

## Have Model, Will Reform?

### Assessing the Outcome of Electricity Reforms in Non-OECD Asia

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#### Executive Summary

Electricity sector reforms, originating in the OECD and implemented in non-OECD countries through the adoption of the ‘standard reform model’, have their theoretical foundations in the economic rationale that restructuring, competition, and regulation lead to higher efficiency, economic growth, and transfer of surplus to consumers. Non-OECD Asian economies comprise about 34% of world primary energy demand, 60% of population and 65% of the world’s poor, and will account for more than 60% of the total increase in energy consumption between 2015 and 2040.

Therefore, the outcomes of electricity sector reforms in non-OECD Asia have significant implications for global energy use, sustainability and socioeconomic welfare. However, the countries in this region have experienced a slow and difficult reform path and after more than two decades of reform efforts, there is now a strong case to take stock of the reform experience and assess their outcomes on the sector, economy, and social welfare.

This paper seeks to address the following questions: to what extent has the ‘standard model’ of electricity reforms in non-OECD Asia delivered the expected technical, economic and welfare gains? And, to what extent have the heterogeneous country-contexts in non-OECD Asia influenced these outcomes? Using an original data set from 1990-2013 for 17 non-OECD Asian countries, we apply instrumental variable regression techniques and estimate several reform outcome models.

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Overall, our findings suggest that the standard reform model has not produced all of the expected theoretical benefits. This has been largely due to the implementation of the reforms within a context of sectoral heterogeneity and generally weak institutional endowments. We also find evidence of some trade-offs from implementation of specific reform measures in terms of their effect on technical efficiency, economic effects and welfare outcomes, as suggested by economic theory.

The results call for a renewed thinking of the realistic potential of reforms and better understanding of the effects of individual reform steps as well as the trade-offs among the competing reform objectives.

**Keywords** market liberalisation; electricity restructuring; development; welfare; instrumental variable estimation.