

Electricity Network Innovation Competition Full Submission Spreadsheet

(2019 version 1.0)








Appendix A

Licensee Name:

Scottish Hydro Electric Power Distribution

Submission Date:

29/07/2019

| | |
|---|--|
|  | Input cells |
|  | Totals cells (of formula within worksheet) |
|  | Referencing to other worksheets |
|  | Check cells |
|  | No Input |
|  | Descriptions and pack data |
|  | Ofgem Input cells |

NIC Funding Request

| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 | Total |
|--|---------------|------------------|------------------|------------------|------------------|---------------|----------|-------------------|
| Total Project Cost | | | | | | | | |
| <i>From Project Cost Summary sheet</i> | | | | | | | | |
| Labour | 32,438 | 318,240 | 486,779 | 358,914 | 244,915 | 48,030 | - | 1,489,316 |
| Equipment | - | 211,560 | 2,440,527 | 656,880 | - | - | - | 3,308,967 |
| Contractors | 30,000 | 2,020,673 | 1,988,553 | 532,590 | 691,000 | - | - | 5,262,815 |
| IT | - | - | - | - | - | - | - | - |
| IPR Costs | - | - | - | - | - | - | - | - |
| Travel & Expenses | 10,000 | 95,594 | 160,506 | 143,287 | 104,283 | - | - | 513,671 |
| Payments to users & Contingency | - | - | - | - | - | - | - | - |
| Decommissioning | - | - | - | - | 356,338 | - | - | 356,338 |
| Other | - | - | - | - | - | - | - | - |
| Total | 72,438 | 2,646,067 | 5,076,365 | 1,691,671 | 1,396,536 | 48,030 | - | 10,931,107 |

| External funding | | | | | | | | |
|--|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>Any funding that will be received from Project Partners and/or External Funders - from Project Cost Summary sheet</i> | | | | | | | | |
| Labour | - | - | - | - | - | - | - | - |
| Equipment | - | - | - | - | - | - | - | - |
| Contractors | - | - | - | - | - | - | - | - |
| IT | - | - | - | - | - | - | - | - |
| IPR Costs | - | - | - | - | - | - | - | - |
| Travel & Expenses | - | - | - | - | - | - | - | - |
| Payments to users & Contingency | - | - | - | - | - | - | - | - |
| Decommissioning | - | - | - | - | - | - | - | - |
| Other | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | - | - | - | - |

| Licensee extra contribution | | | | | | | | |
|---|----------|----------|----------|----------|----------|----------|----------|----------|
| <i>Any funding from the Licensee which is in excess of the Licensee Compulsory Contribution - from Project Cost Summary sheet</i> | | | | | | | | |
| Labour | - | - | - | - | - | - | - | - |
| Equipment | - | - | - | - | - | - | - | - |
| Contractors | - | - | - | - | - | - | - | - |
| IT | - | - | - | - | - | - | - | - |
| IPR Costs | - | - | - | - | - | - | - | - |
| Travel & Expenses | - | - | - | - | - | - | - | - |
| Payments to users & Contingency | - | - | - | - | - | - | - | - |
| Decommissioning | - | - | - | - | - | - | - | - |
| Other | - | - | - | - | - | - | - | - |
| Total | - | - | - | - | - | - | - | - |

| Initial Net Funding Required | | | | | | | | |
|-------------------------------------|---------------|------------------|------------------|------------------|------------------|---------------|----------|-------------------|
| Labour | 32,438 | 318,240 | 486,779 | 358,914 | 244,915 | 48,030 | - | 1,489,316 |
| Equipment | - | 211,560 | 2,440,527 | 656,880 | - | - | - | 3,308,967 |
| Contractors | 30,000 | 2,020,673 | 1,988,553 | 532,590 | 691,000 | - | - | 5,262,815 |
| IT | - | - | - | - | - | - | - | - |
| IPR Costs | - | - | - | - | - | - | - | - |
| Travel & Expenses | 10,000 | 95,594 | 160,506 | 143,287 | 104,283 | - | - | 513,671 |
| Payments to users & Contingency | - | - | - | - | - | - | - | - |
| Decommissioning | - | - | - | - | 356,338 | - | - | 356,338 |
| Other | - | - | - | - | - | - | - | - |
| Total | 72,438 | 2,646,067 | 5,076,365 | 1,691,671 | 1,396,536 | 48,030 | - | 10,931,107 |

Check Total = to Initial Net Fundi
in Project Cost Summary
OK

| Direct Benefit: from Direct Benefits sheet | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Total | - | - | - | - | - | - | - | - |

| Licensee Compulsory Contribution <i>from Project Cost Summary sheet</i> | | | | | | | | |
|--|--------------|----------------|----------------|----------------|----------------|--------------|----------|---------------------|
| Labour | 3,244 | 31,824 | 48,678 | 35,891 | 24,491 | 4,803 | - | 148,932 |
| Equipment | - | 21,156 | 244,053 | 65,688 | - | - | - | 330,897 |
| Contractors | 3,000 | 202,067 | 198,855 | 53,259 | 69,100 | - | - | 526,282 |
| IT | - | - | - | - | - | - | - | - |
| IPR Costs | - | - | - | - | - | - | - | - |
| Travel & Expenses | 1,000 | 9,559 | 16,051 | 14,329 | 10,428 | - | - | 51,367 |
| Payments to users & Contingency | - | - | - | - | - | - | - | - |
| Decommissioning | - | - | - | - | 35,634 | - | - | 35,634 |
| Other | - | - | - | - | - | - | - | - |
| Total | 7,244 | 264,607 | 507,637 | 169,167 | 139,654 | 4,803 | - | 1,093,110.74 |

of Total Initial Net Funding Requir
Check that Total is = or > than
Total Direct Benefits
OK

| Outstanding Funding required | | | | | | | | |
|-------------------------------------|---------------|------------------|------------------|------------------|------------------|---------------|----------|------------------|
| Labour | 29,194 | 286,416 | 438,101 | 323,022 | 220,423 | 43,227 | - | 1,340,384 |
| Equipment | - | 190,404 | 2,196,475 | 591,192 | - | - | - | 2,978,071 |
| Contractors | 27,000 | 1,818,606 | 1,789,697 | 479,331 | 621,900 | - | - | 4,736,534 |
| IT | - | - | - | - | - | - | - | - |
| IPR Costs | - | - | - | - | - | - | - | - |
| Travel & Expenses | 9,000 | 86,035 | 144,456 | 128,959 | 93,855 | - | - | 462,304 |
| Payments to users & Contingency | - | - | - | - | - | - | - | - |
| Decommissioning | - | - | - | - | 320,704 | - | - | 320,704 |
| Other | - | - | - | - | - | - | - | - |
| Total | 65,194 | 2,381,461 | 4,568,729 | 1,522,504 | 1,256,882 | 43,227 | - | 9,837,997 |

Check that Total is =to
Total Outstanding Funding requir
OK

| | | | | | | | | | | |
|----------|--------------|------|-----------|-----------|-----------|--------|-------|-------|-------------|-----------|
| balance | 9,696,262.01 | 0.00 | 7,249,608 | 2,733,835 | 1,273,727 | 41,892 | 6,888 | 7,192 | (1,206,767) | 9,696,262 |
| interest | 0.00 | 0.00 | 52,956 | 62,397 | 25,047 | 8,223 | 305 | 88 | (7,280) | 141,735 |
| | | | | | | | | | | 9,837,997 |

| | 2019/20 | 2020/21 | 2021/22 | 2022/23 | 2023/24 | 2024/25 | 2025/26 |
|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Bank of England interest rate | | 0.75% | | | | | |
| interest rate used in calculation | | 1.3% | | | | | |
| RPI adjustment | | | | | | | |
| Annual inflation | 2.75% | 3.20% | 3.18% | 3.10% | 3.10% | 3.10% | 3.10% |

n.b the NIC Funding Request calculation should use the Bank of England Base rate plus 0.5% on 30 June of the year in which the Full Submission is made

Cell D82 amended to reflect
monthly instalments of the
funding in year 1.

Bank of England Base Rate: <https://www.bankofengland.co.uk/boeapps/iadb/Repo.asp>
RPI Forecast 2018/19-2022/23: <https://www.gov.uk/government/statistics/forecasts-for-the-uk-economy-may-2019>
RPI for 2024/25 and thereafter is an extension from 2023/24 as no further consistent forecast is available.

Whole Project

| | | Unit cost or equipment /number of person days of 'Labour' or 'Contractor' /Payment per user | Role of line item in the Project (function of equipment, staff type, contractor tasks) | |
|--|--|---|---|---|
| Description | Task | Project Workstream | | |
| Project Coordination | Project Coordination | WP1 | Travel and room expenses for project meetings. XXX Costain person days XXX SSEN person days XXX E.ON person days | WP1 contains all core project management activities carried out by each partner, with Costain leading the overall coordination. |
| Stage Gate | Update business case, programme, budget, benefits. | WP1 | XXX Costain person days XXX SSEN person days XXX E.ON person days EXXX consultants to update business case, review and support Stage Gate decision. | Review project progress, risks, business case and industry alignment, and gain senior approval to Proceed/Modify/Stop |
| Front-End Engineering Design (FEED) | Initial design phase for the proposed method | WP2 | XXX SSEN person days XXX E.ON person days EXXX external peer review | *- Define resilience service use case(s) for the demonstrator - demonstrator site selection and proposal development - Functional specification of RaaS service including Energy Management System (EMS), service windows, KPIs and control System integration |
| Detailed Design | Technical design of the method | WP3 | XXX SSEN person days XXX E.ON person days XXX ANM enablement and control equipment for the project. EXXX external resource for IT and OT control enablement. | *- Identification and qualification of potential equipment suppliers - Detailed design of controls, electrical integration, DER, BESS - Supplier selection and EMS development - Construction, integration, commissioning and testing plans - Development of Trial Programme |
| Operational Optimisation | The conversion of market interactions analysis into a practical control system | WP4 | XXX E.ON person days XXX SSEN person days EXXX academic support with WP | *- Market analysis and techno-economic modelling - Market integration - Demonstration platform development - Independent academic review |
| Business Model | Develop Business Model for potential RaaS suppliers. | WP5 | XXX Costain person days XXX SSEN person days XXX E.ON person days EXXX external legal resource for HoT | *- XXX Development of initial learnings and application to Business Model - EXXX Commercial and legal preparation of business case - EXXX External appraisal of initial business model - EXXX Preparation of all deliverables pre Stage Gate - EXXX Investment business case including Heads of Terms |
| Supply Chain Engagement | Accelerating the pace of RaaS market development | WP6 | XXX Costain person days | *- Deep Dive investigation, Creation of system model; risk analysis - Market study of supply chain - Create system model using P13 to identify commercial strategy - Identify and set procurement strategy |
| | Technical Design for Site 2 | WP6 | XXX SSEN person days XXX E.ON person days | *- Site selection and design work for second demonstration site (to be tendered and delivered through BAU processes) |
| Demonstration, Build & Test | Construction and trials operation | WP7 | XXX E.ON person days XXX SSEN person days XXX external person days EXXX includes ANM controller and comms costs for BESS and other DER, 11kV GIS switchgear, protection panel and CTs, relays, 11kV cable, standby generator and network monitoring assets. EXXX equipment cost incl. BESS rental, switchgear, transformer, EMS, earthing impedance and switchgear. EXXX decommissioning costs | *- Procurement of assets, products and services - Permitting and construction of RaaS and network assets - System integration - Commissioning and testing - Operation, Monitoring and optimisation - Conclusion of the trial, via decommissioning of assets or transfer to business as usual |
| Dissemination | Continuous dissemination | WP8 | XXX Costain person days XXX SSEN person days XXX E.ON person days EXXX external design support | *- Creation and dissemination of material at webinars, presentations and relevant industry events. - Dissemination and feedback event at Stage Gate. |
| Total | | | | Total Cost 10,931,107 |