

Severn Tidal Power – Consultation Questions and collated comments from North Somerset Council

Below are the main consultation questions with collated responses from NSC Members and Officers alongside.

	Overarching Questions (to be taken into consideration throughout the Consultation Document):	Comments
1	Is the feasibility study taking the right issues into account?	Broadly yes, but it needs to be more explicit regarding how much uncertainty is contained in the assumptions made. For example, the creation of construction jobs is assumed to have a positive impact on accommodation sector but no mention is made of the impact on services such as health provision, which could be negative.
		What information has been gathered from the barrage at La Rance? Bay of Fundy? Are there lessons to be learned?
		The whole idea of harnessing tidal power from the Severn Estuary has not yet been shown to be positive – the indications are that it is negative over all.
		The Green Energy Bill – micro-generation projects connected to the grid could affect the view of whether we actually need a massive and damaging option. Existing projects alone may provide the 5% expected from a barrage – and now, rather than in 12-15 years.
		Rather than saying ‘the tidal range can supply lots of energy’ we should be asking ‘what are the most sustainable ways of reducing our energy demand and increasing the generation of energy from renewable sources’. This might include investment in solar and wind technologies.
		The capacity of existing transport infrastructure must be fully understood – is not sufficient for existing needs.
		The Cardiff Weston Barrage option appears to take 120 years to ‘break even’ but has a lifetime of only 100yrs. Has this negative value been taken into account properly? Has the cost of future dismantling/disposal been taken into account?
2	Are there other aspects or other evidence that should be taken into consideration?	The study needs to be explicit regarding the geographical impact. For example, after London (at 23 rd place) the next English city in the European league table of economic performance is Bristol (34 th place) (ODPM, State of the English Cities, 2006). . It is likely that a small negative impact in the West of England would have a disproportionately large negative impact on the South West of England and Wales (the extent of the area of impact as defined in the Regional Economic Impacts report).
		What allowance has been made for inflation?

		Are the figures accurate in the light of the current recession? The impact of the downturn in the economy must be carefully factored in, especially assumptions on payback periods.
3	Have we given due weighting to the different benefits and impacts under consideration in our analysis?	How are the social effects being measured? Greater detail needed to enable more appropriate weighting to be given.
		The negative impact of locks on the operation of shipping and ports (as well as on fish, sedimentation and ecology) should be given greater weight.
		What will be the impact on CO2 emissions in this area during and after the construction? Especially if local authority areas are going to be expected to show year-on-year reductions and penalised if they fail to achieve them. How will government ensure that any construction is environmental best-practice?
		Carbon impact of each option needs greater clarification.
		Need a better understanding of the comparative costs of, and ease of, maintenance of each option. Need to understand the 'downtime' in terms of loss of energy generation during maintenance.
		Greater weight should be given to the uncertainty (negative) regarding the effect of changed sedimentation location/rates and tidal range on the ecology of the estuary.
		Flood risk – a barrier could help us in adapting to climate change (LAA target NI 188), but need more detail about the specific impact.
		What evidence is there for the anticipated lifetime of each options? What is the experience from other schemes of similar size/scale?
		The weighting for negative impacts should be greater as the impact increases. For example, displacing jobs within a short travelling distance is serious but can be overcome by transport. Displacing jobs to another areas/region entirely is extremely serious and should therefore have greater weighting to reflect the greater negative impact.
		What is the carbon footprint of a barrage compared with lagoons, reef or fence?
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?	'Tried and tested technology' is yesterday's technology by definition. It can be outdated and inappropriate for today's society.
		There is the opportunity to move ahead quickly but with less damaging

		technologies already on the table.
		There is a range of new technology available today but it has not yet been used on a massive scale. Perhaps it is beneficial to progress a number of smaller options utilising today's technology and thus minimising our dependence on one option or source.
		The cumulative benefit/effect of a number of smaller schemes is likely to show a lower/reduced negative impact. Would also show a better spread of economic and social benefits and could reduce the impact of mechanical failure on energy generation.
		Progressing new technology today will have long term benefits by stimulating and supporting industry involved in production of energy efficient and renewable energy component production. May also be cheaper to produce / run now.
		Energy production for 4-6hrs per tide. Would other technologies provide a greater efficiency and a greater period of production per tide?
		Efficiency is 22% - can it be increased to make it cost effective?
		People developing innovative technology should have access to 100% funding.
	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?	Bristol is high on the GDP league table of European cities – London is the only UK city above it. Impacts on the economy of the West of England sub-region are likely to have a disproportionately high impact on the whole region.
		Employment benefits need to be local and national; should also be run by UK companies (hopefully more viable and secure than European)
		The study makes assumptions regarding job losses and gains – this is understood. However, the study should be much more explicit about the grounds for excluding estimated figures for job losses. For example, jobs gained in tourism have been included on the assumption that people will visit a barrage (as a destination in its own right); but there has been no inclusion of job losses, apparently because of no understanding of what might cause jobs to be lost.
		We need much more certainty than exists at present over the physical effects of any solution, especially a barrage. Put simply, we need to know the predicted height of water above the barrage, the tidal range, its turbidity and the effects on sediment etc. so that we can judge the impact on tourism, local communities and Bristol Port Company.

		Considerable concern about the impact of these studies on the Port Company's operations and in particular proposals for a deep water terminal at Avonmouth. No assurances have been given yet as to the maintenance of locks and dredging of channels and the current uncertainty is blighting the deep water terminal investment with its project value of £600 million, jobs protected 7660 and jobs created 1500.
		The Port Company's assertion of 1500 jobs about to be created through their expansion is just not true.
		The economic effects on caravan parks needs to be understood.
		Will marine cargoes be transferred to road/rail or displaced to other ports?
		In assessing the impact of locks on marine traffic the study must look at future shipping technology and conformation.
		Certainty regarding the operational cost of locks and dredging.
		Will the range of skills in the sub-region be met by new / altered job availability?
		Long-term and high value jobs are important to the sub-region.
		Where are the construction workers coming from? Where will they live? Impact on local services should be assessed – during AND after construction.
		Much greater information is needed on the economic impact of the reduced tidal range on the leisure industry, both in terms of changes to the ecology (eg fewer fish) and water quality.
		Access to moorings. Access to Steephholm
		What is the broader effect on smaller companies?
		It's assumed that the impact on environmental technologies will be positive (which it will be, in statistical terms given the size of this one project), but what about the broader effect on smaller companies, technologies and innovations – will it create a 'cluster', or will it draw away available resources (particularly intellectual resources)? Need to take a pro-active approach to spread the benefits, working with local universities, colleges, sectoral networks, local skills providers, apprenticeship schemes, etc, if any of the five options goes ahead.
		What is our view about the impact on the Port (employs 5000 people?). What are the other sectors that might be affected, and how?
		The loss of port-related jobs appears to be compensated by jobs from new uses. However, the reasoning is not robust. It seems to say that the port landowners will not let the land remain unused and presumes that a quantum of jobs will be

		created. Greater clarity is needed regarding the assessment of these assumptions.
		Could the port activities be located elsewhere in the region?
		Shipping movement above the locks of a barrage would be less constrained by the tides.
		A more rigorous explanation of the jobs created/maintained is needed.
		Need to look carefully at the comparative impacts on the local / regional / national job market.
		Would like to see greater clarity (full list) regarding the 'gains and losses' referred to in order to be sure whether the balance is positive or negative. Para 124 on p43 of the consultation document appears to make many assumptions and has a very wide margin of error.
		The supply chain issue is extremely important. Where will the materials be sourced? Will the building of a scheme in the Severn Estuary impact negatively on other projects / businesses in the region?
		If a Bridgwater Lagoon were built then it is likely that a high negative impact on tourism in North Somerset, particularly Weston-super-Mare, would occur. The loss of associated tourism jobs does not appear to have been included in the calculations.
	Transport Infrastructure	Any transport infrastructure provision from the building of any scheme should contribute positively to local community needs and local economy (not just be taken away at the end of construction).
		The option for road / rail link on a Weston-Cardiff barrage should be considered in a wider forum. Strategic Rail Authority and Highways Agency consider it appropriate in the longer term but other stakeholders may consider it appropriate in the short term.
		Weston might be bypassed by (rather than benefit from) transport solutions across a barrage.
		If a large structure is built then sea transport should be maximised for heavy plant and materials – hopefully to minimise land infrastructure.
	Financing and Subsidy Mechanism:	
6	Do you agree with PricewaterhouseCoopers' (PwC) analysis on ownership and delivery of a Severn scheme?	Would like to understand better the private sector view, and the likelihood of public funding being available.

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?	Would like to see much greater consideration given to achieving generation of 5% through other methods. For example, investment in other technologies, energy reduction methods, etc.
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?	Would like an explanation of how this scheme would NOT be the same as all the others (Channel Tunnel, Dome, etc) ie over budget, out of time.
		The proposed £500,000 fund to develop innovative technology is woefully inadequate. A grant fund of at least £2m, released without a requirement for more than 10% match funding, would be much more effective. It would also demonstrate the Government's serious commitment to considering alternative approaches to energy generation in the Severn Estuary to ensure environmental and social sustainability.
	Impacts on Energy Markets:	
9	What are the impacts and potential risks of tidal intermittency on the balancing and energy market?	
10	Is it worth considering exploring the option of demand management?	Need to view a suite of options (not just tidal range) to provide a greater spread of energy generation to match demand better.
11	Do you consider that a Severn tidal scheme could impact on investment in other energy supply capacity, and if so in what ways?	
		Maximum demand (eg on a cold winter evening when the tide is not generating energy) will requires a back up. How is this to be provided?
		Is research on methods of energy storage (other than pumping water) being investigated?
		If a large scheme is implemented it is essential that it can store and even out the production / demand disparity
		Is the study considering ways of storing the surplus energy? It is not necessarily desirable or efficient to over-supply even if storage is feasible.
		Surplus energy could be stored in batteries; could also be used to charge up

		electric cars 'overnight' (like Economy 7 system).
		Surely ebb AND flood generation is more cost effective and preferable?
	Short-listing Process:	
12	Do you agree with the factors that have been used to determine the short-list for further study?	
		Para 168 of the consultation document is unclear. It reads "As a lot of work has already been done on the Cardiff-Weston barrage, the levels of confidence in estimated construction time and costs are higher than for the smaller or less well-known schemes. This means that estimates for the previously less well-studied schemes could rise significantly as more information becomes available on them." Surely it is the level of confidence that rises, rather than the estimates?
13	Do you agree that the test of economic feasibility should be relative to the cost of other renewables?	No - not in isolation. The test needs to take account of the comparator impacts on environmental and social issues.
		The test should include a) potential cost of pollution and b) potential cost of decommissioning.
		The test should be on the raw values excluding subsidy. For example, subsidy on wind energy technology was to develop and test the new technology, whereas these shortlisted options are old technology.
14	Do you have any further comments on Parsons Brinckerhoff's Interim Options Appraisal Report? Please support your response with evidence where possible.	The tidal reef and tidal fence have been excluded but there is the possibility of further research. If research shows they are credible, can they be added to the shortlist taken forward at the end of this feasibility study?
	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?	No comment
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.	No comment
17	Does the short-list represent an appropriate	No. The ambition should be to balance the energy potential of the estuary,

	level of ambition given the energy potential of the Estuary?	investment in developing clean technology, the value of the ecological system and its wildlife, maximising energy production over the 12.5 hour tidal cycle (which includes wind and wave power), minimise the carbon expended in construction, minimise the negative impact on local communities and maximise the positive impacts for the whole country.
18	Are there any other schemes that, in your view, should be shortlisted? Please provide appropriate evidence wherever possible and refer to the short-listing criteria.	The tidal stream and tidal fence technologies are worthy of further consideration. They were discounted because they are not yet tested at such a large scale, and because they are not tidal range options. The tidal range is an obvious (and very large) plus point, but we should not discount other options simply on the basis that they don't use any, or all, of the tidal range.
		Need a genuine consideration of all options rather than resorting to a barrage.
		There seems to be doubt about the commercial viability of all the shortlisted options. The new technologies should be included at this stage as they may prove to be the viable option.
		Should be looking at bigger options.
	Strategic Environmental Assessment:	
19	Which plans, programmes or environmental protection objectives are most significant for this strategic-level environmental assessment?	The effect on wildlife (both terrestrial and marine) and ecology systems is of paramount importance.
		Must have comprehensive understanding of the mitigation measures required (and the costs)
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.	It is important to ensure that the considerable uncertainties regarding the impact on living systems is highlighted. Given the potential for irreversible and catastrophic impact on species, we suggest that these uncertainties are weighted as 'worst case' scenarios.
21	Is there any important information that has not been addressed in view of the SEA scope?	The effect on the water table (ie freshwater) of reduced tidal range. Increased salinity of groundwater for a considerable distance inland is possible; this would affect farming.
		Concerned about the scale of the disruption to marine and coastal habitats from the larger proposals; and the likely losses to be incurred in relation to marine species and the extent of loss of the coastal mudflats which are so important for coastal

		birds, as outlined in section 12.
		Modelling of the likely geomorphological and ecological effects of the 5 options must be sufficiently robust as to provide better indication of, for example, the expected area of loss of mud flats.
		Vast quantities of sediment are currently moved on every tide. It is not clear that the consultants fully understand how this sediment is likely to be deposited as a consequence of the various options, therefore we cannot be certain that the correct information is being used to model the likely impact on the coastal morphology and likely impacts on wildlife.
		It would be useful to have some of this information tabulated with margins of error - consultees need to be provided with sufficient high-quality information to weigh up the cost/benefits of the various proposals.
		The information on wildlife losses is quite vague (Section 12) merely noting that tidal areas of mudflats will be permanently under water which suggests the likely area is unknown.
		The lower high tide will benefit (minimise) flooding on the Wye and Severn rivers.
		The tide-lock effect on outfalls (rivers, rhynes and drains) would cause a range of problems upstream. If a barrage were built then some existing outfalls would be permanently under water because the tide would only drop to the current mid-tide level.
		Are salmon being used as an indicator species?
		There is no problem about impact on wildlife because the estuary is barren.
		Migratory fish numbers have increased since the Rance barrage was built.
		Where is the stone for a barrage to be sourced? What impact will that have on the economy and the environment?
		The quantum of compensatory habitat to be provided needs to be greater than the amount lost. Is it certain that compensatory habitat can be provided? The quantum may be available in some location but it may not be practicable in terms of the system relating to the species (eg relocation may not be an option for some species; eg the location of feeding grounds along migration routes is critical in terms of the whole journey).
		Low-lying land between Hinckley and Bridgwater has been suggested as available for compensatory habitat. If the Bridgwater Bay Lagoon is chosen, would this still be appropriate? If not, what other locations have been / will be reviewed?

	Next Steps:	
22	Do you agree with the work plan, as outlined in Chapter 6 (p75)? If not please specify any other areas to be studied.	Government is telling Local Authorities to build houses. If government decides it wants a barrage then govt should pay us to build houses in which to house the workers who will migrate here to build the barrage.