

Potential Impact of Electricity Reforms on Turkish Households

BACKGROUND

- Turkey has been in the process of reforming its electricity market since 2001 and plays an important role in the potential South East Europe regional energy market, and is emerging as a hub and transit country between Europe and Asia.
- An essential part of the reform programme is the introduction of cost-reflective tariffs but there is real concern that this will create social hardship among Turkish consumers.
- This paper endeavours to identify the affected consumers and the extent of the impact of the reform programme using 6 different scenarios, some of which are based on proposed policies by the sector regulator, EMRA (Energy Market Regulatory Authority). It should help the government develop programmes which will alleviate the impact and potentially facilitate Turkey's integration into the Energy Community of SE Europe.
- Electricity is mainly used for lighting, power and air conditioning Turkish households. Heating requirements are mainly met by oil, coal or natural gas (in larger cities). Average household use varies considerably between provinces, as a consequence partly of air conditioning usage, and partly of differing income levels.
- Turkey has applied a 'national' system of residential electricity tariffs, with a small discount for priority provinces which are mainly in the south and east of the country and principally rural in nature. Households in priority provinces pay 0.65% less for their electricity. They also have on average much lower income than non-priority provinces. The highest technical and non-technical losses are incurred in priority provinces with lowest per capita GDP.

METHODOLOGY

- This paper examines several scenarios likely under reforms of the sector:
 1. the potential impact of EMRA's policy proposal (which has been rejected) to allow tariffs to reflect the current wide regional variation in network losses;
 2. the effect of potential changes in residential tariffs as a result of a national tariff equalisation programme that is currently being implemented;
 3. the effect of potential efficiency savings from the proposed merger of distribution companies;
 4. the impact of raising the current low ratio of domestic to industrial tariffs to the OECD average;
 5. the effect of reducing taxation levels on households; and
 6. the effect of changing the present flat rate per kilowatt hour to a tariff which reflects more accurately the pattern of consumer-related and consumption-related costs.
- The research uses household level data from the Turkish Household Expenditure Survey (THES) to calculate potential welfare changes for different households and income groups of the 6 scenarios.

KEY FINDINGS

Changes in Regional Tariffs (scenarios 1,2 and 3)

- Reflecting the losses fully implies large price increases for some households. For example, Mardin, which is almost the poorest province, would face price increases of 170% if the cost of losses were to be fully reflected, representing a quarter of average household income.
- The effect of removing the small discount for priority status provinces in a revenue-neutral way is similar to scenario 1, but is much smaller. The poorest deciles of the population lose and the richest gain, reflecting the higher concentration of low income consumers in the priority provinces.
- The third scenario proposes lower tariffs in provinces which have the potential to improve their efficiency levels, and is therefore not revenue-neutral, with effects in the opposite direction to scenarios 1 and 2. Differences between average gains were not statistically significant across income deciles despite a tendency for higher average absolute gains for the richest decile of households.

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Changing the Level of Revenue Collected from Residential Consumers (scenarios 4 and 5)

- The price rise from scenario 4 (raising the proportion of revenue recovered from the residential tariff to the OECD average) and the price fall from scenario 5 (removing all existing taxes and imposing VAT at 5%) are similar in magnitude, raising or decreasing household expenditure on electricity by 1.5% of disposable income on average. The largest effect is on larger families (3 or more children) because they have relatively high electricity requirements and relatively low household income.

Restructuring Tariffs (scenario 6)

- The introduction of a revenue-neutral standing charge benefits those who consume more electricity and penalises users of smaller quantities. This results in losses of 2% of income for the poorest deciles and gains of 0.2% of income for the richest. People who are more vulnerable and likely to consume less electricity, i.e. those with a Green Card, not registered with social security, or receiving an old age pension, face increased expenditure. Single person households would experience the worst effect (since likely to use least electricity). Surprisingly, however, larger families would also pay more, albeit a relatively small amount.

POLICY ISSUES

- Restructuring tariffs to recover technical and non-technical losses is likely to have a large, adverse and direct effect on households through increased energy expenditure. It would be compounded by the fact that the areas with the largest losses are also those with the lowest incomes.
- Removing the small subsidy for priority provinces would have only a small impact on prices, although it would (marginally) improve cost reflectivity. However, it may be the case that there are other factors in the priority provinces that raise costs in these areas relative to the rest of the country. If this were the case and tariffs became cost reflective, the small tariff rises from abolishing the preferential tariff might be considerably larger.
- The installation of a standing charge would be regressive - benefiting those with high incomes and large consumption profiles but impacting negatively on those who use small quantities of electricity.
- A more encouraging aspect of reform is the potential for cost savings. Privatisation and reorganisation will provide incentives for efficiencies (though this may be dampened by additional cost of service regulation) and there is the potential for significant cost reductions.
- Taxes currently levied on the industry largely counteract the relatively low proportion of revenue collected through the residential sector. If residential prices are raised, so that the ratios are closer to the OECD average, and taxes (except 5% VAT) are removed, the net effect on residential tariffs would be broadly neutral.
- Some of the potential changes in the electricity market could impact low income households significantly. It is important that the government and the regulator understand the impact of their reform in advance of its implementation, so that they can bolster existing policy solutions, develop new ones, or determine a careful sequencing of changes to mitigate and spread their effect.

THE CCP

The ESRC Centre for Competition Policy (CCP), at the University of East Anglia, undertakes competition policy research, incorporating economic, legal, management and political science perspectives, that has real-world policy relevance without compromising academic rigour.

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The full working paper (CCP Working Paper 07-8) and more information about CCP and its research is available from our website: www.ccp.uea.ac.uk

ABOUT THE AUTHORS

- **Professor Catherine Waddams** is Director of the Centre for Competition Policy. She has published widely on privatisation, regulation and the introduction of competition, especially in energy markets, in the UK and elsewhere.
- **Associate Professor Necmiddin Bagdadioglu** is Vice-Chair of the Department of Public Finance at Hacettepe University in Ankara, and was a Visiting Researcher at the CCP from 2005-06 on a Jean Monnet scholarship. His research interests are in industrial organisation, the privatisation and regulation of utilities (particularly electricity) and economic analysis of law.
- **Alparslan Basaran** is a Research Associate in the Department of Public Finance at Hacettepe University.

W: www.ccp.uea.ac.uk
 T: +44 (0)1603 593715
 A: UEA, Norwich, NR4 7TJ

