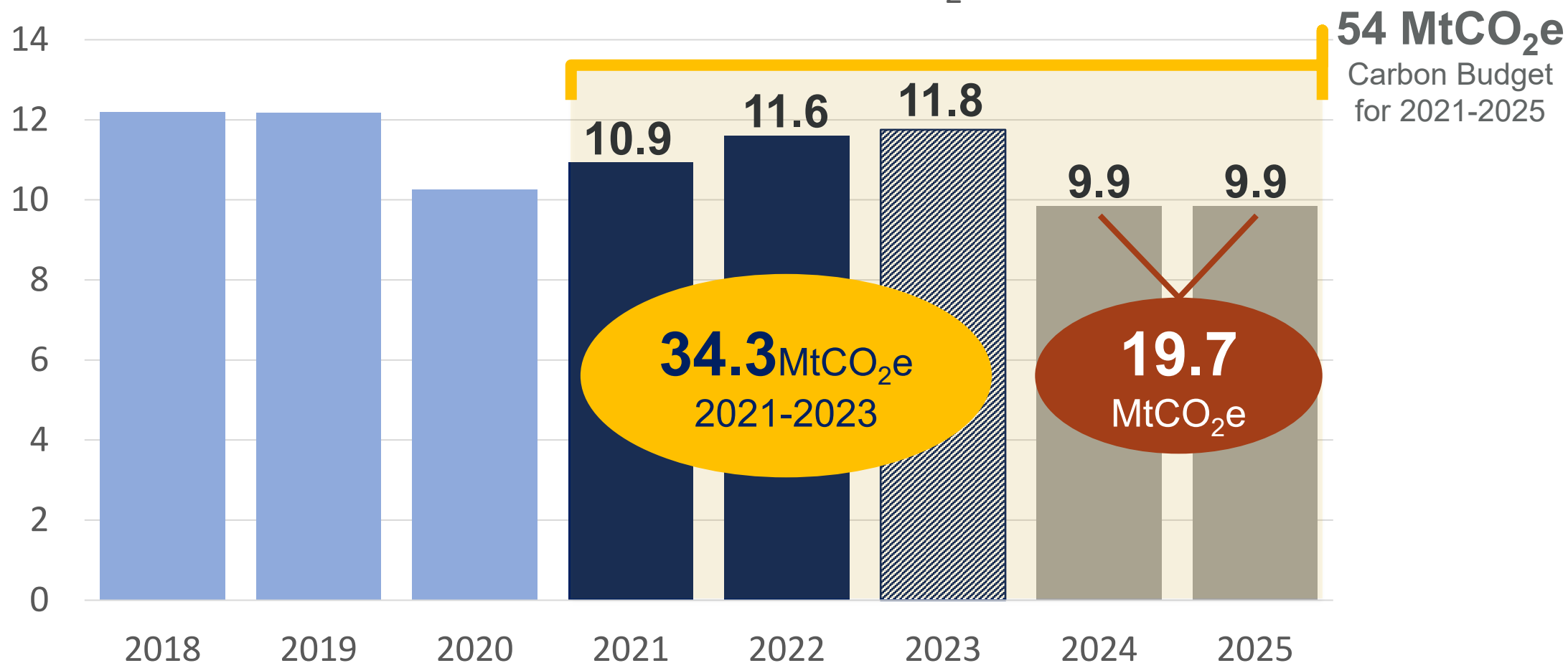
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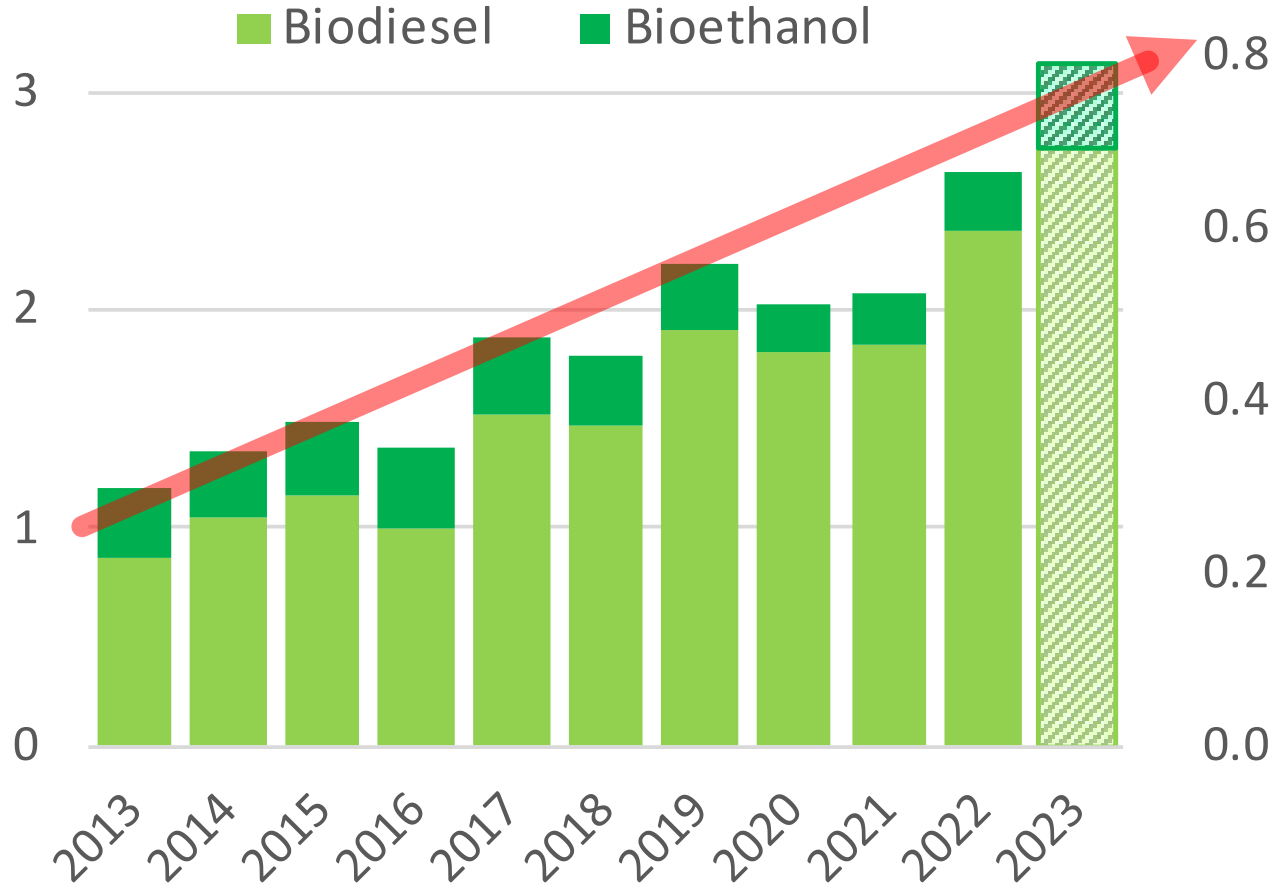
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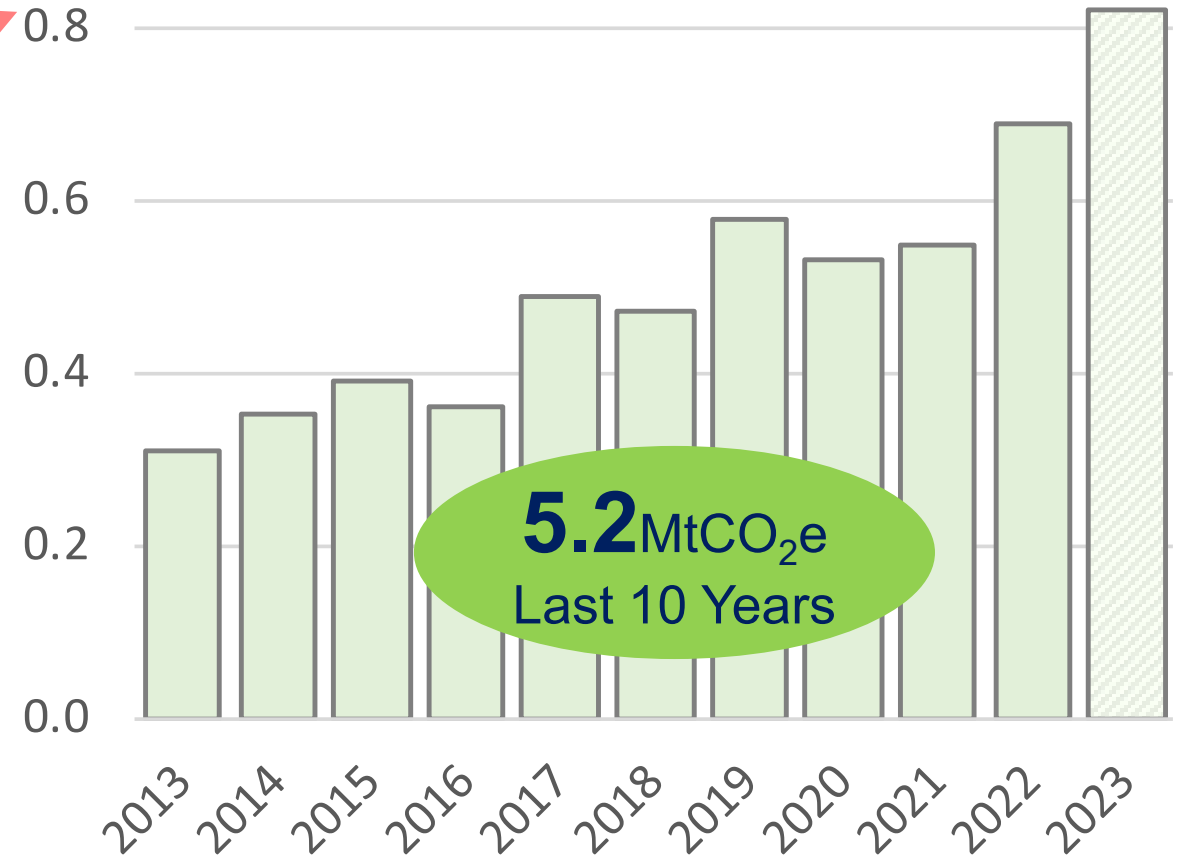


Trends in Transport – Fossil Fuel & Renewables

Road Transport Biofuel (TWh)

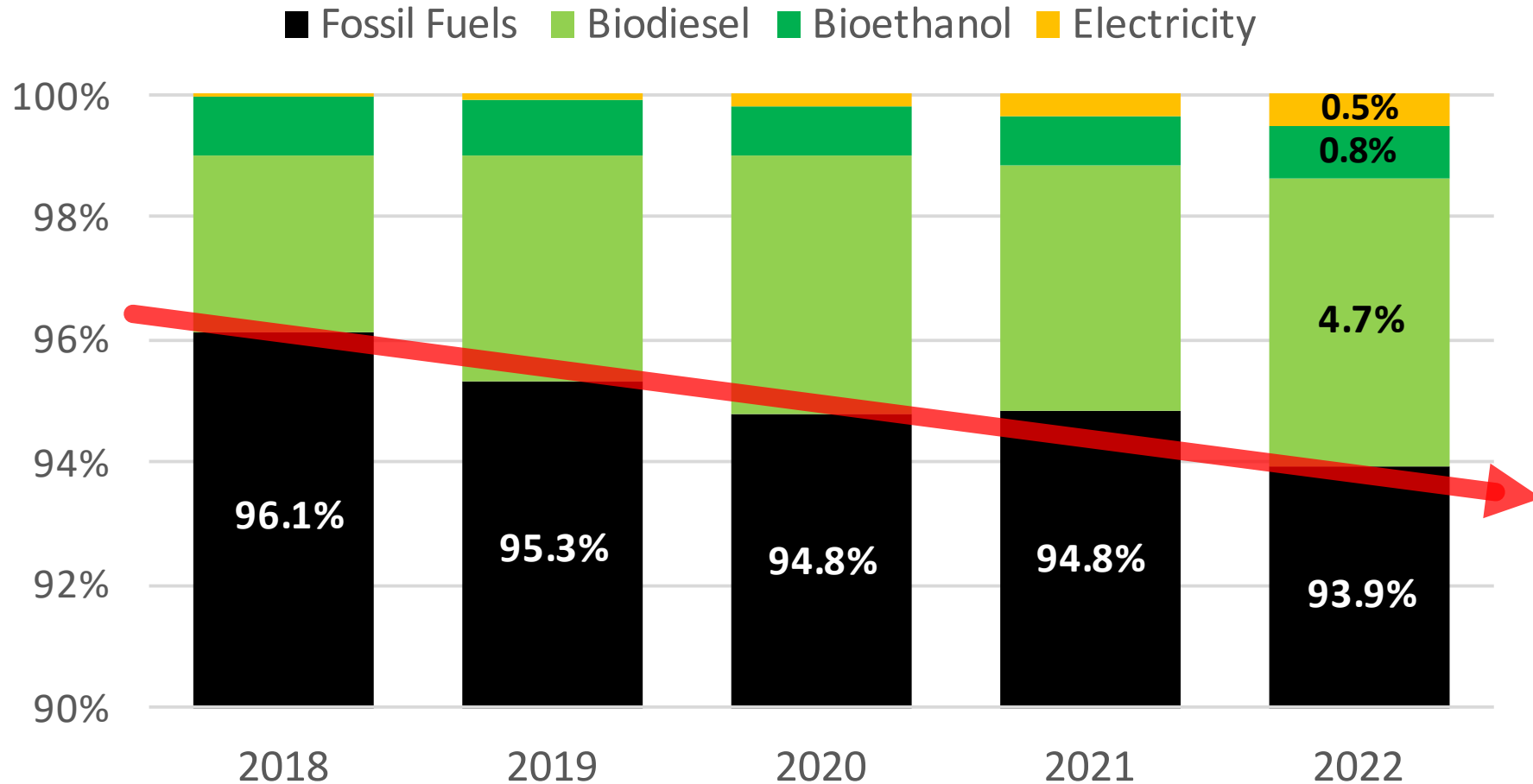


Emissions Avoided (MtCO₂)



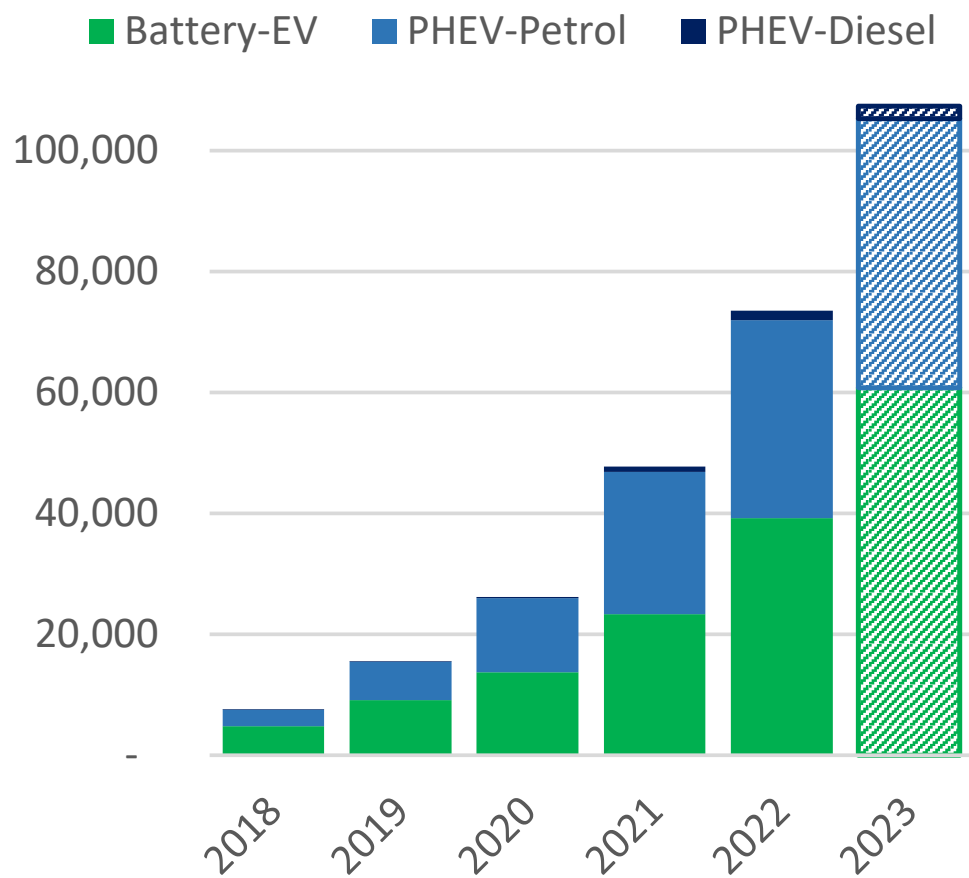
Trends in Transport – Fossil Fuel & Renewables

Fossil & Non-Fossil Energy in Road Transport



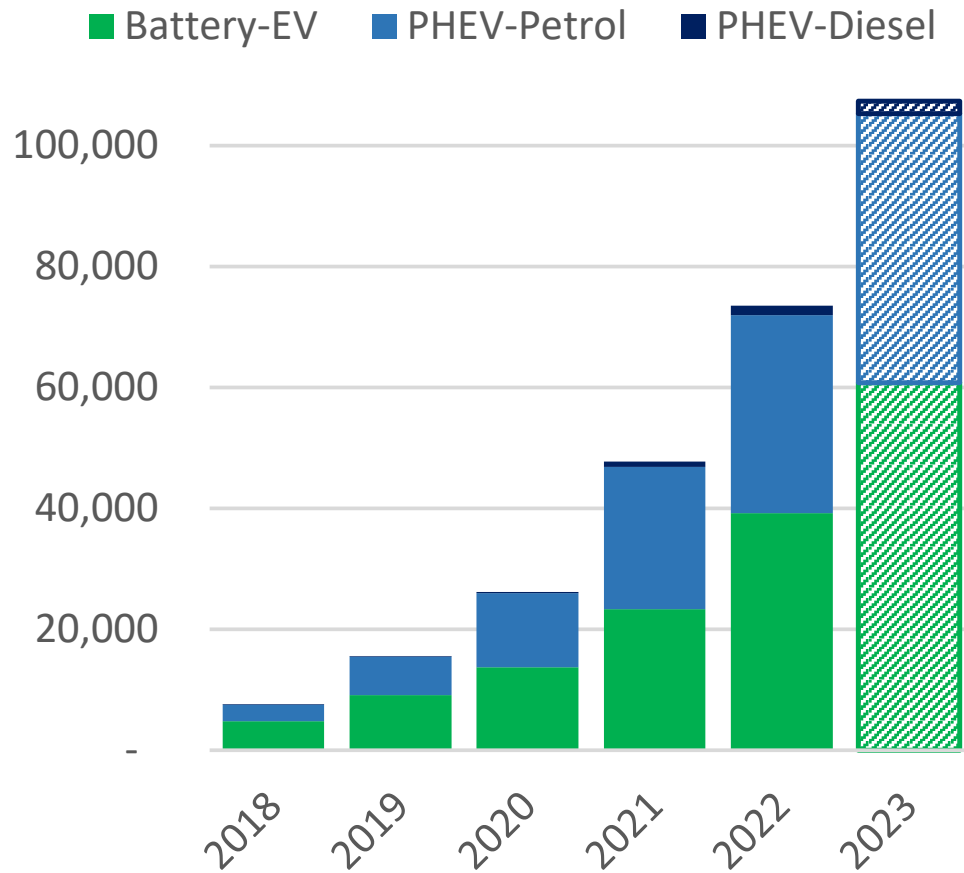
Trends in Transport – Electric Vehicles

No. of Electric Vehicles

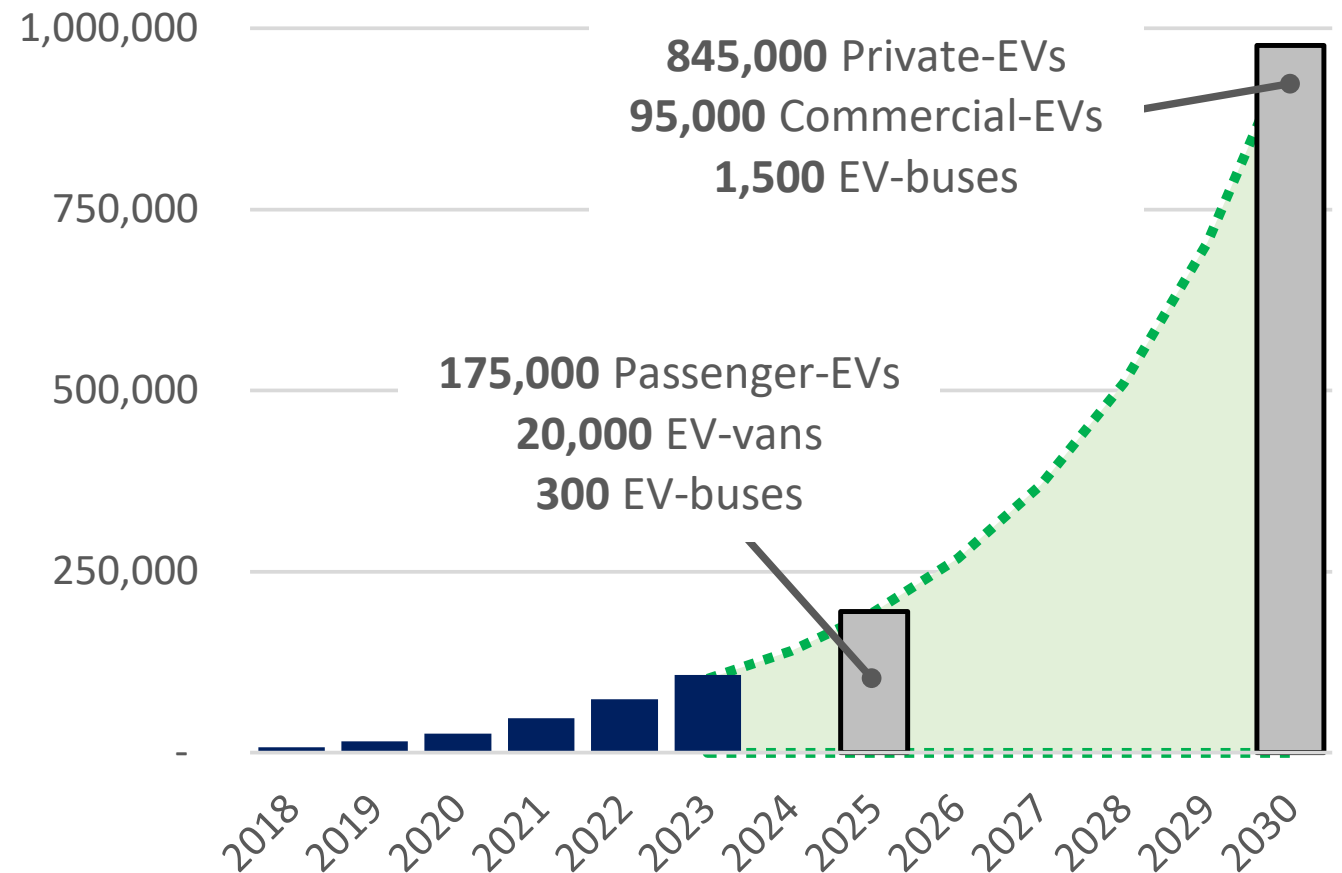


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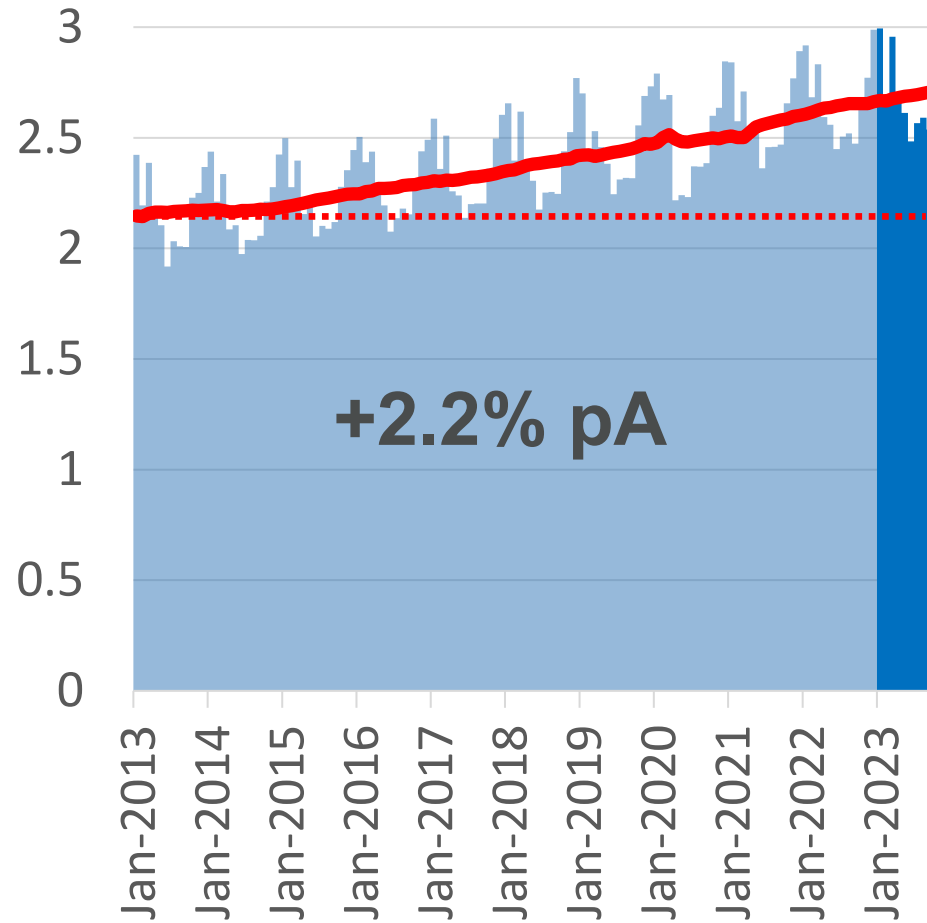
Trajectory to CAP-23 Targets for EVs



Trends in Electricity

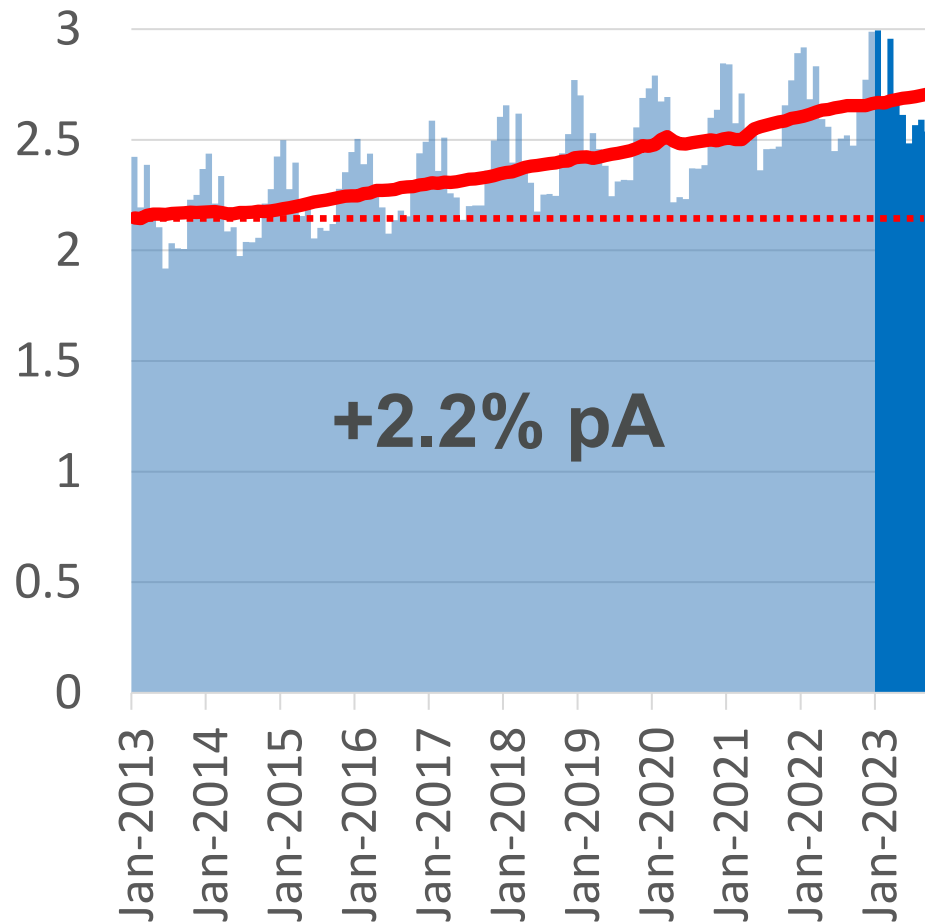
Trends in Electricity – Demand Growth

Monthly Grid Supply (TWh)

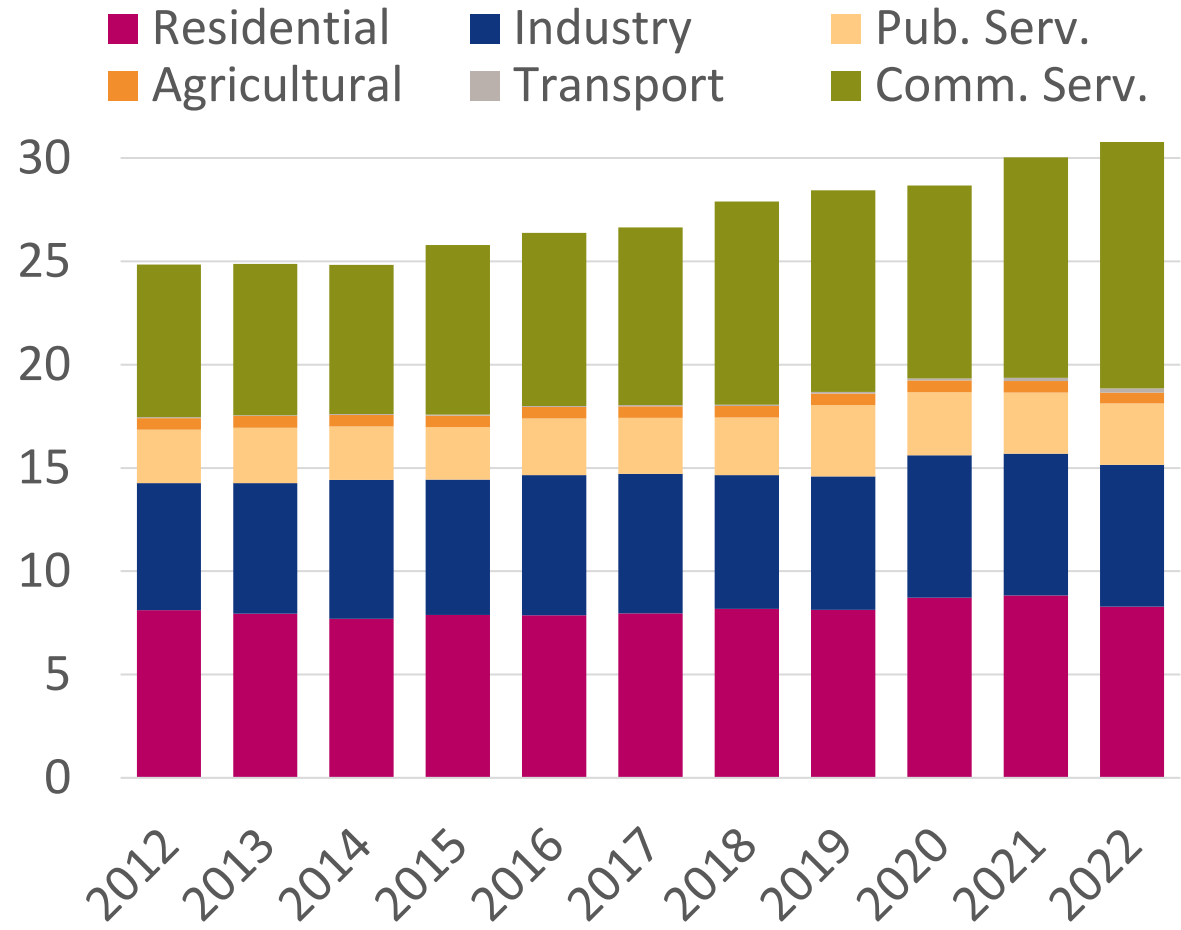


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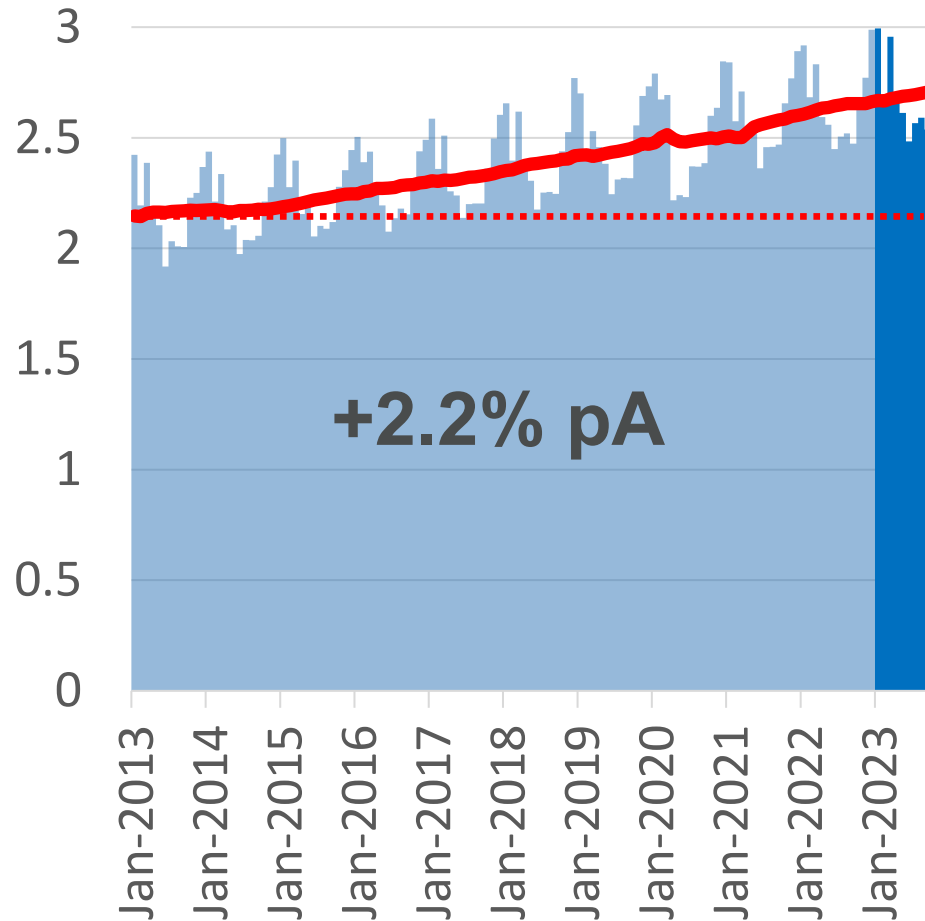


Electricity Demand by Sector (TWh)

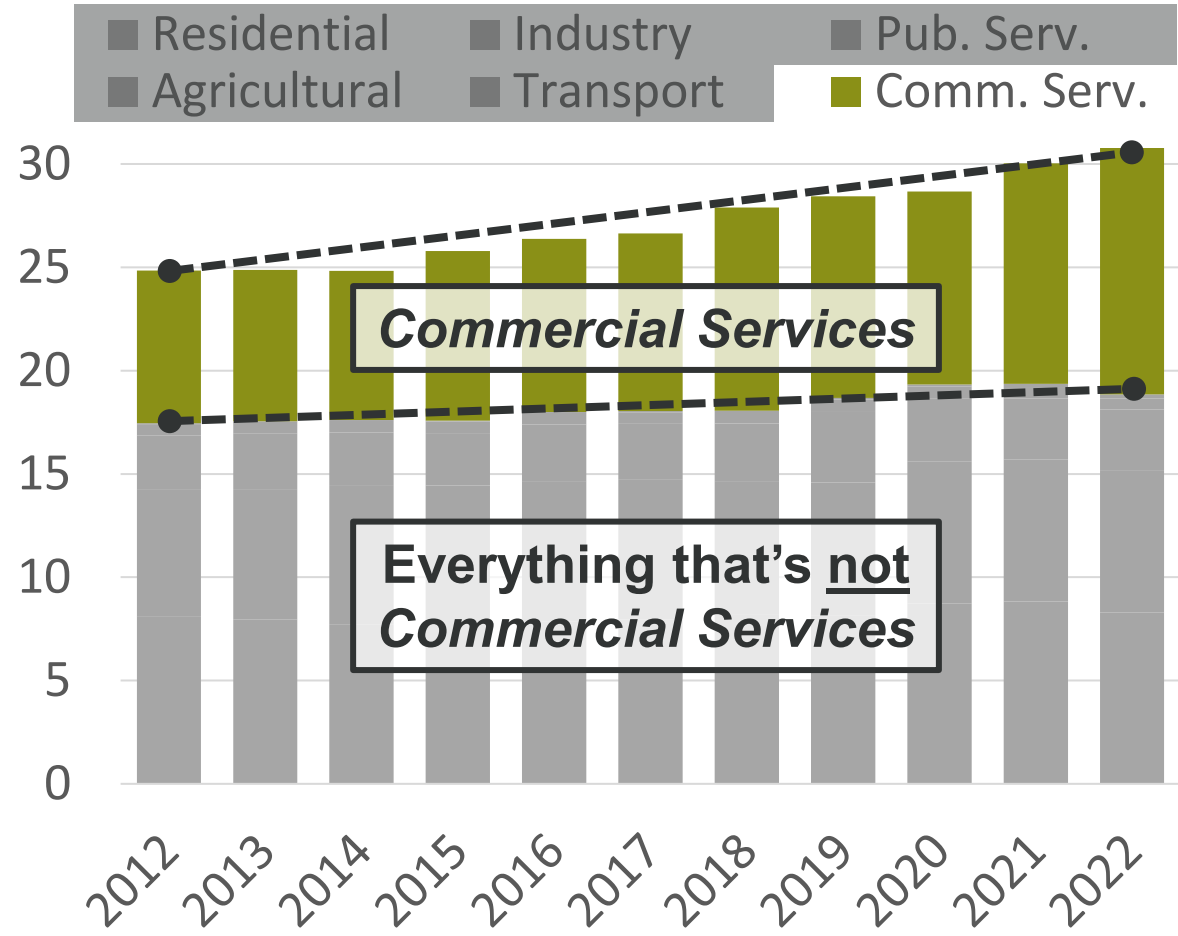


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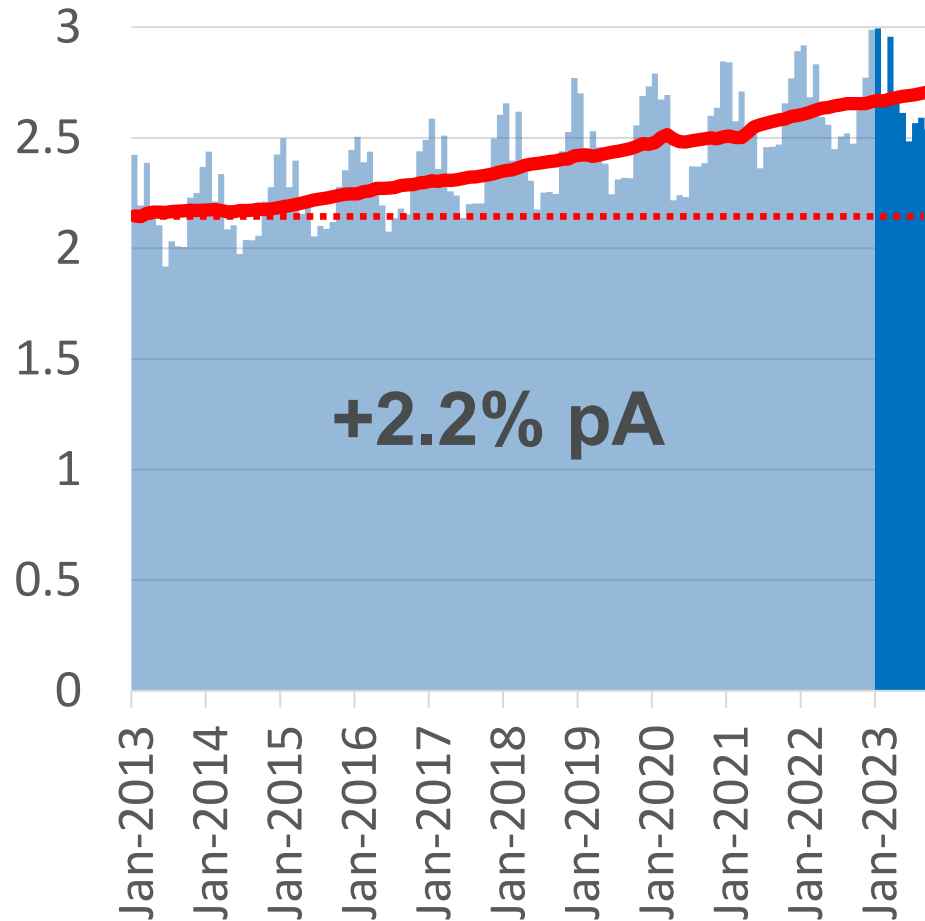


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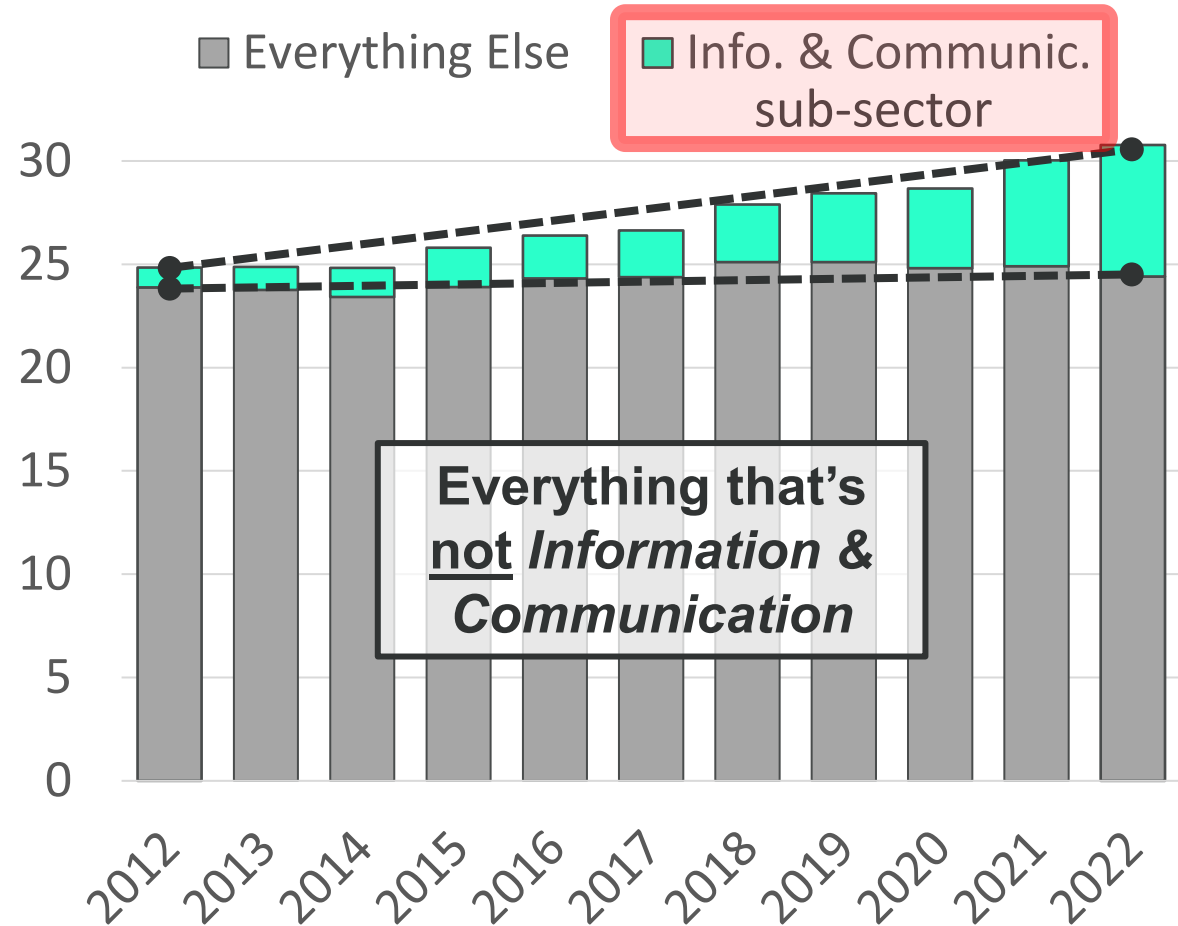


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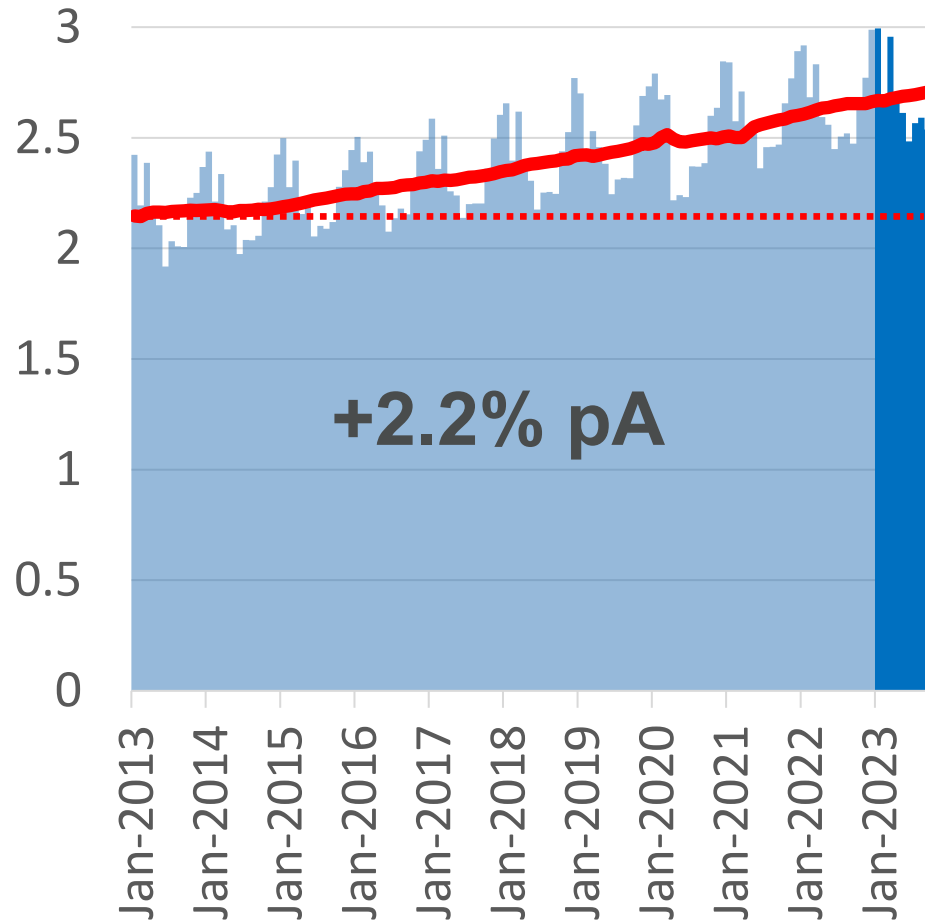


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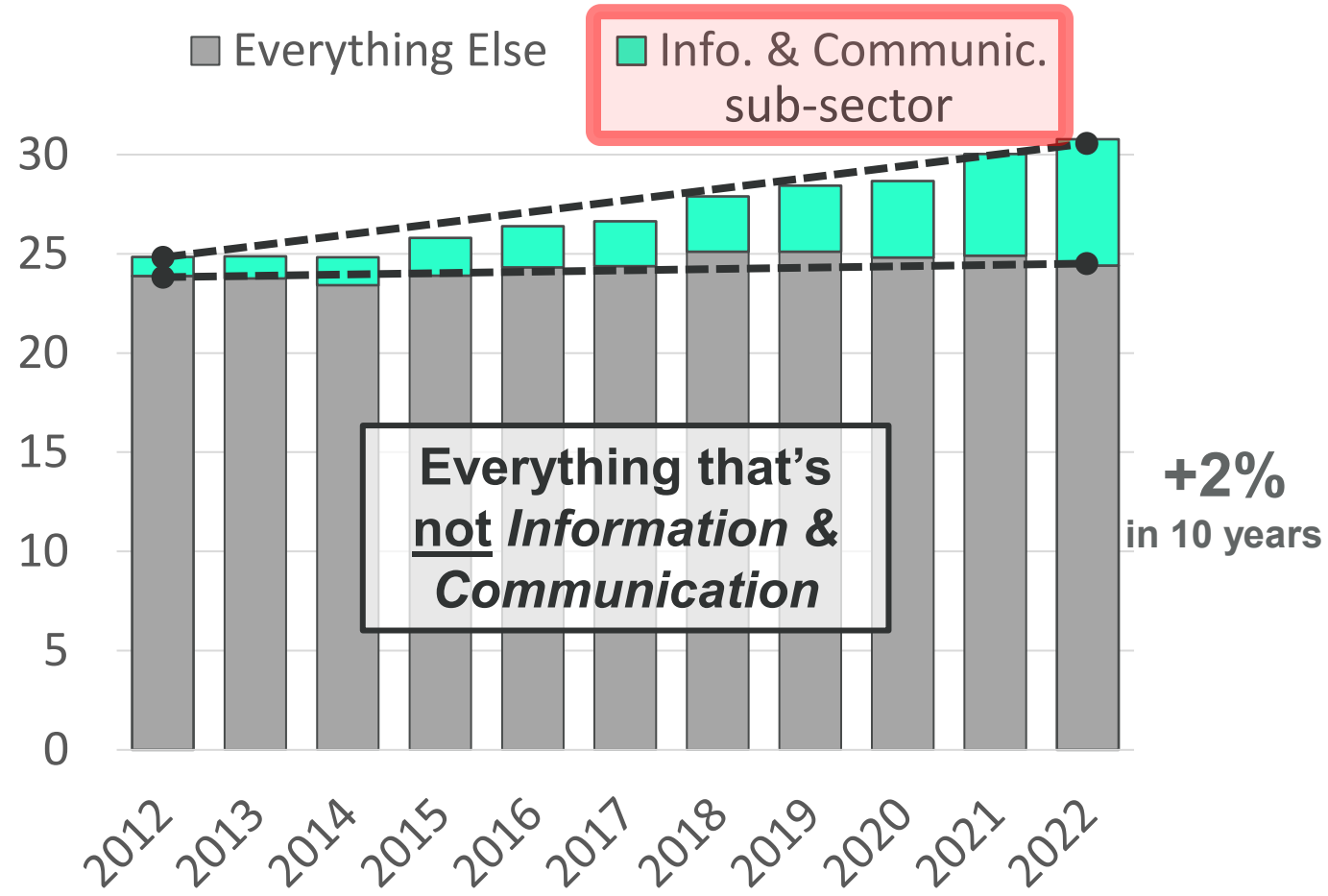


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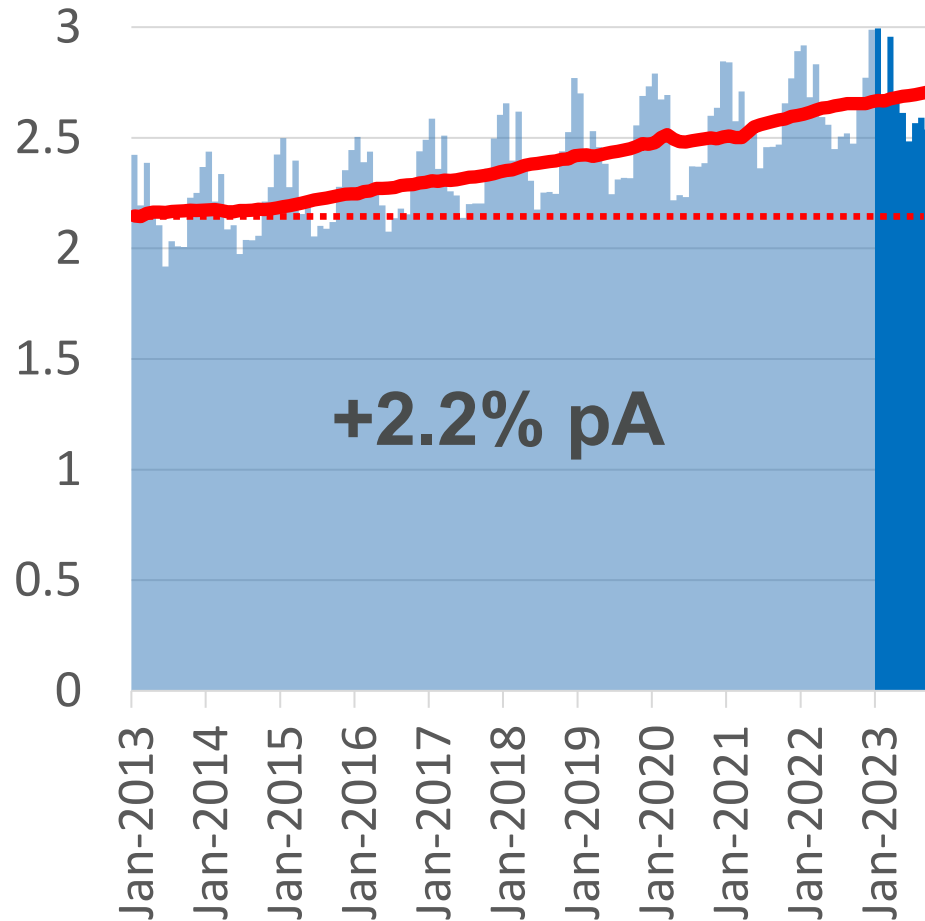


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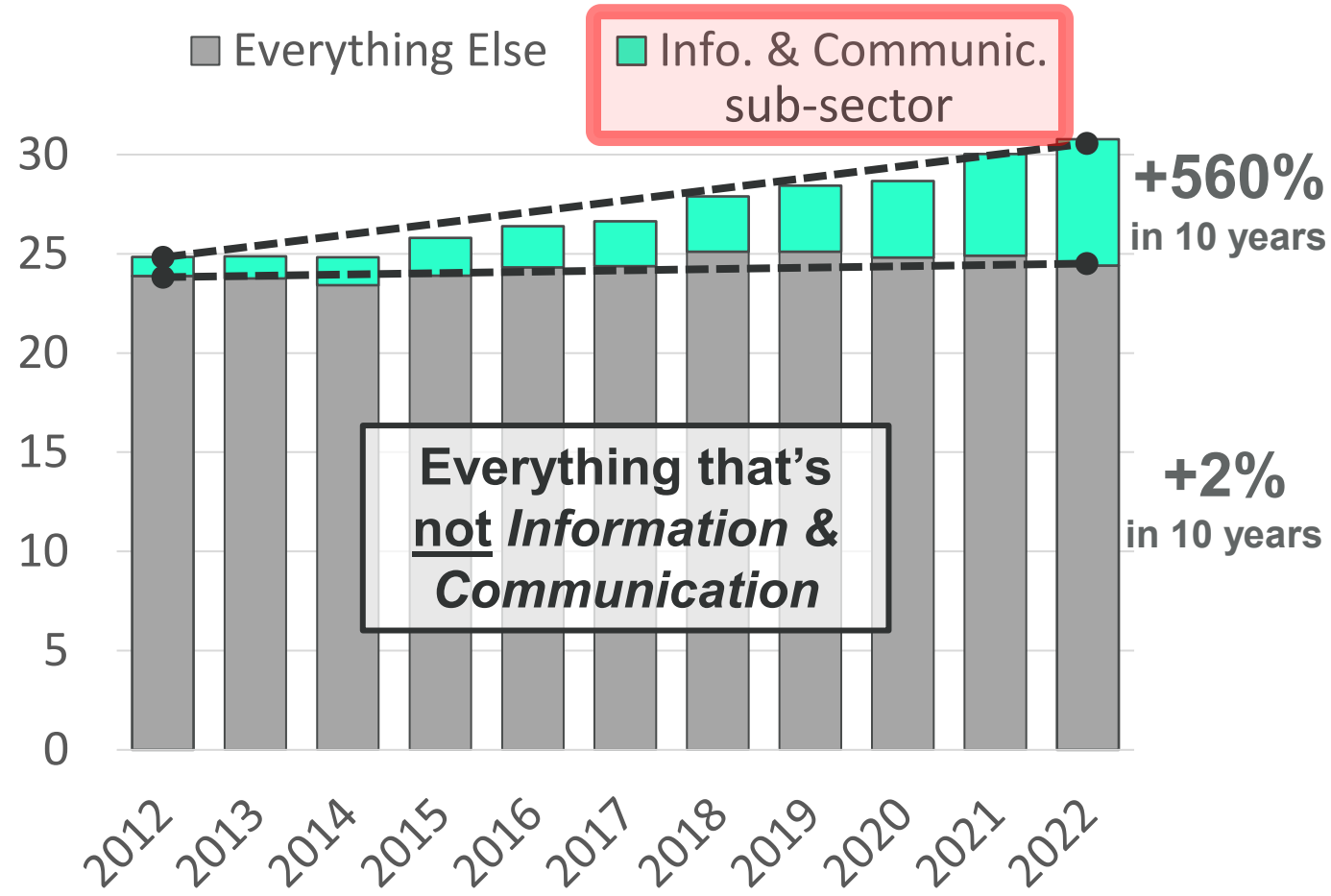


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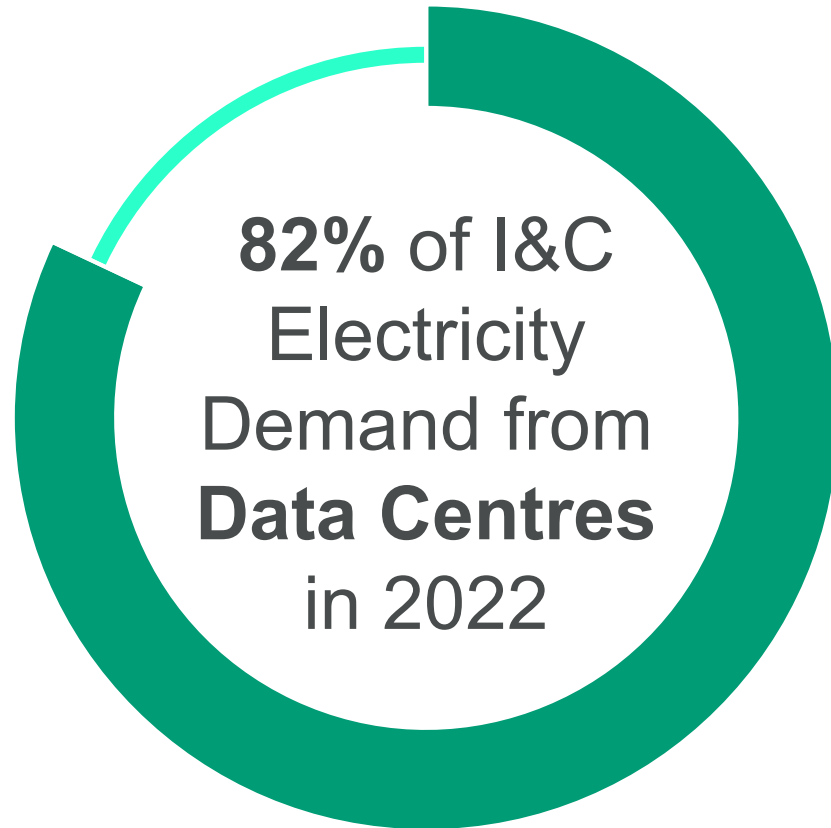
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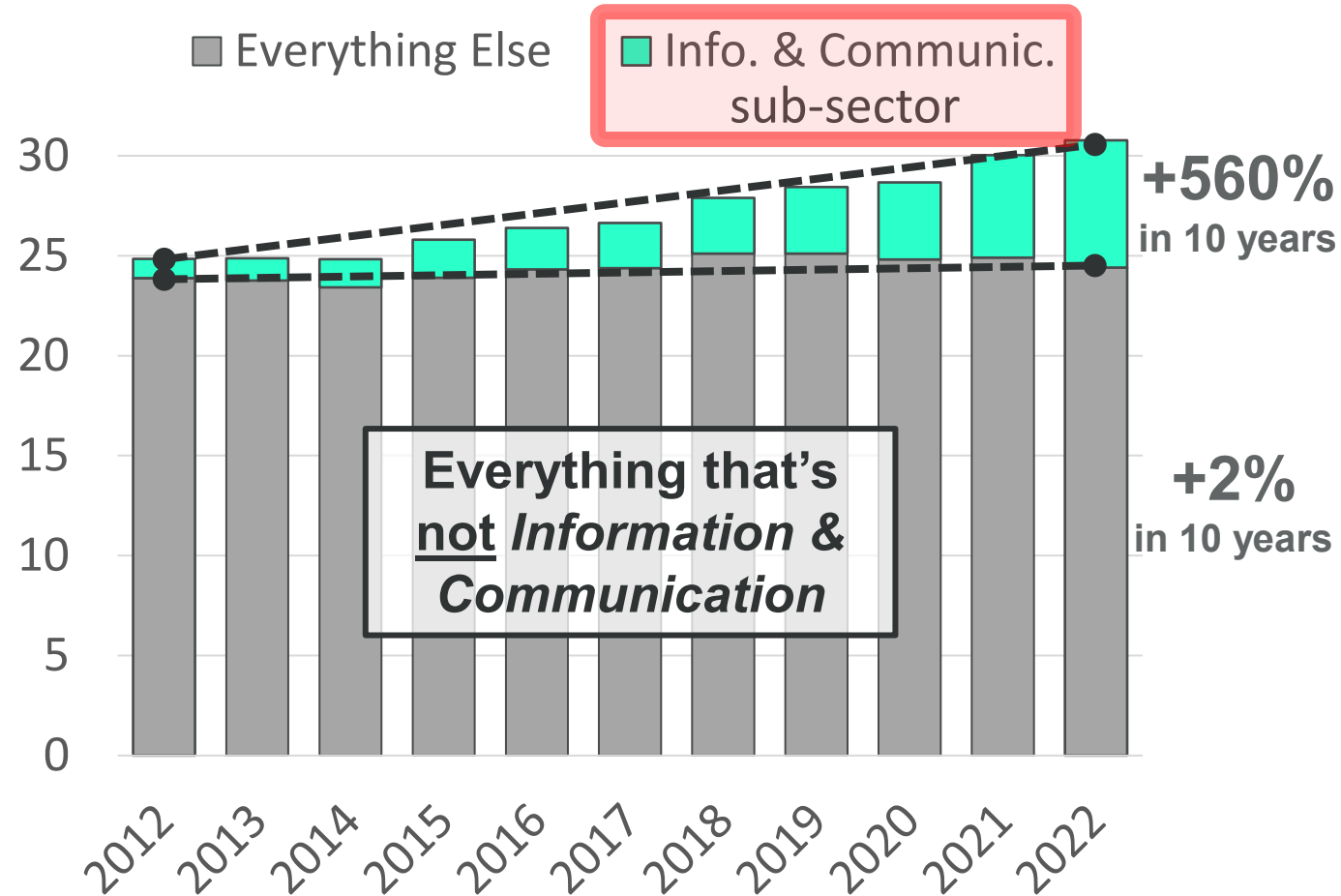
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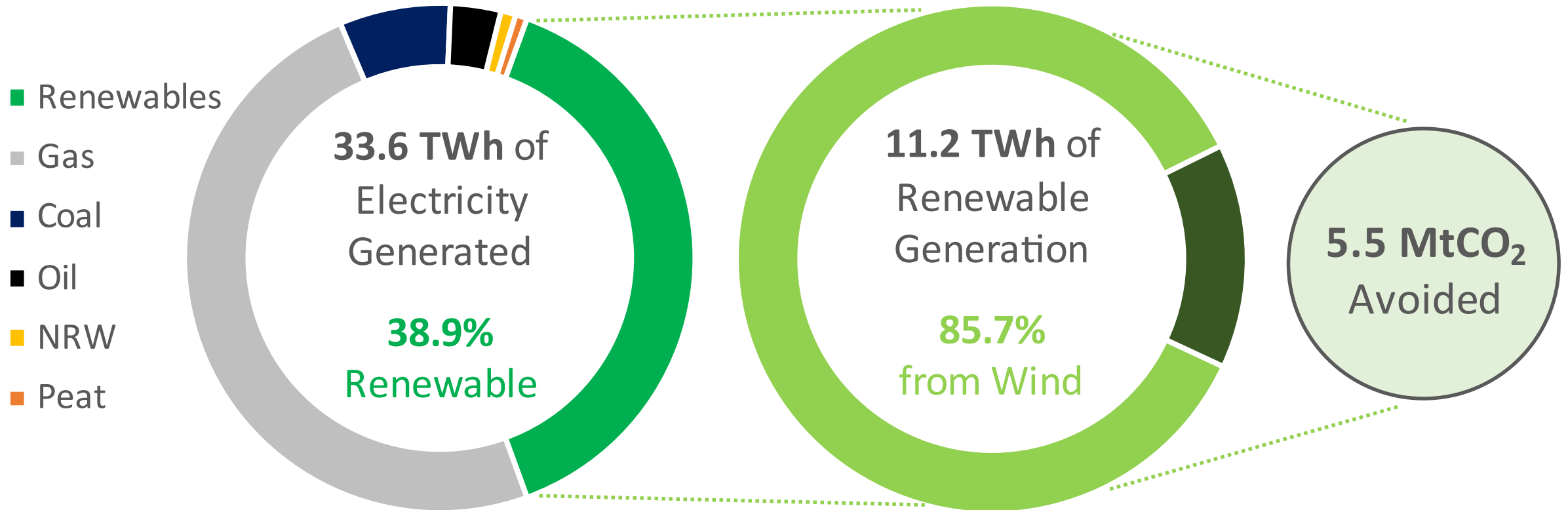


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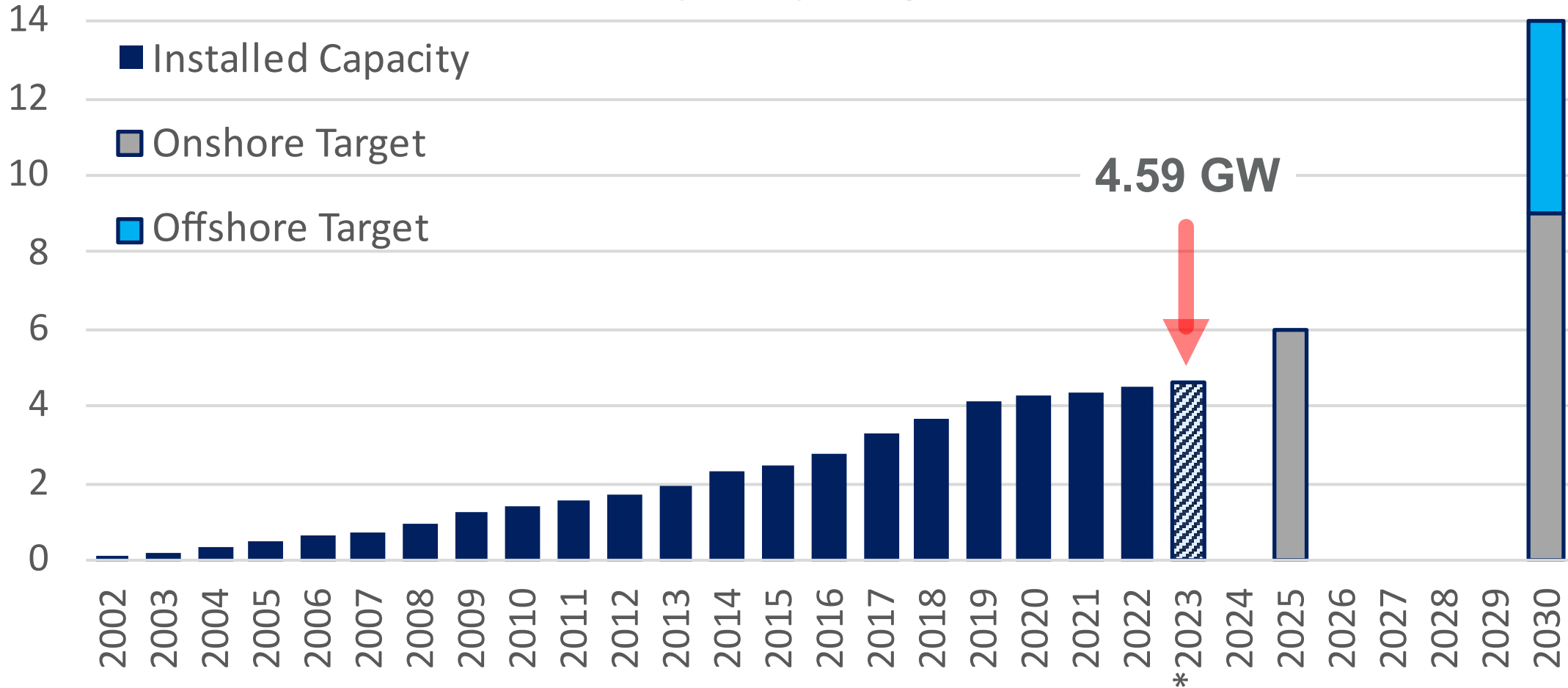
Trends in Electricity – Generation in Ireland

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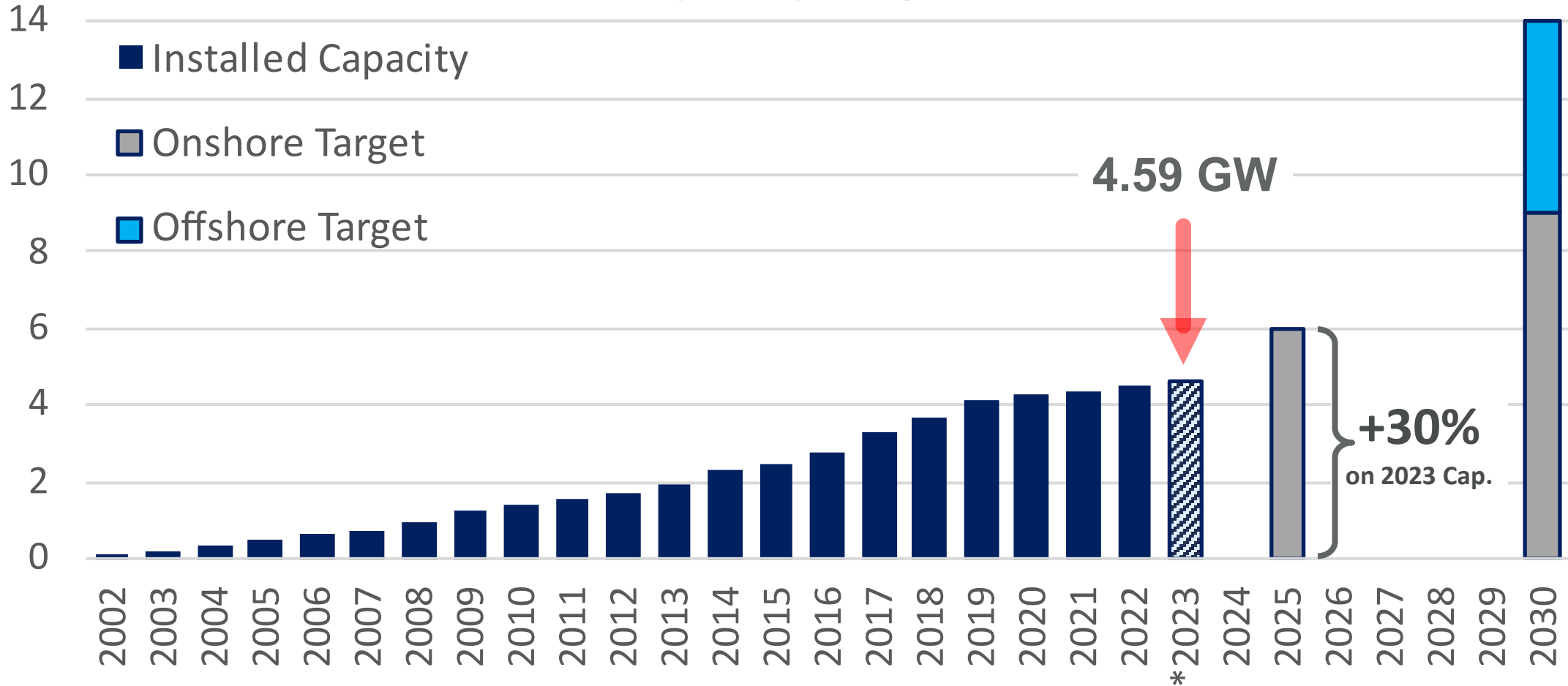
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Wind Capacity Targets (GW)



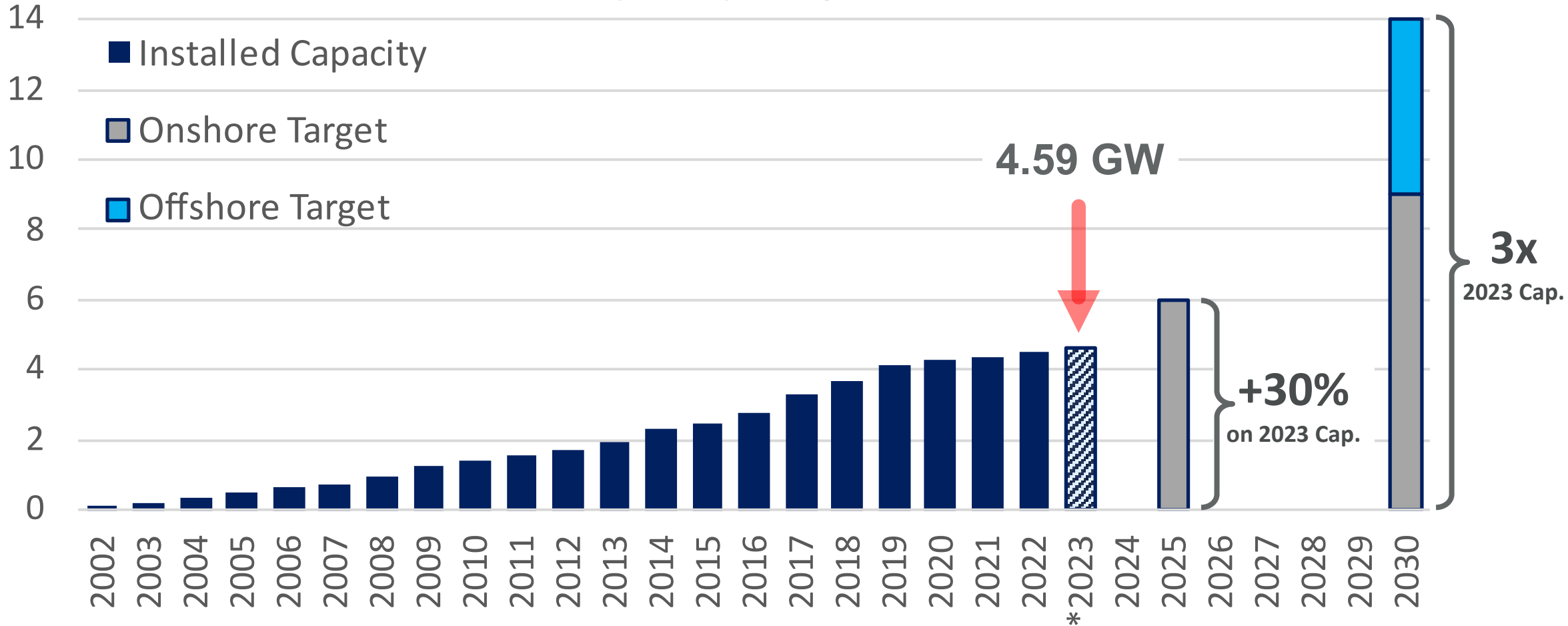
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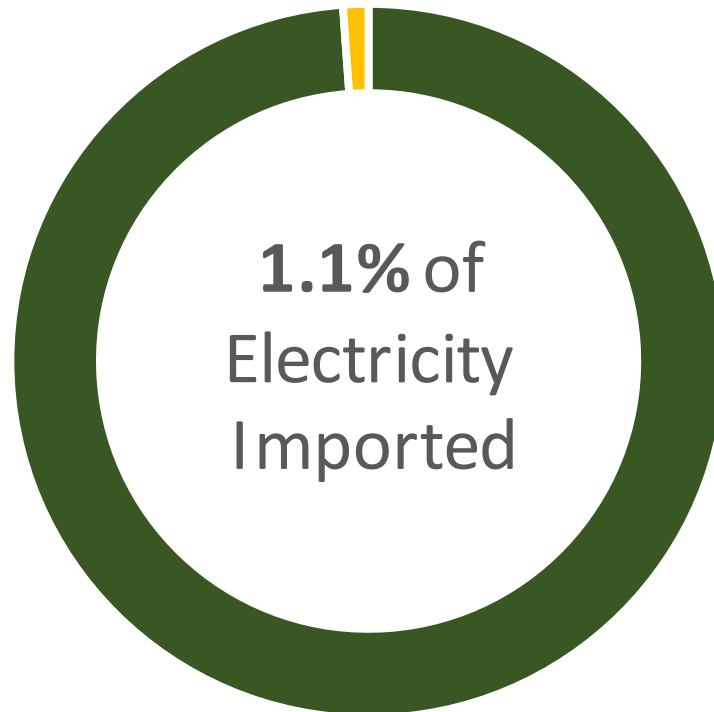
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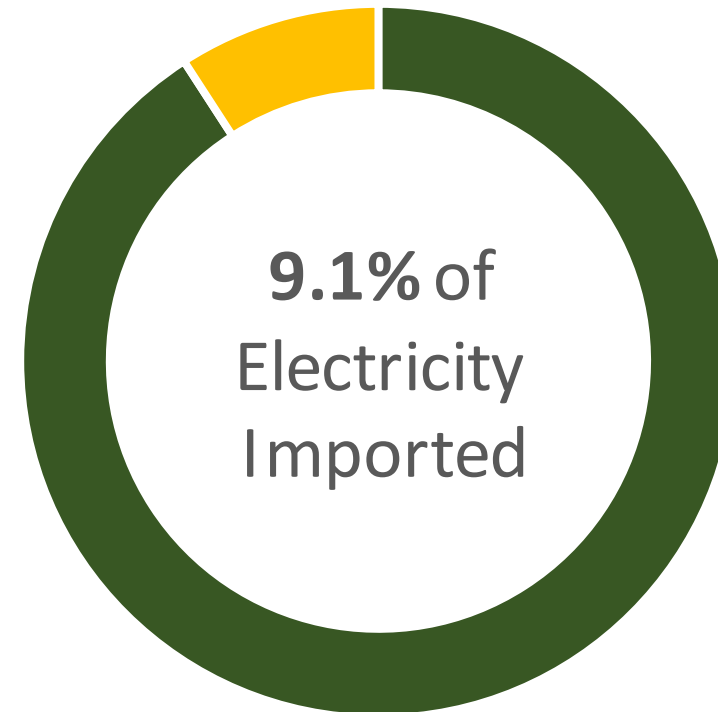


Trends in Electricity – Net Imports

First 9-Months of 2022

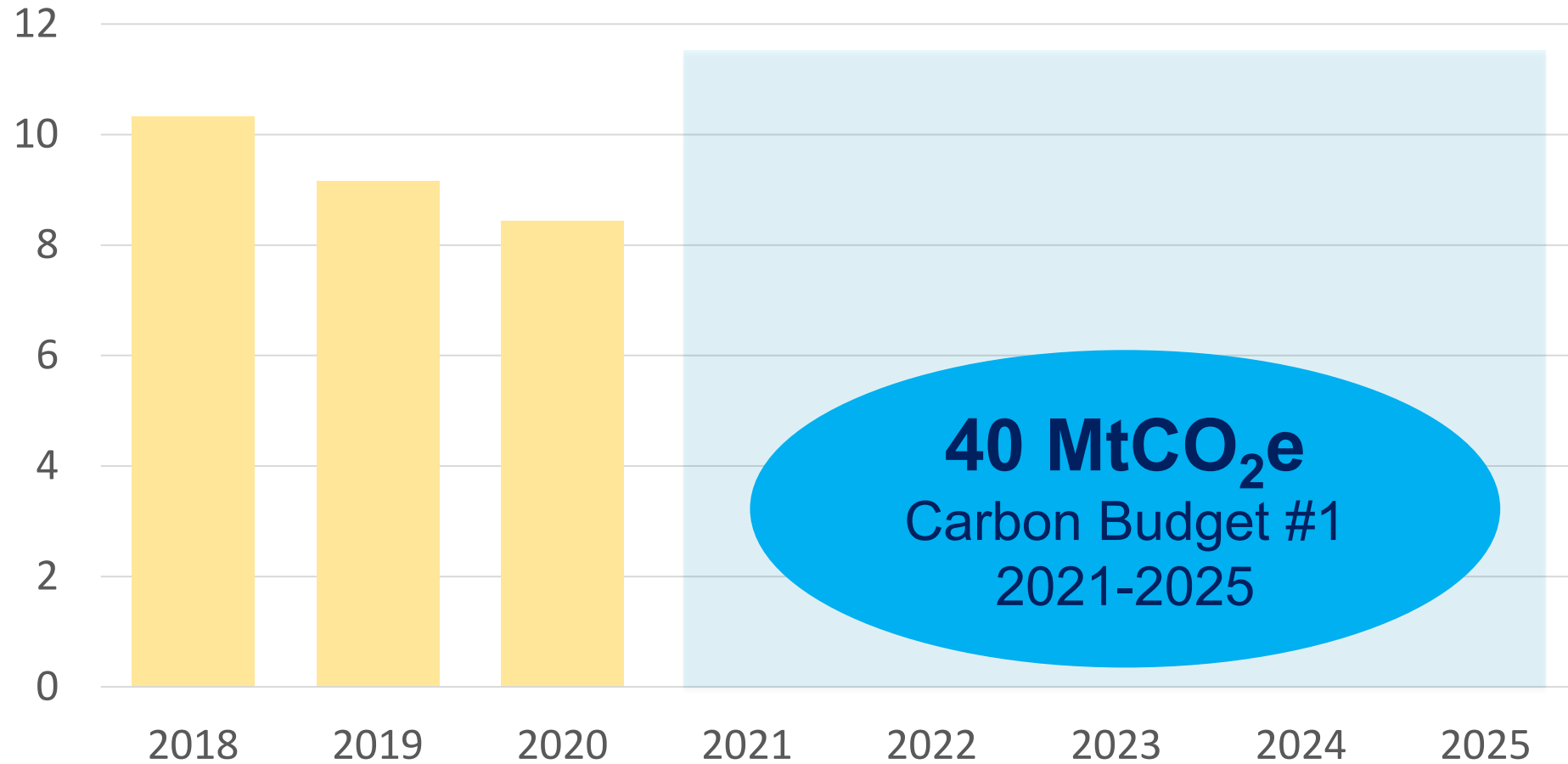


First 9-Months of 2023



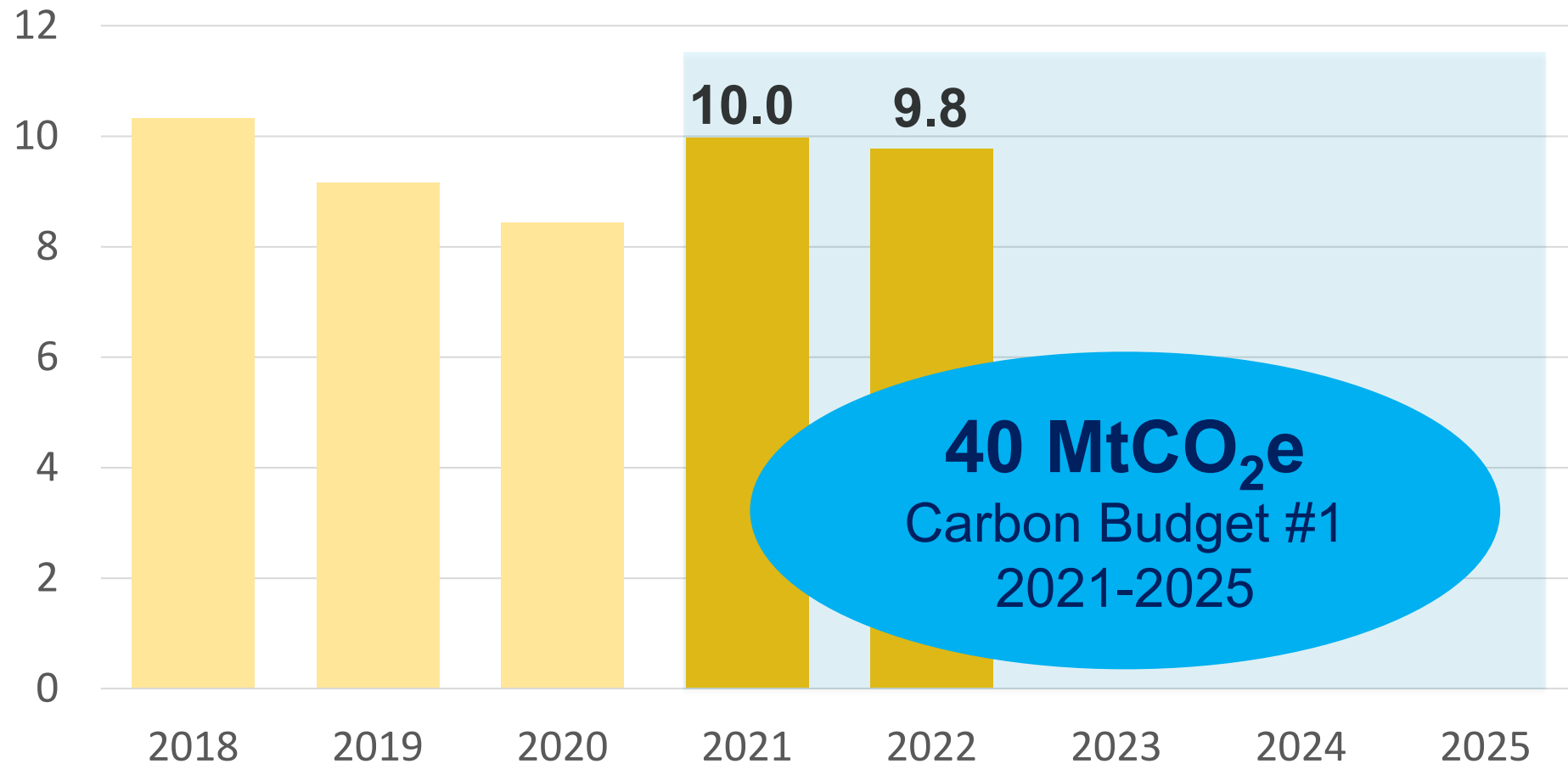
Trends in Electricity – Emissions

Electricity Emissions (MtCO₂e)



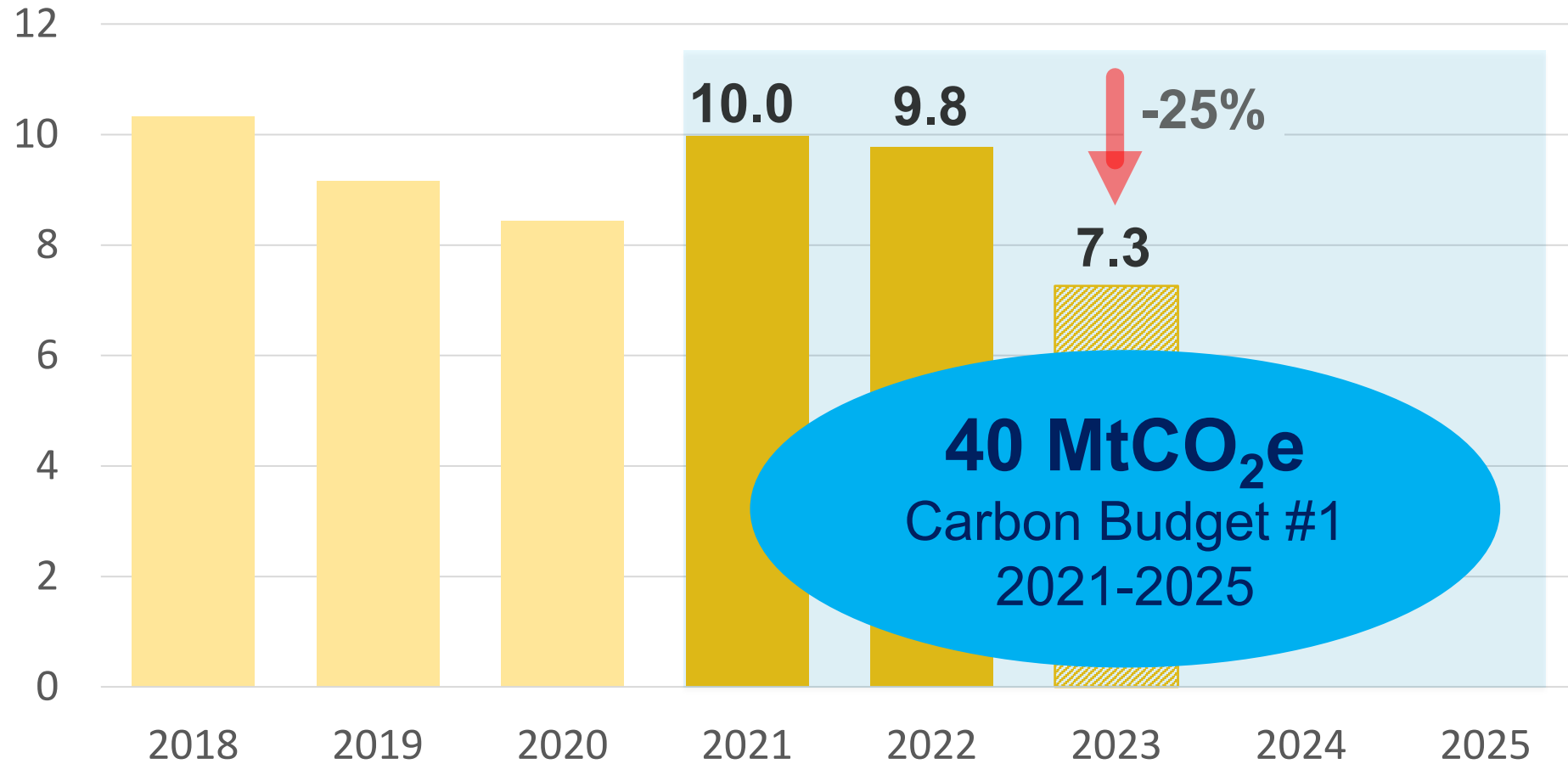
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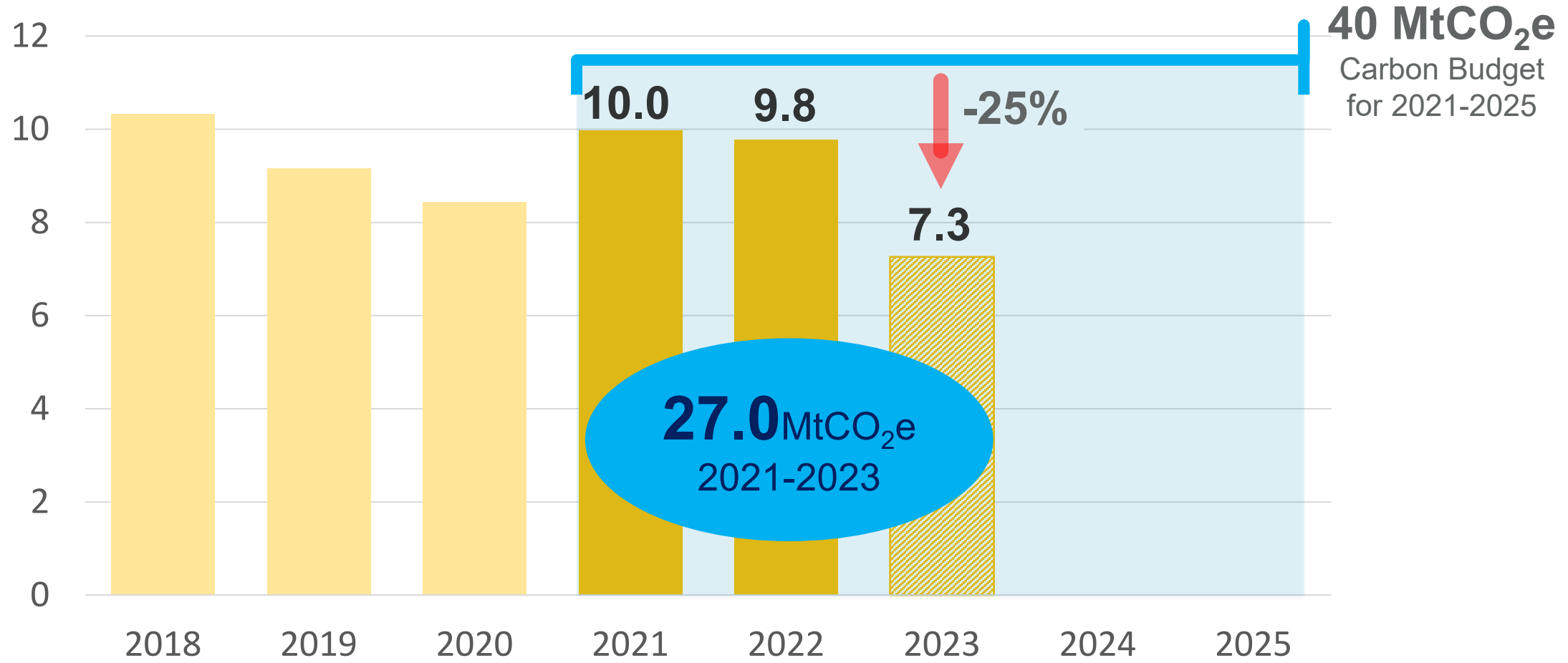
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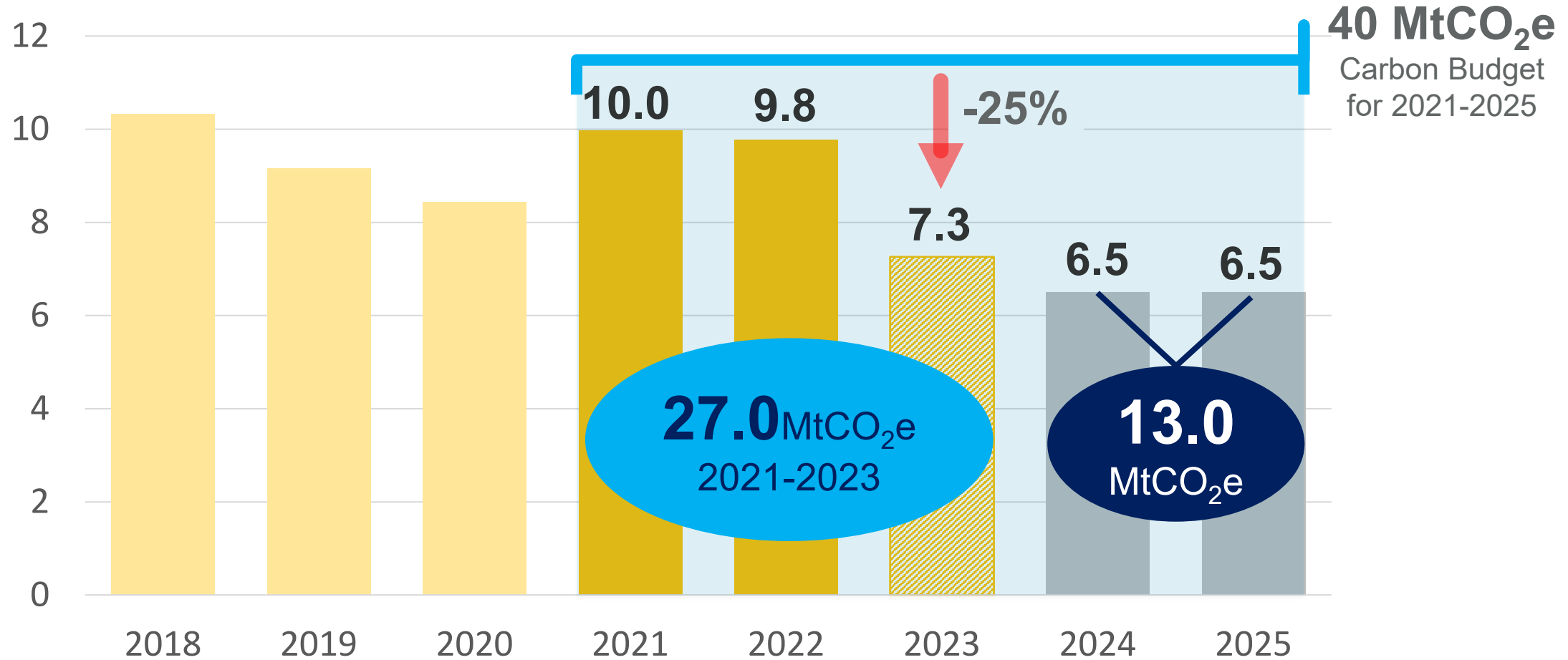
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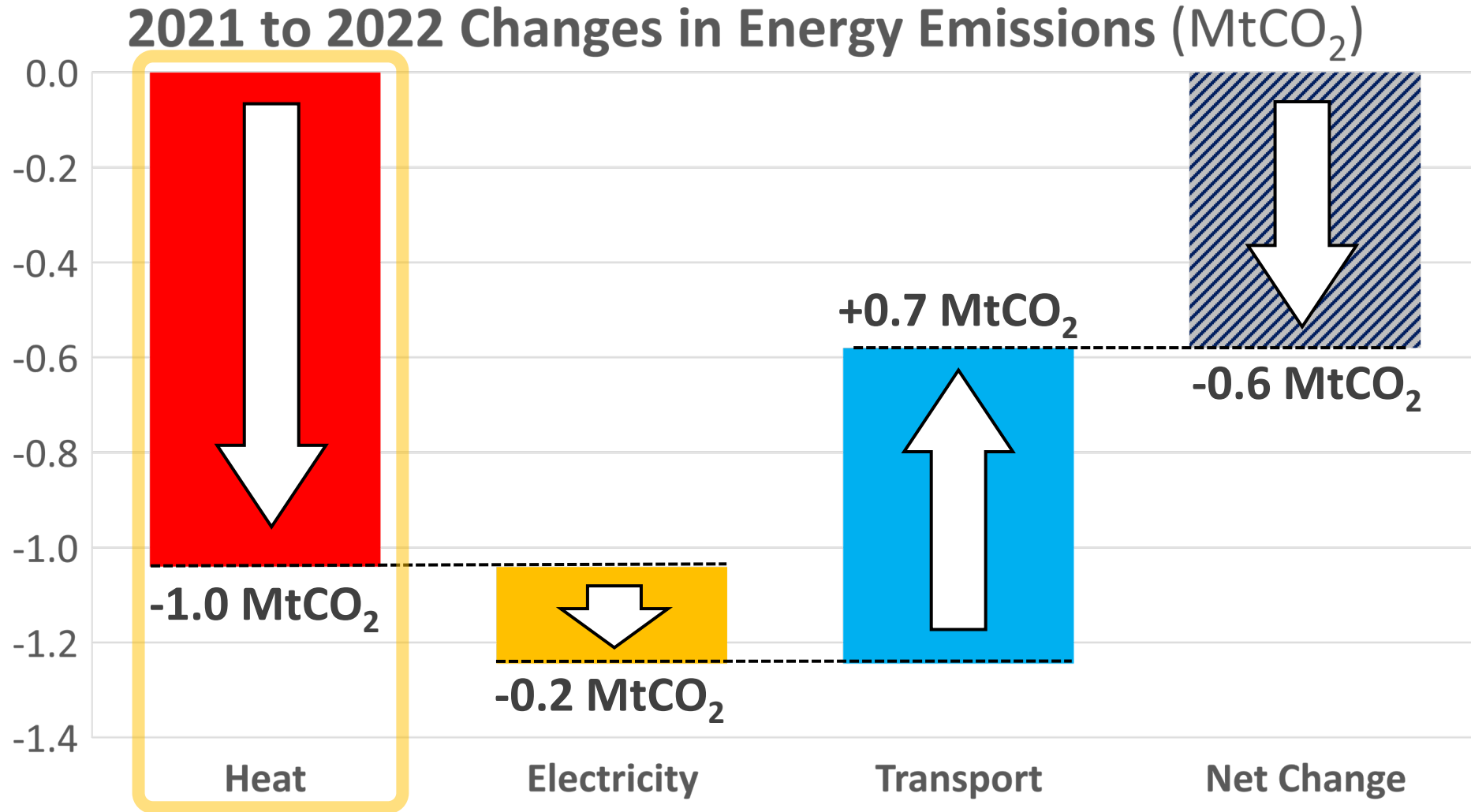
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Electricity Emissions (MtCO₂e)



Trends in Heat Demand

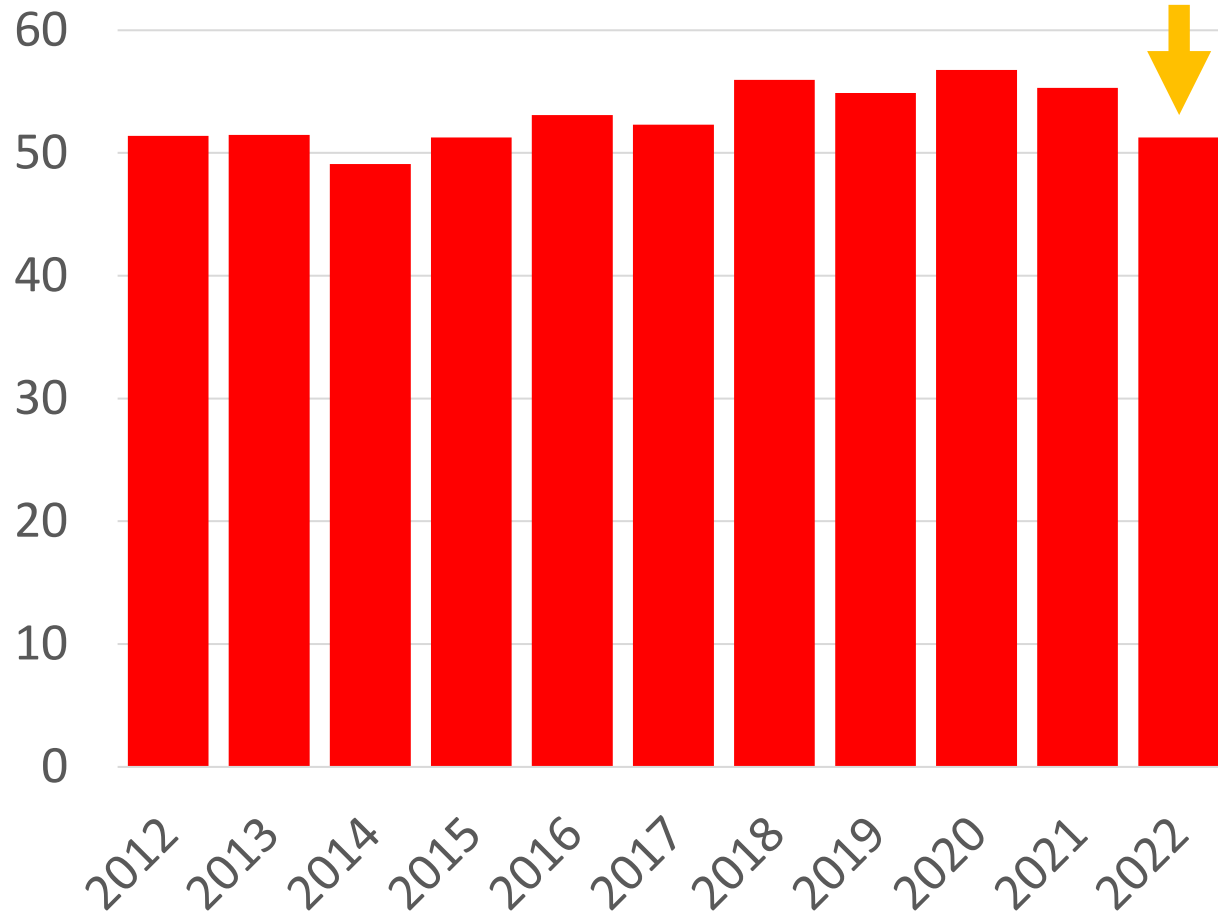
Trends in Heat Demand



Trends in Heat Demand

Heat (TWh)

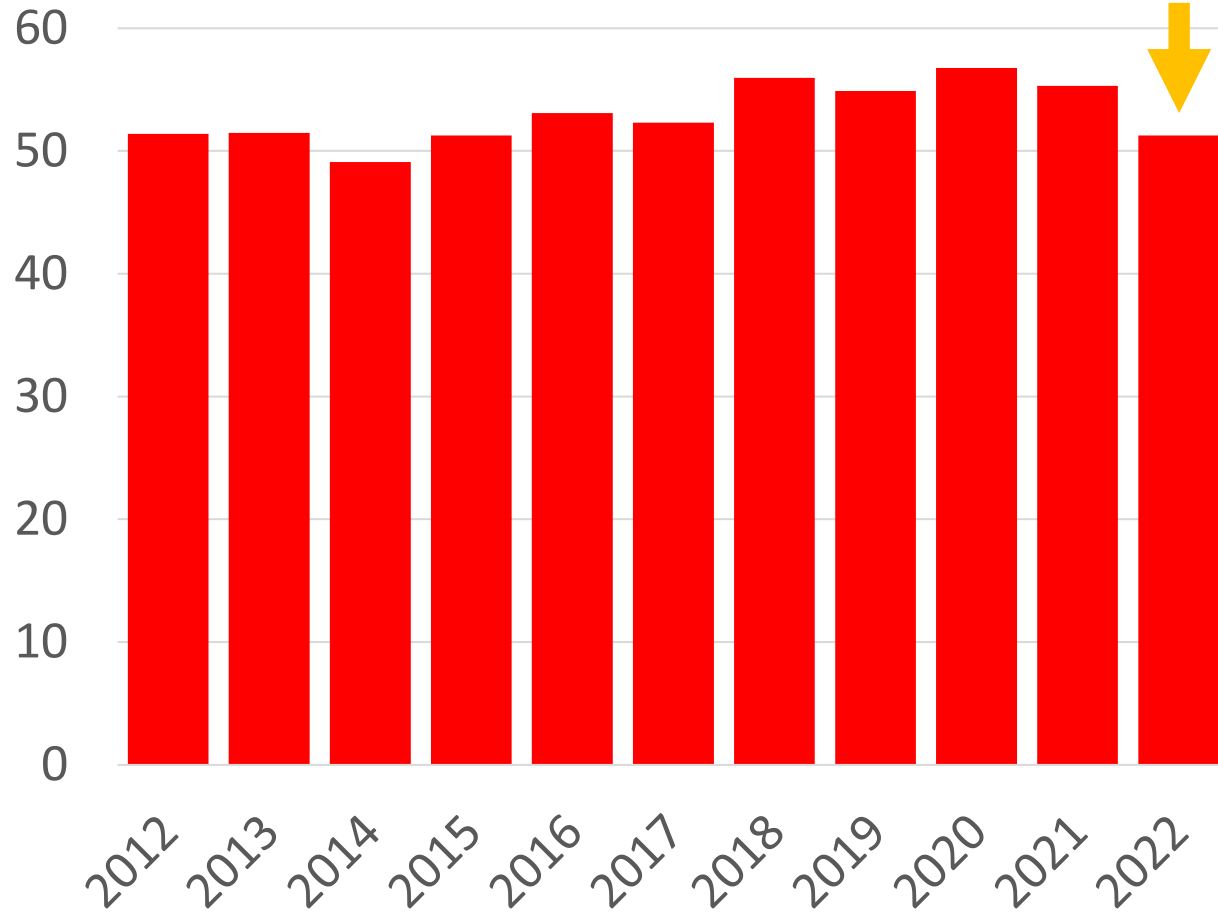
-7.3%
in 2022



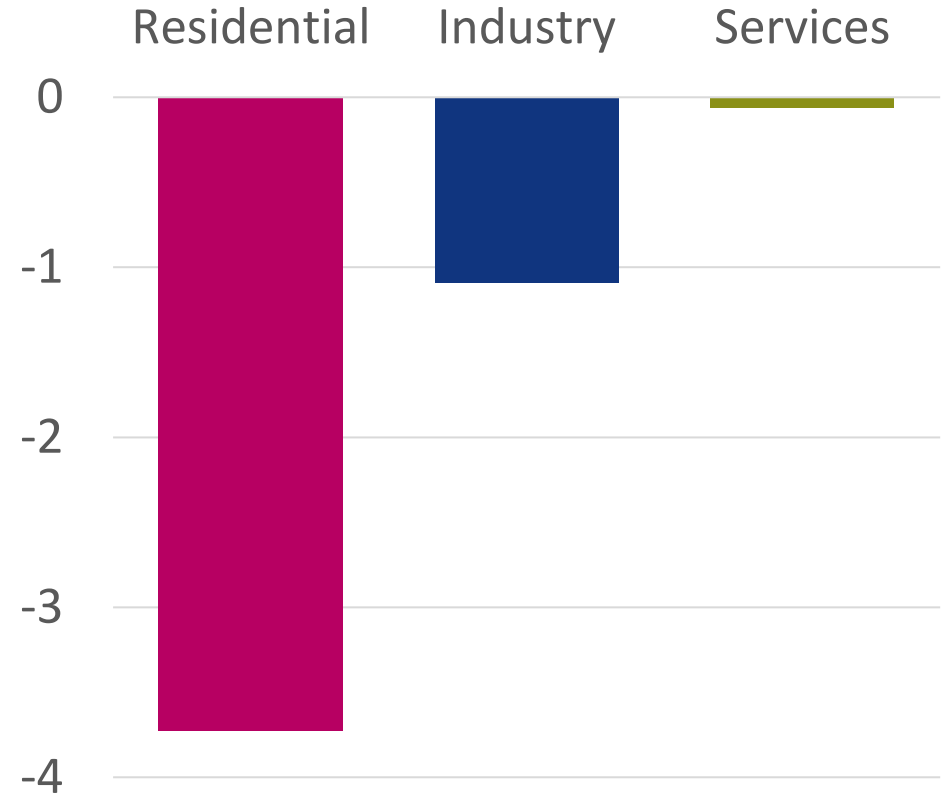
Trends in Heat Demand

Heat (TWh)

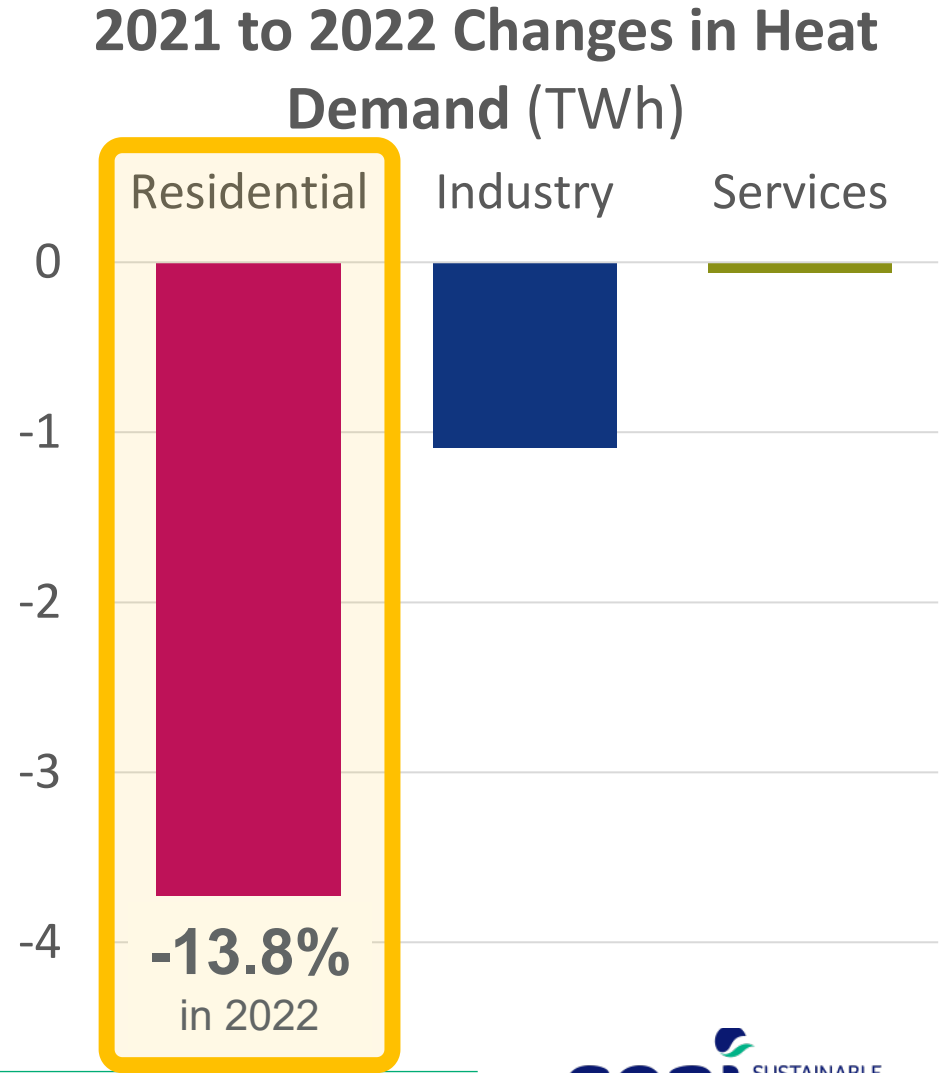
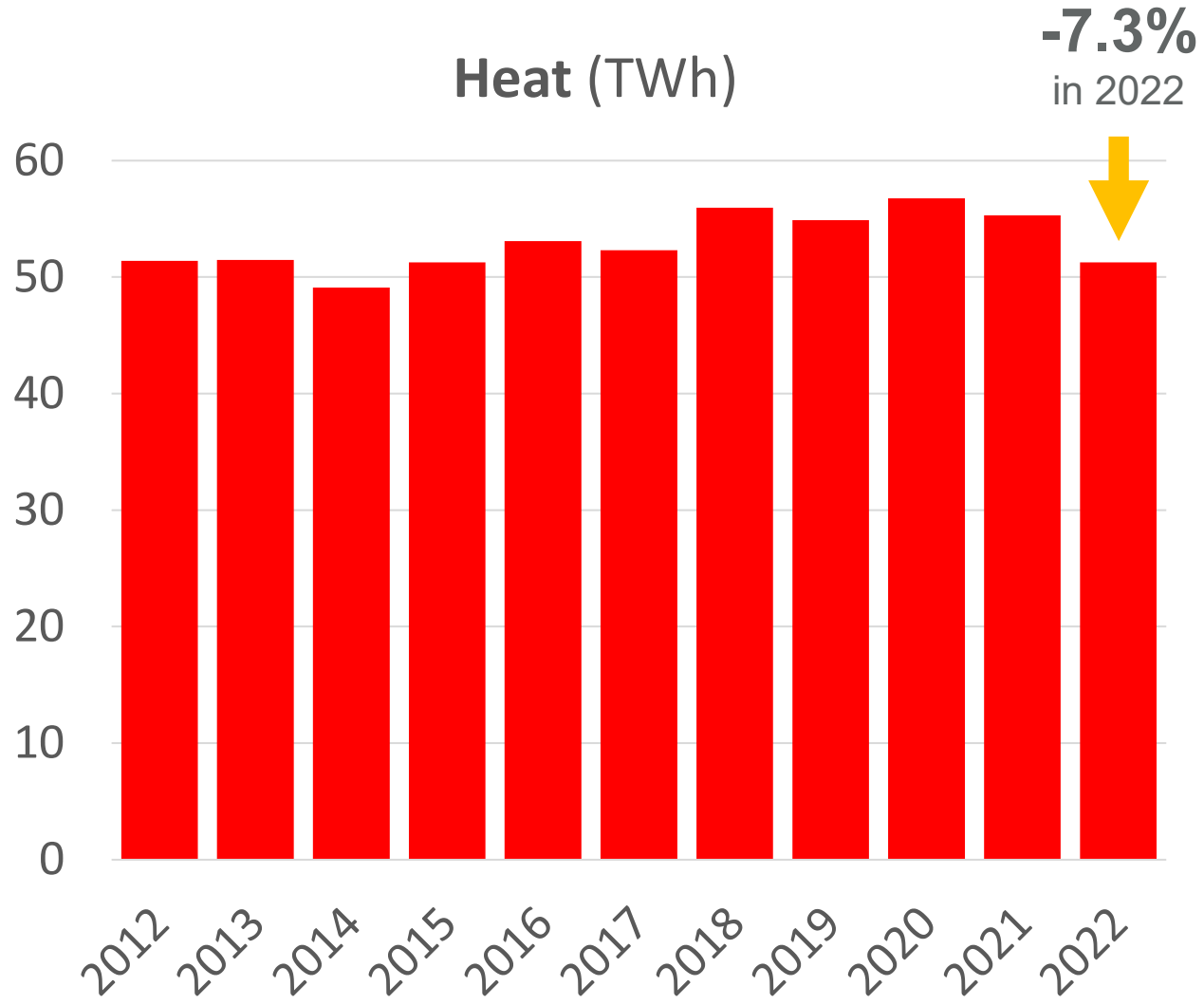
-7.3%
in 2022



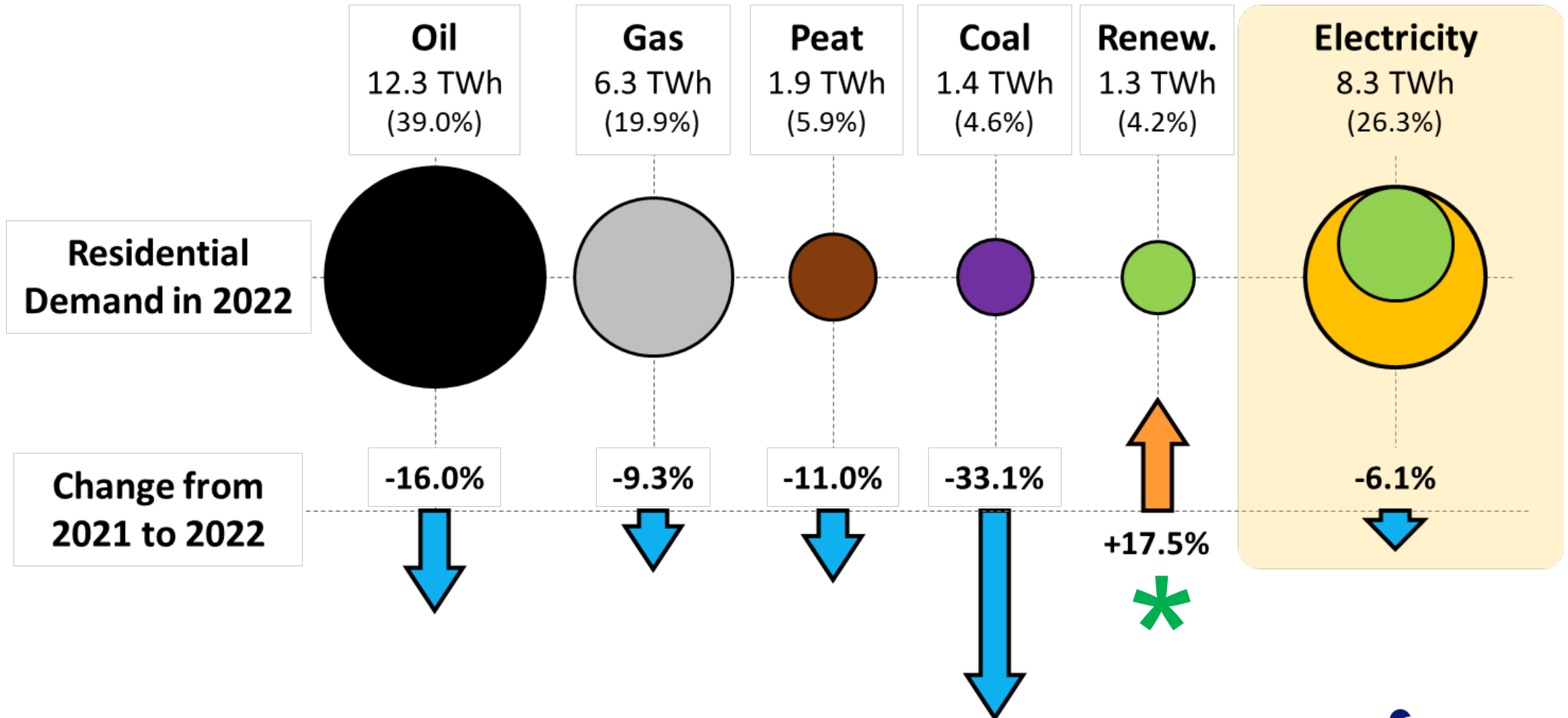
2021 to 2022 Changes in Heat Demand (TWh)



Trends in Heat Demand



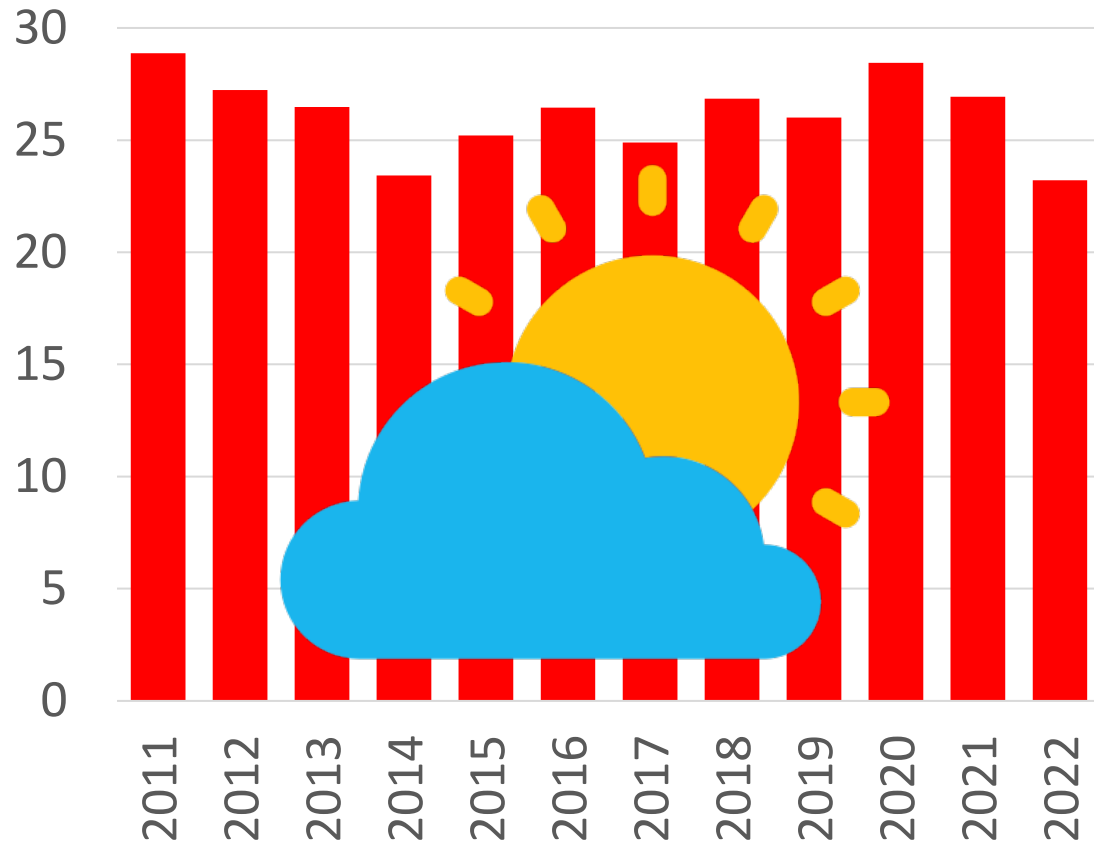
Trends in Heat Demand – Residential



Trends in Heat Demand – Residential

Residential Heat Demand (TWh)

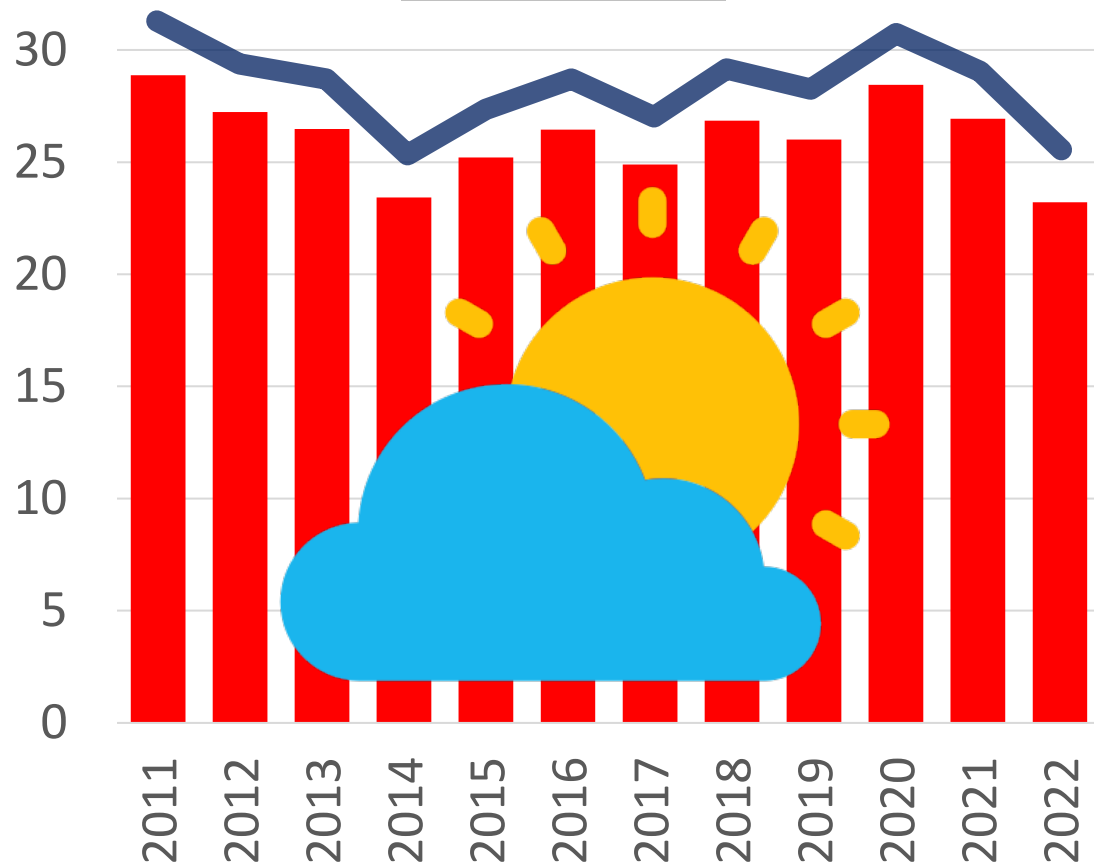
Uncorrected



Trends in Heat Demand – Residential

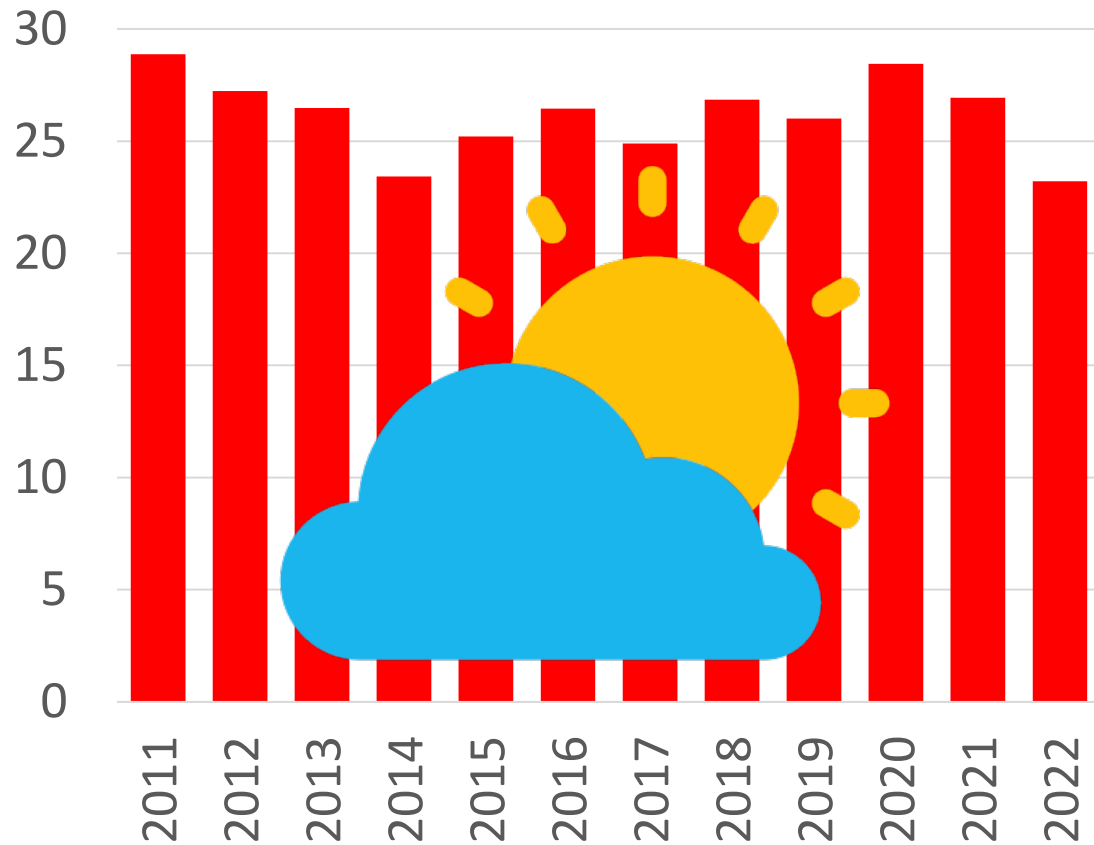
Residential Heat Demand (TWh)

Uncorrected

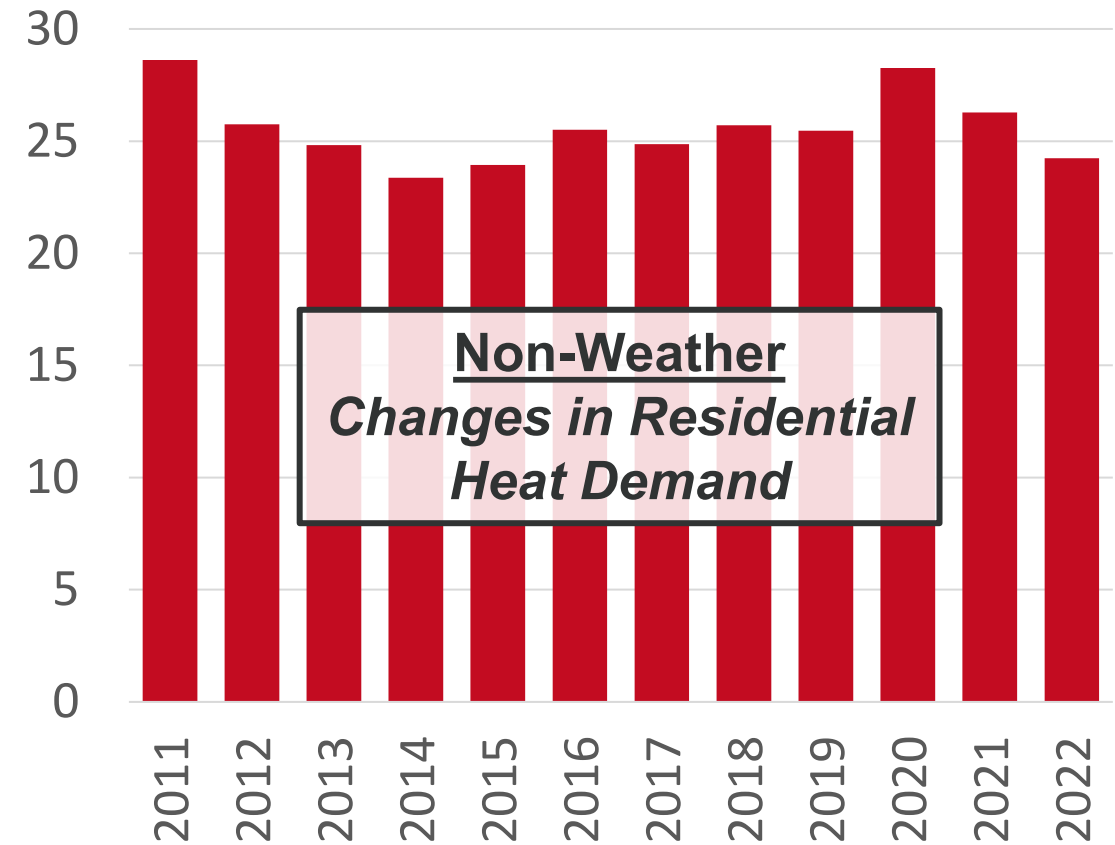


Trends in Heat Demand – Residential

Residential Heat Demand (TWh) Uncorrected



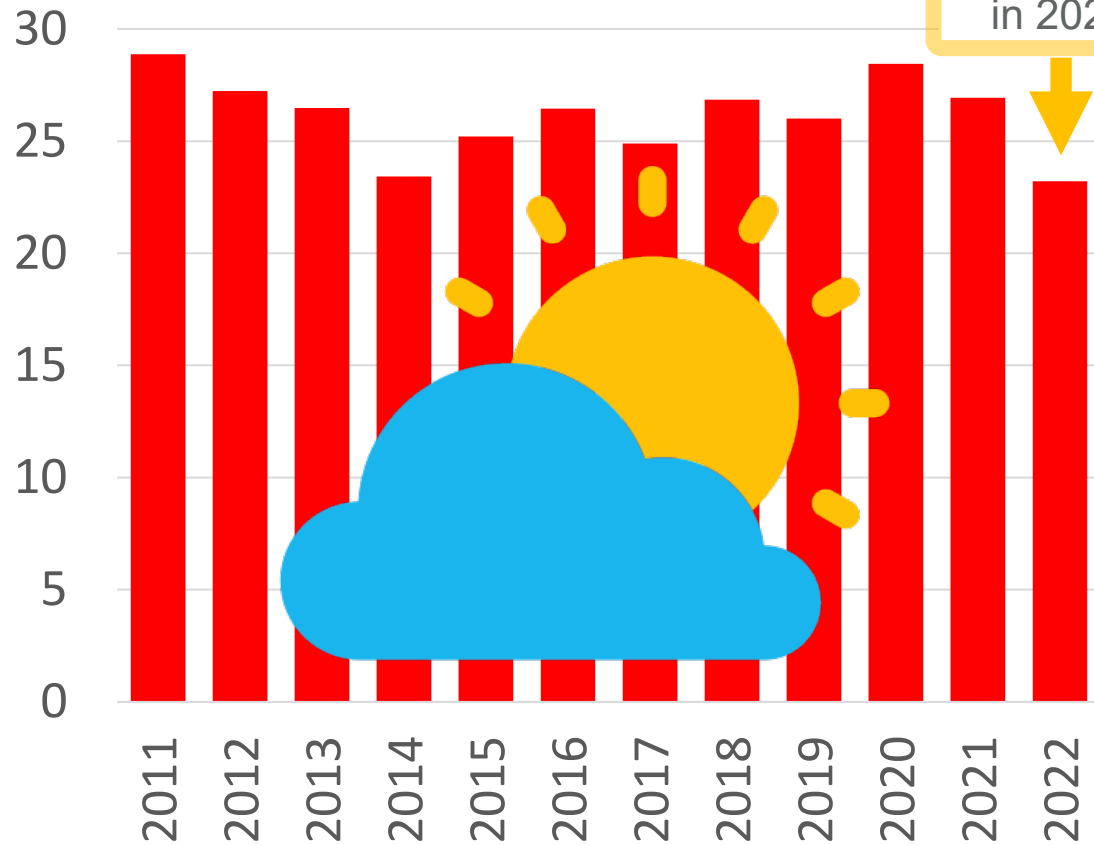
Residential Heat Demand (TWh) Weather Corrected



Trends in Heat Demand – Residential

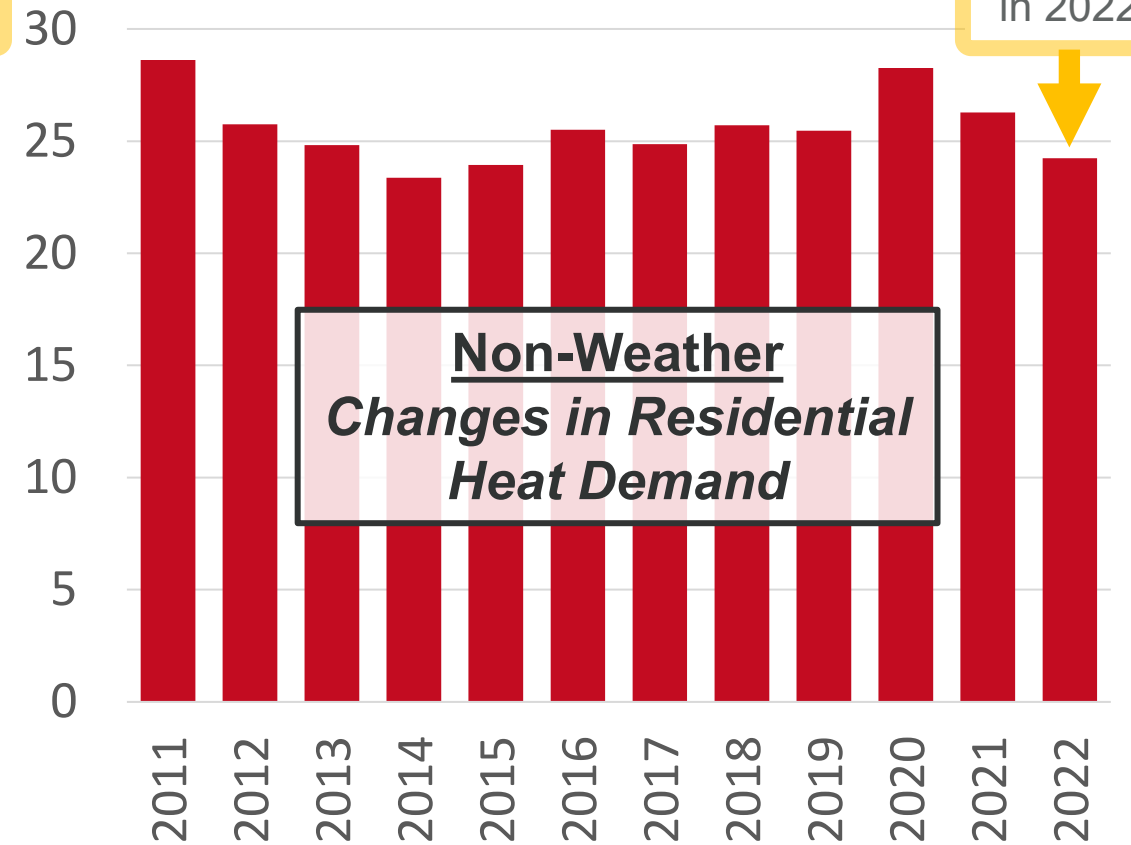
Residential Heat Demand (TWh)

Uncorrected



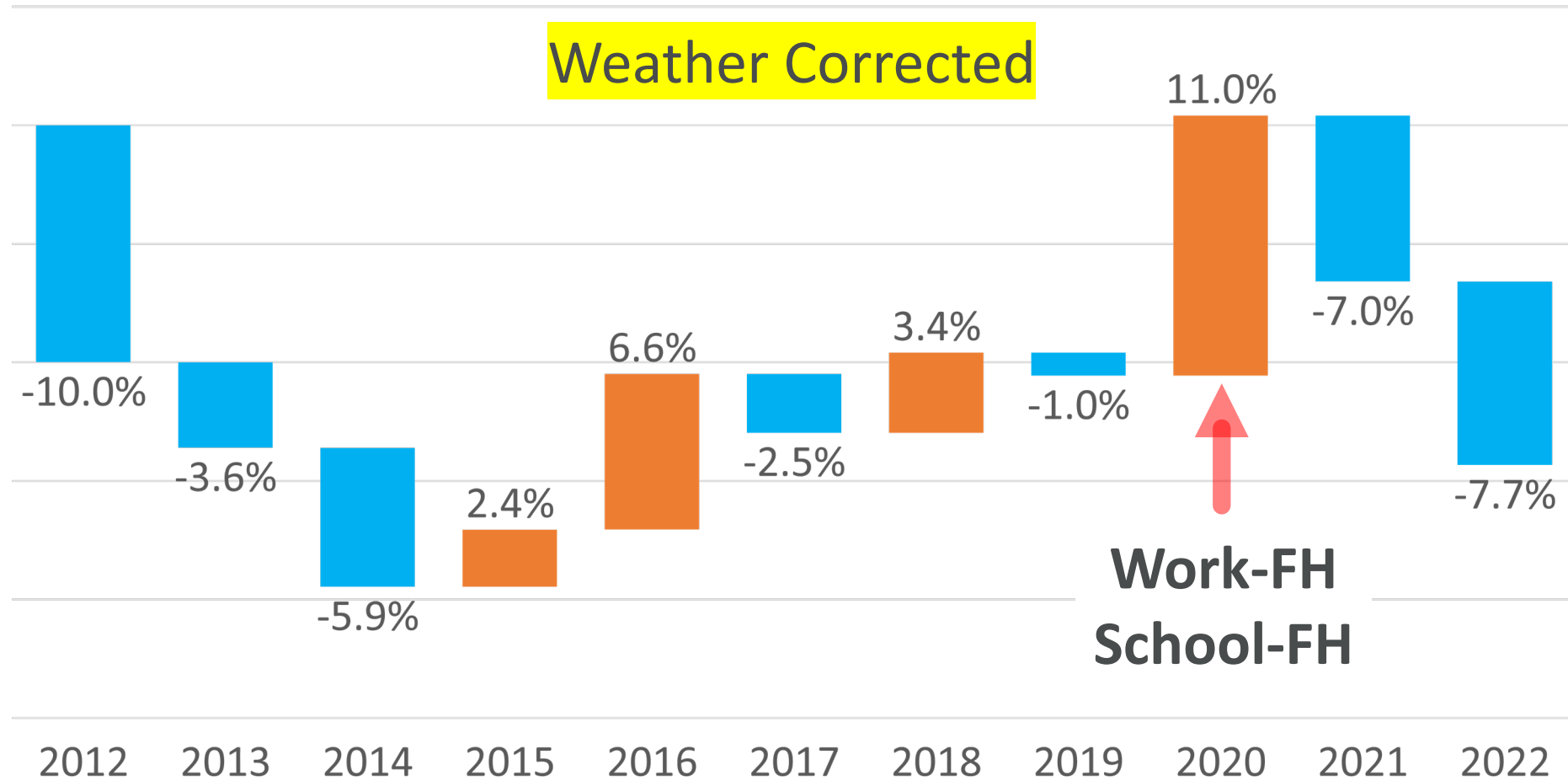
Residential Heat Demand (TWh)

Weather Corrected



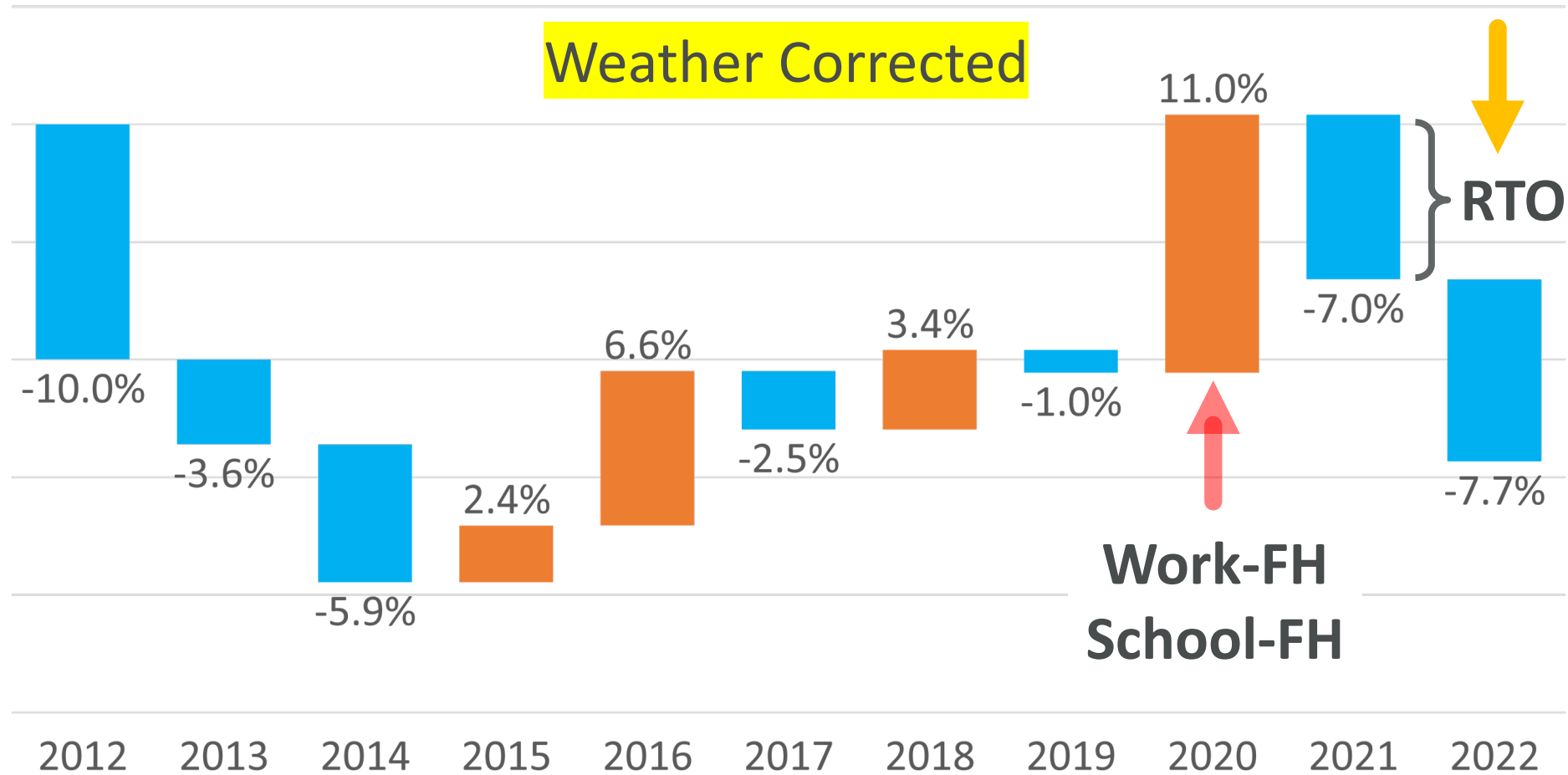
Trends in Heat Demand – Residential

Year to Year Changes (%)



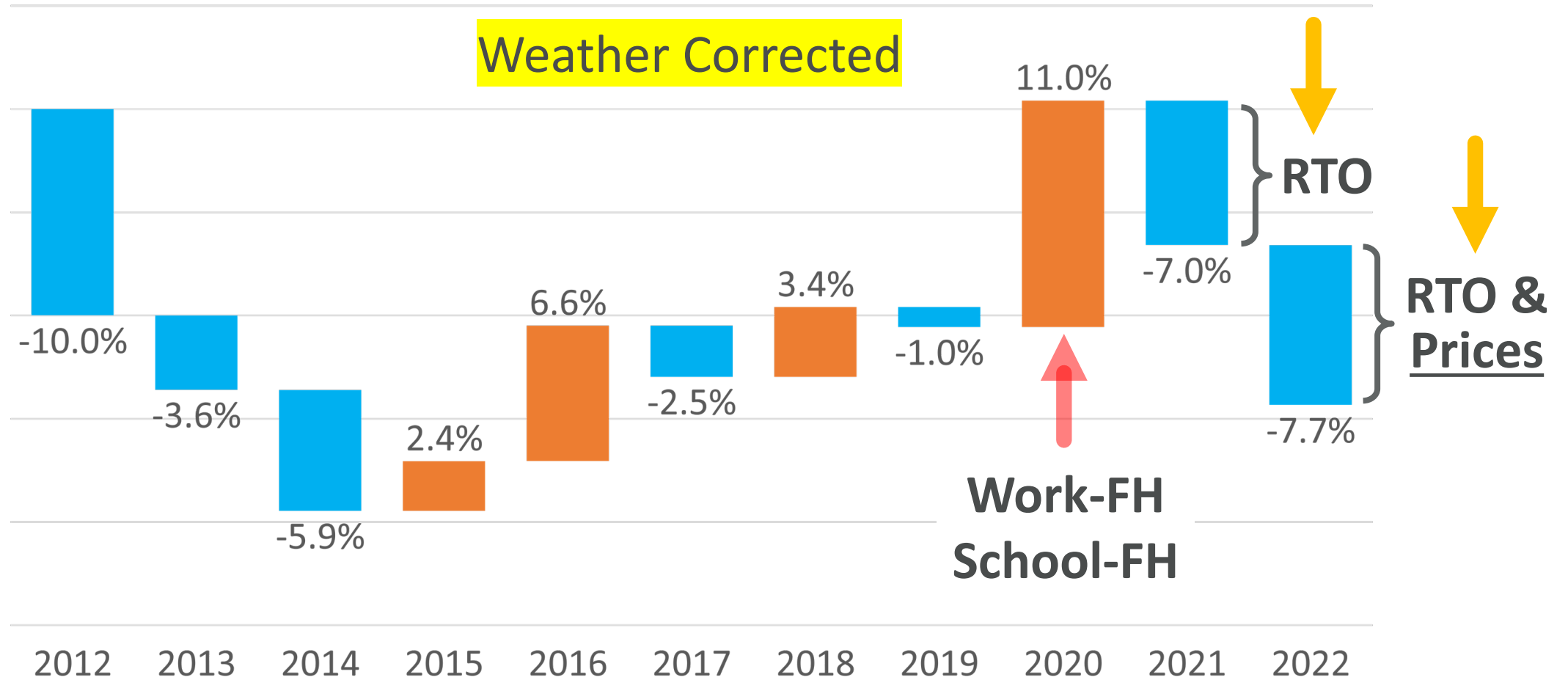
Trends in Heat Demand – Residential

Year to Year Changes (%)



Trends in Heat Demand – Residential

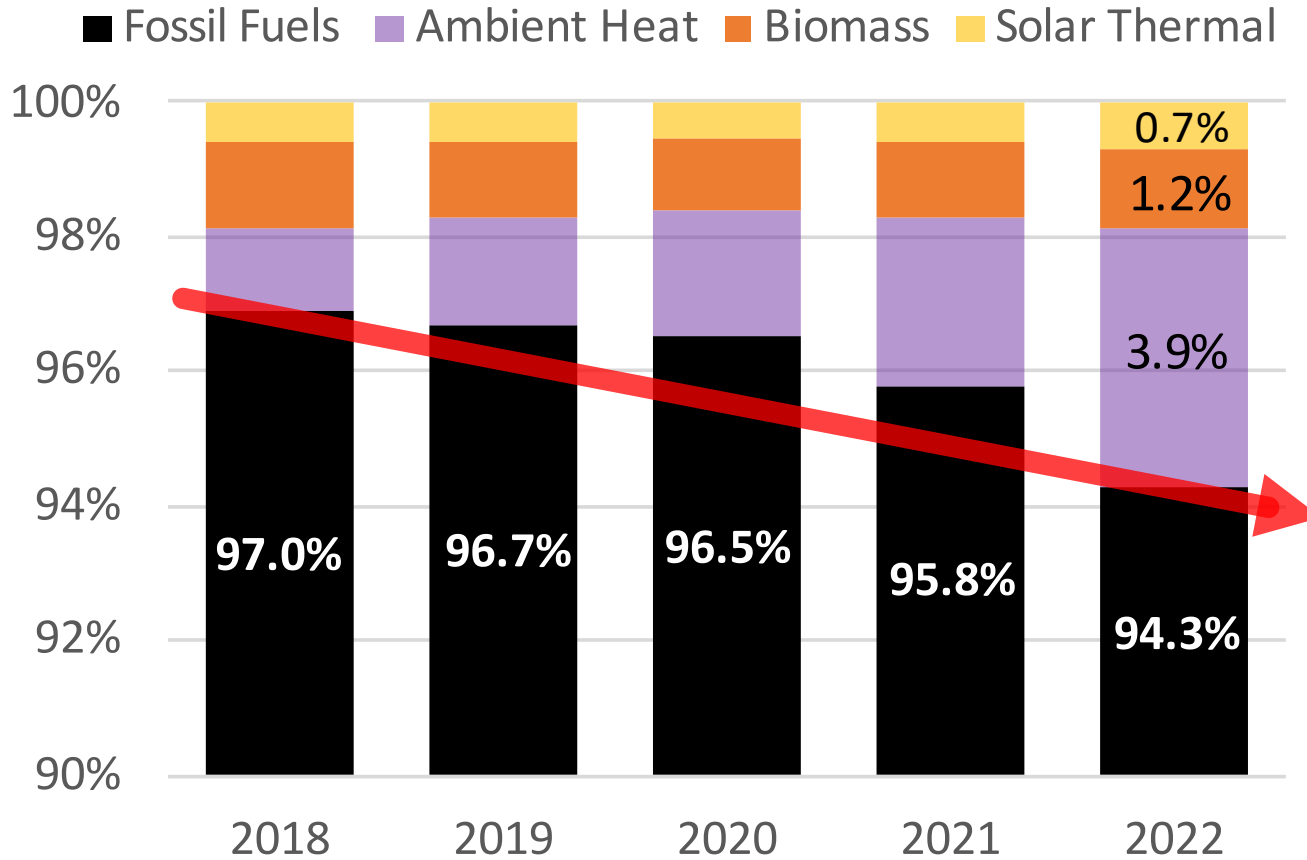
Year to Year Changes (%)



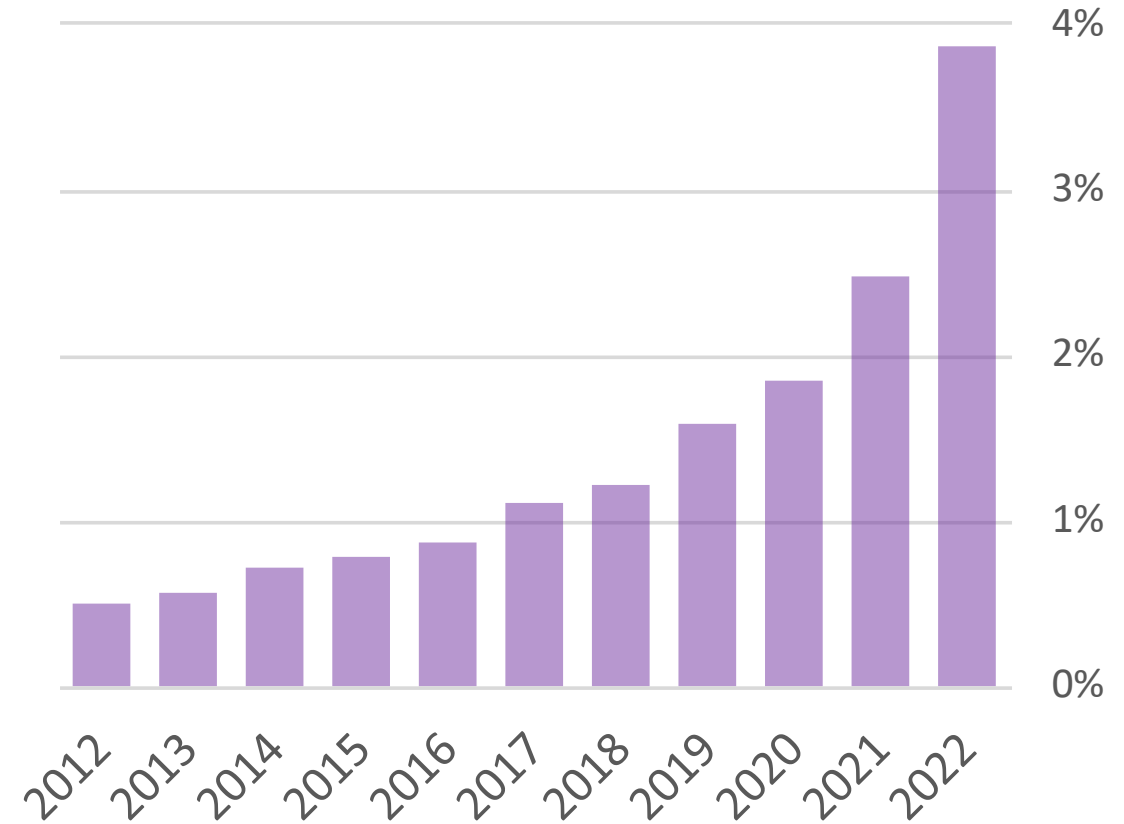
Trends in Heat Demand – Residential



Fossil & Renewable Residential Heat



Ambient Heat in Residential



Energy Modelling

Projecting Future Possibilities



Emma Lynch

Head of Energy Modelling Team, SEAI

Measuring the Past – Projecting the Future



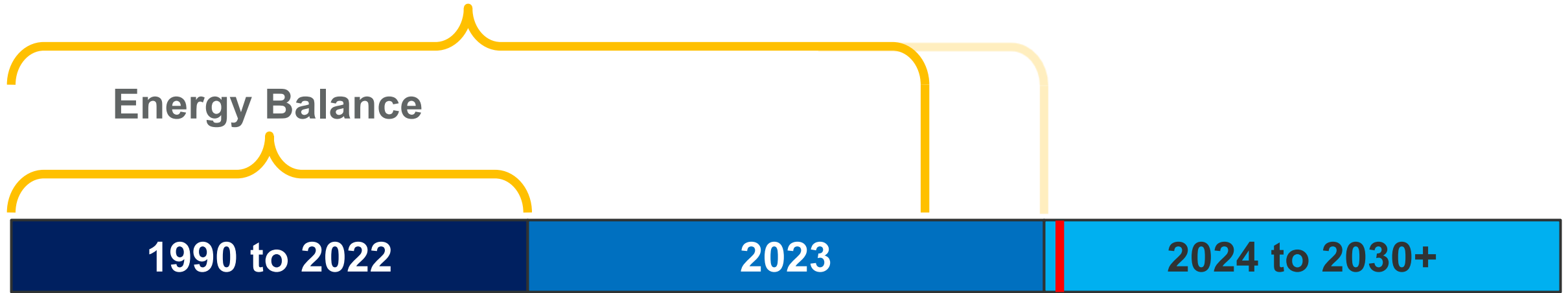
Measuring the Past – Projecting the Future

Energy Balance



Measuring the Past – Projecting the Future

Energy in Ireland



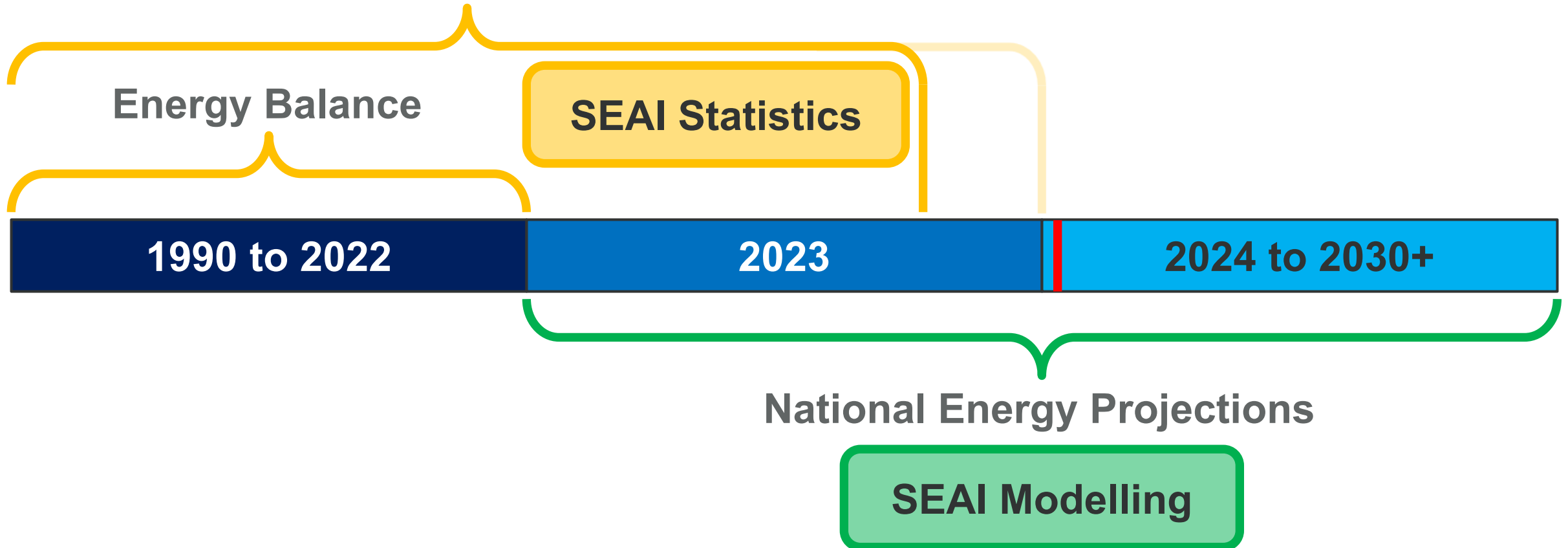
Measuring the Past – Projecting the Future

Energy in Ireland



Measuring the Past – Projecting the Future

Energy in Ireland



Projecting the Future – Scenario Modelling

1990 to 2022

2023

2024 to 2030+

National Energy Projections

SEAI Modelling Scenarios

- **With Existing Measures (WEM)** – policy in place
- **With Additional Measures (WAM)** – WEM + policy outlined in plans (e.g. CAP)
- **Sensitivities** – e.g. price impacts, delays, implementation risk

National Energy Projections 2023



National Energy Projections 2023

Carbon Budgets

Even with full delivery of the Climate Action Plan, the energy sector will likely still be off track to keep within its share of Ireland's national legally binding carbon budget for the first two budget periods



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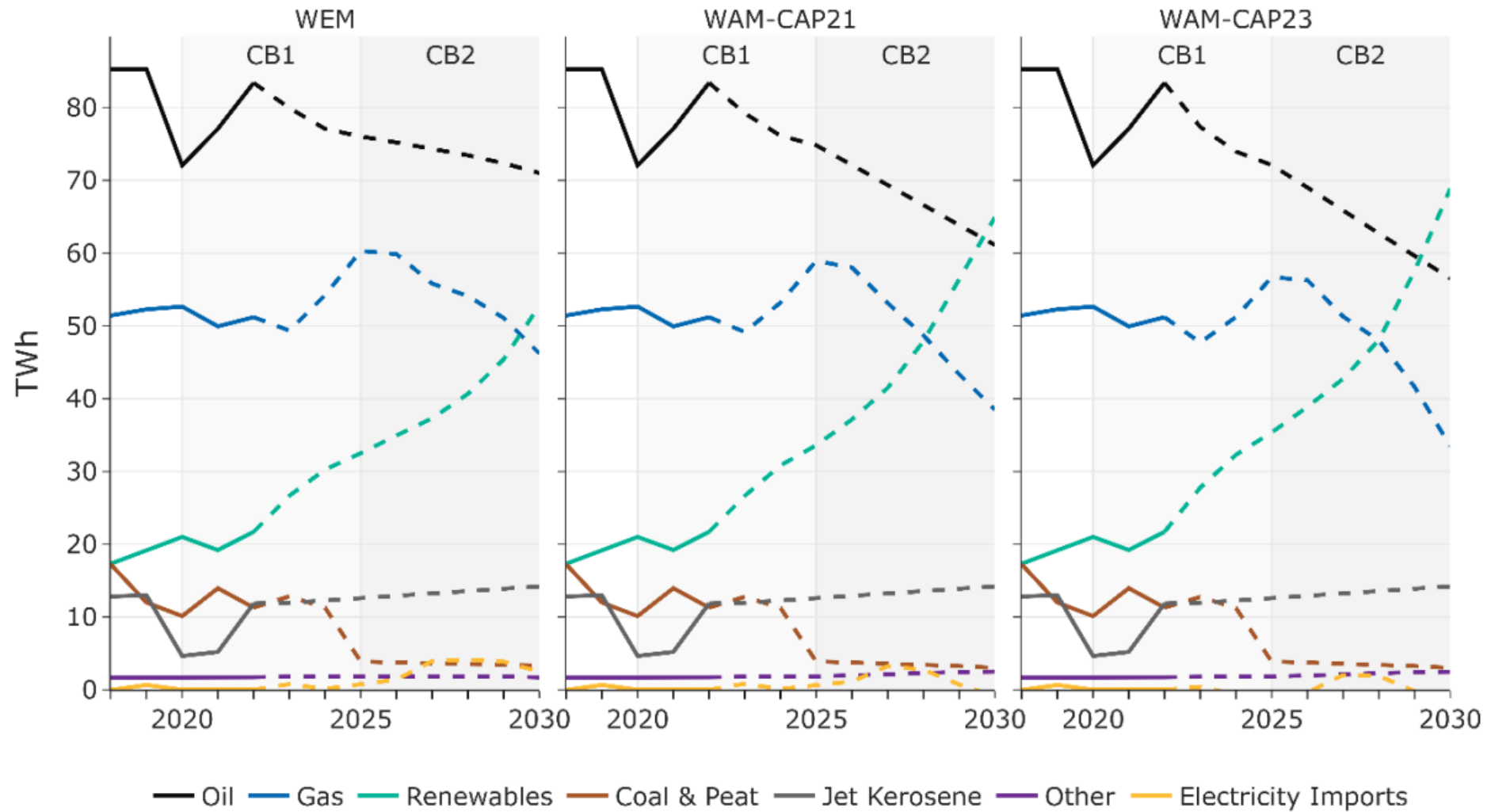
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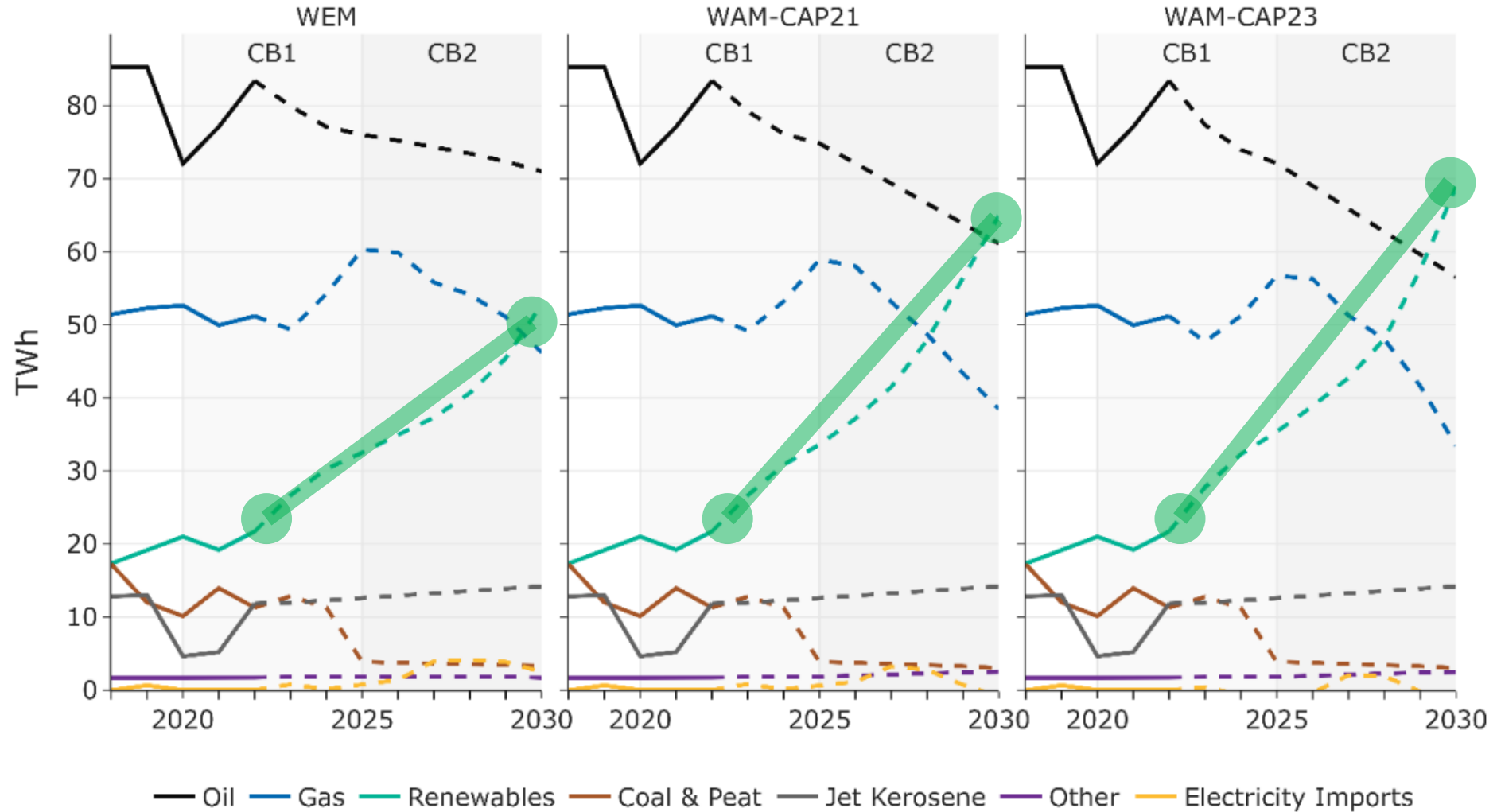
Renewable Energy Shares (RES)

Latest projections indicate that if the 2023 Climate Action Plan targets are fully delivered the energy sector could deliver on its current EU 2030 renewable energy target, though interim targets are unlikely to be met

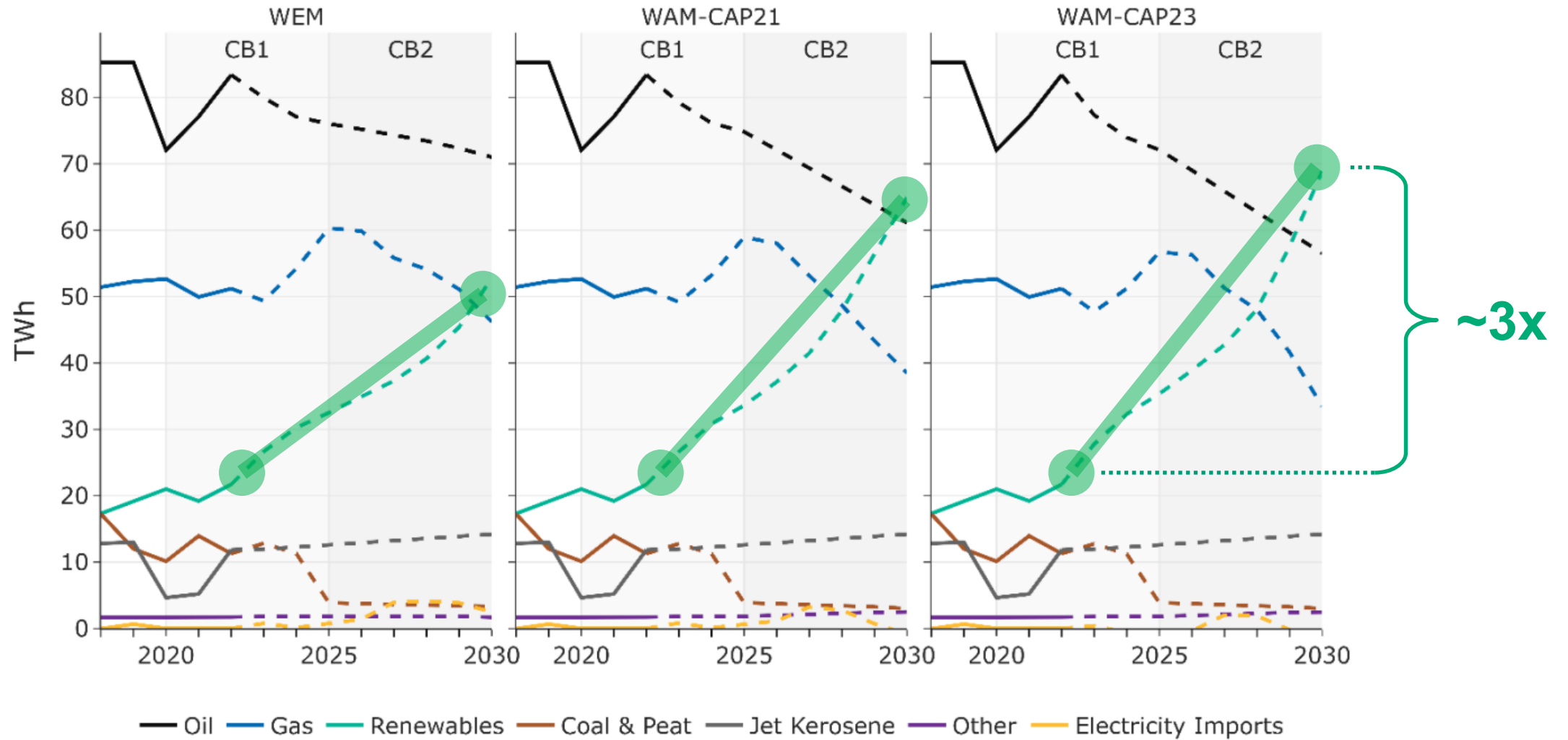
Total Energy Use out to 2030



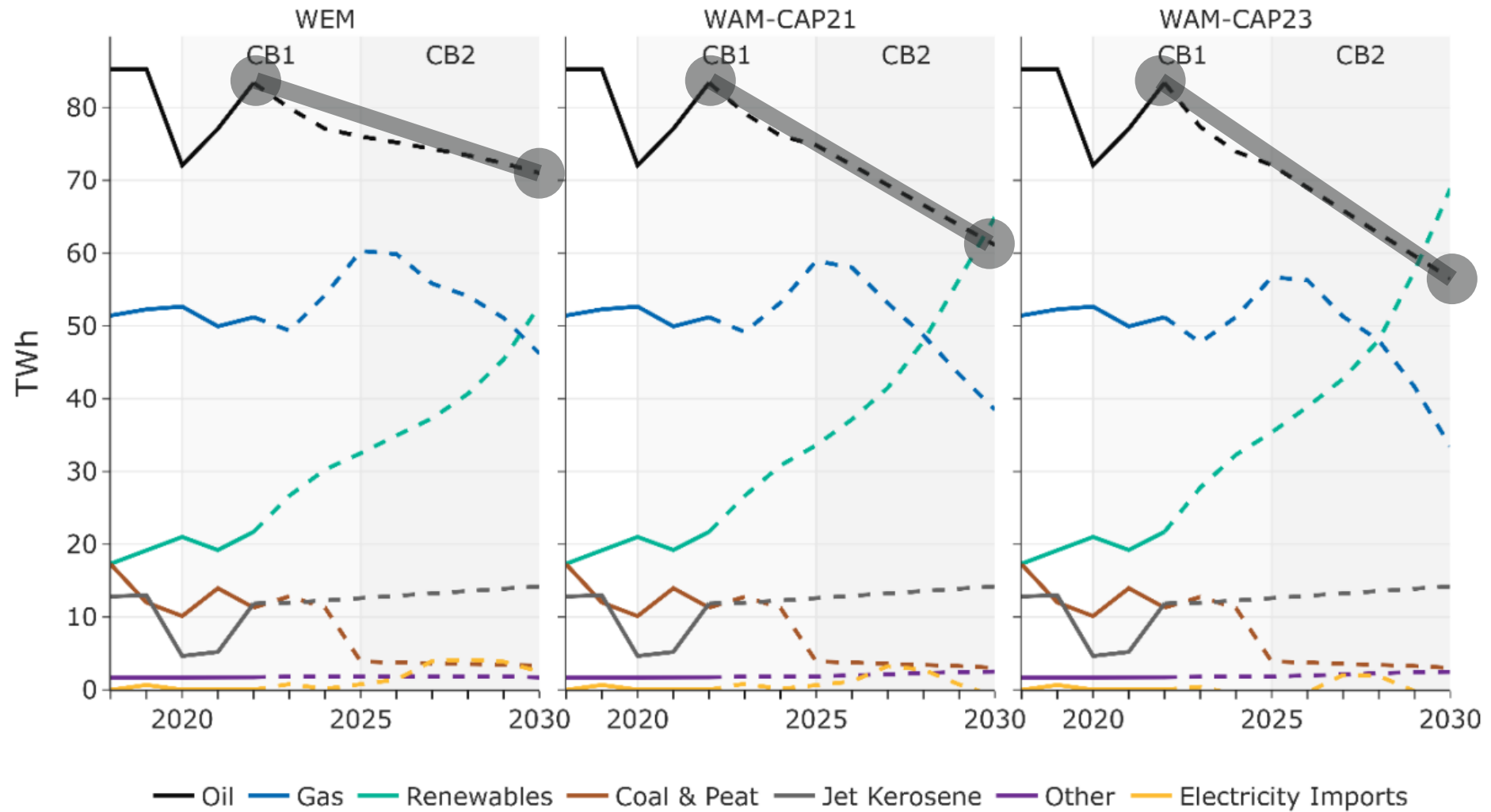
Total Energy Use out to 2030 – Renewables



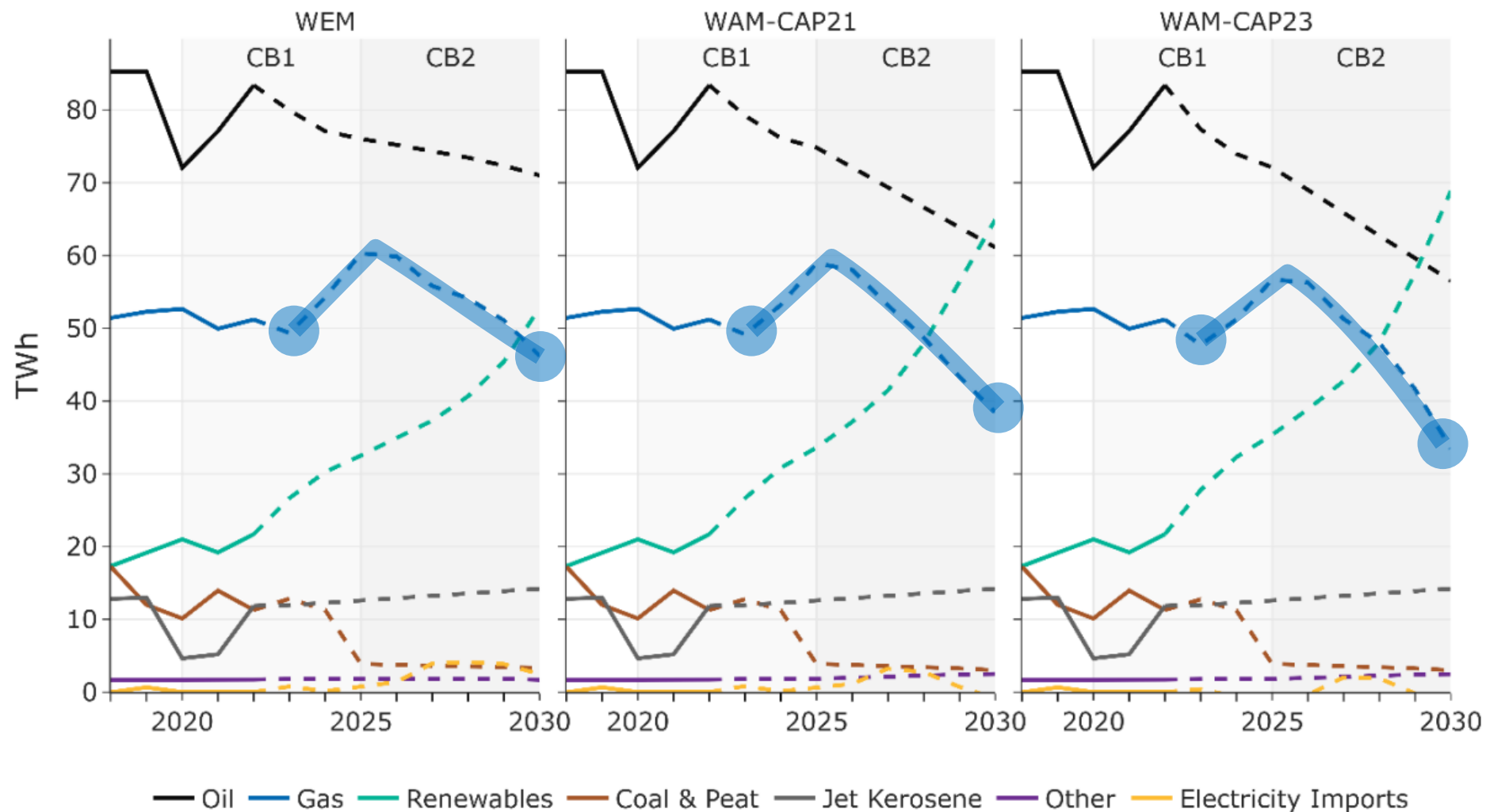
Total Energy Use out to 2030 – Renewables



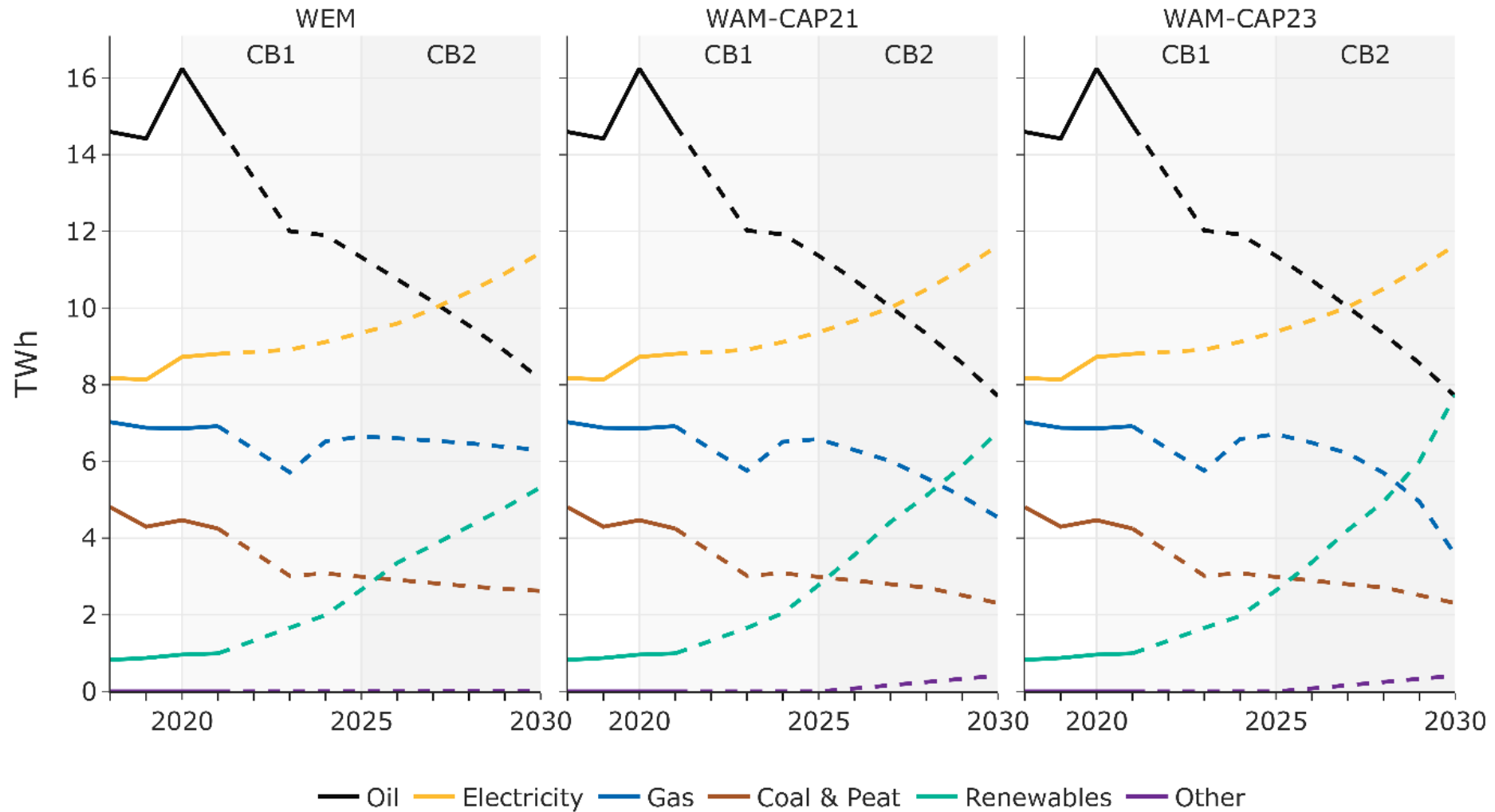
Total Energy Use out to 2030 – Oil



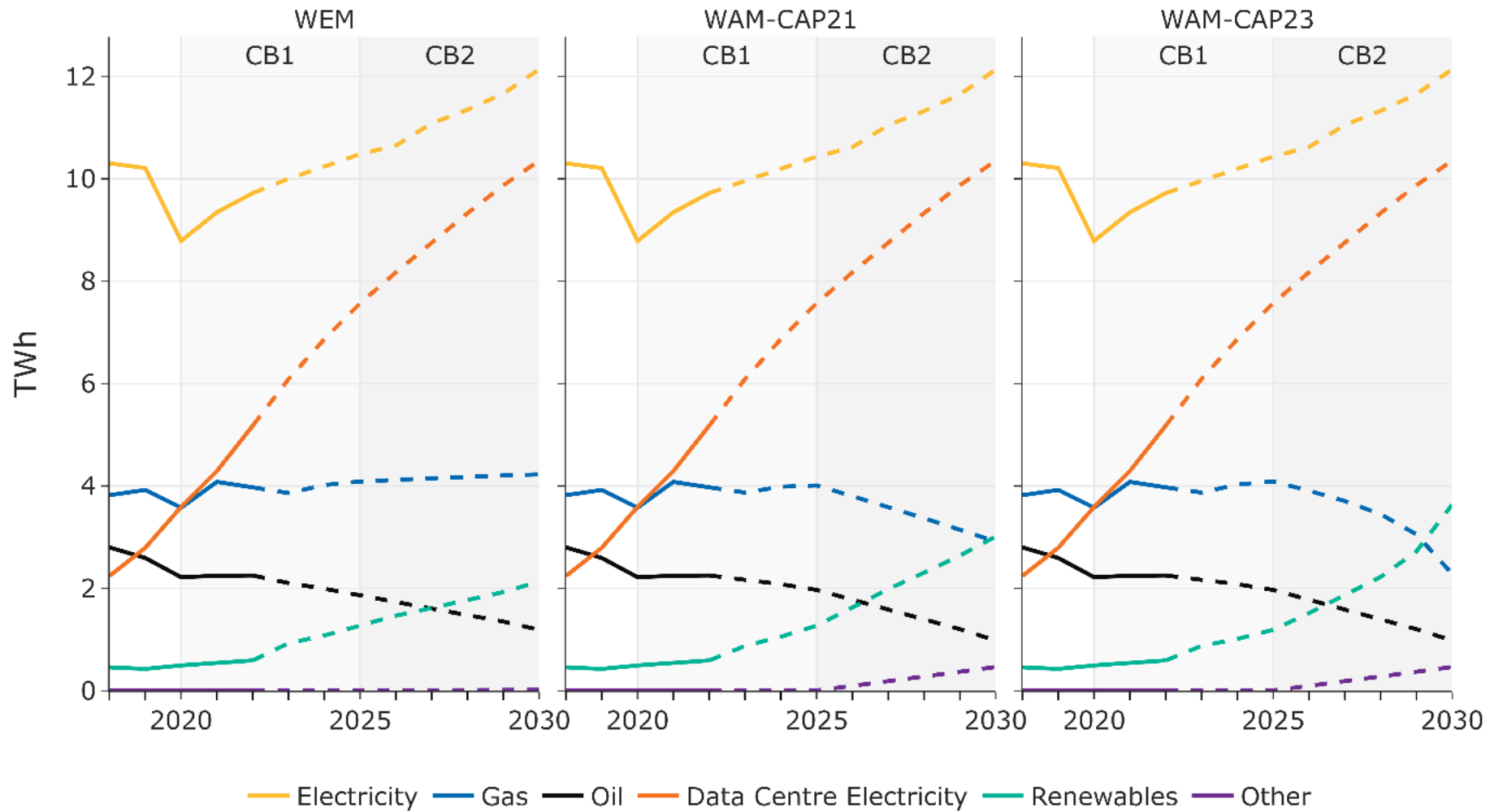
Total Energy Use out to 2030 – Gas



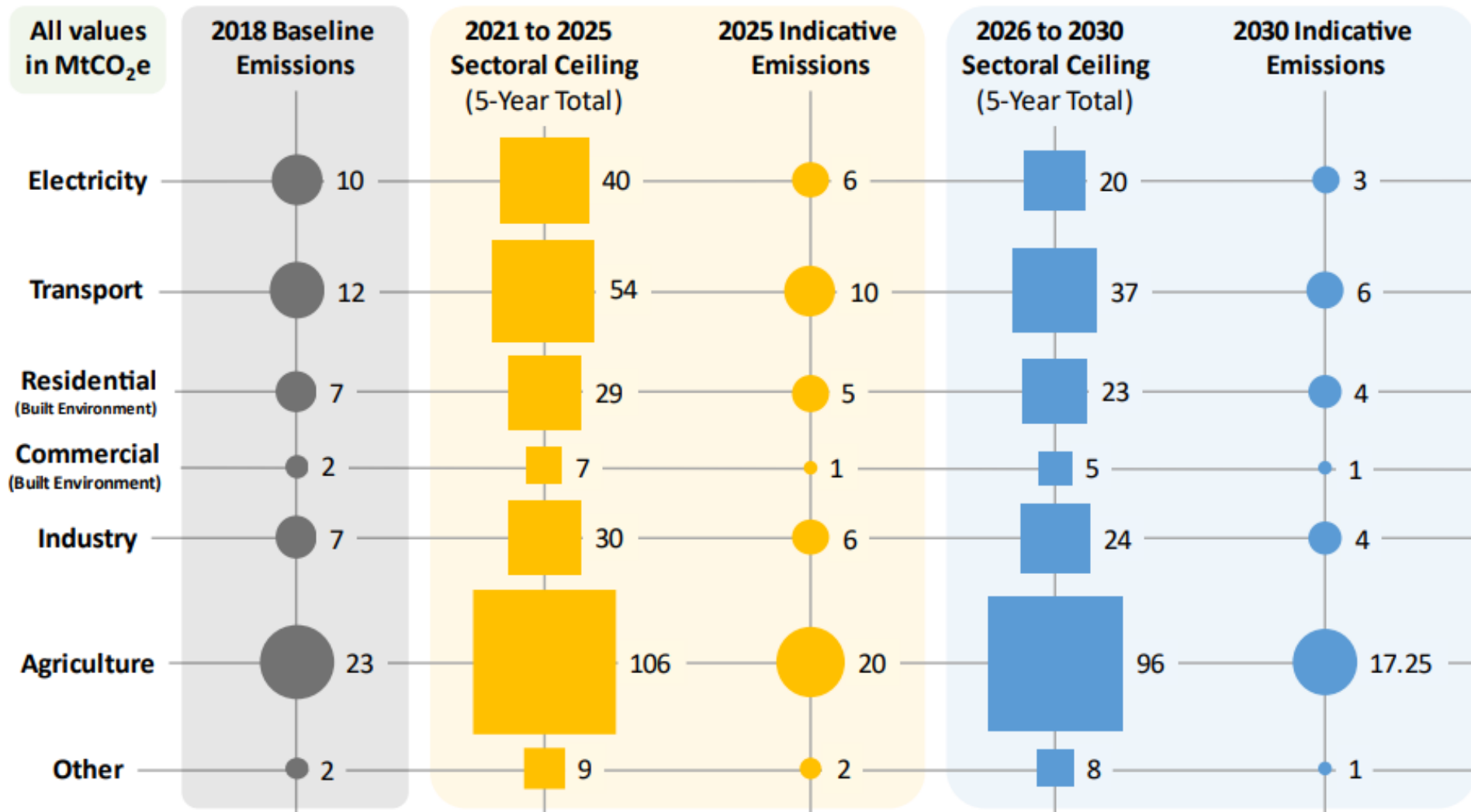
Built Environment - Household Energy



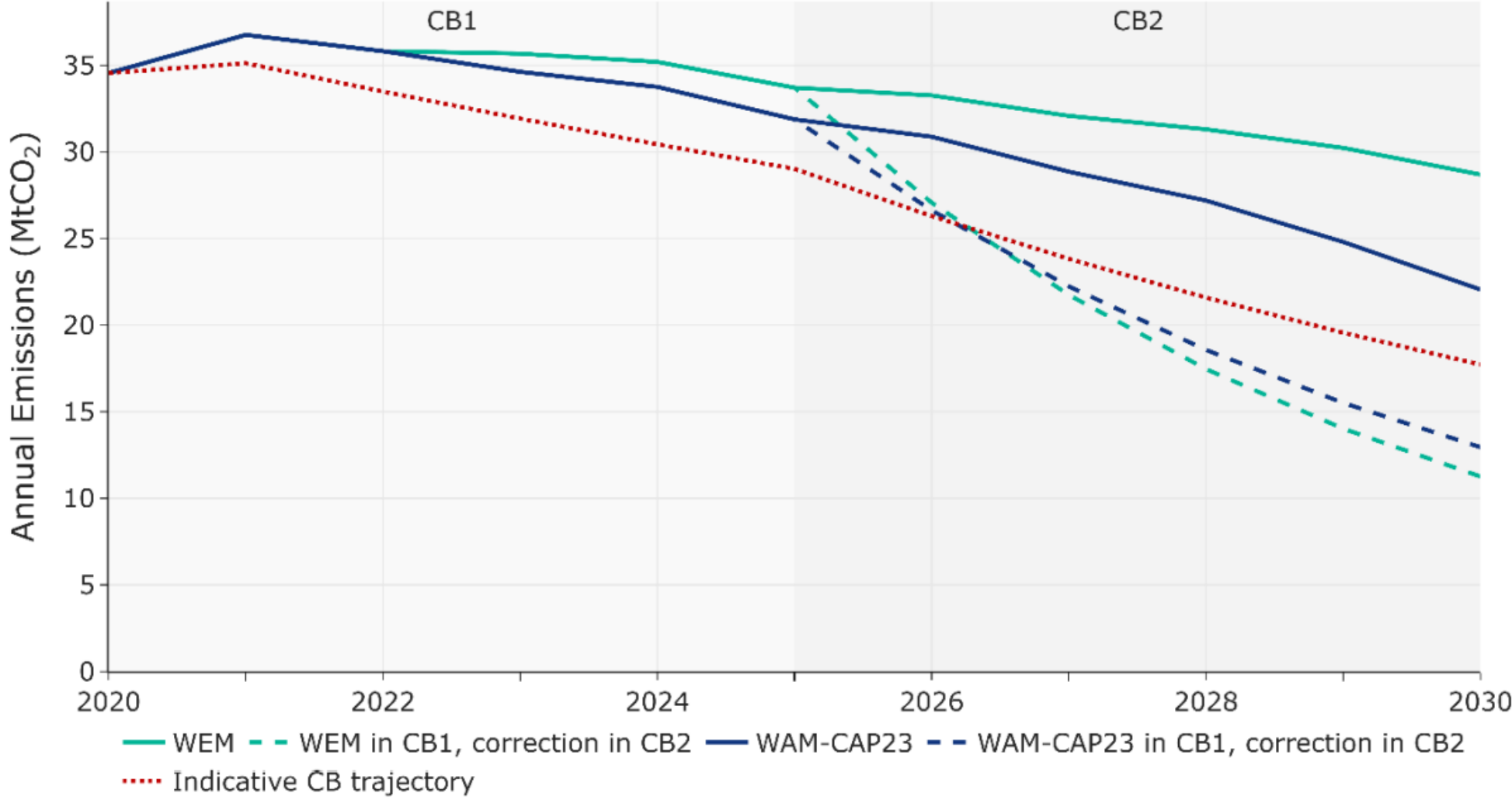
Built Environment - Commercial and public sector energy



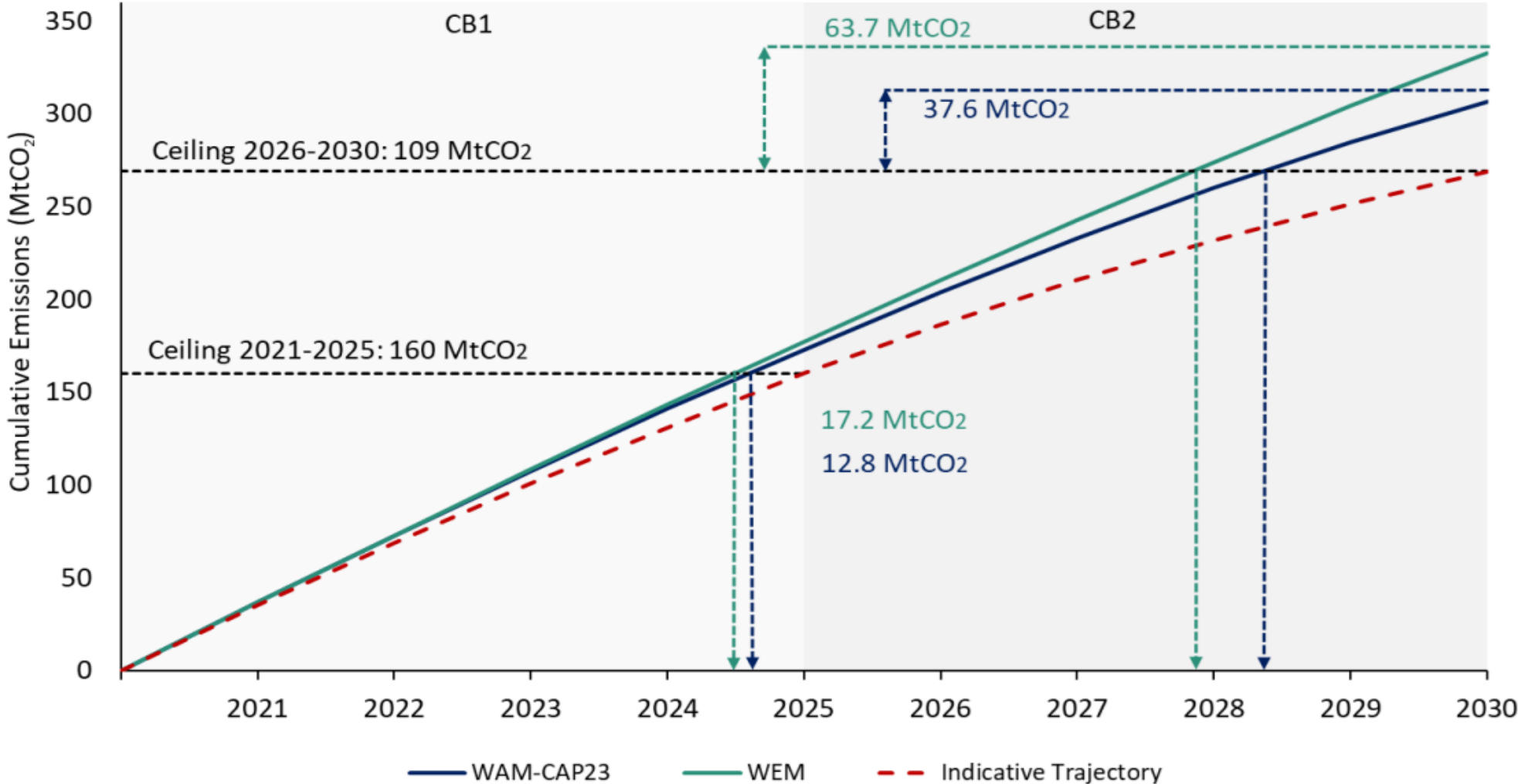
Ireland's Carbon Budgets & Sectoral Emission Ceilings



GHG Emissions from Energy Sectors & Industrial Processes



GHG Emissions from Energy Sectors & Industrial Processes



Questions & Answers...

