

SPLASH PALACE



Conversion from Coal to Wood Fuel

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A little about me....

Pete Thompson
Aquatic Services Manager
Splash Palace
Invercargill City Council



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Conversion from Coal to Wood Fuel

Splash Palace

- Built 1996



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- 50m olympic pool, wave pool, tots pool, spa pool, sauna, hydroslide, café, multi-purpose room



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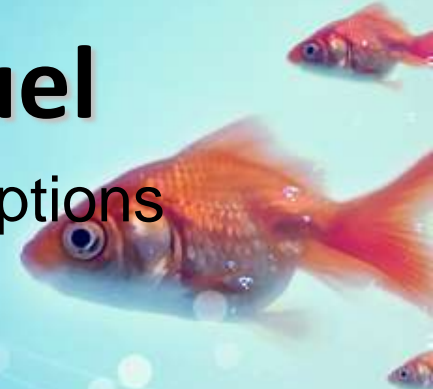


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Path from Coal to Wood Fuel

- 2008: Decision to investigate replacement options for Boilers

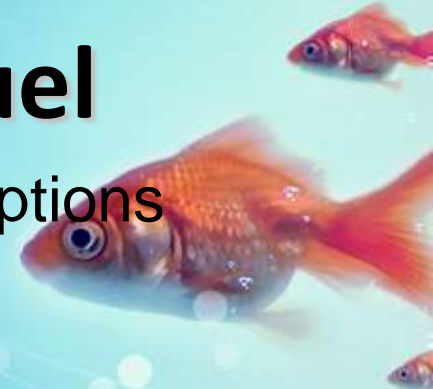


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Path from Coal to Wood Fuel

- 2008: Decision to investigate replacement options for Boilers
- April 2011: Feasibility Study concluded the 'best' option was two new coal boilers



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Stable Woodchip Supply?

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Stable Woodchip Supply?

200,000+ tonnes exported from
Bluff in 2013

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Path from Coal to Wood Fuel

- 2008: Decision to investigate replacement options for Boilers
- April 2011: Feasibility Study concluded the 'best' option was two new coal boilers
- November 2011: Council approved installation of woodchip Boiler and diesel backup boiler

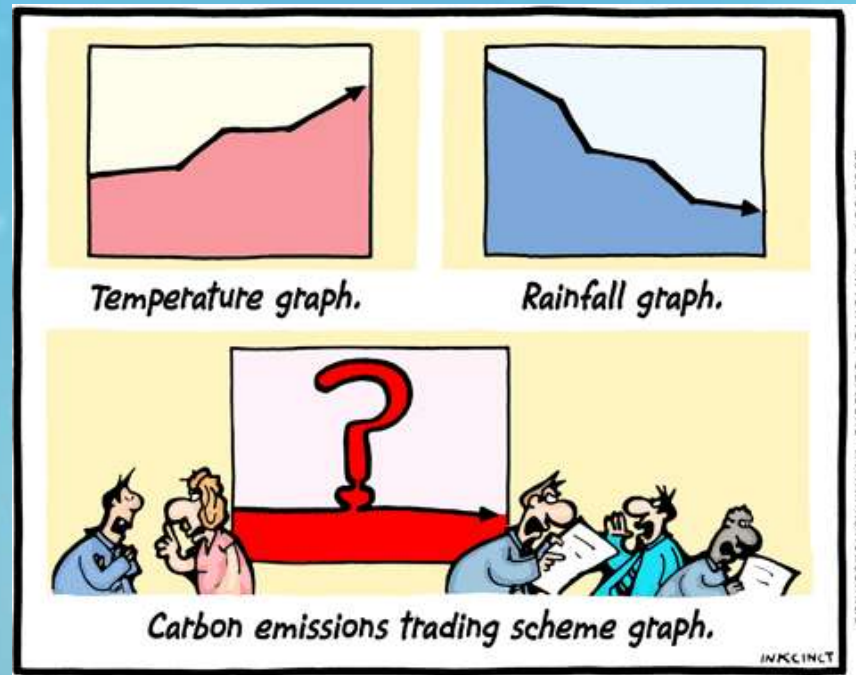
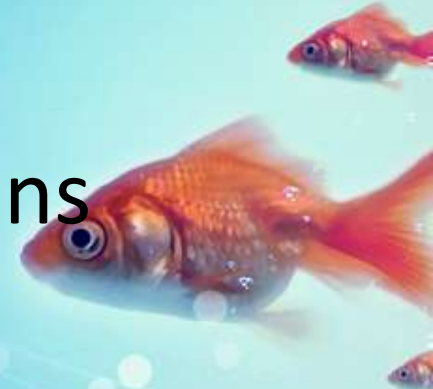


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What the...??

Impending cost of the Emissions Trading Scheme



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What the...??

The Green Look



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What the...??



Health and Safety



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Cost?

Cost vs Benefit

Woodchip vs Coal



\$17,500 - \$20,000 p.a.



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Cost?

Cost vs Benefit

Woodchip vs Coal



\$17,500 - \$20,000 p.a.

Woodchip vs Coal



Reduced health impact
on local residents



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Cost?

Cost vs Benefit



Woodchip vs Coal



\$17,500 - \$20,000 p.a.

Woodchip vs Coal



Reduced health impact on local residents

Woodship vs Coal



Demonstrable leadership opportunity

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Approval to install Woodchip Burner
November 2011

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The Details

- Replace two 750kW coal fired Taylor 70 series vertical boilers with a single 840kW Binder woodchip boiler and one backup 600kW diesel boiler
 - Modify existing coal/lignite bunker to take woodchip
 - Modify existing boiler house to accommodate Woodchip boiler and backup diesel boiler
 - Setup ancillary control systems
- 
- A large, detailed orange goldfish is swimming towards the right in the middle-right section of the slide. It has a prominent eye and a slightly open mouth. The background features the same light blue gradient and bokeh effects as the top section.

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Act. Capacity: 100 %

Flow Temp.: 80.5 °C

Actual O2: 13.8 %

Exhaust Temp.: 132.0 °C

Combustion Temp.: 673 °C

Exhaustgas-temperature achieved

Alarm Delay: 45 m

Shut Off Temperature: 60 °C

Ignition active Feed: 2.0 m

Actual Feed Timer: 0.0 m

Pause: 3.0 m

Actual Pause Timer: 0.0 m

Manual

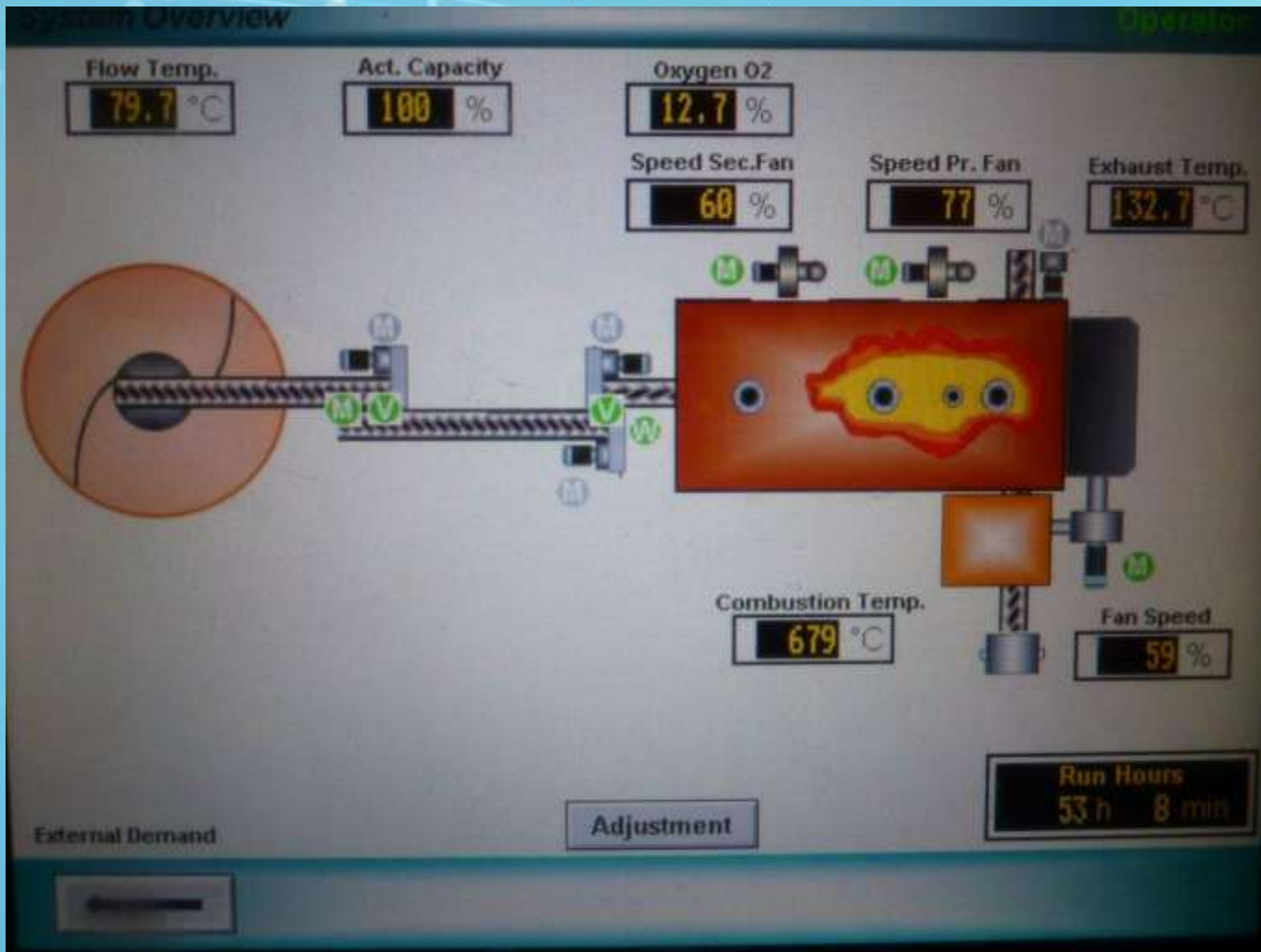
Shutdown

Auto

Ignition



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Cost vs Benefit

- Total installation cost \$650,000



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Cost vs Benefit

- Renewable source of fuel



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Cost vs Benefit

- Cleaner & Safer



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Cost vs Benefit

- Significantly more efficient
- Old Boilers (average) 69%
 - New Boiler 90-95%



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Cost vs Benefit

Which means...

- Reduced Carbon Emissions leaning toward Carbon neutrality
- Reduced maintenance



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Cost vs Benefit

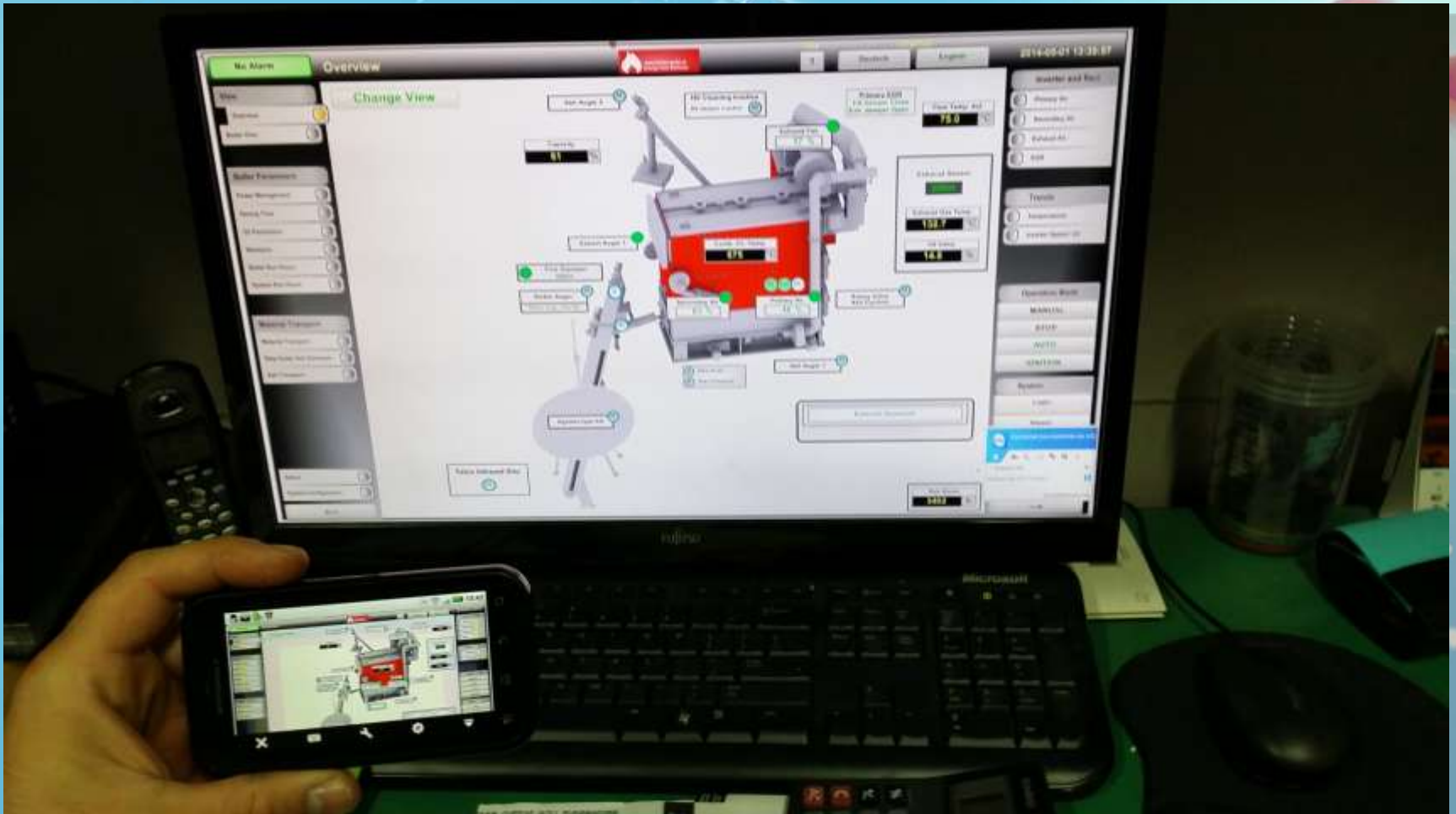
- Safer working environment
 - Reduced risk to staff
 - Reduced man hours
 - Reduced ash
- Improved offsite signalling
- Improved offsite control



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Cost vs Benefit



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Cost vs Benefit



Good result: Aquatic services manager Pete Thompson, left, and plant supervisor Steve Cook check out the new Splash Palace woodchip boiler.
Photo: ROBYN EDIE/FAIRFAX NZ 626740885

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Outcomes

**EXPECTATIONS
EXCEEDED**



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Outcomes

What about the actual operational cost?

Remember:

- Woodchip was going to be \$20k+ more p.a. than coal



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Outcomes

What about the actual operational cost?

Remember:

- Woodchip was going to be \$20k+ more p.a. than coal

However

- Significantly reduced man hours 80%



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Outcomes

What about the actual operational cost?

Remember:

- Woodchip was going to be \$20k+ more p.a. than coal

However

- Significantly reduced man hours (80%)
- No cost for toxic coal waste disposal



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Outcomes

What about the actual operational cost?

Remember:

- Woodchip was going to be \$20k+ more p.a. than coal

However

- Significantly reduced man hours (80%)
- No cost for toxic coal waste disposal
- Reduced maintenance



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Outcomes



Overall positive operational and financial
impact

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Outcomes



Overall positive operational and financial
impact

Questions?
(or an arm wrestle?)