

Mount Gambier Aquatic Centre Biomass Boiler

Aaron Izzard, Environmental Sustainability Officer



City of
Mount Gambier



Why a biomass boiler and not gas?



- Most aquatic centre boilers in Australia run on gas.
- Original boiler ran on sawdust from a local mill.
- Knowledge of the improvement in bioenergy technology.
- Considered gas, solar hot water, and biomass.



TBL Assessment



- TBL Assessment of those three options.
- Financial, Environmental & Social at high level.
- Financial component included Capital costs and Ongoing costs.
- Environment included the Natural Step Framework system conditions.
- Biomass rated 1st in all but capital cost.
- Cheaper to run.
- Carbon neutral (trees are regrown).
- Supports local economy.



Business Case - Before



- In comparison to most common alternative – straight gas.
- Higher capital cost (x 2).
- Lower running costs ($< \frac{1}{2}$).
- 4 year payback compared to straight gas.



Biomass Boiler Details



- 650kW Binder boiler – direct combustion.
- Manufactured in Austria.
- Remote monitoring and control.
- Runs on wood chips (20-30% MC).
- Installed in September 2013.
- Feed system was updated.
- 20-25 year life.
- Supplies heat only.
- Heats 1.38 ML of water to 27-31°C



Capital Cost

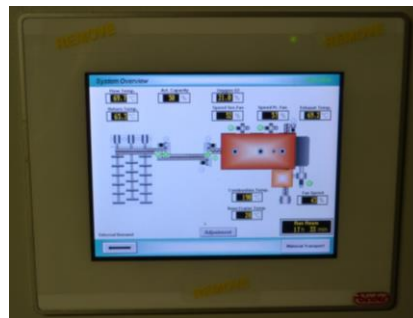
- Boiler - \$358,600 (including install).
- Update of feed system - \$39,551.
- Total \$398,151
- Whole cost financed internally.



Performance So Far



- 1st and only in Australia at an Aquatic Centre.
- Been operational for two seasons.
- Maintained heat very well.
- Noticeable +ve difference from 'regulars'.
- Slightly less feedstock than old boiler.
- Used approx. 500 tonnes of wood chip per season.



Business Case - After



- How did it compare to the predicted?
- Operational costs slightly more than anticipated, but still half that of gas.
- Reduced labour costs.
- Factor in rising gas prices still 4-5 year payback.



Learnings



- Lock in a fuel supply first.
- Experiment with suitable feedstocks, but make sure chips are screened!
- Trial clean urban timber waste.
- Could also supply hot water for building use especially showers.
- Could suit a variety of facilities with similar heat requirements – Aquatic Centres, Civic Buildings, Hospitals etc.
- 12 month season would be more cost effective.



Interested in Bioenergy?



- Review your energy costs – heat & electricity.
- Assess available feedstocks in your area – amount and total cost.
- Variety of bioenergy technologies.
- Compare to existing and predicted future costs.
- Do a TBL assessment.
- Get firm quotes.



Case Study

- Case study on the City of Mount Gambier website;
Search for “biomass boiler”.
- Come and visit!
- Thank-you!

Aaron Izzard
Environmental Sustainability Officer
(08) 8721 2528
aizzard@mountgambier.sa.gov.au



Case Study

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April 2014

