

Severn Tidal Power Feasibility Study Phase 1: Public Consultation Phase

1. Introduction

The Somerset Association for Local Councils (SALC) invited parish and town councils of Sedgemoor and North Somerset, in the area adjacent to the proposed Severn Tidal Power schemes, to a seminar to focus attention on the impact these schemes would have on the local parishes. SALC was of the opinion that Parish councils, in particular, should have been invited to participate in the consultation process. They had been omitted. SALC recommended councils submit their views to the Department of Energy and Climate Change.

- 1.1. The Public Consultation Phase runs from 26th January 2009 until 23rd April 2009. It *"seeks views on the conclusions of the first phase of the Government's feasibility study into whether a power project using the vast natural tidal range resource of the Severn Estuary could be supported and, if so, on what terms"*.

Views are sought on :

- the process by which the long listed options have been short listed,
- the content of the short list, and
- the issues identified for further study, including the scope of the Strategic Environmental Assessment.

- 1.2. Government targets are to reduce UK greenhouse gas emissions by 80% by 2050, with progressive decarbonisation of electricity supply over the next 20 years, and to produce 15% of UK energy from renewable sources by 2020.

- 1.3. A further public consultation phase will be held, probably in 2010, to set out the conclusions of the study and seek views on whether to take forward a Severn Tidal Power scheme and if so on what terms.

- 1.4. The Sustainable Development Commission (SDC) have stated that a barrage "would have a major impact on the local environment, with the loss of up to 75% of the existing intertidal habitat, which is internationally protected. There would also be a number of impacts on local communities and the regional economy, and a high risk that unsustainable ancillary development would take place alongside any barrage project. The SDC has therefore laid down a series of tough conditions which a Severn barrage would have to meet in order to be considered sustainable.

These include:

- A Severn barrage must be publicly led as a project and publicly owned as an asset to avoid short-termist decisions and ensure the long-term public interest
- Full compliance with European Directives on habitats and birds is vital, as is a long-term commitment to creating compensatory habitats on an unprecedented scale
- Further investigation of the 'environmental opportunity' that might exist for combining climate change mitigation with adaptation through a habitat creation package that actively responds to the impacts of climate change over the long term
- Development of a Severn barrage must not divert Government attention away from much wider action on climate change. "

Potential Environmental Impact of Severn Tidal Power Schemes on Compton Bishop Parish

2. Background

- 2.1. This response is presented by Compton Bishop Parish Council on behalf of all of the residents of the parish, numbering well over 500 persons of all ages. There has been insufficient time for a full consultation before the deadline for responses.

- 2.2. Compton Bishop is an inland Parish whose western boundary lies some 5 miles/8 kilometres from the coastline at Brean. The approximate centre of the parish lies at OS grid reference ST400555. It is bounded by the Mendip Hills AONB to the North, the Somerset Levels to the South, the A38 trunk road to the East and the M5 motorway to the West. The lowest points in the parish are below the Extreme Flood levels predicted

by the Environment Agency in the event of a breakdown of sea defences.

- 2.3. Phase 1 of HM Government's Severn Tidal Power Feasibility Study evaluated ten options for large-scale generation of electricity by utilisation of the vast tidal movements within the Severn Estuary. Seven of these options have potential environmental impact on Compton Bishop Parish because of their proximity to the adjacent stretch of coastline running between Clevedon and Minehead. The original ten options have been reduced to a short list of five, which includes only two of the seven original options having potential environmental impact on Compton Bishop Parish. These are the Bridgwater Bay Lagoon and the Cardiff to Weston Barrage.
- 2.4. All of the options considered are major works involving Marine, Civil, Mechanical and Electrical engineering disciplines.

3. Infrastructure

- 3.1. Both of the relevant options will require delivery to site and temporary storage of very large quantities of construction materials, heavy engineering plant and electrical equipment. Much of the latter can probably be brought in by sea (dependent on availability and/or construction of suitable deep water handling facilities) but construction materials are likely to be sourced locally, e.g. Mendip limestone, and transported along local roads.

Comment : *The A370/A38 crossroads at Cross is under investigation by Somerset County Council for road safety issues. Aggregate lorries use this as a main route from Cheddar quarries to the A38/M5 south, an increase in traffic would exacerbate safety issues.*

Whilst no budget has been set to significantly improve this junction the Severn Barrage project could result in road systems being suitably upgraded and maintained.

- 3.2. With up to 1500 new jobs for construction, there is likely to be an increase in commuter and leisure travel on roads.

Comment : *With County road maintenance and improvement restricted because of low budgets, it is unlikely that the road system could support such an increase.*

- 3.3. With up to 1500 new jobs for construction over 10 years and 200 long term, there is likely to be a short term increase in demand for housing, medical services, education, shops and leisure facilities.

Comment : *Provision of short-term facilities to support the 1500 new jobs may be in conflict with the Local Development Framework*

- 3.4. The scale of the project will encourage more business travel. The use of air travel, instead of rail or road, is more economical in business terms. It is highly probable that an increase in air travel to and from Bristol Airport would result.

Comment : *The increase in commuter traffic to and from the airport on inadequate roads would exacerbate existing capacity issues on the A38 in North Somerset and Sedgemoor. A review of the infrastructure to support Bristol Airport is currently the subject of debate concerning the airport's expansion proposals.*

4. Employment

- 4.1. A very large, and possibly multinational, labour force with a wide range of skills will be needed to carry out the work.

Comment : *This should provide some employment opportunities for local people in engineering and construction industries, as well as in catering, hotel trades and supporting services.*

- 4.2. The Cardiff-Weston barrage is expected to generate "an overall net gain of 1500 annual average jobs over a 7-10 year construction period" plus "an overall net gain of 200 annual average jobs over a 30 year operational period".

Comment : *With the potential increase in employment, it is likely that local people would seek secure employment during this development. An increase in commuting traffic would result an influx of new residents to fill positions left vacant. This could put pressure on housing and infrastructure.*

In establishing a large technical project there will be a need to develop local skills which could benefit apprenticeships, scholarships and educational facilities.

- 4.3. Lagoons, e.g. Bridgwater Bay, are expected to generate "an overall net gain of 800 annual average jobs over a 5 year construction period" plus "an overall net gain of 40 annual average jobs over a 35 year operational period".

Comment : *See the comment in 4.2 above.*

5. Technology

- 5.1. The design and construction of the short listed options will be based on proven technologies, but their potential effects on the ecology of the estuary and coastal regions cannot be predicted with absolute certainty. Scientific studies have concluded that a tidal power scheme (barrage) would slow the tides; high tide levels behind the barrage would fall by roughly a metre, whilst low tide levels would be higher. It is also predicted that designated inter-tidal areas would be reduced, displacing protected bird species and threatening migratory fish. Further studies are considering the impact of reduced tides on the suspended sediment in the water, and on water quality.

Comment : *There is no obvious direct impact on Compton Bishop, but there is a generalised threat to the estuarial and coastal environment.*

- 5.2. Newer Technologies, particularly Tidal Stream technologies, have not been included in the shortlist of options.

Comment : *Tidal stream technologies are being adopted, e.g. in South Korea and Wales, to take advantage of continuous bi-directional tidal flows. These technologies provide continuous supply and are less harmful to the environment and visual aspect.*

This technology has British expertise which, in itself, could develop and have benefits to the UK economy.

This option is a serious omission.

6. Sustainability

- 6.1. Estimated construction costs are very large (somewhere between £2.1bn and £22.2bn for the short listed options) and will almost certainly turn out to have been underestimated, but there are significant potential benefits for the nation in terms of cheaper electricity and reduced dependence on conventional power stations fuelled by imported coal, oil and gas. In addition, the Cardiff-Weston Barrage is expected to generate "a net quantitative benefit of £3.55bn to the South West and Wales over 40 years" and the Bridgwater Bay Lagoon "a net quantitative benefit of £800m to the South West [and Wales]* over 40 years".

Comment : *It is not clear that the 'benefits to the South West' would be directly associated with the people and businesses in the South West or whether the benefit would be associated with national or multinational companies located outside The SouthWest.*

- 6.2. The Government considers that the private sector is likely to be able to own, finance and take on most, if not all, construction risks for a smaller scheme (<£4bn construction costs, e.g. Bridgwater Bay Lagoon) but taxpayers would have to share the risks of a larger scheme (e.g. Cardiff-Weston Barrage). The private sector is likely to be able to operate any scheme constructed, but revenue support from taxpayers or consumers will be needed.

Comment : *This would also require a 35 year subsidy from the tax payers to ensure the high cost of producing power from The Barrage remains competitive with other forms of power generation.*

6.3. Supply into the National Grid will be dependent on tides. Peak output will not necessarily coincide with peak demand as power is generated on ebbing tides only, twice a day for about four hours each, allowing for slack water. The times of the tides vary by about 50 minutes each day and so peak production could well be at minimum demand periods, i.e. at 02.00 hrs, with no production at peak demand for about 50% of the time.

Comment : *There are no power storage options proposed.*

6.4. Better security of supply to south west from increased supply in grid

Comment : *There will be potential benefits for the SouthWest peninsula in terms of improved security of supply. Currently, a major grid failure could leave the region seriously short of power. The short listed options could provide somewhere between 1360MW (Bridgwater Bay Lagoon) and 8640MW (Cardiff- Weston Barrage) of additional power locally if needed.*

7. Environment

7.1. It is claimed that some of the options could help protect against storm surge flooding from the sea. It appears that a Weston-Cardiff barrage would protect the mouth of the River Axe from tidal surge, which would be beneficial to our area.

Comment : *By restricting the flow of water up the estuary there could be a surge, blocked by The Barrage, which spills into The Somerset Levels similar to The North Sea surge floods in 1953. Additional flood protection schemes would need investigation and should be included in this project.*

The resultant increase in flood risk could affect householder's insurance costs.

7.2. The effects on the morphology are stated to be 'uncertain'.

Comment : *A clearer understanding of the impact on the infrastructure and habitat is essential when determining the effect on the affected areas prior to decisions being made.*

7.3. The water levels behind the Barrage will be at least 1 metre higher at low water.

Comment : *The true impact of higher levels on the water tables and probable requirements for high water pumping need to be included in the review.*

7.4. The impact, both physical and visual of the man-made concrete structure spanning The Severn Estuary would be significant. The AONB and SSSI are protected areas, not only for flora and fauna but also for the open recreational spaces it offers for residents from a large area including Bristol. It attracts walkers, bird-watchers, cyclists and motorists which benefits local pubs, café's, restaurants, etc.

Comment : *The visual aspect from Mendip within the Parish of Compton Bishop, a significant attraction to visitors, would be adversely affected.*

7.5. Construction work would generate considerable noise and lighting pollution, particularly at night and when working on open waters where sound travels unimpeded..

Comment : *Consideration must be given to protecting local inhabitants and wildlife from such intrusion.*

7.6. Connection to the 400kV National Grid is expected to require an onshore substation and power lines to the nearest connection point, following either a coastal route to Hinkley Point, or an overland link to the existing line between Hinkley Point and Melksham.

Comment : *An overland link as described above could result in transmission towers/pylons being installed to carry power lines across this parish, which adjoins an AONB.*

8. General Comment

8.1. The consultation process has failed to adequately involve the residents in parishes

which border the areas affected by the potential construction and on-going operation of the proposed schemes. A programme of information and participation should have been directed at Parish Councils. It is essential that the next consultation phase recognises and addresses this omission by specifically including Parishes in the 'Environmental, Social and Regional Impacts assessment'.

- 8.2. The three month public consultation period is, for a complex issue such as this, short. The impression given is that achieving targets for greenhouse gas reduction and renewable energy can compromise the process to select the best technical solution and the best solution to protect the environment. The slow start, by governments, in seriously addressing energy and environmental needs is an unacceptable reason to short-cut proper evaluation of options.
- 8.3. The overall timetable for achieving the goals of climate change and renewable energy, in this project, could be seen to be unrealistic. In July 2008 a 'long list' of options was produced : in January 2009 a complex consultation paper was issued with a three month consultation period : by 2010 a second public consultation and a decision to whether to support the building of a Severn Tidal Power scheme will be taken. Construction and commissioning is programmed for 2018 - 2022 provided there are no unforeseen delays. The Government target for producing largely carbon zero electricity is 2030. Such pressure on timescales could result in unsound decisions being achieved to the detriment of the environment and robust technical solutions. The 'ambitious targets' set by Government is regarded as a 'potentially significant issue' in the SEA scoping report.
- 8.4. New and emerging technologies should be afforded higher credibility and increase in Government the research budgets to ensure progress in more acceptable power production facilities.

Produced by : Cllr Richard Parker
Cllr David Windmill

Compton Bishop Parish Council
22nd April 2009

Severn Tidal Power - consultation questions

	Question	Response
1	Is the feasibility study taking the right issues into account?	On the whole, yes, but the study is skewed towards a political view rather than a scientific and financial viewpoint. However, given the need for major private investment, it is likely that commercial considerations may eventually outweigh environmental issues.
2	Are there other aspects or other evidence that should be taken into consideration?	The employment issues fail to qualify the impact on fisheries and ports. The potential loss of these jobs is not included in regional and employment figures.
3	Have we given due weighting to the different benefits and impacts under consideration in our analysis?	The weighting appears to support 'green' targets and may compromise environmental, technical and economic issues.
4	Do you think that it is better to wait for new and perhaps less environmentally damaging technologies to be developed, or to move ahead more quickly with available proposals?	Yes, new technologies should be fully evaluated especially those which are more environmentally friendly and can produce continuous energy with both flood and ebb tides.
Regional Economic Impacts Study:		
5	Do you agree with the conclusions of the DTZ study and are there any other factors that the feasibility study should be aware of?	No, the benefits expressed are £100M- £1.6Bn and £0.4Bn - £9.9Bn too wide a range to be sensible. The true impact on jobs, services and infrastructure are grave omissions.
Financing and Subsidy Mechanism:		
6	Do you agree with PricewaterhouseCoopers' (PwC) analysis on ownership and delivery of a Severn scheme?	Yes but there are many non specific statements and questions raised by PwC. They also indicate that Government should gain a better assessment of market support which is fundamental in financing the projects.
7	Are there any other options for delivery or subsidy that should be considered? Would they be appropriate for all of the tidal power options under consideration?	New technologies should be included. Bi-directional turbines should be a requirement for the barrage option.
8	Government believes that the private sector is best placed to design, build and operate a Severn tidal scheme. Government's role would be to set the conditions in which a scheme could come forward. Do you agree?	Yes, as long as all political parties underwrite this proposal to ensure continuity of requirement thus avoiding changes in specifications which would delay the project beyond the stated deadline.

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Impacts on Energy Markets:		
9	What are the impacts and potential risks of tidal intermittency on the balancing and energy market?	Using barrage and lagoons, generation will not be continuous but on ebb tides only with no power storage some peak demands cannot be met by these methods. Prices will need to be low enough for all available power to be always saleable on the base load market
10	Is it worth considering exploring the option of demand management?	Yes
11	Do you consider that a Severn tidal scheme could impact on investment in other energy supply capacity, and if so in what ways?	Subsidising the cost of this energy will reduce capability to invest in other research or subsidising other suppliers.
Short-listing Process:		
12	Do you agree with the factors that have been used to determine the short-list for further study?	No. Some aspects of energy markets and grid impacts should have been in this phase and would have influenced selection of the shortlist.
13	Do you agree that the test of economic feasibility should be relative to the cost of other renewables?	Yes
14	Do you have any further comments on Parsons Brinckerhoff's Interim Options Appraisal Report? Please support your response with evidence where possible.	Their report omits consideration of newer technologies and their place in the section on 'combinations and modes of operation'. The study was restricted to barrage, lagoons, fences or combinations.
Severn Tidal Power Proposals:		
15	Do you agree that the two lagoon options selected for further study represent a good basis for studying the lagoons?	Yes, but selection for the shortlist should await the further robust studies indicated in the report
16	Given the short-listing criteria, are there any proposals on the short-list which are not suitable? Please support your response with evidence where appropriate.	See question 4

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17	Does the short-list represent an appropriate level of ambition given the energy potential of the Estuary?	No. The flow and ebb should be harnessed with minimum impact on the environment.
18	Are there any other schemes that, in your view, should be short-listed? Please provide appropriate evidence wherever possible and refer to the short-listing criteria.	The new technology options should be evaluated but targets have been set which negate the probability of adequate study.
Strategic Environmental Assessment:		
19	Which plans, programmes or environmental protection objectives are most significant for this strategic-level environmental assessment?	Navigation, ecology, flood and landscape
20	Is there any additional information that could help supplement the baseline data? Any further information relating to the baseline indicators, existing problems and trends over time would be very useful.	The data appears to be comprehensive.
21	Is there any important information that has not been addressed in view of the SEA scope?	Information on the effects of tidal surge in the Severn Estuary.
[For a range of further detailed questions on the SEA, please see p. 103 of the annexed SEA Scoping Report.]		
Next Steps:		
22	Do you agree with the work plan, as outlined in Chapter 6? If not please specify any other areas to be studied.	No. This concentrated on tidal barrages and lagoons whereas new technology could provide constant supplies
SEA questions from page 103		
23	Which plans, programmes or environmental protection objectives are most significant for this strategic-level environmental assessment?	To deliver a strategically significant supply of renewable energy which is affordable with a locally acceptable impact on the environment and economy

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24	Is there any additional information that could help supplement the baseline data? Any further information relating to the baseline indicators, existing problems and trends over time would be very useful.	Data should include feedback from local parish and town councils on behalf of their parishioners.
25	Is there any important information that has not been addressed in view of the SEA scope?	The long term impact on the environment and the potential future upgrading/enhancement programme for the short listed options.
26	Is the range of environmental problems, issues and receptors covered appropriate? Is the level of receptor sensitivity appropriate?	A receptor should be associated with the leisure benefits of the estuary and surrounding areas - this is not included.
27	Is the methodology proposed appropriate for this strategic-level environmental assessment?	Yes. However, it is stated that in some areas the time scale imposed makes it impossible to gain a full understanding of 'potentially significant issues'. This must be addressed.
28	Are there any major plans or projects that should be included in the assessment of cumulative effects?	Local Government Development Plans should be included , i.e. Local Development Framework.
29	Are there any changes that should be made to the proposed SEA objectives; including any consolidation of the objectives? Are there any other SEA objectives, assessment criteria or indicators that should be included?	The objectives appear to be concise and complete.
30	Are the relevant aspects of sustainable development covered, if the SEA addresses the issues identified in this SEA Scoping Report?	The study on 'Society and Environmental Issues' should gain grass-roots views from parish and town councils.
31	Any further suggestions regarding the scope of the SEA and its proposed assessment of the short-listed options?	Short-listing should include a mix of current options with newer technology options. Cost estimates should include allowances for further development work which may prove to be needed during the operational phase.of schemes involving unproven technology

Severn Tidal Power - consultation questions

Compton Bishop Parish Council
23rd April 2009