**Proposal Description**

We propose to implement a recycling scheme to not only tackle the plastic waste issue in Lobitos and Piedritas but also other problem areas. This would be done by converting plastics into a range of different designs which would each address a certain issue or issues the communities face. Machines, such as extrusion or injection moulders, would be used in order melt the plastic into a workable state and produce the designs.

**Summary**

Our design tackles the plastic waste issue Lobitos and Piedritas, using several machines to recycle the usable plastics into various items. These items are then to be used to tackle several other problem areas the communities are facing, from rainwater collection tanks for water to classroom supplies to help improve education. The machines will be powered by a solar array which will feed additional power it generates into the local grid, helping with the grid stability, which is currently unreliable. The size of the project is easily scalable, and the ideas easily changeable as problems facing the communities change.

**Key design highlights**

The act of processing plastic waste involves four key steps, to start with the plastic must be separated into types. Each plastic type has its own individual properties, most importantly, different melt temperatures. After this separation, the plastic waste must be shredded down into smaller components, this allows for a more consistent melt, a higher quality product, and a lower energy requirement.

From this shredder plastic, there are two different methods of processing it. The first, involved using an injection moulder. This machine passes shredded plastic down a heated tube into a metal mould. This mould will allow the plastic to set in the shape of one of our specially designed items.

The second method involves an extrusion moulder. This machine produces a melted plastic string, this string can be shaped around any object chosen, its main use within this project is its ability to produce items like recycling bins/baskets.

**Cost Explanation**

Plastics for Peru would be looking to secure an initial investment of £65,235.05. Indicators such as the NVP and the IRR indicate that the charity would have the potential to be self-sufficient over a period of 24 months. The sources of income would potentially come from sponsors, grants, and donations.

**Social, environmental, and economic considerations**

Plastics for Peru considered ethics and sustainability greatly when creating our solution. We will follow the environmental and sustainability policy set out by the UK government to maintain our approach and ensure we meet our social, environmental, and economic goals. Environmentally we aim to significantly reduce plastic waste in Lobitos and Piedritas by re-cycling plastic into useful items for the community using renewable energy sources. As a charity the main source of income will be from donations however additional funds will also be created through the sale of created items to tourists. The design does include a high initial cost due to the use of solar panels however this source of energy is economically sustainable in the long run. Plastics for Peru will solely aim to hire local residents creating much needed jobs in areas with extremely high poverty rates.