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1A

Identify workplace environmental and resource efficiency issues

In order to reduce the impact our daily activities have on the environment, it is important to understand some of the key environmental and resource efficiency issues. The specific issues that are relevant for your organisation will vary depending on its core business. In general, however, all businesses will seek to improve their environmental performance, minimise environmental risks and use resources and materials more efficiently in daily processes.



What is environmental sustainability?

So much of what we buy, do or use every day has an environmental impact or effect. Using petrol in our cars, electricity in our homes and paper in our offices makes an impact on the environment. In our modern lives, it is not realistic to expect that we stop using our cars or our appliances completely. But we can start to use them in a way that reduces their environmental impact.

If something is environmentally sustainable, it can be continued to be used at a certain rate, without interruption. Environmental sustainability means that something can be used or produced without affecting the ability of future generations to either have the same thing, or enjoy the natural environment from which it came or where it was used.

Sometimes environmental sustainability means taking things from the natural environment at a slower rate. For example, there are strict rules on how many of particular species of fish may be harvested each season. This is to ensure that there are enough fish remaining to replenish the population, so there are enough left to harvest in future seasons.

Examples of environmental workplace initiatives include:

- using less paper by printing on both sides
- using less electricity by adjusting computer settings and turning machines off overnight
- using less fuel for transport by adjusting travel requirements
- introducing paper recycling schemes
- encouraging staff to use washable cups rather than disposable ones
- donating office equipment to other organisations rather than throwing it away when it is upgraded.

Environmental and resource efficiency issues

Environmental and resource efficiency issues revolve around an organisation's efforts to maximise its performance while minimising its waste and environmental impact.

Improving environmental performance may be done as part of good business practice (since it often reduces costs), from a desire to improve the environment or to improve relations with employees, customers, local communities and the general public. Here are some ways organisations may seek to improve business environmental performance.

Ways for organisations to improve business environmental performance

Comply with relevant laws and regulations, such as how to dispose of waste.

Reduce environmental footprint – the amount of land that must be regenerated to make up for the resources consumed to carry out the organisation's activities.

Reduce greenhouse gas emissions – emissions of gases such as carbon dioxide that are a by-product of energy and fuel used in our daily activities.

Use less resources

Using less resources, whether renewable or not, will reduce environmental impact and also generally save the organisation money. A few of the many ways an organisation may reduce resource use are listed below.



- Use office equipment with power-save modes that reduce electricity use.



- Use dishwashers and washing machines that use less water, or choose the eco settings for each wash.



- Install compact fluorescent light bulbs instead of traditional incandescent bulbs; they are more expensive, but last longer and use less electricity.



- Encourage double-sided printing to reduce paper usage and using printed paper for scrap notebooks.

Extended waste management hierarchy

An extended waste management hierarchy includes steps to prevent excessive waste and can be applied in any workplace. These steps are outlined below.

Avoid

- Choose products with less or no packaging.
- Choose products that are more efficient in their energy or water needs.
- Avoid disposable products like cups and bags.

Reduce

- Use low energy settings on all equipment.
- Only use washing machines or dishwashers when there is a full load.
- Use cold water settings.
- Store information electronically rather than as paper copies.
- Circulate one document for review.

Re-use

- Re-use paper printed on one side.
- Request suppliers deliver using re-usable pallets.
- Donate surplus materials/equipment to community groups.

Recycle

- Recycle paper, plastics, steel, aluminium cans, biodegradable food scraps or any other materials accepted by your local council or waste contractor.

Recover

- Use materials that have been recycled; for example, bricks or doors recovered from one building site may be used in another.

Can I achieve the same result with less?

Printing or photocopying on both sides of the page is a simple way to reduce paper usage, providing the printer or photocopier has this function. Speak to someone in your computer support area for assistance in setting up your computer to enable printing on both sides.

Can I do it electronically?

A lot of information is circulated in hard copy that could easily be circulated electronically. For example, you may be able to email copies of a presentation to attendees, rather than distributing them at the time. Or you may be able to scan an article and email it, rather than circulating it in hard copy.

Can I complete the procedure less often?

You may have the habit of running the dishwasher in the staff kitchen every night, regardless of how much is in there. Try waiting until it is full. Similarly, you may be making deliveries or ordering couriers for single items, whereas it may make more sense to wait and complete several together.

Can I use a more environmentally friendly alternative?

You may be able to reduce environmental impact by using recycled paper, washing clothes or dishes in cold water rather than hot, using a biodegradable detergent, using re-usable packaging or any other alternative.

Does it need to be switched on?

Office equipment is often left on for convenience, even though it's not really required. Modern equipment and fluorescent lighting does not use significantly more power to start up, so if you're not using your computer for more than half an hour, turn it off. Turning off the monitor can also help. Similarly, if no-one is in the room, turn off the lights. Talk with your computer support staff for assistance with setting up power-save modes on office equipment.

Example: types of resources

Some examples of renewable and non-renewable resources are listed below.

Renewable resources	Non-renewable resources
<ul style="list-style-type: none"> • Oxygen • Water • Managed timber • Paper from managed sources • Leather • Wind energy • Solar energy 	<ul style="list-style-type: none"> • Oil • Petrol • Coal • Diesel • Natural gas • Nuclear power • Metals

Commonly used resources

Some of the most commonly used resources and their uses are listed in the following table. While some examples, such as office paper, seem quite obvious, others, such as how many plastics are petroleum based, may be surprising.

Did you know that making paper from recycled materials results in 74 per cent less air pollution and 35 per cent less water pollution?

Here are some examples of resources that are commonly used by modern businesses.

Paper

Office paper for printing, photocopying and faxing; kitchen towels; packaging materials; newspapers; magazines; cardboard products

Electricity

Computers, printers, faxes, copiers, heating, cooling, lighting, any office equipment, televisions, equipment on standby

Gas

Heating and hot-water systems, natural gas for vehicles

Petrol

Personal transport, freight distribution

Creating a simple map or checklist can help ensure that you measure in the same way every time and that if another person was collecting the information instead of you, they would also collect it in the same way. Your map or checklist may also help you to collect and/or record information more quickly.

Document resource usage

If you are going to collect the same data regularly, then a template helps make the collection quicker and ensures that you are always collecting the same data.

It is easy to identify if there were errors, if the total paper requisitioned by each department did not equal the amount of paper ordered. If paper is held in stock, then you may need to consider this to ensure the paper ordered matches the paper requisitioned. Measuring the paper requisitioned provides data at a higher level of detail than may be available from the supplier and helps identify who is using the most paper.

Example: paper use in an organisation

	February	March	April	May
Data from supplier invoices				
Paper ordered this year	25	30	28	25
Paper ordered last year	30	32	30	28
Requisition documents				
Sales department	8	9	9	7
IT department	5	7	5	4
Finance department	7	8	8	8
HR department	5	6	6	6
Total paper requisitioned	25	30	28	25

Data comparison

It is useful to compare two periods of data. On first review you may conclude that paper use increased in March. However, there may be another contributing factor; for example, there may have been more working days in March than in February. An alternative would be to measure the average amount of paper used per working day.

1D

Record and file documentation measuring current usage

Organisations record information, create documents and file them for future use as part of daily business activity. Filing can be one of the most frustrating jobs for any employee, but when it is done in a structured way it can be done quickly and save a lot of time when a document is required in the future. You need to select the most appropriate method for recording information based on what you are recording, the nature of your organisation and any particular procedures and guidelines that already exist. You need to ensure you familiarise yourself with your organisation's requirements.



Why record and file documents?

The previous section explained the importance of measuring resource usage. This is because it helps provide information on how effectively an environmental initiative has reduced resource usage, identifies opportunities for improvement and helps us understand any cost savings.

It is important that this data is recorded and filed for future access. Some reasons for this are listed below.

Compliance

There may be workplace policies and procedures in place that require this data to be collected and stored for a period of time. Often these procedures are to support legal requirements, so it is important that the records are kept and stored for audit purposes.

Record usage

How often you collect resource usage data will depend on the type of document you use to record your information. Generally, if you are collecting data regularly, it is most useful to record that data in a database format, whether in a spreadsheet or a database.



It is helpful, though not necessary, to name date columns with numbers, rather than text, as this helps keep them in order in some applications. For example, if you sorted months alphabetically your list would start with April, August, December – and end with September. Putting the year before the month means that it is easier to compare the same month in different years without confusion.

How you structure your table will depend on how you wish to present your data. For future analysis, it is helpful to keep one master table that summarises the key information and then select different fields to create any graphs or diagrams. If data is stored in several places, it's much harder to analyse results.

Example: database sample

Resource	2016 01	2016 02	2016 03	2016 04
Electricity usage (kilowatts)				
Water usage (megalitre)				
Paper usage (no. of reams)				

File documents

Documents are filed so that they can be easily accessed at a future date, whether for further business use or for legal compliance requirements. Filing can be done either electronically or in hard copy. Files are increasingly being stored electronically, as this is much simpler for organisations to manage and it is easier to control access.

Workplace environmental hazards

Workplace environmental hazards include noise pollution, air pollution, chemicals, dust, fumes and disposal hazards.

When considering what environmental hazards might exist in a workplace, think about what might happen if things go wrong. For example, storing chemicals may not be a significant environmental hazard, but a leak or spill can create a more significant hazard. Therefore, when assessing environmental hazards, you should think about all possibilities, not just what happens in daily business. Here are some examples of workplace environmental hazards.

Noise pollution	Prolonged periods in a noisy environment can cause damage to hearing such as tinnitus (ringing in the ears) or permanent hearing loss. This can occur in manufacturing environments, for example. If you work in such an environment, you may be required to use protective equipment such as ear plugs or ear muffs to protect your hearing.
Air pollution	Air pollution can come from many sources, the most common being general smog levels, vehicle emissions and industrial emissions. Air pollution can cause a range of health problems including eye and throat irritations or more severe conditions such as bronchitis.
Chemicals	There are many potentially hazardous chemicals used in workplaces. These include corrosives such as sulphuric acid and caustic soda, irritants such as ammonia, and sensitising agents. Exposure can cause skin disease, poisoning or respiratory illness. These chemicals must be handled using the appropriate procedures and protective equipment.
Dust and fumes	Dust and fume hazards can be created in a variety of ways and may result in respiratory concerns. Most people are aware of the risks when handling lead or asbestos but some timbers, other building materials, paints and cement can also potentially affect your health and the environment. Be sure to use the appropriate protective equipment.
Disposal hazards	There are regulations for the correct disposal of many chemicals and other potentially hazardous materials. It is not appropriate to pour some chemicals down the sink or to throw some things, like batteries, into general rubbish. These materials are usually clearly marked and you should follow the instructions carefully.

Example: environmental hazard report form

Environmental hazard forms will differ according to the organisation and their internal structure. Here is an example of an environmental hazard form for your reference.

ENVIRONMENTAL HAZARD REPORT FORM				
Environmental officer to complete				
Grade: _____				
Incident no.: _____				
Date entered: _____				
Name: _____				
This section is to be completed by the employee involved and handed to the manager or supervisor within 24 hours.				
Employer: Sustainable Workplace, 123 Safety First Street, Metropolis				
This is an: Incident Accident Near miss Minor injury				
Major injury Property damage Other _____				
Time of occurrence: am/pm Date of occurrence: _____				
Location/address of occurrence: _____				
Postcode: _____				
Details of occurrence: _____				

Describe what happened and include: exact location of the occurrence within the workplace (for example, desk, stairs, plant room); details of any plant and equipment involved; the process or substance involved. Attach separate sheet if insufficient space.				
Name of person/s involved in the incident or injured, incapacitated:				
First name: _____ Surname: _____				
Position: _____				
(if more than one person attach a separate sheet)				
Risks or potential risks identified:				

Witnesses:				

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Industry guidelines and regulations

Industry guidelines and regulations are specific to particular industries; for example, building and manufacturing regulations that must be complied with by workers and organisations in those industries.

Local council by-laws and regulations

Local council by-laws and regulations cover a number of environmental issues, including waste disposal.

Assess compliance

Some of the tools commonly used by organisations to assess compliance with workplace policies and procedures will differ depending on the requirements being assessed and how the data will be used. Some commonly used tools are summarised below.

Best practice	<p>Best practice comparison</p> <p>Write out a best practice procedure step-by-step. Then write out the current procedure in your organisation, including the written procedure, and what is actually happening. Compare the steps. Where are they different? The differences will help you identify what you need to do to improve your procedure.</p>
Audit or survey	<p>Audit or survey</p> <p>Conduct an audit over two weeks, to check if computer screens in your work group are left on overnight. You could count the monitors left on, or use a map each day to see if there are obvious trends.</p>
Checklists	<p>Checklists</p> <p>Identify whether the required elements are being undertaken by completing checklists that list key criteria. This is a quick and easy way to assess compliance and may allow the reviewer to rate how well something is being followed. Checklists can also usually be completed regularly.</p>

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- following any signage displayed in areas outside your normal work area
- asking for information from people who work in different departments to ensure that you follow their workplace procedures when relevant.

Report breaches and potential breaches

Once you have identified a breach or potential breach, you should report it to the appropriate personnel. This can be difficult when you have identified a breach or potential breach performed by another employee. Most people do not like to feel like they are creating trouble for their peers or colleagues. However, you must remember that breaches can put you, other employees or the environment at risk. In some cases, they may also affect the organisation's compliance with external laws and regulations.



Who to report to

How you should report the breach or potential breach will depend on your organisation's structure. You should find out who in your organisation is responsible for managing breaches or potential breaches of workplace procedure, particularly those relating to environmental regulations.

Your organisation may have an environment officer who has responsibility for the whole organisation or there may be a representative in each department who reports to the environment officer. The person responsible for workplace health and safety may also have responsibility for environmental hazards and breaches. In smaller organisations, this role may not be specifically assigned, requiring you to report it to the owner or manager.

Different breaches may need to be reported to different people, particularly in larger organisations. Your supervisor should be able to advise who a breach is reported to. Even if you report it to another supervisor or manager, you should still inform your supervisor.

Things that might affect who you report a breach to include:

- where the breach occurred, which will affect if you tell your supervisor or one in another area
- the time at which the breach or potential breach was observed and who is available to report it to
- whether it is an actual breach that is currently occurring and represents a risk, or a potential breach that requires preventative action.

3A

Follow plans to improve environmental practices and resource efficiency

An important part of achieving any objective is to develop a plan for achieving it. When a business has an objective such as improving resource use or reducing their environmental footprint, they must develop a detailed plan to help them achieve it. In fact, in a business where there may be many people involved in achieving an objective, it is even more important to have a clear plan with supporting procedures, schedules and work plans, so that all employees know what is expected of them. This is called an organisational plan.

An organisational plan is a detailed outline of the work that must be completed for a business to achieve its objectives. Some organisations refer to this as the business plan.



Develop organisational plans

Some organisational or business plans are developed and updated annually, as part of the regular business planning process. Often, organisational plans are developed in such a way that the work being done throughout the organisation is in line with the key objectives.

There are usually several steps to developing the plan:

1. Develop key objectives
2. Develop departmental objectives
3. Develop team objectives
4. Develop individual objectives

Develop key objectives

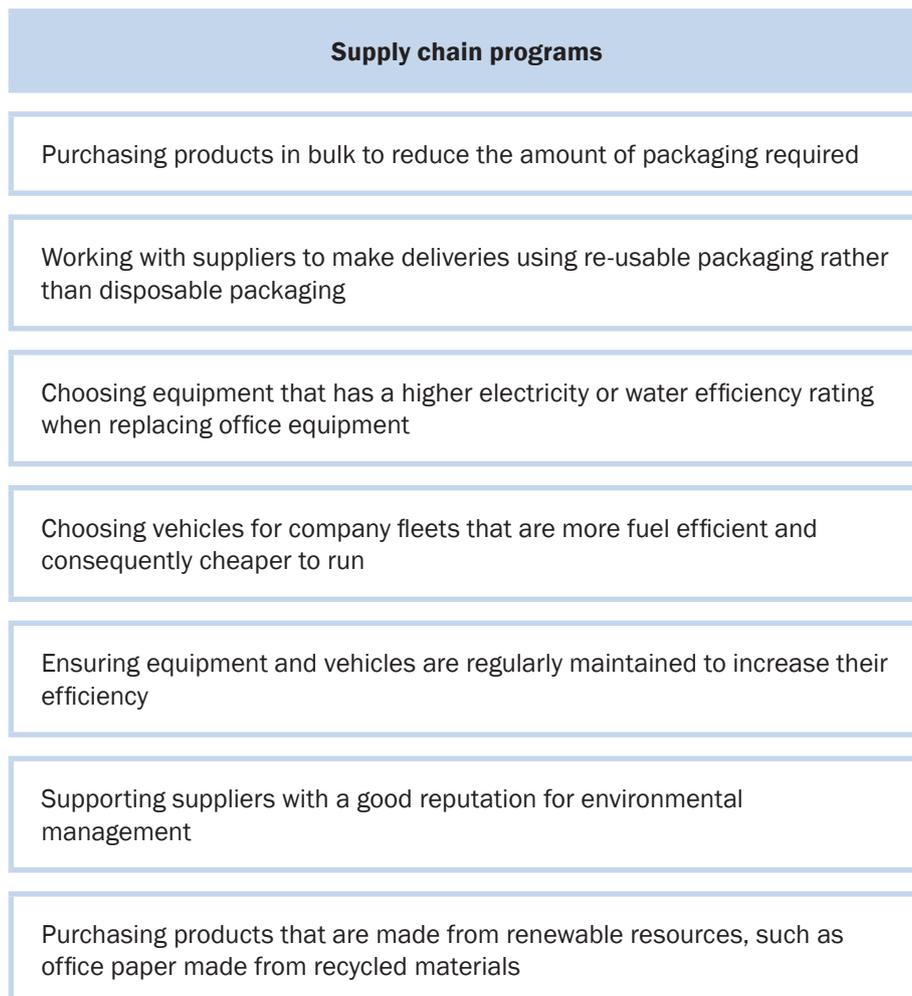
Key objectives are generally limited to between three and five goals; however, there may be numerous supporting projects to achieve these objectives.

Usually completed by senior management, these objectives are generally very high level.

- lighting initiatives, such as changing to more efficient forms of lighting or installing sensor lighting in less frequently used work areas
- making adjustments to office climates, so that the air-conditioning and heating systems run more efficiently
- waste reduction programs.

Supply chain programs

The employees responsible for managing purchasing can help reduce the organisation's environmental footprint by making environmental issues one of the criteria for their purchasing decisions. Cost, value for money, reliability and product warranty will remain important criteria, but often purchasing items with good environmental credentials will also be financially beneficial. For example, a printer that can print on both sides of the paper and is more energy efficient may be more expensive to purchase, but it will have reduced running costs because it uses less electricity and paper, so it may be cheaper in the long run. Other supply chain initiatives that can contribute to environmental sustainability are outlined below.



3B

Work as a team to identify possible areas for improvements to work practices

Many of the most effective changes to improve environmental practices and resource efficiency are simple changes that can be made with little or no financial investment. Those that do require investment are often paid back by savings from reducing use of the resources required.

You should continually look for opportunities to improve environmental work practices and resource efficiency in your home, school or workplace. Identifying these opportunities gives you and your colleagues the chance to implement them and help reduce the environmental impact of your daily activities.



Work practice improvement opportunities

Most workplaces, schools and homes have a number of opportunities for improvement in environmental work practices and resource efficiency. This can be for various reasons, including that:

- current practices have been in place for a long time and have not been reviewed with the objective of reducing the environmental footprint
- staff changes have meant that procedures designed to reduce environmental impact are not being followed thoroughly
- existing procedures for reducing environmental impact have been successfully introduced, but further refinement will increase their success
- other changes in the organisation have created additional opportunities for reducing environmental impact
- there has not previously been a focus on improving environmental work practices or resource efficiency.

3C

Suggest improvements to workplace practices

The previous section explained how to identify opportunities to improve environmental performance and resource efficiency. Making suggestions for improvement can benefit the whole workplace, as well as the environment. How you make a suggestion can affect how successful you are in persuading your team or supervisor to participate. This section provides some information about how to make suggestions.

Making suggestions for improvement is part of your role as a member of a team or work group. If you have thought of something that makes your work easier or reduces the amount of resources used, then you should share it so that other members of the team benefit. Your suggestions may help other people in the team and, in turn, they may also make suggestions that can help you.



How to make suggestions

How you make suggestions will depend on several things, including the type of suggestion, the nature of your work group, the size of your work group and your supervisor's preferences.

In a relaxed, relatively informal work group, it may be appropriate to offer verbal suggestions during team meetings, without prior notice. This may work for simple suggestions, with little or no funding required; for example, suggesting that everyone use a cardboard box at their desk for recycling office paper to make it easier than walking to the recycling bin several times a day.

Written suggestions may be appropriate for more-complex suggestions, which may require either a significant set-up effort or initial funding. In this case, you may develop a short proposal to present to your supervisor. Your proposal may include the objective, background, outline, funding, advantages, risks and recommendations. These are described in detail here.

Risks

Identify any risks, inconveniences or possible disadvantages with the suggestion. When identifying them, explain how these risks will be minimised. For example, the risk that people will not use the duplex function on a new printer will be minimised by asking the IT department to set it as a default for everyone's computer.

Recommendations

Briefly recommend implementing the suggestion, with some persuasive comments about the advantages. Use brief, clear sentences and bullet points where possible. A short proposal that generates interest and further discussion is often more effective than a longer, more informative one that is put aside until your supervisor has time to read it.

Written suggestions may also be appropriate if you work in a more formal environment, or if you do not have regular team meetings where suggestions can be raised. Even if you have prepared a written document, it is usually more effective to arrange a meeting where you review the document with your supervisor, so that you can address any questions or concerns.

When to make suggestions for improvements

Deciding how to present a suggestion will depend on your judgment. For example, think about how your supervisor behaves in team meetings. Do they respond favourably to new ideas? Or are they in a hurry to complete the agenda and finish the meeting? Does your supervisor like time to process an idea before deciding what to do?

For complex suggestions or those that may require substantial set-up effort or funding, you should generally try to raise the idea with your supervisor privately, before suggesting it to a group. You may still choose your time carefully; for example, don't make a suggestion if your supervisor seems rushed or under pressure. Wait until they have time to listen properly and consider the suggestion carefully.

If you have a regular private meeting with your supervisor, this is a good time to discuss suggestions. You may choose to raise it briefly with them and then offer to develop a written proposal that gives full details for their approval.

Employees who make well-considered suggestions for improvement and follow them through are considered highly by their supervisors and managers.

Energy-saving ideas

There are many ways to reduce electricity usage. Some are simple and may be suggested verbally, while others are more complex and require a formal proposal. More complex suggestions may require some initial funding before the savings are realised, while simple methods may involve employee action rather than cost.

Most energy suppliers have suggestions for saving energy on their websites. Visit your provider's website for ideas.

Energy-saving ideas

- Switch equipment off at the unit or the wall, rather than using the remote to leave it in stand-by mode
- Initiate an end-of-day procedure where all office equipment is fully switched off to save power overnight, on weekends and during holiday shutdowns
- Activate power-save options for office equipment like photocopiers and printers so they switch to a more efficient energy usage after a pre-set time
- Switch off computer monitors when they are not in use for more than a few minutes, rather than using screen savers
- Switch off lights when they are not in use, particularly in areas like conference rooms and storage areas
- Install sensor lighting in rooms used less frequently, such as storage rooms, so that lights turn off automatically when no-one is present
- Adjust heating and cooling settings so that it is not less than 26° C in summer or above 20° C in winter and encourage people to dress appropriately
- Use blinds to help manage the temperature; for example, blocking direct sunlight stops a room heating excessively in summer
- Consider energy and water efficiency as key criteria when purchasing or replacing lights or equipment
- Regularly maintain office equipment to help ensure that it is operating efficiently

Water-saving ideas

Some simple suggestions for using less water include:

- using eco settings on washing machines and dishwashers, and only running them when they are full
- installing half-flush devices on toilets if they are not already in place
- installing a rainwater tank for watering gardens
- installing a greywater system for re-using wastewater.

Most water providers have suggestions for saving water on their websites.