Industrial Energy Transformation Fund (IETF) - Technical Support Services (TSS)

Tender Reference No. 4977/03/2021

13 September 2021

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A proposal submitted by ICF Consulting Services Limited
in association with

SLR

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Contents

1 Q.01. Method Statement 3
1.1 Our understanding of the specification 3
1.2 How our approach will meet BEIS requirements 3
1.3 How we will manage assessments 4
1.4 How we will monitor and evaluate projects 6
1.5 Continual improvement 8
1.6 How we will safeguard information and manage conflicts of interest 8
2 Q.02. Teams and Skills 9
2.1 Knowledge and expertise of industrial decarbonisation 9
2.2 Challenges and opportunities associated with industrial decarbonisation and policy development 12
2.3 A strong team to support all key areas of support required by IETF 13
3 Q.03. Social Value 19
3.1 Our commitment and understanding 19
3.2 Our method statement fulfils applicable social value legislation 19
3.3 Our action plan 19
3.4 Agreed plan for monitoring and reporting of social value metrics 19
4 Q.04. Project management and Risk 19
4.1 Effective management for delivery of BEIS outcomes 19
4.2 Adhering to IETF quality assurance processes 20
4.3 Managing Risks, Issues and Conflicts of Interest 20
4.4 Project monitoring 20
ANNEXES 20
Annex 1 CVs 22

1 Q.01. Method Statement

BEIS will build on the successes in IETF Phase 1 through this Technical Support Service (TSS) that will be delivered to optimise the IETF pipeline with high technical quality studies/projects that achieve the intended benefits, maintain value for money and reduce IETF programmatic risk. ICF, working with SLR, bring industry-leading skills from our work on the BEIS IHRS programme and hands-on experience in supporting industrial decarbonisation.

1.1 Our understanding of the specification

We have carefully analysed the TSS specifications, using perspective from operating similar BEIS industrial energy grant programmes (specifically IHRS), to summarise the critical IETF challenges, and how we will overcome them through our methodology (Exhibit 1).

Exhibit 1. Transposing our understanding of the specification to inform the design of our methodology

[REDACTED]

This means that BEIS can have confidence that the investment of IETF funds is the correct amount, going into viable projects, with practical delivery plans. BEIS will know that the risk to IETF that projects unexpectedly do not deliver on time or to expected levels of savings is mitigated, and that the ICF team that they are working with can provide technical support to change control, milestone approval and all areas of the IETF programme as requested.

1.2 How our approach will meet BEIS requirements

The first application window is soon after the start of this contract, bringing immediate monitoring requirements from Phase 1 projects. The risk to BEIS and the projects in the start-up of the TSS will be minimised through our knowledge from very similar assessment and monitoring on BEIS

Industrial Heat Recovery Support (IHRS) and Energy Technology List (ETL) contracts. This experience will speed up the training and induction. Our strategy to ensure the highest standard of work, whilst meeting the specification, is outlined here.

1.3 How we will manage assessments

Exhibit 2 (below) details the steps and division of responsibilities in delivering the application assessments. We will manage this process in close collaboration with the BEIS team throughout, underpinned by robust evidence, analysis, quality assurance, and appropriate assessment and monitoring criteria.

[REDACTED]

1.3.1 Inception between BEIS and ICF

The TSS will kick off with inception meetings between the TSS PM team (TSS PD, PM and governance officer) with relevant team members in BEIS to establish and clarify details of the TSS. Outputs of the inception phase will include: i) Details of Phase 1 projects; ii) Updates on IETF Phase 2 details; iii) ICF TSS delivery schedule; iv) ICF quality plan (expanded in Section 4.2); v) ICF performance KPIs and ICF progress reporting requirements; vi) Scheduling of subsequent development workshops and inception meetings for assessment and monitoring teams at BEIS and ICF. During the inception stage of the assessment process, our assessment coordinator will meet with BEIS assessment leads to establish the detailed operation requirements and offer our solutions as required.

1.3.2 Mobilising the right team for the window

Upon Phase 2 applications being available, the PM will review the specific needs (technology, sector, scale, complexity) of each project, the workload, and COI response of the Assessors. This will lead to an agreed allocation of projects to Assessors and appointment of the Lead Assessor (taking into account the limit of fifteen projects). The assessment team will also attend BEIS and ICF internal training to get updated on the latest IETF scoring requirements.

Exhibit 2. The Application Assessment Process

[REDACTED]

1.3.3 Delivering the technical assessment

The Technical Assessors will carry out the assessment based on the agreed IETF scoring criteria. In addition, they will utilise in-depth sector and technological knowledge to assess the various applications proportionately to their scale, complexity and project monetary value. Where application evidence and inputs are limited by IETF format requirements (e.g. large scale complex projects), our technical assessors may need to score an application based on the inference of technical description, its context and process maturity. Where applicable, our assessors may structure some critical questions back to the applicant for technical verification. Where sub-criteria are defined by IETF, these will be individually scored. Our assessors will also use their technical judgement to apply the necessary weighting or prioritisation of sub-criteria. Our assessors will be prepared for the common issues and pitfalls we have witnessed when assessing similar applications on other industrial programmes, as detailed in Exhibit 3.

Exhibit 3. Our assessors will balance the assessment of poor response vs. a potentially great project

[REDACTED]

1.3.4 Assessment report

We will set up a robust assessment report structure and maintain the records within ICF's internal system in accordance with the QA plan. This will include the scores and associated reasoning for each sub-criterion, along with residual risk items for each application, and each technical assessor. Exhibit 4 provides a snapshot of assessment reports used for similar industrial grant assessment. The assessment report design provides multiple benefits:

- Ability to communicate with technical precision for each assessment.
- Detailed assessment records enable more precise, constructive feedback to the applicant or awarded participant.
- Detailed records of follow up issues to be managed by the monitoring team (M&V, critical risk, outstanding clarification issues, conditional post-award requirements)
- Robust records to support any ongoing or future audits and evaluations.
- Facilitation tool to enable successful moderation of application.
- Records of results pre- and post-moderation changes (feeding into lessons learned).
- Provision of sufficient details to BEIS SRO or minister consideration, especially with regards to exceptions and risk associated with the application which must be dealt with pre-and-post award, that may be transposed into IETF GFA.

Exhibit 4. An effective assessment report with multiple benefits

[REDACTED]

1.3.5 Moderation of assessment

Moderation of assessment is a critical part of the assessment process to ensure that the assessment results are fair, consistent and in line with the previous scoring criteria.

From our experience, these critical issues should be tackled during the moderation process (Exhibit 5):

- Determine the qualitative floor threshold level for passing a specific criterion
- Examine extreme high and low scores, or any other outliers within the application
- Validate inference of evidence for complex applications where evidence is scarce
- Ensure that high scores are reserved for truly exceptional technical quality

- Discuss and validate critical issues to be raised for further questioning

After the review the Lead Assessor will make sure the BEIS data repository is updated.

Where requested by BEIS, Assessors will support other activities such as supporting additional scrutiny or clarification processes through interviews and panels (noting the ITT indication that this will only be needed for energy efficiency projects requesting >£7m funding, and deep decarbonisation projects requesting>£3m funding from BEIS.

Exhibit 5. Our assessment reports are designed to draw out key technical issues succinctly for SRO board level without losing technical content

[REDACTED]

1.4 How we will monitor and evaluate projects

1.4.1 Inception process

Exhibit 6 presents the key steps in setting up the pre-monitoring process. During the inception phase, our monitoring team coordinator along with senior technical experts and senior monitoring officers will set up development workshops with BEIS monitoring leads and officers to establish clear requirements for IETF project monitoring. These requirements will be transposed into our internal procedures and setup of the IETF monitoring process.

Exhibit 6. Pre commencement monitoring

[REDACTED]

1.4.2 Pre-commencement monitoring

The key objective of this step is to ensure a thorough M&V plan is established to monitor the delivery of the project and post-completion monitoring parameters when the project is in operation. At this stage, technical advice will be front-loaded to maximise the success of the project implementation. The critical steps are as follows:

- Technical assessors, allocated project Monitoring Officers (MOs) and senior MOs will meet with the BEIS MO to expand on the details of the M&V plan for each project.
- At this stage, the following issues will be emphasised: details of payment milestone, expected delivery for each payment milestone, M&V scope, data requirements, report frequency, setup templates for the project, define data units, validate measuring points, validate M&V methodology, record of M&V resources, metering details, cost updates
- The technical assessor and senior MO will also summarise any critical issues or outstanding risk to be monitored during the project delivery and post-completion. This ensures that these critical issues are actively monitored over the delivery
- Where needed, the senior MO will develop alternative solutions for M&V to be proposed to the IETF participant to improve upon the weakness of the existing M&V plan.

Based on our experience, the benefit of our suggested process includes:

- Clear identification and management of potential risk for each project

- BEIS and ICF can if needed proactively support IETF participants to develop joint solutions
- Clear recommendations for approving payment milestones
- Enabling immediate updates to BEIS system and data requirements on benefits and VfM

As we found on many monitoring and energy management systems, M&V which utilises data that is already being gathered and used by the business for other reasons is most likely to last the five years. Monthly monitor reports allow the site to get into a rhythm of reporting so avoiding delays, but our experience on IHRS showed that it needs to not be burdensome. It is valuable as it means the Monitoring Officer can identify concerns at an early stage.

Exhibit 7 Project Delivery Monitoring

[REDACTED]

1.4.3 Task 2.2: Monitoring of project delivery

Exhibit 7 shows the key steps and division of responsibilities which start with a kick-off meeting, possibly on site. The duration of project delivery will be project dependent, though it is unlikely that any project would be implemented more quickly than the quarterly period for review meetings.

Rather than written reports, the specification is for quarterly **review meetings** attended by project representatives, BEIS and ICF. We propose a similar agenda and documentation as for the assessment moderation, including a KPI tracker, project progress by subtask, including finance (actual and forecast expenditure), technical aspects, and risk register. Items denoting significant change in progress will be escalated, and where required, M&V plans will be updated and uploaded to BEIS results management system.

At least once a year, or during project milestones (or more frequently if issues arise), BEIS MOs and ICF will undertake **a site inspection** and face-to-face interviews with the grantee. Visual assessment of the project will reduce fraud risk, e.g. witnessing the commissioning or operation of a piece of BEIS funded new equipment; and checking serial numbers against procurement documentation. Outcomes will be recorded in a project monitoring visit report. And all site visits will be carried out in accordance with the local site H&S rules including use of Personal Protective Equipment.

During this phase, where **technical queries from grantees and BEIS** are raised, the ICF PM or MO will review the request and, if required, clarify via phone or email. They will allocate requests to appropriate project team subject specialists to answer. For grantee requests, responses will be reviewed by the PM and BEIS, and where appropriate, added to the Frequently Asked Questions (FAQ) documentation to support future funding windows.

Where the request is **technical input to change requests,** we will evaluate its impact to the schedule, cost, quality, and project outcomes. We may need to obtain clarifications from the participant, following which, we will provide our recommendation to the BEIS MO.

Supporting project closure: After project completion, grantees will submit a project completion report to ICF. The project completion report content will be agreed with BEIS but could contain the following:

- Confirmation and evidence showing that all activities were completed, or reason why not and showing actual versus planned spend and reasons for significant variance.
- Evidence of efforts to ensure that the benefits of the Funded Activities will be sustained and details of the influencing factors.
- Identification of external factors that contributed to the achievement of the project any unplanned outcomes and lessons learnt.

- Feedback and comments on the IETF procedures and systems as set out in the grant funding agreement.

1.4.4 Task 2.3: Post-project completion monitoring

Exhibit 8 Post Project Completion Monitoring

[REDACTED]

Exhibit 7 shows the key steps and division of responsibilities. Five years of monitoring, with potential for multiple contractors, means clear recording of actions and discussions (internal and with participant) is critical for continuity and to provide an audit trail for key decisions.

Grantees will be guided by ICF through a handover when the project is installed/completed, ideally in a meeting, to ensure that post-project reporting responsibilities are clearly understood.

ICF, with the grantee and BEIS, will review the M&V plan and assess its robustness to support long-term monitoring for benefits calculations. The post-project M&V plan will be updated if needed.

Over five years, context for the industrial participant will definitely change. Our experience tracking the Climate Change Levy targets includes the correction of energy use and target data for factors such as changes in production (mix as well as volume), and addition and closure of lines or whole factory areas. We also normalise data on energy use for business cases we deliver to industrial clients as part of energy strategies. This practical experience will be used when needing to revise the M&V approach to calculate the IETF project benefits over time.

BEIS review of the monitoring is six-monthly, so we will ask for quarterly M&V data, ideally monthly. We will **assess and verify the monitoring data** checking for completeness and for unusual responses, contacting the grantee for actions or clarifications as appropriate.

We will conduct the benefits calculation on a standardised and coherent basis. Results, raw data and supporting documentation will be provide to BEIS, with standardised data stored in the central BEIS database.

Based on the M&V reports, the BEIS MO and ICF Technical MO will decide on the need for **site visits and ad-hoc technical support** (e.g., address issues, recognise successes). Request will be reviewed, logged separately from other work, and assigned to the appropriate project team member.

1.5 Continual improvement

At the end of each assessment window or monitoring review period, our TSS PM, PD, assessment team lead, monitoring team lead and QA officer will collate all lessons learned and update BEIS records: risk & issues log (expanded in 0), lessons learned, updating of internal QA plan). The outputs will be presented to BEIS at agreed meetings.

1.6 How we will safeguard information and manage conflicts of interest

1.6.1 Commercially sensitive information

Specifically for IETF, data from applicants and participants will only be shared with the project team. Where input is sought from outside the team, names of people, company names, and identifying elements (such as site names) will be redacted. Confidential data will be shared on

secure platforms and only emailed when necessary and then with password protection. Further approach in managing sensitive information detailed in section 4.4.1

1.6.2 Managing Conflict of Interest (COI)

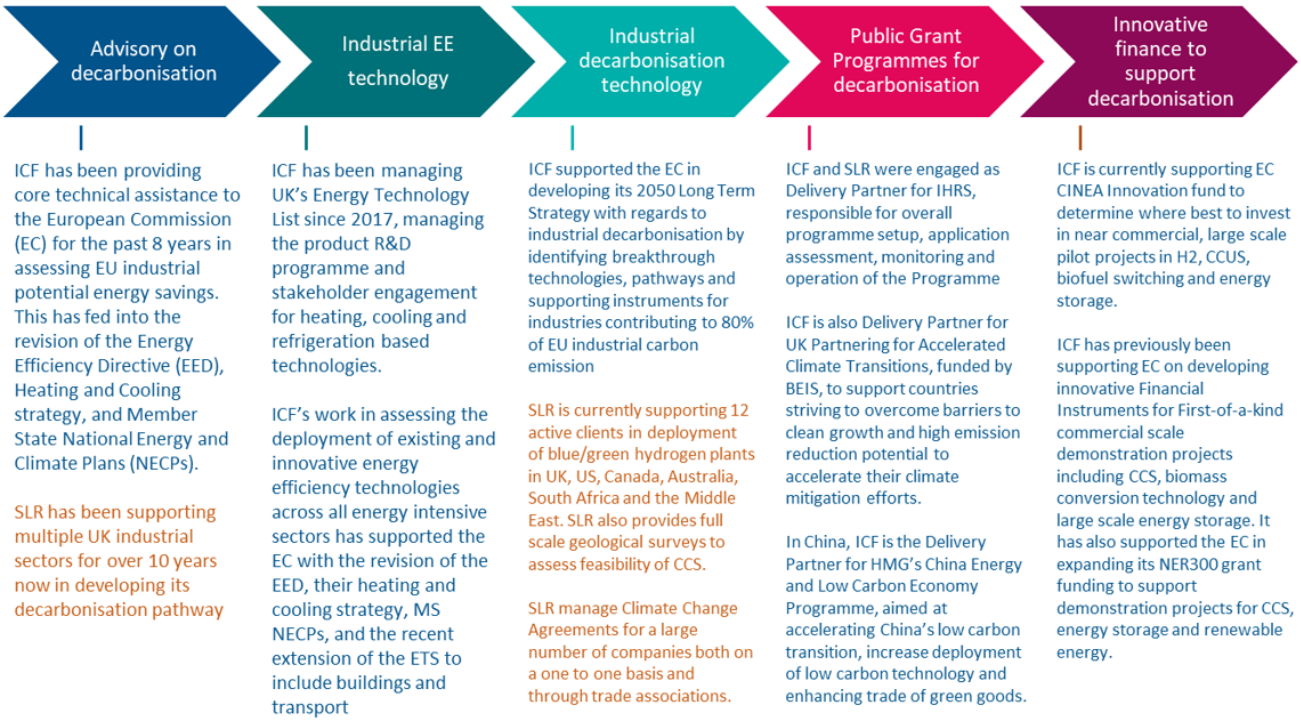
The COI process is not just to avoid a COI but to avoid the suspicion of a COI. All the ICF, SLR and subcontractors in the IETF team will be informed of the requirement that they and their organisation do not work on an IETF project outside of IETF (e.g. as an energy advisor). If an Assessor is working with an applicant outside of the IETF project then we would not allow them to be part of the projects Assessor team. If the Assessor's organisation is working for an applicant in a completely different field (for example, supporting a planning application) then clear ethical walls will be established as an information barrier protocol. Team members will complete conflict of interest (CoI) declarations for each bid assessment window. Any declared CoI will be reported to BEIS to agree mitigating actions (e.g., replacement of staff, firewalls preventing access to specific folders/ documents). The Programme Team will undertake mandatory annual CoI training. Further COI steps are expanded in Section 0.

2 Q.02. Teams and Skills

2.1 Knowledge and expertise of industrial decarbonisation

IETF will be delivered reliably, on time, to budget, by experienced BEIS energy programme manager ICF, working with SLR technical analysts and industrial experts, drawing on the extensive industrial efficiency and decarbonisation expertise and resources of both companies. BEIS will gain fresh ideas, simplicity, high quality, flexibility and responsiveness by working with ICF and SLR to deliver a successful IETF programme. ICF and SLR bring decades of experience providing detailed energy efficiency, carbon and net-zero consultancy across industrial sectors. Exhibit 9 provides an overview of selected references demonstrating ICF and SLR services and recent work on industrial decarbonisation, which have contributed knowledge and skills that will help achieve the objectives of this IETF TSS.

Exhibit 9. Bringing together decades of relevant industrial experience in complementing the IETF TSS



2.1.1 Supporting successful selection of projects and studies contributing to UK net zero transition

Our technical experts (expanded in section 2.3) bring vast technical knowledge covering the expected variety of applications and project complexity, including detailed knowledge of industrial deep decarbonisation (e.g. transition from grey to blue/green hydrogen and full geological surveys for CCUS deployment) under IETF scope. As a minimum, we will provide BEIS with the following set of core technical expertise in support of assessing applications and monitoring awarded IETF participants, leveraging from decades of extensive hands-on knowledge and experience our pool of technical experts possess on deploying industrial energy efficiency and decarbonisation projects.

Topic	Subset of knowledge and expertise	Relevance to IETF
Engineering	Validation of technology and scope, analysis of technology specification and parameters, review FEED or detailed engineering outputs [P&ID, specific engineering system study results, engineering drawings]	■ Ensure project is technically feasible ■ Validate that project is appropriately scoped to the benefit intended ■ Prevent scope creep and gaming ■ Identify gaps in technical requirements
Procurement	Knowledge of supply chain and technology providers, manufacturing process, procurement processes	■ Maximise local supply chain ■ Validate critical chain procurement steps in place to support successful delivery of project.
Construction	End-to-end construction monitoring, regulatory approvals, occupational health & safety, environmental assessment, industrial plant commissioning.	■ Validate project deliverability to IETF requirements ■ Ensure sufficient consideration given to address critical risks ■ Ensure skills and resources are adequate for scope of work ■ Highlight all residual risk to BEIS decision panels for award consideration ■ Provision of critical comments to applicants or participants to improve deliverability of project
Project management	Managing relevant stakeholders in deployment of industrial EE and DD projects (e.g. technology supply chain, owners, EPC contractors, subcontractors, authorities, public consultation), risk assessment and management, resource assessment, delivery schedules for complex projects.	
Operation & Maintenance	Industrial plant O&M manual and schedules, O&M cost and resource analysis, specialised training.	■ Ensure projects can successfully deliver the projected benefits
Monitoring and Verification	Monitoring system design, data analytics, auditing of records, environmental and energy management systems (ISO 14001, ISO 50001)	■ Validation of actual vs projected benefits. ■ Critical lessons learned to be shared with BEIS.
Commercial	Commercial due diligence including assessment of stakeholders involved, commercial structuring, corresponding agreements, insurance and guarantees.	■ Validating the business case ■ Informing BEIS on potential risk involved with the contractual parties ■ Avoid commercial pitfalls
Financial, economics and policy	Financial modelling, financial structuring, assessment of financial statements (cashflow, P&L, balance sheet), industrial decarbonisation policy development	■ Validating the IETF benefits ■ Validating VfM for IETF funding ■ Ensuring project meets Net Zero policy

Our team of experts utilises these critical skills to inform owners and investors of industrial assets on deployment of industrial energy efficiency and decarbonisation projects by validating the business case through extensive due diligence processes. The same rigour will be applied to

support BEIS on successful selection of projects with high technical standards and a strong potential for supporting UK's transition to net zero. In addition to the technical skills discussed above, our team will also provide BEIS with additional commercial, financial, economic and policy knowledge to further validate the business case of awarded projects, specifically when it comes to longer term large scale complex deep decarbonisation studies and projects.

2.1.2 Supporting BEIS in monitoring awarded projects and participants

Establishing appropriate milestones and M&V requirements. To ensure IETF has the means to validate all project benefits and added value for awarded projects, our technical experts will analyse the appropriateness of the M&V methodology and plan presented during the application stage. In consideration of the wide variety of projects expected under IETF, certain resources may not be cost effective to implement direct/automated metering (e.g. smaller scale projects, combustion flows, raw material input, gaseous emissions including pollutants and CO2). Complex projects will require a multitude of controls and instrumentation on an overall system basis to validate the benefits generated. Our technical experts will utilise their experience in informing BEIS about the potential pitfalls and solutions (corrective or refinement) to be suggested to the applicant, proportionate to the scale and complexity of the applicant's project. Our technical experts, supported by our data analytics team, will apply technology and sector knowledge to validate the key metrics underpinning the energy and carbon related baseline of the project. Applicants are often caught out by the monitoring requirements due to cost, complexity of the project or insufficient knowledge of their obligations for post monitoring report as required under the Grant Funding Agreement.

Delivery monitoring. Out technical experts themselves have hands-on experience in delivering industrial energy efficiency and decarbonisation projects. These experts will provide proactive support to BEIS and awarded IETF participants to ensure that they continually work towards achieving their delivery milestones, including suggesting potential solutions and corrective actions to manage arising issues during project deployment.

Post completion monitoring. Our monitoring experts also possess relevant auditing skills to review records provided by IETF participants in support of validating the achieved IETF benefit and VfM.

2.1.3 Provision of technical advice on all areas of IETF as required

In addition to the minimum core skills, our team of experts will leverage on direct experience in managing similar public grant programmes (specifically from IHRS), to manage assessment, monitoring requirements and provide any ad-hoc technical advice as required by IETF for continual improvements. The considerations our team will manage to deliver the contract requirements include the following:

Managing scale and complexity of assessments. We expect a wider range of project scale, complexity and types of entity who will be applying for Phase 2. While we would expect a higher technical quality from larger projects, it may not be reasonable to expect the same level of detail for smaller projects. Our team of accessors are fully experienced in exercising proportionality, and will ensure that the assessment is in accordance with IETF guidance, without compromising projects with high decarbonisation potential on a wider scale.

Insufficient emphasis on risk management. This is an area which may often be overlooked when implementing industrial projects or studies. Grant applicants often provide minimal details, without appropriately identifying or assessing critical risk (e.g. over-ambitious timelines, overlooking HAZOP risk, unable to obtain required planning approvals or breakdown in commercial negotiation between contractual parties) which may hinder successful delivery of the project.

Insufficient details provided during application. Applications are predominantly assessed based on the quality of the response and evidence submitted, however it may be restricted to

IETF application input or format requirements, limiting the amount of technical details to assessors. Higher technical quality evidence requires higher resource commitment (prior or during application stage). We also expect larger entities to be better resourced to supply higher quality evidence, while small or medium enterprise may struggle to provide an equal level of quality. Additionality of grant funding is often difficult to justify based on the evidence provided.

Supporting IETF post award process to avoid dropout. Further due diligence processes are required, both from BEIS and the applicant's aspect post award (e.g. transposing technical details to Grant Funding Agreement, managing conflicts with business requirements, executive board approvals, legal clarifications, etc.). We will be on standby to provide technical support to BEIS in anticipation of the issues which may arise during the post-award process.

A different set of lens required for assessing applications for Feasibility Study (FS) and Preliminary Engineering (PE). Applications related to FS and PE are extremely valuable to the overall objective of IETF and UK net zero transition. FS and PE applications contain a different set of challenges, as the scope of such studies are often insufficient to justify the business case or the quality of the outputs are insufficient to inform an investment decision. The technical quality of the application also depends on the amount of pre-feasibility efforts, which requires strong sectoral understanding of technical, commercial, financial, economic and regulatory aspects of industrial decarbonisation.

Accommodating industrial needs within IETF restrictions. It is essential to ensure IETF remains flexible to industrial needs while maintaining strict requirements within BEIS and Treasury. We will leverage on our experience in operating IHRS to support BEIS on potential solutions in dealing with ad-hoc issues (SIC code validation of owned companies, releasing of IP, managing conflicts with contractual parties).

Feeding back lessons learned to BEIS. To support the continual improvement of IETF, ICF will collectively extract key lessons learned from each assessment or monitoring project and provide constructive feedback to BEIS and potential solutions within the parameters and confines of BEIS and Treasury requirements.

Section 1.3 highlights the approach we're taking to address the issues the above issues.

2.2 Challenges and opportunities associated with industrial decarbonisation and policy development

BEIS can secure greater UK competitiveness by advancing knowledge and investor confidence through selective investment in industrial decarbonisation technologies, leading to the creation of jobs, wealth and trade. ICF will catalyse the achievement of good value from BEIS IETF investment through reliable, insightful, proven technical expertise, and programme management, backed by creative design and analytics.

IETF is operating at an opportune moment. Industrial decarbonisation technologies look technically viable to contribute strongly to the UK's legal commitment to reduce UK net emissions by 100% relative to 1990 levels by 2050. Demonstrating these technologies at large scale in the UK could both hasten the green economic recovery and improve UK competitiveness compared to near neighbours (who are testing their own industrial capabilities through the EU Innovation Fund). In 2019, total UK net territorial emissions of the seven gases covered by the Kyoto Protocol was 454.8MtCO_2e, with the industrial sector accounting for over 15%. The industrial sector is especially challenging to decarbonize, due to two sets of emissions sources that are difficult, and costly to eliminate: 1) the use of high-temperature heat generated by fossil fuel combustion in many industrial processes; and 2) "feedstock" emissions resulting directly from industrial processes, which are independent of the source of energy used to drive the process. Nonetheless, as part of the UK's net zero objective, the UK government expects industrial emissions to reduce by at least 90% by 2050 driven by energy and material efficiency optimisation, CCUS and fuel switching to low carbon fuels.

Demonstration projects (such as Norway's Northern Lights CO2 transport and storage, or the Dutch SDE++ investments in CCUS in greenhouses) are prototyping for future commercial projects. Large emitters (e.g., EU, USA, China) offer potentially lucrative markets to reward brave first movers. Carbon Border Adjustment Mechanisms are being seriously considered, potentially impacting trade for low carbon laggards. The UK, newly freed from EU State Aid rules and with the Subsidy Control regime still evolving, can take bolder steps to support industry to demonstrate that decarbonisation technologies can be commercially viable and suitable for replication both in the UK and in export markets, to create jobs, wealth and trade.

The industrial decarbonisation and hydrogen strategies, and forthcoming strategies on heat and buildings, and net zero set the scene for an integrated policy framework to 'build back better' after COP 26. Adjacent BEIS programmes, such as the Net Zero Innovation Portfolio, Transforming Foundation Industries, and Industrial Heat Recovery Scheme (IHRS, with ICF as Delivery Partner), carbon pricing, Climate Change Agreements, Clean Steel Fund, Industrial Clusters and support for hydrogen production provide a suite of policies acting together across the innovation spectrum to drive ambition, build UK experience and the evidence base to guide future policy interventions. BEIS is examining the feasibility of joint decarbonisation investments with industry in several large industrial clusters, as well as through dispersed innovation options. Complexities, uncertainties, and the scope for creative solutions are all high, with government helping industry towards a durable decarbonisation business model, amidst an evolving policy, technology, business, and trade landscape. At the same time, competition for post-pandemic economic support is high, necessitating carefully targeted project selection to maximise the return on investment from government assistance. IETF supports a clear need to successfully demonstrate proven decarbonisation technologies at commercial scale to establish cost, reliability, and performance characteristics and provide confidence to more risk-averse investors and the public that the technology works as intended. By financing comprehensive feasibility/ engineering studies and deployment projects, IETF provides a tool to support early implementation of technologies already available which could start reducing energy costs and decarbonising immediately, thus contributing to net zero, developing extensive knowledge sharing of project findings to demonstrate the deep decarbonisation technologies needed to meet the 2050 target, and catalysing demand by bridging the cost gap.

There is much to do to obtain and retain the support of industrial stakeholders to achieve net zero by decarbonising the existing industrial base, and to take advantage of the growing global market for low carbon products. Stakeholders need to understand the impact of net zero on operations, employees and on past investments, alongside developing business models that ensure the viability of net zero projects amidst post-pandemic recovery that will see some industries undergoing large scale transformations. IETF will help industries demonstrate the viability of and transition to low carbon technology alternatives that enhance their business performance and help them obtain sector development and trade benefits. The carbon savings delivered on multiple programmes that ICF has managed for BEIS demonstrate that ICF is the right delivery partner, with the right blend of skills, tools, specialist knowledge and experience to optimise BEIS return on its IETF investment, both in feasibility assessment and deployment. We have demonstrated this already through supporting BEIS as Delivery Partner on IHRS. We will continue to meet BEIS needs thoroughly, making use of specialist support from subcontractors, delivering social value alongside technical and management excellence.

2.3 A strong team to support all key areas of support required by IETF

IETF technical support will be delivered reliably on time and to budget by experienced BEIS programme manager, ICF, with industrial experts at SLR, underpinned by our collective knowledge and experience on industrial decarbonisation (expanded on in section 2.1). We bring together a team of 30+ highly experienced UK based technical experts, who will provide a comprehensive service to BEIS and applicants that is solidly rooted in knowledge and expertise of industrial decarbonisation to meet the output requirements and four main objectives of this contract: 1) Selection of proposals on a basis of high standard technical expertise; 2) Ensure clear

and realistic delivery plans, along with associated M&V plans; 3) Monitoring grant project post-completion results against M&V plan and 4) Provision of technical advice in all areas of IETF as required. Exhibit 10 (from the outer to inner ring) maps ICF/SLR team member's comprehensive **skills and knowledge** to support the required **work packages** needed to meet the four **aims & objectives** of this contract.

Exhibit 10. A comprehensive team with specific skills to deliver the TSS

[REDACTED]

2.3.1 A team structure to deliver the IETF TSS effectively and efficiently

We have organised a team structure in accordance to the requirements of this TSS Contract and the anticipated services which may be required on all parts of IETF as detailed in Exhibit 11. We have also established clear roles and responsibility for each team and sub team to optimise delivery of TSS outputs, as detailed in Exhibit 12.

Exhibit 11. Team structure designed to effectively deliver required TSS

[REDACTED]

Exhibit 12. Establishing clear roles to optimise delivery of TSS

Sub Team	Roles and responsibilities
TSS Programme Manager **[REDACTED]**	■ Day-to-day communication with BEIS. attend meetings with BEIS ■ Management and oversight of TSS and Work Package delivery ■ Setup and maintain internal procedures and records ■ Ensure all team members operating in line with internal/IETF quality plan ■ Maintain records within relevant IETF/BEIS system and security plan ■ Mobilise team members and provide work instructions to sub team ■ Track and report progress of the work programme against BEIS KPIs ■ Conduct collective learning sessions (internally and with BEIS) ■ Coordinate wider ICF resources as required (HR, data security, Comms)
Programme Director **[REDACTED]**	■ Overall senior management responsibility for leadership of work package delivery and customer satisfaction ■ Review and improve quality plan established ■ Deploy wider ICF resources to develop appropriate solution as required
Governance **[REDACTED]**	■ Attend periodic review meetings with the BEIS SRO to provide executive oversight and issue resolution from ICF leadership

Quality Assurance and ad-hoc service Lead **[REDACTED]**	■ Develop and setup quality assurance plan to internal and IETF requirements (assessment, monitoring, data sharing and security, BEIS systems, training, lessons learned). ■ Manage ad-hoc technical service as required by BEIS to support delivery of IETF. ■ Coordinate technical experts and monitoring officers to quality plan or develop ad-hoc solutions. ■ Develop ad-hoc solutions with wider ICF/SLR resources
Application Assessment Team Lead **[REDACTED]**	■ Manage and oversight of application assessment process (assessment and moderation schedule, report, records, training, lessons learned) ■ Conduct pre-screening and allocate assessments to the right sectoral experts, appointing Lead Assessors and coordination with BEIS assessor ■ Ensure assessment records maintained to quality plan in BEIS system.
Technical Experts	■ Carry out IETF application assessment according to IETF requirements ■ Provision of assessment scoring and feedback to BEIS. ■ Coordinate with Lead Assessor and attend moderation meetings ■ Review of monitoring plan and coordination with monitoring officers
Monitoring Team Lead **[REDACTED]**	■ Manage monitoring activities (pre, deliver, post) and allocation of monitoring duties to the relevant monitoring officers. ■ Coordination with data analytics team to validate and present results. ■ Ensure monitoring records are maintained to the quality plan and reporting back to BEIS Monitoring Officers.
Monitoring Officers	■ Develop monitoring plans with IETF participants ■ Carry out monitoring duties for pre, delivery, post ■ Communication with IETF Participants, including kick off meetings, site visits and periodic follow up. ■ Maintain monitoring records to the quality plan within BEIS system. ■ Communication and coordination with BEIS Monitoring Officers ■ Senior Monitoring Officers to develop quality plan, provide technical guidance and manage complex monitoring projects.
Data Analytics	■ In depth analysis of monitoring data records ■ Develop insights to project performance and visualisation of data

2.3.2 TSS Programme Management and Quality Assurance team

The TSS Programme will be led by the TSS PM and TSS PD, based in ICF's London office, supported by TSS QA lead based in SLR's Manchester office. This team will be led by senior leaders in ICF and SLR, leveraging on the following programmatic skills and expertise from ICF experience in operating similar grant programmes:

- Experience in managing industrial grant assessment and monitoring participants
- Strong operational understanding of all aspects of IETF
- Setup and maintaining strict QA standards for grant assessment and monitoring
- Ability to develop technical solutions to continually improve IETF
- Hands-on experience in managing and deploying industrial projects
- Ability to manage and deploy wider resources to meet BEIS requirements
- Strong track record in delivering to BEIS KPIs
- Industrial grant programme governance and compliance

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

2.3.3 Technical skills and knowledge in IETF supported technologies

We bring a team over 20 technical experts to ensure applications fulfil the relevant sector / applicant business case. Hence, these experts will provide coverage of the broad variety of applications and project complexity, including deep knowledge of the specific technology areas. This will ensure more effective due diligence and ability to provide reliable advisory support for businesses during the programme operation. The technical expert team (coordinated by the Assessment Team Lead) has been selected as they bring:

- Extensive experience of building the business case for energy management projects and communicating the technical and financial detail to business stakeholders
- extensive sector experience with a strong blend of technical, commercial and financial knowledge of carbon control and storage technologies, enabling them to understand, assess and critique the applications.
- understanding of BEIS and programme requirements
- able to work to a specified approach, collaboratively in a team, understanding the wider programme needs sufficiently to remain flexible and responsive
- strong network of industrial stakeholders (associations, businesses, technology suppliers)
- ability to communicate in the right technical and business sector language.
- experience working and communicating with site operational staff and managers, and with external stakeholders, both on project design and progress and on skills transfer.

Experience highlights of selected technical experts

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

2.3.4 Technical expertise in monitoring of IETF participants

Experience highlights of selected technical experts

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

2.3.5 Approach to address resource gaps and address demand peaks

ICF is a global business with a 50-year energy and environment heritage employing 7,000 staff, including >350 UK consultants. We have over 1,500 low-carbon specialists (with >30% holding energy-related PhD or MSc). This resource helps us respond quickly to shifts in client demand. We can also draw upon resources from our network of suppliers, partners, our database of vetted experts, or by targeted research and recruitment. Our databases facilitate searches by skills, years of experience, qualifications, country of work experience, project and client track record, as well as diversity and inclusion parameters. Efficient search terms allow fast short-listing of suitable staff/contractors allowing delivery within tight timeframes. ICF has specialist in-house recruiters with pipeline tools to locate the specialists we need for specific roles. ICF senior managers monitor demand projections against capacity by scale, roles, skills and experience to ensure ICF is equipped to meet client requirements.

ICF's UK-based flexible delivery team will manage the variability in programme demand. Technical staff will be engaged on other projects when demand is low but will remain available for application support and assessments as required by IETF. The PM will ensure resources accord with the plan, with individuals that are qualified and available for the activity to which they are assigned. The PM will initiate uplifts/downscaling of project resources using our project planning tools to map resource demand over time, across tasks and by skill/grade/function. People Planner, ICF's resource planning application, provides project and business managers with an accurate, real-time picture of the forecast allocation of resources, available capacity and labour allocation, on a rolling basis.

Exhibit 13.Demonstrating capabilities with variable demand

[REDACTED]

3 Q.03. Social Value

3.1 Our commitment and understanding

[REDACTED]

3.2 Our method statement fulfils applicable social value legislation

[REDACTED]

3.3 Our action plan

[REDACTED]

3.4 Agreed plan for monitoring and reporting of social value metrics

[REDACTED]

4 Q.04. Project management and Risk

BEIS will receive a disciplined, insightful and reliable programme management service using PRINCE2® methods, based on decades of successful experience managing public funds for energy programmes.

4.1 Effective management for delivery of BEIS outcomes

[REDACTED]

Exhibit 14. Effective, value for money programme management with continuous improvement: an approach proven to reduce management fees

[REDACTED]

4.1.1 BEIS will benefit from ICF's proven internal programme management tools

[REDACTED]

4.1.2 Working collaboratively with BEIS

We have been delivering energy programmes for BEIS continuously since 2013, which has helped us understand and provide monitoring, risk management and decision-making processes. We will make best use of BEIS management inputs and keep all responsible parties informed with appropriate information, delivered succinctly and promptly to support effective and efficient decision-making.

[REDACTED]

4.1.3 Using change control processes

[REDACTED]

4.2 Adhering to IETF quality assurance processes

[REDACTED]

4.3 Managing Risks, Issues and Conflicts of Interest

[REDACTED]

4.3.1 Robust system for managing and mitigating Conflicts of Interest

[REDACTED]

4.3.2 Identify, prioritise, mitigate, manage and communicate risks

[REDACTED]

4.4 Project monitoring

4.4.1 Providing management information to demonstrate performance

[REDACTED]

4.4.2 Sharing and managing data securely

[REDACTED]

4.4.3 Performance and quality management of outputs

[REDACTED]

4.4.4 Highlights report to Project Board

[REDACTED]

ANNEXES

Annex 1 CVs

[REDACTED]