

Empowering Culturally and Linguistically Diverse (CALD) Communities in Victoria's Energy Transition

Co-Designing Engagement Strategies

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About this report

Title

Empowering Culturally and Linguistically Diverse (CALD) Communities in Victoria's Energy Transition: Co-Designing Engagement Strategies

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Executive Summary

This report presents findings from a two-stage qualitative study examining how culturally and linguistically diverse (CALD) communities in Victoria perceive and engage with the transition from gas to electricity in residential buildings, with a particular focus on hot water systems for existing owner-occupied households.

Drawing on 37 semi-structured interviews and 4 co-design workshops involving 15 participants, the research identifies key factors influencing participation and co-develops culturally appropriate engagement strategies. This approach enables a comprehensive understanding of lived experiences while ensuring that proposed strategies are grounded in community perspectives.

As summarised in the below table, the findings show that CALD communities' perception in the household energy transition is shaped by a combination of four interconnected factors. In response to these perceptions, the study identifies three engagement strategies.

Key perceptions	What it means in practice	Strategy	How the strategy addresses the perceived barriers
 Financial considerations	Strong cost sensitivity, focus on upfront costs, payback, and uncertainty under cost-of-living pressures	 Strategy 1: Information content	Provide clear, simple, and practical content that explains the transition step-by-step, with a strong focus on cost, real-life use, and trusted guidance, tailored to how CALD households understand and make decisions.
 System reliability and performance concerns	Concerns about electricity reliability, appliance performance, and suitability for large households, often shaped by past experiences		
 Trust and communication gaps	Low awareness of policy requirements, confusion due to inconsistent information, reliance on informal networks	 Strategy 2: Communication channels	Leverage community-based delivery channels, trusted networks, and culturally embedded engagement approaches to ensure information reaches CALD communities in credible, accessible, and effective ways.
 Cultural familiarity and reactive decision-making	Preference for familiar systems, reluctance to change, and tendency to act only when systems fail	 Strategy 3: Communication formats	Adopt delivery formats that prioritise face-to-face engagement as the primary mode, supported by simple, visual materials and targeted digital formats, to ensure communication is accessible, trustworthy, and responsive to CALD communities' diverse language capabilities, and digital familiarity.

Overall, the findings highlight that improving participation requires moving beyond one-size-fits-all approaches toward community-informed, culturally responsive engagement that aligns with how CALD households understand, evaluate, and act on information.

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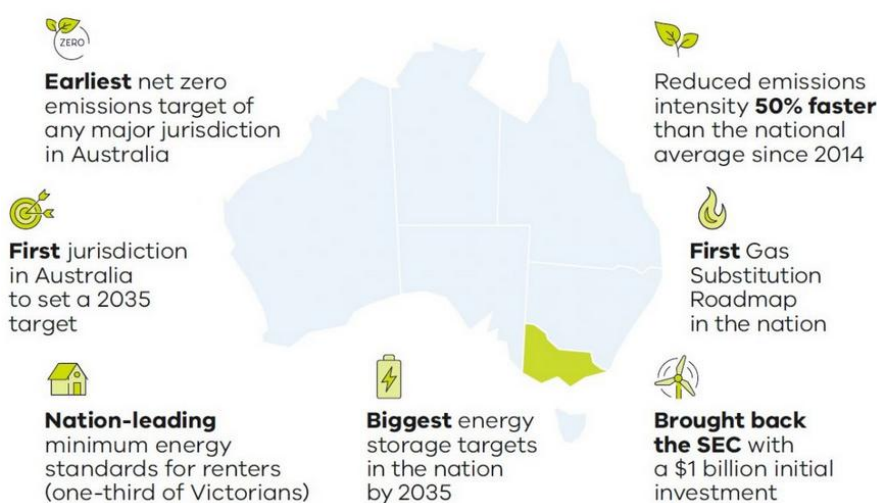
1 Introduction

This report presents findings from a multi-stage qualitative study examining how culturally and linguistically diverse (CALD) communities in Victoria perceive and engage with the transition from gas to electricity in existing residential buildings, with a specific focus on hot water systems. It was undertaken by Deakin University in collaboration with Victoria University for Energy Consumers Australia between 2025-2026.

1.1 Background

Globally, governments are phasing out residential gas use to meet net-zero targets and accelerate electrification. In Australia, the country's *"Trajectory for Low Energy Buildings"* and its Addendum outline a national plan for the residential building industry to become zero-energy and zero-carbon-ready sector by 2030. Consistent with this national direction, Victoria has advanced an ambitious household electrification agenda.

Victoria is leading the nation



Source: <https://www.climatechange.vic.gov.au/victorias-climate-change-strategy>

Over recent years, it has introduced a suite of regulations, complementary policies and initiatives aimed at reducing residential gas dependence and accelerating the shift toward electrified homes, as summarised in Table 1.

Table 1. Key policy and regulatory initiatives supporting the energy transition in Victoria

Policy / Initiative	Year commenced/ gazetted/adopted	Summary
Gas Substitution Roadmap	2022	Provides the strategic direction for reducing reliance on fossil gas through electrification, energy efficiency, and renewable gases, supporting Victoria's transition to net zero emissions.
Amendment VC221 to the VPP	2022	Updated planning provisions to facilitate all-electric and energy-efficient developments by removing requirements for reticulated gas connections.
Reforms to the Victorian Energy Upgrade (VEU) program	2022 and 2025	Strengthened regulatory oversight, expanded program scope, and extended timelines to support long-term energy efficiency upgrades and electrification.
Amendment VC250 to the VPP	2023	Introduced further planning changes to support all-electric buildings and streamline the adoption of efficient hot water systems.
Building and Plumbing Amendment (Solar Water Heater and Other Matters) Regulations 2023	2023	Removed requirements for gas-boosted solar systems, enabling installation of efficient electric hot water systems in new homes regardless of gas availability.
Re-establishment of the State Electricity Commission (SEC)	2023	Reintroduced a state-led energy body to support renewable energy development, reduce power costs, and build workforce capacity for the transition.
Cap on Disconnection Fees Decisions	2023	Capped gas disconnection costs to reduce financial barriers for households transitioning away from gas.
Prohibition on Gas Incentives	2024	Prevented gas providers from offering incentives to connect to gas, encouraging a shift toward electric alternatives.
Gas Distribution Code of Practice	2024	Established regulatory requirements to ensure safe, transparent, and fair gas distribution practices during the transition period.
Upskilling for Plumbers Program	Since 2024	Supports workforce capability by training tradespeople in installation of electric systems, including heat pumps.
Amendments to the National Construction Code 2022	2025	Increased minimum energy performance standards for new homes, including 7-star ratings and whole-of-home efficiency requirements.
Residential Tenancies Amendment	2025	Introduced minimum energy efficiency standards for rental properties, including phased requirements for electrification and improved thermal performance.
Building and Plumbing Amendment Regulations	2025	Mandates transition toward all-electric buildings, including requirements for electric hot water systems in new and existing homes.

As Table 1 shows, the release of the *Gas Substitution Roadmap (2022)* marked the state's integrated strategy to reduce residential dependence on fossil gas and accelerate the transition to efficient electric systems. The roadmap aimed to cut carbon emissions, reduce household energy bills, and enhance comfort levels while maintaining reliability and system security throughout the transition. This strategic direction is supported by a suite of complementary reforms introduced between 2022 and 2025. Planning amendments, including VC221 and VC250, progressively removed requirements for reticulated gas connections and facilitated the development of all-electric buildings. These changes effectively shifted the baseline for new developments toward electrification. In parallel, regulatory measures were introduced to address structural and market barriers that may otherwise delay the transition. Initiatives such as the *Cap on Disconnection Fees (2023)*, *Prohibition on Gas Incentives (2024)*, and the *Gas Distribution Code of Practice (2024)* were designed to remove financial disincentives and discourage continued reliance on gas infrastructure. Together, these reforms aim to create a more consistent and supportive regulatory environment for electrification.

Financial support mechanisms were also strengthened through reforms to the Victorian Energy Upgrades (VEU) program, which expanded incentives for adopting energy-efficient electric technologies and extended the program's duration to align with long-term emissions targets.

At the same time, technical and building standards were enhanced. *The National Construction Code (NCC 2022)* increased minimum energy performance requirements for new homes to a 7-star standard, while the *Building and Plumbing Amendment (Solar Water Heater and Other Matters) Regulations 2023* streamlined the adoption of efficient electric hot water systems.

To support implementation, workforce and institutional capacity were also addressed. The Upskilling for Plumbers Program since 2024 was introduced to equip tradespeople with the skills required for installing electric systems, particularly heat pumps. In addition, the re-establishment of the State Electricity Commission reflects a renewed role for the state in supporting renewable energy development and workforce transition.

Collectively, these initiatives form an integrated policy and regulatory framework aimed at reducing residential gas dependence and supporting a low-carbon energy future.

Within this broader framework, the *Building and Plumbing Amendment Regulations 2025 (Building Electrification Regulations)* introduced a pivotal regulatory milestone for existing homes. From March 2027, when a gas hot-water unit in an existing owner-occupied dwelling fails, it must be replaced with a compliant electric system such as a heat pump or electric storage unit. This marks a transition from voluntary uptake to a more structured and system-wide mandatory implementation. From a regulatory perspective, compliance with energy-transition mandates cannot be understood solely as a legal obligation. Rather, it emerges through the interaction between formal regulatory requirements and households' behavioural, social, and normative responses (Sovacool & Griffiths, 2020). This study adopts this perspective by embedding behavioural theories, such as the Theory of Planned Behaviour (Ajzen, 1991) and the Norm Activation Theory (Schwartz, 1977), within a regulatory compliance context.

1.2 Project aim

While the above gas ban on replacing end-of-life hot water systems provides a strong regulatory foundation, its effectiveness depends on how households engage with the transition in practice. In particular, understanding how different communities perceive the transition is critical to ensuring that policies are both effective and equitable (Lu et al., 2025).

CALD members (defined as individuals born overseas in non-English-speaking countries (Victoria State Government, 2021)) comprise a substantial share of Victoria's population. Despite their central role in achieving an equitable transition, little is known about how these communities perceive and interpret the forthcoming electrification mandate.

To address this gap, the study aims to identify culturally tailored strategies that improve CALD communities' participation in existing household hot water energy transition programs and ensure inclusive, equitable access to sustainable energy solutions. To achieve this aim, the study focuses on two key objectives:

- To identify key perceptions shaping CALD communities' engagement with the transition
- To develop culturally appropriate engagement strategies based on these perceptions

The scope of the study is limited to CALD households in Victoria, with a specific focus on end-of-life gas hot-water system replacement under the electrification requirement.

2 Approach

This study adopts a two-stage qualitative research design approach, combining semi-structured interviews and co-design workshops to explore CALD communities' responses to Victoria's policy requiring end-of-life gas hot water systems in existing homes to be replaced with electric alternatives (see Figure 1). The interviews captured participants' perceptions, experiences and concerns regarding the transition, while the co-design workshops invited participants to reflect on interview findings, discuss community-specific challenges, and collaboratively propose and refine practical engagement strategies.

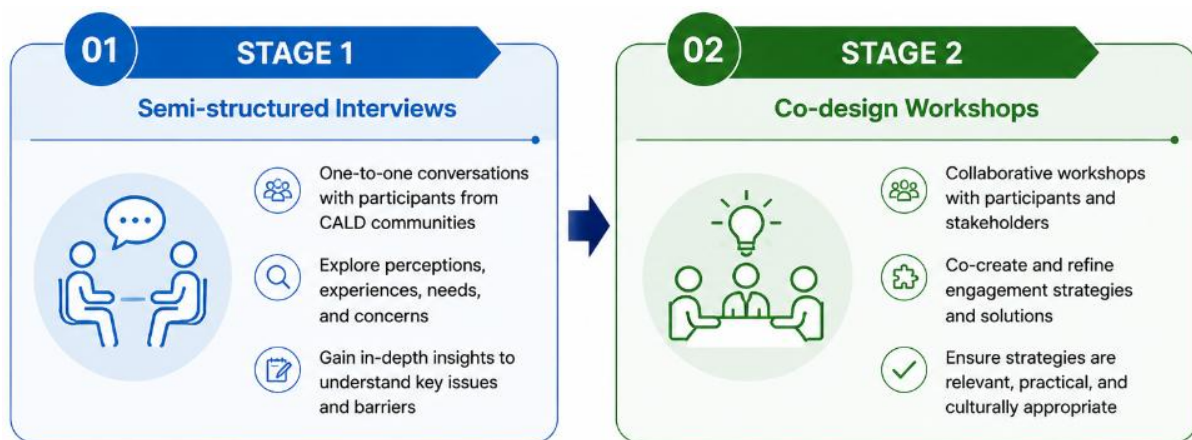


Figure 1. Two-stage research method

2.1 Stage 1: semi-structured interviews

Consistent with previous investigations into CALD energy practices (Energy Consumers Australia, 2024), interviews with CALD community leaders and representatives were adopted as an appropriate data collection method, as these leaders are well positioned to provide a preliminary orientation within their community contexts.

Participants were purposively recruited through a multicultural association in Victoria, with additional interviewees identified via snowball sampling (Etikan et al., 2016). The sampling strategy ensured that participants selected cover across major CALD groups present in Victoria, encompassing a diverse range of regional backgrounds (summarised in Figure 2), supporting the breadth of perspectives captured in this study.

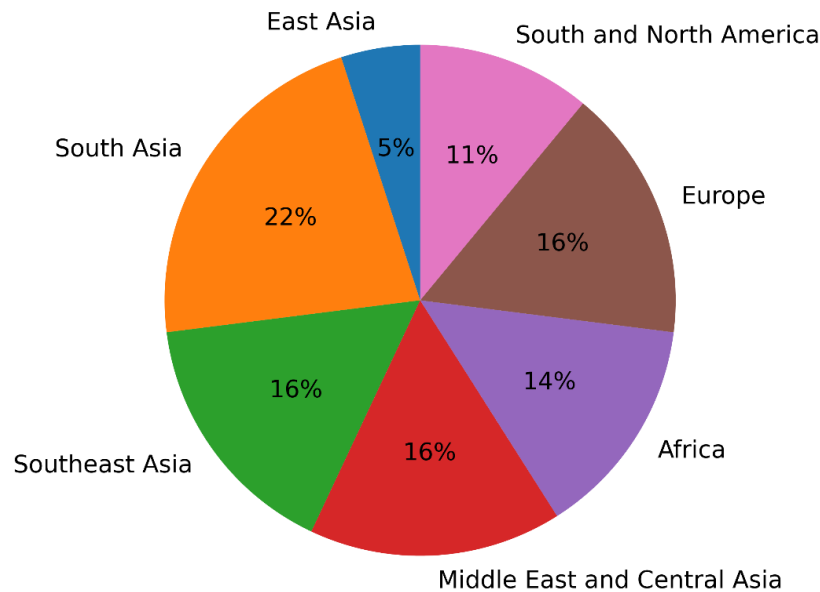


Figure 2. Regional distribution of interview participants (n=37)

Ultimately, 37 participants were recruited (for details please see Appendix for participants' cultural background). Data sufficiency was assessed iteratively during data collection process, with no substantially new themes emerged in later interviews, indicating thematic saturation. Furthermore, this sample size was considered sufficient for a preliminary qualitative inquiry, providing diverse yet detailed insights into community attitudes and compliance intentions (Dworkin, 2012; Lu et al., 2026). On average, participants had more than ten years of involvement in their communities, offering sufficient perspectives on CALD community households' socio-cultural dynamics shaping their responses to hot water gas ban.

Each interview lasted approximately 30 minutes and was conducted via zoom or phone. All interviews were audio-recorded with participants' consent and subsequently transcribed verbatim for analysis. The interview questions comprised the following sections: (1) current practices and overall understanding, which aimed to explore participants' existing household energy behaviours and willingness to participate; (2) perceptions around CALD communities' participation in this energy transition.

Data were analysed using directed content analysis (Hsieh & Shannon, 2005), a method suitable for studies guided by an existing theoretical framework. Coding was initially guided by key themes derived from the research objectives, focusing on perceptions related to financial considerations, system performance, trust, and everyday practices. At the same time,

the analysis remained open to new insights emerging from the data. This combination of deductive and inductive coding enabled both structured analysis and contextual depth (Fereday & Muir-Cochrane, 2006).

To ensure analytical credibility and consistency, the coding process involved repeated cross-checking and team discussions. Discrepancies in coding or interpretation were resolved through team discussion and consensus. In addition, the research team engaged in reflexive discussions to consider how their disciplinary lenses and positionalities might shape interpretation of culturally situated responses, in line with recommended practice for rigorous qualitative research (Olmos-Vega et al., 2023), enabling transparent reflection on interpretive decisions.

2.2 Stage 2: co-design workshops

The second stage involved 4 co-design workshops. It aimed at developing engagement strategies informed by the interview findings.

The co-designing approach was adopted to ensure that strategies are grounded in community perspectives and practical experience (Fung & Macreadie, 2018; Wickes et al., 2021). Participants from the interview stage were invited to take part in the workshops. In total, 15 participants attended across three sessions, with 3 - 4 participants per workshop. Each session lasted approximately one hour.

During the co-designing workshops:

- researchers presented key findings from Stage 1
- participants reflected on challenges within their communities
- participants proposed and discussed potential engagement strategies

This process enabled the refinement of strategies through collective discussion and validation, ensuring that the final recommendations are both relevant and actionable.

3 Results

The findings indicate that participation in Victoria's household end-of-life hot water system energy transition among CALD communities is shaped by a set of interrelated, experience-based perceptions, rather than a single dominant factor. Across the interviews, four key categories of perception were identified: financial considerations, system reliability and performance, communication and trust, and cultural familiarity with reactive decision-making.

Table 2. Key perceptions shaping CALD communities' participation in the end-of-life hot water system transition

Category	CALD community characteristics	Key Perception around transition	Implication for effective CALD Participation
 Financial considerations	Strong saving mindset; cautious toward additional expenditure	High upfront costs; uncertainty around payback periods; perceived low or unclear financial returns from energy savings reduce confidence in adoption	Participation is driven by perceived financial viability and risk. Clear, transparent, and quantifiable economic benefits (e.g. upfront costs, rebates, payback period, and real savings) must be communicated within an acceptable timeframe
 System reliability and appliance performance	Prior living experiences in home countries influence perceptions of electricity reliability; larger household sizes (e.g. 6–7 people) increase demand for hot water performance	Concerns about electricity supply reliability (e.g. blackouts); perceived risks around heating speed, water temperature, system capacity, and noise; electric systems often perceived as slower and less reliable than gas	Trust in information sources strongly influences decision-making. Engagement should leverage community-based networks and trusted leaders, and provide clear, simple, practical, and culturally appropriate information (e.g. local language, visual formats)
 Communication and trust	Strong reliance on word-of-mouth and community leaders; technical language reduces accessibility	Limited awareness of policy requirements and rebate schemes; confusion due to conflicting or unclear information; reliance on informal community networks; need for simple and accessible communication	Trust in information sources strongly shapes decision-making and confidence in the transition. CALD community-based sources of information is more effective to increase information accessibility;
 Cultural familiarity and reactive decision-making logics	Familiarity with visible, experience-based gas systems; long-term residence and established routines (often among older household members)	Electric systems perceived as less visible, more abstract, and less intuitive; preference for familiar systems; reactive decision-making (delay change until system failure); strong dependence on routine, continuity, and convenience	Participation is typically necessity-driven rather than proactive. Engagement should minimise disruption, align with existing routines, and support decision-making at key trigger points (e.g. system failure), while addressing familiarity gaps and building confidence in new systems

As summarised in Table 2, these categories do not operate independently. Rather, they interact to shape how households evaluate the transition in a holistic, pragmatic, and risk-aware manner. Together, they reflect a decision-making logic grounded in affordability, lived experience, trust in information, and the need to maintain continuity in everyday life.

3.1 Key perceptions shaping CALD participation

3.1.1 Financial considerations

Financial considerations emerged as the most immediate and influential factor shaping participation in the transition to electric hot water systems. Rather than being viewed in isolation, financial factors are embedded within a broader economic mindset commonly expressed by CALD participants - one characterised by strong saving mindset, and sensitivity to financial risk. For many CALD households, migration itself represents a significant financial commitment, which reinforces a cautious approach to any additional expenditure. As one participant explained:

“Coming here to Australia is a big sacrifice...Normally you borrow money from bank or other financial entities (to come to Australia). You are trying to save as much as you can to stay here.”

Within this context, decisions about adopting new energy technologies are not driven by general sustainability narratives, but by clear and tangible economic justification. Participants consistently framed the transition in terms of economic feasibility, with particular attention to upfront installation costs, ongoing energy expenses, and expected financial returns.

A key feature of this evaluation is the emphasis on payback logic. Participants emphasised that adoption decisions depend on whether the perceived savings can reasonably offset the initial investment within an acceptable timeframe. Abstract or long-term benefits were often discounted unless translated into concrete, quantifiable outcomes. Where anticipated savings appeared marginal or uncertain relative to the upfront cost, the transition was commonly perceived as financially unjustifiable. This pragmatic reasoning is reflected in the following account:

“long-term thinking is still not that relevant to the community members”

Importantly, this cost–benefit assessment is further complicated by uncertainty surrounding future electricity prices, particularly in the context of ongoing cost-of-living pressures experienced by many CALD households. Participants emphasised that energy decisions are not made under stable financial conditions, but within already constrained household budgets where essential expenses are rising. In this context, increases in electricity prices are not perceived as marginal changes, but as additional strain on already stretched finances. As one participant reflected:

“Because now I have seen that, we have almost disconnected the gas, but I have seen a very steep increase on the electricity price. I'm sure that will be shared amongst the friends, amongst the community, and people will be comparing the price, how much are we paying, as opposed to, you know, stopping using the gas”

This highlights how lived experiences of rising energy costs directly shape perceptions of the transition. Rather than relying on projected long-term savings, households anchor their judgement in immediate financial realities, which can undermine confidence in electrification as a cost-saving pathway. Concerns about price increases are intensified by the limited financial buffer available to many CALD households. As another participant noted:

“Our people are migrants and a lot of them...don't really have that much disposable income for transitioning or changing anything in the house. And if the electricity price goes higher, it just, a big factor in a lot of people's decision I would say”

This reflects a broader condition in which households are already managing tight budgets, often prioritising rent, food, and other essential costs. Within such constraints, the transition to electric systems is not evaluated as a long-term investment opportunity, but as a potential financial risk that could further destabilise household affordability.

Taken together, these findings show that financial considerations are not only about affordability, but about how CALD households interpret and manage financial risk in their everyday lives. Decisions are made within a context of constrained budgets, where rising living costs and limited disposable income heighten sensitivity to any additional expenditure. Within this setting, uncertainty around electricity prices further reinforces cautious decision-making, as households are reluctant to commit to changes without clear and reliable cost expectations. As a result, the transition is approached conservatively, with preference given

to options that minimise immediate financial exposure. This highlights that, for many CALD households, participation is less about potential future savings and more about maintaining current financial stability.

3.1.2 Electricity system and appliances' performance

Considerations of system reliability and appliance performance are equally central to CALD communities' perceptions of the transition. Participants commonly drew comparisons with their previous living environments, where electricity supply could be unstable, and electric hot water systems were perceived as less reliable or less capable than gas alternatives. These past experiences appear to inform expectations in Australia, leading to concerns about whether the existing electricity network can support widespread electrification, and whether electric hot water appliances can deliver consistent and sufficient performance.

Importantly, these perceptions are not always grounded in participants' direct experience within the Australian context. Rather, they are often shaped by prior experiences in migrants' home countries, where electricity infrastructure and appliance performance may differ significantly. While such perceptions may not fully reflect current system conditions in Australia, they provide important insight into how CALD households interpret and assess technological change. In particular, they highlight how past experiences can evolve into community-level beliefs or perceived risks, which continue to influence decision-making in the present.

Regarding electricity system reliability, participants expressed concerns at a broader system level, particularly in relation to electricity supply continuity. The idea of relying entirely on electricity was perceived as introducing vulnerability, especially in the event of outages. As one participant explained:

"When everything is electric... what happens with blackouts? No backup."

This concern is further shaped by migrants' prior experiences of unreliable electricity systems and, in some cases, broader experiences of instability, which contribute to a heightened sense of risk awareness:

"I know that we are lucky enough. There is no long-term electric disruption in the area that we live. But don't forget that these people are from the migrant background. They

have fled from their country, and they are very cautious about the future. They are always assessing the risk. What's going to happen tomorrow if we disconnect electricity... what if the electricity is out for a week? Because that's the case back in [the participant's home country]. So all these people are thinking about it"

These accounts suggest that concerns about reliability extend beyond technical performance, reflecting a broader emphasis on security, continuity, and risk preparedness. For many CALD households, ensuring uninterrupted access to essential services is a priority that shapes their evaluation of new systems.

In addition to system-level concerns, participants also raised issues related to the functional performance of electric hot water appliances in everyday use. In several cases, these concerns are grounded in direct user experience or shared knowledge within communities. Common issues include slower heating times, reduced water temperature, limited capacity for larger households, and differences in operation such as noise. For example, one participant noted:

"With electric systems, it takes time to get hot water ... You need to run water first, which wastes water. Gas is instant."

Another participant highlighted challenges related to CALD household size and peak demand:

"The majority of my community member have about six or seven people living in the house. And if you try to run early in the morning or late in the evening, if you try to run 3, 4 showers, and it will take some time."

These concerns are not abstract; they are closely tied to everyday routines and practical household needs. For larger or multi-generational CALD households, the ability to access hot water reliably and simultaneously is essential. Whether based on direct experience or shared narratives, these perceived limitations in system and appliance performance can therefore significantly reduce confidence in electric alternatives.

Addressing these concerns requires more than technical improvements alone. It also involves targeted, context-sensitive communication, including efforts to clarify misconceptions and "myth-bust" where necessary. Importantly, such communication should be grounded in real-life usage scenarios and tailored to the lived experiences of CALD households, in order to build trust in both the reliability of the electricity system and the performance of electric hot water technologies.

3.1.3 Communication and trust

Communication plays a critical role in shaping CALD communities' engagement with the transition, particularly in how information about the policy and supporting initiatives is delivered, understood, and trusted. A key finding is that awareness of the policy itself is limited. Several participants were not aware that, at the end of life of their existing hot water system, replacement is required to be electric. Many also reported limited awareness of available rebate schemes. This highlights a significant gap in the reach, clarity, and effectiveness of current communication efforts.

Beyond awareness, trust plays a central role in shaping how participants interpret and respond to information about the transition. Information is not passively received; rather, participants actively assess its credibility based on the source, clarity, and perceived relevance. In this context, communication and trust form a mutually reinforcing cycle. Clear, accessible, and culturally appropriate communication can build trust, while limited or unclear communication can lead to confusion, scepticism, or disengagement. In turn, low levels of trust may reduce the likelihood that households will accept or act on the information provided. This challenge is further compounded by the way information is currently communicated. While information is available through various channels, participants frequently questioned its clarity, consistency, and credibility. A common concern relates to conflicting or unclear messages, particularly regarding costs, rebates, and system performance. This creates uncertainty and reduces confidence in decision-making. As one participant noted:

"Installers quote different rebates - \$1,000 here, \$1,800 there. There should be a fixed, clear government amount. This variation is why I've paused."

In this context, participants often rely on informal and community-based sources of information, including family and friends speaking the same language, neighbouring households, and CALD community leaders. These sources are perceived as more trustworthy because they are grounded in lived experience rather than institutional messaging. This reliance on community networks is reflected in the following statement:

This reliance on community networks is reflected in the following statement:

"Our community in ... is small and close-knit. Word spreads fast - if someone recommends something and says it's good, others will follow."

Concerns about trust were further reinforced by past experiences with related energy initiatives. For example, some participants referred to changes in solar feed-in tariff schemes, where initially promoted financial benefits were later reduced or withdrawn. Such experiences contribute to a perception of broken promises, undermining confidence in current and future energy transition messaging. This issue is particularly salient for some CALD participants whose prior experiences in their home countries have shaped a more sceptical orientation toward official communication. For these individuals, policy messaging that emphasises benefits without clear guarantees may be interpreted as overly optimistic or even as one participant expressed as “*propaganda*,” reinforcing hesitation and distrust.

Participants also emphasised that communication must go beyond translation. While language accessibility is important, effective communication requires that information be simple, practical, and directly relevant to household decisions. Overly technical explanations were seen as a barrier rather than a support. As one participant highlighted:

“It has to be explained in a way people understand... not technical. Even if it is in (translated community language), it shouldn't be very technical language it should be simple language.”

These findings indicate that trust is built not only through content, but through how and by whom information is delivered.

Overall, these findings demonstrate that communication and trust are deeply interconnected and play a decisive role in shaping CALD communities’ engagement with the transition. Limited awareness, inconsistent messaging, and past experiences of policy change collectively contribute to scepticism and cautious decision-making. For many CALD households, trust is not automatically granted to institutional sources but is instead negotiated through lived experience, community validation, and perceived credibility. It calls for clear, consistent, and transparent communication, delivered through trusted channels and tailored to the socio-cultural and economic realities of CALD communities. Strengthening trust will be essential to ensure that policy intentions are not only understood, but also accepted and acted upon in practice.

3.1.4 Cultural familiarity and reactive decision-making

Cultural familiarity plays a foundational role in shaping CALD communities' perceptions of and engagement with the transition. Participants' preferences for energy systems are not based solely on technical performance, but are strongly influenced by prior experiences and culturally embedded understandings of how energy is produced and used. In many cases, these experiences originate from participants' home countries, where energy use is more visible, tangible, and directly understood.

"In our [home country] people still use firewood. So most of the parents who are here or household grown-ups might have experience of using firewood. So they have seen the fire burning, so they can understand. But now here at home ... it's very hard for you to explain because they don't see it."

This reflects a broader pattern in which visible and experience-based energy systems are perceived by CALD members as more understandable and trustworthy. In contrast, electric systems are less visible and more abstract. It can be perceived as unfamiliar and less intuitive. This lack of sensory and experiential familiarity can create hesitation, as households may feel less confident in understanding how the system works or how it will perform in everyday use. Further to this, decision-making among CALD households tends to follow a reactive and necessity-driven logic. Participants consistently described their approach as pragmatic and incremental, with action typically triggered by immediate need rather than long-term planning or policy awareness. A recurring pattern is that households are unlikely to proactively replace functioning systems, instead preferring to retain existing gas systems until failure. As one participant explained:

"Unless I'm forced to do it, then only I'll do it."

This reactive behaviour reflects a practical strategy for managing cost, uncertainty, and disruption to established routines. While the policy framework mandates transition at the end of system life and implicitly encourages earlier uptake, participants indicated that decisions are more closely aligned with system breakdown rather than policy intent.

This decision-making logic is also closely tied to everyday household practices. Energy systems are evaluated in terms of how well they support daily routines, particularly essential activities

such as bathing. Participants emphasised continuity and convenience, with any disruption seen as a significant drawback:

“Many members are elderly and have lived in the same homes for more than 30 years. The majority have gas hot water and prefer gas”

“We are happy with our old set up... We don't want to change, of course.”

These findings suggest that cultural familiarity and reactive decision-making are closely intertwined. Familiar systems are preferred because they align with existing knowledge and practices, while unfamiliar systems introduce uncertainty that reinforces a wait-and-see approach. As a result, participation in the transition is not simply a matter of awareness or policy compliance, but involves navigating deeply embedded habits, experiences, and practical considerations.

3.2 Co-designed engagement strategies

Strategy 1: Information content

Provide clear, simple, and practical content that explains the transition step-by-step, with a strong focus on cost, real-life use, and trusted guidance, tailored to how CALD households understand and make decisions.

Co-design workshop findings consistently show that improving engagement with CALD communities starts with getting the content right. Information must go beyond general awareness and provide clear, structured, and relevant guidance that supports real-life decision-making. As Table 3 summarises, five core content elements were identified.

Table 3. Details of strategy 1

Content element	What should be included	Why it matters for CALD communities
Financial clarity and value	• Upfront costs • Rebates/discounts • Payback period • Expected savings (in dollar value) • Bill comparisons (before vs after) • Clear explanation of benefits at individual → community → broader levels	Cost is the primary decision driver. CALD households need clear, realistic financial information to assess affordability and risk. General claims are not persuasive without real numbers.
Practical guidance and step-by-step support	• Roadmap of what happens at end-of-life • Step-by-step actions • Application process (eligibility and documents) • Timelines • Installation expectations	CALD households need clear direction on what to do. Without structured guidance, information remains theoretical and difficult to act on.
Trust and credibility (delivery-related content)	• Trusted list of installers and products • Transparent pricing • Accountability mechanisms • Case studies from community champions • Peer-led explanations	Trust is critical. CALD communities rely more on lived experience and peer validation than formal sources. Trusted guidance reduces fear of misinformation and financial risk.
System understanding and technical confidence	• Demonstrate system reliability using data • Appliance performance using evidence-based data (e.g. reliability statistics, real usage examples) • Maintenance • Product lifespan • Installation impacts	Many concerns are shaped by prior experiences in home countries. Clear and evidence-based information helps address misconceptions and build confidence in the system.
Real-life relevance and day-to-day impact	• How the system works in daily routines • Performance during peak use • Suitability for large households • Impact on comfort and convenience	CALD households assess changes based on daily life impact. Information must connect to real routines; otherwise, it is seen as irrelevant and not trusted.

Financial clarity and value

Financial clarity emerged as the most critical content element for CALD communities. Participants consistently evaluate the transition through a cost lens, requiring clear, transparent, and realistic financial information. Content should clearly present upfront costs, available rebates or discounts, expected savings, and payback periods, ideally expressed in concrete dollar values and supported through bill comparisons (before and after). Participants strongly preferred real numbers over general claims, as this allows them to assess affordability and risk.

Several participants also highlighted that uncertainty around hidden costs, ongoing electricity expenses, and unclear rebate eligibility can discourage households from engaging with the transition process. As a result, transparent financial information was viewed as essential for reducing hesitation and improving confidence in decision-making.

Participants also highlighted that benefits should be communicated progressively, beginning with direct household-level benefits such as lower bills and affordability, followed by broader community and environmental benefits. Broader environmental messaging alone was generally viewed as insufficient to motivate engagement without clear personal financial value. This suggests that communication strategies targeting CALD communities should prioritise immediate and practical household outcomes before introducing broader policy or sustainability narratives.

Practical guidance and step-by-step support

Participants emphasised the need for content that supports action, not just understanding. Clear and structured guidance is essential to help households navigate the transition with confidence. This includes a simple roadmap outlining what happens when systems reach end-of-life, what steps households need to take, and how to prepare for the transition.

One participant explained:

“...motivate them to take action, which can be shown through a roadmap. If the community can't see what they are required to do, they cannot (take action). If the process is shown through a roadmap that they can see the overall process, then this outcome will be achieved.”

The findings suggest that many CALD households require visible and structured guidance to navigate the transition confidently. Participants noted that unfamiliarity with Australian systems, technical processes, and rebate applications can make the transition appear complex and difficult to manage. Without clear step-by-step support, information may remain theoretical and difficult to apply in practice.

Providing clear timelines, practical instructions, and guidance on where to seek support was therefore considered important for reducing uncertainty and improving participation. Participants also indicated that many households tend to delay action until existing systems fail completely, particularly when they are unsure about the transition process. Structured and sequential guidance was therefore viewed as important not only for improving understanding, but also for encouraging earlier and more proactive engagement.

Trust and credibility (delivery-related content)

Participants highlighted the importance of trust-related content, including trusted lists of installers and products, transparent pricing information, accountability mechanisms, case studies, and peer-led explanations from community members.

Demonstrations of how electric hot water systems operate in real homes, supported by community experiences and testimonials, were viewed as particularly important for building trust and credibility.

As one participant explained:

“Maybe like demonstrations or ... real testimonials from people or community members having electric hot water.”

The findings suggest that CALD communities rely strongly on lived experience, peer validation, and community networks when evaluating new technologies or policy changes. Participants considered peer-led communication and real-life examples to be more relatable and trustworthy than formal institutional messaging alone.

Community champions and practical demonstrations were therefore viewed as important mechanisms for reducing fear and improving confidence in the transition process. Participants also suggested that hearing experiences from people with similar cultural backgrounds or household situations can make the transition appear more achievable and

less risky. This highlights the importance of culturally familiar and community-based communication approaches when engaging CALD communities.

System understanding and technical confidence

Participants expressed the need for clear and practical information about system reliability, appliance performance, maintenance requirements, product lifespan, and installation impacts.

Concerns about reliability and performance were commonly linked to prior experiences in participants' home countries, where electricity systems may have been less stable or dependable.

One participant explained:

"It's because of their lived experience (in home countries). I think some statistics will help. For example, if you show how many days, how many nights did we spend without electricity in Australia. I think graphic data will help them to come away from the reliability issues that they are suspecting."

The findings indicate that perceptions of electricity reliability are shaped not only by technical understanding, but also by prior lived experiences and cultural context. Participants suggested that evidence-based information, such as reliability statistics, real usage examples, and visual demonstrations, would help address misconceptions and strengthen confidence in the Australian electricity system.

Providing practical and locally relevant information was therefore considered important for improving technical confidence among CALD households. Visual and simplified statistics and comparisons were also viewed as helpful for translating technical concepts into more understandable and relatable forms, particularly for households with limited technical knowledge or lower confidence engaging with energy-related information.

Real-life relevance and day-to-day impact

Participants emphasised that information should reflect real-life household situations rather than abstract policy messages. Important content areas included how the system works in daily routines, performance during peak usage periods, suitability for larger households, and impacts on comfort and convenience.

The findings suggest that CALD households evaluate new systems based on their compatibility with existing household routines and everyday practical needs. Participants particularly emphasised the importance of understanding how electric hot water systems would perform in larger or multi-generational households with high hot water demand.

Information grounded in realistic household scenarios and day-to-day experiences was viewed as more relatable, understandable, and trustworthy. Without this practical relevance, information was often perceived as disconnected from daily life and therefore less useful for supporting decision-making. Participants also noted that households are more likely to engage with information when they can clearly visualise how the system fits within their own routines, family structures, and daily energy use practices. Real-life examples were therefore considered important for making the transition feel practical, achievable, and personally relevant.

Strategy 2: Communication channels

Leverage community-based delivery channels, trusted networks, and culturally embedded engagement approaches to ensure information reaches CALD communities in credible, accessible, and effective ways.

Co-design workshop findings strongly indicate that how information is delivered is as important as what is delivered. For CALD communities, formal communication channels alone are insufficient. Instead, effective engagement requires working through trusted community structures, informal networks, and culturally relevant settings, where information is more likely to be accepted and acted upon. As Table 4 summarises, the following key elements were identified.

Table 4. Details of strategy 2

Key delivery elements	What does it mean?	Why it matters
Community leaders and trusted networks	Identify and engage trusted “go-to” individuals within CALD communities. Provide training and support so they can confidently explain information, clarify concerns, and lead conversations in culturally appropriate ways. Involve them in both communication and engagement activities.	CALD communities place strong trust in familiar individuals rather than institutions. Messages delivered through trusted leaders are more credible, relatable, and more likely to be accepted and acted upon.
Embedded within community structures and settings	Deliver information within existing community environments such as gatherings, cultural events, informal meet-ups, and community meetings. Use these natural settings to enable discussion, questions, and shared understanding.	Information shared in familiar and social settings is easier to understand and more likely to be discussed. It supports two-way communication and collective sense-making, rather than passive information reception.
Partnership with community organisations	Work with community centres, neighbourhood houses, and CALD organisations. Co-deliver sessions and outreach activities with organisations that already have established relationships, language capability, and cultural understanding.	These organisations already have trust, access, and credibility within communities. Partnering with them improves reach, consistency, and effectiveness of delivery.

Community leaders and trusted networks (core delivery mechanism)

Participants consistently highlighted the importance of engaging trusted “go-to” individuals within communities. These are people who are already relied upon for advice and information, and who have established credibility through ongoing relationships. As noted in the workshops, every community has individuals whom others trust and understand, making them highly effective in communicating new information in ways that resonate.

One participant explained:

“Every community has got some people who are like the go-to people. People trust them people understand them. Provide some sort of training for them and then they can talk the benefits to the community members”

The findings suggest that CALD communities often place stronger trust in familiar individuals and community networks than in formal institutions or government communication channels. Participants indicated that information delivered through trusted community members is more likely to be perceived as credible, relatable, and relevant to everyday household concerns.

Participants suggested that these leaders can play an active role in explaining benefits, clarifying concerns, and facilitating conversations within their communities, particularly in group settings. They can also support delivery by hosting or contributing to discussions during regular gatherings or community events.

Importantly, participants emphasised the value of providing training and support to these individuals so they can confidently and accurately communicate key messages. This suggests that trusted community leaders should not simply be viewed as communication intermediaries, but as active partners in the engagement process who can help translate technical and policy information into culturally meaningful and understandable forms.

Participants also noted that advice shared through trusted individuals is often perceived as lower risk and more personally relevant, particularly when those individuals have similar migration experiences, cultural backgrounds, or household circumstances. This peer-based communication approach was therefore viewed as important for improving trust, reducing uncertainty, and encouraging participation within CALD communities.

Embedded within community structures

Effective delivery should be integrated into existing community structures and everyday social settings, where information sharing naturally occurs. Participants noted that discussions about topics such as energy use often happen informally during regular gatherings, including barbecues, celebrations, cultural events, or even during routine interactions within the community.

As one participant expressed:

“Approach community centres in different regions. They work with emerging CALD communities. They have staff speaking the language and they can help you with delivering the program.”

The findings suggest that communication is more effective when delivered within familiar and socially embedded settings rather than through isolated or purely formal communication approaches. Participants highlighted that CALD communities often rely on collective discussion, shared experiences, and informal conversations to interpret unfamiliar information and evaluate new initiatives.

These environments allow for two-way communication, where individuals can ask questions, share experiences, and collectively interpret information. Participants also highlighted more formal structures, such as community meetings or council-led gatherings of ethnic group leaders, as valuable platforms for reaching multiple communities simultaneously.

Embedding communication within existing community settings was viewed as particularly important for supporting collective sense-making and improving accessibility. Familiar environments can reduce intimidation, encourage participation, and create opportunities for ongoing discussion beyond the initial delivery of information.

Participants also suggested that communication delivered within existing community activities is more likely to feel natural, relevant, and connected to everyday life, rather than being perceived as external or disconnected policy messaging.

Partnership with community organisations

Participants strongly recommended working in partnership with community centres, neighbourhood houses, and CALD-focused organisations, particularly those supporting emerging communities. These organisations already have established relationships with

community members and often employ staff who speak relevant languages and understand cultural contexts.

As one CALD community leader expressed:

“As long as it's going to benefit our members, we have a duty to work with you, not only on the design, as well as on the implementation and effective use of the materials that you are going to create in the future.”

The findings suggest that community organisations play an important role not only in distributing information, but also in improving the cultural appropriateness, accessibility, and credibility of engagement strategies. Participants indicated that organisations with existing community trust and language capabilities are better positioned to support effective communication and outreach.

Such partnerships enable co-delivery of information sessions, workshops, and outreach activities, making communication more accessible and relatable. Participants also noted that collaboration with these organisations can support both the design and implementation of communication materials, helping ensure that information aligns with community needs, communication preferences, and cultural contexts.

Importantly, participants viewed these organisations as long-term engagement partners rather than simply channels for information dissemination. Their involvement was considered important for building trust, strengthening community participation, and supporting more meaningful two-way engagement with CALD communities.

In addition, engaging with local councils and community hubs can provide access to event calendars and existing programs, creating further opportunities for outreach and engagement. Participants suggested that leveraging these existing community networks and infrastructures can improve the reach, consistency, and effectiveness of communication efforts while reducing barriers to participation.

Strategy 3: Communication formats

Adopt delivery formats that prioritise face-to-face engagement as the primary mode, supported by simple, visual materials and targeted digital formats, to ensure communication is accessible, trustworthy, and responsive to CALD communities' diverse language capabilities, and digital familiarity.

Co-design workshop findings indicate that beyond *who* delivers the information (Strategy 2), *how* the information is presented and experienced plays a critical role in whether CALD communities engage with and act on it. Preferences are not uniform; rather, they are shaped by age, migration experience, language ability, and everyday communication practices. The following key elements were identified (Table 5).

Table 5. Details of strategy 3

Key delivery elements	What does it mean?	Why it matters
Face-to-face engagement as the primary format	Prioritise in-person sessions, small group discussions, and community meetings within familiar settings (e.g. cultural events, religious gatherings, informal meet-ups). Enable two-way interaction where participants can ask questions and learn collectively.	CALD communities value trust, dialogue, and shared understanding. Face-to-face engagement allows real-time clarification, builds confidence, and creates a comfortable environment for participation.
Use of simple supporting visual materials	Provide brochures, leaflets, or visual aids with clear visuals, minimal text, and key points. Use materials to reinforce verbal communication and enable sharing within households and community networks.	Written materials alone are often ineffective due to language or literacy barriers. Simple visual materials support understanding, help recall information, and facilitate sharing across family members.
Age-responsive digital formats and social media use	Use short, simple video clips (e.g. 10–15 seconds) and social media platforms to reach younger and middle-aged groups. Ensure content is translated, easy to understand, and delivered through trusted sources.	Different age groups engage differently. Digital formats increase reach among younger audiences, but must be used carefully due to information

Face-to-face engagement as the preferred format

Across workshops, participants consistently expressed a strong preference for face-to-face engagement, particularly within familiar community settings. In-person sessions, small group discussions, and community meetings were seen as the most effective formats, as they allow participants to ask questions, clarify uncertainties, and learn through interaction.

One participant explained:

“Online sessions coming from technical system would be a bit complex for our community. I think they would prefer to have a face-to-face meeting about that. They can ask any question if it’s coming to their mind.”

This preference reflects the importance of trust, dialogue, and collective understanding within CALD communities. Participants indicated that face-to-face communication creates opportunities for immediate clarification, shared discussion, and more comfortable participation, particularly when discussing unfamiliar or technical topics.

Face-to-face settings also enable participants to hear questions and experiences from others within the community, which helps strengthen collective understanding and reduce uncertainty surrounding the transition process. This suggests that communication within CALD communities is not simply an individual information process, but often a socially shared and discussion-based experience shaped through interaction with others.

Participants also highlighted that embedding these sessions within existing community gatherings, such as cultural events, religious occasions, or informal meet-ups, can significantly improve attendance and engagement. Familiar settings were viewed as important for creating a sense of comfort, trust, and cultural familiarity, particularly for individuals who may feel less confident engaging in formal or highly technical environments.

Importantly, participants noted that these sessions are not purely informational; they are also social and relational spaces where community interaction, familiarity, and shared experiences contribute to participation and engagement. This highlights the importance of designing communication approaches that support relationship-building and dialogue, rather than relying solely on one-way information delivery.

Use of simple supporting visual materials

Participants noted that while face-to-face communication is preferred, it should be supported by simple and accessible materials, such as brochures, leaflets, or visual aids. These materials were considered most effective when they used clear visuals, minimal text, and concise key messages rather than dense or technical explanations.

The findings suggest that written materials alone are often insufficient for engaging CALD communities due to language barriers, varying literacy levels, and differences in familiarity with technical terminology. Participants indicated that overly detailed or text-heavy materials may be ignored, misunderstood, or passed on to younger family members for interpretation.

This highlights the importance of simplifying information into visually accessible and easy-to-understand formats that can support communication across different language and literacy contexts. Participants suggested that visual explanations, diagrams, and simplified comparisons are more effective for reinforcing understanding and helping households recall important information after engagement sessions.

As such, materials should be positioned as supporting tools that reinforce verbal communication rather than as standalone communication methods. When designed appropriately, they can be taken home, shared within households, and circulated through community networks, including through informal digital sharing via messaging platforms.

Participants also noted that simple visual materials can support family-based decision-making processes by enabling discussions between different household members. This was considered particularly important in CALD households where decisions are often discussed collectively rather than individually.

Age-responsive digital formats and social media use

Participants highlighted that engagement preferences differ across age groups. Younger and middle-aged members of CALD communities were generally considered more comfortable with digital formats and more likely to engage with information through social media platforms and short video content.

Short and simple video clips, particularly when translated into community languages, were viewed as an effective way to communicate key messages in accessible and engaging formats. Participants noted that these videos can be easily shared through existing networks such as

Facebook groups, WhatsApp communities, and other social media channels, extending communication beyond formal engagement settings.

One participant explained:

“Nowadays even the elderly people in the community, they like to watch a 10-second or 15-second short clips.”

The findings suggest that digital formats can improve reach and accessibility across different segments of CALD communities, particularly when content is concise, visually engaging, and easy to understand. Participants indicated that short-form digital content aligns more closely with current everyday communication practices and changing patterns of information consumption within communities.

However, participants also noted important limitations associated with digital communication, including information overload, limited attention, and the risk that important messages may be ignored or overlooked. As such, digital communication was generally viewed as a complementary approach that should support, rather than replace, face-to-face engagement.

In addition, participants expressed strong concerns about scams and fraudulent communication, which significantly influence how they interact with digital content. Many participants indicated reluctance to click on unfamiliar links, respond to unsolicited phone calls, or engage with messages from unknown sources.

This highlights that trust remains equally important in digital communication environments. Participants emphasised that digital messages need to come from clearly recognisable and credible sources, such as government agencies, local councils, or trusted community organisations, to avoid being perceived as suspicious or unsafe.

Without this level of trust and recognisability, even well-designed digital content may be ignored. Participants therefore suggested that digital communication strategies for CALD communities should prioritise simplicity, recognisable branding, translated content, and delivery through trusted community-based networks to improve engagement and credibility.

4 Discussion

This section discusses an integrated understanding by linking CALD community perceptions with the co-designed engagement strategies, as depicted in Table 6.

Table 6. Integrated finding linking CALD community perceptions with co-designed engagement strategies

Key perceptions	What it means in practice	Strategic response	How the strategy addresses the perceived barriers
 Financial considerations	Strong cost sensitivity, focus on upfront costs, payback, and uncertainty under cost-of-living pressures	 Strategy 1: Content (financial clarity and value)	 Provides clear cost information, rebates, and real-dollar savings to reduce uncertainty and support informed decision-making
 System reliability and performance concerns	Concerns about electricity reliability, appliance performance, and suitability for large households, often shaped by past experiences	 Strategy 1: Information content (evidence and real-life demonstration)	 Uses real-life examples, case studies, and clear explanations to build confidence and address misconceptions
 Trust and communication gaps	Low awareness of policy requirements, confusion due to inconsistent information, reliance on informal networks	 Strategy 2: Communication channels	 Leverages trusted community leaders and organisations to deliver information in credible, culturally appropriate ways
 Cultural familiarity and reactive decision-making	Preference for familiar systems, reluctance to change, and tendency to act only when systems fail	 Strategy 3: Communication formats	 Uses interactive, face-to-face engagement and simple formats to support understanding, reduce perceived risk, and align with everyday practices

The integrated table highlights that CALD communities' participation in the household energy transition is shaped by a set of interconnected perceptions grounded in financial pressure, lived experience, trust, and everyday practices. These factors do not operate independently; rather, they reinforce one another to form a practical, risk-aware decision-making logic.

First, financial considerations emerge as the most immediate and influential barrier, reflecting strong cost sensitivity, concerns about upfront investment, and uncertainty under ongoing cost-of-living pressures. As shown in Table 6, this is directly addressed through Strategy 1: Content, which emphasises financial clarity and value. By providing transparent information on costs, rebates, payback periods, and real-dollar savings, the strategy reduces uncertainty and enables households to evaluate the transition in practical and economically meaningful terms. This alignment is critical, as participants consistently indicated that without clear financial justification, engagement is unlikely regardless of broader policy intent.

Second, system reliability and performance concerns are closely linked to participants' prior experiences and shared community narratives, particularly regarding electricity supply and appliance functionality. These perceptions are not always based on current Australian conditions, but nonetheless shape expectations and confidence. As reflected in Table 6, this is also addressed through Strategy 1: Information content, but with a focus on evidence and real-life demonstration. By incorporating case studies, practical examples, and clear explanations of system performance in everyday contexts, the strategy works to bridge the gap between perceived and actual system capabilities, thereby building confidence and reducing hesitation.

Third, trust and communication gaps represent a critical barrier influencing how information is interpreted and acted upon. Limited awareness of policy requirements, confusion arising from inconsistent messaging, and reliance on informal networks highlight that information alone is insufficient if it is not trusted. In response, this is addressed through Strategy 2: Communication channels, which leverages trusted community leaders and organisations. By embedding communication within familiar and credible networks, this strategy enhances legitimacy, improves understanding, and increases the likelihood that information will be accepted and acted upon.

Finally, cultural familiarity and reactive decision-making reflect a preference for known systems and a tendency to delay action until it becomes necessary, such as when existing

systems fail. This behavioural pattern indicates that participation is embedded in everyday practices and routines, rather than driven by proactive planning. This is addressed through Strategy 3: Communication formats, which prioritise face-to-face engagement and practical communication formats. These approaches support interactive learning, allow for immediate clarification, and align with how CALD communities prefer to receive and process information, thereby reducing perceived risk and supporting more confident decision-making.

Overall, the table illustrates that effective engagement requires direct alignment between specific perceptions and targeted strategies. Rather than applying a generic communication approach, the findings highlight the importance of designing engagement that responds to the underlying drivers of decision-making. By addressing financial concerns, experiential perceptions, trust dynamics, and behavioural patterns in an integrated manner, the proposed strategies provide a coherent and practical pathway to support more inclusive participation in the energy transition.

This integrated understanding reinforces that engagement in the energy transition must move beyond generic communication toward culturally responsive, behaviourally informed, and community-embedded approaches. By aligning strategies with how CALD households interpret risk, assess value, and make decisions, it becomes possible to support more inclusive and effective participation in the transition.

5 Conclusion

This study provides an in-depth understanding of how CALD communities in Victoria perceive and engage with the household energy transition, particularly in relation to the shift from gas to electric hot water systems. The findings demonstrate that participation is shaped not by a single factor, but by a set of interconnected perceptions, including financial considerations, concerns about system reliability and performance, trust and communication gaps, and cultural familiarity with existing practices.

Importantly, these perceptions reflect a practical, risk-aware, and experience-based decision-making logic, grounded in cost-of-living pressures, prior lived experiences, and reliance on trusted social networks. As such, participation in the transition cannot be assumed to follow policy intent alone, but must be understood within the everyday realities of CALD households.

In response, this study develops three integrated engagement strategies: (1) information content - clear, financially focused and real-life grounded content, (2) communication channel - community-led delivery through trusted networks and organisations, and (3) communication formats - delivery formats that prioritise face-to-face engagement supported by simple materials and targeted digital tools. Together, these strategies align closely with how CALD communities access, interpret, and act on information.

The findings highlight that effective engagement requires more than information provision. It requires alignment between policy communication and community-specific behavioural drivers, ensuring that messages are not only accessible, but also credible, relevant, and actionable.

Overall, this study contributes a practical, evidence-based understanding to support more inclusive and culturally responsive engagement in the energy transition. By recognising and addressing the specific needs and perspectives of CALD communities, policymakers and practitioners can better support equitable participation and ensure that no groups are left behind in the transition.

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Appendix: Cultural background of research participants

Cultural background (listed in alphabetical order)	Number of participants
Afghan	2
Bangladeshi	2
Bantu	1
Bosnian	1
Brazilian	1
Chinese	2
Colombian	1
Croatian	1
Eritrean	1
Ethiopian	1
Filipino	2
French	1
Indian	1
Indonesian	2
Iranian	2
Italian	1
Macedonian	1
Mexican	1
Myanmar (Burmese)	2
Nepalese	2
Pakistani	1
Somali	1
Spanish	1
Sri Lankan	2
Turkish	2
Ugandan	1
Venezuelan	1
Total	37