Cost Focus versus Comfort Focus: Evidence from a Discrete Choice Experiment with Swiss Residential Electricity Customers

Christian Winzer^a and Hongliang Zhang^b

Sector coupling and increasing production from renewable energy sources are increasing the need for grid expansion and backup generation capacity. Demand response programs could reduce the cost and need for such backup capacity by incentivizing consumers to make their flexibility available to balance generation and demand and resolve grid congestions.

We conduct a discrete choice experiment with 582 households in Switzerland to assess, to what extent customers could be willing to accept contracts involving large price spikes and / or strong demand restrictions in return for a lower electricity bill.

We find, that about 30% of the consumers focus on price risks (cost focus) when they choose an electricity tariff, while 70% of the customers are more worried about volume risks (comfort focus). Customers with a cost focus, prefer contracts with low price risks and automatic load control, even when these contracts increased their volume risks and may lead to discomfort, while customers with a comfort focus are unlikely to choose a contract that exposes them to either price or volume risks.

All customers prefer direct load control of individual appliances to capacity subscriptions or other demand response approaches which limit their total electricity demand. While customers with a cost focus likely accept direct load controls, enrolling customers with a comfort focus will require further efforts.

a Corresponding author. Centre for Energy and the Environment, Zurich University of Applied Sciences, Bahnhofplatz 12, 8400 Winterthur, Switzerland. https://orcid.org/0000-0001-5362-0922. E-mail: winc@zhaw.ch.

b Department of Environmental and Resource Economics, School of Environment & Natural Resources, Renmin University of China, Beijing 100872, China.