Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

ENTERPRISE **0454/13**

Paper 1 **October/November 2018**

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1 hour 30 minutes

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READ THESE INSTRUCTIONS FIRST

This Insert contains the case study for use when answering the questions.

Anything the candidate writes on this Insert will **not** be marked.

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The Lighting Project

The background

Tixy helped to design and build machines as part of his engineering studies.

When he was growing up Tixy lived in a rural village where very few homes had electricity. He remembered how he had struggled to study in the evenings because his family often could not afford fuel for their lamps. He knew that many families still struggled to buy fuel for their lamps, which was often expensive and not always safe.

Tixy wanted to give every household access to cheap and reliable lighting. Living in a country where fuel was expensive, but the sun shone brightly and regularly, Tixy thought that solar power might be the answer.

The design

Tixy designed a solar-powered lamp that he made using scrap metal and tiny pieces of solar panels given to him by a local manufacturer.

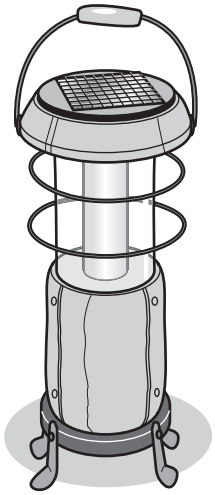


Fig. 1

Even using some scrap materials, the lamps cost US$10 each to make. To cover these costs, the price would be too expensive for many households. Tixy could not afford to make the lamps and give them away. He needed to find a way to finance the enterprise. Borrowing money to finance the enterprise would be too big a risk for Tixy as he still had student loans that he had to repay.

The idea

As part of his studies, Tixy attended a management event sponsored by a local social enterprise, Social Enterprise S. Social Enterprise S aimed to improve sustainable development throughout the country and promote Fairtrade. By helping the country develop without reducing the resources available for future generations, Social Enterprise S ensured sustainability.

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Tixy explained to the organisers of Social Enterprise S what he wanted to achieve and the problems that he faced. One of these organisers asked if Tixy had considered teaching the communities to make the lamps for themselves. This way Tixy would be giving people a skill that they could use to help others in the community. Tixy would be able to help more people by doing this.

The organisers suggested that they work with Tixy to develop a training programme for communities across the country. Tixy was pleased to have some support.

The plan

A plan for the training was developed. Tixy would train a group of volunteers to produce the solar-powered lamps. He would start with a group of volunteers from local communities who he knew well. Social Enterprise S would use its donations to provide the finance for making the first lamps.

The volunteers would then teach people in their communities how to make the lamps. The lamps produced could then be sold and any profits made would be reinvested into making more lamps. In this way the project would eventually become self-financing and cash flow would be maintained.

Volunteers would be given a small percentage of the price of each lamp to help them to continue training people. To keep costs low, the lamps would be made from as much recycled material as possible.

Tixy was responsible for researching potential suppliers and negotiating prices. Using all of his negotiating skills, he was able to buy the materials at suitable prices.

The operation

The training was successful; the first lamps were made and sold. Other local communities started to ask Tixy to offer training in their area. There was high demand for the lamps.

The Lighting Project was a success. People who received the solar-powered lamps no longer had to buy expensive fuel for lighting and as a result some were able to save money on household spending.

The future

Building on the success of the Lighting Project, Tixy wants to find other ways to help communities. He is working with community groups to use the profit earned from the lamps to finance other new enterprises in the community. The difficulty is persuading people to take the risk of using their profits as funds for investment.

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