Second error: Customer Side Leakage data

Attached are various extracts from the First Fix reports etc, for reference

Leakage from within homes/from the supply pipes under gardens is referred to in the analysis for the Shannon project as "customer side leakage" ("CSL"). In relation to CSL, the analysis for the Shannon project factored in:

(1) an assumption of the **"base level" of customer side leakage** – i.e. the volume of water that it assumed was being lost through CSL in 2011,
(2) **leakage reduction targets** – how much water it anticipated would be saved though repairing CSL,
(3) assumptions of the **costs of leakage recovery** i.e. how much it would cost to recover 1Mld (one million litres per day) of water through reducing CSL.

The results of the recent "*First Fix Free*" or "*First Fix*" scheme have shown that the assumptions that were made in the analysis for the Shannon project in relation to *all three* of the above were wrong.

The base year level of CSL cannot have been 40.8Mld – it must have been at least 100Mld

The analysis for the Shannon Project assumed that the volume of water being lost through CSL in 2011 (the base year of the analysis) was only **40.8Mld** (see attached) but the First Fix results show that **this is *impossible***.

The First Fix scheme was introduced in late 2015 to tackle Dublin's high levels of CSL. The scheme uses water meters to identify very large leaks: a "*constant flow alarm*" is triggered by a constant flow of *at least 6 litres of water per hour over a 48-hour period* which flags that there is a major leak at that property. Irish Water writes to the property owner offering a free leak investigation which can result in an offer of a free leak repair.

The First Fix results provide the most up to date information about CSL. They show that the First Fix scheme has been far more successful at recovering water, for far less money, than was anticipated. It has cost well under **half the budget** to recover almost **three times as much water** as was expected (see attached for details). This is notwithstanding the fact that the response to the First Fix scheme has been lower than was expected: as at the Q3 2016 results, the First Fix scheme had identified **34,510 major leaks** in the Dublin water supply area. However, due partly to low customer interaction with the scheme, **less than 40% of those leaks had actually been repaired** (in fact, only **8%** of them had been repaired by Irish Water – the remaining **31%** had been repaired by customers).

Despite the fact that only 40% of the leaks have been repaired, the volume of water that has *already* been recovered in the Dublin water supply area through First Fix is **over 38Mld**. It is therefore *impossible* that the "base level" of CSL was only **40.8Mld**, as was assumed in the analysis for the Shannon project.

Provided that the First Fix scheme continues (whether on its existing terms, under which the customer receives no incentive to repair leaks falling within the home, or whether it shifts to a "subsidy" model as is used in the UK and as contemplated in Irish Water's 01/04/15 submission to the CER) then, taking into account the trajectory of the issuance of "constant flow alarm" letters and the trajectory of the volume of water recovered per leak repaired, the scheme has the potential to recover upwards of 65Mld in the Dublin water supply area. Once (i) water being lost through the hundreds of thousands of *smaller* leaks (i.e. leaks that are not large enough to trigger a "constant flow alarm") is also factored in, together with (ii) water being lost through leaks in homes *without* an operational water meter, and (iii) taking account of Irish Water's assumption that the base-year volume of CSL was *more than double* the volume of water that would be recovered through leakage repairs over 35-years, it is almost certain that the base year level of CSL was at least **100Mld**.

This has significant implications: it means that in meeting its own *current* 2050 CSL target of 29.6Mld, Irish Water will recover an *additional 59.2Mld of water* over and above that assumed in its analysis. This has a significant impact on the bottom line and the question of whether there is a "need" for the Shannon project.

The First Fix results also show that:

(1) The leakage targets contained in the analysis for the Shannon project were unambitious

The analysis projected that CSL would be reduced by a *total* of **11Mld over 39 years**. The First Fix scheme *alone* recovered at least **38Mld in its first 18 months** of operation. **The 39-year leakage target set out in the analysis for the Shannon project was achieved *more than three times over* in just 18 months.**

(2) <u>The costs assumed for leakage recovery in the analysis for the Shannon project were too high</u>

The analysis for the Shannon project assumed that recovering 1Mld of water through repairing customer side leaks would cost *"in the order of **EUR0.75million**"* per 1Mld. On the contrary: recovering 1Mld of water through the First Fix scheme has cost an average of only **EUR212,000 – this is 1/3 of the amount that the analysis for the Shannon project assumed.**

It has been suggested that the costs of leakage recovery through First Fix are not an appropriate reference point because large leaks have been prioritised. In response: the prioritisation will have had only a limited impact given that, at Q3 2016, *Irish Water itself had only repaired 8% of the leaks that the scheme had identified* (most had been repaired by customers). The scheme has *already* recovered *far more* water than was thought possible – and that *entire* recovery has been effected at this fractional cost.

It can also be observed that the cost of recovering a unit of water through fixing leaks under the First Fix scheme has actually *decreased* each quarter: as at the **Q1 2016** report it had cost an average of **EUR252,000** to recover 1Mld; this cost *decreased every quarter* and by **Q1 2017** it had cost an average of just **EUR212,000** to recover 1Mld.

(3) <u>The volumes of water recoverable through fixing leaks are the equivalent to large "new" water "sources"</u>

The table below shows the volumes of water that were recovered for the Greater Dublin Water Supply Area (*"GDWSA"*) *in each quarter* (i.e. in *every three-month window*) of the operation of First Fix.

Period	**Mld recovered in GDWSA in period**[1]	**Mld recovered in GDWSA (cumulative)**
Q2 2015 (using cumulative data as at Q1 2016 report)	5.5	5.5
Q3 2015 (using Q2 2016 report data)	6.9	12.4
Q4 2015 (using Q3 2016 report data)	6.7	19.1
Q1 2016 (using Q4 2016 report data)	5.4	24.5
Q2 2016 (using Q1 2017 report data)	5.2	29.7
Q3 2016 (using Q1 2017 report data)	4.1	33.8
Q4 2016 (using Q1 2017 report data) *Data incomplete – the volume of recovered water will increase once customer repairs are fully accounted for.*	*Data incomplete*	36.6 (will increase)
Q1 2017 (using Q1 2017 report data) *Data incomplete – as above*	*Data incomplete*	*37.6(will increase)*

- *Note: the Q1 2017 report was published in October 2017. The scheme was put on a "hiatus" while the First Fix scheme becomes part of the wider "Water Network Programme". No "constant flow alarm" notifications had been issued for a period, including Q1 2017.*

The volumes of water that the First Fix scheme has recovered are very significant. To put them into context, the Bog of the Ring wellfield produces **2.5-3Mld** of water every day. In *each quarter* since the First Fix scheme began, the amount of water that has been recovered through repairing CSL has been approximately **DOUBLE the production of *the entire Bog of the Ring wellfield*. The water savings that the First Fix scheme is generating are equivalent to adding two brand new, additional Bog of the Ring wellfields to Dublin's water supply every quarter.**

[1] *As per Irish Water's published guidance, these figures assume that 80% of water recovered in the "East and Midlands" region fall within the Dublin water supply area – see attached.*

The analysis assumed that the 2011 level of CSL was only 40.8Mld - the First fix results show that this was WRONG and that the correct level must almost certainly have been AT LEAST 100 Mld

JACOBS TOBIN

The analysis set a target to reduce CSL by 11.2 Mld in 39 years ! the First Fix scheme has already saved 38 Mld in just 18 months

UISCE EIREANN WATER

Scenario 2 - 'Most Likely Growth'										
Component		Element	Units	2011	2021	2026	2031	2041	2046	2050
Accounted for Water (AFW)	Domestic Demand	Population	Nr.	1,516,133	1,642,391	1,742,226	1,842,060	2,003,156	2,081,225	2,154,252
		PCC	l/hd/d	125.50	120.40	120.60	120.70	120.90	121.00	121.00
		Domestic Demand	Ml/d	190.3	197.7	210.1	222.3	242.2	251.8	260.7
	Household (Customer Side) Losses	Occupancy Rate	Nr.	2.64	2.48	2.40	2.32	2.16	2.08	2.00
		Nr of Households	Nr.	618,460	728,480	798,520	873,391	1,020,126	1,100,648	1,184,839
		CSL rate	l/prop/d	66	40	35	25	25	25	25
		CSL	Ml/d	40.8	29.1	27.9	21.8	25.5	27.5	29.6
	Non-Domestic Demand	Non-Domestic Demand	Ml/d	126.5	138.3	146.2	154.8	168.7	175.3	181.1
		Strategic Allowance for Major Water Using Industry	Ml/d	0	34	50	75	100	100	100
	Operational Use	Operation Use Factor	%	1%	1%	1%	1%	1%	1%	1%
		Operational Use Allowance	Ml/d	3.6	3.7	3.8	4.0	4.4	4.5	4.7
	Accounted for Water (AFW)		Ml/d	361.2	402.8	438.1	478.0	540.7	559.2	576.1
Unaccounted for Water (UFW) / Distribution Losses		UFW	Ml/d	178.1	164.8	146.0	140.8	130.0	130.0	130.0
		as % of Average Demand	%	33.0%	29.0%	25.0%	22.8%	19.4%	18.9%	18.4%
		cubic metres per km per day	m^3/km/d	19.42	17.97	15.92	15.35	14.18	14.18	14.18
Average Demand			Ml/d	539.3	567.6	584.1	618.8	670.7	689.2	706.1
Peak Demand		Peaking Factor	%	20%	20%	20%	20%	20%	20%	20%
		Peaking Allowance	Ml/d	72.2	73.8	77.6	80.6	88.1	91.8	95.2
Average Day - Peak Week Demand (ADPW)			Ml/d	611.5	641.4	661.8	699.4	758.9	781.0	801.3
Allowance for Risk and Uncertainty		Headroom & Outage Factor	%	17.5%	17.5%	17.5%	15.0%	15.0%	15.0%	15.0%
		Headroom & Outage Allowance	Ml/d	63.2	64.5	67.9	60.4	66.1	68.9	71.4
Production Requirement			Ml/d	**674.7**	**705.9**	**729.7**	**759.8**	**825.0**	**849.9**	**872.7**

Table 10-C Total Demand Projections for the Water Supply Area (2011 – 2050) – Planning Scenario 2

Extract from the 01/04/15 Submission to the CER in relation to the First Fix Scheme

The table below provides a breakdown of the forecasted expenditure on the First Fix Leak Repair scheme in the period to the end of 2016. As outlined above, these figures are based on a limited urban sample and will be subject to ongoing review by IW. These indicative figures are cumulative and broken down on a quarterly basis:

By Q3 2016, the scheme was expected to have cost €46,540,310. In fact it cost just €18,675,047.

Table 1: First Fix Leak Repair scheme: Estimated total expenditure

	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Leak investigations	€ 2,227,500	€ 4,792,500	€ 7,155,000	€ 9,666,000	€ 11,934,000	€ 13,095,000	€ 13,860,000
Leak repairs	€ 3,156,090	€ 7,319,010	€ 11,875,170	€ 16,634,730	€ 20,906,130	€ 24,546,990	€ 26,255,550
Additional costs - scheme inspection & administration, VAT etc.	€ 2,077,675	€ 3,738,410	€ 4,980,448	€ 6,304,668	€ 7,642,585	€ 8,898,320	€ 9,985,812
Cumulative Expenditure	€ 7,461,265	€ 15,849,920	€ 24,010,618	€ 32,605,398	€ 40,482,715	€ 46,540,310	€ 50,101,362

5.2. Estimated First Fix Leak Repair scheme Deliverables

Under the First Fix Leak Repair scheme it is estimated that approximately 77,000 Constant Flow Notification letters will be issued to Customers in the period to the end of 2016. It is expected that this will result in the completion of over 55,000 leak investigations. Whilst it is only possible to estimate the proportion of cases that will be found to have leakage on the External Supply Pipe (which will convert to returned leak repair offers), based on the limited sampling from the Pilot Scheme it is estimated that approximately 23,000 repairs will be completed under the 'repair' phase of the First Fix Leak Repair scheme.

It was expected that the scheme would have identified 74,750 major leaks (across the state) by Q3 2016: in fact, it identified 100,479.

Table 2: First Fix Leak Repair Scheme: Estimated quarterly deliverables (Cumulative)

	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Customer Notifications	16,500	30,000	43,500	57,000	69,250	74,750	77,000
Leak Investigations Completed	8,910	19,170	28,620	38,664	47,736	52,380	55,440
First Fix Repairs Completed	2,793	6,477	10,509	14,721	18,501	21,723	23,235

It was expected that Irish Water would have carried out 21,723 repairs by Q3 2016. In fact, it had only carried out 6,666 across the entire state, yet the scheme had recovered three times as much water as had been anticipated (see following page)

{Extract from the 01/04/15 submission to the CER re: First Fix}

The scheme aimed to recover 37 MId nationally by the end of 2016: in fact, it recovered over 95 MId

5.3. Anticipated Benefits

Based on Meter consumption data, IW estimates average household[12] consumption at 300 litres per day. Based on the current Meter reading data the average consumption at properties with a Constant Flow Alarm is 1,900 litres per day, over six times the normal consumption for a typical household. Allowing for actual customer consumption, it should be possible to achieve water savings of 37,000,000 litres per day on a national basis based on the target number of repairs to be carried out in the period to the end of 2016. This saving equates to the daily water demand of 123,000 households. However, using the proposed prioritised approach to implementing the First Fix Leak Repair scheme, this volume of water savings could be exceeded, assuming good levels of Customer engagement.

The Pilot Scheme indicated that a high number of Customer side leaks originate within or under the Dwelling[13]. Although the repair of leaks within Dwellings is outside the proposed scope of the First Fix Leak Repair scheme, the occurrence of such leaks will be highlighted to Customers through the First Fix Leak Repair scheme process. There is potential for significant additional water savings should Customers (acting on the information provided to them by IW) seeks to address these leaks and arrange repairs.

5.4. Reporting

IW's work and asset management system will be used to record all works issued and completed under the First Fix Leak Repair scheme. IW contractors will report to IW on the number of investigations that result in repairs as well as the reasons for repairs not being carried out. This will ensure that detailed data exists for KPI reporting. This will support reporting on the number of notifications issued, responses received and investigations and repairs completed by region and local authority area as well as the number of repairs that could not be carried out. In addition a detailed breakdown of the overall First Fix Leak Repair scheme expenditure and water savings achieved will be reported on a quarterly basis to the CER.

[12] Based on CSO household occupancy data.

[13] 63% of customer side leaks identified during the Pilot Scheme were found to have originated inside or under the Dwelling.

Note: our analysis of these results adopts Irish Water's guidance that, of the data reported for the "East and Midlands" region, it can be assumed that 80% relates to the Dublin Water Supply Area

We reference the Q3 2016 data because that is the last quarter for which savings from customer repairs have been fully factored in

Table 2: Overall Project Summary (*last four quarters shown*)

1	Number of Continuous Flow Alarms Detected	Total	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
			52,723			51,950			53,837			60,545		
2	Number of Customer Notifications Issued (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	35,728	38,735	39,479	40,908	42,816	43,138	43,143	43,172	43,174	43,174	43,174	43,174
		North and West	13,100	14,847	15,390	16,098	16,927	17,104	17,107	17,117	17,117	17,117	17,117	17,117
		Southern	29,925	34,272	36,073	37,911	39,991	40,237	40,252	40,267	40,268	40,268	40,268	40,268
		Grand Total	78,753	87,854	90,942	94,917	99,734	100,479	100,502	100,556	100,559	100,559	100,559	100,559
		A total of 100,559 constant flow advice letters issued to the end of Q4 2016. No constant flow advice letters were issued in Q1 2017. These customers will be notified in Q3 2017.												
3	Customer Responses requesting a Free Leak Investigation (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	15,076	15,840	16,559	17,004	17,590	18,076	18,292	18,495	18,594	18,630	18,639	18,652
		North and West	4,856	5,241	5,705	5,987	6,244	6,433	6,493	6,560	6,598	6,603	6,603	6,604
		Southern	11,781	12,553	13,500	14,157	14,822	15,271	15,432	15,587	15,673	15,689	15,692	15,693
		Grand Total	31,713	33,634	35,764	37,148	38,656	39,780	40,217	40,642	40,865	40,922	40,934	40,949
		40,949 customers contacted Irish Water to request a free leak investigation. A total of 42,772 leak investigations have been raised to the end of Q1 2017 (second leak investigation where a customer installs an ISV after advice from first leak investigation survey).												
4	Leak Investigations Completed (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	13,778	14,989	15,957	16,450	17,030	17,360	17,799	18,335	18,580	18,736	18,795	18,808
		North and West	4,638	5,092	5,565	5,962	6,352	6,551	6,669	6,781	6,854	6,885	6,938	6,939
		Southern	11,063	12,060	13,091	14,116	14,985	15,600	16,000	16,286	16,444	16,482	16,602	16,603
		Grand Total	29,479	32,141	34,613	36,528	38,367	39,511	40,468	41,402	41,878	42,103	42,335	42,350
		42,350 leak investigations were carried out to the end of Q1 2017.												
4a	Leak Repairs Created (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	3,523	3,733	3,913	3,985	4,098	4,157	4,237	4,345	4,408	4,458	4,477	4,489
		North and West	871	937	1,016	1,086	1,149	1,188	1,201	1,230	1,251	1,258	1,262	1,262
		Southern	2,286	2,465	2,657	2,867	3,050	3,157	3,218	3,275	3,306	3,319	3,326	3,329
		Grand Total	6,680	7,135	7,586	7,938	8,297	8,502	8,656	8,850	8,965	9,035	9,065	9,080
		Of the 42,350 completed leak investigations carried out at the end of Q1 2017, 9,080 were found to be on the external supply pipe.												
5	Leak Repairs Completed (Cumulative) By Irish Water	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	2,633	2,906	3,120	3,278	3,394	3,518	3,616	3,709	3,770	3,938	3,961	3,972
		North and West	505	588	695	734	765	810	864	911	940	1,010	1,017	1,017
		Southern	1,619	1,752	1,921	2,081	2,165	2,338	2,539	2,640	2,734	2,871	2,872	2,875
		Grand Total	4,757	5,246	5,736	6,093	6,324	6,666	7,019	7,260	7,444	7,819	7,850	7,864
		In respect of the 9,080 qualifying leaks, 7,864 free leak repairs were carried out. For the remaining 1,216 leaks, 764 no longer qualify for repair (e.g repaired or found to be non-qualifying after further detailed investigation)												

43,138 x 0.8 = 34,510 "major" leaks had been identified in the Water Supply Area by Q3 2016

Of the 34,510 major leaks identified, Irish Water had only repaired 2,814 of them (3,518 x 0.8 = 2,814).

So Irish Water had only repaired 8% of the major leaks that the First Fix scheme had identified

- As at Q3 2016 the total water savings were 34 Mld (16.4 Mld from Irish Water repairs plus 17.3 Mld from customer repairs)
- The latest known savings (which do not yet take account of customer repairs in the prior two quarters) are: 38 Mld (18.8 Mld from Irish Water repairs plus 18.9 Mld from customer repairs)

Table 2: Overall Project Summary (continued)

6	Estimated Water Savings from First Fix Repairs (ML/day - Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	16.65	18.03	18.84	19.68	20.19	20.55	21.38	21.93	22.45	23.24	23.46	23.50
		North and West	3.76	4.15	4.57	4.83	5.11	5.31	5.64	5.89	6.12	6.52	6.56	6.56
		Southern	11.16	11.98	12.64	13.50	13.98	14.96	15.86	16.50	17.13	17.83	17.83	17.90
		Grand Total	31.57	34.16	36.06	38.01	39.27	40.81	42.89	44.31	45.70	47.59	47.85	47.95
		A cumulative estimated total of 47.95 million litres per day has been saved through First Fix Scheme repairs. Savings are calculated from a comparison of meter data collected prior to and after the repair work being undertaken.												
7	Customer Repairs Completed (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	8,846	9,784	10,681	11,555	12,377	13,336	13,864	14,184	14,456	14,586	14,638	14,653
		North and West	2,496	2,882	3,175	3,511	3,904	4,258	4,456	4,580	4,690	4,750	4,765	4,776
		Southern	6,648	7,618	8,371	9,170	10,150	11,105	11,598	11,897	12,139	12,278	12,310	12,321
		Grand Total	17,990	20,284	22,227	24,236	26,431	28,699	29,918	30,661	31,285	31,614	31,713	31,750
		Customer repairs are those repairs arranged by the customer for leaks occuring within their property. The customer repair is counted only when two confirmed meter readings are collected after the repair. 31,750 of these repairs were undertaken by customers following a First Fix notification.												
8	Estimated Savings from Customer Repairs (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	16.29	17.29	18.26	19.38	20.38	21.66	22.26	22.86	23.24	23.38	23.47	23.51
		North and West	4.35	4.74	5.12	5.57	6.17	6.67	7.06	7.17	7.36	7.43	7.43	7.50
		Southern	11.83	12.82	13.70	14.75	15.95	17.04	17.79	18.22	18.74	18.94	18.95	18.98
		Grand Total	32.47	34.85	37.08	39.70	42.50	45.37	47.12	48.25	49.34	49.74	49.85	49.99
		An estimated 49.99 million litres of water per day has been saved from customer repairs. Savings are calculated from a comparison of meter data collected prior to and after the repair work being undertaken. The completion of a repair is indicated when the leak alarm is no longer active, with a supporting drop in water usage. The estimated savings from customer repairs are confirmed once two meter readings are collected after the repair.												
9	Known Properties Without an Operational ISV (Cumulative)	Period	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
		Region	2016-01	2016-02	2016-03	2016-07	2016-08	2016-09	2016-10	2016-11	2016-12	2017-01	2017-02	2017-03
		East and Midlands	2,732	2,857	3,008	3,129	3,217	3,270	3,334	3,426	3,468	3,477	3,484	3,484
		North and West	1,066	1,143	1,270	1,368	1,455	1,487	1,513	1,526	1,544	1,551	1,553	1,553
		Southern	3,232	3,403	3,628	3,849	4,024	4,148	4,219	4,280	4,315	4,319	4,321	4,321
		Grand Total	7,030	7,403	7,906	8,346	8,696	8,905	9,066	9,232	9,327	9,347	9,358	9,358
		A total of 9,358 properties did not have an operational Internal Stop Valve (ISV) and the leak investigation could not be progressed. In many cases the ISV was present but not operational.												
10	Number of Non-Qualifying Properties Served Through a Shared or Backyard Pipe (Cumulative)	Total	Q2 2016			Q3 2016			Q4 2016			Q1 2017		
			560			634			666			672		
		672 properties were identified as not qualifying for the scheme as they are served through a shared or backyard pipe and cannot have their supply isolated.												
11	Counties in Each Region	East and Midlands	Dublin City, County Dublin, Kildare, Laois, Longford, Louth, Meath, Offaly, Westmeath, Wicklow											
		North and West	Cavan, Donegal, Galway, Leitrim, Mayo, Monaghan, Roscommon, Sligo											
		Southern	Carlow, Clare, Cork, Kerry, Kilkenny, Limerick, Tipperary, Waterford, Wexford											

Note: Meter read data is used to confirm that a customer repair has been carried out. Number of customer repairs and estimated savings will be included in the report once two confirmed meter readings are collected after the repair date. As such, the number of customer repairs noted above for each month is expected to increase in the next report as more confirmed readings are collected.

13,336 × 0.8 = 10,668

Of the 34,510 major leaks identified in the Water Supply Area, customers had repaired 10,668 of them (despite there being no incentive within the current terms of the scheme for them to do so).
So customers had repaired 31% of the major leaks that the first fix scheme had identified

5.2.4 Adopting challenging Water Conservation targets for WSP

5.2.4.1 Linked Strategies

Water Conservation is a vital part of the overall strategy to provide safe and secure water supplies in the Eastern & Midlands Region. This has been Irish Water's position from the outset in the Project Need Report (February 2015) and it is reiterated in the appended Interim Midlands and GDA Water Resource Plan.

Public consultation over the past 18 months, has repeatedly emphasised the importance of fixing leaks and of water conservation overall. Demand projections are based on achieving ambitious targets in these areas.

5.2.4.2 Two basic approaches

There are two kinds of conservation strategy being examined in the Water Conservation Strategy Project being implemented by Irish Water, these are work-in-progress at this time and are outlined below. The Sustainable Economic Level of Leakage, or 'SELL', is the level at which the combined cost of water and the cost of leakage management, are minimised. The Water Conservation Strategy being considered by Irish Water includes both a SELL Base Case and a Leakage Targets Policy.

The **SELL Base Case** approach would seek to recover 39 Mld in the six year period to 2021, and then prevent leakage from rising thereafter. It assumes that the Water Supply Project comes on stream at 2025.

The **Leakage Targets Policy,** following the leakage targets set out in the Project Need Report, would recover a greater 63.9 Mld substantively by 2031.

5.2.5 An update on the UFW level

The latest estimate of network UFW in the Dublin Water Supply Area by Irish Water, excluding Customer Side Leakage (CSL) exceeds the published position in the WSP Project Need Report 18 months ago, but the progress made with customer side leakage is better than expected. When the PNR estimate is now adjusted for recent, better *'per connection'* metered data, and in one other area around industrial consumption, a UFW in the network of 204.7 Mld emerges.

In February 2015, UFW in the Dublin Water Supply Area was estimated in the PNR at 178.1 Mld, but CSL was separately estimated at 40.8 Mld, giving a total of 218.9 Mld.

The declared ambition in the PNR of March 2015 was to save 48 Mld off the UFW by 2041, and a further 15.3 Mld was to be cut from CSL, giving a total UFW+CSL saving of 63.4 Mld.

5.2.6 Customer Side Leakage

Irish Water has vigorously tackled the problem of Customer Side Leakage through its *Free First Fix* Scheme (http://www.water.ie/water-supply/first-fix/) and has reported excellent returns on the Scheme to date.

At March 2016, the report to the CER on the Free First Fix Scheme identified 48.5 Mld of savings to date, nationally, 26 Mld of which was achieved in Irish Water's East & Midlands Regions. If we assume that 80% of this was in the Dublin Water Supply Area, then almost 20.7 Mld of growing demand has already been offset by this scheme, and value for money is clear from the report to the CER. This would mean that the CSL recovery projected for 2031 in the PNR has already been achieved.

The future returns from the scheme will diminish since the larger leaks are prioritised and are resolved earliest, but Irish Water will continue to work with customers to help them to conserve water.

our analysis of the First Fix results uses Irish Water's guidance that, of the data reported for the "East and Midlands" region, it can be assumed that 80% relates to the Dublin Water Supply Area