



**Local Community Due Diligence
On the Applicant Claims about the Performance,
Benefits and Adverse Impacts of Rampion 2**

**Written Representation to the Rampion 2 Examination Authority (ExA)
On the Development Consent Order (DCO) Application**

**Submitted by Protect Coastal Sussex (PCS) in affiliation with community groups and civil
society organisations on the Sussex Coast and project affected inland areas**

**PCS: IP Registration Number: 20044835
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Submitted By:

The Secretary
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Preface

This Representation offers due diligence and perspective to help the Examination Authority (ExA) and Interested Parties (IPs) consider the Rampion 2 Application.

Due Diligence is routine on a £3-4 billion infrastructure investment. It typically covers all aspects of the benefits and risks for investors. The same principle applies to local communities who would essentially be required to host the Rampion 2 project, if consented, and ultimately pay for the development costs through local electricity bills and taxes, including the commercial investors' rate of return, the cost of investor incentives, public risk guarantees and the CfD subsidy.¹

We view this as important and relevant in the Rampion 2 case, especially considering how Rampion 2 proceeded through a pre-Application process that was so challenging for everyone, not the least including Covid-19 restrictions on meetings and social interactions.

The purpose and relevance of this written representation is thus threefold.

1. To highlight what many see as the Applicant's claims about performance, benefits, and adverse impacts of Rampion 2 infrastructure that we believe lack credibility, and thus mislead and misinform stakeholders;
2. To highlight how that contributed to what we witnessed as a "chilling effect" in the planning context. That is where residents, groups and organisations ended up less informed about the actual project being assured that it is a simple extension to an existing installation. As one consequence many were disinclined to object, or to even participate in the DCO process; and
3. To otherwise help inform the key judgment the ExA will make on whether the "adverse impacts of Rampion 2 outweigh its national benefits".

This is one of three Written Representations that Protect Coastal Sussex (PCS) offers the ExA and all stakeholders to help in the complex task of weighing and balancing the benefit-risk tradeoffs of the Rampion 2 Application.

We sincerely hope the Examination Authority can consider the facts and perspective offered herein to inform its recommendations to the Secretary of State.

¹ Contract for Differences (CfD) is the subsidy that replaced the Renewable Obligation Subsidy in 2017 for commercial offshore wind developers. The upward limit of the CfD was raised by the UK Government by 66% in Sept 2023.

Summary

This written representation offers a due diligence on claims the Applicant has made in statutory consultations and in the Application about the performance, benefits and impacts of the proposed Rampion 2 windfarm development that we believe lack evidence and credibility.

Some significant claims are concerning in several important respects, one of which is the demonstrable “chilling effect”, in a planning context, that we observed on the appetite for engagement in the Applicant-led pre-application consultations, as well as to influence whether people registered as interested parties for the Examination to contribute in a meaningful way.

While that chilling effect served to put off many people from objecting who otherwise might have objected, it also shaped the nature of comment and feedback on the proposed design, as well as actual awareness of the likely scale and significance the adverse impacts Rampion 2 would have on residents and communities, the character of the area and nature.

The concerns are both in terms of where we believe the Applicant has significantly inflated or exaggerated the benefits in terms of the performance of the infrastructure and role in the power system given its variable output, and at the same time, understated the adverse impact.

The understatement of adverse impacts is reflected in a number of the Principal Areas of Disagreement (PAD) statements of statutory consultees. There is a Local Impact Report (LIR) mechanism to address adverse impacts. The exaggeration of performance in terms of power and energy and carbon reduction, where most of the benefits derive, is a more problematic issue.

Benefits are largely “assumed” and ride on the fact we all want more renewable and low emission generation. Moreover, the Applicant’s claims as regard to national benefit have gone without scrutiny and accepted at face value unchallenged.² What the developer claimed is not challenged, and its narrative was free to shape what people's impressions of the Rampion project are today.

On the inflation of benefits of Rampion 2:

Up to the time of the Application, the applicant was indicating the power benefits were that Rampion 2 would supply the power requirements of Sussex, across all sectors. This claim was made in project community liaison group (PLG) meetings consisting of town and parish council representatives and undoubtedly also in the remote online briefings to Councils and other statutory consultees.

When in reality, at times there would be no output or very low power at all, while at other times there would be full capacity supply.

² There was no opportunity to really challenge or refute the claims made about the likely national benefits in the pre-application consultations being Applicant-led, where authorities at all levels remained silent for various reasons including the need for impartiality. Questions raised in that regard were ignored by the Applicant. The Reality is very few people in the statutory consultant groups or the ExA have technical expertise or experience to enable them to scrutinize the benefit claim areas such as power system benefits, or impacts on power system price or actual effects in respect to reliable and secure power supply and the inherent intermittency of Rampion output.

When the Application was filed the benefit claim changed in the Applicant's Press Release to "*Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over*". Which would also be nice, if true; but of course at times no or little output is available, whereas at time more power.³ We present information on that aspect in the main part of this Representation and in the Annexes.

There were also claims about that number of households supplied, cited in the promotion literature and on the Applicant's website that are based on national figures for average annual household electricity use, not figures where West Sussex annual household demand is 33% higher than the national average. Thus, the million households served would be 30% lower. Due diligence would also question whether the Applicant has taken into account the increase in electricity needed per household due to mandated electrification space heating (electric heat pumps) and the charging of electric vehicles (EVs); either nationally or in Sussex.

A far more significant aspect is the Applicant claims Rampion 2 will reduce UK carbon emissions by around 1.8 million tonnes/yr implying over its economic life. Rampion 2 will operate 2030-2050 or so, then be decommissioned or replaced after a 20-25 years of economic life. Though in fact, using standard methodologies the carbon benefit from Rampion 2 would only be for 5 years, 2030 to - 2035, if consented.

That is because the UK power sector is to be fully decarbonised by 2035 (NPS). There will only be low emission generation supplying the national grid from 2035 on. That will include renewables and NetZero read gas-fired power stations with full carbon capture⁴(and hydrogen ready) and nuclear such as small modular SMRs in the mix).

Rampion 2 will not displace carbon after 2035. In those terms, Rampion 2 will only compete with other low emission generation sources on a price and power system impact basis – i.e. what may be needed to keep the lights on, the grid system from collapsing and at what cost to society and the environment. It is not a nuanced point. Rampion 2 will simply be part of a complementary low-emission generation mix.

As to the claims about CO2 reduction over its life, due diligence would suggest that, as Rampion 2 only offers 5 years of carbon emission reduction benefit (2030 to 2035), the calculation of all the imbedded CO2 in Rampion 2 in the mining, processing, smelting, manufacture, construction, operation and maintenance would be helpful. That would help understand if greater or lesser CO2 emissions are imbedded than the 5 years savings (10 million tonnes at the assumed 2 million tonnes CO2 a year to 2035 (i.e., considering the quantum of rare earth and critical minerals mined and steel and concrete involved in turbines and the offshore and onshore works).

That is important again in due diligence on the Applicant's claim that Rampion 2 is essential to save nature and ecosystems by reducing carbon emissions, as in its promotional literature. There is a trade-off against the disruption and harm to ecosystems that construction and operation entails, where all adverse ecological impacts, marine and terrestrial, certainly cannot be mitigated as accepted in the NPS and PAD Statements.

³ Load duration curves show 15% of the time equivalent on average to 1 day a week there is no power from Rampion 1. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% of its installed capacity. Rampion 2 located in the same wind regime will perform similarly though slightly better due to its larger size.

⁴ Also called abated gas-fired generation. Abated meaning no carbon emissions from gas turbines as a point source emitter similar to the NetZero 750 MW Teesside power station consented in Feb 2024. Gas turbines may be hydrogen ready and otherwise multi-fuel.

PCS argues in our companion Local Impact Assessment (LIA) with evidence that Rampion 2 in fact will leave fragile inshore marine ecosystems on the South Coast that are already under multiple pressures even less resilient and susceptible to long term climate change.

The evidence as seen in load duration curves and capacity factors of Rampion 1 since commissioning in 2017 which show that the Sussex Bay inshore is a lower wind regime relatively, and that wind turbines here are less efficient in power output with longer periods of little or no output.

What that means as regards to Energy Security and energy self reliance, is Rampion 2 would need more back up to keep the lights on to avoid grid collapse. Thus, for the foreseeable future and well beyond 2035 this will lead to relatively more imported energy to back Rampion 2 than for turbines in a more favourable wind regime: whether that back up is through more price-volatile liquefied natural gas (LNG) imports from Qatar or the USA, or more imports via undersea cables from the continent.

In either case, that has adverse energy security and energy self-reliance effects leaving the UK more reliant on the behaviour of other states and volatile European and international energy markets. It increases the opportunity cost of consenting Rampion 2 that cascades down to place upward pressure on local household energy bills.

Again, the concern is the chilling effect in a planning context, to the extent those claims made in all the Applicant's marketing material and the local media repetition of the Applicant's messaging had on suppressing feedback and essential and informed critique of the Rampion 2 proposal.

On Understating of Adverse Impacts

Detailed concerns about the scale and significance likely social, environmental and economic impacts and the efficacy of the mitigation measure will be addressed in the statutory LIRs and in community written representations such as the PCS LIA. We appreciate that the ExA is very much attuned to those concerns as seen in the first hearings in Brighton in Feb 2024.

There are also some big narrative-setting claims relating to adverse impacts that lack credibility, which again speak to the chilling effect in the planning context. These included what we see is misrepresentation of the scale of the potential impacts on residents and local communities, and how the Applicant responded to consultation comments that serve to limit awareness and the prevalence of objections.

To illustrate, the Applicant was to offer a "worst case" scenario for statutory consultation using what is called the Rochdale Envelope as set out in the Planning Act (2008) and NPS.

The Preliminary Environment Impact Report (PEIR, 2021) offered two 'worst-case' scenarios for stakeholders to consider: either 75 large turbines each 325m high or 116 turbines each 210m high. The Applicant announced its commercial preference after consultation was to have up to 90 turbines up to 325m tall - 20% over the worst-case of 75 larger turbines consulted on. Yet that was promoted by the Applicant and in media as reduction from 119 turbines to 90 turbines.

We believe that the jump from 75 to 90 turbines at 325m is well outside the flexibility allowed for use of the Rochdale Envelope, which is NPS and Planning Act relevant. This fact was also picked up in the Planning Inspectorate (PINs) Section 51 Advice Note to Applicant issued at the same time the Rampion 2 was accepted for Examination in early Sept 2023 as seen on the PINs website.⁵

⁵ PCS details those concerns in the companion representation on the local impact assessment in chapter 1.

Much was also made by the Applicant of the reduction in sea area to be covered by Rampion 2, claiming that was a response to consultations.

In the case of Rampion 2, these areas have come out at 315km sq, 270km sq and 160 m sq respectively. a normal narrowing process to be expected and has little or nothing to do with listening to consultations. In fact, the existing Rampion 1 wind farm followed the same process where the “scoping “area of 167km sq, was reduced to 122 km sq (PEIR) and then to 72km sq at the DCO stage. That same is true for all windfarms.

We do appreciate that the Applicant accommodated some of Natural England's (NE) concerns about providing a gap between the existing arrays and Rampion 2 due to the considerable size differences and other shipping and recreational boating access reasons. And the slight reduction in the westward expansion of the Rampion 2 arrays along the Sussex Bay past Bognor Regis.

However, the application was not dramatically reduced in scale, or almost halved, as claimed in the Applicant’s marketing campaign and repeated in local media.

On conforming to policy, law and guidelines

A further overall concern raised constantly by residents and statutory consultees was the fact that the Applicant argued repeatedly in statutory consultations and continued in its Environment Statement (ES) that the UK Offshore Energy SEA visual buffers did not apply to Rampion 2.

PCS also addressed that in the companion LIA submission where we show it is abundantly clear that the European Convention on Landscapes (ECL), the OESEA visual buffer advice, the Marine Policy Statement (MPS, 2021) and the new Levelling-up and Regeneration Act (2023) all come to play in the consideration of Rampion 2. They reinforce the connection between landscapes and seascapes as indivisible and being afforded equal protection.

The Applicant categorically and emphatically does not recognise the OESEA as applicable.

Specifically, in terms of interpretation of any breach of legal commitments in the Rampion 2 case, the Government’s own Offshore Energy SEA programme in its latest OESEA-4 (2022) states that its very objective is, *“To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/ landscape including designated and non-designated areas.”*

It was frustrating to many residents expressing serious concerns in this regard that the Applicant dismissed these outright with slogans such as, “beauty is in the eye of the beholder”. That was throughout the pre-application consultations. We believe it served to reduce scrutiny and objections and was repeated in print and social media.

Summary due Diligence Conclusions

This due diligence is from the perspective of community organisations that have proactively and in good faith, engaged in the Rampion 2 DCO process from early 2021. It is what we witnessed and experienced and have taken the time to put on paper on various occasions.

Overall, we feel the chilling effect in a planning context had a material impact on reducing meaningful feedback during the application consultation and it limited actual and effective stakeholder participation in the Examination itself to a measurable degree from speaking to others or Community and Councillors – essentially why bother, if its is just a simple extension to the existing installation as claimed.

It is also important to recognise that many residents remain unaware of the scale of the proposed development or the likely significance of the impacts, or the project development costs (£ 3-4 billion) or the environmental and economic opportunity costs both in terms of the national economy, which we believe are considerable and quantifiable, or the cascading effects that will have including upward pressure on household electricity bills for a long time.

There is also total confusion and we sense obfuscation, over the legal status of the proposed Rampion design in respect to the European Convention on Landscapes (ECL) and in particular the OESEA-4 interpretation of the ECL and application of the government's own strategic environmental advice on locating such large turbines that impact designated landscapes.

We hope the Examination Authority and Interested Parties can take these factors into account alongside other considerations.

Table 1 that follows identifies the issues and evidence we offer with evidence in the Main Representation in support of this due diligence.

Table 1: Due Diligence topics addressed with evidence in the main Representation and Annexes

<p>PART 1: THE CONTEXT, CHILLING EFFECT AND CONSEQUENCES OF MISDIRECTION</p>
<p>PART 2: THE INFLATION OF THE BENEFITS OF RAMPION 2</p> <ol style="list-style-type: none">1) Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex across all sectors.2) Rampion and Rampion 2 combined will be able to power the equivalent of all the homes in Sussex twice over.3) Rampion 2 will power a million households.4) The south coast of England is a high wind area for energy generation.5) Rampion 2 will drive down the cost of energy.6) Rampion 2 is even more critical than before and to save 2million tonnes CO2 /yr.
<p>PART 3: THE UNDERSTATEMENT OF RAMPION 2 ADVERSE IMPACTS</p> <ol style="list-style-type: none">1) Rampion 2 was reduced almost half in size and area as a result of consultations.2) Rampion 2 respects the Rochdale envelope in consulting on the worst case.3) There is no evidence (anywhere) that windfarms impact tourism.4) Beauty is in the eye of the beholder.
<p>PART 4: THE UNDERSTATEMENT OF RAMPION 2 ADVERSE IMPACTS</p> <ol style="list-style-type: none">1) The UK Government's OSEEA Strategic Environmental advice on visual buffers for locating offshore wind turbines does not apply to Rampion 2.2) Rampion 2 design complies with all relevant Government policy and standards.

Main Representation

Many people in our communities believe that Rampion 2 turbines are simply in the wrong location for infrastructure of this scale and nature.

Community organisations constructively engaging with this DCO process in good faith stated so in many consultation responses as did others in relevant representations to the Examining Authority (ExA) at the pre-Examination stage.

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This main part of the Written Representation with evidence is in 4 Parts:

- Part 1. The context, chilling effect and consequences of misdirection
- Part 2. The inflation of the benefits of Rampion 2
- Part 3. The understatement of the adverse impacts of Rampion 2
- Part 4. The assertions that relevant policy and guidelines do not apply to Rampion 2
- Part 5. Due Diligence conclusions

Annex 2 indicates how we feel relevant NPS policy may be interpreted . Other Annexes offer evidence for our observations and views on the Applicants claims and assertions the we believe lack credibility and serve to mislead the public and stakeholders.

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PART 1: THE CONTEXT, CHILLING EFFECT AND CONSEQUENCES OF MISDIRECTION

Among the concerns about the Rampion 2 Application overstating benefits while understating adverse impacts, unchallenged, is the “chilling effect” in a planning context.

This includes the effect on many residents and organisations as regard to influencing their appetite to constructively engage in the DCO process as it was envisaged in legislation and in the Planning Inspectorate (PINs) Advice Notes, where many decided to simply walk away and let it happen. [\[1\]](#)

“Effective pre-application consultation will lead to applications which are better developed and better understood by the public, and in which the important issues have been articulated and considered as far as possible in advance of submission of the application to the Secretary of State”. (MHCLG, 2015)

Chilling Effect as a Planning Concern

The chilling effect is a valid concern in the planning process if it is demonstrated, as is seen in other DCO windfarm applications and legal challenges such as the judicial review (JR) of the East Anglia ONE North and East Anglia TWO offshore wind farms in 2022. [\[2\]](#)

Our experience as community organisations on the ground was that effect was present and not only severed to limit public understanding of the Rampion 2 proposal and the likely scale and significance of its local impacts, but also in limiting essential local engagement within the DCO process.

This extends to limiting interested party engagement in the Examination for fear of “**reputation risk**”, especially among environmental organisations as can be documented separately.

What we witnessed was that residents, groups and organisation due to the nature of the Applicant-led consultations and of course the fact the main statutory consultation were conducted virtually and digitally when social interactions were limited, many if not most people ended up less informed about the actual project.

They were assured by the Applicants direct marketing and repeated in local media that Rampion 2 was a simple extension to the existing installation. As a result many people were disinclined to object, or even participate in the DCO process in the constructive ways they might otherwise have considered and contributed.

- To our knowledge there was no due diligence by authorities on the Applicant's assumption about the project benefits during the pre-application and the formal consultation windows, apart from the PINs role in the Scoping Opinion in terms of what considerations were scoped in or scoped out.
- There was clear conflation of general support for renewable energy with assumed public support for the Rampion 2 scheme by the Applicant, as we elaborate in the companion PCS WR Local Impact Assessment (LIA) in the Appendix on public surveys.
- In conversations locally in our communities, many people also felt it was either a case of too much information to take in and process, or it prompted thinking that to simplify matters - if Rampion 2 reduces our electricity bills as the developer claims, plus if it is so beneficial for the environment and does no harm otherwise, as we are told – then why object to the proposal or even bother to engage in this DCO process.
- Hence, we argue that explicit due diligence on the significant claims made by the Applicant unchallenged that lack evidence and credibility, and that we believe unduly shaped views is important and NPS policy relevant.

- It is also in the interest of fairness.

Thus we argue those more significant factors need to be identified so they can be taken into account when making key Examination calculations on whether the adverse impacts of the Rampion 2 proposal would outweigh the benefits, as required in case-specific DCO Examinations.

Here we also set aside the fundamental concern that Rampion 2 is likely in breach of the European Convention on Landscapes and aligned UK policy and law, as we see interpreted correctly by OESEA-4 where its strategic environmental advice on visual buffers that advise turbines the size and scale the Rampion 2 Applicant proposes need to be 25 miles (40km) from designated landscapes and sensitive visual receptors.

^[1] The chilling effect in the context of the UK's Development Consent Order (DCO) planning process for offshore wind developments refers to the dampening effect on community engagement and participation caused by perceived or actual difficulties in the planning and approval process. When communities feel that their input is not being valued or that the process is too complex and burdensome, or feel developers are not transparent or acting in good faith they may become less willing to actively engage in the planning process. This can lead to a lack of trust between developers and communities, as well as decreased willingness to cooperate and negotiate and participate. That perhaps applies more to the offshore component and coastal communities. For affected inland communities it may relate to compulsory acquisition of land or rights. Chilling effect also applies to potential investors.

^[2] Chilling effect in the planning process was entertained but not upheld due to insufficient evidence in the High Court Judicial Review of the East Anglia ONE North and East Anglia TWO offshore wind farms in 2022. We believe the Rampion 2 case offers sufficient evidence, but only ask the ExA to take that into account with appropriate weight.

<https://www.landmarkchambers.co.uk/wp-content/uploads/2022/12/3177.pdf>

PART 2: THE INFLATION OF THE BENEFITS OF RAMPION 2

We highlight selected issues concerning from the perspective of community organisations.

- 1) Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex across all sectors.
- 2) Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over
- 3) Rampion 2 will power a million households
- 4) The south coast of England is a high wind area for energy generation
- 5) Rampion 2 will drive down the cost of energy.
- 6) Rampion 2 is even more critical than before and to save 2million tones CO2 /yr

Annex 1 which is a PCS Press release offers supporting technical material and figures.

1. Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex – across all sectors.

This claim was made during pre-application consultations to Project Liaison Group (PLG) meetings comprised of Parish and Town council representative, and presumably also to all statutory consultees including Councils in video presentations on-line 2022-2023.⁶

Applicant's assumptions and claims were:

- The Applicants representatives claimed they “were not quoting the figure”, but nevertheless stated clearly that early information was that Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex.
- As it was stated as, “So that is domestic, transport, industry, business, commerce, offices and so on, hospitals - all the electricity needs for the whole of Sussex, East Sussex, West Sussex, Brighton and Hove combine”.
- “Plus offsetting nearly 2 million tonnes of co2 annually, plus promoting all those jobs and apprenticeships locally.”
- And “Rampion 2 will supply million or more homes on top of what Rampion 1 already provides. ”

Our observations and views are:

- Clearly if that were the full picture as some openly accept - who would object? Unfortunately we see it was disingenuous to trail to Parish and Town Councillors in an obvious attempt to get them on side.
- The inherent variability output of wind turbines would preclude that ever happening as seen in the generation of Rampion 1 since its commissioning in 2017 and in the load duration curve (annex 1).
- To illustrate we start with the monthly offshore windpower output for all UK offshore windfarms combined from The Crown Estates website (about 13.7 GW installed capacity in 2022). The variability of this output is seen in figures 1 and 2 below. Crown Estates also shows the output of every offshore wind farm update every 30 minutes or so.

⁶ As recorded on audio.

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

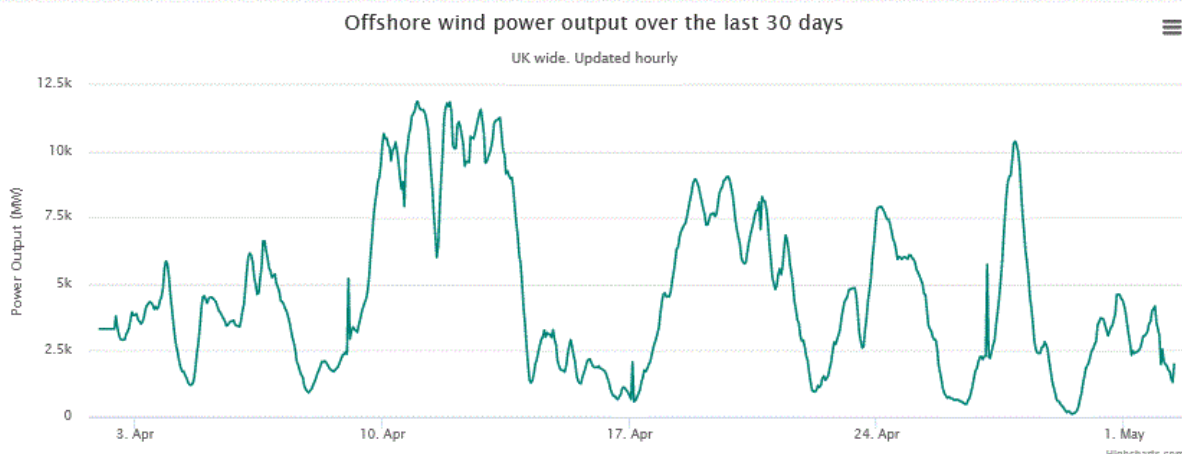


Figure 1: April 2023 Offshore Wind

- Figure 2 below from The Crown Estate website shows actual offshore wind output across the UK for 30 days to 7 Sept 2023. The low and variable combined output from all offshore wind turbines, in this period, can be compared to total nominal installed capacity of UK offshore wind, presently around 13,700 MW.⁷

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

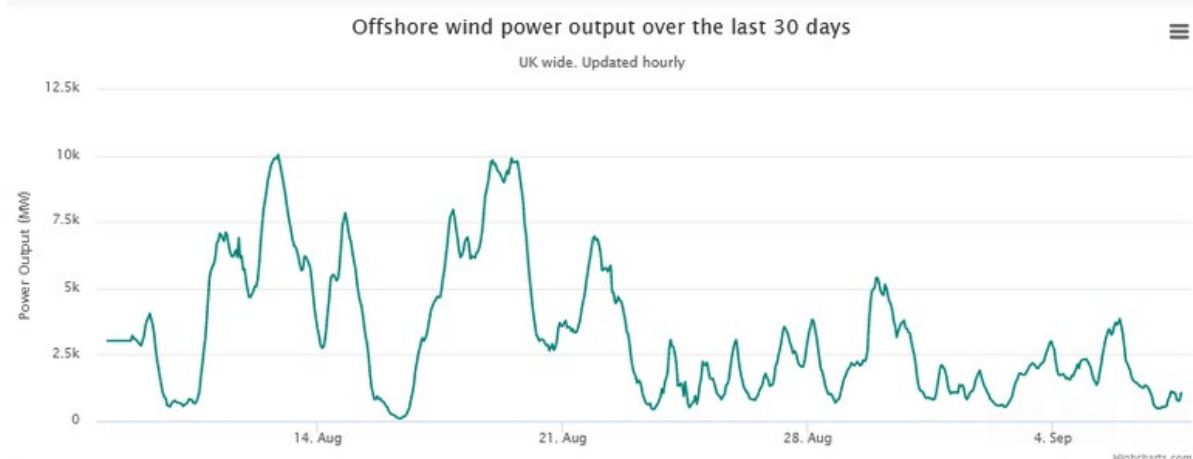


Figure 2: Past 30 days of total UK offshore wind output (combined) to 7 Sept 2023 (source: The Crown Estates website on rolling 30-day output)

⁷ Left scale in Figure 1 thus mostly under 1,000 MW - 2,500 MW output available since 22 Aug 2023.

- Annex 1 shows additional months in 2022. Clearly Rampion 1 and 2 output will vary considerably daily, seasonally and year-to-year.
- More specifically, the load duration curve for Rampion 1 in Annex 1 indicates clearly that since it was commissioned in 2017 Rampion 1:
 - Produced no output at all for 15% of the time.
 - 60 % of the time power output was 40% or less of installed capacity; or conversely, Rampion produced above 40% of installed capacity 40% of the time.
 - Rampion 2 located in the same wind regime will perform in a similar pattern though slightly better due to its larger size.
- What does this actually mean?
 - It means that 15% of the time, equivalent on average to 1 day a week, there is no power output. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity.
 - That is on average. The actual period of no output or very low output from windfarms on the lasts for several days at a time, as we have all seen in recent years (verifiable by a combination of load curves and the Crown Estates Website reporting of offshore wind output and data sets for generation updated).
- As to the claim about supplying all of Sussex power, we assume that means the equivalent to all of Sussex power needs on an average annual basis without accounting for variability, as may be estimated in 2030.
 - That is when Rampion, if consented, would start producing power. Will it cover all Sussex power needs in 2035 or in 2050?
 - And does it account for the increase in power demand expected to at least double on the National Grid sometime between 2035 and 2050 due to the electrification of the transport and heating sectors, even accounting for efficiency improvements and demand-side measures.
 - A simple spreadsheet model in Annex 2 would suggest not.
- As for Apprentices jobs creation, the Applicant' s existing Rampion 1 company announced recently that since Rampion 1 was commissioned it has taken on 13 apprentices, which is small relative to multi- billion pound investments.

Due Diligence and Evidence Suggests:

- The ability of Rampion 1 and 2 to provide for all the power needs of Sussex, as implied, is both exaggerated and misleading based on averages.
- That claim does not account for the essential variability of wind output which is lower and less steady on the south coast than elsewhere (load duration curve in Annex 1) .
- It does not hold up over time over the 20-25 years of the estimated life of Rampion 2 by any stretch of imagination (in our view) and it appears not to account for mandated electrification.
- Rampion 1 and 2 would simply form part of the low-emission supply mix for Sussex and certainly from 2035 when all supply on the Nation Grid is from low emission generation must be reliable and represent value for money.

2. Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over

That pre-application benefit claim changed in the Applicant's Press Release when Rampion 2 was accepted for Examination from implying Rampion 1 and 2 combined would provide all the power needs of Sussex, to enough generation to power all households in Sussex – twice over.

Applicant's assumptions new claims:

- Rampion 1 and 2 combined would provide, "the equivalent of enough to power all households in Sussex – twice over".
- Rampion 2 alone power "the equivalent of over one million homes", and
- Rampion 2 would reduce carbon emissions by around 1.8 million tonnes annually.

Our observations and views on the first part are:

- Again, the Applicant's claim remains wholly misleading without acknowledging the intermittency and variability of power output of Rampion 1 and 2 combine, which is case and setting specific.
- There is no mention again the actual power output from Rampion 2, or from Rampion 1 and 2 combined would vary from little to no output at all for days at time, or long periods low output, as noted above in our observations in Claim 1.
- Thus the combined output from Rampion 1 and 2 would range from enough power for no household, 15% of the time, to running at full capacity to likely more that twice the residential needs – on an average annual basis initially in 2030.⁸
- Most of the time it will be far less. Then it is necessary to factor in population growth and consequent demand growth through 2035 and 2050 as noted, which means the claims about meeting twice the household needs quickly fall away.
- The simple spreadsheet in annex 2 confirms this is the likely scenario.

Due Diligence Evidence Suggests:

- The ability of Rampion 1 and 2 to provide for all the power needs of households in Sussex – twice over, as implied, is exaggerated and misleading based on averages.
- Again it does not account for the essential variability of wind output which is lower and less steady on the south coast than elsewhere.
- It does not hold up over time over the 20-25 years of the estimated life of Rampion 2 and it appears not to account for mandated electrification.

3. Rampion 2 will supply a million households

⁸ Initially at times there would be surplus generation to which the grid would necessarily accommodate and there would be constraint payments to reduce outputs. How many years that would at least require transmission load flow analysis.

This is the standard problem of averages, in this case using national average statistics for household electricity demand (kwh/yr) on the one hand, where some regions of the UK have lower household energy use on average; then on the other hand stating to stakeholders in Sussex that what Rampion 1 and Rampion 2 will do for you where use is much higher.

Applicant’s assumptions and claims are:

- As in all the Applicants promotional materials and on its website. “Rampion 2 could create clean, green electricity to power the equivalent of over 1 million UK homes each year!”
- “The average annual domestic household electricity consumption in the UK was 3,618 kWh in 2018 (Source: UK Government, BEIS, Dec 2019).
- With a maximum planned capacity of 1200 MW of electricity, Rampion 2 could meet the electricity needs of 1m+ homes equivalent each year. This estimate is based on UK Government data and a methodology that is standard used for offshore wind farms.”

Our observations and views are:

- The Applicant cannot play it both ways. The Applicant speaks to benefits to Sussex residents and communities in its household number claims.
- As in Annex 3 and in the table below household electricity use in 2020 the South East was 4327 kwh/yr per household on average. That is roughly 20% below the figure the Applicant applied to make that 1 million home claim.
- By 2030 equivalent when Rampion 2 starts producing power, it would be closer to an equivalent of 700,000 households also assuming an increase of 20% increase in average annual household use in the South East due to some market penetration of EVs and heat pumps. By 2035 that may drop further as indicated.
- By 2050 when Rampion 1 will be decommissioned and Rampion 2 will be at or near the end of its life for the sake of numbers it would drop below 500,000.

These are summarised in the table below.

	Millions of Households (on an average annual basis ignoring variable supply from Rampion 1+2 from 0 to 100 capacity)	
In 2020		
National Average	3618	1,000,000
South East	4327	836,145
By 2030 - South East		
Assuming 20 % Increase over 2020	5192.4	696,788
By 2035 - South East		
Assuming 20 % Increase 2030 With Penetration of EV charging and Heat pumps	6230.88	580,656
By 2050 - South East		
Assuming doubling from 2020	8654	418,073

Due diligence suggests:

- The Applicants claims that imply Rampion 2 would sufficient power for a million homes are averages and inflated and somewhat misleading again ignoring it depends on the weather, season and varies year to year
- Whether that number matters or not it adds to the chilling effect as is described in Part 1 of this representation.

4. The south coast of England is a high wind area for electricity generation

The claim that Rampion 2 is a high wind area is Rampion 2 is important in many respects note the least are the economic and environmental opportunity costs.

Applicant's assumptions and claims are:

- The south east is a high wind area.
- The Applicants in media and press releases claim the proof is that Rampion 1 is breaking and surpassing all targets and records for output. For example, "Rampion blows wind power target out of the water." ⁹
- "As we go into our seventh year of operation, we are proud to have beaten our target, and to offer a new, one-year Operations Engineer Internship position, which is currently advertised to start in August this year."

Our observations and views are:

- The published wind energy density maps for all UK coastal areas and offshore and the load duration curves for operation of Rampion 1 since 2017 and other windfarms in more favourable wind regimes are clear.
- The wind regime here has significantly less power density than wind regimes over other UK waters (watts / per square meter), despite the rhetoric. That leads to higher opportunity costs that inflate average system costs and work their way into higher power bills, which is not in the local, regional or societal interest.
- And the fact remains weather patterns vary significantly year-to-year as recently pronounced by the Royal Academy of Science.
- We see that in Annex 1, looking at the relative performance of turbines on the south coast as compared to moving the same turbines offshore to the North Sea (also Figure 3, below). That is a graph of load duration curves for offshore windfarms showing the percent of time (on the horizontal axis) turbines produce at different power outputs (and capacity factor or load factor, on the vertical axis) as a percent of installed capacity.
- That graphical data tells us:
 - 15% of the time the existing Rampion windfarm turbines produce no output at all.
 - That compares with 7% of the time the Hornsea One windfarm in the North Sea produces no output. Rampion thus has no output twice as often.

⁹ <https://www.rampionoffshore.com/news/media-releases/rampion-blows-wind-power-target-out-of-the-water/> and <https://www.theargus.co.uk/news/24082321.sussex-rampion-wind-farm-exceeds-2023-energy-targets/>

- 60 % of the time Rampion 1 output is 40% or less of its installed capacity; or conversely, Rampion only produces above 40% of installed capacity 40% of the time.
- In contrast, the Hornsea One windfarm spends 55% of time generating above 40% of its installed capacity (compared to 40% for Rampion).
- Honesea One produces above the UK average capacity factor 65% of the time.
- The point being that Rampion 2 turbines would have the same relative lower performance noted above (being adjacent to Rampion 1 in the same wind regime) as compared to investing the same £3-4 billion to install those turbines in the North Sea area, ore even at less cost extending an existing license where there are economies of scale.

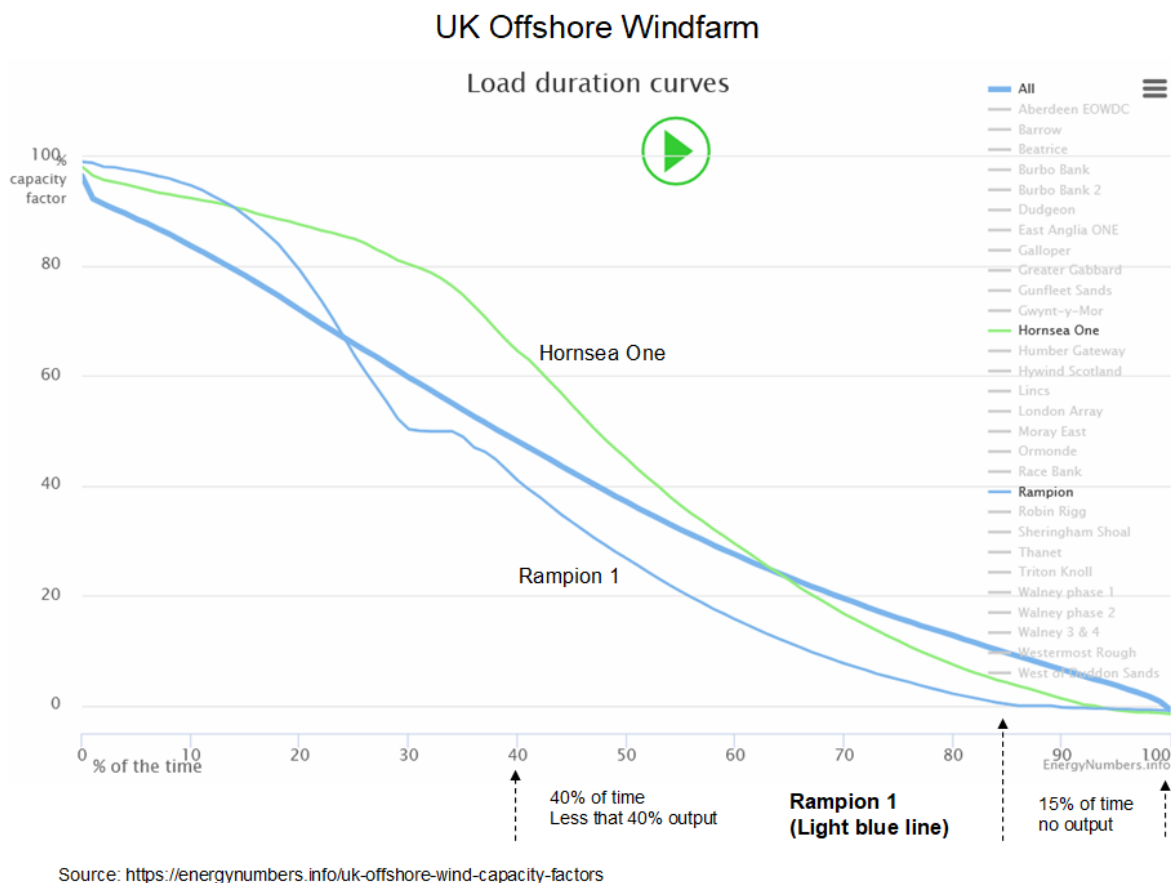


Figure 3: Comparison of Loads Duration Curves (capacity factor versus % of time) for Rampion 1 on the South Coast (light blue line), Hornsea One in the North Sea (green line) and, the average for all UK Offshore windfarms (thicker blue line).

Due Diligence suggests:

- From a national economic, energy and climate policy perspective the south coast of England IS NOT the best location to site a utility-scale windfarm at this stage in the UK's energy transition.
- Rampion 2 would supply less power to the national grid than equivalent windfarm investments in truly offshore locations and have more significant opportunity costs in terms of requiring comparatively and significantly more import of LNG and reliance on the Continent for costly power import – if available.

5. Rampion 2 will drive down the cost of energy

The claim is Rampion 2 will help drive down the cost of energy, implying household electricity bills may soon reduce has been made constantly in the pre-application stage consultations and echoed in local media after the Applicant's press releases.

Applicant's assumptions and claims are:

- " while we are not feeling that at the moment, but in the long-term wind energy is absolutely the cheapest form of power and is pushing down and the cost of energy in the UK"

Our observations and views are:

- In nominal terms wind may be cheaper but for the foreseeable future average system costs will increase and cascade to higher household energy bills, at least until utility scale energy storage systems are available.
- That is acknowledged in national policy statements. Rampion 1 will likely be decommissioned before utility scale hydrogen storage systems are available and possibly Rampion 2 which would be decommissioned around 2050 or shortly thereafter.
- In the near term higher opportunity costs inflate average system costs. This is seen in the load duration curves also in annex 1, where less efficient generation leads to greater.

Due Diligence suggests:

- Implying residents and communities in Sussex will see lower electricity bills any time soon if Rampion 2 is consented contributes to the chilling effect as noted in Section 1 of this representation.
- Ironically, the UK has among the highest electricity bills in Europe, despite having the largest share of wind and solar of any major economy in the world, now approaching 50 percent on an average annual basis, ignoring the variability and intermittency.

6. Rampion 2 is even more critical than before and offers 2 million tonnes carbon reduction annually

This claim was made by the applicant in PLG meetings in 2023 after the Ukrainian invasion and impacts on global energy markets including the price spike in LNG imports, power imports and effect that had on power system costs translated to household energy bills.

Applicant's assumptions and claims are:

- Rampion 2 will help insulate the UK from and reduce costly LNG imports
- Rampion 2 will offset 2 million tonnes of Co2 reduction over its 20-25 year economic life

Our observations and views are:

- It is even more critical for UK society prioritise investments in the most efficient offshore wind farms in the best wind regimes and cited in Annex 1, as that reduced the need for expensive LNG and expensive power imports

- Rampion 2 being less efficient means greater opportunity cost and does not reduce imports to the same extent
- As to the claims about CO2 reduction of Rampion 2 for its 20-25 year economic life, due diligence suggests that is only 5 years to when the entire power system is decarbonised.
- It means the carbon reduction benefit is 1.8 yr million tonnes (closer to 10 million tonnes) not for 20 to 25 years (or 40 to 45 million tonnes).
- The calculation of all the imbedded co2 in Rampion 2 in mining, processing, smelting, manufacture, construction, operation and maintenance would be helpful to understand if it is greater COR emissions than 5 years savings assumed at 1.8 million tonnes Co2 a year (i.e., the rare earths and critical minerals and steel and concrete)

Due Diligence suggests:

- After 2035 when the UK power system is decarbonised only low emission supply will be allowed. Like all other low emission generation Rampion 2 will not displace carbon after 2035.
- In those terms, Rampion 2 will only compete with other low emission generation sources on a price and power system impact basis – i.e. what may be needed to keep the lights on, the grid system from collapsing and at what cost to society and the environment.
- As we noted in the summary it is not a nuanced point. Rampion 2 will simply be part of a complementary low-emission generation mix until it is decommissioned around 2050.
- Until technically and economically feasible energy storage is available at the utility-scale. All evidence is Rampion 2 is not a priority in those terms. The £3+ billion that Rampion 2 would cost UK society may be better spent on offshore wind farms in better wind regimes that are more efficient and thus far more beneficial for UK society and value for money, all things considered.

PART 3: THE UNDERSTATEMENT OF RAMPION 2 ADVERSE IMPACTS

Here we inform noted in the following assessment of:

- 1) Rampion 2 has reduced its size and area as a result of consultations
- 2) Rampion 2 respects the Rochdale envelope consulting on the worst case
- 3) There is no evidence (anywhere) windfarms impact tourism
- 4) Beauty is in the eye of the beholder.

Additionally table 5 is informed by the PCS Local impact Assessment (LIA) submitted in parallel as a Written Representation.

1. Rampion 2 has reduced its size and area as a result of consultations

Emission reductions may take into consideration: (1) life cycle or “cradle to grave” emissions, or (2) only CO2 emissions reductions during the multi-year operation stage.

Applicant’s assumptions and claims re:

- In the acceptance press release “we have carried out a huge programme of engagement and consultation over the past three years, and have subsequently made changes”.
- And In October 2022, *“the Rampion 2 Project Team reduced the extent of the offshore wind turbine array proposals by nearly half and decreased the maximum number of turbines down from 116 to 90.”*
- The Applicant claimed that was in response to feedback from stakeholders.

Our observations and views are:

- RWE’s Preliminary Environment Impact Report (PEIR, 2021) offered two ‘worst-case’ scenarios for stakeholders to consider: either 75 large turbines each 325m high, **or** 116 turbines each 210m high as in Figure 4 below.
- RWE announced its commercial preference now is to install up to 90 turbines up to 325m tall - 20% over the worse-case of 75 consulted on!
- That was claimed and presented by the Applicant as a “reduction from 116 to 90 turbines” and claims that Rampion 2 was “scaled back” almost 50 percent.
- It makes no reference to either the turbine size or the magnitude and significance of impact.
- Much was also made by the Applicant announcing in 2023 a reduction in area to be covered by Rampion 2 turbines as compared to original assumptions, which mainly affects the sea area east of the existing Rampion installation and a slice on the western extension. Those reductions were actually advised by Natural England and in any event the sea area in an application is arrays less than the scoping area.
- In the case of Rampion 2, these areas have come out at 315km sq, 270km sq and 160 m sq respectively. This was entirely to be expected and has little or nothing to do with listening to objections. In fact, the existing Rampion 1 wind farm followed the same process where the “scoping “area of 167km sq, was reduced to 122 km sq (PEIR) and then to 72km sq at the DCO stage.

Figure 4: Worst case Scenarios using smaller and larger WTG Types

Assessment assumption	Smaller WTG Type	Larger WTG Type
Total capacity	1,200MW	1,200MW
Maximum number of WTG	116	75
Rotor diameter	172m	295m
Minimum air gap above Highest Astronomical Tide (HAT)	22m	22m
Maximum blade tip height above Lowest Astronomical Tide (LAT)	210m	325m
Maximum Chord (blade width)	5.4m	11m
Maximum RPM	10.5 RPM	6.5 RPM
Minimum to Maximum Blade pitch	-4 to 90 degrees	-4 to 90 degrees
Minimum turbine spacing	860m	1,720m

Due Diligence Suggests:

- Reduction in project size by almost a half lacked credibility and in our view was deliberately misleading which added to the chilling effect.
- It was reported widely in local media in 2023.

2. Rampion 2 respects the Rochdale envelope consulting on the worst case

The Rochdale Envelope is to be used to assess the worst-case impacts of UK offshore wind farms as set out in the Planning Act and PINs Advice Note 9. The applicant needs to use it considering various factors such as environmental, economic, and social impacts to determine the potential negative outcomes of wind farm projects. The term "envelope" refers to the boundaries within which these impacts are evaluated.

Applicant's assumptions and claims include:

- The Rampion 2 consultation and Environment Statement complied with the Rochdale stipulations in the NPS

Our observations and views are:

- RWE announced its commercial preference is to install up to 90 turbines up to 325m tall - 20% over the worst-case of 75. The concern is illustrated with Figure 5.
- The PINS Section 51 Advice was that the Applicant needed to remedy a number of significant shortcomings in the Application before calling for the Registration of Interested Parties.¹⁰

¹⁰ In the PINs S51 Advice to the Applicant, "The Inspectorate notes it is reference in Schedule 1 Part 1 for Work No.1, and in Part 3 Requirement 2 that the authorised development must not exceed 90 wind turbine

- This was categorically rejected by the Applicant in pre-Examination correspondence in Sept 2023 noted on the PINs Rampion 2 Project website.

Rochdale Envelope: PINs Advice Note 9 and Planning Act (2008, updated)

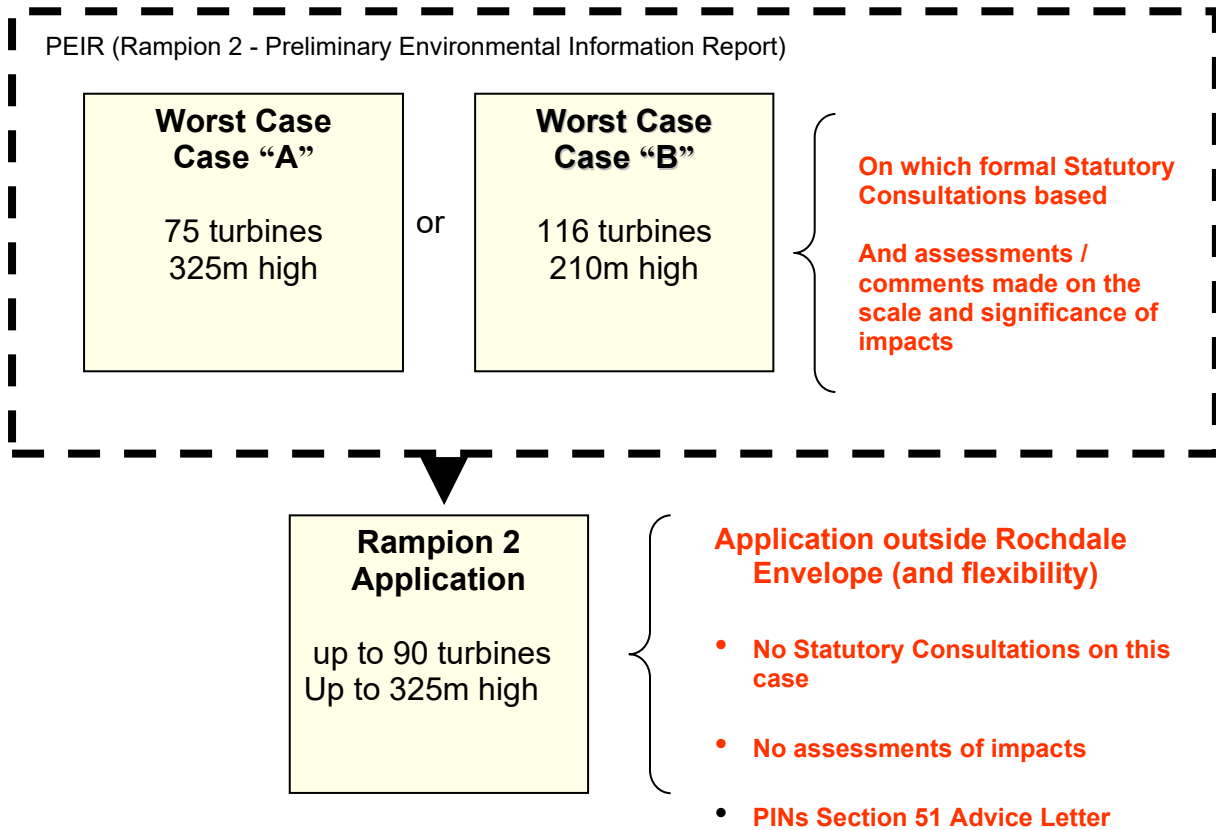


Figure 5: Rochdale Envelope (inside and outside boundaries)

Evidence Suggests:

- This challenges the notion that the Applicant consulted with the case of up to 90 large WTGs provided in the Application which appears outside the Rochdale Envelope worst cases
- This certainly added to confusion and to the chilling effect.

3. There is no evidence (anywhere) windfarms impact tourism.

This is highly concerning and challenged in PAD Statements by all local authorities on the impact on the tourism economy.

Applicant's ES assumptions and claims include:

generators (WTGs) and in Requirement 2(a), that they must not exceed a height of 325m. The Inspectorate notes, however, that no assessment of the effect of 90 WTGs appears to have taken place and evidenced in Chapter 15 of the Environmental Statement (seascape, landscape and visual impact assessment), where it appears that only 65 WTGs have been assessed. The Inspectorate considers that the DCO needs reviewing to ensure that the total quantum of turbines sought has been fully appraised and assessed in the ES taken as a whole..."

- "... there is no evidence that suggests any relationship between the construction (operation or decommissioning) of offshore wind farms and a reduction in tourism activity, visitor spending or tourism-related employment."
- The Applicant then states the tourism statistics for the Rampion 1 scheme validates its hypothesis that Rampion 2 (like all windfarms) would have no impact on tourism volume and value. It also offers the Dudgeon Offshore Wind Farm 32 km (20 miles) off the coast of Norfolk in the North Sea as further validation of its ES claims.

Our observations and views are:

- This clearly lacks and credibility given the finding of the OESEA the UK's own Offshore Energy SEA programme, with its stated objective of alignment with the articles and commitment under the European Convention on Landscapes, update its visual buffer advice in 2020 basing that on a comprehensive review of domestic and international experience with visual buffers at policy, spatial planning and project levels?
- Councils in their PAD Statements and RRs have flagged the absence of commitments from the Rampion 2 Applicant to support the area tourism sector when it is disrupted during construction (4-5 years) and then for 20-25 years of operation from 2030.
- The Secretary of State (SOS) Decision Letter when explaining why consent was refused on the Navitus Bay Application implied the likely loss to the area tourism economy may be somewhere between the Applicant's claim and the estimate from processing the detailed visitor survey information conducted by Visit England.
- It noted the Examination found that the Applicant erred in some assessments by lessening negative impacts on tourism-related jobs, and that there would be "significant residual harm to tourism" in some local areas.

Due Diligence Evidence:

- The Applicant's claims in this regard are not credible.

4. Beauty is in the eye of the beholder.

This messaging was prominent in the Applicants pre-application consultation and marketing, recognising also that consultation on the offshore component was mostly virtual, online and in pamphlets.

Applicant's assumptions and claims include:

- The assertion in the ES: "there is no evidence that suggests any relationship between the construction (operation or decommissioning) of offshore wind farms and a reduction in tourism activity, visitor spending or tourism-related employment."
- And "beauty is in the eye of the beholder".

Our observations and views are:

- The messaging was that any resident opposed to Rampion 2 is either a Nimby, is not properly informed or worse, is a climate change denier.

- That was prominent in media coverage and social media.

Due Diligence Suggests:

- That contributed significantly to the chilling effects for those fearing they would be called Nimbys or climate change deniers by neighbours and on social media if they officially objected to or commented on Rampion 2.
- It contributed to fears of “reputational” risk of environmental groups who would otherwise have engaged with the DCO process more meaningfully.

PART 4: THE ASSERTIONS THAT RELEVANT POLICY AND GUIDELINES DO NOT APPLY TO RAMPION 2

We highlight selected issues that were concerning from the perspective of community organisations.

To inform noted in the following assessment of:

- 1) The UK Government's OESEA Strategic Environmental advice on visual buffers for locating offshore wind turbines does not apply to Rampion 2.
- 2) Rampion 2 design complies with all relevant Government policy and standards.

1. On whether UK strategic advice applies to Rampion 2

This claim that it did not apply was made repeatedly during pre-application consultations to the public, in PLG Group meetings with Parish and Town Council representatives and in the Environment Statement (ES) in responses to Statutory Consultees.

The Applicant's assumptions and claims include:

- The OESEA advice is only, "a high level 'buffer' study ... it is a strategic tool and is not guidance or a roadmap for placing of wind farms...".

as (ES, Volume 2, Chapter 15: Seascape, landscape, and visual impact assessment. Pages 52, 53 and further on) and documented in formal statutory consultation input including that of PCS.

Our observations and views are:

- It is important to consider the alignment of the UK's Offshore Energy SEA (OESEA) with the European Convention on Landscapes (ECL) and its reinforcing nature as well as aligned UK policy and law including the Marine Policy Statement (2021) and the Levelling up and Regeneration Act (2023).
- Specifically, in the Rampion 2 case the rolling OESEA programme's strategic environmental advice to provide visual buffers between large offshore turbines and impacted designated landscapes is material as that advice which is in keeping with the above and we believe legally cannot be dismissed lightly.
- OESEA-4 states the UK objectives and indicators for seascape / landscape protection include the, "Objective: To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/landscape including designated and non-designated areas." Our in-bold text underlining for emphasis.
- The OESEA visual buffers updated in 2020 and adopted in OESEA-4 (2022) are based on a comprehensive review of domestic and international experience with visual

buffers for offshore windfarms, including project-level assessments and laws associated with the application of the ECL in European jurisdictions.

- The proposed design for the offshore component of Rampion 2 (up to 90 WTGs up to 325m tall in arrays starting 6 nautical miles from shore, so visibly fixed in the legally defined and ecologically sensitive inshore seabed (i.e., not offshore that starts 12 nautical miles from shore) - is at the extreme end of the visual impact spectrum due to its scale, expanse or spread along the coast and proximity to people and designated landscapes.
- Our view is it cannot be disputed that Rampion 2 is literally “off the charts” in regard to the UK Government’s ECL commitments and its own strategic environmental advice (OESEA) that derives from the ECL interpretation and experience as clearly stated in the OESEA-4 objectives.

Due Diligence Suggests:

- The Applicant’s assertions in this lack credibility.

2. Rampion 2 design complies with all relevant Government policy and standards.

Clearly the design, construction and operation of infrastructure such as Rampion 2 with sea and land elements are complex and require attention to many policies and standards from national to local levels.

While this will be an ongoing consideration the Rampion 2 were consented the PAD Statements alone indicate the nature of the challenge. Our overall consideration at the moment in this regard is whether the Rampion 2 proposal is compliant with the ECL and the aligned UK national policy, law and strategic advice.

PART 5: DUE DILIGENCE CONCLUSIONS

Due Diligence is routine on a £-3-4 billion infrastructure investment such as Rampion 2.

It typically covers all aspects of the benefits and risks for developers and potential investors. The same principle should apply to local communities who would essentially be required to host this Rampion 2 project, if consented, and ultimately pay or contributed to all the development costs through local electricity bills and taxes, including the investor’s commercial rate of return, the cost of investor incentives and public risk guarantees and the CfD subsidy.¹¹

We view this as important and relevant in the Rampion 2 case, especially considering how Rampion 2 proceeded through a pre-Application process that was so challenging for everyone, not the least including Covid-19 restrictions on meetings and social interactions.

¹¹ Contract for Differences (CfD) subsidy that replaced the Renewable Obligation Subsidy for commercial offshore wind developers in 2017. The upward limit of the CfD was raised by the UK Government by 66% in Sept 2023.

Together with the PCS WR1 Local Impact Assessment (LIA) and the PCS WR3 consideration of Alternative, we take the view that Rampion 2 has serious questions about whether it is in breach of laws and commitments, serious economic and environmental opportunity costs, and that viable alternative would do more for the UK's national climate, energy supply, energy security, sustainable development, environment and industrial policy objective than Rampion 2, while offering better value for money and less upward pressure on electricity prices.

List of Annexes

Annex #	Title
1	Various referenced statistics, graphs and data in a PCS Press Release Note
2	Simple spreadsheet model of projected Sussex electricity demand and Rampion 1 and 2 Power Output
3	Average domestic electricity consumption per household in Great Britain in 2020, by region (in kilowatt-hours)

Annex 1: Various referenced statistics, graphs and data in a PCS Press Release Note

PCS Background Note:

On the Rampion 2 Windfarm Proposal Update by RWE, Oct 2022

15 Nov 2023 Update Version

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RWE, the German-based multinational energy company behind the £3+ billion proposal to develop the 1,200 MW Rampion 2 windfarm off the Sussex coast last week released news about their plans to progress this controversial infrastructure project.

We encourage all residents and local communities on the South Coast to become aware of the social, environmental and economic impacts of the proposed Rampion 2 windfarm. Visit the Protect Coastal Sussex (PCS) website for more information <https://protectcoastalsussex.org/> as well as the Middleton-on-Sea Coastal Alliance (MOSCA) website at <https://www.mosca.click/> and <https://www.protectcoastalengland.org/>

These website resources all help to balance information on the benefits and impacts that the Rampion 2 proponent offers and include what is omitted.

PCS also encourages residents who have the time, the energy and the interest in the decision on whether, or not, to transform our natural south coast into an industrial power park to offer anecdotal or technical inputs to support the preparation and endorsement of a community-led Local Impact Report (LIR) on the proposed Rampion 2 Windfarm.

This work is now in process. It will be circulated in draft before submitted for Examination in the Development Consent Order (DCO) process, expected the summer of 2023.

Overall we feel a Local Impact Report prepared by directly affected communities, one that is widely supported and endorsed, will better inform decisions. It will help communities and authorities to weigh all the benefits and costs; and more generally to consider reasonable alternatives that significantly outperform Rampion 2.

In this regard, we welcome RWE's 1,400 MW Sophia windfarm now under construction on Dogger Bank, as well as the two additional windfarm licences it recently secured there. Those turbines will be in better wind regimes far offshore and thus have far greater power output (and benefit) for the same £3 billion investment as Rampion 2. Critically, they fully respect the Government's strategic environmental advice to locate large turbines (above 225m tall) at least 40 km (25 miles) from designated sites like National Parks.

The advice and guidelines were put in place to provide visual buffers that avoid well recognised, unnecessary harms to coastal communities and prevent multiple harms to the more sensitive and

productive inshore marine ecosystems that will undermine the achievement of sustainable development of inshore coasts.

It otherwise helps to avoid risks that degrade “natural capital” that makes our treasured wildlife even more susceptible and vulnerable to longer-term climate change.¹²

As noted in the National Policy Planning Framework:

“The purpose of the planning system is to contribute to the achievement of sustainable development ...” (Para 7, The National Policy Planning Framework (NPPF) supported by the Planning Act (2008).

In effect, it is a legal presumption not only to development, but to ensure sustainable development.

Achieving sustainable development is recognised in UK Law and policies from local to national levels and in international conventions as pursuing three overarching objectives (environment, social and economic objectives) that are “interdependent and need to be pursued and balanced in mutually supportive ways”. (NPPF)

RWE’s Recent Announcement on Rampion 2

RWE’s plans now include another round of public consultation on the ‘onshore element’ of its Rampion 2 proposal, focusing on the cable route.¹³ This new targeted consultation is due to opposition concerning adverse impacts within the Southdown National Park (SDN) and potential interruptions to planned biodiversity corridors. The new cable route that RWE is proposing is from a shore landing on Clymping beach west of Littlehampton to connect to a National Grid substation near Bolney in the Mid-Sussex District of West Sussex.

However, the newly proposed route still runs through the Southdown National Park. The rerouting does not *reduce* the impacts on the SDNP. It will cause a permanent scar and impact on wildlife and potentially interrupt planned and future biodiversity corridors.

At the same time, RWE has announced they have ‘fixed’ the offshore component of Rampion 2 for the **Development Consent Order** application (**DCO**) that it plans to make sometime around March 2023. If that application is accepted, it will trigger the Examination Stage of the **DCO** process leading to a subsequent decision by the Secretary of State for Business, Energy and Industrial Strategy (BEIS) sometime in 2024-2025, on whether to Consent or Refuse Consent to proceed with the Rampion 2 scheme.

¹² Natural Capital: in general is the collection of natural resources of a region, land area or a coast together with its ecosystem services viewed broadly, including its overall economic value (for example, from the value derived from pollination services provided by migrating birds and insects lost to windfarm turbines, to the visual impacts of transforming the natural seascape that affects the visitor and coastal tourism economy and jobs to intrinsic values of natural seascapes the are part of our culture, heritage and promote well-being).

¹³ <https://rampion2.com/consultation-2022/>

While consultations on the onshore cable route are being restarted, numerous concerns about the social, ecological and economic impacts of RWE's plan for the offshore aspect remain, as well as concerns over the relative merits of the proposed £3+ billion investment in Rampion 2 as a UK climate action – given the many reasonable alternatives already in the planning pipeline to meet the announced Offshore Wind targets for 2030-2050.

RWE's Preliminary Environment Impact Report (PEIR, 2021) reviewed by Statutory Consultees, including Natural England, the Government's main environmental advisor, and upon which the virtual local community and public consultations about the impacts were based, offered two 'worse-case' scenarios for us to consider: **either 75 large turbines each 325m high, or 116 turbines each 210m high.**

RWE has announced its commercial preference now is to install up to 90 turbines up to 325m tall - 20% over the worse-case of 75 consulted on! Yet this change was actually presented by RWE in local media as claim of a "*reduction from 116 to 90 turbines*" and claims that Rampion 2 was "scaled back" almost 50 percent. It makes no reference to either the turbine size or the magnitude and significance of impact.

Much was also made by RWE in its recent announcements of a reduction in area to be covered by Rampion 2 turbines as compared to original assumptions, which mainly affects the sea area east of the existing Rampion installation and a slice on the western extension. Those reductions were actually advised by Natural England and in any event the sea area in an application is always less than the scoping area.

RWE says its Development Consent Order (DCO) application will propose up to 90 large turbines (up to 325m) in north-south arrays in two sections split by a small separation corridor off East Worthing. The eastern section of Rampion 2 would be concentrated behind (south of) the existing Rampion 1 turbines. The western section would spread the tall turbines across the seascape from West Worthing, past Littlehampton and past Bognor Regis, with the closest turbines in north-south array strings starting 8 miles from shore.¹⁴

Initial comment on RWE's recent announcements

In reality, the 1,200 MW Rampion 2 is not a simple 'extension' or expansion of the existing far smaller 400 MW Rampion 1 installation as presented by the developer in public consultations. Rampion 1 has 116 smaller wind turbines 140m tall occupying a far smaller area with a limited field of view, or crowding of the natural seascape and horizon.

Rampion 2 is an entirely new project, one that is far larger in scale and expanse as well as the range and significance of impacts. We feel that a Community-led Local Impact Report (LIR) is even more essential to better inform the future Rampion 2 Examination process, given what we have seen

¹⁴ See: <https://rampion2.com/consultation-2022/what-we-have-now-fixed/>

unfold to date with the developer-led pre-application consultations, as well as documented concerns with information control in the virtual-only consultations (with on-line digital and zoom formats).

Equally important, we feel that South Coast residents and Councillors must be better briefed and informed about the comparison of Rampion 2 with reasonable alternatives already in the UK's offshore windfarm programme plans and low-emission alternatives. Given the full picture, many may conclude that a wiser alternative investment of the £3+ billion is far better to advance the achievement of the UK's urgent energy and climate policy objectives.¹⁵

The argument that all windfarms are the same and must be pursued at any costs is simply not valid. The relative cost and benefits must be objectively compared. Specifically:

The same industrial-scale wind turbines now proposed for Rampion 2 moved to far better wind regimes offshore on Dogger Bank in the North Sea, costing the same £3bn upfront, would generate up to 60% more energy for UK society – and by some recent wind industry data, actually double the energy output; hence double the benefit that Rampion 2 may offer as a climate action. Similarly, clean energy low-emission alternatives are available that provide value for money in the energy transition.

Choosing NOT to build Rampion 2 and thus avoiding the unnecessary compromise to sustainable development of the Sussex Coast would be a far better ecological, financial and sustainability choice for the country, while doing more to reduce carbon emissions sooner.

Conclusions we draw, and why?

Renewable sources now provide over 43-44% of electricity used in the UK (mainly solar and wind, since 2020)¹. That comes as a surprise to many people.

So we ask the simple question:

"With that amount of renewable supply already, how did we end up in such a mess? - with the combination of over reliance on energy imports, prospects of rolling power cuts and blackouts for years, and devastating energy tariffs; perhaps the highest in the world rendering swathes of the UK economy non-completive, shedding jobs and bringing worry and sleepless nights to countless households and families up and down the country?"

One central problem is the widespread lack of understanding among decision-makers, the public and media that *we get lots of power from our main renewable energy sources sometimes (wind and solar), but little or no power at other times – and what that actually means to our lives and livelihoods today and in the future.*

¹⁵ RWE indicates its Rampion 2 proposal in the Sussex Bay inshore would cost £2.87 billion to install 1,200 MW (preliminary cost). RWE websites indicate the 1,400 MW Sofia Windfarm now under construction on Dogger Bank 195 km from the UK's North East coast would cost about the same £3 billion. Sofia has a higher capacity for the same expenditure, and most significantly it will have a higher load factor due to far better wind regimes on Dogger Bank compared to the narrow South Coast inshore. <https://sofiawindfarm.com/>

Simply as the wind drops we get less or even no power from offshore windfarms. At night we get no solar generation either from large grid-scale solar installations in fields, or on house roofs. Plus at UK latitudes we receive far less solar in winter months due to short daylight hours (8 hours daylight in January versus over 16 hours of daylight in July) and far lower solar intensity in winter, by a factor of 7 almost as compared to the summer months.¹⁶

Thus electricity from renewable sources is not “dispatchable” energy, meaning it cannot be turned on when needed. We cannot adjust renewable supply to the National Grid according to demand as it is unpredictable even days in advance. How much we get and when is weather-dependent, season-dependent, and time-dependent and varies year-to-year.¹⁷

This does not mean renewables are not fundamentally essential to the UK’s transition to clean energy. It means we must be practical and smart how we bridge the transition to all low-carbon sources. In particular, despite aspirations, we cannot effectively store variable eco-energy. We are not there yet. Much of that technology is still being developed and is not ready to be scaled-up due to a variety of factors (indicated in the Report in the footnote).¹⁸

What does this mean for the consideration of Rampion 2 and its relative merits versus other reasonable offshore wind alternatives and priorities?

Figure 3 on the next page, “Monthly offshore windpower output”, illustrates the variability reality showing the combined output the National Grid received from all UK offshore windfarms for a 30-day period this Sept-Oct, 2022. That data was available on the Crown Estate website (<https://www.thecrownestate.co.uk/en-gb/what-we-do/asset-map/#tab-2>) which also shows the real-time output for each offshore windfarm operating and the total combined output, as well as the rolling 30-day combine output charts.

Note also: Crown Estate is responsible for international competitive bidding of the UK’s seabed rights and in waters for windfarm development. These are rights (now over a half century) are awarded to the highest international bidders, which at this stage are largely European state-backed, or state supported conglomerates. Some people argue this highest international bidder approach helps to guarantee that UK customers will face higher electricity prices for a very long time.

¹⁶ <https://www.viridiansolar.co.uk/resources-1-2-seasonal-variation-solar-energy.html>

¹⁷ Solar and wind by policy mandate are to be the dominant sources for power supply for the UK by 2035.

¹⁸ An assessment of timeframes for utility-scale energy storage and the main challenges was offered in the UK Government-funded publication by the World Bank, “**BRINGING VARIABLE RENEWABLE ENERGY UP TO SCALE: Options for Grid Integration Using Natural Gas and Energy Storage**. ESMAP, Technical Report 006/ 15. While the Report was issued in 2015, it remains valid and highly informative. This was also before concerns over the world’s security and supply of rare earth minerals such as cobalt and lithium came to the forefront.

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

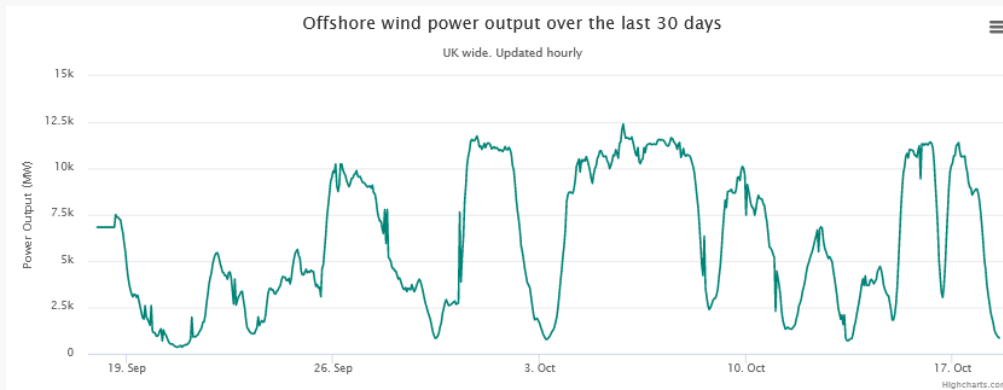


Figure 1: Combine output from all UK Offshore windfarms for a 30-day period in Sept-Oct 2022. Source: Crown Estate Website

The rolling 30-day charts for August-September and January-February show the extent of periods of calm, when offshore wind output drops off. At that time, the UK must rely on imports, or other low-emission electricity sources to power the National Grid; otherwise demand is not met. The grid becomes unstable and load shedding (blackouts) ensue.

Figure 2 below is the rolling 30-day output from offshore windfarms in August 2022 (from Crown Estate's website, as seen 1 Sept 2022). We see low output for sustained periods that month, averaging perhaps 20% -25% of wind installed capacity 11 GW for days at a time.

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

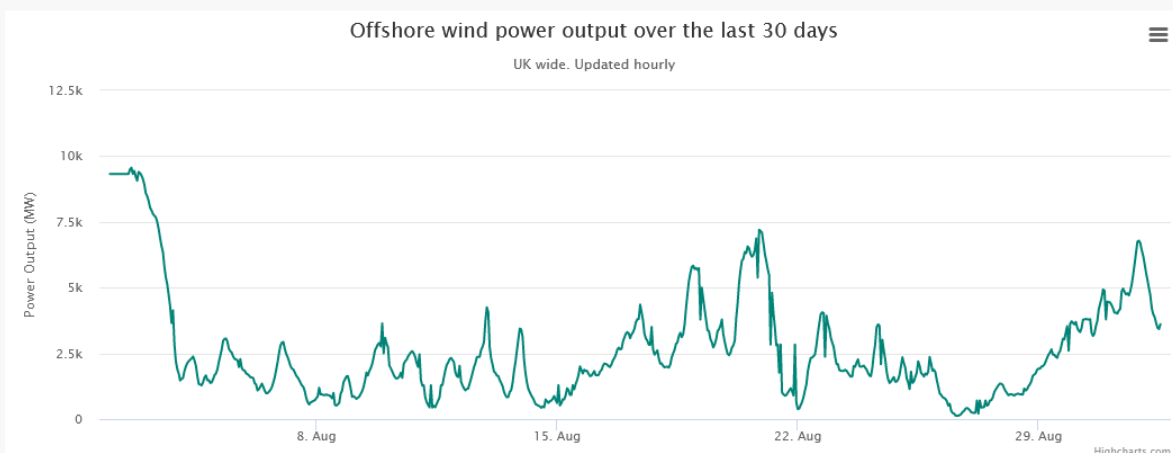


Figure 2: Combined output (MW 000's) from all UK Offshore windfarms August 2022. Source: Crown Estate website

Whether we will see the same pattern of low winds this coming winter in 2023 is unpredictable. Just as we don't know what comes next with natural gas supply to the EU. The UK is in a regional gas market, in addition to competing for LNG imports on the high seas from fracking in the US and Qatar mainly.

Thus until technically and economically feasible energy storage is available at the utility-scale, **UK society must sensibly prioritise its investments in the most efficient offshore wind farms in the best wind regimes. Data indicates Rampion 2 is not one of those.**

Otherwise, we must avoid moral posturing to pressure investing in offshore windfarms that do not offer the most benefit and value for money in order to make some people happy.

We must accept there is no limitless pot of money available to the UK as a society to invest in offshore windfarms. All offshore windfarm proposals and Renewable Energy systems have to compete for investment and what we as a society can afford.

To Note Also: Labelling residents and politicians such as area MP's who have raised legitimate questions about investing £3+ billion in Rampion 2 as NIMBY- helps no one. It unnecessarily distracts and divides communities. Equally, claiming that "activists" are only worried about aesthetics, to then deploy dismissive slogans like, "beauty is in the eye of the beholder", which the Rampion 2 developer has done repeatedly in pre-application virtual consultations on video and in promotion materials, is not helpful behaviour or deserved.

A final illustration of concern over the relative performance of Rampion 2, as compared to moving the same turbines offshore to the North Sea is seen in the data in Figure 3. It is a semi-technical graph of load duration curves for offshore windfarms showing the percent of time (horizontal axis) they produce at different power outputs (capacity factor or load factor, on the vertical axis) as a percent of installed capacity.

That graphical data tells us:

- 15% of the time the existing Rampion windfarm turbines produce no output at all. ¹⁹
- That compares with 7% of the time the Hornsea One windfarm in the North Sea produces no output. Rampion thus has no output twice as often.
- 60 % of the time Rampion 1 output is 40% or less of its installed capacity; or conversely, Rampion only produces above 40% of installed capacity 40% of the time.
- In contrast, the Hornsea One windfarm spends 55% of time generating above 40% of its installed capacity (compared to 40% for Rampion).
- Honsel One produces above the UK average capacity factor 65% of the time.

¹⁹ 15% of the time is equivalent on average to 1 day a week with no power. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity. Figures 1 and 2 with the rolling 30-day output this year, show that periods of low output actually vary up to several days at a time.

The point being that Rampion 2 turbines would have the same relative lower performance noted above (being adjacent to Rampion 1 in the same wind regime) as compared to investing the same £3+ billion to install those turbines in the North Sea area.

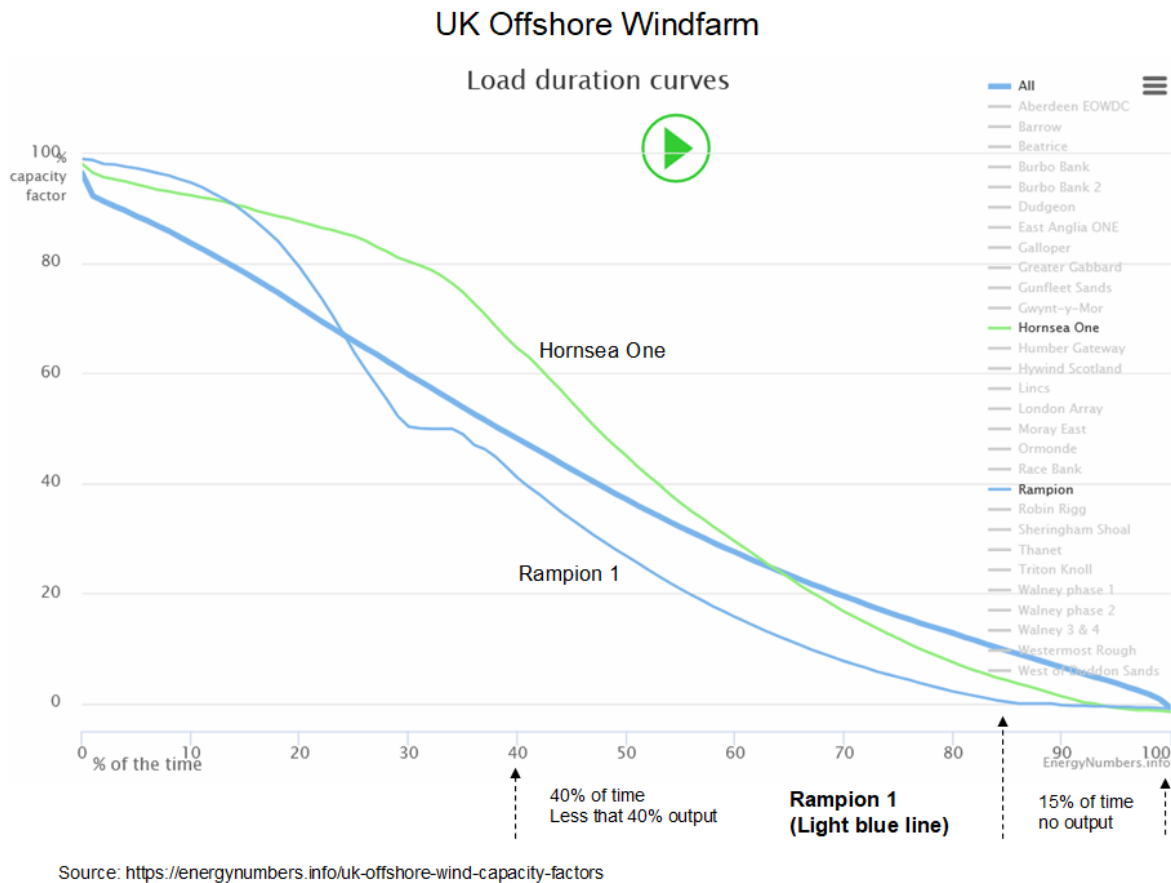


Figure 3: Comparison of Loads Duration Curves (capacity factor versus % of time) for Rampion 1 on the South Coast (light blue line), Hornsea One in the North Sea (green line) and the average for all UK Offshore windfarms (thicker blue line).

At the time of drafting this Background Note (09:00, 14 Nov 2022) Rampion was producing under 3%

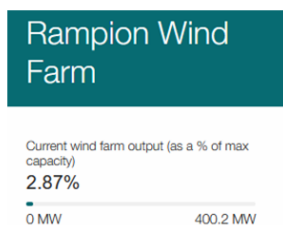


Figure 4: Rampion Output 09:00 14 Nov 2022

of its installed capacity (see Figure 4, from the Crown Estate’s website). Other data to be presented in Representations at the Rampion 2 Examination next year show that on an annual basis Rampion 1 was far less efficient in powering homes on the National Grid than an equivalent windfarm operating in the North Sea with higher and steadier winds at 69% efficiency.²⁰

Moreover, there are reasonable alternatives for clean energy and low

²⁰ As noted load factors vary seasonally and year-to-year depending on the weather. Rampion 1 has generated in the 34-46% range depending on the year.

emission generation in the south of England to support the UK's energy transition. And there is no national target for inshore windfarms on the narrow Sussex coast.

It is important to look carefully at RWE's recent claim that it is **"even more critical to proceed with Rampion 2"**.

PCS argues instead: **it is even more critical for UK society now to invest in the most efficient offshore wind farms: not Rampion 2**

– i.e. invest the £3+ billion that Rampion 2 would cost upfront to advance more productive windfarms in stronger wind regimes further offshore already in the existing UK "project" pipeline to meet national offshore wind targets by 2030 and beyond.

Those who have the expertise should fact check claims about the actual performance, benefits and harms of Rampion 2, and with respect to reasonable alternatives. These reasonable alternatives include offshore windfarms that respect the Government's own strategic environment advice, as well as the clean energy, low-emission generation alternatives available to feed the National Grid in the south of England.

Advancing those offshore windfarms and low-emission generation technologies that clearly outperform Rampion 2 as proposed would thus:

1. Provide more electricity and offer better value for money.
2. Do more to reduce upward pressure on the nation's electricity bills in this extreme cost-of-living crisis so devastating to families, jobs and the economy, where energy prices drive inflation.
3. Do more to reduce imported gas, especially LNG from gas fracking (off shored) to the USA and LNG terminals in Qatar, all subject to highly volatile international pricing and market demand.
4. Do more to reduce UK carbon emissions, and
5. Help to reach the UK Net Zero ambition sooner.

Again, we very much welcome RWE's promotion of three efficient windfarm developments on Dogger Bank that are truly offshore, and fully respect the UK Government's strategic environmental advice on turbine locations of that impressively large size.

Those safeguards are embodied in the Government's rolling Offshore Strategic Environment Assessment (OESEA) programme – meaning to only place turbines over 225m more than 25 miles from sensitive locations, such as National Parks to avoid multiple harms that compromise the achievement of sustainable development of our valued coasts.

We cannot see how to justify a large industrial-scale power park transforming the natural Sussex seascape in the face of people who live, work and visit, all seeking to enjoy our natural seascape heritage with its many intrinsic values and the promotion of well-being. Its construction and operation would cause havoc to the seabed and marine life, as well as insects and birds in highly productive sensitive inshore ecosystems already under pressure, making them even more vulnerable to long-term climate change.

We all recognise and appreciate that some people want to see more wind turbines on the Sussex coast - whatever the cost, for whatever their reasons. For some it may be not being told or realizing the scope and extent of the impacts, or being satisfied with overstated benefits accepted without challenge or scrutiny, or simply not being aware of the risk to sustainable development and the opportunities to do more to address climate change that are forgone if the £3+ billion Rampion 2 investment were to proceed.

PCS along with other community organisations thus encourage everyone to look closer at the facts and claims in the round, with an open mind; and proactively support efforts to ensure that decisions about the future of our South Coast, and how we best tackle climate change are fully informed and the wisest choices.

Our view is that when presented with all the facts, it will be much easier for south coast residents, the wider public and the Examination Panel to see that the combined harms of Rampion 2 far outweigh the benefits claimed by the developer.

Hammering on that Rampion 2 is essential to meet the UK's targets for installed capacity for offshore wind by 2030, at any cost, while compromising the underlying aims and very reasons for those targets, is neither helpful nor wise; while at the same time shouting Nimby to cancel Residents who raise concerns. That on top of other factors, such as the fact Rampion 2 uniquely undermines the achievement of sustainable development in the inshore waters of the south coast. It does not respect strategic environmental advice on locations for large wind turbines offered by the UK Government as common-sense safeguards to avoid and minimise unnecessary harm to coastal communities and marine ecosystems.

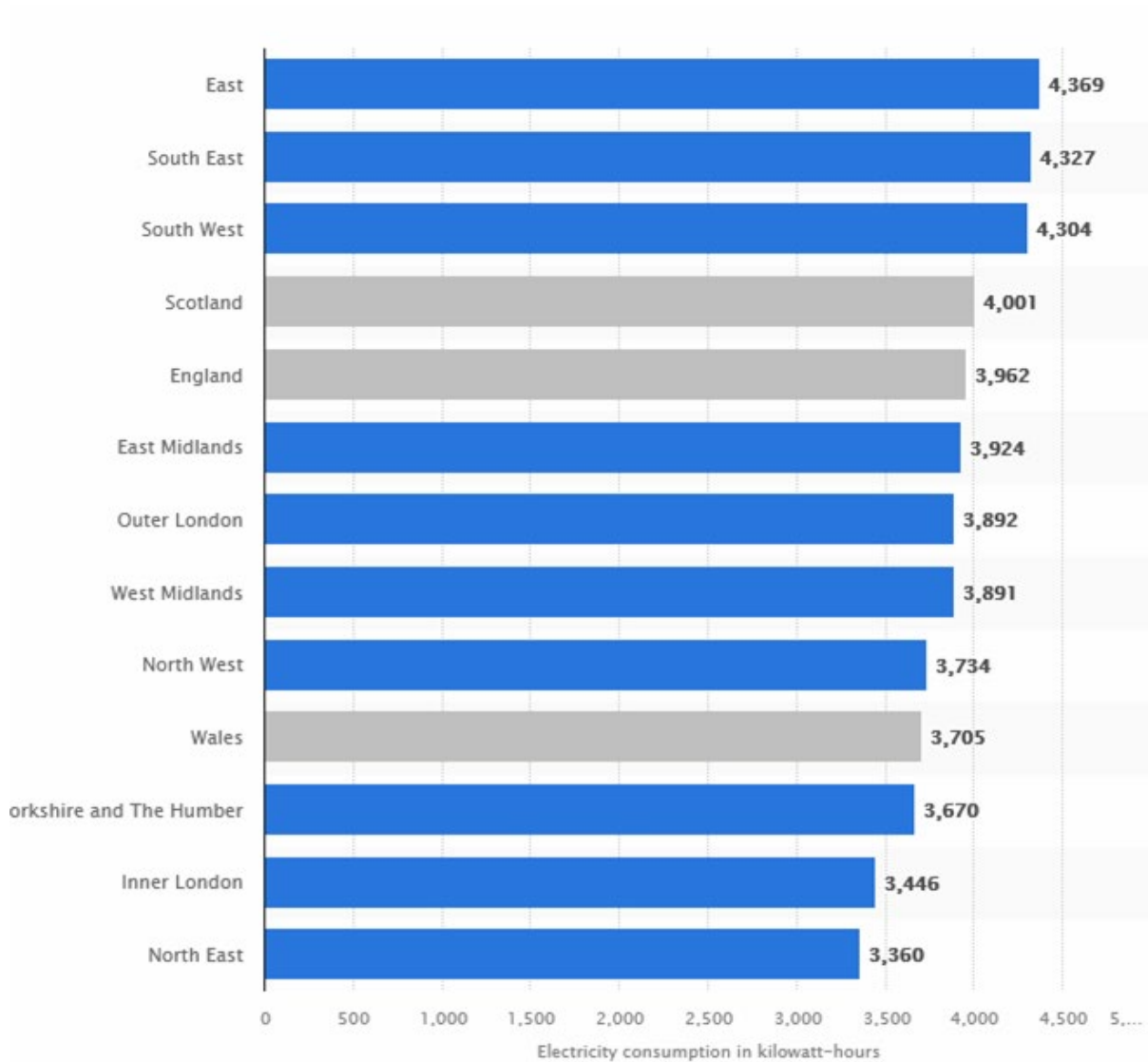
There are no UK targets for offshore windfarms on the narrow south coast of England to feed the National Grid. Reasonable alternatives are available and need to be pursued.

Annex 2:
Simple spreadsheet model of projected Sussex electricity demand and
Rampion 1 and 2 Power Output

Being updated
To be supplied to the ExA if requested

Annex 3:

Average domestic electricity consumption per household in Great Britain in 2020, by region (in kilowatt-hours)



Source: <https://www.statista.com/statistics/517845/average-electricity-consumption-uk/>

RWE Rampion 2 Website: The average annual domestic household electricity consumption in the UK was 3,618 kWh in 2018 (Source: UK Government, BEIS, Dec 2019). With a maximum planned capacity of 1200 MW of electricity, Rampion 2 could meet the electricity needs of 1m+ homes equivalent each year. This estimate is based on UK Government data and a methodology that is standard used for offshore wind farms.

¹ Wind energy generation accounted for 24% of total electricity generation (including renewables and non-renewables) in 2020; with offshore wind accounting for 13% and onshore wind accounting for 11%. All renewable account for lose to 44% of generation today, though it varies year-to-year.

<https://www.ons.gov.uk/economy/environmentalaccounts/articles/windenergyintheuk/june2021#wind-electricity-generation-in-the-uk>