



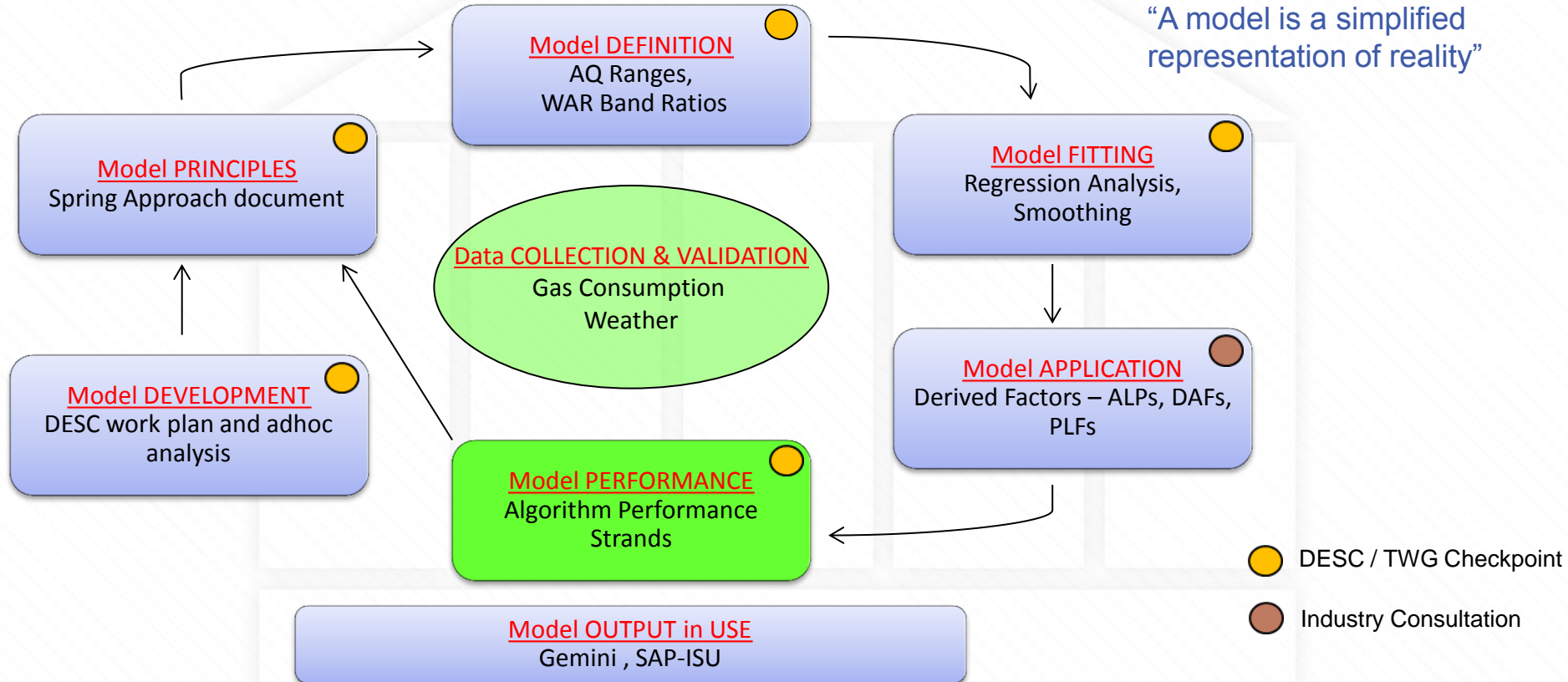
NDM Sample Update

DESC: 7th October 2019

Overview: EUC & Demand Model Lifecycle

The purpose of the **EUC Demand Model** is to represent the behaviour and reactions of the **EUC Population**

“A model is a simplified representation of reality”



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 the Autumn'19 Algorithm Performance analysis, due to be presented at the December'19 DESC meeting

Background

- In order to develop accurate allocation 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*'
- Insufficient numbers or inaccurate data will result in the creation of less-reflective NDM allocation profiles
- NDM Sample data should ideally be representative of the population breakdown
- This data also provides us with the ability to perform analysis of the demand models (i.e. Algorithm Performance)

Background

- 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'19 DESC meeting (action DESC0201) Xoserve presented analysis to determine statistically what the optimum sample size should be by EUC and LDZ
- The approach included individual targets to support the introduction of new EUC definitions for Bands 01 and 02, bought about by MOD0644
- As a result, the overall target numbers for NDM sample sites has increased to c37,000
- 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 2019)

Population Size – September 2019

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	1,796,313	1,139,581	2,508,920	1,306,060	2,230,607	1,887,359	228,431	775,955	1,830,125	2,041,518	2,346,977	1,651,166	1,491,548	21,234,560
		I&C	40,368	26,723	66,986	37,994	55,450	47,516	7,106	19,948	42,780	63,535	58,075	40,378	39,082	545,941
		PrePayment	246,158	123,447	318,207	127,413	210,900	212,816	32,826	104,425	156,175	272,799	261,201	106,586	121,329	2,294,282
02	73.2 to 293	I&C	13,930	8,264	19,292	10,867	16,103	14,966	2,018	5,186	13,158	20,460	17,974	12,975	11,108	166,301
		Domestic	3,184	1,496	3,908	2,602	3,016	2,667	230	724	3,217	7,108	5,903	2,555	1,939	38,549
		PrePayment	144	82	142	85	115	182	15	50	87	222	166	40	54	1,384
03	293 to 732	All	4,664	2,511	5,294	2,828	4,326	4,211	497	1,330	3,630	6,236	4,525	3,540	2,737	46,329
04	732 to 2,196	All	2,093	916	2,098	1,102	1,720	1,790	243	583	1,501	2,927	1,729	1,447	1,113	19,262
05	2,196 to 5,860	All	535	246	541	300	461	469	60	156	351	764	379	291	238	4,791
06	5,860 to 14,650	All	180	96	187	127	199	159	28	51	128	215	97	101	115	1,683
07	14,650 to 29,300	All	75	47	105	53	103	61	15	26	46	54	37	37	46	705
08	29,300 to 58,600	All	47	23	64	28	65	47	6	21	31	30	22	22	25	431
Total			2,107,691	1,303,432	2,925,744	1,489,459	2,523,065	2,172,243	271,475	908,455	2,051,229	2,415,868	2,697,085	1,819,138	1,669,334	24,354,218

PrePayment classification based on the following SAP-ISU 'Meter Mechanism Codes':

- **CM** (Coin Meter); **ET** (Electronic Token); **MT** (Mechanical Token); **PP** (PrePayment); **TH** (Thrift)

Target Sample Size (95% confidence level)

Target Sample Size - September 2019																
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	384	384	384	384	384	384	384	384	384	384	384	384	384	4,992
		I&C	381	379	382	380	382	381	364	377	381	382	382	381	380	4,931
		PrePayment	384	383	384	383	383	383	380	383	383	383	384	384	383	383
02	73.2 to 293	I&C	374	367	377	371	375	375	323	358	373	377	376	373	371	4,790
		Domestic	343	306	350	335	341	336	144	251	343	364	361	334	321	4,127
		PrePayment	105	68	104	70	89	123	14	44	71	141	116	36	47	1,027
03	293 to 732	All	355	333	358	338	353	352	217	298	347	362	354	347	337	4,351
04	732 to 2,196	All	325	271	325	285	314	316	149	232	306	340	314	304	286	3,767
05	2,196 to 5,860	All	224	150	225	168	210	211	52	111	183	256	191	166	147	2,294
06	5,860 to 14,650	All	123	77	126	95	131	112	26	45	96	138	77	80	89	1,215
07	14,650 to 29,300	All	63	42	82	47	81	53	14	24	41	47	34	34	41	603
08	29,300 to 58,600	All	42	22	55	26	56	42	6	20	29	28	21	21	23	391
		Total	3,102	2,781	3,151	2,882	3,099	3,068	2,073	2,527	2,937	3,203	2,993	2,843	2,810	37,467

Active – Target (at September 2019)

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	-244	-254	-233	-231	-235	-231	-383	-245	-210	-233	-221	-222	-221	-3,163
		I&C	-321	-313	-314	-328	-312	-326	-362	-324	-305	-253	-287	-293	-329	-4,067
		PrePayment	-384	-383	-384	-383	-384	-384	-380	-383	-383	-383	-384	-384	-383	-383
02	73.2 to 293	I&C	-246	-260	-249	-273	-213	-247	-313	-275	-194	-214	-190	-193	-230	-3,097
		Domestic	-323	-282	-332	-318	-322	-318	-120	-229	-332	-351	-351	-320	-300	-3,898
		PrePayment	-47	-26	-56	-41	-39	-53	-3	-26	-31	-69	-40	-13	-17	-461
03	293 to 732	All	-156	-217	-211	-207	-207	-244	-190	-243	-188	-213	-118	-173	-219	-2,586
04	732 to 2,196	All	74	-26	-89	41	-107	-112	-117	-144	-104	-106	121	-5	-159	-733
05	2,196 to 5,860	All	29	-46	-90	-9	-89	-81	-33	-61	-90	-103	-20	-42	-69	-704
06	5,860 to 14,650	All	-21	-27	-68	-22	-63	-56	-17	-18	-52	-90	-27	-32	-41	-534
07	14,650 to 29,300	All	-20	-11	-39	-7	-35	-22	-12	-15	-23	-29	-5	-13	-23	-254
08	29,300 to 58,600	All	-7	-7	-17	-4	-17	-11	-1	-9	-10	-8	-8	-5	-2	-106
		Total	-1,666	-1,852	-2,082	-1,782	-2,023	-2,085	-1,931	-1,972	-1,922	-2,053	-1,530	-1,694	-1,993	-24,585

Table compares 'Active' sites from Xoserve and Transporter Samples only and is pre validation

Active – Target (at September 2019)

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	-146	-145	-119	-127	-116	-124	-316	-143	-105	-121	-112	-133	-112	-1,819
		I&C	734	185	461	95	381	351	-265	-108	414	610	447	196	203	3,704
		PrePayment	-384	-383	-384	-383	-384	-384	-380	-383	-383	-384	-384	-384	-383	-383
02	73.2 to 293	I&C	1,007	111	448	95	651	494	-253	-91	708	523	433	344	309	4,779
		Domestic	-320	-279	-328	-314	-311	-310	-120	-229	-325	-341	-349	-319	-298	-3,843
		PrePayment	-47	-26	-56	-41	-39	-53	-3	-26	-31	-69	-40	-13	-17	-461
03	293 to 732	All	979	14	246	71	260	156	-132	-122	250	251	324	163	128	2,588
04	732 to 2,196	All	900	276	302	454	225	255	-65	-16	269	352	635	373	95	4,055
05	2,196 to 5,860	All	348	88	113	183	83	124	-12	4	49	140	183	111	30	1,444
06	5,860 to 14,650	All	101	33	5	64	31	17	-8	7	-6	-18	28	24	11	289
07	14,650 to 29,300	All	34	18	3	38	10	10	-8	-5	-2	-14	25	7	0	116
08	29,300 to 58,600	All	25	6	18	19	17	26	2	-1	4	3	5	5	9	138
Total			3,231	-102	709	154	808	562	-1,560	-1,113	842	932	1,195	375	-25	6,008

- Table compares 'Active' sites from Xoserve, Transporter and Shipper Samples and is pre validation (usually around 30 - 40% falls out following validation)
- We are yet to receive any prepayment data

Conclusions

- Current sample numbers for large sites meets the target size for most LDZs
- Additional sample data will be required to improve the analysis of the demand model's performance during Gas Year 2018/19
 - Domestic
 - PrePayment
 - LDZs WN & WS across all EUC bands
- Third Party data boosted the sample by approximately 10,000 sites in Spring'19
 - c1,000 PrePayment Customers; c9,000 I&C Customers
- Section H 1.6 in UNC specifies that all qualifying Shippers must submit their sample data to the CDSP by Monday 7th October.

- Third Party Data
 - We need your data!
 - Full requirements document available on Joint Office website (www.gasgovernance.co.uk/desc)
 - Please contact xoserve.demand.estimation@xoserve.com if you require support with any aspect of MOD0654

Next Steps

- NDM Sample Data
 - Collating and validating sample data covering gas year 2018/19
- Algorithm Performance
 - Strand 1 – Weather Analysis
 - Strand 2 – Unidentified Gas Analysis
 - Strand 3 – NDM Daily Demand Analysis (using validated sample data collected for gas year 2018/19)