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IEEE GLOBAL CONSUMER SOCIALIZATION OF SMART GRID

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Executive summary

One of the primary goals of Smart Grid is to provide its consumers control over their energy consumption, with the help of real-time information, which in turn benefits both consumers and utilities in managing electricity. This report details the challenges faced by utilities, government bodies, and industry bodies in understanding the consumer behavior and educating them on Smart Grid. It also suggests action items that can be undertaken in order to create large-scale awareness and understanding among consumers.

The report highlights the role of a consumer in successful Smart Grid deployment. It segregates consumers into various strata on the basis of attributes such as their requirements and priorities, Smart Grid technologies and services from which they will benefit most, and the methods of engaging with them. It also details the key challenges faced by consumers in adopting Smart Grid services. These challenges have become a formidable roadblock in the smooth implementation of Smart Grids. The report also throws light on various expectations that consumers have from Smart Grids and suggests key socialization channels for mitigating concerns and delivering value to consumers.

The survey undertaken in the report studies consumer perception and behavior on renewable energy resources and Smart Grids across six countries: USA, Germany, India, China, South Korea, and Japan.

Despite a relatively small sample size of respondents, the survey successfully brings to notice the awareness level and perceptions of an average consumer, thereby helping in understanding the key focus points for consumer socialization.

Eighty-seven percent of the respondents in the survey belonged to the age bracket of 25-34 years. Consumers in this age group are open to new ideas and technology alike. They not only display willingness to try new services offered, but also spread this awareness among their peers and younger generation. Since consumers belonging to this age bracket are the most pivotal in influencing other consumers and actively participating in new initiatives or pilots, the survey successfully provides us an understanding of the perception of consumers who are/will be most actively involved in Smart Grid rollout across countries.

Among the several findings, the survey reveals that a large number of respondents are familiar with the concept of smart grids and smart meters and their related benefits. However, the deliberate inclusion of some incorrect options indicates that a fraction of the respondents is misinformed and requires education. The survey also substantiates the need for governments and utilities to work in tandem with media channels in order to spread awareness on smart grids among consumers.

The report discusses in detail Smart Grid adoption level in each of the aforementioned countries and analyses the level of consumer socialization based on consumer awareness level, perceived concerns, initiatives taken to mitigate the same, and the impact of consumer socialization on Smart Grid rollout. In addition, it also throws light on Smart Grid implementation across the six countries with respect to four technologies that are most relevant to consumers: advanced metering infrastructure (AMI), distribution automation, renewable energy, and cyber security for smart grids.

The report also discusses the consumer socialization cycle, a step-by-step procedure which ensures a systematic, focused, and effective increase in consumer socialization. It aims at influencing consumers, spreading awareness among them, creating an in-depth understanding in simplistic terms, and taking the required actions which encourage them to adopt Smart Grid technologies. In addition, it indicates the ideal level of involvement that should exist for relevant stakeholders of the Smart Grid ecosystem at every step of the cycle. Success stories from the six countries under study exemplify the four steps of the consumer socialization cycle further. The report also enlists the actions that stakeholders can take to create an amicable environment that facilitates effective adoption by consumers for a smooth Smart Grid deployment. The report concludes with a step-by-step procedure that stakeholders can undertake in order to reach out to consumers in an impactful and positive way.