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# Barrage plan makes Severn estuary energy shortlist

Five projects make government's shortlist for tidal power scheme

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**Alok Jha** and agencies

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Lavernock Point, the proposed site of the Severn barrage. Photograph: Martin Godwin

A 10-mile barrage across the Severn is among five projects on a shortlist of potential schemes to harness the tidal power of the estuary published by the government today.

Two innovative "lagoon" schemes, which would trap water in a large section of the estuary without damming it, and two smaller barrages, are also on the list.

Publishing the proposed shortlist today, the [energy](#) and [climate change](#) secretary, Ed Miliband, said ministers had not "lost sight" of other innovative plans, including a huge "reef" project and tidal fences, which had been on a [list of 10 schemes](#) under consideration.

He announced £500,000 of funding to develop the new technologies such as the tidal reefs, which [supporters say](#) could harness the power of the estuary without causing the environmental damage associated with a barrage.

And he said progress on those technologies would be considered before any final decisions on a tidal power scheme for the Severn estuary were made.

The proposed shortlist, which is now being put out to public consultation, is as follows:

- The Cardiff-Weston barrage - a 10-mile scheme costing £14bn that would stretch from near Cardiff to near Weston-super-Mare. It could generate up to 8GW - 5% of the UK's energy needs
- Shoots barrage - a scheme further upstream which would generate around 1GW, equivalent to a large fossil fuel plant
- Beachley barrage - an even smaller scheme, just above the Wye River, which would generate around 625MW
- Bridgwater Bay lagoon - a proposal which would impound a section of the estuary on the coast between east of Hinkley Point and Weston-super-Mare, which could generate

1.36GW

- Fleming lagoon - a similar scheme which would generate the same amount of power from a section of the Welsh shore between Newport and the Severn road crossings.

"We have an internationally important habitat and also have a huge potential clean energy resource. How we approach this will set a precedent for every other country that's looking at the same thing in the EU and elsewhere," said Andrew Lee, chief executive of the [Sustainable Development Commission](#), which advised the government on the feasibility of the various projects being considered.

The government is keen to harness the power of the [Severn, which has the second highest tidal range in the world](#), to generate electricity as part of its commitment to source 20% of the UK's energy from renewable sources by 2020. It is believed to favour the large barrage projects. But many groups are concerned about the environmental impact of these proposals. Bristol-based group Stop the Barrage Now say that the largest barrage would add to local flooding, reduce fish stocks, damage bird life and destroy the Severn bore, as well as ruin mudflats across an area of more than 77 square miles.

Green groups favour tidal lagoons, which have lower impact but are unproven technologies. These artificial lagoons flood as the tides rise and then trap water as the tide falls. The water then passes through a hydropower turbine to generate electricity.

Martin Harper, Head of Sustainable Development at the RSPB said was "hugely disappointing" that the Cardiff-Weston barrage option was on the short list.

"Harnessing the huge tidal power of the Severn has to be right, but it cannot be right to trash the natural environment in the process. The final scheme must be the one that generates as much clean energy as possible while minimising harm to the estuary and its wildlife."

"We know the Cardiff-Weston Barrage would destroy huge areas of estuary marsh and mudflats used by 69,000 birds each winter and block the migration routes of countless fish."

"Today's report recognises just how difficult, costly and environmentally damaging the project is likely to be and yet there is no sign of the cautious and cool-headed approach needed towards such a proposal," he added.

[Friends of the Earth Cymru's](#) energy campaigner, Neil Crumpton said, "Plans to build a Severn barrage are too big a threat to an internationally important wildlife site and must be scrapped - ministers must focus on developing the estuary's potential for tidal lagoons instead."

His concerns are echoed by Martin Harper, head of sustainable development at the RSPB, who is concerned at the potential loss of habitat if the mudflats disappear as a result of one of the bigger barrage projects. He wants today's announcement by Miliband to send a signal to engineers to build something "that maximises clean energy while minimising harm to the natural environment at an affordable cost. As they proceed we really want them to think about how they do that."

Steph Merry, head of marine renewables at the [Renewable Energy Association](#), thinks only the bigger projects such as the 10-mile-long Cardiff-Weston barrage - capable of producing as much power as several fossil-fuel power stations - make sense. "You need something that is a large-scale project on the same scale as a power station in order to meet the renewables targets. The Severn barrage, or something similar, is the only way of achieving that. It's much bigger than any other marine renewable or solar or wind."

She added: "You've got to decide what the balance is between local and global

environmental issues. You can protect the environment of a Severn estuary and not do anything about climate change and then climate change comes along and destroys the environment of the Severn estuary anyway in the future."

Earlier this month, the [Guardian revealed allegations](#) that the government's engineering consultants, [Parsons Brinckerhoff](#), had miscalculated the costs of a tidal lagoon project. The report sent by PB to ministers said the tidal lagoon option would be eight times more expensive than the barrage scheme and would not generate as much power.

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