research highlights

ELECTRICITY RELIABILITY

Willingness to pay in Nigeria

Energy J. **38**, <http://doi.org/b4r2> (2017)

Whereas households in mature economies take electricity reliability for granted, in low-income and middle-income countries this is not the case. In Nigeria, the average household suffers power outages more than three times a day (for a total of 19 hours daily) and typically consumes less than 150 kWh per annum, compared to 5,407 kWh in the United Kingdom or 12,988 in the United States. Therefore, a combination of reduced availability and low reliability of power supply has prompted Nigerian households to use back-up generation to complement unreliable electricity services. However, the impact of self-generation is rarely considered when estimating consumers' willingness to pay (WTP) for improved power provision. Now, Musiliu Oseni, from University College London, UK, uses the results of a recent survey to estimate the impact of back-up generation on the WTP of Nigerian households for increased reliability of electricity services.

Oseni uses data from a survey of 835 households that took place in six local government areas in two states in southwest Nigeria (Lagos and Osum) in April 2013. Using both preferences stated in the survey and those revealed by the positive actions taken to reduce the impact of power cuts, the study allows an economic value to be attached to the cost of supply outages for residential consumers. The results show that Nigerian households that possess back-up generation are willing to pay US\$1.42 on top of the monthly electricity bill (an increase of 4.4% on the average bill) to improve service reliability. This means that families that have back-up generation are willing to pay 23.6% more per kWh than households without back up. This study confirms that Nigerian households, regardless of their specific circumstances and income, are already engaged with measures to improve power reliability and are willing to pay an extra amount above the current electricity bill to secure better electricity supply. These results suggest that the Nigerian government could gradually remove electricity subsidies to raise the capital required to finance additional generation capacity.

Alessandro Rubino