MRV of Nationally Appropriate Mitigation Actions

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Overview

- Challenges to NAMA MRV
- Mapping the causal chain
- Indicators
- Example: UK Climate Change Act
- Example: Carbon Budgets in Wales

Why NAMA MRV?

Your reasons for performing NAMA MRV:

- Does the NAMA achieve its objectives ➡ relevant for national decision makers, donors, NAMA crediting

- Are there unforeseen and undesired impacts?

- Does the NAMA require adjustment?

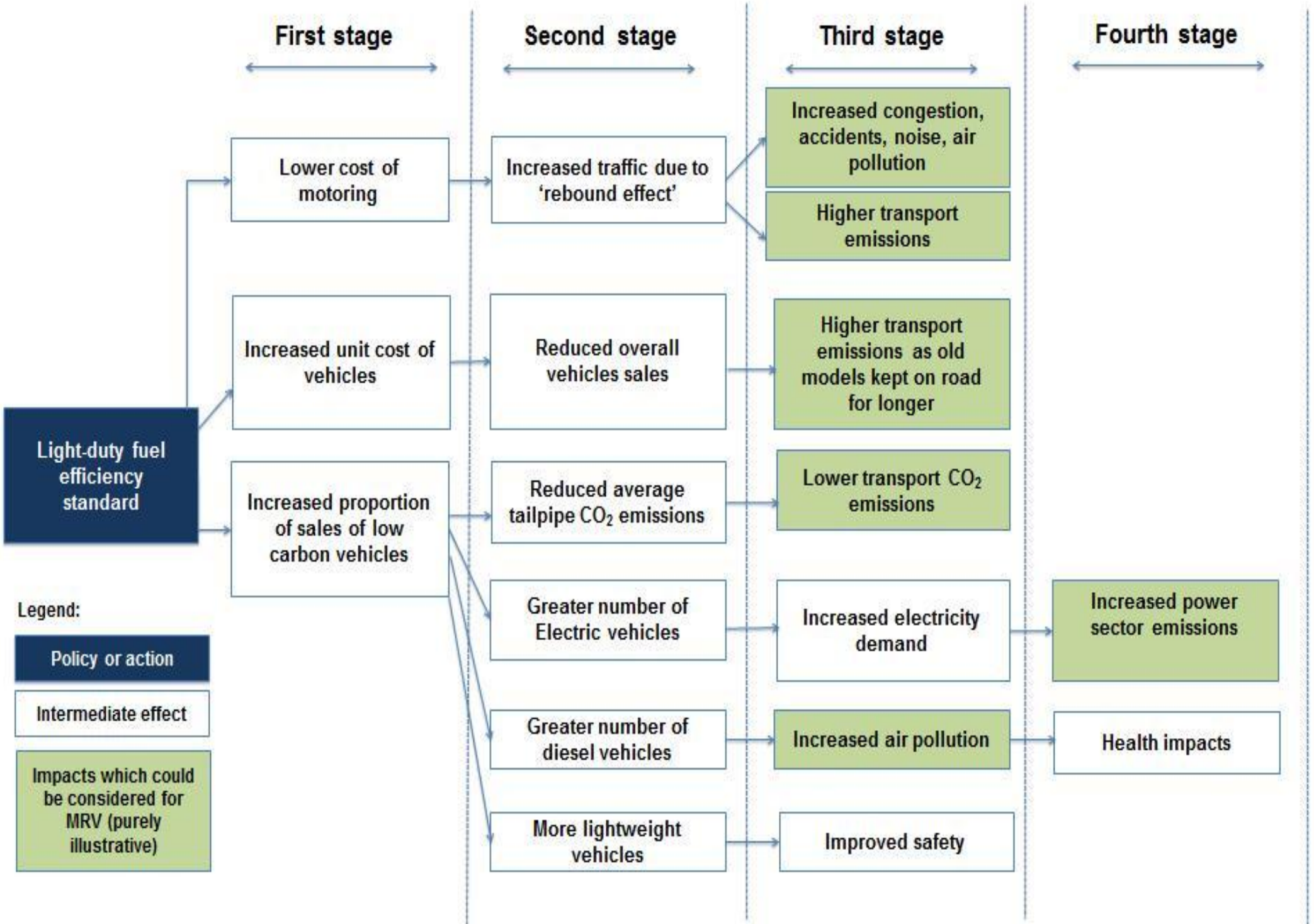
Challenges to NAMA MRV

- It is not easy to understand **whether** a specific NAMA has caused an MRVed change and **to what extent**
- Certain impacts might only be seen after a number of years ("transformational change")
- What can be done?
  - Accept these limitations and adjust expectations to the type of NAMA
  - Assess causality to understand relevant external influences and timelines
  - Connect NAMA MRV to the GHG inventory as far as possible
  - Ensure NAMA baselines consider existing sectoral projections and their assumptions

Different types of NAMAs

Project-type NAMAs	Policy NAMAs	Strategy NAMAs
• Many similar activities, e.g. related to installations of the same sector • Allows for highest accuracy in assessment of impacts • Considerable certainty in attribution of impacts to NAMA possible • Typically rather short- to medium term impact, but long-term impacts possible as well	• Policies or instrument, • Potentially overlaps with other policies/instruments • Rather estimation than measurement of impacts • Moderate to low certainty in attribution of impacts to NAMA possible • Typically medium- to long-term impacts	• Mitigation strategy, e.g. Regional, sectoral, cross-sectoral • Might contain a number of mitigation policies/instruments/activities • Likely only estimation of impacts possible • Moderate to low certainty in attribution of impacts to NAMA possible • Typically medium- to long-term impacts

The causal chain



Indicators

- Are a means to show a set objective has been reached
- Objectives have to be SMART, so indicators can be meaningful
- Indicators require both:
  - A target value
  - A baseline
  - A timeline, to which target value and baseline relate

The SMART concept	
S	Specific
M	Measurable
A	Achievable
R	Relevant
T	Time-bound

MRV Plan

Indicators

Define key performance indicators

- Input, activity, output and outcome
- Indicators should be tailored to the policy or action, based on the type of policy or action, the requirements of stakeholders, the availability of existing data, and the cost of collecting new data

Parameters

Define parameters for ex-post assessment

- Parameters required to estimate baseline emissions using the emissions estimation method(s) for each source and sink. Parameters are the variables (e.g., activity data, emission factors) that make up the emissions estimation equations or algorithm

Define

Define monitoring period for the policy

- The policy monitoring period is the time period over which the policy or action is monitored.
- At a minimum, the policy monitoring period should include the policy implementation period. But note the effects on GHG emissions may go on long after the policy has finished

Create

Create a monitoring plan

- Measurement or data collection methods, sources of data (either existing or additional data needed), monitoring frequency, whether the data are measured, modelled, calculated or estimated; uncertainties, sampling procedures, documentation, QA/QC

Monitor

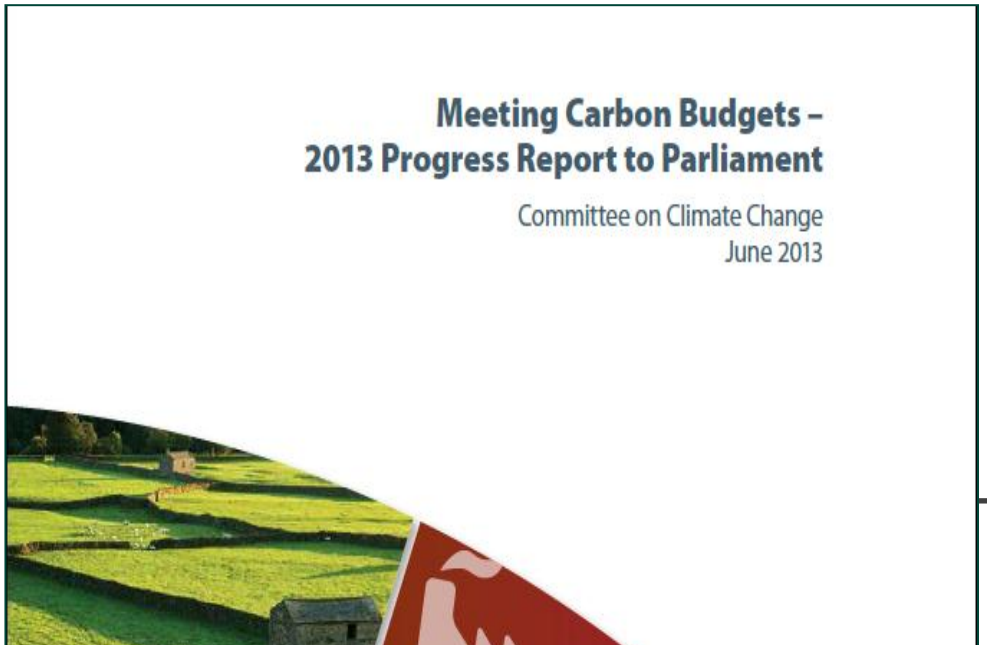
Monitor parameters over time

- Performance indicators are likely to provide useful information on the validity of the assumptions made in the ex-ante assessment of the policy

Example: UK Carbon Budgets

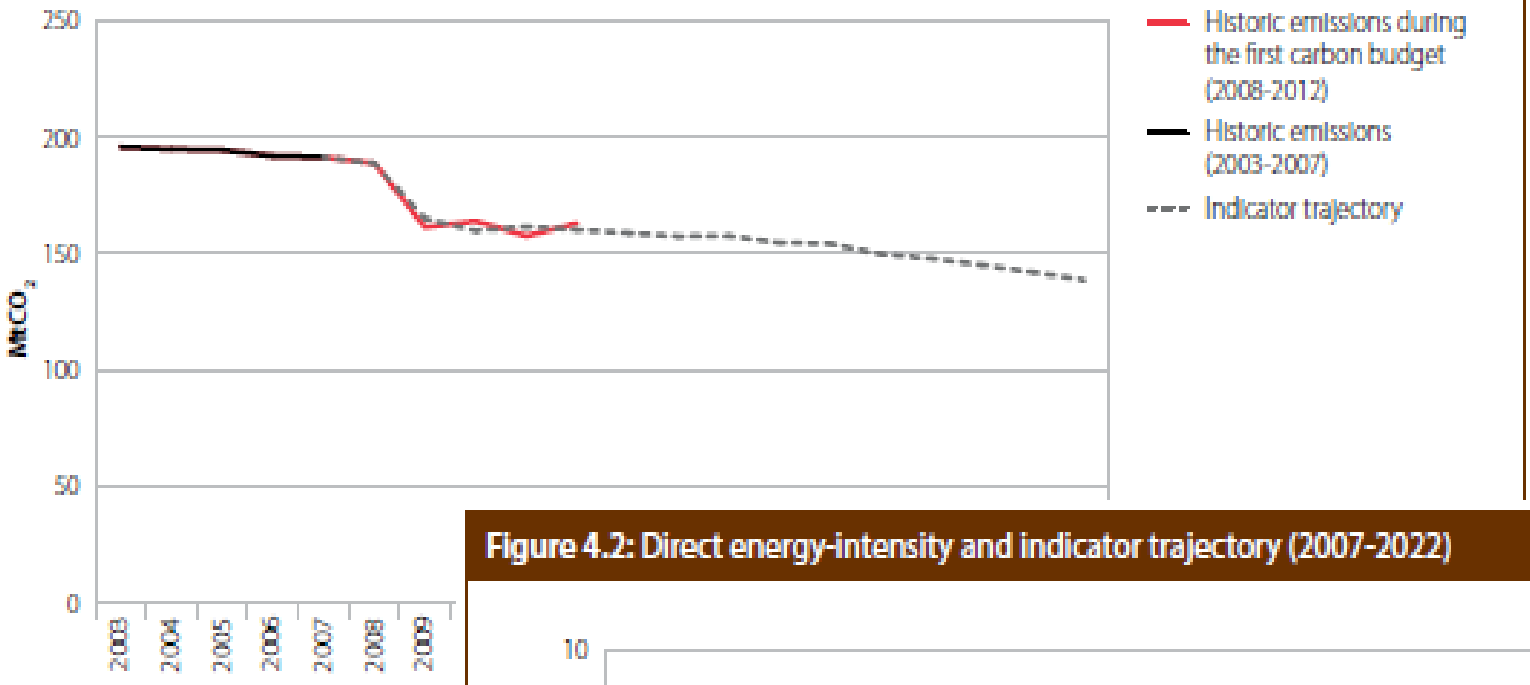
MRV Approach to UK Climate Change Act Targets

- Causality not always straightforward – many potential factors influencing to emission development
- Basic Approach:
  - Define indicators based on relevant effects as well as drivers
  - Develop indicator trajectories based on expected developments
  - Collect indicators values annually
  - Compare collected indicator values with trajectories



Report can be found under:
http://www.theccc.org.uk/publication/2013-progress-report/

Figure 4.3: Historic emissions vs indicator trajectory (2003-2022)



Source: NAEI (2013); DECC (2013) *Energy Trends*, Marc
Notes: 2012 emission estimates are provisional.

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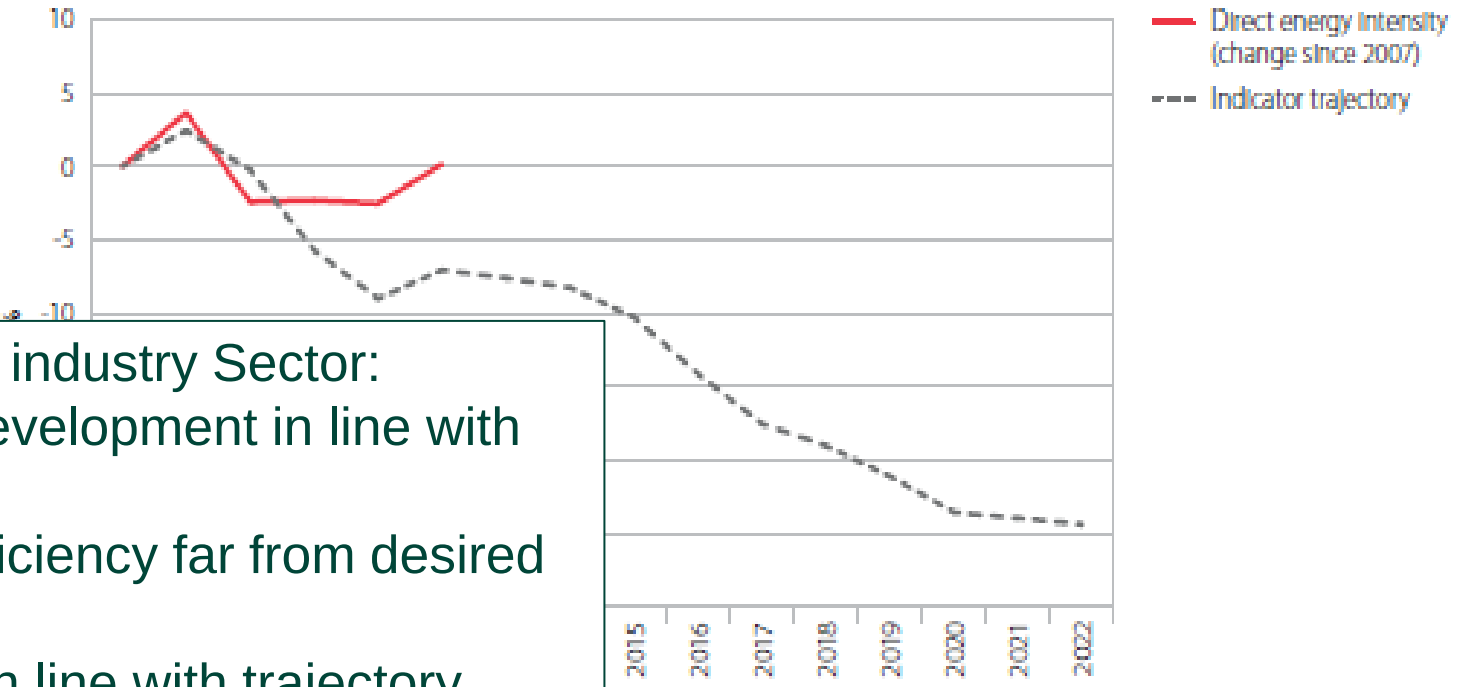
Figure 4.2: Direct energy-intensity and indicator trajectory (2007-2022)



Energy Efficiency in the industry Sector:

- Absolute emission development in line with trajectory
- Key driver energy efficiency far from desired trajectory
- Absolute emissions in line with trajectory mainly because of economic downturn

Example: Energy Efficiency in the Industry (UK level)

Use of indicators

Number of efficient boilers

Biofuels (% by volume)

Table 1.1: Progress against measures in the non-traded sector

	Annual progress†		Cumulative progress‡		Emissions reduction from measures installed in 2011 ($MtCO_2$)
	2011* indicator	2011* outturn	2011* indicator	2011* outturn	
Residential buildings					
Loft insulation (millions)	0.6	0.8 (CERT professional) + 0.3 (DIY & other)	2.2	2.4 (CERT professional) + 1.5 (DIY & other)	0.1 (CERT professional) + 0.1 (DIY & other)
Cavity wall insulation (millions)	0.6	0.5	2.4	2.1	0.3
Solid wall insulation	120,000	19,000	330,000	60,000	<0.1
Efficient boilers (millions)	1.0	1.3	4.0	4.9	0.6
Renewable heat					
Renewable heat penetration (% of total heat demand)	0.0%	+0.2%	1.2%	1.8%	0.4
Road transport					
New car gCO_2/km	-4.7	-6.1	151.0	138.1	1.5
Biofuels penetration (% by volume)	+0.6%	-0.1%	4.0%	3.5%	-0.1
Car drivers trained in eco-training	300,000	8,000	885,000	23,000	0
Electric car sales (PHEV/BEV)	8,100	1,100	13,000	1,300	0

Source: DECC (2012) CERT update quarter 15, DCLG (2012) Housing statistics – Table 241, Heating and Hotwater Council (2012) DECC (2012) Estimates of home insulation levels in Great Britain, DECC (2011) DUKES Table 7.7, SMMT (2012) New Car CO_2 Report, SMMT (2012), HMRC (February 2012) Hydrocarbon Oils Duties Bulletin, Energy Saving Trust (2012), CCC calculations.

Notes: *2010 for renewable heat. †Annual progress represents additional uptake/improvement in 2011 (2010 for renewable heat) relative to the previous year. Cumulative progress represents: for residential building measures, total additional installations between 2007 and 2011; for road transport measures, level achieved in 2011; for renewable heat penetration, level achieved in 2010.

http://www.theccc.org.uk/wp-content/uploads/2013/07/1585_CCC_Progress%20Rep%202012_Interactive.pdf, page 61. There is no equivalent table for 2013 report

Example: Carbon budgets in Wales

Example: Indicator Structure (Wales)

- Indicators divided into three ‘tiers’

Tier One	**Sector carbon dioxide equivalent emissions** CO_2e emission estimates consistent with the 3% target e.g. Transport Indicator 1 (TI1): Transport sector GHG emissions
Tier Two	**Activity Data** Activity data used to compile the Greenhouse Gas Inventory for Wales e.g. Transport Indicator 2 (TI2): Total distance travelled by road vehicles
Tier Three	**Policy** Provides an indication of how individual mitigation measures and policies are performing e.g. Transport Indicator 5(TI5): Percentage of people travelling to work whose mainly cycling or walking

Thank You

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