18 Apr 2019 (updated Sep 19)

Objection to NCC M&WLP and SIL 02 and AOS E in favour of recycling/reusing glass - CATSS (Campaign Against Two Silica Sites)

The Ministry of Housing Communities and Local Government document, the 'National Planning Policy Framework', sets out the Government's planning policies for England and how these should be applied. The document states (Section 2: Achieving Sustainable Development, at para 7), "The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs" - Resolution 42/187 of the United Nations General Assembly. The document also states (Section 17: Facilitating the Sustainable Use of Minerals, at para 203), "It is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs. Since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation." As stated, sustainable development should not compromise future generations to meet their own needs, and that minerals are a finite natural resource; therefore, it is clear that **quarrying is not the future**. So what is the UK strategy and vision to ensure we do not compromise future generations ability to meet their own needs, and make best use and secure the long-term conservation of minerals, in particular silica sand for glass making? And locally, what are Norfolk County Council (NCC) doing via their Mineral and Waste Local Plan (M&WLP) to do the same and correct this cognisant failure with respect to the scarcity of high purity silica sand?

> *"The environmental and economic case for glass recycling[1] is clear. Cullet helps glass producers drive down energy consumption and emissions, and means less landfill and waste disposal. It's a win-win equation that has created a dynamic, global glass recycling market with a number of national and international players. So how do you choose the right partner to help you achieve the full potential of recycling?"* - Quote from Sibelco's brochure[2] on recycling glass in Feb 2012. Sibelco supply, by far, the majority of glass making quality silica sand to glass manufacturers in England and Ireland but they are not involved at all in the recycling of glass in the UK.

NCC use the National Planning Policy Framework (NPPF) document as one source for updating their M&WLP. The NPPF states, 'Planning policies should: …. so far as practicable, take account of the contribution that suitable or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials…' (Sect 17, para 204. b). There is no attempt within the NCC M&WLP to discuss how improved recycling or reuse of glass within Norfolk, nor indeed the rest of the country, would reduce the amount of silica

[1] For clarity, wherever the word 'recycling' is used in this document it is referring to the act of sorting collected glass into different colour streams, processing it into high quality glass cullet that is subsequently used in the manufacture of high quality glass material including clear and flat glass.

[2] Pure Sense Recycling-Sibelco Green Solutions-
https://issuu.com/salez-poivrez/docs/sibelco.glassrecycling.brochure.feb2012_v4

sand (primary material) extracted each year. Improved glass recycling and reuse would ensure the reserves of silica sand are preserved, (fulfilling mineral strategic objective MSO3 on pg 21 of the NCC M&WLP, Preferred Options July 2019) thereby extending the period of self sufficiency in glass manufacturing within the UK and show serious intent to endorse and implement the latest DEFRA (Department for Environment Food and Rural Affairs) policy document on waste management[3]. Expanding the country's glass recycling ability in both efficient collection and up to date processing of the collected glass, especially clear glass, would vastly increase the number of jobs available in the UK and particularly Norfolk if it led the way in developing such a policy. In addition, NCC would be leading the way for innovative strategies to fulfil the Department for Business Energy and Industrial Strategy's 'Clean Growth Strategy'[4] document, in particular towards the ambition of Zero Avoidable Waste. The NCC M&WLP document 'Waste and Management Capacity Assessment', refers to EU legislation, the Waste Hierarchy, the principal of self-sufficiency in waste management and the National Planning Policy guidance for waste management; however, there is no attempt within the M&WLP to satisfy or comply with any of the above policies or advice with respect to recycling glass from within Norfolk. Additionally on pg 58 at section W13 of the M&WLP (Landfill Mining and Reclamation) there is mention of the 'circular economy' with respect to waste; however, it is not referring to glass recycling which is the ultimate circular economy due to glass being 100% recyclable. Overall, without a serious plan to upgrade glass recycling then the M&WLP is fundamentally flawed.

> (A summary of the policies and objectives from the M&WLP that are not complied with can be found at pgs 8+9 of this document).

NCC should also be considering promoting glass reuse[5] which has the advantage of a reduction in local council services requirement for collection of glass[6] because less glass would be thrown away; plus, reuse would mean less raw material requiring to be supplied to the glass manufacturing industry. This would fulfill waste policy WP1 (pg 45) of M&WLP Initial Consultation, and W0.2 Pg 41 of preferred options draft plan July 19 but only with a rewording to deliver a technically advanced facility that recycles as well as reuses glass. During the period where improved glass recycling and reuse is introduced, the UK could import silica sand for glass manufacture to bolster the currently available cullet and existing quarrying, thereby saving further unnecessary destruction of the countryside from the allocation of new areas for silica sand extraction. Indeed without championing and implementing a vastly different, technologically advanced glass recycling policy within Norfolk, then

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[3] Our Waste, Our Resources: A Stategy for England- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

[4] Clean growth Strategy - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/700496/clean-growth-strategy-correction-april-2018.pdf

[5] Study on impact of deposit return scheme - https://feve.org/study-on-impact-assessment-of-deposit-return-schemes/

[6] Environmental Protection Act 1990 Schedule 22A - https://www.legislation.gov.uk/ukpga/1990/43/schedule/2AA

NCC fail their own M&WLP Preferred Options ' Vision to 2036' (pg19) in every respect.

Glass recycling[7] also contributes to British business as a whole: estimates indicate that 500 jobs are created for every 100,000 tonnes of glass collected for recycling. If we, as a country, recycled all the glass we currently throw away to landfill, it would create 7,500 sustainable new jobs overnight. NCC are failing to take the opportunity to create a vibrant local employment market in a green industry that at the same time will preserve and sustain the stocks of silica sand, protect the biodiversity of the countryside and health of the residents of Norfolk, whilst helping to reduce CO_2 emissions. A continuation of quarrying will not add to the jobs market in Norfolk; however, implementing a radical glass recycling programme will create jobs at all levels from manual labour through to technical skills, and graduate to management. In addition no jobs would be lost from the haulage industry as they would be required to move glass rather than silica sand.

Sibelco, the global company who proposed the extraction of silica sand from , AOS E including the overlap from Sil02 , and who currently extract silica sand within Norfolk, are a major partner in glass recycling in other countries around Europe (see Sibelco statement at the top of pg 1 and linked at footnote 2). On their company webpage they make a heavy pitch for their green recycling credentials in respect of glass and how they are in partnership with High 5[8], a glass recycling company boasting the most up to date recycled glass processing plant in Europe that revolutionises glass recycling. However, Sibelco make no attempt to do the same in the UK. Despite policy WP11 (pg56 of M&WLP) that states disposal of inert waste to landfill is the least preferred option, NCC think it is appropriate to allow the vast majority of glass waste in Norfolk to go to inert waste landfills or to refill previous cavernous extraction sites with the very material that was quarried in the first place. They think it is appropriate to destroy a rural setting through deep quarrying for silica sand for the convenience and profit of a private Belgian company, and the perceived need to continue to supply raw materials at the same rate as they always have. Policy WP11 plus many others (summarised at the end) would be fulfilled if NCC were to forge a coherent glass recycling policy leading to less raw silica sand required, less destruction of our countryside and less landfill.

Additionally, Sibelco with its expertise in recycling abroad and the fact that they have a railhead at Leziate, could be the perfect provider of this clean green industry by investing in the infrastructure required for a technologically advanced glass recycling facility at their Leziate plant. This would bring the jobs West Norfolk deserves. The arrival of glass bottles etc and the departure of the processed cullet via the railhead at Leziate would fulfill the aims stated in the M&WLP, para 9 'Transport' on pg34, by alleviating the impacts of HGV transport that surround the mining of minerals, such as silica sand, which places a heavy burden on the road transport system. It also has the added bonus of the reduction in pollution. Whilst transport by HGV may be unavoidable in some circumstances, rail transport would help to fight climate change and fulfill Government and NCC policy to reduce CO2 emissions.

[7] Cheaperwaste.co.uk - Glass Collection Services - http://www.cheaperwaste.co.uk/services/glass-collections/
[8] Sibelco Glass Recycling Video - https://vimeo.com/242176163

Glass is 100% recyclable[9] – it can be melted and made into new containers again and again with no loss of quality or performance. However, demand for cullet[10] often outstrips supply. Glass manufacturing is necessarily a continuous process and a lack of cullet can mean manufacturers must use a higher proportion of raw material (silica sand) than they would otherwise choose[11]. In line with the UK Climate Change Act, British Glass is co-ordinating the endeavours of the glass manufacturers, the mineral industry and food/drinks industry to reduce CO_2 emissions through enhanced glass recycling plus a move toward more green coloured glass usage[12]. NCC and Sibelco cannot ignore this but are making no plans to aid this legal obligation for the UK to reduce CO_2 emissions.

Recycling of glass needs to be split into several discussions: coloured glass, clear flint and flat glass, and reuse. These discussions are not mutually exclusive. Recycling coloured glass is relatively well established in the UK and we produce a surplus, much of which we export but could be put to better use in manufacture of food and drinks packaging[13], aggregates, sports arenas and horticulture . A green recycled bottle can contain up to 90% recycled glass. Clear glass jars and containers may contain 0-25% of recycled flint glass. The difference in the amounts of recycled glass used in coloured vice clear glass jars and containers is because the producers [14] of food and drinks packaging insist on having very high quality (colour clarity - clear) in their jars and containers. Studies[15] have shown that the general public (~73-98%) do not need or expect their foodstuffs to be packaged in clear jars and containers of such high quality. Indeed when presented with the facts that, a) by packaging products in coloured glass instead of clear glass there is a demonstrable reduction in the energy and water consumption required to produce the glass, plus a reduction in the CO_2 emitted, and b) the economic benefit of generating more jobs in the recycling industry, then any negative impact the public have to the use of coloured glass jars and containers, instead of the clear glass equivalent, is further reduced. Unbelievably, in 2010 instant coffee was the largest consumer of glass jars by weight at 700 000 tonnes, all of which was clear glass! (See pg 30 of footnote 15). Therefore, in addition to recycling our glass jars and containers better there also needs to be a re-education of the manufacturers of food and drinks who insist on high quality clear glass for their products' packaging - it is neither required or needed. The public have been persuaded, quite rightly, that the amount of plastic

[9] Brit Glass - Recycling - https://www.britglass.org.uk/our-work/recycling

[10] Waste glass that has been sorted and cleaned for re-melt.

[11] Brit Glass - Recycled content – packaging - https://www.britglass.org.uk/sites/default/files/1709_0001-E1-17_Recycled%20content_0.pdf

[12] Department for Business, Energy and Industrial Strategy's Decarbonisation and energy efficiency action plans - https://www.gov.uk/government/publications/industrial-decarbonisation-and-energy-efficiency-action-plans

[13] This requires manufacturers of food and drinks products currently packaged in high quality clear glass containers to be 'persuaded' that the public would accept their produce in a lesser quality glass package or even in a different colour (see link at footnote 15)

[14] Feasibility Study For The Reduction of Colour Within the Glass Furnace - https://www.glass-ts.com/userfiles/files/2004%20-%20WRAP%20-%20Feasibility%20Study%20for%20the%20Reduction%20of%20Colour%20within%20the%20Glass%20Furnace.pdf

[15] Going Green - A consumer trial to identify opportunities for maximising the use of green glass for wine and spirit bottles - http://www.wrap.org.uk/sites/files/wrap/Going_Green_report_Full_version_3_.ae138c43.10768.pdf

they consume needed to be reduced; it would not take much to persuade them about the need to package produce in non-clear/less clear glass jars and containers, which in turn would put pressure on the producers to reduce the amount of raw silica sand they consume. Whilst our food and drinks manufacturers continue to insist on high quality clear glass the problem is compounded by the produce we import in clear glass packaging which is glass of an inferior quality to that manufactured in the UK. This means we are exporting high quality clear glass containers that other countries can recycle and use in new glass manufacture, whilst we receive inferior quality clear glass containers that, at present, cannot be recycled for use in high quality clear glass manufacture in the UK and the majority goes to landfill. As a result the UK has to extract more raw silica sand if it is to continue to sustain the use of high quality clear glass packaging for the majority of our food and drinks produce. Instead we should be importing silica sand to make up the shortfall in raw materials for clear glass production due to our inadequate glass recycling industry. NCC pat themselves on the back at their 44.9% recycling rate which masks the fact that this is for all recyclable materials; however, their recycling of glass is woefully inadequate[16]. The summary at W1.7 on pg 44 of the M&WLP states, 'The waste forecasts do not take into account potential improvements in waste reduction and prevention' - this is a deficit in forward planning by NCC in regard to advancements in glass recycling.

Flat glass recycling is more problematic due to the way industry disposes of it. For flat glass to be successfully recycled in the quality and quantity that it could be, it needs to be kept clear of contaminants, i.e. it cannot be thrown in with rubble and other waste on development sites. Flat glass requires a ceed change in the building industry and waste recycling centres throughout the UK in how it should be handled to ensure it remains usable to recycle for use in the manufacture of new clear flat glass. There are many examples in Europe of how this is achieved to good effect (Reiling in Germany, for example[17] [18]).

Some benefits of recycling our glass more efficiently are as follows:

- For every tonne of glass recycled it saves 1.2 tonnes of raw material; therefore, less silica sand needs to be quarried, saving our countryside and preserving the minerals.

- The energy saved from recycling 1 glass bottle is enough to power a light bulb for 4 hours.

- Glass is 100% recyclable and can be reused over and over again.

- Glass that is thrown into landfills will never decompose, putting a great strain on landfills with too much glass content. In the UK 28 billion glass bottles and

[16] Brit_Glass Maximising the Recyclability of Glass Packaging- https://www.britglass.org.uk/sites/default/files/00017-E2-19_Maximising_the_recyclability_of_glass_packaging_WEB.pdf
[17] Reiling Glass Recycling Video - https://www.youtube.com/watch?v=zTfrumfUisU
[18] Reiling Flat Glass Recycling Document - https://reiling.de/de/flachglas

jars end up in landfills each year; 14 billion from households. More recycling = less landfill + less quarrying + less destruction of the countryside.

- Bottles and jars recycled saved around 385,000 tonnes of CO_2 emissions over the past year, equivalent to taking more than 120,000 cars off the road. This reduction in emissions of greenhouse gas could be further reduced by more efficient recycling.

- A higher content of recycled glass cullet used in the manufacture of new glass jars and bottles reduces the temperature required in the manufacturing process using 30% less energy. This also extends the life of the furnace.

- Every 100 000 tonnes of glass recycled creates 500 new jobs. Any perceived job losses from the silica sand extraction industry would be far outweighed by the number of new, environmentally sound jobs in the glass recycling industry. The UK throws away nearly 1.5M tonnes of glass bottles and jars which, if recycled, could create 7500 new jobs overnight.

- Producing new glass using recycled glass reduces air pollution by 20% and water pollution by 50%.

Sibelco's own literature for the environmental and economic case for glass recycling is linked here[19]. Their own conclusion, on slide 11, leads one to ask the question, 'why aren't they leading glass recycling here in the UK?'. The assumption has to be because they aren't mandated to, therefore why would they if it impacts their profit margin.

A complimentary system to recycling is reuse[20]. Bottles and jars can be reused many times before, due to wear and tear, the requirement to go through the waste cycle for recycling. This is not a new idea as it was the norm for many bottle types during the 1950s, 60s and 70s, prior to the introduction of single use plastics and aluminium cans. To reintroduce the reuse of glass containers now would require a change within the psyche of the general public, producers and retailers. However, as recently seen with the introduction of a charge for plastic bags the public can be persuaded to reuse their own bags; a similar scheme could be adapted for glass containers. This type of system is already in use in countries such as Germany, Denmark, Sweden, Australia and the USA, saving raw materials, reducing litter, and saving costs for local councils in refuse collection.

Finally, Norfolk County Council is required to preserve the raw minerals in their county. In the case of silica sand this is not being achieved by defaulting to quarrying; which, in turn, is not fulfilling the NPPF guidance quoted above - to look to recycle before extracting raw materials. NCC certainly do not do this; they do not recycle glass at all, they merely collect it, call that recycling and transport it to other counties for onward processing, whilst continuing to quarry raw materials. This is

[19] Sibelco Nov 2012 - Glass recycling: environmental and economic case
[20] Study on impact of deposit return scheme - https://feve.org/study-on-impact-assessment-of-deposit-return-schemes/

neither intelligent nor eco-friendly, it doesn't fulfill objective SA11 of the Initial Sustainability Report (pgs 14+16), nor promotes sustainable use of minerals. Additionally, it doesn't fulfill the Waste Strategic Objective, WS01- minimise waste, or the Mineral Strategic Objective, MSO3 - encourage sustainable use (pgs 20 and 21 of the M&WLP Preferred Options document). Without a technologically advanced glass recycling policy NCC's M&WLP also fails their own policies WSO 2, 4, 6, and 8; MSO 6, 8 and 10 (pg 20 +21 M&WLP); MW4 (pg36, M&WLP); and MP1 (pgs 66/67 M&WLP). In addition and perhaps most importantly, the UK Government signed up to The Paris Agreement on climate change in 2015. This accord legally binds the UK to reduce its CO_2 emissions by 80% by 2050 (against the 1990 baseline). In terms of AOS E, including the overlap area with SIL 02 that still remains in the M&WLP, there is no mention of how the CO_2 emissions are to be reduced or mitigated for compared to the standard silica sand quarry. The suggested wet dredging by electric barge in SIL 02, and hence by extension to the remaining portion of SIL 02 as part of AOS E, then pumping the slurry by pipeline over a distance of 6-8km must have nearly as large a carbon footprint as alternative transport by HGV. The power required for the barge and the pumps for such a long pipeline will not be an insignificant amount. The further away from Leziate silica sand is quarried only highlights the lack of a serious recycling policy through which NCC can comply with the NPPF guidance (to use recycling before raw materials) and the legal obligations to reduce greenhouse gas emissions (aided by recycled cullet use in making new glass).

The aggregate mineral industry has played its part in improving resource use efficiency (reducing CO_2 emissions) by helping to increase the amount of previously used construction material that is recovered and reprocessed to create recycled aggregate. The proportion of recycled and secondary aggregate used in UK construction has increased over the last 20 years (MPA, 2015). If that industry can recycle better why can't the glass industry, with a product that is 100% recyclable, improve and strive for 100% recycling of glass and reduce their reliance on quarrying raw materials?

Whilst there is currently enough silica sand reserve in Norfolk until 2027, the legally binding commitment to the Paris Agreement and subsequent UK Climate Change Act should require NCC to cease committing any further areas for silica sand extraction until the Government and British Glass complete their initial studies into improved recycling and increased use of green glass products. In the meantime the UK glass industry could import glass quality silica sand through a just-in-time principle, if required, to bolster the current cullet available for glass manufacture.

Summary of the Policies and Objectives that are flawed due to the lack of any **SERIOUS** glass recycling plan for Norfolk within the M&WLP Preferred Options July 2019

- The National Planning Policy Framework (NPPF) states in (Ch 17, para 204.b) that authorities should 'take account of...recycled materials…before considering extraction of primary materials..'. The NCC M&WLP does not take this into consideration as it has no SERIOUS glass recycling plan.

- NCC Vision 2036 - M&WLP

    - No SERIOUS glass recycling plan in place to ensure the longevity of self-sufficiency in silica sand.
    - No SERIOUS glass recycling plan in place to enable the aim of self-sufficiency in waste management.
    - No SERIOUS glass recycling plan in place to enable the aim of making the public and business take more responsibility for waste prevention, reuse and recycling.

- Waste Strategic Objectives - Initial Sustainability Report Part B May 2018 and M&WLP Preferred Options Jul 2019

    - WSO 1 - No SERIOUS glass recycling plan in place to support the objective to prevent/minimise waste in line with the Waste Hierarchy.
    - WSO 2 - No SERIOUS glass recycling plan in place to support the aim of increasing the amount of waste reused, recycled and recovered.
    - WSO 4 - No SERIOUS glass recycling plan in place to enable the aim of self-sufficiency in waste management (Vision 2036).
    - WSO 6 - No SERIOUS glass recycling plan in place to support the reduction of greenhouse gas emissions (a legally binding objective), minimise landfill (in Norfolk and nationally), and reduce waste transport distances.
    - WSO 8 - No SERIOUS glass recycling plan in place to recognise the importance of waste management as a generator of local employment.

- Mineral Strategic Objectives - Initial Sustainability Report Part B May 2018 and M&WLP Preferred Options Jul 2019

    - MSO 2 - No SERIOUS glass recycling plan in place to increase the timescale of providing a steady and adequate supply of silica sand by reducing the

quantity of raw material required for the manufacture of glass due to an increase in the quantity and quality of recycled glass (Vision 2036).
    - MSO3 - No SERIOUS glass recycling plan in place to encourage the sustainable use of minerals by using secondary and recycled aggregates (NPPF, Ch 17, para 204.b).
    - MSO 8 - No SERIOUS glass recycling plan in place to minimise the impact of climate change through the reduction of CO_2 emissions due to an increased use of high quality recycled glass cullet in glass manufacturing.
    - MSO 10 - No SERIOUS glass recycling plan in place that ensures more public access to the countryside due to the decrease in quarrying area required for silica sand because of the increased use of high quality recycled glass cullet.

- Presumption in Favour of Sustainable Development - M&WLP Preferred Options Jul 2019

    - A SERIOUS glass recycling plan would ensure increased local employment that far outweighs the numbers and level of jobs generated through quarrying alone, as well as reducing the size and number of areas required for silica sand extraction and aiding the reduction of greenhouse gas emissions.
    - MW 4 - No SERIOUS glass recycling plan in place to support reductions in greenhouse gasses to reduce climate change.

- Waste Management Specific Policies - M&WLP Preferred Options Jul 2019

    - WP 1 - No SERIOUS glass recycling plan in place to increase the amount of glass recycled within the waste management capacity to be provided despite all of the positive factors that would bring to Norfolk - increased employment in a green industry; less CO2 emissions; increased time for self-sufficiency in silica sand; protection of the Norfolk countryside (biodiversity, geology, archaeology, public access).

- Mineral Specific Policies - M&WLP Preferred Options Jul 2019

    - MP 1 - No SERIOUS glass recycling plan in place without which the planned extraction figures are flawed as they are based on what the mineral extraction companies supply to NCC as the ‘required need’. With increased recycling of glass, especially clear glass the figure of ‘required need’ for silica sand would be reduced.