



Implement and monitor environmentally sustainable work practices

AHCWRK313A

By the end of this topic, you should be able to:

- Investigate current practices in relation to resource usage
- Set targets for improvements
- Implement performance improvement strategies
- Monitor performance

- Many organisations are now focussed on implementing environmentally friendly and sustainable practices.
 - These practices are focussed on improved efficiency – reducing the use of resources and impact on the environment.
- Such practices assist in complying with environmental laws, which include the following duties to all persons:
 - A general environmental duty not to carry out any activity that may cause harm without taking measures to prevent or minimise the harm
 - To notify of environmental harm that has occurred or might occur

- To decide how to meet your general environmental duty, you need to think about the:
 - Nature of the harm or potential harm
 - For example, how severe is the potential environmental harm?
 - Sensitivity of the environment you are operating in
 - For example, are you operating near a protected area, waterway or sensitive habitat?
 - Current state of technical knowledge for the activity
 - For example, what is the current best practice for the activity?
 - Likelihood of possible measures being successful
 - For example, how likely are different measures to successfully prevent or minimise environmental harm?
 - Financial implications of taking different measures
 - For example, will taking certain prevention measures rather than others mean your activity is not commercially viable? You should act reasonably, not necessarily take all measures possible.

- Laws and other documentation that may apply to your workplace – in order of legal enforceability [highest to lowest]:

Document	Summary
Act	Developed by Parliament, this is a mandatory requirement which places duties on various individuals and parties within the workplace.
Regulation	This provides more specific detail about the requirements of the Acts.
Codes of practice	These provide a guide for commonly accepted practice within particular industries.
Policies and procedures	These are developed by the workplace to set out requirements that apply for that particular organisation (e.g. Environmental Policies and Procedures). Policies are statements of intent; Procedures are a step-by-step instruction to achieve a desired result.

Environmental compliance

- Refer to the following laws which may apply to your workplace
 - Click the document links to view more information

Acts	Regulations	Codes of Practice
• <u>Environmental Protection Act 1994 (Qld)</u> • <u>Nature Conservation Act 1992 (Qld)</u> • <u>Vegetation Management Act 1999 (Qld)</u> • <u>Waste Reduction and Recycling Act 2011 (Qld)</u> • <u>Water Act 2000 (Qld)</u> • <u>Wet Tropics World Heritage Protection and Management Act 1993 (Qld)</u> • <u>Work Health and Safety Act 2011 (Qld)</u> • <u>Environment Protection and Biodiversity Conservation Act 1999 (Cth)</u>	• <u>Environmental Protection Regulation 2008 (Qld)</u> • <u>Nature Conservation (Wildlife Management) Regulation 2006 (Qld)</u> • <u>Vegetation Management Regulation 2012 (Qld)</u> • <u>Waste Reduction and Recycling Regulation 2011 (Qld)</u> • <u>Water Regulation 2002 (Qld)</u> • <u>Work Health and Safety Regulation 2011 (Qld)</u>	• <u>Code of practice for the harvest and use of protected plants (Cth)</u> • <u>How to Manage Work Health and Safety Risks Code of Practice 2011 (Qld)</u> • <u>Managing Risks of Hazardous Chemicals in the Workplace Code of Practice 2013 (Qld)</u> • <u>Managing Risks of Plant in the Workplace Code of Practice 2013 (Qld)</u> • <u>Rural Plant Code of Practice 2004 (Qld)</u> • <u>Safe Design and Operation of Tractors Code of Practice 2005 (Qld)</u>

- Environmental practices are more than just an ideal – if you breach the law, the Department of Environment and Heritage Protection may implement the following:
 - Warning notices
 - Infringement notices
 - Court orders
 - Prosecution
- Environmental/sustainability legislation and regulations changes regularly – it is important to ensure you are implementing the correct practices while working

The Department's [Compliance and Enforcement Guidelines](#) provide further information about offences and applicable penalties

- Consider the resources that are used within your organisation. These may include:
 - Plant and machinery
 - Lights
 - Raw materials
 - Chemicals
- Sustainable practices include conservation, reuse or modification of:
 - Energy
 - Water
 - Waste

- With increasing energy prices, many companies are seeking alternative energy sources, or to reduce their energy usage.
 - Sustainable energy practices reduce energy consumption, save money and reduce greenhouse gases caused by burning fossil fuels.
- Your workplace can conserve energy usage by:
 - Turning off lights and equipment when not in use
 - Using the correct equipment type for the job
 - Using power saving functions on equipment
 - Using efficient motors and lights
 - Using alternative sources of energy



- Growing pressure on water resources has resulted in companies conserving water usage, either by using less water or reusing water when possible.
 - Recycling water provides additional nutrients and benefits the environment, such as reducing the contaminants that reenter the waterway.
- Your workplace can save water by:
 - Comparing water usage to other workplaces and making adjustments
 - Fixing dripping taps and leaking pipes
 - Undertaking irrigation/watering at specific times to reduce transpiration rate and wind drift
 - Avoiding using water when other approaches are possible
 - Investigating ways to use or treat wastewater



- With rising landfill disposal costs, the ability to reduce waste has become increasingly important for companies
 - Reuse of organic waste reduces cost of disposal whilst improving the soil through compost and mulch
- Strategies your workplace can use to reuse and preserve natural resources include:
 - Composting all organic matter
 - Reusing or recycling natural materials, such as timber
 - Using barricades or sand bags to minimise contamination of soil from chemicals



- Since the 1990s companies have been increasingly taking action to minimise their contribution to carbon dioxide emissions into the atmosphere
 - Practices that reduce air pollution, such as removing toxic chemicals in fertilisers help create healthier plants and animals
- To minimise air pollution and improve air quality your workplace can:
 - Adopting cleaner technologies, such as using environmentally friendly technologies
 - Removing pollutants from gases and chemicals
 - Burning less polluting fuels
 - Wetting down dust causing particles

- Organisations should document and measure current usage of resources to identify areas for improvement.
 - These observations can be made using a checklist or by compiling a more detailed report
 - Work groups will have a close knowledge of resource use and waste practices within your organisation
- Technology is very useful when measuring resource use
 - When reporting to your work group/management, software allows your data findings to be displayed visually through charts, flowcharts, and graphs
 - Electronic recording and filing of your findings allows for easy access – so that trends/improvements can be observed over time

- A usage rate tells you the number of times or the amount of product that you use on a daily/weekly/monthly basis.
- Usage rates can be determined by:
 - Reviewing supplier invoices/receipts
 - Reviewing water and electricity bills
 - Physically counting items
 - Reviewing log books to determine usage
 - Log books can also identify the frequency of repairs

Your resource usage should be compared with best practice to determine if improvements can be made.

Experts can offer advice for improvement.

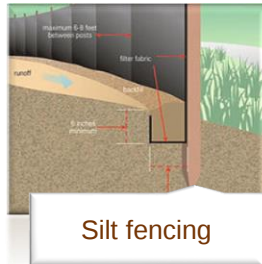
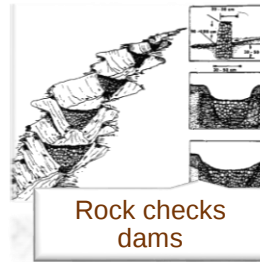
- As part of observing resource usage, it is important to identify and report workplace environmental hazards
 - These hazards may be affecting efficiency
- A hazard is a situation/activity/substance that has the potential to cause harm, injury or illness to a person or the environment
 - Under the law a person can be found guilty of an environmental offence before any harm has been caused
 - As such, workers must report any breaches or potential breaches to appropriate personnel, such as supervisors and management

- Water quality sustains ecological processes that support vegetation, wetlands and birdlife
 - Water quality is also essential for healthy irrigation, stock watering, drinking, fishing and recreation
- Water quality can be affected by:
 - Disturbed vegetation
 - Exposed soil
 - Transportation of soil
 - Rainfall and poor sediment control
 - Hazardous chemicals and materials (including spills and wind drift)
 - Acid Sulphate Soils (ASS)



Hazards: Water

- The following controls may assist with reducing water pollution:

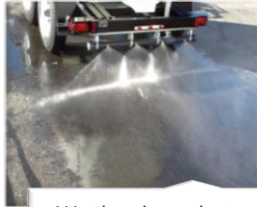


- Good air quality is critical for supporting the amenity of the places we live in, our environment, and maintaining our ecosystem.
 - Air pollution can cause soiling and corrosion.
 - Technologies, such as soil detection equipment, can measure air pollution by testing the level of contaminants in soil.
- Air quality can be affected by:
 - Trucks and other vehicles
 - Plant and other equipment (used in loading/hauling materials)
 - Exhaust emissions



Hazards: Air

- The following controls may assist with minimising air pollution:



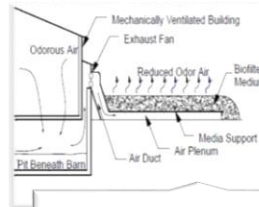
Wetting down dust particles



Maintaining exhaust systems on machines



Stockpile coverage



Enclosed storage

- Healthy soil is crucial for plant and animal wellbeing.
 - Soil contamination occurs as a result of human waste, such as waste products that are full of chemicals and are not naturally found in nature.
 - Technologies, such as soil detection equipment, can test the level of contaminants in soil.
- Soil contamination can be affected by:
 - Pollutants (e.g. waste disposal, spills, gases, emulsions, run off)
 - Chemicals (e.g. fuel, oil, cleaning products, pesticides, herbicides)
 - Treatments (e.g. manure, flocculent)



Hazards: Waste

- The following controls may assist with minimising soil contamination:



Use organic pesticides



Recycle waste



Plant trees



Dispose of chemicals safely

Workplace environmental hazards

- To identify environmental hazards, you can:



Inspect your workplace



Talk to your employees

A Safety Data Sheet (SDS) should always be checked before storing two or more potentially dangerous substances together.



Look at Safety Data Sheets (SDS)



Examine incident records

Workplace environmental hazards

- To report a hazard, you should:

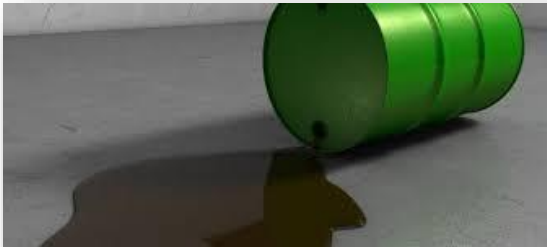




Case Study:

A large drum of oil has spilt 20L+ of oil all over the workplace driveway.

The driveway leads to park gardens and other local horticultural areas.



What should you do?

- **Immediately report** the oil spill to your **supervisor**
- Follow your workplace **safety procedures** for oil spills
- Place sand bags or other barriers to prevent further spreading
- **Access a spill kit** to clean the spill but only if safe



Improving resource efficiency

- When considering ways to improve resource efficiency, it is important to consider more than just getting resources at the cheapest price or simply using less resources - you must consider all steps of the supply chain and how they affect sustainability



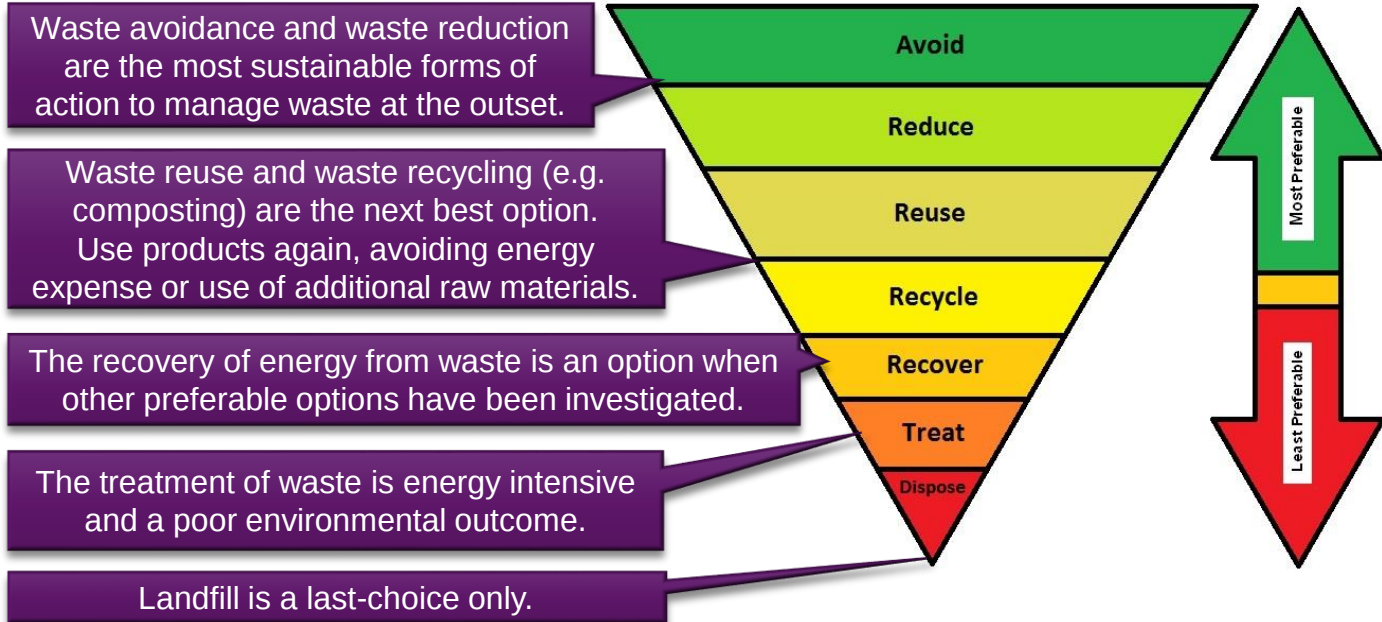
- Sustainable supply chain decisions may include:
 - Buying local materials and using local suppliers
 - This can reduce the amount of fuel used in transport
 - Buying from suppliers that are environmentally conscious:
 - Use solar power
 - Use plantation timber
 - Recycle materials
 - Organic as opposed to chemical

Speak to manufacturers/suppliers to determine what their carbon footprint is (i.e. the level of carbon dioxide generated throughout the production and delivery of the product)

- A key method to preventing waste is to reduce the source of waste. Consider the following:
 - Checking all materials when they are delivered
 - Reducing product use
 - Implement technology to use less paper
 - Switch to products containing non-hazardous materials
 - Purchasing more durable products or reusable/refillable products
 - Reduces frequency of replacement/disposal of products

- A key method to preventing waste is to reduce the source of waste. Consider the following:
 - **Purchasing products in bulk**
 - Ordering items together allows for bulk purchasing = saves money on product and multiple deliveries
 - Reduces amount of packaging, which includes worker time for opening and disposing of containers
 - **Renting or leasing products or equipment**
 - Avoids the accumulation of obsolete technology
 - Reduces maintenance and storage requirements
 - **Sharing or reusing resources within the organisation**
 - Avoid duplicates of resources being purchased

Waste management hierarchy



- Your workplace may have a plan for improving its environmental practices and resource efficiency
 - You should review its documented operating procedures, policies and processes
- After sourcing techniques and tools to assist in achieving efficiency targets, you should identify:
 - Proposed actions and associated benefits
 - Who is responsible for each action
 - Timeframes for implementation

These details should be presented to your work group and management in order to seek advice (e.g. practicality of implementing solutions)

- When providing suggestions, be sure to support your arguments.
- Identify:
 - How your idea will improve resource efficiency
 - How you can measure the improvement
 - An estimate on what the improvement will be
 - Indicate efficiency targets

For example:

“I think that we can save on the use of resources by reducing the amount of delivery trips we make during the day. Currently, we make up to eight delivery trips per day because there are different delivery times.

To save on the use of fuel and employee time spent delivering resources, which would lead to greater productivity, we could inform customers that resources can be only delivered in the morning, or alternatively at allocated times in the morning and afternoon.

In this example, the employee has provided a couple of options for the company whilst also pointing out the benefits to the company's productivity and to the environment.

- When justifying improvements to workplace managers, indicating the financial savings can be quite persuasive
 - For example: Reductions in bills/invoices; Elimination/reduction of fines (e.g. pollution)
- However, it can be difficult to establish the value of some environmental assets
 - For example: It is difficult to put a monetary value on having clean air
- In those instances, consider the following costing strategies:
 - How much people are willing to pay to preserve or improve the environment
 - How much people are willing to accept for loss of environmental amenity

- Environmentally sustainable work practices are never static
 - They will develop and change as newer, more efficient practices are developed and technology changes
 - Governments propose new sustainability initiatives which can encourage change (e.g. greenhouse challenge, solar panel rebates, water tank rebates)
 - See the Queensland Government's [ecoBiz initiative](#)
 - See the Australian Government's [National Waste Policy](#)

- Within your workplace you should aim for continuous improvement strategies, rather than one-off changes
 - You should evaluate and monitor the effectiveness of work practices that have been implemented to improve environmental sustainability
 - For example: Conduct site inspections, View registers of materials usage to identify where waste is continuing
- Always refer back to the efficiency targets that were set
 - You may need to improve/change practice to meet efficiency targets or change unrealistic targets
 - You may even change your efficiency targets to encourage more sustainable practices!

- It is more effective to have an organisation-wide sustainability strategy to send a clear message
 - It should be directed, driven and supported by management
 - Such direction may occur through work induction and supplemented at work team meetings
 - Environmentally sustainable work practices, once embedded into workplace policies and procedures, can become part of the terms and conditions of employment
- Seeking input from stakeholders and key personnel (such as workers) throughout the process will encourage participation in implementing strategies

- When monitoring the effectiveness of sustainability improvement plans that have been implemented, undertake the following:
 - Document and communicate outcomes with regards to efficiency targets
 - Report findings to key personnel and stakeholders (e.g. supervisor, management, work teams)
 - Evaluate the performance
 - Investigate and apply new tools and strategies to meet targets
 - Set new targets, as necessary
 - Promote successful strategies
 - Reward participants where possible