



Ukraine: Phasing Out Energy Price Subsidies

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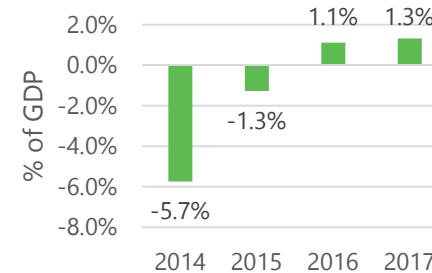
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Summary of energy tariff reform in 2014-2017

In 2014 the Ukrainian government initiated the ambitious tariff reform aimed at complete phasing out energy price subsidies

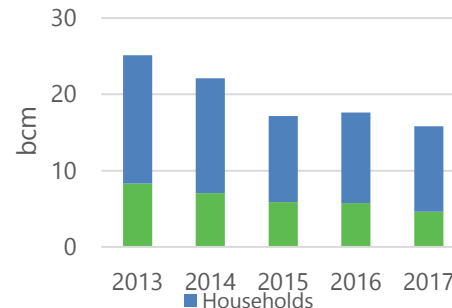
- Natural gas prices increased 8.2 times (4.6 times in real terms).
- District heating tariffs increased 4.6 times (2.4 times in real terms)
- Electricity tariffs increased 3.5 times (2.9 times in real terms)
- Drastic **subsidies reduction had the positive impact on:**
 - *macroeconomic stability*
 - *energy efficiency,*
 - *energy security,*
 - *closing rent seeking opportunities for gas price arbitrage,*
 - *renewables development in heating sector*
- **Tariff increases were coupled with social assistance reform** making it more progressive (linked to household income) and fair
- The price **subsidies were not fully eliminated in 2017** as planned.
- Their **full phasing out** requires the **further reform of the housing and utilities subsidies (HUS) framework**, in particular more progressive HUS provision to ensure the fiscal sustainability of HUS and the affordability of energy

Figure 1. Natogaz net profit(+)/loss(-) as % of GDP



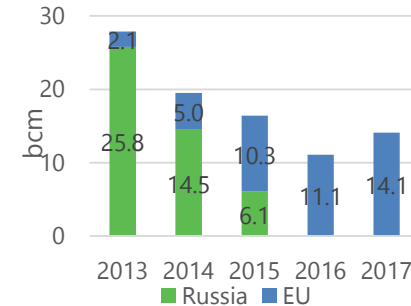
Source: Natogaz of Ukraine

Figure 3. Residential natural gas consumption, mcm



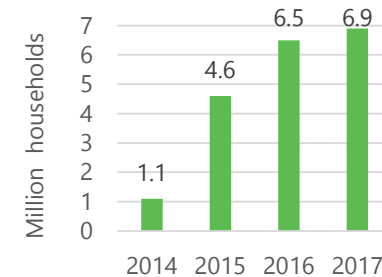
Source: Natogaz of Ukraine

Figure 2. Natural gas import by destination. bcm



Source: Natogaz of Ukraine

Figure 4. The number of HH receiving HUS, mln HH, eoy



Source: State Statistical Service

The analysis of energy price subsidies employs **the price-gap approach**

Price subsidy (price – gap)

= (Reference price – End-user price) × Units consumed

- **Natural gas**

Reference price = average price of imported gas as a commodity + transportation system gas entry fee + transmission, distribution and supply costs + VAT

- **Electricity**

Reference price = LRMC of electricity supply + VAT ¹

¹ The LRMC - the cost of the marginal generator (CFPP) required to meet the increment of demand estimated at the reference price of steam coal that would prevail at the free competitive market. The EUR 5/t is added to this price to account for steam coal railway transportation. An allowance of US\$ 15/MWh and US\$ 40/MWh was added to account for transmission and distribution costs for industrial and residential uses, respectively (WEO, (2014), OECD/IEA)

Gas tariffs increases for households and DH companies and full costs recovery prices

| Gas | 2013 | May 2014 | April 2015 | May 2016 | 4M2018 |
|--|--------------|--------------|-----------------------------------|--------------|--------------|
| Import price of natural gas* (USD/tcm and UAH/tcm) | 412 3,296 | 365 4,339 | 276 6,017 | 185 4,662 | 284 7,729 |
| Exchange rate** (UAH/USD) | 8.0 | 11.9 | 21.8 | 25.2 | 27.17 |
| Import parity price for HH (UAH/tcm) | 4,498 | 5,777 | 8,430 | 6,543 | 10,304 |
| Household gas tariffs (UAH/tcm) | 840 | 1,309 | Tier 1: 3,600*** Tier 2: 7,188 | 6,879 | 6,958 |
| Gas tariffs for DH supply to households (UAH/tcm) | 1,309 | 1,309 | 2,994 | 6,810 | 6,810 |

* Average import price for the year (actual for 2013-15). May 2016 is the government April's 2016 estimate for the average gas price till the end of 2016. There was no gas import by Naftogaz in the 2Q2016. April 2018 is the average import price of gas reported by the Ministry of Economic Development and Trade

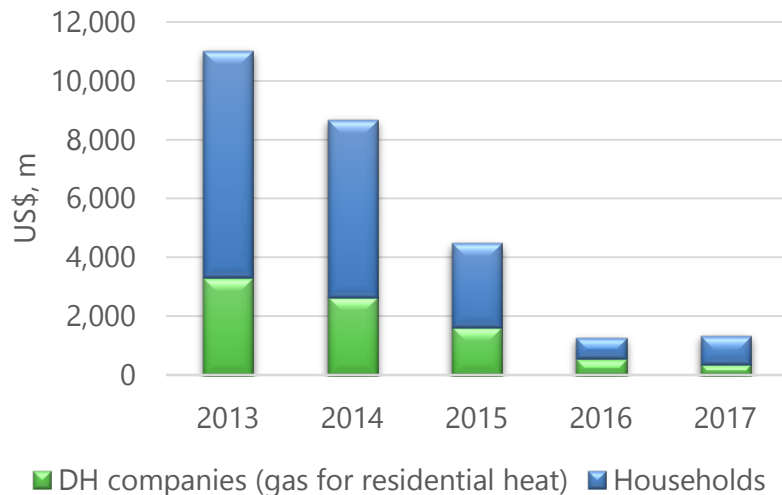
** Average exchange rate for the year (actual for 2013-15, May 2016 reported by NBU and 4M2018 weighted by monthly import)

***Tier 1: <1,200m³ consumption during heating season

Source: WB/ESMAP, IEA for EU4Energy Estimates

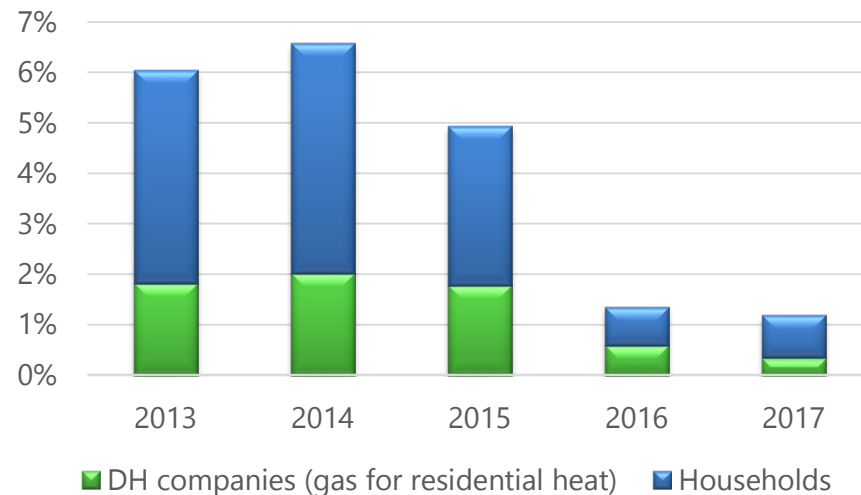
- The government benefitted from low import prices – average gas import price declined from US\$ 412/tcm to US\$211/tcm in 2013 and 2016 respectively
- Gas tariff for households and gas tariffs for DH supply to households in May 2016 increased by about 420% (May 2016 over May 2014) reaching import parity level one year ahead of commitment under IMF's EFF
- Natural gas consumption by residential sector declined by 5.6 bcm or by 33% in 2017 over 2013
- Regulated tariffs started falling short of the import parity level in the 4Q2016 and the gap reached 48% in the 4M2018

Figure 5. Natural gas price subsidies in 2013-2017, US\$ million



Source: WB/ESMAP, IEA for EU4Energy estimates

Figure 6. Natural gas price subsidies in 2013-2017, % of GDP



Source: WB/ESMAP, IEA for EU4Energy estimates

- The regulated price was not reviewed based on movements of gas import price and the exchange rate in 2017 in line with Ukrainian legislation and commitments in the MEFP with the IMF
- The estimated residential gas price subsidies for households and DH companies amounted to US\$ 945 m and US\$ 383 m respectively or 0.85% and 0.34% of GDP respectively in 2017

DH tariffs increases for households and full costs recovery prices

| District Heating | 2013 | May 2014 | April 2015 | July 2016 | 4M2018 |
|---|--------------|--------------|--------------|--------------|--------------|
| Import price of natural gas* (USD/tcm and UAH/tcm) | 412 3,296 | 365 4,339 | 276 6,017 | 185 4,662 | 284 7,729 |
| Exchange rate** (UAH/USD) | 8.0 | 11.9 | 21.8 | 25.2 | 27.17 |
| Household DH tariffs (UAH/Gcal) | 272 | 375 | 645 | 1,252 | 1,244 |
| Tariff based on import parity of gas (UAH/Gcal) | 838 | 1,055 | 1,496 | 1,295 | 1,825 |

* Average import price for the year (actual for 2013-15). May 2016 is the government April's 2016 estimate for the average gas price till the end of 2016. There was no gas import by Naftogaz in the 2Q2016. April 2018 is the average import price of gas reported by the Ministry of Economic Development and Trade

** Average exchange rate for the year (actual for 2013-15, May 2016 reported by NBU and 4M2018 weighted by monthly import)

***Based on import parity price of gas and 13% normative losses used by Regulator for tariff calculation

Source: WB/ESMAP, IEA for EU4Energy Estimates

- Before 2014 heat tariffs for population covered only about 2/3 of heat costs at even highly subsidized gas prices
- The gas tariff for DH and consequently tariff increases for heat were less steep than gas tariff hikes to population in 2015 to allow introducing consumption based billing. The level of building level heat meters installation increased from 32% to 90% in 2014 and 2017 respectively
- Natural gas use by DH companies for residential heat generation declined by 3.7 bcm or by 44% in 2017 over 2013
- The residential tariffs reached full cost recovery at import parity of gas price in July 2016 but gas tariffs for DH and residential heat tariffs have not been reviewed since then in line with gas price movements

Electricity tariff increases for population in 2015-2017

| | Feb-15 | Mar-15 | Sep-15 | Mar-16 | Sep-16 | Mar-17 |
|--------------------------|--------|--------|--------|--------|--------|--------|
| Average tariff, UAH/kWh | 0.35 | 0.51 | 0.63 | 0.77 | 0.97 | 1.23 |
| Average tariff change, % | | 45% | 23% | 23% | 26% | 26% |

Source: NEURC

Figure 7. Residential cross-subsidies in 2014-2017



Source: NEURC

- National Energy and Utilities Regulation Commission (NEURC) estimates total electricity cross-subsidies in residential sector at UAH 32.8 bn in 2017
- Despite nominal increase of electricity tariff for population 3.5 times (March 2017 over March 2015) the cross-subsidization was not phased-out as expected in 2017 due to inflating by NEURC regulated steam coal price
- The calculated by Regulator cross-subsidies may be either lower or higher than actual price subsidies in the sector due to other market distortions (coal producer subsidies, regulated prices for NPP below LCOE, distribution tariff for households below LRMC).
- The employment of price gap approach yields the **residential electricity consumer price subsidies** at **US\$ 1,314 m** (UAH 34,944 m) **in 2017** and projected increase to **US\$ 1,818 m** (UAH 55,123 m) **in 2018**¹

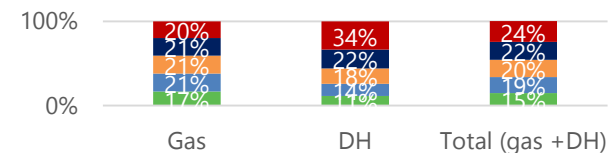
¹ The increase is attributed to higher projected LRMC of supply due to higher generation costs at CFPP and projected by the government the devaluation of national currency to UAH 29.3/US\$ (aoj)

Reform of the social safety net to accommodate tariff increases

- Prior to 2014 reforms, **in addition to price subsidies** there were **two main programs** with an overall **regressive performance**:
 - The Housing and Utility Subsidies (HUS) program with the total coverage and costs of 1.3 m households (HH) and 1.3% of GDP respectively reduced utility bills for households with high energy shares, irrespective of their income.
 - The Housing and Utility Privileges programs with the total coverage and costs of 3.7 m HH and 0.2% of GDP respectively reduced energy bills for eligible HH (different percentages for different groups, from 25% to 100%)
- **Changes to HUS: strongly progressive design** and expansion of the pool of beneficiaries
 - Absorbed other energy assistance programs
 - Threshold **share of energy expenditures** that defined benefits **became a function of income**

$$\text{required payment for utilities} = \frac{\text{income per capita}}{2 * \text{subsistence level}} * 15\%$$
 - Redesigned HUS eligibility criteria to **increase the coverage of poorer households, unemployed**, etc.
 - By the end of 2017 **6.9 m HH received HUS** while **total annual costs reached 2.3% of GDP**
- **Major challenges:** current **HUS are not fiscally sustainable** to accommodate further gas and heat tariffs revision up to the increased full import parity level, were **never means tested** and **include little incentives for energy efficiency** of HUS beneficiaries

Figure 8. Distribution of direct and price subsidies by income quintile in 2013

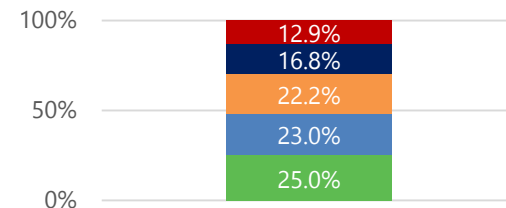


■ Q1 (20% poorest) ■ Q2 ■ Q3 ■ Q4 ■ Q5 (20% richest)

Source: ESMAP/WB

estimates

Figure 9. Distribution of HUS by income quintile in 2016



■ Q1 (20% poorest) ■ Q2

■ Q3 ■ Q4

■ Q5 (20% richest)

Source: WB estimates

ESMAP assistance in reforms coverage

- opinion research to assess public attitudes about reforms
- messaging workshops to design key campaign messages
- training sessions for 278 journalists, media monitoring to enhance press coverage of reform
- development of an animated ad for print, internet, and TV
- 51 trainings for 3000 social workers at HUS to improve their customer orientation



The newly trained journalists reached approximately 14.1 m people (more than 30% of population), resulting in an extremely positive response from the government

Government launched interactive webpage <http://teplo.gov.ua/>

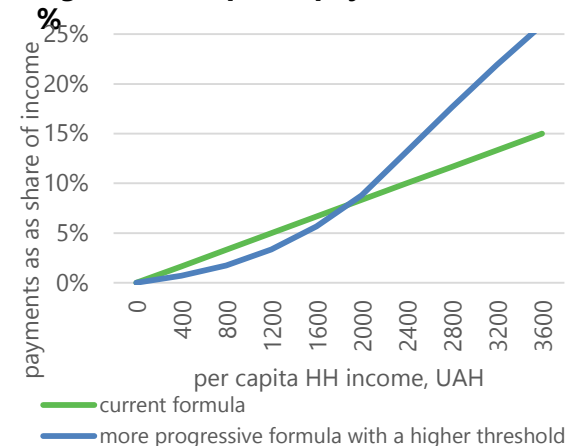
- Most recent changes to HUS procedure
- Information on HUS eligibility, opportunity to apply online, calculate required payment of HH, information on social norms, etc.
- Explanation of tariff reform, tariff setting procedures and authorities
- Advice on energy efficiency improvement to reduce the energy bills, successful examples from different regions

Conclusion and way forward

- Despite the outstanding progress of the government in energy price subsidies reduction in 2015-2016 they were not fully phased out as planned
- Total natural gas and electricity subsidies are estimated at 1.19% and 1.17% of GDP respectively in 2017
- Price subsidies, result in multiple distortions, are regressive and do not achieve its declared goal - protection of the poor. There is no economic excuse for keeping them.
- The complete elimination of subsidies would enable to improve macroeconomic stability, energy security, energy efficiency, reduce corruption in the sector and incentivize renewables deployment.
- The natural gas and electricity tariff adjustment up to the current market level without the HUS system reform would make the HUS coverage almost universal and undermine the energy efficiency incentives.

- To guarantee the fiscal sustainability of HUS and ensure the affordability of energy to vulnerable population the government needs to review the HUS system:
 - More progressive benefits formula targeting 30% of the poorest. The good case of targeted assistance is Bulgaria where 70% of the provided assistance for payment of the utility services in winter were received by the 10% of the poorest households.
 - Increase required payment threshold from 15% to 20-25%
 - Review the eligibility rules (some changes already introduced for 2018/2019 heating season)
 - Introduce means testing to verify reported income and wealth status and prevent fraud
 - Conduct comprehensive annual survey of energy consumption in residential sector and annually revise the HUS social norms to bring them gradually down to non-beneficiaries level.

Figure 10. Required payment for utilities,



Source: IEA for EU4Energy

