**User Segment**

The project has the objective of solving the conventional systems of energy provision with a sustainable solution. The target is more biased toward residential and commercial consumers, particularly in regions with high solar irradiance and who can achieve an effective method of changing solar energy into electricity. In developing regions where there is a low level of accessibility to both reliable and affordable energy, the project brings with it a solution at hand on how to make energy more accessible, usable at less costly expenses. It also benefits the environmental and sustainability advocates associated with reducing harmful emissions and minimizing environmental damages. The chemical and thermoelectric processes combined in this project have implications for further study and innovation in renewable energy and materials science. This work aligns with the Sustainable Development Goals and, therefore, supports policy initiatives targeting the achievement of climate goals and promotion of clean energy solutions. Governments and other policymakers recognize that the project has taken practical action toward improving energy efficiency and reducing environmental impacts.