



**Irish Fiscal
Advisory Council**

What climate change means for Ireland's public finances

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Long-term Sustainability Report: Supporting Research Series,
Nº1

Large annual impacts

1) Transition costs

- Lost revenues up to 1.6% of GNI*
- Expenditure up to 1.1% of GNI*

2) Compliance costs

- 0.2% of GNI* by 2030

3) Adaption costs

- ~0.2% of GNI*

Transition costs

Transition costs

- We build on projections from UCC MaREI's Times Ireland model (Balyk, *et al.* 2022) to model transition costs out to 2050.
- “Least-cost” approach that meets sectoral carbon budgets
- Detailed annual projections of key variables (e.g. car stock, petrol/diesel consumption, sectoral investment costs, etc.)
- Multiple scenarios (tech optimism, higher energy service demand)

Revenue

No policy
change
assumption

(except for
carbon tax)

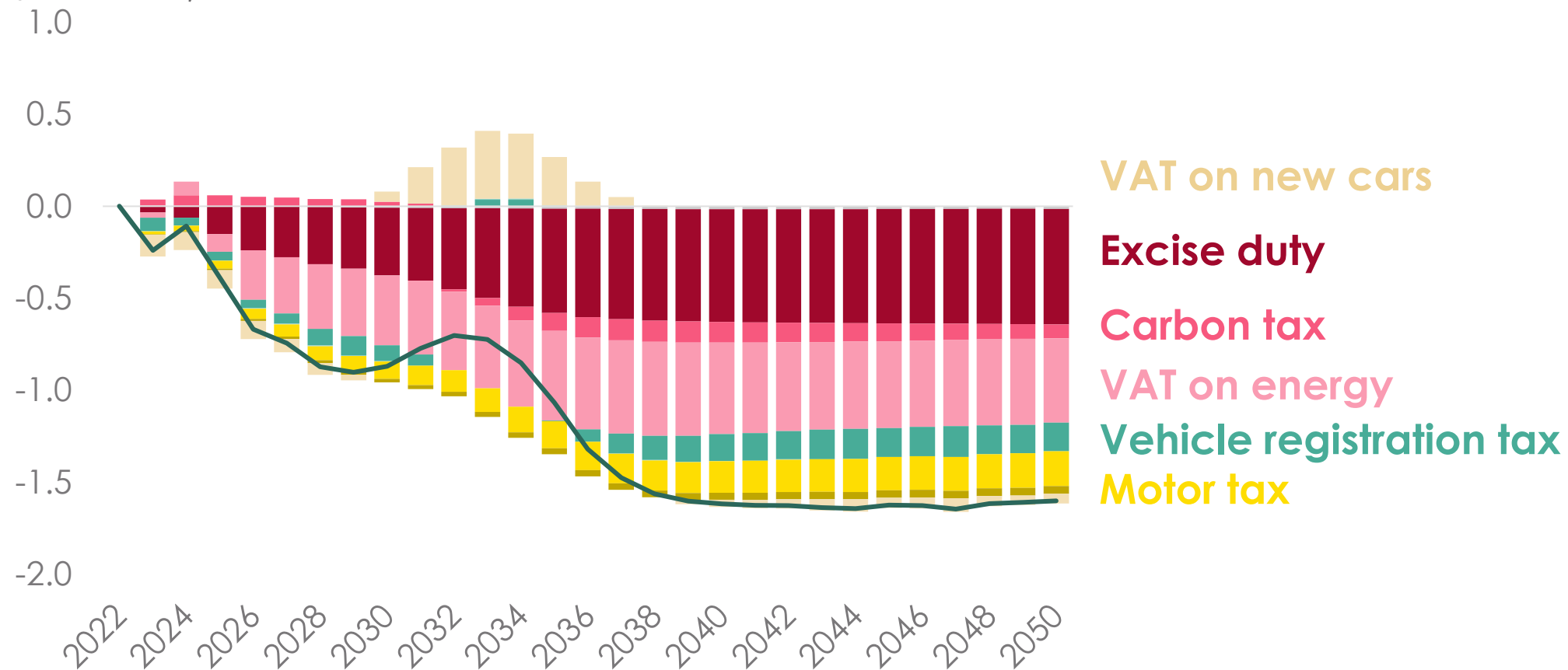
Expenditure

Key
assumptions:
how much of
total economy-
wide costs the
State covers

Lots of
judgement
calls

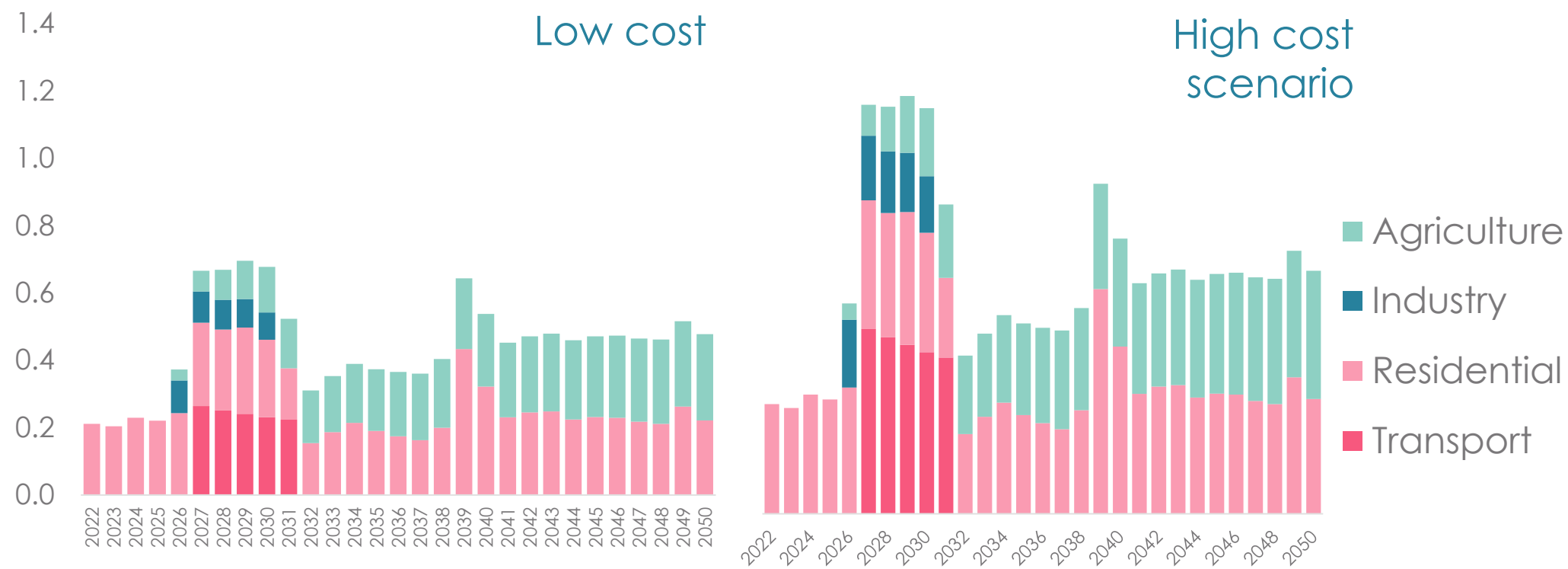
Climate transition sees a 1.6% of GNI* reduction in revenue

% of GNI*, loss in revenue relative to 2022



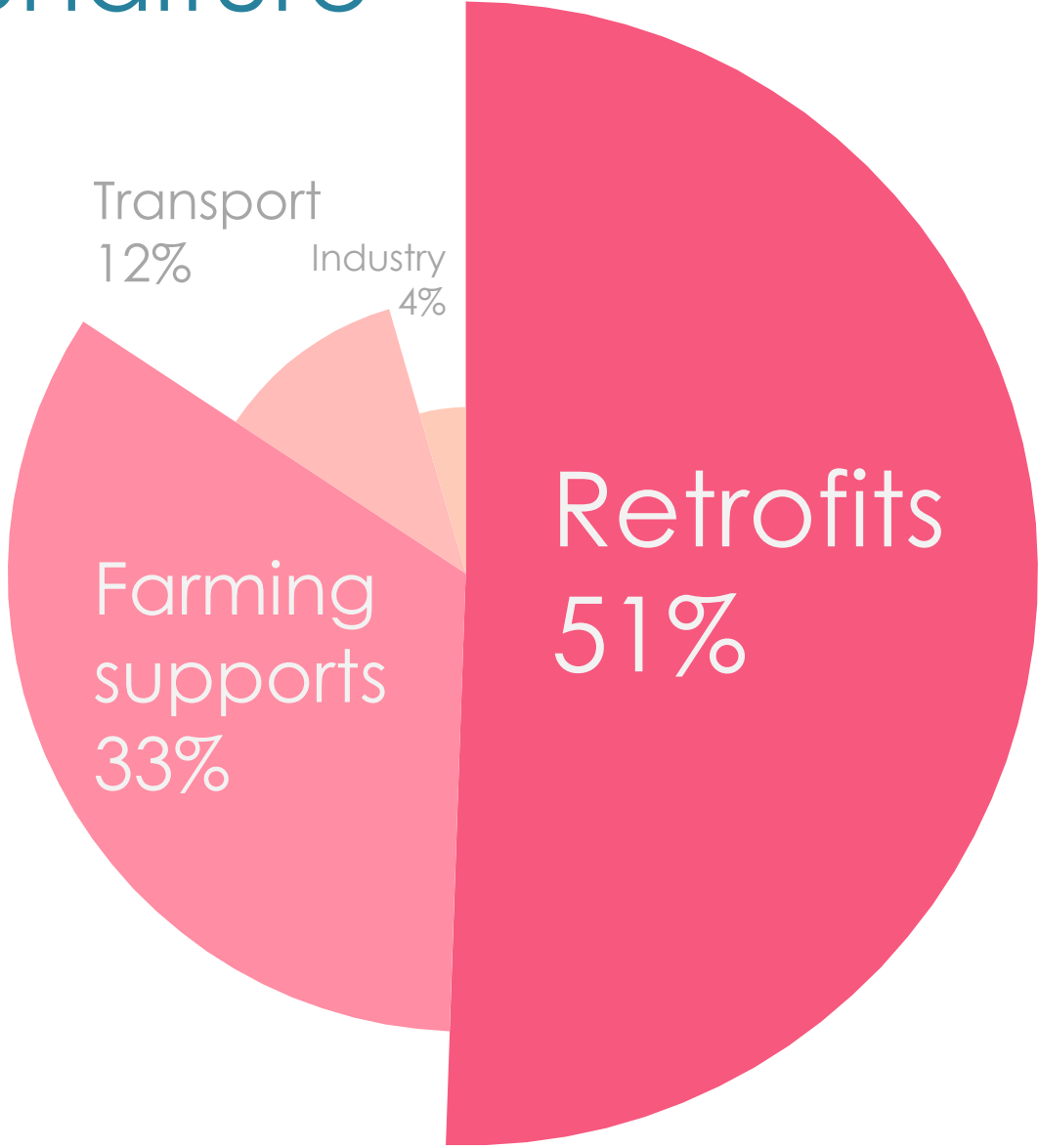
Most expenditure would likely relate to retrofitting and farming supports

% GNI*, estimated public expenditure



Cumulative expenditure

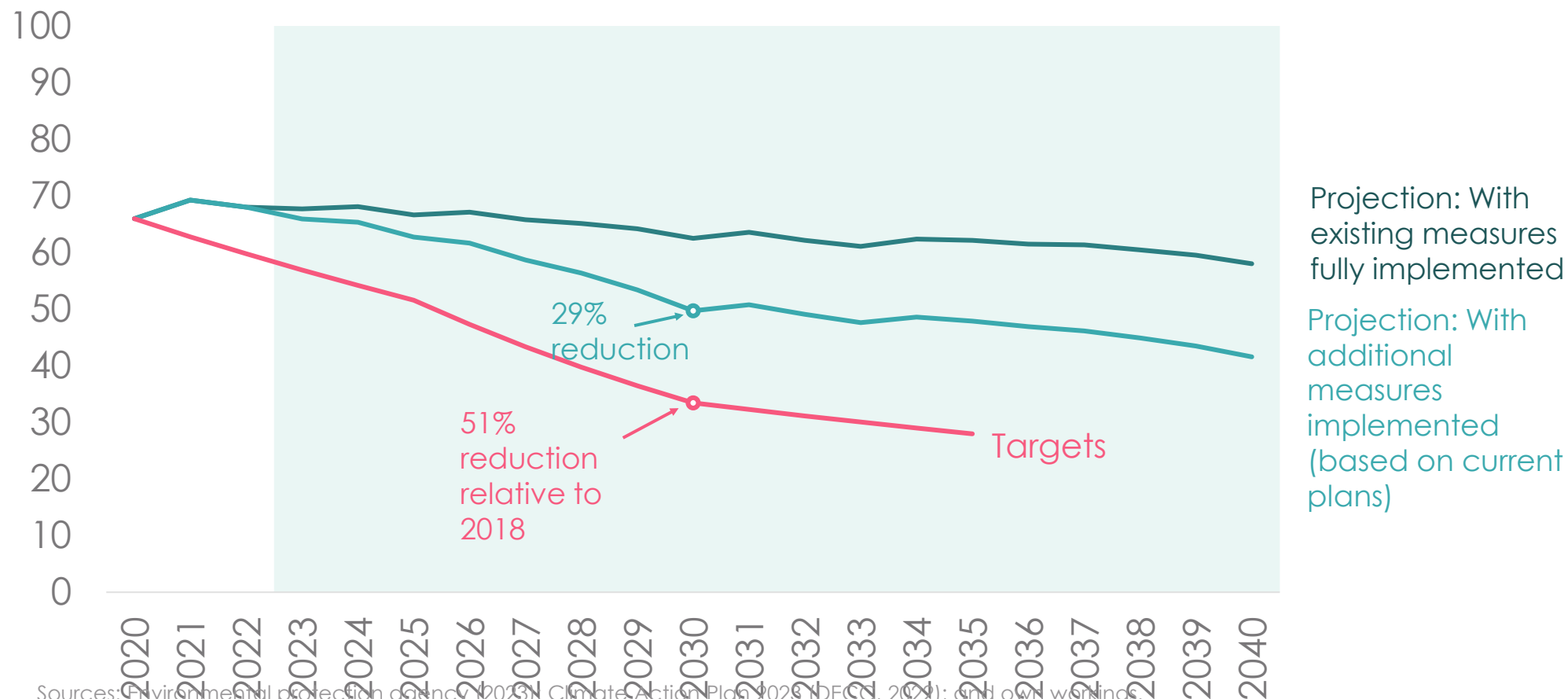
2023-2050



Compliance costs

Current policy is not sufficient to meet targets

Levels of greenhouse gas emissions (Mt CO₂eq)



Sources: Environmental protection agency (2023); Climate Action Plan 2023 (DECC, 2022); and own workings.

Note: With existing measures or "WEM" projection scenario produced by the EPA projects emissions based on measures implemented by the end of 2021 (the last inventory year). With additional measures or "WAM" scenario produced by the EPA which incorporates measures included in Government plans that are not yet implemented.

Compliance costs

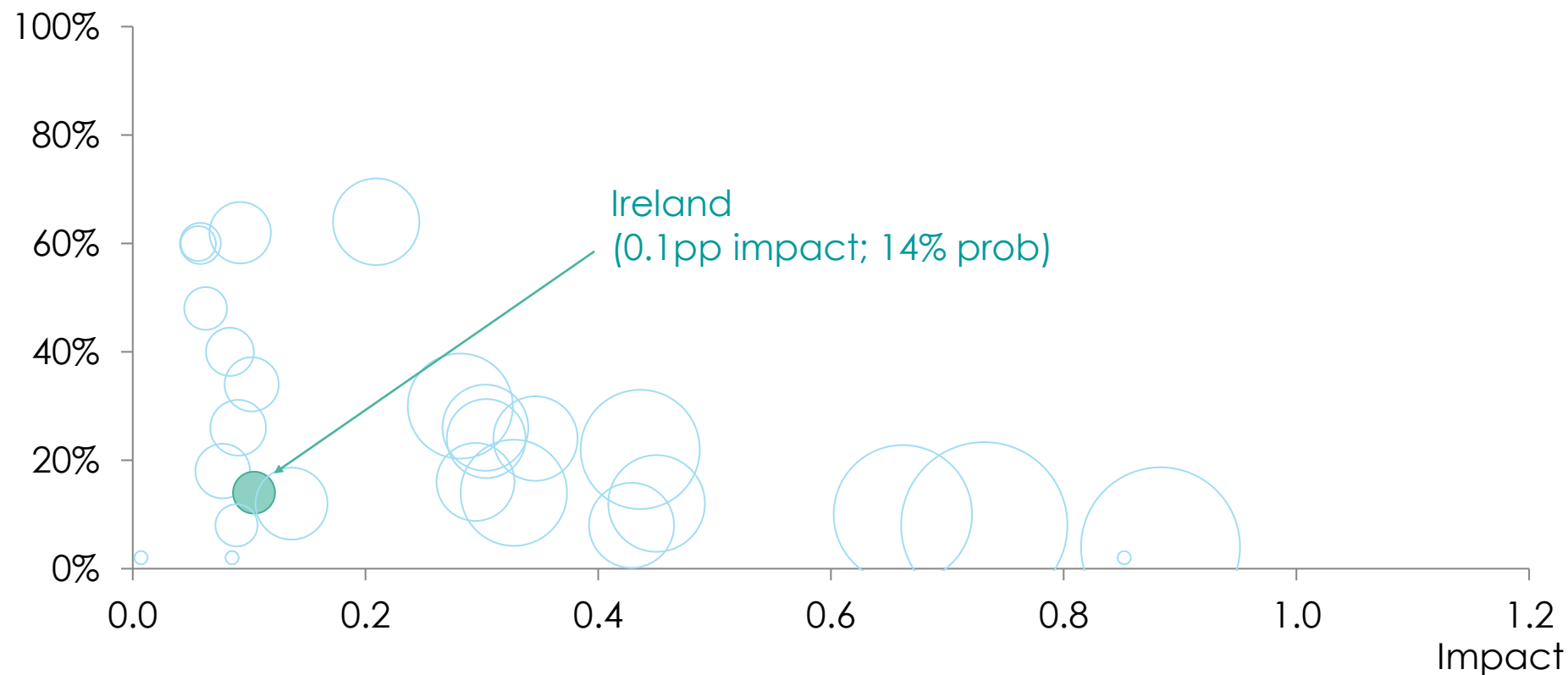
- Over the medium-term, Ireland needs to reduce its non-Emissions Trading System (ETS) greenhouse gas emissions by 42% from 2005 levels by 2030 to comply with legally binding EU targets
- Credits or statistical transfers would need to be purchased from other Member States.
- Work by Walker et al. (2023) estimated that based on current plans, the cumulative cost of non-compliance by 2030 could be up to €3.5 billion, and approximately €0.7 billion per annum by 2030.

Physical costs

Physical costs: Natural disasters

Damages (% GDP or GNI* for Ireland) and probability (%) of 1 or more occurrences in a given year (1970-2019)

Probability



Sources: EM-DAT; own workings.

Example of flood risks: high probability risks for Dublin City

(impacts of 10% probability or “1-in-10-year” events)

	Present day	Mid-Range Future Scenario	High-End Future Scenario
Event Damage (€m)	25	333	2,937
No. Residential Properties at Risk	343	2,789	14,514
No. Business Properties at Risk	23	384	2,947

Takeaways

Takeaways

- Costs are large, but manageable – (small relative to other costs like ageing)
- Current plans are inadequate
- Need to think about phasing and capacity constraints
- Considering the general equilibrium / macro effects is tricky as there are lots of scenarios

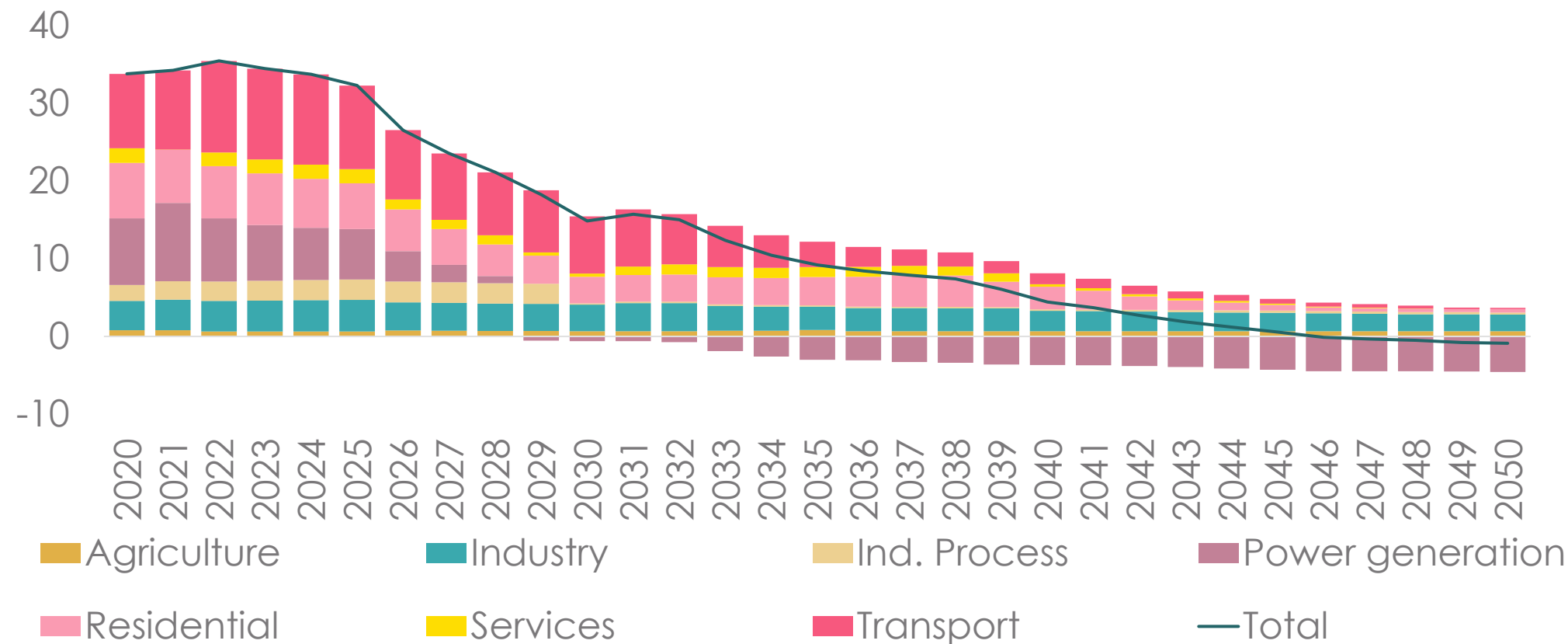
Thank you

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Domestic CO₂ emissions from energy

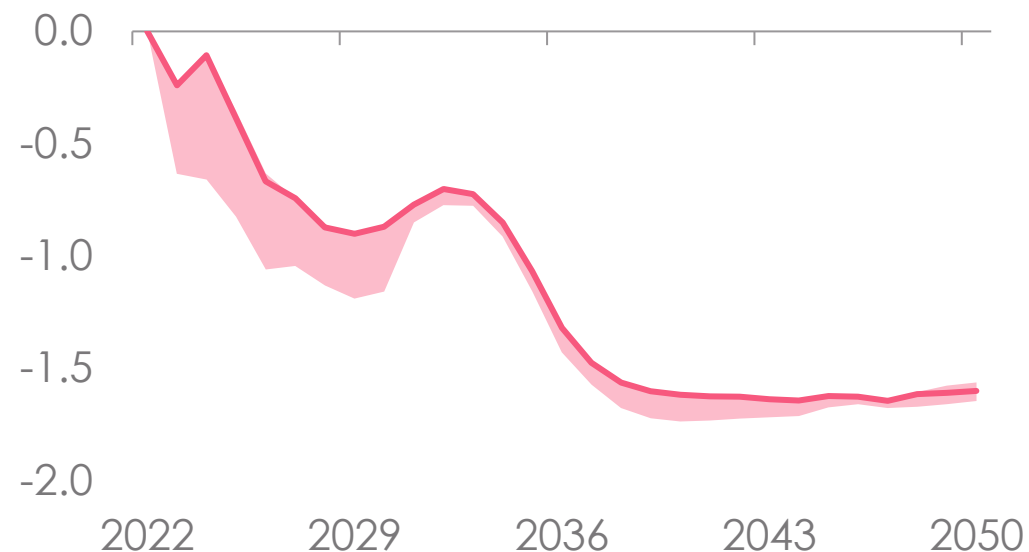
ktCO₂e (kilotonnes of carbon dioxide equivalent)



Range of projection scenarios

Range of scenarios for revenue reductions

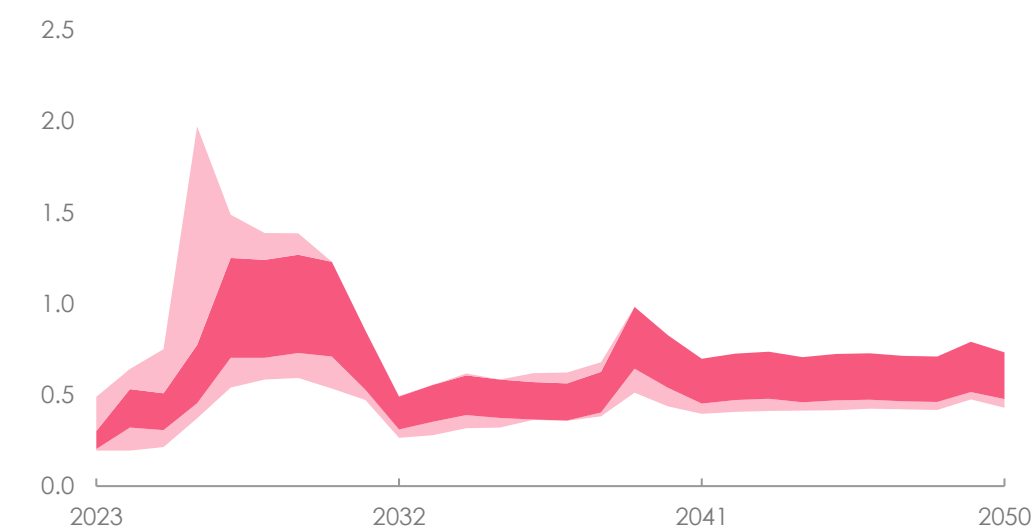
Revenue reductions, % of GNI*



Range Baseline

Range of scenarios for expenditure

Expenditure, % of GNI*



Baseline high-low range Range of all scenarios

Reductions mainly reflect lower excise and VAT on fuel/energy

% of GNI* change 2050 vs 2022

