

Planning Inspectorate
National Infrastructure Planning
Sizewell C Team
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Our ref AEO/EFC/NOR01691.8

Your ref Sizewell C DCO SIZE-AFP059

3 September 2021

By email only to
sizewellc@planninginspectorate.gov.uk

Dear Sirs

Application by NNB Generation Company (SZC) Limited ("the Applicant" and/or "SZC") for an Order granting Development Consent for the Sizewell C Project ("the Application").

We write on behalf of Northumbrian Water Limited ("NWL") further to our previous submissions dated 24 August and 23 July 2021.

The ExA will be aware that: i) NWL has submitted a holding objection to the Application and ii) that recent information has come to light which presents a significant risk that NWL will not be able to provide any sustainable water supply to SZC.

The main purpose of this submission is to provide further background information to the ExA in order to assist its understanding of NWL's current position.

It should be noted that, although this cannot be confirmed at the present time (for reasons explained below) the new information which NWL now has may result in a necessity for NWL to submit a full objection to the Application, which may not be capable of resolution in the relevant time periods for determination of the same.

Summary of Applicant's proposed water supply

As the ExA will be aware, SZC Co now accepts that there is a significant risk that NWL will have insufficient water available to supply SZC in the earlier years of the proposed construction period¹.

This is a consequence of there being a misalignment between NWL and SZC Co's construction programmes with NWL being unable to make the necessary infrastructure improvements before the start of SZC construction. Additionally, SZC Co has increased its demand forecast significantly over the previous two years (with NWL only receiving SZC Co's evidenced *SZC Potable Water Demand Summary Report* on 25/06/21). As is made clear in SZC's *Consultation Document on Temporary Desalination Plant*, during construction, a peak demand of 4ML per day is now likely to be required. The demand is said to be driven by concrete batching, construction of the cooling water tunnels, placement of structural fill and welfare demands for the construction workforce.²

¹ Paragraph 2.3.1 of SZC's Consultation Document on Temporary Desalination Plant

² See paragraph 2.2.14, *ibid*.

NWL has repeatedly made clear to SZC Co that any water supply available to the project would be subject to the ongoing WINEP process, which is still not fully resolved³. NWL had previously identified a potential surplus of water in its Northern/Central Water Resource Zone though it made clear that this was subject to further investigations. SZC Co. has been aware throughout of the risks which water supply may pose to the successful delivery of the project and has separately been made aware of NWL's requirement for a Grampian style restriction to be incorporated within the DCO to address the sustainable supply of water to the power station throughout its lifetime (see letter to SZC from NWL dated 16 July 2021 at Appendix 1).

On receipt of SZC's evidenced demand profile, with SZC Co agreement, NWL undertook further feasibility and promptly flagged that there was a material risk that sufficient sustainable water would not be available to meet SZC Co's construction programme. NWL provided a range of risk profiles to SZC which highlighted in the worst case (prior to the River Waveney abstraction licence issue arising), a water supply may not be available to SZC until 2026. Consequently, NWL understand that SZC has proposed the inclusion of a temporary desalination plant in order to address this existing material risk.

AMP7 WINEP Developments

As the ExA will be aware, NWL and all other statutory water undertakers are required, pursuant to the relevant statutory scheme, to plan for infrastructure improvements and capacity increases within the framework of formal Asset Management Plans ("AMPs"), which are overseen by Ofwat.

As part of the AMP process, NWL and other statutory undertakers, are required to meet environmental objectives, set by the Environment Agency, referred to as the Water Industry National Environment Programme ("WINEP").

NWL are currently working to implement AMP7 WINEP, which requires key sustainability and resilience improvements to be achieved between 2020 and 2025; those improvements are driven in part by the requirements of the Water Framework Directive.

The AMP7 WINEP required NWL to undertake abstraction sustainability investigations for all of its Suffolk groundwater abstraction licences; accordingly, NWL was aware that it would be required to assess the sustainability of abstraction for the Environment Agency's River Waveney support scheme called the Waveney Augmentation Groundwater Scheme (WAGS). Interim results of this investigation have been shared with the Environment Agency who have indicated what the new annual licensed quantities for the WAGS scheme should be. However, the Environment Agency has requested further modelling to be undertaken. This is ongoing and (subject to no additional modelling being required) is expected to be completed by 30 September 2021.

However, as part of the WAGS WINEP investigation, a potential river flow deficits downstream of the NWL intake in the River Waveney has been identified; in other words, there may be insufficient water flow in the river to maintain environmental objectives. Consequently, the Environment Agency has now advised that, 'there is a likely need' to apply a materially significant sustainability reduction to NWL's River Waveney abstraction licence. The Environment Agency's letter, confirming this position, is provided at Appendix 2.

The proposed reduction of abstraction volumes in respect of the River Waveney abstraction licence is, therefore, an entirely new matter which NWL, and all other relevant stakeholders, were previously unaware of. The consequence is that there is likely to be a material reduction in water availability within the Northern/Central Water Resource Zone, significantly reducing or eliminating the supply headroom for this catchment. NWL may therefore be unable to supply water to SZC until new supply schemes have been delivered.

³ NWL provided a WINEP update to the ExA on 6 August 2021 to confirm work was still ongoing.

NWL has identified a series of supply schemes that may be needed to maintain supply headroom in its Suffolk Water Resource Zones. These include Effluent Reuse, Desalination and a Strategic Import from Anglian Water – the latter will be dependent on an ESW export from its Essex Water Resource Zone into Anglian Water's strategic network.

The need for new water supply schemes will be demonstrated through NWL's Essex & Suffolk Water (ESW) PR24 Water Resources Management Plan ("PR24"), the draft of which will be submitted to Defra in August 2022. The final WRMP24 will be submitted in mid-2023. Subject to Defra approval of the ESW WRMP24, the funding required to deliver the new supply schemes will be included in the Company's Business Plan which will not be determined by Ofwat until 2024 (it is also possible that schemes within our PR24 Business Plan may not be approved by Ofwat). Subject to regulatory approval of the Business Plan, funding for the new supply schemes will not be released until April 2025.

Further WINEP investigations are being undertaken but there are significant uncertainties at the present time, notably that the EA could reduce ESW's River Waveney abstraction licence by 60%. This would result in a significant supply deficit in the Northern Central Water Resource Zone and would require new supply and demand schemes to meet current customer demand. It is important to note, as already mentioned above, that this is provisional and there is a material risk that this will be reduced even further.

In the event that the Environment Agency does determine that the River Waveney abstraction licence must be reduced by 60%, there will be no headroom in the Northern Central Water Resource Zone. This would be a highly material change in position compared to NWL's water capacity information prior to August 2021.

NWL's statutory obligations and their implications in this case

The provisions of the Water Industry Act 1991 ("the WIA") *compel* statutory undertakers to provide both new infrastructure and water supply, for domestic purposes to 'household premises', irrespective of any environmental or capacity issues which may result.

Given that SZC will require the construction of what will effectively be a temporary 'new town' to house a large number of construction workers, there is a clear risk that NWL will be compelled to provide not only a new water main (irrespective of any environmental consequences arising from its construction) but supply the water itself (irrespective of any capacity restriction) for domestic purposes, if the DCO is granted without any Grampian restrictions to address the issue.

These statutory provisions, along with the increased demand profile provided by SZC to NWL, led to NWL submitting its holding objection, which made clear it would not be in a position to remove the same in the absence of both: i) clear provisions in the DCO itself to suitably control the timing of any water supply/infrastructure to be provided by NWL and ii) a section 55 Agreement to address the timing and funding of infrastructure for commercial water supply purposes.

Separately, NWL has a wider duty pursuant to Section 37 of the WIA to maintain an efficient and economical water supply within its area. The mechanism for delivery of this is the Water Management Resources Plan ("WMRP"), which AMP7 WINEP forms a part of.

The statutory WMRP is critical to both the delivery and funding of infrastructure to meet the needs of NWL's existing customers and the needs of future customers, both domestic and commercial. Where a significant future water supply demand arises, which has not been taken into account during the WRMP process⁴, the ability of NWL (or any other statutory undertaker) to economically provide for additional infrastructure/capacity may be compromised. This may result in materially increased costs falling upon existing customers to fund new or amended schemes which do not meet the objectives of efficient and economic water supply, effectively in breach of NWL's statutory duty pursuant to Section 37 of the WIA.

⁴ Due to misaligned timescales

As is made clear in the WIA, NWL has a duty to supply water (and related infrastructure) for non-domestic purposes (Section 55 WIA) subject to its ability to: i) incur unreasonable expenditure in order to meet all its existing obligations to supply water for domestic or other purposes, together with its probable future obligations to supply buildings and parts of buildings with water for domestic purposes; or ii) otherwise put at risk the ability of the undertaker to meet any of the existing or probable future obligations.

Prior to the latest information regarding the likely material reductions for the River Waveney abstraction licence, NWL's WRMP proposals included diverting surplus capacity from the Northern/Central Water Resource Zone to address existing capacity issues in other areas, including the Blyth Water Resource Zone (within which SZC is located).

NWL is working to provide (as soon as possible) a background technical paper to furnish the ExA and all other parties with additional information regarding these existing capacity issues.

However, it should be noted that NWL's ability to address such capacity problems for its existing customers will be seriously prejudiced in the event that the River Waveney abstraction licence is reduced as anticipated and it is required to supply SZC.

Accordingly, having regard to its statutory duties under the WIA (which must take primacy) NWL is, having learnt of the potential reductions to the River Waveney abstraction licence, not currently in a position to enter into a Section 55 Agreement to supply water or related infrastructure to SZC for non-domestic purposes. The provision of such infrastructure and water supplies would be highly likely to breach NWL's statutory duties to meet the needs of its existing and/or probable future obligations.

Further analysis and modelling is required by NWL, in conjunction with its consultants and the Environment Agency, to establish with greater certainty the reduced annual abstraction limit for the River Waveney abstraction licence. At present, NWL does not have a confirmed time scale for this further work to be completed, although it is working to ensure this is delivered as soon as it reasonably practicable.

The unavoidable consequence of all of the above matters, taken together, is that depending on the final outcome of NWL's WINEP investigations, NWL will be unable to confirm that it is in a position to supply any water to SZC at any stage of the project's lifecycle until Defra, the Environment Agency and Ofwat have approved its PR24 regulatory plans.

Summary of NWL Position

At the present time, in the absence of PR24 approval being obtained, NWL is unable to confirm that it will be able to supply water, or related infrastructure, to SZC having regard to NWL's duties under the WIA.

With respect to domestic water supplies, it is imperative that NWL is provided with protection at the planning stage (by way of suitable wording within the DCO itself) to ensure that the statutory provisions in the WIA do not compel it to provide either infrastructure or water which would be environmentally unsustainable and/or result in capacity shortfalls for existing customers.

Furthermore, at this juncture, NWL can no longer commit to entering into a Section 55 Agreement to supply water and infrastructure for non-domestic purposes to SZC. To do so would lead to direct conflict with NWL's statutory duties.

NWL regrets that it is unable to provide more certainty to the ExA at this time, however, future modelling is required to assess the precise quantum of sustainable water supply in the Northern/Central Water Resource Zone.

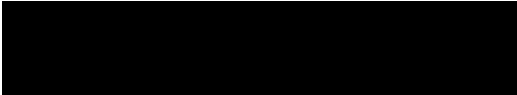
In the absence of this work being fully completed, NWL considers it has little option but to confirm to the ExA that there is a material and significant risk that it may not be able to supply any water or related infrastructure to SZC until after NWL's regulatory plans are approved.

NWL will be in attendance at the proposed water supply hearing on 14 September 2021 (represented by Counsel). However, NWL is concerned that little further progress will be capable of being made with respect to its water supply position, as the additional work required to obtain higher levels of certainty is unlikely to have been completed in time. Accordingly, NWL respectfully requests that the ExA considers providing for further hearing days to consider water supply matters in more detail once additional technical information is available.

We look forward to receiving confirmation of receipt of this submission (and the relevant enclosures) at your earliest convenience.

Yours faithfully

WALKER MORRIS



Encs: Appendix 1; Appendix 2.

By email only:

[REDACTED]@sizewellc.com

16/07/2021

Dear Steve,

Re: NWL Position on Sizewell C Mains Water Supply

Further to our meetings this week, I am writing to you to set out our position regarding the proposed Sizewell C Transfer Main and a mains water supply to the Sizewell C site.

In summary, there is an inadequate supply of water in our Blyth WRZ and inadequate infrastructure to provide water to SZC from elsewhere within our supply area. The DCO application does not currently include any proposals to overcome these issues.

We have received preliminary advice from leading Counsel in relation to the water supply issues in connection with Sizewell C.

Our view is that agreed provisions need to be included in the DCO to ensure that SZC comes forward in tandem with and in a timescale consistent with the provision of necessary water infrastructure. This needs to be followed by the completing of a formal agreement between EDF / SZC and NWL pursuant to section 55 of the Water Industry Act.

It is often the case that rights of connection and supply available under the Water Industry Act 1991 come into conflict with the ability to give effect to those rights in the context of new development. The Supreme Court examined such a scenario in relation to domestic sewerage in *Barratt Homes Limited v Welsh Water [2009] UKSC 13*. In this case the Court considered how rights granted pursuant to the Water Industry Act should be taken into account in planning decisions. The Court suggested that a Grampian condition would be appropriate to ensure that development did not come forward until appropriate infrastructure was in place.

It is common practice for a water undertaker to seek a planning condition of the kind envisaged in *Barratt* when consulted as part of the planning process, which applies equally in the context of an NSIP as it does at the local planning level. NWL considers that the DCO should contain an appropriate Grampian condition. If EDF consider another solution is more appropriate, this needs to be proposed to NWL with clear reasons in support.

We are open to receiving alternative suggestions and finding a satisfactory resolution of this issue that is pragmatic and workable but at the moment we are not aware of a suitable alternative and we would need strong justification to depart from the formal Counsel advice we have received.

Once the DCO containing a suitable Grampian condition has been agreed, we can reach an agreement with you to supply the appropriate infrastructure in accordance with section 55 of the Water Industry Act 1991.

Given that this is EDF's application, EDF should provide the draft wording of a Grampian condition for inclusion in the DCO, which can then be considered and hopefully agreed by NWL. The wording will need to address the supply of water to the power station, both during the construction phase (including meeting the needs of the construction workforce) and the operational phase of SZC. EDF will also need to confirm to the ExA that this is the approach which is being progressed.

We note that EDF is considering whether to delay submitting its Water Strategy to the ExA until Deadline 7 (3 September) to allow time for us to reach an agreement. We remain committed to working with EDF, in accordance with our standard approach as a statutory undertaker and would welcome alternative workable and clear suggestions. However, we will submit a holding objection to the DCO to the ExA, to protect our position should we be unable to reach agreement prior to EDF submitting its Water Strategy.

We look forward to discussing the Sizewell C Transfer Main scheme with you further at our 3pm meeting on Monday 19 July.

Yours sincerely,

Will Robinson

cc: Keith Haslett – Water Director
Andrew Beaver – Regulation Director
Martin Lunn – Head of Water Service Planning

William Robinson
Water Resources & Performance Manager
Northumbrian Water Limited

Date: 26 August 2021

Dear Will

Potential abstraction licence changes within Northern Central Water Resource Zone in relation to Sizewell C water demand and WINEP investigation results

At our recent discussion you explained that the initial outputs from the WINEP investigations indicate that abstraction licence reductions in order to protect the water environment are likely to be needed for Essex & Suffolk Water (ESW) and this throws into doubt your ability to supply sufficient water for Sizewell C construction and operation. As requested, this letter is to clarify as far as possible at this stage of the investigations the licence changes likely to be required in order to protect the environment. You should note that as further work and analysis is required, including a cost benefit analysis/options appraisal, this letter sets out our understanding at this stage and information here should be taken as indicative rather than finalised.

In relation to your interim Broadland Rivers Chalk and Crag WINEP investigation report and the predicted Sizewell C water demand, our Area technical leads confirm that in order for Water Framework Directive objectives to be met we are very likely to need to vary two abstraction licences.

Based on the initial review of the data we have available, we are able to indicate that licence changes are likely to be required as follows:

**1. Environment Agency (Waveney Augmentation Groundwater Scheme) licence
7/34/17/*G/0068**

WAGS is a scheme where groundwater is abstracted from the five boreholes and is discharged into the River Dove tributary of the River Waveney during periods of low flow to enhance the water resources of the catchment. Operation of the Scheme will normally be determined by the natural availability of water for abstraction as determined by our river flow gauging station at Ellingham. River flows will be augmented depending on the natural flow and your demand at Shipmeadow, to ensure that approximately 28 Ml/day is maintained in the downstream reach of the tidal River Waveney. This residual flow is required to prevent the ingress of saline water upstream into the freshwater tidal reaches of the River Waveney below Ellingham.

We undertook a review of the WAGS scheme in 2017. The report highlights that operation of the boreholes results in a residual negative impact to groundwater levels across the well field and into neighbouring catchments. The magnitude of the initial impact increases after each period of operation as a deficit remains from the previous period of use and levels may take several years to recover.

As such, we plan to add an additional annual aggregate and 3 year aggregate to our licence to keep its use within sustainable limits. This is summarised in the table below. In our initial calculations we have assumed the triggers for this augmentation remain the same and that these are based on a modelled Recent Actual abstraction Scenario +7MI/d. This scenario is intended to identify the impacts of a moderate level of growth which takes into account the peak 4MI/d demand required by Sizewell C.

Recent Actual abstraction +7MI/d model scenario

Borehole	MI/day	MI/Year	NEW Annual Aggregate from all boreholes MI/y	NEW 3 year aggregate from all boreholes MI
1	7	1000	1236	1353
2	9	1250		
3	8	1100		
4	10	1350		
5	9	1250		

Recent Actual abstraction Scenario

However, I understand that WOOD consultants presented modelled figures on 24/08/21 taking account of a change in ASB (Abstraction Sensitivity Band) and these indicate that recent actual levels of abstraction are at their sustainable limit due to the increase in abstraction of Waveney water without support from WAGS. It is this increasing pressure on river flow in the tidal reach that is the cause of WFD river flow non-compliance, a potential outcome highlighted during the initial scoping of the WINEP process.

Whilst we have some concerns regarding a large increase in the operation of WAGS these are not the current constraint to growth. We would however expect to cap this licence to match the future need to support the Shipmeadow intake. The maximum annual operation of our WAGS boreholes to support current rates of abstraction has been identified by WOOD to be 419 MI/year. This is below our recent operational use of the scheme during the exceptional dry summers of 2019 and 2020 when 592 MI/y and 618 MI/y were discharged to the river. We are therefore currently minded to cap the annual rate of our WAGS licence at around 700 MI/y to achieve the WFD targets under the recent actual scenario.

2. Northumbrian Water licence 7/34/19/*S/0108 (Inland water known as River Waveney in Shipmeadow, Suffolk).

Based on information in your main interim report (July 2021), at this stage, we can indicate a likely need to reduce the annual licence quantity on your Shipmeadow surface water intake to prevent WFD deterioration on the River Waveney immediately downstream of the

abstraction point. The scale of the required reductions is dependent on the Abstraction Sensitivity Bandings (ASB) for each waterbody. (See table below)

Current Abstraction Sensitivity Bandings

Water body ID	Water body name	ASB Final	WFD Hydrology Status 2019
GB105034045902	Waveney (Starston Brook - Ellingham Mill)	2	Supports Good
GB105034045903	Waveney (Ellingham Mill - Burgh St. Peter)	1	Supports Good

As more analysis is required, we are unable to give you exact details at this point, but based on our best estimates we can indicate the following volumes for the recent actual abstraction +7MI/d scenario (see table below).

Recent Actual +7MI/d scenario assuming no change to ASB

Daily in MI/d	Annual in MI	NEW Annual in MI
28	7500	Between 5500MI – 6500MI

This proposed licence reduction is based on reducing the risk of deterioration to the water environment caused by growth in demand from Sizewell C and domestic/non domestic sources. Further work will need to be done, to refine this figure including a review of operational triggers and constraints associated with modelling WAGS. A slight increase in the use of our augmentation might well have wider ecological benefits for the upper River Waveney catchment during times of dry weather.

Likely worst case scenario if the ASB is changed

The figures that WOOD presented to my colleagues at the meeting 24/08/21, which move the ASB to 2 for both waterbodies, suggests around a 60% reduction would be required in your fully licensed quantity at Shipmeadow. This would result in an indicative new annual of 2945.55 MI/year alongside the commensurate reduction in WAGS referred to earlier in this letter.

As there is a significant difference between these two sets of modelled results this demonstrates the need for further work and cost benefit analysis/options appraisal, before we are able to confirm the licence changes needed to protect the environment.

3. Other groundwater abstraction licences in the Waveney Catchment

We are aware that you are finalising your main Broadland Rivers Chalk and Crag WINEP investigation, so it is still unknown whether it will be necessary to vary any of your groundwater licences within the Waveney river catchment to meet WFD objectives. At this stage, the extent of the contribution of GW abstraction to the river non-compliance is also uncertain and the resulting licence variations to groundwater licences required. Modelled

data, which you shared on 24/08/21 suggests a link between groundwater abstraction and river flow compliance in the River Waveney.

You will also be aware that regionally Water Resources East is currently undertaking work associated with the Environmental Destination and this may result in further sustainability reductions.

Next steps

Our Area team will continue working with you and your consultants to agree additional modelling runs that need to be undertaken to determine a sustainable level of abstraction from the Waveney catchment and North Central Water Resource Zone (a high level model scenario was agreed at a meeting between the EA, Wood Consultants and yourselves, 24/08/21).

I hope this information is useful and I must re-emphasise that this represents an interim Environment Agency position given there are further model runs to be undertaken and assessed. In summary, on the basis of information sent through by Essex & Suffolk Water (18/08/2021) we understand there is a 4.3Ml/d sustainable water resource available. Modelling results presented on 24/08/21 will require further analysis to determine if this remains the case. Whilst we can advise on the availability of sustainable water resources supplies (headroom), it is a business decision for Essex and Suffolk Water to decide how it distributes this headroom amongst its customers.

If you have any general queries please contact me or Ali Taylor. For further technical queries please liaise directly with Sarah Hollingham.

Yours sincerely

Simon Hawkins
Area Director
East Anglia Area



Email: areamanagercorrespondence.eastanglia@environment-agency.gov.uk