



EPA,  
Johnstown Castle,  
Wexford,  
Y35 W821.

11<sup>th</sup> May 2023

**RE: Licence Review Great Island Power Station P0606-04.**

Dear Sirs,

We write to you in relation to the above-mentioned licence review application submitted to the Agency by SSE Generation Ireland for its installation at Great Island Power Station on the 29<sup>th</sup> September 2020 and more recently your letter dated the 19<sup>th</sup> April 2023 where you invited further submissions to be lodged by the 16<sup>th</sup> May 2023.

We made comprehensive submissions to this application first on the 24<sup>th</sup> November 2020 and then again on the 07<sup>th</sup> March 2022, (which I have again attached to this submission, as no satisfactory response to our concerns raised therein have been received).

We requested and paid for an oral hearing due to the very serious concerns we have about the impacts this installation is having on the surrounding marine environment and our shellfish production business that is located within a SAC (Special Area of Conservation), that request for oral hearing was sadly denied by the Agency. The issues surrounding the operation and oversight of this installation has been an ongoing issue in the Waterford Estuary. The installation is having a major impact on the surrounding marine environment. Its even more worrying for the EPA to admit that these objections/submissions being raised by local stakeholders, businesses and environmental conservationists are less important due to the long-standing nature of the complaints being submitted.

The most recent letter submitted to the EPA by the applicant dated the 04<sup>th</sup> April 2023, does not satisfy the legal and environmental concerns raised in our several objections to this application to date. At best it's a brief and extremely vague letter, with no evidence attached in the form of copies of planning permission and copies of relevant certificates of compliance with planning, copies of the applicant's foreshore lease etc. There have been major refurbishments and upgrades carried out by SSE at Great Island since the 2010 planning permission was issued, furthermore to rely on EIS completed by a previous owner (Endesa) dated in 2009 is an insult to say the very least.

The Environmental Impact Assessment dated 2009 which was completed by the plant's previous owner Endesa has been submitted to the Agency by SSE on various occasions at this point. **It would be fair to conclude that it has legally not satisfied the agency to date, nor should it as the EIS was drafted for a materially different plant that does not reflect their current operations** at the site and does not satisfy the strict legal requirements of the EU Birds & Habitats Directives, the Planning and Development Act 2000, the Water Quality Regulations, and the EU Water Framework Directive.

The Waterford Estuary is located within a European Natura 2000 area of conservation. These important sites are a network of core breeding and resting sites for rare and threatened species, and some rare natural habitat types which are protected in their own right. The aim of the network is to ensure the long-term survival of Europe's most valuable and threatened species and habitats, listed under both the Birds Directive and the Habitats Directive.

Article 6 of the Habitats Directive provides a strict assessment procedure for any plan or project not directly connected with or necessary to the management of a designated European site but **which has the potential to have implications for the site in view of the site's conservation objectives.** It is important to note that the applicant is discharging unregulated/uncapped quantities of lethal chemicals into the Estuary with the blessing of the EPA. Furthermore, with a declaration from the applicant themselves that these **chlorine type chemicals are used with lethal effect to kill marine life.** It is incomprehensible that the EPA knowing well the legal requirements under the Habitats Directives and Water Framework directives, continue to licence this extremely harmful level of pollution at Great Island. Under no circumstances should an applicant be permitted to discharge uncapped quantities of these lethal chemicals into any waterbody, let alone into a marine protected site.

There is clearly very real and serious pollution in the Waterford Estuary, which is being tolerated by the Agency to the detriment of the marine ecosystem. The issues in relation to the environmental impacts at the Great Island plant have been highlighted in the media on several occasions last year. Green Party MEP Grace O'Sullivan commissioned a report after contacting the EPA last year out of concern over serious water quality issues in the region, stating that monitoring of the impact from certain bleaching chemicals by SSE at Great Island risked being "neither accurate, nor representative of the water quality throughout the year" in the Estuary. The environmental pollution taking place at the installation is of serious concern to local stakeholders and it is extremely worrying that the EPA is permitting and licensing this ongoing pollution, which is leading to serious shellfish dieback and large-scale mortalities in the Estuary. These chlorine type chemicals and screen wash/coolants chemicals are lethal to marine species and used with the intent of killing these species.

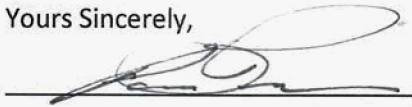
The applicant has made declarations of their compliance on a number of occasions, yet the EPA's inspectors reports show the opposite and unveils very serious and worrying discoveries in the form of unregulated outfalls at the plant, together with ever increasing volumes of unregulated lethal chemicals being discharged into the European protected site. The EPA has a responsibility to protect the marine environment and to ensure proper regulation and compliance at this facility.

During the period that SSE's plant at Great Island was closed for modernisation and upgrades during the Spring/Summer of 2022, we as local stakeholders and shellfish producers noticed positive changes in the recovery of the local marine ecosystem, together with a return of new spatfall of sedentary species which have been dramatically declining in recent years due to the declining water quality in the Estuary.

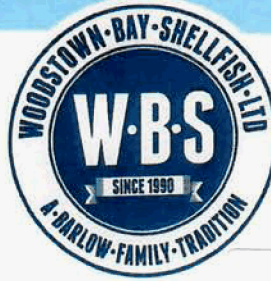
As a shellfish producer in the Waterford Estuary and a local stakeholder, we rely on the EPA as the regulator to uphold the EU Directives and to protect this important and protected waterbody for the survival of our business and the survival of the local marine ecosystem as a whole.

**This application should be refused by the agency as it is not compliant with the above mentioned legislation.** Furthermore, this installation is well known to be having a major impact on the integrity of the EU SAC in the Waterford Estuary and therefore **all operations at the plant should cease until such a time as the agency is fully satisfied that the plant is fully compliant with all legal and environmental requirements and until such a time as proper environmental assessments have been carried out** which detail the cumulative impacts of this installation on the Estuary, to include impacts of all chemicals being used and stored at Great Island.

Yours Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Barlow', is written over a solid horizontal line.

Mr Paul Barlow



## Appendix 1

Mr Billy Shanahan,  
Environmental Protection Agency (EPA),  
Johnstown Castle,  
Wexford,  
Y35 W821.

24<sup>th</sup> November 2020

CC: [B.Kissane@epa.ie](mailto:B.Kissane@epa.ie) , [sweetmanplanning@gmail.com](mailto:sweetmanplanning@gmail.com) , [KDubsky@Coastwatch.org](mailto:KDubsky@Coastwatch.org) &  
[grace.osullivan@europarl.europa.eu](mailto:grace.osullivan@europarl.europa.eu)

RE: **Objection in respect of Licence Application P0606-04 made by SSE Great Island Generating Station dated the 29<sup>th</sup> September 2020.**

Dear Mr Shanahan,

Further to my previous correspondence to you in May of this year. It has recently been brought to my attention that SSE Generation Ireland Ltd has applied for a revision to its industrial emissions licence for its power plant at Great Island Generating Station ( P0606-04).

The applicant was and still is operating in breach of its current licence P0606-03 by continuing with discharges at SW8 and SW7. Importantly also the applicant has avoided stating another important reason for the application and that is the concern that the EPA had and presumably still have in relation to the scale of Sodium Hypochlorite use at the plant, which is in the order of several hundred times that envisaged when licence P0606-03 was applied for some years ago. This initial application and its environmental assessments dealt with a proposed annual usage of 5 tonnes, which is in stark contrast to the massive 1,300 tonnes usage per annum reality. This the EPA discovered in a chance comment during an inspection and not by an examination of purchase records for sodium hypochlorite. Indeed, maybe the EPA would still consider such a retrospective examination of those records and may even in the future look as a standard inspection protocol. The omission of sodium hypochlorite usage as a reason for review is remarkable considering so much of the accompanying documentation (Natura

Impact Statement, Water Quality Modelling Study and Literature Survey) for the new application 'attempts' to address that very point viz the modelling and impact of sodium hypochlorite in the Waterford Estuary.

It is the very use of such large quantities of sodium hypochlorite, its subsequent fate and the impact of the chlorine produced oxidants (CPO's) on phytoplankton (primary production) that is the most important issue to shellfish producers, as oysters and mussels can only feed on phytoplankton and thus this is imperative to their survival. Secondary to this concern would be direct lethal and sub lethal effects either acute/delayed or chronic on shellfish (mussels and oysters) caused by Chlorine Produced Oxidants (CPO's) and Chlorination By Products (CBP's) , the latter formed with compounds present in estuarine suspended solids. These issues are not dealt with in any serious way in the application and pose a massive threat to the marine ecosystem surrounding this installation. Furthermore the water quality modelling study does state that it deals with modelling Sodium Hypochlorite in a conservative manner :

*"The modelling approach in the study has been conservative and representative of the worst-case scenarios. It has purposefully: a. excluded natural free chlorine decay"*

It is this very decay into toxic product, CPO's and CBP's of longer lifespan in the ecosystem which has been ignored totally in the modelling study that is of grave concern to us. But it's not just a group of shellfish farmers that have concerns about CPO's. Quite a few Countries hold these concerns equally as strongly as ourselves and have invested time and resources into establishing guideline values for such compounds in the marine environment for the purpose of protecting marine life and ensuring a health marine ecosystem for years to come.

Bately and Simpson 2020 (*Short-Term Guideline Values for Chlorine in Marine Waters*, G.E. Batley and S.L. Simpson *Environmental Toxicology and Chemistry*, 2020;39:754–764) discuss the impact of CPO's in the marine environment and the guideline values that have been set by various Countries. Zero fieldwork on sampling and testing for CPO's or CBP's has been undertaken by the applicant. If the EPA of Ireland are going to live up to their name they will have to ensure that an objective study take place into the levels of CPO's in the Waterford Estuary, to determine that they are not elevated above guideline values. This is a Special Area of Conservation and a Shellfish Designated Waterbody and has protection status as such. Moreover, the health of the ecosystem is also meant to be protected under the Water Framework Directive. There are several studies I could list to demonstrate Countries all around the world that have given serious consideration to guideline values for Chlorine Produced Oxidants. There would be no point adding all of these in this submission, however it is abundantly clear that numerous Countries/jurisdictions have very low guideline values set for CPO's due to the acute and chronic toxicity to marine life and their respective ecosystems. The literature review presented by the applicant is poor in this regard. One would expect the EPA of Ireland to be fully aware of the serious negative implications that the use of sodium hypochlorite has for the receiving marine environment. It's bad enough that the EPA were misinformed by a previous application based on a usage of 5 ton

hypochlorite per annum which was licensed only to discover (by chance) an actual usage of 1,300 tonnes /annum on their watch, but to now subsequently despite all of that history and in the full knowledge of the negative ecosystem impacts, attempt to licence the use of even a 1,000 tonnes of hypochlorite per annum defies belief.

A further point to note is that flow through experiments normally don't extend beyond 96hrs. Therefore in reality because the power station is continuously generating a supply of CPO to the Waterford Estuary it is possible that marine life in the Estuary are being exposed on a much longer term to chlorine produced oxidants. The applicant admits to this scenario for mussels close to the discharge point based on modelling of sodium hypochlorite, but as stated before it's the distribution of CPO's which travel further and last for longer than hypochlorite that is the major concern. The applicant has not determined the impact of CPO's in the seawater.

Roosenburgl et al 1980 showed that straight hinged larvae of the eastern oyster had LC50 values of 0.3 ppm CPO at 48 h, 0.08 ppm at 72 h, and 0.06 ppm at 96 h. They also clearly demonstrated that the higher the concentration and/or the longer the exposure time resulted in higher mortalities. (*Effects of Chlorine-Produced Oxidants on Survival of Larvae of the Oyster Crassostrea virginica*\* Mar Ecol. Prog. Ser. Vol 3: 93-96, 1980). Hence some jurisdictions set even more stringent guideline values for chronic exposure. More worrying is that exposure to CPO's in the marine environment doesn't get any more chronic than in Waterford Estuary. Scott, G. et al 1980 studied the physiological effects of chlorine-produced oxidants and uptake of chlorination by-products in the American oyster, *Crassostrea virginica* (gmelin) and results of the study indicated that oysters may be stressed in areas adjacent to chlorinated effluent outfalls. Summer exposure of oysters to high concentrations of CPO (0.66 to 1.23 mg/l) proved very toxic.

#### Issues with the Application and Associated Documents:

In the application form for this licence the applicant states that the current surface water usage is 201993000 cubic metres per year and a future usage per annum if the licence is granted of 2890800000 Cubic metres per year. So that is 14.3 times increase in surface water abstraction from the estuary from current usage and 10 times the maximum limit allowed for under the current licence per annum. (The current licence limit for discharge is 33000 m3/hr, 792000 m3/day and 289080000 m3 per annum.) So, is this a typographical error or not? If it is a typo and an extra zero has been erroneously added then the proposed usage will be 1.43 times the current usage which in itself then begs the question will the proposed sodium hypochlorite usage be 1.43 times that currently used? Given that recent sodium hypochlorite usage figures per annum have gone up towards 1,300 tonnes one could logically assume that maybe in the future 1.43 times this value will have to be used which would bring us to 1,859 tonnes/annum. If this is not correct, then could you explain why it is not correct?

Of course, it will depend on the concentration of the sodium hypochlorite used. Will the company be sticking with a 14-15% concentration solution (as stated in the raw materials and intermediates document) or will the licence allow for flexibility to use a more concentrated solution of sodium hypochlorite e.g 1,000 tonnes of an even stronger solution of sodium hypochlorite whereby the proposed 1,000 tonnes/annum licence limit is not breached as there is no licence limit on the strength of the solution of sodium hypochlorite? Will the EPA be including a concentration limit on the sodium hypochlorite also? If it is not a typo then one could assume that the current usage rate of sodium hypochlorite would need to be increased by a factor of 14.3 to match the proposed future water intake. Could the applicant/EPA clarify which is correct? Will the EPA be setting a maximum daily/weekly/monthly/annual usage rate (tonnes/litres per time period) of sodium hypochlorite at a set concentration of solution e.g it is currently used at 14-15% solution. A situation cannot exist again whereby the licensee was able to use sodium hypochlorite at a level 230 times beyond what was originally conceived for many years and even after this was discovered by chance, the licensee is still not in breach of licence for this as it wasn't a stated licence condition. This cannot ever be allowed to happen again.

Not much is revealed in the application regarding the mode of use of sodium hypochlorite e.g continuous feed into the intake water at what volume/weight per hour? What is the target biocidal concentration of free chlorine in the coolant water that the applicant is aiming for? What is the residual concentration of chlorine being aimed for in the cooling water? It also states in the application that usage rate is dependent on river water temperature. So if there is a cut-off point in river temperature below which it is not used e.g industry norm is don't use biocide below 10 degrees intake water temperature then how many months of the year would that be? May to November? The effect of this would then be to concentrate the use of sodium hypochlorite in the remainder of the year its impact presumably into the important growing period within the ecosystem March-October.

Also are higher 'booster' doses of sodium hypochlorite given on top of the continuous feed (again another industry practice that is employed) and if so what would the booster dose be? Does testing at the SW2 discharge point happen after booster dosing if booster dosing is used or does it happen before booster dosing? The weekly test of discharge water for chlorine is not only almost pointless the chlorine has already reacted, but it could miss peaks in chlorine usage.

#### Marine Ecological Survey provided by applicant:

In relation to the Marine Ecological Survey I would like to point out several issues of concern which I believe render the report useless:

- There are no benthic, intertidal transects, and phytoplankton sampling locations on the western side of the estuary from Cheekpoint Southwards. This is remarkable considering the bathymetry of the estuary where the main flow of water hugs the

western side of the estuary south of Cheekpoint. Therefore, the sampling stations are not representative with the main flow of water and hence the movement of chlorine produced oxidants and chlorinated by products.

- The study does not actually quantify phytoplankton data but rather uses a qualitative scale and thus we cannot determine if phytoplankton quantities are suppressed below what one would expect from an estuary on the south coast. A quick look at the phytoplankton data from the Marine Institute weekly samples across oyster production areas in the southeast shows that phytoplankton levels in Waterford Estuary are many times lower than in Youghal, Dungarvan and Bannow Bays and this is exacerbated in the summers months.
- The spatial range of phytoplankton samples is so narrow (clustered close to the discharge location) and as such does not rule out that all the samples are very similar in that they all have been impacted.
- To say that the thermal plume prevents impact on benthic habitats may not be correct as particulates present in the water column can react with Free Chlorine/Chlorine produced oxidants to produce Chlorination By Products attached to particulate matter which can settle out to the benthic layer. The upper estuary has elevated suspended solids in part due to the high frequency dredging at Cheekpoint undertaken by the Port.
- What was the level of use of sodium hypochlorite use in the months preceding the Marine Ecology sampling dates?
- The report is based on a snapshot one-to day study and does not reflect seasonal impact. The profile of phytoplankton will change throughout the year and science has already demonstrated that different species of phytoplankton e.g dinoflagellates are more sensitive to CPO's. Also, species like oysters are more sensitive during the summer to additional stresses.

#### Water Modelling Report:

- Condition 5.7 in the existing licence dealing with emissions states that the mixing zone shall not exceed 25% of the estuarine cross-sectional area at any point. Figure 5.5 of the Water Modelling report submitted with this application showing the modelled Maximum chlorine concentrations (mg/l) throughout neap tides would appear to show a mixing zone greater than 25%. Indeed, it should be a prerequisite that sampling and testing for CPO's and CBP's should be undertaken across the full width of the estuary north and south of Cheekpoint. In addition, a dye release study from the discharge location SW2 should be undertaken to verify discharged water movement throughout the estuary. It would be our contention that water does move across the width of the estuary from east west following the main channel on an ebb tide and also from west to east following the main channel on flooding tides.



Furthermore, weather could exacerbate the spread of discharged water across the estuary, thus we also contend that it is impossible to meet condition 5.7 requiring the mixing zone to be less than 25%. Thus, fish passing up and down the estuary will at times have to pass through a curtain of CPO's or be prevented from passage as a result of avoidance of such chemicals. Also at high and low water movement is slack and we would contend also that discharged water from the power plant will traverse across the estuary from east to west in the line of the discharge and with its force. A full dye and drogoue study would be required across and full neap and a full spring tidal cycle to verify the movement of discharged waters in the upper estuary and indeed to determine levels of the dye that making it to other locations in the estuary. We would advocate that dosing with hypochlorite not take place during the course of those recommended studies in case the hypochlorite has any impact on the dye.

Alternatives that could be considered to reduce the impact of the applicant's activities on the marine environment:

Under the Natura Directive Stage 3 requires Alternative Solutions. Has the applicant done this and explained why the alternatives are not appropriate? Other power stations/researchers are looking at alternatives for example chlorine dioxide.

Chlorine dioxide as antifouling biocide results in reduced Trihalomethanes in condenser effluents at a coastal power station. Indian Journal of Geo Marine Sciences. Volume 45 (12), December 2106, pp, 1638-1644. Rajamohan, R. et al.

The Environment Agency for England and Wales in their evidence document looking at cooling water options for the next generation of nuclear power plants discuss the use of ablating hydrophilic polymer films and low free surface-energy polymer films the former requiring fast intake flows and the latter not as dependant on flow. Silicone-based coatings have been used in Japan with intake pipes being repainted every two to 4 years Trials in the US and Denmark silicone coatings continued to be protective in the fourth year after application. Imagine 4 years with no CPO's impacts. cupro-nickel coating system (paint) CuproprotectTM. Cupro-nickel paint This has minute (50 to 100 µm) cupro-nickel spheres is claimed to have a 20-year service life. Other studies have been done on low level voltage applied to intake piping and cooling water pipes to reduce biofouling.

Habitats Directive and Environmental Impact Assessment Directive

The applicant and the application documents fail to demonstrate beyond reasonable scientific doubt that there will not be significant impacts on the river Barrow and River Nore SAC. On a preview of the Natura Impact Statement the following failings and/or omissions are evident:

1. The NIS has failed to assess the impact of the known and admitted annual usage of sodium hypochlorite on the conservation objectives of the SAC.
2. The NIS has failed to assess the impact of the unlawful discharges from SW7 and SW8 on the SAC.
3. The NIS has failed to assess the cumulative impact of the development with other planned, permitted or existing developments within the estuary and in particular the ongoing dredging works by the Port of Waterford and the discharge of treated and untreated sewage by Irish Water into the estuary..

It is also notable that the application has not been accompanied by an EIS and it is respectfully submitted that an EIS is required for this project where it is evident that the project is likely to and is having significant effects on the surrounding environment. For example, impacts relating to water quality, air quality, marine environment, biodiversity, human beings and cumulative impacts with other developments on the SAC have not been assessed and/or properly assessed in the within application and it is submitted that these are all matters that the EPA must have regard to and assess in its consideration of the within application.

#### Summary

In summary I object to this application on the basis of the scientifically known negative environmental consequences of the use of sodium hypochlorite in the marine/estuarine environment and the lack of,

- a dye and drogue study to validate water movement across a full spring and neap tide,
- a lack of a sampling programme for CPO's and CBP's,
- a lack of wider and inclusive sampling points for phytoplankton (quantification of), sediment and transects,
- the lack of looking at alternatives such as those mentioned in my reply,
- the lack of accounting for in combination effects particularly with dredging activities in the port,
- Waterford County Council should be consulted too given the fact that the estuary is a shared waterbody.

I am also objecting to this application for a revision of the licence on the basis that the applicant has failed to comply with the provisions of the Habitats Directive and Environmental Impact Assessment Directive in the following respects.

- The NIS has failed to assess the impact of the known and admitted annual usage of sodium hypochlorite on the conservation objectives of the SAC.
- The NIS has failed to assess the impact of the unlawful discharges from SW7 and SW8 on the SAC.
- The NIS has failed to assess the cumulative impacts from all the developments within the estuary and in particular the ongoing dredging works but the Port of Waterford.

- The Applicant has failed to have regard to the provisions of the EIA Directive.

The above and the unknowns that I have asked questions about would surely invoke the precautionary principle. I would like answers to the questions posed. All of the signs are pointing to the fact that something isn't well in the ecosystem in Waterford Estuary e.g the disappearance of mussels on rocks and structures, the lack of mussel bed recruitment within the estuary, the very low phytoplankton levels, the abnormally high oyster mortalities compared to neighbouring bays in the southeast and the concerns of inshore fishermen. The Environmental Protection Agency must surely ask the applicant to commission objective further studies into the above and also must put this application to the public for consultation.

I await your comprehensive reply on the above very important concerns, as a matter of urgency.

Yours Sincerely,

  
Mr Paul Barlow

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Office of Environmental Sustainability,  
EPA Headquarters,  
P.O. Box 3000,  
Johnstown Castle Estate,  
County Wexford.

## Appendix 2

7 March 2022

**Re: Objection to Proposed Determination P0606-04 by Paul Barlow MD of Woodstown Bay Shellfish Limited.**

To whom it concerns,

This objection should be read in conjunction with my previous submission to this process dated 24 November 2020. The grounds for this objection and the reasons, considerations, and arguments on which the grounds are based are set out as follows.

**Ground 1 - There is no Planning Permission for the consented development**

1. The development that is the subject of the Proposed Determination ('PD') is a materially different development to that which was granted planning permission as file reference PA26.PA0016 by An Bord Pleanála ('the Board') on 29 July 2010, the reasoned conclusions of which the Agency is stated (at s.3 of its Inspector's Report) to have had regard to in undertaking its environmental impact assessment ('EIA') of the activity.
2. The development the subject of this PD, as described therein by the Agency is: "*a 795-megawatt (thermal input) gas-fired, combined cycle gas turbine (CCGT) power station located in the townland of Great Island, approximately 15km south of New Ross, County Wexford.*" The PD allows a maximum volume of chlorinated water to be emitted to the Barrow Estuary, through Emission Point Reference Number SW2-Condenser Cooling Water of 33,000 m3 per hour, which equates to a daily limit of 792,000 m3. The PD permits other chlorinated emissions to the estuary including at SW8-Cooling Water Screen Wash water which has a daily limit of 1,970 m3. Cooling water is to be abstracted from the estuary
3. The development that was the subject of the planning permission granted by An Bord Pleanála in 2010 was for a smaller output energy plant, described in the Board's Order as "*a combined*

cycle gas turbine (CCGT) power plant with an electrical output capacity of 430 megawatts (MW)". The planning permission assumed a maximum cooling water demand of 20,000 m<sup>3</sup>/hr (to be extracted from the estuary) which equates to 480,000 m<sup>3</sup> per day.

4. The proper planning and sustainable development of a 795 MW power plant at this location with its associated volumes of water abstraction for cooling purposes was never the subject of a development consent. There is no planning consent for the abstraction of what now amounts to nearly 800,000 m<sup>3</sup> per day of cooling water or the return of an equivalent volume of water to the Barrow Estuary in a chlorinated form or the increased incidence of fish impingement at the cooling water intake. The traffic implications of the current operation were never the subject of a planning permission including the substantial increase in transportation of sodium hypochlorite from the 5 tonnes per annum assumed in 2010 to the annualised rate of 1230 tonnes for 2019 reported by the licensee to the Agency by letter dated 25 March 2020.
5. By comparing the 2010 report of the An Bord Pleanála Inspector with the 2021 report of the Agency's Inspector, it is abundantly clear that the Environmental Impact Assessment conducted by An Bord Pleanála in 2010 for the purpose of granting planning permission was for a materially different project.
6. In circumstances where an application for a licence was made to the Agency in respect of an activity that involves development or proposed development for which a grant of permission is required but where the licence applicant cannot confirm that a planning application has been made, the Agency is obliged, under s.87 of the EPA Act 1992, as amended, to refuse to consider the application. The remaining grounds of objection are made without prejudice to this ground, the implication of which is that the Agency has no jurisdiction to grant a PD for the development proposed.

#### **Ground 2 – No proper public notification was made of this PD**

7. The notice published by the Agency to inform the public of the making of the PD failed to identify to the public the true nature and scale of the project being consented and how it has significantly increased in terms of power output and water abstraction and discharge of chlorinated and ammonia rich cooling water since the previous EIA process. It should have been made clear to the public that this is a 795 MW power plant, not the 430 MW power plant on the same site that was the subject of an EIA in 2010 and that the water abstraction and discharge has almost doubled since An Bord Pleanála was last involved.

#### **Ground 3 – No Environmental Impact Assessment**

8. The Agency's Inspector was wrong to conclude that because the planning permission was granted before 16/05/2017, the Agency's assessment should be undertaken in accordance with the requirements of Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment ('the 2011 EIA Directive'). The development

that is the subject of this consent process is a new project that represents a significant increase in power generation capacity and significantly greater environmental footprint than the project previously permitted. Directive 2011/92/EU has been amended in 2014 by Directive 2014/52/EU and the consolidated EIA Directive ('the 2014 EIA Directive') ought to have been the basis of the Agency's EIA, and the EIA conducted by the Planning Authority for any new planning application.

9. Complaints of impacts to marine life in the estuary and in European sites from this power plant have not been properly addressed and no proper regard has been given to the views from the aquaculture and fishing industries that the discharge of excessive loadings of chlorine and chlorine compounds and ammonia rich water to the estuary has for some time been having a negative impact on certain species. The Agency has no knowledge of the concentrations of chlorine or volumes of chlorinated water or ammonia discharged through SW8 for the many years it was operated in non-compliance of the current licence, or the environmental impacts of those or other unauthorised discharges or the impact of compounds formed when the sodium hypochlorite reacted with ammonia in the discharge for example. There has been no environmental impact assessment of any damage that may have already been done.
10. The reputational damage to producers and aquaculture brands that rely on a pristine and healthy marine environment was not considered in any assessment of material assets or human impacts.
11. The Agency failed to consider the cumulative impacts of the surface water emissions from this plant with other emissions to the estuary now and in the past.
12. The Agency ought to have considered the non-compliances with the current licence before issuing a PD that relies heavily on self-regulation, including the failure to report to the Agency ongoing discharges of chlorinated water from SW8. It is not clear why the recommendation of Inland Fisheries Ireland for continuous monitoring of chlorine concentrations in emitted discharges was not implemented by condition in the PD or why the licensee is to be trusted to properly report chlorine emissions into the future when it didn't in the past. It is concerning that no chlorine limit or volume limit at all was placed on *SW13-Process Waste Water*. It is not beyond contemplation that a company that has already failed to report an unauthorised discharge for over a decade would utilise a liberally permitted discharge point for more than one effluent.
13. No alternatives to the cooling water intake system were considered for the purposes of minimising impacts to fish species, despite the existence of the following condition in the planning permission:

*Final detailed measures (other than the reduced cooling water requirement which is a natural consequence of the combined cycle gas turbine), as proposed at the oral hearing, to minimise the incidence of fish impingement at the cooling water intake shall be submitted to, and agreed in writing with, the planning authority prior to*

*commencement of development. The agreed measures shall be installed prior to commissioning of the new generating plant. Reason: In the interest of orderly development.*

#### **Ground 4 – Best Available Techniques were not applied**

14. There is an assumption in the PD that BAT was established in 2001 and never moved on. There is an obligation on the licensee to provide best scientific information to the process and for the Agency to insist on it. It is a failing of this process that the interpretation of 'BAT' for emission discharges is 'stuck' in 2001, even though alternatives to chemical dosing were being identified as BAT by then.
15. In any event, the project as consented in the PD does not comply with BAT as set out in the BREF for Industrial Cooling Systems of December 2001 (Reference Document on the application of Best Available Techniques to Industrial Cooling Systems).
16. Paragraphs 2.3.1 and 2.3.2 of Annex VI of the BREF document suggest that the residual chlorine limit for Chlorine dioxide, chlorine and bromine (expressed as chlorine) should be no more than 0.3 mg/l whereas the Agency in its PD has allowed a limit of 0.3 mg/l for 'chlorine'.
17. The Agency has had no regard to the alternative and non-chemical cooling systems set out in Annex XI of the BREF document, which have evolved in the 21 years since publication.
18. The PD does not control or monitor the site specific implications of the proposed, existing and past chlorination due to the following reactions summarised in the BREF document:  
*From both the chlorine gas and the sodium hypochlorite solution, the most active chemical species is the non-dissociated hypochlorous acid. This is a very reactive oxidising agent and reacts with most organics in the water to form the trihalomethane (THM) chloroform (3-5%) and other chlorinated organics. Free chlorine can also react with ammonia to produce chloramines or with diverse dissolved organic compounds forming different types of organ halogenated compounds (such as THM, chlorophenols).*
19. The PD has not incorporated the conclusion in the BREF document that it is not necessary to dose biocides when water temperatures are lower than 12°C.
20. The appropriate duration of sodium hypochlorite dosage in site specific conditions is not addressed in the Inspector's Report or limited in the PD. The assumption that dosage can occur on a continuous 24 hour basis or as unlimited 'shock dosing' is not compliant with the BREF document.
21. There was no application of BAT to water abstraction. The 'final detailed measures' to minimise the incidence of fish impingement at the cooling water intake to be agreed in writing with the planning authority prior to commencement of development and installed prior to

commissioning of the new generating plant ought to have represented BAT but were never implemented.

#### **Ground 5 - No Appropriate Assessment was conducted**

22. No AA screening was conducted. It is not clear to the public the basis on which the Board decided that there will be significant impacts on the conservation of species or habitats in the River Barrow and River Nore SAC (002162) and Lower River Suir SAC (002137).
23. No AA was conducted. There is a conclusion statement and a list of conditions that purport to mitigate against likely impacts but there is no assessment that can give the public any reasons for the conclusion and no comfort can be derived from what is a formulaic conclusion.
24. The impacts on conservation interest species of the affected European sites including salmon, lamprey, and Freshwater Pearl Mussel, of the water discharged to the estuary in the past, present and future has not been assessed in compliance with the requirements of Article 6 of the Habitats Directive and the related rulings of the Court of Justice of the European Union.
25. The Inspector, in dismissing the obligation to assess the environmental impacts and effects of the abstraction of water into the system has failed to recognise the relationship between the water discharged and the water abstracted. The substantial increase in volumes of discharge water being permitted in this PD has an equivalent intake volume, the impacts of which have had, are having and will have a severe impact on fish species caught up in the abstraction, and this has not been assessed. No AA was conducted by the planning authority in 2010 on the scale of water abstraction required for the very different project that is currently the subject of licence review and the impacts of such abstraction.

#### **Ground 6 – No regard has been had to achieving Water Framework Directive objectives**

26. The Inspector recognises that the installation is located at the intersection of three Water Framework Directive (WFD) waterbodies (map Appendix 1) and that the three transitional waterbodies have been characterised as at risk of not meeting good status. But the statement by the Inspector that the installation at Great Island *“has not been identified as a significant pressure”* is incorrect.
27. The 3rd Cycle Draft Colligan-Mahon Catchment Report published by the EPA in August 2021 identifies in relation to the Barrow Suir Nore Estuary waterbody (IE\_SE\_100\_0100) multiple pressures and incorporates ‘recommended areas for action’ in relation to a submission by BIM in relation to *“Shellfish Protected Areas, Norovirus impacts, concern re sodium hypochlorite use (point source), important inshore fisheries”*.



28. The scale of concern from experienced members of the fishing and aquaculture industries in relation to unregulated and self-regulated discharges to the marine environment from this plant is by itself an identification of significant pressures on the meeting of the Water Framework Directive objectives from the installation.
29. The reliance on the Marine Institute assessment of the average dissolved concentrations for metals in shellfish waters for the period 2016-2019 and the microbial quality in shellfish flesh for 2018 is insufficient as the MI assessment fails to address impacts to shellfish from the discharge of chlorine and chlorine compounds into the estuary or the elevated consumption levels of sodium hypochlorite.
30. The reliance on the Waterford Harbour Pollution Reduction Programme (2012) conclusion that the key pressures on Shellfish were from urban wastewater systems, on-site wastewater treatment systems and agriculture is significantly outdated.
31. It is not clear why the recommendation of Inland Fisheries Ireland for continuous monitoring of chlorine concentrations in emitted discharges to the waterbody was not implemented by condition in the PD.

**Ground 7 – this is not a full licence review**

32. The licence review was restricted to discrete areas identified by the power plant operator. A full review of the Industrial Emissions licence for this installation is long overdue.

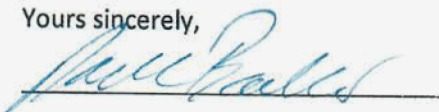
**Ground 8 - The public has not had an opportunity to fully participate**

33. The complaints from the fishing and aquaculture industries in relation to impacts on marine life coincide with a period over which the licensee has admitted using volumes of sodium hypochlorite significantly in excess of the volumes assumed when the 2010 EIA was conducted by the EPA and the Board.
34. The EPA is in effect granting a form of retention consent for the unauthorised discharges and unassessed chlorination of the past without conducting any assessment of those impacts. The public should be allowed to properly participate in any such assessment.
35. The Agency is placing too much emphasis on a 'BREF' document that was published more than 2 decades ago. Scientific knowledge has improved since then. The fishing and aquaculture industries and related environmental NGOs have not had a proper forum to allow them present modern scientific evidence to the process or to interrogate, through experts, the licensee's proposals.
36. An Oral Hearing is essential to ensure full participation of the public. Any public notification of an Oral Hearing should properly inform the public of the nature and scale of the development that is the subject of the licence review and the extent to which the project has

changed since the last EIA was conducted in 2010. This participant formally requests an Oral Hearing.

Enclosed please find the appropriate fee for this objection plus the additional fee for an Oral Hearing. If you have any queries in relation to this submission, please do not hesitate to contact our offices.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "Paul Barlow", is written over a horizontal line.

Mr Paul Barlow

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## Appendix 3



**Sent: 08-11-2022**

**To: Paul Barlow**

**From: noreply Reply**

**Acknowledgement of an Invalid Objection on EPA Licence Application –  
SSE Generation Ireland Limited (Great Island) - P0606**

**Dear Sir or Madam,**

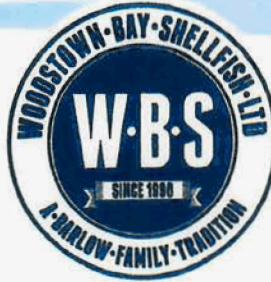
**The EPA acknowledges receipt of your objection received on 08/11/2022, in relation to the above referenced proposed determination/decision which issued on 09/02/2022.**

**The last date for the receipt of objections and/or an oral hearing request in respect of this licence application/review was 08/03/2022. As your objection was received by the EPA either after this date or did not include the appropriate fee, the EPA cannot consider your correspondence as a valid objection in relation to this licence application/review.**

**The EPA is committed to openness, fairness and transparency in its decision making process and all documentation relating to this licence application will be available for inspection on the EPA's website [www.epa.ie](http://www.epa.ie).**

**Yours faithfully,**

**Environmental Licensing Programme  
Office of Environmental Sustainability  
Tel: 053 - 9160600**



EPA,  
Johnstown Castle,  
Wexford,  
Y35 W821.

08<sup>th</sup> November 2022

CC: [Minister.Ryan@decc.gov.ie](mailto:Minister.Ryan@decc.gov.ie) , [grace.osullivan@europarl.europa.eu](mailto:grace.osullivan@europarl.europa.eu) , [licensing@epa.ie](mailto:licensing@epa.ie),  
[B.Shanahan@epa.ie](mailto:B.Shanahan@epa.ie) , [info@epa.ie](mailto:info@epa.ie) & [B.Kissane@epa.ie](mailto:B.Kissane@epa.ie)

**RE: Licence Review Great Island Power Station P0606-04.**

Dear Sirs,

We write to you in relation to the above-mentioned licence review application submitted to the Agency by SSE Generation Ireland for its installation at Great Island Power Station on the 29<sup>th</sup> September 2020.

We made comprehensive submissions to this application first on the 24<sup>th</sup> November 2020 and then again on the 07<sup>th</sup> March 2022. We requested and paid for an oral hearing due to the very serious concerns we have about the impacts this installation is having on the surrounding marine environment and our shellfish production business, that request for oral hearing was sadly denied by the Agency. In its refusal to our application for an oral hearing the Agency stated that "the objections do not raise new issues or introduced significant new information" and therefore the material submitted could easily be assessed by a "Technical Committee". Furthermore, we have now been notified by letter received from the EPA this week dated the 01<sup>st</sup> November 2022 that the Agency is extending its timeframe for determination of this application due to the "complexity and nature of the information to be considered in the determination of the objections".

There has been a significant change in position from the time of the Agency's refusal of our requested oral hearing and now its position requiring additional time to properly consider the application due to the **complexity of the information submitted in the objections**. The Agency was provided with an opportunity to learn more about the very serious issues raised in our "complex" objections/submissions during an oral hearing, which we believe the Agency was wrong in refusing. Another important point to note is that the Agency's letter refusing oral hearing stated that the objections received did not raise "new issues" this is even more worrying. The issues surrounding the operation and oversight of this installation has been an ongoing issue in the Waterford Estuary. The installation is having a major impact on the surrounding marine environment. Its worse for the EPA to admit that these objections/submissions being raised by local stakeholders, businesses and

environmental conservationists are less important due to the long-standing nature of the complaints being submitted.

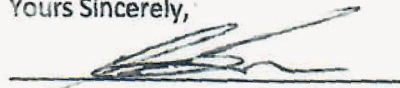
The issues in relation to the environmental impacts at the Great Island plant have been highlighted in the media on several occasions last year. Green Party MEP Grace O'Sullivan commissioned a report after contacting the EPA last year out of concern over serious water quality issues in the region, stating that monitoring of the impact from certain bleaching chemicals by SSE at Great Island risked being "neither accurate, nor representative of the water quality throughout the year" in the Estuary. The environmental pollution taking place at the installation is of serious concern to local stakeholders and it is extremely worrying that the EPA is permitting and licensing this ongoing pollution, which is leading to serious shellfish dieback and large-scale mortalities in the Estuary. These chlorine type chemicals and screen wash/coolants chemicals are lethal to marine species and are purposely used with the intent of killing these species.

The Environmental Protection Agency (EPA)'s newly released "Water Quality in Ireland Report 2016 to 2021" reveals that half of all water bodies in Ireland are in an unsatisfactory condition, with significant declines in water quality being recorded over the last five years. The evidence presented in this report clearly shows that the goal of restoring all waters to good status by 2027 will not be achieved. The report also stated that several water bodies are being impacted by chemical pollution. Some rivers in the east are still suffering from the effects of historic chemical pollution leading to toxic lethal impacts.

There is clearly very real and serious pollution in the Waterford Estuary, which is being tolerated by the Agency to the detriment of the marine ecosystem. The Agency's refusal of our application for an oral hearing is preventing us from having an opportunity to demonstrate the impacts this installation is having on shellfish production within the Estuary. Furthermore, the actions of the agency to prevent further abuse by this applicant is forcing us to consider seeking injunctive relief and or judicial review proceedings through the courts.

The Agency has denied us an oral hearing, denied us answers to questions we have submitted to the Agency (by email to Mr Billy Shanahan on the 18<sup>th</sup> August 2022) and is denying us clarity and transparency in relation to the extensive construction works carried out during 2022 while the installation was out of operation. The actions of the Agency are extremely suspect in relation to this application and their ongoing oversight of the operations at Great Island. This application is now ongoing for more than two years, we have been denied access to crucial information at all junctures and there have been significant alterations and construction works conducted at the plant this year, yet no additional information has been publicised in relation to planning permissions and no new applications have been submitted in respect of the changes made to the plant by the applicant.

Yours Sincerely,



Mr Paul Barlow