

the Water Brothers EPISODE GUIDE QUESTIONS

OCEAN OF ENERGY

1. Why do we need to develop clean, renewable energy sources such as tidal and wave energy?
2. What is the main advantage of tidal energy over other renewable energy sources?
3. What is the difference between wave and tidal power?
4. How many homes can the SeaGen (tidal turbine generator) power?
5. How many homes can the Pelamis (wave power device) power?
6. What country is the Bay of Fundy located in?
7. True or False: The difference between high and low tides in parts of the Bay of Fundy can be large enough to cover a five-storey building.
8. What destroyed Nova Scotia's first tidal turbine (installed in 2009)?
9. What is a concern about the effect of tidal turbines on marine life?
10. What do companies from around the world test in Orkney, Scotland? Why do they come to Scotland to test these?

the Water Brothers EPISODE GUIDE ANSWERS

OCEAN OF ENERGY

- 1. Why do we need to develop clean, renewable energy sources such as tidal and wave energy?**
We need to develop clean, renewable energy sources in order to help reduce greenhouse gas emissions.
- 2. What is the main advantage of tidal energy over other renewable energy sources?** The main advantage of tidal energy over other renewable energy sources is that it's predictable. Tides are driven by gravity and not by weather; this makes tidal energy very predictable.
- 3. What is the difference between wave and tidal power?** Wave power is power that is generated from ocean waves while tidal power is generated from ocean tides.
- 4. How many homes can the SeaGen (tidal turbine generator) power?** The SeaGen can generate 1.2 megawatts of electricity, enough to power over one thousand homes.
- 5. How many homes can the Pelamis (wave power device) power?** The Pelamis can generate power for as many as 500 homes.
- 6. What country is the Bay of Fundy located in?** The Bay of Fundy is located in Canada.
- 7. True or False: The difference between high and low tides in parts of the Bay of Fundy can be large enough to cover a five-storey building.** True.
- 8. What destroyed Nova Scotia's first tidal turbine (installed in 2009)?** The power of the tidal currents destroyed Nova Scotia's first tidal turbine that was installed in 2009.
- 9. What is a concern about the effect of tidal turbines on marine life?** One concern with tidal turbines is the possibility that spinning blades will strike marine life.
- 10. What do companies from around the world test in Orkney, Scotland? Why do they come to Scotland to test these?** Companies from around the world test in Orkney, Scotland prototypes for harnessing marine renewable energy. They test wave and tidal devices. Companies come to Scotland to test these devices because of the strong tidal currents and winds that exist there.

the Water Brothers EPISODE GUIDE ACTIVITIES

OCEAN OF ENERGY

Renewable Energy

- <http://www.nrcan.gc.ca/energy/renewable-electricity/7295>
- <http://www.renewableenergyworld.com/index/tech.html>

Ocean Energy

- <http://www.renewableenergyworld.com/ocean-energy/tech.html>

Tidal Energy

- http://www.tidalenergyltd.com/?page_id=1370
- <http://fundyforce.ca/renewable-and-predictable/tidal-energy-generation/>

SeaGen

- <http://www.marineturbines.com/Seagen-Technology>
- <http://www.marineturbines.com/SeaGen-Technology/Environmental-Impact>