

## CASE STUDY

### Takitimu School



**110 Students**  
reliant on electricity  
for two winters  
prior to new boiler



Project budget of  
**\$402,000**  
(200kw boiler cost  
\$300,000)



Wood chip levels  
are monitored by  
**CAMERA**



Able to monitor  
and adjust  
temperatures with  
a flick of a switch

**“Wood energy won hands down for long-term cost effectiveness, efficiency and environmental sustainability”**

## Longterm cost effectiveness, efficiency and environmental sustainability lead Takitimu School to switch from donated coal to wood chips.

### 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.

#### KEY FEATURES:

- Froling 200kw boiler
- Wood supplied by Findlater Sawmilling Ltd
- 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.
- Warmer school – the efficient boiler has allowed more even temperature making for a toasty school – especially in winter.

### CREATING A “TOASTY WARM” SCHOOL

Takitimu School principal Lindsay King said when it came to assessing the school’s future heating options **wood energy won hands down for long-term cost effectiveness, efficiency and environmental sustainability.**

The school had been using coal kindly donated by Solid Energy then later Nightcaps Coal until the boiler failed leaving the 110 students reliant on electricity as the primary heat source for two winters.

The old boiler, which had been in use for many years, was temperamental for a long time before it finally conked out, King said.

He took into consideration a recommendation from the Ministry of Education, which had been investigating the most sustainable and inexpensive heating sources for schools.

### THE CHIPS STACK UP

The choices were coal, wood chips, diesel and electric and although the wood chip was the more expensive up front, it worked out better in the long run.

King had to convince the school’s board of trustees about the wood chip boiler because the technology was relatively new to New Zealand and the board wanted to be assured that it would be a sustainable option.

The project had a budget of \$402,000, including the costs for building the boiler room, covering the electricity costs and the boiler. The 200kw boiler cost \$300,000.

CH Faul of Invercargill supplied and handled the installation of the Austrian made Froling unit at Takitimu School.

### MULTIPLE BENEFITS

**The new automated burner is proving a real winner for the school.**

The entire school is “toasty warm” now, King said.

The environmental benefits are many, including not having a dirty boiler room to contend.

**Wood chip levels are monitored by camera and all staff have to do is periodically empty the ashes which can go straight on the garden - as opposed to the significantly larger amounts of inorganic coal ash, which previously needed to be disposed of.**

**This also means the school’s bottom-line has been improved as it no longer needs to employ somebody to work on and look after the boiler.**

King said they were better able to monitor and adjust temperatures as it was just “a flick of a switch” as opposed to cranking up the old coal boiler.

While there had not been any major teething problems, he had noticed the wood chips “squishing together” a bit in the hopper, something he was seeking advice about.

The wood bunker at the school was a bit of a cramped space, but King said the minor issues post-installation were far outweighed by the efficiency of the unit and the very low amount of maintenance needed.

### WOOD CHIPS FROM WASTE

Tussock Creek-based Findlater’s Sawmill supplies the school’s wood chips, and owner Carl Findlater said finding a new market for the chips which had mostly in the past been exported was great for his business.

**“We’re actually producing the stuff from waste. It’s truly a waste product.”**

Like any market, price was a factor, and wood chip prices were likely to rise because of demand, but coal prices had also jumped back up recently, Findlater said.

Wood-chips had many environmental benefits over other fuels, and with more being used there was a consequential drop in the need to use imported fuels like diesel, he said.

A good percentage of his sawmill’s wood chips were now being used in boilers, he said.

“It’s a good thing”