



essential materials
sustainable solutions

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Dear Stephen

I have been asked to respond to your letter addressed to the Chief Executive of the Mineral Products Association, dated 16th October 2015.

As you are aware from our previous correspondence on this matter, the hierarchy of construction aggregate supply within Government policy already requires secondary and recycled materials to be used in advance of primary won aggregate wherever possible. This position has resulted in secondary (which includes crushed rock fines) and recycled aggregates accounting for over 28% of the entire GB aggregates market (60 million tonnes out of a total market of 209 million tonnes in 2014) - a contribution that is three times higher than the European average. By contrast, marine sources contribute around 6% of the total. Unfortunately, your briefing fails to refer to any of these facts.

All of the major aggregate producing companies have a wide portfolio of potential aggregate resources that they draw upon to support the markets they supply, including primary resources (both terrestrial and marine) and secondary and recycled materials. The key driver here is that individual producing companies will make decisions on the composition of their supply portfolio based on a wide range of drivers including cost, resource availability, technical suitability, transport logistics and market demand. Crucially, the premise within your paper that the use of marine-dredged sand could be substituted by processed crushed rock fines could in fact be applied to any source of natural sand, given their geological origins are similar. Therefore, the fact that the substitution of crushed rock fines for natural sand sources is limited across the wider industry points towards there being more fundamental technical, environmental and logistical constraints.

The ready-mixed concrete industry already uses crushed rock fines, but for many concretes it is not commercially viable to use it without blending with a natural sand from either land or marine sources. The problem with crushed rock fines is that its finest material increases water demand for any given workability, and the coarser fraction can make fresh concrete somewhat harsh and consequently difficult to finish. The effect of higher water demand for strength can be overcome by adding more cement and using admixtures, but it is neither commercially, nor environmentally attractive to do this and it is still likely that drying shrinkage and other properties of hardened concrete will be adversely affected.

BMAPA is part of the Mineral Products Association, the trade association for the aggregates, asphalt, cement, concrete, lime, mortar and silica sand industries

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In the South West, where there are crushed rock fines readily available, it is already normal practice to use these 1:1 with the locally available marine sands. Some limestone fines are also used in London for higher workability concretes, but again in limited quantities where it is employed in small percentages to improve the fines content of the locally available natural sands from both terrestrial and marine sources.

Clearly, technologies are available to turn crushed rock fines into more usable end products. However, given the crushed rock fines represent a waste product, it is reasonable to assume that if it was technically, commercially or logistically possible to make further use of these materials in place of natural sand, operators would be doing this already. Trials with a Japanese manufacturing technology in South Wales have already demonstrated that while it was technically possible to produce a more usable product, it was prohibitively expensive.

Various misleading comments are made about the extent of substitution that has taken place in Japan to replace marine sources, and also the limited use of marine dredged aggregates in other developed economies.

In terms of Japan, the Japan Concrete Institute states that the annual demand for construction aggregates is 639 million tonnes (over three times that of GB). Of this total, 62% of the material is indeed sourced from crushed rock and sand sources, but the balance comes from a range of natural sources, of which marine sand and gravel contributes 6% (38 million tonnes – twice what is dredged from English and Welsh waters annually). It is our understanding that the restrictions on extraction that are referred to actually relate to dredging in rivers and inland seas, not to marine-dredged sources.

Elsewhere, the ICES Working Group on the Effects of Extraction of Marine Sediment from the Marine Environment (ICES WGEXT) annually reports the levels of extraction taking place across various countries in the North Atlantic region, with Denmark, Germany, the Netherlands and France all demonstrating significant (and in some cases growing) levels of marine aggregate extraction activity.

Finally, the balance between the potential environmental effects arising from marine aggregate extraction and the wider societal need and benefits are fully recognised within UK Government's Marine Policy Statement (2011) which states *'The extraction of marine dredged sand and gravel should continue to the extent that this remains consistent with the principles of sustainable development...'*. The MPS goes on to add *'A marine licence or other regulatory approval to dredge should only be issued if the decision maker is content that the proposed dredging is environmentally acceptable...'*. The wider evidence provided by research, site specific EIA and compliance monitoring certainly does not support the assertions made in your letter and the briefing paper around either the potential scale nor the long term nature of the impacts that result from marine aggregate extraction.

We have always maintained that for there to be a sensible debate, it is essential for any discussions to be founded on robust fact and evidence. Consequently, we are unable to support the initiative that you propose.

Yours sincerely



Mark Russell
Director, Marine Aggregates