

10 Most Dangerous Greenhouse Gases

- 1) Carbon Dioxide (CO₂) ...
- 2) Methane (CH₄) ...
- 3) Nitrous oxide (N₂O) ...
- 4 & 5) Dichlorodifluoromethane (CCl₂F₂) & Chlorodifluoromethane (CHClF₂) ...
- 6) Tetrafluoromethane (CF₄) ...
- 7) Hexafluoroethane (C₂F₆) ...
- 8) Sulfur Hexafluoride (SF₆) ...
- 9) Nitrogen Trifluoride (NF₃)

A cow **does** on average release between 70 and 120 kg of Methane per year. Methane is a **greenhouse gas** like carbon dioxide (CO₂). But the negative effect on the climate of Methane is 23 times higher than the effect of CO₂. ... Cattle-breeding is taking a major factor for these **greenhouse gas emissions** according to FAO.

Several of these microbes create **methane** gas as a byproduct. Due to the sheer number of **cows** on the planet, along with the large size per **cow**, our tasty friends **produce** more **methane** gas than all other ruminants combined. ... **Methane** is twenty one times more potent at trapping heat from the Sun than carbon dioxide.

(B) An increase in global temperatures could melt reflective polar ice, causing the earth to absorb more heat.

Global warming will probably lead to mass extinctions of animals and plants.

The Australian Government is addressing climate change and ensuring energy security and affordability.

There are many benefits of reducing greenhouse gas emissions and government, business, the community, households and individuals are all helping. Everyone's efforts can make a difference

Adapting to climate change



Climate change adaptation helps individuals, communities, organisations and natural systems to deal with those consequences of climate change that cannot be avoided. It involves taking practical actions to manage risks from climate impacts, protect communities and strengthen the resilience of the economy. Adaptation can involve gradual transformation with many small steps over time, or major transformation with rapid change.

Adaptation is a shared responsibility. Governments at all levels, businesses and households each have complementary roles to play. Individuals and businesses will often be best placed to make adaptation decisions that reduce climate risks to their assets and livelihoods.

The Australian Government provides the public with access to national [climate science information](#) to help Australians understand the potential impacts from a changing climate. For example the website [Climate Change in Australia](#) provides comprehensive regional-level data that projects future climate.

The Australian Government provides guidance and information on best practice adaptation to assist businesses and communities to manage their climate change risks. For example [CoastAdapt](#) is an online support tool for decision-makers in managing climate risks in Australia's coastal zone.

National Climate Resilience and Adaptation Strategy

On 2 December 2015, the Australian Government released a *National Climate Resilience and Adaptation Strategy*. The Strategy articulates how Australia is managing the risks of a variable and changing climate. It identifies a set of principles to guide effective adaptation practice and resilience building, and outlines the Government's vision for a climate-resilient future.

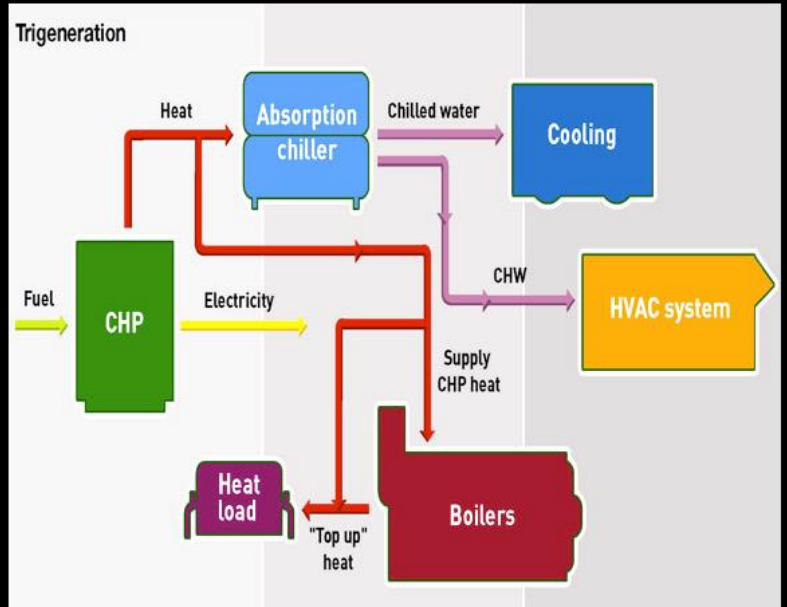
One of the first aspects to consider is the cost of renewable energy technologies. However, this is not an easy question to answer because, as with many energy

technologies, many factors affect cost and different sources of information use different criteria for estimating cost. In many cases, the environmental benefits of renewable energy technologies are difficult to take into account in terms of **cost savings through less pollution and less damage to the environment**. When trying to calculate the cost of these technologies is often best to take a **life cycle cost approach**, as these technologies often have high up-front capital costs but **very low operation and maintenance costs**. And of course, there is usually no fuel cost!

This pathway relies on four “pillars” of action:

- Ambitious energy efficiency in buildings, industry and transport
- Low carbon electricity, either through 100% renewables or a mix of renewables and other technologies
- Electrification where possible of transport and energy-using equipment in buildings and industry where possible, and elsewhere switching to low carbon fuels
- Reducing non-energy emissions through improvements in industrial processes and agricultural practices, and offsetting residual emissions through carbon forestry.

Cogeneration or combined heat and power (CHP) is the use of a [heat engine^{\[1\]}](#) or [power station](#) to [generate electricity](#) and [useful heat](#) at the same time. *Trigeneration or combined cooling, heat and power* refers to the simultaneous generation of electricity and useful heating and cooling from the combustion of a fuel or a solar heat collector. The terms *cogeneration* and *trigeneration* can be also applied to the power systems generating simultaneously electricity, heat, and industrial chemicals – e.g., [syngas](#) or pure [hydrogen](#) (article: [combined cycles](#), chapter: [natural gas integrated power & syngas \(hydrogen\) generation cycle](#)).



Trigeration cycle

Jonnathan McForlan - Own work



Ten Ways to Reduce Greenhouse Gases

Burning fossil fuels such as natural gas, coal, oil and gasoline raises the level of carbon dioxide in the atmosphere, and carbon dioxide is a major contributor to the greenhouse effect and global warming. You can help to reduce the demand for fossil fuels, which in turn reduces global warming, by using energy more wisely.

The following is a list of 10 steps YOU can take to reduce greenhouse gas emissions:

1. Reduce, Reuse, Recycle

Buying products with minimal packaging will help to reduce waste. By recycling half of your household waste, you can save 2,400 pounds of carbon dioxide annually.

2. **Use Less Heat and Air Conditioning**

Adding insulation to your walls and installing weather stripping or caulking around doors and windows can lower your heating costs more than 25 percent, by reducing the amount of energy you need to heat and cool your home. Turn down the heat while you're sleeping at night or away during the day, and keep temperatures moderate at all times. Install a programmable thermostat because setting it just 2 degrees lower in winter and higher in summer could save about 2,000 pounds of carbon dioxide each year.

3. **Replace Your Light Bulbs**

Wherever practical, replace regular light bulbs with compact fluorescent light (CFL) bulbs. Replacing just one 60-watt incandescent light bulb with a CFL will save you \$30 over the life of the bulb. CFLs also last 10 times longer than incandescent bulbs, use two-thirds less energy, and give off 70 percent less heat. If every Canadian family replaced one regular light bulb with a CFL, it would eliminate 90 billion pounds of greenhouse gases, the same as taking 7.5 million cars off the road.

4. **Drive Less and Drive Smart**

Less driving means fewer emissions. Besides saving gasoline, walking and biking are great forms of exercise. Explore the York Region Transit system and check out options for carpooling to work or school.

When you do drive, make sure your car is running efficiently. For example, keeping your tires properly inflated can improve your gas mileage by more than 3 percent. Every gallon of gas you save not only helps your budget, it also keeps 20 pounds of carbon dioxide out of the atmosphere.

5. **Buy Energy-Efficient Products**

Home appliances now come in a range of energy-efficient models, and compact fluorescent bulbs are designed to provide more natural-looking light while using far less energy than standard light bulbs.

6. **Use Less Hot Water**

Set your water heater at 120 degrees to save energy, and wrap it in an insulating blanket if it is more than 15 years old. Buy low-flow showerheads to save hot water and about 350 pounds of carbon dioxide yearly. Wash your clothes in warm or cold water to reduce your use of hot water and the energy required to produce it. That change alone can save at least 500 pounds of carbon dioxide annually in most households.

7. **Use the "Off" Switch**

Save electricity and reduce global warming by turning off lights when you leave a room, and using only as much light as you need. And remember to turn off your television, stereo and computer when you're not using them. It's also a good idea to turn off the water when you're not using it. While brushing your teeth, shampooing the dog or washing your car, turn off the water until you actually need it for rinsing.

8. **Plant a Tree**

If you have the means to plant a tree, start digging. Trees absorb carbon dioxide and give off oxygen. A single tree will absorb approximately one ton of carbon dioxide during its lifetime.

9. **Get a Report Card from Your Utility Company**

Many utility companies provide free home energy audits to help consumers identify areas in their homes that may not be energy efficient. In addition, many utility companies offer rebate programs to help pay for the cost of energy-efficient upgrades.

10. **Encourage Others to Conserve**

Share information about recycling and energy conservation with your friends, neighbours and co-workers, and take opportunities to encourage public officials to establish programs and policies that are good for the environment.

Which Materials Can You Recycle?

- Glass. Most household glass **can be recycled** over and over again; just rinse or wash out the container and **recycle**. ...
- **Metals. Metal** food and drink **cans** made from aluminum or steel **are recyclable**, and aluminum **cans** in particular are very valuable. ...
- Organics. ...
- Paper. ...
- Plastics. ...
- Textiles.

Insulation refers to an energy savings measure, which provides resistance to heat flow. Naturally, heat flows from a warmer to a cooler space. By **insulating** a house, one can reduce the heat loss in **buildings** in cold weather or climate, and reduce the heat surplus in warmer weather or climate.

Insulation acts as a barrier to heat loss and heat gain, particularly in roofs and ceilings, walls and floors. In many **homes insulation** is the most practical and cost-effective way to make a **house** more energy efficient, keeping it cooler in summer and warmer in winter and saving up to 80% in heating and cooling losses

Homes with central heating or air conditioning benefit from energy-efficient **thermal curtain** panels, as **thermal curtains** prevent air from entering or leaving the room. In the winter, these **curtains** keep heat inside and reduce the amount of heat needed to warm the home, which saves money on utility bills.

The reduction of the biomass of three main problem species of submerged aquatic macrophytes was proportional to the light at the stream surface both under artificially shaded sections of stream and in naturally shaded areas when compared to the biomass in adjacent open and unshaded sections of stream. The effect of marginal vegetation in varying the shading effect given to streams of differing width and orientation are described. It is recommended that light should be reduced to about half that presently available in the open, by shading from marginal vegetation but it is warned that too much shade is detrimental to the fish populations of the stream and leads to accentuated local accumulations of leaves. The long term effects are

considered but it is expected that partial shading will increase the diversity of submerged plant species. It is suggested that the practice of stream realignment is discontinued and that the natural tendency of streams to create their own meandering channels is allowed but within some defined and generally acceptable framework

- **Energy Savings:** Insulation Reduces **Energy Costs**. ...
 - Impressive Return on Investment: Insulation Is a Quick Payback. ...
 - **Control** Condensation with Insulation. ...
 - Process **Control** with Insulation. ...
 - Protect the **Environment** by Reducing Pollutant **Emissions** with Insulation. ...
 - Personnel **Protection**. ...
 - Fire **Protection**. ...
 - Improved Appearance.
- Changing behaviours in your workplace to be more energy efficient isn't just good for your business financially; it can also help make your workplace more sustainable.
 - The Australian Bureau of Statistics estimates that during 2011-2012, business expenditure on electricity totalled \$20.2 Billion Dollars in Australia. While we're getting savvier at home about how to save on our energy bills, we spend the majority of our days at work so it's time to start thinking about practical ways to make changes around the office.
 - And it isn't just up to business owners to make the change, employees should think about how they can make a difference too. The key to reducing energy consumption is getting everyone involved.

• Switch it off when it's not in use

- Small changes in electricity usage can help reduce your energy bills, as well making your business more environmentally conscious.
- Energy savings can be made by encouraging staff to make sure all lights are switched off when the office isn't in use, making use of natural lighting where possible, and switching to compact florescent bulbs.
- While computers are essential to the day-to-day running of many businesses, they're also a major energy zapper. Reduce unnecessary energy usage by unplugging computers over the weekend or by setting monitors to automatically turn off after 10 minutes of inactivity - screensavers won't save energy.
- Using office machines as efficiently as possible can cut costs, lower greenhouse gas emissions and possibly extend the life of the equipment. [Think about turning off equipment like printers and photocopiers](#) at the end of the working day.

• Keep energy efficiency in mind

- When choosing fixtures and appliances always look out for the Energy Rating label to make sure you make the more energy efficient choice. The better the energy rating

(shown by the more stars there are on the label); the less you'll spend on running costs over the life of the purchase.

- Also [consider choosing to buy laptops instead of desktops](#), they typically consume less than half the energy! Smaller monitors also help you save on your energy bills with research showing you can reduce your monitor's energy consumption by as much as 30% simply by using one that is two inches smaller.

• Think sustainability in the workplace

- Start by getting an understanding of your workplaces energy consumption. Once you know what you are spending, you can see the difference when you start saving!
- The next step is encouraging awareness of sustainability around the office. It could be as simple as sending a weekly reminder for everyone to unplug their computers and switch off the lights before they head off to enjoy the weekend. Getting employees on board and making small changes in the way they work will reduce both wastage and the size of energy bills.
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