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Managing the Balancing Act: Energy Subsidies & Energy Affordability

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Many Europe and Central Asia (ECA) countries are faced with a difficult balancing act of cutting subsidies to the energy sector while protecting affordability for consumers. This study assesses at the micro-level the distributional impact of raising energy prices to cost recovery levels, while recommending a transition to more effective social assistance measures and demand management interventions.



Introduction

Sheltering consumers from the high cost of energy through subsidies to the energy sector is becoming increasingly unaffordable for many countries in ECA. At a time when fiscal and environmental concerns are calling for increasing tariffs to cost-recovery levels, questions on energy affordability challenge the political feasibility of reforms. Governments are faced with a balancing act of cutting subsidies while protecting affordability.

Relying on the ECAPOV database,² a new World Bank study, *Balancing Act: Cutting Energy Subsidies while Protecting Affordability*, assesses at the micro-level the distributional impact of raising energy prices to cost-recovery levels. The analysis focuses on electricity and gas, which account for 4.5 and 1.6 percent of household spending³ in the region, respectively, and adopts a broad country grouping to address commonalities across the following subregions:

- European Union (EU) member states
- EU candidate and potential candidate (CPC) countries, including Croatia,⁴ Turkey, and the Western Balkans
- The Eastern Partnership and Other Commonwealth of Independent States countries (EPOC), which include the members of the Commonwealth of Independent States (CIS) and Georgia

The report estimates that higher tariffs would increase household expenditures on energy by 14 percent for the EU member

KEY MESSAGES

- Sheltering consumers from the high cost of energy by subsidizing the energy sector is increasingly unaffordable for most countries in ECA, which face growing pressure to raise energy tariffs to cost-recovery levels.
- Since household consumption patterns reflect past infrastructure investments and are unlikely to change in the short term, energy tariff increases would negatively affect large segments of the population in the region. The shock of higher energy tariffs is likely to be significant, particularly for the poorest households.
- A new World Bank study¹ has found that helping households cope and adapt to more expensive energy requires an integrated policy agenda of more effective social assistance measures as well as demand management interventions such as energy-efficiency incentives.
- The cost of these interventions is largely outweighed by the savings from removing the subsidized tariffs. The study reveals that in almost half of ECA countries, reducing subsidies while protecting affordability could lead to fiscal savings of over 1 percent of GDP.

¹ Caterina Ruggeri Laderchi, Anne Olivier and Chris Trimble, *Balancing Act: Cutting Energy Subsidies while Protecting Affordability* (Washington, DC: World Bank, 2013).

² ECAPOV is a unique database of standardized household surveys that covers the majority of countries in the region.

³ The average share of electricity spending ranges from 1.6 to 7.3 percent, and the average share of gas spending ranges from 0.2 to 5.1 percent of the household budget.

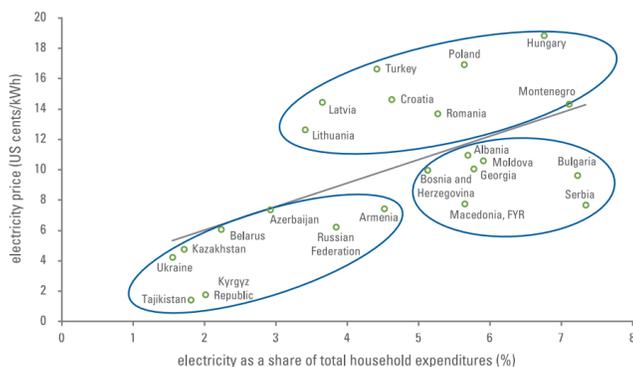
⁴ Croatia joined the European Union on July 1, 2013.

states,⁵ 13 percent for the CPC countries, and 28 percent for the EPOC countries. As a result, poverty could increase by 5–30 percent, while even larger shares of the population could face severe energy poverty.

Energy Affordability in a Broader Context

Higher electricity prices are associated with higher burdens on household budgets, as illustrated by Figure 1. Households appear to have limited ways of keeping their energy expenditures in check. Indeed, country evidence over time shows that energy price increases often compel households to cope by cutting down on other types of basic consumption, such as food or health spending. However, the past decade also shows that increasing energy efficiency can help households manage their energy spending. A companion report⁶ to the new study offers an overview of the energy-efficiency policies that were implemented in countries that have successfully decreased their energy intensity.⁷

Figure 1. Electricity Price & Electricity Share of Total Household Expenditures

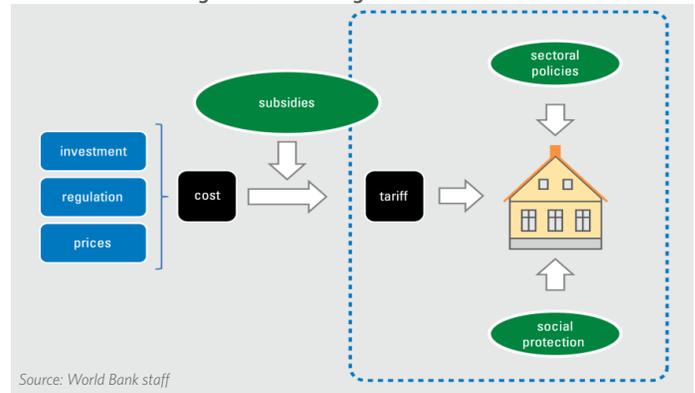


Source: ECAPOV, World Bank estimates

Balancing Act adopts a simple framework to characterize the challenge countries face in balancing affordability with fiscal prudence and environmental concerns. The framework distinguishes the factors that determine the technical cost of energy from those that affect energy affordability for households, as illustrated in Figure 2.

In the framework, predetermined elements are identified that reflect country endowments. These include past policies (in blue) that determine the current technical cost of energy, and current policy variables (in green) that affect household demand and energy affordability. The current technical cost is determined by: (i) prices; (ii) regulations that govern tariff settings, such as EU regulations to internalize the social costs of energy production or reforms to enhance network operational transparency; and (iii) investment to upgrade the capital base of the sector.⁸ Subsidies, social protection, and sectoral policies are the current policy variables that affect energy demand and affordability for households—or conversely, their vulnerability to tariff increases. These policy variables drive: (i) how technical costs are translated into tariffs; (ii) how sectoral policies shape demand patterns; and (iii) the social protection measures available to support energy affordability.

Figure 2. “Balancing Act” Framework



Source: World Bank staff

From Costs to Tariffs: The Role of Subsidies

Most ECA countries fix their tariffs at levels below cost recovery, thus subsidizing the price households pay for energy. For the sake of comparability, the report adopts a common cost-recovery standard equal to 12.5 U.S. cents per kilowatt hour (kWh) for electricity to cover technical costs (and 16 U.S. cents per kWh for the EU10,⁹ accounting for the social costs of energy production). For gas, a common threshold of US\$560 per 1,000 cubic meters (m³) (that is, US\$16.70 per gigajoule [GJ]) is used.

Subsidies through the tariff system are currently pervasive and absorb an estimated 2.3 percent of GDP on average, ranging from 0 in Latvia to 12 percent in Tajikistan. The most common way of implementing these subsidies is through lifeline tariffs, or block tariffs designed to keep the price for the bottom block of consumption at levels significantly below the average tariff. While lifeline tariffs have played an important role in cushioning the impact of the shift to higher residential tariffs over the past decade, the magnitude of subsidies they absorb appears unsustainable at a time of heightened fiscal pressures.

Universal subsidies are also an expensive and inefficient way of protecting consumers because they represent recurrent costs and because they reach everybody, including households that do not need support in paying their bills. Figure 3 presents estimates of how implicit benefits are distributed via subsidized gas and electricity tariffs. As shown in the study’s simplifying framework, households benefit from the subsidy in proportion to their consumption, so that in most countries, wealthier households tend to be the main beneficiaries of electricity and gas subsidies.

Developments in the energy markets, concerns about the environmental sustainability of current energy consumption levels,

⁵This accounts also for environmental costs.

⁶Gary Stiggins, Alexander Sharabaroff, and Yadviga Semikolenova, *Energy Efficiency in ECA: Lessons Learned from Success Stories* (Washington, DC: World Bank, 2013).

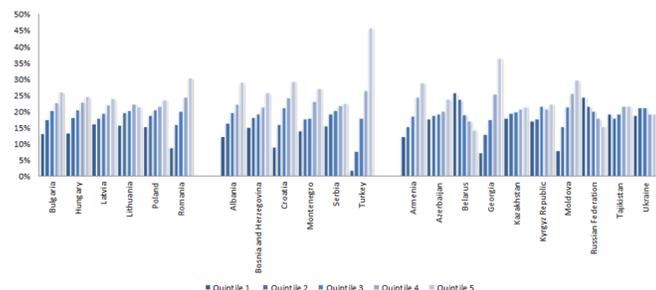
⁷Energy intensity is defined as total energy consumption per unit of GDP.

⁸Recent estimates suggest that for the region as a whole, these costs might amount to as much as US\$3.3 trillion if a lights-out scenario is to be averted. See World Bank, *Lights Out: The Outlook for Energy in Eastern Europe and Central Asia* (Washington, DC: World Bank, 2010).

⁹The EU10 refers to the 10 countries that joined the EU in 2004 (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic, and Slovenia) and 2007 (Bulgaria and Romania).

and the need to start planning for significant investment in the sector all suggest that energy costs will continue to increase. To avoid passing this rising cost along to households, even greater subsidies would be required. Yet, continuing to shelter consumers through subsidies to the sector might be a vanishing luxury for most countries.

Figure 3. Distribution of Benefits for the Implicit Subsidy on Electricity and Gas, by Quintile



Source: ECAPOV, World Bank estimates

Note: Countries with non-regressive patterns are highly reliant on district heating. Once all types of subsidies are accounted for, the pattern would be regressive across all countries.

If tariffs were made equal to the regional cost-recovery standards, households across the region would experience price shocks of different magnitudes. In most countries, the shocks would be significant, with an average increase in the share of household budgets spent on energy of 1.5 percentage points (among EU members), 1.2 percentage points (CPC countries), and 2.1 percentage points (EPOC countries), resulting in energy expenditures that amount to a respective 14, 13 and 30 percent of household budgets. Overall, the increases would range from 1.3 to 51.9 percent across all countries in the region.

While poorer groups would not be the most seriously affected by the price increases in all countries, poverty incidence overall would increase significantly across the board. The report estimates that across EU member states, poverty could increase by 5–30 percent. In addition, energy poverty—defined as the share of households that spend 10 percent or more of their budgets on energy—would rise substantially.

Social Protection: Helping Vulnerable Households Pay their Bills

Given that household tariffs would have to increase significantly to attain cost recovery, more effective policy solutions than those currently in place will be needed to address the social impact of further tariff increases.

In addition to generalized tariff subsidies, countries typically have social protection programs aimed at helping vulnerable households pay their energy bills. These programs are commonly referred to as energy-related social assistance (ESA). Means-tested programs tend to have a higher share of their budgets reaching poorer groups, but lower coverage than other types of programs. Categorically targeted programs, in contrast, generally have much higher coverage, especially if the list of eligible groups is extensive; however, they are often weak at targeting

the poorest, because eligibility is not linked to income.

There are two main challenges to the expansion of ESA throughout the region. The first has to do with delivery mechanisms, which might not yet be in place in some countries, despite high poverty incidence. As these systems are put in place, transitory solutions such as vouchers or well designed lifeline tariffs might be needed. The second challenge is cost. Even restricting the compensation to the poor only—an option that might not be wise given the burden faced also by the middle class in many countries—could require more than 1 percent of GDP for energy programs alone in the poorest countries in the region. Nevertheless, experience from the past decade does offer examples of how existing programs can be made more effective, including measures to reach those most in need by strengthening the targeting of benefits and consolidating multiple programs in a common and enhanced delivery mechanism.

Yet, transfers alone cannot be used to guarantee energy affordability, even if only to some subset of the population. Since these recurrent expenditures do not help address the problem at its root, they should be complemented with more extensive sectoral policies supporting energy efficiency.

Sectoral Policies: Improving Energy Efficiency

A subset of policies in the energy sector, particularly investment in infrastructure and housing, would allow households to diversify their energy consumption and increase their energy efficiency so as to adapt to a higher tariff environment.

Transitioning households to lower consumption behavior has important distributional implications. Poor households tend to allocate higher shares of their energy budgets to electricity, due to their limited access to alternative sources such as district heating or gas. While the rural poor might be able to rely on wood or lower grade fuels to keep their energy budget in check, poor households in urban areas might be the most vulnerable to energy increases. Evidence also suggests that energy consumption patterns can remain stable even if tariffs increase, as was the case, for example, in Armenia over the past decade.



Electrical power lines connecting towns in Southeast Europe

More comprehensive and sustainable measures are needed to help households adapt to this higher tariff environment, particularly in a context such as ECA, where many households still use energy inefficiently.

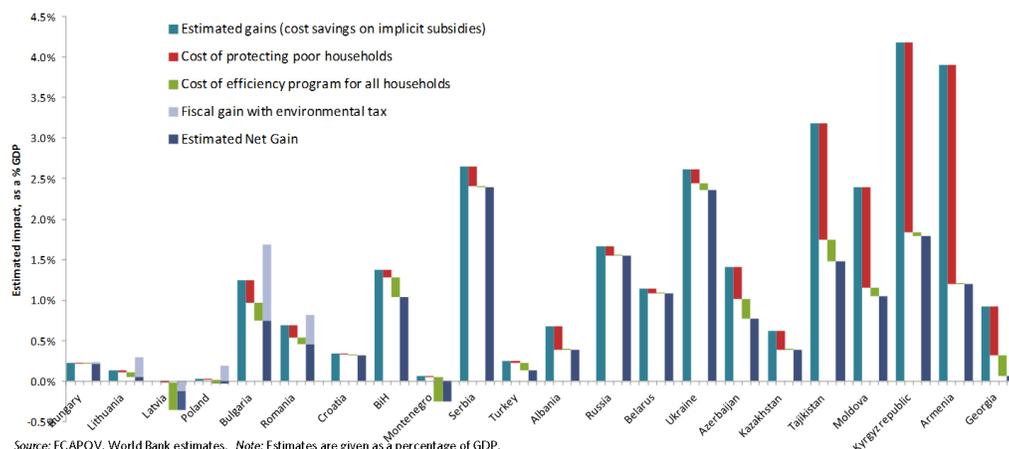
One example is the white certificate programs, implemented in France, Italy, the United Kingdom, and Australia, which impose specific energy savings obligations on energy suppliers or distributors.¹⁰

Moving Toward Implementation of an Integrated Policy Agenda

The fiscal costs of maintaining current tariff structures in the face of upward pressures on the costs of energy are clearly unsustainable. Countries will need to move toward higher energy tariffs while simultaneously improving energy social assistance programs and demand-management tools. Yet, different segments of the population can be covered by different tools. Targeted social assistance measures can cater to the needs of poor households, for example, while incentives to increase efficiency can help all households manage their energy demands. The efforts required will vary across the region and some countries may require more transitional measures before being able to effectively implement such an agenda, as not all have targeted social assistance programs in place that cover the poor effectively.

Would such an agenda be feasible? Given the large amount of resources that are currently absorbed by energy subsidies, the report shows that most countries would eventually realize fiscal savings by focusing on both targeted energy-related social subsidies and investments in energy efficiency for all households. The result would be savings of over 1 percent of GDP for almost half of the countries in the region, though the estimates vary significantly across countries and are clearly approximations (Figure 4).¹¹

Figure 4. Estimated Net Gains from Removing Subsidies, Compensating Poor Households, and Implementing a Basic Energy-Efficiency Program



Source: ECAPOV, World Bank estimates. Note: Estimates are given as a percentage of GDP.

Conclusion

Countries in the ECA region face a difficult balancing act between addressing fiscal and environmental concerns that call for raising energy tariffs to lower fiscal burdens and curb household consumption on the one hand, and coping with concerns about energy affordability and the political economy of unpopular reforms on the other. Balancing Act, the new World Bank report, recommends a well-planned transition from tariff-based subsidies to better-targeted social assistance programs and improved demand management tools to increase energy efficiency as part of an affordable policy reform agenda. Specific policy recommendations would need to be tailored to the circumstances of each country.

To access the full report, please visit:

http://imagebank.worldbank.org/serve/WDSContentServer/IW3P/IB/2013/06/24/000333037_20130624101834/Rendered/PDF/768200Revised00REVISED0JUNE02013.pdf

¹⁰ World Bank, 2012

¹¹ Overall, these are rather conservative estimates, as they do not factor in the energy-saving effects of the energy-efficiency measures discussed above. In other words, savings could be realized even if the protracted investment in energy efficiency that would be required to bring down consumption took time to materialize.

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