

14. Access to electricity grid

The proportion of the population with access to the electrical grid is an important factor for how demand will change over time. This is not a linear process, as it is affected by urbanisation, development of slums and "the last mile" problem of increased infrastructure costs once the easier areas have been completed.

The last decade

In 2010 82% of urban households and 33% of rural households had a central grid connection. In 2010 49.6% of the Bangladesh population had access to electricity, the lowest rate in Asia. This was increased to nearly 60% in 2011, while India's electrification rate increased from 75.0% to 75.3% in the same period.

Assumptions of model

The trajectories are based on updated predictions from the following paper.¹ Their 2020 goal is pushed back to 2025 due to the actual 2010 penetration being lower than the paper predicted. An important assumption from this paper that the maximum feasible rural grid electrification rate is 84% of rural population.

Levels

Level 1

Least effort. The grid continues to expand at a slowly decreasing rate.

Level 2

Current policy. Logistic projection from historic ratios. Rural population reached 84% connected by 2040

Level 3

High effort. Urban population is 100% connected by 2030. Rural population reached 84% connected by 2035

Level 4

Heroic effort. Urban population is 100% connected by 2025. Rural population reached 84% connected by 2025

Interaction with other levers

This lever has a huge influence on the overall electricity demand in the domestic housing sectors. It also controls the extent of the effect of the 'electrification of cooking' lever, since that only applies to houses with a grid connection. Although not modeled, the limit on usage of electric cars should be considered by the light of this lever.

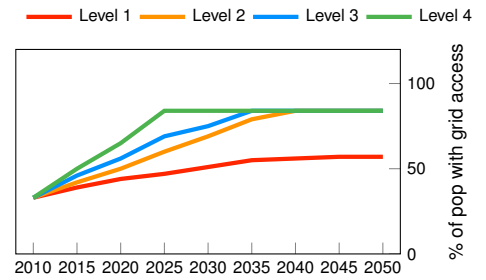


Figure 14.1: Rural Population

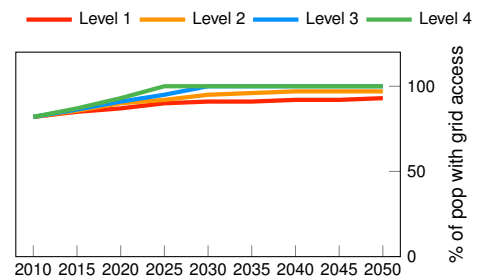


Figure 14.2: Urban Population



Figure 14.3: Rural Power Lines

¹ Md. AlamH, Mondal et al / Energy Policy 38 (2010) 7416-7426