

IELTS LISTENING – Marine renewable energy (ocean energy) S16T4



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Marine renewable energy (ocean energy)

**Introduction:** Producing enough energy to meet our needs has become a serious problem. Demand is rising rapidly because of the world’s increasing population on expanding Q31 industry. Burning fossil fuels like gas, coal and oil seriously damage the environment and they’ll eventually run out.

For a number of years now, scientists have been working out how we can derive energy from renewable sources such as the sun and wind without causing pollution.



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Today, I’ll outline marine renewable energy. He also called Ocean Energy, which harnesses the movement of the oceans. Marine renewable energy can be divided into three main categories. Wave energy title energy and ocean thermal energy conversion, and I’ll say a few words about each one. First wave energy.

Numerous devices have been invented to harvest wave energy with names such as Wave Dragon, the Penguin on DH, mighty whale

This form of energy has plenty of potential as the source is Q32 constant and there’s no danger of waves coming to a standstill.

Electricity can be generated using onshore systems using a reservoir or offshore systems.

But the problem with ocean waves is that they’re erratic with the winds, making them travel in every Q33 direction. This adds to the difficulty of creating efficient technology.

Ideally, all the waves would travel smoothly and regularly along the same straight line.

Another drawback is that sand and other sediments on the ocean Q34 floor might be stopped from flowing normally, which can lead to environmental problems.

The second category of marine energy that I’ll mention is tidal energy.

One major advantage of using the tide rather than waves as a source of energy is that it’s Q35 predictable.

We know the exact times of high and low tides for years to come. For title energy to be effective, the difference between high and low tides needs to be at least five metres, and this occurs naturally in only about forty places on earth. But the right conditions can be created by constructing a tidal lagoon, an area of seawater separated from the sea.

One current plan is to create a tidal lagoon on the coast of Wales. This will be an area of water within Q36 bay that Swansea, sheltered by a U-shaped breakwater or damn built out from the coast.

The breakwater will contain sixteen hydro turbines, and as the tide rises, water rushes through the breakwater, activating the turbines, which turn a generator to produce electricity. Then, for three hours, as the tide goes out, the water is held back within the breakwater, increasing the difference in water level until it’s several metres higher within the lagoon than in the open sea.

Then, in order to release the stored water, Q37 gates in the breakwater are opened.

It pauses powerfully out of the lagoon, driving the turbines in the breakwater in the opposite direction and again generating thousands of megawatts of electricity.

As there are two high tides a day. This lagoon scheme would generate electricity four times a day every day for a total of around fourteen hours in every twenty-four and enough electricity for over one hundred fifty thousand homes.

This system has quite a lot in his favour. Unlike solar and wind energy, it doesn’t depend on the weather.

The turbines are operated without the need for Q38 fuel, so it doesn’t create any greenhouse gas emissions, and very little maintenance is needed.

It’s estimated that electricity generated in this way will be relatively keep on that manufacturing. The components would create more than two thousand Q39 jobs, a big boost to the local economy.

On the other hand, there are fears that lagoons might harm both fish and birds, for example, by disturbing Q40 migration patterns and causing a build-up of silt affecting local ecosystems. There are other forms of title energy, but I’ll go on to the third category of marine energy ocean thermal energy conversion.

This depends on there being a big difference in temperature between surface water on the water a couple of kilometres below the surface, and this occurs in tropical coastal areas. The idea is to bring cold water up to the surface using a submerged pipe. The concept dates back to eighteen eighty.

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