OUTLINE OF REFORMS IN DISTRICT HEATING TARIFF SYSTEM IN UKRAINE

Diana KORSKAITE,
DH Sector Lead, USAID Energy Security Project

April 27, 2021
OUTLINE

• Regulatory architecture in Ukrainian DH
• Regulatory approaches coexisting
• Gas PSO removal implications
• Climate policy implications
REGULATORY ARCHITECTURE FOR UKRAINIAN DH SECTOR

• RULE MAKERS AND IMPLEMENTERS IN THE AREA OF TARIFF MAKING
# REGULATORY ARCHITECTURE FOR DH ENTITIES.
## DISPERSION OF REGULATORY FUNCTIONS

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Licensee of Regional State Administrations</th>
<th>Licensee of NEURC</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Generation Volume of TE</td>
<td>Less 170 thousand Gcal and/or Less 90%</td>
<td>More 170 thousand Gcal and More 90%</td>
</tr>
<tr>
<td>II. Share of commercial metering (metering devices installed, houses)</td>
<td>≈50% generation 1400 DHCs</td>
<td>≈50% generation 26 DHCs</td>
</tr>
</tbody>
</table>

**Licensing function**

**Methodology-level function**

**Tariff-level function**
### REGULATORY ARCHITECTURE FOR DH ENTITIES.

#### APPROACH UNDER CONSIDERATION

<table>
<thead>
<tr>
<th>Category if DHC</th>
<th>Regulatory allocation - current</th>
<th>Regulatory allocation - considered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume of GEN</td>
<td>&gt;170 Gcal</td>
<td>DH tariff</td>
</tr>
<tr>
<td>Level of metering</td>
<td>&gt;90%</td>
<td>GEN-tariff</td>
</tr>
<tr>
<td>TPP/CHP/NPP</td>
<td>n.a.</td>
<td>T-tariff</td>
</tr>
<tr>
<td>Number of DHCs</td>
<td>9</td>
<td>S-tariff</td>
</tr>
</tbody>
</table>

| Volume of GEN   | >170 Gcal                      | DH tariff                         |
| Level of metering| >90%                            | GEN-tariff                        |
| TPP/CHP/NPP     | operated                       | T-tariff                          |
| Number of DHCs  | 18                              | S-tariff                          |

| Volume of GEN   | >170 Gcal                      | DH tariff                         |
| Level of metering| <90%                            | GEN-tariff                        |
| TPP/CHP/NPP     | any                            | T-tariff                          |
| Number of DHCs  | 30-40                           | S-tariff                          |

| Volume of GEN   | <170 Gcal                      | DH tariff                         |
| Level of metering| any                            | GEN-tariff                        |
| TPP/CHP/NPP     | any                            | T-tariff                          |
| Number of DHCs  | ≈1350                           | S-tariff                          |

**Tariff set by NEURC**

**Tariff set by Local Gov**
REGULATORY APPROACHES FOR DH TARIFF MAKING

• TWO MAJOR APPROACHES FOR DH TARIFF ESTABLISHMENT
# REGULATORY MODELS FOR DH TARIFF SETTING.

## HELICOPTER VIEW on APPROACHES

<table>
<thead>
<tr>
<th>Cost Plus Approach</th>
<th>Incentives Based Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PROS</strong></td>
<td><strong>CONS</strong></td>
</tr>
<tr>
<td>Simple to implement</td>
<td>Coverage of costs less 100%</td>
</tr>
<tr>
<td>Straightforward to justify</td>
<td>No push for efficiency</td>
</tr>
<tr>
<td>No over-profit allowed</td>
<td>Short-termism</td>
</tr>
<tr>
<td>…</td>
<td>…</td>
</tr>
<tr>
<td>C+ modified - in use</td>
<td>IBR (RAB) at the initial phase</td>
</tr>
</tbody>
</table>
REGULATORY MODELS FOR DH TARIFF SETTING IN UA.

COST+

• Implemented to generation, transport, supply.

• Methodological outlook:
  – 12 months period
  – Formula is conventional – establishes total eligible costs for a type of activity (G, T, S), based on norms and adjustments

• $TC_T = C_M + C_{T3} + C_{TL} + C_P + C_{other}$
  – $P$ – allowance for investment, allowance to credit-body repayment, allowance $\geq 2\%$ for Working Capital, profit tax

• $T = (TC + P + \Delta)/Q$
  – Tariff: can be flat rate or two-part;
  – Obligingly differentiated to residential, public, religious and other consumers.

• Special accounts operationalized to secure priority payments for gas supplier(s), gas TSO and DSO, IFI credit repayments, etc.

Reconsider to IMPROVE:

1. Utilization of norms
2. P concept
3. Working Capital
4. Prerequisites of DHC response to DM/EE
5. Associate with long term investment plans
REGULATORY MODELS FOR DH TARIFF SETTING IN UA. IBR (RAB)

- **IBR (RAB)** for TE transportation regulatory package:
  - NEURC adopted in 2017-2018, following the opportunity in the Law on Natural Monopolies;
  - COM decision pending.

- Law provided condition: **asset shall be revaluated** prior to switching to IBR (RAB) tariff model:
  - methodology on asset revaluation by SPF – no sufficient political support to further the issue;
  - sector complains having no financial means to implement asset revaluation.

- **Methodological outlook**:
  - 5(3)Y regulatory period.
  - Approved long term investment programs 5(3) years.
  - Established efficiency obligations: network technological losses; electricity for technology; personnel for technology; target quality indicator (2nd period); regulatory return.

- **Methodological formulae**:
  \[ RR_T = C_c + C_{nc} + C_{TL} + C_{TE} + D + RRR \]
  \[ RRR = 12.5\% \]

- Annual correction indices applied to RR (regulatory revenue): producer price index; average salary index; consumer price index; deviations of actual from projected values.

- **Formulae**:
  \[ T = RR/Q \]

---

Reconsider to UNLOCK:

1. Asset value
2. Long term investment plan
3. RRR
4. Clusterization & Benchmarking
5. Formal resolutions
6. Real pilot(s)
REGULATORY MODELS FOR DH TARIFF SETTING.
ROLE TO BE PLAYED - GENERALLY

- CONSUMER to pay fair price, DHC to be not overcompensated
- QUALITY to be ensured and stimulated
- COST EFFICIENCIES to be incentivized
- ADMINISTRATIVE burden to be reasonable both to regulator and a DHC

- MAINTENANCE of existing infrastructure to be ensured, needed EXPANSION of network to be supported
- INTEGRATION of fragmented systems to be facilitated
- INNOVATIONS, EE improvements and DM measures to be incentivized
REGULATORY MODELS FOR DH TARIFF SETTING:
BASELINE TASKS YET TO BE ACCOMPLISHED

The need for DH investment

- Modernization of heat generation capacities
- Replacement, repair and/or insulation of networks
- Total

<table>
<thead>
<tr>
<th>Component</th>
<th>USD Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment needs</td>
<td>~3bn</td>
</tr>
<tr>
<td>Annual operational savings</td>
<td>0.4bn</td>
</tr>
<tr>
<td>Annual natural gas savings</td>
<td>1.1 bcm</td>
</tr>
<tr>
<td></td>
<td>~6bn</td>
</tr>
<tr>
<td></td>
<td>0.9bn</td>
</tr>
<tr>
<td></td>
<td>2.4 bcm</td>
</tr>
</tbody>
</table>

Source: Minregion

Current debts of DHCs for gas account to EUR ≈1.9 billion

Debts of consumers to DHCs, end-2020, accounted to USD ≈0.9 billion [UAH 24 billion]
GAS REFORMS AND ASSOCIATED DH TARIFF CHALLENGES

• THE GUARANTEED SUPPLIES OF FUEL AT PREFERENTIAL TERMS ARE BEING REMOVED
  – EXPECTED IMPLICATIONS ON DHC ACTUAL COSTS
  – ANTICIPATED IMPACT ON FINANCIAL STATE OF DHCs
  – ADEQUATE TARIFF MODEL RESPONSE
# Gas Reforms and DH Tariff Challenges

## Implications of Move to Competitive Terms for Gas

<table>
<thead>
<tr>
<th></th>
<th>Post May 2021: without PSO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guarantee of gas supply</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Imbalances</strong></td>
<td>Both medium-term (quarterly / monthly) and daily planning for each metering point is required. In case of non-compliance, the price of gas may increase significantly.</td>
</tr>
<tr>
<td><strong>Settlement of imbalances</strong></td>
<td>Determined on a contractual basis each case individually. Supplier markup is not regulated.</td>
</tr>
<tr>
<td><strong>Gas price (commodity)</strong></td>
<td>Requirement to provide financial collateral. Need to book transportation capacities for DH consumers. Pre payment for infrastructure services (pre-payments). Special accounts are removed; no protection from accounts blocking.</td>
</tr>
<tr>
<td><strong>Privileged terms to pay for gas transportation</strong></td>
<td>Usually, pre payment for gas commodity or additional payments guarantees to be provided. Special accounts are removed; no protection from accounts arrest.</td>
</tr>
</tbody>
</table>

### Gas price for DHCs, UAH/1000m3 w/o VAT*

![Graph showing gas price fluctuations from Nov-15 to Aug-20]
GAS REFORMS AND DH TARIFF CHALLENGES.
KEY AREAS TARIFF MODEL CAN ADDRESSES

Settlement of debts to Naftogaz, which occurred prior to gas PSO lifting
Impact: ability to switch to another supplier, improve financial standing.

Providing DH companies with tools to ensure payment discipline of consumers
Impact: ability to pay on DH liabilities, maintaining working capital, no new debts

Real & full cost of gas transposed timely in DH tariffs
Impact: timely and full tariff coverage of gas and other associated costs, maintaining working capital, no new debts

Ensuring DHCs have sufficient working capital (financial guarantees)
Impact: ability to purchase gas under the market conditions

Capacity of DHCs to operate on a gas market
Impact: ability of DHCs to forecast and manage gas consumption, efficiently purchase gas, minimize imbalances; potential for cooperation as “aggregated gas consumer”

Conditions irrespective of PSO lifting – for proper functioning of DHCs

Preconditions associated with PSO lifting – prior to PSO lifting
GAS REFORMS AND DH TARIFF CHALLENGES.
CONCEPTUAL OPTIONS

**Republic of Lithuania**
By the 25th of each month, DHC announces the gas price and DH tariff for next month, based on formula previously set by regulator.

Gas price for DH is determined based on actual contracts but may not exceed 105% of gas price in the Baltic Exchange.

By the end of the regulatory year, the regulator checks gas price applied in DH tariff conformity to the provision. If needed, (+/-) adjustments are made on top of DH tariff for the regulatory year.

Capability of DHCs sufficient to bear the lag

**Czech Republic**
At the end of heating season, regulator calculates the amount of one-time settlement

Requires strong financial state of DHCs to support such a system

One-time settlement payment could be high for population to pay in UA

Capability of DHCs sufficient to bear 6m lag

**Republic of Poland**
DHCs can submit the application on tariff adjustment on a regular basis. The compensation for difference between actual gas price and gas price in tariffs will be reflected in the new tariffs Polish DHCs use mainly coal, and coal prices are much more predictable than gas. In addition, cost of hedging energy prices could be covered by DH tariffs in Poland

Capability of DHCs sufficient to accumulate difference >1Y lag

Practice differences: delays in UA; rare approaches in PL

**Republic of Ukraine**
GAS REFORMS AND DH TARIFF CHALLENGES.
CONCEPTUAL OPTIONS

**Monthly DH tariff adjustment on fuel component**
- Set by DHCs at fuel price capped by market and regulatory ex post verification

**Determinant by regulator individually for each DHC**

**One-time settlement in the end of heating season**

**Annual+ DH tariff adjustment on a fuel component**
- No specific adjustment procedure for fuel component
GAS REFORMS AND DH TARIFF CHALLENGES.  
TARIFF MODEL ADEQUATE RESPONSE

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable costs, Q dependent</td>
<td>Fuels (gas commodity) procurement costs</td>
</tr>
<tr>
<td></td>
<td>Third party TE procurement costs</td>
</tr>
<tr>
<td></td>
<td>DH tariff, adjustable on monthly basis</td>
</tr>
<tr>
<td></td>
<td>Component of DH tariff, adjustable on monthly basis</td>
</tr>
<tr>
<td>Non-variable, Q indifferent</td>
<td>CAPEX &amp; OPEX, incl. those related to using fuel supply infrastructure</td>
</tr>
<tr>
<td></td>
<td>Monthly billing, 1/12 on annual projected costs</td>
</tr>
</tbody>
</table>

Adjusted monthly

\[
\text{DH tariff (UAH/Gcal)} = \left(\frac{\text{Cost of gas supply, UAH/m3}}{\text{Gas volume, m3/Gcal}}\right) \times \left(\frac{\text{Gas volume, m3/Gcal}}{\text{Other expenses*, UAH/Gcal}}\right)
\]
GAS REFORMS AND DH TARIFF CHALLENGES.
TARIFF MODEL UNDER DESK TESTING

902 UAH / Gcal - tariff at "stable" gas price *

* when gas price is 3948 UAH / ths m³
CLIMATE POLICY AND DH TARIFF CHALLENGES

- INVESTMENT OPPORTUNITIES UNDER CHANGE
CLIMATE POLICY AND DH TARIFF CHALLENGES: IMPLICATIONS FOR INVESTMENT OPPORTUNITIES

• The latest EU policy framework documents, e.g., Taxonomy Regulation, EU Strategy for Energy System Integration, Sustainable Europe Investment Plan -
  – highlight DH role in climate mitigation efforts,
  – put Energy Efficiency principle first,
  – effect non-EU member states, where European investors operate.

• The principal infrastructure is of good coverage in Ukraine; however, its quality is dilapidated over decades and DH systems are being withdrawn.

• Considering the IFI investments into DH infrastructure objects get shaped by the climate policy objectives, the gap will need to be bridged by national solutions, including (not limited) tariff-based solutions.
CONCLUDING NOTES

• Tariff system reform in Ukraine is undergoing, and currently two essential changes – gas PSO removal and climate objectives are adding up on the complexity.

• USAID Energy Security Project is providing technical assistance to the Ministry of Territories and Communities Development and NEURC (selected):
  – Adjust to competitive terms of gas market
  – Improve cost+ model
  – Implement accounting by licensed types of activities, and respective reporting
  – Incorporate long term investment planning into tariff model duly respecting objectives of Heat Supply Schemes of the given settlement and RES/EE objectives
  – Finalize IBR(RAB) model framework
  – Apply IBR(RAB) model for pilot entities