



SMART GARAGE GUIDE

REDUCE THE ENVIRONMENTAL IMPACTS
OF YOUR BUSINESS AND SAVE MONEY



THE CIRCULAR ECONOMY PROGRAMME
The Driving Force for Ireland's Move to a Circular Economy



Rialtas na hÉireann
Government of Ireland

Introduction

This guide deals with the main day to day operations of a typical garage under the headings of Waste, Water, Energy, Documentation and Legislation. For each of the main headings on waste, water and energy there is a brief introduction, followed by information on best practice options.

These will help improve your garage's performance and save you money. There are many different wastes produced by the garage sector, many of which are hazardous. This guide will outline how the various laws apply to each of these and how to best manage them. By doing this you can cut down on the amount of wastes you produce, save money and make sure you are not liable to prosecution.

The National Hazardous Waste Management Plan 2021-2027 is part of the EPA's Circular Economy Programme. This guide was published in-line with recommendation 14 of the National Hazardous Waste Management Plan 2021-2027 to 'promote best practice in the management of commercial hazardous wastes streams'.

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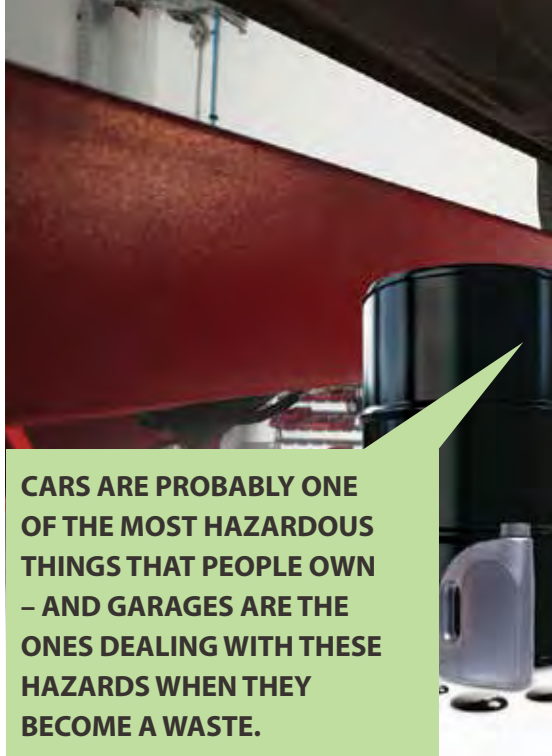
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1. Garage waste management

Garages deal with many different waste streams, many of them hazardous, so there is no doubt that waste management can be costly. Is that an excuse for using cheaper and possibly illegal alternatives? Absolutely not, because the mismanagement of garage waste will have an impact – either locally or in someone else's neighbourhood.

The thing to remember is that, while there are many ways to keep the cost of your waste collection down, good waste management also benefits customer relations, creates a safer work environment and ensures you are operating within the law.



CARS ARE PROBABLY ONE OF THE MOST HAZARDOUS THINGS THAT PEOPLE OWN – AND GARAGES ARE THE ONES DEALING WITH THESE HAZARDS WHEN THEY BECOME A WASTE.



Safe working environment

Ever trip over a spanner left on the floor? Or slip on some spilled oil and do the splits (ouch!). Garages are busy places with lots of potential hazards. Having good systems in place (put back that spanner in its right place!) is the best way to ensure a safe working environment and safety for workers. The same goes for waste management. Having a well thought out waste management system that is easy to use and caters for the needs of workers, ensures that safety and waste management become part of how a garage works.



Customer relations

Most people that drop their car into a garage just don't understand the impact of the waste associated with servicing or fixing cars. They want it done yesterday for as cheaply as possible. Yet, if you think about it, cars are probably one of the most hazardous things that people own – and garages are the ones dealing with these hazards when they become a waste. Don't be afraid to communicate the costs that you incur to manage wastes.



Risk assessment

Check out [BeSMART.ie](https://www.be-smart.ie) – this free online tool, brought to you by the Health and Safety Authority, will help you do a risk assessment of your garage and produce a safety statement.



At the end of the day, it is the law!

Nobody likes being told what to do but, when it comes to garage related wastes, there are lots of hazardous materials that, if managed badly, can have terrible effects on the local environment (including on workers). The laws that are in place for garage wastes are designed to make sure that these materials are managed safely and, when possible, reused or recycled. It is not to make your life harder – it is to make your life, and the environment, better.

Mixing waste costs you more

Most Irish garages separate their main hazardous wastes (waste oil, batteries and used oil filters) but the majority of other wastes (card, plastics etc.) often end up in either an open skip or covered bins.

While this is the typical way of handling waste in lots of garages. It is also the most expensive way.

The cost of disposal of mixed wastes has been increasing steadily and is expected to increase even more.

BY MANAGING YOUR WASTES BETTER, YOU SHOULD KEEP AS MUCH WASTE AS POSSIBLE OUT OF THE MIXED WASTE BIN - THEREBY CUTTING COSTS.



The main types of wastes found in Irish garages' bins are:



38%
Hazardous Waste



25%
Recyclables



24%
Metals



13%
General Waste

What is best practice in waste management?

Best practice waste management refers to putting in place and maintaining proper facilities and services for general waste, recycling, hazardous waste and bulky waste.

Best practice management systems should be clearly labelled, easy to use and safe to access for both mechanics and the waste collectors.

Through separating out your metals, recyclables and hazardous wastes there is the potential to further reduce your waste costs.

Packaging for recycling is usually collected for free and you can get money back for scrap metals, so through good waste segregation you can save a packet.

And remember, waste management has changed a lot in the past few years and there is value in metals and automotive batteries. So, discuss these with your waste contractors and make sure that you are getting as good a deal as possible. For more information and free bin signs for your garage, visit www.mywaste.ie business

Potential Waste & Hazardous Waste Charges



Many garages now have 'environmental charges' on the end of a bill, though these should probably be called what they are - waste and hazardous waste charges. Garages handle and manage hazardous and difficult to dispose of wastes on a customers behalf so, under the polluter pays principle, it is the customer that should pay.

TYPICAL WASTE DISPOSAL & RECYCLING CHARGES	
Oil	€2 – €4
Oil filter.....	€0.5 – €1
Battery.....	€0 – €2
Brake or antifreeze.....	€0.5 – €1
Bumper.....	€10 – €20
Tyres (car & van)	€2.80
Mixed fuels	€1.50-€2 per litre

Best practice in waste management

In this section we will go through the main waste types typically generated by Irish garages and show you how best to manage your wastes and keep your costs down, while complying with the various laws.



a. Proper infrastructure

Use containers provided by your waste management contractors for your hazardous and non-hazardous waste. If you have to store waste outside ensure you use bins, drums and battery boxes with lids/covers that do not allow rainwater in.

b. Segregate garage wastes

Segregate your wastes especially metals & recyclables. Of all the wastes generated in garages the most common one that is thrown out incorrectly into the regular waste is metal. If you collect your metal waste separately, instead of paying for it to be collected you can get money for it! Things like screws, brake discs, brake pads, metal shaving fines and any other metal wastes should be kept in a separate container. Usually a waste contractor will give you a small drum to keep metal waste in - have a chat with them about this option.

Segregate other wastes

In addition to metal you are required by law to recycle the things that are recycled at home. www.mywaste.ie

Cardboard

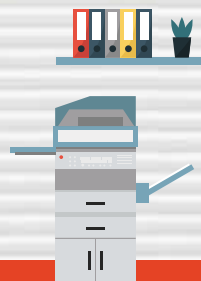
Lots of this is generated in garages from motor factor supplies. When cardboard gets wet it can weigh up to 5 times more. If you have a recycling bin always keep it closed.

Plastics

While some plastic containers cannot be recycled from garages (e.g. those that contain oil) many can be - especially drink bottles, milk bottles, sandwich containers, bags and film. Make sure they have been emptied and cleaned first.

Paper

Paper instructions from parts, office paper and newspapers are all commonly generated in garages. Like cardboard, store in a recyclable bin and keep dry.



Tins and cans

Tin cans can be put in with the metal wastes - this will make you money instead of costing you. These are usually quite light in weight but should always be kept out of the regular bin, although they are accepted in the mixed dry recyclables bin if clean and dry.

C. Bin your skip

The most important thing when it comes to mixed wastes is to get rid of a skip if you have one. Skips are magnets for waste - both yours and others. If you have one - go and have a look in it, you'll be surprised what you'll find in there. Skips always result in poor segregation and poor waste management.

It has been found that by removing a mixed waste skip, your waste charges will usually drop by at least one third!

Skips are great for people leaving their waste in (in particular bulky items) without your knowledge. Skip rental is also more than the cost for a couple of wheelie bins.

D. Consider other areas

If you have an office and/or a canteen in your garage then don't forget about them. Canteens are often the biggest producers of waste because of the weight of food waste. Make sure you segregate your food packaging here. Contact your local authority about this or for more information on the regulations visit www.foodwaste.ie If you have an office, make sure that you print double sided where you can, and also recycle (or better again, reuse) your printer cartridges.

So, if you manage your wastes properly, then your black bag/bin rubbish should be quite small. As this is expensive, the more you reduce it, the less you pay. If you find you still have more than you expect, just have a quick look through the bin before it is removed - you'd be surprised what you'll find in there.

Where does it come from and where should it go?

Cars are made up of multiple components and, when it comes to managing these as wastes, it can be very difficult to know what goes where. A lot of these materials end up in mixed waste bins. This is often the most expensive way to get rid of wastes. But, by knowing your main waste streams, and having the proper systems in place to manage them, you will lower waste management costs and ensure you are in compliance with the law.

Mixed recycling

Between office paper, cardboard and other recyclable items it is always important to have mixed recyclable facilities. This keeps these items out of the general waste stream and will lower costs.

Metal wastes

By weight, these are the most common materials found in general waste bins and as all pay by weight now in place, mis-managing these will increase your costs. Garages should have a separate metal collection bin.

Bin your skip

Skips are magnets for waste, both yours and other peoples. Also, every time it rains the waste gets heavier so will cost you more. If you can it is always best to get rid of skips and use covered wheelie bins instead.

Air filters

Air filters are a 'mixed component waste' which is not ideal as they can be costly to dump. Did you know there are reusable filters that can cut down on these wastes? Check out www.knfilters.com/air-filters

Plastic components

Most cars have lots of different plastic components. These can be recycled in the mixed dry recyclables stream.



A white sports car is shown from the side, parked on a white surface. In front of the car, various automotive components are laid out, including wheels, suspension parts, a battery, and engine components. The image is framed by green diagonal lines.

Electronic components

Modern cars have lots of electrically related parts – seat belts, head lights, etc.

These can be very difficult to dispose of but there are companies that will collect them. A quick search online should provide a few options.

If you are dealing with a lot of cardboard and plastic materials it may be worth considering a baler. These can be leased and it is worth asking your waste contractor about these.

While tyres aren't hazardous they are a special waste as they cannot be disposed of in landfills. If you sell tyres then you must join the Circolet ELT scheme.

There are loads of mixed materials in cars. Depending on what they are made up of it may be possible to manage them separately (e.g. wipers). But, for now, a lot of them can only go into the general waste stream (e.g. fan belts).

Parts of the brake system often end up in the mixed waste bin but should be put into the metal recycling waste stream

The End-of-Life Vehicle Regulations place responsibility on garages to play their part in the recycling and recovery of vehicles at end of life. The ELV system replace a lot of red tape with one single registration, and can be as much as 80% cheaper, and already has a contracted network of ATFs/scrapyards that will cover your compliance.

Managing hazardous waste

There are many different laws that apply to how Irish garages must manage their hazardous wastes. This section will outline how the different types of wastes should be managed to make sure you comply with all the relevant laws. There are fines and possible imprisonment for offenders (Waste Management Act 1996, as amended), so it is important to know what you should do with each different waste.

We have also outlined some best practice tips on how to deal with hazardous wastes.

Your waste contractors and paperwork

Keep records when you have hazardous wastes taken from your garage to prove that you have managed your hazardous wastes properly. The following 3 points are very important to know:

Make sure you have a copy of the relevant waste collection permit from the people that take the hazardous wastes from your garage. You can ask them when they come to your garage or get them to send it to you at the start of the year. If they have a waste collection permit they must manage your wastes correctly and it also protects you if they do anything wrong with your wastes.

If you give your hazardous wastes to someone without the appropriate waste collection permit then you are breaking the law and may be liable to prosecution. Contact the the Environment section of your local authority for a list of companies permitted to collect hazardous waste in your county. Or look up the National Waste Collection Permit Office for details. <http://www.nwcpo.ie>



REMEMBER, IF YOUR HAZARDOUS WASTES ARE NOT MANAGED PROPERLY THERE ARE SERIOUS CONSEQUENCES FOR THE GARAGE.



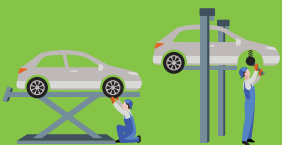
Each docket should be accompanied by a form called a Waste Transfer Form, available from your authorised waste collector or you can download one from the National TFS Office at the following link: <https://wrms.dublincity.ie/wrms/frontoffice/>

For hazardous wastes you must keep your records for a minimum of three years and the waste transfer form must contain information on the volume/ quantity of waste removed (European Communities (Waste Directive) Regulations, as amended (S.I. No.126 of 2011).



John's Garage - Case Study

This is John's Garage

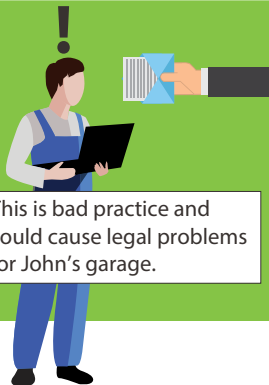


It's a busy garage

When there is an oil spill
John's apprentice covers
it with saw dust. Good!



He puts the contaminated
saw dust into the general
waste bin. Bad!



This is bad practice and
could cause legal problems
for John's garage.

So now, John has
clearly labelled a bin...

**OILY
SAWDUST
ONLY!**



...everyone can get
back to work!

Hazardous waste and the law

Hazardous wastes and how you must manage them. This Section goes through the main hazardous wastes that might come from your garage and how you must manage them according to laws.

Waste oil



- Always store waste oil in a suitable drum or preferably a UN approved container.
- Never burn waste oil in a (waste) oil burner - it is illegal and may pose a risk to you and your employees health.
- Ensure that your waste oil is only removed by a permitted waste collector and you always obtain a waste transfer form from them.
- Keep your oil removal records for at least 3 years.

Oil filters



- These must be stored separately and handled as a hazardous waste.
- You must get a waste transfer form properly filled in when these are removed.

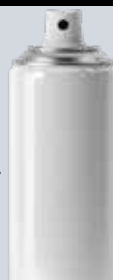
Unused airbags

These are a hazardous waste due to the fact they are explosive and contain sodium azide which is a hazardous substance.



Aerosols

Used aerosols often contain highly flammable or toxic materials. They should be handled separately. As they are pressurised, they pose an explosive risk.



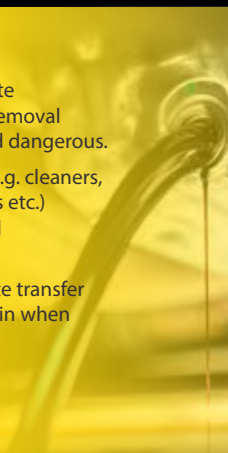
Oily solid wastes



- Oily solid waste should never be thrown into the regular rubbish bin. It should be stored separately in a drum and treated as a hazardous waste.
- You must get a waste transfer form properly filled in when these are removed.

Mixed fuels

- Never mix with waste oils as it can make removal more expensive and dangerous.
- Bodyshop wastes (e.g. cleaners, thinners, degreasers etc.) should be managed with these.
- You must get a waste transfer form properly filled in when these are removed.



Car batteries



- Make sure your batteries are sourced from valid registered producers - you can check at <https://www.producerregister.ie>
- If you supply auto batteries, (even if you are replacing one) you must:
 - Register with an appropriate compliance scheme
 - Take back batteries similar to the ones you sell and/or replace
- Only transfer waste batteries to collectors that are authorised to collect them.
- Ensure that these are sent to appropriately permitted or licensed waste recovery facilities.

Old brake pads

Older pads can contain asbestos so beware and contact your hazardous waste collector for more information on how best to manage them.



Fluorescent lights



These contain small amounts of mercury. Even small amounts of mercury can cause huge problems with water supplies so try and ensure that they are not broken during storage.

Brake fluid and antifreeze

- These can have a serious impact on water supplies and should NEVER be allowed go to the drain.
- You must get a waste transfer form filled in when these are removed.

WEEE



Not much of this is generated in garages, but what is MUST be stored and given to your local Civic Amenity Site (if they'll accept it), or collected by a licensed waste contractor. Visit your Local Authority website or WEEE Ireland or ERP to find out more. www.weeeireland.ie
<https://erp-recycling.org/ie>

Small batteries



Putting these batteries into the regular rubbish is a serious problem in Ireland. They damage landfill sealants and can poison water supplies. Battery boxes are freely available from WEEE Ireland and ERP Ireland.

Hazardous waste tips

Hazardous wastes and how you must manage them. This Section goes through the main hazardous wastes that might come from your garage and how you must manage them according to laws.

Waste Oil



- Manage waste oil with an air powered waste oil drain. These remove oil quicker and reduce spills almost completely. They are on wheels, they are easy to manoeuvre.
- Keep your waste oil tanks or drums in a contained or "bunded" area. This should be a water tight area to catch spills or leaks.

Oil filters



- Usually these are stored in 240 litre wheelie bins that your waste contractor will supply.
- Make sure you drain as much oil as possible from the used filters.

Unused airbags

They have a resale value so should always be kept separately and given to your waste collector.



Aerosols

Should be stored in a UN approved container (ask your waste contractor for one).



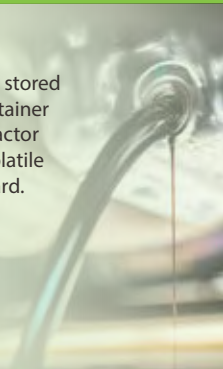
Oily solid wastes



Currently much of these materials end up in the general rubbish. This is one of the main areas where garages may get into legal problems for bad waste management. These can catch fire easily so treat with care.

Mixed fuels

Mixed fuels should be stored in a UN approved container (ask your waste contractor for one) as they are volatile and a serious fire hazard.



Car batteries



- Never drain batteries.
- If storing in a battery box, make sure it's sealed from rainwater.
- Get money back on your batteries. Discuss this with your hazardous waste contractor.
- Make sure collectors have proper paper work. Waste batteries are often stolen from the back of garages so keep them secure.

Old brake pads

Modern brake pads are mainly metal and should be managed with your waste metals.



Fluorescent lights



- Check with your local Civic Amenity Site to see if they are willing to accept them.
- If you have a large site, then it may be worth getting the appropriate storage bins for storing the tubes.



Brake fluid and antifreeze

- Should be stored in a labelled UN approved container (provided by your waste management contractor).
- These are usually topped up during a service but if the system has to be bled then these liquids should be stored separately and not mixed with the waste fuels or oils.

WEEE



Waste electrical and electronic equipment is recycled by specialist contractors.

Small batteries



- Battery boxes are freely available from WEEE Ireland and ERP Ireland.
- Also, most co-ops and motor factors will accept these at their counter.

Other important waste areas

The following areas of waste management might seem obvious if you operate in that sector (e.g. tyre retail) but they are still important.

ELVS

Waste Management End-of-Life Vehicles (ELVs). An End of Life Vehicle can only be transferred to an Authorised Treatment Facility (ATF). Retain a copy of their permit and/or licence. Producer Responsibility Scheme for End-of- Life Vehicles: <https://www.elves.ie/en>

ELV Environmental Services CLG was established in 2014 representing all Original Equipment Manufacturers (OEMs) and has been approved under the European Union (End-of-Life Vehicles) (Amendment) Regulations 2016 to be the new compliance scheme for the vehicle sector. ELVES promote, on behalf of its members, a network of public drop-off points (also known as authorised treatment facilities, ATFs or scrapyards) that provide free ELV take back to the public.

If you need collection of a waste electric vehicle battery, contact the ELVES compliance scheme. They operate the Electric ELVES programme to provide collection and recycling for electric vehicle batteries: <https://www.elves.ie/en/electric-elves>

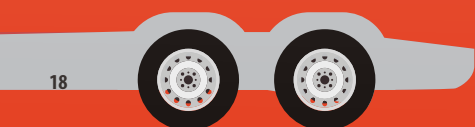
Bodyshop

If you are involved in vehicle refinishing you need to comply with the appropriate regulations. For more on these see the separate best practice guidance for vehicle refinishers published on the EPA website: <https://www.epa.ie/publications/compliance--enforcement/air/solvents-and-decorative-paints/best-practice-guidelines-for-vehicle-refinishing.php>

VOC containing waste is hazardous and poses a threat to human health and the environment. Liquid waste must be stored in suitable sealed, labelled containers on a spill tray/bund.

Solid waste must be stored in a closed, labelled container. You must ensure that the waste collector holds a valid waste collection permit. You should obtain a copy of this permit and a copy of the EPA licence for the facility to which the waste is being taken.

To search for an EPA licence visit: <https://www.epa.ie/our-services/licensing/licencesearch/>



Tyres

If you supply tyres, make sure you are registered with an appropriate compliance scheme or with your local authority. There is one approved compliance scheme- Circolet ELT. You must also put up a sign indicating you are involved with the scheme. While tyres aren't hazardous, they are a special waste as they cannot be disposed of in landfills. Only transfer waste tyres to appropriate licensed collectors and ensure these are sent to an appropriately permitted or licensed recovery facility.

MACs

- Mobile Air Conditioning (MACs) systems often run on fluorinated greenhouse gases, which are major contributors to climate change. Therefore, garages must take steps to avoid emissions by checking for leaks before and after servicing.
- If you service MACs, first you must ensure that there are no leaks or an abnormal amount of refrigerant missing before servicing. Most MAC servicing machines do a pressure test first and won't allow the next step unless the pressure test has been done successfully.

See legal requirements & other guidance if you service MACs:

<https://www.epa.ie/publications/compliance-enforcement/climate-change/7-IRL-Summary-Guidance-Garages-MAC-V1.0.pdf>

BURNING WASTE OIL? FEEL THE HEAT!

BURNING OF WASTE OIL IS ILLEGAL, EITHER IN WASTE OIL BURNERS (OFTEN CALLED OIL BURNERS) OR IN OPEN FIRES. WASTE OILS MUST NOT BE DISPOSED OF TO WATER OR DRAINAGE SYSTEMS.

Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009, as amended (S.I. No. 286 of 2009).

The burning of wastes - either indoors or outdoors is illegal. Only licensed/permitted facilities can burn waste under controlled conditions.



2. Water

With the introduction of metered water charges, many garages are realising that water can be a significant cost. Water use in garages is limited to a small number of areas: taps, toilets, sinks, kitchen, and car washing, and if not managed carefully can be expensive.

A TAP LEFT ON CAN USE AS MUCH AS 1,000 LITRES AN HOUR. FOR A COLD TAP THIS COULD COST €72 A DAY, OR OVER €150 A DAY FOR A HOT TAP!

If you have a car wash this will be the obvious source of most water use on-site but undetected leaks can also be a problem, and even if you have your own well you can still save money by cutting down your water use - pumping water from your own well uses electricity and this is often a forgotten cost.

So, when it comes to water use in Irish garages there are 3 main areas of interest:

WATER CONTAMINATION
WATER EFFICIENCY
CAR WASHES BEST PRACTICE



Water contamination

Causing water pollution or allowing it to happen is illegal. If it happens it can be hugely damaging - both to the environment and your pocket!



Water pollution is a serious issue for your locality. If ground water is polluted then it is effectively ruined, and if pollutants like antifreeze get into rivers they can kill all aquatic life. By proper handling, storage and disposal of waste liquids you can ensure no pollution of your local water supply occurs.

Handling of potential water pollutants

How mistakes are made

This picture shows a wheelie bin where used oil filters are stored. The bin is leaking, and it is on open ground.



This is dangerous and illegal.

For information on best practice refer to the EPA's guidance note on storage and transfer of materials at https://www.epa.ie/publications/licensing--permitting/industrial/ied/IPC_Guidance_note_Materials_storage.pdf.

Clean up

Clean up spills immediately. If you have a spill, always try to sweep it up first. Then, use sawdust or spill kit materials to absorb the spilt liquids.



Avoid short cuts

Don't throw hazardous materials down the sink or toilet - this is illegal and very polluting. In areas where there is no wastewater treatment this is particularly dangerous to the local supply of drinking water.



Liquid Storage

If you store waste liquids on site, make sure that the containers are stored in a suitably sealed and contained area. Such areas are referred to as bunded and should hold any liquids that spill or leak from holding containers.



Interceptors

If you have a trade effluent licence or sell petrol/diesel you should have interceptors on your drainage systems. Interceptors remove contaminants from wastewater before it enters the sewer system. They should be cleaned regularly, and the waste removed appropriately. In a garage, this waste is likely to be hazardous.



Location

If you are close to rivers, streams, ponds, lakes, estuaries, or the sea you must be very careful of polluted runoff as this could be a cause for prosecution.



Car Wash

Larger generators of wastewater (i.e. a carwash) should have a trade effluent licence. These are issued by your local authority and will have specific requirements for your particular site.



Liquid Storage

Try to keep storage areas covered. Rainwater will carry spills and leaks into local waterways and sewers. For example, batteries left out in the open can fill with water and the acid can then run into the local waterways.



Staff Awareness

Make sure everyone in your garage is aware of the potential problems water pollution can cause, in both legal and local terms.



Water efficiency

Garages don't use a lot of water (except in car washes) so water costs should be quite low. If you have a few leaks or leave a tap running overnight, these costs won't be long in increasing.

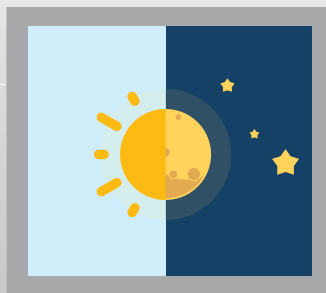
BY KEEPING AN EYE ON THE COMMON PROBLEMS YOU CAN KEEP YOUR WATER USE EFFICIENT AND YOUR COSTS DOWN.



Some easy fixes...

Overnight leak test

If you are now metered it will be straight forward to check if you have leaks. When closing up for the evening or the weekend make sure that all water is turned off (don't forget to turn off urinals). Then read your water meter. Read it again first thing the next morning. If there is a difference in the numbers, it means there is a leak in your system.



Damaged fittings.

Replacing these is often a cheap and quick job. A faulty toilet can cost as much as €1,000 a year from leaking water if not fixed while a new ball-cock will cost you no more than €15.



On/off nozzles

Fit on/off nozzles or triggers to all hoses. This stops the hoses running when not used and can also provide different spray options for different needs.



Efficient fittings

Replacing old or faulty fittings with high efficiency ones is an easy way to save money.

Self-closing taps

Self-closing taps (the ones with push tops) will always shut off, even when people forget about them!

Old cisterns

Most old cisterns use about 15 litres per flush whereas new ones use 7 litres. By putting a brick, a filled plastic bottle or any other displacement device (e.g. hippo bag) into the cistern (for urinals or toilets) you can reduce your water use.

Dual flush toilets

Dual flush toilets are now common in modern buildings but not so much in older buildings. A retrofit kit can be bought for about €25 and this can save you as much as 6 % on your annual water bill - the costs of course depend on how often you use it.



**AERATORS ON YOUR TAPS
CAN REDUCE THE AMOUNT OF
WATER YOU USE BY UP TO 70%.**

Aerators

They restrict water flow from your tap without reducing the water pressure. They cost €5 to fit can save you as much as €30 per tap each year.

Urinals

Urinals are notorious for wasting water – they are often set up to flush much too regularly, regardless of use. There are a range of devices that can significantly reduce this waste.

Consider harvesting rainwater

Rainwater is something we have lots of in Ireland. Harvesting barrels are an easy way of gathering free water for use around the garage. Barrels can be fitted under down pipes or other areas to maximise water collection. They are an ideal way to save some money on your water charges - about the only good thing about all the rain!



Car wash best practice

An extra water saving option when using a water reuse system is to increase the wait time for the car after the final rinse – this provides a longer period in which to collect rinse water (and also reduces drying time if a blow-drying system is used). Potential water savings of between 50% - 80% can be achieved.

A GOOD WAY TO CUT DOWN ON WATER BILLS IN LARGE CAR WASHES IS TO INSTALL A WATER REUSE SYSTEM

If your car wash uses hot water, it may be an option to use solar panels to heat the water. Traditional water heating solar panels require a pitched roof facing in a southerly direction and a hot water storage tank.

However stand-alone solar panels, which are common in parts of the world where flat roofs are the norm (e.g. Greece, Spain, China), are now in use in Irish farms and other industrial locations. These units require a cold-water feed and because the tank is inbuilt can be put anywhere.

For power washers and self-service car washes the following should be considered:

- Choose hand-held spray wands and foamy brushes that use no more than 13 litres per minute. (Resulting water savings can increase by 40-80%).
- Make sure each spray wand, foamy brush, or similar system has a shutoff trigger valve so that the water will not run while the system is not being used.
- Replace spray nozzles regularly and check for leaks. Repair the leaks as soon as they occur.
- Replace brass or plastic nozzles (which tend to erode more quickly) with stainless steel nozzles.
- Beware of compressed air leaks - car washes are often away from the main operation of a garage and air leaks can be overlooked





3. Energy

Energy is the main utility cost for most garages each month. This is mostly due to electricity and while there is now increased competition in the electricity market, electricity costs are still on the rise.

The main areas where electricity is used in Irish garages are:

- **COMPRESSED AIR (45%)**
- **LIGHTING (32%)**
- **OTHER AREAS (23%)**

Each of these main electricity using areas will be discussed individually. After each there is a checklist to help you identify saving opportunities.

**IT IS EASY TO MAKE SAVINGS
ON YOUR ELECTRICITY
BILLS BY MAKING SURE
THAT THESE AREAS ARE
PROPERLY MANAGED
AND MAINTAINED.**



Compressed air

Take the pressure off your electricity bills. Producing compressed air is expensive as it uses a lot of electricity and is the largest part of most garages' electricity bills.

To see the effect compressed air has on your electricity use, watch your electricity meter the next time your compressor kicks in. It flies around compared with when the compressor is off. So, you can make big savings if you make sure you manage your compressed air properly.

These are the main areas where savings can be made across your compressed air system.



FIXING LEAKS



BETTER CONTROL & MAINTENANCE



IMPROVED AIR TREATMENT



OTHER MEASURES

The following gives you an idea of the easiest ways to make sure you are not wasting electricity and money on compressed air.

- Check the compressor, hoses and other piping and fittings for leaks regularly. Weekly is best.
- Generate compressed air close to where it is used – the longer the pipes the bigger the chance of leaks.
- Turn air compressors off when they are not needed e.g. lunch time. If there are no leaks in the system, the pressure won't drop.
- Don't use too high a pressure in your system – 7 bar should be fine for garage work. The higher the pressure the higher the cost!



**COMPRESSED AIR LEAKING
THROUGH A SINGLE 3MM
HOLE COULD COST YOU AS
MUCH AS €700 A YEAR!**



Fixing Leaks...

The biggest problem, and the biggest waste of money, with compressed air use in garages is leaks - even a small leak can cost you money. Most leaks are found at fittings and at joints but small holes in hoses are also common. Usually leaks are not repaired straight away, and in most cases, they are only patched up and start leaking again quickly.

Easy Savings

Compressed air leaking through a single 3mm hole could cost you as much as €700 a year.

By checking your system regularly for leaks and repairing them straight away you can make sure you are not wasting money.

**There are 3 main ways to find air leaks:
(For the majority of garages the first two options work perfectly well)**

Listen

By listening you can identify the majority of leaks. Make sure you do this when it is quiet (after work) and there are no air tools in use. You can also try running your hand along the line to feel for leaks.

Look

If you can't identify exactly where a leak is by listening, then put some soapy water along the pipework. Using a sponge, soft paintbrush or spray bottle will help you cover all joints, flanges and valves. If there is a leak, you should be able to see the soap liquid bubbling up.

Detect

Detection - this is mainly for large complicated sites where ultrasonic leak detection equipment is the best way to locate all leaks.

Once you have identified leaks make sure you fix them properly. When repairing any compressed air system make sure you consider the following:

- Compressed air can be dangerous so you should always make sure that the system is completely de-pressurised before attempting any repair.
- In low-pressure systems, which are the ones mainly used in garages, it is usually possible to 'patch' small leaks with a sealant or patch, but this repair method should only be a temporary measure.



Lighting

Lights are usually turned on for the whole day in garages so lighting can be a big part of your electricity costs. There are three main parts to your lighting: bulbs, housings (reflective fittings) and controls (switches & timers).



Case study

One Irish garage reduced their electricity bills by 20% in 6 months by improving the way they managed lighting and used compressed air around the garage. This reduction was due to training staff on how to be more efficient within the workplace.

Energy efficient bulbs

Most garages only change lightbulbs as old ones fail but, with so many different bulbs now available, it can be very confusing to know what is the best alternative. Regardless of what bulbs you may be replacing, always make sure to use energy efficient LEDs. Although more costly initially, these bulbs last longer and will save money and electricity over time.



The cost of completely overhauling your lighting system may not make sense if you run a small garage but remember, everyone will make the same saving per bulb.



However, if you have a large fleet or franchise garage it may be worth getting an energy audit done. This will provide advice on all aspects of energy management in your garage as well as costs and payback periods.



There are so many types of bulbs now available that it can be very confusing to know what is right for your garage. Most garages still use fluorescent strip bulbs on the ceiling, regular tungsten bulbs for drop lights and work lights and where used, halogen lights in work stands.

As a general rule, if your bulb is giving off heat then you could probably get a more efficient one. The following give information on the main bulbs in use in Irish garages along with typical savings you can make.

In general, there are three main ways you can reduce the amount of money you spend on lighting: energy efficient bulbs, reflective housings & lighting controls.

Bulb Type 	Alternative 	Comments
<ul style="list-style-type: none"> • Incandescent or tungsten bulbs are costly to run. A 100W bulb running all day will cost you €42 a year. • 100W incandescent bulbs are no longer available to buy as they have been phased out, however you may still have some in use. 	<ul style="list-style-type: none"> • A 20w equivalent CFL bulb will cost you €8 a year - Saving of €34 per bulb each year • A 4w equivalent led bulb will cost you €1.70 a year - Saving over €40 per bulb each year! 	<ul style="list-style-type: none"> • The traditional type of bulb (tungsten) generates a lot of heat when being used and this wastes electricity. • The typical energy saving bulbs (CFLs), give off the same light but generate much less heat. They save up to 70% on electricity costs. • While LEDs are more expensive to buy, they use less electricity again and last 20 times compared to incandescent bulbs

Bulb Type 	Alternative 	Comments
<ul style="list-style-type: none"> • Typical fluorescent tubes are 58W and each tube will cost you €24 a year to run 	<ul style="list-style-type: none"> • A 28W T5 equivalent will cost you €12 a year - a Saving of €12 per tube each year • A 19W LED Tube will further reduce the cost to €8 a year 	<ul style="list-style-type: none"> • Strip fluorescent bulbs are common in garages but there are different types and these use different amounts of electricity. • To know how much electricity your bulbs use, look for a number like: TLD 58W/33. In this case, 58W is the amount of electricity used. The lower this number the better. • In addition to direct tube replacements, LED panels are now a cost effective alternative. In addition, as these are sealed units, they don't get as dirty and are easy to clean.

Bulb Type 	Alternative 	Comments
<ul style="list-style-type: none"> • A 50W spotlight or downlighter running all day will cost you €21 a year. 	<ul style="list-style-type: none"> • CFLs and LEDs • An 11W equivalent CFL will save you €16 per bulb each year • A 3W LED will save €20 each year 	<ul style="list-style-type: none"> • Spotlights or downlighters have become popular in recent years and are often found in show rooms and offices. • They are very inefficient and tend to blow or fail regularly due to the large amount of heat they generate in confined spaces. • While LEDs are more expensive to buy as an alternative, don't forget they last much longer as well as being far more cost efficient!

NOTE: there are grants available to minimise the costs of investing in LEDs.
Check out www.seai.ie/grants for more

Housing & controls

Obviously efficient bulbs are essential to reducing costs but equally important are the housings and controls.

Housings

Good housings can improve lighting by 100% - this means you can use 2 bulbs instead of 4, allowing you to halve your costs while maintaining the same level of lighting.

Open housings, and their bulbs, collect dirt over time which reduces the amount of light they give out. In dusty environments like garages make sure to clean these every 2 years.

Savings can also be made by making the most of natural daylight. Many garages have skylights but, as these get dirty over time, they may not be as effective as they should be. These should be cleaned every 3-4 years and can make a big difference around the garage.

Lighting controls

People are good at turning lights on but not so good at turning them off and this can result in excessive energy use and costs. Lighting controls are a good way of reducing lighting costs, especially in areas that don't need light all the time. The main types of controls are:



Manual

Make sure that all light switches are labelled. Where possible try not have all the lights on one switch. Instead arrange lights so that they are controlled in banks - especially if you can use natural light as an alternative in certain areas.



Photo-electric controls

These control lighting based on the amount of natural light present. These ensure that lighting is turned off when daylight alone provides the required light.



Motion sensors

These are very useful in toilets, stores and other areas that are not used all the time.



Time controls

If the working hours in a garage are fixed, then it may be worth installing a time switch so that most of the lighting is switched off at the end of the working day.



4. Documentation

Regardless of whether you are having large volumes of waste taken off site or just a small amount, each person that takes away your waste should be able to give you a copy of an up-to-date waste collection permit. This protects you from any legal issues that may arise if it is found that some of your wastes are managed inappropriately.

All wastes that are removed from your garage by a third party, including general rubbish must have an accompanying record. Remember, for hazardous waste you should get a waste waste transfer form.

Having all of these records on hand is a tricky thing – book-keeping not being the strength of most people!

Once collected, waste must be brought to a facility for recovery or disposal. Make sure the facility is authorised to operate by the EPA or Local Authority as appropriate.

Check for waste collection permits at:

<http://www.nwcpo.ie>

Check for EPA licences at:

<https://www.epa.ie/our-services/licensing/licencesearch>

Check for Local Authority permits at:

<http://facilityregister.nwcpo.ie>

**YOUR LOCAL AUTHORITY
CAN CALL AT YOUR
GARAGE AND ASK TO SEE
YOUR RECORDS FOR THE
PAST THREE YEARS.**

It is much easier to keep a summary of the relevant information. The following is an example of summary sheets for all your waste records. The first table records all the relevant information that you should have for your waste contractors and the second will summarise all the information you must have for the wastes taken from your garage.



Waste Licences and Permits (Example)

Waste Type	Company Name	License/ Permit Reference Number	Issuing Authority
Waste oil	ABC Waste	NWCPO-22-12345-01	Issuing Authority: National Waste Collection Permit Office http://www.nwcpo.ie/
Waste oil filters	ABC Waste	NWCPO-22-12345-01	Issuing Authority: National Waste Collection Permit Office http://www.nwcpo.ie/
Car batteries	ABC Waste	NWCPO-22-12345-01	Issuing Authority: National Waste Collection Permit Office http://www.nwcpo.ie/
Tyre producer (P)	ABC Tyres Ltd	2000T 1234567	https://www.producerregister.ie/producers/ https://circolet.ie/membership/member-list/
Tyre retailer (R)	ABC Tyres Ltd	1234567	https://circolet.ie/membership/member-list/
Tyres, Authorised Treatment Facility (ATF)	DEF Waste Tyres	7654321	https://circolet.ie/membership/member-list/
General waste	XYZ Waste	NWCPO-22-12345-01	Issuing Authority: National Waste Collection Permit Office http://www.nwcpo.ie/

Waste Collection Records (Example)

Waste Type	Waste Contractor Company	License/ Permit Reference Number	Quantity and Date Collected
Waste oil	ABC Waste	NWCPO-22-12345-01	180 litres, 4th July 2020
Waste oil filters	ABC Waste	NWCPO-22-12345-01	40 kg, 4th July 2020
Car batteries	ABC Waste	NWCPO-22-12345-01	80 kg, 4th July 2020
Waste Tyres	DEF Waste Tyres	NWCPO-22-12345-01	250 tyres, 1040kg, 15th July 2020
General waste	XYZ Waste	NWCPO-22-12345-01	220 kg, 7th July 2020

Waste Licences and Permits (for you)

Waste Type	Company Name	License/ Permit Reference Number	Issuing Authority
Waste oil			
Waste oil filters			
Car batteries			
Tyre producer (P)			
Tyre retailer (R)			
Tyres, Authorised Treatment Facility (ATF)			
General waste			
Other			

Waste Collection Records (for you)

Waste Type	Waste Contractor Company	License/ Permit Reference Number	Quantity and Date Collected
Waste oil			
Waste oil filters			
Car batteries			
Waste Tyres			
General waste			
Other			

Legislation and best practice

The law and you. There are many different pieces of legislation that apply to Irish garages. As a result, it can be difficult to know everything that you must do in your garage. The main laws that you must comply with are set out below and mainly involve waste materials. It has been found that by complying with these laws can save money and make sure you are not liable to large fines.

Wastes	How it affects you	The law
Hazardous waste Disposal	The main hazardous wastes generated in a garage must be recovered and disposed of appropriately.	Waste Management Act 1996, as amended.
Hazardous waste storage	Hazardous wastes should not be mixed and appropriate containers should be used for their on-site storage.	Waste Management Act 1996, as amended.
Removal of hazardous waste	Hazardous waste should only be taken away by a permitted waste collector. Make sure you get a copy of their permit - this is your protection in case the waste is managed or disposed of incorrectly afterwards.	Replace with: Waste Management (Collection Permit) Regulations 2007 (S.I. 821 of 2007), as amended.
Burning of waste oil	It is illegal to burn waste oil, either in waste oil burners (often called oil burners) or in open fires. Waste oils must not be disposed of to water or drainage systems.	Waste Management (Prohibition of Waste Disposal by Burning) Regulations 2009, as amended (S.I. No. 286 of 2009).
Record keeping for hazardous waste	All hazardous wastes removed from your garage must have an appropriate waste transfer form.	European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011, as amended (S.I. No. 324 of 2011)
Record storage	Records for hazardous waste must be kept for at least 3 years. Storage containers must be labelled, and hazardous wastes should not be mixed with each other or general waste.	The European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011.
Tyres	If you supply tyres, you must register with Circol ELT and comply with the associated requirements, https://circoelt.ie/	Waste Management (Tyres and Waste Tyres) Regulations 2017, as amended S.I. No. 400 of 2017.
Packaging materials	Packaging wastes must be segregated at source and recycled.	Waste Management (Packaging) Regulations 2014, as amended (S.I. No. 282 of 2014).
Burning wastes	The burning of waste - either indoors or outdoors is illegal. Only licensed/permitted facilities can burn waste under controlled conditions.	Waste Management (Prohibition of waste disposal by burning) Regulations 2009, as amended (S.I. No. 286 of 2009).

Wastes	How it affects you	The law
Waste Management End-of-Life Vehicles (ELVs)	An End of Life Vehicle can only be transferred to an Authorised Treatment Facility (ATF). Retain a copy of their facility permit/license and waste collection permit if collecting from the garage.	Producer Responsibility Scheme for End-of-Life Vehicles: https://www.elves.ie/ ELV Environmental Services CLG was established in 2014 representing all Original Equipment Manufacturers (OEMs) and has been approved under the European Union (End-of-Life Vehicles) (Amendment) Regulations 2016 to be the new compliance scheme for the vehicle sector. ELVES promote, on behalf of its members, a network of public drop off points (also known as authorised treatment facilities, ATFs or scrapyards) that provide free ELV take back to the public.

Wastes	How it affects you	The law
Batteries	If you sell or supply batteries, you must either register with an appropriate compliance scheme (WEEE Ireland or European Recycling Platform (ERP)) or with your Local Authority. You must then comply with the associated requirements for supply and management of waste batteries.	Waste Batteries and Accumulators Regulations 2014, as amended (S.I. No. 283 of 2014).
Vehicle Refinishing	If you do body work repair on cars you must have the appropriate compliance certification. For more information refer to the EPA website: Best Practice Guidelines for Vehicle Refinishing: http://www.epa.ie/pubs/reports/air/solvents/bestpracticeguidelinesforvehiclerefiniting2012.html	European Union (Paints, Varnishes, Vehicle Refinishing Products and Activities) Regulations 2012, as amended (S.I. No. 564 of 2012).
Wastewater	If your garage discharges waste water from washing of automobiles, then you may be subject to a Trade Effluent License. Contact your local authority for more information.	Local Government (Water Pollution) Act, 1977-1990, as amended.

Wastes	How it affects you	The law
Mobile Air Conditioning Units (MACs)	If you service or repair MAC equipment you must ensure that the system does not have leaks and has not lost an abnormal amount of refrigerant before you service the unit. EPA Summary Guidance for Garages who Service Mobile Air Conditioning (MAC) Units summarises the key requirements and obligations specified in the Regulations for F-gas from MACs of all road vehicles: http://www.epa.ie/pubs/advice/air/od/s7irlsummaryguidanceforgaragesmac.html	Regulation (EU) No 517/2014 of the European Parliament and of the Council of 16 April 2014 on fluorinated greenhouse gases, as amended. Personnel carrying out gas recovery during MAC maintenance must have the following qualification: For MAC units of cars and light vans personnel must hold: • FETAC Special Purpose Certificate in Handling F-gas Mobile Aircon Systems Award Code 550109 or equivalent • City & Guilds Certificate 5101-01 in Safe Handling of Refrigerants for Mobile Air Conditioning Systems (MAC); or • Equivalent courses that fulfil the requirements of (EC) No 307/2008.

Checklists

AREA	HAZARDOUS WASTE - MUST DO	Are you doing this?	
		YES	NO
Waste Contractors	Contractors removing waste (haz and non-haz) from your garage must have a current waste collection permit from the National Waste Collection Permit Office (NWCPO). Facilities or installations providing recovery or disposal activities of the waste must also have an appropriate authorisation from their Local Authority or the Environmental Protection Agency.		
Waste oil	Keep records of the volumes of waste oils removed from your garage for at least 3 years.		
	You must never burn waste oil - either in an oil burner (often called waste oil burners) or in an open fire.		
All other hazardous wastes	Keep records of all hazardous wastes removed from your garage for at least 3 years. This includes a waste transfer form which should be correctly filled in by the waste contractor and garage.		
Hazardous waste storage	Make sure that no hazardous wastes are put into the municipal waste stream.		
	Make sure that all hazardous waste containers, including waste oil drums, are labelled.		
	Make sure that hazardous wastes are not poured down the sink or into drains.		
Batteries	If you are a supplier of batteries you must fulfil your obligations as set out in the table on the previous page.		
	Keep all waste batteries intact and do not drain or dismantle.		
Tyres	If you supply tyres you must fulfil your obligations as set out on https://circoelt.ie/		
	Make sure that your tyre collector has a waste collection permit to collect them from the NWCPO. They should also be registered with the tyre compliance scheme, https://circoelt.ie/		
Packaging	Segregate and recycle your packaging wastes.		
	Keep collection records from your waste contractor for recyclables.		
End of Life Vehicles (ELVs)	If you generate ELVs you must forward them to an Authorised Treatment Facility (ATF).		
Mobile Air Conditioners (MAC)	If you repair MACs check for leaks before servicing. MAC servicing should only be carried out by personnel with the appropriate qualifications. More information is available on www.fgases.ie		

AREA	HAZARDOUS WASTE - SHOULD DO	Are you doing this?	
		YES	NO
Waste Contractors	Keep a written record of all your waste contractors details. A sample table is shown at the back of this booklet.		
Waste oil & hazardous waste storage	Store all waste oil and hazardous wastes in contained (bunded) areas and away from any drains.		
Hazardous waste storage	Store these in the appropriate containers. These are shown in the section that deals with Hazardous Wastes.		
	Have spill containment and clean-up kits in place.		
	Use different materials for cleaning up water and hazardous liquids e.g. never use a cloth that has been used for cleaning an oil spill to clean a water spill.		

AREA	GENERAL WASTE - YOU SHOULD DO	Are you doing this?	
		YES	NO
Metal	Always separate your metal wastes - metal is heavy and can cost you if thrown out in the mixed rubbish. Ask your waste contractors if they will take it for free, or better yet, give you money for it.		
Recyclables	Segregate as much of your recyclable wastes as you can. Using clear plastic bags is good for this. Always try and do your segregation as close to where the waste is generated as possible. Doing this when you generate it (at source) can save you money. If space is a problem, consider something like the portable bins shown previously.		
General Wastes	Always keep the lid on your bin or skip closed. Water is heavy and could cost you money to be taken away!		
	Try and get suppliers to use less packaging and get parts without all the additional packaging materials - less materials for you to deal with.		
	Use double sided printing and photocopying if you can.		
	Recycle printer and toner cartridges.		

WATER USE - BEST PRACTICES	Are you doing this?	
	YES	NO
If you have a car wash does it reuse water? Modern car washes use the last rinse water from one wash as the first cleaning water in the next wash – this can save you a lot of money.		
If your car wash uses hot water can you use solar water collectors to heat the water – once these are installed you get free hot water.		
If you have a do it yourself car washer make sure that all the hoses and washers have on/off triggers – customers will often forget about turning off taps and equipment.		

COMPRESSED AIR - BEST PRACTICES		Are you doing this?	
		YES	NO
Check the compressor, hoses and other piping and fittings for leaks regularly. Weekly is best.			
Generate compressed air close to where it is used – the longer the pipes the bigger the chance of leaks.			
Turn air compressors off when they are not needed e.g. lunch time. If there are no leaks in the system the pressure won't drop.			
Don't use too high a pressure in your system – 7 bar should be fine for garage work. The higher the pressure the higher the cost!			
Take the input air from a cool source – if the compressor is in a hot room, fit a pipe that leads outside to supply the air.			
Clean air inlet filters regularly - these cost only a few cents but can save you euros!			
If you are buying a new compressor invest in a good quality type (e.g. variable speed drive). They are more expensive to buy but cheaper by far in the long run. They are also quieter and this makes a big difference in small garages.			
Many leaks occur in hoses, especially if they are left on the ground. Use retractable hoses to save on this expense.			
If you have a public air supply for tyres or use it for a car wash, make sure these are checked for compressed air leaks daily. These are usually away from the main part of the garage and can be leaking for quite a while if not checked regularly.			
Inform workers of the costs of producing compressed air.			

LIGHTING - BEST PRACTICES	Are you doing this?	
	YES	NO
Use energy efficient and long life bulbs - they can give you up to 70% savings on your electricity bill		
Can fewer lights be used ? Cleaning the lighting housings and/or painting the roof with reflective paint, will give more light from your fittings.		
If you have skylights in your garage clean them regularly. You'll be amazed the difference this can make.		
Use timers and motion sensors in areas where lights are used infrequently but are often left on all day, e.g. toilets, stores.		
Label all light switches.		
Ensure all lights are turned off when they are not needed (inform staff).		

ELECTRICITY USE BEST PRACTICES - YOU SHOULD DO	Are you doing this?	
	YES	NO
Read your electricity meter on the first day of each month and submit the reading to your supplier (by phone or internet) – this means you are only paying for what you use each month.		
Are you on the right electricity tariff? Talk to your supplier to get the best deal for your garage. Usually the General Purpose tariff is the correct one for Irish garages.		
If you charge batteries and other rechargeables then it may be worth being on a General Purpose Night Rate - this has reduced rates for night electricity so you can charge these for less overnight.		
Investigate alternative electricity suppliers – there are savings to be made!		
Examine your bills for wattless charges. If you have wattless charges on your bill something isn't working properly (probably a motor on a lift) – get your electrician in to check this out.		
Switch off office equipment when not in use (especially on weekends and holidays).		



E: info@epa.ie

www.epa.ie

LoCall: 0818 335 599

twitter.com/EPAlreland

For more information on any aspects of waste or hazardous waste management please contact the environment section of your local authority.

Disclaimer

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THE CIRCULAR ECONOMY PROGRAMME
The Driving Force for Ireland's Move to a Circular Economy



Rialtas na hÉireann
Government of Ireland