Terms of Reference for

Research on the ban of use HCFC-141b as blowing agent in pipe insulation sub-sector under PU Foam Sector

1. **Background**
2. The Sector Plan for Phase out of HCFC-141b in the PU Foam Sector in China (phase I) was approved in November 2016. According to the sector plan, pipe insulation sub-sector is targeted as a prioritized sub-sector to phase out HCFC-141b in 2020.
3. As proposed in the foam sector plan, a ban on the use of HCFC-141b as a blowing agent in the pipe insulation sub-sector (hereinafter as ban) will be issued in order to achieve timely compliance with the Montreal Protocol and sustainable phase-out of HCFC-141b in China. It is essential to research the technical feasibility, economic and environmental impacts for issuing the ban, and collect the opinions from the companies, industrial associations and relevant stakeholders. This study should also identify measures to minimize or mitigate negative impacts that may impose on the industry by the ban.
4. **Objectives**
5. The objectives of this assignment are to: 1) collect the HCFC-141b consumption information and ODS-free alternative technology applications of the pipe insulation sub-sector through questionnaires and on-site visits to foam companies and system houses; 2) provide evaluation and assessment of the impact of issuing bans on the use of HCFC-141b in this sub-sector and propose recommendations to avoid or mitigate potential negative impacts; and 3) propose draft legal texts for the ban.
6. **Work Scope**
7. Collect information on the status of the pipe insulation application in the PU foam sector, which includes the development of the sub-sector in the past 10 years, HCFC-141b consumption status, the number of pipe insulation enterprises and distribution by size of enterprises, and by province and region where companies in this sub-sector are highly concentrated.
8. Design and finalize the questionnaire of survey which should cover key information of enterprises, such as establishment date, contact information, consumption of HCFC-141b in the past 3 years, application of alternatives or intended alternatives, baseline equipment information, and any obstacles and/or difficulties experienced during conversion.
9. Distribute and collect the questionnaires to at least 200 PU foam pipe insulation companies, which would account for at least 80% of the HCFC consumption in the sub-sector, with consideration of the geographic locations, consumption size distributions and history of receiving MLF. Meanwhile, carry out on-site visit to at least 40 pipe companies and 5 system houses that have clients in the pipe insulation sub-sector.
10. Prepare evaluation reports on the impact of issuing ban on the use of HCFC-141b as a blowing agent in pipe insulation sub-sector. The reports should cover but not limited to the following information:
	* + - 1. Overall condition of the pipe insulation sub-sector, such as the number of enterprises and production capacity nationally, development trend in the future, and existing technical standards;
				2. Analysis of the data from collected questionnaires and site-visits on the HCFC-141b consumption, baseline equipment, business status, and derive the national scenario;
				3. Analysis of the HCFC-141b alternatives suitable for the sub-sector, current alternative application status, and difficulties and challenges encountered in phase-out process;
				4. Evaluation of the economic, social, and environmental impacts of issuing the ban in the sub-sector;
				5. Provide advice and suggestions to assist all sub-sector enterprises to implement HCFC-141b phase-out activities smoothly.
11. Draft a notice on the bans with the evaluation report on the impact of issuing bans.
12. Organize at least two meetings with stakeholders to discuss the plan on collecting data from the sub-sector and disseminate the finding from the survey.

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|  | Meeting | Participants | Estimated participants |
| 1 | Consultation meeting on site visit plan and questionnaire | The consultant/FECO/ associations/ sector experts, foam companies and system house | 30 |
| 2 | Consultation meetings on the evaluation report and draft ban | The consultant/MEE/FECO/ sector experts/foam companies and system house/associations | 60  |

1. **Output**
2. The output of the activity includes: (a).questionnaire employed for the survey, questionnaire dissemination and collection plans and on-site visiting plan, (b) evaluation report on the issuing ban in the pipe insulation sub-sector, (c). draft of the ban, and (d) at least two meeting minutes.
3. **Qualification of consultant**
4. The procurement method of Consultant Qualification Selection will be used for this assignment. The selection of the consultant will be based on its qualification, and the selected consultant firm will be invited to submit a combined technical and financial proposal for this assignment for review and approval before awarding the contract.
5. The required qualifications of the consultant firm include:
	1. Familiarity with the PU foam industry and the pipe insulation sub-sectors;
	2. Familiarity with on Multilateral Fund projects of the Montreal Protocol and the Sector Plan for Phase out of HCFCs in the PU foam sector at other sectors;
	3. Had experiences in conducting national or industrial-level surveys in the past 5 years;
	4. Familiarity with HCFC-141b alternative technologies in pipe insulation applications, and can provide evaluation and suggestions based on the information collected during survey and on-site visits.
	5. Have the capacity to organize sector level meetings and invite relevant stakeholders to join the meeting and discussion.
6. **Schedule**
7. The lump sum contract will be used for the activity. The duration of this contract is estimated to be from March to December, 2020. The workload is around 300 person days. It is recommended at least three persons, with one team leader and two team members, to undertake this activity. The minimum qualification requirements for the key personnel is indicated as following:

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| **Position** | **Qualification Requirements** | **Estimated Work Time (Person/Day)** |
| Team leader | 1. Strong influence and ability of coordination;
2. Responsible for the assignment to ensure satisfied performance of the team and report to PMO regularly on project progress;
3. Familiar with the national regulations related to ODS phase-out and international protocols;
4. Familiar with the process of issuing regulations or policy;
5. Has experience on regulation and policy preparation;
6. has extensive knowledge on the PU foam pipe insulation application;
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| Team members | 1. be cooperative and have excellent inter-personal skills
2. experience of working with administrative departments, association, or international organizations is preferred;
3. at least 2 years working experience in project management, or chemical industry, or environmental management. The working experience in PU foam sector is highly preferred.
4. Willing and able to travel frequently within China.
5. at least a team member is familiar with process of policy and regulations preparation and procedures to issue bans.
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1. **Payment schedule**
2. The grant of lump sum contract will be disbursed through four installments. The detailed payment condition and amount are indicated in the below table.

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| **No.** | **Payment Condition** | **Percentage of the total contract amount**  | **Estimated disbursement Date** |
| 1 | Contract signed | 10% | Upon the signature of contract |
| 2 | Site visit plan and designed questionnaire submitted and accepted by FECO, organized the first meeting | 30% | 2 months after the contract signed |
| 3 | Draft evaluation report submitted and accepted by FECO | 40% | 6 months after the contract signed |
| 4 | Evaluation report and the draft ban submitted and accepted by FECO, organized the second meeting | 20% | 10 months after the contract signed |

Note: If there is any discrepancy of payment schedule between this TOR and contract, the contract content shall prevail.