

Cquestrate Funding Requirements

Short term funding requirements

The immediate requirement for research funding is £135.8k. This would cover six pieces of research:

- (i) Formation kinetics of calcium carbonate (£29.9k)
- (ii) Dissolution kinetics of Mg and Ca hydroxides (£32.1k)
- (iii) Modelling the input of hydroxide particles to seawater (£15.5k)
- (iv) Biological response to impurities in carbonates (£10.9k)
- (v) Biological response to increased alkalinity (£14.2k)
- (vi) Process engineering of end-to-end process (£10.6k)
+20% to cover project management, expenses and contingency

Items (i), (ii) and (iii) will address the issue of how to add the alkalinity to the seawater. This work would be performed by the Department of Earth Sciences at Oxford.

Items (iv) and (v) will address the impact on the biology of the oceans. This work would be performed by Plymouth Marine Laboratory.

Item (vi) will address how the various parts of the process are best optimised. This work would be performed by the Department of Engineering at Oxford.

The reason I can give such exact costings is because I have quotes on the work, which are available on request. These pieces of work could be undertaken in parallel and would take 3-4 months to complete.

Longer term funding requirements

If the findings of the research outlined above and the economic analysis currently underway in Australia are both positive, then the next stage of the process will be to conduct two further pieces of research:

- Pre-ocean research
- Ocean trials

The pre-ocean research would focus on ensuring that ocean trials would be safe to conduct and to ensure that the ocean trials were designed in such a way as to be most effective. It would consist of:

- Mesocosm trials (testing on seawater isolated in large containers)
- Cost/benefit analysis of effect on marine ecosystems
- Measuring the draw-down of carbon dioxide
- Creation of a risk register

This phase would cost in the region of £200-250k and would take six months to complete.

The ocean trials would take place over a number of years to track the short, medium and long term impact of the process. The total cost would need to be estimated in light of the findings from the previous research, but would be of the order of £3-6million