

Assessing indicators

Each indicator is composed of one or more measures which will show trends over time. Many indicators have a single measure, but where data cannot be combined logically the indicator will have more than one measure. Each measure is summarised or assessed separately using a set of 'traffic lights'. The traffic lights show 'change over time'. They do not show whether the measure has reached any published or implied targets, or indeed whether the status is 'good' or 'bad', although where targets have been set, these are identified in the indicator text.

The traffic lights are determined by identifying the period over which the change is to be assessed and comparing the value of the measure in the base or start year with the value in the end year. The 4 symbols utilised are:

-  Improving
-  Little or no overall change
-  Deteriorating
-  Insufficient or no comparable data

Where possible, the assessment has been made by evaluating trends using statistical analysis techniques. The assessment may be made by Defra statisticians in collaboration with the data providers, or undertaken by the data providers themselves. A green or red traffic light is only applied when there is sufficient confidence that the change is statistically significant and not simply a product of random fluctuations. An amber traffic light is applied when there is insufficient confidence that the change has taken place. Where there are insufficient data to make an assessment, for example, when the time series is too short, or where there are no data available to compare, a white 'traffic light' is applied to the indicator/measure.

For some indicators, it is not possible to formally determine statistical significance and in such cases the assessment has been made by comparing the difference between the value of the measure in the base or start year and the value in the end year against a 'rule of thumb' threshold. The standard threshold used is 3%, unless noted otherwise. Where the data allow it, a 3-year average is used to calculate the base year; this reduces the likelihood of any unusual year(s) unduly influencing the assessment. Where an indicator value has changed by less than the threshold of 3%, the traffic light has been set at amber. The choice of 3% as the threshold is arbitrary but is commonly used across other government indicators; the use of this approach is kept under review.

The traffic lights only reflect the overall change in the measure from the base to latest year and do not reflect fluctuations during the intervening years.

Where sufficient data are available, 2 assessment periods have been used:

1. Long term – an assessment of change since the earliest date for which data are available, although if the time series is for less than 10 years a long-term assessment is not made.
2. Short term – an assessment of change over the latest 5 years.

In 2 cases (indicators 2c and 4c), the short-term assessments have been carried out over a 6-year time period. This is because the assessments on which the indicators are based are only submitted to the European Union (EU) once every 6 years. For both long-term and short-term assessments, the years over which the assessment is undertaken are stated in the assessment table and/or accompanying notes.

Where the data allow, the individual indicators also have a third marker showing the direction of change in the latest year. This period is too short to make any meaningful assessment; however, when the change exceeds a 1% threshold, the direction is given simply as an acknowledgement of very recent trends and as a possible early indication of emerging trends.