

Student workbook

BSBSUS201

Participate in environmentally sustainable work practices

Delivery date

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**TAFE NSW would like to pay your respect and acknowledge Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of the Land, Rivers and Sea. We acknowledge and pay your respect to the Elders, both past and present of all Nations.**

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# Icon legends

| Icons | Descriptions |
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|  | **Practice activity**  Learning activities are the tasks and exercises that assist you in gaining a clear understanding of the content in this workbook. It is important for you to undertake these activities, as they will enhance your learning.  Activities can be used to prepare you for assessments. Refer to the assessments before you commence so that you are aware which activities will assist you in completing your assessments. |
|  | **Collaboration**  Whether you discuss your learning in an online forum or in a face-to-face environment discussions allow you to create and consolidate new meaningful knowledge. |
|  | **Self-check**  A self-check is an activity that allows you to assess your own learning progress. It is an opportunity to determine the levels of your learning and to identify areas for improvement. |
|  | **Readings (Required and suggested)**  The required reading is referred to throughout this Student workbook. You will need the required text for readings and activities.  The suggested reading is quoted in the Student workbook, however you do not need a copy of this text to complete the learning. The suggested reading provides supplementary information that may assist you in completing the unit. |

Topic 1

Identify current resource use

# Introduction

Before you investigate practices in relation to resource use you need to understand the concept of environmental sustainability; what it means for you as an individual and for your business community. You also need to understand how sustainability relates to business; the benefits and opportunities that can flow from improving environmentally sustainable work practices.

# What does sustainability mean?

Every day we hear the term ‘sustainable’ or ‘sustainability’ being used to describe a large number of issues and news items. There is the ‘sustainable economy’, ‘sustainable agriculture’, ‘economically sustainable’, ‘the need to be sustainable’, ‘sustainable work practices’ and ‘sustainable water supply’ to name a few.

A very simple definition of sustainability comes from the World Summit on Sustainable Development (2002):

*“…enough, for all, forever”*.

The earth’s resources are finite and that we must conserve and manage these resources for our own needs so that we do not compromise the ability of future generations to meet their needs. It introduces the concepts of ‘stewardship’, or looking after the world’s resources, reducing and recycling resources and looking to nature for examples of ways to develop without using large amounts of resources (termed ‘biomimicry’).

# What are the key sustainability issues?

Unsustainable activities have led to changes in our environment or have been identified as having the potential to lead to future changes. The types of changes that are occurring or are predicted to occur form the key issues for sustainability.

Key sustainability issues, which can be broken down into environmental and resource efficiency issues, can be global and/or local.

## Global environmental and resource efficiency issues

An example of global sustainability issues is enhanced greenhouse gas effects. The greenhouse effect happens naturally as the sun’s energy warms the earth, some of which is trapped by greenhouse gases such as water vapour, carbon dioxide, methane, nitrous oxide, ozone and some artificial chemicals such as chlorofluorocarbons (CFCs). Increased greenhouse gases from us burning fossil fuels such as coal, oil and natural gas (also known as non-renewable energy sources) are increasing this warming effect.

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| Readings icon | Reading list |

A diagram of the [greenhouse effect](https://climatechange.environment.nsw.gov.au/About-climate-change-in-NSW/Causes-of-climate-change) is available from the federal government Department of the Environment website.

The following table provides a summary of some of the key global sustainability issues. They are related to changes to the physical and cultural (i.e. the way we live) environments, which in turn relate to the economic environment.

Table 1 Key global environmental and resource efficiency issues

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| --- | --- |
| Key issues | Implications – Globally and in Australia |
| Change in climate due to an increase in greenhouse gases | Rising sea levels due to accelerated ice cap melting, agricultural losses, drought, flooding. |
| Reduction in air quality | Increase in air pollution affecting health, vegetation loss. |
| Reduction in water quality and quantity | Less water available for agriculture, natural environments (leading to loss of biodiversity) and human consumption and recreation, increase in soil erosion, increase in illness due to unclean water consumption. |
| Loss of biodiversity | Loss of species, land clearing leading to erosion (which reduces water quality), changes to the food chain and ecosystems. |
| Finite resources (non-renewable) | Limited supplies of fossil fuels (e.g. oil, gas, coal), changes to transport modes, price increases for fuels and other resources, damage to the environment through resource extraction activities. |
| Loss of heritage | Reduction in heritage values and historical reference, cultural losses – stories, traditions and values, loss of cultural diversity. |
| Generation of waste | Increase in pollution risks due to uncontrolled landfill disposal and liquid waste disposal to rivers and oceans. Health hazards associated with uncontrolled waste disposal. |
| Increase in noise | Effects on community and worker wellbeing, hearing damage. |
| Genetically modified foods | Loss of species diversity, loss of local traditions and small scale methods of food production, potential for larger scale disease/pest epidemics due to reduced crop diversity. |
| Loss of community and social values | Increase in crime, reduction in family support and reliance on external financial support mechanisms, loss of links to the natural environment through traditional values (see Loss of heritage), isolation from the community. |

You may have heard the term ‘renewable resources’ or ‘renewable energy’. A renewable resource or energy source is one that can be replaced or replenished at a rate equal to or above demand and usage. A great example of a renewable energy source is solar power – our usage of this resource will not have any impact on the amount of solar energy produced by the sun – not even close!

## Local environmental and resource efficiency issues

Your local community will be influenced by the key global sustainability issues but will also have some local sustainability issues unique to your area. Examples of these might include things such as:

* New proposed housing development in ecologically sensitive area
* Coal seam gas exploration proposal
* Existing quarry expansion project
* New airport site.

# Workplace environmental and resource efficiency issues

Just as your local community will have their own unique sustainability issues, so will your workplace. The issues your workplace face will depend on many factors including the:

* Nature of the business conducted
* Number of staff
* Location of the business
* Distance from services such as transport
* Access opportunities to local renewable energy suppliers.

Imagine the different environmental issues of a website development company with three employees compared to a high school campus with 1,000 students.

## Workplace environmental and resource efficiency issues

Some of the biggest environmental and resource efficiency issues we face in the workplace fall into the following three areas:

* Energy consumption
* Waste management
* Water consumption

### Energy consumption

The two main sources of energy that organisations use are electricity and fuel (such as petrol and diesel). All of our workplace technology just about runs off electricity including computers, telephones, photocopiers, printers, lighting, air conditioning, fridges and dishwashers. Think about how many electrical items you used at work today? When we really think about it, we realise it is a lot.

Some industries in particular, such as the transport industry, use vast quantities of fuel in their day-to-day work activities. However, even other industries will still use fuel. Does your organisation have work vehicles? Do you have staff who travel via car or plane to conduct business?

Our aim is to reduce the amount of energy we are consuming which can be done through:

* Using energy efficient equipment
* Using equipment with power-saving modes
* Turn off equipment when not in use
* Reduce unnecessary travel by using technology to connect with people where possible.

### Waste management

Every day we produce vast volumes of waste from packaging, no-longer-needed products and food scraps etc. Just have a look at the contents of your waste bin. Waste management refers to how we dispose of waste. We have come a long way in managing our waste better than previous generations with the introduction of recycling services and organic waste services. By using these services we are able to reduce the amount of waste heading to landfill and are able to give a new lease of life to recyclable products. If we have a look at the bins provided by our local council most of us will have three bins; a red lid one for general waste, a yellow lid one for recycling and a green lid one for organic waste. Some councils have introduced a FOGO (Food Organics Garden Organics) program. Imagine if we did not have the recycling and organic waste bins? How full would your general waste bin be?

Now let’s look in the workplace; think about the amount and types of waste you create each day. Does your organisation have different bins for different types of waste? Do they use recycling programs for printer cartridges and other recyclable products?

Our aim is to reduce the amount of general waste we are generating which can be done through:

* Separating waste into general waste, organic waste and recyclable waste
* Engaging in recycling services for office consumables and equipment
* Being mindful of purchasing products with excessive, unnecessary packaging.

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Have a look at the [FOGO program](https://www.begavalley.nsw.gov.au/cp_themes/default/page.asp?p=DOC-PUP-54-48-20) introduced by the Bega Valley Shire Council to see how they are approaching reducing the amount of organic waste that ends up in landfill.

### Water consumption

In Australia, we understand that water is a precious resource as we have experienced droughts and the Government have, at times, implemented water restrictions. In the general workplace, most of our water consumption can come from appliances such as toilets, taps, dishwashers and washing machines. In certain industries, water consumption will also come from production of products.

Many appliances these days have been designed to reduce the amount of water consumed. Notice that all toilets installed now have a dual flush system meaning that we have the choice to use a half-flush or a full flush. Sensor taps are becoming more common in public and organisational bathrooms so water only comes out of the tap when your hands are in front of the sensor. This eliminates the issues of people failing to turn taps off or not turn them off entirely and leaving them to trickle or drip.

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Look at the Business Queensland website for [strategies for saving water](https://www.business.qld.gov.au/running-business/environment/saving-water/workplace) in your workplace.

## Workplace environmental sustainability policy

Many workplaces will already have an existing environmental sustainability policy, procedural document, guidelines and/or mission statement. Improving environmental sustainability can often have a dual effect of long term financial rewards, for example, investing in solar energy infrastructure will usually pay itself in a very short time period. Using less paper is good for the environment and great for your workplace budget.

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Check out the following workplace environmental sustainability statements and policies:

* [TAFE NSW environmental sustainability statement](https://www.tafensw.edu.au/about/environmental-sustainability)
* [Australian Department of Human Services environmental sustainability policy](https://www.humanservices.gov.au/organisations/about-us/publications-and-resources/environmental-sustainability-policy)
* [Healthy Balance Fitness sustainability strategy](https://www.healthybalancefitness.com.au/about/sustainability-strategy/)
* [Plan2go sustainability policy](http://plan2go.nctafe.edu.au/assets/document-library/Crew-Folders/People-and-Culture-Crew/Sustainability/Sustainability-Policy.pdf)

Find out what commitment or policy your workplace has already put into improving their environmental sustainable practices. If you are not currently in a workplace think of a previous place you have worked or use your local TAFE campus.

# Identifying resource usage

Resources likely used in your workplace include:

* energy – including electricity, gas and fuels such as petrol or diesel
* waste – this needs to be categorised – e.g. office waste (recyclable and otherwise), process waste (e.g. paper offcuts from a printing company), putrescible waste (e.g., lunch room waste), liquid waste (e.g. toilets and hand basins)
* water – used in any industrial processes, taps and toilet flushing
* materials – which are the things you use - e.g. paper, cars, office equipment and furniture.

The aim of collecting resource usage information is to identify whether the use of these resources can be more efficient. Large savings have been made by companies that have implemented resource efficiency savings.

In working out how you will collect resource usage data, think about whether you will seek assistance from other staff or departments. You should make it very clear to them what sort of information you need, for example, rather than sending an email to the purchasing team asking for ‘electricity invoices’, you could ask for “the last 12 months of invoices for electricity usage in building C – if there are multiple electricity meters or invoices for this building, could I please have all the data for this building for the past 12 months”.

Other questions you could find the answer to may include:

* Does the organisation recycle paper?
* Recycle toner cartridges?
* Do workers use public transport?
* Is a paperless office encouraged?

You can collect information about resources by obtaining the invoices for services such as water, gas, electricity and waste collection. These invoices generally show amounts used in both dollars and a unit of measurement, and, increasingly, will also provide a greenhouse gas emission calculation. An explanation of how to read the units of measurement on these invoices is provided later.

Before you start, make sure to ask the office manager if they track resource usage before you start collecting invoices.

Many businesses already track these resources and you might be able to access a spreadsheet with all the information you need.

Collecting information about general resources can be obtained from the purchasing department or you can just count the number of and types of office equipment, furniture, stationery, etc. To do this, you could develop a table like the table below.

Table 2 Resource usage audit

| Item | Number | Location | Type |
| --- | --- | --- | --- |
| Photocopier | | 2 | Administration department | Fuji Xerox colour PQ – 45 |
| Colour printer | | 4 | Front office | Kyocera Ecosys FS – 12D |
| Office tables | | 10 | Human Resources | Officemaxi – lamipanel |
| Fridge | | 1 | Lunch room | 500 litre frost free –  Kelvinator PQRST |
| Office chairs | | 45 | Across office | Officemaxi – gas lift 56G |
| Fluorescent lights | | 120 (in doubles – total count) | Across office | T12 fluorescent tubes |
| Copy paper | | 4 reams total/day used | Across office | Brands:  2 ‘Recyclo’  2 ‘Britewhite’ |

The energy usage of items is often written on the equipment or in the user guide. You could make up another column noting this information and the amount of time the equipment is switched on/in use so you can calculate energy usage later if needed.

Depending on the detail of your audit (determined by your scope and objectives), you may even identify the types of coffee/tea you supply, stationery supplies (pens, pencils, etc.), copy paper and so on. A Green Office program can assist you identify and categorise these items.

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Look at the [audit toolkits](http://cityswitch.net.au/Resources/CitySwitch-Resources/Energy-efficient-equipment/Energy-efficient-equipment-article/cityswitch-energy-audit-toolkits-1) that CitySwitch have that you can use to look at your resource consumption in the workplace.

## Energy usage

Air conditioning is a large energy user and details such as the size of the system, temperature setting, wattage, etc. should be taken from the system so that any improvements can be investigated. You could also note whether vents and filters are clean, what temperature the unit is set at and when the system was last serviced. Is the system switched off at night or over weekends or does it run all the time?

For lighting, office equipment and general power you could make a note of whether equipment is left on all the time or when it is switched off. For computers, check how many have energy-saving functions activated.

Another method of calculating energy usage is to use a ‘[power mate](https://www.c-c-i.com.au/shop/media/Pdf/Product/datasheet/CCI/pmpro-20a.pdf)’ that measures the amount of electricity used by various appliances.

There are various types of fluorescent lamps used for overhead lighting in most offices. As technology has advanced, the lamps have become smaller in diameter. The 38 mm lamp (known as a T12 lamp) was superseded 20 years ago by the 26 mm lamp (known as a T8 lamp). The T8 lamp requires 10% less power to produce the same light output. Most recently, new buildings are installing 16mm lamps (T5 lamps) which provide even greater efficiency.

Try and identify what type of lighting you have. Note that in reception areas there are often halogen down lights, which use more power. The number of lights and their type should be identified if this is part of your audit.

When considering energy use, you might also want to investigate the transport usage of staff vehicles and also how staff travel to and from work. Are work vehicles booked efficiently or are staff taking multiple cars to the same location regularly? Do staff carpool or use public transport? Can the business utilise technology to reduce the need to travel such as web conferencing software.

### Commercial building energy efficiency

Owners of large commercial buildings may be required by law to meet certain energy targets and disclose their usage. Is your workplace located in a large office block?

## Waste

Invoices from your waste collection contractor will provide you with details of the amounts of waste generated by your organisation. Determine whether there are separate waste collections for general rubbish, other materials (for example, timber off-cuts or ink cartridges), scrap paper, aluminium/ steel or recyclable plastics.

To verify what waste is being generated, you could undertake a waste audit. This can be as simple as identifying the contents of one bin or several bins in order to categorise the waste as percentages (Don’t forget to wear gloves or wash your hands afterwards!).

For example, you may determine that an office waste bin may have 40% scrap paper, 10% food scraps and 50% plastics.

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Check out the [CitySwitch Waste Assessment Tool](http://cityswitch.net.au/Resources/CitySwitch-Resources/ChooseReuse-waste-toolkit/ChooseReuse-waste-toolkit-article/cityswitch-waste-assessment-tool) that helps you keep track of the waste that is going into your bins at work.

Ask questions at your workplace about what items are recycled and how often. Are desk rubbish bins sorted for recyclables or does this all go into general waste?

## Water usage

Water supply invoices will provide information on water usage, which if you are in an office situation will roughly equal your wastewater output as most water is used for toilet flushing and hand washing.

You can also calculate your water usage by determining the number of toilets, the size of the cistern (e.g., 9/6/4/3, etc. litre) and whether they are single or dual flush. Calculate how many times a toilet would be flushed per day and you have your per day toilet usage amount.

For example:

Two toilets flushed approximately 5 times per day on half flush (6 litres)

= 60 litres of water per day.

## Materials

Identify the most common resources and material used in your workplace and determine how much is purchased each year (e.g. reams of paper). Two important considerations for consumable materials are:

1. Can the consumption of these items be reduced (e.g. making printing double-sided default print option on all office computers)?
2. Is the most sustainable item being purchased initially (e.g. 100% recycled paper)?

# Units of measurement

To identify where efficiencies can be made, and to monitor usage over time, you will need to identify consistent units of measurement, or metrics. The following table provides a brief description of the most common units of measurement and how to convert measurements if required.

Table 3 Identifying and converting common units of measurement

| Item | Common units of measurement |
| --- | --- |
| Electricity | J = Joule = unit of energy  W = Watt – unit of power (rate of energy usage)  1 watt = 1 joule/second  1000 watts = 1 kilowatt (kW)  3600 watt seconds = 1 watt hour  1000 watt hours = 1 Kilowatt hours (kWh) |
| Water | L = litres  ML = megalitres (1000 litres)  GL = gigalitres (1 million litres) |
| Gas | MJ = megajoules |

*Green to Gold* (Esty and Winston 2006) notes the importance of making the data interesting and relevant so that it focuses the employee’s attention. For example, you could talk about energy use per employee or work section, which brings the challenge down to the individual level and can grab someone more than seeing a grand total.

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Check out the [CitySwitch Waste Assessment Tool](http://cityswitch.net.au/Resources/CitySwitch-Resources/ChooseReuse-waste-toolkit/ChooseReuse-waste-toolkit-article/cityswitch-waste-assessment-tool) that helps you keep track of the waste that is going into your bins at work.

## NABERS rating calculator

The National Australian Built Environment Rating *S*ystem (NABERS) program has four environmental rating tools and an assessor can be engaged to provide a star rating for your workplace. The website also has a [self-rating calculator](https://www.nabers.gov.au/ratings/estimate-your-rating) you can use.

# Verifying information

It is important to verify the information you have collected to ensure it is correct.

If you have obtained information from an existing report, check the facts, e.g. if the report says there are 20 single-flush toilets, do a quick check to make sure this is still the case.

Discuss your findings with others (remember the saying “two heads are better than one”) – you may find that you have made a simple calculation error.

Do not just check one bill – ask for 12 months of data. This ensures you are accounting for seasonal variations, or changes to the workplace or workforce over a period of time.

Contact suppliers to verify details supplied (or not supplied) with equipment.

# Identifying current practices – the audit

An audit is an examination and verification of accounts and records. (Macquarie Dictionary, 2002).

An environmental sustainability audit is an examination and verification of current work practices that relate to environmental sustainability. It can be a ‘desktop’ audit, where practices are investigated through reviewing invoices, company policies, regulations and laws and discussions with leaders, employees and customers. The audit can also be a ‘practical audit’ where you actually measure such things as electricity, water and fuel usage. This can be done to verify discussions for items where more accurate data is required. For example, you may have fuel invoices but need to determine how many cents per kilometre a vehicle is using to determine its fuel efficiency.

The elements of an environmental sustainability audit are:

* identifying what is to be audited (scope and objectives)
* collecting information
* verifying information and
* documenting and reporting information.

# What to audit – scope and objectives

Before undertaking an audit, you need to determine the audit scope and objectives. The scope is the geographical or administrative boundaries of your audit. For example, you may decide to audit your entire company, your branch office or the activities of your work team.

The larger the scope the more complex the audit will be. Imagine how large an audit would be for a global company such as Apple. They would need to examine not only their head office in the United States but also all of their administrative branches throughout the world, their many suppliers and perhaps even a sample of their retail outlets and customers.

You must set objectives for your audit before you start. This is so that you know the ‘boundaries’ of your audit and also so that you can refer back to your objectives (together with your targets) when you are monitoring your sustainability practices at a later date, to make sure you are achieving your objectives. Setting audit objectives is when you ask “What do I want to achieve from this audit?” Setting these preliminary audit objectives is different to setting targets. The objectives are broad statements that define the boundaries of the audit to be completed.

For example, an audit objective could be ‘determine electricity usage in the Brisbane office’. Whereas a target would be ‘reduce electricity usage by 20% per year in the Brisbane office’.

It is also important to identify the key stakeholders in the process, so that they can participate in setting the objectives. Consider involving the following stakeholders in the process of setting audit objectives:

* CEO, board of directors or managers for commitment, strategic direction and sign-off
* Human resources department for objectives relating to staff recruitment and retention
* Procurement or purchasing department for objectives relating to supply chain and resource efficiency
* Marketing department for objectives relating to market opportunities, branding and promotion
* General staff to identify items relating to day-to-day operations
* Contractors for external relations and supplies/purchasing
* Customers or clients for their external view of the company and values important to them.

For a large-scale audit you could consider setting up a workshop where the various people come together to set the objectives for the audit. This meeting could also be used to set measurable targets, identify possible sustainability improvements and discuss outcomes and promotion.

# Reporting your audit results

Once you have conducted your audit, you will compile the results and report them to your workplace supervisor. Keep your report short and to the point and use tables and graphs where possible. This will ensure it is read and understood by as many staff as possible. Ideally, you might ask for five minutes to present it to the staff during morning tea or lunch time.

Environmental hazards or evidence of non-compliance with legislation or company policy may have been uncovered during your audit - these must be reported immediately to your supervisor. Your workplace should have an incident reporting procedure.

Examples of what might need to be reported include:

* Discovering that disposable batteries are being thrown into general waste
* Finding a toilet cistern that is stuck on and requires a plumber
* Noticing the office cleaners are using a chemical that has been banned.

# Documenting and reporting information

After you have collected all your information you need to present it in a form than can be easily interpreted by others. Think about using a table based on the checklist you may have already prepared. Microsoft Excel or a similar spreadsheet program is an excellent way to record, document and store audit data. You can also use the graphing features to visually present your results.

Try and document as much information as you can and do not delete any until you have finished the report, as you may find you need a small piece of information at a later date to confirm an efficiency detail.

If you uncover some amazing facts – for example, the air conditioner has not been serviced for 10 years, or that several taps are constantly leaking – note these down as they can serve as your ‘attention grabbers’ later when you want action.

If you uncover an issue with compliance, for example, that a licence has not been renewed or that there is a new piece of legislation you think should be complied with, bring it to the immediate attention of your manager.

# Filing Documentation

Once you have completed your audit, it is important that the information be filed correctly so it can be easily accessed if it needs to be referred to in the future or needs to be retained for compliance reasons. For example, you may want to compare the results of your current audit against previous audits to see if there has been an improvement based on conservation strategies that have been introduced.

## Electronic documentation

When filing electronic documentation it is important that you find out what the organisation’s requirements are for naming and storing electronic files. Ensure that you name files according to the organisation’s naming conventions and that it is stored in the correct location. If your organisation does not have specific requirements for saving electronic files, talk to your supervisor about what their preferences are.

## Hard copy documentation

When filing hard copy documentation ensure that you have filed it in the correct physical location including the correct filing cabinet drawer or folder and that the information is organised in a logical order.

# Workplace environmental hazards

Workplace environmental hazards are hazards that are created by an organisation that impact on the environment. This includes oil spills and factory fires.

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Refer to the [NSW Environment Protection Authority incident management website](https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management) for further information regarding [reporting and managing these incidents](https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management/reporting-and-managing-incidents) and organisations’ [duty to notify pollution incidents](https://www.epa.nsw.gov.au/reporting-and-incidents/incident-management/duty-to-notify-pollution-incidents).

In the workplace, your responsibility in relation to workplace environmental hazards is to identify and report potential environmental hazards and environmental incidences immediately to the appropriate personnel.

## Identifying hazards

Hazards can be identified through:

* Workplace inspections
* Observing
* Conversations with other co-workers

## Reporting hazards and incidences

All hazards and incidences must be reported to ensure that they can be prevented or contained as soon as possible. Your organisation might have a specific form that needs to be completed or a detailed email with the relevant information might suffice to your supervisor, the environmental health officer or work health and safety team. The information that you should provide in your report includes:

* Location of hazard/incident
* Date and time of identification
* The nature of the hazard/incident
* What risk is associated with the hazard/incident.

Topic 2

Comply with environmental regulations

# Introduction

There are numerous Commonwealth (federal) and state environmental laws and regulations designed to protect the environment and all those that inhabit it.

It is likely that your organisation is required to comply with various laws and regulations, including these environmental laws. The relevant laws and regulations need to be identified and examined to determine compliance.

Identifying compliance is very important to an organisation to:

* Reduce the risk of litigation and fines
* Protect the environment and people from harm.

This topic will discuss global, federal and state environment protocols, laws and regulations, how you can comply with workplace procedures and how to report breaches.

# Environmental regulations

It is likely that laws and regulations may be at the levels provided in the table below. Determining laws and regulations that apply to your organisation can be quite complex, and you may need to refer to a lawyer or consultant for assistance. If you have had planning studies done for new buildings or additions, the documentation may list your relevant laws and regulations.

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Legislation is generally provided on various government and law websites. A good starting point to locate a particular piece of legislation or check its content is the [Australasian Legal Information Institute website](http://www.austlii.edu.au/).

The websites of the various federal and state/territory government departments should also provide useful overviews of laws relevant to various types of industry sectors.

Table 4 Levels of laws and regulations

| Level of law or regulation | Comment/example |
| --- | --- |
| International | For example, if you manufactured aerosol sprays, you would be required to comply with international ozone protection laws. |
| Federal | *Environment protection and Biodiversity Conservation Act 1999* requires particular activities such as those in sensitive ecosystems to obtain federal planning approval.  There are also federal Work Health and Safety (WHS) laws. |
| State/territory | In Australia, the majority of environment-based law is state/territory-based.  Planning laws in your local state/territory will require you to seek approval for most new buildings or extensions.  Pollution laws require certain standards for your air emissions, wastewater quality and hazard management. Industries, which may supply your products, may be required to hold an environmental pollution, water use, dangerous goods or hazardous materials licence. |
| Local council | Your local council will most likely have requirements for your building, such as height, window or awning size, car parking restrictions, use of footpath, etc. They may also have guidelines relating to water or energy efficiency for new or existing buildings. |

## International environmental protocols and agreements

Creating worldwide (international) environmental laws and protocols is a very tricky business and getting every country in the world to agree and abide is virtually impossible. But it is important to cover a number of important environmental international protocols and agreements:

* Stockholm Declaration (1972) – At the United Nations Conference on the Human Environment the meeting agreed upon a declaration of 26 principles concerning the environment and development, and an Action Plan with 109 recommendations was developed.
* UNFCCC (1992) – The United Nations Framework Convention on Climate Change was an international treaty negotiated at the Earth Summit in Rio de Janeiro in 1992. The objective of the treaty is to stabilise greenhouse gas concentrations in the atmosphere and provided the framework for more specific protocols to be developed in an attempt to set binding limits on greenhouse gas emissions.
* Kyoto Protocol (1997) – This international protocol sets emissions targets for developed countries which are binding under international law. There are two commitment periods, the first from 2005-2012 and the second from 2012-2020.
* Copenhagen Accord (2009) – This United Nations Climate Change Conference produced a document which recognised that climate change is one of the greatest challenges of the present day and that actions should be taken to keep any temperature increases to below 2oC.

Of course, no country can be forced to participate and will only be urged to do so.

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Look at the [United Nations Framework Convention on Climate Change (UNFCCC) website](https://unfccc.int/) to see the parties involved and latest developments.

## Federal laws protecting the environment

The Australian Federal Government department overseeing protection of the environment at the time of writing is the Department of the Environment and Energy. This department is responsible administering a long list of acts (or legislation) but some key overarching environmental federal laws include:

* *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) – This Act protects and manages nationally and internationally important plants, animals, ecological communities and heritage places
* *Renewable Energy (Electricity) Act 2000* – The object of this Act is ensure that more renewable electricity is created and that it is sustainable while reducing greenhouse emissions for this sector.

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Visit the following websites to further investigate renewable energy targets and schemes:

* [Clean Energy Regulator](http://www.cleanenergyregulator.gov.au/RET/Pages/default.aspx)
* [Australian Renewable Energy Agency](https://arena.gov.au/)

The federal (or Commonwealth) laws that apply to your workplace will depend on what type of business you work for.

## State laws protecting the environment

Each state in Australia has their own suite of laws and regulations to more closely manage and protect the environment. They also have their own state department to administer these laws and regulations and these departments are continually being merged, separated, renamed and reshaped. At the time of writing, in NSW, the government department responsible for legislation pertaining to the environment is the NSW Environment Protection Authority (EPA).

Once again, the legislation that apply to your workplace will depend on the nature of the business, but some of the broader state environmental laws include:

* Protection of the Environment Operations Act 1997 (POEO) – this Act protects, restores and enhances the NSW environment. This Act administers such acts as releasing waste, leaks, spillages into the environment, cigarette smoking, litter and much more
* Pesticides Act 1999 – prohibits the misuse of pesticides that harm people, property, animals or plants
* Environmentally Hazardous Chemicals Act 1985 – related to the reporting, management and disposal of chemicals deemed harmful to the environment.

You could also contact your local state or territory environment department to discuss what may be relevant, such as:

* [Department of the Environment and Energy](https://www.environment.gov.au/) (Federal department)
* Environment Protection Authority (EPA) in your state ([NSW EPA link provided](https://www.epa.nsw.gov.au/))

There may also be local council regulations or policies that govern how the workplace you are in conduct their business. Your local council should be able to provide a list of required laws and regulations governing your geographical area.

## Industry or company-based standards, guidelines, policies and procedures

There may also be regulations, standards, policies, procedures, compacts, agreements or covenants set by your workplace, government or industry. These are generally voluntary but compliance will ensure that your workplace is following ‘best practice’. For example, there may be energy efficiency standards set for your business sector, a company environmental policy or purchasing guides published for your industry.

You can locate information about standards, guidelines, policies and procedures by the following methods:

* asking your relevant work department – compliance, human resources, strategic planning or procurement for relevant company policies and procedures
* contacting your industry-based association or relevant environment/sustainability government department or
* undertaking a search of the Internet – for example, typing in “energy efficiency guidelines for financial institutions” will provide lots of links to industry initiatives and guidelines.

After you have identified the appropriate documents, you would need to review them to identify relevant items and then determine if your own work practices follow the recommendations.

# Complying with workplace procedures

As discussed in Topic 1, many businesses have their own sustainability policy, making a statement about their commitment to the environment and/or sustainable practices and then associated procedures guiding employees on how to comply with the policy.

Complying with federal, state and workplace sustainability laws and policies protects the environment and also reduces the risk of litigation and fines. Pollution fines in many states of Australia are quite large and can include jail time clauses for offenders, including the individual offender and company management.

Ways to ensure you are complying with your workplace procedures are:

* Ask about your workplace sustainability policy. If your workplace does not have one, offer to write one! There are many examples online to get you started.
* Follow workplace procedures. If you do not understand a procedure or why it is required, ask your supervisor to explain. Employees are more likely to follow procedures if they understand the broader context and implications for the procedure.
* Be an active participant in sustainability e.g. carpool to work if you can, make sure the car booking system is efficient so that cars can be shared during work trips, turn lights off when an area is not in use and try not print emails if it is not necessary.
* Train yourself to consider the environment in all aspects of your workplace procedures, in the same way that many employees consider safety in aspects of their working practices.
* Report all breaches or suspected breaches to your supervisor immediately.

Many large businesses have integrated environmental risk assessment and monitoring into their Work Health and Safety (WHS) management systems. This is a very efficient way of ensuring sustainability is considered in a structured system and process. If this is the case, it is important to clearly separate risks that are health and safety risks from those that pose a risk to the environment. Sometimes they may pose a risk to both areas, but ensure both aspects are covered adequately (not just WHS).

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The University of Queensland has a very clear and easily accessible [Environmental Management System (EMS)](https://sustainability.uq.edu.au/projects/environmental-risk).

If you identify that your company is required to hold an environmental licence, you should check the date of the licence, as many are required to be renewed each year. They may also require an annual report to be provided, or they may require regular monitoring to be undertaken.

# Reporting breaches or potential breaches

Just as with Work Health and Safety (WHS) laws and regulations, ignoring a breach is not acceptable and you may even be charged as negligent or complicit if you ignore a clear breach.

There are two clauses of Australian federal law that require consideration of environmental compliance and sustainability.

These are:

* s299(1)(f) of the *Corporations Act 2001* requires companies to include details of breaches of environmental laws and licences in their annual reports and
* s1013(A) to (F) of the *Corporations Act 2001*, requires providers of financial products with an investment component to disclose the extent to which labour standards or environmental, social or ethical considerations are taken into account in investment decision-making.

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Review the following case EPA v Aargus Pty Ltd: Kariotoglou; Kelly [2013] NSWLEC 19 from [Matthews Folbigg Lawyers Case Law update](https://www.matthewsfolbigg.com.au/news/planning-environment/case-law-update-epa-v-aargus-pty-ltd-kariotoglou-kelly/).

This case study shows that breaches of compliance not only impact on the business, but also any employees that are deemed negligent or complicit.

We have outlined that as an employee, you have responsibilities to ensure compliance with environmental regulations and hopefully realise there could be serious repercussions if you fail to do so.

If you become aware of a breach of company policy or other environmental regulations, depending on the severity of the breach, report it directly to your supervisor in the first instance. If it was a major environmental incident or contamination, call 000 in the first instance and then the contact your local EPA.

As with any good management system, reporting potential breaches to your supervisor are just as important to maintain your reputation as a responsible and proactive employee.

Topic 3

Seek opportunities to improve resource efficiency

# Introduction

The previous topic outlined some environmental regulations and how they may apply to your workplace. The importance of complying with workplace regulations and policies was also discussed as was the best course of action to take if you become aware of a breach potential breach of environmental compliance.

This topic will assist you to:

* Follow workplace and organisational plans to improve environmental practices and resources efficiency
* Work as part of a team to identify possible areas for improvement and
* Make suggestions for improvements in own work area.

# Follow workplace plans to improve environmental practices

In Topic 2 you looked at ways to comply with workplace procedures including:

* Finding out if your workplace has a sustainability policy
* Following all workplace procedures and
* Being an active participant in sustainability.

Workplace procedures and plans have been designed to show you how to complete tasks in an efficient and compliant way. They also provide consistency and a benchmark of how a task needs to be completed so all staff know how to do the task.

A common complaint from staff is why they need to complete a task in a certain way, e.g. “why am I only able to buy paper from this distributor – they take longer to deliver!” If you are not sure why a certain procedure is in place, ask your supervisor to explain. A good manager knows that staff are more likely to follow workplace procedures if they understand the reasoning so they should be happy to outline the justification for the procedure.

Try to imagine a horrible environmental incident at your workplace, e.g. a chemical spill. Now imagine the Environmental Protection Authority (EPA) officer coming in to investigate. Their initial questioning will involve something like:

1. What happened?
2. How did this happen?
3. Which staff members were involved?
4. What workplace procedures were in place to prevent this happening?
5. Were these procedures followed by the staff involved?

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Review the following [case study](https://www.epa.nsw.gov.au/news/media-releases/2018/epamedia181126) regarding an environmental hazard caused at Suez Water Pty Ltd and the outcomes.

You will have noticed in the case studies above that if a staff member has failed to follow environmental regulations they may also be fined as well as the company. You could be directly liable if you do not follow workplace procedures in the event of an incident.

Workplace procedures and plans have been developed for many reasons. They are protecting you in many ways – protecting your health, your job role, the company, the environment and possibly even protecting you from legal repercussions in the event of an incident.

# Work as a team to identify areas for improvement

Topic 1 and 2 have provided you with the knowledge and skills to identify and measure current resource use in the workplace and reasons for complying with environmental regulations. This has all been building up to giving you the background to start identifying possible areas for improvements to work practices in your own work area.

## Identifying areas where resource efficiency can be improved

A resource is quite simply an input into your workplace, whether that is staff, money, petrol or paper. You have already considered the resources that are being used in your workplace and even measured some. Now you need to consider how these can be reduced so the workplace is using less resources, i.e. using resources more efficiently. Kinder on the environment and usually will save your workplace money!

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Sustainability Victoria has [Top tips for energy and materials efficiency](https://www.sustainability.vic.gov.au/Business/Efficient-business-operations/Tips-for-energy-and-materials-efficiency) that is worth reviewing to give you some ideas.

While the resources and the way they are used will be unique to your own workplace, some examples of resources that could be used more efficiently include:

* Asking all work colleagues to bring a mug to meetings and training courses so paper and Styrofoam cups are not needed.
* Cancelling the paper copy of the phone book – most use their internet or the phone to look up phone numbers now.
* What other reference materials are being sent and not used? Catalogues? Procedural manuals? Are these available and accessible to all electronically?
* Using furniture sourced from local op shops or reuse centres.
* Ensuring environmentally friendly cleaning products are used, including the dishwashing tablets and liquids in the lunch room.
* Buying only 100% recycled paper content (*closing the loop* involves purchasing products that are made from recycled content).

So make a list of those resources in your work area that you think could be used more efficiently. Start researching what could be done, how and how much this would cost. Now hold that thought! We will cover how to make suggestions in a minute.

# Working as part of a team

If your work area houses more than just you, why not work together to investigate how to improve sustainability? Now that’s an efficient use of resources.

Getting other staff members involved in sustainability can sometimes be a challenge – it might not be something your work colleagues think is important and most employees are already stretched for time without adding another task to their schedule.

Here are some tips on how to work as part of a team on sustainability projects:

* First and foremost, do NOT criticise another work colleague’s work practices. Making someone feel ashamed or guilty because of the way they undertake a task will not make them change their ways – it will simply make them to do the task when you are not around.
* Encourage any actions of work colleagues you see that are improving resources efficiency.
* Ask your supervisor if sustainability can be placed on the weekly team meeting agenda – this will give an opportunity to discuss any ideas on a regular basis and ensure others in your team are present and given time to offer ideas and suggestions.
* Brainstorm for ideas with work colleagues. The rules of brainstorming mean all ideas are listed and considered during the initial process. Try not to discourage any suggestions from work colleagues or they may hesitate to contribute next time.
* Share the results of any progress and improvement of resource efficiency at your next team meeting if appropriate. It is always a good idea to get permission from your supervisor before doing so.
* Ask for help or volunteers from your work team.
* Always give everyone in the team the opportunity to talk and contribute.

Be the example. If others in your work team see you working at identifying resources that could be used more efficiently they may just join in.

Regardless of your role within an organisation you can contribute to the sustainability of the organisation by making a contribution yourself. This might be as small as suggesting to another staff member in the same work space that you use a tray for paper that can be recycled through to making suggestions to management about large scale changes.

Sustainability is something that everyone can participate in and generally the best results will be achieved when everyone gets involved.

# How to make suggestions to improve sustainable work practices

Before you make any suggestions, make sure you have:

* Done your research – your monitoring results from Topic 1 will be very useful!
* Have all the correct facts
* Considered all implications of any current work practices or changes
* Done some financial comparisons if possible.

Suggestions for improvement to resource usage will in most cases be made to your supervisor, who may or may not be the boss of the company. Either way, you need to consider the issue from the point of view of who you are presenting to.

## Scenarios

Let’s look at two different scenarios.

### Scenario 1

You: “Hi Jane. Can I make a suggestion please about our paper?”

Jane: “Sure. What’s your idea?

You: “Well, I was noticing we only use 50% recycled content paper. Can we please change to 100% recycled content?”

Jane: “Why?”

You: “Well… there are so many trees being cut down… it makes me so sad and anrgy…”

Jane: “OK. OK. What’s the price difference?”

You: “Ummm…. I’m not sure.”

Jane: “How much do we use each month?”

You: “…I have no idea.”

Jane: “have you finished that letter I gave you this morning…”

### Scenario 2

You: “Hi Jane. Can I make a suggestion please about our paper?”

Jane: “Sure. What’s your idea?

You: “Well, I was noticing we use 50% recycled content paper, which is great, but can we please discuss changing to 100% recycled content?”

Jane: “Why?”

You: “It will help us meet our sustainability goals of 20% resource efficiency for this year.”

Jane: “What’s the price difference?”

You: “It’s only 50c more per ream. We go through 40 reams per month so it would be an additional cost of $20 per month but I also have some suggestions on how we can reduce paper use to balance that out and even end up spending less on paper. Would you like to hear those as well?”

Jane: “Absolutely!”

The main difference between these scenarios is that you had done your research and calculations in the second one, but did you notice a few other subtle differences as well? The second scenario attempted to make the suggestion with Jane’s point of view in mind and it also used a slightly different tone of language.

## Case Studies

To finish off, let’s look at some case studies. Compare the following case studies paying particular attention to how adjusting resource use has improved their resource efficiency:

* [Mainstream Aquaculture](https://www.sustainability.vic.gov.au/About-Us/Case-studies/Agriculture/Mainstream-Aquaculture)
* [Taltarni Vineyards](https://www.sustainability.vic.gov.au/About-Us/Case-studies/Beverages-and-alcohol/Taltarni-Vineyards)
* [Burbank Zero Waste Home](https://www.sustainability.vic.gov.au/About-Us/Case-studies/Building-and-construction/Burbank-zero-waste-home)
* [Farm Pride](https://www.sustainability.vic.gov.au/About-Us/Case-studies/Food-processing-and-storage/Farm-Pride)

That concludes the learning content on this topic. Be an active participant in sustainability. Consider your work environment, how it could be improved and make suggestions. This will ensure you are reducing the negative environmental impact of your work practices.