**Outline for the implementation of system house projects**

**Objective**

The overarching objective is to reduce demand for HCFC-141b in the foam sector in order to achieve China’s reduction targets under the Stage II HPMP agreement with the MLF. By 2025, HCFC-141b maximum consumption will only be 3,000 MT (330 ODP MT) for spray foam sub-sector. By 2026, all HCFC-141b consumption in PU foam sector shall be completely phased-out. Specifically, the objective of the System house (SH) projects is to provide technical assistance and financial support to system houses in China during the Stage II HCFC-141b phase out sector plan implementation in PU foam sector, to support the SHs to develop the capacity on providing pre-blended polyol with low-GWP alternative blowing agents to their downstream foam enterprises, especially small and medium-sized foam enterprises(SMEs) with technical assistance, to facilitate HCFC-141b phase-out in the sector.

**Criteria for selecting SHs and priorities for SME coverage**

When selecting SHs, below general principles will be followed:

* + The cut-off date: not to consider any projects to convert HCFC-based manufacturing capacity installed after 21 September 2007;
	+ The local ownership: the proportion of A5 ownership will be eligible for funding.
	+ The alternatives to be selected by the SHs: the selected alternatives should be at least one of the 3 selected alternatives (HFO, HC, water-based) .

Besides, in this particular project, the following factors will be evaluated as well:

* + The amount of HCFC-141b consumption: the SH should have substantial HCFC-141b consumption, which can realize stepped and complete elimination of HCFC-141b consumption during the subproject implementation.
	+ Technical capability: the SH should have adequate space, technical staff and capability on formulation and production of preblended polyol (PBP) with hydrocarbon or other zero ODP and low GWP blowing agents, as well as providing training and after-sale service to customers in a timely manner; in case of the selection of HC technology, SH should be enabled to conduct required safety measures at the plant according to local requirements.
	+ The distribution of downstream foam enterprises: each SH has no less than 20 downstream foam enterprises / customers, where the majority are SMEs (whose annual consumption is less than 20MT), enabling them to adopt PBP with alternative blowing agents.
	+ Geographical distribution: the SH would be given priority, if the province/region involved in the location of the SH was not covered by previous SH subprojects.
1. **Approach**
2. **SHs converting to HC technology**

The SHs that intend to develop foam formulations for HC technology will be supported with incremental capital cost (ICC) coverage.The funding is to be used to purchase the pre-mixing machines, safety measures and storage tanks, to conduct trials, and for technical and safety guidance to downstream foam enterprises, and for other expenses deemed eligible by FECO in coordination with the World Bank, and in accordance with ExCom guidelines.

The technicalguidance will cover the downstream foam enterprises of the beneficiary SHs who are willing to go to HC technology. The SHs will organize technical and safety trainings during their downstream foam enterprises’ conversion period, and the on-site technical support and safety measures consultations would be given to them as well. Both the training meeting minutes and on-site support records, including the enterprises’ names, locations, the technical consultants and SH names who provide the technical and safety measures support, present the technical and safety conversion issues and the corresponding solutions and technical advice, the measures undertaken, and the results, etc, would be compiled and submitted to FECO, which will be verified as the condition for fund disbursement to SHs.

* 1. **Sub-project application**

The SHs that voluntarily participate in the project should submit their applications to FECO, along with supporting documents as requested. According to the ExCom’s guidelines and the PU foam sector plan, the SHs will be selected based on the eligibility criteria and funding priority mentioned above. A sub-project implementation plan will be prepared by each SH for FECO approval before signing a sub-grant agreement with FECO, including a commitment by SHs to provide the above technical assistance to downstream enterprises.

**1.2 Baseline verification**

Upon the applications received, FECO in collaboration with ISA, will carry out preliminary screening of the applications submitted by the SHs. The SHs will be selected based on the eligibility criteria and funding priority mentioned above. After that, FECO will organize baseline verifications at each SH that passes the preliminary screening, so as to 1) verify the eligibility and proportion of Chinese investment in the corporate capital; 2) collect the information on polyols production, equipment, downstream foam enterprises information and the baseline year consumption of HCFC-141b; and 3) obtain corporate financial data and analyze the business conditions.

**1.3 Sub-project implementation plan**

The sub-project implementation plans shall be prepared and submitted to FECO by the beneficiary SHs. The implementation plan shall include project background, the basic information of the SH, the selection of alternative technologies, conversion/retrofit plan, the plan for training and technical assistance to be delivered to downstream foam enterprises along with pre-identified companies if available and if not, the targeted number/phaseout or percent of downstream foam enterprises in the SH market (to be confirmed by the ISA), budget, project team, as well as the implementation schedule.

Grant funds from the MLF can only be used for financing agreed eligible ICC. Eligible ICC includes the cost of the purchasing or retrofitting of the polyol production equipment, the storage tanks for hydrocarbon blowing agent, the pre-mixing machine and storage tank for hydrocarbon pre-mixed polyol, the spare parts, the safety equipment required for safe conversion (ventilation system, detection and alarm device, nitrogen system, anti-static coating and device, etc.), training, technical supports and safety measures consultations to downstream foam enterprises, trial run, and installation and adjustment, etc.

According to relevant regulations, if necessary and needed, the preparation of EMP, ECP and RAP, where applicable, should be included in the implementation plan, and if any, the further action should be taken.

**1.4 Sub-project approval**

Upon receiving the baseline verification report and the subproject implementation plans, FECO will organize an assessment meeting which invites technical experts, ISA, and safety experts (if necessary) to evaluate the implementation plans. The assessment panel will put forward its opinions to FECO on the following aspects:

* + Whether or not the implementation plan is feasible and comprehensive in terms of HCFC-141b phaseout covered (meeting minimum required amounts);
	+ Whether or not the alternative technology selected is reasonable;
	+ Whether or not the conversion/retrofit plan is feasible;
	+ Whether or not the plan for training, technical support to be delivered to downstream foam enterprises is acceptable and adequate;
	+ Whether or not the budget is eligible and reasonable;
	+ If the counterpart fund is needed, whether or not SH has the capability to provide the counterpart fund;
	+ Whether or not the implementation schedule is reasonable.

The beneficiary SHs shall make necessary modifications to sub-project implementation plans in accordance with comments from the assessment meeting, and submit to FECO for approval. After FECO approves the sub-project implementation plans, FECO will sign the subproject contracts with the SHs.

**1.5 Sub-project implementation**

The beneficiary SHs will implement the sub-projects according to provisions of contracts and the implementation plans. They are responsible for the goods, works and non-consulting procurement, and financial management during project implementation and shall ensure the subproject implementation follows the schedule in the plan.

If the beneficiary SHs, for some reasons, cannot duly enforce the sub-grant agreement or the implementation plan during implementation, they shall submit an application in written in advance, illustrating the reason and proposing a revised plan or suggestions to FECO for approval. Further actions for the changes can be taken only when FECO has no objection on the amendment proposal.

The beneficiary SHs shall submit the requests for payments to the FECO based on the statement of expenditures (SOE) in accordance with the terms of payments in the contracts. During the sub-project implementation, the beneficiary SHs shall provide the reports/statements with any supporting documents as required by each milestone stipulated in the contracts to FECO for review. The beneficiary SHs should maintain the essential project documents including purchasing and disbursement records for supervision.

In this project, the sale of a minimum of 500MT of HC pre-blended polyols to downstream foam enterprises will be requested. This operation would be verified based on (1) the sale records from SHs to downstream foam enterprises, including the sale contracts, invoices, and other documentation evidences, (2) the list of downstream foam enterprises provided by the beneficiary SH, indicating the number of downstream foam enterprises who purchase PBP from the SH, the amount of PBP sold, and, the price of the trade between the SHs and downstream foam enterprises. At least 100 person-time training meeting, and minimum 5 times of on-site technical/safety consultations would also be required. The training meeting minutes including the participants list, training themes and other records, and the on-site consultation recording forms would be verified as the condition for fund disbursement to SHs. The contract validity lasts to the end of 2025. The system houses will be requested to finish the equipment retrofitting in less than a year and set reduction milestones mid-year until the complete phase-out of HCFC-141b consumption before the end of 2025. FECO and ISA will organize the verifications on the achievement of respective milestone stated in each year and the final complete phaseout target.

After the completion of the conversion, the sub-project completion report shall be prepared by beneficiary SHs with the assistance by ISA and submitted to FECO for review. FECO will organize sub-project acceptance to verify that 1) the phase-out impact of HCFC-141b consumption, 2) equipment procured and procurement procedures, 3) approval documents of local authorities, 4) financial records, 5) marketing status of the new pre-blended polyol with HC, and 6) technical support and safety measures consultations given to the downstream foam enterprises.

In addition to the subproject acceptance on beneficiary SHs, FECO and ISA will conduct spot checks on downstream foam enterprises of the beneficiary SHs, with the purpose of checking the phase-out of HCFC-141b consumption, the adoption of PBP with HC and the technical assistance/training/safety guidance received by the clients. Relevant supporting documents or records should be provided by the downstream foam enterprises, including confirmation that they have received the TA and subsidized material for testing and trials

**1.6 Safety Assurances**

The SHs converting to HC technology basically need to obey the uniform standards and policies on the management of dangerous chemicals in China because HC is flammable, also they need to obey the local authorities’ rules or requirements on the safety measures for using HC during the production, if any. The funds would support SHs’ own safety retrofits and the safety measures consultations to the downstream foam enterprises who intend to use HC pre-blended polyols for foaming. The downstream foam enterprises who want to convert to HC technology need to conduct the safety retrofits on their own expense, they should follow the local authorities’ safety guidelines and requirements, and the SHs will provide guidance on needed safety equipment and/or measures to downstream foam enterprises. When selling the HC pre-blended polyols to the downstream foam enterprises, the SHs are requested to check and record the safety measures documentation of using HC pre-blended polyols provided by the downstream foam enterprises to ensure the foam enterprises’ safe production, the documentation including the measures taken, the equipment investment information, relevant acceptance/permission/registration documentations or assessment report, etc. All these documents need to be submitted to FECO through the SHs for review. The SHs should undertake the safety measures for transport and delivery to the downstream foam enterprises in compliance with the uniform standards and policies on the management of dangerous chemicals in China. The SHs would give technical support when the downstream foam enterprises have any safety questions on safety and what measures and equipment to invest in, what guidelines to follow, etc. SHs should report to FECO on when, what and how its support on safety measures is provided to its downstream foam enterprises.

**1.7 Supervision and inspection**

Supervision will be carried by FECO, ISA, independent verification institutions and other relevant departments in accordance with subproject contracts, as well by the World Bank. The beneficiary SHs shall cooperate in the on-site supervision and provide the necessary information and documents when required. According to the roles and responsibilities of different stakeholders, the supervision and inspection will be performed accordingly.

1. **SHs converting to water technology**

The SHs that intend to develop foam formulations for water-blown technology will be supported through incremental capital costs (ICC) and alternatives promotion cost (APC).The funds can be used to purchase the pre-mixing machines, storage tanks, experimental and testing facilities, to develop new formula, to conduct trials and production testing, to provide training and technical guidance to downstream foam enterprises, and to provide part of free water-preblended polyols for trials and testing at the downstream foam enterprises to promote market penetration of water pre-blended polyols to downstream foam enterprises, and for other expenses deemed eligible by FECO and in accordance with ExCom guidelines.

The training and technicalguidance will cover the downstream foam enterprises of beneficiary SHs who are willing to go to water technology. The SHs will organize technical trainings during the downstream foam enterprises’ conversion period, and the on-site technical support would be given to the downstream foam enterprises. Both the training meeting minutes and on-site supports records, including the enterprises’ name, location, the technical consultants who give the technical supports, the technical issues, the corresponding solutions and technical advice, the measures undertaken, and the results, etc, would be compiled and submitted to FECO, which will be verified as the terms of funds disbursement to SHs.

* 1. **Sub-project application**

Same as 1.1.

* 1. **Baseline verification**

Same as 1.2.

**2.3 Sub-project implementation plan**

The sub-project implementation plans shall be prepared and submitted to FECO by the beneficiary SHs. The implementation plan shall include project background, the basic information of the SH, the selection of alternative technologies, conversion/retrofit plan, the plan for training and technical assistance to be delivered to downstream clients, budget, the composition of the project team, as well as the implementation schedule.

Grant funds from the MLF can only be used for financing agreed eligible ICC and APC. Eligible ICC include the cost of the purchasing or retrofitting of the polyol production equipment, the pre-mixing machine and storage tank for water pre-mixed polyol, the spare parts, testing facilities, training and technical supports to downstream foam enterprises, trial run, and installation and adjustment, etc. Eligible APC includes the cost of the SH’s incremental operation cost for selling 500MT of water pre-blended polyols to at least 10 downstream foam enterprises, this 500MT should include at least 20MT for SH to give water-based PBP samples for trials free-of-charge to at least 10 downstream foam enterprises, each downstream foam enterprise should receive at least 2MT. In this way, to subsidize the downstream foam enterprises, especially the SMEs, during their technical conversion period, and to promote the adoption of water pre-blended polyols among the downstream foam enterprises.

According to relevant regulations, if necessary and needed, the preparation of EMP, ECP and RAP, where applicable, should be included in the implementation plan, and if any, the further action should be taken.

**2.4 Sub-project approval**

Same as 1.4.

**2.5 Sub-project implementation**

The beneficiary SHs will implement the sub-projects according to provisions of contracts and the project implementation plans. They are responsible for the goods, works and non-consulting procurement, and financial management during project implementation and shall ensure the subproject implementation follows the schedule in the implementation plan.

If the beneficiary SHs, for some reason, cannot duly enforce the contracts or the implementation plans during implementation, they shall submit an application in written in advance, illustrating the reason and proposing a revised plan or suggestions to FECO for approval. Further action for the changes can be taken only when FECO has no objection on the amendment proposal.

The beneficiary SHs shall submit the requests for payments to the FECO based on the statement of expenditures (SOE) in accordance with the terms of payments in the contracts. During the sub-project implementation, the beneficiary SHs shall provide the reports/statements with supporting documents as required by each milestone stipulated in the contracts to FECO for review. The beneficiary SHs should maintain the essential project documents including purchasing and disbursement records for supervision.

In this project, the sale of 500MT of water pre-blended polyols to a minimum of 10 downstream foam enterprises will be requested in the contract. The SHs will be requested to give at least 20 MT trial samples of water-based PBP to at least 10 downstream foam enterprises by free-of-charge, each downstream foam enterprise should receive at least 2MT. This operation would be verified based on (1) the sale records from SHs to downstream foam enterprises, including the sale contracts which should indicate the amount of free trial samples, (2) the list of downstream foam enterprises provided by the beneficiary SH, indicating the number of downstream foam enterprises who purchase PBP from the SH, the amount of PBP sold, the price of the trade between the SHs and downstream foam enterprises, (3) invoices, and other documentation evidences if needed. The list of downstream foam enterprises should include details – address, HCFC-141b consumption level before TA/supply of new polyol, confirmation by downstream foam enterprises that after the receipt of TA/supply of new polyol it no longer use HCFC-141b. FECO, in collaboration with ISA, will organize the verification to verify the delivery of free trial samples, the achievement of 500MT sales target, and the number of recipients.

The contract validity lasts to the end of 2025. The SHs will be requested to finish formulating the new preblended polyol and retrofitting equipment that is proven necessary within 1 year and set reduction milestones in each 6 months until the complete phase-out of HCFC-141b consumption by the end of 2025. After completing the conversion, SH should sell no less than 500MT of water-based pre-blended polyols to at least 10 downstream foam enterprises. At least 100 person-time training meeting, and minimum 5 times of on-site technical/safety consultations would also be required. The training meeting minutes including the participants list, training themes and other records, and the on-site consultation recording forms would be verified as the condition for fund disbursement to SHs. FECO and ISA will organize the verification on the achievement of respective milestone stated in each year and the final complete target.

After the completion of the conversion, the sub-project completion report shall be prepared by beneficiary SHs and submitted to FECO for review. FECO will organize sub-project acceptance to verify that 1) the phase-out impact of HCFC-141b consumption, 2) equipment procured and procurement procedures, 3) approval documents of local authorities, if any, 4) financial records, 5) marketing status of the water-based PBP, 6) training and other technical supports given to downstream foam enterprises, and 7) the trial samples received by downstream foam enterprises and their feedback on the operation performance.

**2.6 Supervision and inspection**

Supervision will be carried by the World Bank, FECO, ISA, independent verification institutions and other relevant departments in accordance with contracts. Spot check on a batch of downstream foam enterprises will be conducted to inspect the market penetration of water pre-blended polyols achieved. The beneficiary SHs and selected downstream foam enterprises shall cooperate in the on-site supervision and provide the necessary information and documents when required. According to the roles and responsibilities of different stakeholders, the supervision and inspection will be performed accordingly.

1. **SHs converting to HFO technology**

The SHs intend to convert to HFO technology will be supported with incremental capital cost (ICC), as needed, and alternatives promotion cost (APC).The funds can be used to purchase pre-mixing machines, storage tanks, experimental and testing facilities, to develop new formula, to conduct trials and production testing, to provide technical guidance to downstream foam enterprises, to promote the market penetration on HFO pre-blended polyols to downstream foam enterprises, and for other expenses deemed eligible by FECO and in accordance with ExCom guidelines.

The technicalguidance will cover the downstream foam enterprises of beneficiary SHs who are willing to go to HFO technology. The SHs will organize technical trainings during the downstream foam enterprises’ conversion period, and the on-site technical measures supports would be given to the clients. Both the training meeting minutes and on-site support records, including the enterprises’ name, location, the technical consultants and system house who give the technical supports, the technical issues, the corresponding solutions and technical advice, the measures undertaken, and the results, etc, would be compiled and submitted to FECO, which will be verified as the terms of funds disbursement to SHs.

* 1. **Sub-project application**

Same as 1.1.

* 1. **Baseline verification**

Same as 1.2.

**3.3 Sub-project implementation plan**

The sub-project proposals shall be prepared and submitted to FECO by the beneficiary SHs. The implementation plan shall include project background, the basic information of the SH enterprise, the selection of alternative technologies, conversion/retrofit plan, the plan for training and technical assistance to be delivered to downstream foam enterprises (including target number and phaseout and name if available), budget, the composition of the project team as well as the implementation schedule.

Grant funds from the MLF can only be used for financing agreed eligible ICC and APC. Eligible ICC include the cost of the purchasing or retrofitting of the polyol production equipment, the pre-mixing machine and storage tank for HFO pre-mixed polyol, the spare parts, testing facilities, training and technical supports to downstream foam enterprises, trial run, and installation and adjustment, etc. Eligible APC includes the cost of the SH’s incremental operation cost for selling 120MT of HFO pre-blended polyols to at least 5 clients, this 120MT include at least 10MT for SH to give HFO-based PBP samples for trials free-of-charge to at least 5 clients, each client should receive at least 2MT. In this way, to subsidize the downstream foam enterprises, especially the SMEs, during their technical conversion period, and to promote the adoption of HFO pre-blended polyols among the downstream foam enterprises.

According to relevant regulations, if necessary and needed, the preparation of EMP, ECP and RAP, where applicable, should be included in the implementation plan, and if any needed, further action should be taken.

**3.4 Sub-project approval**

Same as 1.4.

**3.5 Sub-project implementation**

The beneficiary SHs will implement the sub-projects according to provisions of contracts and the project implementation plans. They are responsible for the goods, works and non-consulting procurement, and financial management during project implementation and shall ensure the subproject implementation follows the schedule in the implementation plan.

If the beneficiary SHs, for some reason, cannot duly enforce the contracts or the implementation plans during implementation, they shall submit an application in written in advance, illustrating the reason and proposing a revised plan or suggestions to FECO for approval. Further action for the changes can be taken only when FECO has no objection on the amendment proposal.

The beneficiary SHs shall submit the requests for payments to the FECO based on the statement of expenditures (SOE) in accordance with the terms of payments in the contracts. During the sub-project implementation, the beneficiary SHs shall provide the reports/statements with supporting documents as required by each milestone stipulated in the contracts to FECO for review. The beneficiary SHs should maintain the essential project documents including purchasing and disbursement records for supervision.

In this project, the sale of 120MT of HFO pre-blended polyols to a minimum of 5 clients will be requested in the contract. The SHs will be requested to give at least 10MT trial samples of HFO-based PBP to at least 5 downstream foam enterprises by free-of-charge, each downstream foam enterprise should receive at least 2MT. This operation would be verified based on (1) the sale records from SHs to downstream foam enterprises, including the sale contracts which should indicate the amount of free trial samples, (2) the list of downstream foam enterprises provided by the beneficiary SH, indicating the number of downstream foam enterprises who purchase PBP from the SH, the amount of PBP sold, the price of the trade between the SHs and downstream foam enterprises, (3) invoices, and other documentation evidences if needed. The list of downstream foam enterprises should include details – address, HCFC-141b consumption level before TA/supply of new polyol, confirmation by downstream foam enterprises that after the receipt of TA/supply of new polyol it no longer uses HCFC-141b. FECO, in collaboration of ISA, will organize the verification to verify the delivery of free trial samples, the achievement of 120MT sale target, and the number of recipients.

The contract validity lasts to the end of 2025. The system houses will be requested to finish the equipment and development of the HFO-system within 1 year and set reduction milestones every 6 months until the complete phase-out of HCFC-141b consumption by the end of 2025. After completing the conversion, SH should sell no less than 120MT of HFO pre-blended polyols to at least 5 downstream foam enterprises. At least 50 person-time training meeting, and minimum 3 times of on-site technical/safety consultations would also be required. The training meeting minutes including the participants list, training themes and other records, and the on-site consultation recording forms would be verified as the condition for fund disbursement to SHs. FECO and ISA will organize the verification on the achievement of respective milestone stated each six months and the final complete target.

After the completion of the conversion, the sub-project completion report shall be prepared by beneficiary SHs and submitted to FECO for review. FECO will organize sub-project acceptance to verify that 1) the phase-out impact of HCFC-141b consumption, 2) equipment procured and procurement procedures, 3) approval documents of local authorities, if any, 4) financial records, 5) marketing status of the HFO-based PBP, 6) training and other technical supports given to the downstream foam enterprises, and 7) the trial samples received by downstream foam enterprises and their feedback on the operation performance.

**3.6 Supervision and inspection**

Supervision will be carried by the World Bank, FECO, ISA, independent verification institutions and other relevant departments in accordance with contracts. Spot check on a batch of downstream foam enterprises will be conducted to inspect the market penetration of HFO pre-blended polyols achieved. The beneficiary SHs and selected downstream foam enterprises shall cooperate in the on-site supervision and provide the necessary information and documents when required. According to the roles and responsibilities of different stakeholders, the supervision and inspection will be performed accordingly.