

# **LDZ Shrinkage Forum**

22<sup>nd</sup> June 2006

Wales & West Utilities

Wales North, Wales South & South West LDZs

# 2006/07 Gas Year Initial LDZ Shrinkage Factor Proposals

- The Overall Methodology
- The Outcome
  - LP/MP Leakage
  - Own Use Gas
  - Theft of Gas
  - Overall Shrinkage
  - Consumption
  - Shrinkage Factors

# The Methodology

- Proposal Required 1<sup>st</sup> July 2006
- Uses “Transco” methodology

# LP Leakage

# LP Leakage (Mains Length in km)

**2005**

LDZ	PE	CI	DI	ST	TOTAL
SW	7,961	4,500	1,271	1,626	15,358
WN	1,686	615	237	156	2,694
WS	4,504	2,670	744	340	8,257
<b>TOTAL</b>	<b>14,152</b>	<b>7,785</b>	<b>2,252</b>	<b>2,121</b>	<b>26,310</b>

**2004**

LDZ	PE	CI	DI	ST	TOTAL
SW	7,815	4,619	1,274	1,634	15,342
WN	1,642	629	238	155	2,664
WS	4,405	2,724	747	335	8,212
<b>TOTAL</b>	<b>13,862</b>	<b>7,972</b>	<b>2,259</b>	<b>2,123</b>	<b>26,217</b>

**DIFFERENCE**

LDZ	PE	CI	DI	ST	TOTAL
SW	146	-119	-3	-8	16
WN	44	-14	-1	1	30
WS	99	-54	-3	5	47
<b>TOTAL</b>	<b>289</b>	<b>-187</b>	<b>-7</b>	<b>-2</b>	<b>93</b>

# LP Leakage (Average System Pressure)

LDZ	Average System Pressure (mbarg)		
	2004	2005	Difference
WN	42.11	42.72	0.61
WS	31.20	31.75	0.55
SW	36.29	36.36	0.07

LDZ	ASP All PE excluded (mbarg)		
	2004	2005	Difference
WN	42.93	42.29	0.36
WS	30.87	31.07	0.20
SW	35.84	35.77	-0.07

# LP Leakage (Leakage Rates)

Leakage rates in Cu.m/Annum/Km at 30mb Standard System Pressure

MATERIAL	<=3"	4"-5"	6"-7"	8"-11"	>=12"
PE	63.5	63.5	63.5	63.5	63.5
Steel	3416.3	3854.3	3854.3	3854.3	3854.3
Ductile	719.2	719.2	576.4	576.4	576.4
Pit Cast	2407.2	1639.8	2525.5	2204.0	7463.4
Spun Cast	1075.7	1075.7	1075.7	1075.7	1075.7

# LP Leakage (MEG)

LDZ	MEG Saturation			MEG Benefit (GWh)		
	2004	2005	Difference	2004	2005	Difference
WN	0%	0%	0%	0	0	0
WS	0%	0%	0%	0	0	0
SW	8.02%	8.11%	0.09%	2.8	1.9	-0.9



# LP Leakage (Energy Comparison)

LDZ	LP Leakage (GWh)		
	2004	2005	Difference
WN	44	43	-1
WS	117	115	-2
SW	286	287	1
Total	447	445	-2

# MP Leakage

# MP Leakage (Mains Length)

**2005**

LDZ	Metallic	Plastic	TOTAL
SW	952	1,931	2,883
WN	89	140	229
WS	318	564	882
<b>TOTAL</b>	<b>1,359</b>	<b>2,635</b>	<b>3,994</b>

**2004**

LDZ	Metallic	Plastic	TOTAL
SW	957	1,913	2,870
WN	105	175	280
WS	314	524	838
<b>TOTAL</b>	<b>1,376</b>	<b>2,612</b>	<b>3,988</b>

**DIFFERENCE**

LDZ	Metallic	Plastic	TOTAL
SW	-5	18	13
WN	-16	-35	-51
WS	4	40	44
<b>TOTAL</b>	<b>-17</b>	<b>23</b>	<b>6</b>

# MP Leakage (Energy Comparison)

LDZ	MP Leakage (GWh)		
	2004	2005	Difference
WN	3	3.7	0.7
WS	12	11.3	-0.7
SW	24	24.6	0.6
Total	39	39.6	0.6

# AGI Leakage

# AGI Leakage (Equipment)

## Equipment Population 2005

LDZ	Governors	Holder	Service Governors	Local Transmission	NTS Offtake	Total
WN	424	0	1,767	120	1	2,878
WS	696	3	2,900	102	3	3,137
SW	2,357	17	10,151	79	11	12,615
<b>Total</b>	<b>3,477</b>	<b>20</b>	<b>14,817</b>	<b>301</b>	<b>15</b>	<b>18,630</b>

## Equipment Population 2004

LDZ	Governors	Holder	Service Governors	Local Transmission	NTS Offtake	Total
WN	352	1	1,117	72	1	1,542
WS	1,057	2	3,350	215	3	4,627
SW	2,312	17	10,151	69	11	12,559
<b>Total</b>	<b>3,721</b>	<b>20</b>	<b>14,618</b>	<b>355</b>	<b>15</b>	<b>18,729</b>

In 2004 equipment for Wales was split via throughput ratio. In 2005 actual numbers extracted from MIMS (excluding TMS sites.)

# AGI Leakage(Rates)

Leakage Rate (scm/annum/site)				
District Governor	Holder	Service Governor	Local Transmission	NTS Offtake
406.9	7692	7.64	6485	31075

The same factors used by Transco

# AGI Leakage(Energy)

LDZ	AGI Leakage (GWh)		
	2004	2005	Difference
WN	11.42	22.18	10.76
WS	40.47	21.81	-18.66
SW	29.18	31.98	2.8
Total	81.07	75.97	-5.1



# Identified Gas Release Events (Other Losses)

LDZ	Identified Gas Release Events (GWh)		
	2004	2005	Difference
WN	0.18	0.15	-0.03
WS	0.68	0.48	-0.2
SW	0.76	1.18	0.42
<b>Total</b>	1.62	1.81	0.19

# Own Use Gas (Pre-heater Usage)

Utilises Transco calculation which applies 0.035% to each LDZ

LDZ	Preheater Usage	
	% Consumption	GWh
WN	0.035%	3.2
WS	0.035%	11.6
SW	0.035%	13.3
<b>Total</b>	0.035%	28.1

# Theft of Gas

Utilises Transco calculation which applies 0.02% to each LDZ

LDZ	Theft of Gas	
	% Consumption	GWh
WN	0.02%	1.8
WS	0.02%	6.7
SW	0.02%	7.6
<b>Total</b>	0.02%	16.1

# Shrinkage Energy Overall (GWh)

2005

LDZ	Leakage				Own Use	Theft	Total
	Low Pressure	Medium Pressure	AGI	Identified Gas Release			
WN	43	3.7	22.18	0.15	3.2	1.8	74.03
WS	115	11.3	21.81	0.48	11.6	6.7	166.89
SW	287	24.6	31.98	1.18	13.3	7.6	365.66
Total	445	39.6	75.97	1.81	28.1	16.1	606.58

2004

LDZ	Leakage				Own Use	Theft	Total
	Low Pressure	Medium Pressure	AGI	Identified Gas Release			
WN	44	3	11.42	0.18	3.3	1.9	63.8
WS	117	12	40.47	0.68	11.8	6.7	188.65
SW	286	24	29.18	0.76	13.7	7.9	361.54
Total	447	39	81.07	1.62	28.8	16.5	613.99

# Shrinkage Energy Overall (GWh) Comparison

## DIFFERENCE

LDZ	Leakage				Own Use	Theft	Total
	Low Pressure	Medium Pressure	AGI	Identified Gas Release			
WN	-1	0.7	10.76	-0.03	-0.1	-0.1	10.23
WS	-2	-0.7	-18.66	-0.2	-0.2	0	-21.76
SW	1	0.6	2.8	0.42	-0.4	-0.3	4.12
<b>Total</b>	-2	0.6	-5.1	0.19	-0.7	-0.4	-7.41

# Annual Consumption

LDZ	Throughput (TWh)			
	2004	2005	Difference	
WN	9204	9089	-115	-1.27%
WS	33801	33236	-565	-1.7%
SW	38815	38079	-736	-1.93%
<b>Total</b>	<b>81820</b>	<b>80404</b>	<b>-1416</b>	<b>-1.76%</b>

# Shrinkage Factors

LDZ	Shrinkage Factors			
	Leakage	Own Use	Theft	2006/07
WN	0.76%	0.035%	0.02%	<b>0.815%</b>
WS	0.446%	0.035%	0.02%	<b>0.501%</b>
SW	0.905%	0.035%	0.02%	<b>0.96%</b>
<b>Total</b>	0.699%	0.035%	0.02%	<b>0.754%</b>

# Shrinkage Factors (comparison)

LDZ	Overall Shrinkage Factors		
	2006/07	2005/06	Difference
WN	0.815%	0.68%	0.135%
WS	0.501%	0.56%	-0.059%
SW	0.96%	0.96%	0.04%
Total	0.754%	0.74%	0.014%



# Initiatives to reduce Shrinkage

- Installation of profile control on 5 low pressure networks in Wales North.
- Working with Advantica to review Own Use Gas (we are currently undertaking a process to obtain meter reading data)
- MEG benefit review.

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## Any Questions ?