Air Quality Results- Dublin Airport

CLG Meeting 30/5/2019

Dr. Mary Kerins
Head of HSSE

Outline

- Dublin Airport AQ Monitoring programme
- Monitoring locations- diffusion tubes
- Trends and Actions arising
- Online monitoring
- Sustainability Strategy

Are we monitoring the right things in the right way?

- Ambient Air Quality Monitoring is undertaken at Dublin Airport in line with EPA guidelines and practice at other airports.

Environmental Protection Agency

The Environmental Protection Agency manages the national ambient air quality monitoring network. We also measure the levels of a number of atmospheric pollutants. The pollutants of most concern are those whose main source is traffic such as Particulate Matter and Nitrogen Dioxide.

ISO 17025 INAB ACCREDITED CALIBRATION DETAILED IN SCOPE REG NO.311C

- The compounds we monitor are those identified internationally as key air quality impacts arising from airports - even by anti-aviation groups such as greenskies:

greenskies www.greenskies.org

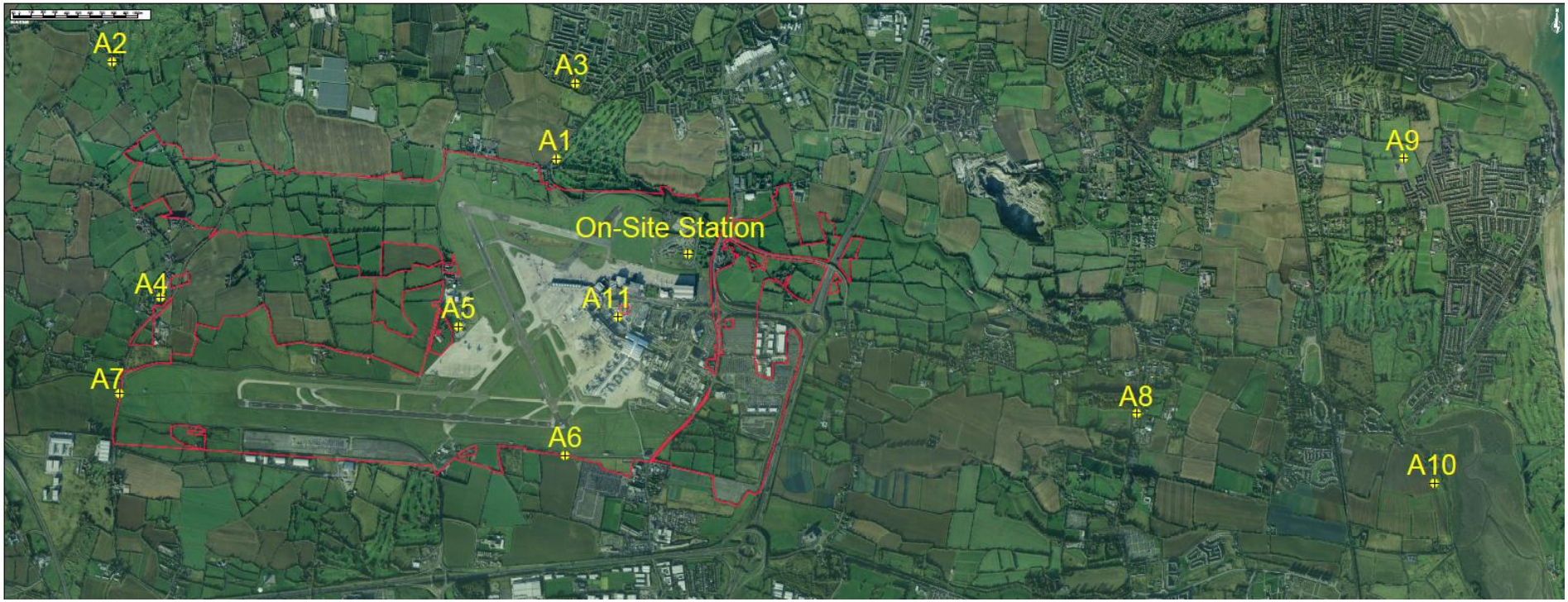
Unlike road transport, air pollution emissions from planes have remained stable over the last years due to a lack of strict or mandatory emission standards. At present Nitrogen oxides (NOx) emissions and particulate matter (PM) are to be deemed the principal aircraft pollutants for local air quality (CE Delft, 2000). Surprising as it might be though, aircraft emissions are not the major contributor to air quality problems around big airports. The sources of pollution in order of significance appear to be:

- *road traffic at and around airports is the most important source of pollution;*
- *aircraft exhaust fumes (10% of air pollution around Amsterdam Airport Schiphol (urban region) (Noord-Holland, 2001), 20% east of Roissy Charles de Gaule (rural region), (Airparif, 2004)*
- *emissions from ground service equipment and auxiliary power units;*

Aircraft today emit **50% less** CO_2 and **90%** less smoke and unburned hydrocarbons than those made 50 years ago. NO_x levels have also been cut, with aircraft today emitting **40% less** NO_2 than in 1981. Hence up to 95% of AQ impacts at airports is due to ground vehicles

Air Monitoring Locations

- Voluntary AQ monitoring since 2009
- Diffusion tubes – external specialist agency calibrates and maintains equipment - ISO UKAS 17025 standard

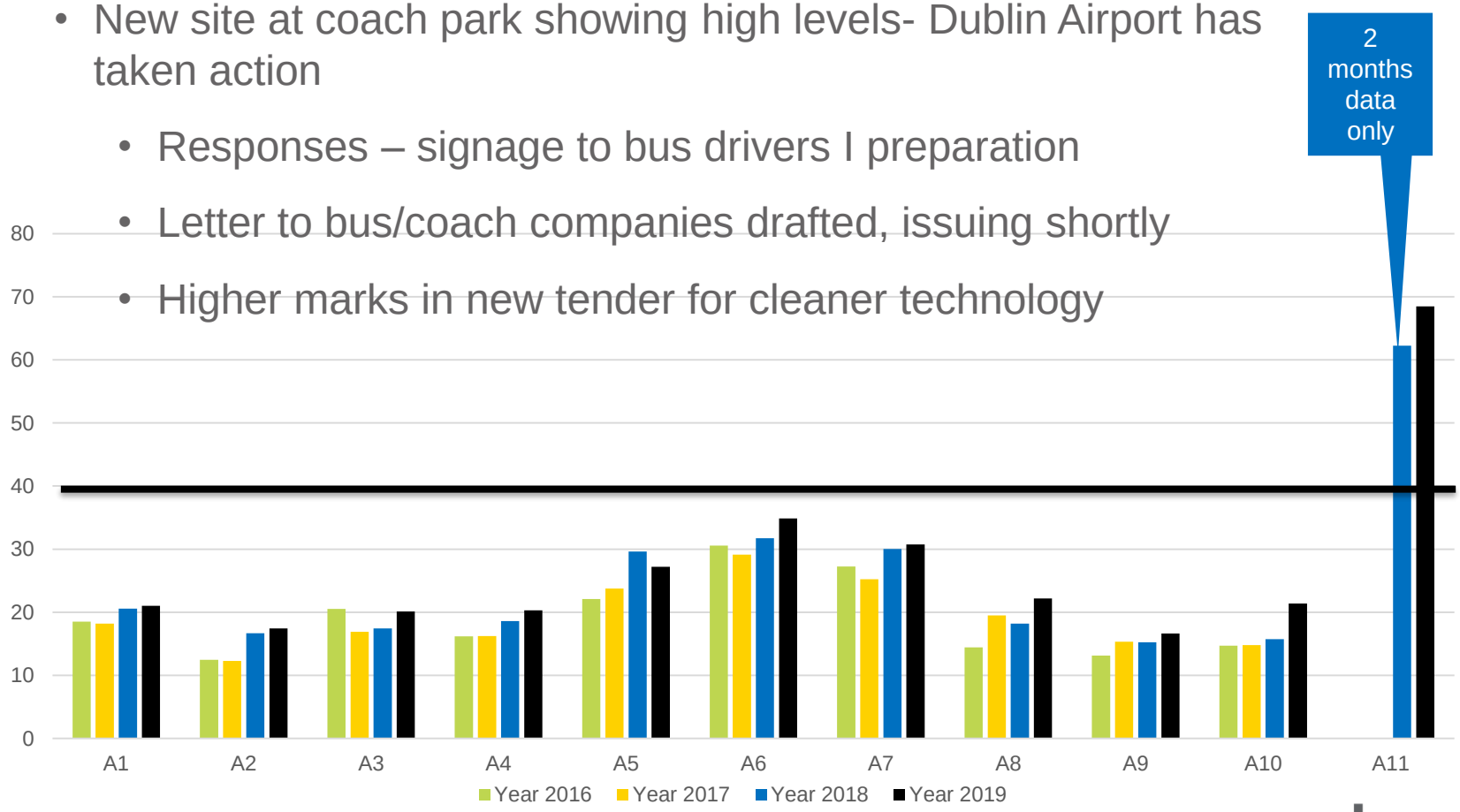


Diffusion Tubes Locations

Ref	Location	Method	Parameters
On-site	Dublin Airport.	Continuous analyser[1]	**NO_2** **PM_{10}**
A1	Forrest Little Golf Club.	Passive Tubes	**NO_2** **Benzene**
A2	Kilreesk Lane, St. Margaret's.	Passive Tubes	
A3	Ridgewood Estate West, Swords.	Passive Tubes	
A4	St. Margaret's School and Parish House.	Passive Tubes	
A5	Fire Station, Huntstown, Dublin Airport.	Passive Tubes	
A6	Southern Boundary Fence, Dublin Airport	Passive Tubes	
A7	Western Boundary Fence, Dublin Airport	Passive Tubes	
A8	St. Nicholas of Myra School, Malahide Road.	Passive Tubes	
A9	Naomh Mearnóg GAA Club, Portmarnock.	Passive Tubes	
A10	Oscar Papa Site, Portmarnock.	Passive Tubes	
A11	Dublin Airport Bus Depot.	Passive Tubes	

NO_2 Diffusion Tubes 2016 - Present

- Most significant growth at sites remote from airport (A8, A10) or adjacent to roads(A6, A7)
- New site at coach park showing high levels- Dublin Airport has taken action
  - Responses – signage to bus drivers I preparation
  - Letter to bus/coach companies drafted, issuing shortly
  - Higher marks in new tender for cleaner technology



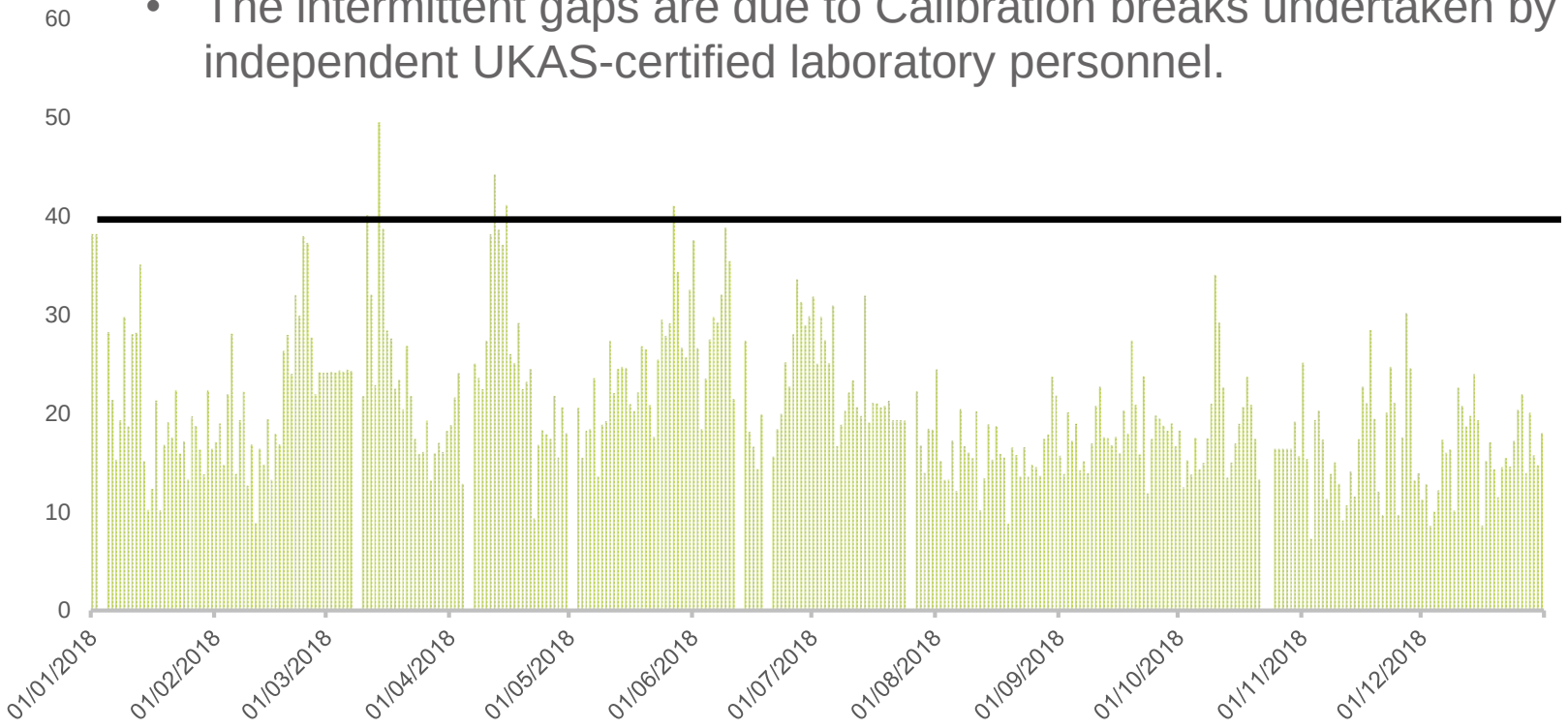
Benchmarking

Location	NO_2 (µg/m³)							
	2011	2012	2013	2014	2015	2016	2017	2018[1]
Winetavern St	34	29	31	31	31	36.6	27.2	
Rathmines	20	21	19	17	18	20	17.1	
Swords	14	15	15	14	15	15.7	14.2	
Blanchardstown	31	30	29	31	25	30.2	26.2	
Dublin Airport Station[2]	19	19	19	22	22	23	20	27.6
Annual Limit Value	40							

Location	PM_{10} (µg/m³)							
	2011	2012	2013	2014	2015	2016	2017	2018[1]
Winetavern St	14	13	14	14	14	14	12.9	
Rathmines	16	14	17	14	15	15	13.4	
Phoenix Park	12	11	14	12	12	11	9.1	
Blanchardstown	16	-	20	18	17	18	15	
Ennis	22	19	20	21	18	17	15.8	
Dublin Airport Station[2]	20	20	23	21	20	23	21	20
Annual Limit Value	40							

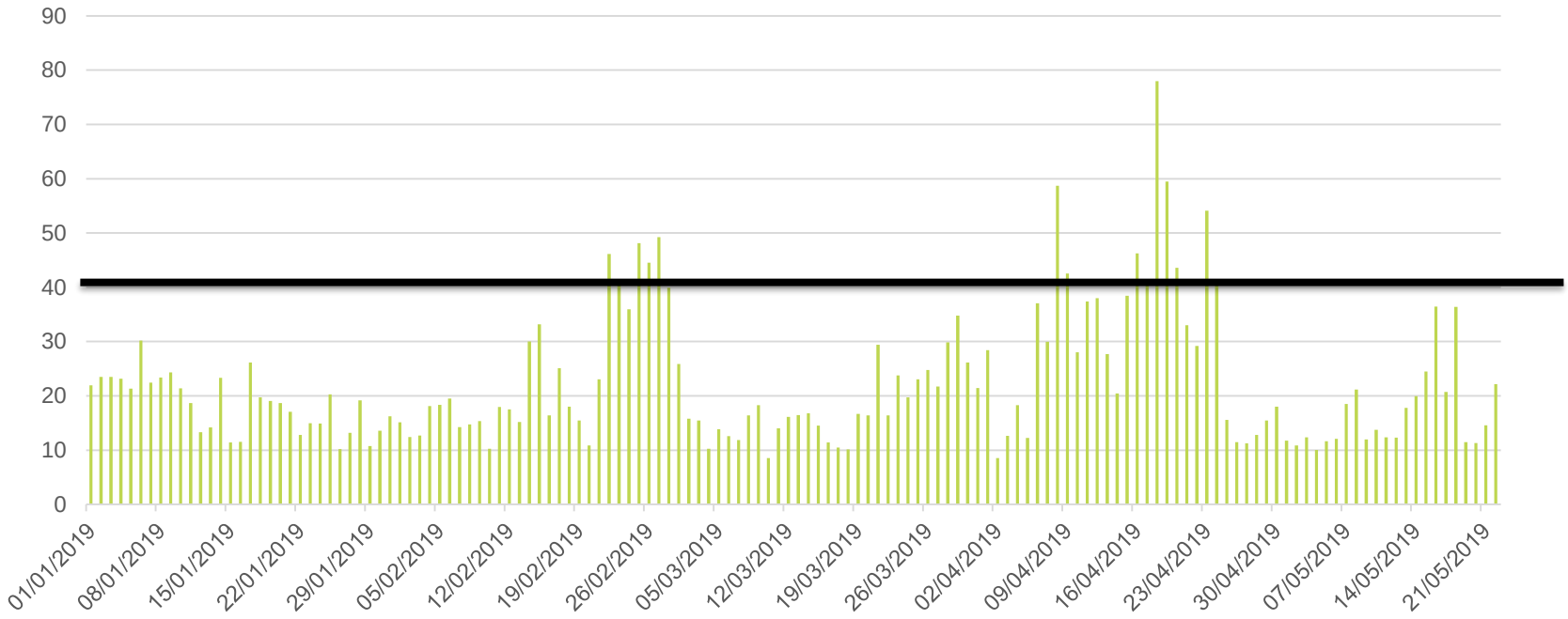
2018 PM_{10} levels

- 2018 results from our online air quality monitoring station indicates that we remain well below the annual limit
- The intermittent gaps are due to Calibration breaks undertaken by independent UKAS-certified laboratory personnel.



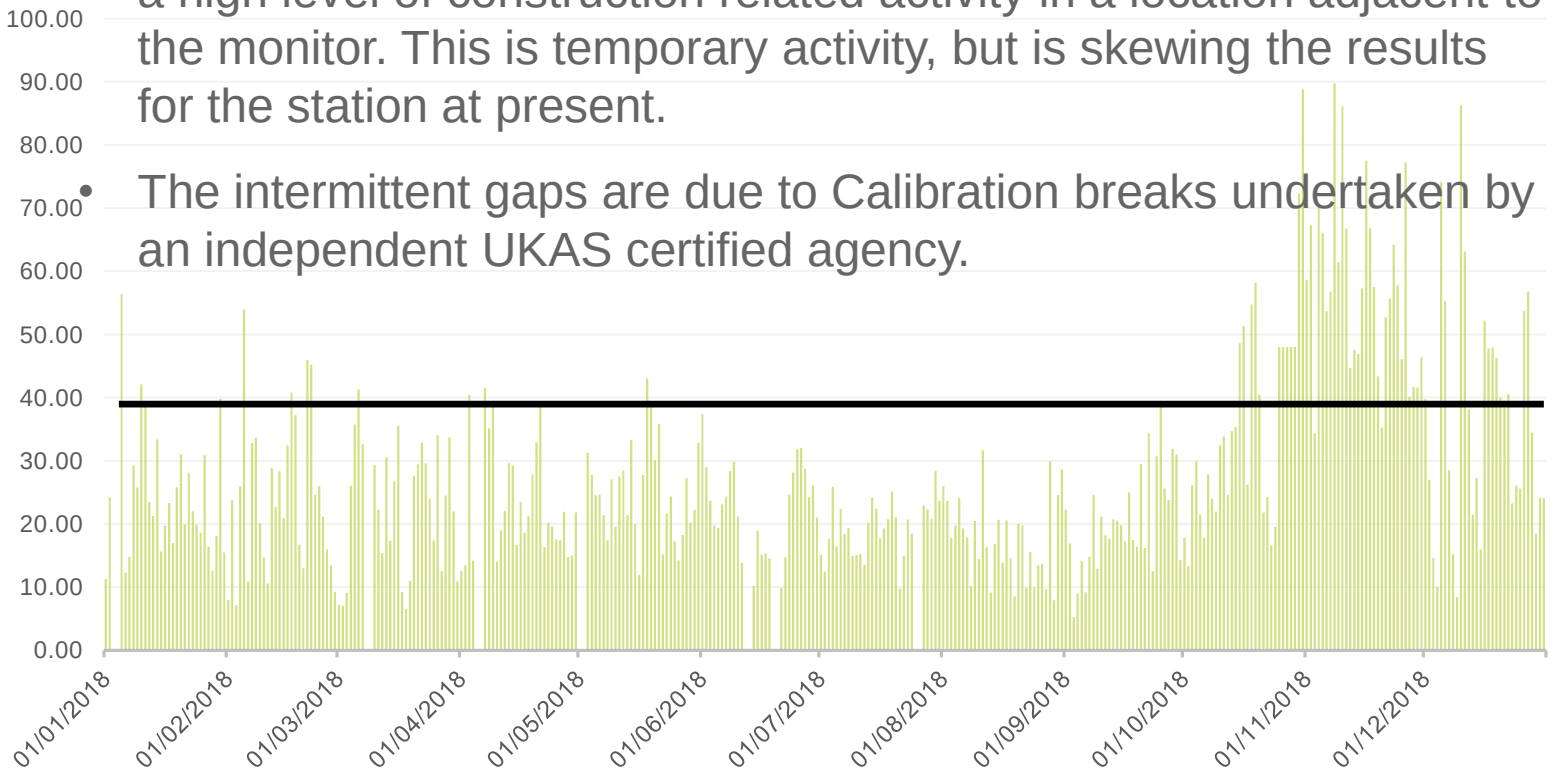
2019 PM_{10} levels to date

- 2019 to date shows we remain well below the annual limiting level in general.



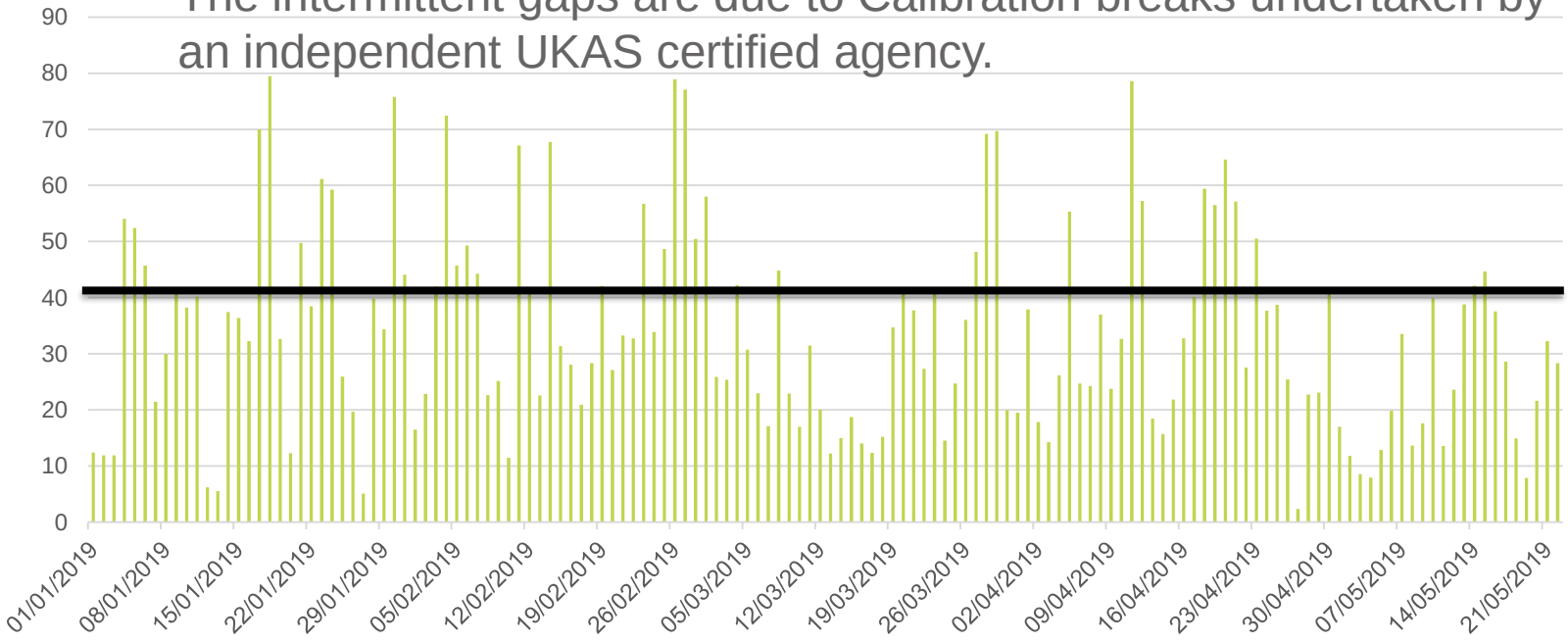
2018 NO_2 emission levels

- 2018 results from our online air quality monitoring station indicates that we generally remain well below the annual limit.
- The higher levels recorded in November/December correlate with a high level of construction related activity in a location adjacent to the monitor. This is temporary activity, but is skewing the results for the station at present.
- The intermittent gaps are due to Calibration breaks undertaken by an independent UKAS certified agency.

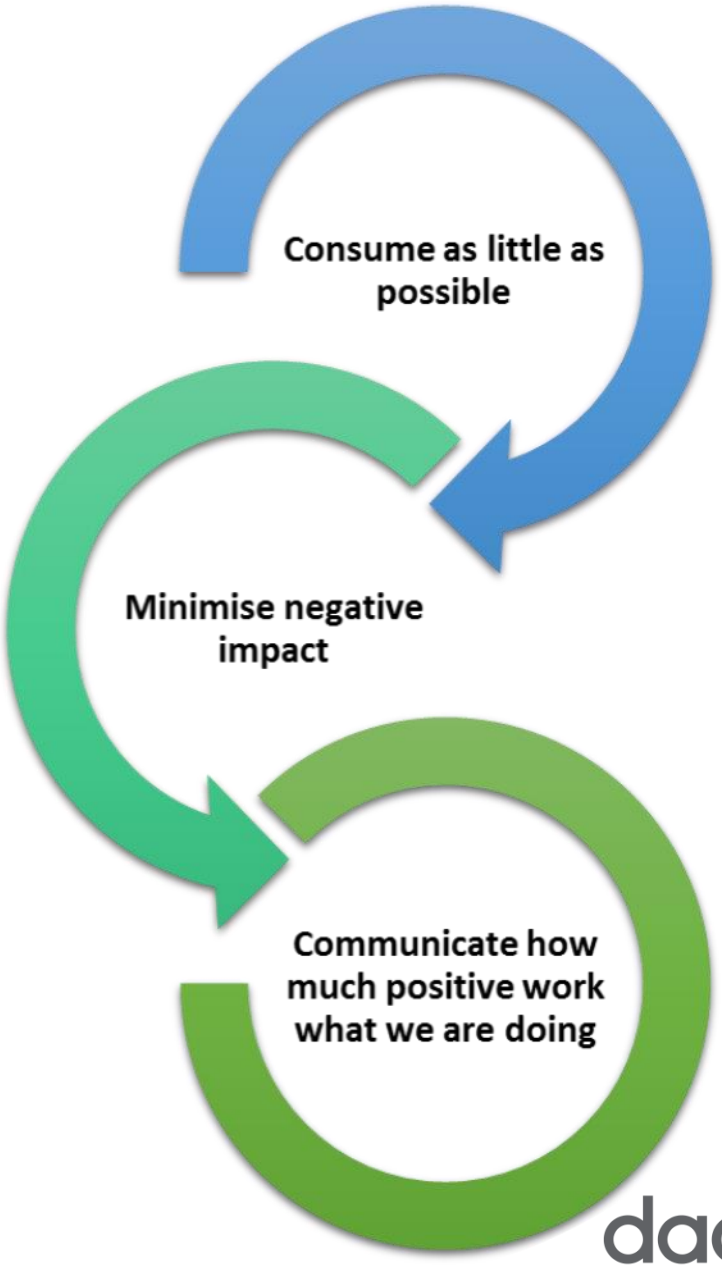


2019 NO_2 emission levels to date

- The higher levels recorded in to date correlate with a high level of construction related activity in a location adjacent to the monitor. This is temporary activity, but is currently skewing the results for the station although results have fallen again in recent weeks.
- The intermittent gaps are due to Calibration breaks undertaken by an independent UKAS certified agency.



Dublin Airport Sustainability strategy



Daa's Low Emission Vehicles Targets

Current light commercial fleet of 100 has now 22% LEV

Electric bus trial held in February to assist in developing bus tender. Next steps is to assess Electric bus trials and develop a business case

Procurement process revised and will be included in tenders

FEGP currently installed on Terminal 2; Pier 100 & Pier 300 will be completed 2019.

This will be discussed at stakeholder meetings in Q3 and Q4

This will be discussed at stakeholder meetings in Q3 and Q4

13

Thank you