



NPS Construction Consultancy (Infrastructure, Estates, Facilities & Additional Services) Framework Agreements

Ref No: NPS-PS-0027-15

Lots: 1a, 1b and 1c - Multi-Disciplinary (Infrastructure)

Mini-Competition – Quality Response

Company Name (Please insert): AECOM LTD

Name of Mini-Competition: Assessment of On-Shore Wind and Solar Energy Potential in Wales (C006/2018/2019)

Bidders should review the evaluation guidance described in the Requirements Pro Forma.

Submissions must not exceed the specified limit. Any information in excess of the specified limit will not be considered.

Submissions must be submitted using Ariel font size 12 single line spacing.

Appendices and word links will not be considered unless specifically requested.

1

Project Management

Redacted

Redacted

The contingency proposals in the event of unavailability of staff would be as follows:

Role*	Team Member	Back up
Project Director	Redacted	Redacted
Project Manager	Redacted	Redacted
GIS	Redacted	Redacted
Planning	Redacted	Redacted
Power & Transmission	Redacted	Redacted
Transport	Redacted	Redacted
Landscape	Redacted	Redacted

*see structure chart for further coverage

Management of Client Issues and Concerns

Redacted

Programme

Assuming that the contract takes effect on 18/6/2018 (as indicated in the brief), we propose to complete all of the works prior to Christmas break 2018. A work programme is provided below: We note the suggested milestones in the project brief:

- 1 Draft Methodology Early August 2018 *we propose earlier, to be agreed end July*
- 2 Draft Energy Atlas Assessment Early October 2018 *our method allows for provision of the assessment at end August but with provision to amend if useful data / findings arises out of NDF analysis that might be applied to Atlas*
- 3 Draft NDF Analysis Mid November 2018 *we propose to issue drafts wc 5/11*
- 4 Draft Final Report and Maps Early December 2018 *we propose wc 3/12*
- 5 Final Report and Maps 4 January 2019 *we propose prior to Xmas as little work is likely to undertaken during 2 weeks of Xmas*

A full list of our proposed milestones, indicated in red in the programme and how we will deliver them is provided below:

- wc 18/06: inception meeting – *to be attended by the Project Director (PD) and Project Manager (PM)*
- wc 02/07: produce technical note with key findings of document review *The PM will set the parameters for the document review which will then be undertaken by a more junior member of the team. QA will be provided by the PM*
- wc 09/07: identify methodological issues and meet with WG to discuss way forward *The PM will attend the meeting to discuss initial methodological issues*

- wc 23/07: produce technical note on proposed methodologies *The PM will propose new methodologies*
- wc 30/07: meet with WG to discuss way forward *to be attended by the Project Director (PD) and Project Manager (PM)*
- wc 13/08: provide results of calculation of current & future energy demands *Once calculation method agreed, this work can be undertaken by a more junior member of the team with QA by PM*
- wc 20/08: provide proposed technology specifications at various scales and agree *PM will steer with write up by more junior members of the team*
- wc 27/08: provide early maps of available resource (not including transport / grid / landscape assessment and agree *These maps will relate primarily to OS and statutory and non-statutory environmental / heritage constraints – the approach to the application of which will have been addressed in earlier discussions. GIS staff will produce maps according to previously agreed technology scales and specifications.*
- wc 10/09: meet with MoD to discuss blanket approach to constraints provide methodology for landscape assessment *There are currently grey areas or relatively high-level methodologies in the Toolkit, including approach to MoD land, transport, grid and landscape. Our approach will be to attempt to produce something more robust, involving engagement and buy-in from key stakeholders. Redacted will lead engagement with MoD and, if needed, be supported by Redacted. Once approach is agreed, maps will be produced*

- wc 17/09: provide resultant MoD maps and agree approach
meet with NRW/WG/LPA to agree landscape assessment approach
Redacted, our senior landscape architect will lead engagement with the WG, NRW / LPAs in seeking to identify a common and acceptable approach to mapping / constraining for landscape sensitivity in relation to different scale technologies and in different locations. Once agreed, maps will be produced.
- wc 01/10: provide new maps with agreed landscape sensitivity method applied and agree clusters to explore with DNOs
Once MoD and landscape methodologies are applied across the mapping, we would seek to understand the grid network in relation to strategic clusters of technologies. We will engage with relevant DNOs in order to agree a methodology that can be applied to more robustly evaluate opportunities.
- wc 15/10: meet with DNOs to agree methodology for assessment of grid infrastructure
Redacted and now lead of AECOM's Power & Transmission Group will be involved in the discussions and, where required supported by Redacted.
- wc 29/10: meet with developers to test methodologies for transport, landscape, grid, etc – get steer on plans, if any
Part of the issues surrounding policies in LDPs is the lack of projects / development certainty. AECOM will engage with key developers to understand their development plans in the future, test the applied methodologies with them, including an approach to understanding how transport assessment and how constraints might be overcome, and Soft Market Test our identified opportunities in relation to their appetite for involvement. We will seek to gain approval from WG prior to undertaking this exercise, particularly in relation to whom we will approach.
- wc 05/11: issue draft outputs after all findings applied, including maps and methods for both **Redacted**
Outputs will include spreadsheet of data resources, report with full description of methodologies and their applications and GIS including shape-files.
- wc 19/11: Meet with WG to agree drafts / amendments to **Redacted** to be attended by the Project Director (PD) and Project Manager (PM)
- wc 03/12: Provide final outputs for **Redacted**
Outputs will include spreadsheet of data resources, report with full description of methodologies and their applications and GIS including shape-files.
- wc 17/12: Provide fully translated report and present findings to WG *Our method for providing a fully translated report is set out in our response to question 4.*

It is envisaged that resource will be allocated as per the following schedule of responsibilities however, this will be dependent upon final agreed methodologies.

2	Method Statement
---	-------------------------

Task 1: Document review including REA's

AECOM will undertake a review of existing policy documents including TAN 8 and local authority REAs. AECOM's previous work on the Welsh Government: '*Renewable Energy: A Toolkit for Planners*' [The Toolkit] is not definitive and Local Planning Authorities [LPA] may have approached the development of their REAs in different ways. We will review each approach and associated datasets with a view to making an assessment of comparative strengths and weaknesses.

Task 2: Produce a draft methodology

AECOM will produce a draft methodology for the assessment of potential wind and solar PV in Wales based on a reviewed and revised version of AECOM's previous work on the Welsh Government: '*Renewable Energy: A Toolkit for Planners*' [The Toolkit]. The methodology will be designed in such a way as to positively maximise renewable potential within Wales. It will take into account a review of existing policy and guidance and other relevant documents, including TAN 8.

The methodology will comprise agreed revisions to the approach which will include:

- Assessment of electrical grid;
- Assumptions about constraining factors e.g. cumulative impact buffers, application of non-mandatory designations, MoD and airspace related constraint,
- Transport constraints assessment;
- Landscape impact assessment
- Broader range of wind and solar PV generation scales providing a comprehensive data source for both the **Redacted**.

Task 3: Calculate Existing and Future Energy Demand Baseline

We propose to update existing and projected energy demands for each LPA. To do we propose to utilise a review of publically available data (e.g. FIT, RHI, REstats, REA) to update numbers and installed capacity of existing and proposed renewables / Low and Zero Carbon (LZC) Technologies. The current *Toolkit* method of forecasting is based upon DECC projection to 2020. A review will be undertaken of this increasingly problematic method with a view to recommending / utilising an alternative. Amended figures will be assessed against identified Welsh Government targets and to inform the requirement for new generation over a particular timeframe to be agreed.

Task 4: undertake a full resource analysis of wind and solar PV farm potential

Tasks 4a and 4b set out the likely work streams involved in undertaking and assessment of solar and wind potential and will inform the **Redacted** evidence bases. Unless likely to be sited next to or close by a larger facility, for the land parcels identified for smaller, community-scale projects we do not propose to apply the more detailed approach of MoD, transport, grid and landscape assessment. **Task 4a: Identify and calculate the Wind Energy Resource (e.g. unconstrained**

areas with sufficient wind speeds, etc.)

We will review and modify the methodology for calculating wind resource, produced by AECOM for The Toolkit to incorporate methodological amendments identified in Task 2 of this proposal.

Step 1: Decide on typologies of wind turbines to use for the assessment

- Up to 5 wind technology specifications will be developed for a range of proposed scales –this will feed into NDF and Atlas evidence bases.

Step 2: Map average annual wind speeds

- This will be undertaken for a range of different heights applicable to the identified turbine hub heights.

Step 3: Map environmental and heritage constraints

- Publically available datasets will be employed to recreate GIS constraint maps;
- We will need to discuss availability of some datasets e.g. peat, etc
- Approach to application of different environmental / other designations will be discussed and agreed prior to mapping;
- Assumed buffers will be reviewed and amended as appropriate.

Step 4: Map existing buildings / development constraints

- OS maps will be utilised to buffer existing buildings;
- Turbine specifications will dictate topple distance whilst other buffer requirements (e.g. noise) will be reviewed and agreed as appropriate.
- We would seek to have discussions with the WG regarding dataset for publically owned land and buildings.

Step 5: Map existing aviation related constraints (excluding MoD)

- We will review approach to NATS data, etc to develop evidence and agree revised approach as appropriate.

At this stage, depending upon the size of turbines being consider, variously sized land slithers are removed from the assessment. A full range of the potential Local Search Areas are identified at this stage – this is the theoretical maximum of wind development and indicates where more detailed site assessment is required.

Task 4b: Identify and calculate the Solar PV Resource

The approach to identifying and calculating solar PV resource will be as follows:

Step 1: Decide on typology for scale of solar PV farm to use for the assessment

- Up to 5 solar PV farm specifications will be developed for a range of proposed scales –this will feed into **Redacted** evidence bases.

Step 2: Map areas of suitable slope and topology

- The approach will be reviewed and amended as agreed with the Welsh Government and according to findings of the review.

Step 3: Map locations of built-up areas and infrastructure

- OS maps will be utilised to buffer existing buildings, to avoid over-shading and impact from construction, maintenance and cleaning;
- Assumptions around buffer sizes to be reviewed and amendments agreed with the Welsh Government.

Step 4: Map existing aviation related constraints

- When we engage with MoD / NATs we will clarify the detailed differences in approach between wind and solar PV (e.g. solar impact may be more due to glare, etc).

At this stage, depending upon the size of PV farms being considered, variously sized land slithers are removed from the assessment. A full range of the potential Local Search Areas are identified at this stage – this is the theoretical maximum of solar PV farm development and indicates where more detailed site assessment is required.

Following undertaking the above activities, the method for assessment of solar PV farm resource will be the same as set out in Steps 6-8 of the assessment of wind (as set out below), with the assumption that there are no transport constraints for solar PV farm development (as there are no very long blades or towers).

Step 8: Revised Potential Generation from Wind / Solar Power

- On completion of the review and application of the revised methodology, the potential installed capacity from solar PV will be produced;
- The revised numbers will be compared against target to identify shortfall / surplus potential generation.

Task 5: Engagement with Key Stakeholders

Where elements of the methodology for identifying larger scale solar and wind resource become more subjectively applied by LPAs, more reliant upon site specific analysis, and proposals need to be more robust we propose engaging with key stakeholders to attempt to devise an approach that is palatable for all. Such stakeholders will include Distribution Network Operators (DNOs), a sample of Welsh Government and Local Authority Planners, MoD and, potentially, with NRW to feed in to the approach to landscape assessment. Following engagement exercises, for wind development we will:

Step 6: Prioritise available wind/solar resource

- Current prioritisation is undertaken on an LPA by LPA basis. New approach will be undertaken:
 - On a national basis – this has potential to better optimise unconstrained land;
 - Revisit cumulative impact approach and assumptions – current method may be unnecessarily constraining and prevent project clustering which is potentially key to infrastructure funding.

- We will seek to engage with MoD regarding an approach to wind and solar development, with activity supported by the Welsh Government.

Step 7: Undertake landscape assessment

- We will develop a desktop method for assessing landscape impacts and agree with NRW / Welsh Government;
- We will seek to discuss proposals with planners and developers; □ The agreed method will be applied to GIS constraints mapping.

Step 8: Undertake grid network constraints

- We will work with the Welsh Government to engage with DNOs to discuss:
 - existing capacity in the network;
 - future plans for network upgrades;
 - issues, timelines and costs associated with key upgrades;
- We will seek to discuss proposals with planners and developers;
- Following discussions, we will finalise a desktop methodology to assess grid constraints and apply to maps and/or other evidence base;
- The method may combine elements of technical and cost assessment.

Step 9: Undertake Transport Infrastructure Constraints

- We will develop a desktop methodology for assessing transport constraints to wind development;
- The method is likely to combine elements of technical and cost assessment;
- We will seek to discuss proposals with planners and developers;
- Following discussions, we will finalise a desktop methodology to assess transport constraints and apply to maps and/or other evidence base.

Step 10: Revised Potential Generation from Wind / Solar Power

- On completion of the review and application of the revised methodology, the potential installed capacity from wind will be produced;
- The revised numbers will be compared against target to identify shortfall / surplus potential generation.

Tasks 6 & 7: Produce an (updated Energy Atlas &) NDF Assessment

Once data has been collated for Tasks 1-5 AECOM will issue a single draft Energy Atlas Assessment, spreadsheet and associated GIS maps to the client for review. AECOM will extend the analysis used to produce the Energy Atlas Assessment to produce a landscape sensitivity, transport and infrastructure analysis for NDF. AECOM will issue a single draft NDF Analysis, including report, spreadsheet and associated GIS maps to the client for review. This review will provide the client with the opportunity to provide feedback on the identification of existing and proposed wind and solar PV opportunities across Wales. A full translation of final report to be supplied.

3	Account and Contract Management (Skills and Expertise)
---	---

Expertise

AECOM is one of the leading energy and environmental consultants in Europe with a strong track record in wind and solar energy services. We are uniquely placed to advise on this project due to our specialist knowledge of the planning system as well as supporting developers in practical delivery. We have been at the forefront of supporting central and local government in England and Wales in the development and delivery of policies and guidance to secure renewable energy development – this experience is detailed under the ‘knowledge’ section.

We are appointed as framework consultants for these services for some of the main utility developers of these schemes in the UK for example such as E.on Climate & Renewables and RWE Npower Renewables. Our specialist wind and solar teams has between them undertaken over 100 EIA, environmental and other assessments for wind and solar energy projects in their corporate and individual portfolios in the last five years.

Our services to wind energy developers encompass the complete development life cycle, from site finding and appraisal, all of the specialist studies associated with environmental impact assessment, through planning and consenting, to detailed design, and construction management. AECOM can offer advantages of extensive experience delivering wind and solar energy solutions which includes input to schemes totalling more than 10GW of potential installed capacity across the globe and technical input to more than 100 wind and solar energy projects across Europe.

Skills

AECOM has the expertise to deliver ‘cradle to grave’ solutions for wind and solar energy developments, from site finding, through technical feasibility investigations, EIA and permitting and across the post-consent stage from detailed design to construction management.

This breadth of capability means there are few issues that we cannot address inhouse and provides the crucial benefit of allowing post-consent technical specialists to input their real life experiences and knowledge into the pre-consent design works to ensure that the scheme for which permits are being sought is deliverable.

[Table: AECOM Wind & Solar Energy Capability Matrix – Pre-Consent Services](#)

Redacted

provide to wind energy developers across the UK. Level 1 Staff are those individuals who have sufficient experienced to direct and sign off packages of works. They are considered experts in their respective fields. Level 2 Staff are those staff with sufficient experience and technical knowledge to prepare packages of work with minimal supervision.

It should also be noted that there are a considerable number of less experienced or qualified staff who have worked on our wind and solar energy projects. For example within the UK we have more than 30 ecologists and avian experts who regularly undertake field surveys and ecological assessments for wind energy developments

Knowledge

AECOM has significant knowledge of the issues and requirements relating to this project, having undertaken the following works:

Redacted

AECOM has also contributed studies to support the completion of REAs for the following Welsh local authorities:

Redacted

Project Team & Roles

The core team will be those involved in developing the current renewable energy guidance for planners in Wales (**Redacted**), supplemented by a range of personnel and teams of experts to draw upon AECOM's extensive inhouse wind and solar energy feasibility, pre-consent services and post-consent design capabilities to assist where necessary. This includes those who have undertaken site finding, feasibility, EIA, power connections, planning advice, technical design, contract management to name but a few. The proposed team and structure is as follows:



Redacted
Redacted
Redacted

4 **Cost**

The total cost of our proposed service is **Redacted**

The rates applied to our staff are in line with those agreed via the existing NPS Framework. We have in-house translation capabilities and allowance has been made for translation and QA. Our fees are exclusive of VAT but cover all reasonable disbursements.

Redacted

We note stage payments for this project as follows:

- A first stage payment of 25% of the total fee will be paid upon the satisfactory submission of the methodology;
- A second stage payment of 25% of the total fee will be paid upon the satisfactory submission of the Energy Atlas assessment;
- A third stage payment of 25% of the total fee will be paid upon the satisfactory submission of the NDF analysis; and
- A final stage payment of 25% of the total fee will be paid upon the

satisfactory submission of the final report and maps.

We also note that payment will be made within 30 days of receipt of a correctly submitted invoice e.g. showing a full breakdown of costs that clearly tie back to successful company's submitted tender and comprising the Welsh Government as the addressee, a valid PO number provided by Welsh Government and Date of invoice.

Contract

This proposal is submitted on the basis that the study is Commissioned through the existing NPS Framework and accompanying NEC3 contract supplied during the ITT process. We confirm agreement to the Terms & Conditions with the previously confirmed amendments as follows:

- Liability for consequential losses and liability for defects found after the defect date are limited to £2m.
- **Clause Z.31.3** the word 'negligent' is inserted before 'act, omission or default'.

Clarifications

1. We will limit data for mapping existing, consented and submitted planning applications for wind and PV projects to publically available data unless this can be provided electronically by the Welsh Government;
2. Our proposal excludes purchase of any datasets;
3. Hire of any meeting venues or refreshments for stakeholder meetings is excluded;
4. Work for the landscape sensitivity assessment is limited to GIS mapping of existing information on sensitivity to wind and PV (e.g. LANDMAP) with discussions around blanket application, rather than new assessments of the sensitivity of different landscape character areas to wind and PV typologies and sites;
5. For transport assessment we will seek to use road classifications and their proximity to sites, and potentially other metrics in order to develop blanket methodology;
6. Until the methodology is agreed there will be some uncertainty about the scope of the analysis of landscape sensitivity, transport and other constraints. We are happy to be flexible about how the resources are allocated to these different aspects, but our proposal is based on overall costs and resourcing for these elements not exceeding the fee we have set out in total, and the methodology phase will also need to take account of this cost constraint;
7. Any participation in Examinations in Public or inspector review of the NDP is excluded from this proposal