Forecasting Moldova's electricity costs between November 2022 and April 2023: A scenario analysis

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About the German Economic Team

Financed by the Federal Ministry for Economics 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.
**Advisory activities in Belarus are currently suspended*

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Executive summary

Moldova is facing the worst energy crisis in the country's history, with high rates of uncertainty regarding the country's electricity import bill as well as the ability to fulfil demand in the coming winter period. The German Economic Team modelled the Moldovan electricity system and assessed a variety of scenarios to forecast electricity costs in the six-month period between November 2022 and April 2023:

Table 1: Electricity cost scenarios compared to last year's corresponding months

EUR m	S1 Worst-case	S2 MGRES deal	S3 ROU additional subsidized capacity	S4 Best-case
Scenario Parameters	» No deal with MGRES » 85 MW of ROU capacity secured » LB maintains consumption	» **Deal with MGRES secured** » 85 MW of ROU capacity secured » LB maintains consumption	» **Deal with MGRES secured** » **180 MW of ROU capacity secured** » LB maintains consumption	» **Deal with MGRES secured** » **180 MW of ROU capacity secured** » **LB decreases consumption**
Projected cost Nov22-Apr23	**484**	**321**	**250**	**203**
Additional cost vs Nov21-Apr22	**349**	**186**	**114**	**68**
Additional cost % of GDP	**3.0%**	**1.6%**	**1.0%**	**0.6%**

Source: Own modelling results and calculations

These scenarios all reflect substantially higher electricity costs compared to the same period last year and varying levels of difficulty in obtaining supplies. Fixed assumptions include significant demand reduction in right bank Moldova[1], MGRES operating at least partially to satisfy left bank demand[2] and that combined heat and power plants (CHPs) in right bank Moldova operate near last year levels.[3] Progressively, the variables and scenarios assume that no deal is struck with right bank Moldova (S1), a deal is concluded and MGRES resumes sending electricity (albeit at lower capacities) (S2), more supply at subsidized prices is secured from Romania (S3) and finally that demand reduction also occurs in left bank Moldova (S4).

In the worst-case scenario, electricity supplies cost over EUR 484 m between Nov-22 and April-23, a 260% yoy increase. Negotiations for securing supply from MGRES and

[1] At least 50% reduction in industrial demand and 10% of residential and other demand.

[2] Implying that right bank Moldova does not have to send emergency electricity supplies to left bank Moldova.

[3] This accounts for uncertainties regarding fuel oil supplies and unseasonably warm weather so far this winter.

additional subsidized electricity imports from Romania reduce this amount to EUR 250 m, or 119% yoy, as imports at spot prices are more limited. In the best-case scenario, the total cost comes to “only” EUR 203 m, a 50% yoy increase, assuming that left bank demand reduction also means more electricity is available for right bank Moldova. The direct cost of electricity generation and imports (compared to last year) as a share of GDP ranges between 3.0% for the worst-case scenario to 0.6% for the best-case scenario. However, additional impacts such as reduced industrial output or price increases for other energy-consuming sectors (heat, transport etc.), which have not been calculated in this study, will also have major impacts on GDP and costs.

While the analysis demonstrates that the cost burden is high in all scenarios, options exist to prevent a worst-case scenario. Below is a list of actions that are strongly recommended:

1. Keeping MGRES running is essential to getting through the next six months, and might include sending larger volumes of natural gas, fuel oil and/or coal to left bank Moldova.

3. Electricity demand reduction is vital and can be achieved through strong savings in industrial, and moderate savings in residential demand.

4. Securing electricity supplies from MGRES is key to reducing the imported volumes of electricity and the associated cost burdens of right bank Moldova.

5. Contracting additional import capacity from Romania at subsidized prices dramatically reduces the electricity cost burden, especially from January onwards.

6. Sharing the burden of demand reduction between left and right bank Moldova is fundamental to reducing overall costs.

7. In addition to the results of the conducted modelling analysis, increased utilization of combined heat and power plants beyond needs for heat production could help decrease the import burden and electricity demand shortfall.

Content

1. Introduction and rationale

Moldova is currently in the midst of the worst energy crisis in the country's history. As of the drafting of this study (4th of November), monthly natural gas supplies by Gazprom are reduced by over 50% and there are difficulties securing alternative fuel oil, the key MGRES power plant has ceased electricity sales to right bank Moldova, and subsidized electricity allocations by Romanian electricity providers have decreased markedly. In addition, given the unseasonably warm weather, the combined heat and power plants (CHPs) in right bank Moldova are not yet operating at full capacity, further limiting domestic electricity production. Further potential uncertainties exist regarding the evolution of the Russian war in Ukraine and the impact this could have on both physical electricity transmission infrastructure and gas deliveries.

Within this context, the German Economic Team has conducted an analysis of the costs facing Moldova in the coming six months (November 2022 to April 2023), with a focus on the electricity sector. The study jointly modelled both left and right bank Moldova due to their interconnectedness and mutual energy sector dependence, with scenarios demonstrating sharp differences in the expected incurred costs. Substituting gas with fuel oil in thermal units has already been undertaken, but the effect is still unclear and difficult to analyse given uncertainties surrounding import volumes and availabilities, prices and impacts on electricity production.

2. Methodology

2.1 Approach

The analysis was conducted using a custom-built scenario-based techno-economic power system model[4], which optimizes electricity dispatch and derives costs for every hour between November 2022 and April 2023. The hourly data used is based on load and generation data from Moldelectrica from the corresponding period November 2021 to April 2022, with a synthetic disaggregation for the residential, industrial, and other sectors for both left and right bank Moldova. The two-node model accounts for thermal unit specificities (including efficiencies, minimum loads, and ramping constraints), co-generation production (respecting the country's heat demand), renewable generation and import capacities from neighbouring countries. The derived scenario results for electricity generation and costs are presented at aggregated monthly levels and assessed against estimated generation costs for the same period last winter (November 2021 to April 2022) based on load and generation data from Moldelectrica as well as fuel and electricity import prices from Termoelectrica, Moldovagaz, and Moldelectrica.[5]

2.2 Fixed assumptions

Several assumptions underpin all the modelled scenarios and cost calculations. These include:

MGRES continues operating

So far, the MGRES plant has continued operating, albeit at very low levels, supplying electricity to left bank Moldova. The plant is expected to continue some sort of operations, with the possibility of substituting natural gas with either coal or fuel oil. All modelled scenarios assumed that production can continue to cover left bank Moldova's demand, as a prolonged and complete shutdown of MGRES would have significant implications and result in an economic and humanitarian catastrophe which cannot be adequately addressed in this study.

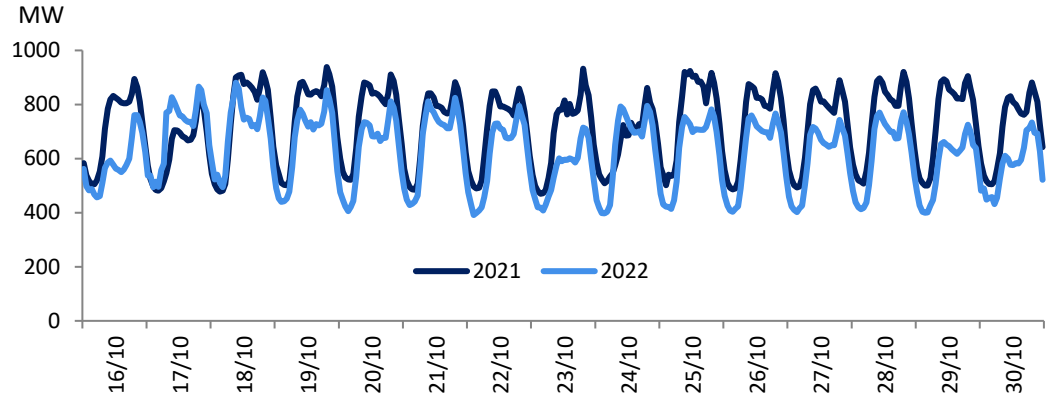
Demand reduction

Reducing demand has already been identified by key governmental stakeholders as necessary to decrease demand peaks, reduce rolling blackouts and minimize costs. Importantly, reductions in demand have already been observed. In the second half of October 2022, the average load was 13% lower than in the same period in 2021, and 11.5% lower over the whole month.

[4] Implemented in open-source energy systems modelling framework Calliope (Pfenninger & Pickering, 2018) and solved with Gurobi

[5] For more details on the modelling methodology and assumptions taken, please see Annex 1.

Figure 2: Hourly electricity demand in 2nd half of October 2021 and 2022



Source: Moldelectrica

While much work has already been done, additional demand reductions could contribute to cost savings and supply security. All scenarios have an assumed high rate of electricity savings for right bank Moldova, including a target 50% reduction in industrial electricity demand and 10% reductions in residential and public electricity demand, which can be achieved through more efficient utilization of electricity. This results in a modelled overall demand reduction of 16%.

CHP production levels

As of time of writing (4th November), given the unseasonably warm weather, right bank Moldova's CHPs are not running anywhere near full capacity, which further decreases the amount of available produced electricity. While the CHPs are currently being ramped up, significant uncertainties regarding securing the supplies of natural gas and fuel oil remain. While a rapid ramp-up and running at high-capacity factors would be preferable for electricity supply security in most scenarios, all models assume that CHPs produce at corresponding levels to last year to compensate for uncertainties regarding fuel supply and heating requirements.

2.3 Variables of analysis

The analysis identified several key variables which have a significant impact on the overall electricity system and associated costs, and which were thereafter used in the scenario modelling analysis:

MGRES supply secured

In previous years, the left bank-based Russian-owned MGRES routinely served over 70% of right bank Moldova's annual electricity demand. With decreasing gas deliveries by Gazprom, October supply decreased significantly and as of early November, MGRES has ceased electricity sales to right bank Moldova altogether.

In all modelled scenarios, MGRES produces electricity to fully cover left bank Moldova, and in some scenarios also produces electricity to satisfy 32% of right bank electricity demand as per the final delivery amounts made in late October 2022. An average price of EUR 70.82 / MWh was used in light of contractual uncertainty in the coming months.

Securing additional favourable Romanian imports

As of the 4th of November, two agreements exist with Romanian electricity providers to supply Moldova with 85 MW of electricity at favourable prices. However, this is less than the previously allocated 180 MW, meaning the difference would have to be covered on the more expensive open market. Two of the scenarios assume that the gap is closed, and Moldova can receive the full 180 MW of electricity at favourable prices of EUR 91 / MWh.

Left bank reduced consumption and burden sharing

Indications from high-level discussions between left and right bank Moldova representatives point to an unwillingness of left bank Moldova to significantly reduce local electricity demand, especially from the industrial sector and/or cryptocurrency mining and other sectors.
The best-case scenario assumes that agreements and understanding is reached and electricity savings in left bank Moldova roughly mirror those in the right bank in terms of the overall pattern.

2.4 Scenario overview

Based on the key underlying assumption and the variables identified as exerting a significant impact on Moldova's Nov22-Apr23 electricity costs, four main scenarios assessing these were conducted. The scenarios are ordered from most to least costly where additional variables are phased in sequentially to show the savings of each option.

Table 2: Overview of variables and scenario used in analysis

	S1	S2	S3	S4
Scenario name	Worst-case	MGRES deal reached	ROU additional subsidized capacity	Best-case
MGRES deliveries	No	Yes	Yes	Yes
Romanian subsidized electricity imports	85 MW	85 MW	180 MW	180 MW
LB demand reductions (50% industry, 10% residential and other)	No	No	No	Yes

In Scenario 1, no deal is reached with MGRES, Romanian subsidized electricity capacity is not expanded, and no progress is reached with left bank Moldovan representatives on spurring local demand reduction. This represents the worst possible (and most costly) scenario barring a complete shutdown of MGRES.

In the slightly more optimistic Scenario 2, a deal for the resumption of deliveries is reached with MGRES, as it has been in previous negotiations. This entails negotiation

around topics important to left bank Moldova, but the overall secured supply is still only at around late October levels, with a return to prior levels currently not probable due to fuel supply shortages.

In Scenario 3, in addition to the resumption of deliveries, deals are concluded with additional Romanian providers to secure the full 180 MW imported at favourable prices.

In Scenario 4, the best-case scenario modelled under this study, the deals are struck and negotiations with left bank Moldova also yield demand reductions of the region's industrial and residential sector comparable to those undertaken by right bank Moldova. This scenario entails the highest savings and presents a goal to strive for in all future negotiations and discussions.

3. Results

The results of the scenario modelling show the decreasing electricity costs associated with the improvement or fulfilment of the variables under analysis. The monthly results, along with the cumulative costs and comparisons with the same period (November-April) can be seen in the table below:

Table 3: Monthly electricity cost projections by scenario

EUR m	S1 Worst-case	S2 MGRES deal reached	S3 ROU additional subsidized capacity	S4 Best-case
November 2022	56.0	41.7	36.3	32.3
December 2022	70.7	47.8	39.5	34.5
January 2023	92.2	61.0	48.2	39.3
February 2023	88.4	58.3	44.5	34.9
March 2023	91.1	58.6	44.7	36.0
April 2023	86.0	53.5	36.5	26.1
Nov. 22 – Apr. 23	**484.2**	**321.0**	**249.7**	**203.1**
Additional cost vis-à-vis Nov. 21 – Apr. 22	**348.9**	**185.5**	**114.4**	**67.8**

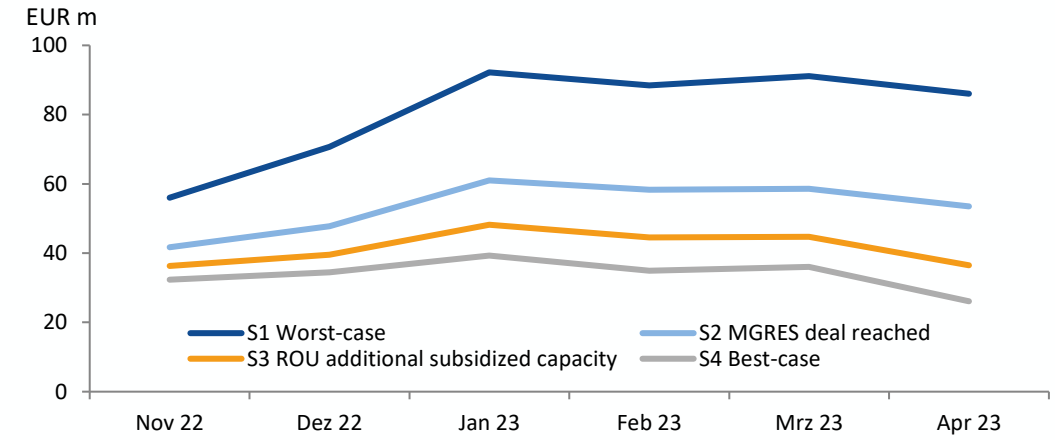
Source: Own modelling results and calculation

Monthly cost breakdown under all scenarios

On a monthly basis, the highest incurred costs under all scenarios occur in January, with progressive decreases thereafter. This is mostly due to the highest expected electricity

demand during the month that must be met through generation and imports, and also the start of higher expected spot market prices (as forecasted by Romanian electricity market futures prices). The monthly costs and distribution can be seen in the figure below:

Figure 2: Monthly costs under modelled scenarios



Source: Own modelling results and calculations

Scenario 1: Worst-case

In the first modelled scenario, total costs over the six-month period reach over EUR 484 m or 258% more than during last year's corresponding period. With the complete absence of MGRES supply to right bank Moldova, most of the electricity demand (53%) is met through open market electricity imports, which account for almost 74% of all cumulative costs over the time period. Given the high costs associated with these imports, the risk of demand curtailment and rolling blackouts increases significantly.

Scenario 2: MGRES deal reached

Under the modelled scenario where a deal is struck with MGRES, albeit in a limited capacity, total costs amount to EUR 321 m. MGRES supply is still not fully restored given high uncertainty around fuel prices and substitution as well as uncertainty around the future of gas supply. Nonetheless, MGRES fulfils 32% of right bank Moldova's electricity demand during the period, helping reduce the share of electricity procured from the open market.

Scenario 3: Romanian additional subsidized capacity

Including the previous additions, under Scenario 3, the full 180 MW of contracted capacity is secured from Romania at more favourable prices. This additional capacity reduces total electricity costs by over 22% vis-à-vis the previous scenario, as spot market imports are further reduced. The total six-month cost for this scenario amounts EUR 249.7 m or 85% increase yoy.

Scenario 4: Best-case

In the best-case scenario, in addition to all of the previously implemented measures, left bank Moldova's representatives and population follow the savings pattern of right bank Moldova (i.e. a 50% decline in industrial consumption and 10% residential consumption). This enables the delivery of the saved volumes of electricity to right bank Moldova, with MGRES-produced electricity now accounting for 53% of right bank electricity

consumption, allowing the limiting of expensive open market imports to an almost negligible 1.1%.

4. Preliminary conclusions and policy recommendations

As the scenario analysis demonstrates, Moldova faces a large financial burden as a consequence of the country's worsening electricity crisis. However, some scenarios carry significantly higher costs, providing insights into important courses of action:

1. **Keeping MGRES running is essential to getting through the next six months, and might include sending larger volumes of natural gas, fuel oil and/or coal to left bank Moldova.**

   As of the finalisation of this study, the MGRES plant has continued operating, albeit at very low levels, supplying electricity to left bank Moldova. The plant is expected to continue some sort of operations, with the possibility of substituting natural gas with either coal or fuel oil. A prolonged and complete shutdown of MGRES would result in an economic and humanitarian catastrophe and should be averted at all cost. Cooperation between right bank and left bank Moldova regarding procurement and logistics of fuel supply is strongly recommended.

2. **Electricity demand reduction is fundamental and can be achieved through strong reductions in industrial, and moderate reductions in residential demand.**

   Moldova is already significantly saving electricity compared to last year. Maintaining demand reductions and incentivizing additional demand reductions is fundamental for reducing costs and maintaining security of supply this winter. Especially non-critical energy-intensive industry (whose products can be substituted with imports) should be incentivized to temporarily reduce electricity consumption. To this effect, marginal electricity price signals should be passed on to consumers – especially commercial electricity consumers – while cushioning the effect for vulnerable households.

3. **Securing electricity supplies from MGRES is key to reducing the imported volumes of electricity and the associated cost burdens of right bank Moldova.**

   MGRES electricity deliveries, even at reduced levels as seen during the second half of October 2022, present the largest driver for reducing the electricity cost burden for the country. These are key to secure sufficient electricity supplies for right bank Moldova in order to reduce the risk of large-scale blackouts. Efforts should thus be undertaken to reach an understanding with left bank Moldovan representatives for concluding a deal to resume electricity deliveries across the Dniester.

4. **Securing additional import capacity from Romania at subsidized prices dramatically reduces the electricity cost burden, especially from January onwards.**

   Romania has demonstrated considerable support to its northern neighbour throughout Moldova's energy crisis. However, Moldova has not yet secured the full

volumes of agreed electricity at subsidized prices and should undertake additional efforts to identify suitable suppliers that qualify for the scheme.

5. **Sharing the burden of demand reduction between left and right bank Moldova is vital to reducing overall costs.**

   With the backdrop of potentially logistically constrained fuel supplies to MGRES, sharing the burden of demand reductions between left bank and right bank Moldova would be economically efficient and reduce reliance on excessively expensive EU electricity imports. Discussions with left bank Moldovan representatives should thus include the topic of electricity demand reductions in both parts of the country.

6. **Increased utilization of CHPs beyond needs for heat production could potentially help decrease the import burden and electricity demand shortfall.**

   If more than sufficient fuel oil (or natural gas) supplies for the country's CHPs can be secured, an operation beyond the production volumes strictly needed for meeting Chisinau and Balti district heat demand could provide additional domestic electricity generation to reduce the high import burden.

5. Annex I: Detailed modelling approach and assumptions

Based on the open-source energy systems modelling framework Calliope (Pfenninger & Pickering, 2018), a custom-built two-node techno-economic dispatch optimisation power system model has been set up for Moldova (with the two nodes representing right bank and left bank Moldova). Dispatch is optimised for all 4344 hours of the period November 2022 to April 2023.

Hourly load (electricity demand)

Hourly load is based on quarter-hourly load data for left and right bank Moldova from Moldelectrica for the corresponding period from the previous year (November 2021 to April 2022). All-Moldovan hourly load is disaggregated as follows:

> Monthly load for left bank Moldova is derived by subtracting monthly right bank Moldovan load, obtained from Moldova's National Bureau of Statistics, from monthly aggregates of all-Moldovan load. Based on monthly left bank load and a left bank hourly standard load profile, obtained from a recent report on ANTARES power system modelling results for Moldova, synthetic hourly left bank load is derived, with the difference between hourly all-Moldovan load and synthetic hourly left bank load assumed to be hourly right bank load.
>
> Hourly left bank load is decomposed into (1) industrial and (2) residential plus other[6] demand via a simple 70% / 30% ratio based on expert assessment. The right bank industrial hourly load profile is assumed to correspond to the left bank (and thus left bank industrial) hourly load profile and calibrated such that aggregate hourly industrial right bank demand[7] matches annual industrial electricity demand from Moldova's energy balance (National Bureau of Statistics). The difference between this synthetic hourly industrial right bank load and hourly (industrial, residential and other) right bank load thus represents right bank load for residential and other (non-industry) sectors.

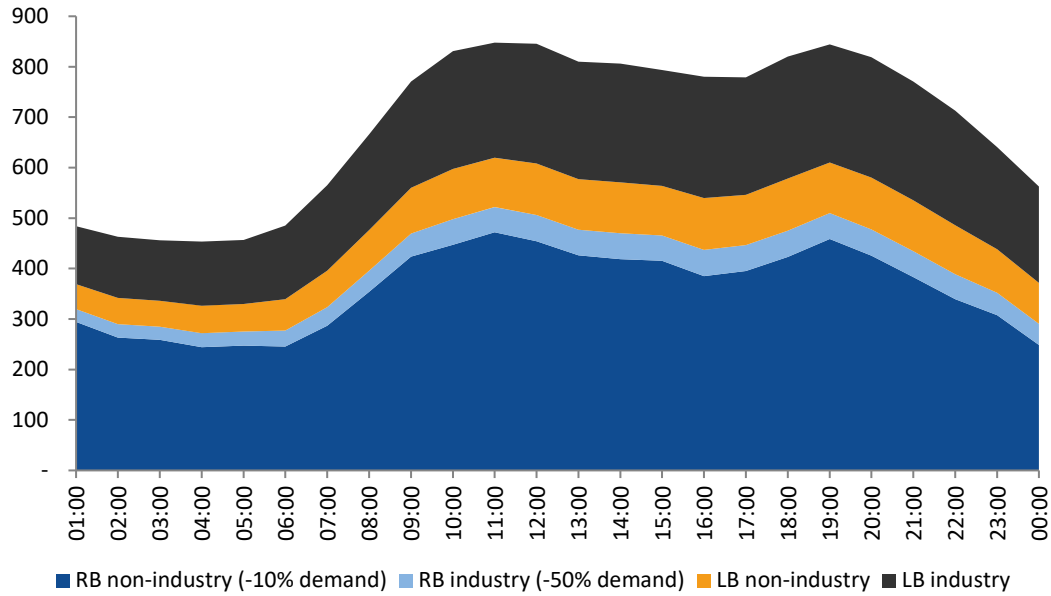
Right bank Moldova is assumed to achieve electricity demand savings in order of 50% for industrial demand and 10% for residential and other demand compared to the same period last year, leading to overall demand savings the order of 16%.

In Scenario 4 (best-case), left bank Moldova is assumed to achieve similar sectoral demand reductions (50% in industry and 10% in residential and other sectors) vs. last year, leading to a much larger overall demand reduction in the order of 38% due to the much larger share of industrial demand in left bank Moldova.

[6] Communal services, commercial sector, etc.

[7] Aggregated to annual levels

Figure 3: Disaggregated hourly load (representative winter day 2022-2023)



Source: Own calculations based on Moldelectrica, National Bureau of Statistics, ANTARES study
Note: RB = right bank Moldova, LB = left bank Moldova

Hourly electricity generation, MGRES deliveries and imports

Hourly generation from Moldova's variable renewable energy sources (solar PV and wind) as well as its two major hydropower plants (HPP Dubasari in left bank and HPP Costesti in right bank Moldova) is based on quarter-hourly variable renewable and hydropower generation data from Moldelectrica for the corresponding period last year. Generation for HPP Dubasari and HPP Costesti is disaggregated via a fixed ratio based on installed capacities of the two plants due to a lack of disaggregated hourly data.

Last year's right bank Moldovan hourly CHP generation is assumed to be constant within each month and based on monthly generation data due to a lack of publicly available disaggregated hourly thermal power generation data and calibrated to match monthly CHP generation data from Moldova's National Bureau of Statistics. Synthetic hourly CHP generation is subtracted from hourly thermal power generation data (based on quarter-hourly thermal power generation data from Moldelectrica) to obtain last year's (synthetic) hourly MGRES generation. Last year's synthetic hourly left bank load (net of HPP Dubasari generation) is subtracted from synthetic hourly MGRES generation to obtain last year's hourly MGRES deliveries to right bank. Monthly aggregates of the synthetic hourly MGRES deliveries to right bank Moldova are compared to monthly values from Moldova's National Bureau of Statistics and found generally in line with monthly data.

CHP generation in November 2022 to April 2023 is assumed to correspond to the levels from the same period last year in all scenarios. MGRES deliveries to left bank Moldova are assumed to be zero in Scenario 1 (worst-case) and correspond to 32% of (reduced) right bank demand in Scenario 2 and 3, given high uncertainty around fuel prices and substitution as well as uncertainty around the future of gas supply. This reflects reduced delivery volumes similar to the second half of October 2022. Saved volumes of hourly electricity demand in left bank Moldova in Scenario 4 (see previous page) are assumed to

free up additional MGRES deliveries to right bank Moldova, keeping MGRES generation at identical (reduced) levels as in Scenario 3 and 4.

Import capacities from Romania to Moldova (500 MW) reflect the current net-transfer capacity from EU to Ukraine and Moldova which have been fully allocated to Moldova as publicly announced. Of the total 500 MW of import capacity from Romania, subsidised electricity imports from Romania are assumed at the level of 85 MW in Scenario 1 and 2 (as currently contracted as of November 4th) and at 180 MW in Scenario 3 and 4 (maximum volume of subsidised electricity deliveries following public statements and reports). No import capacities from Ukraine to Moldova are assumed since Ukrainian authorities have announced the cessation of electricity exports due to difficulties of maintaining domestic electricity supply in the context of recent increased Russian aerial attacks on Ukraine's critical infrastructure.

Generation costs and import prices

Last year's CHP generation costs and MGRES delivery prices are based on information from Termoelectrica, Moldovagaz, and Moldelectrica. 2022-2023 CHP generation costs and potential MGRES delivery prices are based on semi-public information and expert assessments. Prices of subsidised electricity imports from Romania are based on publicly available statements and reports. Prices for additional commercial electricity imports are forecasted based on Romanian electricity market futures prices.

Table 4: Assumptions for electricity generation costs and import prices

EUR / MWh	CHPs (21/22)	CHPs (22/23)	MGRES deliveries to RB (21/22)	MGRES deliveries to RB (22/23)	Romanian subsidised imports (22/23)	Commercial EU imports (22/23)
November	96.19	202.37	45.20	70.83	91.06	223.63
December	86.98	202.37	45.20	70.83	91.06	314.55
January	128.69	202.37	45.20	70.83	91.06	403
February	109.03	202.37	45.20	70.83	91.06	403
March	105.70	202.37	45.20	70.83	91.06	403
April	226.95	202.37	45.20	70.83	91.06	403
Ø (Nov-Apr)[8]	125.59	202.37	45.20	70.83	91.06	358.36

Sources: Publicly available statements and reports, semi-public information, expert assessments, own calculations based on Termoelectrica, Moldovagaz, Moldelectrica, EEX

[8] Not weighted with monthly generation/import volumes (as volumes vary between scenarios)

6. Annex II: Additional results

Scenario 1: Worst-case

Monthly generation (GWh):

GWh	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	301	310	340	310	327	277	1865	
CHPs	80	94	105	80	88	10	458	25%
Unsubsidised imports	153	146	162	166	167	194	988	53%
Romanian subsidised imports	61	63	63	57	63	61	369	20%
MGRES	0	0	0	0	0	0	0	0%
Hydro	5	5	7	5	6	8	35	2%
RES	2	2	3	2	2	3	15	1%

Costs (EUR m):

EUR m	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	56	71	92	88	91	86	484	
CHPs	16	19	21	16	18	2	93	19%
Unsubsidised imports	34	46	65	67	67	78	358	74%
Romanian subsidised imports	6	6	6	5	6	6	34	7%
MGRES	0	0	0	0	0	0	0	0%

Scenario 2: MGRES deal reached

Monthly generation (GWh):

GWh	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	301	310	340	310	327	278	1867	
CHPs	80	94	105	80	88	10	458	25%
Unsubsidised imports	60	53	68	76	70	96	424	23%
Romanian subsidised imports	55	54	54	55	58	60	336	18%
MGRES	99	103	102	93	103	100	599	32%
Hydro	5	5	7	5	6	8	35	2%
RES	2	2	3	2	2	3	15	1%

Costs (EUR m):

EUR m	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	42	48	61	58	59	54	321	
CHPs	16	19	21	16	18	2	93	29%
Unsubsidised imports	13	17	28	31	28	39	155	48%
Romanian subsidised imports	5	5	5	5	5	6	31	10%
MGRES	7	7	7	7	7	7	42	13%

Scenario 3: ROU additional subsidized capacity

Monthly generation (GWh):

GWh	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	301	310	340	310	327	278	1867	
CHPs	80	94	105	80	88	10	458	25%
Unsubsidised imports	20	16	27	31	25	42	161	9%
Romanian subsidised imports	95	91	96	99	102	115	598	32%
MGRES	99	103	102	93	103	100	599	32%
Hydro	5	5	7	5	6	8	35	2%
RES	2	2	3	2	2	3	15	1%

Costs (EUR m):

EUR m	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	36	40	48	44	45	36	250	
CHPs	16	19	21	16	18	2	93	29%
Unsubsidised imports	4	5	11	13	10	17	60	48%
Romanian subsidised imports	9	8	9	9	9	10	55	10%
MGRES	7	7	7	7	7	7	42	13%

Scenario 4: Best-case

Monthly generation (GWh):

GWh	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	301	310	340	310	327	278	1867	
CHPs	80	94	105	80	88	10	458	25%
Unsubsidised imports	0	0	3	5	2	12	22	1%
Romanian subsidised imports	44	30	57	67	61	91	350	19%
MGRES	170	179	165	153	168	154	988	53%
Hydro	5	5	7	5	6	8	35	2%
RES	2	2	3	2	2	3	15	1%

Costs (EUR m):

EUR m	Nov	Dec	Jan	Feb	Mar	Apr	Total	% of Total
Total	32	34	39	35	36	26	203	
CHPs	16	19	21	16	18	2	93	46%
Unsubsidised imports	0	0	1	2	1	5	9	4%
Romanian subsidised imports	4	3	5	6	6	8	32	16%
MGRES	12	13	12	11	12	11	70	34%