

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: Ove Arup and Partners Limited

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

Q1

Project Management

Set out details of the work programme and provide a timetable for the delivery of this work, including the key milestones and how these will be delivered. Provide a schedule setting out the responsibilities of the team.

1.1: Outline Work Programme

Our proposed outline work programme and associated programme milestones are presented below in Table 1. During the project inception stage, we will produce a detailed project delivery programme, tailored to your requirements.

Work Stage		June	July	August	Sept	Oct	Nov	Dec
1	Project Inception							
	Preparation work							
	Client Inception Workshop							
2	Information Management							
	Issue request & response period							
	Cut-off date for receipt of data			17 th				
	Client sign-off & data freeze			31 st				
3	Baseline Documentation Review							
4	Stakeholder Engagement							
	Government & Local Authority Workshops							
	Key Sector Stakeholder Meetings							
5	Methodology							
	Submit draft			10 th				
	Client review meeting			15 th				
	Submit final method			24 th				
	Client sign-off			31 st				
6	Screening & Analysis Tool Build							
	Stage 1 – Core Build							
	Stage 2 – Finalise Content & Function							
7	Energy Atlas Assessment - GIS Screening							
	Submit draft assessment outputs					12 th		
	Analysis review meeting					17 th		
8	National Development Framework Evaluation							
	Issue draft NDF analysis						9 th	
	Client evaluation workshop						14 th	
9	Reporting & Project Close-out							
	Issue draft							3 rd
	Issue final							14 th
	Project close-out meeting							21 st

Table 1

In addition to scheduled Client meetings and workshops, we will report on progress and maintain close communication with you by way of a telephone progress meeting with our Project Manager and issue of a brief progress report, every two weeks.

1.2: Team Structure & Responsibilities

To undertake this work efficiently and to the highest level of quality, we have selected a team of specialists based within our Cardiff and Bristol offices, as presented in Figure 1.

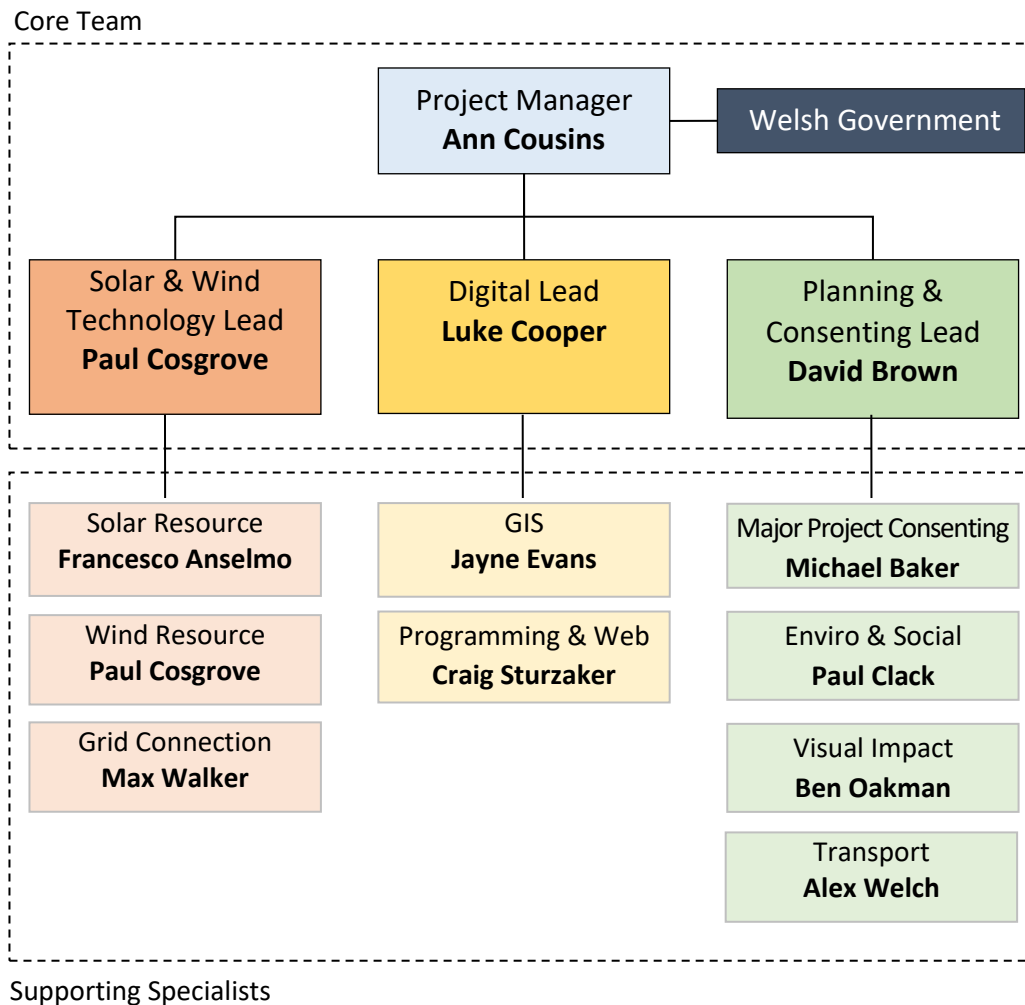


Figure 1

Our team structure comprises a *core team* and *supporting specialists*. Combined, the team’s skills cover Geographic Information Systems (GIS), wider digital capabilities and all planning and technical disciplines which are relevant to this scope of work. Furthermore, the team’s combined experience spans all project development stages associated with solar PV and onshore wind projects, both in Wales and internationally. For translations and translation quality assurance, we will use a combination of in-house staff who are fluent in Welsh and Welsh Government approved suppliers (to the extent required by the Client).

A schedule of each team member’s role and responsibilities is presented in Table 2. A summary of our team’s relevant skills and experience is presented in our response to question three.

Name	Role	Responsibilities
Ann Cousins	Project Manager	Ann will lead the project team and therefore plan, manage and co-ordinate inputs and review outputs from the three workstream leads. She will also lead our public sector stakeholder engagement activities and will be the main point of Client contact throughout the project. Ann has broad experience of delivering services on behalf of National and Local Government in Wales and particular experience in implementing the Welsh Government Renewable Energy Toolkit for Planners. Ann is based between our Cardiff and Bristol offices.
David Brown	Planning & Consenting Lead	David will lead the planning and consenting aspects of the project, with a particular focus on defining the appropriate screening criteria, analysis logic, threshold values and evaluating analysis outputs. David has particular experience in the planning, consenting and development of solar PV and wind infrastructure projects in Wales, England and Scotland. He sits on the Renewable UK Cymru Strategy Group and will lead our developer focussed engagement activities. David will work in an integrated way with Luke and Paul and be supported by and further co-ordinate a team of planning and consenting specialists. He is based in our Cardiff office.
Luke Cooper	Digital Lead	Luke will lead the digital aspects of the project, in terms of GIS, programming and web development activities. As such Luke will lead the process of defining 'architecture' of the GIS screening and analysis tool and developing the tools functionality and integrity. Luke has extensive experience in the application of GIS and wider digital solutions to complex planning and design challenges. Luke will work in an integrated way with David and Paul and be supported by and further co-ordinate a team of GIS, web and programming specialists. Luke is based in our Cardiff office.
Paul Cosgrove	Solar & Wind Technology Lead and Wind Resource Lead	Paul has extensive experience in site screening, feasibility assessments, design and construction of solar and wind infrastructure projects. Accordingly, Paul will lead the process of obtaining, auditing and transforming technical constraints information and defining technical screening constraints logic and value thresholds and evaluating analysis outputs. Paul will also be responsible for transforming the wind resource raw data files into the GIS tool and defining the associated screening logic. Paul will work in an integrated way with David and Luke and be supported by and further co-ordinate a team of technical specialists. Paul is based in our Bristol office.

Name	Role	Responsibilities
Michael Baker	Major Project Consenting Specialist	Michael will provide specialist support with respect to opportunities for larger scale projects (e.g. Developments of National Significance (DNS), Development Consent Order (DCO) / emerging Welsh Infrastructure consent), in terms of informing the project approach, evaluating analysis outputs and deriving recommendations with regard to the NDF.
Paul Clack	Enviro and Social Specialist	Paul will provide specialist inputs to the GIS tool development process, screening analysis and results evaluation with respect to environmental, heritage and social impacts. He has a broad range of environmental assessment experience across onshore renewable energy technologies.
Ben Oakman	Visual Impact Specialist	Ben will provide specialist inputs to the GIS tool development process, screening analysis and results evaluation with respect to landscape and visual impact aspects. Ben has worked on a large number of onshore wind and solar projects for clients such as Natural Resources Wales (NRW) and private sector developers. He has also provided advice to local planning authorities in relation to new overhead line infrastructure for the Hinkley Point C Connection Project.
Alex Welch	Transport Planning Specialist	Alex will provide specialist inputs to the GIS tool development process, screening analysis and results evaluation with respect to transport planning aspects. He has provided both transport assessment, design and construction advice for both onshore wind and large scale solar.
Jayne Evans	GIS Support Analyst	Jayne will provide supporting GIS tool development and analysis support to Luke, with a particular focus on solar and wind specifics. Jayne has specific experience in implementing the Welsh Government Renewables and Low Carbon Toolkit for Planners.
Craig Sturzaker	Programming & Web Analyst	Craig will provide specialist GIS and web programming tool inputs to enable development of the GIS screening and analysis tool and associated, web user interface.
Francesco Anselmo	Solar Resource Specialist	Francesco will be responsible for transforming the solar resource raw data files into the GIS tool and defining the associated screening logic.
Max Walker	Grid Connection	Max will be responsible for obtaining and interpreting the electricity grid connection data for integration with the GIS tool and will lead collaboration with the associated DNOs.

Table 2

Q2

Method Statement

Provide an initial methodology on how the project would be undertaken. This should demonstrate how you would undertake the various aspects of the project and deliver the desired outcomes for the National Development Framework and Energy Atlas.

2.1: Philosophy of our approach

Determining the feasibility of an infrastructure-scale solar PV or onshore wind project requires evaluation of a wide range of inter-dependent *parameters*, spanning stakeholder collaboration, planning, technical and commercial dimensions.

For a limited number of the parameters to be evaluated, it is possible to conclusively pre-determine associated limiting values or criteria, resulting in **fixed constraints**. Fixed constraints are possible due to limiting values which can be pre-determined by data or logic which is: *complete and absolute; is not dependent on site specific studies; is not inter-dependent with other parameters; and is unlikely to vary over time*. Example fixed constraints would be defining a road or existing development as a 'no-go' land use type.

However, for the majority of parameters, it is not possible to conclusively pre-determine associated limiting values or criteria due to varying levels of uncertainty, and/or changing markets, resulting in **variable constraints**. In the case of variable constraints, limiting values are uncertain due to possible values being: *within a range; highly subjective between stakeholder types; dependent on site-specific studies to complete gaps in data; inter-dependent with other parameters; likely to vary over time; and cumulative effects*. Examples of variable constraints include solar irradiation levels, proximity to the grid and visual impact. Determination of limiting values for variable constraints is therefore dependent on project-specific considerations, such as life-cycle economic cost-benefit evaluations; developers commercial risk and return thresholds; and the nature of project stakeholder collaborations and associated costs and benefits.

Generally, from a planning perspective, when evaluating the potential of a sector and producing planning guidelines, there is a natural inclination to fix as many feasibility constraints as possible, defining them as non-negotiable, in order to protect potentially sensitive assets and stakeholders and remove ambiguity in planning guidance. Other evidence base studies, for example Infrastructure Delivery Plans (IDP) also led to different outcomes when compared to renewable energy studies. With an IDP, potential site allocations are assessed and the study leads to a fixed / planned investment which can be included within both a developers and statutory undertakers forward plan. With renewables, although the evidence base identifies broad areas of search, the further actions (e.g. Network Operator upgrades) do not emerge in the same way. In contrast, from a developer's perspective within any competitive market, there is a need to maximise the number of constraints treated as variable, in order to test the widest range of options and challenge 'norms' through innovative approaches, including community stakeholder collaboration. In the context of this scope of work to undertake national constraints screening and identification of 'most appropriate areas' for project development, we believe it is important that the approach taken, the outputs produced and planning policy content defined thereafter considers the fixed and variable constraints appropriately. As such this will providing an interactive evidence base which can be adjusted to suit the needs of both Welsh Government, local authorities and potentially the development industry.

Therefore, in the context of delivering this scope of work, our approach proposes that **fixed constraints** are treated as **non-negotiable** from a planning perspective and can therefore be used to generate a limited number of 'static' maps which identify boundaries of '*most appropriate development zones*' for embedding in NDF planning documents. In contrast, **variable constraints**, due to their uncertain and subjective nature, are treated as **negotiable** from a planning perspective and limiting values or criteria are therefore subject

to project-specific assessments and impact scenario analysis via collaboration between planning authorities and project stakeholders during the planning process. Whilst 'static' maps can be produced to communicate scenario-based screening outputs, they shall not be embedded in NDF planning documents. In contrast, a GIS screening analysis tool shall be referred for use in NDF guidance, to be used as a dynamic, assessment and decision making tool for use collaboratively between stakeholders during the planning process, to assess project-specific risks and benefits.

We consider this dynamic approach to be key to producing an evidence based tool which can be utilised in what is an ever-changing market. The tool and any associated outputs would therefore not date should, for example one scenario change or input change over time (e.g. the cost of grid connections enabling a longer connection corridor to be an option).

2.2: Outline method

1. Project Inception



Ann will schedule and chair a project inception workshop with Welsh Government in order to introduce our core team, agree roles and responsibilities, clarify key assumptions, agree our outline project programme and method.

2. Information Management



Ann will create and manage an electronic Request For Information (RFI) register to track requests, receipt and assumption notes of all input information. The RFI will include requests for documents, data and key assumptions from relevant stakeholders and will be issued directly to relevant stakeholders for responses. We will agree a reasonable 'cut-off' date for the return of data and ask that a Client representative supports in chasing responses. Whereby gaps in requested input data remain, we will propose and agree appropriate 'bridging' assumptions. In parallel to the RFI we will produce a Screening & Analysis Assumptions Workbook (SAAW) which will document all key assumptions behind the GIS screening tool and analysis method. The SAAW will serve as a living document in the initial project stages, but we will obtain Client sign-off of the SAAW prior to completing the GIS tool development and undertaking screening analysis.

3. Baseline Documentation Review



Ann, David and Paul have a good working knowledge of relevant existing planning policy, guidelines and the Welsh Renewables Planning Toolkit, which will inform our approach. David is also currently actively involved in responding to live consultations on the proposed changes to energy consenting in Wales through his role with Renewable UK Cymru and as part of the National Infrastructure Planning Association (NIPA). To build on this, at the outset of the project Ann will lead our team in reviewing relevant parts of any National policy consultations underway and in reviewing local authority renewable energy assessments completed to date and key elements of resulting development plan policies. We will summarise key points of our findings and review with Welsh Government to inform our method.

4. Stakeholder Engagement



We will engage in-person with a focus group of key stakeholders, to inform our starting point, method and to potentially establish third party digital data exchange collaborations. Proposed key stakeholders are: a) relevant Welsh Government departments, bodies and programmes including NRW and the Energy services programme, b) local authorities, c) selected sector body representatives such as Renewable UK Cymru and d) Western Power Distribution and Scottish Power Energy Networks. We will engage with Welsh Government stakeholders via a joint meeting, and local authorities via two regional workshops in North and South Wales. We will hold one workshop with selected sector body representatives and undertake one meeting with each DNO. We will produce summary notes of all engagement sessions.

5. Methodology



On completion of the Baseline Documentation Review and Stakeholder Engagement, we will review the outcomes with Welsh Government and thereafter collaboratively finalise our method in terms of: a) the outline specification for the Screening and Analysis Tool (to be captured in the SAAW), b) the screening analysis methodology and c) the NDF evaluation methodology.

6. Screening & Analysis Tool Build



Led by Luke, we will develop a GIS screening tool using industry standard, inter-compatible ESRI ArcGIS software in conjunction with a web user interface. The GIS screening tool and associated scenario analysis engine will accommodate the following scope: ❶ Geographic: Wales - land **and water bodies**. ❷ Technology: Solar PV (Ground **and floating**) and Onshore Wind. ❸ Generation capacity range: Infrastructure, MW scale. The screening methodology and basic screening logic will follow that which is defined in the Welsh Government "Planning for Renewable and Low Carbon Energy - A Toolkit for Planners". Where appropriate and to the extent practical, enhancements to this reference method and logic will be implemented, in consideration of feedback from relevant stakeholders and in terms of dataset accuracy, screening scenario permutations and lessons learnt from screening studies completed by local authorities to date. The screening tool will enable visual, map-based identification of 'zones of potential' for developing solar PV or onshore wind capacity - based on fixed and variable constraints – within which zones it is assumed that solar or wind generation capacity could be delivered in the form of single or multiple 'projects'.



In general, the screening tool will be built using a combination of datasets which are publicly available or available under license to public sector bodies i.e. freely available to the project. Where appropriate we will utilise data from existing public sector models, such as the NRW LANDMAP. For solar irradiation data, we will use a combination of open source NASA Solar Energy and Meteonorm datasets - available to Arup under licence. For wind resource data we will use a combination of open source NASA MERRA-2 data and UK Met office data.



Where possible, we will create web-based data exchange links between the screening tool and input data host sites. This will help to keep the tool populated with the most current information for critical datasets which are prone to change regularly. In particular, we will try to achieve this for planning application data and electricity distribution network asset information (subject to DNO collaboration). Whereby web data links are not possible, we will use static versions of datasets.

Scenario Analysis Engine



A simple scenario analysis 'engine' will be developed and integrated within the GIS screening tool, to enable real-time, 'what if' scenario analysis - considering fixed and variable constraints on the basis of project-specific assumptions. Users will be able to undertake scenario analysis by adjusting key screening parameter values or sensitivity thresholds, via a simple interface. A practical logic will be included for identifying risks associated with the cumulative effects of projects. We will pre-process potential parameter interactions, to enable rapid scenario testing by users. After running each analysis, a downloadable constraints map will be presented in combination with a schedule of associated input:output data.



The GIS screening and scenario analysis engine will be accessible to the Client via a simple, **web-based graphical user interface**. Basic user training will be provided to the Client in combination with a simple user guide to enable Client ownership, use and subsequent further development. The approach to developing the screening and analysis tool will consider compatibility with the longer-term Client ambition to create an Energy Atlas for Wales. The Web Viewer and associated underlying data will be hosted on Arup secure servers.

8. Energy Atlas Assessment - GIS Screening Analysis



For a range of variable constraint assumption scenarios, we will use the GIS screening and analysis tool to identify geographic zones which are potentially suitable for the development of wind and solar PV projects. This analysis will be based on the complete suite of data screening parameters, including energy resource. For each identified zone of potential which results from a particular screening scenario, the tool will produce a graphical map output and present an indicative estimate of the potential range of peak project capacity (MW) and associated estimated annual electricity generation (MWh/year). The tool will also output a table of associated input and output data. We will issue the screening results for Client review prior to conducting the NDF Evaluation Client workshop.

9. National Development Framework Evaluation



In collaboration with key Client project stakeholders, we will undertake further evaluation of the screening results, in the context of NDF aims and objectives, to inform the identification of the most appropriate areas to be designated in the NDF for on-shore wind and solar energy development. We will focus on areas suitable for DNS and Nationally Significant Infrastructure Projects (NSIPs). The evaluation will be completed by way of preparation work by Arup and a collaborative Client workshop. Consideration will be given to any potential future evolutions of NSIP and DNS planning thresholds and protocols, likely to emerge through the proposed Welsh Infrastructure Consent process.

Q3

Account and Contract Management (Skills and Expertise)

Provide a summary of relevant expertise, skills and knowledge specifically in relation to this project. This should include details of the individuals to be deployed to the project and the extent of their involvement.

3.1: Relevant company expertise, skills and knowledge

Solar PV and Onshore Wind

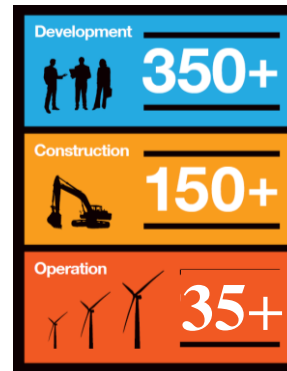
We have extensive experience across all planning, environmental impact assessment, technical, financial and commercial aspects of solar PV and onshore wind energy projects at each project stage, throughout Wales and internationally.

Through the extensive capability of our integrated, multidisciplinary teams, globally, the firm has provided engineering design and business consultancy services on more than 100GW of energy projects in over 20 countries including over 6GW+ of solar PV and 5GW+ of onshore wind.

We have particular experience in Wales and internationally in undertaking national and regional resource potential screening and feasibility assessments for solar PV and onshore wind development sites. Within the UK our project experience for solar experience is in excess of 500MW and for onshore wind in excess of 2.5 GW, across all project development stages. Our onshore wind experience in Wales is in excess of 500 MW and our key clients include NRW, Scottish Power Renewables, RWE npower, E.On and RES. We have previous experience in implementing the Wales Renewables Planning Toolkit across multiple local authority regions.

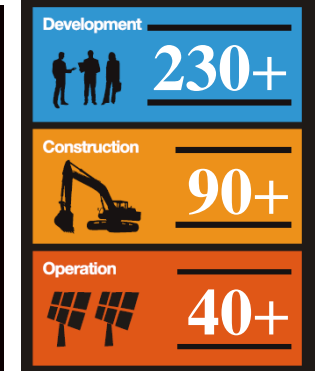
Onshore Wind

Project in numbers:



Solar PV

Project in numbers:



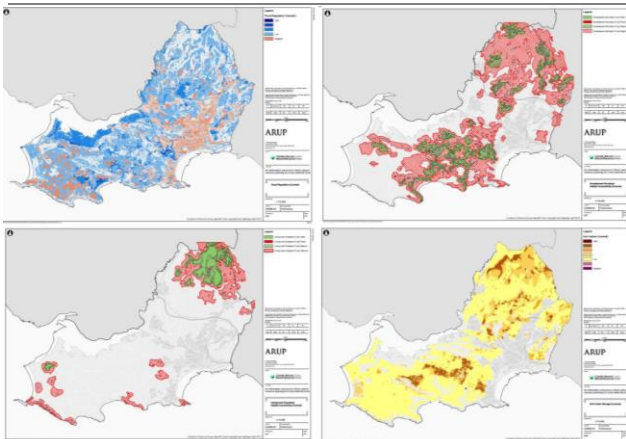
GIS & Web Interfaces

Arup has an award-winning local and global network of GIS experts working to industry standards on multidisciplinary projects across all sectors and throughout all project development stages from planning to operations. By customising out-of-the-box applications such as ESRI ArcGIS, our specialists are able to add customised interfaces and functions to a GIS model, to suit specific user requirements, including scenario-based data analysis engines and database management applications.

Our web developer specialists can also create user-friendly web-enabled GIS interfaces - enabling geospatial data to be easily accessed and analysed remotely via secure access to the ESRI ArcGIS Server. This enables clients to experience GIS functionality over the internet utilising all the power of common GIS processes without requiring a full deployment of GIS technology.

In delivery this scope of work, our GIS and Web specialists will work closely with you to ensure our end deliverables are tailored to your needs and you are comfortable in using and understanding any tools handed over.

3.2: Selected Project Experience

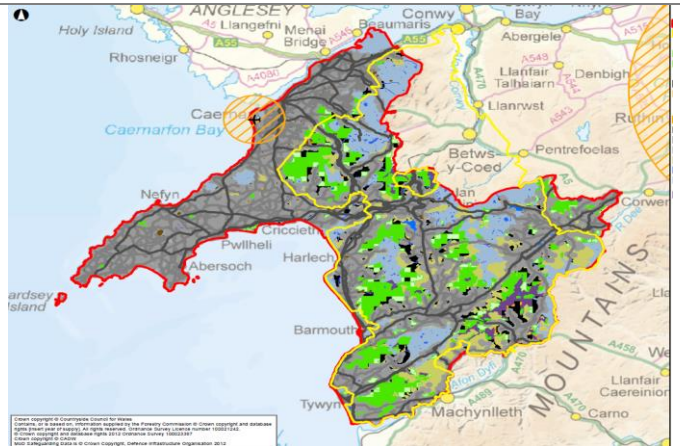


Natural Resources Planning

Client: NRW

Project description: Arup developed a pilot information resource to inform natural resource planning by creating a replicable and automated analysis toolbox, modelling the current and potential ecosystem services at a local authority scale. A webhosted platform was developed enabling the data to interact with and visualise the results.

Project team involvement: Ann Cousins – PM, Jayne Evans – GIS lead

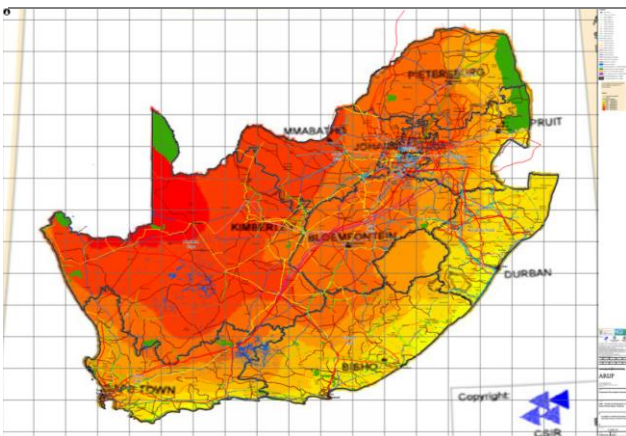


Scoping Renewable Energy Opportunities

Clients: Councils: Gwynedd, Rhondda Cynon Taf, Anglesey & Snowdonia National Park Authority

Project description: Arup undertook studies to assess the potential for both MW of installed renewable electricity or heat, using the Welsh Government toolkit for four Local Planning Authorities.

Project team involvement: Ann Cousins – PM, Jayne Evans – GIS lead



SA Solar PV National Screening Tool

Client: Fotowatio Renewable Ventures

Project description: Arup created a GIS constraints model for South Africa to enable identification of resource and project capacity potential and priority development areas.

Project team involvement: Paul Cosgrove – technical lead



Rooftop Solar Irradiation Mapping Tool

Client: Arup Internal

Project description: Arup's Irradiation Mapping Tool enables automation and highly efficient analysis of individual buildings as well as large areas with tens of thousands of addresses.

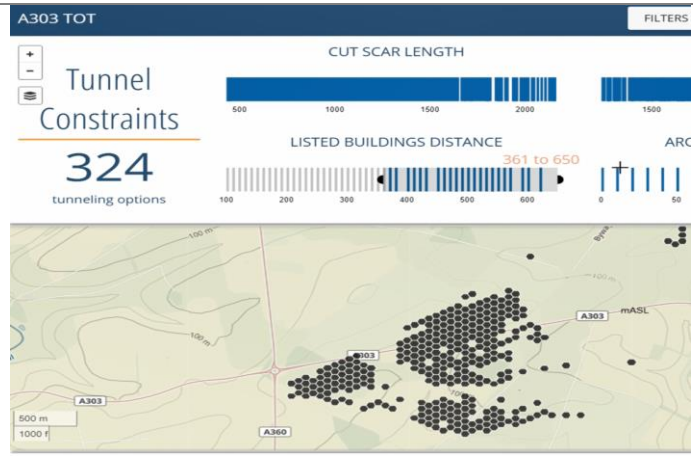
Project team involvement: Francesco Anselmo – lead developer/analyst



Epping Forest Local Plan
 Client: Epping Forest District Council

Arup undertook a site selection process to support the identification of traveller and employment sites in Epping. A repeatable chain of ESRI tools was developed to identify suitable areas based on constraints analysis.

Project team involvement: Luke Cooper – GIS



A303 Tunnelling optimisation tool
 Client: Highways England

Development of web-enabled GIS based tunnelling optimisation tool to rapidly classify and evaluate thousands of design concept options for the A303 tunnel sections. The tool allows users to cross-filter constraints dynamically in real time.

Project team involvement: Luke Cooper – GIS Lead

3.3: Staff Expertise Matrix

A summary of our project team’s relevant experience is presented in Table 3.

Team Member	Solar PV & Onshore Wind Projects						GIS	Web development
	Policy	Planning & Consenting	Feasibility	Engineering	Construction	Operation		
Ann Cousins	•	•	•					
David Brown	•	•	•					
Luke Cooper							•	•
Paul Cosgrove		•	•	•	•	•		
Michael Baker	•	•						
Paul Clack	•	•	•					
Ben Oakman		•	•					
Alex Welch		•	•	•	•			
Jayne Evans		•	•				•	
Craig Sturzaker								•
Francesco Anselmo			•				•	•
Max Walker			•	•	•	•		

Table 3

3.4: Key Staff Biographies

Ann Cousins – Project Manager



Ann has 13 years' experience in developing policy and strategy for renewables throughout Wales and England. Ann was the project manager

for the natural resource planning project for NRW, and for the scoping of renewable energy potential for Gwynedd, Rhondda Cynon Taf, Snowdonia and Anglesey - using the Wales renewables and low carbon planning toolkit.

Paul Cosgrove – Solar and Wind Technical Lead



Paul is a chartered engineer with 15 years' experience specialising in distributed energy infrastructure with public and private owner,

investor and contractor clients. Paul has particular experience in solar PV and onshore wind, with over 2GW of project experience across all project development stages from screening and feasibility through design, construction and operation.

Luke Cooper – Digital Lead



Luke is a senior digital specialist, working in GIS and web dashboard development. He has lead digital services

roles for Network Rail and Highways England projects, including building data analytics viewers and optimisation tools to solve complex problems based on geographic constraints, much like assessing the opportunities and constraints for renewables.

David Brown – Planning & Consenting Lead



David is a chartered town planner with 13 years' experience focused on assessing and consenting major infrastructure and energy

projects. David previously reviewed Renewable Energy Consenting on behalf of Welsh Government in Wales and is a member of the Renewable UK Cymru Strategy Group which means he is familiar with current policy changes and delivery issues in Wales. He has knowledge of a number of the existing SSA's and a clear understanding of the main constraints to deployment of solar and wind projects.

Jayne Evans – GIS Specialist



Jayne is a GIS specialist with nine years' experience across transport, energy, water and building sectors. Jayne was the GIS lead

for our previous work scoping renewable energy potential for Gwynedd, Rhondda Cynon Taf, Snowdonia and Anglesey - using the Wales renewables and low carbon planning toolkit.

Craig Sturzaker – Web Developer



Craig is a software developer with ten years' technical experience.

Craig brings to the project a combination of development skills and experience in GIS to create custom tools for the analysis and presentation of spatial information.

Q4

Cost

Please complete the Commercial Response form with a full breakdown of your costs for this project.

In this section please provide any information relating to the rates applied and provide any further explanation of the charges that you feel is necessary to ensure clarity.

4.1: Commercial Response

Please refer to attached commercial response form and associated key assumptions and clarification below.

4.2: Key Assumptions & Clarifications

1. Deliverables

1. Inception meeting/workshop attendance
2. Bi-weekly client progress calls (half hour every two weeks)
3. Monthly progress summary notes
4. Web-enabled, GIS-based Solar PV and Onshore Wind Resource Potential Screening and Scenario Analysis Tool and associated simple user guide
5. Server hosting of screening tool, scenario analysis engine, web-interface and underlying data sets, during project contract period and for a period of 6 months thereafter (refer below).
6. Client Review Meetings x 3 up to two hours each
7. Stakeholder Workshops x 4 up to one day each
8. Meetings with Key Stakeholders x 3 up to two hours each
9. Bilingual Summary Report and Associated Map Outputs from Scenario Analysis and NDF Evaluation, including underlying data in a format compatible with GIS mapping technology, suitable for inclusion in other tools which may be developed as part of an Energy Atlas

Exclusions:

1. Authoring of NDF document written content.
2. Development of the broader 'Energy Atlas' as described in the specification.
3. Stakeholder venue hire/usage costs and arrangements for workshops and client meetings.

2. Commercial

1. 'Quantity of resource' inputs to the Commercial Pro-forma represent full time equivalent staff numbers.
2. Unless otherwise agreed, deliverables under this appointment are not intended for and should not be relied upon by any third party beyond the Client and no responsibility is undertaken by Arup to any third party for it.
3. Intellectual property rights for our report and hard copy mapping deliverables and underlying GIS input data will reside with the Client – subject also to any third party data intellectual property rights. However, Arup will retain ownership of the intellectual property rights associated with the proposed digital software application deliverables i.e. the scenario analysis engine and web-interface.

4. During the contact period and for a period of six months beyond the date of issue of our final deliverables (project close date), we will grant the Client a royalty free license for the use of the screening tool, scenario analysis engine and web-interface. Beyond this period, as an extension to this scope of work, we would be happy to explore an additional, appropriate commercial arrangement for broader dissemination and use of such digital deliverables, considering licencing, intellectual property rights and liabilities – dependant on required usage and relevance to the broader Client aspiration of developing an Energy Atlas for Wales.
5. During the contract period and for a period of six months after issue of our final deliverables (project close date), Arup will host the screening tool, scenario analysis engine, web-interface and underlying data sets via our secure remote server infrastructure. The cost for hosting of data is included in our proposed fees.
6. With regard to 'maintenance' of the scenario analysis engine and web-interface (e.g. fixing data exchange links and any bugs):
 - a. During the contract period, Arup will assume all responsibility, within our proposed fees.
 - b. Beyond the contract period, considering events that might be out of our control related to data exchanges or otherwise, we will need to discuss and agree an appropriate commercial arrangement depending on assigned responsibilities and intended usage of these tools.
7. To undertake this scope of work, we will be relying on information provided by other third parties. Whilst, to the extent practical, we will endeavour to review and identify significant quality and completeness issues associated with such data, we do not in any way accept responsibility for the content, including the accuracy and completeness of such information and we shall not in any circumstances be liable in relation to the accuracy and completeness of such third party information.
8. We emphasise that the forward-looking projections, forecasts, or estimates of resource potential are based upon interpretations or assessments of available information at the time of undertaking an appointment. Their realisation is dependent upon the continued validity of the assumptions on which they are based. Actual events frequently do not occur as expected, and the differences may be material. For this reason, we accept no responsibility for the realisation of any projection, forecast, opinion or estimate associated with this scope of work.
9. The cost for translating our final report and supporting with verbal translations at stakeholder engagement workshops is included within our total price. For translations and translation quality assurance, we will use a combination of in-house staff who are fluent in Welsh and Welsh Government approved suppliers (to the extent required by the Client).
10. In general, the screening tool will be built using a combination of datasets which are publicly available or available under license to public sector bodies i.e. freely available to the project.