

Addendum to St Saviours Heating Options Review Paper 27 June 2022

This paper is an Addendum to the St Saviours Heating Options Review paper, dated 21st June 2022, that was presented to the PCC on 22nd June and provided the information on which the PCC Resolution was passed that same day.











The PCC Resolution authorises Standing Committee to choose between two main options for heating:

1. The implementation of a “Like for Like” gas boiler system, supported by a more effective management control board, which can zone our heating according to the very different requirements of the Church and Centre.
2. The potential to go further by introducing IR heating instead of Gas for the Centre – a Hybrid model.

The assessment of the heating needs of the Church and Centre has sought to strike the right balance between:

- The Church must be warm and welcoming
- Protecting the Historic fabric and materials
- Affordability (to install, maintain and run),
- The feasibility of the solution – “will it actually work?”
- Reducing our carbon footprint

The Review paper provided the following comparison:

	GAS	HYBRID
Welcoming and warm Church		
Protecting the Historic fabric		
Affordability (CAPEX and OPEX)		
Feasibility – “will it actually work?”		
Reducing our carbon footprint		

As both options are GREEN for the first two markers, this Addendum seeks to clarify any additional points or indicate the risks from an Affordability, Feasibility and Carbon footprint perspective.

AFFORDABILITY

The CAPEX comparison is as follows:

	GAS	HYBRID
Gross Budget	£124,840	£125,637.70
VAT (Grant to be obtained)	£ 19,140	£ 21,606.28
Net Budget	£105,700	£104,031.42

Note:

- (i) The Gas Like for Like solution includes a £10,000 contingency for increases in pump and material costs.
- (ii) Jigsaw (IR) has provided an updated quotation which increases the Hybrid CAPEX to Gross budget of £129,087.70 and Net budget £106,906.42. This covers additional proposed heaters and installation time.
- (iii) We have not included for any additional CAPEX costs for temporary heaters for the Centre through the Winter on the Hybrid model, nor for any additional cost for UKPN to upgrade the power supply.

- (iv) Pumps are included in both quotations and concern was expressed by members of the PCC and Buildings Committee that these should be purchased and installed at the same time to ensure no weak points or potential points of failure in the system.

From an OPEX perspective, please note the following comments:

- (i) Comparing 2019 and 2022 YTD figures, based on full Church and Centre usage, our Gas KWH consumption has stayed roughly the same through the Jan – Mar Winter period and reduced significantly from May 22 onwards, when the boilers were switched off. We have run hot water off the Electric since the summer of 2021.
- (ii) Our Gas (£) costs have actually reduced as our current Gas tariff is slightly lower than 2019.
- (iii) Our Electric consumption follows a similar pattern with equivalence on KWH for the Winters of 2019 and 2022. Any variation is typically reflected by temperature variations for these periods.
- (iv) Our Electric tariffs increased by 15% from 2019 to 2022 and therefore our current Electric costs are projected to be 15% higher across 2022. Also – please note our Electric costs are typically 60-65% of overall energy costs in any one year.
- (v) We have estimated that introducing IR heating for the Centre will increase our overall OPEX costs by between 20 and 25%. This reflects the increased costs of Electric and does take into consideration the reduced KWH of using IR to heat the Centre.

Overall – the summary on Affordability is as follows:

- Hybrid is c. £4,200 more expensive in Gross Budget
- Hybrid has additional CAPEX costs to cover winter heating for the Centre
- Hybrid may be subject to additional UKPN electric supply upgrade costs
- Hybrid is 20 – 25% more expensive to operate from an energy cost perspective

FEASIBILITY

Gas – “Like for Like”

We can have a high degree of confidence in the Like for Like boiler replacement that it will provide improved heating and control of heating for the Church and Centre and be operational before the demands of Autumn and Winter.

Based on a go ahead from Standing Committee by 1st July, we are anticipating a 6 week programme of works on site with a completion of operations in late Summer / early Autumn. Fixed dates will be obtained once a final programme of works has been costed and reviewed

The key decision on this option is whether the Water pumps should be purchased and installed at the same time – these are currently costed at £10,700 + VAT. Concern has been raised by members of the PCC and Building Committee that not including these provides a potential weak point / point of failure in a new system.

Hybrid

On the Hybrid model, the introduction of IR for the Centre will be subject to the new Faculty procedure that comes into effect from 1st July. This will be a 4 to 6 month process, followed once approved, by a lead time of c. 6 to 8 weeks before works can commence. Implementation of IR in the Centre is a 1 to 2 week programme.

Therefore, at best case, subject to approval to commence the Faculty process from 1st July, we need to consider that IR will not be operational in the Centre until March 2023. Therefore we will need contingency planning for the Centre through Autumn and Winter – the use of mobile heaters and radiators in key rooms.

Concern was expressed by PCC members on the safety and potential risk to our staff, children and vulnerable users of the Centre.

CARBON FOOTPRINT

Gas – “Like for Like”

The “Like for Like” gas boiler replacement will lead to a significant immediate reduction in our carbon footprint (from hydrocarbons) of 40%. This is supported by Case Study evidence – for example:

[Case Study - St Paul's Cathedral - Hamworthy Heating - Energy Live News](#)

This is the commencement of our journey towards Net Zero and will require some innovative and flexible planning in the coming years to offset this carbon footprint through additional means. These may include:

- Use of Solar Array to reduce our electricity footprint and provide back to the grid in Summer
- Transfer onto electric green tariffs (an initial estimated quote to implement is £40,000).
- Potential introduction by the gas network of a 20% hydrogen / 80% gas mix, reducing further the hydrocarbon footprint.
- Offset of carbon footprint through Mission partner engagement (tree planting, solar array investment overseas etc)

Hybrid

Hybrid will go further to reduce our hydrocarbon footprint, by switching the Centre heating directly to an electric footprint. The journey towards Net Zero will still require us to plan and implement an innovative and flexible programme – we just start one further step along that journey by introducing Hybrid at this stage.

- Use of Solar Array to reduce our electricity footprint and provide back to the grid in Summer
- Transfer onto electric green tariffs
- Potential introduction by the gas network of a 20% hydrogen / 80% gas mix, reducing further the hydrocarbon footprint.
- Offset of carbon footprint through Mission partner engagement (tree planting, solar array investment overseas etc)

SUMMARY

The recommendations from the Heating Team are as follows:

- (i) A “Like for Like” gas boiler replacement, including the pumps.
- (ii) A review of Insulation improvement for the Centre as a priority to reduce our energy loss.
- (iii) Further review of insulation options for the roof of the Main Church building – for future consideration.
- (iv) Ongoing review of Energy tariffs to ensure we have the very best value for St Saviours, that take into consideration our sustainability objectives – e.g. green tariffs
- (v) Development of a carbon offsetting programme – e.g. Mission partner engagement / participation in hydrogen / gas national programmes.