



Reading 427

You are going to read four extracts from articles in which experts give their views on using tidal energy. For questions 1-4, choose from the experts A-D. The experts may be chosen more than once.

Tidal energy

A There is currently a wide range of technologies for harnessing the energy potential of the world's seas and oceans. These include a few large barrages built in certain coastal waters, various smaller types of turbine further out to sea capturing wave power, and tidal lagoons where large walls are constructed to trap water at high tide and then release it through turbines at low tide. The challenge of making these technologies work is huge, but so is the prize. Once in operation, they produce no greenhouse gas emissions, and given what we know about the severity of climate change, this is of colossal importance. Any new technology will inevitably affect the environment to some degree. However, the evidence suggests that barrages and underwater turbines have a relatively benign effect. There are also bound to be people who think barrages are an eyesore. These structures, however, are often not easily visible from land and, compared with nuclear power reactors and wind farms, are inoffensive.

B For the last thirty years, I have lived in a lovely spot next to the sea. From my living room window, I look out over a stunning bay with cliffs and small islands in the distance. I would be the first to resist any change to such a landscape, which is why I have listened carefully to recent objections to a proposal to install tidal energy structures just along the coast from me. All the evidence presented, however, indicates that these installations are minimally intrusive. Everything we know about global warming -its causes and implications for the future -points to the need to expand our ocean power resources without further delay. The technology is already available and is being enhanced all the time. While the initial costs are high, the longer-term benefits are just what we need -clean, renewable, predictable and low-cost energy.

C Towering concrete barrages situated off coastlines and in river estuaries are clearly unsightly, and even submerged turbines can impinge on an area. The change in the speed and height of tides as a result of these schemes can be dramatic and can detract markedly from the visual appeal of these places. At the same time, things undoubtedly change for all kinds of organisms in the sea. Noise from construction and from turbines, the corrosion of building materials and the way that turbines change water flows can all be very disruptive for flora and fauna. This all sits uncomfortably with tidal power's prime selling point: that it has no toxic by-products of the kind produced by traditional energy sources, which cause temperatures around the world to rise. Also, it would be wrong to forget that other sources of clean, renewable energy cost far less to produce. The sensible choice is to continue to build on the successes of solar, wind and thermal energy until tidal technology has reached a point where it is viable.

D I've heard plenty of hostile comments regarding the ugliness of tidal energy infrastructure. However, whether it offends aesthetic sensibilities is a trivial matter. The key issues are whether tidal power can deliver energy in a reliable, cost-effective and environmentally friendly way. The uncomfortable truth is that such schemes have a record of being extremely expensive upfront. The sea is a difficult environment for engineers to work in and more traditional energy sources like oil and gas cost less and make more sense to exploit. Once tidal schemes are up and running, they produce relatively little air pollution, but there's a

tendency to forget the considerable energy consumption involved in manufacturing materials for them, and constructing and repairing them. This, of course, involves greenhouse gas emissions, which in turn play a role in higher temperatures across the planet. There is also a tendency to overlook how tidal schemes can harm animal and plant life. A major barrage in France, for example, has brought increased levels of silt which favours some plant and animal species, but is disastrous for others.

Which expert

1. shares C's view on whether developing the use of tidal power should be a priority?

2. has a different view from D regarding the impact that tidal power installations have on marine ecosystems?

3. has a different view from the others regarding the extent to which the physical appearance of tidal power systems is a concern?

4. has a different view from B on the significance of tidal power for global warming?



- 1. D
- 2. A
- 3. C
- 4. D