

1st March 2019

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1. Introduction

Each year National Grid undertakes a variety of maintenance and investment activities on the gas National Transmission System (NTS). This work can take many different forms, including keeping our assets in good working order, replacing ageing assets with new equipment, inspecting assets and facilitating new connections and capacity requirements.

This maintenance programme is intended to provide an indication to the gas industry of the impact of these works on the NTS, and any associated impact on entry or exit capacity from April 2019 to March 2022. This programme supersedes all previous plans.

This document provides an overview of all work scheduled at NTS compressor stations and NTS pipelines. Where this work affects the capability at an Aggregate System Entry Point (ASEP), an indication of the revised ASEP's minimum daily capability is included for each month.

Although every effort is made to align work to any customer or associated asset outages which we have been made aware of, this is not always possible and where NTS Exit Points are affected, we will endeavour to issue Maintenance Day notices to our customers by 1st February and any revisions at least 42 days in advance of the scheduled Maintenance work.

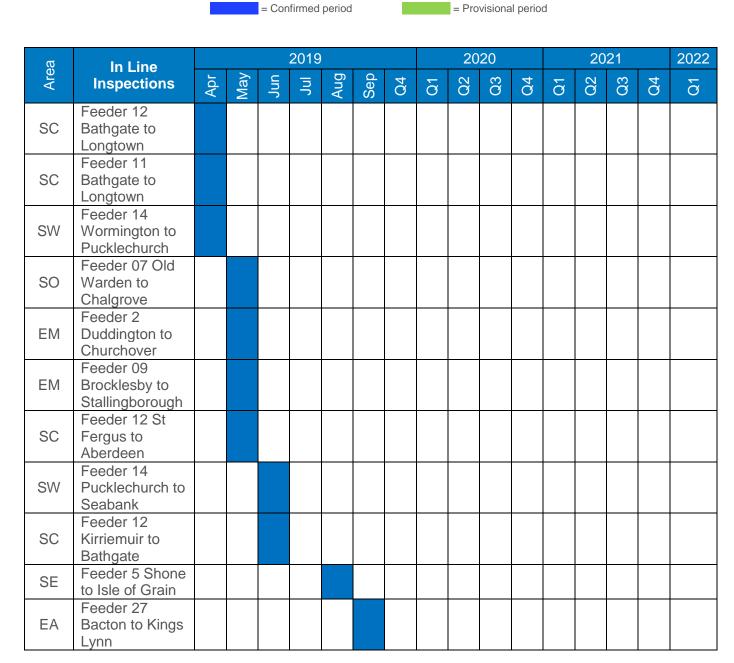
This document only includes maintenance activities on the NTS which are to be undertaken by National Grid NTS. It does not include maintenance carried out upstream of the NTS by Delivery Facility Operators (DFOs) and Producers or downstream of the NTS by the Distribution Networks and other NTS connected parties.

2. NTS Maintenance Work Monthly Summary

The following tables provide a summary of the NTS in line inspection work, other NTS pipeline work and NTS compressor outages. The month where the work is scheduled to take place has been highlighted in the tables. If it is the case that any work listed below has an effect on the flow of gas, affected sites and associated shippers will be contacted individually. The tables indicate which month the work takes place in, not that the work will take the whole of the month.

2.1 Planned In-Line Inspections

National Grid is required to carry out in-line inspections of our pipelines periodically in order to monitor and maintain their integrity, ensuring that they comply with the Pressure Systems Safety Regulations (PSSR). The in-line inspection process requires a number of Pipeline Inspection Gauges (PIGs) to travel through the pipeline in order to complete a full inspection. The number of "runs", and the associated time taken for the work, can vary from pipeline to pipeline.



	T		 							1
	Feeder 2									
WM	Churchover to									
	Wormington									
	Feeder 14									
WM	Churchover to									
	Wormington									
	Feeder 5									
NT	Horndon to									
141	Tilbury Thames									
	Feeder 04									
N IV A /										
NW	Audley to									
	Shocklach									
	Feeder 14									
SW	Barrington to									
	Kenn South									
	Feeder 15									
NO	Plumpton to									
	Lupton									
	Feeder 06									
NE	Beeford to									
	Hornsea									
	Feeder 06									
NO	Pickering to									
140	Elton									
	Feeder 24 St									
SC										
30	Fergus to									
	Lochside									
00	Feeder 13 St									
SC	Fergus to									
	Aberdeen									
SC	Feeder 10 Boon									
	to Coldstream									
	Feeder 09									
NE	Easington to									
	Paull									
	Feeder 18									
EA	Matching Green									
	to Rye House									
	Feeder 14									
SW	Sapperton to									
	Cirencester									
	Feeder 11									
SC	Aberdeen to									
00	Kirriemuir									
	Feeder 13									
NO										
INO	Cowpen Bewley									
	to Yafforth	+								
	Feeder 15									
NO	Longtown to									
	Plumpton									
_	Feeder 07									
SO	Michelmersh to									
	Braishfield									
	Feeder 02									
EA	Peterborough to									
	Eye									
						_				

NT	Feeder 05 River Thames Crossing (East)								
NT	Feeder 05 River Thames Crossing (West)								
NW	Feeder 04 Warburton to Audley								
SW	Feeder 14 Ilchester to Barrington								
SC	Feeder 10 St Fergus to Aberdeen								
NW	Feeder 21 Warburton to Audley								

2.2 Pipeline Work

Pipeline work listed in this table below can include diversions of existing pipelines, facilitation of connections to the NTS, and replacement or maintenance of pipeline and associated assets (pipes, valves, pig traps etc.) which require some form of pressure restriction or isolation. Some work can be performed by restricting the pressure of gas in the pipeline; however some work requires a full shut down (often termed "isolation" or "outage") of a section of the pipeline which would then be reinstated back to operational pressures once the work is completed. The 2020 and 2021 pipeline works are yet to be fully planned.

	= Pressure Restric	tion				=	Pipelii	ne Shu	ıtdown		= Provisional period									
Ø					20	19					20	20			20	21		2022		
Area	Pipeline	Mar	Apr	Мау	Jun	Jul	Aug	Sep	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q 3	Q4	۵ ک		
EA	Feeder 04 Kings Lynn to Bacton																			
SC	Feeder11 Bathgate to Armadale																			
NW	Feeder 21 Burton point																			
NE	Feeder 06 Paull to BP Saltend																			
SC	Feeder 10 Armadale to Broxburn																			
SW	Feeder 2 Wormington to Ross																			
SW	Feeder 14 Pucklechurch to Ilchester																			
SC	Feeder 10 Broxburn to Penicuik																			
SW	Feeder 2 Kings Lynn																			
SC	Feeder 10 Glenmavis to Penicuik																			
NO	Feeder 12 Longtown to Haltwhistle																			
WN	Feeder 04 Shocklach to Maelor																			
NO	Feeder 7 Bishop Auckland to Little Burdon																			
EA	Feeder 05 Bacton to Salhouse																			

SO	Feeder 09 Aylesbury to Slapton									
NO	Feeder 11 Weatherall to Melkinthorpe									
SO	Feeder 07 Aylesbury to Hardwick									
EA	Feeder 04 Bacton									
EA	Feeder 03 Bacton									
NE	Feeder 09 Paul to Hatton									
WM	Feeder 02 Newbold Pacey to Frankton									
WM	Feeder 02 Newbold Pacey to Churchover									
NE	Feeder 09 Paul to Hatton									
WM	Feeder 05 Lower Thames Crossing									
EA	Feeder 18 Lower Thames Crossing									

Please note: where a pipeline is required to be shut down the specific isolation points may differ from those displayed above. Any parties impacted by the works are contacted directly.

2.3 NTS Compressor Stations

Compressors are used to help move gas around the NTS to where it is needed, maintaining pressures required at exit points whilst avoiding over-pressurising pipelines. In order to maintain our capability at Compressor Stations, routine maintenance is performed as well as a variety of other projects to maintain and improve the fleet.



Compressor Station				2019					20	20		2021				2022
Outages	Apr	Мау	Jun	Jul	Aug	Sep	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Aberdeen																
Alrewas																
Avonbridge 1																
Avonbridge 2																
Aylesbury																
Bishop Auckland																
Carnforth																
Cambridge																
Chelmsford																
Churchover																
Diss																
Felindre																
Hatton																
Huntingdon																
Kings Lynn																
Kirriemuir																
Lockerley																
Moffat																
Nether Kellet																
Peterborough																
Warrington																
Wisbech																
Wooler																
Wormington																

3. ASEP Capability

The table below shows an indicative flow capability for each Aggregate System Entry Point (ASEP), taking into account the effect of the draft maintenance programme. The volumes are displayed month by month and are based on appropriate seasonal normal conditions.

In generating the ASEP capabilities, no account has been taken of any supply side (Delivery Facility) maintenance outages.

The values represent the ASEP's daily capability for each month, based on Seasonal Normal Demand conditions and for the period in the month where scheduled maintenance has most impact on capability. The analysis performed to produce the figures uses the assumption that a supply at a particular ASEP is favoured over other ASEPs. For example, in producing capability figures for St Fergus, it would be assumed that St Fergus ASEP would be flowing at its maximum for the season and the rest of the NTS supply was spread over other ASEPs.

Where "no impact" has been stated, this indicates that the maintenance scheduled is expected to have no adverse effect on the ASEP capability.

The capability volumes shown for the individual ASEPs are indicative only, but do represent a consistent operational view.

On any given day, the amount of capability that may be available at any ASEP will depend upon the level and distribution of the demand and the level of supplies at other terminals. In cases where scheduled maintenance has an adverse effect on an ASEP's capability, National Grid may be able to make additional capability available at other ASEPs.

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
St Fergus	No Impact	84 (924)	89 (979)	91 (1001)	83 (913)	No impact	90 (990)	No impact
Teesside	No	No	No	No	No	No	No	No
	Impact	Impact	Impact	Impact	Impact	Impact	Impact	impact
Barrow	No	No	No	No	No	No	No	No
	Impact	Impact	Impact	Impact	Impact	Impact	Impact	impact
Easington	No	No	No	No	No	No	No	No
	Impact	Impact	Impact	Impact	Impact	Impact	Impact	impact
Theddlethorpe	No	No	No	No	No	No	No	No
	Impact	Impact	Impact	Impact	Impact	Impact	Impact	impact
Bacton (including IUK)	121	109	96	No	No	No	No	No
	(1331)	(1199)	(1056)	Impact	Impact	Impact	Impact	impact
Isle of Grain	No	No	No	49	51	40	51	No
	Impact	impact	impact	(539)	(561)	(440)	(561)	impact
Milford Haven	No	54	53	55	55	57	52	No
	Impact	(594)	(583)	(605)	(605)	(627)	(572)	impact

Values in millions of cubic metres & (GWh)

(Conversion from millions of cubic metres to GWh using Calorific Value of 39.6 MJ/m³)

4. Maintenance Affected Exit Points

We aim to minimise the impact of our maintenance on customers through transparency, aligning our work with their outages as appropriate and facilitating customer needs for flexibility.

Outages

Each year we ask when our customers' outages are to enable alignment of works. If your outages move, please get in touch as early as possible so that we can consider whether we can also realign our works to reduce any impact of these works. Please contact us to advise of any change to outage periods via email at NTSaccessplanning@nationalgrid.com.

Where possible, work is co-ordinated with the end user to avoid supply disruption, however in certain circumstances it may be necessary to schedule work at a time which may require disrupting the supply to an Exit Point whilst the NTS maintenance is undertaken.

Shippers, End-Users and Distribution Networks will be advised, in accordance with the Uniform Network Code (UNC) requirements and timescales, of any required disruptions to supply at an Exit Point by the issuing of a Maintenance Day(s) to the relevant party.

Maintenance Day notifications will be issued by February 1st each year to all relevant parties where our maintenance will impact gas flows for the period April to October. Where work is aligned to customer outages, or there is no anticipated impact, we will issue an Advice notice for your convenience to confirm these arrangements. Should any changes or additions to the requested Maintenance Days be required, all relevant parties will be notified in line with the timescales detailed in the UNC.

Minor Works Agreement

We recognise that sometimes standard maintenance approaches may not be optimal for our customers. Where this is the case the Minor Works Agreement can enable parties to agree different maintenance approaches through a bilateral contract with directly connected customers. Customers can pay the incremental costs of working flexibly outside normal working practices where we are able to accommodate these requests. For any questions relating to Minor Works Agreements, please contact the Business and Operations Planning Team on 01926 655625 or email via box.SCM.GTO@nationalgrid.com.

General Queries

Further information on the maintenance activities undertaken by us is available on our website¹.

If you have any queries or questions regarding the information contained within this document, please contact:

NTS Access Planning Team

National Grid

Gas System Operation

National Grid House

Gallows Hill

Warwick

CV34 6DA

NTSaccessplanning@nationalgrid.com

Tel: 01926 655958

We would welcome any feedback from you in relation to the maintenance programme or the way in which this information is provided. If you would like to provide feedback please contact us via email at: NTSaccessplanning@nationalgrid.com

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¹ https://www.nationalgridgas.com/data-and-operations/maintenance

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