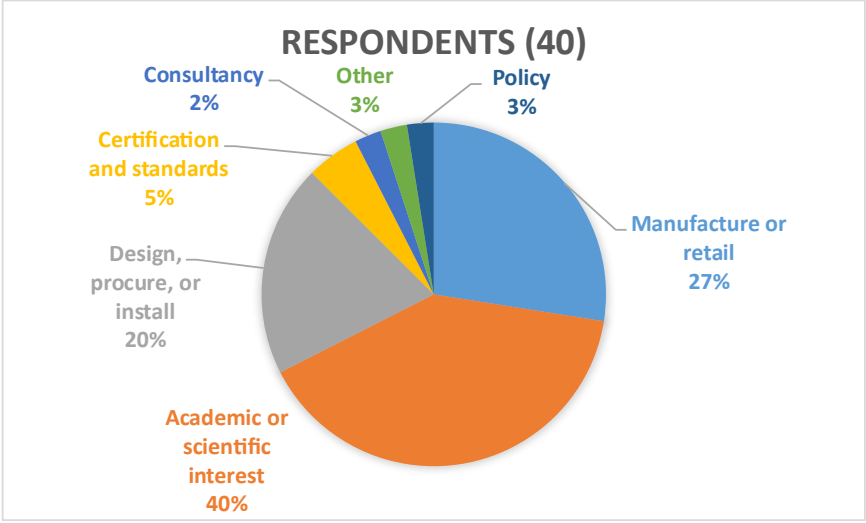
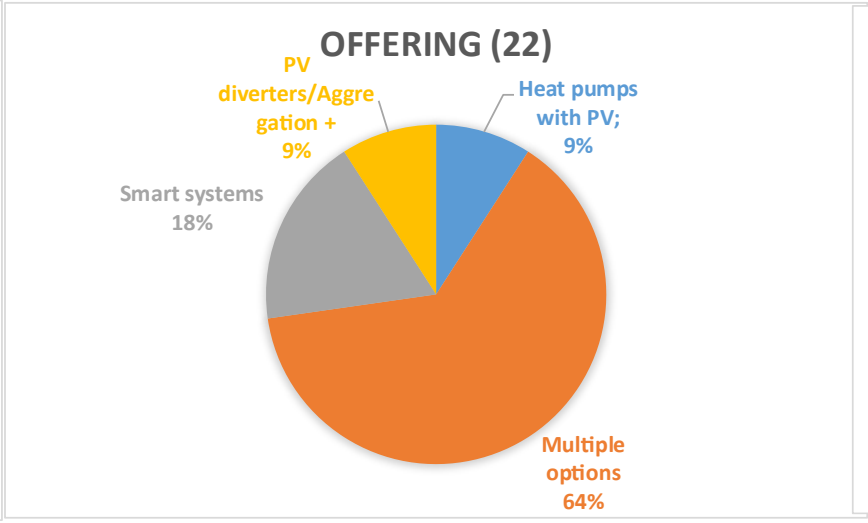
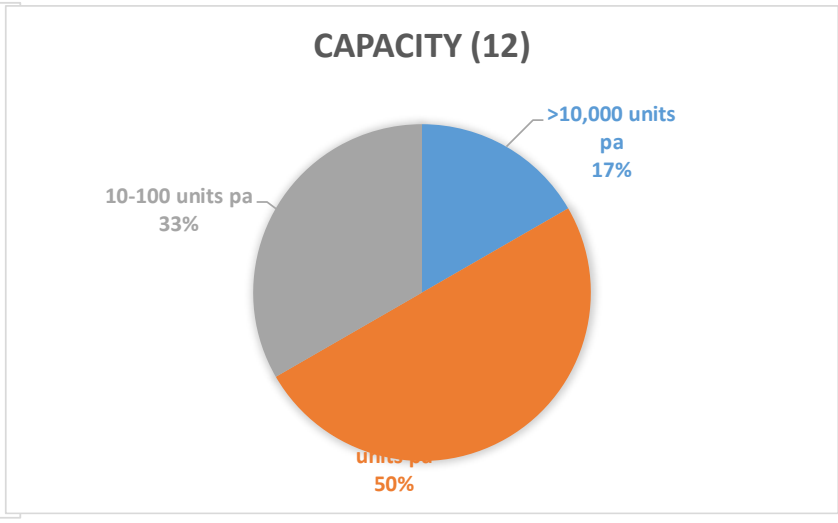
Task C Survey Results

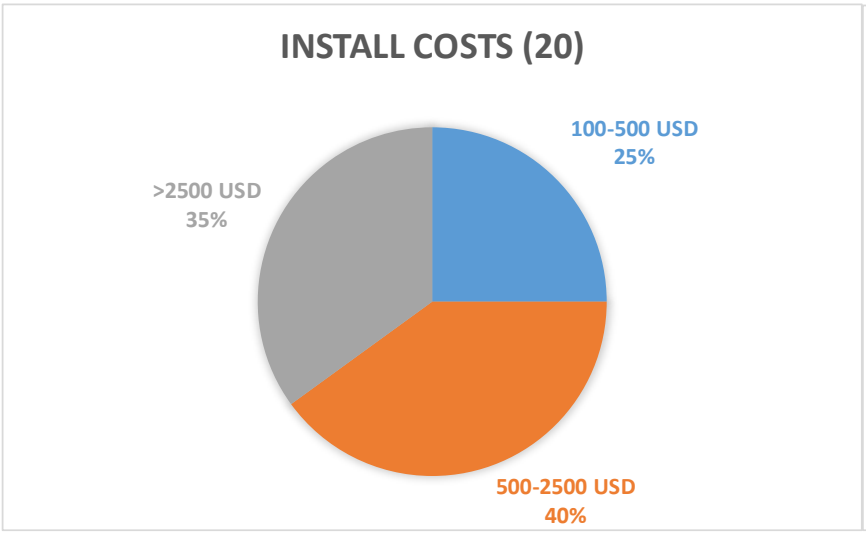
November 2023

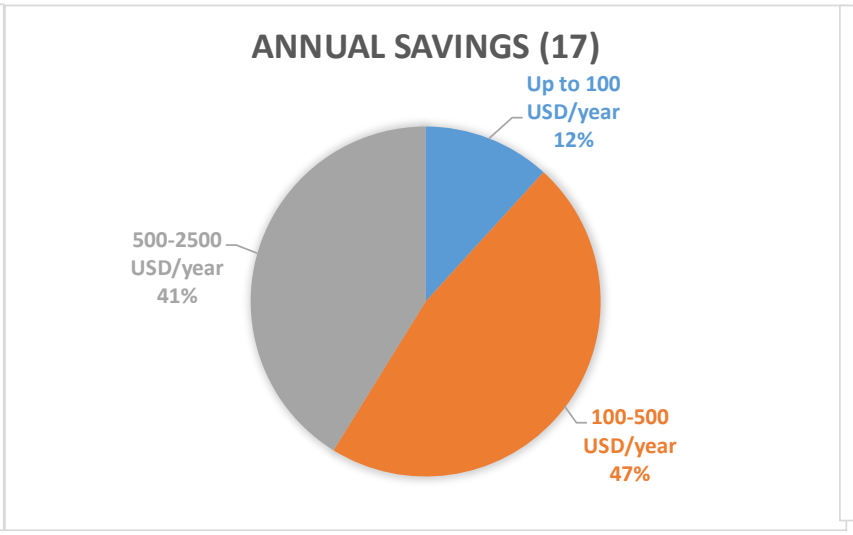
STC Survey – Preliminary Results (40 now)

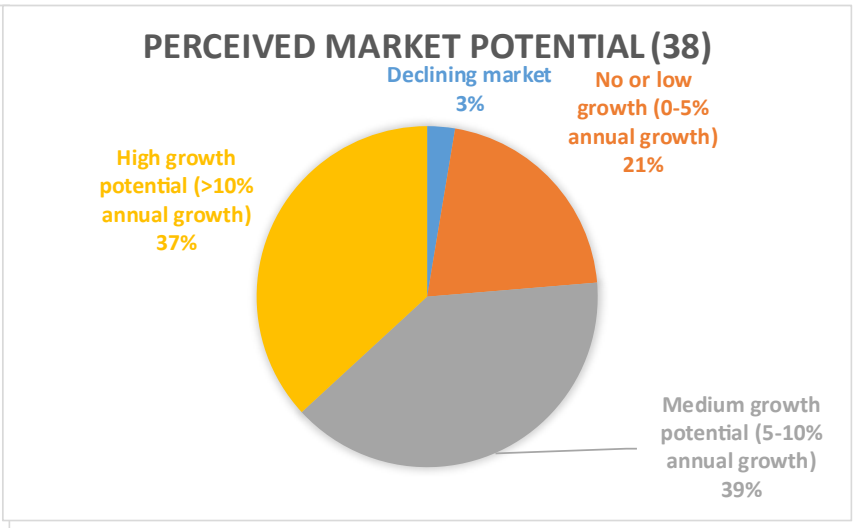










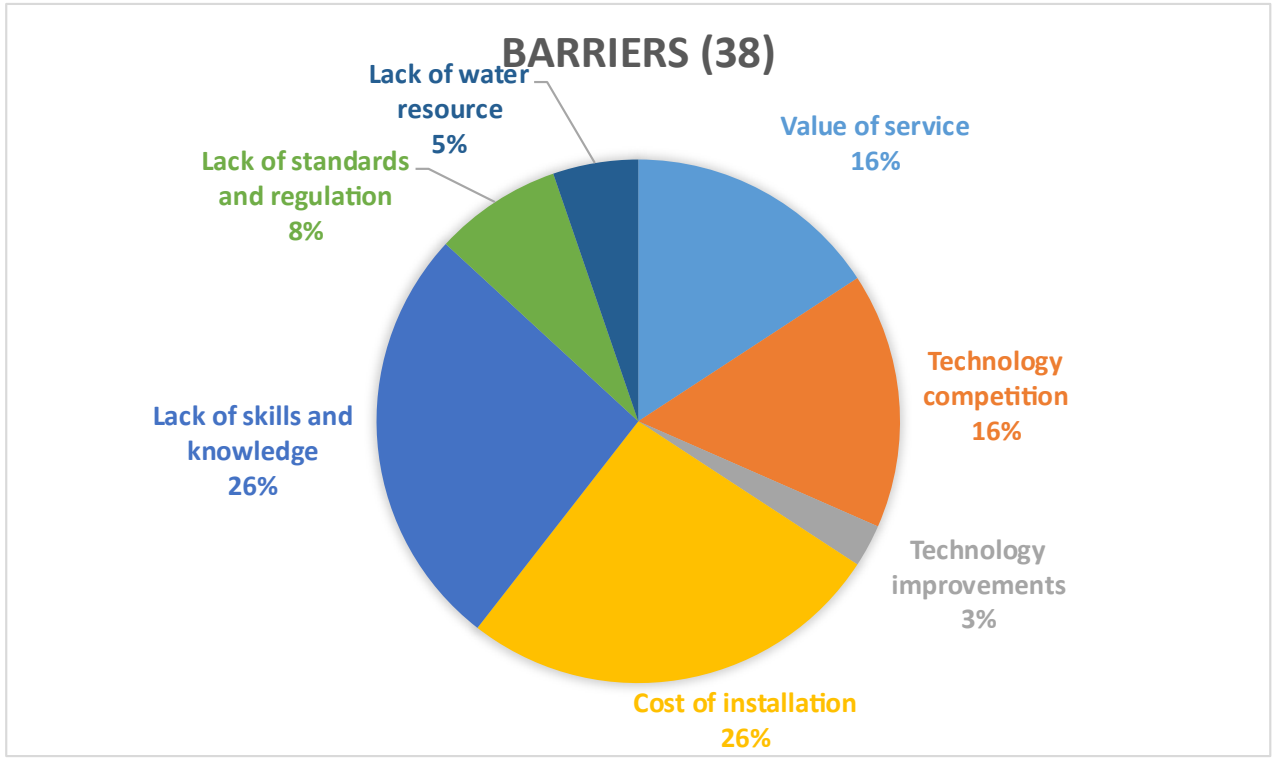


Comments on results

- Mix of respondent types
- Commercial parties generally have an optimistic outlook for growth (medium or high; except one manufacturer)
- Magnitude of savings may be too high, unless aggregated service estimates have been provided. A normalised method should be developed for reporting performance comparisons
- Barriers analysis might point to areas of focus for the task (see following slides)

Summary of barrier types

- Value of service 6
- Technology competition 6
- Technology improvements 1
- Cost of installation 10
- Lack of skills and knowledge 10
- Lack of standards and regulation 3
- Lack of water resource 2



Barriers - 1

- Figuring out how to divide up the value between stakeholders when aggregating systems. (A)
- Supply of Water (A)
- Installation (M)
- Energy efficient heating elements (A)
- Costs for transitioning from gas to electric water heating systems, Lack of clear guidelines and standards for PV hot water Uncertainties in the value proposition for customers due to being a relatively new technology (A)
- Excessive emphasis on heat pump water heaters as the only "green water heating" solution. Also difficulty getting water heater installers who are able and willing to install PV modules on the roof. Most plumbers are unaccustomed to working on rooftops and do not have the necessary training or tools. (Cert)
- Lack of training and awareness (A)
- Lack of technical knowledge, lack of regulations, no frameworks , no proper standards ,low involvement of private sector, lack of funding and the market. (DPI)
- high investment start up costs (M)

Barriers - 2

- In some regions where there are new builds if there is solar pv combined with hot water tanks, then the true carbon abatement potential is not fairly considered, as surplus pv is diverted to the tank. Furthermore some subsidies still focus on solar boilers rather than one specifically designed as a pv tank. (M)
- Initial investment (A)
- Little interest in the uptake of PV technologies; Minimal technical capacity of installers; Unaffordability (A)
- Finance... (M)
- low cost natural gas; CAPEX and installation costs vs. gas/oil/ electric systems; lack of qualified installers (A)
- Architectural design reserved, higher cost, imperfect standards (M)
- too expensive (A)
- Consumer understanding that PV excess power can be used for water heating. (A)
- Heat pump with PV installer education (A)

Barriers - 3

- Cost, for sure, is one of the barriers in the uptake of smart water heating controls with PV systems. However, a huge risk worth noting is that PV energy will be wasted by encouraging and promoting the use of high-consumption heating technologies, like electric resistive heating water tanks with direct or indirect PV connectivity, rather than using heat pump or solar water heaters that consume a fraction of the energy (and in the case of some DHW heat pumps much lower power) to deliver the same hot water loads, leaving much more PV surplus for use for other loads. It is significantly more efficient energy-wise to use a smart energy management system with a heat pump water heater than with an electric water heater and the latter would appear to make sense only in certain cases where the former is not suitable. (DPI)
- Water Supply (A)
- High cost of the products (DPI)

Barriers - 4

- Price and availability of products
- Lack of training, Lack of awareness rising to see the benefits of PV hot water systems because it is an emerging technology.
- High cost
- Finances
- Price and Technology as well as knowledge gap
- For Australia, high levels of PV may lead to street voltages too high which could disadvantage PV installations. Household batteries and community batteries may become more used and so the issues of PV export may reduce the incentive for hot water self consumption
- Current rebate schemes don't recognise PV water heating, as such whilst the capital installation is comparable between smart water heaters and heat pumps for instance, the cost to the consumer is significantly different. A level playing field that is not technology specific is needed.

Barriers - 5

- People are heading towards batteries instead of power diverters, therefore excess power is going to the battery therefore less for the HWC
- cost and sales-people offering this solution
- Education of the users who do not know about the product and skeptical of new products is the biggest marketing barrier. Our product started development in 2013 and has been sold in other countries from 2014. It has all the test reports and is fully certified. No technical risks.
- Consumer awareness about the potential of PV water heating and understanding that connecting a PV water heater (e.g., heat pump) to a house with rooftop PV does not automatically make the devices work together (e.g., without appropriate control the heat pump may start at night). The PV water heater needs to be PV ready and include appropriate control.
- Need for more education and lack of comprehension of how large the water heating load is
- There is already large uptake of Solar PV and will be large uptake of HPWH - the challenge will be a cost-effective / standardised method for communicating between PV and HPWH and the broader electricity network.