



Terms of Reference

“Water & Energy for Increased Food Security and Socio- Economic Development. Promoting Clean Cooking Solutions and Solar Technologies”

Consultancy Services for Baseline Studies and Selection of Communities

International Consultancy Firm

Submission deadline:

The extended deadline for submission: 10 November 2023, 23h59 Cabo Verde local time (00:59 GMT).

Disclaimer: In the event of any discrepancies or misunderstandings arising from translations or interpretations of this procurement document, the English version shall take precedence and serve as the authoritative reference. All parties involved are encouraged to seek clarification or verification in case of uncertainty regarding the content.



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1. INTRODUCTION

The ECOWAS region continues to face interrelated challenges of energy access, energy security and climate change mitigation and adaptation, which are intertwined with the region's economic development. Rural electrification rates in many countries in the region are below 10%, and overall electrification rates are well below 50%. These energy challenges are impacting negatively on the implementation of regional programmes and strategies aimed at fostering socio-economic development, attracting foreign investment, providing basic social services, and achieving the Sustainable Development Goals (SDG7) goals.

In ECOWAS region, most of the countries' economies are predominantly dependent on the agricultural and livestock sector, which contributes considerably towards their GDPs and employ at 70% of the total population, while over 80% of the rural population depend mainly on small-scale subsistence farming as their main source for sustenance and revenues. The agricultural sector is however, characterized by low productivity owing to the fact it is mostly rain-fed, thus highly subject to adverse impacts of climate change such as erratic rainy seasons, variable rainfalls, floods, droughts, bush fires and other extreme events. This affects not only to food security, but hinders socio economic development in the region.

The Water and Energy for Food (WE4F) Grand Challenge was announced at the World Water Week 2018 and launched at Social Capital Markets 2019. Energy supply, water availability and food security are intricately connected and must be addressed in a holistic approach. It is in this backdrop that we are launching the project entitled Water and Energy for Increased food Security and Socio-Economic Development, which aims to Increase food production along the value chain through a more sustainable and efficient usage of water and/or energy.

2. PROJECT BACKGROUND

The project "Water & Energy for Increased Food Security and Socio- Economic Development. Promoting Clean Cooking Solutions and Solar Technologies" is a 30 month project that will be implemented in the following 3 different countries of ECOWAS region: **Cabo Verde, Guinea Bissau and The Gambia**. Through this project, ECREEE and AECID intend to promote the adoption of solar photovoltaic technologies to produce clean energy and and water pump for agricultural purposes. This will be done alongside the promotion of clean cooking solutions in schools and health centers as well as clean and efficient fish smoking for integrated community development.



The interventions will also spur the adoption of low-carbon technologies in the communities, they will contribute to building resilience and mitigating the negative effects of climate change in the region.

2.1 General Objective of the Project

The general objective of the project is to *participate in the socio-economic development of local communities through the development of productive activities supported by sustainable energy solutions.*

As part of the project activities, solar technologies will be implemented in selected communities in order to increase production and reduce losses in agriculture and fish value-chains. Also, health and educational facilities in urban and peri-urban areas will be provided with cleaner cooking solutions that will permit the reduction of GHG emissions.

While economic development continues to move people from poverty into middle income living, this is resulting in increased demand for water, food, and energy as a consequence of consumption patterns. Even if many people are lifted out of poverty, the poorest sector of the population is growing even faster, and the actual number of poor and vulnerable populations and inequalities are increasing. Increasing demand due to population growth and economic development combined with unsustainable production methods will put increased strain on the natural resources base that is unlikely to be reversed during the foreseeable future¹.

Through these actions, SDG's will be addressed in an integrated way, and not in silos, allowing a bigger impact of the action and to increase resilience of the selected communities.

2.2 Specific Objectives of the Project

The expected outcomes of the project will be the following:

¹ Implementing the Water–Energy–Food–Ecosystems Nexus and Achieving the Sustainable Development Goals, UNESCO, European Union and IWA Publishing 2021



- Outcome 1: Improved agricultural productivity among assisted communities as a result of using solar-powered water irrigation systems.
- Outcome 2: Increased incomes of assisted fish traders.
- Outcome 3: Reduction in fish post-harvest losses.
- Outcome 4: Carbon dioxide emissions reduced as a result of using of clean cookstoves in assisted hospital or educational facilities.
- Outcome 5: Improved management of clean technologies that promote the energy efficiency and clean cooking by assisted communities.
- Outcome 6: Increased awareness about the benefits of adopting clean energy technologies in assisted communities.

The previous outcomes are expected to occur following site interventions in the three countries:

1. Provision of clean water for agricultural production.
2. Provision of industrial type of fish smoking facilities to facilitate preservation of fresh fish.
3. Provision of PV plants to feed ice cubing machines for preservation of fresh fish.
4. Provision of improved institutional cookstoves for schools / hospitals.
5. Awareness-raising workshop are held to sensitize on alternative energy, energy efficiency (clean cooking).

2.3 Planned Activities of the Project

On an operational level, a complete holistic approach which recognizes that everything is influenced by everything else is intricate and difficult to implement. Choosing a limited number of sectors to work with, such as the WEFE (Water, Energy, Food and Ecosystems) Nexus presents a more workable scale and the links are already intuitively recognized between these specific sectors, for example: the use of energy for irrigation and food production or conservation, efficient cooking technologies for energy saving and environmental preservation...

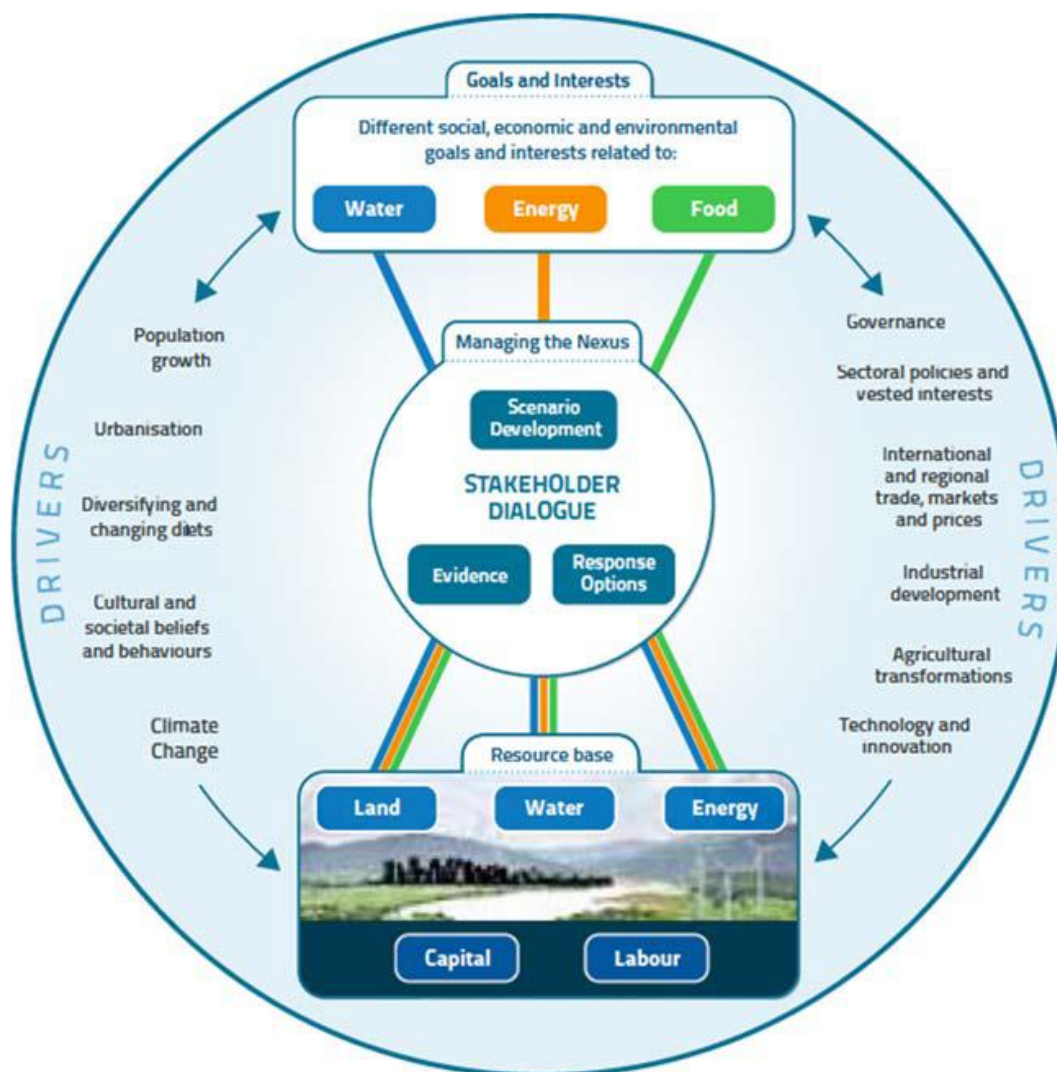


Figure 1. Presentation of the WEF Nexus Complexity (FAO).

In order to set a right approach for the planification of the activities of the project, we will rely on two of the key principles of the WEFE Nexus²:

- Recognize the interdependence between water, energy, food, and ecosystems and promote rational and inclusive dialogue and decision-making processes and efficient use of these resources in an environmentally responsible way.
- Ensure coordination across sectors and stakeholders to enable synergies and increase solution sustainability.

² Position paper on water, energy, food and ecosystems (WEFE) nexus and SDGs, JRC Technical Report, JRC114177, 2019.



Therefore, a complete study should be conducted to select certain communities where different interventions involving several sectors can be carried out in a sustainable way and ensuring that the actions will revert in socio economic development of the population. This study should be conducted in consultation with the main stakeholders of the WEF in the 3 countries.

Following this rationale, the main activities for the project are:

1. Regional Virtual Workshop with the National Focal Institutions to launch the project.
2. Baseline studies and selection of value chains and communities: Desk research will conduct to the selection of value chains. Further information of this activity, can be found in Section 3-” *Description of the assignment.*”
3. Stakeholder’s Engagement: National meetings will be organized engaging all relevant stakeholders of the sector in order to provide input into the baseline study and relevant information for the design of the site interventions and site selection.
4. Site interventions: Provision of solar pumping systems, industrial type of fish smoking facilities, PV plants to feed ice cubing machines and improved institutional cookstoves for schools / hospitals. Awareness-raising workshop will also be held to sensitize on alternative energy, energy efficiency (clean cooking).
5. Production of communication materials for scale-up and replication. On going projects under the Water, Energy and Food Programme intend to become flagship initiatives and therefore, that its activities can be expanded and replicated.
6. External Evaluation. External final evaluation of the project to determine the extent of technologies adoption, and its impact on users.

3. DESCRIPTION OF THE ASSIGNMENT

3.1 General Description



The selected company must conduct a thorough study of value chains in agriculture and fishery on each of the countries where the intervention will take place, that is, Cabo Verde, Guinea Bissau and The Gambia. For that purpose, desk research will be required, as well as consultations with national and regional stakeholders that can contribute to the results of the initial study by providing guidance, research materials, existing studies, policies, related projects developed in the regions, barriers found, possible risks and lessons learnt.

This initial study will serve as basis for the selection of the value chains that will be improved and the communities where the interventions will take place. After selection, data collection will be required in order to further assess the needs of these communities and better design the strategy of the site interventions.

A final report with recommendations for the site interventions must be produced and will serve as basis for the elaboration of the ToRs for the provision of equipment to the communities.

3.2 Activities of the Assignment

1) KICK-OFF MEETING – revise and confirm the expectations from the mission and approve calendar.

2) DESK REVIEW–with consultations with key actors, including the National Focal Institutions (NFIs) of the 3 countries and relevant stakeholders in the sector, as necessary.

The following steps will be performed:

- Sector / VC identification and Grouping. The first step of the project's value chain assessment process will be to identify the sectors and value chains that are most important to the selected countries and/or that could have market potential based on current trends. The assessment will then develop broad sector categories under which specific value chains will be grouped.

For each of the value chains identified, desk research will be conducted to gather all relevant data. The team will also conduct a stakeholder mapping exercise as part of the data collection process to determine the major players including government, development partners, national and international organisations in each sector and value chain under consideration.



The sector categories might not align with those classified by the countries' stakeholders. With this in mind, the identification and groupings will be done in consultation with stakeholders.

During this stage, National studies and any more recent documents may be taken into consideration if needed.

- Trend Analysis and Scoring: Analysis of sector/VC trends and scoring based on data collected, **including entry points for clean energy technologies:**
 - i. solar irrigation for agriculture,
 - ii. fish smoking facilities, and
 - iii. ice cubing machines.

In determining which sectors and value chains have the most potential in terms of investment, high(er)-value job creation, energy savings and energy efficiency, and revenue enhancement, the team will undertake a trend analysis of the demand side of each value chains identified in step one. This step will focus on market analysis, whereby the assessment will determine the market potential of sectors, value chains, and business activities.

The consultant will conduct a private sector mapping exercise for each sector and value chain that include potential investors, partners, government entities and potential Public-Private-Partnerships (PPP) and development partners. In addition, cross-value chain mapping of industry leaders and private sector investment funds will be conducted in order to identify those individuals and companies that can address investment, job creation, and revenue growth needs in each value chain. Once the assessment results are summarised, the key findings for each evaluation sub-criteria agreed under competitiveness potential, systemic impact and feasibility be presented in a brief narrative form.

The value chains will then be scored according to the selection criteria and sub-criteria and ranked accordingly using the Competitiveness Appraisal Matrix tool in Annex 1. An illustrative selection element is presented in table 1 below. The weights allocation and key analytical questions will be discussed and agreed with the NFIs before implementation.

Initial report will be produced to support the CAM Matrix. This will provide a comprehensive understanding of the agriculture and fishery sector landscape, including:

- emerging trends, and challenges.



- sub-sectors usage of energy and potential for increase of productivity.
- analysis of policy and regulatory and financing framework of the value chain in the countries.
- Insights of projects and technologies along the selected value chains in the beneficiary countries and other countries, maturity of the technologies, lessons learnt and impacts of similar interventions.

Six (6) communities will be proposed by the consultancy firm for site interventions. These communities must have the potential for the implementation of the site interventions:

- Potential for installation of solar irrigation equipment for the improvement of productivity of the highest scoring value chains.
- Need of preservation equipment for agriculture / fishery value chains.
- Potential for improvement of cooking devices or deployment of clean fuels for cooking in educational or healthcare institutions.

3) STAKEHOLDER'S CONSULTATION (In parallel with DESK REVIEW)

A maximum of 2 National meetings with the main stakeholders of the 3 countries in order to:

- Discuss the result of the Trends Analysis and scoring and select the value chains (4 per country).
- **Agree on the site selection with the NFI's.**
- Agree on the information that will be collected for the design of the strategy.

An **interim report** will be produced after stakeholder's consultation for the selected communities, including relevant data of each community, justification of the selection, MOM of the stakeholder's consultation and a comprehensive list of the KPI's that will serve as basis for the data collection.

Note: An indicative list of the main stakeholders in each country will be provided by the NFIs.

4) DATA COLLECTION

After approval of the interim report, data collection will be conducted in the 6 communities to complete a baseline assessment of the information approved in the interim report. An indicative list of the data that will be collected is:

- Average daily expenditures of beneficiaries in assisted communities (to be disaggregated by value chain and sex)
- MT/ha of crops harvested by assisted communities in the participating countries.
- Average number of hours in a workday spent by assisted farmers on irrigation.
- Sales revenue (in USD) of persons provided with improved fish preservation facilities.
- MT of transported fish preserved due to the use of ice-cube-making machines.
- MT of Carbon Dioxide reduced as a result of the adoption of clean cookstoves by assisted schools or healthcare centres.

This list will be revisited after stakeholders' consultation and included in the interim report.

When possible, countries will provide with the most recent data. However, the consultant must foresee 1 trip to each of the 3 countries for data collection.



This item must be included as a separate item in the financial proposal and its conveniency will be evaluated only after selection of VCs.

5) PRODUCTION OF FINAL REPORT.

Finalisation of Gaps Assessment Report, that must include the minimum following information:

- Description of Value Chains
- Baseline study of the 6 communities
- GAP assessment
- Proposed activities to fill the gaps. Identify the pain points along the VC as well as propose specific interventions prioritised by the countries.
- Risk and identified issues (for example, too ambitious activities, inappropriate activities for all countries, etc.).
- Estimate the costs and benefits of each value chain, including technologies.
- Investigate commercial competitiveness of solar energy solutions in the value chains and the extent of its affordability as an alternative source of energy for end users. Calculate the greenhouse gas emissions (GHG) savings to be derived from the renewable energy sources.
- Establish a roadmap for implementing the interventions.

4. DELIVERABLES, REPORTING and indicative SCHEDULE

Kick-off meeting	Meeting to be held one week after award
Deliverable 1: Initial Report	- 6 weeks after kick-off meeting
Deliverable 2: Interim reports	- 2 weeks after stakeholder's meeting in which the communities will be approved
Deliverable 3: Baseline Study and Final Gap Assessment Report	- 6 weeks after approval of the interim report



Reports will be submitted in electronic format and will contain references and literature consulted for the purposes of the mission. Minutes of meetings to be received within 3 days after the meeting and will be included in an annex of the reports.

The experts are obliged to respond by revising their deliverables and providing clarification to any demand for improvement, corrections and response to comments for the period up to 1 month after the end of the mission without special remuneration.

The final report and its recommendations shall be operational and supported by solid arguments. The final report shall be of high quality, well written, concise and to the point. Figures, facts and numbers (for example energy access figures) shall be linked to the sources from which they are derived.

5. EXPERTS PROFILE

The proposed team is composed of two (2) experts. A Team Leader will advise and coordinate activities.

Expert 1	Team Leader / Energy Expert
Category of expert	Senior expert, international work references
Expert Profile	<p><u>Qualification and skills</u></p> <ul style="list-style-type: none"> - University degree (or equivalent) in engineering, physics, energy law, agriculture, environmental sciences, socioeconomics, or relevant areas; - Fluent in English and Portuguese spoken and written. - Excellent reporting, structuration, and communication skills; <p><u>Professional Experience</u></p> <ul style="list-style-type: none"> - Over 20 years of general professional experience; - Experience in project management, scoping studies, and analysis of multidimensional information. <p><u>Specific professional experience</u></p> <ul style="list-style-type: none"> - Minimum 10 years of experience with sustainable energy; - Work experience in SSA countries. Knowledge of West African institutions will be an advantage. - Familiar with climate change issues; - Previous experience in projects related to the following topics: <ul style="list-style-type: none"> • Productive uses of energy • Energy efficiency • Water Energy and Food Nexus.

Expert 2	Environmental / Agriculture expert
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Category of expert	Senior expert, international work references
Expert Profile	<p><u>Qualification and skills</u></p> <ul style="list-style-type: none"> - University degree (or equivalent) in engineering, physics, energy law, environmental sciences, agronomist, socioeconomics, or relevant areas. - Fluent in English or Portuguese spoken and written. - Excellent reporting and communication skills. <p><u>Professional Experience</u></p> <ul style="list-style-type: none"> - Minimum 10 years of general professional experience. - Experience in scoping studies, analysis of multidimensional information. <p><u>Specific professional experience</u></p> <ul style="list-style-type: none"> - Minimum 5 years of experience with sustainable energy. - Experience in sustainable energy / climate change in Sub-Saharan Africa. - Previous experience in projects related to the following topics: <ul style="list-style-type: none"> • Productive uses of energy • Sustainable Agriculture • GHG calculation. • Environmental, gender and social impact assessment

6. LOCATION AND DURATION

Location: The work will be home-based.

Duration: The total duration of the assignment will be around **50 working days**, broken-down as follows.

	Home based work
Expert 1	35
Expert 2	15

The offered working days/months for the experts may differ from the estimation mentioned above, according to the proposed strategy and the associated workload in achieving the required outputs as defined in the scope of work. However, the total may not exceed the above-mentioned expert days for each expert.

Short trips: The interested consultants must propose as a separate item a short trip to each of the 3 countries (5 days each) to assess the communities selected.



7. OTHER INFORMATION

7.1 Language of the mission

The language of the mission will be English and Portuguese. The report and annexes will be in English.

7.2 Acceptance of deliverables, comments and closure of mission

The different versions of the reports will be sent to ECREEE and 3 NFI's. They will make comments on them within 15 days and final virtual meeting will be organized for adoption.

The Consultancy firm will be responsible to take into account the comments and for the presentation of the final report. If the report has many comments or is not compatible with the requirements of the Terms of Reference, it will have to be re-worked and re-submitted. After approving the deliverables by ECREEE and NFIs, the mission will be closed.

8. Evaluation Criteria

Proposals will be evaluated on the basis of:

- a) Implementation methodology.
- b) Experience of Contractor /team; and
- c) Cost effectiveness / financial proposal

9. Electronic applications

The electronic application contains the following documents:

- 1) Technical proposal including
 - Work description and methodology.



- CV of the consultants (copy of university degrees, certifications, licenses, etc. should be included in Annex);
 - Work experience related to the fields requested in section 5.
- 2) Financial Proposal in Euro (including all costs and taxes in a detailed work-time-expert-diagram indicating daily rates for individual team members). All costs are to be in Euro.

Interested consultancy firms should submit applications with the above documents by e-mail through: baseline-cc@ecreee.org clearly indicating in the subject: “Consultancy Services for baseline studies and selection of Communities”.

The extended deadline for submission is: 10 November 2023, Cabo Verde local time (0h59 GMT).

For any additional information on the proposal, you can contact Vanesa Martos Pozo at vmartos@ecreee.org, cc asessay@ecreee.org.



Annex 1: Value Chain (VC) Competitiveness Appraisal Tool Matrix

Variations on the following Matrix can be proposed by the consultancy firm in order to improve the adequacy of the compiled data for the selection of the value chains.

Selection criteria and sub-criteria	Weight	Key Analytical Questions	Data Sources
Competitiveness Potential	45%	Assesses potential for growth of the value chain	
Market demand	10%	Strength of domestic, regional and international market demand (current and projected). Has the end market been growing over the past 5 years and is it projected to grow?	<ul style="list-style-type: none"> International trade data analysis, export growth trends and global market size growth trends (international and regional markets). Domestic production and sales data over the past 5 years and trend.
Competitive advantage	15%	Do the selected countries have a long-term competitive advantage against key competitors in domestic or export end markets? Are there ready market opportunities in higher value segments?	<ul style="list-style-type: none"> Qualitative assessment based on industry interviews Interviews with end market experts and/or buyers, research on end market trends.
Upgrading potential	10%	Ability of the value chain to meet market requirements in higher value market segments and increase value added. Opportunities to address productivity gaps, via new technologies, processes and innovations, and improve competitiveness. Are required human resources available/can become available?	<ul style="list-style-type: none"> Qualitative assessment based on industry interviews Qualitative productivity benchmarking based on industry and end market interviews
Strength of investor interest/potential to attract future investments	10%	Presence of ready investors – are foreign and domestic investors looking for opportunities/seeing growth potential in the value chain? Are there key investors that have already begun investing in the selected countries and could be leveraged by the project?	<ul style="list-style-type: none"> Data on foreign and domestic investment in the sector over the past 5 years and who are the key investors/potential private sector partners for the project Qualitative assessment based on industry interviews



Systemic Impact	40%	Assesses the breadth and depth of the impact of value chain growth.	
Potential to benefit a large number of MSMEs	10%	Number of MSMEs involved (or could be involved) in the value chain and able to benefit from growth.	<ul style="list-style-type: none"> · Data on the number of firms engaged in the value chain, including an estimate of the number of small, medium and large firms (over the past 5 years)
Job creation potential	15%	Potential to create new high-value jobs within the project timeframe.	<ul style="list-style-type: none"> · Data on current employment in the value chain and, most importantly, the employment growth trends in the past 5 years
Economic opportunities for women and youth	5%	Opportunities for women, men and youth via self-employment or employment.	<ul style="list-style-type: none"> · Data on share of women and youth employed · Qualitative assessment based on interviews
Local supply chain linkages	5%	Opportunities for local suppliers and domestic backward linkages.	<ul style="list-style-type: none"> · Qualitative assessment based on industry interviews
Impact outside selected towns	5%	Will working in this value chain yield benefits to regions outside of selected towns?	<ul style="list-style-type: none"> · Qualitative assessment based on industry interviews · Data on MSMEs and employment from above, disaggregated by regions or by selected towns/outside of selected towns
Feasibility	15%	Assesses the ability to achieve results within the project timeframe.	
Private sector dynamism	5%	Strength of private sector leadership (presence of an association; readiness of private sector to invest; active participation of leading firms and vision for growth).	<ul style="list-style-type: none"> · Qualitative assessment based on industry interviews
Potential to leverage project investment via PPPs and other partnerships (sustainability)	5%	Existing eco-system for investment in the VC. Are the institutional structure, workforce, infrastructure and other elements in place to capture investor interest?	<ul style="list-style-type: none"> · Qualitative assessment based on industry interviews
Alignment with governments priorities	5%	Alignment with the Governments development priorities.	<ul style="list-style-type: none"> · Review and analysis of all relevant government strategies