



## **Demand Estimation Sub Committee**

**NDM Sample Update**

**5<sup>th</sup> October 2020**

# Objective

- Review the current NDM Sample numbers against the ideal target number for each EUC and LDZ combination
- Identify what actions (if any) are required to boost the NDM Sample in readiness for Strand 3 of the Autumn' 20 Algorithm Performance analysis, due to be presented at the December'20 DESC meeting

## Background (1 of 2)

- In order to develop accurate Gas Demand Profiles for NDM supply meter points (Class 3 and 4), daily gas consumption data is required from a variety of different NDM gas consumers
- We refer to this data as the '*NDM Sample*'.
- The NDM Sample should ideally be representative of the population breakdown
- Insufficient numbers or inaccurate data will result in the creation of less-reflective Gas Demand Profiles
- The NDM sample data also provides us with the ability to analyse the performance of the Gas Demand Profiles (i.e. Strand 3 of Algorithm Performance). This is crucial to learning how we can improve future EUC demand modelling

## Background (2 of 2)

- NDM Sample data has traditionally been sourced by Xoserve (Bands 01 & 02) and Transporters (Bands 02 to 08)
- Due to the sample numbers showing a declining trend over many years, industry discussions under MOD0654 led to a new UNC obligation being established for shippers with effect from 1st March 2019
- Section H (section 1.6) mandates the provision of regular NDM Sample Data from shippers to the CDSP
- The data quality of the submissions received since March have been mixed and we have been working with shippers to resolve the issues we have identified

# Approach

- At the Feb'20 DESC meeting Xoserve presented analysis to determine statistically what the optimum sample size should be by EUC and LDZ
- The overall target numbers for NDM sample sites is c39,000
- A comparison of current 'Active' sites (i.e. where daily consumption data is being received) against ideal 'Target' numbers is then performed

# Population Size (at September 2020)

Population Size (Class 3 and 4 only) - September 2020																
EUC Band	AQ Range (mWh)	Customer Type	LDZ													Total
			SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	
01	up to 73.2	Domestic (Non PPM)	1,840,301	1,162,279	2,559,995	1,329,683	2,272,991	1,926,957	234,920	794,374	1,868,697	2,060,439	2,386,422	1,687,598	1,528,450	21,653,106
		I&C (Non PPM)	41,026	27,267	68,696	39,193	55,854	47,956	7,327	20,601	43,567	65,047	59,521	41,303	40,243	557,601
		Domestic (PPM)	230,268	113,953	294,501	120,142	197,818	197,295	29,292	93,588	146,146	261,227	243,738	99,638	111,031	2,138,637
		I&C (PPM)	246	156	496	257	256	331	35	188	274	581	524	161	164	3,669
02	73.2 to 293	Domestic (Non PPM)	3,731	1,762	4,556	2,739	3,566	3,276	269	840	3,676	7,743	6,818	3,037	2,383	44,396
		I&C (Non PPM)	12,856	7,617	17,873	9,765	15,039	13,992	1,786	4,852	12,242	18,929	16,439	12,195	10,360	153,945
		Domestic (PPM)	143	77	203	112	148	245	18	45	106	262	195	55	71	1,680
		I&C (PPM)	6	4	5	2	4	6	1	1	7	13	10	3	3	65
03	293 to 732	All	4,456	2,385	5,054	2,644	4,046	4,005	475	1,249	3,330	5,946	4,321	3,412	2,608	43,931
04	732 to 2,196	All	1,966	883	2,041	1,043	1,688	1,715	230	592	1,430	2,782	1,659	1,343	1,040	18,412
05	2,196 to 5,860	All	444	223	500	284	421	442	48	134	323	727	349	269	218	4,382
06	5,860 to 14,650	All	159	76	170	104	174	122	28	44	106	189	91	99	97	1,459
07	14,650 to 29,300	All	49	24	77	36	77	50	12	21	45	43	30	32	45	541
08	29,300 to 58,600	All	16	15	38	14	53	29	1	19	23	19	11	12	14	264
		Total	2,135,667	1,316,721	2,954,205	1,506,018	2,552,135	2,196,421	274,442	916,548	2,079,972	2,423,947	2,720,128	1,849,157	1,696,727	24,622,088

# Target Sample Size (95% confidence level)

Target Sample Size (Class 3 and 4 only) - September 2020																
EUC Band	AQ Range (mWh)	Customer Type	LDZ													Total
			SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	
01	up to 73.2	Domestic (Non PPM)	384	384	384	384	384	384	384	384	384	384	384	384	384	4,992
		I&C (Non PPM)	381	379	382	380	382	381	365	377	381	382	382	381	381	4,932
		Domestic (PPM)	384	383	384	383	383	383	379	383	383	384	384	383	383	4,977
		I&C (PPM)	150	111	216	154	154	178	32	126	160	231	222	113	115	1,962
02	73.2 to 293	Domestic (Non PPM)	348	315	354	337	347	344	158	264	348	366	364	341	331	4,217
		I&C (Non PPM)	373	366	376	370	375	374	316	356	372	377	375	372	370	4,772
		Domestic (PPM)	104	64	133	87	107	150	17	40	83	156	129	48	60	1,178
		I&C (PPM)	6	4	5	2	4	6	1	1	7	13	10	3	3	64
03	293 to 732	All	354	331	357	335	351	351	212	294	344	361	353	345	335	4,323
04	732 to 2,196	All	321	268	323	281	313	314	144	233	303	338	312	299	281	3,730
05	2,196 to 5,860	All	206	141	217	163	201	206	43	99	175	251	183	158	139	2,182
06	5,860 to 14,650	All	112	63	118	82	120	93	26	39	83	127	74	79	77	1,093
07	14,650 to 29,300	All	43	23	64	33	64	44	12	20	40	39	28	30	40	480
08	29,300 to 58,600	All	15	14	35	14	47	27	1	18	22	18	11	12	14	248
		Total	3,181	2,846	3,348	3,005	3,231	3,235	2,090	2,634	3,085	3,426	3,210	2,948	2,913	39,151

# Active – Target (at September 2020)

Active Target (Xoserve, Networks & Shippers) (Class 3 and 4 only) - September 2020																
EUC Band	AQ Range (mWh)	Customer Type	LDZ													Total
			SC	NO	NW	NE	EM	WM	WN	WS	EA	NT	SE	SO	SW	
01	up to 73.2	Domestic (Non PPM)	-6	21	5	-11	-35	77	238	36	-40	12	62	5	-29	335
		I&C (Non PPM)	-762	-159	-422	-141	-397	-358	264	115	-561	-580	-446	-194	-184	-3,827
		Domestic (PPM)	384	374	378	383	380	383	373	382	380	384	380	383	380	4,942
		I&C (PPM)	150	111	216	154	154	178	32	126	160	231	222	113	114	1,961
02	73.2 to 293	Domestic (Non PPM)	335	304	341	321	330	332	158	260	338	352	354	331	317	4,073
		I&C (Non PPM)	-1,025	4	-383	-71	-510	-413	235	142	-596	-413	-407	-255	-237	-3,929
		Domestic (PPM)	104	64	133	87	107	150	17	40	83	156	129	48	60	1,178
		I&C (PPM)	6	4	5	2	4	4	1	1	6	13	10	3	3	61
03	293 to 732	All	-753	94	-41	49	-27	14	161	185	-43	-89	-67	18	30	-469
04	732 to 2,196	All	-605	-28	-91	-139	-31	-47	94	91	-92	-152	-213	-90	11	-1,292
05	2,196 to 5,860	All	-133	11	29	-23	39	-2	20	49	41	-2	-20	20	40	69
06	5,860 to 14,650	All	-30	12	41	-6	32	37	15	13	35	61	15	20	30	275
07	14,650 to 29,300	All	-4	-1	29	-12	14	5	9	11	22	26	-2	15	17	129
08	29,300 to 58,600	All	-13	0	3	-14	13	-2	-1	10	2	6	1	2	0	7
		Total	-2,352	811	243	579	72	358	1,616	1,461	-265	4	17	419	552	3,514

- Table compares 'Active' sites from Xoserve, Transporter and Shipper Samples and is pre validation (usually around 40% falls out following validation)



# Conclusions

- Additional sample data will be required to improve the analysis of the demand model's performance during Gas Year 2019/20
- We are yet to receive any Domestic Pre-Payment data. For DESC to validate whether the new Gas Demand Profiles for c.2m Supply Meter Points is an improvement on the standard Domestic Profiles we will need data
- Figures do not include counts from Shipper data that is sent in on a frequency greater than monthly
- Third Party data boosted the sample by approximately 12,700 sites in Spring'20
- Section H 1.6 in UNC specifies that all qualifying Shippers must submit their sample data to the CDSP by Thursday 8<sup>th</sup> October.

# Guidance

- Third Party Data
  - We need your data!
  - Full requirements document available on Joint Office website ([here](#))
  - Please contact [xoserve.demand.estimation@xoserve.com](mailto:xoserve.demand.estimation@xoserve.com) if you require support with any aspect of MOD0654
- Note: We are going to be proposing changes to the document to update the decimal format of "uncorrected and corrected volume" from 0 to 2dcps - this is to provide a greater granularity of consumption which will help build more sensitive demand models. In the meantime please provide this if you can

# Next Steps

- NDM Sample Data
  - Collating and validating sample data covering Gas Year 2019/20
- Algorithm Performance
  - Strand 3 – NDM Daily Demand Analysis (using validated sample data collected for Gas Year 2019/20)