



## **SEAS Analysis of Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021<sup>1</sup>**

### **1. INTRODUCTION**

*“Without reform, there is now a significant risk that local backlash against grid connections for offshore wind farm will grow, spreading from East Anglia to North Wales, Humberside, and the east coast of Scotland”<sup>2</sup>*

1.1 This is the conclusion to the latest report endorsed by the Rt Hon Dame Andrea Leadsom DBE MP and the Rt Hon Amber Rudd.

1.2 SEAS would agree with this conclusion. The Government must minimise the damage to precious inland areas and listen to communities if they are to maintain the support for the UK’s ambitious 2030 offshore wind energy goals.

1.3 SEAS and other community groups are proposing a positive way forward, a ‘split decision’, for East Anglia One North (EA1N) and East Anglia Two (EA2), so that:

- a. The offshore turbines are recommended for consent. This will mean that no time is wasted in respect of construction of the turbines.
- b. The onshore infrastructure is rejected in favour of full consideration of better locations for this infrastructure where the adverse impacts are minimised at a brownfield or industrialised site.

### **2. THE CURRENT REGIME IS NOT FIT FOR PURPOSE**

*“[There is] concern that the current regime, which sees each offshore wind farm build its own new power lines and substations to connect to the existing electricity network, is not fit for purpose.”<sup>3</sup>*

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<sup>1</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>2</sup> Ibid

<sup>3</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)



2.1 This report is the latest in a string of policy papers which discredits the current ‘point to point’ system for connecting wind farms to the grid. It supports the findings of the National Grid ESO study<sup>4</sup> which states that the current rules would lead to unacceptable outcomes, including:

- a. Significant disruption for coastal and rural communities caused by the new network infrastructure required for each offshore wind farm;
- b. Risk of environmental degradation in environmentally sensitive areas offshore, onshore and at landing points for subsea cables; and
- c. Higher costs and therefore higher energy bills compared to a coordinated onshore and offshore electricity network.

2.2 The devastating impacts of EA1N and EA2 on the onshore tourism economy, the environment and local communities have been well documented throughout the nine month examination demonstrating the now established fact that the current regime is not fit for purpose.

### 3. WE NEED A CLEAR VISION FOR THE FUTURE NOW

*“More coordination will not come about just by leaving it to the market. It requires Ministers to outline a clear vision for the future of the UK’s onshore and offshore electricity network.”<sup>5</sup>*

*“Some of this network infrastructure could have a lifetime of over fifty years. It is therefore critical that network planners consider the long-term impact of infrastructure that is approved and/or built in the next few years. For example, without long-term planning, network infrastructure built to meet the 2030 offshore wind target (40 GW) may make it more expensive to meet the UK’s longer term decarbonisation goals, which the ESO forecasts will require 80-100 GW of offshore wind.”<sup>6</sup>*

*“Projects recommended now must be complementary to options that might be recommended in 3, 5 or 10 years time.”<sup>7</sup>*

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<sup>4</sup> The Offshore Co-ordination Phase 1 Final Report, National Grid Electricity System Operator (NGESO), 16 December 2020 [Link](#)

<sup>5</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>6</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>7</sup> Ibid



3.1 There is an urgent need for a comprehensive long-term offshore and onshore spatial plan so that projects connecting over the near, medium and long term benefit from pre-planned coordination. Importantly, we need this holistic plan now, not in two, five or ten years time.

3.2 SEAS believe that this point must be reflected upon with regard to EA1N and EA2 planning applications. The cumulative impact of future projects planned to connect to the Grid at Friston should consent be given is staggering (Nautilus Interconnector, Eurolink Interconnector, SCD1 Interconnector, SCD2 Interconnector and possibly Five Estuaries Offshore Wind Farm and North Falls Wind Farm). With the addition of Sizewell C Nuclear Power Station, this will become the largest complex of energy infrastructure in the UK. It is essential that EA1N and EA2 are planned strategically in co-ordination with the future projects planned to connect to the grid in East Anglia. To date, this has not been the case. The Examination of EA1N and EA2 took place without due consideration to future projects.

3.3 The 'split decision', where the offshore turbines are given consent but the onshore infrastructure is not, would give the government an opportunity to develop a planned strategic direction for East Anglia.

- a. An opportunity to choose a Grid connection on a brownfield or industrialised site which has the long-term capacity to act as a wind energy hub and thus facilitate the timely consenting not only of EA1N and EA2 but future projects planned to connect in the area. Thus avoiding the costly and lengthy Judicial Review process as has been experienced in Norfolk.
- b. An opportunity to give new strategic direction to the UK's offshore wind industry and pilot an East Anglian 'Pathfinder' project with integrated offshore solutions in order to minimise the number of connections onshore and thereby creating significant economies of scale and synergies. A major opportunity to lead the world in terms of wind energy infrastructure.
- c. An opportunity to nurture and grow the Suffolk Heritage Coast's nature based tourist economy.
- d. An opportunity for a grid connection to be chosen in line with the government's environmental policy to protect Areas of Outstanding Natural Beauty.
- e. And ultimately the opportunity to accelerate the government's wind energy targets.



## 4. INTEGRATION OFFSHORE AND ONSHORE

*“It is critically important that coordination includes both the onshore and offshore network.”<sup>8</sup>*

4.1 The National Grid ESO’s analysis<sup>9</sup>, highlighted in this report, shows that an integrated approach could significantly reduce the new infrastructure required onshore and offshore, as well as reducing the number of landing points. National Grid ESO found that an integrated approach could reduce the number of landing points by 50% if delivered by 2025, or 30% if delivered by 2030.

4.2 The ESO’s study also found that a coordinated approach could reduce the cumulative cost of building and operating new network infrastructure by £3bn-£6bn by 2050 (8%-18%), depending on how quickly coordination can be delivered.

## 5. MODULAR OFFSHORE GRID (MOG)

5.1 A coordinated offshore approach does not necessarily mean an offshore ring main. The report gives a case study of the Belgian transmission owner, Elia, who has built an offshore substation that will be used to connect at least four offshore wind farms to the onshore grid. This is called a ‘Modular Offshore Grid’ (MOG). This reduces the impact of new cables on the local environment. Elia estimates that the coordinated offshore network uses 30-40 km less cable compared to an uncoordinated approach.

5.2 Unlike an offshore ring main, this small scale integration is compatible with security of supply.

5.3 If ScottishPower Renewables (SPR) were willing, they could coordinate their EA1N and EA2 wind farms and deliver the power from those two farms together to a single site using HVDC rather than HVAC technology. Ofgem has confirmed within the Examination of EA1N and EA2 that *“there is scope for the development of shared assets and this can be considered within the existing regime.”*

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<sup>8</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>9</sup> The Offshore Co-ordination Phase 1 Final Report, National Grid Electricity System Operator (NGESO), 16 December 2020 [Link](#)



## **6. THE DEPARTMENT OF BUSINESS, ENERGY AND INDUSTRIAL STRATEGY, (BEIS) OFFSHORE TRANSMISSION NETWORK REVIEW (OTNR)**

6.1 As the report emphasises, the overarching stated aim of the OTNR is:

*“[To] ensure that the transmission connections for offshore wind generation are delivered in the most appropriate way, considering the contribution offshore wind is expected to make towards net-zero by 2050. This will be done with a view to finding the appropriate balance between environmental, social and economic costs”<sup>10</sup>*

6.2 Importantly, this explicitly recognises the environmental and social impact of grid connections for offshore wind farms.

6.3 Crossed Wires recognises the importance of finding solutions that can reduce the social and environmental impacts of projects without risking delays or harming investor confidence.

6.4 A ‘split decision’ for EA1N and EA2 would enable such a solution. It would facilitate an alternative brownfield or industrialised grid connection to be brought forward and thereby ensure the onshore infrastructure minimises its environmental and community damage in line with the explicit aim of the BEIS OTNR Review. Alternative brownfield or industrialised sites have been identified such as Grain, Bramford<sup>11</sup> or Bradwell.<sup>12</sup>

## **7. EAST ANGLIA FOR FIRST PATHFINDER PROJECT**

*“Given the potentially large costs involved in encouraging projects to coordinate, we recommend that the Government focus only on the projects where early coordination could have the biggest benefits; the Government should focus on the East Anglia region, where there are six new offshore wind farms that are looking to connect to the onshore electricity network in mid-2020s and where proposals include new substations and many miles of underground cables onshore.”<sup>13</sup>*

7.1 Very significantly, this report singles out East Anglia as the region for the Government to focus on with regard to greater integration and engagement with the BEIS OTNR ‘pathfinder’ projects.

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<sup>10</sup> BEIS OTNR Objective [Link](#)

<sup>11</sup> Substation Action Save East Suffolk (SASES), Pathfinder Update, 28 June 2021 [Link](#)

<sup>12</sup> Therese Coffey has been consistent in proposing Bradwell. Therese Coffey’s Deadline 10 Submission, 7 May 2021 [Link](#)

<sup>13</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)



7.2 SEAS wholeheartedly supports this positive suggestion. In the case of EA1N and EA2, these two projects can share the same technology, share the same developer (which would negate the need for changes to legislation) and therefore have opportunities to integrate offshore and reduce the harm to the environment. This does not require a ring main or shared assets but would enable an alternative grid location to be brought forward at a brownfield or industrialised site. This would lead to less damaging impacts on our environment and coastal tourism economies, in line with the environmental aims of the White Paper<sup>14</sup> and the BEIS OTNR Review<sup>15</sup>.

7.3 Whilst SEAS welcome the report's calling for East Anglia to become the first Pathfinder project, it is important to realise that EA1N and EA2 should not in any way be classified as 'advanced' or 'in-flight'. Nor should they, as the report sometimes implies, be lumped in the same category as projects that have already received planning consent (e.g. EA3) or even projects which are much further down the planning path (e.g. Norfolk Vanguard). Let us be clear, EA1N and EA2 have only just reached the end of the examination period and as yet no recommendation has been received or made by the Secretary of State. As such they should be regarded as early enough in the development process to accommodate changes to the design of their grid connection which a 'split decision' would enable.

## **8. GOVERNMENT MUST UNDERWRITE ANY NEW RISKS**

8.1 The report goes on to say that such a pathfinder project is only likely to be attractive to developers, if the government:

*"Underwrites all additional costs incurred by the developers, including the cost of any delays to their projects such as lost CfD payments."<sup>16</sup>*

8.2 SEAS supports this initiative which would incentivise developers to coordinate.

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<sup>14</sup> Energy White Paper, Powering our Net Zero Future, December 2020 [Link](#)

<sup>15</sup> BEIS OTNR Objective [Link](#)

<sup>16</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)



## **9. CHANGES MUST BE DELIVERED WITHOUT SLOWING DOWN THE GOVERNMENT'S DRIVE TO NET ZERO**

*“The challenge for the Government is to deliver these changes without slowing down existing projects or damaging investor confidence in the UK’s offshore wind sector – any delays will put at risk the Government’s manifesto commitment for 40 GW of offshore wind capacity by 2030, and any harm to investor confidence will increase the cost of new offshore wind farms and lead to higher energy bills.”<sup>17</sup>*

9.1 SEAS recognises the time critical political agenda. It is quite likely that even if the Applications for EA1N and EA2 are consented in full it may well miss the CfD (Contract for Difference) to begin later this year. In this case it may be late 2023/24 before the Applicant has an opportunity to bid in a CfD. By 2024, if a ‘split decision’ was granted and the consenting process was quickened, (as it has been suggested it will be by the Secretary of State for Business, Energy and Industrial Strategy, The Rt Hon Kwasi Kwarteng MP), SPR would have sufficient time to submit an alternative proposal with a grid connection designed to cherish our environment and also maximise efficiency. Viewed in this way, no time would be lost in achieving 40GW by 2030.

## **10. OFFSHORE WIND PROJECTS SHOULD BE BUILT AND CONNECTED IN PLACES WHERE THEY HAVE THE MOST VALUE**

10.1 The report recommends that developers should be incentivised to build and connect projects near centres of demand so as to minimise the amount of new infrastructure that is required and reduce electricity bills through minimising ‘constraints costs’<sup>18</sup>.

*“In future, the electricity network in East Anglia is likely to be increasingly constrained as more offshore wind farms connect there; therefore, each new wind farm built in these ‘constrained’ areas provides less overall value to the electricity system unless and until the network is upgraded. If the electricity market rules were reformed to encourage developers to build projects in place where they are most valuable and can therefore reduce energy bills the most, then it is possible that these wind farms off East Anglia*

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<sup>17</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>18</sup> NGESO expects constraint costs to rise to up to £2bn per year by late 2020s. The Offshore Co-ordination Phase 1 Final Report, National Grid Electricity System Operator (NGESO), 16 December 2020 [Link](#)



*would have sought a grid connection nearer to London, where demand for electricity is higher.<sup>19</sup>*

10.2 A split decision for EA1N and EA2 would enable a more suitable onshore site connection to be chosen closer to centres of demand. For example, as the Secretary of State for Work and Pensions, the Rt Hon Thérèse Coffey MP says:

*“The long-term capacity of Bradwell as an integrated Wind Energy Hub has significantly greater potential than the Friston site. It is closer to London and on the coast thus negating the need for cable corridors to be dug and re-dug with every future wind farm project attempting to connect to the Grid. It is a brownfield site and in need of development ....”<sup>20</sup>*

## **11. THE DANGER OF LEGAL CHALLENGE TO PLANNING CONSENT**

*“Without reform, there is a risk that new projects will face growing local opposition, including through the courts, that will slow down the UK’s offshore wind programme, limiting jobs and slowing down cuts to emissions.”<sup>21</sup>*

11.1 The report recognises that legal challenges to planning consents, as has already occurred in Norfolk, will cause severe delays to the next phase of the offshore wind programmes.

11.2 The UK clearly needs to ramp up the construction of wind farms. It is thus essential that we get this East Anglian Hub right NOW and save time by avoiding a costly and lengthy judicial review process not only for EA1N and EA2 but for the future projects planned to connect on the shores of East Anglia such as Nautilus, Eurolink, North Falls, Five Estuaries, SCD1 and SCD2.

## **12. COSTS**

12.1 The report states that the current rules are likely to increase energy bills, with analysis from the Electricity System Operator showing that more coordination could

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<sup>19</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>20</sup> Therese Coffey’s Deadline 10 Submission to PINS, 7 May 2021 [Link](#)

<sup>21</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)





save between £3bn and £6bn by 2050, depending on how quickly it can be implemented.<sup>22</sup>

12.2 Infrastructure coordination to a brownfield site is needed to avoid the higher costs caused by the current approach.

### **13. INTEGRATED GRID CONNECTIONS MUST BE TAKEN TO A BROWNFIELD OR INDUSTRIALISED SITE**

13.1 The report does not go far enough. Integration in itself is not enough to protect our biodiversity and rural communities. Only if integrated grid connections are taken forward at **brownfield or industrialised sites** can the impacts of offshore wind farm infrastructure be minimised. In today's world if our environment is not protected for our future generations, then the Government will not receive support for the UK's decarbonisation efforts.

### **14. NEITHER MITIGATION NOR COMPENSATION IS THE ANSWER**

14.1 However this report suggests weak and regressive caveats to fall back upon.

*"Where new onshore infrastructure is needed, we should compensate local communities through new 'Offshore Wind Wealth Funds'"<sup>23</sup>*

*"The Government should compensate communities impacted by the construction of offshore wind farms and associated infrastructure such as substations and cable routes"<sup>24</sup>*

14.2 SEAS rejects this suggestion. No amount of money can compensate for the needless and permanent loss of our environment and rural communities. This degree of damage to environmentally sensitive and diverse landscapes brimming with biodiversity is unmitigable, unacceptable and given the availability of better industrialised or alternative brownfield sites either on the coast or using existing cable routes, indefensible.

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<sup>22</sup> The Offshore Co-ordination Phase 1 Final Report, National Grid Electricity System Operator (NGESO), 16 December 2020 [Link](#)

<sup>23</sup> Crossed Wires: Maintaining public support for offshore wind farms, A Policy Exchange Report July 2021 [Link](#)

<sup>24</sup> Ibid



## **15. CONCLUSION**

15.1 There is no reason why Coastal Suffolk cannot develop a coordinated onshore and offshore electricity network that reduces bills, minimises disruption and protects the local environment. In today's world if our environment is not protected then the Government will not receive support for the UK's decarbonisation efforts. Only if integrated grid connections are taken forward at a brownfield or industrialised site can the impacts of offshore wind farm infrastructure be minimised.

SEAS July 2021