Barwon Water

BIOCHAR

From waste to high value resources

Waste from our region becomes a resource for our region.

At Barwon Water, we care about enabling regional prosperity. Our strategic focus is to achieve zero waste and zero emissions, vital for driving a prosperous region. One of the projects to help achieve this is the Regional Renewable Organics Network, which will reduce emissions, produce renewable energy, and produce biochar.

You can be part of our region's journey towards a circular economy.

What is biochar?

When organic waste is disposed of, the carbon is released back into the atmosphere. Barwon Water is supporting the region to divert this waste, transform it into high value products and in the process lock the carbon in place for hundreds to thousands of years. This transformation produces a product called Biochar.

Biochar can turn waste into a powerful climate mitigation resource for the region by locking away carbon that would have been released back into the atmosphere as well as providing many benefits when used again in new products or put back into the soil.

The benefits of using biochar are diverse. It is a versatile product which is rising in popularity as consumers and businesses seek to reduce their carbon footprints and produce sustainable products.

In terms of what it looks like, biochar is black and granular, also lightweight and highly porous.

How does it benefit the environment?

Biochar is included on the Intergovernmental Panel on Climate Change's (IPCC) short-list of negative emissions technologies. The benefit lies in the ability to capture carbon dioxide effectively and economically from the atmosphere by using proven technology (carbonisation) to convert the organic waste into one of the most stable organic carbon forms known in the environment.

Want to know more?

Contact the Circular Economy Team at Barwon Water for more information.

1300 656 007 circulareconomy@barwonwater.vic.gov.au

How is biochar made?

Biochar is made by baking organic waste (food, garden and commercial organic wastes) at a high temperature in a low oxygen environment, resulting in an end product containing high levels of stable carbon. The process of baking the waste also produces a gas called 'syngas' which can be converted into renewable energy. The high heat involved can also destroy contaminants contained in some organic wastes.

We are developing a circular system for our region

1. Food & garden waste is collected
2. We bake the waste, with limited oxygen so it doesn't burn
3. We transform this into biochar
4. We can apply this back into our gardens and lawns, grow food or seedlings, create sustainable materials for manufacturing or construction or we might drive on roads made with biochar.

What can you use biochar for?

So many things! Industries from agriculture and horticulture to construction and manufacturing can all use biochar. It is considered one of the key materials for a sustainable future of our planet, and with biochar's many uses it can be integrated into new systems for farming, building, clothing, electronics, and a whole range of consumer products.

When applied to the soil, biochar can:

- Increase water efficacy
- Improve fertiliser efficiency
- Attract nutrients to plants
- Increase plant yields
- Increase microbial activity in soil
- Increase and retains carbon in the soil

Recent studies show that biochar, if used correctly, can help build organic carbon in soil by up to 20% and can reduce nitrous oxide emissions (greenhouse gases) from soil by 12 to 50%.

Some examples include:

- Sports fields
- Golf courses
- Home gardens
- Agriculture
- Horticulture

When used in manufacturing and construction, biochar can:

- Increase strength
- Increase durability
- Substitute fossil fuel intensive products with more sustainable alternatives

Some examples include:

- Roads
- Concrete
- Sustainable Batteries
- Filtration (water and air)
- Bio plastics
- Paints and dyes
- Steel production

Who is biochar for?

Home gardeners, right through to farmers for a start. And with applications ranging from applying the biochar onto soil to using it in construction and manufacturing, many businesses are taking a keen interest in it. We know there is a growing interest in substituting fossil fuel intensive products with more sustainable alternatives.

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