FAQs

Kentish Flats Extension Frequently Asked Questions

20 February 2011

1. How much power will the extension produce annually?
If consented and built Vattenfall expects the extension to generate between 90,000 megawatt hours and just over 150,000 megawatt hours (MWh) of green electricity every year, which is equivalent to the total annual electricity needs of between *20,000 UK households and 35,000 UK households.

2. **How much power will the entire wind farm produce annually?**
If extended, Kentish Flats, with between 120 and 141MW total installed capacity would be expected to generate between 350,00MWh and just over 430,000MWh of green electricity every year, which is equivalent to the total annual electricity needs of between 82,000 UK households and 96,000 UK households.

3. How much energy was produced last year at the existing wind farm?
The total production in 2010 reached 260 GWh. This corresponds to the requirements of 58,000 households.

4. How much energy is used to build a wind farm?
With regards to energy expended, the industry standard is six to 12 months payback and that includes development, manufacture, deployment, operation and decommission of a wind farm. Our joint venture Alpha Ventus offshore wind farm in the German North Sea (Germany's first) has already achieved a balanced Energy Return on Energy Invested in the first 12 months of operation.

5. How many tonnes of carbon dioxide emissions will be prevented by the operation of the extension annually?
It takes less than a year to produce enough electricity to compensate for the CO_2 that is created during manufacture, construction, operation and decommissioning of the turbines. Based on industry standard figures, the extension will displace annually between 38,000 tonnes to 64,500 tonnes of CO_2 emissions, on average, from generation across the electricity sector.

6. How many tonnes of carbon dioxide emissions will be prevented by the operation of the entire wind farm annually?
Based on industry standard figures, the combined generation of Kentish Flats and its extension will displace annually between 150,000 tonnes to 185,000 tonnes of CO_2 emissions, on average, from generation across the electricity sector.

7. What about all the carbon dioxide that is created to produce the turbines?
It takes less than a year to produce enough electricity to compensate for the CO_2 that is created during manufacture, construction, operation and decommissioning of the turbines.

8. What is in it for local people?
Vattenfall already considers itself part of the local community and as such will ensure as many benefits as possible are shared with local people. For example, local suppliers will be used wherever possible, local people will be employed and positive media attention will be given to the area.

The wind farm already buys products and services from many local companies for turbine servicing; this will increase if new turbines are installed. The current team of technicians all live in the local area and it is a Vattenfall objective to ensure local people are hired when there are job opportunities.

Kentish Flats has had many important visitors such as Tony Blair, Hilary Benn and other politicians. It also continues to attract journalists and scientists from all over the world. Many of these visitors stay in the local area, have meals locally and pass on information about their visits.

9. How much will Vattenfall earn from the wind farm's operation?

As from offshore wind farms, the generator gets income from the sold electricity and from the ROCS (Renewable Obligation Certificate). A ROC is a green certificate issued to an accredited generator for eligible renewable electricity generated within the United Kingdom.

10. Are there community benefit payments?

In similar projects Vattenfall has paid a community benefit. Extending an existing wind farm is a new proposition for the company in the UK. A decision has not been made yet regarding community benefit.

11. What is the Infrastructure Planning Commission?

The Infrastructure Planning Commission is the independent body that examines applications for nationally significant infrastructure projects. These are the large projects that support the economy and vital public services, including railways, large wind farms, power stations, reservoirs, harbours, airports and sewage treatment works.

In the case of the Kentish Flats Extension, the IPC will examine the application for consent because, when put alongside the existing project, the cumulative capacity exceeds the 100MW threshold set out in the Planning Act.

12. What role do local authorities play in the planning process? Which ones?

Under the Planning Act, under which the application to the IPC will be made, local authorities have several roles to play. Firstly they have a statutory obligation to comment on the applicants plans for community consultation (sometimes known as the Section 47 consultation) in the form of the Statement of Community Consultation (SoCC). The knowledge the local authority provides to the applicants in terms of the nature of the communities potentially affected by a development is seen as important in ensuring that consultation is comprehensive and effective.

Secondly, following the application the IPC will ask the local authority for their views on the consultation and whether, in their view, the applicant complied with the commitments set out in the SoCC.

Finally the local authority has a role as a statutory consultee and will be separately consulted during the pre-application phase (a process often referred to as the Section 42 consultation). Here authorities will be expected to comment on the potential negative and positive effects of the application on their area – for example adverse environmental effects, visual impacts or positive socio-economic benefits. These comments are made to the applicant who must consider issues raised by the authority in developing the final application. Subsequently, the IPC will invite the local authority to submit a Local Impact Report (LIR) setting out the authorities view on the application prior to the start of the examination process. The LIR must be considered by the IPC in reaching its conclusions on the application.

Note: For section 47 consultation, local authorities are defined by the Planning Act as those within whose area the land lies (i.e. land affected by the application) – in the case of the Kentish Flats Extension this includes Canterbury City Council and Kent County Council).

For Section 42, local authorities are defined by the act as section 47 authorities PLUS all boundary authorities.

For offshore applications such as the Kentish Flats Extension, the Marine Management Organisation may also function as an authority in providing advice on the SoCC in ensuring the 'offshore community' is adequately included.

13. What role do parish councils play in the process? Which ones?
Parish councils are included under the provisions of the Planning Act as statutory bodies (also sometime referred to as schedule 1 consultees, the consultation or prescribed bodies). Under Section 42 of the Act, the applicant must consult with Parish councils as prescribed bodies during the pre-application phase and seek their views on the merits of the scheme. The applicant must provide suitable information on the scheme and its likely adverse and positive benefits to allow the parish councils to take a view on the scheme and how it might affect their area.
Parish Councils may then also provide their views directly to the IPC following the application and where they choose to do so will be invited to play a part in any subsequent examination process.

14. How can I comment on the project?
You can write to us with your comments to Mandy Broughton, Kentish Flats Extension, Vattenfall Wind Power, 10 Greycoat Place, London, SW1P 1SB or email mandy.broughton@vattenfall.com. There are two public information days:
Wednesday 23 February at the Kings Hall, Herne Bay
Thursday 24 February at Whitstable Castle
Both are from 2pm until 8pm. There will be key staff on hand to answer questions and there is an opportunity to comment using a questionnaire.
The deadline for written responses to our pre-application consultation is 4 March 2011.

15. What is a Statement of Community Consultation?
Vattenfall has had discussions with the local authorities and the Marine Management Organisation and they have given their advice on our community consultation. The Statement of Community Consultation has been published in local newspapers. Public notices have also been published in the same newspapers. These give information about the extension and how people can comment on it.

16. Are you extending Thanet Offshore Wind Farm?
We have decided that an extension to the Thanet project at the present time faces insurmountable challenges, relating principally to the timely availability of a grid connection, that mean the extension could not be completed within the timescale set by The Crown Estate. We will therefore not make a planning application to extend the Thanet project.

17. What else is being built or developed by Vattenfall in the UK?
Vattenfall owns and operates Edinbane Wind Farm on the Isle of Skye, Thanet Offshore Wind Farm off the Isle of Thanet and Kentish Flats Offshore Wind Farm, off Whitstable and Herne Bay.

18. What else is being built or developed by Vattenfall in the UK?

Vattenfall has an extensive portfolio of both on and offshore wind farms in development and construction. In Scotland we are developing onshore wind farms in the north east and an offshore project off Aberdeen. Further south we are developing two onshore projects in the Scottish Borders and another in Northumberland.

Offshore we are currently building Ormonde Offshore Wind Farm, off Barrow-in-Furness and have entered into a joint venture with ScottishPower Renewables to develop an up to 7.2GW wind farm off East Anglia.

19. When will KFE start generating power?
If consented and following final engineering and financial assessment, Kentish Flats extension could start generating in 2014.

20. When will KFE start construction?
If consented and following final engineering and financial assessment, Kentish Flats extension could start construction in 2013.

21. How much will it cost to build KFE?
This is dependent on the scale of the extension and also the cost of developing offshore wind in the next few years. It is therefore impossible to provide an accurate answer to this question at this time. The current cost nationally across the industry is £3 million per MW to build an offshore wind farm, however a lot depends on the site of the wind farm.

22. Why should we, the tax payers, pay for your wind farms?
Vattenfall pays for the wind farm to be built, not the UK tax payer. There are subsidies from the government for the electricity that is produced. The generator (Vattenfall) gets income from the sold electricity and from the ROCS (Renewable Obligation Certificate). A ROC is a green certificate issued to an accredited generator for eligible renewable electricity generated within the United Kingdom.

23. Why is it I sometimes see turbines not turning?
There are different reasons for this. Sometimes there is simply not enough wind and sometimes winds that are far too strong. We also stop turbines to perform operations and maintenance work for a short time to make sure they operate safely long term. The turbines have a regular maintenance program. If technicians are working on them then the turbines are stopped.
In the past we have had problems with the gear boxes (see answer below).

24. Will KFE have the same operational difficulties as KF?
The existing turbines at Kentish Flats are from 2005. It is true that we have had problems with the gear boxes and Vestas have replaced several of them. Vestas is well aware of this problem and has done much development with their new gear boxes. Vattenfall has installed several wind farms since 2005, also offshore, and have not met these problems in the new wind farms.

Vattenfall has with Vestas learnt about the reality of offshore wind operation. By being one of the offshore wind operator in the UK and we are confident that our position as one of the offshore wind leaders will deliver high performance at Kentish Flats Extension.

25. When will you submit your proposal into planning?
The planning application to the IPC is expected to be made some time in 2011.

26. What will I see?

The existing 30 turbines that make up the Kentish Flats development are already visible from the North Kent coast on a clear day. The Kentish Flats 2 development will add up to 17 additional turbines, placed to the west and south of the existing array. Vattenfall propose to use turbines up to a height of 145 metres. Within information prepared for consultation and at public exhibitions photomontages will show how the additional turbines will appear from representative points along the adjacent coast and the impact this might have on landscapes and seascapes will be assessed as part of the EIA process.

27. Is the wind farm noisy?
No, Kentish Flats 2 will use modern, quiet turbines similar to those already installed at Kentish Flats, which do not produce a high level of noise and will certainly not be audible at adjacent coastlines. Even on a quiet day the existing turbines are inaudible at the coast and even when at sea only the swishing of the blades can be heard when in close proximity to the wind farm.

28. Will there be any disruption on land?
The options for the cable route are still being assessed. It is envisaged the route will follow that selected for the original development which comes ashore to the east of Hampton pier. The cable was directionally drilled below the beach from a jointing box in the car park and then followed the public highway to the substation, a distance of approximately 2.5km. Every effort will be made to keep disruption to a minimum but there will be some road works required to bury the cable.

29. What are the onshore works?
These works comprise primarily of the onshore cable. The route has yet to be decided but is likely to follow that selected for the original development which comes ashore to the east of Hampton pier. The cable was directionally drilled below the beach from a jointing box in the car park and then followed the public highway to the substation, a distance of approximately 2.5km.

30. Will I be disturbed by construction offshore?
During the construction period the extension area will require an exclusion zone around it for safety purposes. As such approximately 8km^2 will be out of bounds during construction.

Some noise may be heard during the foundation installation. The foundations are anticipated to be monopiles which will be hammered into the seabed. When they were installed for the existing wind farm it took between 1 and 3 hours per monopile. The hammering noise may potentially be heard from shore.
Otherwise some impact may arise from the many vessels employed to assist construction of the wind farm. These will be carefully coordinated through a dedicated project marine coordinator.

31. Will I be able to fish in the wind farm?
Yes, provided that you consider it safe to do so. Vattenfall have no plans to apply for any navigational exclusion during the operational phase of the project, except for a small zone (perhaps 50m radius) around each of the turbines – the same policy currently employed at the existing site. Cables will be buried below the seabed to a safe depth. Occasional fishing is seen within the existing Kentish Flats site.

During construction, larger temporary exclusion zones will be imposed to ensure the safety of the construction vessels and other sea users. You will be informed of these through notices issued at the time and through an appointed Fisheries Liaison officer.

32. Will I be able to sail in the wind farm?
Yes. Vattenfall have no plans to apply for any navigational exclusion during the operational phase of the project, except for a small zone (perhaps 50m radius) around each of the turbines – the same policy currently employed at the existing site.

During construction, larger temporary exclusion zones will be imposed to ensure the safety of the construction vessels and other sea users. You will be informed of thee through notices issued at the time.

33. How long will construction take?
Construction is anticipated to be spread over six months. Clearly different activities such as the foundation installation will only span part of the time.

34. How can I get a job in the construction phase?
There will be openings with our contractors. Please give us your details, and a CV if possible, and we will pass them on when we have decided who our contractors will be.

35. How can I get an operations job with Vattenfall?
There are currently no openings with Vattenfall, however please check our web site as they are advertised there when they arise.

36. Who do I speak to about my business winning work with this project?
The procurement process has not begun yet, however we are organising a supplier event and we'll be happy to give you the details when we have a date and venue organised.

37. Who do I speak to about my business winning work with Vattenfall?
Please give us your details and we will pass them on to the appropriate people.

38. How many birds will be killed during the operation of the wind farm?
Impacts on birds will be a key focus of the project EIA and will include an assessment of effects such as collision risk that could result in bird mortality. However, the existing bird data for the area suggest that collision risk will be low since very few birds are recorded flying at collision heights.

Other effects on birds such as disturbance during construction or as a result of the operational turbines will also be assessed during the EIA.

39. Will you scare dolphins away in construction and operation?
It is likely that the turbine foundations will be installed using piling which can create high levels of underwater noise. This in turn can temporarily displace marine mammals such as dolphins or porpoise. That said measurements during piling at the existing wind farm showed that the shallow water in this area means that noise does not travel far so that effects on marine mammals tend to be highly localized. Further more, this part of the Thames Estuary is not commonly used by dolphins with porpoise only occasional visitors. In surveys done on the site – 93 since 2002, the only mammals seen were 14 harbour porpoise and 47 seals.

Nonetheless, we would expect to employ industry standard mitigation to minimise potential effects through the use of soft start piling and by having marine mammal observers around the piling vessel to ensure effects are minimised.

40. Will you destroy sea life in and around the wind farm during construction and operation?
The placement of the turbines themselves will permanently remove small areas of seabed habitat; conversely the underwater structures offer areas for colonisation by marine species

such as mussels, sea squirts and crabs – as has been observed at the existing wind farm. More temporary disturbance also arises from cable installation. Recovery is expected within a short period and the seabed habitats of the area are not considered sensitive or of high conservation interest.

Effects on fish species during construction could occur where piling is used with the noise produced tending to scare fish away for short periods of time. Particularly sensitive times – for example fish spawning will be considered during the EIA. Monitoring of fish at the existing site showed that following construction no obvious changes to the diversity or distribution of fish was evident within and around the wind farm. Indeed it is likely that the turbines themselves might act to offer fish new habitats and lead to an aggregation of fish, and over time might act to increase fish populations in the area.

Electromagnetic Fields (EMF) produced by subsea cables of all wind farms (and indeed many other underwater cables) are detectable by certain species of fish (such as rays and sharks) although it is unclear what effect this has on the behaviour of these fish. The Kentish Flats Extension cables will be shielded and buried into the seabed which will help to reduce the EMF emanating from the cables.

41. How long will KF and KFE operate for?
In our investment plans we calculate an operational time of 20 years. However, with good service we hope to operate the turbines for an even longer period.

42. What happens at the end of the wind farm's life?
It is to some extent up to the authorities to decide. However, Vattenfall is prepared to after decommissioning the farm, take down the turbines and towers (recycle as much as possible) and cut the foundation at the level of the sea bed and take away also these parts. It is also possible to take away the cables, but it is needed to evaluate the benefit of this with the impacts of picking up the cables.

43. Why aren't you using Whitstable Harbour more?
Whitstable Harbour was used during the construction of Kentish Flats and has continued to be used for its operations and maintenance. Land on the West Quay is leased from Whitstable Harbour Board where a service base has been built that is used by Vattenfall and Vestas technicians, visiting staff and service vessels. There are offices, a control room, workshop, lifting pontoon and storage area.

Whitstable will be a very important base for any extension work carried out. It is however, restricted by tides and is too shallow for large construction vessels.

44. How has Kentish Flats been performing in past four years?
Kentish Flats was built under the UK Government's Round 1 pre-commercial programme of offshore wind farms designed to boost early sea based wind power technology. Under this scheme projects received capital grants and as part of our obligations we produced an annual report for the first three years of operation.

Due to difficulties with the gearboxes on all 30 Vestas WTGs these have now benefitted from their third set of gearboxes as part of a planned maintenance programme. The lessons learned from this exercise have proved enormously helpful for TOW.

Higher than expected levels of maintenance on Kentish Flats meant availability levels on the turbines in the first three years of operation (2006, 87%; 2007, 73.5%; 2008, 89.2%) were lower than we expected. Exported power, 263,139 MWh, was significantly higher in 2008 compared to previous years: 27% more than in 2007 (209,444 MWh) and 16% more than in 2006 (227,977 MWh).

We have now fulfilled our obligations in terms of reporting on the performance of Kentish Flats and therefore, due to commercial confidentiality, we will not provide details regarding performance in 2009.

However, we can say that during 2009 and 2010 the third set of gear boxes have been successfully installed. We can also confirm that availability levels were higher in 2009 than in previous years but still not as high as expected and that wind conditions were not as productive as in previous years and consequently exported power was lower than that achieved in 2008.

No power station of any kind produces power to full capacity all the time.

45. What are the problems you have been experiencing with the foundations at Kentish Flats?

Last year, settlements occurred between the foundation pile and transition piece at the Egmond aan Zee wind farm in the Netherlands. For that reason, Vattenfall undertook inspections of all wind farms with monopile foundations to find out whether there have been settlements between the foundation pile and transition piece. This work is carried out to make sure turbines generate safely with top performance.

The investigations of Horns Rev 1, Kentish Flats and Thanet have been undertaken and we can confirm that we have found settlements between the foundation pile and transition piece on the foundations examined at Horns Rev 1 and Kentish Flats so far but no visible cracks. These findings will be further investigated, measured and monitored through monitoring equipment to secure a lifetime operation of the wind farms. There are at the present moment no settlements at Thanet. However, this is expected to happen within the operational lifetime of the turbines and Thanet will be closely monitored and included in the planning. There are no health or safety risks or threat to service or output.

Useful Calculations:

Number of hours in the year: 8760
Installed capacity for KFE: 30 to 51MW
Average industry capacity factor for offshore wind: 35%
Average annual UK household electricity consumption: 4,478 kilowatt hours (kWh)

*****For example: (8760 x 30 x 35%) x 1000 = 91,980,000kWh divided by 4,478 = 20,540 homes.

On site wind measurements predict **each turbine** will produce an average of circa 9,000 MW hrs of electricity annually. This is enough electricity for 2,000 UK homes over a year.
This is calculated in the following way:
Number of hours in the year: 8760
Installed capacity: 3MW
Average industry capacity factor for offshore wind: 35%
Average annual UK household electricity consumption: 4,478 kilowatt hours (kWh)