



Submission

Submitter:	Karin Dubsky
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Application

Applicant:	SSE Generation Ireland Limited
Reg. No.:	P0606-04

See below for Submission details.

Attachments are displayed on the following page(s).

Mr Pdraig Dunleavy

Manager,

SSE Great Island

Co. Wexford



21st April 2021

Re: Halt SSE water abstraction and cooling water discharge until compliant with existing license or until SSE Great Island Generating Station P0606-04 licence is reviewed

Dear Mr Dunleavy,

The biodiversity and water quality of Waterford estuary - the second largest estuary in Ireland - with 2 Natura 2000 sites is deteriorating and under continuing threat. Coastwatch has been working with other eNGOs, community, fishing and aquaculture interests over the last 2 years to get a better understanding of pressures and augment official monitoring and assessments with citizen science, so that we can support protection and restoration of the ecosystem functions and key features.

The more we have looked at SSE water abstraction and discharges the more concerned we have become. You have been in breach of several IPC license conditions from the day you opened your gas fired station in 2015.

One such example of your noncompliance with the conditions of your licence is the water abstraction without the mandatory fish deterrent.

It was acknowledged back in 2011 in the ABP inspector's report that 'the main risks being direct damage to Annex 2 fish species and their larvae from impingement on the cooling water intakes'. This was to be mitigated by significantly reducing the volume of water abstracted and by the planning condition to install a fish deterrent before commencing operations. However the volume of water abstracted was then revised upwards in an EPA license amendment and the mandatory fish deterrent wasn't installed. This has meant that fish species, which are already reduced to precariously low numbers, have to pass your huge water abstraction site (up to 792,000 m³/day; EPA license P0606-03) in their migratory passage between the sea and the three sister rivers.

This ongoing pressure on threatened fish species for which both Lower River Suir and the Barrow estuary Natura 2000 sites were designate isn't all. You then return the abstracted water back into the estuary, heated up to 12C above ambient, with altered pH and significant volumes of antifouling biocide added.

While it would appear that your licence permits the release of up to 5 tonnes of Sodium Hypochlorite biocide per annum, the fact, on your own evidence, is that annual volumes in excess of 1,000 tonnes have been discharged into the estuary with the returned cooling water. In our professional opinion this level of gross exceedance in biocide of heated discharge water is likely to be a significant factor in the death of estuarine species - especially planktonic stages of some. Mass death of a range of molluscs have been recorded most summers since you started operations. In this context, it is worth noting that at the time when the estuary was designated as an SAC under the Habitats Directive - there were large mussel beds forming biogenic reefs around the power station. Now there are none.

We have tried to work through the EPA enforcement section to have these issues of noncompliance rectified and have better understanding of possible cumulative impacts of several stressors. While some progress has been made it is simply not enough to protect, never mind restore this estuarine ecosystem and the species for which the Natura 2000 sites were selected.

Having run out of all options we have sought legal advice and are now requesting that you forthwith halt the abstraction and hence discharge of cooling water into the estuary until such time as you are in a position to at least comply with your license or go beyond that. This is urgent and fish migration is likely to start on the next spring tide (hence April 25th) or the one after that if the weather is unsuitable and the migration of twaite shad and salmon smolts is delayed.

If you halted abstraction and minimised light pollution now, at this critical time then it would:

Ensure that the fish species for which the estuary is designated are no longer put at risk of being sucked up with the cooling water and killed in the critical migration period. Specifically: it would

1. Make the migratory journey of the Twaite Shad up to its spawning grounds past your station much safer (May and June) while halting resident juvenile shad loss due to water abstraction and damage from biocide in cooling water.
2. Save Salmon smolts which run down to the sea and pass this pinch point where the River Suir and Barrow- Nore meet. They would not be exposed to the double pressure of being sucked up into the SSE water abstraction stream, or if avoiding that, being picked off by predators as the bright SSE lights shine over the water surface, marking the smolt flapping areas.
3. Benefit the migratory eels which have already arrived in the estuary and will be moving up through later in May.
4. Ensure that there is no heated bleach enriched discharge water killing estuarine biota including the planktonic mussel larvae from remaining clumps of adult stock in the estuary.
5. Show that you are making an effort towards conservation of the habitats and species for which these Natura 2000 sites were designated.

The Salmon smolt are in the rivers and waiting for the right conditions to make their way to sea. If the weather changes and we have high river flow plus spring tides the conditions are ideal.

‘The conservation status of Twaite Shad in Irish rivers is unfavourable; their populations are small and declining’ as by latest IFI assessment and ‘unfavourable – bad’ in the latest Art 17 report to the EC) Its dwindling resident juvenile population in the estuary is likely to have suffered further decline by the unprecedented sprat fishing effort last winter. The glass eels which have come in belong to a species which is now critically endangered.

We are asking you to halt water abstraction by **April 25th 2021** to allow these fish to pass. While your license set that you were to have fish deterrents in place before starting your operation, **now coming into the peak migration period for the most threatened species is not the time to try it, as if it's too disruptive this too will affect the fish passage past your station.**

Mr Dunleavy, Coastwatch is more than happy to highlight your efforts to contribute towards estuary protection and restoration if you are willing to take this critical and necessary first step, which we had hoped the relevant authorities would have insisted upon, and are available to you by phone or zoom meeting to discuss any detail. However and as you will appreciate we are determined to protect the estuary and the key species for which it is protected at this time and that determination will not and cannot be compromised where we are on notice of adverse impacts which threaten the protection and viability of the conservation objectives of the Natura 2000 sites into the future.

We await your immediate reply to this letter and in the meantime the very best to you.



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Some Background information is attached

The Waterford estuary eNatura 2000 sites are declining in quality, both from the water framework directive and Habitats Directive point of view.

In a nut shell that is because pressures have increased over the past 2 decades in an estuary divided between 3 local authorities and umpteen government departments and agencies responsible for aspects of management and the option of enforcement but with inadequate overview and no joint management plan with restoration goals.

SSE is one of the larger point sources of pressure. While by no means the only one, SSE is not complying with its license and if SSE was to stop water abstraction now - even initially for 1 month - then that would contribute towards the twaite shad and eel survival in the estuary at its most critical time in the spawning/migration period. It would also support mussel stock recovery as the planktonic and most sensitive spat settlement stage would not be killed by bleach. Further hot spots for action will come during hot spells and when salmon starts to move.

Cumulative Impacts:

Since Endesa which SSE bought, obtained its EPA IPC license, a number of other pressures have increased in the estuary including:

- Waterford Port company were facilitated with a DAS license which permits more plough dredging and for longer periods increasing the turbidity and silt in the water column.
- With climate change water temperature is rising and we have had several years of hot spells, where your cooling water is still permitted to continue discharging warmed water with bleach into an already extremely heat stressed system.
- Instead of the original max 25 000m³/hr the amended licenses allows 33,000m³/hr¹(TC for PO606-03) abstraction - still with the same max temperature and bleach concentration in the now much larger discharge.
- For certain fish species an extra pressure arose last autumn when unprecedented sprat fishing took place from October 2020 into January 2021. The one species likely to have been impacted most is twaite shad, as juvenile twaite shad live in the estuary and prey on sprat.

Action:

Given that Twaite shad are already at 'unfavourable poor status' in Ireland and there are only 2 estuaries designated for this species, it is imperative that a real effort is made not to lose but to restore the population of this iconic fish. That means at least halting damaging activities while adults are migrating from the sea up the estuary to their spawning sites.

Adults start moving up the estuary as we come into spring tides with spawning peaking on a full moon. If weather is suitable then that would be from around April 23rd to be around the spawning site for the full moon on April 26/27th

That means a closure from April 23rd for migrating adults.

- The protected **Twaite shad** spend their juvenile stage in Waterford estuary and prey on a range of organisms including young sprat when the shoals come in. Young twaite shad cannot be told apart from sprat by visual inspection and hence the SFPA who carried out the visual inspections of landings over 5000 tonnes of sprat caught in the estuary and twaite shad prey on young sprat.
- spawning population going up the Barrow Nore catchment has to pass your power station and risks being sucked up at the intake for cooling water.

HEAT Waves

¹ 33,000 m³/hr also expressed as 792,000 m³/day elsewhere in license

We have observed mass death of estuarine organisms like Scrobicularia, mussels and cockles as well as aquaculture oysters with neither SSE nor state authority making great efforts to identify the causes.

The Great Island SSE power station, protrudes into the core of the Barrow estuary SAC - and is adjacent to the Lower River Suir SAC. It represents one of the pressures on the estuarine habitat and select species for which the estuary was designated. In heat waves organisms are stressed and any added pressure from a cocktail of extra heat (10 C above ambient by license) and change in pH and bleach have not even been assessed but are certain to be an extra pressure.

The EPA screening determination letter of Jan 28th 2021 does not give a time limit for providing an EIS and as it stands SSE continue to operate in breach of their current licence with no visible consequences. We also note that the present license does not have a reporting obligation in respect of cooling water intake and bycatch of protected fish species. More than a year ago we were told that the EPA has asked the company for fish impact studies but as of today they do not have a report. Operating in the 'acknowledged non-compliance but with no consequence' zone as practised now is bad for nature.

We are in an **interim period until a decision on a new license is in place.**

We talked to inshore fishermen and members of local communities in Wexford, Kilkenny and Waterford who take an interest in the Waterford estuary as our second largest estuary and Natura 2000 site complex. It is stunningly beautiful, complex and biodiverse, boasts high value archaeology, geology, history and heritage, landscape, bathing and shellfish areas. It has extraordinary eco – and educational tourism potential. As yet there is no CZM or MPA management plan or site conservation measures. So umpteen interests gnaw at it on all sides. Demands are not assessed cumulatively and we are losing quality, heritage in the small fringe wetlands, the ecological linked little units as well as the main estuary.

Realistically we concluded, there won't be good water quality under the WFD, or favourable conservation status for key habitats and species and no thriving coastal communities if the approach doesn't change radically.

A note on the protected fish species

The national status of the species for which the Waterford estuary was designated relevant to both Barrow and L River Suir SACs is 'unfavourable status - insufficient' for Sea Lamprey and unfavourable – bad for Twaite Shad and Atlantic Salmon in the last Irish Art 17 report to the EC in 2019 https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol1_Summary_Article17.pdf. The IFI presentation on these fish and eel protected under separate law in autumn 2020 Coastwatch zoom event confirmed a bad status for Salmon, twaite shad and eel for the Waterford estuary.

Twaite Shad *Alosa fallax* protected under both Annex II and IV of the EU Habitats Directive has three sites in Ireland where it regularly occurs and all 3 are designated as SACs for it. While data has far more gaps than we would like, this fish is known to spend juvenile stages in the estuary, while adults live in coastal waters. Adults then need to migrate up, right past the SSE plant area to the fresh water spawning areas. It is vital that we protect remaining fish on their migration journey and that we set measure in place to restore the population.

When large volumes of water are pumped out of the estuary into the concrete chamber which is right in the SAC, juvenile and migrating adult fish get sucked into the pipe and die at the grids, or if small enough wash through the grids and come out topped and tailed in the cooling water discharge pipe area. We have photos of fish which could be Twaite shad and may not be. Incredibly there isn't even fish ID and biomass monitoring requirement in the current license.

Salmon *Salmo salar* are protected in this estuary under the Annex II and V of the Habitats Directive and also in the adjacent River Suir SAC. The Barrow, Nore, Suir populations are still in poor status with no fishing. We would expect smolt to run down into the Waterford estuary from spawning sites as soon as the river flow increases with a change of weather and spring tides.

Careful management of all pressures would encourage recovery. Large scale water abstraction while migrating adults and smolts pass is an annual uncontrolled pressure. So is a plant lit up like a city for a fish which wants to avoid predators and prefers travel in dark nights.

Eel: is the third species we would like to flag as known to get caught in the abstraction water when spending time in the estuary in suitable intertidal and shallow sublittoral muddy habitat around the station abstraction point. The eel is deemed to be critically endangered worldwide. The heritage eel fisheries has been totally closed under eel regulations for over a decade now and that is well enforced.

From a social point of view it is upsetting to see heritage salmon and eel fishermen prohibited from even catch and release, but see your large power station brightly lit, abstracting a huge volume of water in the same area without even the obligatory fish deterrent.

This is a bad for the stocks, not in keeping with Habitats Directive assessment requirements and glaringly unjust.

River and Sea lamprey: Both are known to spend time in the estuary but far too little is known about where juveniles spend their time and whether adults coming back to spawn get caught in the SSE water abstraction stream or indeed what the impact of bleach laden cooling water is on say the Campile pill area. Sea lamprey is declining and conservation status is unfavourable.

Given these unknowns and the legal obligation for the fish species in the estuary a halt to the once-through cooling water abstraction in the Barrow, Nore Suir estuary would seem like an obvious option to consider. Especially as there are other cooling system readily available. So we cannot understand why it wasn't considered earlier.

This massive water intake, use and discharge to the estuary would appear to be the cheapest for a large international company which currently boasts its greenness every night on RTE television and has major expansion plans in Ireland.

Very few new power plants use once-through cooling, because of the disruptions such systems cause to local ecosystems from the significant water withdrawals involved. Large scale water abstraction right in the heart of this SAC complex is not compatible with protection and restoration of threatened fish species.

In our submission on the license application, we urge that this power station only be licensed for a dry cooling process which requires minimal water abstraction. When that happens we will not have the problem of cooling water discharges to the heart of the SAC at times in summer when many species are already heat stressed. And there will be no need to argue about the >1000 tonnes of sodium hypochlorite added to cooling water discharges.

In the interim - while waiting for an EIS which will inform the new process - we want to see water abstraction halted as far as possible. In other words the plant should be shut until it has a cooling water system which is fitting for an MPA of this importance for threatened fish species.

If it is not possible to do without the plant in our current electricity supply system which is an overriding public concern, then at least we need to avoid abstraction times at key points in the life cycle of the threatened protected fish species and we need a halt to use of bleach now.

For now, the most important is an immediate halt to provide safe passage for twaite shad, salmon smolt and eel.
