DFID Department for International Development

DFID RESEARCH

Applied Research Programme on Transforming Energy Access (TEA):

Terms of Reference for a Research Programme Delivery Consortium

DFID Research and Evidence
July 2017

Contract Section 3
Terms of Reference

1. Introduction

DFID is seeking to appoint a Research Programme Delivery Consortium (RPDC) to oversee a programme of applied research and innovation that will accelerate access to affordable, clean energy services for poor households and enterprises.

This research and innovation programme will deliver new technologies and robust evidence on the critical barriers hampering systemic change and scaling up energy access, working with Southern researchers and entrepreneurs, to drive locally relevant innovation and delivery. This will have a transformative impact on deploying renewable energy solutions in developing countries, especially in Africa. DFID has approved funds of up to £65 million over 5 years for **the Transforming Energy Access for Households and Improved Livelihoods Programme (TEA)** that will support early stage testing and scale up of innovative technology applications and business models for this purpose.

The applied research and innovation under TEA will seek to address the challenges of:

a) what **technologies and applications** can most effectively accelerate the deployment and use of decentralised modern energy services, including through distributed generation, storage, smarter systems, and more efficient appliances?

b) what are the main **enabling mechanisms** for delivering reliable decentralised modern energy services at scale and how can **business models and innovative financing** address these market gaps?

c) what **clean energy partnerships** can be forged to stimulate greater collaboration on research and development of clean energy solutions, and strengthen the market and evidence base for their deployment at scale?

d) what are the **skills and expertise** required to accelerate the development and deployment of smarter decentralised energy systems, and what are the most effective approaches to building this capacity?

Both directed and responsive approaches will be pursued, with the research and innovation delivered by a number of partners and complementary mechanisms, both tested and new. More specifically, building on past DFID support and consultations with key stakeholders, TEA will be structured around four themes:

- **Stimulating Technology Innovation by UK enterprises:** Co-fund a series of open calls under the Innovate UK's Energy Catalyst for proposals from UK enterprises and academia, working with international partners. This responsive approach will stimulate technology innovation and business models suited for expanding clean energy access in developing countries. It will also provide a framework for leveraging other UK government co-funding.
- **Accelerating Enterprise-led Innovation in Technologies and Business Models:** An expanded strategic partnership with Shell Foundation to accelerate access to energy through testing and demonstrating innovative enterprise-led solutions that address key market bottlenecks and have the potential to scale up without long-term dependence on subsidy from donors. This directed approach will build on DFID's successful partnership with Shell Foundation that is supporting the scale up of high potential enterprise-led innovation and enable expansion to support another 30+ selected early stage

private sector partners. The programme will leverage confirmed co-funding of £30m from Shell Foundation, and potentially funding from others.

It is recognised that there will be other partners and channels that can support and complement the aims of TEA, and also a need to build commensurate research capacity in developing countries, and the professional and vocational skills that enterprises require to expand and ensure facilities can be sustainably operated and maintained. TEA will therefore include scoping studies and piloting to identify, design and implement two other complementary themes:

- **Supporting Clean Energy Partnerships:** This will include a rigorous assessment of technologies and innovation opportunities, as well potential partners and delivery channels. Possible partners could include key international organisations, like the International Energy Agency, other UK Test and scope out the potential for involving other key partners that can assist in addressing critical evidence gaps and opportunities that will not be covered by the proposed Shell Foundation and Energy Catalyst components. This could include collaborating with international energy organisations, established UK research networks, cross-Whitehall clean energy initiatives, the private sector and foundations, trade associations and civil society organisations.
- **Developing Local Skills and Expertise:** The scoping out of initiatives and institutions that can support building the skills and expertise required to achieve and sustain energy access scale-up and address local research and innovation capacity needs, and professional development and vocational skills, and design a programme of support. This could include engagement with established capacity building initiatives such as under the Renewable Energy Cooperation Programme, links between science and engineering academies, and collaboration with established networks such as the Low Carbon Energy Development Network (LCEDN).

These four integrated research and innovation themes will deliver the longer term **Impact** of improved access to reliable energy services, leading to better well-being for poor people and improved livelihood opportunities and economic growth. The **Outcome** will be increasing the use of affordable, decentralised clean energy options for poor households and enterprises, through applied research that results in the deployment of innovative technologies and delivery models, leveraged financing and skills development.

The **Outputs** will be proven technology applications and business models that are affordable and scalable, and the capacity to extend near grid-quality energy services to the unserved and underserved populations in SSA and SA. These will be captured in a body of evidence (research reports, case studies and toolkits) published and disseminated to policymakers, investors, planners and project developers identifying the options for scaling up the use of clean energy, the opportunities for targeting poor households, and a framework for evaluating impacts.

TEA Output indicators will include:

- Early stage energy innovation ideas evaluated, tested and validated (at least 50);
- At least 30 new innovative technologies and scalable business models developed, tested and trialled by the private sector, research institutions, and not-for-profit organisations;

- New clean energy partnerships developed and tested (including innovative financing approaches that support energy enterprises to secure new finance for scale up such crowdfunding , as well as from commercial investors and impact investors);
- Collaboration and technical capacity and skills built through partnerships between UK and southern institutions, and south-south exchanges.

The TEA Research Programme Delivery Consortium (RPDC) will conduct the proposed scoping studies, and design and manage the agreed follow on activities as well as coordinating the overall reporting on the TEA work streams and research uptake. The overall aim is to ensure that evidence and research results from TEA are efficiently translated into use and influence future investments.

2. Background

Lack of access: Reliable energy services are crucial to human well-being and to a community's economic development. It can transform people's lives, and yet 1.1 billion people globally go without access to modern energy services, and a further billion experience intermittent access. Most of these people live in Sub-Saharan Africa (SSA) and South Asia (SA). Despite global investment in the power sector increasing almost two and half times during the past 15 years, generation capacity struggles to keep up with growing demand, let alone meet the needs of low income communities. In many situations, traditional, centralised grid-based approaches are not feasible or affordable for the majority of unserved poor households

New opportunities are emerging. Reductions in the price of solar photovoltaic panels and the availability of cheap, efficient lighting and mobile pay-as-you-go systems have introduced the possibility of a package of affordable basic electricity services for a growing number of households, enabling better communications (lighting, phone charging, low power appliances such as radios and TVs). However, significant challenges remain in raising awareness of these options and unlocking the finance that will enable the dramatic scaling up of this basic entry electricity provision, and achieve universal access by 2030 (Sustainable Development Goal SDG 7). Moreover, these systems currently offer only limited scope for using energy for more transformative, productive uses.

The distribution of decentralised affordable grid-quality electricity services to low income urban and rural communities that meet their nascent electricity demands will make possible better livelihoods (e.g. enough power for a sewing machine, a hairdresser, grain milling, or a small irrigation pump etc). This is as the "missing middle" between basic home system provision and grid-based electricity, and it holds the key to transforming poor people's livelihoods.

The UK is well placed to support this transformation. Increasing attention to economic development and the country inclusive growth diagnostics are placing energy provision centre stage in DFID programming. Internationally, the UK is actively mobilizing and coordinating support for universal access to modern energy services (SDG 7) working closely with the Sustainable Energy for All (SE4ALL) and a coalition of development partners, and implementing the Energy Africa initiative. DFID has also in recent years been promoting research and innovation in the energy sector, particularly using mobile pay-as-you-go technologies linked with solar home systems (such as M-KOPA), and through catalytic innovation support (such as through Shell Foundation). This experience provides a unique foundation on which to build this ambitious applied research programme(TEA), building on the lessons

and partnerships of recent years and also test new channels to promote systemic change, and tackle the barriers to scaling-up viable and affordable business models for households, communities and entrepreneurs alike. It complements other energy research being undertaken in DFID and internationally.

3. Recipients

The purpose of the research work is to influence energy access investments in low income countries in Sub-Saharan Africa (SSA) and South Asia (SA), through the demonstration of proven technology applications and business models. The recipients of the services will be relevant energy sector investors, entrepreneurs, civil society and policy makers in these countries who will thus be in a position to scale up affordable energy access solutions for the benefit of poor households and enterprises.

4. Objectives

The overall objective of the Research Programme Delivery Consortium (RPDC) is to promote the cost-effective, efficient and timely coordination and delivery of the TEA funded research and innovation activities, results uptake and knowledge management.

5. TEA Structure and Phasing

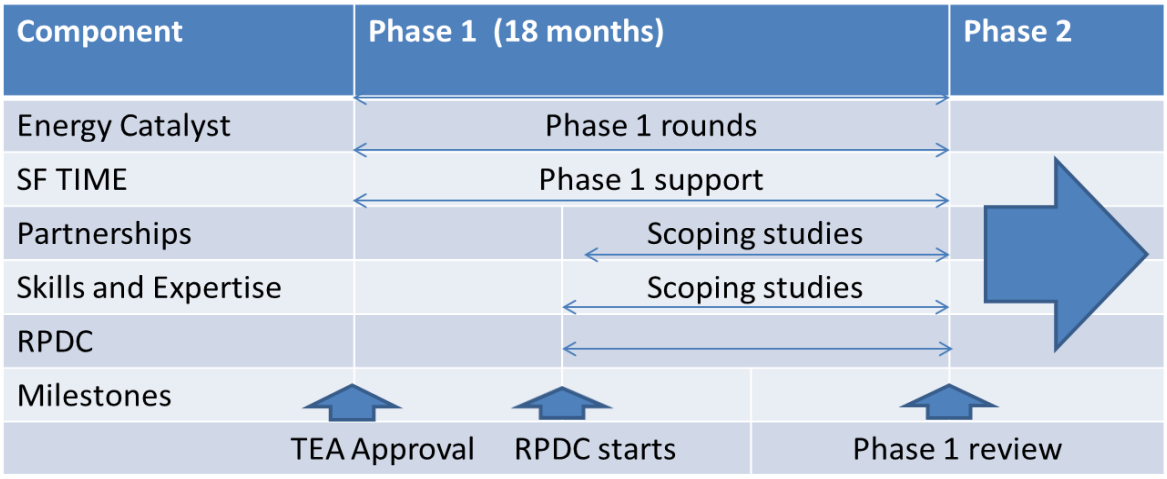
TEA Management Structure: The TEA programme comprises four components. Two (Innovate UK Energy Catalyst and the Shell Foundation Partnership - TIME) will be managed directly by DFID under Memoranda of Understanding (MoUs).

The two other components of the TEA programme will be implemented as part of a commercial contract between DFID and the service provider, who will provide the Research Programme Delivery Consortium (RPDC).

The RPDC will also monitor and report on the overall delivery of the TEA programme, and energy access results for other related DFID research and innovation projects.

Phasing: Each component of TEA is split into two phases, as is the work of the RPDC, and Phase 2 of each component will be subject to a coordinated review of the Phase 1 activities. This phased approach will ensure that the overall research programme and the individual components are responsive to the fast moving energy access market and optimise results take-up and respond to any emerging risks.

The TEA programme was approved on 24 March 2016. The Phase 1 review will take place approximately 24 months after the TEA approval date around July 2018). This will be approximately 12 months into the RPDC contract assuming this commences in July 2017. Phase 2 for the RPDC (if approved) will be 42 months (to end of December 2021). An indicative timeline for TEA is shown below based on the TEA approval of 24 March 2016.



6. RPDC Scope of work

Given the scale of TEA and the different components, DFID wishes to place particular emphasis on coordinated monitoring, research delivery, dissemination and research uptake (building on recent DFID guidance). The scope of services for the RPDC is summarised below.

Outline of Scope of Services for the TEA Research Programme Delivery Consortium (RPDC)

Component	Outline scope of Consortium services
Overall TEA management	Coordinated monitoring, research results delivery and take-up analysis; TEA annual reports; facilitated networking and dissemination.
TEA- Collaborative energy innovation partnerships	Design and conduct of scoping studies; assessment of any DFID fast-track pilots; develop Phase 2 work plan; commissioning follow on research; monitoring and reporting.
TEA- Skills and expertise development	Design and conduct of scoping studies; assess any existing skills initiatives including any DFID fast-track pilots; develop Phase 2 work plan; commission follow work; monitoring and reporting.
TEA- Energy Catalyst innovation	Peer reviewers inputs, collaboration on development impact monitoring, indicators and complementary results reporting.
TEA -Shell Foundation partnership TIME	Collaboration on monitoring, indicators and results reporting, complementing Shell Fdn reporting.
Bioenergy Phase 2	Following separate bioenergy scoping study, if agreed, RPDC to take on programme management activities for Phase 2 research work, including commissioning, reporting.
Enhanced clean energy access results reporting	Higher level energy access results analysis and take-up reporting, for a portfolio of DFID energy projects that complements individual project reporting, and dissemination.

Overall TEA programme management: The RPDC will have an overall programme management role for TEA. The RPDC scope of engagement will vary across the four

TEA components and will also include some programme management and reporting on other DFID energy research and innovation projects (specified below). A range of different measures for results and impact reporting, and formats for dissemination will be developed and used. To support overall TEA programme management the RPDC will:

- Review and elaborate the TEA overall Logframe, for DFID approval during the RPDC Inception Phase (Month 1). The initial TEA logframe is attached to this ToR. The RCDP will make recommendations for updates, at least annually thereafter, feeding into annual reviews. These will reflect any changes and developments to the individual TEA component logframes.
- During Phase 1, design an impact evaluation framework and terms of reference for DFID approval to allow DFID procure an independent provider. The impact evaluation scope of services will cover establishment of baselines, interim evaluation and a final evaluation report at project completion. Monitor and report on how the activities supported under the different components take account of gender, youth and social inclusion, and implementation reflects compliance with the UK Gender Equality Act.
- Monitor and report on the uptake of deliverables across the four TEA components to optimise the outputs of the research and translation of results into use. This will require close collaboration and coordination across the four TEA components. It will build on recent DFID Research Uptake guidance.
- Develop a TEA communications strategy and a programme for networking and dissemination and advise component partners on approaches and opportunities, as well as conduct the same for TEA overall.
- Collate progress reporting from the different work streams and partners and produce quarterly and annual reports to DFID agreed format, and participate with DFID in the Annual Reviews.
- Establish, in consultation with DFID, a TEA Programme Steering Committee and Technical Advisory Panel.

Collaborative energy innovation partnerships: This theme recognises that there are evidence gaps and other areas of expertise and opportunities not necessarily included under the Innovate UK Energy Catalyst and SF TIME Partnership components and, in this fast moving clean energy sector, this work stream allows other options to be explored, piloted and assessed to contribute to TEA objectives. This will include a rigorous technology needs assessment and readiness and innovation intervention opportunities, including potential partners and delivery channels. Possible partners could include key international organisations, like the International Energy Agency, other UK government clean energy initiatives such as Mission Innovation, trade associations, such as GOGLA, and civil society organisations, key foundations, and established UK energy research networks. Annex 1 provides an outline for this theme. The RPDC will:

- Conduct a scoping study during Phase 1, with recommendations for specific support and programmes of work under Phase 2, and these will be assessed during the Phase 1 review. This study will include a technology innovation and readiness assessment, identification of possible interventions, partners and delivery channels.
- Assess any fast track initiatives that DFID may have procured directly in advance of the RPDC contract commencing to test specific innovative partnerships during Phase 1. The RPDC would review these when making recommendations for TEA Phase 2. These fast track initiatives may for example include initial design work and piloting of a new peer to peer ('P2P

Solar') crowdfunding platform, and some early work with key foundations as part of the Mission Innovation initiative.

- During Phase 2 the RPDC will, if agreed at Phase 1 review, then procure agreed services, either as directed activities through selected partners and/or responsively through commissioning and open calls, based on the Phase 1 recommendations.
- The RPDC will monitor any Phase 2 work under this component and include it in the quarterly and annual progress reports for DFID.

Developing Local Skills and Expertise: This theme responds to the recognised need to build the skills and expertise locally to achieve and sustain energy access scale-up and address local research and innovation capacity needs, and professional development and vocational skills. There are some existing capacity building initiatives and networks that might be supported such as under the Renewable Energy Cooperation Programme, and links with science and engineering academies, and the work of the Low Carbon Energy Development Network (LCEDN). Annex 2 provides an outline for this theme. The RPDC will:

- Conduct a review and scoping study during Phase 1, with recommendations for specific support and programmes of work under Phase 2, and these will be assessed during the Phase 1 review. The study will include a skills and capacity assessment alongside a review of the capacity and potential of initiatives in this area.
- Assess any fast track initiatives that DFID may wish to procure directly to test the potential for skills development and networking during Phase 1 which the RPDC would review when making recommendations for TEA Phase 2.
- During Phase 2 the RPDC will, if agreed at Phase 1 review, then procure agreed services, either as directed activities through selected partners and/or responsively through commissioning and open calls, depending on Phase 1 recommendations.
- The RPDC will monitor any Phase 2 work under this component and include it in the quarterly and annual progress reports for DFID.

***Innovate UK Energy Catalyst component*:** TEA support will be channelled through the established Energy Catalyst applicant rounds and assessment processes and monitoring arrangements (see Annex 3 for details). The RPDC will:

- Participate in communications and brokerage events with Energy Catalyst and KTN to encourage relevant project applications;
- Contribute via recommendations to Energy Catalyst independent assessments, with expertise in energy topics and developing country issues, as requested by DFID:
- Contribute to review on whether Energy Catalyst project applications are in-scope for TEA funding (involving coordination with Energy Catalyst competitions processes, and access via DFID to applications);
- Contribute to selection of projects for funding considering portfolio balancing and state of innovation readiness, and other criteria;
- Advise UK lead partners in conducting any qualification and due diligence on International Partners, and assist monitoring by UK leads of International Partners activity and spend during projects, including the reporting to Innovate UK monitoring officers on International Partner activities for UK quarterly project monitoring meetings;
- Collaboration with Innovate UK on project impact and metrics reporting, including reviewing standard Innovate UK quarterly monitoring and project-end reporting outputs, ensuring information is aligned and can be aggregated for overall TEA progress and impact reporting;

- Review and report on the potential take up of projects supported, including the synergies and coordination between this early stage Energy Catalyst support and other potential later stage support under TEA and other DFID programmes.

Shell Foundation expanded partnership (TIME)*:* The scope, governance arrangements and investment assessment process under TIME are set out in the MoU between Shell Foundation and DFID and described in more detail in a supporting annex (see Annex 4 attached). DFID is represented on the TIME Governance Committee and the TIME Investment Committee. For this component, the RPDC will:

- Assist and liaise on monitoring and reporting such that information is aligned and can be aggregated for overall TEA reporting;
- Participate in any committees or meetings as requested by DFID, including brokerage events to maximise the impact of the TIME component managed by Shell Foundation;
- Review the portfolio of DFID supported applications and make recommendations on the balance between technologies and business support and potential take up, including the synergies and coordination potential with any other complementary business and innovation support under TEA;
- Support coordination with the broader DFID Energy Africa initiatives such as Africa Clean Energy – Business (ACE) and an possible Energy Africa financing facility.

Bioenergy Phase 2: A separately funded DFID project on Bioenergy for sustainable energy access in Africa (£4.5m) has been approved. A 12 month scoping study is due to commence shortly. The ToR for the scoping phase is attached (Annex 5). If the recommendations from this scoping study are approved by DFID, the Phase 2 of the Bioenergy research project will be integrated into TEA and form part of the overall programme management and reporting responsibilities of the RPDC. This will involve the RPDC in:

- Assisting DFID in reviewing the scoping study and work plan recommendations:
- Commissioning any follow up research activities, including finalising ToRs, procurement and evaluation, in consultation with DFID;
- Provision of advice on indicators and results reporting;
- Assist and liaise on monitoring and reporting such that information is aligned and can be aggregated for overall TEA reporting.

Enhanced clean energy access results reporting: TEAs is a major knowledge programme responding to the challenges of scaling up access to reliable clean energy to serve the poor and will play a key part in DFID's response on extending access to modern energy services and sustainable economic development. TEA is part of a growing portfolio of clean energy research and innovation projects. These are listed in the Annex 6 (both existing and pipeline DFID clean energy research). Each project and programme has its own results reporting framework, logframe and review cycle. While individual project achievements are well reported, the synergies in terms of overall impact of improved modern energy services, research uptake and influencing are often not easily captured.

There is clear complementarity between TEA and the DFID Energy Africa initiative. DFID Energy Africa aims to accelerate the growth in the market for solar household systems. TEA scope is wider, both geographically, drawing of evidence and lessons

from other countries beyond SSA, and also technically, addressing the challenges of developing smart, affordable community based electricity systems that can provide more power on demand for households and productive purposes, and which can be scaled and integrated into grid systems. Apart from TEA research and innovation support, Energy Africa is also complemented by other DFID programmes which include Africa Clean Energy – Business (ACE) and a possible Energy Africa financing facility, as well as country office funded projects. Annex 6 also illustrates the relationship between these aspects of Energy Africa, including TEA. The RPDC provides an important opportunity to optimise the impact of the research and innovation work and inform the overall implementation of the Energy Africa initiative.

In terms of enhanced clean energy access results reporting, the RPDC will therefore:

- Provide an overview results analysis to strengthen energy access reporting and research uptake from DFID applied energy research and innovation projects, complementing without duplicating the individual project management arrangements;
- Advise on optimising the impact of the research and innovation work and inform the overall Energy Africa initiative.

7. Outputs/Deliverables

The TEA programme is split into two phases. Phase 1 would test delivery through established channels, such as the Shell Foundation Partnership, and the Innovate UK Energy Catalyst, and conduct scoping studies and assessments, and conclude with an overall summary of findings and recommendations for Phase 2, subject to DFID review. This Phase 1 review will enable DFID staff to assess the track record and performance under each component, and progress and likelihood to deliver results.

The RPDC bidder should elaborate a schedule of deliverables based on the outline below. This will be used to define payment points for the Consortium in an output-based contract; the precise sequence and timing of activities will be subject to negotiation.

In Phase 1, the RPDC is expected to deliver the following key **outputs:**

- An updated TEA logframe, one month after RPDC project start date.
- An inception report on TEA, based on DFID reporting format, on the initial RPDC activities and also drawing on information and complementing reporting submitted by Innovate UK and Shell Foundation. This is due 9 months after the formal approval of the TEA programme (before end March 2018), and it will inform the first TEA annual review by DFID, which is required by end of July 2018.
- Two high quality scoping studies, covering wider energy access partnership potential and skills and expertise development, ideally supported by high quality papers of publishable quality, which clearly set out the state of development and challenges in these areas and a framework for any further support and delivery.
- A Phase 1 summary report within 12 months following RPDC appointment, summarising progress to date on all aspects under the Consortium delivery remit, the deliverables and expected results take-up, making overall recommendations for Phase 2. This will include:

- A summary of the progress and lessons from the first 18 months of support to the expanded Shell Foundation partnership TIME, and the Energy Catalyst rounds for proposals.
- Assess any fast-track projects proposed by DFID and make recommendations for follow on support or revisions.
- An assessment of the separately conducted scoping study for Bioenergy and recommendations for any follow-up substantive research programme.
- A TEA research into use strategy, and communications strategy.
- A review and recommendations of how to integrate the research in to use and results reporting for the wider range of DFID funded energy research and innovation projects and Energy Africa. This will complement the existing reporting arrangements that these projects have to DFID, and not replace them.

Supporting Phase 1 final documents will include an overall work plan and budget, staffing schedule, and updated logframe and schedule of RPDC deliverables for Phase 2, based on the Phase 1 recommendations.

The project is expected to deliver the following key **outputs under Phase 2:**

- A synthesis report on new innovative technologies and scalable business models developed, tested and trialled by the private sector, research institutions, and not-for-profit organisations.
- A summary of the body of evidence produced (publicly available research reports, case studies and toolkits) for policy makers, planners and project developers identifying the options for scaling up the use of renewable energy, opportunities for targeting poor households, and for evaluating impacts.
- A review of the outputs and evidence of collaboration and value added of the supported energy innovation partnerships.
- A review of vocational skills, professional and research capacity and institutional development outputs built through partnerships between UK and southern institutions.
- Any high quality research reports and material leading to publication of work and findings in peer reviewed journals (number of which to be determined during Phase 1 review), and at least a conference/international seminar related to each main component per year, as well as wider dissemination.
- A concluding TEA research programme delivery report assessing the take-up of the research and its impact, and initiatives and partnerships established and capacity building undertaken, and recommendations for any further work.

8. Reporting

Phase 1 reports will include:

- An updated logframe with recommendations delivered after 1 month.
- A draft Inception report on TEA compatible with DFID annual reporting format after 2 months.
- Short quarterly progress reports.
- A Phase 1 summary report and supporting documents, after approximately 12 months.

Overall, we anticipate formal annual reporting against the main TEA programme components, complementing any component generated reporting (for example by the Shell Foundation Partnership TIME, Energy Catalyst and other DFID energy research projects), against milestones and outputs as specified in the TEA Logical Framework, and together with shorter quarterly progress reports, in a format to be discussed with DFID. The reporting will be supplemented by six monthly meetings of the TEA Programme Steering Committee.

9. Budget, Timing & Contractual Matters

The overall proposed TEA programme, including the services of this Consortium, is up to £65 million, within this overall value, RPDC will represent £22m as detailed below. The Consortium would directly manage the partnerships and capacity building components, as well as the Bioenergy research programme (phase 2). The Consortium would also undertake the overall integrated energy access results reporting on the rest of the TEA programme (Energy Catalyst and Shell Foundation components), as well as for the identified on-going DFID funded research and innovation projects, complementing their existing reporting requirements.

It is expected that the RPDC will commence work in July 2017 with a contract let for 4.5 years (54 months), over two phases. DFID reserves the right to extend the subsequent contract by a further 2 years.

The contract shall therefore include the following break point:

Break Point 1 – at the end of the Phase 1 (after 12 months; assumed end of July 2018)

Movement from Phase 1 to the Phase 2 will be dependent on satisfactory performance against Phase 1 deliverables, KPI's and any other outputs in the agreed work plan and DFID's acceptance of the recommendations and design of the programme for Phase 2.

The indicative budget for the RPDC covering the services under this ToR is £3 million to cover management fees. The RPDC scope of work includes the direct programme management of the Clean Energy Innovation Partnerships and Developing Local Skills and Expertise components and the Bioenergy Phase 2 (if approved), and the RPDC will procure and manage these components and hold the relevant sub-contracts and pay for these work streams in arrears. The RPDC would not need to pre-fund these budgets. The RPDC contract also covers the higher level coordination and reporting for the Energy Catalyst and Shell Foundation TIME components and enhanced clean energy access results reporting, as part of TEA programme delivery as described in these ToR. The resultant RPDC contract will have a value of circa £22 million and is made up as follows: RPDC programme management fees £3 million; £10 million fund envelope for Collaborative Energy Innovation Partnerships; £5 million fund envelope for Developing Local Skills and Expertise; and £4 million fund envelope for Bioenergy Phase 2.

It is important to note that DFID's assessment of each bid's value for money will take into account the quantity and quality of methodologies and outputs promised, and not only the total project cost. While there is considerable detail in these ToRs, DFID would welcome innovative suggestions on how to improve on the services outlined and the impact of TEA and associated research and innovation programmes.

The RPDC is required to provide technical oversight and lead on lesson learning, and research uptake. The Consortium will require both research management and energy specialist expertise and could draw from private sector companies, universities, civil society and individual researchers. Overseas partnerships as part of the Consortium are encouraged. The proportion of research activities to be directly undertaken by the RPDC core team is limited but open to suggestions and will be reviewed at the end of Phase 1. It is anticipated that most activities will be procured and managed through contracted partners.

Success will depend on the Provider's ability and skills to oversee and deliver:

- **Effective research programme management** - effective high level coordination and consultation, scoping studies, design of research work plans, commissioning of research and open calls for proposals, financial management, analytical expertise and peer review capabilities.
- **Specialist knowledge** – covering the energy sector and innovation processes relevant to developing country contexts, and including nurturing enterprises, market development and capacity building, at levels that command international recognition.
- **Monitoring and evaluation** – including progress, results measurement and development impact reporting, and research uptake analysis.
- **Lesson learning and communications** – proven networking skills, lesson learning, innovative dissemination approaches and influencing at international and national levels.

10. Staffing

It is expected that bidders will propose a management structure with inclusion of the necessary specialist expertise within a suitable core team under a Programme Director, which will include energy and innovation specialists and management, administrative and research uptake capacity. DFID will critically assess the levels of expertise and time allocated to these functions by prospective bidders. A balance between strong research management skills, sector academic excellence, and practitioner experience is important to bring management and research delivery rigour, research methodological expertise, up to date operational insights and strong results delivery. Proposals must include a recommended core team composition and structure.

The Programme Director should have proven research management expertise, ideally in energy research and innovation, and with a demonstrated track record, experience and capability to lead and co-ordinate high calibre teams, and to communicate the results of high quality research and innovation activities to users and policy makers in a manner that is impactful. Proven research management skills are essential, as is the demonstrated ability to quickly develop productive relationships with relevant researchers, policy makers and institutions. Full time coverage for the Director post is not mandatory but DFID will critically assess the levels of expertise and time allocated to this function, and to any supporting functions, including that of a Programme Manager.

In addition to the Director and Manager, the core team will include a Research Uptake Manager who is anticipated to be a specialist who has proven experience in research uptake activities, and recognises the importance of strategic engagement within research and innovation programmes. The Research Uptake Manager must

have the capacity to ensure that the communications functions are of the highest quality. The core team will also include designated research and innovation leads for each of the four component areas, with relevant experience at a senior level, and demonstrated skills in the areas identified above.

11. Governance and Peer Review

The service provider will propose, for DFID's agreement, a governance structure for the management of the TEA programme as a whole that provides for robust oversight including by independent experts. DFID would expect this structure to follow international best practice in research management and reporting. Typically, the governance structure should include:

- An executive/decision-making body (**Programme Steering Committee**), comprising representatives from DFID and other relevant stakeholders, with the programme consortium providing a secretariat function. This executive body would propose strategies, work plans and budgets and maintain oversight of the programme's implementation, while respecting the governance arrangements set out in the MoUs for the Energy Catalyst and TIME components. The Committee will meet at least twice annually, including prior to Annual Reviews, to ensure the strategic direction of the programme is focused, relevant and responds to changing needs and demands, and is delivering as expected. More frequent meetings are likely in the first year.
- A separate body (**Technical Advisory Panel**) may be proposed providing an independent academic challenge function including peer-review and advice to the executive body on the strategies, research and outreach to policy makers. The members may be identified by the winning bidder with DFID endorsement. Responsibilities of the advisory panel are expected to include intellectual guidance and independent peer review of the project's research intermediate and final outputs, and panel members are expected to be experts in their field.
- The service provider will provide a **Programme Management Unit** to undertake the direct implementation of aspects of the programme, against strategies, work plans and budgets approved by the Programme Steering Committee, and taking into account any advice of the Technical Advisory Panel.

Bidders' proposals should incorporate outline Terms of Reference for the Programme Steering Committee and the Technical Advisory Panel.

12. Procurement Arrangements

The contractor is expected to procure research expertise and policy advice from other suppliers during the course of the TEA programme. Research projects procured by the contractor will not be subject to EU Directives on procurement, but must comply with the contract to be agreed with DFID. Procurement procedures will be carefully monitored to ensure conflicts of interest are identified and avoided and there is full transparency and value for money in procurement. The contractor is expected to work collaboratively and constructively with any already identified research partners, including the Shell Foundation, Innovate UK Energy Catalyst, and others to be specified by DFID.

13. Accounting & Audit

The lead RPDC member designated for overall management and financial responsibility will appoint and pay for an accountancy firm, acceptable to DFID, to undertake annual audits relating to the TEA RPDC directly managed components. The audits will include a management systems audit to ensure that procurement, fraud avoidance, human resources and other management systems by the lead and its partner organisations are in line with DFID requirements and international best practice. The financial arrangements do not include the funding through the Shell Foundation and Innovate UK Energy Catalyst, which will be directly contracted by DFID, and have their own audit provisions as specified under respective Memoranda of Understanding.

14. Funding

The RPDC service provider will need to pre-fund the costs incurred for the directly managed activities and claim back from DFID in arrears in line with DFID contracting arrangements. Similar arrangements should apply to any contracts let by the RPDC. This does not apply to the Shell Foundation and Energy Catalyst components, which are covered by their MoUs. The likely pre-funding requirement is not likely to exceed £500,000.

15. Open Access

DFID is committed to strengthening demand for knowledge and improving access to research information. To this end DFID launched a new Open Access policy in 2012. Bidders should illustrate their plans for Open Access of research outputs and access to data sets by filling out the Data Access and Management template.

With regard to author pays publishing, DFID expects the project to collaborate with researchers/authors in choosing where to place their research, and it is expected that Open Access fees will be paid for either by the project (most likely through the research uptake budget) or through arrangements that the host institution has on Open Access. It will be the project's responsibility to monitor the percentage of research outputs that are available under Open Access and to inform DFID of the details and the percentage in the programme's Annual Reports. The majority of research outputs will be made open access; non open access should be the exception.

DFID also encourages its research projects to archive quantitative and qualitative datasets, resulting from the research it funds, with appropriate data archiving repositories at the earliest opportunity. In any case, datasets must be retained by the research team and provided free of charge on request.

It is also expected that, as far as possible, all outputs are forwarded to DFID for inclusion on the R4D website.

16. DFID Branding

The public has an expectation and a right to know what is funded with public money. It is expected that all research outputs will acknowledge DFID support in a way that is

clear and explicit and which comply with DFID Branding Guidance. This will include ensuring that publications acknowledge DFID support.

If press releases on work which arises wholly or mainly from the project are planned this should be in collaboration with DFID Communications Department.

17. Research Ethics

Researchers, evaluators and implementing agencies should adhere to clear, best practice ethical guidelines (e.g. confidentiality, disclosure, adequate and informed consent, explicitly ensuring 'do no harm'), building on existing WHO resources and academic ethics protocols.

Specifying and ensuring compliance with ethical standards should form a part of research design, preparation of research teams, and delivery. All study team members and members of organisations involved in research delivery, should be carefully selected and receive specialised training and on-going support in research ethics.

Allied to ensuring best practice in research ethics, we expect the lead Supplier to ensure that clear ethical standards in research management are established, communicated, complied with, and monitored, including in relation to financial management and people management by all agents involved in research delivery and (particularly) all recipients of UK aid funds. The Supplier will be expected to develop a strategy for RPDC programme delivery.

Suppliers will be required to have written protocols for research/evaluation ethics and ethical clearance and to demonstrate adherence to WHO protocols and DFID research and ethical guidelines. During implementation, ethical review will be the responsibility of an appropriate Ethical Review Committee, established by the Supplier.

18. Transparency

DFID has transformed its approach to transparency, reshaping our own working practices and pressuring others across the world to do the same. DFID requires Suppliers receiving and managing funds, to release open data on how this money is spent, in a common, standard, re-usable format and to require this level of information from immediate sub-contractors, sub-agencies and partners.

It is a contractual requirement for all Suppliers to comply with this, and to ensure they have the appropriate tools to enable routine financial reporting, publishing of accurate data and providing evidence of this DFID – further IATI information is available from; http://www.aidtransparency.net/

19. Duty of Care

19.1 The Supplier is responsible for the safety and well-being of their Personnel (as defined in Section 2 of the Contract) and Third Parties affected by their activities under this contract, including appropriate security arrangements. They will also be

responsible for the provision of suitable security arrangements for their domestic and business property.

19.2. The Supplier is responsible for ensuring appropriate safety and security briefings for all of their Personnel working under this contract and ensuring that their Personnel register and receive briefing as outlined above. Travel advice is also available on the FCO website and the Supplier must ensure they (and their Personnel) are up to date with the latest position.

19.3. As the countries/areas of work involved in this intervention are currently undetermined, DFID is not in a position to be able to provide a Duty of Care assessment at this point. On this basis, DFID assumes that this programme will be rated as 'Medium/High' risk. Therefore, as part of their PQQ response, bidders will be asked to submit a 'generic' response to provide assurance to DFID that they can manage DoC responsibilities in even the most challenging of environments

19.4. During the programme, it is DFID's expectation that any contracted supplier will provide a full Duty of Care assessment for each potential country/area of work where in-country ground work is expected to be necessary.

19.5. If the programme activities take place in medium or high risk locations, DFID will share available information with the Supplier on security status and developments in-country where appropriate. DFID will provide the following:

a) All Supplier Personnel will be offered a security briefing by the British Embassy/DFID on arrival.
b) All such Personnel must register with their respective Embassies to ensure that they are included in emergency procedures.
c) A copy of the DFID visitor notes (and a further copy each time these are updated), which the Supplier may use to brief their Personnel on arrival.

19.6. Tenderers must develop their PQQ Response and ITT response (if invited to Tender) on the basis of being fully responsible for Duty of Care in line with the details provided above and should confirm that:

a) They fully accept responsibility for Security and Duty of Care.
b) They understand the potential risks and have the knowledge and experience to develop an effective risk plan.
c) They have the capability to manage their Duty of Care responsibilities throughout the life of the contract.

19.7. If service providers are unwilling or unable to accept responsibility for Security and Duty of Care as detailed above, the PQQ will be viewed as non-compliant and excluded from further evaluation.

Initial Logical framework: Transforming Energy Access TEA - Draft 1 outline 26 10 2015 The initial logical framework reflects the anticipated TEA outputs (phases 1 and 2). These will be refined and specified in further detail, following the Inception Stage of the project for Phase 1 outputs, and again at the review at the end of Phase 1. The indicators and their progress will be reviewed during the annual review process.

IMPACT	**Impact Indicator**		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Milestone (2021 end of project)**	
Improved access to reliable energy services, leading to better well-being for poor people and livelihood opportunities.	Indicative measures reflecting improved energy access; proportion of energy from clean sources in line with achievement of Energy Global Goal by 2030 or better.	**Planned**	GTF 2015						Measures in line with achieving 2030 GG targets
		Achieved	GTF 2015						
		Source							
		Global Goal 7 for Energy and target reporting; Sustainable Energy for All Global Tracking Framework and reporting							
OUTCOME	**Outcome Indicator 1**		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
Increasing use of affordable decentralised clean energy options for poor households and enterprises in SSA and SA	Lives improved	**Planned**	**0**					9.5m	
		Achieved	0						
		Source							
		RPDC TEA project reports and publications							
	Outcome Indicator 2		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	Investment leveraged; jobs created	**Planned**	0					£300m	
		Achieved	0						
		Source							
		RPDC TEA project reports and publications							
	Outcome Indicator 3		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	Installed off-grid clean energy capacity (or CO2 offset?)	**Planned**	0					74MW	
		Achieved	0						
		Source							
		RPDC TEA project reports and published items; reviews etc.							

OUTPUT 1	Output Indicator 2.1		Baseline (July 2016)	Milestone 1 (July 2017)	Milestone 2 (July 2018)	Milestone 3 (July 2019)	Milestone 4 (July 2020)	Target Mid 2021	Assumptions
Stimulating technology innovation through Energy Catalyst	Number of awards made for promising innovative UK led solutions that have international application.	**Planned**	**0**	**5**	**15**	**25**	**35**	40	
		Achieved	0						
		Source							
		Phase 1 review and project reports (Inc. Energy Catalyst)							
	Output Indicator 2.2		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	Number of supported proposals progress to market following validation	**Planned**	0					10	
		Achieved	0						
		Source							
		Phase 1 review and project reports (Energy Catalyst)							
	Output Indicator 2.3		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	Number of jobs created in new energy enterprises as a result of EC support	**Planned**	0					100	
		Achieved	0						
		Source							
		Phase 1 review and project reports (Energy Catalyst)							
IMPACT WEIGHTING									
25%									

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OUTPUT 2	**Output Indicator 2.1**		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
Shell Foundation partnership TIME	New innovative applications and business models tested and proven	**Planned**	**0**	**2**	**4**	**17**	**19**	43	
		Achieved	0						
		Source	Phase 1 review, SF and implementing partners reports						
	Output Indicator 2.2		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	New financial innovative models developed and proven	**Planned**	0	1	1	5	5	12	
		Achieved	0						
		Source	Phase 1 review, SF and implementing partners reports						
	Output Indicator 2.3		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	Number of new corporate partnerships formed, and additional finance leveraged	**Planned**	0	0	0	1	1	3	
		Achieved	0						
		Source	Phase 1 review, SF and implementing partners reports						
IMPACT WEIGHTING									
40%									

OUTPUT 3	**Output Indicator 3.1**		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
Clean energy partnerships established that meet critical needs	Scoping study on partnerships; and commissioned support on market intelligence undertaken	**Planned**	**0**	**1**	**2**				
		Achieved	0						
		Source							
		Phase 1 review and project reports							
	Output Indicator 3.2		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	Collaborative clean energy research and innovation partnerships identified and work plans agreed, including between UK and southern institutions and networks	**Planned**	0	0	1	2	3	6	
		Achieved	0						
		Source							
		Phase 1 review and project reports							
	Output Indicator 3.3		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	**Assumptions**
	RPDC forges comprehensive and productive energy reporting including on Bioenergy following scoping study and for other energy research programmes	**Planned**	0	1	2			TBC	
		Achieved	0						
		Source							
		RPDC Phase 1 review and project reports							
IMPACT WEIGHTING									
25%									

OUTPUT 4	Output Indicator 4.1		Baseline (July 2016)	Milestone 1 (July 2017)	Milestone 2 (July 2018)	Milestone 3 (July 2019)	Milestone 4 (July 2020)	Target Mid 2021	Assumptions
Local skills and expertise	Scoping study on approaches for vocational, professional and research capacity building undertaken, followed by published reports on skill and expertise development .	**Planned**	0	1	1	3	3	10	
		Achieved	0						
		Source							
		Phase 1 review and project reports							
	Output Indicator 4.2		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	
	Vocational training; degree and higher degree professional; and, research capacity building initiatives identified and supported (outputs measured in terms of trained and qualified individuals)	**Planned**	0	0	15	40	80	200	
		Achieved	0						
		Source							
		Phase 1 review and project reports							
	Output Indicator 4.3		**Baseline (July 2016)**	**Milestone 1 (July 2017)**	**Milestone 2 (July 2018)**	**Milestone 3 (July 2019)**	**Milestone 4 (July 2020)**	**Target Mid 2021**	
	Low carbon energy network supported and TEA key dissemination products and workshops including through partnerships between UK and southern institutions	**Planned**	0	1	2	2	2	10	
IMPACT WEIGHTING		**Achieved**	0						
15%		**Source**							
		Phase 1 review and project reports							