## QUESTIONNAIRE:

**Consultation on proposals for the levels of banded support for solar PV under the Renewables Obligation for the period 1 April 2013 to 31 March17 – proforma for the submission of evidence on full-life generation costs of large-scale (>5MW) generation.**

This questionnaire is for use in conjunction with the public consultation on proposals for the levels of banded support for solar PV under the Renewables Obligation for new accreditations and additional capacity added over the period 1 April 2013 to 31 March 2017. It provides a common format for stakeholders to submit evidence (or further evidence, where applicable) on full-life generation costs of large-scale (>5MW) solar PV, where they wish to do so as part of their consultation response.

At the time of writing, there are no solar PV sites >5MW that are operational yet in the UK, although we are aware of some schemes in the pipeline. As a result, our initial analysis is based on two pieces of existing evidence which although relevant do not include specific information relating to very large solar PV sites. It is also recognised that with the pace in the solar industry new information may be available.

The original solar PV cost assumptions for the Renewables Obligation Banding Review were taken from [the original Arup work commissioned for the review and published in October 2011](http://www.decc.gov.uk/assets/decc/11/consultation/ro-banding/3237-cons-ro-banding-arup-report.pdf). This evidence, while relating to solar PV installations >5MW, is now unreliable given the rapid pace of change in the PV industry. The analysis in the consultation is based on evidence arising from the recent FITs consultation on solar PV cost control (‘FITs consultation 2A’). This consists of:

* The evidence submitted to the FITs 2a consultation and summarised in the Government’s response to that consultation, published May 2012 (see <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/renewable-energy/5386-government-response-to-consultation-on-comprehensi.pdf>); and
* The solar PV cost update undertaken in May 2012 by Parsons Brinckerhoff which was used in DECC’s model for the FIT (see <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/renewable-energy/5381-solar-pv-cost-update.pdf>), which took account of evidence submitted as part of the consultation as well as additional research.

This analysis, while recent and in-depth, it is confined to sub-5MW solar installations. We are therefore seeking further information relating to the costs and performance characteristics of installations >5MW. The consultation document poses a number of questions and encourages the solar industry to provide information. This questionnaire has been developed to assist the industry provide that information. The Government will review the proposed support levels further to the information provided as part of this consultation exercise.

The provisions relating to confidentiality and data protection outlined in the consultation document also apply to any information provided in and with this questionnaire.

Completed questionnaires, along with any supporting documents/evidence, should be returned to DECC at the address given at the end of this document no later than 19 October 2012.

* *If you are unable to provide all cost items in the level of detail requested below, please still provide all available information.*
* *If you have more than one project of broadly similar size (installed capacity), or there is significant uncertainty, feel free to provide ranges rather than point estimates for the cost and efficiency parameters.*
* *If you have two projects of significantly different size you could provide distinct information on, this would be very useful, as we would like to gather information that gives an indication of scalability of generation costs.*

**Please insert your answers into the tables below.**

|  |  |  |
| --- | --- | --- |
| Renewable technology |  | Please specify technology family (e.g. solar PV). |
| Installed capacity deployed by you globally to date |  | [MW] |
| Installed capacity deployed by you in UK to date |  | [MW] |
| Installed capacity in development by you in UK currently |  | [MW] |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  | | --- | --- | --- | | **General project questions** | **Response** | | | **Project information**  *(name of project, year start of operation, aggregation – names of projects, estimate)* |  |  | | **Size that specific project costs are provided for (MW of electrical output)** *(if aggregation please give average and range of size)* |  |  | | **How is the land structured?** *(Lease, Freehold)* |  |  | | **Is the project a new built asset/ or retro-fit?** |  |  | | **What procurement/ contracting strategy is in place?**  *(Full EPC wrap, individual sub-contracts)* |  |  | | **What is the approximate distance to grid?** *(km)* |  |  | | **Are there any substantial non-typical costs included in your cost estimates (e.g. brown field remediation works)?**  *If so what % of the EPC cost is made up of these works?* |  |  | |

Please insert your answers on specific cost items in the table below.

* The specific items relate to pre-development, construction and operational costs of large-scale (>5MW) solar PV generation.
* Please provide each cost information in the original currency the cost was incurred in (either £, US$ or €).
* To ensure comparability of costs in real terms each cost section includes a question on the specific year the cost items relate to.

| **Cost items** | | **Response/ Comments** | **Cost** | | | **Time** | **%** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | £ | US$ | € | Years/ months |  |
| **PROJECT COST** | |  |  |  |  |  |  |
|  | **Pre-licensing** |  |  |  |  |  |  |
|  | **Technical development cost** *(including design selection)* |  |  |  |  |  |  |
|  | **Legal costs** |  |  |  |  |  |  |
|  | **Planning** *(including regulatory costs, licensing, public enquiry, ‘local community engagement’ costs)* |  |  |  |  |  |  |
|  | **Timescale for pre-development** *(total pre-development period including pre-licensing, licensing, public enquiry)* |  |  |  |  |  |  |
|  | **To what year do the above costs apply?** (e.g. 2006) |  |  |  |  |  |  |
|  | **Distribution of the costs over the pre-development period**  *(e.g. 50% cost upfront and rest straight line, straight line for full pre-development period or straight line with 50% of cost back-ended)* |  |  |  |  |  |  |
|  | **What do you consider to be the key drivers behind Pre-development cost?** *(e.g. planning hurdles, licensing, technology, environmental, etc)* |  |  |  |  |  |  |
| **CONSTRUCTION COSTS** | |  |  |  |  |  |  |
|  | **Construction costs** (construction cost including procurement and project management cost, this excludes *other costs listed separately here)* |  |  |  |  |  |  |
|  | **Grid connection costs** |  |  |  |  |  |  |
|  | **Other infrastructure costs** *(if applicable, e.g. water, roads, waste disposal, land costs, etc)* |  |  |  |  |  |  |
|  | **Total capital cost or capital cost per kW installed** *(This cost item includes the full capital cost excluding interest during construction)* |  |  |  |  |  |  |
|  | **Construction time period** |  |  |  |  |  |  |
|  | **Distribution of the costs over the construction period**  *(e.g. 50% costs upfront and rest straight line, straight line for full construction period or straight line with 50% of costs back-ended)* |  |  |  |  |  |  |
|  | **To what year do the above costs apply?** (e.g. 2008) |  |  |  |  |  |  |
|  | **What do you consider to be the key cost drivers behind capital/ construction costs?** *(e.g. steel, exchange rates, energy costs, labour costs, other)* |  |  |  |  |  |  |
|  | **How do you think capital costs are likely to change over the next 5, 10, 15 years?** |  |  |  |  |  |  |
| **OPERATIONAL COSTS** (please provide the following operating cost data on a unit cost basis – i.e. per kW/ MW or kWh/ MWh as appropriate) | | | | | | |  |
|  | **Total operation and maintenance (O&M) cost / kW** |  |  |  |  |  |  |
|  | **Fixed O&M cost / MW per year**  *(Includes operating labour costs, planned and unplanned maintenance, lifecycle capital renewable cost, and ongoing property taxes/ rates)* |  |  |  |  |  |  |
|  | **Variable O&M costs/MWh** |  |  |  |  |  |  |
|  | **Insurance cost / MW** |  |  |  |  |  |  |
|  | **Connection and UoS charges – per MW per year** |  |  |  |  |  |  |
|  | **To what year do the above costs apply?** (e.g. 2010) |  |  |  |  |  |  |
|  | **What do you consider to be the key cost drivers behind operational costs?** *(e.g. exchange rates, fuel costs, labour costs, other)* |  |  |  |  |  |  |
|  | **How do you think operational costs are likely to change over the next 5, 10, 15 years?** |  |  |  |  |  |  |
| **TECHNICAL ASSUMPTIONS** | |  |  |  |  |  |  |
|  | **Plant capacity in MW (as above)** |  |  |  |  |  |  |
|  | **Plant availability during full operation** |  |  |  |  |  |  |
|  | **Average annual reduction in plant availability (if applicable)** |  |  |  |  |  |  |
|  | **Average annual load factor** |  |  |  |  |  |  |
|  | **Average annual reduction in load factor (if applicable)** |  |  |  |  |  |  |
|  | **Plant operational life** |  |  |  |  |  |  |
| **FINANCE COSTS** | |  |  |  |  |  |  |
|  | **Expected investment period (years)** |  |  |  |  |  |  |
|  | **Expected level of debt finance (%)** |  |  |  |  |  |  |
|  | **Price received for electricity generated through Power Purchase Agreement** (although expect big variation as it depends on how bankable the site is in the eyes of the supplier/PPA negotiator). |  |  |  |  |  |  |
|  | **Return on Investment** (if the ROC rate were to be set as proposed) |  |  |  |  |  |  |
|  | **Project hurdle rate** (please specify if pre-tax real or nominal) |  |  |  |  |  |  |

Please provide any other cost evidence that you think relevant:

|  |
| --- |
| **Please insert or attach any other relevant cost evidence that you wish to submit as part of your response (expandable box)** |
|  |

**Please return this completed questionnaire as follows:**

* Please send your completed questionnaire and any supporting documents, along with your main response, to the following email address - [robr@decc.gsi.gov.uk](mailto:robr@decc.gsi.gov.uk).
* If you are responding by post, please send your completed questionnaire and any supporting documents, along with your main response, to the following address:

Renewables Obligation Team

Department of Energy & Climate Change

Area 4A

3 Whitehall Place

London

SW1A 2AW