

## IFA2 – responses to questions raised following public consultation

24 February 2016

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### Locating the converter station

#### Q: Why is the converter station not at Chilling?

The point of connection to the national electricity transmission system is at Chilling, near Warsash. One of the key factors when conducting land searches is the proximity of the converter station to the point of connection to the grid, therefore we actively searched for land available close by.

Hampshire County Council (HCC) owns much of the land in this area and we held discussions with HCC during 2014 and early 2015 regarding land it owns near Chilling Copse. After careful consideration, HCC declined to progress this further and made a public statement to this effect in April 2015. We do not believe that there is a commercially available site which meets our needs for the converter station in the Chilling area.

Prior to this, we had investigated prospective sites on Daedalus. One site we initially discussed with the Homes and Communities Agency (HCA) and Gosport Borough Council during 2013 and 2014 was near the Daedalus waterfront residential development, but this site proved to be too small for our operational needs.

In early summer 2015, we held discussions with Fareham Borough Council (FBC) as the new owner of the Daedalus airfield. FBC was willing to discuss land for development to the north of Daedalus in the Hangars East area, consistent with their vision and strategy for Daedalus. We progressed our assessments of the site and the feasibility of routing cables across the airfield to the point that we considered that the 4Ha site to the north of Hangars East was feasible. FBC has, in principle, agreed to lease this site to us and made a public statement about this in December 2015.

Our preference is always to work with willing partners to find suitable land that is commercially available where possible.

#### Q: Why is the converter station not at Fawley?

We have been asked in particular why we cannot bring forward the project at the Fawley power station site. This is an understandable question, and one that we have received on a number of occasions during and subsequent to the public consultation events in December. The answer is multi-faceted, but it is worth first highlighting the ownership and use of the power station site at Fawley, as there has been some confusion that this was Government owned or even owned by National Grid.

The power station site was until recently owned by RWE npower. Although the main power station ceased operation in 2013, a replacement power station remained a possibility and it had been RWE npower's public position that the site had strategic value for new generation and was being retained in their ownership as such. Our understanding is that RWE npower decided to sell the power station site very recently, and that it has been acquired by Fawley Waterside Limited for housing development. Adjacent to the power station, National Grid Electricity Transmission (NGET), the owner of the electricity transmission network in England and Wales, owns and operates a substation, where the site is held on a 999 year lease dated March 1990.

The location of a converter station for an HVDC electricity interconnector is primarily driven by the location of the connection point to the electricity transmission system. All developers seeking to connect a new project to the electricity transmission system must go through the same regulated process. This involves agreeing the connection point to the existing UK network with NGET, which has a regulatory obligation to ensure an



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economic and efficient connection. For IFA2 this connection assessment process was undertaken in 2011 and, after a wide-ranging search from Chickerell substation in West Dorset in the west to Ninfield substation in East Sussex in the east, concluded that the most economic connection point (to minimise transmission costs to consumers) would be at an existing National Grid facility off Chilling Lane, near Warsash.

Only with certainty over a point of connection to the grid, is it possible to search for a suitable site for a converter station and cable route. Our approach is to seek land rights for sites and cable routes by commercial and voluntary agreement. As such, we consider land that is already available for sale or lease - or where landowners are interested to sell or lease land. The site and cable route have to be fit for purpose, feasible to achieve both technically and environmentally, and economically viable. The process of finding an available site, which meets the needs of the project, has been ongoing since 2011.

We considered locations for a converter station on the western and eastern shores of the Solent / Southampton Water as part of this process. Our studies showed that the eastern shore presented a better option for the converter station. Notably, there is the National Park area and other environmental designations on the western coast line of the Solent. A key factor in this search was to consider appropriate cable routes and landfalls for cables. The key issue affecting project viability on the western shores of the Solent /Southampton Water is from a marine perspective, to allow for cable routing and installation. The shipping and navigational constraints around the Calshot and Fawley area are significant. There are notable precautionary areas for large vessel turning, the dredged Thorn Channel, the North Channel, and Calshot Reach that cables would need to cross.

The integrity and protection of cable assets installed in the seabed is a high priority for the reliable operation of the interconnector. Dredging activities create a significant risk of damage to cables. This is the primary reason why there is an existing tunnel between Fawley and Chilling. The tunnel is the property of NGET. They have advised us that the tunnel was built in the 1960s to carry six cables under Southampton Water. These cables form an integral part of the transmission network on the south coast. Due to its age and condition and space limitations, additional cables cannot be installed in the NGET tunnel. Any additional cables required under Southampton Water would have to go in a new tunnel. Tunnelling would not be economically justifiable when other sites and associated cable routes are feasible and commercially available on the eastern side of the Solent.

A cable route across the English Channel entering the Solent from the east, around the east of the Isle-of-Wight and with a landfall to the eastern shore of the Solent / Southampton Water avoids these problems.

As such, we have prioritised sites and cable routes to the eastern shore of the Solent. The process of finding an available site which meets our needs has involved extensive searches and discussions over a period of 4 years with successive owners of different sites. These included the HCA and Gosport Borough Council regarding a site in the waterfront area of Daedalus near Lee-on-the-Solent; Hampshire County Council regarding a site near Chilling Copse; and, latterly, Fareham Borough Council regarding a site to the north of Daedalus. In that time, and given the uncertainty of finding suitable sites, we had also regularly reviewed our land searches to identify suitable available sites and this has informed our decision to bring our current proposals forward.

## Aviation

### Q. How will we ensure IFA2 is compatible with operations at Daedalus Airfield?

The Civil Aviation Authority is the regulatory body for aviation in the UK. We are currently consulting with them and the owner and manager of the airfield to ensure that they, along with users of the airfield, are aware of our proposals. We will also contact users of the airfield directly to make sure we understand their views and can answer their questions.



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Furthermore we are embarking on an independent assessment of impacts with the airfield owner and manager. Amongst other things, the assessment will consider aviation systems, communication systems; air flow quality and aircraft crash risk. We do not consider that the IFA2 project will have any adverse impact on airfield operations, but we recognise that an independent assessment is necessary in order to fully explore and understand any relevant issues. We will not be able to build IFA2 if the Civil Aviation Authority and airfield operator believe it would not be safe to do so at the airfield.

## Noise

### Q: How will we mitigate against the noise impact of the converter station?

We appreciate that the potential for noise arising from the converter station is a concern for local people. Therefore we have allowed for this in the design process of the converter station from very early on.

For example, we have decided that there will be no outdoor electrical equipment. All of our equipment will be enclosed in buildings. This has a number of benefits: it not only ensures there is no adverse visual impact from electrical equipment and protects the equipment from coastal weather effects, but it is also an effective way of mitigating noise.

The equipment involved in the conversion of electricity does not have noisy moving parts. The main sources of noise will be from the transformers and associated cooling equipment. We will mitigate these noise emissions by ensuring that all such equipment is contained within specifically designed noise enclosures.

This is a tried, tested and effective approach that has been utilised on interconnector projects such as BritNed on the Isle of Grain. We are also measuring existing background noise levels in the area in and around the airfield to ensure our mitigation measures are effective and do not create a nuisance for local residents. We will share this with manufacturers to help them with the design of the equipment. Our mitigation measures will form part of our Environmental Impact Assessment that will be submitted alongside the Planning Application.

## Safety and security

### Q. What will the impact of Electric and Magnetic Fields (EMFs) be on the general public and airfield operations?

The level of EMFs emitted from all the various components of IFA2 will be in compliance with the exposure limits set to protect the public on the advice of independent authorities, and we do not therefore consider that there will be any adverse impact on the local community, the airfield or its users arising from our proposals.

For both the AC and DC cable systems used on IFA2, electric fields will be completely screened by the sheath of the cables and the cables will produce no external electric field. Both types of cable will produce magnetic fields. The magnitude of both the AC and DC magnetic fields decreases rapidly with distance. The cables will be buried approximately 1m in the ground and this ensures that the magnitude of the magnetic fields above ground, even directly above the cables, are limited, and fall rapidly to the sides. For example, the DC field produced by the cable will be similar to the natural magnetic field produced by the earth.

It is important to note that exposure limits for EMFs in the UK are set by the Government on advice from Public Health England, and the electricity industry strictly adheres to these limits. The exposure limits for both DC and AC cables originate from the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines, published in 1994 and 1998 respectively. The equipment installed in the converter station, and both the AC and DC underground cables, will be designed to comply with the relevant exposure limits as set by these authorities, even directly above the cables. These limits are available to view here:

[http://www.energynetworks.org/assets/files/electricity/she/emfs/EMF\\_The\\_Facts\\_260613.pdf](http://www.energynetworks.org/assets/files/electricity/she/emfs/EMF_The_Facts_260613.pdf)

We are working with the airfield to ensure that the routing of the cables is optimised so that it does not interfere with existing operations. We will also carry out measurements of the existing electric and magnetic fields at Daedalus in order to understand indicative background levels in the area. All the relevant information on EMFs will form part of our Environmental Impact Assessment which will be submitted alongside the Planning Application and our compatibility assessments with the airfield.

A very low level of radio waves may be emitted from the converter station, which should not present a health concern. Similar to the magnetic fields, these will decrease rapidly with distance. Again we are working closely with the airfield and equipment designers to ensure that this does not impact on operations or interfere more widely with radio or TV equipment.

Q: Is it a security risk?

As part of the planning application process, we prepared an Environmental Impact Assessment Scoping Report – this was designed to help authorities judge whether there was a need for further assessment of security risk. The Counter-Terrorism Unit has been consulted on this and stated that it does not consider the proposals to present a security risk.

We need to protect the safety of our staff and the public. We will put in place the appropriate asset, fire protection and security measures to ensure this. The site will be protected by a high chain-link fence, with controlled gate access, video camera surveillance, and clear public safety signage. The site will also be manned 24/7. We regularly review security arrangements at our sites to ensure they remain adequate.

Q: Will National Grid cut costs on IFA2 as a result of the proposed converter station being located at Daedalus as opposed to Chilling?

No. We see ourselves as long-term members of the local community and want to be good neighbours from the start. A vital part of this is ensuring that our facilities do the job they are meant to do, are well-maintained and designed to fit in as best as is possible with the immediate neighbourhood. Where we make promises to a local community, these will be honoured and we believe our track record bears this out.

## Design

Q: What will the interconnector look like?

We recognise that the size and design of the new interconnector building at Daedalus is a cause of concern for many local people who live near to the site. That's why we have appointed architects to work alongside officers from the local planning authority, Fareham Borough Council, to create a design which is in keeping with the Daedalus site.

Ensuring that the converter station is in keeping with other buildings has formed a key part of our brief to the architects. The materials, colours and form of the buildings are all important considerations here. Residents have told us that the north-east view from Peel Common is particularly significant and we are looking at the best approach for this perspective. Landscaping is equally important in this regard, and we are working with the landowner and local planning authority to develop a quality landscaping strategy and design.

We are currently in the process of developing options for the indicative design of the converter station and landscaping and will bring these forward at our next public consultation events in March. We will be able to share more detail at that time, and receive feedback.

## Scale of converter station

Q: The proposed height of the converter station is 22 metres; can you reduce this or bury the converter station?

Our proposal will ensure that all electrical equipment is enclosed in buildings – this is important for the visual impact of the site, to protect equipment from coastal weather effects and to mitigate any concerns about noise. We are currently in a procurement process to determine the contractors that will build the interconnector for us along with the equipment in each part of the converter station.

That means that, at present, we are only able to provide an outline of the size of the converter station. For the sake of openness and transparency, we prefer at this stage to talk in terms of the worst-possible case for the building – the largest it could be. In terms of height, this would be 22 metres. Depending on the proposals we receive from manufacturers, we believe that a 2-3 metre reduction in height is possible. This would be comparable with other proposed buildings at the Daedalus site.

Outline planning permission has been granted at Daedalus east for buildings up to 18 metres tall, including 2 plots with building heights of 16 metres closer to the airfield than the proposed converter station site. We think that the converter station will therefore be in the size range of other buildings planned for the Daedalus site.

We expect manufacturer's design proposals to heavily influence the height of the buildings. Following feedback during public consultation we have investigated other ways of reducing the height of the building, including digging down to sink the building. We will already generate enough spoil for landscaping from levelling the site; so we would need to take away any soil arising from further digging. This would generate thousands of truck movements on local roads. Digging down to sink the site would mean that all access roads would have to be designed with this in mind, and also the overall land-take would need to increase to take account of the additional civil engineering for drainage and flood protection. This would require land owner approval. We do not consider that digging down would be the best way to affect the visual impact of the buildings. We will work with building design, landscaping as well as manufacturer's proposals to have the greatest effect on visual impact.

## Consultation

Q: How will we ensure we continue to consult with the local community?

To ensure local people are consulted on our proposals, we agreed a programme of public consultation with the two authorities which will determine whether IFA2 can go ahead – the local planning authority, Fareham Borough Council, and the Marine Management Organisation. The programme we agreed with their input is contained within our Concept for Public Participation which is available for download on our website

We agreed to consult with local people in two stages. The first stage set out the background to the proposals, sought feedback on our decision-making process to date, and asked about the environmental impact of the proposals. We consulted across seven consultation events in December 2015. To ensure residents knew about the events, we wrote to more than 22,000 people and promoted the events in the local media.

Following the first round of consultation, we analysed the feedback received and are now preparing for a further round of consultation events. These will provide an opportunity to review the updated proposals in response to this feedback. As part of this process we have considered feedback on the original consultation programme from a variety of stakeholders including representatives of Fareham Borough Council, Gosport Borough Council and the MP for Gosport amongst others. As a result we will take measures to increase our engagement with younger people in particular, including working with CEMAST to promote the consultation programme.