

UNC Supplemental Agreement

Site	Partington Offtake
Site Owner	Cadent Gas Limited
Site User(s)	National Grid Gas plc
Version	v1.0
Date	25 th January 2018

Any issues concerning the content within this document should be raised with the Site Owner via email to: address@operatororganisation.com

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- Section 2 Site Assets & Ownership
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- Section 5 Telemetered Data Requirements
- Section 6 Document History

Section 1: Site Details

Name of the Offtake Site	Partington	
Postal address of the Offtake Site	Off Common Lane Carrington M31 4QJ	
Co-ordinates for the Offtake Site	OS Coordinates	BNG Coordinates
	SJ 750 919	E: 372654, N: 392085
Owner of the site (the Site Owner)	Cadent Gas Limited	
Site User(s)	National Grid Gas plc	
Site safety and access arrangements	Dual Lock and Keys allowing each party to access to site as and when required. ARC monitored site. Access via Swipe Card only. Please contact Site Owner Network Manager to arrange access.	
Third Party Interests	None. i.e. third parties that hold a lease – acquiva any NGG customer connections on site any third party assets	

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Section 2: Site Assets & Ownership

2.1 Points of Offtake

Points of Offtake	<p>There are two formal points of offtake at this site. These are:</p> <ul style="list-style-type: none"> • Inlet of Cadent Valve GF10 • Inlet of Cadent Valve GF51 									
Exceptions	<p>All assets downstream of the 'points of offtake' belong to the site owner, Cadent, unless specified below:</p> <ul style="list-style-type: none"> • The NGG P1 Transmitter is located downstream of the Points of Offtake between Cadent valves x and y. <p>All assets upstream of the 'points of offtake' belong to the site user, National Grid plc, unless specified below:</p> <ul style="list-style-type: none"> • Cadent Sample Point is located between NGG Valve 362902 and the points of offtake valves as stated above. 									
Other	<ul style="list-style-type: none"> • Cathodic Protection system is owned by the site owner (see Section 2.4) • Telemetry is Shared (see Section 2.3) • Shared Electrical arrangements exist (refer to Section 2.1) • All ISS assets are owned by the site owner 									
Drawing/Diagram	<p>Please refer to the following Site Owner drawings:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">PSD</td> <td>NW/3629NS/G/003</td> </tr> <tr> <td>GA</td> <td>NW/3629NS/P/001</td> </tr> <tr> <td>Electrical SLD</td> <td>NW/3629NS/P/001</td> </tr> <tr> <td>Other (please specify)</td> <td></td> </tr> </table>		PSD	NW/3629NS/G/003	GA	NW/3629NS/P/001	Electrical SLD	NW/3629NS/P/001	Other (please specify)	
PSD	NW/3629NS/G/003									
GA	NW/3629NS/P/001									
Electrical SLD	NW/3629NS/P/001									
Other (please specify)										

2.2 Electrical Arrangements

2.2.1 Main Arrangements

Main Supply	<p>One main feed to site.</p> <p>Power Supply cubicle, main RCD and busbar owned by site owner.</p>
Specific Ownership	<ul style="list-style-type: none"> • All Distribution Boards (1-9) owned by Cadent Gas Ltd

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	<ul style="list-style-type: none"> Block Valve Unit owned by National Grid plc.
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2.2.2 Shared Boards

Board Number or Name	DB3		
Board Owner	Cadent Gas Ltd		
Specific Ownership	<i>Way/Fuse</i>	<i>Owner</i>	<i>Asset / Description</i>
	1	NGG	RE Valve 362901
	2	Cadent	LE Valve (3629)49
	3	Cadent	Spare
	4	NGG	RE Valve 362902
	5	Cadent	LE Valve (3629)69
	6	Cadent	Spare

2.2.2 Actuated Valves

Specific Ownership	Cadent		NGG	
	<i>Valve</i>	<i>Type</i>	<i>Valve</i>	<i>Type</i>
	362949	LE	362901	RE
	362969	LE	362901	RE

2.2.3 Hydraulic Valves

Specific Ownership	Cadent		NGG	
	<i>Valve</i>	<i>Type</i>	<i>Valve</i>	<i>Type</i>
(note: Any RGH's will be connected to the site's telemetry arrangements)	GF241	LGH		
	GF242	LGH		
	GF243	LGH		
	GF244	LGH		
	GF245	LGH		
	GF245	LGH		
	GFA74	LGH		

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2.2.4 Standby Power Arrangements

Item	Owner	Location	Supports
Generator Inlet Socket	Cadent	o/s on Electrical Building exterior	Site via ISOL5
Generator Inlet Socket	Cadent	Inside Instrument Room	DB5 and DB7
UPS	Cadent	Instrument Room	DB7
Ulysses PSU	Cadent	Instrument Room	Cadent Telemetry
UPS	Cadent	ISS Kiosk	ISS Requirements
Comments:			

2.3 Telemetry Arrangements

2.3.1 Main Arrangements

Specific Ownership	Site Owner (Cadent)		
	Assets	IS Barrier Box	<u>Notes:</u> Located in the Switch Room of the Control Building. NGG P1 Transmitter is connected to site owner RTU. NGG Microbox Unit connected to site owner Telemetry system. Line: 0161 - 775 1020 (ISDN)
		RTU	
		Router	
		Ethernet Hub	
		Ports	
		DSL	
		Satellite Dish / Radio	
		Non IS I/F Box	
	Site User (NGG)		
Assets	IS Barrier Box	<u>Notes:</u> IRIS Telemetry system on site located in IRIS kiosk. Line: 0161 - 775 3676 (ISDN)	
	RTU		
	Router		
	Ethernet Hub		
	Ports		
	DSL		

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	Satellite Dish / Radio
	Non IS I/F Box

2.3.2 P1 Pressure Transmitter

Transmitter	Owner	Demarcation	Location	RTU
P1	NGG	Above Offtake Valves	Between NGG valves 362901 and 362902	Cadent

2.3.3 Other Pressure Transmitters

Transmitter	Owner	Demarcation	Location	RTU
P2	NGG	Above Points of Offtake		NGG
P3	NGG	Above Points of Offtake		NGG
P4	NGG	Above Points of Offtake		NGG
P5	NGG	Below Points of Offtake		Cadent

2.3.4 Shared Barrier Loops

Transmitter	Owner	Transmitter	Owner	Loop
P1	NGG	P5	Cadent	Position 1. Channels 1 & 2

Any maintenance required to P1 will require prior notification via the OAD process.

2.4 FWACV Arrangements

FWACV Asset	Number on Site	Location, description & ownership		
Sample Point	1	1	Downstream of Valve 362902 or GF02 on NTS pipework	Cadent
		2		
PRU's	4	1	All PRU's are owned by the Site Owner	Cadent
		2		
Chromatographs	1	1	All Chromats are owned by the Site Owner	Cadent
		2		
OMNI Computers	1	1	OMNI Computer – x (Telemetry Room)	Cadent

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		2	OMNI Computer – y (Telemetry Room)	NGG
Controllers	1	1	Controller – x (Telemetry Room)	Cadent
		2	Controller – y (Telemetry Room)	NGG
Mircobox / AB's	1	1	Allen Bradley – x (Telemetry Room)	Cadent
		2	Mircobox – y (Telemetry Room)	NGG
Moxa Unit	1	1	Unit owned by Cadent. Port 1 Channel 2 has a NTS assets connected. All other Ports connected relate to Cadent assets.	Cadent
ADAM Unit	1	1		Cadent
Brief description of how systems are shared				
<ul style="list-style-type: none"> The NTS have their own chromat, controller and mircobox assets installed on site. These are connected to the Ethernet hub within the Cadent Telemetry system in order to send data back to the SCADA network. The Ethernet Hub and comms system downstream thereof is owned by Cadent as 				

2.5 Cathodic Protection Arrangements

CP System / Asset	Owner	Comments
AGI TR	Cadent	Location: Electrical Room AGI TR protects entire offtake site within I/J's 1, 2, 3, I/F5, 6 and Carrington Shell pipeline.
Pipeline TR	Cadent	Location: Electrical Room Pipeline TR protects 5 Cadent pipelines and also the Feeder 4 pipeline Partington to Warburton
I/J's 1	NGG	Includes connection/cables from joint to TR
I/J's 2, 3, I/F5 and 6	Cadent	Includes connection/cables from joint to TR
Groundbeds	Cadent	2 Groundbeds on site: 1 located in pit by Valve GF73 1 x pit by Valve x
Drain Point(s)	Cadent	1 Drain Point connection in vicinity of CGL Valve GF18.
Shared Test Posts	n/a	No Shared Posts on site
Data Loggers	Various	3 data loggers on site. <ul style="list-style-type: none"> NGG own FM04 CGL own the other two
Other Information: <ul style="list-style-type: none"> The Pipeline TR on site providing protection to NGG's Feeder 4 to Warburton. This also protects the CGL PS005 to Warburton Tunnel and Turnmoss Rd. 		

2.6 Buildings, structures and enclosures

All building, structures and enclosures are owned by the site owner unless listed below:

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Specific Ownership	Asset	Owner	Location
	Regulator Building	NGG	
	Metering Kiosk	NGG	
	FWACV Kiosk	NGG	

2.7 Other Shared Arrangements

All building, structures and enclosures are owned by the site owner unless listed below:

Asset	Owner	Location	Description of Shared Arrangement
LGT	Cadent	Downstream of Valve x	The LGT sample point shared a common feed and PRU. The data is then sent back to the separate FWACV systems as documented in Section

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Section 3: Site Services:

The following services are provided by the Site Owner to the Site User:

Cathodic Protection	<p>Where any Site User assets are connected to a Site Owner's Cathodic Protection system or Transformer Rectifier, permission via the OAD process must be ascertained before repair/replacement or maintenance is undertaken.</p> <p>In relation to cathodic protection systems, the Site Services (to be provided by the Services Party) include:</p> <ul style="list-style-type: none"> maintaining and testing such cathodic protection systems (and planning for such maintenance in accordance with the provisions for Relevant Maintenance in Section G of the Offtake Arrangements Document); and providing each Site User a report certifying compliance of the cathodic protection systems agreed standards no later than 14 days after any maintenance or testing in accordance with sub-paragraph (a). 															
Electrical	<p>All power provided to site users assets as provided via the main supply and busbar. This includes lighting to all buildings, site flood lighting, and space heating.</p> <p>See Section 2.2 for asset ownership.</p>															
General Site Services	<ul style="list-style-type: none"> Drainage General Site Maintenance Security (See Section 1.1) 															
Telecommunications	<p>The following lines are available on site:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: yellow;"><i>Line</i></th> <th style="background-color: yellow;"><i>Type</i></th> <th style="background-color: yellow;"><i>Owner</i></th> <th style="background-color: yellow;"><i>Comment</i></th> </tr> </thead> <tbody> <tr> <td>0161 - 775 1020</td> <td>ISDN</td> <td>Cadent</td> <td>Cadent's Telemetry Line. Site User to retrieve data from Site User FWACV system.</td> </tr> <tr> <td>0161 – 775 8440</td> <td>PSTN</td> <td>Cadent</td> <td>Site Land Line for all parties to use in Instrument Room in Main Control Building</td> </tr> </tbody> </table>				<i>Line</i>	<i>Type</i>	<i>Owner</i>	<i>Comment</i>	0161 - 775 1020	ISDN	Cadent	Cadent's Telemetry Line. Site User to retrieve data from Site User FWACV system.	0161 – 775 8440	PSTN	Cadent	Site Land Line for all parties to use in Instrument Room in Main Control Building
<i>Line</i>	<i>Type</i>	<i>Owner</i>	<i>Comment</i>													
0161 - 775 1020	ISDN	Cadent	Cadent's Telemetry Line. Site User to retrieve data from Site User FWACV system.													
0161 – 775 8440	PSTN	Cadent	Site Land Line for all parties to use in Instrument Room in Main Control Building													
Telemetry	<p>All Telemetry assets except the P1 Transmitter are owned by the Site Owner (See Section 2.3)</p> <p>The following Site User's assets are connected to the Site Owners Telemetry system:</p> <ul style="list-style-type: none"> The P1 transmitter is connected to the site owners IS Barrier Box & RTU. The site user's FWACV system is connected via the site owners Ethernet Hub. (See Section 2.4) The site user's ROV's are connected via the RTU and routers. This uses the site owners communication system for control. 															

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Water and Welfare Arrangements	No water or welfare arrangements within the offtake site. Facilities in Security Lodge at the main entrance to the Partington site.
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Section 4: Measurement Equipment and Permitted Ranges:

The Measurement Equipment, and the Permitted Range for the Measurement Equipment, are as follows:

Flow Rates

	Specified Range	Permitted Uncertainty Level	
Instantaneous Volume Flow Rate Based on pressure of 37 barg	Between 3% and 100% of 10.8 MCM/day	+/- 2 % of actual flow between 30% and 100% of maximum flow rate.	
		+/- 3.5 % of actual flow between 10% and 30% of maximum flow rate.	
Instantaneous Energy Flow Rate. Based on mean CV = 39.12 MJ/m ³ and pressure of 37 Bar	Between 3 % and 100% of 66.5 TJ/day	+/- 2.1 % of actual flow between 30% and 100% of maximum flow rate.	
		+/- 3.6 % of actual flow between 10% and 30% of maximum flow rate.	
The offtake should not be operated below 10% of maximum flow rate except where there is no alternative route to deliver gas to the LDZ.			
Pressure and Temperature			
	Specified Range		
Offtake Inlet Gas Pressure	0 – 80 barg	+/- 0.4% of specified range	
Outlet Gas Temperature	-10 to 40 deg C	+/- 0.2% of specified range	
Gas Quality – CV Directed Offtake			
	Specified Range	Permitted Uncertainty Level	
CV	35 - 44 MJ/m ³	+/- 0.14 MJ/m ³	
Carbon Dioxide	0 – 5 mole %	+/- 0.2 mole %	
Nitrogen	0 - 10 mole %	+/- 0.2 mole %	
Relative Density	0.5 – 0.8	+/- 0.002	
Wobbe No.	45 - 54 MJ/m ³	+/- 0.19 MJ/m ³	
Measurement Equipment			
No. of Meter Streams	Stream flow as % of total capacity	Meter Type	Design Details
2 stream(s)	2 x 100%	Orifice	Tube A DIA = 581mm Nominal Plate Bore DIA = 327mm Tube B DIA = 737 mm Nominal Plate Bore DIA = 463 mm

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Section 5: Telemetered Data Requirements:

In this section:

- a) a Minimum Requirement is a requirement applicable in relation to any Offtake;
- b) a Site-Specific Option is a requirement applicable (in accordance with paragraph (c) below) in relation to certain Offtakes;
- c) Site-Specific Options are applicable where so provided under 'Comments' or where agreed between the Parties.
- d) Information may be provided under 'Comments' in relation to Minimum Requirements and/or Site-Specific Options.

Part 1 – Analogues

Point Name	Minimum Required	Site Specific Options	DN Control System Point Name	NGG Unique Name	Comments
Feeder/Inlet Pressure	Yes		P1	P1	DNP3 Link – Raw Data to GNCC
Outlet Pressure	Yes		P5		DNP3 Link – Current Value to GNCC
Instantaneous Volume Flow	Yes		F1		DNP3 Link – Current Value to GNCC
Instantaneous Energy Flow	Yes		EF1		DNP3 Link – Current Value to GNCC
Outlet Gas Temperature		Yes	T1		DNP3 Link – Current Value to GNCC Where Fitted
Calorific Volume	Yes		CV1		DNP3 Link – Current Value to GNCC
Relative Density	Yes		SG1		DNP3 Link – Current Value to GNCC
Nitrogen	Yes		N2_1		DNP3 Link – Current Value to GNCC Except Tracker only sites
Carbon Dioxide	Yes		CO2_1		DNP3 Link – Current Value to GNCC Except Tracker only sites
Wobbe	Yes		WB1		DNP3 Link – Current Value to GNCC Except Tracker only sites
24 Hour Average CV	Yes		CV1_AVG		DNP3 Link – Current Value to GNCC
24 Hour Average RD	Yes		SG1_AVG		DNP3 Link – Current Value to GNCC
Orifice Standby Differential Pressure		Yes	ODP1		DNP3 Link – Current Value to GNCC ODPn (orifice differential pressure x, where x is a numerical identify) only where fitted

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Orifice 'in Use' Differential Pressure		Yes	METER1_DP		DNP3 Link – Current Value to GNCC METER_DPn (orifice differential pressure x, where x is a numerical identify) only where fitted
Flow Meter Temperature		Yes	FT1		DNP3 Link – Raw Data to GNCC Where Fitted
Compressibility		Yes	Z1		DNP3 Link – Raw Data to GNCC Where Fitted
Filter Differential Pressure		Yes	FLT_DP1		DNP3 Link – Current Value to GNCC Where Fitted

Part 2 – Digitals

Point Name	Minimum Required	Site Specific Options	DN Control System Point Name	NGG Unique Name	Comments
Power	Yes		MAINS1		DNP3 Link – Current Value to GNCC Mains/Phase Fail
Charger	Yes		CHGR1		DNP3 Link – Current Value to GNCC
Site UPS		Yes	UPS_ALM1		DNP3 Link – Current Value to GNCC Where Fitted
Gas Quality System UPS	Yes		n/a		Not Fitted
Gas Quality System Alarm	Yes		SYSTEM1		DNP3 Link – Current Value to GNCC SYSTEMn (system x, where x is a numerical identity)
Generator Alarm		Yes	n/a		Not Fitted
Generator Available		Yes	n/a		Not Fitted
Generator Bypass		Yes	n/a		Not Fitted
Generator Trip		Yes	n/a		Not Fitted
Generator Running		Yes	n/a		Not Fitted
Generator Status		Yes	n/a		Not Fitted
Barrier		Yes	BARRIER		DNP3 Link – Current Value to GNCC Where Fitted
Local Comms Link Status		Yes	n/a		Not Fitted
RTU Fault		Yes	n/a		Not Fitted
Watchdog		Yes	n/a		Not Fitted
Filter		Yes			No Digital fitted. See Analogues Section.
Maintenance Key		Yes	MTCE_1		DNP3 Link – Current Value to GNCC Where Fitted

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Intruder		Yes	INTRUDER1		DNP3 Link – Current Value to GNCC Where Fitted
Metering Alarm	Yes		MTR_SUSP1		DNP3 Link – Current Value to GNCC
Meter Stream Change		Yes	n/a		Not Fitted
Meter Valve Position		Yes	n/a		Not Fitted
Status Local/Remote		Yes	STATUS1		DNP3 Link – Current Value to GNCC Where Fitted
Pressure Override Alarm		Yes	OVERRIDE1		DNP3 Link – Current Value to GNCC Where Fitted
CV Not Valid		Yes	CV_N_VLD1		DNP3 Link – Current Value to GNCC Where Fitted
CV Not Attributable		Yes	CV_N_ATR1		DNP3 Link – Current Value to GNCC Where Fitted
Outstation Comms Status		Yes	OS_STATU S		DNP3 Link – Current Value to GNCC Scada Link Telemetry Only
Comms Routing Status		Yes	CM_ROUTI NG		DNP3 Link – Current Value to GNCC
Valve position of all remotely operable valves (INDICATORS)		Yes	V01, V02, V03, V61, V62, V63, V70, V75, V77 All Open		DNP3 Link – Raw Data to GNCC Valves operated by National Grid NTS and Distribution Networks for inlet isolation to be provided where control facilities are necessary but no NTS Physical Telemetry Facilities exist

Part 3 – Valve Monitoring / Control

Point Name	Minimum Required	Site Specific Options	DN Control System Point Name	NGG Unique Name	Comments
Control Function for remotely operable valves operated by National Grid NTS (CONTROLS)		Yes	V01, V02, V03, V61, V62, V63, V70, V75, V76		DNP3 Link – Raw Data to GNCC To be provided where control facilities are necessary but no NTS physical telemetry facilities exist

Part 4 – Integrators

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Point Name	Minimum Required	Site Specific Options	DN Control System Point Name	NGG Unique Name	Comments
Offtake Volume Integrator	Yes		INTG1		DNP3 Link – Current Value to GNCC
Offtake Energy Integrator		Yes	INT_EF1		DNP3 Link – Current Value to GNCC Where Fitted
Fuel Gas for Pre-heater Volume Integrator		Yes	INTG2		DNP3 Link – Current Value to GNCC Where Fitted
Fuel Gas for Pre-heater Energy Integrator		Yes	n/a		Not Fitted

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Section 6: Document History:

Dated Version	Recorded Changes
30 July 2018	Assets updated by Cadent following revised arrangements to site owners FWACV arrangements.
01 Oct 2016	Updated to support Hive down for Cadent sale
01 May 2005	Document Implemented to support Network Sales process

Document End