Mirboo North
Community Energy Hub
Prototype Website

Sponsor:
Snowy River Innovation

Colin Burns
Joseph Collins
Paul Johnston
Rebecca Nichols

12/16/2013
Abstract

The purpose of this supplementary document is to provide a visual, offline representation of the prototype website we created for the Mirboo North Community Energy Hub. This is designed as a supportive tool to better illustrate our findings and recommendations. A tree diagram outlines the general layout and navigational characteristics of the website. The sections that follow the sitemap each represent a primary webpage and any of its subpages. Detailed descriptions of the individual pages and features of the website can be found in the Findings chapter of our IQP report. The website can be accessed at the following URL:

http://colinburns8.wix.com/mirboonorthenergyhub
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Sitemap Tree Diagram

The sitemap tree diagram provides an overview of the general layout of the website. The leftmost level represents the home page. The next level represents the primary webpages that can be accessed through the menu navigation bar. Any branches extending from this level represent subpages that can be accessed through dropdown submenus on the menu navigation bar.
Website Contents

The subsequent sections are formatted in accordance with the sitemap tree diagram, starting with the homepage. They each include a screenshot of the entire webpage to provide an offline archive of our website. This is designed to serve as a visual supplement to the Findings and Conclusions and Recommendations chapters of our IQP report. Please note that there may be slight visual discrepancies between the online webpages and the screenshots shown below. This is simply a result of converting the images to a PDF document.
About Us

Welcome to the Mirboo North Community Energy Hub

Who are we?

Mirboo North is a tight-knit community of hardworking and passionate individuals. We like to operate our energy hub following these same principles. Each member of the hub is extremely passionate about what they do and works hard to achieve the goals of the community. We are a group of local residents and business owners who share an interest in sustainability. Joining us is as easy as attending a meeting at the community shed.

What do we do?

The hub is an organization that was founded through funding from the Mirboo North and district community foundation. We currently operate out of the local Mirboo North Community Shed. Our goal is to spread information on energy efficiency practices and renewable energy technologies to the community. We also build trusted relationships with renewable energy installers. This will allow us to make more sustainable decisions in our daily lives and give the community a reliable source of installers to consider, if they decide to install a renewable energy source.

Why do we do it?

We do all this simply because we are passionate about sustainability. Creating a more sustainable future is something in which we strongly believe. If we all join together and take action, we can make these goals a reality.

Our Philosophy

We are dedicated to creating a more sustainable way of living for future generations. Through energy efficiency practices and renewable energy technologies, we will be able to limit the human impact on our planet. The future is in our hands and the time to do something positive is now.

Our History

The Mirboo North Community Energy Hub was established in September 2012 to enhance the community’s quality of living. We partnered with Snowy River Innovation to finalize a business case in May 2013. Presently we are working to develop our Energy Efficiency Program to better serve the community.

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Search Our Site Here  Forum
News & Events

WPI Student Visit
Posted 14 November 2013
A group of four engineering students from Worcester Polytechnic Institute in the United States visited the Mirboo North community on the weekend of 8-10 of November. The students met with the energy hub committee to discuss community outreach strategies on energy efficiency and renewable energy technologies. Local farmers gave the students their input on how the energy hub could better serve their needs. The students plan to return to Mirboo North for the Spring-Summer Energy Expo to continue working with the energy hub committee.

Ivor’s Narracan Hydro Station
Posted 14 November 2013
Energy hub committee members attended the opening of Ivor’s Narracan Hydro Station on the 3rd of November. The system consists of 4 grid connected, 6 kW turbines. This came at a $30,000 investment and is expected to have a ten year payback period.

Upcoming Events

SUN 17 NOV, 3pm
National Day of Climate Change
Lobethal Valley
Victory Park, Traralgon

SAT 10 NOV, 8am - 2pm
Spring-Summer Energy Expo
Baroni Park, Mirboo North

SAT 30 NOV, 8am - 2pm
Community Market
Baroni Park, Mirboo North

SAT 14 DEC, 8am - 2pm
Community Market
Baroni Park, Mirboo North
Energy Information

Follow our energy roadmap to better understand your usage, improve your energy efficiency, and even generate and store your own energy!

1) The best way to become more sustainable is to learn the basics of your energy use. This starts with understanding the electricity supply network.

   - Electricity Supply Network

2) The next step is to practice quick, easy, and inexpensive energy efficiency practices. These are simple things you can do to reduce your energy consumption and save money.

   - Energy Efficiency

3) Once you have learned about your electricity supply and implemented some energy efficiency practices, you can look into adding a renewable energy technology.

   - Renewable Technologies

4) Finally, you may want to add an energy storage system to your renewable energy source to give you more flexibility with your energy usage.

   - Storage Systems
Electricity Supply Network

It is important to understand the basics of how the electricity supply network operates so you can get the most for your money. This will help you know what groups play each role in the electricity market and allow you to make a more informed decision on which power provider to use.

The diagram at right illustrates the general structure and order of the electricity supply network.

1. The Australian government plays a key role in the electricity supply network. They represent the starting point from which all prices and regulations are set. The price of electricity per kilowatt-hour is established by government energy organisations.

2. Generation refers to the points in the supply network that actually deal with electricity directly. Power stations generate all of the electricity throughout Australia from the burning of fossil fuels. This produces steam which is then used to spin turbines that drive generators and produce electricity.

3. The transmission component of the supply network is crucial to carry the high voltage electricity produced at power plants over long distances via towers and power lines. The wiring and infrastructure for electricity transmission in Victoria is controlled by SP Austrail.

4. The distribution component finishes the job of the transmission component. The electricity carried in the high voltage lines is run into smaller substations that step down the voltage for residential and business use. Power lines carry this lower voltage electricity from the substations to nearby buildings. SP Austrail is also responsible for this wiring and infrastructure.

5. The wholesale component represents the final point in the supply network where business is introduced. Wholesalers purchase the electricity in bulk from the power generation plants. They then sell this to the retailers.

6. The retail component is the final business level in the supply network. Retailers purchase electricity from the wholesalers at substations and then sell this to end-users. There are a range of companies from which you can choose to purchase your electricity.

7. The final component in the electricity supply network is the homeowner. Once the electricity has reached your building and you have paid for it, it is readily available for your use.

---

Compare Australian Energy Providers

The link below will direct you to a Yahoo tool that enables you to compare prices for your electricity. Simply input the required geographic and household information and see the options available to you.

Find Out More About Smart Meter Flexible Pricing

The link below will direct you to the Smart Meters Australian government website where you can get more information on flexible pricing plans used by electric utilities. Flexible pricing plans allow you to choose which pricing plan works best for you.

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Energy Efficiency

Beginner’s Quiz

Start energy efficiency knowledge with our beginner’s Quiz then try the more challenging quiz below.

Challenge Quiz

Start You know about energy efficiency. Then check out our helpful tips below. Get started now!

Energy Efficiency Tips

<table>
<thead>
<tr>
<th>No Cost:</th>
<th>Low Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Turn off unused appliances (TVs, computers, etc.) at the outlet as they still use electricity in standby mode.</td>
<td>- Replace your incandescent light bulbs with energy efficient light bulbs. CFLs and LEDs are good choices.</td>
</tr>
<tr>
<td>- Turn off the lights when you leave a room.</td>
<td>- Replace fluorescent lights and traditional incandescent bulbs.</td>
</tr>
<tr>
<td>- Use fans to cool the room instead of air conditioning when you are not at home.</td>
<td>- Reduce heat loss by properly insulating your home and adding weatherstripping.</td>
</tr>
<tr>
<td>- You keep an attic fan or exhaust fan running all the time.</td>
<td>- Use timers or motion sensors to turn off lights automatically when not needed.</td>
</tr>
<tr>
<td>- Use blinds or curtains to keep the sun out when possible.</td>
<td>- Install an energy-saving power board to ensure all appliances are not consuming energy when turned off.</td>
</tr>
</tbody>
</table>
Financing Outline

The table below provides examples of upgrades you can make to your home to increase your energy efficiency and display their corresponding financial implications.

The first column describes what the update is. The second column shows how long it will take for the update to pay for itself. The third column shows the total cost of the update. The fourth column calculates the yearly savings that the update provides. The fifth column calculates how much money the update will save you over ten years. The final column illustrates the return on investment of the update as a percentage of its initial cost.

### Updates

<table>
<thead>
<tr>
<th>Updates</th>
<th>Payback Time in Years</th>
<th>Added Cost</th>
<th>Annual Savings</th>
<th>10 Years Savings</th>
<th>Return on Investment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programmable Thermostat</td>
<td>1.0</td>
<td>$127.00</td>
<td>$21.00</td>
<td>$210.00</td>
<td>16.5%</td>
</tr>
<tr>
<td>String PV Reduction</td>
<td>3.0</td>
<td>$25.00</td>
<td>$7.00</td>
<td>$210.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>Grease/Stainless Steel</td>
<td>3.0</td>
<td>$46.00</td>
<td>$10.00</td>
<td>$300.00</td>
<td>19.1%</td>
</tr>
<tr>
<td>Hot Water Save Washer</td>
<td>3.0</td>
<td>$26.00</td>
<td>$5.00</td>
<td>$150.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>Motion Sensor Lights</td>
<td>4.0</td>
<td>$36.00</td>
<td>$5.00</td>
<td>$240.00</td>
<td>15.5%</td>
</tr>
<tr>
<td>Heating System Tune-Up</td>
<td>1.0</td>
<td>$59.00</td>
<td>$5.00</td>
<td>$59.00</td>
<td>46.6%</td>
</tr>
<tr>
<td>Dual Rune Control</td>
<td>1.0</td>
<td>$69.00</td>
<td>$5.00</td>
<td>$69.00</td>
<td>46.6%</td>
</tr>
<tr>
<td>Water Filters</td>
<td>1.0</td>
<td>$26.00</td>
<td>$1.00</td>
<td>$10.00</td>
<td>4.0%</td>
</tr>
<tr>
<td>Whole House Water Filters</td>
<td>3.0</td>
<td>$36.00</td>
<td>$1.00</td>
<td>$36.00</td>
<td>10.0%</td>
</tr>
<tr>
<td>Whole House Fan</td>
<td>5.0</td>
<td>$49.00</td>
<td>$1.00</td>
<td>$49.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>Air Quality House House</td>
<td>3.0</td>
<td>$49.00</td>
<td>$1.00</td>
<td>$49.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>On-Demand Water Heater</td>
<td>3.0</td>
<td>$49.00</td>
<td>$1.00</td>
<td>$49.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>Garage Replacement</td>
<td>3.0</td>
<td>$49.00</td>
<td>$1.00</td>
<td>$49.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>Parking Lot</td>
<td>3.0</td>
<td>$49.00</td>
<td>$1.00</td>
<td>$49.00</td>
<td>20.0%</td>
</tr>
<tr>
<td>Clothes Washer</td>
<td>4.0</td>
<td>$31.00</td>
<td>$1.00</td>
<td>$31.00</td>
<td>6.0%</td>
</tr>
<tr>
<td>Recycle: Mulch</td>
<td>4.0</td>
<td>$6.00</td>
<td>$1.00</td>
<td>$6.00</td>
<td>10.0%</td>
</tr>
<tr>
<td>Solar Panel: Outdoor Lights</td>
<td>3.0</td>
<td>$26.00</td>
<td>$1.00</td>
<td>$26.00</td>
<td>6.0%</td>
</tr>
<tr>
<td>Insulated Attic and Ceiling</td>
<td>3.0</td>
<td>$26.00</td>
<td>$1.00</td>
<td>$26.00</td>
<td>6.0%</td>
</tr>
<tr>
<td>Insulated Doors</td>
<td>3.0</td>
<td>$26.00</td>
<td>$1.00</td>
<td>$26.00</td>
<td>6.0%</td>
</tr>
<tr>
<td>Insulated Windows and Doors</td>
<td>3.0</td>
<td>$26.00</td>
<td>$1.00</td>
<td>$26.00</td>
<td>6.0%</td>
</tr>
<tr>
<td>Whole House Water Filters</td>
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<td>$26.00</td>
<td>$1.00</td>
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<td>6.0%</td>
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<td>$49.00</td>
<td>$1.00</td>
<td>$49.00</td>
<td>20.0%</td>
</tr>
</tbody>
</table>

### Total Savings and Average Savings/Year

<table>
<thead>
<tr>
<th>Updates</th>
<th>Payback Time in Years</th>
<th>Added Cost</th>
<th>Annual Savings</th>
<th>10 Years Savings</th>
<th>Return on Investment (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Savings</td>
<td>4.0</td>
<td>$132,000</td>
<td>$26,000</td>
<td>$132,000</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

### Updates

<table>
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<td>$132,000</td>
<td>13.0%</td>
</tr>
</tbody>
</table>
Renewable Technologies

Renewable Energy Technologies

Renewable energy is a source of power that comes from a regenerative source. These sources are able to produce clean and efficient energy for use in place of fossil fuels; petroleums, coal, and natural gas. Advantages to using renewable energy sources over fossil fuels include: less damage to the environment, the ability to be self sustaining, the opportunity to sell your generated energy back to your supplier, and best of all, lower energy bills!

The quality of renewable energy technologies is rapidly improving, while their cost is actually dropping. Potential users of these technologies may still be wary to purchase them due to the necessary initial investment. However, payback periods are under ten years and with constantly rising electricity prices, this time can be even shorter.

The pages below each describe a specific renewable technology and how it works. Their advantages and disadvantages are highlighted so you can decide which technology is right for you.

Find Out More About Each Type Of Renewable Energy:

- Solar Energy
- Hydro Energy
- Bioenergy
- Wind Energy
- Geothermal Energy

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Solar Energy

Solar PV System

What is it?
Solar energy is energy obtained from the sun's rays. This can be used for electricity generation through photovoltaic (PV) panels or heating through evacuated tube hot water systems.

How does it work?
PV panels are installed on a rooftop or structure that is readily exposed to direct sunlight. The panels then collect the sun's rays and output direct current (DC) electricity. This passes through an inverter to change the current to alternating current (AC) which can be used in the house. This system is connected to your current smart meter and the power grid. When more electricity is needed than the PV panels can supply, electricity is drawn from the grid through the meter as normal. When more electricity is generated from the PV panels than you are using, the excess electricity runs through the meter backwards and reduces your electricity bill.

Evacuated tube systems are installed on a rooftop or structure that is readily exposed to direct sunlight. The water in the bottom of the tubes is then heated until it rises to the top of the tubes. Once it reaches the required temperature, it moves to a storage tank. As water in the tank cools it flows from the bottom of the tank back to the bottom of the tubes to be reheated. The heated water in the tank can then be drawn into the house for regular use. If you desire a temperature hotter than the system can attain, a gas or electric booster will further heat the water from the tank as it moves to the house.

Advantages:
- generates free electricity
- zero-emission
- can turn your bill into a check
- payback period is only 5-7 years
- units are easily installed in a few hours

Disadvantages:
- requires constant exposure to sunlight
- size restrictions limit PV systems to 4.5 kW
- inverters must be replaced every 10 years
- panels are usually replaced every 25 years

Solar Hot Water System

Back to Renewable Technologies

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Next - Hydro
Hydro Energy

What is it?
Hydro energy is energy generated from the force of water moving through a turbine. A hydroelectricity system consists of a reservoir atop a hill, a dam to regulate the flow from this reservoir, and a series of turbines and generators.

How does it work?
Water from a low source (a stream or pond) is pumped through a pipe uphill into a reservoir that sits atop a hill. The pump can be powered by another renewable energy source (free electricity) or by the grid during off-peak hours (reduced price electricity). The water in the reservoir can then be released whenever electricity is needed, particularly during peak hours. This water runs downhill through a turbine. The force of the water rotates the turbine. The rotating turbine is used to drive a generator that produces electricity that can be used in the house. The amount of electricity generated is dependent on the height from which the water is falling, the volume of water flowing through the turbine, and the size of the turbine.

Advantages:
- free or reduced price electricity
- zero-emission
- built-in storage system
- easy integration into farm irrigation systems

Disadvantages:
- requires nearby water supply
- need external power source to run pump

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Search Our Site Here

Forum
Bioenergy

What is it?
Bioenergy is energy created from organic matter called biomass. Biomass consists of plant or animal material that can be used in combustion or chemical processes to generate biogas or biofuel. Biogas is collected as a by-product of anaerobic digestion. Biofuels are formed from chemical conversion processes that produce ethanol and biodiesel. The diagram at right shows the wide array of possible fuels, processes, and products of bioenergy.

How does it work?
There are several methods of generating bioenergy. A common biochemical process is anaerobic digestion. This process works by feeding organic matter (manure) into a tank. This matter is then decomposed by bacteria in the tank. The solid matter, sludge, sinks to the bottom of the tank and can be burned for heating. The liquid in the tank, effluent, can be pumped out to a secondary reservoir that can be used for irrigation. The gas released from the decomposed organic matter rises to the top of the tank and is passed through a meter to measure its volume. This gas can be burned to power generators to produce electricity or simply in a furnace to produce heat.

The most common process for generating bioenergy is combustion. In combustion processes, biomass is burned to produce heat. This process releases carbon dioxide and water as well as smoke and ash. The emissions from burning biomass are less harmful to the atmosphere than those released from burning fossil fuels because they are derived from organic matter that would otherwise naturally decompose.

Advantages:
- fueled by waste materials
- produces solid, liquid, and gas products
- emissions are less harmful than fossil fuels

Disadvantages:
- requires large mounts of biomass fuel
- fuel can be variable quality
Wind Energy

What is it?
Wind energy is energy obtained from wind currents. A typical electricity generation system consists of the turbine, its supports, a safety switch, an inverter, a production meter, and a load center.

How does it work?
Winds of a high enough speed spin the blades of the turbine. The required wind speed is dependent on the type and size of the turbine. A turbine that is sufficiently elevated and away from any obstacles will result in the highest production. The rotating turbine then powers a generator which produces direct current electricity. This DC electricity is run through an inverter to produce AC electricity which can be utilized in the house. The electricity is run through a production meter to monitor how much electricity has been produced by the turbine. There is also an AC load center which allows for fluctuations in electricity generation by storing a small amount of power in batteries for when generation is low.

Advantages:
- generates free electricity
- zero-emissions
- low operational costs
- require only a small plot of land

Disadvantages:
- requires constant wind stream
- produce noise
Geothermal Energy

What is it?
Geothermal energy is energy obtained from the heat beneath the surface of the Earth. These systems consist of a collection pipe deep underground, a turbine, generator, and injection well.

How does it work?
The collection pipe extracts hot water from natural channels between rocks deep beneath the Earth's surface. This hot water is then further heated into steam. The steam is pushed through a turbine which drives a generator. The generator produces electricity that can be fed into the grid. The steam could also be used to supply heating for a house. The waste steam is moved to a cooling tower to convert it back to water. The cooled water is then reinjected deep beneath the surface to be reheated for extraction.

Advantages:
- generate free electricity
- low emission
- constantly available supply

Disadvantages:
- generally requires larger scale operations
- pipes require continuous maintenance
- energy cannot be transferred over long distances
Storage Systems

Find Out More About Each Energy Storage Category:

- Chemical
- Electrochemical
- Electrical
- Mechanical
- Thermal

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Chemical Energy Storage

What is it?
Chemical energy storage involves storing energy in chemical fuels that can later be burned to perform mechanical work and produce electricity.

What are some examples?
Gasoline, diesel, natural gas, and propane are some common forms of energy stored as chemical fuel. Each of these can be burned to produce heat or perform work. However, these are all fossil fuels so when they are burned they release damaging gases that destroy our environment.

Biofuels and ethanol are newer forms of chemical fuel that are made from organic matter in place of fossil fuels. Ethanol is an alcohol fuel that is generally made from the sugars in corn and barley and mixed with gasoline in low concentrations. Special engines are required to run on higher concentrations of ethanol. Biofuels are a fuel made from vegetable oils, fats, and greases and can be used in any standard diesel engine.

Hydrogen is a potential fuel source in the future as it is the only chemical fuel that is carbon-free and zero-emission. This is a high cost fuel and requires engines built specifically for its use.

Advantages:
- Long storage periods
- Able to be transported long distances
- Biofuel can be used without engine modification
- Biofuel is biodegradable
- Biofuel produces less air pollutants than fossil fuels
- Hydrogen is carbon-free and zero-emission

Disadvantages:
- Fossil fuels damage the environment
- Ethanol requires special engines
- Hydrogen has high production costs
Electrochemical Energy Storage

What is it?
Electrochemical energy storage is a way to store energy for electrical use in a device that can convert electrical work into chemical form energy.

What are some examples?
Batteries are the most widely used electrochemical storage devices. Typical batteries supply electrical energy from the chemical reactants contained within them. They come in a range of sizes for countless applications and are divided into primary and secondary groups. Primary batteries are single use and limited to supplying the energy contained in one unit. While secondary batteries have the same small storage capacity as primary batteries, they are able to be recharged so they can use this capacity multiple times.

Advantages:
- long storage life
- provide portable electrical power
- secondary batteries are rechargeable

Disadvantages:
- high cost
- batteries have small storage capacity
Electrical Energy Storage

What is it?
Electrical energy storage systems store electricity in devices by means of static charge.

What are some examples?
Capacitors are the most widely used device for electrical energy storage. They store energy on the surface of metal electrodes and are able to work with extremely high currents, but only for very short periods of time.

Supercapacitors are a larger version of capacitors that use a thin layer of electrolyte to store an electrical charge. They are able to work for longer durations than capacitors, but they can only work with lower currents. They typically operate above 90 percent efficiency.

A larger electrical storage device is the superconducting magnetic energy storage (SMES) system. These machines send a current through a superconducting coil to store large amounts of electricity. They are capable of releasing megawatts of power and operate at over 95 percent efficiency.

Advantages:
- capacitors can handle high currents
- supercapacitors can work for long durations
- SMES systems carry huge amounts of power

Disadvantages:
- capacitors have a short usage period
- supercapacitors can only handle low currents
- SMES systems are very high cost
Mechanical Energy Storage

What is it?
Mechanical energy storage systems use kinetic and potential energy to generate on-demand electricity.

What are some examples?
Flywheels are a simple mechanical energy storage device that operates by conserving energy and momentum. A rotor is accelerated to maintain rotational energy. The system then slows when energy is drawn from it and speeds up when energy is stored in it. This allows for quick responses in energy production and make flywheels good for black out backups.

Compressed air energy storage (CAES) is a storage system that is used with wind turbines. The turbines push compressed air into a holding tank underground. When there is a lack of wind and its resulting energy production, this compressed air can be released to power the generator and continue to produce electricity.

Pumped storage hydro (PSH) is a storage system that is combined with hydroelectricity systems. Water is pumped uphill into a holding tank by using free power from a renewable source or by using electricity from the grid during off-peak hours. Water can then be released from the tank and run through a turbine to generate electricity during peak hours.

Advantages:
- Flywheels can deliver energy in very short time increments
- CAES provides long term storage
- PSH provides long term storage
- PSH can be integrated into irrigation systems

Disadvantages:
- Flywheels are much less efficient than other methods
- CAES systems are inefficient
- PSH requires water turbines
Thermal Energy Storage

What is it?
Thermal energy storage systems use sunlight or excess thermal energy to provide heat or electricity.

What are some examples?
Solar ponds are a common collection system of the sun's rays. The pond is comprised of water divided into three layers; each layer has a different salt content. This allows the lowest level (with the highest salt concentration) to reach near boiling point temperatures. This water can then be run into a building for hot water or used for heating or electricity production.

Rock heat storage systems use the thermal properties of rock to provide heated insulation for buildings. The rock can be warmed by the sun and then further heated by electric heaters. The rock retains this heat for a longer duration than water and can provide heating for buildings.

Advantages:
- low cost, low maintenance systems
- zero-emission
- solar ponds can be used for hot water, heating, or electricity
- rock heat storage provides natural insulation

Disadvantages:
- solar pond requires land area for a body of water
- rock heat storage is only for heating

Previous - Mechanical
Community Innovation

Grand Ridge Brewery
The Grand Ridge Brewery in Mirboo North has always been an icon for our community. It houses a brewery, hat factory, and social events. It has since added a new feature to the brewery: an eco-box. This eco-box community cooler is a small business use of renewable energy technology. The brewery has received water from one of its businesses, the production between 85-90% of its total energy consumption.

Wightman’s Organic Dairy Farm
Sculpt and harvest Wightman’s Organic Dairy Farm highlights many practices that you can adapt to both reduce and produce. It reduces harmful chemicals in the environment by promoting soil health, reducing the use of pesticides and herbicides. They also reduce their waste output by using an efficient plant. The milk from the cows is then sold to a local producer. They produce their own energy to heat their water via solar panels. In addition, they have automated the dairy process through a two-way thermal process that recovers waste heat from their water and condenser system. Whether you’re an organic farmer or not, the regenerative agriculture and energy saving tactics that you can employ.

Ellinbank Dairy Research
The Ellinbank Dairy Research Institute is performing groundbreaking research into optimizing dairy cow production. By simply changing the feedstock for your cattle, you can increase methane output to the atmosphere and increase the milk production. This, in turn, increases your income.

Rose and Fuchsia Farm
Elene and Ceri Forsyth have implemented solar energy efficiency practices as well as renewable energy technology. Their house uses solar panels that provide enough electricity to give them a 10% discount on their energy bills. The buildings’ solar power have white roofs to reflect sunlight and lower the temperatures inside the building, reducing the need for air conditioning. The solar system is set on a slab to absorb waste water. These are simple things that you can do to not only reduce your energy usage, but also to make extra money.

Like what you see here? Want to learn more?

Get Started Now!
Contact Us

Mirboo North Energy Hub
34-46 Burchell La
Mirboo North VIC 3871
Phone: (03) 5686 1611

Co-ordinator, MNCEH
Ian Southall
Phone: (04) 1359 0220
Email: ian@ecohubgippoland.com.au

Chairperson, MNCEH
Diana Mueller
Phone: 5686 7207
Email: mueller.diana.a@edumail.vic.gov.au

Member, MNCEH
Greame Wilson
Phone: 5685 4207
Email: deburni@hotmail.com

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Driving Directions

From Melbourne:
Take M1 towards Citylink Toilet/S.E. Suburbs
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Turn left onto C455

From Canberra:
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Continue on B23 into VC
Turn right onto M1
Exit onto B469 towards Mirboo N/Leongatha
Turn left onto C455

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