ENERGY TRANSITION PARTNERSHIP

Powering Prosperity and Enabling Sustainability in South East Asia

The Southeast Asian Energy Transition Partnership (ETP) is a multi-donor Forum that brings together government donors, philanthropies, and Southeast Asian governments to accelerate the energy transition in Southeast Asia.

National Green Cooling Program
In-depth study and survey to develop the National Green Cooling Program

UNOPS AFD CIFF CHILDREN'S INVESTMENT FUND FOUNDATION Department for Business, Energy & Industrial Strategy Federal Ministry for Economic Affairs and Climate Action Environment and Climate Change Canada Environnement et Changement climatique Canada IKEA Foundation WINDWARD Fund

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I. BACKGROUND

A. Southeast Asia Energy Transition Partnership

1. The Southeast Asia Energy Transition Partnership (ETP) brings together governments and philanthropies to work with partner countries in the region. We support the transition towards modern energy systems that can simultaneously ensure economic growth, energy security, and environmental sustainability. Enabling the transition toward greener energy systems will greatly contribute to the achievement of the UN's Sustainable Development Goals (SDGs) and the Paris Climate Agreement objectives.

2. ETP is initially focusing on Indonesia, the Philippines and Vietnam, which are the countries in the region with the highest energy demand, a substantial pipeline for fossil fuel-based projects, and a significant and cost-effective potential for renewable energy and energy efficiency. ETP provides High Level Technical Advisory Support, Holistic Support to Governments on financing and technical needs, capacity and skill development and facilitation of dialogues in all related areas.

B. Project background

3. Coordinated international actions to improve the cooling industry's energy efficiency together with the transition to climate-friendly refrigerants could reduce between 210 and 460 billion tonnes of carbon dioxide (CO2) equivalent emissions over the next four decades. Countries can institutionalise many of these actions by integrating them into the implementation of the Montreal Protocol (MP) on Ozone Depleting Substances (ODSs) and its Amendments. The IEA estimates that worldwide, doubling the energy efficiency of air conditioners could by 2050 reduce the need for 1,300 gigawatts of additional electricity generation capacity to meet peak demand – the equivalent of all the coal-fired power generation capacity in China and India in 2018[1].

4. Vietnam ratified the MP in January 1994 and at the 19th Meeting of the Parties to the MP in September 2007, committed to freeze consumption of Hydro Chloro Fluoro Bon (HCFC) in 2013 and will reduce HCFC consumption, except for servicing, by 100% by 2030. By ratifying the Kigali Amendment to the MP, Vietnam will follow with a freeze of its Hydrofluorocarbon (HFC) baseline consumption level in 2024 - 2028, then start to further reduce HFC consumption until reaching 80% phase out by 2045.

5. Under the MP, Vietnam receives the support to phase out HCFCs and HFCs. However, it does not fund energy efficiency measures alongside conversions from HCFCs, developing countries

[1] https://www.iea.org/news/climate-friendly-cooling-could-cut-years-of-greenhouse-gas-emissions-and-save-trillions-of-dollars

like Vietnam tend to switch from ODSs with low global warming potential (GWP) to the higher GWP ones. The lack of targeted support for energy efficiency improvement alongside conversion of ODSs is a significant lost opportunity for generating significant climate benefits and for saving energy.

6. The National Energy Efficiency Programme (VNEEP) has been approved by the Prime Minister in Decision 280/QD-TTg dated 13 March 2019. The implementation is divided into the periods of 2019 - 2025 and 2026-2030 with the target to save 5-7% and 8-10% of the total national energy consumption respectively. The Program's objective is to promote economical and efficient use of energy, making a significant contribution to ensuring and stabilising national energy security while fulfilling Vietnam's commitment to reducing GHG emissions under the Paris Agreement on climate change. It has the specific objective "to enhance the policy mechanism and legal regulations on EE including research, amend, and supplement contents of the Law on Economical and Efficient Use of Energy and by-law documents.".

7. Under the United Nations Framework Convention on Climate Change (UNFCCC), Vietnam has ratified the Paris Agreement. To implement the commitments under the Paris Agreement, the updated Nationally Determined Contribution (updated NDC) submitted by Ministry of Natural Resources and Environment (MONRE) to UNFCCC in 2020 sets the target of GHG emission reduction by 9% by 2030 compared to the Business-As-Usual (BAU) scenario, solely with domestic resources, and by 27% with international support. The NDC 2020 technical report identified two mitigation options in refrigeration and ACs in the energy sector (E1. High efficiency residential AC and E2. High efficiency residential refrigerator).

Table 1: Mitigation options related to the cooling sectors in Vietnam NDC[2]

No.	Option	Assumption	Emission reduction potential [MtCO2e]	
			In 2021 - 2030 period	In 2030
1	E1:High efficiency residential air conditioning (AC)	By 2030, 75% of households in cities and 55% of households in rural areas will use high efficiency AC (an increase from 15% and 8% respectively in 2014). The cost for High Energy Efficiency (EE) AC is 30% higher than that of normal AC with the same capacity and reduces energy consumption by 30%.	23.9	4.6

[2] https://unfccc.int/sites/default/files/NDC/2022-06/Viet%20Nam_NDC_2020_Eng.pdf

2	E2:High efficiency residential refrigerators	By 2030, 80% of households in cities and 65% of households in rural areas will use high efficiency refrigerators (an increase from 15% and 10% respectively in 2014). The cost for High energy Efficiency (EE) refrigerators is 15% higher than that of normal refrigerators with the same capacity and reduces energy consumption by 30%.	11.3	1.6

8. In November 2021, at COP26, Prime Minister Pham Minh Chinh announced strong commitments to tackle climate change. He emphasised that with Vietnam's own resources, along with the co-operation and support from the international community, especially developed countries, both in terms of finance and technology transfer, including implementing mechanisms under the Paris Agreement, Vietnam will develop and implement strong emissions reduction measures to achieve net-zero emissions by 2050. Vietnam also agreed to support a number of important statements and initiatives on protecting forests, shifting to clean energy, supporting adaptation for local communities, and methane reduction. The commitment of net-zero emissions and joining the methane commitment sent a strong signal to the international community, opening the door for global finance for low-emission development, which is also an opportunity for Vietnam's development.

9. In light of its commitment to push forward the energy transition and the development of low carbon economy, ETP is actively responding to the requests for support from the Government of Vietnam through technical assistance, capacity building and coordination to improve the readiness of the Vietnam to pursue its goals and support a rapid transition to a more environmentally sustainable energy system and meeting the international mechanisms and requirements for climate change mitigation.

C. Rationale

10. Cooling is central to health, prosperity, and the environment. Efficient, clean cooling for all underpins many Sustainable Development Goals and represents an opportunity to avoid substantial climate and air pollutant emissions. The Kigali Amendment to the Montreal Protocol[3] entered into force on January 1st, 2019. The phase down of HFC (hydrofluorocarbon) refrigerants under the amendment has the potential to avoid up to 0.1˚C of warming by 2050 and up to 0.4℃ by 2100. The economic, environmental, and health benefits of catalysing simultaneous energy efficiency improvements, in concert with the HFC phase down, supports reduced energy consumption and avoided emissions of CO2 and black carbon, which can potentially double the climate benefit of the phase down alone.

[3] https://www.ccacoalition.org/en/news/historical-agreement-hfcs-reached-kigali

11. The Ministry of Natural Resources and Environment (MONRE) is the National Focal Point implementing the UNFCCC, the Kyoto Protocol and the Paris Agreement and the international treaties on ozone layer protection, including MP and its Amendments. The Department of Climate Change (DCC) is an organisation directly under the MONRE, with the function of advising and assisting the Minister in state management of climate change and ozone layer protection.

12. The Ministry of Industry and Trade (MOIT) is the National Focal Point for implementing the VNEEP and other relevant international treaties on energy efficiency. The Department of Energy Efficiency and Sustainable Development is an organisation directly under the MOIT, assisting MOIT's Minister on matters related to energy efficiency and sustainable development, including climate change mitigation.

13. The Ministry of Science and Technology (MOST) is responsible for establishment and implementation of the National Standards (TCVN). Once every 5 years, the MOST shall update and issue EE standards. Directorate for Standards, Metrology and Quality (STAMEQ) in charge of development and appraisal of draft national standards (TCVN), including those for refrigerant-containing equipment.

14. Promulgating energy labelling and Minimum Energy Performance Standards (MEPSs) by MOIT in collaboration with MOST based on TCVNs will directly facilitate energy efficiency of equipment in Vietnam..

15. Vietnam is shifting from a rural-agrarian society to an urban-industrial and services-based economy, with a significant increase in urbanisation, which is expected to increase to 45% by 2020. Given that, Vietnam's cold chain industry is set to expand considerably in the next few years, as demand for chilled and frozen food surges across the country. It is of significant importance to develop a National Cooling Program to promote conversion to high energy efficiency and low carbon technologies and increase energy savings in the cooling sector to contribute to meeting sustainable development goals as well as national energy efficiency targets.

16. On 26 July 2022, the Prime Minister issued Decision 896/QD-Ttg to approve the National Climate Change Strategies for the period up to 2050 (NCCS). As part of the tasks and solutions, the NCCS states that "Gradually reduce the use of Hydrochlorofluorocarbon (HCFC) refrigerants and Hydrofluorocarbon (HFC) in cold chain, refrigeration and building air conditioning systems; improve cooling efficiency, reduce cooling demand and refrigerant consumption through building design and passive cooling solutions; promote the recovery, reuse, destruction and recycling of refrigerants and move towards the use of refrigerants with low global warming potential (GWP)". In order to do so, a National Cooling Plan should be developed that is a national framework including, *inter alia*, visions, specific goals for different stages, design of

legal and institutional basis, the financial instruments and engagement of relevant stakeholders.

17. In this context, MONRE has requested ETP to support in studying and developing a National Green Cooling Program with a roadmap to implement that will aim to improve the energy efficiency and reduce GHG emissions in the cooling sector to contribute towards the Net-zero target of the country by 2050.

18. The ETP's support shall provide the key beneficiaries, including MONRE, MOIT, and MOST a clear vision of the cooling sector in Vietnam, recommending a legal framework and institutional mechanism to promote energy savings in the cooling sector. A clear national cooling program shall provide a suitable mechanism for financial support in transition to climate friendly ACs and refrigeration equipment and technologies through domestic and international funds.

19. The National Green Cooling Program which is planned to be realised in this project is in line with the ETP's activities in energy efficiency in Vietnam in order to facilitate energy transition to contribute to achieve net-zero commitments in Vietnam, including CBAM Assessment, carbon tax design and emission trading scheme. ETP's multi-pronged interventions in energy efficiency aim to make a significant impact in moving the sector forward.

D. Objectives

20. Conduct in-depth study and survey to develop the National Green Cooling Program to promote conversion to high energy efficiency and low carbon technologies and increase energy savings in the cooling sector to contribute to meeting sustainable development goals as well as national energy efficiency targets.

E. Scope

21. The ETP's technical assistance will be limited to conduct in-depth study and survey to develop the National Green Cooling Program. In-depth consultation with relevant ministries, public and private enterprises and NGOs (as Vietnam Society of Refrigerant and Air-Cooling Engineers (VISRAE), researching institutions) shall be required to ensure a multi-view approach in analysis and policy recommendations.

22. The following cooling sector/sub-sectors should be covered but not limited to:

No.	Cooling sector/ sub-sector
1	**Refrigeration**

1.1	Domestic refrigeration
1.2	Commercial and Industrial refrigeration
1.3	Transport refrigeration
2	**Air-Conditioning (AC)**
2.1	Residential AC
2.2	Chillers and central ACs
2.3	Mobile air conditioning (MAC)
2.4	Public transportation (Vietnam Railways)

23. The Program will be delivered within a 12-month timeframe and its deliverables shall be handed-over to the Government of Vietnam.

F. Deliverables under the project

24. This assignment is the first package among a series of packages of the National Green Cooling Program. Accordingly, the Green Cooling Program, once established, will serve as a platform to strengthen coordination between government agencies mandated with energy efficiency and climate and ozone mitigation, as well as key stakeholders in the cooling sector (manufacturers, standard-setting bodies, etc.) towards a common goal of transforming the market towards lower GWP, high energy efficient while meeting international environmental goals and commitments. This very first package will collect and create a database of the cooling sector and its sub-sectors, identifying the technical and regulatory gaps and creating the National Green Cooling Program and its roadmap for implementation.

25. This assignment will include, but not be limited to, the following tasks:

Task 1: Inception Report and Project Work Plan: The consultant prepares a detailed inception report detailing the project plans, ensuring the expectations of ETP are aligned with the understanding of the project from the consultant. The inception report should contain, as a minimum:

a. Introduction and project background
b. Scope of Services
c. Methodology and Workplan, including approach, methodology and project gantt chart
d. A detailed approach as to how each deliverable will be met and what each submission will contain
e. Mapping of key stakeholders including outreach and communications plan
f. A donor coordination strategy
g. Initial assessment of financing needs and offers
h. Project management inclusive of organisational chart detailing key personnel, their roles and responsibilities, as well as their locations (strong in country team and project management is expected)
i. Risks, mitigations and assumptions

26. Monitoring and Evaluation Framework, presented in the form of the ETP Results Based Monitoring Framework (RBMF)

Task 2: Stakeholder Consultation Workshops/Meetings. Under this task, the consultant will organise technical and financial consultation workshops with various stakeholders, including enterprises and financial institutions and other relevant stakeholders. The events aim at collecting information and identifying the technical and financial gaps between the bankers and the project developers and brainstorming appropriate solutions.

Task 3: National data survey, compilation and analysis: This task includes a literature review, survey(s) and compilation of relevant and existing (at least three latest years) qualitative and quantitative data and information to:

a. Provide an overview of the existing policy and regulations, and national and sector strategies and plans that are related to energy efficiency and refrigerants for cooling;

b. Examine and assess the market status for ACs and refrigeration equipment;

c. Establish the baseline for the country in terms of energy efficiency, controlled refrigerants, including but not limited to MEPS, equipment imported and manufactured, types of refrigerants and technologies, number of units, and market and sector trends, and other information that will be used in analysis and calculations;

d. identify policy gaps, international obligations/commitments, market, institutional and other barriers, and other factors influencing the speed and extent of adoption of more energy efficiency, lower-GWP AC and refrigeration equipment/technologies.

Task 4: Assessment and projections of growth in cooling sectors/sub-sectors based on different criteria. This task will provide an analysis and projection of ACs and refrigeration

equipment growth, potential energy and climate benefits, development of cooling strategy for cooling sector/sub-sectors.

Task 5: Sector/subsector review of refrigerants, technologies, regulatory, policy and gap analysis. This task will compile assessment and analysis to provide alternative replacement refrigerant technologies for controlled substances and of energy efficiency measures and technologies for each refrigeration and AC subsector. The review will determine the availability of the technologies in the country, costs, timelines, environmental and safety concerns, and other factors affecting adoption. It shall include a review of not-in-kind technologies and measures as relevant to Vietnam.

Task 6: Development of the National Green Cooling Program and its roadmap (including, *inter alia*, visions, specific goals for different stages, design of legal and institutional basis, the financial instruments and engagement of relevant stakeholders). The Green Cooling Program will serve as a platform to strengthen coordination between government agencies mandated with energy efficiency and climate and ozone mitigation, as well as key stakeholders in the cooling sector (manufacturers, standard-setting bodies, etc.) towards a common goal of transforming the market towards lower GWP, high energy efficient while meeting international environmental goals and commitments.

Task 7: Review and analysis on Financing, implementation approaches & business models for green cooling development and investment. Options for scaling up transformation, identification of business models and sources of finance and financial instruments should be reviewed, analysed and recommended to the government and relevant stakeholders, including, but not limited to, the government authorities, industries (well established enterprises and start-ups), researchers and financial institutions (private and public).

Task 8: Consultation workshops on the draft National Green Cooling Program and its roadmap. These consultation workshops will help collect comments from relevant stakeholders to finalise the Program and its implementation roadmap. Awareness raising and communication of relevant government policies in the context of net-zero commitment shall also be included in these workshops.

Task 9: Final Report and final workshop.

G. Existing Support and Programs

27. The Kigali Cooling Efficiency Program (K-CEP) is a US$52 million fund established to bridge the EE gap in the MP and MLF, particularly in relation to HFC phase-down. K-CEP aims to promote access to environmentally friendly, EE cooling by all through support from four distinct windows. Vietnam, along with Thailand were awarded a K-CEP grant in 2017 through the WB to implement Window 1: Institutional Strengthening and Capacity Building. Under Window 1, countries will be supported to develop National Cooling Action Plan (NCAP) similar to HPMPs, but which integrate review, analysis and recommendations on HCFCs and HFCs as refrigerants and on EE in the AC and refrigeration sector. This Assignment is conducted under K-CEP's

Window 1 with the focus on residential AC sub-sectors. Under Window 2: Technology Transfer, local manufacturers are supported to access the know-how and technology for manufacturing R-32 (or other low-GWP refrigerant as available), inverter split-type AC. The conversion to R-32 by AC manufacturers in Vietnam is on-going.

28. UNDP and the Ministry of Construction have been implementing Energy Efficiency Improvement in Commercial and High Rise Residential Buildings in Viet Nam Project[4] since 2016 with the support of the Global Environment Facility. The project has contributed to removing the barriers, improving the energy efficiency in buildings and reducing greenhouse gas emissions in Viet Nam's construction industry. The project provides a holistic and integrated approach from design to construction, acceptance and operation to the design consulting team, civil engineers and building energy managers through training and capacity building

29. UNEP and the Global Green Growth Institute (GGGI) are leading the Sustainable Urban Cooling in Vietnam Project[5] in close cooperation with the Ministry of Natural Resources and Environment. The project is funded with the support of the Clean Cooling Collaborative (CCC). Accordingly, the project is supporting two pilot cities of Can Tho and Tam Ky to prepare Urban Cooling Action Plans (UCAPs) that integrate action on cooling and extreme heat into a range of municipal plans and master plans. In parallel, the project will support these cities to finance pilot projects and unlock stable municipal budgets for intervention on extreme heat and urban cooling. Dong Hoi city will also receive light touch support through the project. Interventions will include improved urban design, nature-based solutions, passive cooling measures, municipal incentives, district cooling and sustainable public procurement.

H. Beneficiaries and Impacts

30. MONRE and DCC: are direct beneficiaries of the ETP's support. As the National Focal Point for the UNFCCC and the Kyoto Protocol; the Vienna Convention and the MP, MONRE/DCC shall receive a comprehensive analysis and policy recommendations related to establish and implement the legislation related to the Refrigerants. DCC of MONRE is the focal point of the project and coordinates relevant ministries and stakeholders during the project implementation.

31. MOIT: is a participating agency in the project in coordination with the DCC, MONRE. As the MOIT is responsible for leading and coordinating relevant ministries, agencies and localities to

[4] https://undpvietnam.exposure.co/energy-efficient-and-green-buildingsnbsp-towards-a-low-carbon-viet-nam

[5] https://coolcoalition.org/pilot-projects/sustainable-urban-cooling-in-viet-nam-cities/

implement the National Energy Efficiency Program, the Law on Energy Efficiency and others legislations related to Energy Efficiency, a clear understanding of the cooling sector and its key elements shall support the ministries to develop appropriate policies to encourage enterprises to apply energy efficiency measures and to participate in the conversion to low-GWP refrigerants (such as R-32).

32. MOST and STAMEQ: is a participating agency in the project in coordination with the DCC, MONRE. As the MOST is responsible for establishment and implementation of the National Standards (TCVN), MOST/STAMEQ shall receive a comprehensive analysis related to revise EE standards in the cooling sector.

33. Manufacturers will benefit from the ETP's support. The Green Cooling Program is pushing the AC and refrigerator manufacturers in Vietnam to change their main types of refrigerants, as well as develop cost-effective energy efficiency measures to achieve low-carbon pathway goals. As ETP's support provides the enterprises with comprehensive understanding of the policy's impacts and implications as well as supports the government of Vietnam to develop appropriate legal frameworks, the enterprises shall benefit from a quick and effective energy transition while maintaining their competitiveness.

34. The Government of Vietnam: ETP's support to the ministries and private sector shall contribute to the Government's efforts to achieve climate change targets in Paris Agreement and to realise the net-zero emission by 2050 commitment.

2. IMPLEMENTATION & TIMELINE

A. Implementation Modality & Arrangements

35. The TA will require the services of an experienced consultancy with international experience and local knowledge of the Vietnamese manufacturing and servicing sectors related to cooling, understanding of the Vietnam regulatory and institutional framework governing ODS and HFC-related sectors, deep technical knowledge of refrigeration and AC sectors and energy efficiency in cooling appliances and equipment and direct work experience in conducting surveys and developing the database in cooling sectors in Vietnam. The consultant is expected to be able to expose relevant government agencies, enterprises and other stakeholders to recommend appropriate policy framework for the government of Vietnam to maintain the country's advantages while enabling acceleration toward energy transition.

36. The procurement method of Request for Proposals (RFP) will be employed. This RFP will be published on the UN Global Marketplace website (UNGM) for a duration of a minimum 21 days, upon which an evaluation panel, including the required expertise, will review and select the related bids. After internal approval by the UNOPS contracts committee, the result of this process will be a contract for services to the selected bidder.

B. Deliverables and Reporting Timelines

37. The Project is planned for 12 months. The actual project timeline will be presented from the consultant and agreed upon in the Inception Report.

Table 4: Proposed timeline for the activities and key milestones

ACTIVITIES	MONTH											
	1	2	3	4	5	6	7	8	9	10	11	12
Milestone 1												
Task 1: Inception Report												
Milestone 2												
Task 2: Organise initial Stakeholder Workshop including the participation from financial institutions												
Task 3: Conduct a national data survey, compilation and analysis												
Task 4: Conduct the assessment and projections of growth in cooling sectors/sub-sectors based on different criteria												
Milestone 3												
Task 5: Conduct sector/subsector review (refrigerants, technologies, regulatory, policy) and gap analysis												
Task 6: Develop the National Green Cooling Program and roadmap												
Task 7: Conduct review and analysis on Financing, implementation approaches & business models												
Task 8: Consultation workshops on the draft National Green Cooling Program and its roadmap												
Milestone 4 Task 9: Final report and final workshop												

38. The outputs of the Tasks as detailed in paragraph 25 will be reported to ETP in the following formats:

    a. **Milestone 1 - Inception Report:** The Inception Report needs to be delivered 1 month after contract signing. The report will present the consultant's initial findings, detailed work plan and recommendations for implementation of the project based on consultation with the local partners and the ETP.

    b. **Milestone Report 2:** The second milestone report needs to be delivered after 9 months of contract signing and provides a narrative summary of the project progress to date, demonstrates completion of Tasks 2, 3 and 4 and updates as to the status of the other Tasks

        a) A summary, providing a narrative of the project progress to date, highlighting key achievements, challenges and next steps.
        b) Outputs from Task 2, 3 and 4, including a narrative report and outputs under Task 1 and 2 attached in the Annex
        c) Update of the work plan and the Results Based Monitoring Framework (gender disaggregated).

    c. **Milestone Report 3:** The second milestone report is a progress report focused on Tasks 5-8. It will include as a minimum:

        a) A summary, providing a narrative of the project progress to date, highlighting key achievements, challenges and next steps.
        b) Progress from Task 5-8, including a narrative report and outputs under Task 5-8 attached in the Annex.
        c) Update of the work plan and the Results Based Monitoring Framework (gender disaggregated).

    d. **Milestone Report 4 - Final Report:** The final report summarises the whole project, integrating a narrative of the deliverables. This report details the key activities and outputs from each task. The report will be presented as a professional and publishable document that may be widely disseminated. It includes a finalised version of the Results Based Monitoring Framework (gender disaggregated).

39. All reports will be first submitted in English. Final versions of each report will be required in English and Vietnamese. Each deliverable will be submitted both in report format and with a catchy powerpoint.

C. Assumptions

40. The proposal will include resources for suitable PowerPoint presentation, graphical and infographic skills to present the resultant information in a way that is easily accessible to all levels of understanding and eye-catching.

41. The implementing organisation will incorporate global best practices and latest technological inputs and concepts based on a highly developed, detailed and analytical assessment of the current data.

42. The Project assumes cost-free, easy and unobstructed access to existing data of policy and regulatory framework, and national and sector strategies and plans all related to EE and refrigerants for cooling, availability of the pertinent staff for discussion on the data and analysis to the Project purposes, and where possible, availability of the Government and its agencies involved in GHG reduction and energy efficiency. Where this is not possible, the analysis aims to identify the underlying assumptions based on the publicly available results. The Project will make use of ETP's convening capacity and partnerships with its aligned programs and engage with the stakeholders economy-wide, particularly in the local context and based on the specific factors.

43. ETP Secretariat manages the selection of the experts and implementation of the Project. ETP Secretariat will help coordinate engagement with the Government parties and country authorities on the implementation of and process of this study.

44. The Project will work under the overall guidance of ETP Steering Committee, its Secretariat and Advisory Committee. The implementing entity will prepare the reports with the relevant materials in publishable quality, through ETP Secretariat, Interim Report, and Final Reports. All reports will be reviewed and accepted by the ETP Secretariat upon the incorporation of its comments with the objective to improve the comprehensiveness and quality of the final Review. The implementing organisation will develop effective methods for collecting comments and suggestions in a speedy fashion and incorporate these into the proposal, as deemed quality improving.

45. The Project will ensure that it accounts for environmental and social impacts in the context of the terms of reference and identifies environmental and social costs and benefits within the Project. Furthermore, the Project shall provide a response that demonstrates its commitment to support gender equality and women's empowerment through its operations.

E. Sustainability & Gender Diversity

46. The Project will adopt sustainability measures and mechanisms to extend the Project's objectives beyond the present administration. These will require stakeholder support, budget allocation from the involved agencies, and adoption of policies to institutionalise the design of the reserve market. The involvement of DCC's officials from the start of the Project is essential

to carry over the Project into the next administration. In addition, information and communication of the Project to constituents and beneficiaries shall also secure the commitment of the stakeholders.

47. The Project is committed to the promotion, enhancement and development of gender sensitivity of its implementation activities. For cause-oriented groups, the Project shall be inclusive of the invited stakeholders during the consultation, more particularly women's groups. The Project shall also ensure gender balance among the officials designated into the inter-departmental committee. Emphasis shall be given to policy measures that shall not discriminate or marginalised any personalities and groups based on gender.

3. QUALIFICATION AND EXPERIENCE OF THE SERVICES PROVIDER

48. General requirements

The consultant's project team should demonstrate the capacity to execute the works and should include all essential roles filled with personnel with relevant experience. CVs of the personnel proposed should be used to verify this information.

Bidders should have experience in:

- Providing policy advisory in improving energy efficiency, phasing out ODS and mitigating GHGs in refrigeration and air-conditioning manufacturing, assembly and installation (from domestic to industrial sectors), mobile refrigeration and air-conditioning production, refrigerant servicing sector internationally and in Vietnam.
- Conducting data survey, collection and validation, inference, analysis and growth projections in industry sectors that comprise small and medium scale enterprises to large and multinational companies in Vietnam.
- Conducting consultations with the public and private sector, and data and policy analysis.
- Experience on Montreal Protocol Multilateral Fund financed activities/projects and GHG mitigation projects and specifically prior experience in developing phase-out strategy options for controlled substances in Vietnam is considered as an asset.
- Given the centrality of generating a fully vetted and country-owned green cooling plan, it is essential to the assignment that the consultant company or the consultant personnel has direct work experience in Vietnam with understanding of the Vietnamese manufacturing and servicing sectors as well as the Vietnam regulatory and institutional framework governing ODS and GHG-related sectors, including on energy performance and safety, as well as deep technical knowledge of refrigeration and AC sectors and energy efficiency in cooling appliances and equipment.

49. Requirements for the Project Lead

The lead individual should have the following qualification:

Education:

- Master's Degree or higher education in Energy, Economics, Environmental Sciences or related fields is required.

Work Experience

- A minimum of 10 years of experience in policy development; experience in providing advice and technical support for formulating national policies and regulations on climate change, ozone layer protection, and energy efficiency;

- Professional working experience in developing national/sectoral strategies to improve energy efficiency and to mitigate GHG emissions and phase out ODSs in cooling industry in Vietnam;
- Good experience in leading and conducting national/sectoral data survey, modelling and analysis. Experience in cooling sector is considered an advantage;
- Previous successful involvement with, and good knowledge of, donor, government, private sector and civil society in cooling sector is considered as an advantage;
- Depth understanding of the cooling sector, technologies and business drivers behind corporate GHG mitigation actions and initiatives
- Good understanding of the national policies and initiatives to improve energy efficiency and to mitigate GHG emissions and phase out ODSs in the cooling industry in Vietnam.
- Excellent report-writing and management skills

50. Requirements for the project team

The overall team members should have the following qualification:

- Extensive experience in energy efficiency policies, phasing out ODSs and reducing GHG emissions in the cooling sector and regulatory, institutional advisory in climate change mitigation and ozone layer protection in Viet Nam.
- Strong experience in data collection and stakeholders mapping in industries and the cooling sector is preferred.
- Strong quantitative skills and the ability to use data and metrics to inform decisions.
- Good knowledge and experience in scenario-based planning and modelling regarding the impact of energy efficiency, ODS phase out and GHG mitigation policies on the national cooling sector.
- Good knowledge of refrigeration and air-conditioning manufacturing, assembly and installation (from domestic to industrial sectors)/mobile refrigeration and air-conditioning production/refrigerant servicing sector in Viet Nam.
- Experience in conducting GHG accounting and estimation at both national and enterprise levels using different approaches and methodologies.
- Advanced skills with the use of MS Office, Google Drive, IT platforms, and technologies.
- Strong international knowledge of technologies, initiatives, policies in the cooling sector to implement the Paris Agreement.

The composition of the team members are expected to be the following:

Title	Minimum Qualification	Preferred experience
Climate change and energy efficiency policy expert	Master degree in environment, climate change, engineering or relevant subject. Additional three years of similar experience with a Bachelor Degree is considered equivalent.	8 years of experience in policy development related to green/clean production, energy efficiency in industries and GHG mitigations. - Working experience in Vietnam is desired.
Energy efficiency technical expert	Master degree in energy, engineering or relevant subject. Additional three years of similar experience with a Bachelor Degree is considered equivalent	8 years of experience in energy efficiency, energy efficiency/audit services with professional experience and specific experience with energy performance standards, auditing, labelling, etc. - Working experience in energy efficiency in industries in Vietnam.
Technology expert	Master degree in energy, mechanical engineering or relevant subject. Additional three years of similar experience with a Bachelor Degree is considered equivalent.	- 8 years of experience and technical knowledge and demonstrated experience of cooling sectors and applications
Survey expert	- Master degree in environment, engineering subject. - Additional three years of similar experience with a Bachelor Degree is considered equivalent.	- 8 years of experience in data survey and validation; - Working experience in refrigeration and air-conditioning industries in Vietnam.
Modelling expert	- Master degree in environment, engineering subject. - Additional three years of similar experience with a Bachelor Degree is considered equivalent.	- 4 years of experience in data survey and validation; - Working experience in refrigeration and air-conditioning industries in Vietnam.

Considering the importance of close coordination with stakeholders in Vietnam, it is expected that the team proposed consists of consultant(s) who understands the local context in climate change, ozone layer protection, energy\efficiency and energy transition in Viet Nam.

The bidder should also assign a Contract Manager who would liaise on the non-technical part of the contract implementation, including coordination, liaising with key counterparts, liaising with UNOPS on submission of invoice and payment-related documents.

4. EVALUATION CRITERIA

51. Eligibility and Formal Criteria

The criteria contained in the table below will be evaluated on Pass/Fail basis and checked during Preliminary Examination of the proposals.

Criteria	**Documents to establish compliance with the criteria**
1. Offeror is eligible as defined in the document Section I: Instructions to Offerors, Article 4 . In case of JV, all JV members should fulfill this requirement	● Form A: Joint Venture Partner Information Form, all documents as required in the Form, in the event that the Proposal is submitted by a Joint Venture. ● Form B: Proposal Submission Form
2. Completeness of the Proposal. All documents and technical documentation requested in Instructions to Offerors Article 10 have been provided and are complete	● All documentation as requested under Instructions to Offerors Article 10, Documents Comprising the Proposals
3. Offeror accepts UNOPS General Conditions of Contract as specified in Section IV: Contract Forms	● Form B: Proposal Submission Form

52. Qualification Criteria

The criteria contained in table below will be evaluated on Pass/Fail basis and checked during Qualification Evaluation of the proposals.

Criteria	Documents to establish compliance with the criteria
1. The company should have a minimum of 3 years of experience in delivering similar projects in the past with a track-record of success. In case of JV, the experience will be calculated as an accumulation of the experience of each of the JV members.	● Certification of incorporation of the Offeror ● Form F: Performance Statement
2. Offeror must provide a minimum of two (2) customer references from which similar services have been successfully provided, within any of the last 3 years	● Form F: Form F: Performance Statement

53. Technical Criteria

Technical evaluation will be carried out to bids that pass the eligibility, formal and the qualification criteria, with requirements as follows:

- The maximum number of points that a bidder may obtain for the Technical proposal is 80. To be technically compliant, Bidders must obtain a minimum of 56 points
- Minimum pass score: 70% of maximum 80 points = 56 points

Technical proposal points allocation:

Section number/description		Points Obtainable
1	Offeror's qualification, capacity and expertise	25
2	Proposed Methodology, Approach and Implementation Plan	30
3	Key Personnel proposed and Sustainability Criteria	25
Total Technical Proposal Points		80

Section 1: Offeror's qualification, capacity and expertise		Points	Sub-points
1.1	Brief description of the organisation, including the year and country of incorporation, and types of activities undertaken, including relevance of specialised knowledge and experience on similar engagements done in the past. Bidders partnering up with a Vietnamese entity to provide for the strategic consultation, translations; as well as the communications expertise is considered a valuable asset. (Max 4 pages written text plus 1 Matrix)	20	
	Experience in projects of comparable size, type, complexity and technical speciality		10
	Experience in providing similar services in the region, especially Vietnam		5
	Understanding of local context, and partnering up with a Vietnamese entity to provide for the strategic consultation, translations; as well as the communications expertise particularly for non Vietnamese organisations		5
1.2	General organisational capability which is likely to affect implementation: management structure, and project management controls. (Max 4 pages written text)	5	
	1. Management structure, management controls, and extent to which any part would be subcontracted		3
	2. Financial Capacity/financial stability: Bidder should have minimum annual turnover of 300,000 USD in any of the past 2 years Liquidity / quick ratio should be minimum 1, in any of the past 2 years . In case of a joint venture, annual turnover is calculated based on the total annual turnover of the JV members. In case of a joint-venture, at least one		2

	of the JV members should have 1 liquidity/quick ratio in any of the past 2 years.		
Total points for section		25	

Section 2: Proposed Methodology, Approach and Implementation Plan		Points	Sub-points
2.1	Description of the Offeror's approach and methodology for meeting or exceeding the requirements of the Terms of Reference	20	
	1. Description of the offeror's approach and methodology to design and conduct the national survey and data analysis for the cooling sector in Viet Nam.		8
	2. Description of the offeror's approach and methodology to develop the National Green Cooling and roadmap in Vietnam		7
	3. Description of the offeror's approach to promote energy savings and efficiency, and facilitate the engagement of broader stakeholders including financial institutions in the cooling sector in Viet Nam.		5
2.2	Quality Assurance	5	
	A plan outlining how the bidder intends to ensure oversight and quality assurance throughout the assignment. Quality Assurance plan should include discussion on risk-assessment and its mitigation plan		5
2.3	Implementation Timeline	5	
	Bidder submits a detailed implementation timeline which includes detailed activities to be undertaken during this assignment, and is completed with gantt chart		5
Total points of the section		30	

Section 3: Key personnel proposed and Sustainability Criteria

Number	Description	Sub-points	Points (Total)
3.1 Qualifications of key personnel proposed	a) Project lead	6	20
	b) Climate change and energy efficiency policy expert	3	
	c) Energy efficiency technical expert	3	
	d) Technology expert	3	
	e) Survey expert	3	
	f) Modelling expert	2	
3.2 The bidder shall provide a response that demonstrates its commitment to support gender equality through its operations		5	5
Total points for section			25

Scoring Matrix for Key Personnel

Title	Minimum Qualification	Preferred experience	Marking	Max points
Team Lead	- Master's Degree or higher education in Energy, Economics, Development Policies, Social Sciences, Environmental Sciences - Knowledge of the energy efficiency, energy transition, political, economic and social situation and cooling sector in Vietnam is	- Minimum of 10 years of experience in policy development; - Professional experience in providing advice and technical support for formulating national policies and regulations on mitigation activities, energy transition, ozone depleting	Related Experience: - More than 10 years: 5 points. - 8 – 10 years: 4 points. - 4 – 7 years: 2 points. - Working experience in Vietnam: 1 point	6

	desired; - Computer literacy in Microsoft packages (MS Word, MS Excel, MS Access, MS Power Point) is required.	substances control and energy efficiency; - Previous successful involvement with, and good knowledge of, donors, government, private sector and civil societies in Vietnam is desired.		
Climate change and energy efficiency policy expert	Master degree in environment, climate change, engineering or relevant subject. Additional three years of similar experience with a Bachelor Degree is considered equivalent.	8 years of experience in policy development related to green/clean production, energy efficiency in industries and GHG mitigations. - Working experience in Vietnam is desired.	Related Experience: - 8 and more than 8 years: 2.5 points. - 5 – 7 years: 2 points. - 3 – 4 years: 1 point. - 1 – 2 years: 0.5 point. - Related working experience in Vietnam: 0.5 point	3
Energy efficiency technical expert	Master degree in energy, engineering or relevant subject. Additional three years of similar experience with a Bachelor Degree is considered equivalent	8 years of experience in energy efficiency, energy efficiency/audit services with professional experience and specific experience with energy performance standards, auditing, labelling, etc. - Working experience in energy efficiency in industries in Vietnam.	Related Experience: - 8 and more than 8 years: 2.5 points. - 5 – 7 years: 2 points. - 3 – 4 years: 1 point. - Related working experience in Vietnam: 0.5 point	3
Technology expert	Master degree in energy, mechanical engineering or relevant subject. Additional three years of similar experience with a Bachelor Degree is	- 8 years of experience and technical knowledge and demonstrated experience of cooling sectors and	Related Experience: - 8 and more than 8 years: 2.5 points. - 5 – 7 years: 1.5 - 2 points.	3

	considered equivalent.	applications	- 3 – 4 years: 1 point - Related working experience in Vietnam: 0.5 point	
Survey expert	- Master degree in environment, engineering subject. - Additional three years of similar experience with a Bachelor Degree is considered equivalent.	- 8 years of experience in data survey and validation; - Working experience in refrigeration and air-conditioning industries in Vietnam.	Related Experience: - 8 and more than 8 years: 2.5 points. - 5 – 7 years: 2 points. - 3 – 4 years: 1 point. - Related working experience in Vietnam: 0.5 point.	3
Modelling expert	- Master degree in environment, engineering subject. - Additional three years of similar experience with a Bachelor Degree is considered equivalent.	- 4 years of experience in data survey and validation; - Working experience in refrigeration and air-conditioning industries in Vietnam.	Related Experience: - 4 and more than 4 years: 1.5 points. - 2 - 3 years: 1 point. - Related working experience in Vietnam: 0.5 point	2

54. Financial Criteria (20 maximum points)

The financial part of those proposals that are found to be technically compliant will be evaluated as follows.

The maximum number of points that a bidder may obtain for the Financial Proposal is 20. The maximum number of points will be allocated to the lowest evaluated price bid. All other prices will receive points in reverse proportion according to the following formula:

Points for the Financial Proposal of a bid being evaluated =

[Maximum number of points for the Financial Proposal] x {Lowest price}

[Price of proposal being evaluated]

Financial proposals will be evaluated following completion of the technical evaluation. The bidder with the lowest evaluated cost will be awarded (20) points. Financial proposals from other bidders will

receive prorated points based on the relationship of the bidder's prices to that of the lowest evaluated cost.

Formula for computing points: Example

Points = (A/B) Financial Points
Bidder A's price is the lowest at $20.00. Bidder A receives 20 points
Bidder B's price is $40.00. Bidder B receives ($20.00/$40.00) X 20 points = 10 points

The total score obtained in both Technical and Financial proposals will be the final score for the proposal, with 80% allocated to the Technical proposal and 20% to the Financial proposal. The proposal obtaining the overall highest score will be considered as the winning proposal. This proposal will be considered to be the most responsive to the needs of UNOPS in terms of value for money.

The selection of the preferred bidder will be based on a cumulative analysis, analysing all relevant costs, risks and benefits of each proposal throughout the whole life cycle of the services and in the context of the project as a whole. The lowest priced proposal will not necessarily be accepted.

5. Results Based Monitoring Framework

A. Results Framework Template For Project Implementation

51. The Results of the Project are monitored through the following Framework in Table 5. The Implementing Partner will provide input indicators to meet the output expectations of the Project and update the Morning Framework through each report.

Table 5. Monitoring and Evaluation Framework

Impact Level:

The design and implementation of the National Green Cooling Program will create an inclusive impact on the cooling sector from the top government agencies to grass-root level. ETPs' support in all legal, technical and financial aspects will encourage relevant stakeholders to change and unlock the public and private financing for energy efficiency investments.

Long-Term Outcome:

The Green Cooling Program will serve as a platform to strengthen coordination between government agencies mandated with energy efficiency and climate and ozone mitigation, as well as key stakeholders in the cooling sector (manufacturers, standard-setting bodies, etc.) towards a common goal of transforming the market towards lower GWP, high energy efficient while meeting international environmental goals and commitments. Ultimately, it will lead to an increased deployment of energy efficiency projects.

ETP Outcome	Project Outputs	Indicator	Target	Data Source and Means of Verification
Strategic Outcome 1. Strengthened Enabling Policy Environment				
Developing The National Green Cooling Program and roadmap to facilitate energy transition in refrigeration and air-conditioning sectors.	Output 1: National Data Survey, Compilation and Analysis Output 2: Assessment and projections of growth in cooling sectors/sub-sectors Output 3: Sector/subsector review of refrigerants, technologies, regulatory, policy and gap analysis. Output 4: Development of the National Green Cooling Program and its roadmap	Indicator 1: # of databases established Indicator 2 # of publications Indicator 3.1 # of publications Indicator 4: # of roadmaps developed	Indicator 1: 1 Indicator 2: 1 Indicator 3: 1	Reports to be delivered as part of this project Relevant reports published on ETP's website

			Indicator 4: 1	
Strategic Outcome 4. Knowledge and Awareness Building				
Number of trainings, knowledge sharing events, and/or awareness workshops organized at national and regional levels building institutional capacity and knowledge networks	Output 5: Consultation workshops on the draft National Green Cooling Program and its roadmap	Indicator 5: Number of workshops (number of participants, gender disaggregated participation)	Indicator 5: 2 (50 participantes; 50% women)	Training and workshop Reports

6. Conclusion

55. The National Green Cooling Program established under the ETP-DCC cooperation will accelerate progress in efficient, climate friendly cooling, setting higher energy efficiency standards as a tool to meet energy and environmental objectives. By improving cooling efficiency, they can reduce the need for new power plants, cut emissions and save consumers money. The ETP's approach of providing an inclusive package of legal, technical and financial solutions in the National Green Cooling Program will accelerate the transition to climate friendly cooling, and identify opportunities to incorporate efficient cooling into stronger Nationally Determined Contributions under the Paris Agreement.

56. The collaboration will directly enhance the capacity of governmental authorities in developing and operationalizing policies while facilitating financial and technical initiatives to support the private sector to transform the cooling sector in Vietnam to become more climate friendly to contribute to the net-zero commitment by 2050.

57. Furthermore, the Project's activities are an initial step to provide technical evidence in support of revising national standards and labelling on energy efficiency in the cooling sector.