Royal Academy of Engineering

Invitation to Tender

An analysis of engineering skills and ecosystems in Ghana, Kenya and South Africa

Deadline for submissions: 9am GMT, Monday 7 December

The Royal Academy of Engineering (The Academy) is seeking to commission an analysis of engineering skills and ecosystems in Ghana Kenya and South Africa as part of its *Engineering Skills and Systems in Africa* programme. This research, alongside complementary scoping activities, will inform the Academy on how best to utilise funding over the next three years of the programme, and specifically, where targeted Academy intervention can add value in each of the three focus countries.

The research may be published to inform others working in the ecosystem. We are open to receiving applications from individuals/teams to undertake this research across one, two or all of these countries, and will choose the best qualified applicant for each country context.

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Context

The Royal Academy of Engineering ('the Academy') has worked for over a decade in sub-Saharan Africa, strengthening professional engineering bodies, higher education institutions, and other stakeholders in engineering ecosystems in Africa through the GCRF and ISPF 1.0 Africa Catalyst and industry-academia partnerships programmes.

Looking forward, and informed by the 2025 Global Engineering Capability Review (GECR) and 2025 Engineers for Africa Report, the *Engineering Skills and Systems in Africa* programme seeks to support engineering bodies and education institutes in Ghana, Kenya and South Africa specifically.

Taking a systems approach, the programme will convene stakeholders within engineering ecosystems to identify barriers and opportunities, and co-design solutions. It will use funding to foster stronger collaborative partnerships between stakeholders, in particular industry, academia, and government, to develop new offers and approaches to building relevant engineering capacities, as well as scaling successful models. It will support the development and exchange of knowledge and expertise on how best

to support engineering ecosystems and skills for sustainability and future needs between Africa and UK, and between African countries. It will also support engineering organisations to strengthen their own capacity both individually and together to raise awareness amongst decision makers of the importance of engineering in achieving the sustainable development goals.

In turn, these interventions will support economic development, whilst linking engineering skills to growth sectors set out in national development plans. They will also support job creation and the expansion and maintenance of high quality, safe infrastructure that can support people's access to essential services.

Country-reports

To inform this work, the Academy seeks to commission country-level reviews to identify key sectors prioritised for national economic growth and development, the skills gaps and areas of strength within these, and any relevant socio-political and economic considerations. This will highlight where there is a need to prioritise engineering skills development as part of workforce planning and to support economic development. The analysis should identify the underlying factors driving strengths and gaps, and where targeted Academy intervention could add most value.

The key objectives of this piece of work are as follows:

- To identify the **key sectors** for economic growth in each country (including those set out in respective national development plans) and provide data and evidence on engineering capacities and skills gaps in those sectors;
- To assess who the **key actors** are in country, both national and international, who are either responsible for engineering skills development in the above identified sectors and/or are contributing towards addressing gaps, or hindering progress.
- To provide **tangible recommendations** for the Academy on where it could uniquely play an impactful role. Academy support can be provided through a variety of mechanisms, always locally-led, including but not limited to:
    - Grants that drive research, collaboration, training and/or innovation, such as addressing data gaps or exploring new technologies.

    - Multi-stakeholder engagement through events, networks and long-term projects that improve ecosystem cohesion and collaboration.
    - Development of skills through training programmes.

The commission will also include:

- **Interviews with key stakeholders**, as agreed on in collaboration with the Academy. This could include representatives from regulators, professional engineering institutions (PEIs), ministries, university engineering departments etc.

  We require that a minimum of three interviews are conducted in the first instance, with an opportunity for review with the Academy scheduled in, before going on to conduct more. The exact total number of interviews will be determined by the country context.

This work must be completed in three phases for each country:

Phase 1: Supplier completes an initial analysis and presents findings to the Academy.
Phase 2: Based on feedback and direction received from the Academy, further in-depth scoping is undertaken.

Phase 3: Final delivery of reports and online debrief of findings

Outputs

The Academy is seeking x3 well-structured written reports of approximately 10 pages in length each. These should build on the research and themes detailed in the 2025 Global Engineering Capability Review (GECR) and 2025 Engineers for Africa Report. Bidders can also propose other outputs they think may be beneficial. The report does not need to be designed but should be well-written, clear and to publishable standard.

The report should include:

- Key sectors for economic growth (current and aspirational, whether that be realistic or idealistic)
- Key actors in government, industry, academia and civil society/development who are either responsible for engineering skills development in the above identified sectors and/or are contributing towards addressing gaps or hindering progress.

- Key publications, policies and research, including any national development plans and/or sector development plans, that are being used at a national or regional level to inform engineering skills development.
- Socio-political and economic considerations, for example, political and economic sector momentum, economic opportunities and industry complement (e.g. size of employers, informal businesses, multinational interests), skills demand, training access and affordability etc.
- Strengths in engineering capacity in the identified sectors, including but not limited to number of engineers; quality of engineering education at technician and university level; diversity and accessibility of internships/secondment opportunities at graduate and CPD level.
- Gaps in engineering capacity in the identified sectors
- Recommendations for where the Academy can have the most impact, including further research into any of the above if not already available.
- A clear and complete bibliography and links to source data.

Working with the Academy

The successful individual/teams will be in regular contact with Catriona MacArthur, Senior Manager for the Africa programmes, and Anzet du Plessis, Programme Manager for the Africa programmes.

We would welcome a regular online check-in on progress and/or written updates on the management of the project led by the supplier(s).

Responding to the ITT

Please submit an expression of interest between 2-4 pages, setting out your response in the following structure:

- Organisational or personal background: Please clearly include the role and experience of any participating researchers
- Experience in compiling similar reports of this nature, providing at least one example
- Proposed approach to the work, including how you would:
    - build on the existing GECR and Engineers for Africa research,
    - undertake stakeholder engagement and

    - approach the phased delivery
- Relevant knowledge, experience or networks in the country /countries you are proposing to cover
- A high-level timeline, including any key dependencies
- GDPR, ethics considerations and risk management
- Cost breakdown

Please submit the proposal to catriona.macarthur@raeng.org.uk by 9am GMT on 7 December. Please note that shortlisted suppliers will be interviewed, wherein their approach and timeline will be assessed.

Budget

The budget for all three reports is £60,000 (including VAT), which can be split across different suppliers taking on specific country reports. We invite proposals to include in the costing the number of hours/days planned towards the project.

Proposal assessment criteria

1. Experience: Relevant expertise and country/context knowledge	30%
2. Approach: Quality and appropriateness of proposed approach	30%
3. Outputs: Experience in compiling similar reports of this nature	20%
4. Cost: Value for money	10%
5. Project and client management: Demonstration of ability to meet deadlines and work with the Academy team	10%

Timeline

Please note, this timeline will apply to all suppliers, whether conducting one, two or three reports:

- Deadline to submit a proposal: 9am GMT, 7 December
- Interviews: 10 December
- Review decision and contracting: Week beginning 14 December
- Phase 1 report submitted: End of January
- Feedback from the Academy: Mid-February
- Phase 2 reports submitted: End of March

- Feedback from the Academy: Mid-April
- Final reports submitted: End of May

Required reading

- Global Engineering Capability Review 2025 (GECR)
  The Global Engineering Capability Review (GECR), published by the Academy in collaboration with the Lloyd's Register Foundation, is a unique data set linking engineering capacities and safety (and identifying gaps) in 115 countries, including South Africa, Kenya, Ghana and the UK.
- 2025 Engineers for Africa report (EFA)
  The 2025 Engineers for Africa report is an update on the 2012 publication and reflects on successes, trends, recommendations and shared perspectives from across Africa towards further enhancing engineering capacity to drive development.

Use of artificial intelligence in delivery of the research

The supplier(s) must identify in its proposal any **material use of AI** that will process research data, interact with participants, or materially influence research design, sampling, data collection, coding, analysis, interpretation or substantive reporting. Routine spelling, formatting or administrative assistance need not be disclosed unless it processes research data or materially affects the work.

The supplier(s) remains fully accountable for the research methodology, evidential judgements, findings and recommendations. AI-assisted transcripts, coding, analysis, statistical work and substantive written outputs must be subject to proportionate human verification and quality assurance.

Findings must remain traceable to the underlying evidence.
The final report(s) or technical annexes must briefly describe any material AI use, including its purpose, the research stage at which it was used, the validation undertaken and any relevant limitations. The supplier(s) must notify the Academy before introducing a materially different AI use during delivery.