

## Product Concept

Product Concept Document (Solar Water Heating System)	
Recommended Entry	Considerations
Market Problem or Opportunity	<ul style="list-style-type: none"> <li>• Market industry is projected to grow from USD 4.01 billion in 2023 to USD 7.71 billion by 2032</li> <li>• Compound annual growth rate (CAGR) of 8.50% during the forecast period (2023–2032)</li> <li>• Climate conditions are driving the need for more energy efficient and functional heating systems</li> <li>• The US Department of Energy predicts that installation of a solar water heater will save you 50-80% off your heating bill</li> <li>• Renewable energy solutions are popular.</li> <li>• Some local, state, and federal governments provide incentives such as low interest loans, tax credits, and reduced insurance costs</li> <li>• Conventional water and heating systems are becoming less and less supportable as the industry moves toward more environmentally friendly solutions</li> </ul>
Market Segments	<ul style="list-style-type: none"> <li>• Primary market for solar powered heating is home or apartment owners and commercial businesses</li> </ul>
Key Financials	<ul style="list-style-type: none"> <li>• Preliminary cost analysis estimates 40% return on investment (ROI) in Year 1</li> </ul>
Market Window	<ul style="list-style-type: none"> <li>• Time to enter market is now as it is growing</li> <li>• There is a growing demand for energy efficient water heaters and furnaces</li> <li>• Continual government regulatory changes and incentives to use a solar solution will continue to drive the market upward.</li> <li>• Extreme climate conditions are driving the need for more energy efficient and functional heating systems around the world</li> <li>• Renewable energy solutions are popular right now</li> </ul>
Competitive Landscape	<ul style="list-style-type: none"> <li>• Major competitors are General Electric, Rheem Manufacturing, Racold, Sun Pad and Bosch</li> <li>• There will likely be few new competitors in the short-term</li> </ul>

Main Features and Functionality	<ul style="list-style-type: none"> <li>Solar water heating system will provide 2 options: solar collector options and water tank &amp; storage options</li> <li>Solar collector option will provide 2 solutions: 1) Evacuated tube solar collectors - uses a series of vacuum-sealed tubes to collect and store heat from the sun (highly efficient at capturing solar energy) and 2) Flat plate solar collectors - device that uses solar energy to generate thermal energy (cheaper than evacuated tubes, simpler design and easy to manufacture)</li> <li>Water tank &amp; storage will provide 3 solutions: 1) Only solar - system produces up to 150L of hot water/day (no need for tank), 2) Conventional water heater - solar collector connected with conventional water heater and 3) Instant water heater - solar collector connected to smaller, more compact instant water heater (never run out of hot water, more efficient, waste less energy, takes up less space)</li> </ul>
Key Differentiators	<ul style="list-style-type: none"> <li>Can help customers save at least 10% in installation fees over the competition.</li> <li>System is more user friendly, innovative, and aesthetically pleasing.</li> <li>Technology that exceeds what competition can offer, specifically, their solar panel technology. This includes ability to convert more sunlight into electricity, capture sunlight from both sides and increase energy output, flexible solar panels that can be installed on curved surfaces and transparent solar panels that can be used as windows or skylights and generate power without blocking light.</li> <li>System can reduce carbon dioxide emissions.</li> <li>System has fewer components than the competition's systems and is virtually maintenance free.</li> <li>Insulation design allows the tank to maintain high water temperatures longer than most competitive products.</li> </ul>
Go to Market Logistics	<ul style="list-style-type: none"> <li>Will market, sell and schedule installations through firm's website</li> <li>Leverage existing distribution channels with Amazon, Home Depot, Lowes, Walmart, and Costco</li> </ul>
Business Success Measurements	<ul style="list-style-type: none"> <li>Success will be measured by sales, revenue, market share</li> </ul>