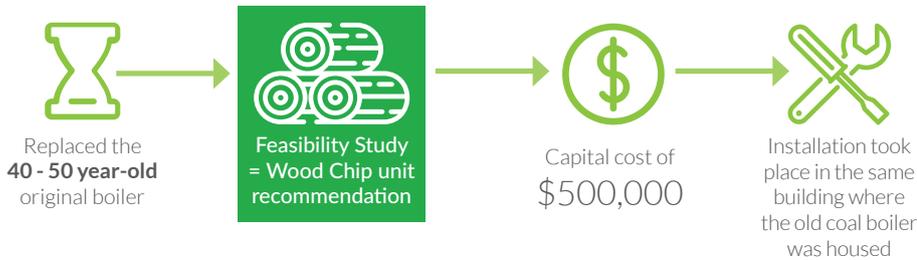


CASE STUDY

Makarewa School



“The room looks completely different. It’s no longer a dirty, dark boiler.”

Q: Would the school’s network of pipes be able to cope with the new pressurised system?

A: The existing system has been able to handle the new system very well

CLEAN AND SIMPLE TO OPERATE

To operate the old coal boiler the school’s caretaker had to be in the boiler room twice a day, while Silcock also had to pull on the overalls regularly toward the end of it’s life.

“(The old boiler) wasn’t operating that well. I was in there stoking it as well. There’s a saving there in terms of work. It doesn’t need the same attention.”

The wood-chip boiler unit generated heat as soon as it was switched on, which was a huge benefit, as was not having to worry about it during the day, he said.

The system can be operated remotely, meaning Silcock can log in at home or anywhere else and regulate when the heating goes on and off.

“If I need it going for a parent meeting we can do that. It’s got all the bells and whistles.”

KEY FEATURES:

- Froling 200kw boiler
- Wood supplied by Niagara Sawmilling
- Project manager John Faul
- Buffer tanks 2x 2200litre

KEY BENEFITS:

- Lower whole of life costs, especially in areas such as boiler maintenance and supervision.
- Ash volumes have been drastically reduced and the residue can now be composted.
- Regional development has been boosted through buying fuel from a local provider and through the launch of a government-backed wood energy hub.
- Fuel is a homegrown, renewable resource
- Health and safety benefits with no dusty, dirty boiler room.

A VICTORY FOR FORWARD-THINKING

The environmental aspect of the project, while not the major driver, was a significant part of the discussion and the school’s eventual decision - especially with changes to air quality standards.

“It was an added bonus that the choice we made was a good choice for the environment,” Silcock said.

The new boiler had also generated a lot of interest in the local community with people with an interest in engineering and new technology keen to learn about how it works and have a look at it. Silcock is looking at options for showcasing the unit to anyone interested.

The process had taken three years from first thought to completion and had been a big project for the semi-rural school with a roll of about 140 pupils.

SCHOOLS EMBRACING CLEAN TECHNOLOGY

Venture Southland Wood Energy South technical advisor Lloyd McGinty said schools had really bought into wood energy as they looked for solutions to coal boiler breakdowns or coal boilers that have come to the end of their days.

Wood was the next cheapest fuel to coal, but had so many additional benefits and operating efficiencies that made it a sound choice.

Schools with existing coal boilers had much of the space and infrastructure in place already for a conversion to wood energy, and benefits such as a dramatic reduction in ash were being welcomed. Wood chip ash was easier to dispose of as it can be spread on gardens as fertiliser.

McGinty said one of the challenges in supplying wood chips was working out how to pay for them.

An innovative system of buyers paying per gigajoule of energy produced is used, which is an incentive for suppliers to ensure their wood chips are as dry as possible, as moisture reduces the amount of energy produced.

HEALTH AND SAFETY BENEFITS CRUCIAL

CH Faul owner John Faul said **health and safety benefits were yet another tick in the wood energy box.**

With more stringent health and safety law coming into effect in April 2016, issues around caretakers and other staff working in a dirty, dusty coal boiler-room were relevant to any organisation operating a boiler.

“Teachers and staff just love it, just the ease of operation.”

Faul said the Froling units were highly efficient and “as finely tuned as a top European car”.

The units have an outdoor compensation facility, by which they can take outside temperatures into account and adjust accordingly.

Faul said he was excited about the potential for wood energy in New Zealand and interest in the fuel source was growing.

“Our fuel here is homegrown.”

Wood energy gave the forestry industry another string to its bow, while anything from walnut shells to olive stones could potentially be used as a fuel source, Faul said.

BUILDING MOMENTUM

In 2014, Venture Southland and the Energy Efficiency and Conservation Authority (EECA) launched a three-year initiative called Wood Energy South focused on establishing a regional cluster of wood energy use in Southland.

Backed by \$1.5 million of government funding, Wood Energy South aims to realise a trifecta of benefits for Southland: lowering energy-related carbon emissions, improving air quality and providing local employment and business opportunities. While the project focuses on building capacity regionally it is also expected to act as a pilot for New Zealand. EECA also has funds to assist businesses in Southland with wood energy projects and welcomes applications as part of the Wood Energy South project.