

Water Management – Hospitality Sector

(Updated June 2021)



In October 2021 Irish Water commenced the rationalisation programme on commercial water charges. Over a period of 3 years charges will be increased to an average effectively of €3.15/M3 (Per 1,000 Litres) for mains water and sewerage services supplied. *(Based on an annual consumption of c. 10,000M3)*

For most Hospitality Businesses, especially Hotels and large Restaurants and tourism businesses this will mean an increase – of up to c. 95% in some counties.

The increases are capped for the first 3 years at 10% per annum in total charges followed by the full tariff on the 4th year.

If you want to know how much your water bills will increase login to the Irish Water website where they have an easy to use calculator – you will need to know your annual consumption which you can find from your bills. *(Get all your 2019 bills to work out what future charges will be following your business recovery post Covid)*

<https://www.water.ie/for-business/billing-explained/business-tariff-calculator/>

Increase Example: Hotel in Kildare using 15,000 M3 of mains water.

Current Annual Cost: €16,000

Future Annual Cost: €31,449

% Increase: **96%**

If you have not already taken steps to reduce your overall mains water consumption then you should be planning to act now and avoid the worst of these increases.

If your increase is not large but your consumption is high then you should be taking steps right now to reduce your water consumption.



Hospitality businesses use a lot of water in their day-to-day operations and should implement good practices to minimise its use for both environmental and financial reasons. The less water used the lower the cost and the less demand it places on these scarce supplies.

One item of information that can be quite surprising is that less than 2% of Mains Water (Treated drinking water) is directly consumed – the majority is used for toilets, personal washing, cleaning and food preparation.

This short practical guide has been created by the Green Hospitality Programme and is backed up with some case studies and additional resources on the [GreenHospitality.ie website](http://GreenHospitality.ie).

It is designed to assist you in reducing the amount of water you use every day and supports the call for all of us to conserve this scarce and important life-giving resource. Many of the recommendations can be implemented at home as well so you should give each of your staff a copy of this guide and ask them to take some direct action at home.

Water & Energy

A lot of the water used in a tourism business is hot water so excessive use of hot water will lead to additional costs.

Take the example of the Kildare Hotel using 15,000 M3 of water annually. It was identified that the hotel had a number of water leaks totalling 5,000M3 annually.

3,000M3 were from a Mains leak and the other 2,000M3 were from leaking hot water pipes in a bedroom block. The hotel uses LPG Gas to heat their water. So what is the annual cost?

$$3,000 \times \text{€}3.15 = \text{€}9,450$$

$$2,000 \times \text{€}6.00 = \text{€}12,000$$

$$\text{Total} \quad \quad \quad \text{€}21,450$$

(LPG/Oil doubles the cost of Cold Water, Mains Gas x 1.5, Electricity x 3 – GHP Calculations)

There are 3 key approaches to water management;

Management – Commitment, Support

Measurement – Monitoring and Understanding Consumption

Minimisation – Communication & Investment



Management – Commitment, Support

The success of any project is to have the full commitment of senior management who provide direction, targets and required resources.

If you are reading this guide then you have at least identified that you should be doing “something” about your water consumption and costs. It may be that you were surprised by a water invoice or recently discovered and repaired a leak.

Whatever the reason the simplest way to find out if you need to take further action is to conduct a quick business assessment. Answer the following questions;

Water Management Self-Assessment	Yes	No
Do you know what your annual water consumption is in terms of Litres/Cubic Metres		
Do you regularly (at least monthly) measure total water consumption		
Do you use a benchmark or key performance indicator to assess if your business uses water efficiently		
Do you know where your water comes from – Mains, well, rainwater, etc.		
Do you know how much water each department uses and is this measured regularly		
Do you receive real-time information about total water consumption		
Do you have sub-meters installed to measure, track and benchmark departments that use large quantities of water (Kitchen, Laundry, Leisure Centre, etc.)		
Have you implemented water saving measures within your business		
Do you have a plan to implement additional water saving measures within your business		

If most of your answers are NO then you need to engage without delay and take control of your water usage.

There will be some investment required but the paybacks will be quick and permanent.



Measurement

The old saying, “you can’t manage what you can’t measure” holds true with water use. It is important to understand how much water your business is consuming and where it is being consumed – Internal department, especially large water using areas

A great place to start is with a thorough evaluation of water use in the property, also called an audit or site survey. This can be done in-house or contracted out to a third-party specialist.

An audit includes collecting historic water bills and also counting all the water using fixtures and appliances inside and outside of the building. Observing how water is used in various operations such as cleaning guest rooms, laundry, and food service is also very useful. The evaluation should identify the associated water flows from taps, showers, urinals, hoses, machines, etc.

Additional data such as occupancy rates are useful during this assessment. A detailed water use profile will enable precise planning and implementation of improvements.

We recommend that mains water consumption is monitored and measured in real-time through a cloud based monitoring system or at least once per week.

Measuring equipment water flows – see the guide on the [GreenHospitality.ie website here](https://www.greenthospitality.ie)

Understand your Bill

Irish Water provide good information on this topic on their website under – [For-Business/Billing-explained/Understand-your-bill](https://www.irishwater.ie/For-Business/Billing-explained/Understand-your-bill)

However, if your bills are estimated then you really are not getting enough information in as timely a manner as you should. At a minimum you should be reading your water meter weekly and for larger businesses a daily read should be implemented.

Benchmarking

Very few businesses benchmark their water consumption. In Green Hospitality we have been benchmarking for 15 years and can tell hotels what the average consumption per sleeper is. This means that if a hotel is worse than this it knows that it can improve. If it is better, it probably can still improve!

For other tourism businesses you can calculate your own benchmark – it could be; Litres of water per cover, visitor, etc. (We can provide sectoral benchmarks)

Metering - Internal Metering and Sub-Metering

Your Business Meter

All business premises have a mains water meter – they are usually located outside the curtilage (grounds) of the property so that Irish Water does not have to enter the grounds to read the meter. In many local authorities the information is read electronically but there is also an analogue or digital view available.

Find out where your meter is and start taking readings and calculating your daily, weekly consumption. Track how it falls after you take some actions.

If you have a problem finding your meter contact Irish Water or your local authority for assistance. www.water.ie



Important Note: If there is a mains water leak on the business side of the meter it is a cost to the business. Once water passes through the Irish Water meter the business is fully liable.

However, in many situations it can be quite difficult to access a business's mains water meter – it may be under a heavy manhole or on a busy pavement or even in the middle of a road. This will lead to infrequent checking and over time it will cease altogether – as well as potentially presenting a Health & Safety challenge.

In this day and age of the digital economy – and now that Irish Water (From 2021+) will be securing c. €45 million annually from Irish Hotels alone - you would expect that the business could get real-time consumption data through a wireless or other methodology!

No, Irish Water does not provide this service to Irish Businesses, except in some urban locations and it requires regular logins, etc.

Best Practice Advice: You pay for your water and you pay for excess consumption. Do not wait for a supplier to tell you how much you owe them, monitor their supply line and work it out yourself and make changes if volumes/costs increase – it's called installing your own meters – it's called taking control and managing.

(And if you think this is a problem apply the same approach to your energy suppliers – what real-time consumption data do you have?)

The hotel sector (and all business sectors) should be demanding that Irish Water should at least provide a real-time pulse output from their meter that individual hotels can tap into.

However, there is a strong commercial reason for a hotel to monitor their own water consumption, particularly for leaks. A 1% leak will cost the average hotel €540 annually and many hotels will have leaks of up to 10-20%.

Best practice is to install a mains water meter as close to the Irish Water meter and also install sub-meters for departments that use a large amount – especially Leisure Centres with Swimming Pools, Kitchens and In-house Laundry's.



Don't forget to install sub-meters on your hot water lines as well

Well water.

You might think that if you have a well it doesn't matter, there is no cost for water. But this is the wrong approach. Environmentally you are extracting water from the local water table and in drought periods may be negatively impacting other users – waste is waste!

Commercially it also costs money to extract well water, treat it for hygiene purposes and deliver it to your customers, maintain the well equipment plus the ensuing waste water has a treatment cost. We advise businesses to apply a cost of €1.00 M3 plus €1.85 M3 if your waste water goes to mains sewerage or if you don't know the cost per M3 of your waste water treatment plant.

(Note: If your sewerage goes to the mains you are liable for a charge for its treatment at a rate of c. €1.85 M3 – this charge is due from the day you start using well water)

Well Water extraction good practice: Put a meter on your well and monitor regularly your usage – if you also use mains water add the 2 together and work out your average consumption and compare against your industry KPI.

Note: If you abstract more than 25M3 per day (9,125 M3 pa) through your well you are required to notify the EPA. [\(More info here\)](#)



Leaks

We all know that more than 40% of mains water never reaches consumers – our ancient pipe system leaks all over the place. But, once water passes through your business meter you pay for it – therefore it is vital to find and eliminate any leaks.

Large water leaks can occur for prolonged periods as the water leaking goes straight into the ground – other leaks tend to be found quickly as the building floods or water damage is seen quickly – monitoring consumption helps to identify if there is a background or undetected leak

Some typical costs can be seen here.

	Type of Leak	Litres / Hour	M3 per year	Cold Water Cost €	Hot Water Cost €
Leaking Tap	Seeping	0.1	1	3.15	6.00
Leaking Tap	Drips	0.5	4	12.60	24.00
Leaking Tap	Fast drips	1.5	13	40.95	78.00
Leaking Tap	A flow	10	88	277.20	528.00

Consider the cost of fixing these leaks? Marginal – the cost of a washer!

Leak Detection



Do an overnight, or night time, test when the business is “resting” or little water is being consumed. Work out the litres per hour that goes through your meter = your leak. Multiply by 8760 and that is your annual leak. Multiply by the total cost of water and that is the cost.

Call a plumber and find and repair the leaks.

Overnight Test: The water meter is read at midnight and again at 6.00 am – the business was closed during this period and total water consumption was calculated as 600 litres. This is a 100 litre per hour leak = $876 \text{ m}^3 \times €3.15 = €2,759$ annual cost (If Hot Water the cost could be c. €5,000+)

What is an acceptable rate of leaking?

It is not always financially feasible to fix every leak as the cost of finding it and repairs could well outweigh saving. Many hospitality businesses have substantial underground and hidden water pipes – you need to calculate what the losses are and their cost vs the cost of repair.



Leak Detection – Day-to-Day

Other leaks can be from faulty equipment – taps, showers, toilets, cisterns, etc. Engage and train your staff to spot and report these as fixes are often a few euro – whilst the waste can be many multiples.

Communication and Investment

Now that you know how much water you are using, and where, and have fixed the leaks, you are able to implement the next phase – changing human behaviour and investing to save.

Minimising Water Waste

A lot of waste comes from poor behaviour (People wasting water) and we all know that water leaks also cause a lot of waste. Understanding how much water and how you compare to others can help you to identify waste – either through leaks or poor behaviour.

If a kitchen porter leaves the Pot Wash Sink Tap (20 lt/mn) on with no stopper in the sink for 5 minutes every hour (16 hrs/day) he/she will waste 1,600 litres per day, 11,200 per week, 48,667 per month or 584,000 per year – Costing c. €1,840 pa or if its hot water c. €3,500 pa

Both staff and customers need to be communicated with and trained to minimise water usage. Everyone who turns on a tap can waste your businesses profits very quickly.



Investment

By installing low water use equipment, businesses can reduce water consumption – without any negative impact on customer service. This is a key principle in the tourism and hospitality sector – the customer should not notice any environmental improvement unless you want them to.

Where can you Invest?

Your plan should focus initially on areas where there is the greatest use of water and the smallest investment;

Little or No Cost

Towel Reuse Programme – Ask customers to hang up their towels for reuse and ensure staff follow through. Make sure you have a policy in place to ensure that if your staff feel that fresh towels are required, that they provide additional as opposed to replacement – don't annoy your customer.

Linen Reuse Programme - Do not change linen during a guest stay **or** engage with the customer asking them to request a linen change – if this is not your existing standard.

Hint: Do not claim that you are saving the world or minimising pollution as you are trying to guilt your customers whilst saving money. GreenHospitality.ie promotes a more positive approach where the savings are either shared with the customer or used for environmental good works locally.





Bedroom Toilets – with old cisterns – displace up to 1lt of water per flush with a brick or bottle of water or commercial water toilet reduction device – such as a “Hippo” Bag, or similar

Note: If a brick make sure it is non-permeable as if it degrades under water it will destroy the toilet.

Reduce water pressure – this can be done by area or across the property. Make sure it does not impact negatively on your operation

Swimming Pool Backwash – base this on pressure reduction, not a schedule

Quick Return on Investment

Public Bathrooms/Areas

These are in use 24/7 (*Guest and Employee*) and use a lot of water therefore the Return on Investment will be quite short.

Urinals – described as an “Engineered Leak” traditionally these flush every 10-15 minutes – 24/7. Even when the business is closed (*The author managed a hotel that used 25% of its destinations water flushing urinals when the hotel was closed! – and there was a permanent water shortage at the destination*)

Solution: Waterless urinals, sensors

Taps – traditionally 2 tap sinks with screw taps dispensing up to 15 lts water per tap per minute. 95% of running tap water never touches users hands!

Solution: Mixer taps – Good practice is lever - Best Practice is with sensors – maximum 6 lts/min

Toilets – Old style uses up to 15 lts per flush. Dual flush uses 4/6 litres per flush

An old 12 litre/flush toilet in use 6 times per hour replaced with a 4/6 litre dual flush toilet will save €1,000 per toilet per annum

Solution: Install dual flush – do the ladies first as they are flushed after every use.

Showers – where available for Public/Employees – Can use up to 25 Litres/Minute, hot and cold water.

Solution: Low flow shower from specialist suppliers. Mixes air with the water to give the impression of a greater volume – Maximum 10 litres/minute



Cleaning with hoses – All areas – especially leisure Centres, Kitchens, back of house - use a spray unit on any hose pipes

General Short-term returns

Aerators – for taps– these can be screwed on

In Line flow regulators – these can be inserted in individual bathrooms or for key areas



Longer Investment Return

Sub-metering – for high water use areas – Kitchens, Laundry, Swimming Pools, etc. Should be linked to your mains water meter and ideally all data managed in the cloud with alarms sent when consumption exceeds acceptable levels.

Often the payback on these meters can be very quick as they allow you to identify poor behaviour and reduce consumption. When employees know that they are being measured their performance alters.

Pool covers – reduces evaporation when the pool is not in use (Correctly used, a pool cover can also reduce total energy usage in a swimming pool by up to 30% and can deliver a payback between 1 and 2 years)

Ice Machines – use air cooled as opposed to water cooled. If using water cooled, capture the waste water and use it in the pot wash – as it is warm/hot.

Rainwater Harvesting – when it rains capture this and use it for pool backwash or non-potable uses – or install a full filtration system and use within the business.

New Equipment – when replacing equipment such as Dishwashers, Washing Machines, etc. ensure that the new machines use the minimum quantity of water possible, allied with excellent energy efficiency.



Communication

Employee Training – train your employees to use the least amount of water when working, especially;

- Accommodation – aim to achieve a one flush standard when cleaning toilets
- Accommodation – minimise water use in cleaning bathrooms – look at alternative solutions to minimise rinsing such as the [GREENClean](#) programme
- Kitchen – Dishwashing – make sure full loads are in operation
- Kitchen – Pot Washing – make sure the stopper is in the sink when the taps are on
- Kitchen – defrosting – do not use running water
- Swimming Pool/Leisure – backwash when pressure drops across the filters
- Laundry – ensure only full loads are washed
- All Staff – report leaks immediately

Customer Communication – engage with your customers – don't be afraid of them – be up front with your message *“We are working hard to reduce our environmental impact, without impacting on your stay – however, there are a number of things you could do to support our actions”*

- Bedroom Bathrooms – Towel reuse programme – shower and shower shorter – don't leave the tap running
- Bedrooms – Linen reuse programme

Tell a story – you should also include messages/information about your other environmental activities – your community engagement, energy efficiency, carbon offsets, waste minimisation, etc.

Checklists – we have enclosed 2 checklists – which are also available on our website [here to download](#) – to assist you in putting an action plan together.

Conclusion

We hope that you find this guide to water management and minimisation useful and we would welcome any case studies that can show water reduction from any actions you implement – please send them to us at info@greenhospitality.ie or if you require any direct support

Disclaimer: Please refer to our disclaimer on www.greenhospitality.ie/services

<h2 style="text-align: center;">Good Practice Actions - CHECKLIST</h2>	<p style="text-align: center;">Are we Implementing Good Practice</p> <p style="text-align: center;">Yes / No</p>
<p>Action Plan – we have a water reduction plan in place with specific targets with completion dates</p>	
<p>Measurement – We regularly read our Mains Water Meter and compare consumption on at least a weekly basis and communicate our progress/benchmark to all employees.</p>	
<p>Water Flows measured – we have measured the average flows or usage from the following – Taps, Showers, Toilets, Urinals</p>	
<p>Benchmark – we benchmark our consumption against available benchmarks – either national or local.</p>	
<p>Leak Detection – we formally check for mains water leaks at least monthly by carrying out the “Overnight” test</p>	
<p>Leak Detection – we have trained all our staff to report visual leaks and we have a process in place to have them fixed.</p>	
<p>Employee Training – we have identified where we use water within our business and have trained our staff to be aware of and minimise the use of water – by department – especially high usage areas such as Kitchen, Laundry, Leisure Centres.</p>	
<p>Customer Information – we have engaged with our customers – at the point of use – about our water reduction initiatives – and ask them to support them</p>	
<p>Plants and Grounds - We do not use Mains Water to water plants or grounds</p>	
<p>Dishwashing – we ensure that only full loads are sent through the machines and that pre-rinse is minimised</p>	
<p>Laundry – Clothes Washers – we ensure that only full loads are washed</p>	
<p>Towel reuse programme – we have a Towel Reuse programme in Guest Bathrooms and customers are requested to support it and staff trained to follow through</p>	
<p>Linen reuse programme – we have a Linen Reuse programme in Guest Bedrooms and customers are requested to support it and staff trained to follow through</p>	
<p>Guest Bathroom cleaning – staff are trained in how to minimise water use during cleaning – including only flushing the toilet once</p>	

<h2 style="text-align: center;">Best Practice Actions - CHECKLIST</h2>	<h3 style="text-align: center;">Are we Implementing Best Practice Yes / No</h3>
<p>Sub-metering – major water using departments are sub-metered and consumption analysis/benchmarks monitored on at least a weekly basis – key areas include Kitchens, Leisure Centres, Full in-house Laundry</p>	
<p>Taps – The flow rate is 6 litres/minute or less. Public Bathrooms – all taps are mixer type with flows less than 4 litre/minute</p>	
<p>Showers – low flow showerheads are in place with flows of less than 10 litres/minute</p>	
<p>Urinals – are either waterless or have sensors in place to minimise flushing</p>	
<p>Toilets – dual flush toilets are in use or – Guest Bedrooms: Water reduction actions taken – Public Toilets: Dual Flush toilets are installed</p>	
<p>Pre-Rinse unit – Maximum flow of 8 litres/minute when in use</p>	
<p>Equipment – dishwashers, clothes washers, etc. Water efficient models are in use</p>	
<p>Rainwater Harvesting – collected and stored and used wherever possible</p>	
<p>Ice Machines – only air cooling units are used</p>	
<p>Swimming Pool Showers – push button or sensor units are in use</p>	
<p>Swimming Pool Management – Pool Covers are in use daily to minimise evaporation</p>	
<p>Swimming Pool Management – Backwashing is implemented based on usage/pressure as opposed to a regular schedule</p>	
<p>Floor Cleaning – all departments – staff are trained to minimise the use of water and low flow spray heads are in use instead of free-flowing hoses.</p>	