

Analysis and development of sustainable solutions for the inclusion of low-income customers in the electric power network

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The democratization of Brazil in the early 1990s set off a process of economic development and social inclusion, leading to the creation of a burgeoning middle class eager and able to purchase goods and services, including high-quality electric power. However, social stratification is not enough to address and define the behavior of these new customers. The diversity of behavior found in this new social group impacts the utilities companies' operations in terms of increased non-technical losses. The culture of non-payment for public services elevates total losses to levels higher than 50%. The inclusion of this new middle class is fundamental to the reduction of the non-technical losses. To achieve this, the utility companies face a threefold challenge: (i) to fully include the group (in social, electrical and digital terms); (ii) to maintain them as regular customers in compliance with the contractual obligations implied in the electricity supply; and (iii) to educate them around energy efficiency. Unlike most developed countries, the energy efficiency programs in Brazil and in other developing countries seek to teach methods of rational use of energy mainly for new electricity customers. However, this is not a simple issue and one of the most difficult issues is creating sustainable energy efficiency programs to guarantee that new customers are able to pay for the amount of energy they use. Through the VI Energy Efficiency Program, created by Change through Digital Inclusion (CDI) for Light, a Brazilian Electricity Utility operating in Rio de Janeiro State, these new included customers can make savings upwards of 47kWh/month per customer, representing a 22% saving in energy.