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Greener Cooling in Indian Cities

The potential for behaviour change and usage of air conditioners

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Executive Summary

Energy consumption is a crucial aspect of reducing carbon emissions in Indian cities. Over the last decade, fuel-efficient technologies have taken centre stage, with energy-efficient air conditioners (ACs) emerging as an important low carbon household energy solution. AC ownership in India has tripled since 2010, reaching significant levels per household. The Indian government has implemented policies like the India Cooling Action Plan, aimed at making energy consumption more efficient and affordable, promoting technologies that consume less power, and setting minimum energy performance standards. However, despite the increasing availability of energy-efficient options, many individuals and households, even those who can both afford and access such solutions, still opt for appliances that use high levels of energy. This represents a missed opportunity in terms of climate action, as energy-efficient technologies have the potential for significant emissions reductions. It is increasingly clear that behavioural biases limit the uptake of energy-efficient solutions for reducing overall energy consumption in Indian cities.

This study conducted in Delhi identifies three key behaviours critical for fostering sustainable cooling: (I) adoption of 5-star (energy-efficient) ACs, (II) AC usage at optimal settings, and (III) regular maintenance of AC units. Barriers vis-à-vis these behaviours include low linkages between star ratings, energy consumption, and environmental impact, misperceptions about the performance and value of 5-star ACs, financial burdens associated with the high upfront cost of energy-efficient ACs, and misconceptions or lack of knowledge of AC usage at optimum settings and maintenance. The study offers potential behavioural interventions and policy recommendations for enhancing the adoption of energy-efficient ACs and improving usage and maintenance practices.

Section 01: The Project

Air conditioning is a widely used technology that has become essential to modern living. However, traditional air conditioners (ACs) can be energy-intensive, leading to soaring energy consumption and rising greenhouse gas (GHG) emissions. Energy-efficient ACs are designed to minimise energy consumption while maintaining optimal cooling performance, thereby reducing GHG emissions and mitigating the negative environmental impact. These advanced systems utilise innovative technologies, such as variable speed compressors, smart thermostats, and improved insulation, to significantly reduce energy usage and lower electricity bills.

According to the International Energy Agency, more efficient ACs can cut carbon dioxide emissions from space cooling in half and, combined with cleaner power sources, can radically reduce overall emissions (IEA, 2018). Further, they can lower investment, fuel, and operating costs by USD 3 trillion between now and 2050. However, despite the significant benefits, most consumers still purchase air conditioners with average efficiencies that are less than half of what is available in the market. Moreover, most AC owners' usage of their cooling units is far from optimal in that they invariably set the temperature at 18–21°C instead of the recommended 24°C. Many also fail to ensure regular servicing of their ACs or the adoption of good servicing practices which significantly impacts AC performance. It is imperative to increase uptake of energy-efficient ACs and improve usage and maintenance practices for more sustainable and environmentally friendly cooling.

The Low Carbon Lifestyles Project at CSBC seeks to initiate behaviour change towards sustainable lifestyle choices, including low carbon energy consumption, in Indian cities. It aims to design interventions to redirect individual and household choices towards sustainable behaviour and technologies. The primary goal is to ensure that policy incorporates an understanding of the context of consumer choices and of local barriers to the uptake of low carbon consumption, essential to devise levers for higher adoption.

In the domain of energy consumption, the project promotes the adoption of low carbon options such as energy-efficient air conditioning and rooftop solar panels. Within the framework of the Low Carbon Lifestyles Project, in this brief we zero in on three low carbon energy consumption behaviours in relation to ACs: (I) adoption of 5-star (energy-efficient) ACs, (II) AC usage at optimal settings, and (III) regular maintenance of AC units. This brief focuses on the barriers and facilitators in these three AC-related behaviours, and suggests behavioural and policy interventions.

Project Objective:
A key objective of the Low Carbon Lifestyles Project is to advocate the adoption of sustainable cooling. It promotes the purchase of energy-efficient ACs and improvement of the usage and maintenance of ACs.

- Target Behaviours:
  - Adoption of 5-star rated ACs
  - AC usage at optimal settings
  - Regular maintenance of ACs
- Target Population: Indian households located in urban areas and belonging to the middle-and high-income groups.

Air Conditioning – The Indian Context

India, along with China and Indonesia, is projected to contribute to half of the global cooling energy demand growth by 2050, making it the world's largest energy user for cooling by that year (IEA, 2018). With studies suggesting that the cost to the Indian economy due to lost productivity from extreme heat could exceed $450 billion by 2030 (Kjellstrom, 2015), access to cooling is becoming a basic necessity for health, productivity, and even survival during extreme heat events. It is estimated that the number of room ACs in the country will increase fourfold in the next 10 years and tenfold in the next 20 years (MoEFCC, 2019).

Currently, air conditioning accounts for about 40–60% of peak power demand in major Indian cities like Mumbai and New Delhi, where there is a high concentration of air-conditioned buildings (Bengali, 2017). The projected increase in AC use in India will require approximately 600 gigawatts of new power generation capacity by 2050, equivalent to installing 1,200 coal power plants of 500 megawatts each. If left unchecked, the direct and indirect emissions worldwide from room ACs alone could contribute to as much as a 0.5°C increase in global warming by 2100 (Lalit & Kalanki, 2019). While India contributes only 5% of the global annual emissions from room ACs today, in a business-as-usual scenario, the country is predicted to account for over 25% of annual emissions globally by 2050 (Kalanki & Sachar, 2018).

India has committed to phasing down high global warming potential (GWP) hydrofluorocarbons (HFCs) – in conformity with the global environmental agreement, the Montreal Protocol's Kigali Amendment of 2016 (MoEFCC, 2021). The Ministry of Power takes the lead in formulating comprehensive policies, regulations, and ambitious targets aimed at enhancing energy efficiency, particularly in air-conditioning systems. In 2019, India became the first major country in the world to develop a national policy document on cooling, known as the India Cooling Action Plan, which outlines a 20-year roadmap for addressing the country's future thermal comfort and cooling needs in a sustainable manner (MoEFCC, 2019).

Energy conservation and efficiency are integral to India's ability to meet its cooling needs while mitigating GHG emissions. The Indian government promotes various schemes and programmes under the Energy Conservation Act 2001 (BEE, 2010). The Bureau of Energy Efficiency (BEE) plays a pivotal role here, developing standards and labelling programmes, certifying and guiding energy-efficient products, and promoting a culture of conservation. BEE initiated Standards & Labelling (S&L) in 2006 to encourage the use of energy-efficient appliances in households, particularly ACs (BEE, 2020b). Since 2010, BEE has mandated ACs as a mandatory labelled appliance under the Energy Conservation Act, meaning they cannot be sold without a star label (which indicates the energy efficiency of ACs) (Indian Seasonal Energy Efficiency Ratio, n.d.). An essential component of the S&L programme is educating retailers on the significance of star labelling and energy efficiency and generating consumer awareness (BEE, 2020b).

BEE has conducted extensive ad campaigns on print, electronic, and social media explaining energy efficiency and star labelling (BEE, 2018). A radio programme called 'Bachat ke Sitare Dost Hamare' was aired in 20 languages on various radio stations to encourage consumers to purchase star-labelled appliances. Messages from public figures through interviews and advertisements are also used to promote the adoption of energy conservation behaviours among the public (All India Radio News, 2019).

Along with BEE, the Central Electricity Authority (CEA) and the Central Electricity Regulatory Commission (CERC) together set technical standards and guidelines for energy-efficient air conditioning systems. State Electricity Regulatory Commissions (SERCs) extend this influence at the state level. The private sector, think tanks and other organisations, too, play crucial roles in India's sustainable energy ecosystem. Manufacturers, suppliers, and research institutions collaborate to drive innovation in cooling technologies, conducting research and development to move AC technologies towards greater efficiency and designing and producing cutting-edge AC systems.

In terms of efficient usage and maintenance of ACs, the Indian government is making efforts to focus on these critical aspects, but this is still at a nascent stage. An Energy Conservation Building Code was published in 2007 for commercial and residential buildings to reduce demand for space cooling, and in 2018, BEE issued mandatory guidelines for all commercial and public buildings to optimise temperature settings at 24–25°C (BEE, 2018). A notification has also been issued mandating a default temperature setting of 24°C from January 2020 for all room ACs covered under the BEE star labelling programme. The maintenance of ACs is also recognised as a crucial element, as regular servicing and the adoption of good servicing practices significantly impact AC performance (Bhasin, 2020). A poorly maintained AC can underperform in comparison to a well-maintained lower-rated

unit (GIZ, 2019). Hence, promoting maintenance practices ensures that ACs perform optimally with minimal emissions.

However, consumer awareness programmes run by BEE and AC companies do not highlight the need for efficient usage and regular servicing in optimising AC energy utilisation (Bhasin et al., 2020). For example, the awareness drive regarding BEE's recommended temperature set-point of 24°C has been limited to media campaigns. Another challenge is the transition from high-GWP refrigerants to climate-friendly alternatives, which requires specialised training for servicing technicians. While the need for standardised training and certification system for technicians as a key priority in the service sector has been emphasised (Bhasin, 2020), it has not been implemented so far.

The efficiency of ACs in India varies widely. Despite awareness of the star labelling programme, only 14% of consumers in India purchase ACs with 4- or 5-star labels, according to household surveys conducted across four Tier-II Indian cities: Meerut, Madurai, Vadodara, and Dhanbad (Bhasin et al., 2020). Moreover, AC usage at optimum settings and maintenance practices are lacking. A household survey conducted in Delhi revealed that while most households use ACs for three to four hours a day during peak summer months, about 15% use them for over eight hours a day (Khosla et al., 2021). There is also a wide range of preferred AC set-point temperatures among households in India, with half of the study respondents setting their ACs between 24°C and 26°C, and 27% preferring temperatures between 21°C and 23°C (Khosla et al., 2021). These variations are significant for energy demand, as every 1°C increase in AC set-point temperature can lead to 6% energy savings (BEE, 2018). Further, less than 10% of households in India have an Annual Maintenance Contract or have purchased an Extended Warranty Service for regular servicing (Bhasin et al., 2020).

A point to note is that, currently, ACs fall within the 'luxury' category of India's Goods and Services Tax (GST) and are subject to the highest rate of taxation (Bhasin et al., 2020). There are no tax incentives that promote the purchase of higher-rated ACs. The lack of incentives for consumers and their low awareness of AC usage at optimum settings and AC maintenance practices (including proper installation, cleaning or replacing air filters, and regular servicing) contribute to higher energy consumption and reduced overall efficiency. All this calls for urgent action to promote energy-efficient ACs and AC usage at optimum settings and AC maintenance practices in India.

Choice and Air Conditioning

Sustainable energy transitions demand a close examination of the factors influencing the three identified behaviours related to ACs: the adoption of 5-star ACs, AC usage at optimum settings, and regular AC maintenance. A comprehensive literature review, encompassing scholarly articles, reports, and industry

publications, helped us understand the key barriers and facilitators for each behaviour.

Behaviour I: Adoption of 5-star ACs

Energy-efficient AC uptake faces hurdles rooted in low awareness and misconceptions, including of mandatory labelling programmes (Khosla et al., 2021). The high upfront cost proves another formidable barrier. Status quo bias, evident in the prolonged usage of older, less efficient ACs, and a general disregard for environmental impact during purchases, solidifies patterns of non-energy-saving behaviour among consumers (Singh et al., 2018; Leelakulthanit, 2017; Khosla et al., 2021). On the supply side, limited market availability restricts consumer choices, with local retailers predominantly stocking 3-star ACs, limiting access to higher-rated, environmentally conscious alternatives (Khosla et al., 2021).

Facilitators in consumers' decision to purchase energy-efficient ACs include social pressure (Zainudin et al., 2014): their social networks, including friends, family, and broader societal norms. Provision of financial incentives in the form of subsidies and tax rebates can encourage consumers to overcome the hurdle of high upfront costs (Abhyankar et al., 2017; Khosla et al., 2021). Local retailers also play a crucial role by offering a diverse range of 5-star AC options influencing consumer choices, especially when accompanied by attractive designs (Banerjee & Banerjee, 2015). Further, marketing strategies targeted at specific demographics, such as women and senior citizens, can influence energy conservation behaviours positively (Khosla et al., 2021).

Behaviour II: AC usage at optimum settings

Many households lack awareness of the link between AC usage and energy efficiency, leading to inefficient use of ACs (Bhasin et al., 2020). A barrier to widespread adoption of the energy-efficient temperature set-point of 24°C is the limited dissemination of information, contributing to misconceptions and inhibiting behavioural change among consumers. Interventions focusing on the benefits of efficient cooling practices, utility incentives, and proper sizing can contribute to positive changes in energy consumption behaviours (The Energy and Resources Institute et al., 2018; Khosla et al., 2021).

Behaviour III: Regular maintenance of ACs

A notable barrier is the lack of awareness among households regarding the relationship between AC servicing and energy efficiency. In a study conducted in Tier-II cities in India, only one-third of households recognised a link between servicing and the maintenance of energy efficiency; two-thirds were either unaware or did not believe in such a relationship (Bhasin et al., 2020). This is concerning given the 7–10-year operational life of residential ACs. Without proper maintenance,

energy efficiency can deteriorate over time, leading to increased costs and reduced savings on energy bills. Neglecting maintenance can also render investments in higher-efficiency equipment futile, with such units exhibiting a lower performance than well-maintained, less-efficient equipment that is better understood and regularly serviced by technicians (GIZ, 2019).

Understanding these distinct behaviours and the associated barriers and facilitators provides a foundation for crafting targeted and effective interventions to foster the widespread adoption of energy-efficient ACs and usage and maintenance practices.

Project Methodology

To explore the behavioural and policy barriers and the enablers in the widespread adoption of energy-efficient ACs, AC usage at optimum settings, and AC maintenance, and to design interventions to promote adoption, the project devised a comprehensive methodology.

- First, a detailed literature review was conducted, where we examined international and national protocols related to energy-efficient appliances, as well as government policies and efforts to promote high-rated air conditioners and efficient AC usage and maintenance.

- This was supplemented by stakeholder mapping to understand the diverse actors who support, facilitate, and promote AC usage at optimum settings and maintenance of ACs.

- Next, the team designed and conducted fieldwork with 38 respondents in Delhi. The selection of the study location involved a meticulous framework considering factors like AC uptake, market demand, and active government incentives.

- Then, we consolidated and analysed the insights from the fieldwork to identify behavioural and structural barriers to and facilitators for the adoption of energy-efficient ACs.

- This was followed by ideation workshops to identify interventions to improve uptake.

Section 02: Insights from Fieldwork

Whether or not an individual consumer adopts a given sustainable behaviour depends on two sets of factors: (1) Demand side factors -- The preferences, needs, and beliefs of the individual can make her/him more likely to adopt that behaviour (such factors are demand-side facilitators of sustainable behaviour), or less likely to adopt the behaviour (demand-side barriers) and (2). Supply-side factors: The availability and accessibility of infrastructure and/or services at the systemic level make an individual more likely (supply-side facilitators) or less likely (supply-side barriers) to adopt the behaviour.

Our diagnostic fieldwork among households in Delhi revealed eight distinct barriers and facilitators associated with the three behaviours identified as aligned with energy-efficient cooling.

Barriers To

Behaviour I: Adoption of 5-star ACs

1. *Consumers' low awareness of linkages between star ratings, energy consumption, and environmental benefits:* Despite a high awareness (80%) of the star labelling programme among AC-owning households, there is a limited understanding of what star ratings actually mean and their benefits, particularly in relation to the environment. Respondents primarily associate star ratings with monetary benefits, such as lower electricity bills, and do not perceive the environmental advantages. This is evident from the fact that only 30% of customers using 2- and 3-star rated ACs find the star labelling reliable, and there is scepticism about the added value of a 5-star AC in terms of both price and performance. Though respondents exhibit pro-environmental behaviour by reducing their electricity consumption, only 30% mention higher star ratings as good for the environment. However, existing customers of 4- and 5-star rated ACs are able to identify the benefits of higher star labelling, including better performance and longer lifespan of the appliance.
2. *Perception of 5-star ACs not being worth the price:* One barrier to the adoption of 5-star ACs is the misperception among owners of low-star rated ACs that the performance of a 5-star AC does not justify the extra price and is very similar to their own ACs. They therefore do not see the value in paying a premium for a higher star rating.
3. *High upfront costs of ACs:* The biggest barrier to the widespread adoption of clean energy technology, including cooling appliances, is the high upfront costs associated with these appliances. Consumers' purchasing decisions are greatly influenced by the initial cost they have to bear when buying appliances. Our survey found that for 30% of respondents, budgetary

constraints prevent them from purchasing a 5-star AC, even though they would like to.

4. *Limited communication with customers by sales agents:* Many sales agents do not effectively communicate the full benefits of 5-star ACs beyond lower electricity bills and often describe them in relative terms without providing detailed economics. Sales agents typically only highlight a few benefits of 5-star ACs, such as reduced compressor damage and self-maintenance features. Moreover, a small percentage of sales agents themselves do not believe in the advantages of 5-star rated ACs over 3-star rated ACs, and this belief may be conveyed to customers. All this hinders customers from understanding the wide-ranging benefits of 5-star ACs and making informed choices when purchasing ACs.

Behaviour II: AC Usage at optimum settings

5. *Misconceptions about usage of ACs:* Despite default temperature settings and guidelines from BEE recommending a temperature set-point of 24°C and fan at speed 2 for human thermal comfort and electricity savings, there is a lack of awareness among consumers about these aspects. Our survey findings indicate that the median temperature set by respondents was 22°C. None of the respondents was aware of the optimum cooling guidelines and reported that their only measure to conserve energy was to ensure doors and windows were closed to maximise cooling. Moreover, some respondents believed that keeping low temperatures is a good maintenance practice. These misconceptions about AC set-points contribute to suboptimal AC usage and result in increased electricity consumption and emissions.

Behaviour III: Regular Maintenance of ACs

6. *Limited awareness and demand for comprehensive AC maintenance services:* Despite the recommendation of getting ACs serviced twice a year – before the summer season and towards the mid/end of the season – most consumers get their ACs serviced just once a year, which falls short of ideal servicing frequency. This pattern is attributed to a lack of awareness among consumers about the benefits and value of biannual AC servicing.
7. *Lack of awareness of standardised procedures for maintenance:* The lack of awareness extends to what constitutes effective maintenance for ACs. Because of this, maintenance personnel often do not adhere to standardised procedures during servicing, often simply cleaning ACs without carrying out a comprehensive servicing. The absence of clear guidelines on what maintenance entails contributes to the limited demand for comprehensive AC maintenance services.

Facilitators For

Behaviour I: Adoption of 5-star ACs

1. *Social norms driving the adoption of 5-star ACs:* Our survey revealed that 50% of respondents purchased ACs, both high-star and low-star rated, based on the recommendations of their friends, family members, and neighbours. Suppliers also noted that if they were able to sell 4- or 5-star ACs in a specific neighbourhood, this led to increased sales in that area through referrals. Positive word-of-mouth recommendations from satisfied customers create a ripple effect that drives more consumers to choose energy-efficient cooling appliances.
2. *Agents who communicate effectively:* The fieldwork revealed that sales agents who possess strong communication skills are key facilitators in promoting 5-star ACs, with their ability to answer questions and explain the working and benefits of 5-star ACs in simple terms. By asking questions to understand customer cooling needs, explaining different AC workings, and providing demonstrations, they alleviate customer cognitive load and facilitate informed decision-making.

Section 03: Recommendations and Interventions

This study has uncovered significant behavioural and structural barriers relating to the three behaviours identified as key to energy-efficient cooling in the Indian context. Leveraging these insights is crucial for policy-making, enabling governments to employ effective strategies to spur the adoption of these behaviours.

To activate the behavioural bridge to policy, this study employs the 4Es Model of the UK government's Department for Environment, Food and Rural Affairs (DEFRA), which aspires to enable, encourage, exemplify, and engage in moving individuals towards sustainable practices (Institute for Government, 2015). This model offers an approach to addressing behavioural and structural gaps in policy:

1. Enable focuses on providing the necessary infrastructure to make sustainable choices accessible and attractive.
2. Encourage delves into the realm of information dissemination and public awareness to motivate individuals.
3. Exemplify emphasises the importance of leading by example.
4. Engage encourages active participation and collaboration amongst stakeholders to influence policy.

Through a series of ideation workshops, this project identified 16 interventions that address the behavioural barriers to adoption of energy-efficient ACs and AC usage at optimum settings and AC maintenance, organised below in the 4Es framework:

Enable

For the widespread adoption of 5-star ACs and improved usage and maintenance, interventions should focus on providing the necessary infrastructure that enable energy-efficient choices:

1. *Display 5-star ACs prominently in retail stores:* To boost sales of 5-star ACs, they can be placed in prominent locations in the electronic stores. The strategic placement of these ACs at the entrance or central points will make them more visible to customers and more likely to stimulate their interest.

2. *Include symbols on AC remote control for optimal usage:* To optimise AC usage, manufacturers can incorporate clear and intuitive symbols on the remote control. This intervention aims to facilitate active user engagement, making it easier for consumers to operate ACs efficiently and achieve optimal cooling. Ensuring the remote control is user-friendly and features easily understandable symbols can significantly enhance the overall experience for AC users.

3. *Offer user-friendly instructions on effective use of the AC:* User-friendly instructions enable consumers to optimise AC usage by promoting active participation in using AC features effectively.

Encourage

Bringing insights from behavioural research to traditional policy tools, such as information dissemination and communication campaigns, will enhance their efficacy in encouraging individuals to embrace energy-efficient cooling behaviour by directly addressing their misperceptions and financial concerns:

4. *Introduce 7-star ACs to create the perception of 5-star ACs as the mainstream choice:* The introduction of a higher-rated AC category by the government will encourage the adoption of 5-star ACs by positioning them as a mainstream and reasonable choice.

5. *Introduce a new symbol to represent the environmental benefits of 5-star ACs:* The introduction of a new symbol for 5-star ACs may nudge environmentally conscious customers to switch to such ACs by visually representing and making evident their environmental benefits.

6. *Comprehensively highlight the cost-saving benefits of 5-star ACs:* Disseminate a comprehensive cost-saving benefits comparison chart for 5-star ACs to effectively communicate the economic advantages. Providing clear and understandable comparisons will encourage customers to opt for these energy-efficient ACs through informed decision-making for enhanced energy savings.

7. *Frame messaging around 5-star ACs as latest technology:* Positioning 5-star ACs as the latest technology creates a perception shift, thereby influencing customer preferences.

8. *Target relevant cohorts for uptake of 5-star ACs:* Organise campaigns that target specific cohorts, tailoring the message to address the needs and preferences of different groups.

9. *Promote tips and tricks on social media to make a lower-rated AC work like a higher-rated one:* Use social media to show consumers tips and tricks for adopting energy-efficient practices.

10. *Embed messages about responsible AC usage in films and ads for entertainment education:* Engaging content can be leveraged to educate and influence consumers to adopt better AC usage and maintenance behaviour.

11. *Devise messaging on '5-star' usage of ACs:* Develop messaging that promotes the concept of using lower-rated ACs in a '5-star' manner. Consumers can be educated on responsible usage and encouraged to adopt techniques and practices that enable their units to approach 5-star AC efficiency, achieving energy savings comparable to 5-star models.

12. *Highlight the cost savings of adjusting AC temperature:* Campaigns can be organised to highlight the cost savings of adjusting AC temperature, encouraging individuals to actively participate in energy-efficient practices.

Exemplify

The project suggests using high-profile or relatable figures in society to set an example for others to follow in terms of embracing energy-efficient technologies.

13. *Shape social narratives for optimal AC usage:* Craft and disseminate stories and messages that showcase the adoption of energy-efficient ACs by influential people in the community to drive further adoption in the community. These narratives can emphasise collective responsibility for environmental well-being through energy-efficient cooling by individual households, contributing to a culture focused on energy-conscious practices.

14. *Leverage social proof to communicate the right way to use ACs:* Organise campaigns featuring testimonials and endorsements from real people or influencers practising responsible AC usage, and thereby leverage social proof – people's tendency to follow others' actions. Celebrities can actively contribute to public interest information videos, produced by entities like the BEE, sharing their experiences with responsible AC usage and encouraging the public to adopt similar practices.

Engage

Promoting the adoption of energy-efficient technologies requires cooperation from diverse actors. The project suggests multi-stakeholder interventions to improve uptake of 5-star ACs:

15. *Collaborate for broader 5-star AC uptake:* Collaborate with builders, businesses, and other relevant stakeholders to improve awareness about the benefits of 5-star ACs to facilitate the installation of energy-efficient ACs in new constructions (residential and commercial).

16. *Collaborate with vendors to ensure sales people are well trained:* Invest in sales agents' training and development, as their communication expertise can be a powerful driver in promoting sustainable cooling options and fostering consumer uptake of energy-efficient technologies. Clear and

compelling communication, product demonstrations, and accurate information can help customers understand the advantages of 5-star ACs and make informed choices.

Towards A Greener Future Through Energy Efficiency in ACs

This diagnostic brief emphasises the need for inclusion of behavioural insights in policies and planning for the widespread adoption of energy-efficient cooling, focusing on three key behaviours: adopting 5-star ACs, improving usage practices, and regular maintenance. It offers a comprehensive overview of key barriers hindering the adoption of these behaviours in the context of India's residential energy consumption. While some barriers may be context-specific, most are applicable across various Indian cities. This novel research also provides a set of recommendations and interventions aimed at promoting energy-efficient ACs and improved AC usage and maintenance practices, and thereby contributing to a more sustainable and energy-conscious urban landscape.

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