

# Gas price shock in Moldova: Compensation schemes for protecting the population

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# Summary

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- Recently, Moldova concluded a new 5-year gas supply contract with Gazprom, which will lead to a significant increase in gas import prices, mirroring current trends on international energy markets
- The objective of this policy study is twofold:
  1. We discuss different schemes to protect the population from this price shock at different time horizons;
  2. and provide a first estimate of the associated short-term fiscal costs in a hypothetical scenario where tariffs would not be adjusted (“what-if”)
- Our findings are as follows:
  1. For this heating season, **block tariffs seem to be the best choice**, but credible steps have to be taken already now to move towards a **national targeted subsidies system**
  2. The fiscal costs of fully subsidising the price increase would be at **USD 228 m** during Oct 21 - Sep 22, if the government would have decided to fully absorb the import price shock
- Beyond the introduction of a targeted subsidy system, we recommend MDA to develop a comprehensive **Action Plan**, which shall i.a. include:
  - Promote energy efficiency in residential and public buildings
  - Diversification of gas supplies (if possible, according to the new contract)
  - Steps to decrease the dependency on gas, including fuel switches to RES

# Outline

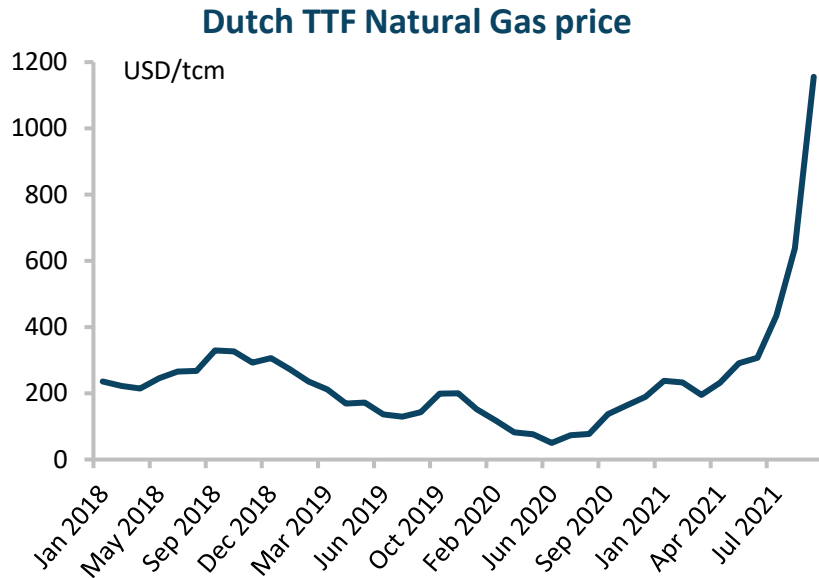
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1. Introduction
2. Gas and DH market overview
3. Tariff and subsidy model prior to the shock
4. Possible compensation schemes
  - i. Block tariffs
  - ii. Targeted housing and utility subsidy system
  - iii. General social support system
5. Conclusion and recommendations

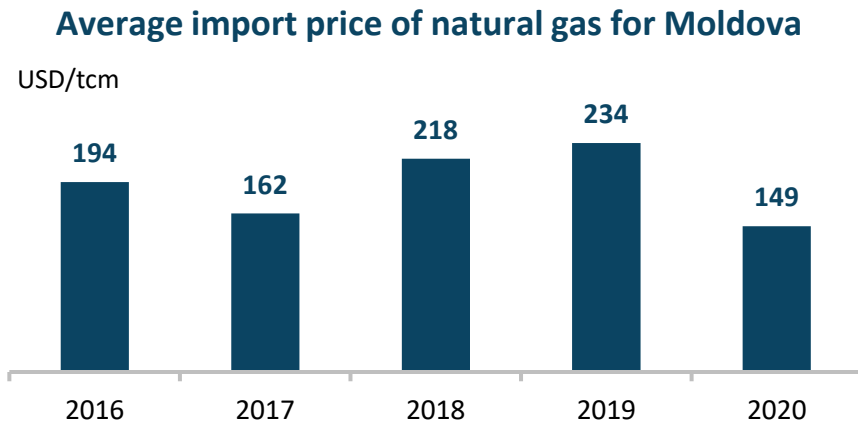
## Annex

- A.1 Targeted subsidies vs price subsidies: general aspects
- A.2 Scenario analysis: Fiscal cost of gas price shock
- A.3 Energy efficiency in Ukraine

# 1. Introduction



Source: Yahoo finance



Source: ANRE reports

- Currently, there is a drastic surge in international gas prices, as the chart shows
- This development coincided with MDA-RUS negotiations on a new gas supply contract
- Moldova, which is fully dependent on gas imports, had a long-term contract with Gazprom until Sep 2021, enjoying relatively low and stable import prices
- In Sep and Oct 2021 Moldova imported from Gazprom at USD 550 and USD 790 resp. under monthly “bridge” contracts
- As of Nov 2021, Moldova entered into a new 5-year-contract with Gazprom, where prices are linked to both oil and international gas prices, with time-varying weights
- **As the future gas import price will rise, we discuss different schemes to protect the population from this shock and provide an estimate of the fiscal costs for a hypothetical scenario in which tariffs would remain frozen**

## 2. Gas and DH market overview

- The only source of gas for Moldova is imports from Russia thorough Ukraine
- Almost all operations (95%+ of supply and distribution; and all transmission) are performed by Moldovagaz (shareholders: 50% Gazprom, 35.3% Moldovan government, 13.4% Transnistrian de-facto authorities)
- All gas tariffs (transportation, distribution and supply) for most of consumers and all district heating (DH) tariffs are set by the National regulator ANRE
- The regulated energy component is the same for all consumers, but on average, the populations pays higher tariffs for distribution than commercials
- There are 10 DH companies operating in Moldova w/o Transnistria, but Chisinau DHC (Termoelectrica) provides around 90% of the total heat output
- In Chisinau, the heat price for all final consumers is set at the level of USD 65 per Gcal (without VAT) from March 2020
- Gas is the key fuel for DH & CHPs

### Number of consumers



**0.56 m HHs (58%\*)**  
gas consumers

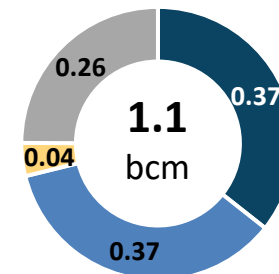


**0.16 m HHs (15%\*)**  
DH consumers

*\*share of total households*

*Source: Moldova state statistics service*

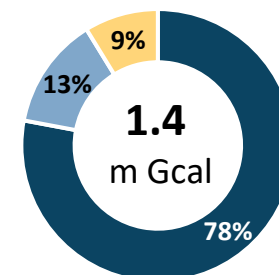
### Gas consumption in 2020, bcm



- HHs
- Energy sector
- Public institutions
- Others

*Source: ANRE report*

### DH consumption in 2020, m Gcal



- HH consumers
- Public institutions
- Companies

*Source: ANRE report*

# 3. Tariff and subsidy model prior to the shock

## Targeted subsidies (i.e. provided to vulnerable groups)

- No national targeted subsidies system
- Some municipalities provide subsidies to vulnerable groups. The Chisinau mayoralty provides partial compensation of up to 40% DH bills; consumers of gas, electricity, wood or coal can ask for USD 30-60 per month

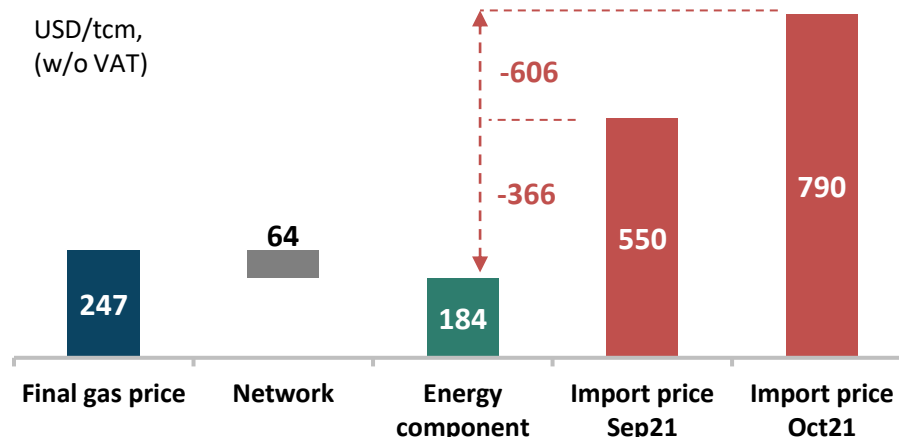
## Not targeted subsidies (i.e. provided to all consumers)

- Bills for district heating for population are not subject to VAT, gas bills are subject to 8% VAT rate (regular VAT in Moldova is 20%)
- Tariffs for gas and DH for population (and other consumers) are set by ANRE and at least in 3Q 2021 did not fully cover economic costs

Source: ANRE report, TASS

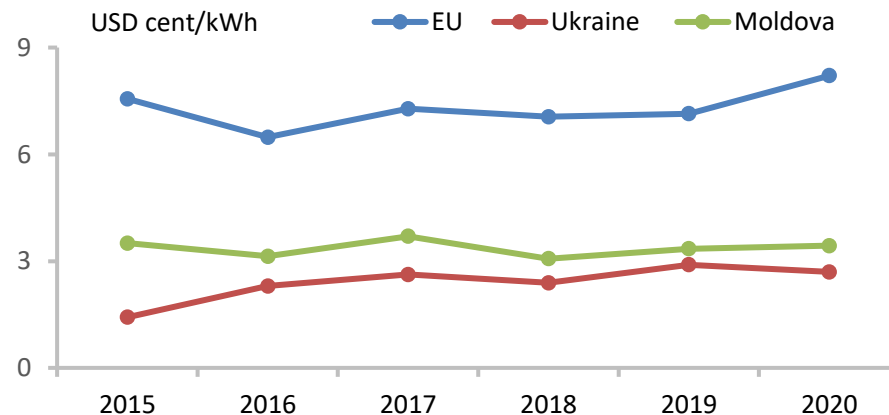
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Current household final gas price vs import prices



Source: ANRE, Energy Community report, neftegaz.ru

Final gas prices for households



Source: Energy Community report

## 4. Possible compensation schemes

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### General remarks

- Unsurprisingly, high energy prices caused an immediate discussion on how to protect low-income households from the negative social consequences; this discussion is fully justified
- Still, the right balance of instruments need to be applied, and a **medium- to long term view is needed beyond the current shock**
  - Allowing (retail) tariffs to reflect the rise of global energy prices gives important signals to save energy, thereby reducing energy (and import) dependency. This will be a key driver for lower energy bills in the medium- to long term
    - The energy consumption (kWh/m<sup>2</sup>/year) of residential apartment buildings in MDA is 172 (versus 90 in the EU and 186 in UKR) – huge potential
  - Flexible prices are a necessary, but not a sufficient condition for increasing energy efficiency; the state needs additional instruments to support investment decisions into energy savings
    - See Annex A.1 “Targeted subsidies vs price subsidies” for more information

## i. Block tariffs

- The tariff level depends on the volume of consumption – lower tariffs for consumption below certain thresholds (for instance, 500 m<sup>3</sup> gas per month per household) and higher tariffs for consumption above (possibly fully reflecting the market price)
- There could be 2 variations of this model: (1) higher tariff applied to all the consumption or (2) just to consumption above the threshold

### Pros

- ✓ Relatively easy to implement, but must be, at a minimum, properly communicated to the population
- ✓ Less expensive for the state budget
- ✓ Energy efficiency incentives partially restored
- ✓ Have already been applied in the past

### Cons (risks)

- ✗ Not a strong link between subsidy and vulnerability; fiscal overspending
- ✗ Gas supplier will have arbitrage opportunities and the possibility to manipulate
- ✗ No full incentives for consumers to efficiently use resources
- ✗ Can not be applied to DH consumers

➤ **Preliminary assessment: could already be considered for this heating season as a stop-gap measure, since Moldova can build on previous experience with block tariffs**



## ii. Targeted housing and utility subsidy system

- ANRE sets tariffs for gas and heat (and for other utility services) that fully reflect gas import prices for all consumers
- Subsidy is provided only to vulnerable consumers, i.e. for households, which spend more than certain share of their income (e.g. 10%) on energy (utility) bills
- Subsidies are financed from the state budget and paid directly to households – if the subsidy recipient does not fully pay for his/her utility bills, they will lose the subsidy (so the payment discipline is ensured)

Pros	Cons (risks)
<ul style="list-style-type: none"><li>✓ If implemented properly, strong subsidy to vulnerability link</li><li>✓ Significantly lower fiscal needs than direct tariff subsidies</li><li>✓ Energy efficiency incentives and proper economic relations between consumer and supplier are fully restored</li></ul>	<ul style="list-style-type: none"><li>✗ Takes time (at least 1 year) and efforts to implement (comprehensive system with local and central components should be established)</li><li>✗ More difficult to administrate (digitalization could help a lot)</li><li>✗ Can be manipulated by households, if reliable data on their incomes can not be collected</li></ul>

- **Preliminary assessment: target model for the mid-term; but preparatory work should start immediately**

### iii. General social support system

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- A housing utilities subsidy (HUS) system can be seen as a step towards an integrated social assistance system that covers all aspects of social support
- High income countries usually have such well-established social safety nets
- Direct social assistance cash payments take care of the essential needs of households that do not possess the necessary own resources
- Such a model generally provides more effective welfare support to the population while consuming fewer fiscal resources

**In Ukraine, there are plans (supported by the World Bank) to “rebalance fiscal resources from the housing utilities subsidy (HUS) to minimum income support (GMI) for improved targeting of social safety net spending. This would entail a gradual contraction of the HUS, the expansion of the GMI, and the integration of some child benefits such as the single mother benefit into the GMI. (...) The end-goal for the proposed reform is to develop a system that supports more equitable distribution of welfare expenditures, with the GMI playing a central safety net role, and HUS playing a smaller complementary role to support energy affordability for most vulnerable groups (World Bank, 2019)**

➤ **Preliminary assessment: long-term vision for Moldova**

## 5. Conclusion and recommendations

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- For the current heating season, block tariffs seem to be the best choice, but credible steps **have to be taken already now** to move towards a **national targeted subsidies system**
- In a **hypothetical case of no tariff adjustment**, i.e. full subsidization of the gas shock, **fiscal costs would be a staggering USD 228 m** during Oct 21-Sep 22, if the government would have decided to fully absorb the shock (see Annex A.2)
- We recommend MDA to develop a comprehensive **Action Plan**, which shall i.a. include:
  - Introduction and transition to a targeted subsidy system
  - Promote energy efficiency: develop the proper legislative framework (i.e. transpose the EU Energy Efficiency Directives) and set up a programme for thermal renovation of buildings (see information on the Ukrainian Energy Efficiency Fund in the annex)
  - Diversification of gas supplies (if possible, according to contract)
  - Steps to decrease the dependency on gas, including fuel switches to RES

# About the German Economic Team



Financed by the Federal Ministry for Economic Affairs and Energy, the German Economic Team (GET) advises the governments of Ukraine, Belarus, Moldova, Kosovo, Armenia, Georgia and Uzbekistan on economic policy matters. Berlin Economics has been commissioned with the implementation of the consultancy.

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# ANNEX

# A.1 Targeted subsidies vs price subsidies: general aspects

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## Price subsidies

State sets low (subsidized) prices for all households via legal obligations or other mechanisms. In any case, the amount of the subsidy are quasi-fiscal expenses

### Pros

- All HHs may enjoy low and/or predictable prices for utilities services

### Cons

- No competition on the market
- Price subsidies are the costliest type of support for the state (provide to everyone)
- Low prices stimulate consumers to overconsume energy (low energy efficiency incentives)
- Possible manipulations (corruption)

➤ **Market prices and targeted subsidies are the option to pursue, but achieving it requires proper planning and comprehensive actions (incl. a communication campaign)**

## Market prices and targeted subsidies

Market prices for all consumers and targeted subsidies for vulnerable households only

### Pros

- Only vulnerable HHs are protected
- Incentives for responsible consumption
- No barriers for market competition
- No arbitrage opportunities for market participants

### Cons

- Prices may fluctuate significantly, which can create social tensions

## A.2 Scenario analysis: Fiscal cost of gas price shock (1/6)

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- In the following, we consider a **hypothetical case of no tariff adjustment**, i.e. a full fiscal subsidization of the gas shock, to show its possible magnitude
- **We concentrate on gas and heat supply to population for a 12 months period (October 21 – September 22), including the current heating period**
  - We do not consider public buildings in the main analysis, but provide a short assessment of fiscal costs separately
  - We do not consider domestically produced electricity (about 10% of final domestic consumption)
- We base our assumptions on the publicly known information on the new gas price contract
- Scenarios are used to deal with the high degree of uncertainty around key variables

## A.2 Scenario analysis: Assumptions (2/6)

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- In order to assess the fiscal impact of the gas price shock, a baseline scenario is calculated for the period Oct 21 - Sep 22
- As we want to assess the impact on households, we look at related heat and gas consumption
  - In the baseline scenario, heat is assumed to be produced exclusively with gas (no fuel switch)
  - Electricity related consumption is assumed to be not impacted (continuation of supply from the Transnistrian region)
- Other main assumptions of the baseline scenario:
  - Expected import price of gas
    - Price forecast based on the known details of the new Gazprom supply contract
    - Consumption weighting according to historical Moldovan monthly gas consumption
    - Future price is multiplied by assumed monthly consumption weight
  - Expected consumption volumes are based on historical consumption
  - In the baseline, we consider **unchanged gas and heat tariffs** for the period Oct 21 - Sep 22
  - Additional information with monthly projections are provided separately
- **The expected fiscal impact is calculated as the difference between the old and the new import price of gas, multiplied by the respective consumption volumes**



## A.2 Scenario analysis: Results (3/6)

### Calculation of the baseline scenario

	Oct 21 - Sep 22	Comments
<b>Total HH related gas consumption</b>	<b>549 mcm</b>	
Directly by households	373 mcm	<i>ANRE data for 2020</i>
DH for HHs purposes	176 mcm	<i>For DH converted from Gcal to m3 with 68% efficiency level</i>
<b>Implied gas price subsidization</b>	<b>416 USD/tcm</b>	
New import price gas	565 USD/tcm	<i>Calculations Public information on new contract; oil and gas price assumptions</i>
Old import price gas	149 USD/tcm	<i>2020 average annual price, ANRE</i>
<b>Fiscal impact (excl. VAT)</b>	<b>USD 228 m</b>	<i>Calculations</i>

Source: National Bureau of Statistics of the Republic of Moldova, ANRE, Moldovagaz, Termoelectrica, GET calculations

## A.2 Scenario analysis: Sensitivities (4/6)

- Below, we introduce possible changes to consumption (i.e. decreases) and changes in the import price (increases/decreases) in a scenario analysis
- This results in the following changes in the estimation of the fiscal costs of a full direct subsidization of gas and heat consumption by the population:

		Change in gas import price				
		USD m	+20%	+10%	<i>Baseline scenario</i>	-10%
Decrease of HH consumption (gas + heat)	<i>Baseline scenario</i>	290	259	<b>228</b>	197	166
	-10%	261	233	205	178	150
	-20%	232	207	183	158	133

Source: GET calculations

- Under the baseline, the fiscal impact is **USD 228 m** for 12 months (equivalent to 1.8% of GDP 2021E), but possible demand reductions and future changes in the import price would change this amount

## A.2 Scenario analysis: Monthly projections (5/6)

- Below, we provide a monthly breakdown of our fiscal impact baseline scenario (population)

### Monthly projections of the baseline scenario

	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 21-Sep 22
2020 average import price, USD/tcm	149												149
Forecasted import gas price, USD/tcm	790	450	400	666	660	629	584	505	498	497	495	496	565
<b>Implied gas price subsidization, USD/tcm</b>	<b>641</b>	<b>301</b>	<b>251</b>	<b>517</b>	<b>511</b>	<b>480</b>	<b>435</b>	<b>356</b>	<b>349</b>	<b>348</b>	<b>346</b>	<b>347</b>	<b>416</b>
Direct gas consumption* by HHs, mcbm	19	49	61	58	56	50	28	13	10	9	9	11	373
Gas consumption* by DH for HHs needs, mcm	9	23	29	27	27	23	13	6	5	4	4	5	176
<b>Total consumption* for HHs needs, mcm</b>	<b>28</b>	<b>72</b>	<b>90</b>	<b>85</b>	<b>83</b>	<b>73</b>	<b>41</b>	<b>20</b>	<b>14</b>	<b>13</b>	<b>14</b>	<b>16</b>	<b>549</b>
Fiscal impact for direct HHs consumption, USD m	12	15	15	30	29	24	12	5	3	3	3	4	155
Fiscal impact for DH for HHs needs, USD m	6	7	7	14	14	11	6	2	2	1	2	2	73
<b>Total fiscal impact (excl. VAT), USD m</b>	<b>18</b>	<b>22</b>	<b>22</b>	<b>44</b>	<b>42</b>	<b>35</b>	<b>18</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>6</b>	<b>228</b>

- It is projected that the highest fiscal impact would materialize in Q1 2022: **USD 121 m**

*\*monthly gas consumption weights were derived from monthly historical total gas consumption in Moldova*

## A.2 Scenario analysis: Public buildings (6/6)

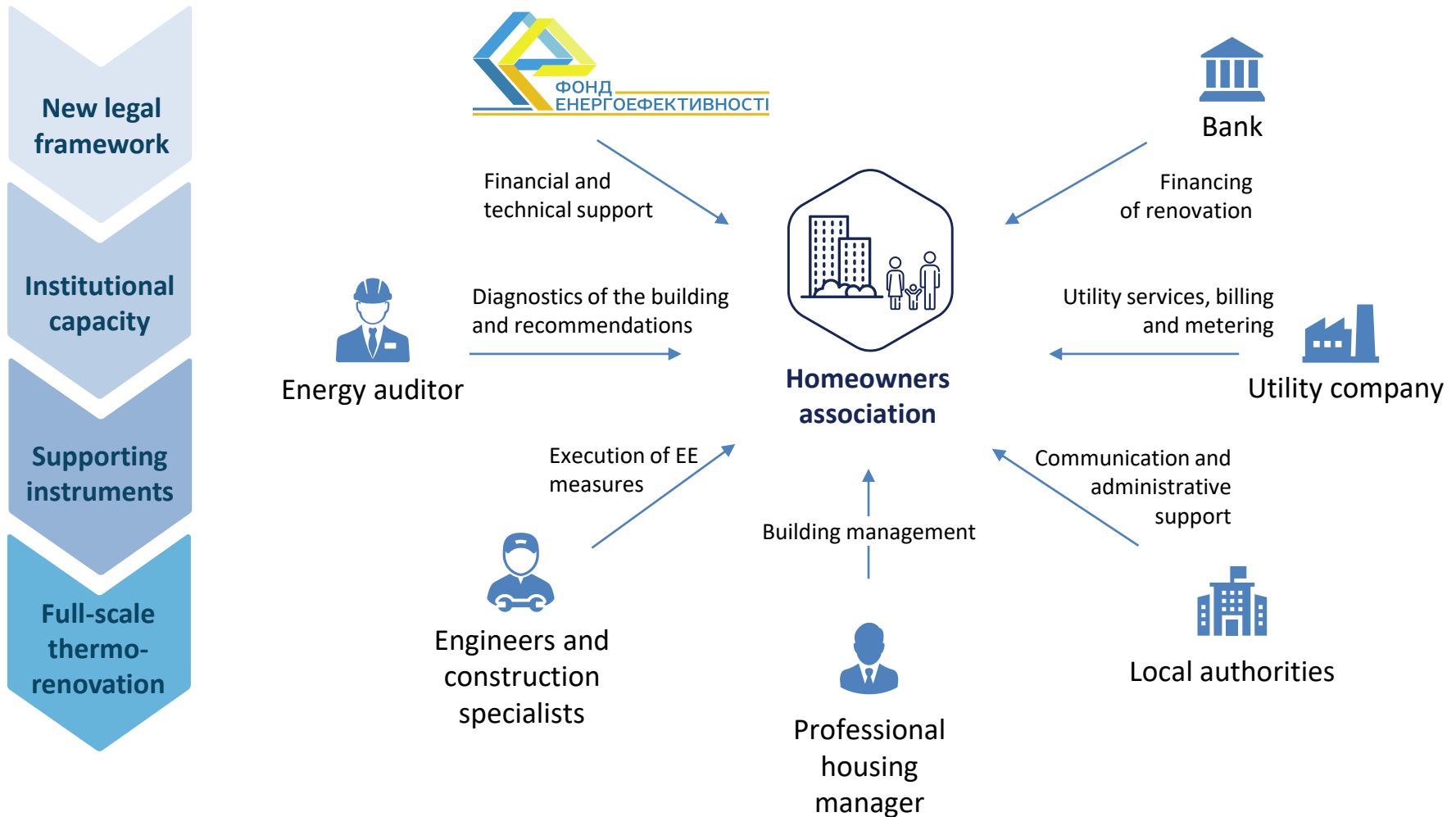
- Below, we estimate the fiscal costs for providing heat and gas to public buildings under the same baseline assumptions as before

### Calculation of the baseline scenario

	Oct 21 - Sep 22	Comments
<b>Total public buildings related gas consumption</b>	<b>70 mcm</b>	
Directly	41 mcm	<i>ANRE data for 2020</i>
Indirectly via DH	29 mcm	<i>For DH converted from Gcal to m3 with 68% efficiency level</i>
<b>Implied gas price subsidization</b>	<b>416 USD/tcm</b>	<i>Calculations</i>
New import price gas, USD/tcm	565 USD/tcm	<i>Public information on new contract; oil and gas price assumptions</i>
Old import price gas, USD/tcm	149 USD/tcm	<i>2020 average annual price, ANRE</i>
<b>Fiscal impact (excl. VAT)</b>	<b>USD 29 m</b>	<i>Calculations</i>

Source: National Bureau of Statistics of the Republic of Moldova, ANRE, Moldovagaz, Termoelectrica, GET calculations

# A.3 Energy efficiency in Ukraine: framework for buildings



# A.3 Energy efficiency in Ukraine: Energy Efficiency Fund

