



Sustainable Black powder (Gozo)

Our idea..



- ▶ This proposal addresses a rather niche market. Black powder is used in abundance in the Maltese Islands, most prominently in the form of fireworks, which are a massive feature of the traditional village feasts. The majority of fireworks are produced locally, with there being a full 35 firework factories in the country. Due to rising mineral prices, (such as potassium nitrate and sulphur) gunpowder has become more and more expensive, making the upholding of this tradition in jeopardy of being untenable financially.
- ▶ The proposal presented plans to construct a black powder manufactory in Gozo. The facility itself will be built away from urban areas. Furthermore, the plan entails the planting of trees throughout the outside of the facility, in order to reduce the overall carbon footprint of the endeavour.

Multiple markets

- ▶ Of course, the success of this venture is not solely dependent on the demand of the fireworks manufacturers alone. Black powder is also used in a military capacity as an igniter and as a fuse, it also has many uses across the entertainment industry, in the form of pyrotechnics, therefore the project has a stable market. It is also possible that in the future with the use of sustainable packaging, exportation could become an option.

Use of Organic Material...

- ▶ On the production of the black powder itself, the plan is to use organic methods to produce all three ingredients of black powder, from locally sourced material. These organic methods (especially sulphur production) are much cleaner in terms of pollutants and emissions created, compared to foreign mechanical industrial processes.





- ▶ Fireworks are explosions of numerous small pellets of black powder called stars.
- ▶ The main ingredient in fireworks is black powder, which explodes when ignited .In addition to black powder, firework stars contain different chemicals or metals to create certain colours.
- ▶ The stars are intentionally arranged to create various firework shapes or images.Pyrotechnicians carefully measure black powder, chemicals, fuses and other supplies to build fireworks that work properly.
- ▶ These professionals make precise calculations to ensure that each firework projects to the correct altitude and explodes at the right time and in the right location.
- ▶ The next time you enjoy an aerial fireworks show hopefully you can appreciate the exact science that becomes a beautiful celebration of chemistry and physics.

Other Similar Products

- ▶ If the project is successful and proves sustainable financially, there is a very good path to expansion into production of guncotton and smokeless powder, for which there is a very large demand in the military sector, which could make at least part of the armed force's ammunition supply self sufficient, thus aiding the national security, therefore can help Malta land on the moon by using it for rockets and similar space exploration..



How will this project help mitigate the effects of climate change?

► The proposed project of the gunpowder manufactory will help reduce Malta's emissions and other negative factors which affect climate change on a local and global level. First, by producing gunpowder locally, the emissions caused by shipping, as well as the waste caused by packing will be greatly reduced. Furthermore, the processes for the very manufacture of gunpowder that is being proposed is, generally speaking, very clean in terms of emissions and, compared with more synthetic techniques used abroad, produces less environmentally hazardous waste. The facility itself will be built using the most eco-friendly method, and the structure will blend in with the local environment.



Environmental Sustainability:

- ▶ The factory will be built in a way as to be sustainable to the environment, and not to be an eyesore.
- ▶ There are many ways in which a factory can start off green and sustainable.
- ▶ Some ways this can be done are:
 - ▶ Isolation:
 - ▶ The project will be built either in an industrial estate or in the countryside away from citizens as not to be an eyesore and as to minimise injuries in the rare event that an accident occurs.

Circular Manufacturing:

- ▶ The intention of circular manufacturing is to close the loop of materials, products, and components through multiple lifecycles. It aims to be different from the rest of the world's manufacturing process which is extremely inefficient and wasteful, as well as very harmful to the natural environment.



Environmental sustainability

- ▶ Trees:
 - ▶ As mentioned above, trees and other vegetation will be planted in the unused areas of the factory. This will make it less of an eyesore, and the trees will help make oxygen. The trees that will be planted will be endangered and protected trees, such as the Carob tree, as to enlarge the populations of these trees.
- ▶ Digital communication:
 - ▶ Digital communication enables a very efficient communication system which is high speed, reliable and uses little to no power.
- ▶ Generation of energy:
 - ▶ Since it will be a large-scale factory, sophisticated solar panels can be installed on the roof of the factory, as well as in unused areas. This will enable the factory to generate a portion of its power itself, therefore less need to purchase from elsewhere, making it more sustainable and green.

Financing

- ▶ Initial funds to construct facility will be largest hurdle
- ▶ Sources of funding: private investors (including firework manufacturers), with promise of good returns in the long-run.
- ▶ Government subsidies also possible, as well as potential for EU funds.





The End

HAVE A GOOD EVENING

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