

Pakistan Cooling Action Plan (PCAP)

First PCAP Working Group Meeting Meeting Report

October 14, 2022

Serena Hotel, Islamabad

Hosted by Ministry of Climate Change (MoCC), CLASP & HIMA^Verte



Background

The inaugural Pakistan Cooling Action Plan (PCAP) workshop conducted in December 2021 concluded with the decision to form a working group that will guide development of the PCAP, being developed with support from CLASP/HIMA^Verte. Composition of the PCAP working group included key stakeholders from both public and private sectors.

The PCAP working group was notified by the Ministry of Climate Change in the Gazette of Pakistan on September 1, 2022. The first PCAP working group meeting was hosted by MoCC and CLASP/HIMA^Verte on October 14, 2022 at Serena Hotel in Islamabad.

Objective

The objectives of the first PCAP Working Group meeting were to assimilate findings of the cooling needs assessment and to bring synergy among working group members on overall objectives of the PCAP with the intention to accelerate PCAP development.

The meeting remained focused on:

- Elaborating terms of reference of the PCAP working group and role in PCAP development
- Scope of PCAP and selection of priority cooling sectors
- Findings of the Cooling Needs Assessment (CNA) conducted by CLASP and HIMA^Verte
- Priority interventions in time for COP-27 to address key challenges identified in the CNA
- Formation of technical sub-committees for respective priority interventions

Agenda

The meeting agenda was as follows.

Venue: Quetta Board Room, Serena Hotel, Islamabad
Time: 9:45 am to 1.00 pm.
Date: October 14, 2022

09.45 – 10.00 am	<i>Registration</i>
10.00 – 10.10 am	<i>Welcome and Introduction Mr. Syed Mujtaba Hussain – Senior Joint Secretary, MoCC</i>
10.10 – 10.15 am	<i>Meeting Objectives & TOR of PCAP Working Group Mr. Ali Habib – National Team Leader, CLASP</i>
10.15 – 10.25 am	<i>NEECA's contribution to NDCs Feroz Baig – Director Industry, NEECA</i>
10.25 – 10.35 am	<i>Overview of Pakistan Cooling Action Plan Amna Shahab – Project Manager, CLASP/HIMA^Verte</i>
10.35 – 10.55 am	<i>Findings of Cooling Needs Assessment Areeb Hussain – Project Coordinator, CLASP/HIMA^Verte</i>
10.55 – 11.05 am	<i>Public Procurement Standards for Electric fans Mr. Abdur Rahman – Managing Director, PEECA</i>
11.05 – 11.25 am	<i>Tea Break</i>
11.25 am – 12.25 pm	<i>Consultation sessions for three priority focus areas:</i> <ul style="list-style-type: none"> <i>i. Low Emission Cooling Policies & Strategies (National & Sub-national)</i> <i>ii. Air Conditioners & Refrigerators transition to lower emissions</i> <i>iii. Electric fans market transition to lower emissions & Cooling Access</i>
12.25 – 12.45 pm	<i>Summary of discussions</i>
12.45 – 12.50 pm	<i>Closing remarks Mr. Abdur Rahman – Managing Director, PEECA</i>
1.00 pm	<i>Lunch</i>

Proceedings:

The meeting began with a round of introductions followed by welcome and introductory remarks from the chair of the PCAP Working Group **Mr. Syed Mujtaba Hussain, Senior Joint Secretary, International Cooperation, Ministry of Climate Change**. He highlighted the importance of developing a cooling action plan for Pakistan, that has been incorporated in the revised 2021 Nationally Determined Contributions (NDCs). He emphasized the urgent need to expedite development of PCAP linked with the ongoing review of Pakistan's GSP plus status for preferential trade by the European Union (EU).

He added that with support from CLASP and HIMA^Verte, the development of PCAP is being fast

tracked. The cooling needs assessment has been completed in October 2022 and MoCC is targeting to have a zero draft of the PCAP by January 2023. Furthermore, the MoCC aims to leverage the COP 27 platform and secure international support by presenting 5-10 priority actions for GHG emission reduction from the cooling sector. Mr. Mujtaba encouraged input from the working group members in identifying and defining these priority interventions. He concluded by reiterating the importance of a collaborative approach with input from all key stakeholders. While the MoCC will steer the development of PCAP, the Cabinet is expected to approve the final plan, while NEECA is expected to have the main implementation role.

Mr. Ali Habib, National Team Leader for the PCAP project explained objectives of the meeting, terms of reference of the PCAP working group (Annex II), expected contribution from the nominated working group members and targeted outcomes of the meeting. He provided a proposed outline of the PCAP document to provide a better understanding of the structure and composition of the final action plan. He also highlighted the two new external factors (COP-27 in November 2022 and the 2022 Floods in Pakistan) in response to which CLASP and HIMA^{Verte} have accelerated PCAP development support to MoCC.

The PCAP working group TORs state authority to establish technical sub-committees. Mr. Ali Habib informed participants of formation of three technical sub-committees agreed with the MoCC, that focus on the three priority focus areas of the proposed PCAP. These three technical sub-committees are: (i) Policies & Strategies (to address GHG emissions from the cooling sector); (ii) Air Conditioners & Refrigerators; and (iii) Electric Fans & Cooling Access. PCAP working group members will be divided into 3 respective groups for discussion in the second half of the meeting. This will be considered the first meeting of the technical sub-committees and follow-up meetings will be scheduled individually for each sub-committee.

The following presentations were delivered:

NEECA's contribution to NDCs – Mr. Feroz Baig, Director Industries, NEECA

NEECA is a key partner in the PCAP project and expected to be the lead organization for implementation of priority actions and recommendations. Mr. Feroz Baig provided an overview of NEECA's mandate, alignment with the NDCs, NEECA's assessment of sector wise emission reduction potential from efficiency improvements, ongoing initiatives relevant to the cooling sector such as Minimum Energy Performance Standards (MEPS) and key interventions linked to PCAP for which further assistance is required.

Overview of Pakistan Cooling Action Plan – Ms. Amna Shahab, Project Manager CLASP/HIMA^{Verte}

Ms. Amna Shahab introduced the Clean Cooling Collaborative (previously known as the Kigali Cooling Efficiency Programme-KCEP) project and its main outputs. She explained the importance and purpose of National Cooling Action plans and shared examples of National Cooling Plans being developed by other countries and why it was essential for Pakistan to develop a macro level policy tool such as Pakistan Cooling Action Plan (PCAP). The development of PCAP has been included as one of the eight cross sectoral priority actions in Pakistan's NDCs. She provided an overview of some key cooling figures, changes in temperature and how they are impacting Pakistan, the Pakistan Cooling Action Plan methodology, stages/steps in its development, key project timelines and milestones.

Findings of Cooling Needs Assessment – Mr. Areeb Hussain, Project Coordinator CLASP/HIMA^{Verte}

Cooling Needs Assessment (CNA) is an in-depth data driven assessment for current and future cooling demand and emissions from priority cooling sectors, that sets the baseline and identifies critical intervention areas for the cooling action plan. Mr. Areeb Hussain presented findings of the CNA for the following priority cooling sectors selected for Pakistan: (i) Domestic Air Conditioning; (ii) Domestic Refrigeration; (iii) Commercial Refrigeration; and (iv) Electric fans. The CNA establishes baseline for energy use and in-direct GHG emissions for each of the priority cooling sectors, while also providing projections until 2030 under four different scenarios. The assessment currently does not account for direct emissions from the cooling sector, these will be added in the next phase of PCAP development.

Mr. Abdur Rahman, Managing Director, Punjab Energy Efficiency and Conservation Authority

Mr. Abdur Rahman welcomed the initiative of developing PCAP for Pakistan by MoCC, CLASP and HIMA[^]Verte and expressed support and cooperation from PEECA. He emphasized importance of energy efficiency and explained how improvements in efficiency standards have the highest potential for addressing the energy supply-demand deficit in Pakistan while contributing significantly to GHG emissions reduction. Mr. Abdur Rahman shared experience from Punjab province in introducing procurement guidelines for energy labeled fans and how other provinces can adopt similar regulations to achieve substantial savings. He concluding by reiterating PEECA's support for PCAP development and encouraging collaboration among all stakeholders.

Following the tea break, participants were divided into three groups as per composition of the technical subcommittees and 2-pager briefs summarizing emission reduction potential for each of the priority cooling sectors, critical challenges and proposed priority interventions to address them were shared with them. Discussions for each group are summarized as follows:

(i) Policies and Strategies Technical Sub-Committee

Moderator: Ms. Amna Shahab, CLASP/HIMA[^]Verte

Participant Name	Organization
Dr. Sardar M. Rafique	Environmental Protection Agency, Azad Jammu & Kashmir
Fatima Khan	WWF Pakistan
Safdar Hayat	PEDO, Energy & Power Department, Khyber Pakhtunkhwa
Noureen Arif	PMU, Energy Department Punjab
Engr. Dr. Zakaullah Khan	Pakistan Engineering Council
Muhammad Amin	NOU, Ministry of Climate Change
Syed Azmat Shah	NOU, Ministry of Climate Change
Feroz Baig	Director Industry, NEECA
Arif Goheer	GCISC, Ministry of Climate Change
Engr. K.B. Ali	Engineering Development Board, Ministry of Industries & Production

An overview of the policy 2 pager brief was given by Ms. Amna to the group members such as what are the challenges faced what are some of the suggested interventions that can be implemented to overcome the challenges.

The members strongly felt that ownership of policies should be at the highest level of government to make their implementation and enforcement effective. They strongly urged that MEPS approval by NEECA should be expedited so that MEPS could be rolled out and procurement standards adopted by provincial governments for public procurement of cooling products. It was also suggested that MEPS should be implemented in a staggered approach with increasing efficiency levels at intervals.

The members also suggested that heavy duties/tariffs should be imposed on inefficient materials/products being imported. This will enable the induction and promotion of only energy efficient new cooling products in our national system. Only energy efficiency products would be considered for import and local manufacturing. This can be a key recommendation of the PCAP.

Sustainable transition strategy of appliances is essential. It was mentioned by NOU representative that a sustainable model needs to be worked out under this PCAP framework so that new appliances being rolled out on grounds of achieving energy efficiency should not become an extra load on national grid. A buy back mechanism should be set up by industry as well as the government. Recovery/disposal centres should be considered for safe dismantling of appliances at end of their life. This proposition can incentivize consumers in transition to energy efficient appliances.

While discussing the training need for new technologies, it was mentioned by NOU that they have

trained more than seven thousand technicians for phase out of CFCs/HCFCs/HFCs, however this will only be beneficial if there is a behaviour change among consumers/technicians. Under current practice, consumers/technicians do not have the awareness and/or motivation to ensure proper disposal of cooling products. An extensive campaign needs to be carried out to increase consumer understanding of why they should buy products with low Global Warming Potential (GWP) refrigerants and why proper disposal of their discarded products is important (end of life capture of refrigerants).

On-bill financing of cooling products was also discussed as being a good idea (through NEPRA and DISCOs) which can be similar to the existing mechanism of buying solar water heaters through the gas utility company.

Some of the members gave examples of work/projects they had dealt with to support the suggestions being offered. For example, Punjab Energy Department has provided provision for those products where testing facilities are not available in Pakistan to allow giving test certificate from their country of origin that they meet the required standards along with a supporting letter from that country's authority. This method could be used for MEPS to be enforced for products for which accredited testing laboratories are not available in Pakistan.

The 'Build Back Greener' policy was also discussed briefly. Some of the same suggestions were repeated such as public procurement standards for buying efficient products such as AC/DC hybrid and DC fans for off-grid areas for the homes to be built as part of the rehabilitation efforts in response to the 2022 Floods.

It was suggested that a Pakistan Engineering Council and CLASP/HV joint session should be planned so that PEC can incorporate some of the suggested interventions in their policies and plans. PEC already has provision in their Building standards about buying energy efficient appliances which is being used by Capital Development Authority for their projects.

The members were asked to take another week to send any other suggestions that may be incorporated in the 2 pagers briefs to the project team.

The Technical Sub-Committee members generally endorsed both 2-pager briefs.

The findings of the group were presented by Mr. Azmat Shah (NOU) to the rest of the working group members.

(ii) Air Conditioners & Refrigerators Technical Sub-Committee

Moderator: Mr. Salman Zaffar, CLASP/HIMA^Verte

Participant Name	Organization
Attique Ahmad	Pakistan Electronics Manufacturers Association (PEMA)/PEL
Engr. Altaf Hussain	Engineering Development Board, Ministry of Industries & Production
Kazi Nasir	Dawlance
Adnan Nazir	Dawlance
Saqib Rasool	Pakistan HVACR Society
Adeel Akhtar	Haier Pakistan
Dilshad	Haier Pakistan
Muhammad Ahmad	Pakistan HVACR Society
Ahmad Nawaz	Pakistan HVACR Society

Mr. Salman Zaffar provided an overview of the 2 pager briefs for air conditioners and refrigerators highlighting the key challenges identified, some suggested interventions and potential for GHG emission reduction.

The first priority intervention raised was immediate roll-out of MEPS for air conditioners and refrigerators. Participating representatives of manufacturers agreed that MEPS should be implemented as soon as possible. In response to the suggestion that MEPS should be staggered, gradually raising standards, all participants generally agreed with the proposition indicating that the industry has the capacity and ambition to comply with staggered MEPS. Representatives from Haier stated that they already operate at the 3-star level of proposed MEPS for air conditioners and are targeting reaching 4-star and 5-star levels. Dawlance representatives suggested that 1-star level can be eliminated from the MEPS and minimum standard can be set at current 2-star level.

An issue highlighted with adopting staggered MEPS was the higher cost of production that would be passed on to consumers. It was argued and generally agreed among all participants that this should not be considered a deterrent and a significant factor to limit MEPS ambitions. Cost of materials are market driven and as new technological developments reach maturity, prices typically normalize. Another aspect raised by representatives of manufacturers was creating awareness among consumers. It would be easier to market and sell higher quality products at premium prices to educated consumers who have awareness and appreciation of star labels.

The pre-requisite of establishing an online product registration system (PRS) for roll out of MEPS was not seen as a critical road block by Mr. Kazi Nasir. Mr. Salman Zaffar explained the value of having an online PRS beyond the industry, for instance as a reference for Customs for restricting import of sub-standard/unregistered products or product parts.

Regarding access to laboratories for testing of products by respective government departments mandated to develop and implement MEPS (NEECA, PSQCA), Mr. Salman Zaffar informed participants of the creation of a separate working group in collaboration with manufacturers for discussing this issue. Representatives from Haier stated that they would be open to the idea of offering their labs to the public sector for product testing. Engr. Altaf Hussain from Engineering Development Board (EDB) suggested that the National Productivity Organization (NPO) should also be brought into the working group as they are already involved in testing of other (non-cooling) products.

On the subject of role and responsibilities of regulating agencies, the representatives highlighted some procedural concerns, such as separate requirements/processes for each agency. For example, reporting requirements to NEECA are different from PSQCA. Dealing with multiple agencies raises overheads for manufacturers, the recommendation is to harmonize processes. Another case in point is the Rs. 50 per sticker charged by NEECA for security label/sticker. The aggregated amount for all products sold is an excessive amount that is a loss to the economy and does not provide sufficient value addition.

Mr. Ahmad Nawaz, chairman of the Pakistan HVACR society offered the HVACR society platform that has the ability to provide accurate market data. Some cooling sectors such as commercial air conditioning are not adequately covered in the CNA, the HVACR society can assist in addressing such data gaps.

To conclude, the Technical Sub-Committee members generally endorsed recommendations in the air conditioner and refrigerator briefs with the few important aforementioned considerations to be incorporated in the final PCAP.

(iii) Electric Fans & Cooling Access Technical Sub-Committee

Moderator: Mr. Ali Habib, CLASP/HIMA^Verte

Participant Name	Organization
Abdur Rahman	Punjab Energy Efficiency & Conservation Agency (PEECA)
Arif Changaizi	Pakistan Council of Architects & Town Planners (PCATP)
Hassam Ali	WWF Pakistan

Mr. Ali Habib gave an overview of the priority initiatives of:

Build Back Greener:

This relates mainly to the planning reconstruction of about 700,000 homes and restoration of another 1.3 million homes affected by the 2022 Floods. Fans are expected to be a core demand and component of these homes.

Energy Efficient Electric Fans & Cooling Access:

Electric fans are responsible for the highest energy consumption of electricity of all the cooling appliances. With a large population still without access to reliable electricity, cooling access linked to comfort cooling is often supplied by DC fans connected to solar home systems. Efficient DC fans, especially pedestal fans will enable improved cooling access when running on storage batteries.

Key comments/recommendations from participants:

The participants comments relevant for both initiatives are mentioned below.

It was proposed that the new 5-Star label for electric fans, recently notified by PSQCA should be considered as the desirable procurement standard. NEECA is expected to update the existing 3-Star label programme to this revised 5-Star scheme.

Mr Changezi mentioned that PATPA had already developed some low cost and locally appropriate designs for homes that will be flood resilient and climate friendly. Different designs have been proposed for the Sindh and Punjab regions. He would incorporate the use of 5-Star label electric fans within these designs.

Mr Changezi also offered that they can specify that all architectural firms use only 5-Star fans as PATPA renews the license of all architectural firms in Pakistan each year.

WWF-Pakistan was requested to include the use of 5-Star fans for all their Green Office corporate members

The MD PEECA stated that he can take these recommendations to the high-powered government cabinet committee on energy efficiency representing the province of Punjab. All Chief Ministers of the provinces are members, and Ms Sherry Rehman, Minister for Climate Change is also a member.

The MD PEECA stated that the Punjab Government is embarking upon replacing fans and lights in 15,000 government institutions, based upon the project design developed by CLASP/HIMA^Verte for bulk replacement. Incapacitation of the old removed fan is part of the bulk replacement project design.

The MD PEECA said that they are also trying to arrange for on-bill financing mechanism for electricity consumers to buy energy label fans.

It was suggested by NOU that authentic data sources may only be considered while determining baselines. Moreover, it was also suggested by NOU that a reporting mechanism needs to be adopted by each sector which should be prioritized under PCAP. This would determine the current production/use vis-à-vis will also give an overview of the sector growth.

It was agreed that a stakeholder dialogue should be arranged by CLASP/HIMA^Verte to develop procurement specifications for DC fans for use in off-grid and weak-grid areas. The Sindh province has most of these areas, and the MD PEECA stated that a few parts of South Punjab have such areas. Therefore, engagement with the Sindh government and microfinance organisations were considered priorities for this discussion.

The Technical Sub-Committee members endorsed both 2-pager briefs, with the revision of mentioning lack of fan manufacturers capacity to supply high numbers of 5-Star fans, which will be added in the revised version.

Conclusion and Key Takeaways:

- There was strong agreement from the participants about the importance of regulating the cooling sector and reducing GHG emissions through macro level policy tools such as Pakistan Cooling Action Plan.
- Expedited development of PCAP is a priority for the Government of Pakistan.
- PCAP will recommend priority actions for GHG reduction from the cooling sector.
- The upcoming COP 27 provides an opportunity to integrate cooling as a priority agenda in Government of Pakistan's agenda and highlight the development of Pakistan Cooling Action Plan through 2 pager briefs on priority areas (policy, fans, Air conditioners and refrigerators, cooling access and build back greener).
- The devastating floods of 2022 as an impact of Climate Change in Pakistan will also be highlighted in COP 27 and the rehabilitation efforts can be targeted towards 'build back greener' and an opportunity for enhanced access to cooling.
- Stakeholder ownership is essential at the highest level. This is not an activity for a single organization, rather all relevant parties (public and private sector) must come together for its development and effective implementation.

Annex I: List of participants

Present:

	PCAP Working Group Member Organizations	Representative	
i	Ministry of Climate Change (MoCC)	Mr. Syed Mujtaba Hussain	Senior Joint Secretary (IC)
ii	Engineering Development Board, Ministry of Industries & Production	Engr. K.B. Ali	General Manager
		Engr. Altaf Hussain	Assistant Manager
iii	National Energy Efficiency & Conservation Authority (NEECA) Ministry of Science & Technology	Mr. Feroz Baig	Director Industries
iv	Global Change Impact Study Centre (GCISC), MoCC	Mr. Arif Goheer	Head Coordinator
v	Energy & Power Department Government of Khyber Pakhtunkhwa	Engr. Safdar Hayat	Deputy Director (RE)
vi	Energy Department Government of Punjab	Mr. Abdur Rahman	Managing Director PEECA
		Ms. Noureen Arif	Manager Environment PMU Energy Department
vii	Environment Protection Agency, P&D Department, Azad Government of the state of Jammu & Kashmir	Dr. Sardar Rafique	Deputy Director (CC)
viii	Federation of Pakistan Chamber of Commerce & Industry (FPCCI)	Mr. Amin Ullah Baig	Vice President
ix	Pakistan Electronics Manufacturers Association (PEMA)	Mr. Attique Ahmed	Representative (PEMA)/ Manager R&D (PEL)
x	Pakistan Council of Architects & Town Planners	Mr. Arif Changezi	Chairman
xi	Pakistan Engineering Council	Engr. Dr. Zakauallah Khan	Member PEC
xii	National Ozone Unit, MoCC	Mr. Azmat Shah	
		Mr. Muhammad Amin	
xiii	CLASP/HIMA^Verte	Mr. Ali Habib	
		Ms. Amna Shahab	
		Mr. Salman Zaffar	
		Mr. Areeb Hussain	
		Mr. Abdul Rehman	

Regrets:

	PCAP Working Group Member Organizations
i	Ministry of Planning, Development & Special Initiatives
ii	P&D Department, Government of Balochistan
iii	Energy Department, Government of Sindh
iv	Water & Power Department, Government of Gilgit Baltistan
v	Pakistan Electric Fans Manufacturers Association (PEFMA)
vi	ASHRAE Pakistan Chapter

By Invitation:

	Organization	Representative	
i	WWF Pakistan	Mr. Syed Hassam Ali	Environment Officer
		Ms. Fatima Khan	Coordinator
ii	Dawlance	Mr. Kazi Nasir	R&D Manager
		Mr. Adnan Nazir	Product Manager
iii	Haier Pakistan	Mr. Adeel Akhtar	R&D
		Mr. Dilshad Ali	R&D
iv	Pakistan HVACR Society	Mr. Ahmad Nawaz	Chairman
		Mr. Mian Arif	Member
		Mr. Saqib Rasool	Secretary

Annex II: Terms of Reference of PCAP Working Group

- I. The Working Group will guide and review the Pakistan Cooling Action Plan (PCAP) , being developed with the support of CLASP/HIMA[^]Verte and Clean Cooling Collaborative (formerly called Kigali Cooling Efficiency Program).
- II. Pakistan Cooling Action Plan (PCAP) will define national cooling needs and lay out priority interventions that can be integrated to the country's existing policies, which will include:
 - a. High level country mapping of cooling landscape using existing data and knowledge
 - b. Determining Met vs Unmet cooling demand
 - c. Establishing PCAP priorities subsectors
 - d. Conducting thorough data-driven assessments of the current and future cooling demand for each of the chosen cooling subsectors
 - e. identifying solutions and future pathways for each of the cooling subsectors using sector-wise analysis
- III. The Working Group will also render guidance on key policy decisions, ensure effective oversight through receiving regular reports and reviewing progress of the action plan.
- IV. Meetings of the PCAP Working Group will be held on quarterly basis for the duration of the development process:
 - a. Once the draft PCAP is ready, the same will be passed on to National Energy Efficiency & Conservation Authority (NEECA) for:-
 1. Getting the approval of the Government
 2. Working out the implementation mechanism
 3. To ensure and monitor the implementation and roll out at the national / provincial levels
- V. The Working Group will provide guidance in defining the scope of the Pakistan Cooling Action Plan
- VI. The Working Group will get regular updates of PCAP development process and provide feedback and guide the development process in aligning/integrating with Pakistan's existing energy policies
- VII. Empowered to form technical sub-committees to enable the members to coordinate more closely with the project team
- VIII. Develop a mechanism to learn of ongoing programs and initiatives relevant to the PCAP and to collect data/information on the cooling sectors from their organizations
- IX. HIMA[^]Verte/CLASP will provide secretariat services to the PCAP Working Group. These will include
 - a. Circulation of relevant material to members in good time for preparation for each meeting
 - b. Drafting of agendas in agreement with the Chairperson
 - c. Keeping of minutes and recording of decisions made
 - d. Reporting on progress in the development of the PCAP
- X. The Working Group may invite any technical expert or representative of any government agency or non-governmental organization or any other person possessing specialized knowledge on the subject for assistance in performance of its functions. The quorum to convene the meeting of working group must not be less than 50%.

Annex III: Composition of technical sub-committees

PCAP Working Group Technical Sub-Committee Policies & Strategies	
1	Ministry of Climate Change
2	Global Change Impact Study Centre (GCISC), MoCC
3	National Ozone Unit (NOU), MoCC
4	National Energy Efficiency & Conservation Authority (NEECA), MoST
5	Pakistan Standards and Quality Control Authority (PSQCA), MoST
6	Ministry of Planning, Development & Special Initiatives
7	Energy & Power Department, Government of Khyber Pakhtunkhwa
8	Energy & Climate Change Sector, P&D Department, Government of Balochistan
9	Energy Department, Government of Punjab
10	Punjab Energy Efficiency & Conservation Agency (PEECA)
11	Energy Department, Government of Sindh
12	Water & Power Department, Government of Gilgit-Baltistan
13	Environment Protection Agency, P&D, Azad Govt. of the State Jammu and Kashmir
14	Federation of Pakistan Chamber of Commerce and Industry (FPCCI)
15	Pakistan Engineering Council
16	Pakistan Council of Architects & Town Planners (PCATP)

PCAP Working Group Technical Sub-Committee Air Conditioners & Refrigerators	
1	Ministry of Climate Change
2	National Energy Efficiency & Conservation Authority (NEECA), MoST
3	Engineering Development Board, MOIP
4	Pakistan Electronics Manufacturers Association (PEMA)
5	ASHRAE Pakistan

PCAP Working Group Technical Sub-Committee Electric fans & Cooling Access	
1	Ministry of Climate Change
2	National Energy Efficiency & Conservation Authority (NEECA), MoST
3	Ministry of Planning, Development & Special Initiatives
4	Energy & Power Department, Government of Khyber Pakhtunkhwa
5	Energy & Climate Change Sector, P&D Department, Government of Balochistan
6	Energy Department, Government of Punjab
7	Punjab Energy Efficiency & Conservation Agency (PEECA)
8	Energy Department, Government of Sindh
9	Water & Power Department, Government of Gilgit-Baltistan
10	Environment Protection Agency, P&D, Azad Govt. of the State Jammu and Kashmir
11	Pakistan Electric Fans Manufacturers Association (PEFMA)