

Self Assessment Matrix on Non-Revenue Water

		Level				
Issues questions		1 Basic	2	3	4	5 High
1	Water Balance, Flow and Pressure Monitoring, Mapping					
1.1	Water Balance	We do not establish a water balance	We have tried to establish a water balance but gave up since we don't know the split in physical and commercial losses	<u>We establish a water balance following our own format</u>	We establish an annual water balance in accordance with the international form	We establish an annual water balance in accordance with the international form and also use 95% confidence limits to indicate accuracy bands.
1.2	System Input Metering	Most of our system input is not metered	Not all, but > 50% of our system input is metered	<u>Our system input is metered but we are not sure about the accuracy of these (partly old) meters</u>	Our system input is metered with mechanical and/or magnetic flow meters that are rarely calibrated	Our system input is metered with magnetic flow meters that are regularly calibrated
1.3	Pressure Monitoring	We do not have any pressure recorders installed	We have a few pressure recorders at pumping stations and treatment plants installed	We have a few pressure recorders at pumping stations and treatment plants installed and sporadically measure pressure in the distribution network with pressure gauges	<u>We have a few pressure recorders at pumping station and treatment plants and sporadically measure pressure in the distribution network with pressure loggers</u>	We have permanently installed pressure loggers and continuously monitor pressure in the distribution network
1.4	Maps/GIS	We do not have maps at all	The maps we have are not updated	We have started to update our maps	Our maps are updated but do not include GIS	<u>We use GIS based on updated maps</u>
2	Leak Repair Records					
2.1	Leak Repair Records	We have no records of leak repairs	The only way to know the number of leaks repaired is to look into the customer complaints book	We keep basic leak repair records that only tell us whether the leak was on a main pipe or a service connection	<u>We keep detailed records that indicate location, pipe diameter, material and type of leak as well date of detection and date and duration of repair</u>	We keep detailed records that indicate location, pipe diameter, material and type of leak as well date of detection and date and duration of repair and have linked this to our GIS

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3	Issues questions	Performance Indicators				
3.1	Performance Indicators	The only PI used is %NRW	<u>We have tried to calculate water loss performance indicators</u>	We regularly calculate physical loss performance indicators	We regularly calculate physical and commercial loss performance indicators	We regularly calculate physical and commercial loss performance indicators and publish them in our annual report
4	Active leakage control					
4.1	Active leakage control	We only repair visible leaks.	We have leak detection equipment but we do not use it.	We do leak detection occasionally if there is a specific problem in an area.	<u>We have started to do regularly leak surveys</u>	We cover the network by leakage survey at least once a year.
4.2	District Meter Areas (DMAs)	We have no DMAs and have no plans to establish DMAs	<u>We have started to establish the first DMAs</u>	The first DMAs are established and we have already the first results	We have several DMAs and check and analyze inflow data sporadically	We have several DMAs and monitor flow and pressure on a regular basis
4.3	Leak Repair - Distribution Pipes(Repair Time)	We have no records and therefore don't know how fast our leaks repaired	Our average repair time is more than 7 days	Our average repair time is between 7 and 3 days	Our average repair time is between 3 and 1.5 days	<u>Our average repair time is less than 1.5 days</u>
4.4	Leak Repair - House Connections	We have no records and therefore don't know how fast our leaks repaired	Our average repair time is more than 14 days	Our average repair time is between 14 and 7 days	Our average repair time is between 7 and 2 days	<u>Our average repair time is less than 2 days</u>
5	Customer Metering					
5.1	Customer Metering	We have no customer metering	Only large customers are metered	We have started with universal customer meters but at present not all customers have meters installed	Nearly all of our customers are metered, except public fountains, stand pipes and similar.	<u>100% of our customers are metered</u>

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5.2	Customer Meter Replacement and Age	We have no reliable information on the age of our customer meters	Many of our customer meters are older than 10 years, we have not yet introduced a regular replacement policy	We only change meters if they are obviously not functioning anymore	<u>We have a meter replacement policy but have not been able to change all meters so some of our customer meters are still older than 10 years</u>	We strictly follow our customer meter replacement policy and replace ALL meters every 5- years
5.3	Customer Meter Class	All customer meters are class B	All customer meters are Class B and C	All customer meters are class C	All customer meters are Class C and D	All customer meters are Class D
5.4	Customer Database	Our customer database has not been updated for a long time	We sporadically update our customer database	<u>We are in the process of updating our customer database</u>	We regularly update our customer database by house to house surveys and checks	We have an updated customer database that is linked to the GIS
5.5	Customer Meter Reading	We have no special system of controlling meter readers	We only rotate meter readers if we are suspicious of inaccuracies	<u>We regularly rotate meter readers</u>	We regularly rotate meters readers and make often spot checks	Our meter readers use handheld meter reading devices
5.6	Illegal Connections, meter tampering, bypasses	We have not made any assessment and have no program to deal with water theft	We occasionally detect illegal connections	We occasionally detect illegal connections and other forms of fraud	We have a thorough illegal connection detection program	<u>We have a thorough illegal connection detection program and also try to identify bypassers</u>