

Impact of climate change policies: Behavioural insights

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Abstract: A large proportion of carbon dioxide emissions are due to the burning of fossil fuels for electricity generation. Environmental markets provide the most cost-effective way to reduce these harmful emissions, however the economic and environmental impacts of these markets can depend on their institutional design and how people respond to them. In the first part of the talk, the focus will be on the design of a carbon market (the US Regional Greenhouse Gas Initiative). Our evidence suggests that the price of carbon in this market can be heavily influenced by the regulator's design choices rather than the cost of pollution control which may have long-run efficiency impacts. In the second part, I will discuss the design of electricity pricing schemes which have the potential for significant efficiency gains. One such example is a dynamic electricity pricing whereby the marginal price paid by consumers changes frequently. However, given the essential nature of electricity, a concern for regulators with a consumer protection mandate is whether households comprehend the nature of price risks inherent to these dynamic real-time electricity pricing plans and whether they are able to manage these risks? For instance, many households on these plans experienced severe financial distress in the aftermath of the winter storm in Texas in 2021 and were caught unaware that electricity prices could be extremely high, a feature that is inherent to their plan. We develop a randomized and incentivized experiment calibrated to real-world price distributions to examine the plans households choose when faced with real time pricing products, with and without risk protection, and a flat rate pricing plan. Further, we test their understanding of the financial risks involved with real time pricing electricity plans. We find that (a) probabilistic risk disclosure elicits greater demand for real-time pricing products relative to a low-risk fixed-price alternative but without improving comprehension of the risk inherent in these plans, (b) products with risk protection are not highly sought, and (c) the experience of a bill shock improves risk comprehension and drives choice away from real time pricing. Personal experience receiving a very high price may play a greater role in risk comprehension and self-imposed risk protection than receipt of an ex-ante probabilistic risk disclosure. We discuss the implications these findings may have for regulators with a consumer protection mandate.