



15 October 2020

## INDIVIDUAL CONSULTANT PROCUREMENT NOTICE

for individual consultants and individual consultants assigned by consulting firms/institutions

Country:	Viet Nam
Description of the assignment:	02 International Consultants to develop end-of-life solutions for solar photovoltaics and wind power systems in Viet Nam
Period of assignment/services (if applicable):	October 2020 – July 2021 (Estimated 75 working days)
Duty Station	Home-based and Ha Noi, Viet Nam
Tender reference:	3-201001

1. Submissions should be sent by email to: [luu.ngoc.diep@undp.org](mailto:luu.ngoc.diep@undp.org) no later than:

**22~~0~~ October 2020 (Hanoi time)**

With subject line:

**3-201001-IC1 International Consultant No. 1 to develop end-of-life solutions for solar photovoltaics and wind power systems in Viet Nam (estimated 50 working days)**

**3-201001-IC2 International Consultant No. 2 to develop end-of-life solutions for solar photovoltaics and wind power systems in Viet Nam (estimated 25 working days)**

Submission received after that date or submission not in conformity with the requirements specified in this document will not be considered.

### Note:

- Any individual employed by a company or institution who would like to submit an offer in response to this Procurement Notice must do so in their individual capacity, even if they expect their employers to sign a contract with UNDP.
- Maximum size per email is **35 MB**.
- Any request for clarification must be sent in writing, or by standard electronic communication to the address or e-mail indicated above. Procurement Unit – UNDP Viet Nam will respond in writing or by standard electronic mail and will send written copies of the response, including an explanation of the query without identifying the source of inquiry, to all consultants.

- After submitting proposal, bidder should send notification by email (without attachment) to: [procurement.vn@undp.org](mailto:procurement.vn@undp.org) informing that the bidder has submitted proposal. UNDP will not be responsible for the missing of proposal if the bidder does not send notification email to above address.
- Female consultants are encouraged to bid for this required service. Preference will be given to equally technically qualified female consultants.

## 2. Please find attached the relevant documents:

- [Terms of Reference \(TOR\)](#)..... (Annex I)
- [Individual Contract & General Conditions](#)..... (Annex II)
- [Reimbursable Loan Agreement](#) (for a consultant assigned by a firm).....(Annex III)
- [Letter to UNDP Confirming Interest and Availability](#) ..... (Annex IV)
- [Financial Proposal](#) .....(Annex V)

## 3. Interested individual consultants must submit the following documents/information (in English, PDF Format) to demonstrate their qualifications:

### a. Technical component:

- Signed Curriculum vitae with copies of required certificates
- Signed Letter to UNDP Confirming Interest and Availability
- **Two (02) sample reports for track record of good quality analytical report writing, and/or academic publications in English**

### b. Financial proposal (with your signature):

- The financial proposal shall specify a total lump sum amount in **Viet Nam Dong for National Consultant and US Dollar for international consultant** including consultancy fees and tax, insurance etc. – see format of financial offer in Annex V.
- Please note that the cost of preparing a proposal and of negotiating a contract, including any related travel, is not reimbursable as a direct cost of the assignment.
- If quoted in other currency, prices shall be converted to the above currency at UN Exchange Rate at the submission deadline.

## 4. Evaluation

The technical component will be evaluated using the following criteria:

International Consultant No. 1		
No	Criteria	Score
1	Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/management, business management, economics or related fields;	200
2	At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/ circular economy/ cleaner production. Experience in policy research and evidence-based analyses on waste management/circular economy/cleaner production;	300
3	Work experience in renewable energy sector (solar and wind) and knowledge and experience of waste management in the renewable energy systems is preferred;	250
4	Experience in working in developing countries for donor supported projects in relevant fields;	150

5	Track record of good quality analytical report writing, and/or academic publications in English ( <b>two sample reports must be submitted</b> ).	100
	<b>Total</b>	<b>1,000</b>

<b>International Consultant No. 2</b>		
<b>No</b>	<b>Criteria</b>	<b>Score</b>
1	Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/management, business management, economics or related fields;	200
2	At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/ circular economy/ cleaner production. Experience in policy research and evidence-based analyses on waste management/circular economy/cleaner production;	300
3	Work experience in renewable energy sector (solar and wind) and knowledge and experience of waste management in the renewable energy systems is preferred;	200
4	Experience in working in developing countries for donor supported projects in relevant fields. Previous experience of working in Viet Nam is preferred;	200
5	Track record of good quality analytical report writing, and/or academic publications in English ( <b>two sample reports must be submitted</b> ).	100
	<b>Total</b>	<b>1,000</b>

A two-stage procedure is utilized in evaluating the submissions, with evaluation of the technical components being completed prior to any price proposals being opened and compared. The price proposal will be opened only for submissions that passed the minimum technical score of 70% of the obtainable score of 1000 points in the evaluation of the technical component.

The technical component is evaluated on the basis of its responsiveness to the Term of Reference (TOR).

Maximum 1000 points will be given to the lowest offer and the other financial proposals will receive the points inversely proportional to their financial offers. i.e.  $S_f = 1000 \times F_m / F$ , in which  $S_f$  is the financial score,  $F_m$  is the lowest price and  $F$  the price of the submission under consideration.

The weight of technical points is 70% and financial points is 30%.

Submission obtaining the highest weighted points (technical points + financial points) will be selected **subject to positive reference checks** on the consultant's past performance.

Interview with the candidates may be held if deemed necessary.

## 5. Contract

"Lump-sum" Individual Contract will be applied for freelance consultant (Annex II)

"Lump-sum" RLA will be applied for consultant assigned by firm/institution/organization (Annex III)

Documents required before contract signing:

- International consultant whose work involves travel is required to complete the BSAFE course and submit certificate to UNDP before contract issuance.

Note: In order to access the course, please go to the following link:

<https://training.dss.un.org/course/category/6>. Type in your name and password, create a new user. After you have completed the courses, please print/save the certificates to submit to us

- Full medical examination and Statement of Fitness to work for consultants ***from and above 62 years of age and involve travel.*** (This is not a requirement for RLA contracts).
- Release letter in case the selected consultant is government official.

## **6. Payment**

UNDP shall effect payments to the consultant (by bank transfer to the consultant's bank account provided in the vendor form) upon acceptance by UNDP of the deliverables specified the TOR.

### **For IC No. 1:**

- 1) 20% of the contract value will be made upon submission and acceptance of the inception report;
- 2) 40% of the contract value will be made upon submission and acceptance of the interim report;
- 3) 40% of the contract value will be made upon submission and acceptance of the final report and all products under the contract.

### **For IC No. 2:**

- 1) 50% of the contract value will be made upon submission and acceptance of the written inputs and feedbacks to the interim report;
- 2) 50% of the contract value will be made upon submission and acceptance of the inputs and feedbacks to the final report and all products under the contract;

If two currencies exist, UNDP exchange rate will be applied at the day UNDP instructs the bank to effect the payment.

## **7. Your proposals are received on the basis that you fully understand and accept these terms and conditions.**

## TERMS OF REFERENCE

Consultancy service	02 International Consultants and 1 National Firm/Institution to develop end-of-life solutions for solar photovoltaics and wind power systems in Viet Nam
Location	Home-based and Hanoi
Duration	October 2020 to July 2021 Total working days (estimated): <ul style="list-style-type: none"> <li>- 50 working days – International Consultant No.1</li> <li>- 25 working days – International Consultant No.2</li> <li>- 100 working days – National firm/institution</li> </ul>
Report to	Head of Climate Change and Environment, UNDP
Technical Supervision	Programme Analyst, Climate Change and Environment, UNDP

### 1. BACKGROUND

Viet Nam is among the fastest growing economies in the world, but its economic growth is characterized by a high energy and carbon intensity. Viet Nam's GHG emissions are projected to increase threefold by 2030 compared to 2010 level and hence, the Government of Viet Nam has encouraged climate change mitigation alongside economic growth. The Government of Viet Nam ratified the Paris Agreement of the United Nations Framework on Climate Change and also adopted the Plan for Implementation of the Paris Agreement. The updated NDC was approved by the Government of Viet Nam in July 2020 with the greenhouse gas emission reduction target of 9 percent unconditionally and up to 27 percent with international support to be achieved by year 2030 compared to the business as usual.

The climate change mitigation strategy of the Government of Viet Nam has a strong emphasis on the development of renewable energy resources, especially solar photovoltaic (PV) and wind-based power (WP) generation. Resolution 55 by the Central Committee of the Party on "Orientations for the Viet Nam National Energy Development Strategy to 2030 and Outlook to 2045 ("Resolution 55" of the Politburo) envisages renewable energy accounting for 15-20% of the primary energy in 2030 and 25-30% in 2045. The National Energy Development Master Plan for the period 2021-2030 with a vision to 2050 and the new Master Plan for Power Development for 2021-2030 (PDP8) with the vision to 2045 also anticipates a strong contribution from renewable energy sources.

Viet Nam has a high potential for both solar and wind-based power. Only a small fraction of this has been developed so far, but there has been a sharp increase in 2019, with 4.5 GW of solar and 0.45 GW of wind in operation by the end of June 2019. The solar PV potential is estimated at around 380 GW (economic potential) mostly concentrated in the south, south central, and highlands regions. The total

potential of onshore wind power is estimated at 217 GW (technical potential), mainly concentrated in the south, highlands, and south-central regions. While decision makers have started addressing various challenges for further market development for both solar PV and wind power, including expansion of the transmission and distribution network, the management of the waste generated by these technologies has received very little attention in Viet Nam. Experts forecast thousands of tons of solar modules, wind turbine blades, and other components will need to be refurbished, reused, recycled or safely disposed, in the next few decades. A lot of effort goes into making many of these equipment's and their sub-components such as turbine blade composites, and high-purity photovoltaic silicon. Manufacturers also face spiking costs and supply constraints for the raw materials needed for the manufacturing of PV panels and wind generator components.

Some compounds—including silver, aluminum, indium, gallium, and tellurium used in PV modules—might have a high value for recycling and recovery, while other compounds such as cadmium and selenium are considered to be hazardous. Hence it is important to refurbish, reuse or recycle as much as possible and reduce the quantity of hazardous waste or that which needs to be sent to landfills. However, disassembling or recovering materials from discarded devices is also a challenge which in some cases requires dedicated technologies and infrastructures. However, a limited number of these equipment's have reached their end of life to make investments worthwhile in installing or upgrading facilities such as that for recycling.

The Government of Viet Nam adopted the amended National Strategy of Integrated Solid Waste Management up to 2025, vision towards 2050 (491/QĐ-TTg Decision). The Strategy has made clear the integrated approach of solid waste management by which the 3Rs (reduce, reuse, recycle) should be strengthened while landfilling should be limited. The Government also has a plan to review and assess suitable models for circular economy proposed for the next 10-year Socio-economic Development Strategy (SEDS) 2021-2030 and 5-year Socio-economic Development Plan (SEDP) 2021-2025. However, the equipment for the generation of electric power (not only wind generators and PV plants, but also conventional plants) in Vietnam have not been included in the circular economy approach, as no standards or requirement for the end of life management of these equipment has been considered in Vietnam.

UNDP is recruiting a team of two international consultants and a national institution/firm for an assignment to support the Government of Viet Nam in identifying end of life solutions that could be applied to the solar PV and wind power industry in Viet Nam.

## 2. OBJECTIVE OF THE ASSIGNMENT

The objective of the assignment is to i) conduct an assessment of the flow of materials and waste generated during the operation and end of life stage of photovoltaic and wind generation plants in Vietnam, and to ii) propose a solution for the reuse, recycling and management of such materials and wastes, taking into account the international experiences and expected life of the PV and WP plants, the specific Vietnamese trend of renewable energy generation and the presence and needs of infrastructure in Vietnam for the re-processing and disposal of the material and waste generated.

## 3. SCOPE OF WORK AND RESPONSIBILITIES

The international experts will provide guidance and advises to the national team in performing assigned tasks and get the work done as team. The national firm/institution shall make available a team of national experts with a national focal point to work closely with the international consultants (ICs) and share responsibilities during the implementation of the assignment.

The main scope of the work concern for each of PV and WP industries:

- 1) Review the international literature available and assess end of life solutions for solar PV and wind power (WP) systems with specific international experiences from relevant countries

where the market of wind generation is already consolidated since more than 20 years and/or countries that are now facing the issue of dismantling and recycling of RE installation.

- 2) The assessment of the amount and composition of materials generated during the operation and end of life stage of wind generators and Photo-Voltaic panels in Viet Nam including:
  - a. Waste generated during maintenance operations;
  - b. Maintenance and replacement of technological components (for instance, gearboxes, generators for wind turbines; panels, inverters for PV panels)
  - c. Waste generated as end of life of the equipment entailing the replacement of the whole systems
- 3) The assessment of the existing regulatory framework, current practices and existing and infrastructures for the management of the above waste in Vietnam.
- 4) The proposal of a technical and regulatory approaches for the recycling of components and entire systems of PV and Wind turbine generation plants.

During the assignment, the team shall undertake necessary consultation with experts and authorities supported and/or organized by UNDP and the selected consulting institution/firm to elaborate and finalize all the products. The team shall also conduct regular team meetings (once in every two to four weeks) and participate in technical consultation meetings organized by UNDP.

### 3.1. TASKS FOR ICs

The international consultants will be responsible for the following tasks.

- 3.1.1. **Develop an inception report** on the assignment explaining the scope of work, the methodology, the report structure and the work plan and Conduct online consultations with the relevant agencies including, Ministry of Industry and Trade (MOIT), Ministry of Natural Resources and Environment (MONRE), Ministry of Construction (MOC), Ministry of Science and Technology (MOST) and other key stakeholders and based on feedbacks, finalize the inception report. This task will be led by the IC No.1 with inputs by the IC No. 2 and the NC team.

- 3.1.2. **As far as Wind generation plants are concerned:** IC No. 1 will undertake the following tasks with support by the IC No.2 and NC team:

- 1) With reference to waste generated from wind power systems or equivalent waste streams, identify and evaluate existing solid waste management including recycling approaches, good practices and costs of waste management, etc. being applied globally. The review shall focus on countries where the market of WP system is already mature/ consolidated since than 20 years with a substantial fraction of the installation reaching its end of life and are now facing the issue of dismantling and recycling of WP equipment. Recommended countries for this analysis would be Denmark, Finland, Sweden, Germany, the Netherland, USA, China. The analysis will include the following but may not be limited to:
  - Assess the of current status of flow of materials and equipment which have reached their end of life.
  - For each of category of materials generated, assess existing physical infrastructure/ established systems and policy frameworks for waste management, disposal, reuse, recycling and re-processing end-of-life waste and equipment
  - Review the best practices, challenges and cost of identified end-of-life solutions

- 2) With the objective to assess the existing installed capacity of wind farm in Viet Nam and project the expected installed capacity till 2030 with the vision up to 2045,
  - a. Design an inventory of the Wind Turbine farms in Vietnam including year of installation, capacity of the entire farm and of the turbines, brand of the turbines and technology adopted,
  - b. Support the national firm/institution the implementation of the inventory;
  - c. Integrate the inventory of the existing Wind Turbine farms with information concerning new installation expected in the short/mid-term in Vietnam.
- 3) Based on the inventory result, estimate the flow of materials and equipment which will reach their end of life by year, including:
  - a. Foundation (concrete, steel);
  - b. Towers (steel);
  - c. Housing of the nacelle (Steel, Glass Reinforced Plastics)
  - d. Gear boxes (Iron)
  - e. Generators (Steel, Iron, Copper, rare earth metals)
  - f. Hub (Cast Iron, Glass Reinforced Plastic)
  - g. Rotor and blades (Glass Reinforced Plastic, Carbon Reinforced Plastic, etc.)
  - h. Electronic components (plastic, copper, gold, aluminum, several metals)
  - i. Cables (plastic, copper)
- 4) For each category of materials generated, assess the possible disposal and recycling options taking account the material processing facilities existing in Vietnam, (for Iron, Steel and nonferrous metal components) and the waste management options for non-recyclable or hard to be recycled components (blades) as well as the classification of waste as hazardous or nonhazardous.
- 5) The following end of life management options should be discussed.
  - a. Re-use of components or entire systems with forecast of associated cost;
  - b. Recycling, recovery and disposal with forecast of associated cost:
    - i. Export or domestic recycling of metal including steel;
    - ii. Blade materials (incineration, co-incineration, mechanical grinding, mixing with concrete, landfilling)
  - c. Electronic waste disposal with forecast of associated cost: export or process in existing facilities in Vietnam.
- 6) Collect international experiences in operating offshore wind power projects focusing on offshore turbine and construction technologies; safety issues for navigation and the offshore ecosystem, etc.

### **3.1.3. As far as Photo Voltaic panels are concerned**

The management of the end of life of the two main PV cell technologies will have to consider mainly the crystalline silicon (c-Si), which is the dominant cell technology of existing and currently sold modules; compound PV technology, which includes thin film modules like cadmium-telluride (CdTe) and copper-indium-gallium-selenium (CIGS) will be considered only if relevant to Vietnam and in the perspective of increase of its use.

Similar to the Wind generation, the IC No.1 will undertake the following tasks with inputs/feedbacks by the IC No. 2 and the NC team:

- 1) With reference to waste generated from solar PV or equivalent waste streams, identify and evaluate existing solid waste management including recycling approaches, good practices and costs of waste management being applied globally. This shall focus on countries where the market of PV system is already mature/ consolidated since than 20 years with a substantial fraction of the installation reaching its end of life and are now facing the issue of dismantling and recycling of PV equipment. Recommended countries for this analysis would be at least



Italy, Germany or other EU countries, China, United States. The analysis shall include but may not be limited to

- Assess the of current status of flow of materials and equipment which have reached their end of life
  - For each of category of materials generated, assess existing physical infrastructure/ established systems and policy frameworks for waste management, disposal, reuse, recycling and re-processing end-of-life waste and equipment
- 2) Review the best practices, challenges and cost of identified end-of-life solutions. With the objective to assess the existing installed capacity of PV generation in Viet Nam and project the expected installed capacity till 2030 with a vision up to 2045,
- a. Design an inventory of PV installation in Vietnam
  - b. Support the national firm/institution in the implementation of the inventory;
  - c. Integrate the inventory of the existing PV generation plants with information concerning new installation expected in the short/midterm in Vietnam
- 3) Based on the inventory result, estimate the flow of materials and equipment which will reach their end of life by year, including:
- a. PV panels by category, and their content in term of:
    - i. Glass
    - ii. Plastic
    - iii. Aluminum frame
    - iv. Silicon
    - v. Metals
    - vi. Rare earth Metals
  - b. Inverters;
  - c. Frames and stands
  - d. Cables
- 4) For each category of materials generated, assess the possible disposal and recycling options taking account the material processing facilities existing in Vietnam and the following:
- a. The recycling process of silicon-based PV panels starts with disassembling the actual product to separate aluminum and glass parts. Almost all (95%) of the glass can be reused, while all external metal parts are used for re-molding cell frames. The remaining material are usually treated in thermal processes which allows for the recovery of the silicon wafers which may be recycled into new silicon modules.
  - b. The recycling process of thin film PV panels entails usually shredding, grinding, separation of the liquid from the solid materials, purification of the liquid with recovery of semiconductors, and recovery of glass with removal of the interlayer materials.
- 5) The following end of life management options should be discussed.
- a. Re-use of components or entire systems with forecast of associated cost;
  - b. Recycling, recovery and disposal with forecast of associated cost;
  - c. Electronic waste disposal with forecast of associated cost: export or process in existing facilities in Viet Nam.

**3.1.4. On the basis of the analysis conducted above, the ICs will develop:**

- a) A draft interim report containing both international analysis and national assessment with details as presented in the above scope of work. The report shall cover two separate parts for each PV and WP systems. *(This task will be led by the IC No.1 with support by IC No.2 and the NC team).*

- b) Based on the interim report, prepare a final report that include but may not be limited to the following suggested elements.
  - a. Recommendations for the management of waste generated from solar PV and wind power industry in Viet Nam, based on the international level analysis and national level assessments of the waste from solar PV and wind power systems.
  - b. Proposed viable end of life solutions including circular economy approaches that can be implemented in the solar PV and wind power industry supply chain in Viet Nam at each stage of the product life cycle such as in design, product use and end of life stages, including appropriate material re-processing and waste management practices. Assess positive and negative impacts of the proposed approaches and how the risks could be managed
  - c. How to strengthen the enabling environment to facilitate the changes, such as changes needed to policies and regulations, capacity building needs, strengthening of institutional framework, establishment of network for the recycling and re-processing of materials, how public and private finance and public procurement can be leveraged, strengthening monitoring and evaluation systems etc.
  - d. Specific next steps that need to be taken by the industry as a whole, and by key stakeholders, such as the Government/ decision makers, business and investors

*The final report will be consolidated by the IC No.1 while the recommendation section will be prepared by the IC No.2 with support by the IC No.1 and NC team.*

- 3.1.5. Present the findings of the draft report and final report to key stakeholders through an online or face-to-face meeting.

### 3.2. TASKS FOR NATIONAL FIRM/INSTITUTION

The national firm/institution will be responsible for assisting in the implementation of the assignment and providing inputs to the international consultant for the deliverables specified in the TOR. The firm/institution shall make available national experts who will work under the leadership of the international consultant and ensure that the materials are delivered before the due date.

#### **Specific tasks for national firm/institution:**

- a) Provide inputs to the inception report of the assignment, especially in terms of collecting data and information and translating it where needed and reviewing the inception report
- b) Conducting consultations with the MOIT, MONRE, MOC, MOST and other key stakeholders and based on feedbacks, support the finalization of the inception report. This will also include developing presentation materials, translation of documents where needed, and preparing the meeting minutes
- c) Provide inputs and comments on the international level analysis for end of life solutions from solar PV and WP systems or equivalent waste streams and discuss with the IC on the feasible solutions that can be recommended to Viet Nam
- d) Implement the inventory of the wind generation and photo-voltaic installation with elements as described in the scope of work of the International Consultant and based on the inventory structure developed by the International Consultant and based on access to maximal number of available FSs of PV and WP projects and discussion with relevant developers of large projects.

- e) Based on guidance by the ICs, collect and provide data and information for the national level assessment for solid waste from solar PV and WP systems or equivalent waste streams, which includes but may not be limited to:
  - The quantum of solid waste that would be generated by each of PV and WP systems per year in the near and long term in Viet Nam. Identify the quantum of such waste that has to be managed within Viet Nam and their value, also considering cross border movement (import, export, re-export) of such waste.
  - Review public policies and legislations at the national and local levels with analyses of elements and provisions that are relevant to the disposal and management of wastes from PV and WP systems
  - Identify existing and projected infrastructure for material re-processing (iron and steel, secondary metal, glass factories), recycling and solid waste management, including landfill capacity and the recycling infrastructure; waste management practices (sorting, waste collection, transportation); human resources, technology, business models, financing models, cost of waste management, key players and stakeholders involved, etc.
  - Identify the key opportunities and challenges/ barriers for end of life solutions for PV and WP systems, including technical, financial, economic, institutional, social, environmental and that related to information/ data
  - Discuss with the ICs on the identified and viable end of life management solutions for PV and WP systems with forecast of associated costs.
- f) Present the findings of the draft report to key stakeholders through an online/ offline meeting, including developing presentation materials, translation of documents where needed, and taking notes of comments and feedbacks by stakeholders
- g) Support in organization of the consultation workshop and final workshop based on further discussion and agreement with UNDP during the implementation
- h) Provide inputs to support the ICs to finalize the interim and final reports, based on feedbacks received from stakeholders
- i) Review the report drafted by the ICs at various stages of finalization, including translating the draft report into Vietnamese and finalize the report in Vietnamese based on the final English report.

#### 4. DURATION OF ASSIGNMENT, DUTY STATION AND EXPECTED PLACES TO TRAVEL

The contract duration: From date of signature to 31 July 2021.

Estimated number of working days for ICs:

- 50 working days for the IC No.1
- 25 working days for the IC No.2

Estimated number of working days for National Firm: 100 working days

Duty Station: Home-based and Hanoi, Viet Nam

Due to restrictions imposed by Covid, travel by the ICs to Viet Nam is not anticipated. In case the situation improves, and travel is possible, the possibility of the ICs to make a 5 working day trip to Hanoi and other cities and provinces would be explored. The cost for international travel (economy class) and 6 per-diems in Ha Noi will be included in the financial offer by the ICs. For all domestic trips within Viet Nam (from Hanoi), the eligible cost for travel will be covered by UNDP based on UNDP policy and/or UN-EU cost-norm.

Local travel (if any) will be discussed and agreed during the inception phase. The eligible cost for all such travel will be covered by UNDP based on UNDP policy and/or UN-EU cost-norm.

During the implementation, the national institution/firm might be asked to provide logistical support in organisation of the consultation and result dissemination workshops. Eligible and associated cost for this support shall be covered by UNDP based on UNDP policy and/or UN-EU cost-norm and will be reflected in the contract amendment.

## 5. DELIVERABLES

### 5.1. FOR ICs

The international experts are expected to submit following deliverables:

#	Deliverables (in English) by IC No.1	Deliverables (in English) by IC No.2	Deadline
1	Inception report explaining the scope of work, the methodology, the report structure and the work plan	Written inputs and feedbacks to the Inception Report	10 days upon the signing of the contract
2	Draft interim report containing both international level analysis and national assessment with details as presented in the above scope of work. The report shall cover separate section for each PV and WP system	Written inputs to the international assessment including recommended accessible sources to international experiences, and relevant researches, studies  Written feedbacks and comments to the interim report including the international and national assessments	15 December 2020
3	Draft report and Power point presentations and meeting minutes for the consultation workshop and final workshop	Draft section of recommendations with specific technical solutions as inputs to the final report  Written feedbacks and comments on the draft report and PowerPoint Representation	28 February 2021
4	Final report that bases on the interim report including conclusion and recommendations as detailed in the scope of work		30 March 2021

### 5.2. FOR NATIONAL FIRM/INSTITUTION

The national firm/institution is expected to submit following deliverables:

#	Deliverables	Deadline
1	Inputs for the IC No. 1 for preparation of inception report including details of the sector/sub-sectors, countries, stakeholders and workplan for the project (in English)	10 days upon the signing of the contract
2	Inputs and comments to the international assessment by the IC and inputs to the interim report including Inventory of PV and WP plants and associated material flows and national level assessment of waste generated from PV and WP systems (in English)	15 November 2020
3	Comments to the interim report (in English)	30 December 2020
4	Inputs and comments to the draft version of the final report (in English) and a	15 March 2021

	translated version of the final report in Vietnamese Draft and final versions of power point presentations (in both English and Vietnamese)	
5	Final report in Vietnamese; and meeting minutes focusing on feedback received from the consultation workshop and final workshop	30 March 2021

## 6. PROVISION OF MONITORING, PROGRESS CONTROL

The national firm/institution will assign a national focal point who will represent the national expert team and will work closely with the International expert and UNDP officer during the assignment. The team shall report to the Head of Climate Change and Environment, UNDP based on the agreed work-plan.

## 7. ADMINISTRATIVE SUPPORT AND REFERENCE DOCUMENTS

UNDP will provide administrative support to the consultants to undertake research and assessment and logistic arrangement during any mission in Viet Nam, as well as for arranging online consultations if needed.

## 8. QUALIFICATION AND WORK EXPERIENCE

### 8.1. FOR IC No.01

- Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/management, business management, economics or related fields
- At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/ circular economy/ cleaner production
- Work experience in renewable energy sector (solar and wind) and knowledge and experience of waste management in the renewable energy systems is preferred
- Experience in policy research and evidence-based/technical analyses on waste management/circular economy/cleaner production
- Experience in working in developing countries for donor supported projects in relevant fields
- Track record of good quality analytical report writing, and/or academic publications in English

### 8.2. FOR IC No.2

- Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/management, business management, economics or related fields
- At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/ circular economy/ cleaner production
- Work experience in renewable energy sector (solar and wind) and knowledge and experience of waste management in the renewable energy systems is preferred
- Experience in policy research and evidence-based/technical analyses on waste management/circular economy/cleaner production
- Experience in working in developing countries for donor supported projects in relevant fields. Previous experience of working in Viet Nam is preferred
- Track record of good quality analytical report writing, and/or academic publications in English

### 8.3. FOR NATIONAL FIRM/INSTITUTION

**For firm/institution**

- At least 10 years relevant experience in research, consultancy and policy advise in waste management and/or environment assessment and management. Relevant experience in renewable energy systems/technologies is preferred
- Demonstrated expertise in renewable energy systems particularly wind and solar power technologies
- Strong experience in working with and providing services to the government agencies and donor-supported agencies in relevant areas

For **national experts**: the firm/institution shall make available an expert team including the national focal point with sufficient qualification required for the assignment. The team shall possess:

- Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/ management, business management, economics or related fields
- At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/circular economy/cleaner production
- Experience in policy research and evidence-based analyses on waste management/circular economy/cleaner production
- Proven knowledge of the sectors/sub-sectors in Viet Nam in areas of waste management/ circular economy/ cleaner production. Work experience/knowledge in renewable energy sector (solar and wind) and waste management in the renewable energy systems is preferred
- Experience in working with government, institutions and donor-supported agencies
- Proficient in English.

**9. PAYMENT TERM****9.1. FOR IC No. 01**

Payment will be made after the contract deliverables are accepted by UNDP and based on the following milestones:

- First payment of 20% of the contract value will be made upon submission of the inception report with acceptance by UNDP
- Second payment of 40% of the contract value will be made upon submission of the interim report with acceptance by UNDP
- Last payment of 40% of the contract value will be made upon submission and acceptance of that final report and all products under the contract.

**9.2. FOR IC No. 02**

Payment will be made after the contract deliverables are accepted by UNDP and based on the following milestones:

- First payment of 50% of the contract value will be made upon submission of the written inputs and feedbacks to the interim report with acceptance by UNDP
- Second and last payment of 50% of the contract value will be made upon submission of inputs and feedbacks to the final report and all products under the contract with acceptance by UNDP.

**9.3. FOR NATIONAL FIRM/INSTITUTION**

Payment will be made after the contract deliverables are accepted by UNDP and based on the following milestones:

- First payment of 20% of the contract value will be made upon submission and acceptance of the inputs to the inception report and inputs to the international level assessment

- Second payment of 50% of the contract value will be made upon submission and acceptance of the inputs to the interim report including Inventory of PV and WP plants and associated material flows and national level assessment of waste generated from PV and WP systems
- Last payment of 30% of the contract value will be made upon submission and acceptance of inputs to the final report and all products under the contract.

#### 10. PRESENCE REQUIRED ON DUTY STATION / UNDP OFFICE

☐ NONE  
 FULL-TIME

☐ PARTIAL

☒ INTERMITTENT

☐

## EVALUATION CRITERIA

### For International Consultant No.1

Consultant(s)' experiences/qualification related to the services		
1	Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/management, business management, economics or related fields	200
2	At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/ circular economy/ cleaner production. Experience in policy research and evidence-based analyses on waste management/circular economy/cleaner production	300
3	Work experience in renewable energy sector (solar and wind) and knowledge and experience of waste management in the renewable energy systems is preferred	250
4	Experience in working in developing countries for donor supported projects in relevant fields	150
5	Track record of good quality analytical report writing, and/or academic publications in English ( <b>two sample reports must be submitted</b> )	100
Total		1000

### For International Consultant No.2

Consultant(s)' experiences/qualification related to the services		
1	Master's degree or higher qualification in chemistry, biology, environmental studies/environmental science/environmental engineering, chemical engineering, civil engineering, energy technology/management, business management, economics or related fields	200
2	At least 7 years of working experience in the design/ operation/ maintenance/ management/ consulting in waste management/ circular economy/ cleaner production. Experience in policy research and evidence-based analyses on waste management/circular economy/cleaner production	300
3	Work experience in renewable energy sector (solar and wind) and knowledge and experience of waste management in the renewable energy systems is preferred	200
4	Experience in working in developing countries for donor supported projects in relevant fields. Previous experience of working in Viet Nam is preferred	200
5	Track record of good quality analytical report writing, and/or academic publications in English ( <b>two sample reports must be submitted</b> )	100
Total		1000



## **ANNEX IV**

### **OFFEROR'S LETTER TO UNDP CONFIRMING INTEREST AND AVAILABILITY FOR THE INDIVIDUAL CONTRACTOR (IC) ASSIGNMENT**

Date \_\_\_\_\_

*(Name of Resident Representative/Bureau Director)*  
United Nations Development Programme  
*(Specify complete office address)*

Dear Sir/Madam:

I hereby declare that:

- A) I have read, understood and hereby accept the Terms of Reference describing the duties and responsibilities of *[indicate title of assignment]* under the *[state project title]*;
- B) I have also read, understood and hereby accept UNDP's General Conditions of Contract for the Services of the Individual Contractors;
- C) I hereby propose my services and I confirm my interest in performing the assignment through the submission of my CV which I have duly signed and attached hereto as Annex 1;
- D) In compliance with the requirements of the Terms of Reference, I hereby confirm that I am available for the entire duration of the assignment, and I shall perform the services in the manner described in my proposed approach/methodology which I have attached hereto as Annex 3 *[delete this item if the TOR does not require submission of this document]*;
- E) I hereby propose to complete the services based on the following payment rate: *[please check the box corresponding to the preferred option]*:
  - ☐ An all-inclusive daily fee of *[state amount in words and in numbers indicating currency]*
  - ☐ A total lump sum of *[state amount in words and in numbers, indicating exact currency]*, payable in the manner described in the Terms of Reference.
- F) For your evaluation, the breakdown of the abovementioned all-inclusive amount is attached hereto as Annex V;
- G) I recognize that the payment of the abovementioned amounts due to me shall be based on my delivery of outputs within the timeframe specified in the TOR, which shall be subject to UNDP's review, acceptance and payment certification procedures;
- H) This offer shall remain valid for a total period of \_\_\_\_\_ days *[minimum of 90 days]* after the submission deadline;
- I) I confirm that I have no first degree relative (mother, father, son, daughter, spouse/partner, brother or sister) currently employed with any UN agency or office *[disclose the name of the relative, the UN office employing the relative, and the relationship if, any such relationship exists]*;
- J) If I am selected for this assignment, I shall *[please check the appropriate box]*:

- ☐ Sign an Individual Contract with UNDP;
- ☐ Request my employer [*state name of company/organization/institution*] to sign with UNDP a Reimbursable Loan Agreement (RLA), for and on my behalf. The contact person and details of my employer for this purpose are as follows:

K) I hereby confirm that [*check all that applies*]:

- ☐ At the time of this submission, I have no active Individual Contract or any form of engagement with any Business Unit of UNDP;
- ☐ I am currently engaged with UNDP and/or other entities for the following work:

Assignment	Contract Type	UNDP Business Unit / Name of Institution/Company	Contract Duration	Contract Amount

- ☐ I am also anticipating conclusion of the following work from UNDP and/or other entities for which I have submitted a proposal:

Assignment	Contract Type	Name of Institution/ Company	Contract Duration	Contract Amount

L) I fully understand and recognize that UNDP is not bound to accept this proposal, and I also understand and accept that I shall bear all costs associated with its preparation and submission and that UNDP will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the selection process.

M) **If you are a former staff member of the United Nations recently separated, please add this section to your letter:** I hereby confirm that I have complied with the minimum break in service required before I can be eligible for an Individual Contract.

N) I also fully understand that, if I am engaged as an Individual Contractor, I have no expectations nor entitlements whatsoever to be re-instated or re-employed as a staff member.

O) Are any of your relatives employed by UNDP, any other UN organization or any other public international organization?

YES ☐ NO ☐ If the answer is "yes", give the following information:

Name	Relationship	Name of International Organization

P) Do you have any objections to our making enquiries of your present employer?

YES ☐ NO ☐

Q) Are you now, or have you ever been a permanent civil servant in your government's employ?

YES ☐ NO ☐ If answer is "yes", WHEN?

R) REFERENCES: List three persons, not related to you, who are familiar with your character and qualifications.

Full Name	Full Address & Email Address	Business or Occupation

S) Have you been arrested, indicted, or summoned into court as a defendant in a criminal proceeding, or convicted, fined or imprisoned for the violation of any law (excluding minor traffic violations)?

YES ☐ NO ☐ If "yes", give full particulars of each case in an attached statement.

I certify that the statements made by me in answer to the foregoing questions are true, complete and correct to the best of my knowledge and belief. I understand that any misrepresentation or material omission made on a Personal History form or other document requested by the Organization may result in the termination of the service contract or special services agreement without notice.

DATE: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

NB. You will be requested to supply documentary evidence which support the statements you have made above. Do not, however, send any documentary evidence until you have been asked to do so and, in any event, do not submit the original texts of references or testimonials unless they have been obtained for the sole use of UNDP.

---

**Annexes** *[please check all that applies]:*

- ☐ CV shall include Education/Qualification, Professional Certification, Employment Records /Experience
- ☐ Breakdown of Costs Supporting the Final All-Inclusive Price as per Template

## **GUIDELINES FOR CV PREPARATION**

WE REQUEST THAT YOU USE THE FOLLOWING CHECKLIST WHEN PREPARING YOUR CV:

Limit the CV to 3 or 4 pages

NAME (First, Middle Initial, Family Name)

Address:

City, Region/State, Province, Postal Code

Country:

Telephone, Facsimile and other numbers

Internet Address:

Sex, Date of Birth, Nationality, Other Citizenship, Marital Status

Company associated with (if applicable, include company name, contact person and phone number)

### **SUMMARY OF EXPERTISE**

Field(s) of expertise (be as specific as possible)

Particular development competencies-thematic (e.g. Women in Development, NGOs, Privatization, Sustainable Development) or technical (e.g. project design/evaluation)

Credentials/education/training, relevant to the expertise

### **LANGUAGES**

Mother Tongue:

Indicate written and verbal proficiency of your English:

### **SUMMARY OF RELEVANT WORK EXPERIENCE**

Provide an overview of work history in reverse chronological order. Provide dates, your function/title, the area of work and the major accomplishments include honorarium/salary. References (name and contact email address) must be provided for each assignment undertaken by the consultant that UNDP may contact.

### **UN SYSTEM EXPERIENCE**

If applicable, provide details of work done for the UN System including WB. Provide names and email address of UN staff who were your main contacts. Include honorarium/salary.

### **UNIVERSITY DEGREES**

List the degree(s) and major area of study. Indicate the date (in reverse chronological order) and the name of the institution where the degree was obtained.

### **PUBLICATIONS**

Provide total number of Publications and list the titles of 5 major publications (if any)

### **MISCELLANEOUS**

Indicate the minimum and maximum time you would be available for consultancies and any other factors, including impediments or restrictions that should be taken into account in connection with your work with this assignment.

## **Annex V**

### **FINANCIAL OFFER**

Having examined the Solicitation Documents, I, the undersigned, offer to provide all the services in the TOR for the sum of .....VND (for National Consultant) or ..... USD (for International Consultant)

This is a lump sum offer covering all associated costs for the required service (fee, meal, accommodation, travel, taxes etc).

#### **Cost breakdown:**

No.	Description	Quantity	Unit Rate (USD or VND)	Total (USD or VND)
1	Consultancy fee			
2	Out of pocket expenses			
2.1	Travel			
2.2	Per diem			
2.3	Full medical examination and Statement of Fitness to work for consultants from and above 65 years of age and involve travel – (required before issuing contract). *			
2.5	Others (pls. specify).....			
2.6	VAT** if applicable (in case your company signs the contract)			
	<b>TOTAL</b>			

\* Individual Consultants/Contractors who are over 62 years of age with assignments that require travel and are required, **at their own cost**, to undergo a full medical examination including x-rays and obtaining medical clearance from **an UN-approved doctor** prior to taking up their assignment.

\*\* Individual Consultants/Contractors who request their employer to sign a Reimbursable Loan Agreement (RLA) with UNDP for their behalves are reminded to add the Value Added Tax into the total lump sum of the Financial Offer if applicable.

I undertake, if my proposal is accepted, to commence and complete delivery of all services specified in the contract within the time frame stipulated.

I agree to abide by this proposal for a period of 120 days from the submission deadline of the proposals.

Dated this day /month of year

Signature

(The costs should only cover the requirements identified in the Terms of Reference (TOR)  
Travel expenses are not required if the consultant will be working from home).