REQUEST FOR PROPOSAL (RFP)

(From Vietnamese firms/institutes/organizations)

NAME of service: **Development of end-of-life solutions for solar photovoltaics and wind power systems in Viet Nam by a national research institution/firm/organisation**	DATE: September 10, 2020 REFERENCE: 2-200902

Dear Sir / Madam:

We kindly request you to submit your Proposal for the **Development of end-of-life solutions for solar photovoltaics and wind power systems in Viet Nam.**

Please be guided by the form attached hereto as Annex 2, in preparing your Proposal.

Proposals may be submitted on or before **Sunday, September 20, 2020 via email** to the address below:

United Nations Development Programme
304 Kim Ma Street, Ha Noi, Viet Nam
Ms. Luu Ngoc Diep, Procurement Associate
Luu.ngoc.diep@undp.org

Note:

- *Please send separate email (without attachment) to procurement.vn@undp.org notifying that you already submitted proposal and the number of emails submitted. Notification email indicating the tender's reference number should be sent to this email address by submission deadline or right after you submit proposals.*
- *UNDP will acknowledge receipt of the proposals within 2 working days from the submission deadline. In case you do not receive acknowledgement, please contact us within 3 working days after submission deadline.*
- *Maximum size per email: **30 MB**. Bidders can split proposals into several emails if the file size is large.*

Your Proposal must be expressed in the English language, and valid for a minimum period of **120 days from the date of bid submission deadline.**

In the course of preparing your Proposal, it shall remain your responsibility to ensure that it reaches the address above on or before the deadline. Proposals that are received by UNDP after the deadline indicated above, for whatever reason, shall not be considered for evaluation. If you are submitting your Proposal by email, kindly ensure that they are signed and in the .pdf format, and free from any virus or corrupted files.

Services proposed shall be reviewed and evaluated based on completeness and compliance of the Proposal and responsiveness with the requirements of the RFP and all other annexes providing details of UNDP requirements.

The Proposal that complies with all of the requirements, meets all the evaluation criteria and offers the best value for money shall be selected and awarded the contract. Any offer that does not meet the requirements shall be rejected.

Any discrepancy between the unit price and the total price shall be re-computed by UNDP, and the unit price shall prevail, and the total price shall be corrected. If the Service Provider does not accept the final price based on UNDP's re-computation and correction of errors, its Proposal will be rejected.

No price variation due to escalation, inflation, fluctuation in exchange rates, or any other market factors shall be accepted by UNDP after it has received the Proposal. At the time of Award of Contract or Purchase Order, UNDP reserves the right to vary (increase or decrease) the quantity of services and/or goods, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.

Any Contract or Purchase Order that will be issued as a result of this RFP shall be subject to the General Terms and Conditions attached hereto. The mere act of submission of a Proposal implies that the Service Provider accepts without question the General Terms and Conditions of UNDP, herein attached as Annex 3.

Please be advised that UNDP is not bound to accept any Proposal, nor award a contract or Purchase Order, nor be responsible for any costs associated with a Service Providers preparation and submission of a Proposal, regardless of the outcome or the manner of conducting the selection process.

UNDP's vendor protest procedure is intended to afford an opportunity to appeal for persons or firms not awarded a Purchase Order or Contract in a competitive procurement process. In the event that you believe you have not been fairly treated, you can find detailed information about vendor protest procedures in the following link:
http://www.undp.org/content/undp/en/home/operations/procurement/business/protest-and-sanctions.html

UNDP encourages every prospective Service Provider to prevent and avoid conflicts of interest, by disclosing to UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the requirements, design, cost estimates, and other information used in this RFP.

UNDP implements a zero tolerance on fraud and other proscribed practices, and is committed to preventing, identifying and addressing all such acts and practices against UNDP, as well as third parties involved in UNDP activities. UNDP expects its Service Providers to adhere to the UN Supplier Code of Conduct found in this link :

https://www.un.org/Depts/ptd/sites/www.un.org.Depts.ptd/files/files/attachment/page/pdf/unscc/conduct_english.pdf

Thank you and we look forward to receiving your Proposal.

Sincerely yours,

Tran Thi Hong
Head of Procurement Unit
9/10/2020

Annex 1

Description of Requirements

Context of the Requirement	Please refer to the attached Terms of Reference (TOR)
Implementing Partner of UNDP	Please refer to the attached TOR
Brief Description of the Required Services[1]	(TOR is attached in this Annex)
List and Description of Expected Outputs to be Delivered	Please refer to the TOR
Person to Supervise the Work/Performance of the Service Provider	Please refer to the attached TOR
Frequency of Reporting	Please refer to the attached TOR
Progress Reporting Requirements	Please refer to the attached TOR
Location of work	☒ Ha Noi, Viet Nam ☒ At Contractor's Location
Expected duration of work	**From October 2020 – July 2021**
Target start date	As soon as possible in October 2020
Latest completion date	31 July 2021
Travels Expected	Please refer to the attached TOR
Special Security Requirements	☐ Security Clearance from UN prior to travelling ☐ Completion of UN's Basic and Advanced Security Training ☐ Comprehensive Travel Insurance ☐ Others *[pls. specify]*
Facilities to be Provided by UNDP (i.e., must be excluded from Price Proposal)	☐ Office space and facilities ☐ Land Transportation ☐ Others *[pls. specify]*
Implementation Schedule indicating breakdown and timing of activities/sub-activities	☒ Required ☐ Not Required
Names and curriculum vitae of individuals who will be involved in completing the services	☒ Required ☐ Not Required
Currency of Proposal	☐ United States Dollars ☐ Euro ☒ Vietnamese Dongs
Value Added Tax on Price Proposal[2]	☒ must be inclusive of VAT and other applicable indirect taxes ☐ must be exclusive of VAT and other applicable indirect taxes

[1] *A detailed TOR may be attached if the information listed in this Annex is not sufficient to fully describe the nature of the work and other details of the requirements.*
[2] *VAT exemption status varies from one country to another. Pls. check whatever is applicable to the UNDP CO/BU requiring the service.*

Validity Period of Proposals ***(Counting from the date of submission deadline)***	☐ 60 days ☐ 90 days ☒ 120 days In exceptional circumstances, UNDP may request the Proposer to extend the validity of the Proposal beyond what has been initially indicated in this RFP. The Proposal shall then confirm the extension in writing, without any modification whatsoever on the Proposal.
Partial Quotes	☒ Not permitted ☐ Permitted
Payment Terms[3]	☒ As indicated in the attached TOR ☒ Condition for Payment Release: ***Within thirty (30) days from the date of meeting the following conditions:*** a) UNDP's written acceptance (i.e., not mere receipt) of the quality of the outputs; and b) Receipt of invoice from the Service Provider.
Person(s) to review/inspect/ approve outputs/completed services and authorize the disbursement of payment	Please refer to the attached TOR
Type of Contract to be Signed	☐ Purchase Order ☐ Institutional Contract ☒ Contract for Professional Services ☐ Long-Term Agreement[4] ☐ Other Type of Contract *[pls. specify]*
Criteria for Contract Award	☐ Lowest Price Quote among technically responsive offers ☒ Highest Combined Score (based on the 70% technical offer and 30% price weight distribution) ☒ Full acceptance of the UNDP Contract General Terms and Conditions (GTC). **This is a mandatory criterion and cannot be deleted regardless of the nature of services required. Non-acceptance of the GTC may be grounds for the rejection of the Proposal.**
Criteria for the Assessment of Proposal	Proposal shall be considered technically qualified if it achieves minimum 70% of total obtainable technical points. **Weight of technical and financial point:** **Technical Proposal (70%)** ☒ Expertise of the Firm (30%) ☒ Management Structure and Qualification of Key Personnel (70%)

[3] *UNDP preference is not to pay any amount in advance upon signing of contract. If the Service Provider strictly requires payment in advance, it will be limited only up to 20% of the total price quoted. For any higher percentage, or any amount advanced exceeding $30,000, UNDP shall require the Service Provider to submit a bank guarantee or bank cheque payable to UNDP, in the same amount as the payment advanced by UNDP to the Service Provider.*

[4] *Minimum of one (1) year period and may be extended up to a maximum of three (3) years subject to satisfactory performance evaluation. This RFP may be used for LTAs if the annual purchases will not exceed $150,000.00.*

	Financial Proposal (30%) To be computed as a ratio of the Proposal's offer to the lowest price among the proposals received by UNDP. Please refer to the Evaluation Criteria for further details.
UNDP will award the contract to:	☒ One and only one Service Provider ☐ One or more Service Providers, depending on the following factors:
Contract General Terms and Conditions[5]	☐ General Terms and Conditions for contracts (goods and/or services) ☐ General Terms and Conditions for de minimis contracts (services only, less than $50,000) Applicable Terms and Conditions are available at: http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
Annexes to this RFP[6]	☒ Terms of Reference & Evaluation Criteria (attached to this Annex) ☒ Proposal Submission Form (Annex 2) ☒ Contract Template & UNDP Contract General Terms and Conditions (GTC) (Annex 3) ☒ Submission checklist (Annex 4)
Contact Person for Inquiries (Written inquiries only)[7]	*Luu Ngoc Diep (Ms.)* *Procurement Associate* *Luu.ngoc.diep@undp.org* Any delay in UNDP's response shall be not used as a reason for extending the deadline for submission, unless UNDP determines that such an extension is necessary and communicates a new deadline to the Proposers.
Other Information *[pls. specify]*	**Bidders are responsible for checking the UNDP website:** https://procurement-notices.undp.org/ for any addenda and updated deadline to this Request for Proposals. UNDP reserves the right to post addenda up to the closing date for submissions. Hence bidders are advised to check the UNDP website frequently prior to submitting their proposal.

[5] *Service Providers are alerted that non-acceptance of the terms of the General Terms and Conditions (GTC) may be grounds for disqualification from this procurement process.*
[6] *Where the information is available in the web, a URL for the information may simply be provided.*
[7] *This contact person and address is officially designated by UNDP. If inquiries are sent to other person/s or address/es, even if they are UNDP staff, UNDP shall have no obligation to respond nor can UNDP confirm that the query was received.*

TERMS OF REFERENCE

Consultancy service	1 International Consultant 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): - 70 working days – International Consultant - 100 working days – National firm/institution
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/QD-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 an international consultant and a national institution/firm to team up 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 national firm/institution shall make available a team of national experts with a national focal point to work closely with the international consultant (IC) as a team and share responsibilities during the implementation of the assignment. The national experts will work under the guidance and advice of the IC

and assist in performing the assigned tasks, whereas, the IC will be a team leader and will be responsible for providing guidance/support to the national experts and get the work accomplished as a team.
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 IC

The international consultant will be responsible for leading the assignment, maintaining the quality of the deliverables, guide and monitor the work of the NC and ensure that the materials are delivered before the due date.

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.

3.1.2. <u>As far as Wind generation plants are concerned:</u>

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 non hazardous.

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. <u>As far as Photo Voltaic panels are concerned</u>

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 will undertake the following tasks:

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/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. 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. <u>On the basis of the analysis conducted above, the IC will develop:</u>

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.

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

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

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 IC, 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 IC 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 IC to finalize the interim and final reports, based on feedbacks received from stakeholders
i) Review the report drafted by the IC 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 IC: 70 working days including 5 working days mission to Ha Noi

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

Duty Station: Home-based and Hanoi

Due to restrictions imposed by Covid, travel by the IC to Viet Nam is not anticipated. In case the situation improves, and travel is possible, the possibility of the IC to make a 5 working day trip to Viet Nam 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 IC. 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 IC

The international expert is expected to submit following deliverables:

#	Deliverables (in English)	Deadline
1	Inception report explaining the scope of work, the methodology, the report structure and the work plan	15 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	15 December 2020
3	Draft report and Power point presentations and meeting minutes for the consultation workshop and final workshop	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 expert is expected to submit following deliverables:

#	Deliverables	Deadline
1	Inputs for the IC 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 translated version of the final report in Vietnamese Draft and final versions of power point presentations (in both English and Vietnamese)	15 March 2021
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

- 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 10 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 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 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

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

- First payment of 30% of the contract value will be made upon submission and acceptance of the inception report and interim report
- Second payment of 40% of the contract value will be made upon submission and acceptance of the interim progress report and copies PowerPoint Presentation
- Last payment of 30% of the contract value will be made upon submission and acceptance of that final report and all products under the contract.

9.2. 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 □ PARTIAL ✓ INTERMITTENT □ FULL-TIME

EVALUATION CRITERIA

The evaluation of technical proposal shall be conducted using scoring method (1,000 points), as follows:

Summary of Technical Proposal Evaluation Forms		Points Obtainable
1.	Bidder's qualification, capacity and experience	300
2.	Management Structure and Key Personnel	700
	Total	**1000**

Section 1. Bidder's qualification, capacity and experience		Points obtainable
1.1	Reputation of Organisation and Staff (In terms of Competence / Reliability)	70
1.2	Quality assurance procedures, warranty	30
1.3	Relevance of: - 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/technology 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	200
	Total Section 1	**300**

Section 2. Proposed Team of National Experts		Points obtainable
2.1	Master's degree or higher qualification in chemistry, biology, environmental studies/ environmental science/ environmental engineering, chemical engineering, civil engineering, energy technology/ management or related fields;	150
2.2	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;	150
2.3	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;	200
2.4	Experience in working with government and donor-supported agencies;	100

2.5	Proficient in English (two sample reports in English must be submitted)	100
	Total Section 2	**700**

All bids passing the minimum technical score of 700 will be technically qualified for financial evaluation. **Submission obtaining the highest weighted points (technical points + financial points) will be selected.**

Important Notes:

- **Evaluation will be done separately for each of the proposed key personnel (if applicable) and the total personnel score will be the average.**
- **Please refer to the Submission checklist (Annex 4) for documents to be submitted for the evaluation**

Annex 2

FORM FOR SUBMITTING SERVICE PROVIDER'S PROPOSAL[8]

(This Form must be submitted only using the Service Provider's Official Letterhead/Stationery[9])

[insert: *Location]*.
[insert: *Date]*

To: [*insert: Name and Address of UNDP focal point]*

Dear Sir/Madam:

We, the undersigned, hereby offer to render the following services to UNDP **in conformity with** the requirements defined in the RFP dated *[specify date]* , and all of its attachments, as well as **the provisions of the UNDP General Contract Terms and Conditions** :

A. **Qualifications of the Service Provider**

The Service Provider must describe and explain how and why they are the best entity that can deliver the requirements of UNDP by indicating the following : *a) Profile – describing the nature of business, field of expertise, licenses, certifications, accreditations;* *b) Business Licenses – Registration Papers, Tax Payment Certification, etc.* *c) Latest Audited Financial Statement – income statement and balance sheet to indicate Its financial stability, liquidity, credit standing, and market reputation, etc. ;* *d) Track Record – list of clients for similar services as those required by UNDP, indicating description of contract scope, contract duration, contract value, contact references;* *e) Certificates and Accreditation – including Quality Certificates, Patent Registrations, Environmental Sustainability Certificates, etc.* *f) Written Self-Declaration that the company is not in the UN Security Council 1267/1989 List, UN Procurement Division List or Other UN Ineligibility List.*

B. **Proposed Methodology for the Completion of Services**

The Service Provider must describe how it will address/deliver the demands of the RFP; providing a detailed description of the essential performance characteristics, reporting conditions and quality assurance mechanisms that will be put in place, while demonstrating that the proposed methodology will be appropriate to the local conditions and context of the work.

[8] *This serves as a guide to the Service Provider in preparing the Proposal.*
[9] *Official Letterhead/Stationery must indicate contact details – addresses, email, phone and fax numbers – for verification purposes*

C. **Qualifications of Key Personnel**

If required by the RFP, the Service Provider must provide :

a) Names and qualifications of the key personnel that will perform the services indicating who is Team Leader, who are supporting, etc.;
b) CVs demonstrating qualifications must be submitted if required by the RFP; and
c) Written confirmation from each personnel that they are available for the entire duration of the contract.

D. **Cost Breakdown per Deliverable***

	Deliverables *[list them as referred to in the RFP]*	**Percentage of Total Price** *(Weight for payment)*	**Price** *(Lump Sum, All Inclusive)*
1	Deliverable 1		
2	Deliverable 2		
3	….		
	Total	100%	

**This shall be the basis of the payment tranches*

E. **Cost Breakdown by Cost Component *[This is only an Example]*:**

Description of Activity	**Remuneration per Unit of Time**	**Total Period of Engagement**	**No. of Personnel**	**Total Rate**
I. Personnel Services				
1. Services from Home Office				
a. Expertise 1				
b. Expertise 2				
2. Services from Field Offices				
a . Expertise 1				
b. Expertise 2				
3. Services from Overseas				
a. Expertise 1				
b. Expertise 2				
II. Out of Pocket Expenses				
1. Travel Costs				
2. Daily Allowance				
3. Communications				
4. Reproduction				
5. Equipment Lease				
6. Others				
III. Other Related Costs				

We confirm our full acceptance of the UNDP Contract General Terms and Conditions and agree to abide by this Proposal for 120 days from the date of proposal submission deadline.

[Name and Signature of the Service Provider's Authorized Person]
[Designation]
[Date]

Annex 3

Contract Templates and General Terms and Conditions

1. **Please find below link to the Professional service contract template:**

http://www.vn.undp.org/content/dam/vietnam/docs/Legalframework/Contract%20Face%20Sheet%20(Goods%20and-or%20Services)%20UNDP%20-%20Sept%202017.pdf

2. **Please find below link to the General Terms and Conditions:**

☐ **below US$ 50,000 (Services only)**:
UNDP General Terms and Conditions for Institutional (de minimis) Contracts apply
http://www.vn.undp.org/content/dam/vietnam/docs/Legalframework/3.%20UNDP%20GTCs%20for%20de%20minimis%20Contracts%20(Services%20only)%20-%20Sept%202017.pdf

☐ **below US$ 50,000 (Goods *or* Goods and Services):**
UNDP General Terms and Conditions for Contracts apply
http://www.vn.undp.org/content/dam/vietnam/docs/Legalframework/2.%20UNDP%20GTCs%20for%20Contracts%20(Goods%20and-or%20Services)%20-%20Sept%202017.pdf

☐ **equal to or above US$ 50,000 (Goods *and/or* Services):**
UNDP General Terms and Conditions for Contract apply
http://www.vn.undp.org/content/dam/vietnam/docs/Legalframework/2.%20UNDP%20GTCs%20for%20Contracts%20(Goods%20and-or%20Services)%20-%20Sept%202017.pdf

Annex 4

CHECKLIST OF DOCUMENTS SUBMITTED BY BIDDERS

Note:

- **Bidders are required to review carefully this checklist before submitting proposal to ensure complete submission.**
- **Maximum email size: 30 MB/email. Bidders can split proposal into several emails if the file size is large.**
- **Technical and Financial Proposals are to be submitted in separate emails before or by Sunday, September 20, 2020 (Hanoi time).**
- **Email and proposal should indicate clearly the reference and name of tender.**

Item	Documents	To be completed by bidders		
		Doc submitted Y/N	Number of pages	Remarks
1	Fully filled Technical proposal (pls. refer to the guidelines in Annex 2) with copies/scan of appropriate supporting documents:			
	a) Profile – describing the nature of business, field of expertise, licenses, certifications, accreditations			
	b) Business Licenses – Registration Papers, Tax Payment Certification, etc.			
	c) Track Record – list of clients for similar services as those required by UNDP, indicating description of contract scope, contract duration, contract value, contact references			
	d) Certificates and Accreditation – including Quality Certificates, Patent Registrations, Environmental Sustainability Certificates, etc. (if any)			
	e) Written Self-Declaration that the company is not in the UN Security Council 1267/1989 List, UN Procurement Division List or Other UN Ineligibility List.			
	f) Names and qualifications of the key personnel that will perform the services indicating who is Team Leader, who are supporting, etc.;			
	g) Detailed CVs of the proposed personnel with copies of required certificates and at least two (02) sample reports in English for the English proficiency criteria evaluation.			
2	Duly signed Price Schedule (pls. use the template in Annex 2)			
3	Bidder confirms its full acceptance of the UNDP Contract General Terms and Conditions and agrees to abide by this Proposal for 120 days from the date of proposal submission deadline.			

4	This duly filled, checked, certified submission checklist to be attached to the submission			
5	Send email (without attachment) to procurement.vn@undp.org notifying that you already submitted proposal and the number of emails submitted. Notification email should be sent to above email address by submission deadline or right after you submit proposals.			

[Name and Signature of the Service Provider's Authorized Person]
[Designation]
[Date]