



The Planning Inspectorate

Tees CCPP
(EN010082)

Correspondence received after the
close of the Examination at 23:59 on
10 October 2018

No.	From	Organisation	Date Received
1.	Gareth Leigh	Department for Business, Energy and Industrial Strategy	4 February 2019
2.	Jake Barnes-Gott	Sembcorp Utilities (UK) Limited	18 February 2019
3.	Lucy Mo	Environment Agency	18 February 2019
4.	Gareth Leigh	Department for Business, Energy and Industrial Strategy	11 March 2019
5.	Jake Barnes-Gott	Sembcorp Utilities (UK) Limited	14 March 2019



Department for
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To:
By email only:

Your Ref:

Sembcorp Utilities (UK) Limited &
The Environment Agency

Date: 4 February 2019

Dear Sir/Madam,

Planning Act 2008 and The Infrastructure Planning (Examination Procedure) Rules 2010

Application by Sembcorp Utilities (UK) Limited (“the Applicant”) for an Order granting Development Consent for the proposed Tees Combined Cycle Power Plant (“CCPP”) Generating Station

REQUEST FOR COMMENTS FROM THE APPLICANT AND ENVIRONMENT AGENCY ON THE APPLICATION FOR THE PROPOSED TEES CCPP GENERATING STATION

Following the completion of the examination on 10 October 2018, the Examining Authority (“ExA”) submitted a Report and Recommendation in respect of its findings and conclusions on the above application to the Secretary of State on 10 January 2019. In accordance with section 107 of the Planning Act 2008, the Secretary of State has three months to determine the application.

There are issues on which the Secretary of State would be grateful if parties identified in **bold** could provide further clarification and information:

Inconsistent reference in application documents to “gross” and “net” electrical capacity, including in the draft Development Consent Order (“the Order”) considered during the examination.

The Secretary of State has identified that the Applicant has been inconsistent in references to the electrical capacity of the proposed generating station in the application documentation submitted. For example, the Application Form refers to a generating station of “*up to 1,700MW gross output capacity*”, whilst its covering Application Letter of 22 November 2017 refers to a generating station with “*a nominal net electrical output capacity of up to 1,700MW*”. Further, the Environmental Statement Non-Technical Statement does not specifically refer to either “*net*” or “*gross*”, but describes the development as having “*an output capacity of up to 1,700MWe*”.

These inconsistencies in the use of gross and net electrical capacity in the application documents were not raised by any party during the examination.

It is not clear to the Secretary of State therefore, if the references to net capacity are simply drafting errors. However, if the references to net capacity are intentional, there appears to be no indication of what the gross electrical capacity of the proposed development would be and how this relates to the net capacity. Clarity on these points is necessary in order to understand the basis of the Carbon Capture Readiness (“CCR”) assessment and other assessments contained in the Environmental Statement which refer to capacity of the proposed development. **The Applicant** is offered the opportunity to comment on this.

The Secretary of State notes that the Carbon Capture Readiness Guidance¹: which is applicable to the application, is relevant to applications for generating stations of the type proposed with “*an electrical generating capacity at or over 300 MW (gross capacity...)”² [underlining added]. The Secretary of State therefore considers that the CCR assessment of an application for a generating station made under the Planning Act 2008 would be on the basis of its gross*

1

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43609/Carbon_capture_readiness_-_guidance.pdf

2 <https://www.gov.uk/guidance/consents-and-planning-applications-for-national-energy-infrastructure-projects#carbon-capture-readiness-ccr>

electrical capacity rather than its net capacity so that it is assessed on a worst case scenario.

In particular, it is noted that Requirement 29 in the draft Development Consent Order submitted at a late stage during the Examination by the Applicant in close consultation with the Environment Agency, would allow construction of a generating station with “a net electrical output of up to 1,700MWe”. It would also impose an operational restriction, stating that the generating station “*must not be operated at a net electrical output of more than 1520MWe until such time as the Applicant can demonstrate there is sufficient space within the Order limits to comply with the land footprint requirement for the retrofitting of appropriate capture equipment for a generating station with a net electrical output of up to 1700MWe*” [underlining added].

In order to inform the Secretary of State’s decision, **the Environment Agency** is requested to confirm the basis for its assessment of CCR requirements to enable him to consider whether the draft Requirement 29 is appropriately drafted and suitable for inclusion in any DCO which may be granted. **The Applicant** may also wish to comment.

Habitats Regulations Assessment

The Applicant’s In-combination Assessment

The ExA’s second written questions asks the Applicant to further explain how, in the absence of a quantitative in-combination assessment, it is possible to conclude that the proposed development will not have a likely significant effect on any European Site. In response the Applicant stated that in-combination effects are anticipated to be insignificant, given that only the Tees Renewable Energy Plant, will be operating [concurrently], and, because the two projects would not be co-located, any impacts are likely to arise at different locations. However, it is noted that in the Applicant’s No Significant Effect Report, reference is made to two other proposed developments with the potential to impact on air quality, but these were not referenced in the Applicant’s response to the second written questions:

- North Sea Pipelines Ltd (ConocoPhillips) CCGT/CHP facility at SealSands, north of the Tees;

- The MGT biomass facility south of the Tees.

In view of this apparent omission, **The Applicant** is invited to provide any additional information on these projects that could be used to inform the Secretary of State's HRA.

Effect of air pollutants on extensions to European sites

At deadline 7 the Applicant provided an HRA addendum to consider new extensions to the Teesmouth and Cleveland Coast SPA and Ramsar sites. It is noted that the values presented in this report differ from the values presented in the Applicant's No Significant Effects Report, but the information provided to account for these differences is limited. Table 3 of the HRA Addendum identifies an annual mean Process Contribution (PC) for NO_x of 0.374 µg m⁻³ (1.25% of the Critical Level) at the pSPA; whereas previously, the Applicant's No Significant Effects Report (Table 3) identified an annual mean PC for NO_x of 0.283 µg m⁻³ (<1% of the Critical Level) at the pSPA. In addition, the background level of NO_x for the pSPA is identified as 19.3 µg m⁻³ in Table 3 of the HRA Addendum [REP7-004]; whereas the background level of NO_x for the pSPA is identified as 31.8 µg m⁻³ in Applicant's No Significant Effects Report (Table 3). **The Applicant** is invited to provide information to account for these increases, and any other differences that exist between the two reports.

The deadline for a response is Monday 18 February 2019.

The response should be submitted by email to: TeesCCPP@pins.gsi.gov.uk

Please also send any hard copy response to the Tees CCPP Project Team, Secretary of State for Business, Energy and Industrial Strategy, c/o the Planning Inspectorate, Eagle Wing 3/18, Temple Quay House, Temple Quay, Bristol, BS1 6PN. If you will have difficulty in submitting a response by the consultation deadline, please inform the Project Team as soon as possible.

Responses will be published on the Tees CCPP project page of the Planning Portal website as soon as possible after 18 February 2019.

This letter is without prejudice to the Secretary of State's decision whether or not to grant development consent for the Tees CCPP project, and nothing in this letter is to be taken to imply what that decision might be.

Yours faithfully

Gareth Leigh
Head of Energy Infrastructure Planning

Date: 18 February 2019
Your Ref: EN010082
Our Ref: 12369



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Dear Ms Williams,

EN010082 – THE TEES COMBINED CYCLE POWER PLANT PROJECT – APPLICANT’S RESPONSE TO THE REQUEST FOR COMMENTS FROM THE SECRETARY OF STATE

THE PLANNING ACT 2008 (AS AMENDED) AND THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010 (AS AMENDED)

I write on behalf of Sembcorp Utilities (UK) Limited (the ‘Applicant’) in response to the queries raised by the Secretary of State (‘SoS’) in his letter dated 4 February 2019 relating to the Tees Combined Cycle Power Plant Project (the ‘Project’).

The letter raises queries in respect of the follows matters:

1. inconsistent reference in application documents to ‘gross’ and ‘net’ electrical capacity, including in the draft Development Consent Order (the ‘draft DCO’) considered during the examination;
2. Habitats Regulations Assessment (‘HRA’) – the Applicant’s In-Combination Assessment; and
3. HRA – effect of air pollutants on extensions to European sites.

The remainder of this letter sets out the Applicant’s response in respect of the above matters (1-3).

Matter 1 – inconsistent reference in application documents to ‘gross’ and ‘net’ electrical capacity, including in the draft DCO considered during the examination

The letter refers to inconsistencies in the references to the electrical capacity of the Project in the application documentation submitted. The letter therefore requests clarity on this matter in order to understand the basis of the Applicant’s Carbon Capture Readiness (‘CCR’) work and other assessments contained in the Environmental Statement (‘ES’) which refer to the electrical capacity of the Project.

In relation to CCR, the letter states the following:

“...the Carbon Capture Readiness Guidance¹: which is applicable to the application, is relevant to applications for generating stations of the type proposed with “an electrical generating capacity at or

¹https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/43609/Carbon_capture_readiness_-_guidance.pdf

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over 300 MW (gross capacity...)² [underlining added]. The Secretary of State therefore considers that the CCR assessment of an application for a generating station made under the Planning Act 2008 would be on the basis of its gross electrical capacity rather than its net capacity so that it is assessed on a worst-case scenario.

In particular, it is noted that Requirement 29 in the draft Development Consent Order submitted at a late stage during the Examination by the Applicant in close consultation with the Environment Agency, would allow construction of a generating station with “a net electrical output of up to 1,700MWe”. It would also impose an operational restriction, stating that the generating station “must not be operated at a net electrical output of more than 1520MWe until such time as the Applicant can demonstrate there is sufficient space within the Order limits to comply with the land footprint requirement for the retrofitting of appropriate capture equipment for a generating station with a net electrical output of up to 1700MWe [underlining added].”

In light of the above, the letter requests that the Environment Agency confirms the basis for its assessment of CCR requirements to enable the SoS to consider whether Requirement 29 is appropriately drafted and suitable for inclusion in the DCO. Furthermore, that the Applicant may also wish to comment.

The Applicant’s response is as follows:

The draft DCO [REP8-009] is correct in referring to ‘nominal net electrical output capacity of up to 1,700 MWe’. Where documents produced by the Applicant refer to ‘gross’, this is a drafting error and ‘net’ should have been used when referring to the electrical capacity.

In relation to the ES, the only areas where this matter has relevance is the assessment of air quality effects and undertaking the HRA. The basis of the assessment in the ES (which has informed the HRA) can be summarised as follows:

- The output of the Proposed Power Plant is measured in megawatts electric (‘MWe’); the net MWe is the output available for export to the National Grid after parasitic load (e.g. power used for the cooling system) has been subtracted from the gross MWe. The gross MWe is related to the thermal power input (‘MWt’) by the efficiency of the turbines; the numerical value of the MWt is always larger than the corresponding value for the gross MWe. The MWt is determined by the nature and amount of fuel used to fire the turbines.
- It follows that although paragraphs 7.5 and 7.9 of the ES air quality assessment [APP-049] make mention of an output of up to 1,700 MWe, the atmospheric dispersion modelling was based on emissions data for the fuel combustion products that exit the stacks, as provided by a prospective turbine supplier for full-load operation. These input data represent the ‘gross thermal power input’ of the Proposed Power Plant; the numerical values of the net and gross electrical outputs are therefore immaterial to the dispersion modelling results in terms of the air quality effects on people and habitats predicted in the ES.

In relation to the CCR Assessment [APP 039] and information (relating to CCR) provided by the Applicant during the Examination [e.g. REP7-007; REP7-011; REP7-012; REP7-015], it should be noted that the CCR guidance (see footnote 1) for the most part refers to ‘MWe’ without specifically defining whether this is ‘gross’ or ‘net’ output. The only reference to ‘gross’ in the guidance is in regard to the

²<https://www.gov.uk/guidance/consents-and-planning-applications-for-national-energy-infrastructure-projects#carbon-capture-readiness-ccr>

aforementioned 300 MW limit, which the Project is significantly above. It is notable that the guidance also includes reference to 'net' when cross-referencing a report³ produced by the International Energy Agency ('IEA'). There are therefore references to both new and gross, notwithstanding that the guidance refers to neither for the most part.

The Applicant's CCR calculations, which have been approved by Imperial College London (in relation to document REP7-011), are based on net electrical output. Importantly, this does not impact on the appropriateness of Requirement 29 or the general conclusions set out by the Applicant in respect of CCR. This is because, similar to the atmospheric dispersion modelling in the ES, the CCR assessment work is based on CO₂ emissions data for the fuel combustion products that exit the stacks (provided by a prospective turbine supplier) for full-load operation.

The Applicant's assessment of the CCR compliance quotes net electrical output figures (pre-abatement) in line with industry and academic practice; however, as the assessment has been undertaken on the 'gross thermal input' of the Proposed Power Plant; the net and gross electrical outputs are immaterial to the CCR assessment results. The Applicant has discussed this matter with the Environment Agency, who agree that reference to net in the DCO is acceptable and the drafting in Requirement 29 is suitable.

Matter 2 – HRA – the Applicant's In-Combination Assessment

The letter refers to the following projects:

- the North Sea Pipelines Ltd (ConocoPhillips) CCGT/CHP facility at Seal Sands, north of the Tees (referred to as the 'North Sea Pipelines Project' for the purposes of this letter); and
- the MGT biomass facility south of the Tees (referred to as the 'MGT Project' for the purposes of this letter).

The letter queries why the above have seemingly been omitted from the Applicant's response to the Examining Authority's second written questions.

The Applicant's response is as follows:

- The MGT Project is one and the same project as the Tees Renewable Energy Plant referred to by the Applicant. This project has been considered by the Applicant.
- In respect of the North Sea Pipelines Project, it is understood that this project was approved by the SoS under s36 of the Electricity Act 1989 on 22 April 2009. However, the consent was not implemented within the conditioned three-year period and has therefore lapsed. The project has not therefore been considered further.

Matter 3 – HRA – Effect of air pollutants on extensions to European sites

The letter queries why there appear to be increases in the values set out in the HRA Addendum [REP7-004] provided at Deadline 7 of the Examination when compared to those provided in the earlier HRA No Significant Effects Report [REP1-001]. The latter was submitted by the Applicant at Deadline 1.

The Applicant's response it as follows:

In the ES, the air quality assessment [APP-049] and dispersion modelling presented in the HRA No Significant Effects Report [REP1-001] consider the Teesmouth and Cleveland Coast Special Protection

³CO₂ capture as a factor in power plant investment decisions. 2006/8. IEA, Greenhouse Gas Report

Area ('SPA') and the Teesmouth and Cleveland Coast potential SPA ('pSPA'). The pSPA was an extension to the existing SPA, and the ES assessment was based upon the proposed boundary of the pSPA available at that time.

Of note, the following test of significance (taken from Environment Agency guidance) was used for Annual Mean NO_x:

- Process Contribution ('PC'), PC<1% of the Critical Level ('CL') – insignificant contribution;
- PC>1%, Predicted Environmental Concentration ('PEC') (PC plus baseline), PEC<70% CL – insignificant contribution; and
- PC>1%, PEC>70%CL – potential for likely significant effect so further assessment required.

In the HRA No Significant Effects Report [REP1-001], the highest PC for any point in the pSPA was 0.283µg/m³, and therefore <1% of the CL and insignificant. The baseline used for the Teesmouth and Cleveland Coast pSPA was taken to be the same as the baseline used for the wider Teesmouth and Cleveland Coast SPA. This baseline was 31.8µg/m³ and represented the highest baseline anywhere on the SPA or pSPA, noting that this is a large area. No further spatial refinement of the baseline was necessary as the PC was <1% at the pSPA, therefore baseline and PEC values were irrelevant in determining the potential for a significant effect.

On 5 September 2018 (i.e. post-submission of the DCO application and the environmental hearing during the Examination), the Examining Authority advised the Applicant of formal changes made to the pSPA boundary and an HRA Addendum [REP7-004] was produced for Deadline 7 supported by updated air quality modelling. The baseline review and modelling undertaken for the HRA Addendum considered the revised boundary. The modelling identified that within the revised pSPA boundary the maximum PC was now 0.374µg/m³, which is still >1% of the CL. The area of the pSPA where the PC is >1% was identified as small (as noted in paragraph 1.16 of the HRA Addendum).

To understand whether this impact was potentially significant for the small area where the PC>1%, the baseline specific to this area was identified. This baseline was 19.3µg/m³. Therefore, the PEC <70% of the CL, and therefore the Project is classed as making an insignificant contribution requiring no further assessment.

I trust that this letter provides the information required from the Applicant in order to address the queries set out in the letter dated 4 February 2019. We trust that PINS will inform the Applicant if any further information or clarification is required.

I would be grateful if you could confirm receipt of this letter.

Yours sincerely



Jake Barnes-Gott BA (Hons) MA MRTPI
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Industrial Strategy
1 Victoria Street
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SW1H 0ET

Our ref: NA/2019/114459/01-L01
Your ref: Tees CCPP
Date: 18 February 2019

Dear Sir/Madam

**PLANNING ACT 2008 AND THE INFRASTRUCTURE PLANNING
(EXAMINATION PROCEDURE) RULES 2010. APPLICATION BY SEMBCORP
UTILITIES (UK) LIMITED (“THE APPLICANT”) FOR AN ORDER GRANTING
DEVELOPMENT CONSENT FOR THE PROPOSED TEES COMBINED CYCLE
POWER PLANT (“CCPP”) GENERATING STATION.**

**The Environment Agency is requested to confirm the basis for its
assessment of CCR requirements to enable him to consider whether the
draft Requirement 29 is appropriately drafted and suitable for inclusion in
any DCO which may be granted.**

Thank you for your letter in respect to the Examining Authority’s request for
further information, which we received on 4 February 2019.

The Department of Energy & Climate Change (DECC) Carbon Capture
Readiness (CCR) guidance notes does not specially state that CCR assessments
should be based on gross capacity. However, in order to determine the threshold
for the requirement for CCR, it is considered that this should be based on gross
capacity rather than net electrical capacity.

For an assessment purpose, DECC’s CCR guidance table 1 carbon capture plant
footprint figures are based on net capacity. Therefore, the use of net electrical
capacity is considered to be appropriate for assessing the land set aside for
carbon capture.

In order to determine the CCR requirements, we based on our assessment on the
report submitted by AECOM - Tees Carbon Capture Sizing Studies, Support to
Carbon Capture Readiness Report, Sembcorp Utilities (UK) Limited, Project
reference: PR-328273, Project number: 60580085, 60580085-501-000-ME-RP-



00001, 18 June 2018. This report is based on net electrical output. Therefore, we consider it appropriate to use net electrical output in requirement 29 of the draft Development Consent Order.

Following discussions with the Applicant (Sembcorp Utilities) in a telecon on Friday 15 February, the Applicant confirmed that the inconsistencies with respect to the gross and net electrical outputs were drafting errors. The Applicant also stated that the CCR calculations are based on net electrical output, and the calculations of carbon dioxide emissions are based on the gross thermal input (i.e. the total fuel burnt) to the power plant. Therefore, the Applicant has calculated the size of the carbon capture plant correctly.

Please do not hesitate to contact me if you have any questions regarding this letter.

Yours faithfully

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Sembcorp Utilities (UK) Limited
c/o The Environment Agency

Date: 11 March 2019

Dear Sir/Madam,

Planning Act 2008 and The Infrastructure Planning (Examination Procedure) Rules 2010

Application by Sembcorp Utilities (UK) Limited (“the Applicant”) for an Order granting Development Consent for the proposed Tees Combined Cycle Power Plant (“CCPP”) Generating Station

REQUEST FOR COMMENTS FROM THE APPLICANT ON THE APPLICATION FOR THE PROPOSED TEES CCPP GENERATING STATION

I refer to the representations received on behalf of Sembcorp Utilities (UK) Limited (“the Applicant”) of 18 February 2019 and the Environment Agency of 18 February 2019 in response to queries raised by the Secretary of State’s letter of 4 February 2019.

The Secretary of State would be grateful if **the Applicant** could provide further clarification and information relating to the use of “net” electrical capacity, including in the draft Development Consent Order (“the Order”) considered during the examination.

The Secretary of State notes that inconsistencies with respect to gross and net electrical outputs were drafting errors. The Applicant states that Carbon

Capture Readiness (“CCR”) calculations are based on the net electrical output and that this is the output available for export to the National Grid after parasitic load (e.g. power used for the cooling system) has been subtracted from the gross electrical capacity. It is noted that the calculations of carbon dioxide emissions are based on the gross thermal input (i.e. the total fuel burnt) and the net and gross electrical outputs are considered by the Applicant to be immaterial to the CCR assessment results and to the dispersion modelling results in terms of air quality effects on people and habitats predicted in the ES.

It is further noted that Environment Agency have confirmed in they consider it appropriate to use net electrical capacity in both assessing the land set for carbon capture and also in requirement 29 of the draft Order.

Although the Secretary of State considers it should be possible to limit capacity of the proposed power plant by either gross thermal input or gross electrical capacity, it would be more consistent with other previous consents if the gross electrical capacity was specified in any Order that may be granted. Please provide a further explanation therefore of: the relationship between the gross electrical capacity, gross thermal input and net electrical capacity; confirmation of the gross electrical capacity figure; and any reasons why it would not be appropriate or possible to use the gross electrical capacity figure in this case, both within the description of the authorised development and in requirement 29 of the draft DCO.

The deadline for a response is Thursday 14 March 2019. Please let me know as soon as possible if you will not be able to meet this deadline.

The response should be submitted by email to: TeesCCPP@pins.gsi.gov.uk

Please also send any hard copy response to the Tees CCPP Project Team, Secretary of State for Business, Energy and Industrial Strategy, c/o the Planning Inspectorate, Eagle Wing 3/18, Temple Quay House, Temple Quay, Bristol, BS1 6PN. If you will have difficulty in submitting a response by the consultation deadline, please inform the Project Team as soon as possible.

Responses will be published on the Tees CCPP project page of the Planning Portal website as soon as possible after 14 March 2019.

This letter is without prejudice to the Secretary of State's decision whether or not to grant development consent for the Tees CCPP project, and nothing in this letter is to be taken to imply what that decision might be.

Yours faithfully

Gareth Leigh
Head of Energy Infrastructure Planning

Date: 14 March 2019
Your Ref: EN010082
Our Ref: 12369



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Secretary of State for Business, Energy &
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Dear Sir/Madam,

EN010082 – THE TEES COMBINED CYCLE POWER PLANT (CCPP) PROJECT – APPLICANT’S RESPONSE TO THE REQUEST FOR COMMENTS FROM THE SECRETARY OF STATE FOR BUSINESS, ENERGY & INDUSTRIAL STRATEGY DATED 11 MARCH 2019

THE PLANNING ACT 2008 (AS AMENDED) & THE INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010 (AS AMENDED)

I write on behalf of Sembcorp Utilities (UK) Limited (the ‘Applicant’) in response to the queries raised by the letter from the Department for Business, Energy & Industrial Strategy (‘BEIS’) dated 11 March 2019 relating to the Tees Combined Cycle Power Plant Project (the ‘Project’). The letter follows an earlier request for information (dated 4 February 2019) and a response by the Applicant (dated 18 February 2019).

The BEIS letter follows confirmation by the Applicant in the aforementioned response that the draft DCO [REP8-009] is correct in referring to a nominal net electrical output capacity of up to 1,700 megawatts electrical (‘MWe’) and, where documents produced by the Applicant refer to ‘gross’, this is a drafting error and that ‘net’ should have been used when referring to the electrical capacity of the Proposed Power Plant. The Applicant also provided an explanation as to why the use of net is appropriate within the context of the assessment of the environmental effects of the Proposed Power Plant (set out in the Environmental Statement) and Carbon Capture Readiness (‘CCR’). This is on the basis that the air quality assessment and the calculations of carbon dioxide emissions are based on the gross thermal input, and the net and gross electrical outputs are immaterial.

The BEIS letter confirms that although the Secretary of State (‘SoS’) considers it should be possible to limit the capacity of the Proposed Power Plant by the use of either gross thermal input or net electrical capacity, it would be more consistent with recent grants of development consent if the gross electrical capacity was specified in any DCO that may be granted.

Further explanation is therefore requested in respect of the following:

1. the relationship between the gross electrical capacity, gross thermal input and net electrical capacity;
2. confirmation of the gross electrical capacity figure; and

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3. any reasons why it would not be appropriate or possible to use the gross electrical capacity figure in this case, both within the description of the authorised development and in Requirement 29 of the draft DCO.

The remainder of this letter sets out the Applicant's response in respect of matters 1-3 and suggests a proposed solution. It is notable that representatives of BEIS and the Applicant held a telephone conference on 12 March 2019 to discuss matters 1-3, which is referenced where necessary.

Matter 1 – the relationship between the gross electrical capacity, gross thermal input and net electrical capacity

The Applicant's response is as follows (**bold text** added for emphasis):

- In a combined cycle gas turbine ('CCGT') power station, fuel (i.e. gas) is combusted at high pressure with air in a turbine which generates electricity. A heat recovery steam generator ('HRSG') captures exhaust heat from the gas turbine that would otherwise be vented to atmosphere. The HRSG produces steam from the gas turbine exhaust heat and delivers it to the steam turbine, which produces additional electricity. Some of the electricity produced from the gas and steam turbines is used to run the power station (e.g. to supply the cooling system) and is known as the 'parasitic load'. The rest is exported to the electricity grid or other customers.
- The amount of fuel (gas) used in the process is represented as the **gross thermal input**. The total amount of electricity produced, expressed in **MWe gross**, is related to the gross thermal input by the efficiency of the turbines. The electricity available to the grid/customers after the power station has taken some for its own use (parasitic load) is expressed as **MWe net**.
- From an EIA perspective all the air quality modelling work and assessments following from it (including the Habitats Regulations Assessment) are based on the **gross thermal input**. It follows that the **MWe gross** and **MWe net** values are immaterial to these aspects of the EIA. The same logic applies to the CCR assessment work. All EIA assessments that are based on building sizes and footprints (e.g. the landscape and visual impact assessment) are related to power station structures and equipment designed to deliver the **respective MWe gross** value, and the MWe gross and MWe net values are again immaterial.

Furthermore, it is notable that the Planning Act 2008 and other relevant legislation does not stipulate between stating net or gross and previous DCOs granted by the SoS, have referred to net, including the Knottingley Power Plant Order 2015. This matter was raised by the Applicant during the aforementioned telephone conference and was acknowledged by the representatives of BEIS.

Notwithstanding the above, the representatives of BEIS reiterated that comments made in terms of stating gross electrical capacity in any DCO are aimed at achieving consistency with other more recent DCOs.

Matter 2 – confirmation of the gross electrical capacity figure

The MWe gross figure for the Proposed Power Plant is 1,748 MWe. The additional 48 MWe, which takes the figure above 1,700 MWe, comprises the parasitic load. The MWe net is therefore 1,700 MWe, which is the gross MWe minus the parasitic load.

Matter 3 – any reasons why it would not be appropriate or possible to use the gross electrical capacity figure in this case, both within the description of the authorised development and in requirement 29 of the draft DCO

The Applicant, during the aforementioned telephone conference with BEIS, expressed concerns regarding the potential for misunderstanding in the local community and the consequent impact on the Applicant's reputation in a scenario where the gross MWe figure (1,748 MWe) is stated in the DCO, notwithstanding that this is in fact immaterial when considering the EIA and CCR work (as noted previously).

The Applicant's concerns however, have been allayed to some extent on the basis that BEIS confirmed that this matter could be fully explained in the decision letter/report issued by the SoS, making it clear that the use of net or gross is immaterial when considering the EIA and CCR work that has been carried out to assess the impacts and requirements of the Project, and that reference to gross in some application documents was merely a drafting error that has now been rectified.

Proposed solution

It remains the Applicant's preference to refer to nominal net electrical output capacity (only) in any DCO and to continue referring to net (only) in Requirement 29. This is on the basis of the information set out in this letter, including that the Planning Act 2008 does not stipulate between the use of net or gross, and that the use of net or gross when considering the EIA and CCR work is immaterial.

Notwithstanding the above, BEIS suggested during the telephone conference that a compromise could be to state both the net and gross figures in any DCO (Schedule 1) and in Requirement 29 (Schedule 2). The Applicant would accept this, subject to the use of appropriate wording. We suggest that the description of Work No.1 in Schedule 1 of the draft DCO is therefore amended to read as follows (additional/amended text is underlined):

'a nominal net electrical output capacity of up to 1,700 MWe (1,748 MWe gross) at ISO Conditions'

We suggest that the wording of Requirement 29 in Schedule 2 of the draft DCO is amended to read as follows (additional/amended text is underlined):

'29. —(1) The authorised development must not be operated to generate a net electrical output of more than 1520MWe (1,563MWe gross) unless and until sub-paragraph (2) has been satisfied.

(2) The authorised development must not be operated at a net electrical output of more than 1520MWe until the undertaker submits a scheme to demonstrate there is sufficient space within the Order limits to comply with the land footprint requirement for the retrofitting of appropriate capture equipment for a generating station with a net electrical output of up to 1700MWe (1,748MWe gross). The scheme shall be submitted to and approved in writing by the relevant planning authority in consultation with the Environment Agency. The scheme shall include as a minimum—

(a) information required by the form "Environment Agency verification of CCS Readiness New Natural Gas Combined Cycle Power Station Using Post-Combustion Solvent Scrubbing," as outlined in Annex C of the DECC Guidance for a generating station with a net electrical output of more than 1520MWe (1,563MWe gross) and up to 1,700MWe (1,748MWe gross); and

(b) details demonstrating how the capture equipment will fit into the space allocated for the plant including the submission of engineering design details.'

I trust that this letter provides the information required by the SoS in order to address the queries set out in the letter from BEIS dated 11 March 2019. We trust that BEIS will inform the Applicant if any further information or clarification is required or if the proposed solution is not acceptable to the SoS.

I would be grateful if you could confirm receipt of this letter.

Yours sincerely



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