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| Energy Storage Cost Reduction Competition |
| Application Form |
| 6 |
| January 2017 |

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| Energy Storage Cost Reduction Competition |
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## **Guidance**

Further information and guidance about the Energy Storage Cost Reduction Competition can be found in the Competition Guidance Notes (available at [www.gov.uk/guidance/energy-innovation](http://www.gov.uk/guidance/energy-innovation) or by emailing smart.innovation@beis.gov.uk ). Information is provided below on the application process for the Competition.

* **Overview:** The Competition funding is offered in two tranches, with separate submission deadlines for each tranche of funding.
* **Registration Email:** Applicants must submit a registration email to smart.innovation@beis.gov.uk using the title ‘Energy Storage Cost Reduction Competition’ in the email subject and containing the following information: the name of the lead project organisation (project co-ordinator); the project title; and confirmation of intention to submit an application.

The deadlines for submitting registration emails are:
	+ Tranche 1: Registration deadline is 5pm, Thursday, 16 March 2017.
	+ Tranche 2: Registration deadline is 5pm, Thursday, 1 June 2017.
* **BEIS confirmation:** Within a week of receipt of the Registration Email, BEIS will issue a confirmation email to the applicant with an individual reference number. Please use this reference number to submit any subsequent application or when submitting any questions about the Competition.
* **Questions about the Competition:** If you have read the guidance notes and any online FAQs and still have questions, you may address any queries regarding the competition process to the following email address: smart.innovation@beis.gov.uk
* **Submission process and deadline:** The full proposal for the Competition must be emailed to smart.innovation@beis.gov.uk using the title ‘Energy Storage Cost Reduction Competition - (name of lead applicant)’ in the email subject by the relevant deadline for each funding Tranche:
	+ Tranche 1: Proposal submission deadline is 5pm, Thursday, 23 March 2017;
	+ Tranche 2: Proposal submission deadline is 5pm, Thursday, 8 June 2017.
* **File format and size:** Completed application forms and the completed finance templates and any supporting information should be submitted electronically. The completed finance form should be submitted as a spreadsheet (.xls) file; the completed application form should be submitted in pdf format.

The maximum size email you can send is 10 MB. If your application is larger than 10MB, please break the submission down into smaller sizes and ensure the subject line of each additional email takes the following format ‘Energy Storage Cost Reduction Competition - (name of lead applicant) – email x of y’.
* **Submission content:** Each proposal must include the following documents:
	+ Completed application form (separate word document – this can be downloaded from <https://www.gov.uk/guidance/energy-innovation> or requested from smart.innovation@beis.gov.uk.);
	+ Completed finance form (separate spreadsheet – this can be downloaded from <https://www.gov.uk/guidance/energy-innovation> or requested from smart.innovation@beis.gov.uk );
	+ Completed project Gantt chart or outline project plan (see Assessment Criterion 4);
	+ **Optional:** additional letters of support or other supporting information can also be submitted **where they add substantive information** to the proposal; however, you should not assume that any additional information will be cross-referenced or reviewed as part of the selection process – for example, it may only be used to help finalise the assessment of projects which receive very similar assessment scores.

You should endeavour to answer all of the questions on the application in full. Incomplete applications and any containing incorrect information will very likely be rejected although BEIS may, at its discretion, request clarification or additional data before making a final decision.

Any applications or supporting documentation received after the application deadline will not be considered.

## **Contact and Company Details and Proposal Summary**

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| --- |
| Summary Information |
| Name of Applicant Business |       |
| Project Title |       |
| Estimated Start Date |       |
| Project Duration | 0 mths |
| Total Eligible Project Costs | £ 0.00 |
| Total private sector contribution to project costs | £ 0.00  |
| Total BEIS Grant applied for | £ 0.00 |
| Is this a collaborative application? | Click to enter | If Yes please provide contact and business details for all partners in Annex 1. |

|  |
| --- |
| Contact Details |
| Title | Choose title | Name |       |
| Position |       |
| Email |       |
| Telephone |       | Mobile |       |
| Organisation name |       |
| Address |       |
|   |       |
| . |       |
| . |       |
| Town/City |       |
| Postcode |       |
| Business Type | Choose type |
| If type of business is ‘other’, please describe here: |  |
| **Business Details**  |
| Number of employees (including directors) | 0 |
| Business Registration Number |       |
| Turnover (in most recent annual accounts) | £ 0.00 | as at | enter date |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at | enter date |
| Business maturity | Choose maturity |
| Does the business have a parent company? | Choose an item |
| How is the business currently funded? (Choose all that apply) |
| [ ]  | No Funding | [ ]  | Founders (including bank loans) | [ ]  | Friends and Family | [ ]  | Public Sector Grants\* |
| [ ]  | Angel Investment | [ ]  | Venture Capital | [ ]  | Private Equity | [ ]  | Stock Market Floatation |
| **Other public sector funding:** With respect to this project or the technology it is based on, please list briefly any public sector support you are receiving or have received in the past 10 years, or which is currently being sought (please add further details in a separate annex if necessary). |  |

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| --- |
| Parent Company Details (if applicable) |
| Organisation name |       |
| Address |       |
|  |       |
|  |       |
|  |       |
| County |       |
| Postcode |       |
| Turnover (in most recent annual accounts) | £ 0.00  | as at | enter date |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at | enter date |
| Company maturity | Choose an item. |

## **Public Description of the Project**

|  |
| --- |
| The public description of the project should be a brief non-confidential description of the project that BEIS may use in online or printed publications; please describe the project objectives and key deliverables and the expected project benefits) (maximum 500 words) |
|       |

## **Eligibility Criteria**

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| This section seeks information to address the Competition Eligibility Criteria: all projects will be assessed against these eligibility criteria before progressing to evaluation against the Assessment Criteria. Please see section 4 of the Competition Guidance Notes for further information. |

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| **1. Innovation and technology readiness** |
| Please describe the existing technology readiness level of the overall energy storage system. Please describe the existing technology status as well as providing a numerical TRL grading (see Annex 1 in the Guidance Notes for further information on technology readiness levels). |       |
| Please describe the current technology readiness level of the component, sub-system or manufacturing process to be developed during the project. |       |
| Please describe the progress in technology readiness expected to be secured for the component, sub-system or manufacturing process during the project.  |       |

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| **2. Technology scope** |
| To the best of your knowledge, is this energy storage technology already commercially deployed in the UK or elsewhere? If yes, please describe the extent of commercial deployment. |       |
| Please describe the optimum operating range for this storage technology – in terms of both storage capacity (MWh or MWh/tonne for thermal systems) and typical power export level (in MW) |       |

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| **3. Project activity** |
| Which is the main research, development and innovation category applicable to your project (see section 5 of the Guidance Notes)? | Choose an item. |
| Please identify any additional research, development and innovation category applicable to your project. | Choose an item. |

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| **4. Project status** |
| Please describe any work which has been carried out on the proposed project already (BEIS is unable to fund retrospective work on projects). |       |

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| 5. Additionality |
| What is the added value of public funding for this project and what would be the outcome if no public funding was provided (for example, in terms of the extent or speed of innovation activity). Why can’t you fund this innovation activity yourself?  |       |

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| 6. Grant size |
| Maximum grant funding requested for Industrial Research project activity (in £) |       |
| Maximum grant funding requested for Experimental Development project activity (in £) |       |
| Maximum total grant funding requested (in £)  |       |

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| 7. Grant intensity |
| Please complete Table E7 below to confirm the proposed grant intensity for each project partner.  |
| **Table E7 – Grant intensity** |
|

| **Name of partner organisation** | **Size and type of partner[[1]](#footnote-2)** | **Partner’s eligible project costs (in £)** | **Partner’s project costs as a proportion of the total eligible project costs (%)** | **Partner’s grant funding request from BEIS (in £)** | **Partner’s grant funding request as a proportion of their eligible project costs (%)** |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| *Please add extra rows for additional partner, if required* |
| **Total:** |  |  |  |  |  |

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| **8. Project location** |
| Please describe the location or locations where the proposed project will be carried out. If more than one location, please provide an estimate of the total project costs to be delivered at each location. |       |

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| 9**. Project duration and end-date** |
| Please state the completion date for the project – including completion of all reporting requirements. |       |

## **Assessment Criteria**

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| This section seeks information to address the Competition Assessment Criteria: these criteria will be used to rank projects. Please see section 7 of the Competition Guidance Notes for further information. |

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| **1. Cost reduction and expected lifetime costs of the storage system (30% weighting)** |
| 1a. Please complete Table 1a to provide details of current and anticipated performance parameters of your energy storage system. The column of expected performance parameters should reflect the improvement(s) in performance expected to be secured from successful deployment of the innovation which is proposed for funding in the Competition.  |
| 1b. Please complete Table 1b to provide details of current and expected capital, installation, operating and maintenance costs and cycle life for your energy storage system. The expected costs and cycle life should reflect the cost reduction(s) and extensions in cycle life expected to be secured from successful deployment of the innovation which is proposed for funding in the Competition. |

**Table 1a – Performance parameters**

| **Performance parameter***(Please complete for all the performance parameters which are relevant for your energy storage system.)* | **Current performance of energy storage system**  | **Expected performance of energy storage system within 3 years (if significantly different from current performance)** | **Notes - please provide a brief justification for all expected substantial improvements in performance (more detailed evidence can be provided in an Annex or in supporting documents if necessary).** |
| --- | --- | --- | --- |
| **Type of storage technology and storage medium:** |  |
| **Maximum deliverable power in (MW)** |  |  |  |
| **Energy storage capacity (MWh)** |  |  |  |
| **Self discharge rate (i.e. time elapsed before capacity is reduced to less than 80% by self-discharge)**  |  |  |  |
| **Discharge time (from maximum to minimum energy) (minutes/hours)** |  |  |  |
| **Useable depth of discharge/charge; please explain if this can be extended and under what circumstances.** |  |  |  |
| **Recharge time (from minimum to maximum energy) (minutes/hours)** |  |  |  |
| **Response time (from signal to power discharge) (seconds)** |  |  |  |
| **Roundtrip efficiency (%) (please specify how you are defining roundtrip efficiency for your system - e.g. electrical or other form of energy exported from project/electrical energy imported from grid)** |  |  |  |
| **Details of typical operating temperatures and (where relevant) typical operating pressures**  |  |  |  |
| **Scaling: how easily can the power and capacity of the proposed storage system be increased? Can power and capacity be increased independently?** |  |  |  |
| **Geographical or proximity constraints?** |  |  |  |
| **Infrastructure requirements? (e.g. does the storage system have to be in a climate-controlled environment?)** |  |  |  |
| **Size and footprint (for a specified export power and storage capacity)?** |  |  |  |
| **Environmental impact (e.g. emissions; noise or vibration; visual intrusion, etc)?**  |  |  |  |

**Table 1b – System costs and cycle life**

|  |  |  |  |
| --- | --- | --- | --- |
| **Cost element***(Please complete for all the performance parameters which are relevant for your energy storage system.)* | **Current cost performance of energy storage system**  | **Expected cost performance of energy storage system expected within 3 years (if significantly different from current performance)**  | **Notes – please use this column to provide a brief explanation of:*** **the status of the current costs (e.g. firm quotations; off the shelf items; initial estimates) for each of the cost items.**
* **all expected substantial cost reductions (more detailed evidence can be provided in an Annex or in supporting documents if necessary).**
 |
| Specify the **size of energy storage system** which has been costed below (include the maximum power and energy capacity): |  |
| **Capex** *Please provide the breakdown of capital costs, using the sub-categories below where possible.* |
|

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| **Break-down of capital costs (in £) by category:** |
|  |

 |  |  |  |
| 1. Pre-development activities (owner's costs)
 |  |  |  |
| 1. Storage medium
 |  |  |  |
| 1. Charge device
 |  |  |  |
| 1. Discharge device
 |  |  |  |
| 1. Control systems
 |  |  |  |
| 1. Connection to power grids/user, e.g. electrical grid connection
 |  |  |  |
| 1. Civil works
 |  |  |  |
| 1. Balance of plant
 |  |  |  |
| 1. Others (please specify)
 |  |  |  |
|  |  |  |  |
| Sum of capital costs for specified system (in £) |  |  |  |
| Where the technology is scalable, please provide cost of additional energy storage (£/MWh) |  |  |  |
| **Opex and Maintenance Costs** (including all labour, consumables, & security for specified system size) |
| Annual operating costs (in £) |  |  |  |
| Other operating costs (in £ - please list items in Notes column) |  |  |  |
| Annual maintenance costs (in £) |  |  |  |
| Other maintenance costs (in £ - please list items in Notes column) |  |  |  |
| **Operating Life** |
| Please provide details of the typical operating life of the different sub-components of the energy storage system. Please outline here the typical operating pattern expected to secure these operating lives: |  |
|

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| **Expected life of sub-components (in years) by category:** |

 |  |  |  |
| 1. Pre-development activities (owner's costs)
 |  |  |  |
| 1. Storage medium
 |  |  |  |
| 1. Charge device
 |  |  |  |
| 1. Discharge device
 |  |  |  |
| 1. Control systems
 |  |  |  |
| 1. Connection to power grids/user, e.g. electrical grid connection
 |  |  |  |
| 1. Civil works
 |  |  |  |
| 1. Balance of plant
 |  |  |  |
| 1. Others
 |  |  |  |
|  |  |  |  |

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| **2. Scale of potential cost-effective, controllable demand(15% weighting)** |
| Please explain how the proposed demand side response system is expected to secure one or more of the following benefits for the energy system:* Reducing overall energy system costs;
* Enabling increased deployment of intermittent or inflexible low carbon generation (including providing synthetic inertia);
* Securing cost-effective efficiency improvements in generation technologies (renewable or non-renewable);
* If you intend to provide one or more of National Grid’s Ancillary or Balancing Services (including black start capability) or to operate in other commercial markets (e.g. capacity market), please detail those services and markets with which you believe your proposed storage system would be technically compliant.

Please provide explanation and supporting evidence to support the benefits claimed.Please base the expected benefits on the performance of the energy storage system at the end of the proposed project – i.e. assuming successful deployment of the innovation which is proposed for funding in this Competition. ***Please limit your response to 2 pages*** |
|       |

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| **3. Market potential (15% weighting)** |
| Please describe:* the size and nature of the market opportunities for your energy storage technology - both the UK and the international markets;
* the proposed route and timescales to market – both in the UK and internationally, if relevant;
* how you and the project partners expect to generate value from the innovation;
* any further technology development needed to secure sales in the UK or international markets.

***Please limit your response to 2 pages*** |
|       |

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| **4. Project delivery(20%)** |
| 4a. Please provide a separate **high level Gantt chart** or outline project plan listing the key tasks and timescales for the proposed project. |
| 4b. Please complete Table 5b below to describe the **key work packages** for the project. |
| 4c. Please complete Table 5c below to list the **key project milestones**. |
| 4d. Please complete Table 5d below to outline the **key project risks and risk mitigation** techniques |
| 4e. Consortium **roles and governance**: please outline below the **key roles for each partner** and the proposed **governance arrangements** between the partners to ensure effective project delivery.***Please limit your response to 2 pages*** |
|       |
| 4f. Please list any **external party** responsible for delivering goods or services worth more than 10% of the total project value and explain how you will ensure that these parts of the project do not give rise to delays in the delivery of the project. |
|       |
| 4g. Please provide details below of the **relevant skills, qualifications and experience** of the project team, including descriptions and evidence of previous relevant work carried out, Please include brief details of relevant previous projects, including the date, location, client and project size.***Please limit your response to 6 pages***Brief CVs of lead project team members should be provided in an Annex to this Application (CVs should be no longer than 2 pages each).  |
|       |

**Table 4b – Project Work Packages**

|  |  |  |  |
| --- | --- | --- | --- |
| **Work package number** | **Work package name** | **Project partner lead for work package** | **Brief description of work package, including key tasks** |
| **WP1** |  |  |  |
| **WP2** |  |  |  |
| **WP3** |  |  |  |
| *Please add further rows as necessary for each work package* |

**Table 4c – Project Milestones**

|  |  |  |  |
| --- | --- | --- | --- |
| **Milestone number** | **Milestone name** | **Project partner lead for milestone delivery** | **Brief description of milestone, including deliverables** |
| **M1** |  |  |  |
| **M2** |  |  |  |
| **M3** |  |  |  |
| *Please add further rows as necessary for each milestone* |

**Table 4d – Risks and Risk Management**

*(Applicants can provide their own Risk Table as a separate Annex if preferred)*

|  |  |  |
| --- | --- | --- |
| **Risk**(Identify and describe all key project risks, including: financial, technology, supply chain, regulatory, etc) | **Overall risk rating:** (Probability x Impact)High, Medium or Low | **Mitigation actions**(Describe the actions taken or planned responses to reduce the impact and/or probability of the risk) |
|  |  |  |
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|  |  |  |
|  |  |  |
| *Please add further rows as necessary*  |

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|  **5. Project financing** (15% weighting)You must also complete a separate Finance Form (spreadsheet) and submit it with your completed Application Form. |
| 5a. Please complete the project finance summary below: |
| Total private sector contribution | £ 0.00 |
| Total BEIS grant applied for | £ 0.00 |
| Other public sector funding applied for | £ 0.00 |
| Total eligible project costs | £ 0.00 |
| Project Start Date | Click here to enter a date |
| Project End Date | Click here to enter a date |
|  |

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| **6. Sector capacity building (5% weighting)** |
| Please describe:* any wider learning of general relevance to the energy storage industry which is expected to be secured from this project and how the learning will be shared.
* the impact on jobs – both within the project partners and within the wider supply chain, if known – including estimates of the number and location of any jobs to be created and retained as a result of the project.

***Please limit your response to 2 pages*** |
|       |

## **Application Approval**

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| Please ensure a suitable representative from the lead applicant business and for a formal collaboration project, a representative from each of the project partners who are seeking BEIS funding, checks and signs this application before returning it to BEIS to indicate their knowledge and approval of the application. |
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|  |  |  |  |
| --- | --- | --- | --- |
| **Name of organisation** | **Name of signatory & position in organisation** | **Signature** | **Date** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
| **Please add rows for additional project partners, if needed.** |

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| Further Information:Please insert any further information in the annexes immediately following this page or alternatively provide as attachments to the email submission. All additional information should be appropriately referenced within the application form text so that assessors can readily refer to it. If information is not appropriately referenced it will not be considered during the assessment process. |
|  |

## **Annex 1: Partner Information (for Collaboration Projects only)**

|  |
| --- |
| Contact Details – Partner 1 |
| Title | Choose title | Name |       |
| Position |       |
| Email |       |
| Telephone |       | Mobile |       |
| Organisation name |       |
| Address |       |
|   |       |
| . |       |
| . |       |
| Town/City |       |
| Postcode |       |
| Business Type | Choose type |
| If type of business is ‘other’, please describe here: |  |
| **Business Details – Partner 1** |
| Number of employees (including directors) | 0 |
| Business Registration Number |       |
| Turnover (in most recent annual accounts) | £ 0.00 | as at | enter date |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at | enter date |
| Business maturity | Choose maturity |
| Does the business have a parent company? | Choose an item |
| How is the business currently funded? (Choose all that apply) |
| [ ]  | No Funding | [ ]  | Founders (including bank loans) | [ ]  | Friends and Family | [ ]  | Public Sector Grants\* |
| [ ]  | Angel Investment | [ ]  | Venture Capital | [ ]  | Private Equity | [ ]  | Stock Market Floatation |
| \*With respect to this project or the technology it is based on, please list any public sector support received in past 10 years, or currently being sought (please add further details in a separate annex if necessary) |  |

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| --- |
| Parent Company Details (if applicable) |
| Organisation name |       |
| Address |       |
|  |       |
|  |       |
|  |       |
| County |       |
| Postcode |       |
| Turnover (in most recent annual accounts) | £ 0.00  | as at | enter date |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at | enter date |
| Company maturity | Choose an item. |

|  |
| --- |
| Contact Details – Partner 2 |
| Title | Choose title | Name |       |
| Position |       |
| Email |       |
| Telephone |       | Mobile |       |
| Organisation name |       |
| Address |       |
|   |       |
| . |       |
| . |       |
| Town/City |       |
| Postcode |       |
| Business Type | Choose type |
| If type of business is ‘other’, please describe here: |  |
| **Business Details – Partner 2** |
| Number of employees (including directors) | 0 |
| Business Registration Number |       |
| Turnover (in most recent annual accounts) | £ 0.00 | as at | enter date |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at | enter date |
| Business maturity | Choose maturity |
| Does the business have a parent company? | Choose an item |
| How is the business currently funded? (Choose all that apply) |
| [ ]  | No Funding | [ ]  | Founders (including bank loans) | [ ]  | Friends and Family | [ ]  | Public Sector Grants\* |
| [ ]  | Angel Investment | [ ]  | Venture Capital | [ ]  | Private Equity | [ ]  | Stock Market Floatation |
| \*With respect to this project or the technology it is based on, please list any public sector support received in past 10 years, or currently being sought (please add further details in a separate annex if necessary) |  |

|  |
| --- |
| Parent Company Details (if applicable) |
| Organisation name |       |
| Address |       |
|  |       |
|  |       |
|  |       |
| County |       |
| Postcode |       |
| Turnover (in most recent annual accounts) | £ 0.00  | as at | enter date |
| **Balance Sheet Total** (total assets net of depreciation) | £ 0.00 | as at | enter date |
| Company maturity | Choose an item. |

|  |
| --- |
| Additional Partners:*If required, please add further tables for Contact, Business Details and (if relevant) Parent Company Details for any additional partners.*  |
|  |

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**Department of Business, Energy and Industrial Strategy**

3 Whitehall Place, London SW1A 2AW

1. SMA-Small enterprise, MED-Medium enterprise, IND-large enterprise, HE-University, RES-Research organisation, OTH-Other – please describe. [↑](#footnote-ref-2)