

RISK ASSESSMENT PROCESS AND EVALUATION OF RISKS, STRENGTHS AND WEAKNESSES

Our assessment of data quality risks

Risk is defined as an uncertain future outcome that, if it occurs, will have negative effects on the quality and reliability of published information. A Risk is specified by the combination of the probability of it occurring and a measure of the impact should it occur. Risk relates to the level of expectation that inaccurate or incomplete data will be submitted to our stakeholders in the future and the possible consequences.

The overall Risk profile for regulatory data contained within the Annual Performance Report (APR) is determined by assessing both the probability of it containing an error and the impact this error would have on the business. The resultant Risk Matrix therefore comprises two component metrics – the Impact Metric and the Probability Metric. The Total Risk Rating assigned is a combination of both metrics.

In the table below we demonstrate how we prioritise areas that may require increased levels of assurance.

Table – Impact and Probability Risk Matrix

Impact Metric Score	4				
	3				
	2				
	1				
		1	2	3	4
		Probability Metric Score			

Any area with higher probability and higher impact residing in the red “high” or amber “high-medium” risk zones demands a higher level of assurance over those which reside in the yellow “low-medium” or green “low” risk zones.

Low Risk
Low-medium Risk
High-medium Risk
High Risk

The probability element of Risk is proxied by the Probability Metric and the impact element of Risk is proxied by the Impact Metric. The Impact and Probability Metrics are defined as follows:

- **Impact Metric:** a measure to represent the impact of an identified Risk materialising. It relates to the expected impact that inaccurate or incomplete data could have on stakeholders, our finances, our reputation and our coverage in the media. It is scored by assessing each performance data measure against the specified impact categories; and
- **Probability Metric:** a measure to represent the probability of data being incomplete or inaccurate. It is scored through the evaluation of the processes for data collection, reporting and the related control systems and processes.

Results of assessing the impact of data quality risks

The Impact Metric has four ratings, 1 to 4, with 4 denoting the highest level of adverse impact and 1 denoting the lowest level of adverse impact that would arise (in a realistic worst-case scenario) due to the use of inaccurate or incomplete data.

To calculate the Impact Metric we use the following three categories and score on a scale of 1 to 4:

- Financial;
- Reputational (including Media coverage); and
- Stakeholders.

To calculate an overall impact score for a Performance Commitment, we take the highest score of all impact categories. We interpret the impact assessment as being the associated impact of inaccurate or incomplete data and not the impact associated with poor performance that the data might reveal. In doing so, we assume a “realistic” worst-case scenario.

Method of assessing the probability of data quality risks

The Probability Metric has four ratings, from 1 to 4, with 4 denoting the highest probability and 1 denoting the lowest probability of inaccurate or incomplete data. There are seven categories that are scored for each Performance Commitment in order to calculate its probability score. These are:

- | | | | |
|----|---|---|-----------------------------|
| 1. | I1. Complexity of data sources | } | Inherent Probability |
| 2. | I2. Completeness of data set | | |
| 3. | I3. Extent of manual intervention | | |
| 4. | I4. Complexity and maturity of reporting rules | | |
| 5. | C1. Control activities | } | Control Frameworks |
| 6. | C2. Experience of personnel | | |
| 7. | C3. Evidence of historical errors with this data | | |

I1 to I4 reflect the inherent (I) probability of error where no additional controls (on top of general system or process controls) are used to reduce Risk.

C1 to C3 reflect the control (C) framework in place to reduce the probability of error. Combining these gives the overall probability of error, taking into account any controls that are in place.

The overall probability score ranges from 1 to 4 and, all other factors being constant, high inherent Risk or a weak control environment should result in a higher Risk score. Low inherent Risk or strong control environment should result in a lower Risk score.

We might expect to see greater variation between Performance Commitments in the Probability Metric Scoring than we would expect for Impact Metric Scores. This is because each Performance Commitment will have different reporting systems, processes, and control environments for reporting data.

Example to help explain the scoring process.

Taking one of our Performance Commitments, Treatment Works Compliance (En1), the table below helps explain the risk scoring further.

Treatment Works Compliance (En1)													
Impact Metric				Inherent Probability				Control Framework					
Financial	Reputational	Stakeholders	Impact Score	I1 Complexity of data sources	I2 Completeness of data set	I3 Extent of manual intervention	I4 Complexity/maturity of reporting rules	Highest Score	C1 Control activities	C2 Experience of personnel	C3 Evidence of historical errors	Average Score	Probability Score
3	4	4	4 A	3	2	2	2	3 B	1	2	2	1.7 C	1.3
A large penalty of £2.8m if we failed targets.	Our reputation with customers would be severely impacted.	Requirement for data to be totally accurate.		Data is entered into our system which then shared with our Regulator.	Large volume of data but complete set and been reported on for many years.	Limited manual intervention, but some manual quality checks done in addition to the automated checks.	Data set has been reported on for many years with regulator guidance for reporting.		Long standing controls in place.	Established experienced team.	Data has been reported with no historical errors.		Calc B-C = 1.3

Impact Metric Score	4	En1	Yellow	Orange	Red	
	3		Yellow	Orange	Red	
	2		Green	Yellow	Orange	
	1		Green	Green	Green	
			1	2	3	4
			Probability Metric Score			

Low Risk
Low-medium Risk
High-medium Risk
High Risk

From the risk scoring example above the Performance Commitment – Treatment Works Compliance (En1) scores a 4 (Impact Score) and 1.3 (Probability Score). The Impact score is taken from column marked A. The Probability metric score is calculated by taking the highest of the inherent probability score (column marked B) minus the average score across the control framework (column marked C). This therefore resides in the top left hand box as shown and is low risk (high impact but low probability).

This is a rigorous process and is one which we have applied to each of the Performance Commitments contained within our Final Determination.

Regarding other key documents and discreet parts of the business which involve data reporting, e.g. Bioresources Market Information, we have undertaken a high level risk assessment of each area. This involves following an exercise which determines the overall profile of the data quality risk by reference to the probability of the risk occurring and the likely impact on the business.

Our assessment of risk on our Performance Commitments and other targeted areas in 2021-22 can be viewed in the [Our Assurance Activities](#) document on our website.