

**RELEASES TO AIR
QUARTERLY RETURN
MONTHLY MEAN, MAXIMUM DAILY MEAN AND ANNUAL PERCENTILE CONCENTRATIONS
OPERATING MODE:**

Operator: **Dow Silicones UK Ltd**
Location: **Barry Cogeneration Plant**
Permit/Variation Number: **EPR/JP3632ZH/V004**

Form: IED CON 2 (Gas Turbines)
Version/date: **V.3.1 31 Dec 2015**

Year: 2022						
A1 / LCP 60						
NOx (mg/m3)						
CO (mg/m3)						
Month	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean
January	-	-		-	-	
February	-	-		-	-	
March	113.11	118.57		3.8	7.0	
April	115.32	115.32		4.4	4.4	
May	-	-		-	-	
June	-	-		-	-	
July						
August						
September						
October						
November						
December						
Monthly ELV / Daily ELV (f)	75.	82.5		80.	80.	
Annual 95th Percentile (h)						
Annual Percentile ELV (g)						

5 hours of operation on 2nd April

NOTES:

(a) All data based on validated hourly average concentrations, excluding start-up and shut-down and periods of malfunction or breakdown of abatement equipment, at 15% O₂, dry, 273.15K, 101.325 kPa

(b) Annual percentiles are submitted with the final return (Quarter 4)

(c) Extend report to cover the required number of LCP on each site and repeat report for each separately regulated Operating Mode as required, e.g., Combined Cycle, Open Cycle, Supplementary firing, Auxiliary firing

(d) Averages determined at loads in the range 70% < Load ≤ 100% ISO base load and above

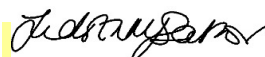
(e) Averages determined at loads in the range MSUL* < Load = 100% ISO base load and above (* For a 3 parameter approach, from the point of Start-Up to the point of Shut-down)

(f) Leave the Daily ELV blank if this is applied as a 95th percentile ELV within the Permit

(g) For each pollutant, report the Annual 95th percentile ELV for hourly averages in the first column and, if applicable, the Annual 95th percentile ELV for daily means in the second column

(h) For each pollutant, report the Annual 95th percentile of hourly averages in the first column and, if applicable, the Annual 95th percentile of daily means in the second column

Signed on behalf of the Operator by:



Judith Sartor, Environmental Specialist

Date of return:

28th July 2022

No confidence adjustment

**RELEASES TO AIR
QUARTERLY RETURN
MONTHLY MEAN, MAXIMUM DAILY MEAN AND ANNUAL PERCENTILE CONCENTRATIONS
OPERATING MODE:**

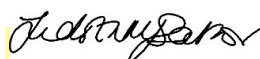
Operator: **Dow Silicones UK Ltd** Form: IED CON 2 (Gas Turbines)
Location: **Barry Cogeneration Plant** Version/date: **V.3.1 31 Dec 2015**
Permit/Variation Number: **EPR/JP3632ZH/V004**

Year: 2022	A2 / LCP60					
	NOx (mg/m3)			CO (mg/m3)		
Month	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean
January	-	-		-	-	
February	-	-		-	-	
March	53.75	53.75		7.1	7.1	
April	57.93	63.15		10.1	20.2	
May	57.93	63.25		9.0	13.6	
June	59.11	62.36		8.8	13.1	
July						
August						
September						
October						
November						
December						
Monthly ELV / Daily ELV (f)	100	110		100	110	
Annual 95th Percentile (h)						
Annual Percentile ELV (g)						

NOTES:

- (a) All data based on validated hourly average concentrations, excluding start-up and shut-down and periods of malfunction or breakdown of abatement equipment, at 15% O₂, dry, 273.15K, 101.325 kPa
- (b) Annual percentiles are submitted with the final return (Quarter 4)
- (c) Extend report to cover the required number of LCP on each site and repeat report for each separately regulated Operating Mode as required, e.g., Combined Cycle, Open Cycle, Supplementary firing, Auxiliary firing
- (d) Averages determined at loads in the range 70% < Load ≤ 100% ISO base load and above
- (e) Averages determined at loads in the range MSUL* < Load = 100% ISO base load and above (* For a 3 parameter approach, from the point of Start-Up to the point of Shut-down)
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28th July 2022

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**RELEASES TO AIR
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MONTHLY MEAN, MAXIMUM DAILY MEAN AND ANNUAL PERCENTILE CONCENTRATIONS
OPERATING MODE:**

Operator: **Dow Silicones UK Ltd**
Location: **Barry Cogeneration Plant**
Permit/Variation Number: **EPR/JP3632ZH/V004**

Form: IED CON 2 (Gas Turbines)
Version/date: **V.3.1 31 Dec 2015**

A3 / LCP60						
Year: 2022	NOx (mg/m3)			CO (mg/m3)		
Month	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean	Monthly Mean	Max Daily Mean	Part Load Max Daily Mean
January	26.38	29.93		3.8	13.0	
February	28.66	31.38		1.0	6.8	
March	49.24	75.02		9.5	23.6	
April	72.57	80.82		12.4	23.1	
May	70.10	78.15		11.7	20.2	
June	77.25	85.97		0.8	15.7	
July						
August						
September						
October						
November						
December						
Monthly ELV / Daily ELV (f)	75.	82.5		80.	80.	
Annual 95th Percentile (h)						
Annual Percentile ELV (g)						

All operation
FD mode
only

New
permit
limits
from 1
July 2020

NOTES:

- (a) All data based on validated hourly average concentrations, excluding start-up and shut-down and periods of malfunction or breakdown of abatement equipment, at 15% O₂, dry, 273.15K, 101.325 kPa
- (b) Annual percentiles are submitted with the final return (Quarter 4)
- (c) Extend report to cover the required number of LCP on each site and repeat report for each separately regulated Operating Mode as required, e.g., Combined Cycle, Open Cycle, Supplementary firing, Auxiliary firing
- (d) Averages determined at loads in the range 70% < Load ≤ 100% ISO base load and above
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- (h) For each pollutant, report the Annual 95th percentile of hourly averages in the first column and, if applicable, the Annual 95th percentile of daily means in the second column

Signed on behalf of the Operator by:



Judith Sartor, Environmental Specialist

Date of return:

28th July 2022

No confidence adjustment

RELEASES TO AIR
QUARTERLY RETURN

2022

Q2

CUMULATIVE ROLLING MALFUNCTION AND BREAKDOWN HOURS (12 MONTH PERIOD)(a), (b)

OPERATING MODE:

Operator:

DOW

Location:

Barry Cogeneration Plant

Permit/Variation Number:

EPR/JP3632ZH/V004

Form:

Version/date:

IED/LCPBREF BD1

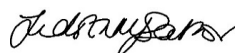
V.3.1 31 Dec 2015

Year: 2022	A1 / LCP 60			
	NOx (mg/m3)		CO (mg/m3)	
Month	Malfunction (hours)	Breakdown (hours)	Malfunction (hours)	Breakdown (hours)
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	-	-	-	-
May	-	-	-	-
June	-	-	-	-
July				
August				
September				
October				
November				
December				
Annual total (hours)				
Annual cap (hours)	120.	120.	120.	120.

NOTES:

- (a) Cumulative rolling malfunction and breakdown hours (12 month period) updated monthly
- (b) Data Acquisition and Handling Systems without the capability to report Black Start hours separately may incorporate Black Start hours on this form provided that a
- (c) Insert the relevant months for the preceding 12 month period, e.g., starting with March 2016
- (d) Gas turbines with CO abatement only (columns may be deleted for other plant types)
- (e) Plants with HCl abatement only (columns may be deleted for other plant types)

Signed on behalf of the Operator by:



Judith Sartor, Environmental Specialist

Date of return:

28th July 2022

No confidence adjustment

RELEASES TO AIR
QUARTERLY RETURN

2022

Q2

CUMULATIVE ROLLING MALFUNCTION AND BREAKDOWN HOURS (12 MONTH PERIOD)(a), (b)

OPERATING MODE:

Operator:

DOW

Location:

Barry Cogeneration Plant

Permit/Variation Number:

EPR/JP3632ZH/V004

Form:

IED/LCPBREF BD1

Version/date:

V.3.1 31 Dec 2015

Year: 2022	A2 / LCP 60			
	NOx (mg/m3)		CO (mg/m3)	
Month	Malfunction (hours)	Breakdown (hours)	Malfunction (hours)	Breakdown (hours)
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	-	-	-	-
May	-	-	-	-
June	-	-	-	-
July				
August				
September				
October				
November				
December				
Annual total (hours)				
Annual cap (hours)	120.	120.	120.	120.

NOTES:

- (a) Cumulative rolling malfunction and breakdown hours (12 month period) updated monthly
- (b) Data Acquisition and Handling Systems without the capability to report Black Start hours separately may incorporate Black Start hours on this form provided that a
- (c) Insert the relevant months for the preceding 12 month period, e.g., starting with March 2016
- (d) Gas turbines with CO abatement only (columns may be deleted for other plant types)
- (e) Plants with HCl abatement only (columns may be deleted for other plant types)

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Date of return:

28th July 2022

No confidence adjustment

RELEASES TO AIR
QUARTERLY RETURN

2022

Q2

CUMULATIVE ROLLING MALFUNCTION AND BREAKDOWN HOURS (12 MONTH PERIOD)(a), (b)

OPERATING MODE:

Operator:

DOW

Location:

Barry Cogeneration Plant

Permit/Variation Number:

EPR/JP3632ZH/V004

Form:

Version/date:

IED/LCPBREF BD1

V.3.1 31 Dec 2015

Year: 2022	A3 / LCP 60			
	NOx (mg/m3)		CO (mg/m3)	
Month	Malfunction (hours)	Breakdown (hours)	Malfunction (hours)	Breakdown (hours)
January	-	-	-	-
February	-	-	-	-
March	-	-	-	-
April	-	-	-	-
May	-	-	-	-
June	-	-	-	-
July				
August				
September				
October				
November				
December				
Annual total (hours)				
Annual cap (hours)	120.	120.	120.	120.

NOTES:

- (a) Cumulative rolling malfunction and breakdown hours (12 month period) updated monthly
- (b) Data Acquisition and Handling Systems without the capability to report Black Start hours separately may incorporate Black Start hours on this form provided that a
- (c) Insert the relevant months for the preceding 12 month period, e.g., starting with March 2016
- (d) Gas turbines with CO abatement only (columns may be deleted for other plant types)
- (e) Plants with HCl abatement only (columns may be deleted for other plant types)

Signed on behalf of the Operator by:



.....
Judith Sartor, Environmental Specialist

28th July 2022

Date of return:

No confidence adjustment

RELEASES TO AIR
RETURN OF DISCONTINUOUS MONITORING RESULTS

Operator: Dow Silicones UK Ltd
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED PM1
Version: V.11 Mar 2016

Year - 2022	LCP 60 (A1 & A3 HR-001A & B)				
Six months to -30/06/22					
Measurement approach	NO _x	SO ₂	CO	Hg	Dust
Time					
Date					
Measurement 1 (mg/m ³) ^(b)					
Measurement 2 (mg/m ³) ^(b)					
Measurement 3 (mg/m ³) ^(b)					
Alternative approach ^(c)					
Method ^(d)		FS			DF
Calculation (mg/m ³)		0.24			0
Operational data ^(a)					
Load (%MCR)					
Fuel 1 Natural Gas (%)		100			100
Fuel 2 name (%)					
Fuel 3 name (%)					
Daily Emission Limit Value					
(mg/m ³)					

NOTES:

- (a) Operational data for the test period (measurement approach) or the six month period to date (Alternative approach)
 (b) Reference conditions for mg/m³ are 15% O₂ CCGT, 6% O₂ solid fuels, 3% O₂ for oil and gas, dry, 0°C, 101.325 kPa
 (c) Alternative approach to discontinuous monitoring by agreement with the Competent Authority
 (d) Use abbreviation: NF for agreed NO_x factor, FS for fuel sulphur content, CS for agreed CO factor, DF for agreed dust factor

Signed on behalf of the Operator by: Judith Sartor, Environmental Specialist



Date of return: 28th July 2022

RELEASES TO AIR
RETURN OF DISCONTINUOUS MONITORING RESULTS

Operator: Dow Silicones UK Ltd
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED PM1
Version: V.11 Mar 2016

Year - 2022	LCP 60 (A2 FB-001)				
Six months to -30/06/22					
Measurement approach	NO _x	SO ₂	CO	Hg	Dust
Time					
Date					
Measurement 1 (mg/m ³) ^(b)					
Measurement 2 (mg/m ³) ^(b)					
Measurement 3 (mg/m ³) ^(b)					
Alternative approach ^(c)					
Method ^(d)		FS			DF
Calculation (mg/m ³)		0.72			0
Operational data ^(a)					
Load (%MCR)					
Fuel 1 Natural Gas (%)		100			100
Fuel 2 <i>name</i> (%)					
Fuel 3 <i>name</i> (%)					
Daily Emission Limit Value					
(mg/m ³)					

NOTES:

- (a) Operational data for the test period (measurement approach) or the six month period to date (Alternative approach)
(b) Reference conditions for mg/m³ are 15% O₂ CCGT, 6% O₂ solid fuels, 3% O₂ for oil and gas, dry, 0°C, 101.325 kPa
(c) Alternative approach to discontinuous monitoring by agreement with the Competent Authority
(d) Use abbreviation: NF for agreed NO_x factor, FS for fuel sulphur content, CS for agreed CO factor, DF for agreed dust factor

Signed on behalf of the Operator by: Judith Sartor, Environmental Specialist



Date of return: 28th July 2022

RELEASES TO AIR
RETURN OF DISCONTINUOUS MONITORING RESULTS

Operator: Dow Silicones UK Ltd
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED PM1
Version: V.11 Mar 2016

Year - 2022	LCP 60 (A4 FB-002A)				
Six months to -30/06/22					
Measurement approach	NO _x	SO ₂	CO	Hg	Dust
Time	13:30		13:30		
Date	08/06/2022		08/06/2022		
Measurement 1 (mg/m ³) ^(b)	96.76		0.51		
Measurement 2 (mg/m ³) ^(b)					
Measurement 3 (mg/m ³) ^(b)					
Alternative approach ^(c)					
Method ^(d)		FS			DF
Calculation (mg/m ³)		0.72			0
Operational data ^(a)					
Load (%MCR)					
Fuel 1 Natural Gas (%)	100	100	100		100
Fuel 2 name (%)					
Fuel 3 name (%)					
Daily Emission Limit Value					
(mg/m ³)	110	38.5	100		5.5

NOTES:

- (a) Operational data for the test period (measurement approach) or the six month period to date (Alternative approach)
(b) Reference conditions for mg/m³ are 15% O₂ CCGT, 6% O₂ solid fuels, 3% O₂ for oil and gas, dry, 0°C, 101.325 kPa
(c) Alternative approach to discontinuous monitoring by agreement with the Competent Authority
(d) Use abbreviation: NF for agreed NO_x factor, FS for fuel sulphur content, CS for agreed CO factor, DF for agreed dust factor

Signed on behalf of the Operator by: Judith Sartor, Environmental Specialist



Date of return: 28th July 2022

RELEASES TO AIR
RETURN OF DISCONTINUOUS MONITORING RESULTS

Operator: Dow Silicones UK Ltd
Location: Barry Cogeneration Plant
Permit/Variation Number: EPR/JP3632ZH/V004

Form: IED PM1
Version: V.11 Mar 2016

Year - 2022	LCP 60 (A5 FB-002B)				
Six months to -30/06/22					
Measurement approach	NO _x	SO ₂	CO	Hg	Dust
Time	12:15		12:15		
Date	08/06/2022		08/06/2022		
Measurement 1 (mg/m ³) ^(b)	99.16		0.53		
Measurement 2 (mg/m ³) ^(b)					
Measurement 3 (mg/m ³) ^(b)					
Alternative approach ^(c)					
Method ^(d)		FS			DF
Calculation (mg/m ³)		0.72			0
Operational data ^(a)					
Load (%MCR)					
Fuel 1 Natural Gas (%)	100	100	100		100
Fuel 2 name (%)					
Fuel 3 name (%)					
Daily Emission Limit Value					
(mg/m ³)	110	38.5	100		5.5

NOTES:

- (a) Operational data for the test period (measurement approach) or the six month period to date (Alternative approach)
(b) Reference conditions for mg/m³ are 15% O₂ CCGT, 6% O₂ solid fuels, 3% O₂ for oil and gas, dry, 0°C, 101.325 kPa
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