Achieving the IRA's Potential:
The Role of Social and Behavioral Science-based Program Design Elements

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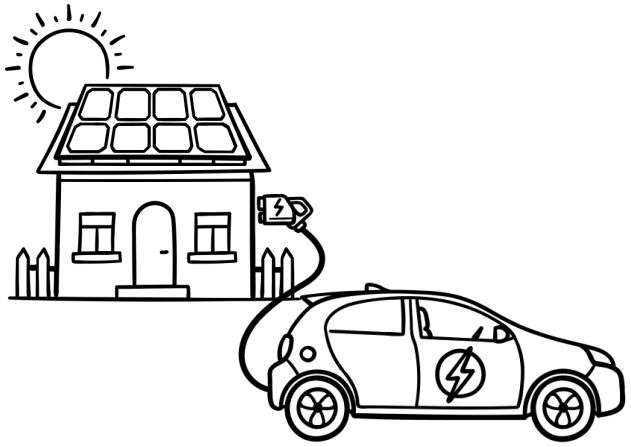
IRA makes clean energy options financially accessible

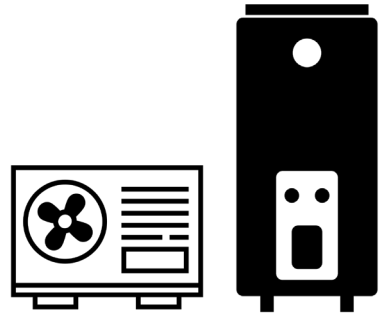


Clean Vehicle & Residential Clean Energy Credits

- Up to 30% project cost for solar
- $7.5k for new EVs & $4k for used

Energy Efficiency Home Improvement Credits

- Up to 30% for insulation, energy audits, windows/doors, heat pumps



High Efficiency Electric Home Rebates

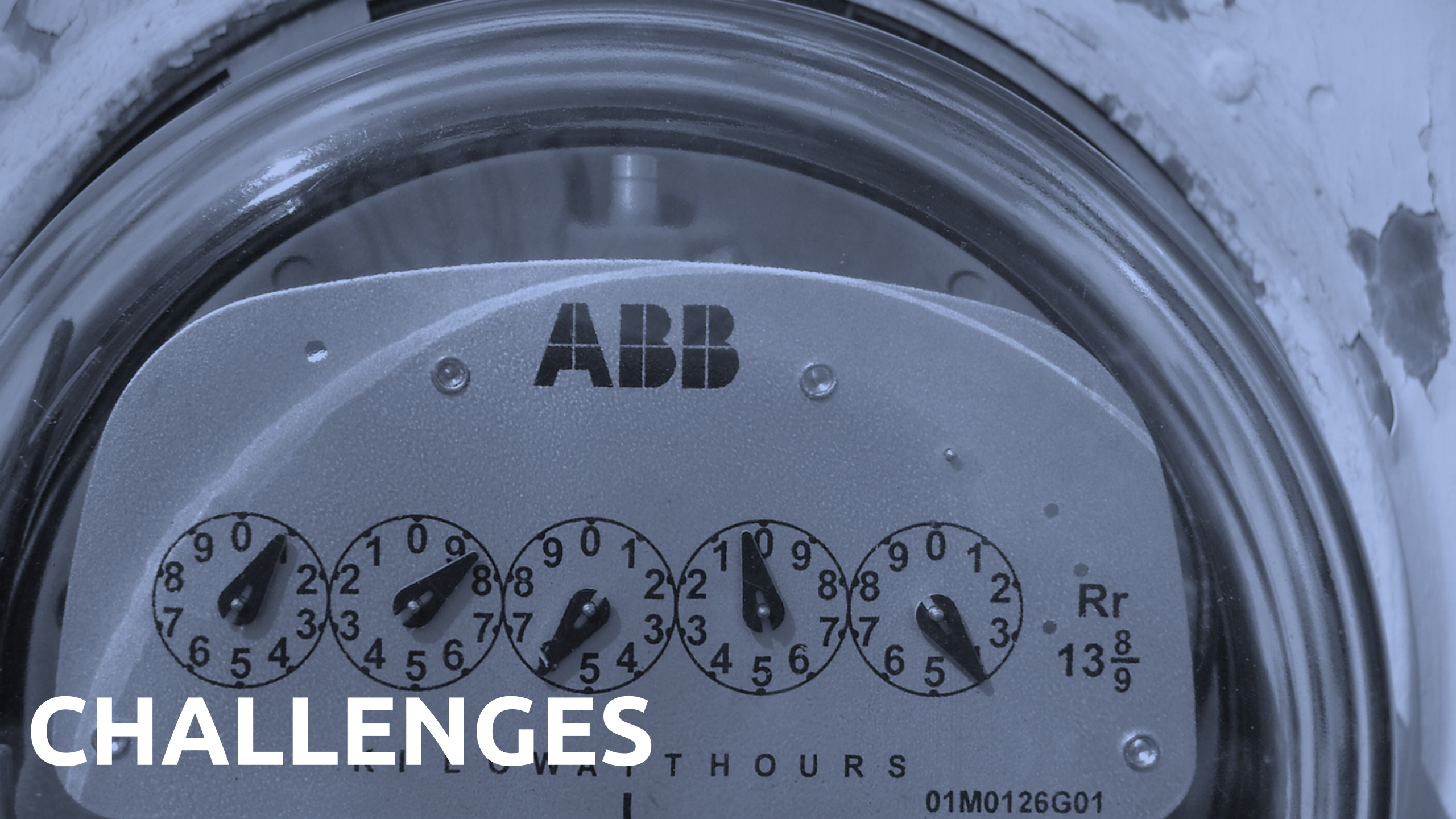
- Up to 100% ($14k) for low-income
- Up to 50% ($14k) for moderate-income

But *how* incentives are implemented matters as much as their economic value

We need behaviorally-informed policy implementation

1. What are the challenges to high-impact behavior change?

2. Where are there opportunities to enhance uptake through better policy design?



CHALLENGES

Consumers have a different understanding of energy than energy professionals and policymakers

- People think about energy in terms of services and benefits it provides (e.g., comfort, convenience, social benefits) (Shove, 2003)

- On average, people have a poor understanding of energy use and bills
  - Do not understand relative consumption of different behaviors and devices (Attari et al., 2010; Brounen, et al. 2013)
  - Or what they spend on monthly bill (Brounen, et al. 2013)

Policy often assumes that people are rational actors, who weigh costs & benefits, based on available information

In reality, may be rationally inattentive to efficiency information (Sallee 2014)

Use heuristics/mental shortcuts to size up information, in some cases making erroneous conclusions (Frederiks, et al. 2015), e.g.:

- Seem like they're wasting goods they already own (*sunk cost fallacy*)
- Deterred more by upfront costs than they are attracted to (uncertain) future energy savings (*loss aversion & present bias*)
- Out of sight, out of mind (*availability heuristic*)
- Too burdensome or inconvenient to adopt (*relative to sticking with the status quo*)

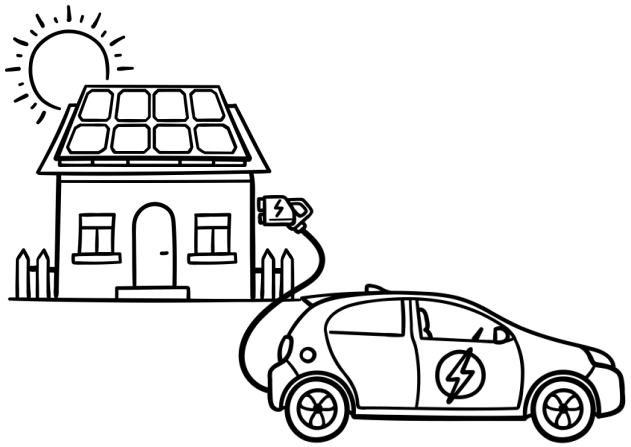
Characteristics of technologies may exacerbate these challenges

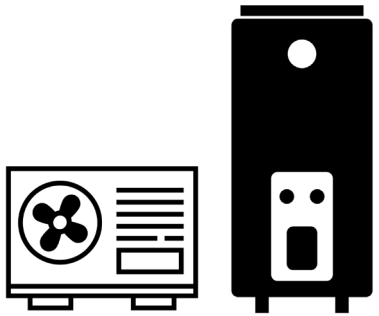
- **May still pay price premium** over conventional alternatives

- May necessitate **changes to home or routine**

- **Advantages** of unfamiliar technologies **may not be apparent**

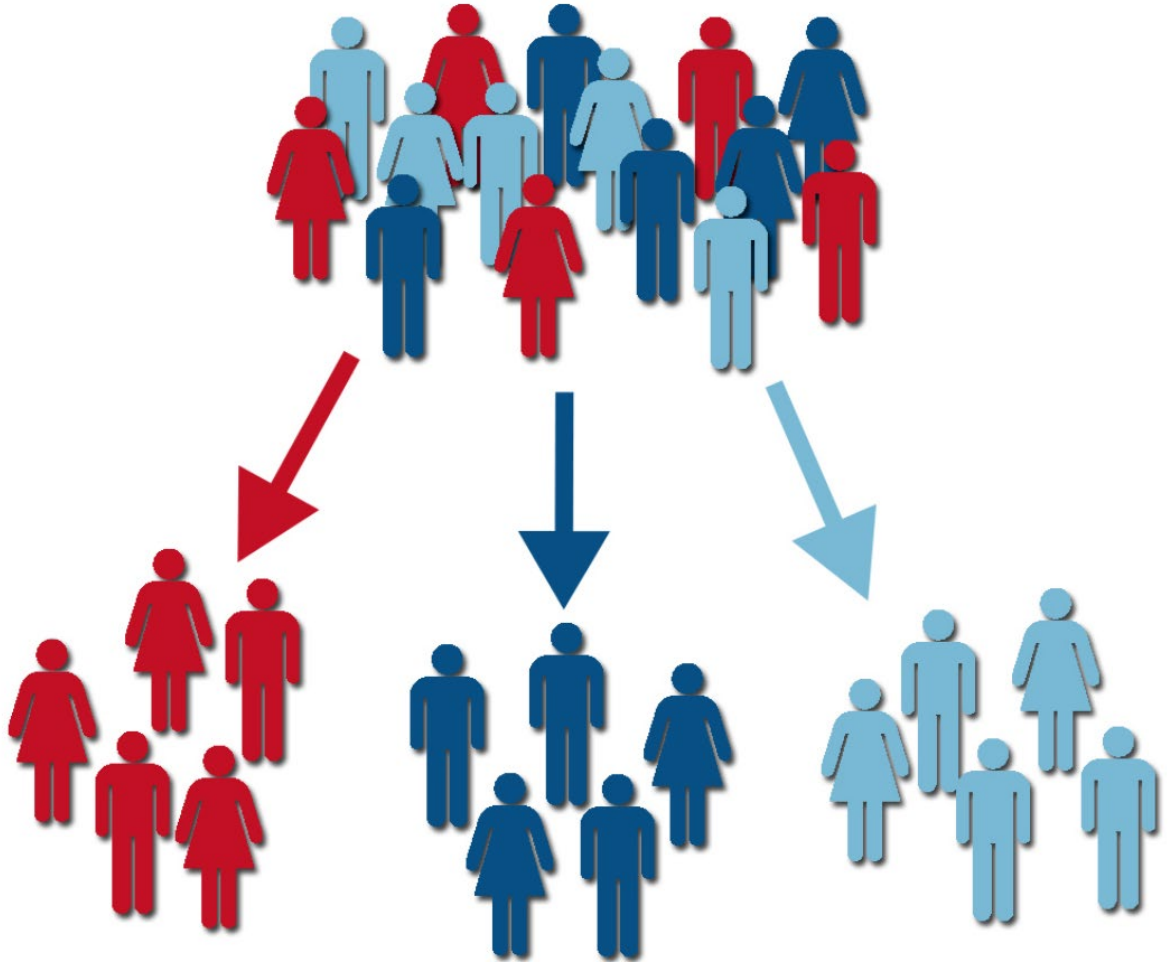
Perceived need for these technologies may be low





POLICY OPPORTUNITIES

1. Target the right audience



- Looking at average effects may obscure the process of change for different groups

- Evidence from
  - Solar PV (Wolske, Stern, & Dietz, 2017)
  - Solar Thermal (Labay & Kinnear, 1981)
  - Alternative fuel vehicles (Jansson et al 2011)

  that early adopters have different motivations and constraints

Barriers to action also vary across the population

- Innovators and Early Adopters
  - Naturally **drawn to novel** things
  - For energy technologies, often **more pro-environmental**
  - **Less risk averse**
  - Early adopters can act as "**opinion leaders**"

- Early Majority and Late Majority
  - **Follow the lead of others**
  - See technology as risk; **want social proof** that it works

- Laggards
  - Last to adopt and often do so because they have no choice

(Rogers 2003)

2. Target at the Right Time

When are people most likely to invest?

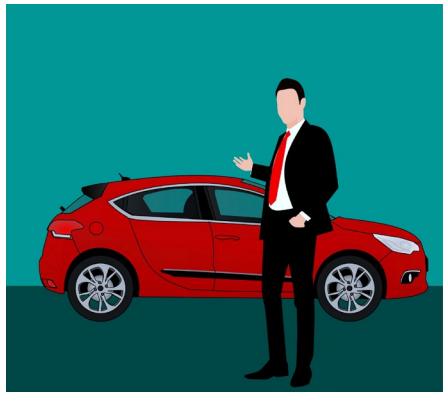
- Old appliance/car breaks

- Life change creates opportunity
  - Moving homes/Changing jobs
  - Renovating
  - Change in family structure

- Favorable policies, incentives, or sales
  …maybe

MOST COMMON
Characterized by:
- High time-pressure
- Limited research
- Budget constraints
- Competing interests

3. Target the Right Time, with the *Right Messengers*



- Engage with critical intermediaries
  - home improvement contractors
  - real estate agents
  - appliance salespeople and repair people
  - motor vehicle dealers

- To be effective change agents, policies and interventions may need to target them!

To be effective, Intermediaries may need training & incentives

- Mixed evidence about impact of salespeople
  (Kallbekken et al, 2013; Allcott & Sweeney 2016)

- Less likely to bring up energy, unless consumer is already interested

- May be dismissive of technology (Zarazua de Rubens et al., 2018)
  or have inaccurate information
    - E.g., Up to 1/3 of car sales associates at certified EV dealerships gave inaccurate information about available subsidies (Matthews, et al. 2017)

- Without continued training may revert to old sales practices (Kallbekken et al, 2013)
  May need incentives to switch sales pitch (Allcott & Sweeney 2016)

4. Simplify: Shift the burden to implementers not end-users

- Programs should **simplify the process**:
  - Reduce the number of steps & minimize paperwork
  - Options to reduce hassle
  - Provide a vetted list of approved contractors and/or certify contractors

  Else, too much complexity/too many options leads to sticking with the status quo

- **Do the math for end-users**;
  Standardize how economic savings are presented

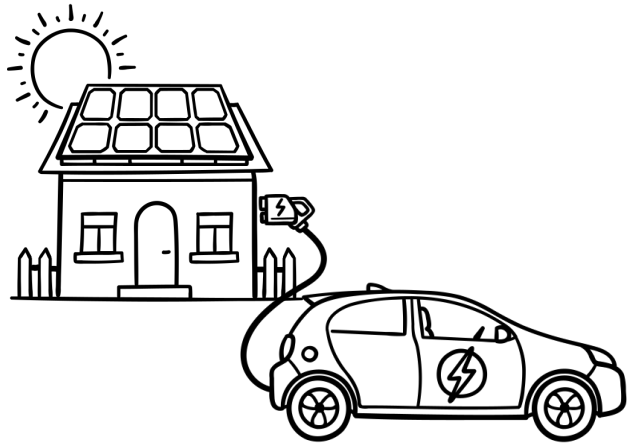
5. Leverage social influence

We know peers have played an important role in Solar and EV adoption

(Wolske, Gillingham & Schultz, 2020)

Seeing and talking with others with the technology can:

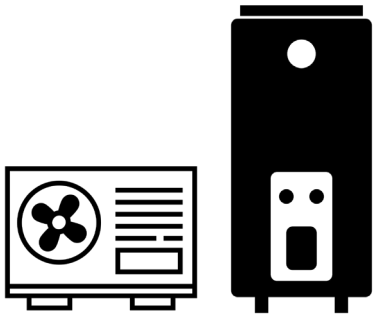
- Trigger interest in technology
- Shorten decision-making period
- Clarify and reaffirm available incentives
- Lead to more nearby adoptions



How do we achieve this with less visible actions?

Behaviorally-informed peer referral may offer promise, especially for low-income households

(Wolske, Todd-Blick, Tome, under review)



In summary, we need to shift away from…

- Assuming that people are self-motivated to invest in efficiency
- Assuming that “saving money” is their only motivation
- Treating consumers as a homogenous group

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Toward meeting them where they're at

- **Speak to the needs and wants of the audience**
  - Address nonfinancial and non-energy attributes,
    comfort health home appearance social status safety
  - At the time the information is most beneficial,
  - Through trusted information sources (intermediaries & social network)
  - Through the simplest process possible

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