

## Gonville & Caius Engineering Challenge 2019

Engineering is about solving problems: about designing processes and making products that can make a real difference to individuals and society. Engineers require a strong academic knowledge, but engineering is more than just mathematics or science. It's the ability to analyse a problem and find a solution in a practical and cost-effective way.

The task for this year's Gonville & Caius Engineering Challenge for Year 12 students is to **devise a strategy to power the UK's electricity supply**. In 2007, the UK had an electrical generating capacity of 80 GW and a peak supply load of 63 GW.

The task is to decide how the UK should be generating its electricity. You can use any energy-generating fuel or method of generation. You can rely on just one source or any combination of them. Your strategy must consider a number of issues:

- How much generating capacity does the UK need?
- Where should the electricity be generated?
- What source of power should the UK be using? Each source has different characteristics and there are many factors to consider.
- Cost vs benefit.

The supply design you come up with is entirely up to you. Ignore the current generating infrastructure; do not continue to use a power plant just because it has already been built! **Base your design on what you think an ideal system would look like**. We need a sustainable system that can reliably supply as much electricity as is needed to everywhere in the UK.

### Your Challenge entry should include two parts:

- (1) The developed design as a high-level presentation to a government minister. This could be a text document or a PowerPoint presentation. It should succinctly convey the important aspects of your design.
- (2) Explanatory notes detailing the decisions you have made and crucially why you made them. This can be as long as you wish and can contain calculations to justify your thinking if appropriate.

Please submit your entry in electronic form (as a PDF) to [schoolsprizes@cai.cam.ac.uk](mailto:schoolsprizes@cai.cam.ac.uk). Entries should arrive by the deadline of **Friday 31<sup>st</sup> May 2019**. Please do not put your name or your school's name on your entry, but instead complete a cover sheet. The completed cover sheet must be sent with your submission as a separate file. All entrants will be notified with the results of the competition by early September.