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JOB TITLE	Review of Levels of Service for UK Infrastructure Systems
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Description of spreadsheet	This spreadsheet presents the levels of service that are defined for UK infrastructure by sector.

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Water	Water-related level of service metrics
Wastewater	Wastewater-related level of service metrics
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Transport - Rail	Rail-related level of service metrics
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Digital	Digital-related level of service metrics

AUTHORISATION OF LATEST VERSION

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REVISIONS Current Revision

Rev.	Date	Originated	Checked	Description
1	18/01/19	OP	VV/JM	Final project deliverable

Review of Levels of Service for UK Infrastructure Systems | Water

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence Probability	Resilience to 'every day' or 'large shocks'?	Who sets the Level of Service?	What informs the Level of Service?	Hazard or threat specific?	Frequency of definition/target	Performance reporting frequency	Source	Comments	
England and Wales	Water	Water supply	Asset Health	Water Supply interruptions	Number of minutes of supply interruption, per property served by the company, greater than 3 hours.	Ofwat expect companies to perform in the Upper Quartile which they have determined here: https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	Deterministic: actual occurred in one year.	Everyday	Water companies propose performance with regulator approval.	Cost Benefit Analysis (CBA), impact on bills and customers' consultation	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	All companies should aim to achieve upper quartile performance by 2024/2025. Ofwat in 2017-18, the average amount of time that consumers were without a supply of water increased from 10 minutes and 45 seconds, to 22 minutes – an increase of 105%. This has been mainly driven by the 'leaky-train' in early March, but highlights that companies need to be better prepared to prevent these spikes. - Consumer Council for Water (CCWater)	
England and Wales	Water	Water supply	Asset Health	Mains bursts	Number of mains bursts per 100km of total length of mains for defined year.	No threshold set.	Deterministic: actual occurred in one year.	Large shock	CBA	CBA	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	Mains bursts include all physical repair work to mains from which water is lost. Any repair work undertaken on the water mains (i.e. all pipes conveying treated water around the distribution point but not including communication pipes or supply pipes) shall be included.	
England and Wales	Water	Water supply	Asset Health	Unplanned Outage	The company's total unplanned outage as a proportion of the company's total production capacity. Where unplanned outage is a temporary loss of maximum production capacity.	Companies defines threshold and target.	Deterministic: (%) of unplanned outage as a proportion of company's total production capacity.	Everyday	Water companies propose performance, regulators approve it	Regulator sets performance commitment	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	Unplanned outage for each water production site is calculated separately and then summed over the reporting year to give a total actual unplanned outage for the water resource zone. Planned outage should be recorded separately.	
England and Wales	Water	Water supply	Asset Health	Leakage	Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses and trunk main leakage plus customer supply pipe leakage	Ofwat state that they expect companies to 'achieve at least a 15% reduction in leakage' by 2025 or perform in the upper quartile. Thresholds set by individual water company e.g. + Yorkshire Water announced to reduce leakage by 40% by 2025. + Severn Trent announced to reduce leakage by 15% in AMP7.	Deterministic: Reported as the annual arithmetic mean daily leakage expressed in mega-litres per day (MLD). It is reported as leakage per property, per day basis to provide a comparative leakage performance level.	Everyday	Water companies propose performance, regulators approve it	Impact on bills and customer consultation.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	Leakage is a top priority for customers and is also a priority for Defra and the Environment Agency. Ofwat has stated the expectation that leakage targets should be ambitious, a message echoed by Defra and National Infrastructure Commission (NIC). Overall leakage levels rose for the second consecutive year during 2017-18 by 1.5% to 3,170 mega litres per day (COWater).	
England and Wales	Water	Water supply	Resilience	Risk of severe drought restrictions in a drought	% of population that supply restrictions in a 1 in 200 year drought on average over 25 years	Thresholds for appropriate % of population defined in each water companies Water Resource Management Plan and Drought Plans. E.g. + Severn Trent target for AMP7 and AMP8 will ensure that by 2030, 0% of customers will be at risk of severe restrictions in a 1 in 200 year drought. + Affinity Water: improve from 42.9% to 11% over AMP7.	Probabilistic: % of population the company serves that would experience severe supply restrictions (e.g. standpipes or rota cuts) in a 1-in-200 year drought. Non-statutory expectation: 0.5% annual probability Actual: variable between 1% and 0.2% annual probability	Large shock	Water companies propose performance, regulators approve it	Customer consultation	Yes - drought	Supply Demand Balance applied for this metric undertaken for the 25 year forecast.	Annual	http://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	There is no standard approach to estimating drought return periods used for water resources planning.	
England and Wales	Water	Water supply	Resilience	Per Capita Consumption	Average amount of water used by each customer that lives in household property (litres per head per day).	Target for PCC reduction set by each water company reflecting their local situation	Deterministic: litres per head per day, based on 3 year average.	Everyday	Water companies propose performance target, regulators approve it	Regulator, customers' consultation	No	Reviewed at every price review (i.e. 5 years)	Annual, reported at the whole company level but Company's performance will be measured as a three-year average of the annual figures	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	Increasing water metering penetration - customers paying for what they use sending strong message about the value of water. Defra have advised that they expect Ofwat to promote ambitious action to reduce leakage and PCC, where this represents best value for money over the long term. The government's 25 year plan to improve the environment (published January 2018) also states that they want to see water use in England fall, and for ambitious personal consumption targets to be set. PCC derived from WRMP Inconsistencies in how PCC is calculated across companies. Current average water consumption is 141 litre a day.	
England and Wales	Water	Water supply	Water Quality	Water Quality (CRI score)	The Compliance Risk Index (CRI) is made up of four sub-components based on where water quality sampling occurs. These are: Water Treatment Works, Supply Points, Service Reservoirs and Water Supply Zones. These are combined to produce an overall CRI score for each company.	CRI replaces current monitoring programme (mean zoned compliance) and moves towards a risk based methodology to assess based on where water quality defines scores. DWI set expectation for company to target zero on CRI and expect full compliance. Financial incentive in the form of penalties only. Score under the DWI's Compliance Risk Index, (risk based monitoring methodology to assess company compliance with water quality standards).	Deterministic: sum of compliance failures, normalized to the company population served, total volume of water supplied, and total service reservoir capacity, respectively, forms the amalgamated overall CRI score.	Everyday	Drinking Water (DWI) and Ofwat.	DWI establishes risk level.	No	Annual	Annual	http://www.dwi.gov.uk/asset-health-determining-factors.aspx	For CRI, the most recent industry UQ performance, as reported by the DWI, is at 0.39 with further performance at 0.01. The industry (England companies only) average in 2017 was 3.62 (DWI). The average score of the large companies (> 1 million connections) is 4.60, in contrast to an average of 2.27 for the smaller companies. CRI replaces Mean Zoned Compliance Index	
England and Wales	Water	Ofwat expect companies to cover the following areas with their bespoke PCs			• Different price controls (water resources, wastewater network plus etc.) This relates to wholesale controls (https://www.ofwat.gov.uk/wp-content/uploads/2018/12/Appendix-x-7-Wholesale-revenue-incentives-FM.pdf) • Vulnerability • Environment: e.g. Affinity Water set a bespoke performance commitment "Environmental Innovation" • Resilience: e.g. Severn Trent set a bespoke resilience commitment of "increasing water supply capacity" e.g. Anglian Water set a bespoke resilience commitment (percentage of population supplied by a single supply system) • Abstraction, using the AIM Companies can choose from the following to reflect their own asset health challenges and allows them to consults with CCB and customers on their particular preferences:			Customer preference or specific issues affecting companies operating area.					Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx	
England and Wales	Water				Ofwat expect water companies to come forward with a bespoke Performance Commitment on gap sites and voids (https://www.ofwat.gov.uk/wp-content/uploads/2017/12/Appendix-10-Retail-FM.pdf), for residential retail and the business retail market or justify why this isn't appropriate.			Everyday	Customer preference or specific issues affecting companies operating area.	Regulator	No		Annual	https://www.ofwat.gov.uk/objv/asset-health-determining-factors.aspx		
Scotland	Water	Water Supply		Inadequate pressure			Deterministic - forms part of 'Overall Performance Assessment'	Everyday	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Unplanned supply interruptions			Deterministic - forms part of 'Overall Performance Assessment'	Everyday	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Hosepipe restrictions			Deterministic - forms part of 'Overall Performance Assessment'	Large Shocks	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	Drought	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Security of Supply Index absolute			Deterministic - forms part of 'Overall Performance Assessment'	Large Shocks	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Security of supply Index variance against target			Deterministic - forms part of 'Overall Performance Assessment'	Large Shocks	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Water quality			Deterministic - forms part of 'Overall Performance Assessment'	Everyday	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Water pollution incidents			Deterministic - forms part of 'Overall Performance Assessment'	Everyday	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Leakage			Deterministic - forms part of 'Overall Performance Assessment'	Everyday	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	
Scotland	Water	Water Supply		Resilience of Supply Index	Monitor how to manage risk of water supply restrictions in future and an asset health indicator to monitor stewardship of assets.	In development	In development	Large Shocks	Water industry commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	In development	Annual	https://www.scotishwater.co.uk/assets/files/2020/05/Performance-Report-2019-2020.pdf	362-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.	

Review of Levels of Service for UK Infrastructure Systems | Water

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence Probability	Resilience to 'every day' or 'large shocks'?	Who sets the Level of Service?	What informs the Level of Service?	Hazard or threat specific?	Frequency of definition/target	Performance reporting frequency	Source	Comments
Scotland	Water	Water Supply		Security of Supply Index		Expected performance by 2021 - Band B (89%)	In development	Large Shocks	Water industry Commission for Scotland	Customer forum, Water Industry Commission for Scotland and other stakeholders.	No	In development	Annual	https://www.scotishwater.co.uk/assets/uploads/2019/05/Files/Strategy%202019-2022/PerformanceAssessment2019-2022.pdf	382-400 points is target against delivery plan, that incorporates all 11 'Overall Performance Assessment' measures.
Northern Ireland	Water		Overall customer service		Number of low pressure properties removed by company action	200	Deterministic: actual recorded number of properties	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water		Overall customer service		Total number of properties receiving low pressure at end of year.	932	Deterministic: actual number of properties.	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water		Overall customer service		% of properties affected by supply interruptions >12hrs	0.17%	Deterministic: % of incidents.	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water		Overall customer service		Overall supply interruption performance score	1.05		Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water		Overall customer service		Overall Performance Assessment score (11 thresholds)	221	Deterministic: Value of all scores combined	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water	Water Customer Service		Total Leakage		161 MI	Deterministic: Mega Litres per day	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water	Water Customer Service		Security of supply index score		100	Deterministic	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water		Drinking water quality		Overall compliance with drinking water regulations	99.79%	Deterministic: % overall compliance	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	
Northern Ireland	Water		Drinking water quality		% compliance with drinking water quality standards at consumers tap	99.69%	Deterministic: % overall compliance	Everyday	Utility Regulator	Consumer Council for Northern Ireland, working with NI Water, gather consumer views to inform and influence policy and investment decisions.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.uregpi.gov.uk/sites/uregpi/files/media-files/Final%20PC15%20MTR%20Report%20Including%20Annex%20A%20B_1.pdf	

Review of Levels of Service for UK Infrastructure Systems | Wastewater

Country	Sector	Subsystem	Measure Type	Measure Category	Impact Definition	Impact Threshold	Occurrence Probability	Resilience to 'every day' or 'large shocks'?	Who sets the Level of Service?	What informs the Level of Service?	Hazard or threat specific?	Frequency of definition/target	Performance reporting frequency	Source	Comments
England and Wales	Wastewater		Internal sewer flooding		The number of internal flooding incidents per year, including sewer flooding due to severe weather events per 10,000 sewer connections.	Ofwat expect companies to perform in the Upper Quartile which they have determined here: https://www.ofwat.gov.uk/publications/annual-determinations-upper-quartile-comparative-assessment/	Deterministic: actual incidents occurred each year.	Large shock	Company propose target	Customer consultation, Cost benefit Analysis	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/wp-content/uploads/2018/03/Reporting-guidance-sewer-flooding-updated-April-2018.pdf	Number of incidents reported to the Environment Agency and Natural Resources Wales
England and Wales	Wastewater	Water Quality	Pollution incidents		The number of category 1-3 pollution incidents per 10,000km of wastewater network.	Ofwat expect companies to perform in the Upper Quartile which they have determined here: https://www.ofwat.gov.uk/publications/annual-determinations-upper-quartile-comparative-assessment/	Deterministic: actual number of incidents.	Large shock	Company propose regulator approves	Customer consultation, EIANRW advice	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/wp-content/uploads/2018/03/Reporting-guidance-sewer-pollution-per-1000km.pdf https://www.ofwat.gov.uk/wp-content/uploads/2017/12/018-Incident-Category-1-3-Reporting-guidance.pdf https://www.ofwat.gov.uk/wp-content/uploads/2017/12/018-Incident-Category-1-3-Reporting-guidance.pdf	Documents listed include latest definition and categorisation methods.
England and Wales	Wastewater	Asset Health	Asset Health	Sewer collapses	Number of sewer collapses	Ofwat have historically used the stable reference level of 1000 sewer collapses however, an impact on larger/threshold set by company	Deterministic: Number of sewer collapses per thousand kilometres of all sewers causing an impact on service to customers or the environment	Large shock	Ofwat set mandatory metric but no specific guidance on target setting.	Cost Benefit Analysis	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/wp-content/uploads/2018/03/Reporting-guidance-sewer-collapse-per-1000km.pdf https://www.ofwat.gov.uk/wp-content/uploads/2017/12/018-Incident-Category-1-3-Reporting-guidance.pdf	Historically, Ofwat used the reference level of 1000 sewer collapses.
England and Wales	Wastewater	Asset Health	Treatment works compliance	Treatment Works Compliance	The EA expects companies to achieve performance within the green range as outlined below: >99% - green performance within 97% - 99% amber performance within EPA.	Environmental Performance Assessment (EPA) is a non-statutory tool for comparing performance between water and sewerage companies. The indicators covered by this performance commitment are: • Numeric permit compliance including water treatment works discharge compliance • Total pollution incidents (categories 1, 2 and 3) for the sewerage system (normalised) • Sewerage pollution incidents (category 1 & 2) for the sewerage system (normalised) • Percentage self reporting of pollution incidents • National Environment Programme (NEP) scheme delivery • Satisfactory Sludge Use/Disposal • Security of Supply Index (SoSI)	Both	Environment Agency EPA methodology	Environment Agency's Environment Performance Assessment methodology	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/wp-content/uploads/2017/12/018-Incident-Category-1-3-Reporting-guidance.pdf		
England and Wales	Wastewater		Resilience	Sewer flooding	Risk of sewer flooding in a storm	Flooding in a 1 in 50 year storm	Deterministic: Percentage of population at risk of sewer flooding in a 1 in 50 year storm	Large shock		Cost Benefit Analysis	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.ofwat.gov.uk/wp-content/uploads/2017/12/018-Incident-Category-1-3-Reporting-guidance.pdf	
England and Wales	Wastewater		Bespoke asset health measures		• Sewer blockages • External sewer flooding • Percentage of population equivalent, served by sewage treatment works with numeric limits, which were non-compliant with sanitary look-up table limits or nutrient limits, urban wastewater treatment directive (UWWTD) look-up table limits or nutrient limits. • Unplanned maintenance - non-infrastructure				Customer preference or specific issues affecting companies operating area.					https://www.ofwat.gov.uk/wp-content/uploads/2017/12/018-Incident-Category-1-3-Reporting-guidance.pdf	
Scotland	Wastewater	Customer service	Overall Performance Assessment	Sewer flooding incidents due to inadequate capacity	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Sewer flooding incidents due to other causes	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Sewer flooding, properties at risk.	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Wastewater pollution incidents (Category 1 & 2)	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Large shock	Utility Regulator	Scores are weighted to reflect importance to customers.	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Wastewater pollution incidents (Category 3)	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Large shock	Utility Regulator	Scores are weighted to reflect importance to customers.	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Sewage sludge disposal	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Non compliant waste water treatment works	Not made available. Overall, expected OPA performance by 2021 = 380-400.	Deterministic: Calculated by scoring 17 individual performance measures, weighted to reflect importance to customers and aggregated to establish and overall index of service performance.	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Number of properties externally flooded from sewers	In development	In development	Large shock	In development	In development	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Scotland	Wastewater	Customer service	Overall Performance Assessment	Number of properties at risk of external flooding from sewers due to hydraulic overloading.	In development	In development	Large shock	In development	In development	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.scotishwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Overall Performance Assessment	Wastewater compliance	Target set for 2018 by NI at 99.12	Deterministic: percentage of population equivalent (%)	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Overall Performance Assessment	Sustainable wastewater Treatment Works (WwTW) solutions	Target set by NI for 2018/19 as 3.	Deterministic: Cumulative number of sustainable WwTW	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Consumer service coverage	Properties at risk of flooding	Number of properties removed from risk register.	Not defined	2 in 10, 1 in 10, and 1 in 20 risk register.	Large shock	Utility Regulator	Scores are weighted to reflect importance to customers.	Sewer flooding	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf	
Northern Ireland	Wastewater	Customer service	Quality sewerage	% of Wastewater Treatment Works compliant with numeric consent	Not defined	Deterministic	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	Water quality	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Quality sewerage	Number of high and medium pollution incidents attributable to NI Water	Not defined	Deterministic	Large shock	Utility Regulator	Scores are weighted to reflect importance to customers.	Pollution incidents	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Sewerage Outputs	Sewerage activity - Length of sewers replaced or renovated	Not defined	Deterministic	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Serviceability	Sewerage infrastructure serviceability	Not defined	Deterministic	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		
Northern Ireland	Wastewater	Customer service	Serviceability	Sewerage non-infra serviceability	Not defined	Deterministic	Everyday	Utility Regulator	Scores are weighted to reflect importance to customers.	No	Reviewed at every price review (i.e. 5 years)	Annual	https://www.niwater.co.uk/assets/uploads/2018/03/Performance-Report-2017-18.pdf		

Review of Levels of Service for UK Infrastructure Systems | Energy

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence probability	Resilience to 'every day' or 'large shocks'?	Who sets the Level of Service?	What informs the Level of Service?	Hazard or threat specific?	Frequency of definition/target (Every 8 years)	Performance reporting frequency	Source
England, Wales	Energy	Electricity Transmission (National Grid)	System availability	Annual System availability	Annual system availability is reduced whenever a circuit is taken out of operation for either planned purposes or result of a fault. Also considers availability of interconnectors (France and Netherlands) and offshore transmission system.	No threshold set - compared with previous years statistics	Deterministic: Calculated using approach defined in National Grid Electricity System Performance Report 2017-18. (Sum for all circuits of hours available)/(no of circuits) x (No. hours in period) x 100%.	Every day	Ofgem	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales	Energy	Electricity Transmission (National Grid)	System availability	Winter peak system availability	Average system availability over the three months of December, January and February.	No threshold set - compared with previous years statistics	Deterministic: calculated using same equation as annual system availability but only for months of December, January and February.	Every day	Ofgem	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	System availability	Monthly System Availability	Average monthly system availability.	No threshold set - compared with previous years statistics	Deterministic: calculated using same equation as annual system availability, but on a monthly basis.	Every day	Ofgem	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	System unavailability		Unavailability falls into 4 categories, that include: - Maintenance outages - System construction outages - User connection outages - Unplanned unavailability	No threshold set. For unplanned unavailability, this relates to outages required and taken at <24 hours notice.	Deterministic: calculated using equation - (100 - Availability) %	Every day	Ofgem	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	Offshore System Availability			No threshold set. Compared with previous years statistics.	Deterministic: calculated using equation - [(Total MWh system is capable of delivering - MWh unavailable)/Total MWh system is capable of delivering]x100%	Every day	Ofgem	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	Security	Loss of supply incidents (Incentivised)	Incident on the transmission system that results in an actual unsupplied energy incident to customers that is subject to exclusions defined in the Special Conditions of the Transmission Licence.	> 3 minutes in duration	Deterministic: Reported individually giving the date, time and location of the event, duration, demand lost, an estimate of unsupplied energy and relevant factual information relating to the event.	Every day	Ofgem	Energy Not Supplied Scheme (ENS) and Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017).	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	Security	Loss of supply incidents (Non-Incentivised)	Same as 'Incentivised'	< 3 minutes in duration	Deterministic: for each individual event, energy not supplied is calculated and recorded, and recorded separately to incentivised measure.	Every day	Ofgem	Energy Not Supplied Scheme (ENS) and Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017).	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	Security	Overall Reliability of supply		No threshold set	Deterministic: calculated using following equation - [(Estimated Unsupplied Energy/Total energy that would have been supplied by the transmission system)]x100%	Every day	Ofgem	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	Quality of service	Voltage excursions	Not exceeding 10% above the nominal voltage of 132kV and above and not exceeding 6% at lower voltages.	Voltage excursions in excess of 15 minutes are reported. NETS Grid Code states that 400kV system voltages can only exceed 6% for a maximum of 15 minutes.	Deterministic: Reported individually when exceeded.	Every day	Electricity Safety, Quality and Continuity Regulations, 2002 and NETS Grid Code	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Electricity Transmission (National Grid)	Quality of service	Frequency excursions	Not exceeding 1% above and below 50Hz: a range of 49.5 to 50.5Hz	Any excursions beyond these limits for 60 seconds or more are reported.	Deterministic: Reported individually when exceeded.	Every day	Electricity Safety, Quality and Continuity Regulations, 2002	Requirements defined in the National Electricity Transmission System Security and Quality of Supply Standard (v2.3 8th Feb 2017). Requirements of the Transmission Licence Standard Conditions - 01 April 2018.	No	At each price review (Every 8 years)	Annual	https://www.nationalgrideso.co.uk/sites/eso/files/documents/National%20Electricity%20Transmission%20System%20Performance%20Report%202017-2018.pdf
England, Wales, Scotland	Energy	Gas Transmission (National Grid)	Reliability and Availability	Network Output Measures	Includes a series of Measures including: - Network asset condition measure - Network risk measure - Network performance measure - Network capability measure - Network replacement outputs	N/A	Deterministic and probabilistic: as defined in Methodology for Network Output Measures. Includes probability of failure.	Every Day	Ofgem	Gas Transmission Licence objectives. Stakeholder feedback and engagement.	No	At each price review (Every 8 years)	Annual	https://license.opendata.co.uk/files/nationalgrid/nationalgridtransmission/201718_NGCI_Our_Performance_Full_Report.pdf
England, Wales, Scotland	Energy	Gas Transmission (National Grid)	Reliability and Availability	Maintenance Days Used Incentive Scheme	Number of days of maintenance undertaken as part of routine valve maintenance activities.	N/A	Deterministic: No of days of maintenance undertaken. For 2017/18 this only included Remote Valve Operations (RVOs).	Every Day	Ofgem	Gas Transmission Licence objectives. Reduce the impact that NG has on customers when undertaking routine maintenance activities. In 2017/18, only included maintenance days for Remote Valve Operations.	No	At each price review (Every 8 years)	Annual	https://license.opendata.co.uk/files/nationalgrid/nationalgridtransmission/201718_NGCI_Our_Performance_Full_Report.pdf
England, Wales, Scotland	Energy	Gas Transmission (National Grid)	Reliability and Availability	Maintenance Days Changed Incentive Scheme	Changes to planned maintenance after 1 April for the forthcoming summer maintenance period.	Benchmark of 20.37 days set for 2017/18 period. Which is 7.25% of all maintenance days and Advice notice days called	Deterministic: No of days of maintenance days changed.	Every Day	Ofgem	Gas Transmission Licence objectives. To reduce the impact on customers when undertaking routine maintenance activities. Does not include changes which were initiated by customers, only those initiated by NG	No	At each price review (Every 8 years)	Annual	https://license.opendata.co.uk/files/nationalgrid/nationalgridtransmission/201718_NGCI_Our_Performance_Full_Report.pdf
England, Wales, Scotland	Energy	Gas Transmission (National Grid)	Reliability and Availability	Demand Forecasting Incentive Schemes	Deliver accurate 13.00 day ahead demand forecasting.	2017/18 average error had target of 9.03 mcm	Probabilistic.	Every day	Operator	Forecasts assist the industry in making efficient physical and commercial decisions to balance supply to, and demand from, the NTS	No	At each price review (Every 8 years)	Annual	https://license.opendata.co.uk/files/nationalgrid/nationalgridtransmission/201718_NGCI_Our_Performance_Full_Report.pdf
England, Wales, Scotland	Energy	Gas Transmission (National Grid)	Reliability and Availability	Demand Forecasting Incentive Schemes	Deliver accurate demand forecasting at the two to five days ahead stage.	2017/18 average error had target of 13.07 mcm	Probabilistic.	Every day	Operator	Forecasts assist the industry in making efficient physical and commercial decisions to balance supply to, and demand from, the NTS	No	At each price review (Every 8 years)	Annual	https://license.opendata.co.uk/files/nationalgrid/nationalgridtransmission/201718_NGCI_Our_Performance_Full_Report.pdf
England, Wales, Scotland	Energy	Gas Transmission (National Grid)	Environment	Unaccounted for Gas		Particular attention to any days that exceed +/- 20 GWh	Deterministic	Every day	Operator	Reputational incentive with a requirement for the operator to undertake projects and initiatives to investigate the cause and reduce sources of UAG.	No	At each price review (Every 8 years)	Daily	https://www.nationalgrideso.co.uk/balancing/unaccounted-gas-usage https://license.opendata.co.uk/files/nationalgrid/nationalgridtransmission/201718_NGCI_Our_Performance_Full_Report.pdf
England, Scotland and Wales	Energy	Electricity (Distribution)	Network Performance	Security of supply	Number of supply interruptions recorded as a % of customers connected in a year. Called 'Customer Interruptions' (CI).	Supply loss of > 3 minutes duration	Deterministic: actual events occurred are reported. Targets are set for each individual DNO and across individual DNO sub regions.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years)	Annual	https://www.ofgem.gov.uk/subs/callions-and-updates/nic-electricity-distribution-annual-report-2016-17/
England, Scotland and Wales	Energy	Electricity (Distribution)	Network Performance	Availability of supply	The average number of minutes that a customer has their supply interrupted. Called 'Customer Minutes Lost' (CML).	Supply loss of > 3 minutes duration	Deterministic: number of customer minutes lost. Targets are set for each individual DNO and across different DNO sub regions.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years)	Annual	https://www.ofgem.gov.uk/subs/callions-and-updates/nic-electricity-distribution-annual-report-2016-17/

Review of Levels of Service for UK Infrastructure Systems | Energy

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence probability	Resilience to 'every day' or 'large shocks'?	Who sets the Level of Service?	What informs the Level of Service?	Hazard or threat specific?	Frequency of definition/target	Performance reporting frequency	Source
England, Scotland and Wales	Energy	Electricity (Distribution)	Network Performance	Restoration of supply	% of customers restored in one hour if their electricity supply is interrupted due to a fault.	Supply restored in <=1 hour.	Deterministic: % customers supply restored within one hour. Varying targets among the DNOs and across individual DNO regions.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years)	Annual	
England, Scotland and Wales	Energy	Electricity (Distribution)	Network Performance	Restoration of supply - Target 60	Designed to ensure that as many customers as possible have their electricity supply restored within one hour of an HV fault.	Supply restored in <=1 hour.	Deterministic: number of customers with restored power within one hour of an HV fault.	Everyday	Western Power Distribution derived this metric.	Improving customer service to Western Power Distribution's customers.	No	Not defined.	Annual	https://www.westernpower.co.uk/key-performance-targets
England, Scotland and Wales	Energy	Electricity (Distribution)	Network Performance	Electricity supply failure	If supply network fails, supplies will be restored within 12 hours of fault during normal weather.	Supply restored within 12 hours. If 5,000 premises or more, 24 hours.	Not defined.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years)	Annual	https://www.westernpower.co.uk/key-performance-targets
England, Scotland and Wales	Energy	Electricity (Distribution)	Network Performance	Electricity supply	If supply network fails during severe weather, supplies will be restored within 24 or 48 hours of fault being reported.	>24 and < 48 hours.	Not defined.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years)	Annual	https://www.westernpower.co.uk/key-performance-targets
England, Scotland and Wales	Energy	Electricity (Distribution)	Value of Load Lost (VOLL)		To establish the value of the social and economic impact of electricity supply interruptions.	Not defined.	Deterministic: calculated as per methodology set out in 'The Value of Lost Load (VOLL) for Electricity in Great Britain'. Represents economic value given to the unserved amount of electricity as a result of planned or unplanned electricity outages.	Everyday	Ofgem and DECC	Informed by research commissioned by Ofgem and the Department for Energy and Climate Change.	No	At each price review (Every 8 years)	Annual	https://www.ofgem.gov.uk/ofgem-publications/82293/london-economic-value-of-loss-load-electricity-eb04f https://www.enwl.co.uk/inproval/our-smaller-projects/network-innovation-also-called-trillium-the-value-of-loss-load-to-customers
England, Scotland and Wales	Energy	Gas (Distribution)	Reliability	Loss of supply	Minimum levels of network reliability performance for customers.	Not defined.	Deterministic: reported as number of customers impacted, overall reliability (%), % customers interrupted and average hours interrupted.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years). But can be reviewed periodically.	Annual	https://www.ofgem.gov.uk/system/uploads/2017/12/2016-17.pdf https://www.ofgem.gov.uk/system/uploads/2018/03/interim_decision_letter.pdf
England, Scotland and Wales	Energy	Gas (Distribution)	Reliability	Loss of supply	Achieving 1 in 20 peak capacity standard.	Probabilistic: forecast demand to ensure that adequate capacity to meet a level of demand that is not likely to recur more often than 1 in 20 years.	1 in 20 year demand.	Large shocks	Ofgem	Guaranteed customer service standards, set by Ofgem.	No	At each price review (Every 8 years)	Annual	https://cadentgas.com/getattachment/About-us/Regulation/Cur-performance/Promo-Exec-Summary/Strategic-performance-overview-narrative-310718-Final.pdf
England, Scotland and Wales	Energy	Gas (Distribution)	Safety	Repairing network escapes	Proportion of gas escapes prevented within 12 hours	<=12 hours.	Deterministic.	Everyday	Ofgem	Guaranteed customer service standards, set by Ofgem.	Gas escapes.	At each price review (Every 8 years)	Annual	https://cadentgas.com/getattachment/About-us/Regulation/Cur-performance/Promo-Exec-Summary/Strategic-performance-overview-narrative-310718-Final.pdf
England, Scotland and Wales	Energy	Gas (Distribution)	Iron mains risk reduction		Programme to replace risky iron mains on network.	Each GDN has a specified level of iron mains at risk that they must remove from their network.	Deterministic: length of iron mains replaced as per that mandated.	Everyday	Mandated by Health and Safety Executive.	Iron Mains Risk Reduction Programme.	Cast iron mains leading to gas in property events.	At each price review (Every 8 years)	Annual	https://www.ofgem.gov.uk/system/uploads/2017/12/2016-17.pdf http://www.hse.gov.uk/gas/supply/mains/gas-connections/interference-maint-policy-2013-2021.htm
England, Scotland and Wales	Energy	Gas (Distribution)	Guaranteed Standards of Performance (GSOPs)	GSOP 1: Supply restoration	If you are a domestic customer and your gas supply is interrupted as a result of a failure, fault or damage to your GTs pipeline system you will be reconnected/gas will be available at your property within 24 hours.	24 hours	Deterministic.	Everyday	Ofgem	Guaranteed Standards of Performance agreed between Ofgem, GDNs and customers.	No	At each price review (Every 8 years). But can be reviewed periodically.	Annual	https://cadentgas.com/getattachment/About-us/What-we-do/Promo-Standards-of-service/Notice-Of-Rights-2017.pdf
England, Scotland and Wales	Energy	Gas (Distribution)	Guaranteed Standards Exclusions	Responding to gas emergencies	Where a report of a gas escape or other gas emergency is received, including a significant escape of carbon monoxide or other hazardous situations, the GDN shall attend as quickly as possible.	(a) All uncontrolled escapes/gas emergencies within 1 hour. (b) All controlled escapes/gas emergencies within 2 hours.	Deterministic: Target of 97% for each threshold scenario.	Everyday	Ofgem in terms of Gas Licence Conditions.	Guaranteed customer service standards, set by Ofgem.	Gas escape	At each price review (Every 8 years)	Annual	https://cadentgas.com/getattachment/About-us/What-we-do/Promo-Standards-of-service/Notice-Of-Rights-2017.pdf

Review of Levels of Service for UK Infrastructure Systems | Transport - Rail

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence probability	Resilience to 'everyday' OR target shocks?	Who sets the level of service?	What informs the level of service?	Hazard or threat specific?	Frequency of definition/new target	Performance reporting frequency	Source
England, Wales and Scotland	Transport	Rail	Railway performance	Punctuality and reliability	% of trains that arrive at their terminating station on time compared to number of trains planned	Public performance measure (PPM) combines figures for punctuality and reliability into a single performance measure expressed as a % - CP target is 92.5%	First Great Western - PPM 88% East Coast and Virgin West Coast Trains - PPM 88% For all others - PPM 90%	'Every day'	ORR sets the measure; Train Operating Companies establish what their customers want from Network Rail	Public performance measure	No	Control period (CP) - Every 5 years	Monthly	http://or.gov.uk/rail/communications/regulation/regulation-of-network-rail/pric-controls/periodic-reviews-2013-15-public-consultations/decisions/performance/ https://www.transport.gov.scot/public-transport/performance-and-service-quality/overview/
England, Wales and Scotland	Transport	Rail	Safety performance	Passenger Safety (stations)	Passenger Safety Indicator which incorporates train accident risk data with the weighted number of personal injuries to passengers.	Not defined - based on ALARP approach	Deterministic. Represents a combination of: - Fatalities and Weighted Injuries per year - Personal Injuries to Passengers (RIDOR) - Train accident risk component where Network Rail is the Risk Controller (FWI)	'Every day'	ORR	RSSB Precursor Indicator Model and HSE ALARP approach	No	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/passenger-safety/
England, Wales and Scotland	Transport	Rail	Safety performance	Public safety	All aspects of the interaction between the general public and the railway	Not defined - based on ALARP approach	Deterministic. Represents a combination of total: - Serious bridge strikes - Potentially serious bridge strikes - Vehicle Incursions	'Every day'	ORR	HSE ALARP Approach	No	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/public-safety/	
England, Wales and Scotland	Transport	Rail	Safety performance	Infrastructure wrong side failures (SW+ severity score)	Number of higher risk infrastructure failures	Where hazard index >50	Deterministic. Reported as a number of overall failures.	'Every day'	ORR	HSE ALARP Approach	No	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/infrastructure-wrong-side-failures/
England, Wales and Scotland	Transport	Rail	Safety performance	Level crossing event	Measure of the number of collisions or injuries at Network Rail level crossing sites.	Not defined - based on ALARP approach	Deterministic. Includes: - Level crossing misuse - Collisions with road vehicles - Train striking pedestrian - Near miss with road vehicle - Near miss with non-vehicle users	'Every day'	ORR	HSE ALARP Approach	Yes - level crossing incidents	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/level-crossing-events/
England, Wales and Scotland	Transport	Rail	Safety performance	Signals passed at danger (SPADs) - Category 'A'	Where signals have been passed when a stop aspect, end of in-cab signalled movement, or indication (and any associated preceding cautionary indications) was displayed correctly and in sufficient time for the train to be stopped safely at the signal or end of in-cab movement authority.	Not defined - based on ALARP approach	Deterministic. Reported as a number of overall events.	'Every day'	ORR	HSE ALARP Approach	Yes - signals passed at danger	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/signals-passed-danger-apsads-category/
England, Wales and Scotland	Transport	Rail	Safety performance	Operational close calls	Any unsafe act (formerly termed irregular working) or unsafe condition that in different circumstances could have led to an accident or personal injury or could have resulted in damage to property or equipment. These are occasions where no one was hurt or nothing was damaged, but this is more by chance than by the application of systemic controls.	Not defined - based on ALARP approach	Deterministic. Number of incidents of operational close calls.	'Every day'	ORR	HSE ALARP Approach	No	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/operational-close-calls/
England, Wales and Scotland	Transport	Rail	Safety performance	Close calls	Any unsafe act or unsafe condition that in different circumstances could have led to an accident or personal injury, or could have resulted in damage to property or equipment, but would not introduce risk to the railway infrastructure.	Close calls closed (%) within 90 days - 2017/18 target was 85%	Deterministic. Number of incidents of close calls. Mobile application used by Network Rail staff to report close calls.	'Every day'	ORR	HSE ALARP Approach	No	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/close-calls/
England, Wales and Scotland	Transport	Rail	Safety performance	Criminal damage	Malicious acts per 100 route miles.	Not defined - based on ALARP approach	Deterministic. Number of malicious acts on, or directly affecting, Network Rail infrastructure, normalised per 100 route miles	'Every day'	ORR	HSE ALARP Approach	Yes - criminal damage	Control period (CP) - Every 5 years	Annual	https://www.networkrail.co.uk/who-we-are/how-we-work/performance/saf-ety-performance/criminal-damage/
England, Wales and Scotland	Transport	Rail	Network availability	Possession disruption index for passengers	Impact of planned engineering work on passengers.	2014-19 target - reduce by 8%	Deterministic. Economic value of the impact of possessions on excess journey time as experienced by passengers as a result of disruptive possessions in a period.	'Every day'	ORR as a regulatory measure	Network Rail Website and ORR website	No	Control period (CP) - Every 5 years	Monthly	Network Rail Website and ORR website (2018)
England, Wales and Scotland	Transport	Rail	Network availability	Possession disruption index for freight	Impact of planned engineering work on freight traffic.	2014-19 target - reduce by 17%	Deterministic. Possession disruption index for Freight (PDI-F).	'Every day'	ORR as a regulatory measure	Developed by Network Rail and ORR.	No	Control period (CP) - Every 5 years	Monthly	Network Rail Website and ORR website (2018)
England, Wales and Scotland	Transport	Rail	Network availability	CPPP & EAS Disputes	The level of access disputes escalated to the Access Disputes Committee (ADC) through the engineering access planning process, or after the Confirmed Period Possession Plan.	Moving Annual Average Used	This is a leading indicator. This assesses whether the access planning processes are working as they should.	'Every day'	Network Rail as an internal measure	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Weekend working timetable compliance	Working Time Table compliance measures the percentage of train schedules that ran as scheduled or were disrupted (cancelled or replaced by buses vs. the permanent timetable) each weekend by franchised passenger train service operators.	Aspirational target of 90%		'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Rail replacement bus hours (weekend)	Rail replacement bus hours measure the percentage of bus hours that ran and were disrupted (cancelled or replaced by buses vs. the permanent timetable) per weekend, per TOC.	Moving Annual Average Used	The Rail replacement bus hours measure provides an indication of the extent of bus substitution at weekends.	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Number of planned disruption mitigation interventions	Measures the number of adjacent line open interventions planned to minimise the impact of planned engineering work on rail users.	Moving Annual Average Used	The measure includes the number of possessions planned with either bi-directional signalling, single line working or Simplified Bi-Directional Signalling in operation to enable trains to run during engineering work / line blockages.	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Notification discount factor	Possession Notification Discount Factor measures the percentage of disruptive passenger possessions notified in each of the three possession notification bands.	Moving Annual Average Used	The measure serves as an incentive to plan possessions as far in advance as possible. This helps passengers plan their journey's better as fewer changes are made to the published timetable.	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Planned disruption - Late notice possession changes	Measures the number of new, cancelled, curtailed or extended disruptive possessions that were agreed between the CPPP and the WCN as approved by the Engineering Access Planning unit (EAP).	Moving Annual Average Used	It captures Network Rail driven changes which have an additional material impact that will be felt by the travelling public and/or freight customers (e.g. cancelled trains, retimings and diversions away from stations), compared to what was published in the Confirmed Period Possession Plan (CPPP).	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Delay minutes due to possession overrun	The indicator is the delay minutes per 100 train kilometre run due to possession overrun.	Moving Annual Average Used	The measure aims to provide a view of the levels of passenger journeys disruption resulting from extended journey times due to overrunning planned engineering works.	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Cancellation of train services due to possession overrun	The number of equivalent delay minutes per 100 train kilometre run caused by cancellations due to possession overruns	Moving Annual Average Used	The measure aims to provide a view of the levels of passenger journeys disruption resulting from cancelled train services due to overrunning planned engineering works.	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf
England, Wales and Scotland	Transport	Rail	Network availability	Unplanned temporary speed restrictions	The Unplanned Temporary Speed Restrictions measure provides an indication of the number of unplanned TSRs in place.	Moving Annual Average Used	Deterministic. Provides number of unplanned Temporary Speed Restrictions in place.	'Every day'	Network Rail	Network Rail	No	Not defined	Possession Indicator Report published every 4 weeks.	https://cdn.networkrail.co.uk/wp-content/uploads/2019/01/Possession-Indicator-Report-for-09-2018-19.pdf

Review of Levels of Service for UK Infrastructure Systems | Transport - Aviation

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence probability	Resilience to 'everyday' or 'large shocks'?	Who sets the level of service?	What informs the level of service?	Hazard or threat specific?	Frequency of definition/new target	Performance reporting frequency	Source
England, Scotland and Wales	Transport	Aviation	Asset availability	Passenger sensitive equipment (general), Passenger sensitive equipment (priority), Fixed electrical ground power, jettes, stand entry guidance, arrival reclams	Availability of Passenger sensitive equipment (general), Passenger sensitive equipment (priority), Fixed electrical ground power, jettes, stand entry guidance, arrival reclams	99% Availability during core hours (core hours range depending on element and terminal)	Deterministic: Data collection by fault management system	Everyday	CAA	Airline and passenger expectation which is linked to a rebate/bonus system via the service quality rebate and bonus (SQRB) system	No	Reviewed every 4 years	Monthly	https://www.caa.co.uk/Work/AccessDownload/Assets/2018/2017/2018%20Annual%20Report%20-%20Executive%20Summary.pdf https://www.heathrow.com/file-source/Company/Static/PDF/Company/press-information/SQRB%20-%202018.pdf
England, Scotland and Wales	Transport	Aviation	Asset availability		Availability of Stands	99% availability during core hours	Deterministic	Everyday	CAA	Airline and passenger expectation which is linked to a rebate/bonus system via the service quality rebate and bonus (SQRB) system	No		Monthly	Heathrow and Gatwick website (2018)
England, Scotland and Wales	Transport	Aviation	Asset availability	Pier served passenger	Availability of stands	95%	Deterministic: Data collection by fault management system	Everyday	CAA	Airline and passenger expectation which is linked to a rebate/bonus system via the service quality rebate and bonus (SQRB) system	No	Reviewed every 4 years	Monthly	Heathrow and Gatwick website (2018)
UK	Transport	Aviation	Cancellations		If flight cancelled by airline, they must allow the passenger to either: 1. Receive a refund for parts of ticket not used 2. Choose an alternative flight (which can be as soon as possible, or at a later date)	If flight cancelled (whether short, medium or long-haul) by airline. Not applicable if cancelled by an extraordinary circumstance. If <14 days notification of cancellation, compensation may also be claimed.	As per impact threshold	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Long-haul-cancellations/
UK	Transport	Aviation	Cancellations		Where the passenger received 7-14 days notification of cancellation.	If new flight is >4 hours after original flight, you can claim €600 no matter what time it departs. If new flight >2 hours before original flight and <4 hours after, you can claim €300.	As per impact threshold	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Long-haul-cancellations/
UK	Transport	Aviation	Cancellations		Where the passenger received <7 days notification of cancellation	If new flight is >4 hours after original flight, you can claim €600 no matter what time it departs. If new flight >2 hours before original flight and <4 hours after, you can claim €300.	As per impact threshold	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Long-haul-cancellations/
UK	Transport	Aviation	Delays	Short-haul (<1500km)	Airline must look after passengers if delay is significant. This includes: - Reasonable amount of food and drink - Means for passenger to communicate - Accommodation if delay is overnight - Transport to and from accommodation.	Delay > 2 hours	Delay length calculated using the time the flight arrives at its destination (this is based on the time at which at least one door of the aircraft is opened, not the departure time).	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Short-haul-delays-compensation/
UK	Transport	Aviation	Delays	Short-haul (<1500km)	If delay was fault of airline, compensation can be claimed.	Delay >3 hours €250	Delay length calculated using the time the flight arrives at its destination (this is based on the time at which at least one door of the aircraft is opened, not the departure time).	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Short-haul-delays-compensation/
UK	Transport	Aviation	Delays	Medium Haul (>1500km and <3500km)	Airline must look after passengers if delay is significant. This includes: - Reasonable amount of food and drink - Means for passenger to communicate - Accommodation if delay is overnight - Transport to and from accommodation.	Delay > 3 hours	Delay length calculated using the time the flight arrives at its destination (this is based on the time at which at least one door of the aircraft is opened, not the departure time).	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Medium-haul-delays-compensation/
UK	Transport	Aviation	Delays	Medium Haul (>1500km and <3500km)	If delay was fault of airline, compensation can be claimed.	Delay >3 hours €400	Delay length calculated using the time the flight arrives at its destination (this is based on the time at which at least one door of the aircraft is opened, not the departure time).	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Medium-haul-delays-compensation/
UK	Transport	Aviation	Delays	Long haul (>3500km)	Airline must look after passengers if delay is significant. This includes: - Reasonable amount of food and drink - Means for passenger to communicate - Accommodation if delay is overnight	Delay >4 hours	Delay length calculated using the time the flight arrives at its destination (this is based on the time at which at least one door of the aircraft is opened, not the departure time).	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Long-haul-delays-compensation/
UK	Transport	Aviation	Delays	Long haul (>3500km)	If delay was fault of airline, compensation can be claimed.	<3 hours No compensation; 3-4 hours €300; >4 hours €600	Delay length calculated using the time the flight arrives at its destination (this is based on the time at which at least one door of the aircraft is opened, not the departure time).	Everyday - but only if fault of the airline	European Union (although CAA decide what is an extraordinary circumstance)	EU Law, where to be covered your flight must either be: - departing from an EU airport operated by any airline or; - arriving at an EU airport and operated by an EU airline. (Under this law, EU airports also include those in Iceland, Liechtenstein, Norway and Switzerland).	No (but does not include an extraordinary circumstance)	As per EU Law	N/A	https://www.caa.co.uk/Passengers/Resolving-travel-problems/Delays-cancellations/Delays/Long-haul-delays-compensation/

Review of Levels of Service for UK Infrastructure Systems | Transport - Highways

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence probability	Resilience to 'everyday' OR 'large' shocks?	Who sets the level of service?	What informs the level of service?	Hazard or threat specific?	Frequency of definition/new target?	Performance reporting frequency	Source
England	Transport	Road - SRN	Performance specification	Making the network safer	Making the network safer performance specification (under 1500km)	Reduce number of killed and seriously injured (KSI) by 40% relative to previous road period (2005-2009 average)	Deterministic: Data obtained from STATS19 Road Accident Database.	Everyday	HE, DfT, ORR	Roads Reform Social Research Programme and 'What Users Want' reports (see report).	No	Road period - 5 years	Annually	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721108/Operational_Metrics_Manual.pdf http://orr.gov.uk/data/assets/pdf_file/0017/24533/measuring_performance_of_english_strategic_roads-what_users_want_march_2017.pdf
England	Transport	Road - SRN	Performance specification	Supporting the smooth flow of traffic	Lane availability with respect to closures caused by roadworks	97% lane availability threshold	Deterministic: % of lane availability	Everyday	HE, DfT, ORR	Roads Reform Social Research Programme and 'What Users Want' reports (see report).	No	Road period - 5 years	Monthly	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721108/Operational_Metrics_Manual.pdf
England	Transport	Road - SRN	Performance specification	Supporting the smooth flow of traffic	Percentage of motorway incidents cleared within one hour	In any one rolling year, maintain performance of at least 85% of all motorway lane impact closures between 0600 and 2200 being cleared within one hour.	Deterministic: % of motorway lane closures cleared in one hour.	Everyday	HE, DfT, ORR	Roads Reform Social Research Programme and 'What Users Want' reports (see report).	No	Road period - 5 years	Annually	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721108/Operational_Metrics_Manual.pdf
England	Transport	Road - SRN	Performance specification	Encouraging economic growth	Average delay	Not defined	Deterministic: time lost per vehicle mile.	Everyday	HE, DfT, ORR	Roads Reform Social Research Programme and 'What Users Want' reports (see report).	No	Road period - 5 years	Annually	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721108/Operational_Metrics_Manual.pdf
England	Transport	Road - SRN	Performance specification	Keeping the network in good condition	Percentage of pavement asset that does not require further investigation for possible maintenance.	% of the network not requiring further investigation for possible maintenance in each year of the road period should be maintained at 85% or above.	Deterministic: percentage of pavement asset not requiring further investigation.	Everyday	HE, DfT, ORR	Roads Reform Social Research Programme and 'What Users Want' reports (see report).	No	Road period - 5 years	Annually	https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/721108/Operational_Metrics_Manual.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Network reliability	Percentage of period when network is unavailable due to road works	Targets not shown in performance report. Comparison made with previous years performances	Not defined	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Journey time reliability	Number of lane kilometres hours when unprogrammed operations and works are on the network.	Not defined.	Deterministic: Number of lane kilometres hours.	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Journey time reliability	Percentage of incident responses within required timescales.	Not defined.	Deterministic: % of incident responses within required timescales.	Everyday (but potentially large shocks)	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Network safety	Inspections not completed on time	Targets not shown in performance report. Comparison made with previous years performances	Deterministic: number of inspections not completed on time.	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network Management	Network safety	Percentage of Category 1 defects made safe.	24 hours.	Deterministic: % category 1 defects made safe.	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network Management	Network Safety	Keep the network free from ice and snow, as far as is reasonably practicable.	2 hours.	Deterministic: Treatment times achieved within contractual response time of 2 hours.	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	Ice and Snow	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network Management	Condition	Series of indicators that indicate the state of repair of trunk road assets. E.g. 'Percentage of carriageway where structural maintenance should be considered'	Not defined.	Deterministic: reported as percentage of assets in 'poor' or 'very poor' condition.	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Inventory management	Poor knowledge of network used in decision making	Targets not shown in performance report. Comparison made with previous years performances	Not defined	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Traffic Management	Poor knowledge of network used in decision making	Targets not shown in performance report. Comparison made with previous years performances	Not defined	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network management	Sustainability	Provision of more sustainable service and to assist in achieving carbon reduction targets	Overall Scottish Government carbon emissions reductions by 42% by 2020	Tool developed by Performance Action Group (PAG), site visits and depot inspections	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network maintenance	Cyclic maintenance	Not defined	Targets not shown in performance report. Comparison made with previous years performances	Not defined	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network maintenance	Reactive maintenance	Not defined	Targets not shown in performance report. Comparison made with previous years performances	Not defined	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Network maintenance	Planned maintenance	Not defined	Targets not shown in performance report. Comparison made with previous years performances	Not defined	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf
Scotland	Transport	Roads - Trunk Roads	Quality of service	Continuous improvements	Not defined	Targets not shown in performance report. Comparison made with previous years performances	Testing, inspecting and auditing	Everyday	Transport Scotland Performance Audit Group	Performance measures are focused on areas of genuine interest to road users and other stakeholders, enabling their levels of satisfaction and expectations to be recorded. Set out in Transport Scotland's Performance Management Framework.	No	Not defined	Annually	Transport for Scotland website, Performance Audit Group's Annual Report 2016/2017 https://www.transport.gov.scot/media/32978/4/0891.pdf

Review of Levels of Service for UK Infrastructure Systems | Transport - Digital

Country	Sector	Subsector	Measure Type	Measure subtype	Impact definition	Impact threshold	Occurrence probability	Resilience to 'everyday' OR 'large shocks'?	Who sets the level of service?	What informs the level of service?	Hazard or threat specific?	Frequency of definition/new target	Performance reporting frequency	Source
UK	Digital	Broadband	Broadband Speed	Universal Service Obligation for Broadband	The Universal Service Obligation for broadband is a UK-wide measure to deliver broadband connections to the hardest to reach premises in the UK. Filling the gap left by UK Government's existing broadband roll-out programs.	Minimum download speed 10 Mbps; Minimum upload speed of 1 Mbps; Additional quality parameters: medium response times, a minimum data cap of 100GBs and a contention rate of 50:1 (which means a maximum of 50 users to share one bandwidth).	None - obligation to meet required service levels.	Everyday	HM Government as part of the Digital Economy Act 2017. Enforced by Ofcom.	UK wide measure to deliver broadband connections to the hardest to reach premises in the UK. Cross-party and consumer support	No	Not defined	Government aiming for this to be in place by 2020. Secondary legislation laid in Parliament in March 2018, and came into force on 29 April 2018.	https://research.briefings.parliament.uk/ResearchBriefingSummary/CSBP-R146#insight
UK	Digital	Broadband	Broadband Speed	Normally available download speed	ISPs must provide normally available download speed.	Based on advertised speed. However, if no advertised speed this should be based on comparable data.	Not specified	Everyday	Ofcom. Forms part of their voluntary code that service providers sign up to.	Customers, service providers and Ofcom	No	Not defined	Twice annually, through Connected Nations Update	https://www.ofcom.gov.uk/data/assets/pdf_file/002/110905/Code-residential-broadband-speeds.pdf
UK	Digital	Broadband	Broadband Speed	Normally available upload speed	ISPs must provide minimum guaranteed upload speed.	Based on advertised speed. However, if no advertised speed this should be based on comparable data.	Deterministic: provided in the form of a range as required for the normally available download speed estimate, but can be a single point estimate if the 20th-90th percentile range is narrower than 2Mbps (for instance on ADSL services).	Everyday	Ofcom. Forms part of their voluntary code that service providers sign up to.	Customers, service providers and Ofcom	No	Not defined	Twice annually, through Connected Nations Update	https://www.ofcom.gov.uk/data/assets/pdf_file/002/110905/Code-residential-broadband-speeds.pdf
UK	Digital	Broadband	Broadband Speed	Minimum guaranteed download speed	ISPs must provide minimum guaranteed download speed.	Based on advertised speed. However, if no advertised speed this should be based on comparable data.	Deterministic: For services whose delivered speeds are affected by line length (such as ADSL), this is equivalent to the 10th percentile of the ISP's similar customers, adjusted to account for the impact of contention at peak time. For services whose delivered speeds are unaffected by line length (including cable and FTTP), this will be at least 50% of advertised speed for the package that is being enquired about. Represents speed below which customers can exit the contract without penalty if the ISP cannot resolve the speed problem.	Everyday	Ofcom. Forms part of their voluntary code that service providers sign up to.	Customers, service providers and Ofcom.	No	Not defined	Twice annually, through Connected Nations Update	https://www.ofcom.gov.uk/data/assets/pdf_file/002/110905/Code-residential-broadband-speeds.pdf
UK	Digital	Broadband	Broadband Speed	Peak time performance in speed estimates	ISPs must ensure that normally available download and normally available upload speeds account for the contention experienced at peak time. Peak time defined as 8pm-10pm everyday	ISPs must test an appropriate and representative sample of their customers' actual speeds from the Customer-Premises Equipment (CPE) to the internet interconnect in order to test speeds at peak time	Not specified	Everyday	Ofcom. Forms part of their voluntary code that service providers sign up to.	Customers, service providers and Ofcom.	No	Not defined	Twice annually, through Connected Nations Update	https://www.ofcom.gov.uk/data/assets/pdf_file/002/110905/Code-residential-broadband-speeds.pdf
UK	Digital	Mobile Comm	Coverage	Voice Coverage Obligation	Licensee's shall provide and maintain an electronic communications network that provides mobile voice telecommunications services.	By 31 December 2017 at least 90% UK landmass area coverage and for at least one of the minimum signal strengths.	Deterministic: Operator's predictive radio planning tools or measurements, (including the signal strength of the relevant channel in each relevant location). Resolution less than or equal to 100m between locations which are on the same landmass. Information provided in relation to the above targets shall be made using the tools with associated parameters and assumptions (which may include but need not be limited to signal strength predictions) that the Licensee uses for its own coverage planning purposes.	Everyday	Voluntary industry agreement between service providers and HM Government. Enforced by Ofcom.	Customers, service providers and Ofcom. Applied to all Mobile Network Operators (MNOs): EE, O2, Three, Vodafone.	No	Required to meet and maintain by 31 December 2017. However, no further target currently set.	Twice annually, through Connected Nations Update	https://www.ofcom.gov.uk/data/assets/pdf_file/002/110905/Code-residential-broadband-speeds.pdf
UK	Digital	Mobile Comm	Coverage	Data Coverage Obligation	Licensee's shall provide and maintain an electronic communications network that is capable of providing, with 95% confidence, a mobile telecommunications service with a sustained downlink speed of not less than 2 Mbps when that network is lightly loaded.	By 31 December 2017: (i) in an area which at least a) 98% population of UK lives; b) 95% population of each of England, Wales, Scotland and Northern Ireland lives (ii) indoor locations	Not specified	Everyday	Voluntary industry agreement between service providers and HM Government. Enforced by Ofcom.	Customers, service providers and Ofcom. Only applied to Telefonica UK Ltd (O2) under terms of its 4G800MHz licence.	No	Required to meet and maintain by 31 December 2017. However, no further target currently set.	Twice annually, through Connected Nations Update	https://www.ofcom.gov.uk/data/assets/pdf_file/002/110905/Code-residential-broadband-speeds.pdf
UK	Digital	Telecomm	Security and Resilience	Security Incidents	Service providers should provide uninterrupted access to emergency organisations	Thresholds are provided from which a provider can gauge impact of an incident and determine if it should be reported. These are set out in 'Ofcom Guidance on security requirements in sections 105A to D of the Communications Act 2003' (Ofcom, 2017). Most critical is the 'emergency services access' threshold: these are incidents that affect voice access to emergency services for 1000 customers, for 1 hour.	Ofcom's General Conditions of Entitlement mandate that service providers should provide "uninterrupted access to emergency organisations". Therefore, such incidents should not occur and Ofcom enforce this through economic penalties. None. Required to meet as part of service providers obligation under their licence. Measured in 'customer hours', and only reported for the 'emergency services access' threshold due to low number of other incidents. Ensures that service providers provide continued public access to emergency services. Financial penalty incurred if breached.	Everyday	HM Government. Service providers agree as per their licence agreement. Enforced by Ofcom.	Section 105A(4) of the Communications Act 2003 and; Ofcom's General Conditions of Entitlement.	No	As per any revisions in legislation or Ofcom's General Conditions of Entitlement	Monthly	https://www.ofcom.gov.uk/data/assets/pdf_file/002/11474/Ofcom-guidance.pdf https://www.ofcom.gov.uk/phones-and-facsimile/industry/telecoms-competition/industry/telecoms-competition/industry-general-conditions-of-entitlement