New plans for a Severn Barrage generating 10% of the UK's electricity needs

New plans for a Severn Barrage tidal project, generating up to 10% of the UK's electricity needs and providing a bulwark against climate change induced rising sea levels, can be revealed.

While at an early stage backers of the project, the Great Western Power Barrage, believe the timing for a long mooted barrage, stretching from the South Wales coast to Somerset, couldn't be better timed, as the UK pivots to renewable energy sources needed to achieve the 2050 net zero emission targets of both the UK and Welsh governments.

The Great Western Power Barrage, which is focused on a first stage £10m fundraising to de-risk and to develop more in-depth plans ahead of a second round of up to £250m to get to a planning consideration point, is already engaging potential global investors, as well as politicians and decision-makers on both sides of the Severn Estuary. It said its project has an indicative cost of between £25bn to £30bn.

Earlier this week the cross-border Western Gateway partnership – which is driving closer economic ties between South Wales and the west of England – confirmed it is establishing an independent commission to assess the potential of exploiting tidal energy in the Severn Estuary, which has one the highest tidal ranges in the world.

While looking at all types of projects, including lagoons, it will also assess a tidal barrage. The members of the commission will be confirmed later this year.

Great Western Power Barrage, which is yet to incorporate,

currently consists of former Arup director and construction industry veteran David Evans, corporate financier David Grundy and engineer and managing director of Eco Innovate, Bob Long.

poll loading

Would you like to see a Severn Barrage built?

0+ VOTES SO FAR

Yes
No
Don’t know
The last proposed barrage scheme, from a company called Hafren Power, was for a 18 kilometre long structure with energy generating turbines along its length from Lavernock Point in the Vale of Glamorgan to the Brean Peninsula on the English side of the estuary in Somerset. While it had some political support there was strong opposition in the west of England, including the Port of Bristol with concerns over the impact on its shipping flows.

Even if the port operator could be assuaged, any new project could face opposition from wildlife conservation bodies. However, securing endorsement from the Western Gateway, which is backed at a local authority, city region, government and local enterprise partnership level, from Swansea to Swindon, as well as having private and higher education sector support, would give the project significant momentum.

While it has a number of potential options, the Great Western Power Barrage, is currently focused on a much longer structure than Hafren Power at around 23 kilometres from Lavernock Point just south of Cardiff to Hinkley Point in Somerset. This it said would increase the green energy capacity by 20% on the previous project.

Penarth-based Mr Evans, who was involved in a number of

previous proposed barrage schemes, believes that the timing is now right for a project to be finally realised.

He added: “Since COP26 there is widespread agreement that all the energy we consume in the UK must be from non-fossil fuel sources by 2050. However, the present trajectory for decommissioning coal-fired power stations along with ageing nuclear power stations means that we are becoming vulnerable with increasing dependence on solar panels and wind turbines. Neither can provide a solid, reliable supply that meets the needs of industry or households.

“However, the UK is fortunate in having one of the largest tidal ranges in the world in the Severn Estuary. Our proposed barrage would generate up to 10% of the electrical power requirement of England and Wales.

“We are strongly committed to working together with local authorities on governments on both sides of the estuary and with industrial partners to harness this gift of nature to benefit us all.

As for the environmental impact of a barrage, on wildlife, including on fish migration, and the loss of mudflats, Mr Evans said: “Each is capable of mitigation and there would also be the benefit of re-establishing salt marshes as waterfowl habitats.

This barrage embraces more of the estuary to increase the amount of generation available by comparison with the earlier alignment from Lavernock Point to Brean Down. At the same time it would protect the Somerset Levels from a repeat of the catastrophic flooding in 2014. It would also help protect the Welsh side of the estuary.

How a barrage could be funded

As for funding Mr Evans said following an initial £10m raise it would require a further up to £250m round to carry out the

required environmental and economic impact studies.

Planning approval for any barrage could come through a UK Government hybrid bill, which are used for major infrastructure projects deemed as being of strategic national importance. A barrage could also be a key asset in the drive achieving UK energy security.

However, why would early funders back a project without any guarantee of approval and a return on investment?

“There is certainly investor appetite at an early stage and not necessarily from sovereign wealth funds,” said Mr Evans. He added: “With a barrage providing clean energy for at least 120 years, it would also prove attractive to investors with a long-term investment outlooks.”

However, if a Severn barrage is deemed as being of national strategic importance, the UK Government could de-risk its early stage by potentially funding it through planning and then overseeing a competitive procurement process. This could see the government getting a return by having an equity stake in an operational barrage.

Such an approach would mean that Great Western Power Barrage and its backers, having to bid against rival plans.

The UK Government though could help finance any barrage project through the use of a regulated asset based funding model, which is it currently being considering for nuclear projects, including for Wyfla Newydd in North Wales. This effective reduces the capital costs associated with a major infrastructure project by consumers making a contribution, through energy bills, during the construction period.

There are also a number of other, yet to be publicly disclosed, parties also looking to develop alternative barrage plans.

A road and rail link across a barrage is not part of the current thinking of the Great Western Power Barrage.

From planning to a barrage becoming operational could have a timeframe of up to 15 years.

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