

Gas System  
Operator

# Flow-weighted average calorific value (FWACV) attribution mapping

nationalgrid



# FWACV attribution mapping

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# Purpose and principles of FWACV attribution mapping

Used to identify a valid daily average CV for each input or output point included in calculation of capped flow-weighted average CV for LDZ.

Principles of attribution mapping:

- Compliant with regulation 4A of the amended Gas (Calculation of Thermal Energy) Regulations
- Use directed measurement at input or output point if available and measurement valid
- If no directed measurement at input or output point, use directed measurement from an upstream or downstream site if measurement valid and available for attribution
- Also used if measurement data not available at time of calculation of LDZ FWACV or in event of loss of record instances
- Makes use of 'CV Not Valid' and 'CV Not Attributable' flags

# Current attribution mapping arrangements

Up to 9 directed measurements, if available, can be used to identify a valid daily average CV for an input or output point.

	Priority 1	Priority 2	Priority 3
Group A	Measurement A1 →	Measurement A2 →	Measurement A3
↓			
Group B	Measurement B1 →	Measurement B2 →	Measurement B3
↓			
Group C	Measurement C1 →	Measurement C2 →	Measurement C3

Measurements considered in order Group A Priority 1 to Group C Priority 3.

# Attribution mapping examples

## Directed measurement site (Offtake 1) example:

Offtake 1	Priority 1	Priority 2	Priority 3
Group A	Offtake 1	Offtake 2	NTS Feeder 99
Group B	Offtake 1	Offtake 2	NTS Feeder 99
Group C	Offtake 1	Offtake 2	NTS Feeder 99

Attribution mapping for Offtake 1 will consider directed measurements at Offtake 1, Offtake 2 and NTS Feeder 99.

Attribution will first consider Offtake 1 directed measurement: a valid CV will be identified if daily CV average at Offtake 1 measurement point has been determined and 'CV Not Valid' flag has not been generated.

If Offtake 1 directed measurement can not be used (CV average not available or 'CV Not Valid' flag generated), Offtake 2 directed measurement will be considered: a valid CV will be identified if daily CV average at Offtake 2 measurement point has been determined and 'CV Not Valid' flag has not been generated.

# Attribution mapping examples

## Directed measurement site (Offtake 1) example:

Offtake 1	Priority 1	Priority 2	Priority 3
Group A	Offtake 1	Offtake 2	NTS Feeder 99
Group B	Offtake 1	Offtake 2	NTS Feeder 99
Group C	Offtake 1	Offtake 2	NTS Feeder 99

If Offtake 1 and Offtake 2 directed measurements can not be used (CV averages not available or 'CV Not Valid' flags generated), NTS Feeder 99 directed measurement will be considered: a valid CV will be identified if daily CV average at NTS Feeder 99 measurement point has been determined and 'CV Not Valid' flag has not been generated.

Attribution will fail if CV average at NTS Feeder 99 measurement point not available or 'CV Not Valid' flag generated.

'CV Not Attributable' flags not considered for directed measurement sites.

# Attribution mapping examples

## Non-directed measurement site (Offtake 10) example:

Offtake 10	Priority 1	Priority 2	Priority 3
Group A	Offtake 11	Offtake 12	
Group B	Offtake 11	Offtake 13	
Group C	Offtake 11	Offtake 13	

Attribution mapping for Offtake 10 will consider directed measurements at Offtake 11, Offtake 12 and Offtake 13.

Attribution will first consider Offtake 11 directed measurement: a valid CV will be identified for Offtake 10 if daily CV average at Offtake 11 measurement point has been determined and 'CV Not Valid' or 'CV Not Attributable' flags have not been generated.

If Offtake 11 directed measurement can not be used (CV average not available or 'CV Not Valid' or 'CV Not Attributable' flags generated), Offtake 12 directed measurement will be considered: a valid CV will be identified if daily CV average at Offtake 12 measurement point has been determined and 'CV Not Valid' or 'CV Not Attributable' flags have not been generated.

# Attribution mapping examples

## Non-directed measurement site (Offtake 10) example:

Offtake 10	Priority 1	Priority 2	Priority 3
Group A	Offtake 11	Offtake 12	
Group B	Offtake 11	Offtake 13	
Group C	Offtake 11	Offtake 13	

If Offtake 12 directed measurement can not be used (CV average not available or 'CV Not Valid' or 'CV Not Attributable' flags generated), Offtake 13 directed measurement will be considered: a valid CV will be identified if daily CV average for Offtake 13 measurement point has been determined and 'CV Not Valid' or 'CV Not Attributable' flags have not been generated.

Attribution will fail if CV average for Offtake 13 not available or 'CV Not Valid' or 'CV Not Attributable' flags generated.



# Attribution mapping examples

## Biomethane (Bio 1) site example:

Bio 1	Priority 1	Priority 2	Priority 3
Group A	Bio 1		
Group B	Bio 1		
Group C	Bio 1		

Only attribution mapping available is the directed measurement at biomethane site (Bio 1).

Valid CV will be identified if daily CV average at Bio 1 measurement point has been determined and 'CV Not Valid' flag has not been generated.

Attribution will fail if daily CV average for Bio 1 measurement point not available or 'CV Not Valid' flag generated.

'CV Not Attributable' flags not considered for biomethane sites.

# Attribution mapping summary (as of 1 October 2019)

LDZ	Number of sites with directed measurements	Number of sites without directed measurements	NTS owned measurements included in attribution mappings	Other DN owned measurements included in attribution mappings
East Midlands	20	5	9	0
Eastern	20	1	5	0
North Thames	6	1	1	5
North West	14	2	4	0
West Midlands	15	3	5	2
North East	11	3	8	0
Northern	13	8	9	6
Scotland	24	9	5	1
South East	12	0	1	1
Southern	22	1	1	1
South West	30	1	1	0
Wales North	2	0	0	0
Wales South	3	0	0	0