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# Charting a Course Through the Energy Crisis: **Assessing Bulgaria's Response to Soaring Prices**

## Regulatory Insight Report

NET-ZERO LAB
Faculty of Economics and Business Administration

Sofia University St. Kliment Ohridski, 2024

FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

# EXECUTIVE SUMMARY

The energy price crisis of 2021-2022 prompted urgent responses across the European Union, testing its capacity for coordinated action and solidarity in the face of economic and social turmoil. In response, the EU swiftly enacted Regulation 2022/1854 to bolster energy independence through increased renewable energy adoption and reduced dependency on Russian imports. Member states, including Bulgaria, implemented diverse measures to alleviate the strain on non-household consumers, although these varied widely in scope and effectiveness.

This regulatory insight report based on document review and expert opinions collection critically evaluates Bulgaria's implementation of Regulation 2022/1854, focusing on its alignment with EU objectives and its impact beyond immediate financial relief. It highlights significant departures from recommended practices by regulatory bodies like ACER and the IMF, as well as divergences from strategies observed in other EU nations.

Key findings reveal that Bulgaria's approach, characterized by early and broad business aid without sufficient incentives for behavioral change, has raised concerns about long-term sustainability and market stability. The introduction of unprecedented price caps on electricity consumption and generation further complicated market dynamics, leading to unforeseen consequences such as increased trading volumes in the Day-Ahead Market (DAM) and a decline in long-term contracting.

Despite substantial financial resources–approximately €3.4 billion allocated between October 2021 and December 2023–significant uncertainties persist regarding their impact on local market prices and consumer behavior. The report underscores the limited focus on energy efficiency, low-carbon investments, and renewable energy self-consumption, which could have provided more enduring solutions to energy challenges.

Moreover, while corporate profits saw marked increases during the support period, primarily driven by the concentrated financial aid in 2022, the broader societal benefits and targeted outcomes for vulnerable consumer groups remain unclear. Criticisms extend to the inclusivity and effectiveness of measures, suggesting a need for more targeted and sustainable approaches in future policy developments.

In conclusion, while Regulation 2022/1854 aimed to mitigate immediate energy crises, its implementation in Bulgaria underscores the imperative for cohesive, forward-looking policies that prioritize environmental sustainability, economic equity, and long-term market viability across the EU energy sector.

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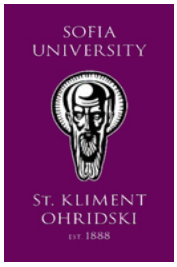


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# 1 INTRODUCTION

The year 2021 witnessed unprecedented global challenges that reverberated throughout the energy landscape. These events pushed the European Union (EU) into another uncharted public policy territory as it was gradually recovering from a global pandemic - an energy prices emergency.2 The energy prices crisis, or emergency as it became known, side-tracked yet again the EU from its orderly efforts towards an ever-improving internal energy market. The picking up of economic activity and energy demand as vaccines brought hope at the end of the COVID-19 era bashed against Russia's covert and methodical supply chain disruptions, geopolitical tensions, and, ultimately, the start of a war in Europe on February 24th, 2022. This situation tested the EU's ability to deliver synchronised, effective collective action aligned with solidarity and internal energy market principles.

The critically low energy prices throughout 2020 due to the pandemic slowdown mainly hurt investors' revenue expectations in energy generation. At the same time, however, low energy prices served as much-needed pressure relief to all consumers and businesses also struggling to sustain their financial stability in times when life, as known until then, was on hold. Partly because of this drop in price levels and the unaccounted rush and enthusiasm for economic recovery in 2021, coupled with lower-than-usual levels of natural gas stored across Europe's storage facilities, the EU's internal energy market was pushed out of sync again, this time creating energy emergency via extremely high natural gas and electricity prices.

With prices spiking in the third quarter of 2021, the EU and national governments gradually ramped up collective actions by addressing the challenge

through public informational campaigns on cutting demand and focusing on energy efficiency measures for the upcoming winter.[1] Yet, attempts to control demand via informational campaigns effectively were not sufficiently successful in reducing price levels at peaks or enough of an effort to counter-balance natural gas supply shortages. National governments faced urgent outcries from energy system participants and consumers to intervene and prevent an even more acute social crisis amid the winter and a second shock to the competitiveness of the EU's industry. In this climate, on October 13th, 2021, the European Commission published its Communication on "Tackling rising energy prices: a toolbox for action and support"[2].

The Toolbox proposed several solutions to the member states in response to the emerging situation: protection from disconnection from the grid of consumers experiencing short-term payment difficulties, reduction of energy-related taxes and levies, and introduction of direct state aid in the form of subsidies or price caps. Apart from the specific task of dealing with extreme price fluctuations, the toolbox had several additional objectives. It placed the European Commission as an institution committed to not just finding a quick-fix solution in an emergency but also using the crisis as an opportunity to spearhead fast efforts on EU energy independence by rapidly scaling up renewables and diversifying away from Russian energy imports. The publication of the communication itself legitimised and supported the immediate price control measures introduced by 20 member states. It also led to almost all EU countries introducing a number or a combination of the solutions proposed by the Toolbox.

**The Toolbox introduced by the European Commission in a response to the emerging energy price crises aimed at using the situation as an opportunity to spearhead fast efforts on EU energy independence by rapidly scaling up renewables and diversifying away from Russian energy imports.**

1 European Commission (2021-2024): *Actions and measures on energy prices.* Online resource.

2 European Commission (2021): *Tackling rising energy prices: a toolbox for action and support.* COM(2021) 660 final. Brussels, 13.10.2021.

*Figure 1:*

## Event Chain of EU Legislative Initiatives and Measures to Address Energy Price Increases

While the actual legislative document - *the Regulation on an emergency intervention to address high energy prices (EU 2022/1854)*[3] - was adopted a year later, on October 6th, 2022, the initial impetus given by the Communication validated a wave of national measures across member states that were already adopted as a response to social and economic tensions. With national authorities at ease that EU institutions also recognise the challenge that price spikes pose, most member states resorted immediately to providing compensation or effective price ceilings supported usually through national budgets. Soon after emergency measures were introduced across the EU, the piling budgetary pressure required a claw-back mechanism that would re-distribute excessive profits from electricity generators back as compensation budgets. This was the primary goal of Regulation 2022/1854. The approach involved implementing technology-specific measures and subsidising consumers only in exchange for a commitment to sustainable demand reduction via energy efficiency and development of renewable energy sources (RES), while preventing a disproportionate negative effect on investments.

**Soon after emergency measures were introduced across the EU, the piling budgetary pressure required a claw-back mechanism that would re-distribute excessive profits from electricity generators back as compensation budgets. This was the primary goal of Regulation 2022/1854**

The Communication also outlined several practical and legislative initiatives that took place between the last quarter of 2021 and the end of 2022.[4] *(Figure 1)*

It is evident from this timeline that a priority for the European Commission was to ensure that, first and foremost, the crisis might be addressed by more energy efficiency and more renewable energy production to replace energy imports. However, member states differed in their approach to tackling the energy prices crisis and guaranteeing energy efficiency and renewables deployment increase as key performance indicators were not their primary concern. As a consequence, the Commission was pushed to consider a more explicit legislative tool that would deliver on this objective.

3 Official Journal of the EU (2022): *Council Regulation (EU) 2022/1854 of 6 October 2022 on an emergency intervention to address high energy prices*.

4 European Commission (n.a.): *Actions and measures on energy prices. The EU's joint efforts and the REPowerEU plan have helped to stabilise prices on the EU energy market*.

INFOBOX

# Main Objectives
## of Regulation 2022/1854

1

At the core of Regulation 2022/1854 lies the imperative **to shield consumers**, particularly vulnerable households, **from the adverse effects of soaring energy prices**.

2

The regulation sought **to enhance affordability by imposing price caps or other mechanisms to prevent excessive price hikes**, thereby ensuring access to essential energy services without imposing undue financial strain on consumers. It also recognises the pivotal role of energy affordability and stability in fostering economic resilience and competitiveness.

3

Thus, the Regulation endeavours **to mitigate the disruptive impact of energy price volatility on businesses, especially small and medium-sized enterprises (SMEs) and energy-intensive industries**.

4

This legislation aims **to bolster business confidence, stimulate investment, and foster long-term economic growth** despite the roaming market instability by providing a regulatory framework conducive to cost predictability and sustainability.

Despite its immediate focus on addressing energy price volatility, the **Regulation 2022/1854** was underpinned by broader environmental imperatives, including the imperative to advance the EU's climate objectives and transition towards a low-carbon economy. By incentivising energy efficiency measures and sustainable consumption patterns, it aligned with the EU's broader sustainability agenda, thereby attempting to facilitate the decarbonisation of the energy sector and mitigate the adverse environmental impacts of energy production and consumption.

**In 2022, Bulgarian industrial consumers paid four to ten times higher for gas supplies and six to ten times more for electricity.**

Bulgaria experienced the effects of the energy crisis unfolding in the common EU market. In 2022, Bulgarian industrial consumers paid four to ten times higher for gas supplies and six to ten times more for electricity. The Bulgarian population experienced inflation levels assessed at four to five times higher, primarily driven by the surge in commodity prices.[5] Particularly in 2022, global natural gas prices were profoundly impacted by the dynamics in the European market. As a result, factors influencing supply and demand on the Title Transfer Facility (TTF[6]) also hold an equivalent impact on the Bulgarian Gas Hub (BGH). The TTF index explains 97% of the price variations on the Bulgarian gas market. Geopolitical tensions and policy shifts, particularly those reshaping the energy interactions between the EU and Russia, have also emerged as pivotal forces shaping the contours of the wholesale gas landscape. Specifically, the suspension of the Nord Stream 2 pipeline project and the intensifying discord centred around Ukraine, epitomised by the deployment and subsequent invasion of Russian troops, have generated far-reaching consequences that transcend the traditional ebb and flow of demand and supply.

The Bulgarian government acted swiftly, compared to other EU member states, with regard to supporting power consumers. Other support regarding district heating and household consumption of natural gas was introduced much later and was modest in comparison; consumers of natural gas did not receive support for the increase in gas prices.

Initially, power support for non-household consumers took the form of a flat payment, which was quickly converted to **75%** of the difference between the average Day-Ahead Market (DAM) price for a given month and July 2021

Between July 2022 and December 2024, the government has introduced a price cap on power traded on the Independent Bulgarian Energy Exchange (IBEX). The scope of the power support mechanism covers all non-household consumers with not even a hint at focusing or differentiating the support with regard to consumer vulnerability or competitiveness. Bulgarian households still purchase their power at regulated prices, which did not change between July 2021 and June 2022, and have since been increased by around 8-9% in the last two years.

5 Yanchev, M., Zhivachki, K. (2023): *Factors Influencing Natural Gas Price Developments in Bulgaria*. Report. Sofia University St. Kliment Ohridski. Sofia, 2023.

6 TTF is a virtual trading point for natural gas in the Netherlands, which became the main reference virtual market for gas trading in Europe.

This report evaluates to what extent the European Commission's objectives with Regulation 2022/1854 were achieved in Bulgaria and whether additional system benefits were guaranteed beyond the mere alleviation of the financial burden from non-household consumers without any commitment to energy efficiency and increased deployment of renewables, resulting in increased profits for them but reduced public welfare as a result.

**Bulgarian authorities claimed a decrease in peak hours consumption between 4% and 7%, with Bulgaria being one of 10 member states with results in that frame.**

The measures enacted by Bulgarian authorities to implement Regulation 2022/1854 were not fully aligned with the above-mentioned priorities of the Regulation. Although scarce, the only report[7] to date published by the European Commission provides evidence supporting that claim. Bulgarian authorities claimed a decrease in peak hours consumption between 4% and 7%, with Bulgaria being one of 10 member states with results in that frame. According to Eurostat data, between 2021 and 2022, Bulgaria's primary energy consumption increased. Although the increase was just 0.3 mtoe (1.6%), it was out of sync with the EU's overall ambition and drop in primary energy consumption between 2021 (1 311.2 mtoe) and 2022 (1 257.1 mtoe)[8], which is a decline of 4%. Not only that, but also Bulgaria's share of renewable sources in energy consumption decreased between 2021 and 2022 by 0.35 percentage points, whereas the average share for the EU for that period increased by over 1.15 percentage points, signalling that other member states were far more successful in reacting to the extreme prices as investment signals for higher RES generation and consumption[9].

7 European Commission (2023): *REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the review of emergency interventions to address high energy prices in accordance with Council Regulation (EU) 2022/1854*. COM(2023) 302 final. Brussels, 5.6.2023.

8 Eurostat (2024): *Shedding light on energy in Europe. 2024 edition*. Interactive publication.

9 Eurostat (2024): *Share of energy from renewable sources*. Data set.

# 2 ANALYSIS OF POLICY MEASURES IN BULGARIA: Before and After Regulation EU 2022/1854

With the aim of alleviating the economic consequences of the sudden volatility of power prices, the Bulgarian government approved a *Program for the compensation of non-domestic end customers of power*[10]. The government's decision was published on October 26th, 2021 and would have a retroactive effect from October 1st to November 30th, 2021. The support takes the form of a flat payment in the amount of 56.24 €/MWh. Eligible are all non-household consumers, approximately 633 000, who procure their consumption on the free market[11] . The projected budget of the program is €230 mn and would be financed by an early dividend payment from the nuclear power plant (NPP) "Kozloduy", which is 100% state-owned enterprise (SOE).

10 Council of Ministers of the Republic of Bulgaria (2021): *Governmental Decision №739/26.10.2021*

11 According to the Energy Act in Bulgaria, all trading at market prices takes place on the Independent Bulgarian Energy Exchange (IBEX)

Since the support excludes the electricity transmission and distribution companies, in early December 2021, the National Regulatory Authority (NRA) proposed an increase in their tariffs[12]. These companies secure their electricity demand from the IBEX but operate under regulated grid tariffs, which initially were not covered by the support program. Although this would have a modest effect on power expenditure in the liberalised market, due to the sharp increase in power prices, it would have a considerable effect on the regulated market, which consists entirely of household consumers.

The proposed NRA decision would increase the TSO tariff by 39% and the DSO tariffs between 40% and 61%. It would also decrease the regulated power prices for households to around 71.38 €/MWh while the average DAM price in December 2021 is 219.81 €/MWh. This would mean that grid tariffs for households would increase by 20 to 22% with relation to their power price, while for non-household consumers the increase would be around 1 to 2%.

As a result, on December 15th, 2021, the Bulgarian Parliament voted on a decision to freeze the regulated prices for power, heating, and water supply and sanitation. On the next day, the Council of Ministers voted on a decision to expand the support program to include the Electricity Transmission System Operator (TSO) and the Distribution System Operators (DSOs). The flat payments of 56.24 €/MWh would now apply for the quantities purchased to cover their technological costs for the period October 1st –November 30th, 2021. Although the program's scope had expanded, the projected budget remained unchanged.

**Initially, under the Program for the compensation of non-domestic end customers of power, all non-household consumers, approximately 633,000 who procure their consumption on the free market, were eligible. Later electricity transmission and distribution companies were included as well.**

On December 30th, 2021, the Council of Ministers voted on a new support program, targeting the TSO and DSOs, effectively imposing a price cap on the quantities purchased to cover their technological costs. The cap was set at the level of the projected price from the NRA's price decision for the period of July 1st, 2021 – June, 30th 2022, amounting to 63.83 €/MWh for the TSO, and 67.12 €/MWh for the DSOs[13]. The support mechanism was in effect from July 1st to December 31st, 2021, with a projected budget of €120.15 mn, complemented by an additional €25.56 mn already compensated in line with the above-mentioned support mechanism.

12 Bulgarian Commission on Energy and Water (2021): *Draft Decision on Amending the Prices in the Electricity Sector During the Regulatory/Pricing Period (Draft Decision # Ц-..../01.01.2022 г.)*. Sofia, 2021.

13 Council of Ministers of the Republic of Bulgaria (2021): *Governmental Decision №893/30.12.2021.*

On January 21st, 2022, the Council of Ministers voted on an amendment to the support program, which involved extending the period to December 2021 and increasing the level of support. The revised criteria stipulated that support would be provided at the lesser of 30% of the average DAM power price for December 2021 and 75% of the difference between the average power DAM prices for December and July 2021. The actual support amount was 65.94 €/MWh. Consequently, the projected program budget was increased to €319.56 mn.

According to end-year data from the Ministry of Finance, the total financial support for non-household consumers, as well as the TSO and DSOs for 2021 amounted to €439.71 mn. The source of financing included restructuring other expenditures/transfers in the central budget, as well as an early dividend payment from NPP "Kozloduy".

Although the government introduced an ad-hoc support mechanism for non-household power consumers, it did not focus the support on consumer vulnerability or competitiveness, which would have increased the mechanism's effectiveness and efficiency. Instead of implementing the support with a limited scope and expanding it gradually, if necessary, the government applied it universally to all non-household consumers. Furthermore, without any cost-benefit analysis of the support mechanism's effects, the government increased the amount of aid in December. As demonstrated later in this report, the cost of the support for just these three months nearly equals the total cost for 2023.

**On January 25th, 2022, the Council of Ministers voted on amending the support mechanism[14] as follows:**

- The amount of the support was calculated as 75% of the difference between the average DAM price for January 2022 and July 2021;
- The projected budget was €122.71 mn.

In addition, the government introduced a support mechanism for purchasing natural gas by district heating companies and households, which would cover 50% of the difference between the regulated Public Supplier price, approved by the NRA, and the market price. This translates into a payment to

[14] Council of Ministers of the Republic of Bulgaria (2022): *Governmental Decision №30/21.01.2022*

district heating companies and households of 13.69 €/MWh for December 2021 and 21.63 €/MWh for January 2022. The measure's scope should reach around 138 thousand households using either district heating or natural gas. The projected budget for the support for December 2021 and January 2022 is €71.58 mn.

On February 1st, the Council of Ministers voted to amend and extend the support for water supply and sanitation. The support duration was adjusted to cover January 1st, 2021 – December 31st, 2021, and it would take the form of a price cap equal to the projected power expenditure, according to the NRA's price decisions. Any previously paid-out support would be subtracted from future payments. The projected budget for this support was €31.19 million.

On March 2nd, 2022, the Council of Ministers extended the support mechanism for February and March 2022 while keeping the flat support amount.[15] The projected budget for the two months was €294 mn. One crucial difference was that up until January 2022, the support was paid out by the Ministry of Energy, while during February and March, it was paid out by the Electricity System Security Fund (ESSF). The fund was the contractual party paying preferential prices to RES producers, high-efficiency thermal and power generators, and PPAs with thermal power plants. It plays a significant role in determining the regulated power prices for households. The Council's decision did not include an additional revenue source or a budget transfer to the ESFF, meaning the fund would have to cover the additional expenditure with its own reserves.

**Instead of implementing the support with a limited scope and expanding it gradually, if necessary, the government applied it universally to all non-household consumers**

The decision also extended the support for water supply and sanitation companies for the first quarter of 2022 through the same price cap mechanism. The projected budget was €23.52 mn and would also be paid out by the ESFF.

15 Council of Ministers of the Republic of Bulgaria (2022): *Governmental Decision №105/02.03.2022.*

On April 6th, 2022, the Council of Ministers extended the support mechanisms for all programs:[16]

| SUPPORT PROGRAMS | SCOPE OF EXTENTION | PROJECTED BUDGET |
|---|---|---|
| Supporting power prices for **non-household consumers** | Same calculation and scope as in Q1. | €240.82 mn for April |
| Supporting the TSO and DSOs for **purchasing quantities for their technological costs** | The outstanding amount of support for July-December 2021 was to be covered by restructuring expenditure/ transfers from the Central Budget, while the support for January-June 2022 was to be paid entirely by the ESSF. | €332.85 mn (€102.23 mn by the Central Budget and €230.59 mn by ESSF). |
| Supporting natural gas prices for **district heating and households** | Extending the period of support to February-April 2022. Support calculation remained unchanged with a flat payment of 15.61 €/MWh for February and 16.60 €/MWh for March paid out by the ESSF. | n/a |
| Supporting power prices for **water supply and sanitation companies** | Extending the period of support to April 2022. | €8.18 mn |

*Figure 2: Extension of energy price support programs in Bulgaria*

Later, the support for power prices for non-household consumers and gas prices for district heating companies and household consumers was extended to May 2022 with the same support mechanism but without a projected program budget.

16 Council of Ministers of the Republic of Bulgaria (2022): *Governmental Decision №202/06.04.2022*.

On July 27th, 2022, the government revamped its support program for power prices for non-household consumers[17] by introducing a price cap of 127.82€/MWh for the period of September 2022, which is projected to cost €2.3 bn. However, the actual expenditure was considerably lower. The program was introduced with the amendments to the State Budget. In addition, the government introduces new support for purchasing quantities for the technological costs of the TSO and DSOs with a projected budget of €75.35 mn. The amount is much lower, compared to the previous price period, due to the NRA's decision to considerably increase the regulated tariffs for the period July 2022 – June 2023[18].

In addition to the price cap for non-household consumers, the government introduced a new financing mechanism. The support was to be paid out by the ESSF, and a new revenue stream was established – a monthly dedicated payment from the Bulgarian Energy Holding (a holding structure that includes energy SOEs), determined by the Council of Ministers, to be transferred to the ESSF. The transfers are calculated as the difference between the actual revenue of the companies and their projected revenue, using a reference price that includes break-even costs, investments and maintenance, interest payments, rate of return, etc. This is a similar financing mechanism introduced with the Council Regulation (EU) 2022/1854 of October 6th, 2022, on an emergency intervention to address high energy prices.

**In addition to the price cap of 127.82 €/MWh for non-household consumers, the government introduced a new financing mechanism, which was paid out by the ESSF based on dedicated payment from the Bulgarian Energy Holding.**

Since introducing the price cap for non-household consumers and the reference price for energy SOEs, the support mechanism for end consumers and the TSO and DSOs has remained unchanged. Other support programs were discontinued, mostly due to increased regulated prices for district heating companies and water supply and sanitation companies.

17 Council of Ministers of the Republic of Bulgaria (2022): *Governmental Decision #534/29.07.2022*

18 Bulgarian Regulatory Commission on Energy and Water (2022): *Decision # Ц-19/01.07.2022*

The one exception was for household natural gas consumers, which were left entirely to market forces. For example, the Public Supplier prices for August 2022 were 152.51€/MWh and for September were 181.01 €/MWh and there was no support mechanism for households, while the price in January 2022 was 68.42 €/MWh with a flat payment per MWh consumption.

After the Regulation came into effect, Parliament approved the State Budget for 2023 with a price cap of 102.26 €/MWh applicable to all producers, not just SOEs. The production price caps were differentiated by technologies and determined by the Council of Ministers. On January 12th, 2023, the Council of Ministers voted on the initial price caps for generation companies[19]:

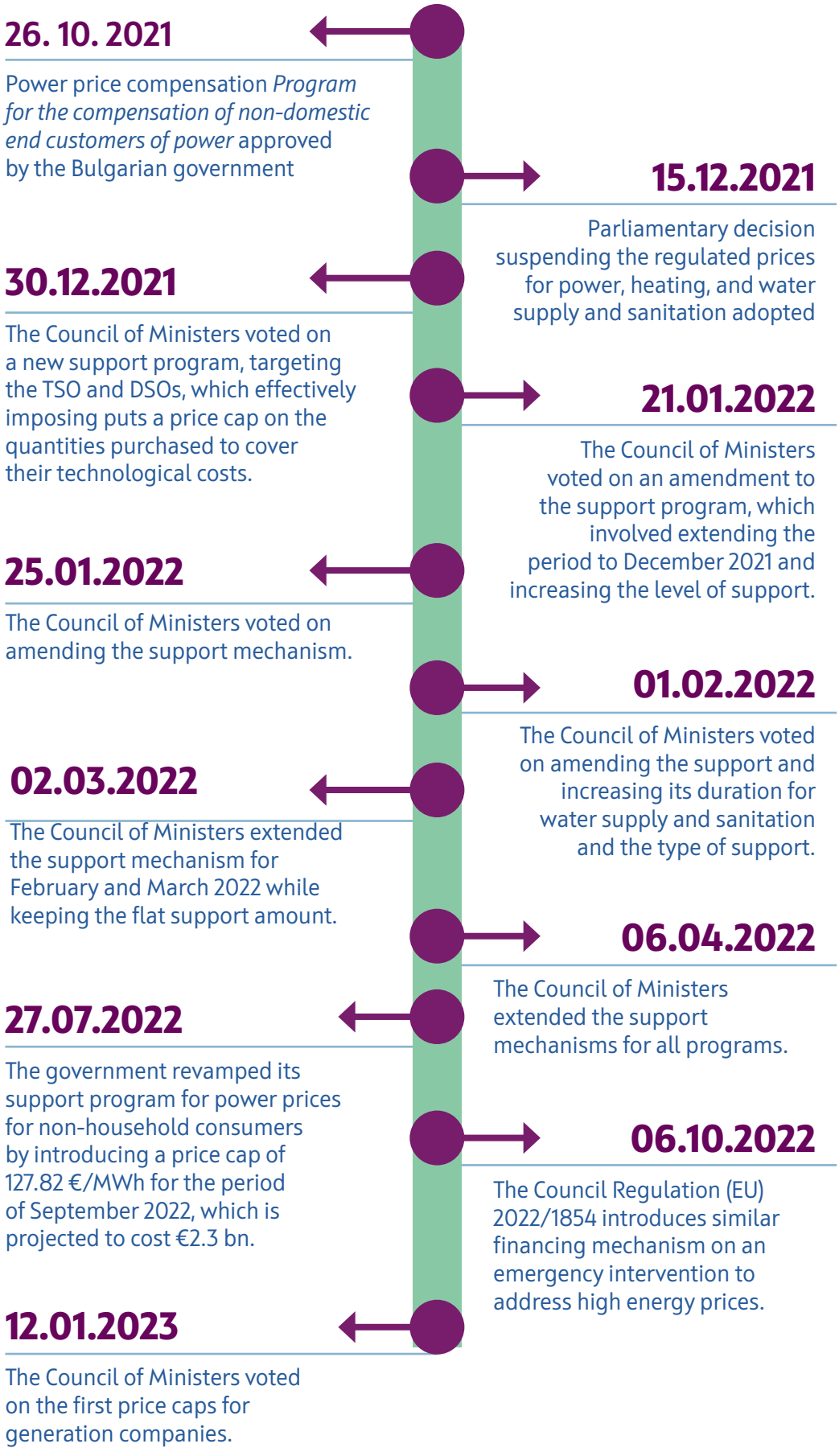
| GENERATION COMPANY | 12.1.2023 | 30.8.2023 | 14.3.2024 |
|---|---|---|---|
| Nuclear Power Plant | 92.03 €/MWh | 76.69 €/MWh | 76.69 €/MWh |
| Thermal Power Plant - Coal | 178.95 €/MWh + 1.32x price of $CO^2$/MWh | 178.95 €/MWh + 1.32x price of $CO^2$/MWh | 178.95 €/MWh + 1.32x price of $CO^2$/MWh |
| Thermal Power Plant - Coal with biomass | 178.95 €/MWh + 0.9x price of $CO^2$/MWh | 178.95 €/MWh + 0.9x price of $CO^2$/MWh | 178.95 €/MWh + 0.9x price of $CO^2$/MWh |
| RES without FiP | 178.95 €/MWh | 153.39 €/MWh | 153.39 €/MWh |
| Hydro Power Plants owned by the Natsionalna Elektricheska Kompania EAD | | 102.26 €/MWh | 102.26 €/MWh |

*Figure 3: Price Caps for Generation Companies according to Governmental Decision of January 2023*

19 Council of Ministers of the Republic of Bulgaria (2023, 2024): *Governmental* Decisions №29/12.01.2023; №580/30.08.2023; №167/14.03.2024

*Figure 4:*

## Event Chain of Price Control Measures Implemented by the Bulgarian Government from 2021 to 2023



The Bulgarian government's response to the increase in energy prices was swift and unfocused, with the support mechanism for power consumers lasting over three years. Support mechanisms for natural gas consumption were limited in scope, applying only to district heating companies and households, and the amount of aid covered only 50% of the difference between the NRA's projected and actual prices. No support mechanism was introduced for other energy sources such as coal, wood, or heating oil. Although average DAM power prices in the first half of 2022 were similar to their levels in Q4 2021, the amount of support increased before a hard price cap was introduced in July 2022.

Between October 2021 and June 2022, the support mechanism changed frequently - at least once per month - without a clear indication of cost containment or an exit strategy. This could be interpreted as indecision and hope that higher energy prices were transitory, which was the prevailing public consensus despite numerous reports and commentaries highlighting the folly of such views. Financing the support mechanism almost entirely through excess profits from energy SOEs essentially constituted "free money." Many experts pointed out that improving the efficiency of the support mechanism would ensure that companies would not go bankrupt while setting aside part of the profits for investment projects, benefiting the energy transition, energy efficiency, and alleviating energy poverty. Unfortunately, such calls fell on deaf ears.

**The design of the support mechanism practically shields non-household consumers from any market signals leading to market prices being driven in Bulgaria by increased external demand and stimulated short-term power purchasing.**

The design of the support mechanism would practically shield non-household consumers from any market signals leading to several intended and unintended effects. On the one hand, market prices in Bulgaria were not driven by increased costs for $CO^2$ emissions or natural gas prices, but rather by increased external demand. In this respect, shielding, at least partially, non-household consumers from exogenous factors both with regard to the energy system and economy makes sense from a political perspective.

On the other hand, increasing energy prices would signal scarcity of energy resources - with natural gas shocks in 2021 and the following war in Ukraine, as well as fears about security of supply, the economic logic would dictate a fall in consumption. The wide scope of the aid, as well as the generous

amount per MWh, raises concerns about overstimulating non-household consumers, which will be addressed in later sections. At the same time, the equal support for all non-household consumers creates the risk of under-stimulating production and service companies unable to pass through their increasing costs in their final prices and facing increasing competitive risks. Furthermore, the price cap on consumption stimulates only short-term power purchasing and disincentivizes long-term contracts as well as other price hedging instruments. Although we see the same dynamic in the EU as a whole in 2022, the trend has been reversed in 2023 and after, whereas the situation remains unchanged in Bulgaria due to the ongoing price cap.

Initial financing for the power support mechanism came from excess profits from energy SOEs; however, it was quickly transferred to the ESSF. Thus, a new revenue stream for the fund was created - a monthly dedicated payment from the Bulgarian Energy Holding (a holding structure that includes energy SOEs), determined by the Council of Ministers. In effect, these dedicated payments resemble the producer price cap introduced with Council Regulation 2022/1854.

3

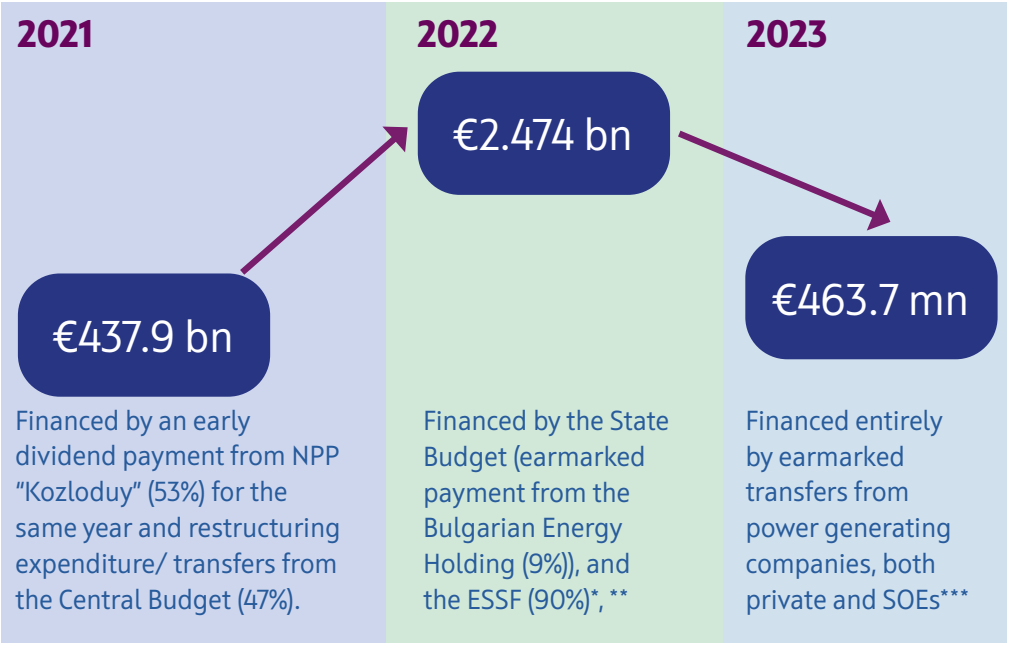
# FINANCIAL IMPLICATIONS AND BENEFICIARY GROUPS OF IMPLEMENTED POLICIES

The total cost of energy subsidies paid in Bulgaria from October 2021 to December 2023 in response to the energy crises amounts to €3.38 billion. This expenditure is unevenly distributed throughout the period. Notably, the total support for 2023, provided in the form of a price cap, is slightly higher than the amount paid out in the last quarter of 2021. During that quarter, the support was delivered as a flat payment, covering 75% of the difference between the average monthly prices on the Day-Ahead Market (DAM) and the price in July 2021.

The total cost of the measures was distributed as follows:

*Figure 5:*

## Distribution of the Cost of Price Control Measures in Bulgaria by Year and Funding Sources




*Before introducing the price cap for SOEs in July 2022, the ESSF had already been obliged to pay out compensations for February-June 2022 of roughly € 617 mn.

** By design, the Fund has three main revenue sources: revenue from CO2 certificates, a 5% revenue tax on power generation companies, and the so-called Obligation to Society Surcharge. This surcharge covers payments for Feed-in Tariffs and Feed-in Premiums for renewable energy sources (RES) producers, high-efficiency thermal and power generation, and Power Purchase Agreements (PPAs) with thermal power plants. In 2022, 50% of the total revenue came from earmarked transfers from State-Owned Enterprises (SOEs), 34% from CO2 certificates, 14% from the 5% revenue tax, and 2% from the Society Surcharge.

***The data is preliminary, as the ESSF has yet to publish its annual report.

The largest part of the support was unfocused and benefited all non-household power consumers, including large manufacturing companies, SMEs, but also hospitals, schools, administrative buildings, religious buildings, etc. The three exceptions to this rule, where support was focused, were companies with regulated prices – the electricity TSO and DSOs, district heating companies, and water supply and sanitation companies. In order not to increase their regulated prices, thus shifting the burden onto household and non-household consumers, the government aimed at postponing the increase in regulated prices by directly compensating the companies for the difference.

For power consumption, compensation covered the difference between the NRA's projected expenditure in its price decisions and actual expenditure. The compensation covered only 50% of the difference for district heating companies' natural gas consumption.

Household consumers of natural gas also benefited from a 50% compensation. However, the program covered the period December 2021 – May 2022, while the highest natural gas prices were recorded in August through September 2022. Household consumers purchased their power at regulated prices, which remained unchanged during the price period of July 2021 – June 2022, and were increased by around 3-4% during the price period of July 2022 – June 2023, and an additional around 3-4% for the price period July 2023 - June 2024. Although prices of other heating sources also had increased – coal, wood, heating oil, etc. – there were no government support programs targeting households. Electricity consumption was not supported as, unlike in other member states, end prices for households in Bulgaria are fully regulated and kept at a socially acceptable level to this date.

**Due to the unfocused approach and the practically unrestricted scope of the power support program, there have been concerns regarding inefficiencies, overstimulation, and excessive government spending.**

Due to the unfocused approach and the practically unrestricted scope of the power support program, there have been concerns regarding inefficiencies, overstimulation, and excessive government spending. According to the annual report of the National Revenue Agency, declared tax corporate profits have increased by 38.2% and have reached € 19.2 bn during the fiscal year 2021 compared to 2020. For the same period, declared tax losses declined by 12.7% to € 2.9 bn. Although the National Revenue Agency has not published its annual report for 2022, State Budget data shows that tax revenue from corporate profits has increased by 35% annually. In 2023, a much more modest increase of 9% in tax revenue was recorded.

Corporate tax revenues for both 2021 and 2022 suggest that there is a strong correlation between power subsidies and corporate profits. However, the government has not presented a rigorous analysis of its policies and their effects. While manufacturing is the most energy intensive sector, profits in 2021 have increased only modestly compared to other sectors such as wholesale and retail, accommodation and food services, financial services, and information and communications.

Although we do not have sector statistics, the State Budget data for 2022 suggests a similar, albeit more pronounced, increase in corporate profits, which can be attributed, among other things, to the large payout in power subsidies.

*Figure 6:*

## Change in Declared Tax Profit Across Economic Sectors (2021/2022)

| ECONOMIC SECTOR | | PERCENTAGE CHANGE 2021/2020 |
|---|---|---|
| A | Agriculture, forestry and fishing | **91.9%** |
| B | Mining and quarrying | **43.7%** |
| C | Manufacturing | **24.9%** |
| D | Electricity, gas, steam and air conditioning supply | **173.8%** |
| E | Water supply; sewerage, waste management and remediation activities | **18.4%** |
| F | Construction | **-8.0%** |
| G | Wholesale and retail trade; repair of motor vehicles and motorcycles | **42.0%** |
| H | Transportation and storage | **8.8%** |
| I | Accommodation and food service activities | **85.3%** |
| J | Information and communication | **39.5%** |
| K | Financial and insurance activities | **42.3%** |
| L | Real estate activities | **27.4%** |
| M | Professional, scientific and technical activities | **20.8%** |
| N | Administrative and support service activities | **28.3%** |
| O | Public administration and defence | **9.2%** |
| P | Education | **17.9%** |
| Q | Human health and social work activities | **47.7%** |
| R | Arts, entertainment and recreation | **50.6%** |

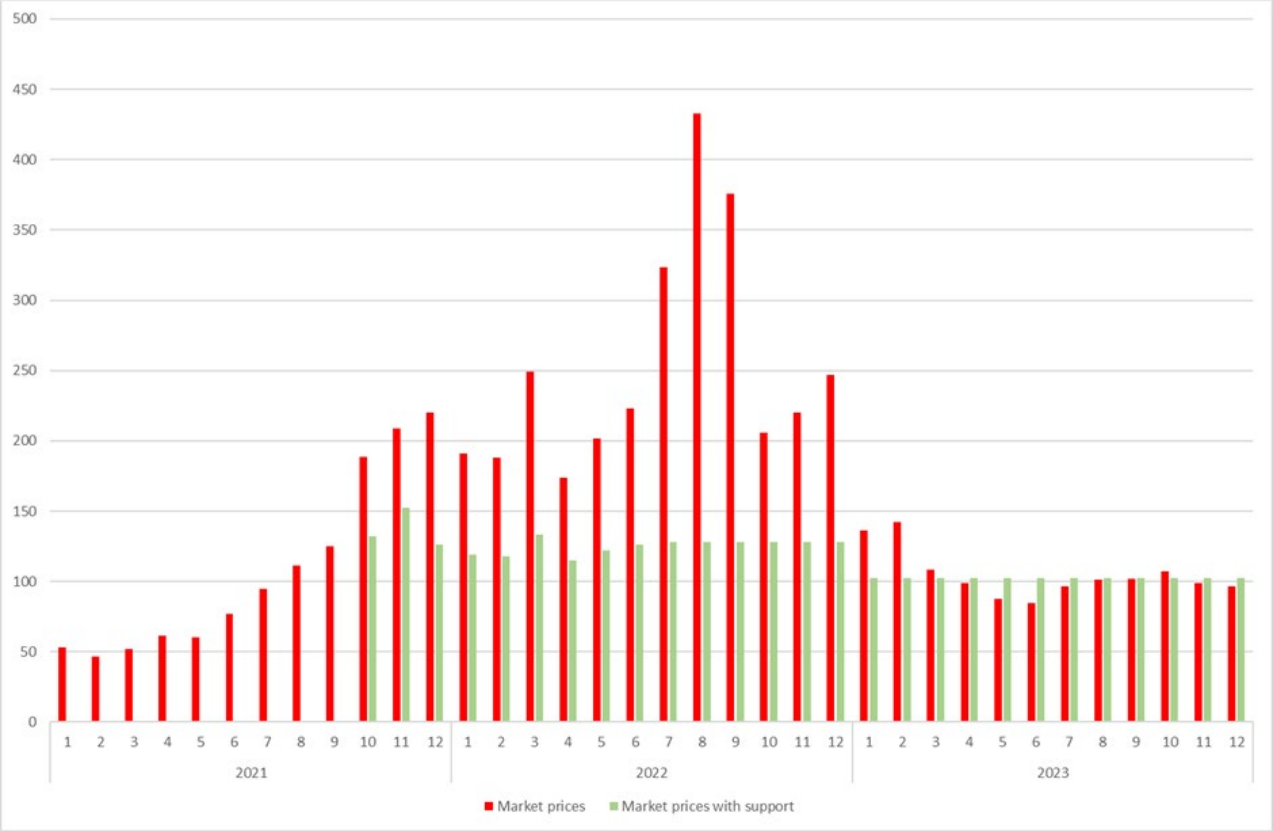
*Source: National Revenue Agency, Annual report, 2022*

# 4 ASSESSING THE IMPACT ON WHOLESALE PRICE DYNAMICS

The wholesale prices on the IBEX were mainly driven by external demand during 2021-2023, as seen in the graph. Although in the first half of 2021, European power prices were driven by the increase in the EU Emissions Trading System prices, it did not considerably affect the Bulgarian market. However, the situation changed in the second half of the year with the increase in European natural gas prices. Thus, natural gas thermal power plants became the market-closing technology. After this dynamic had started, almost a doubling of power prices on the DAM in Bulgaria between May and July 2021 has been observed. The situation was further exacerbated by the beginning of the heating period in 2021, the start of the war in Ukraine in early 2022, the change in payment conditions with Gazprom later that year, and the EU's decision to set a hard threshold for natural gas storages to be reached by November of 2022.

*Figure 7:*

## Power prices on the Day-Ahead Market, €/MWh.




*Source: IBEX, Council of Ministers Decisions, own calculations*

Due to Bulgaria's high power interconnection capacity, relatively cheaper power generation from coal, and negligible power generation from natural gas (around 5% of annual generation), the country saw its TPP workload increase almost to full capacity. High energy prices and uncertainty regarding the security of supply had another significant effect – a decline in power demand. Either through a switch in the energy base, investments in RES generation for own consumption, including through PPAs, or price destruction of demand, power consumption declined in 2022 and is projected to recover slowly over the next few years. However, these projections do not consider a possible economic slowdown/recession, which could further weigh on energy demand.

*Figure 8:*

## Annual Change in Power Consumption by the Industry.

| | 2020 | 2021 | 2022 |
|---|---|---|---|
| **Bulgaria** | -3.8% | 2.5% | -0.9% |
| **EU-27** | -5.1% | 3.9% | -4.8% |

*Source: Eurostat, own calculation*

With external demand decreasing in the second half of 2022 due to the above-mentioned factors, power prices in Bulgaria also subsided. The price cap for non-household consumers was extended in 2023, and the support rate increased. Despite the lower threshold, market prices were either close to the price cap or even below it during most of 2023.

Rather, the government had opted to target end consumers, thus preserving the price signals on the market. Nevertheless, setting a price cap for both consumers and producers has had a major impact on market dynamics.

As the support does not target power generation companies (except for partial support for high-efficiency thermal and power cogeneration, which is less than 5% of total generation), it is hard to imagine it having any effect on market prices in the country. Household consumers purchase power at regulated prices, which saw a cumulative increase of around 7-8% over two years. Rather, the government had opted to target end consumers, thus preserving the price signals on the market. Nevertheless, setting a price cap for both consumers and producers has had a major impact on market dynamics.

# 5 EVALUATING CHANGES IN POWER DEMAND

The impact on internal demand has been modest to none as the support mechanism does not include any obligation for energy efficiency measures, investments in low carbon solutions, developing RES for own consumption, etc. In addition, households pay for their power consumption at regulated prices and have no incentive to decrease their demand. Despite rising power prices in 2021, non-household power demand increased by 43% annually due to the faster-than-expected economic recovery from the pandemic year of 2020. Power demand further increased by a more modest 10% in 2022, although it was a peak year for both manufacturing production and exports of goods, excluding electricity and military goods. Although 2022 was characterised by two different support mechanisms, the amount of support per MWh, as seen from Figure 1, is almost unchanged throughout the year and lower compared to October-November 2021. The price had effectively been frozen at September 2021 levels, shielding non-household consumers from any market signals, thus further boosting power demand.

One of the main factors to have an effect is the slowdown in EU economic activity because the EU is the leading trading partner for Bulgaria; a small open economy with exports comprising around 2/3 of the country's GDP.

With external power demand falling in the second half of 2022 and 2023, internal demand in Bulgaria soon follows with an annual drop of 1%. While part of the explanation for the fall in external power demand was due to a sharp drop in natural gas prices, this has no effect on the domestic power demand in Bulgaria. One of the main factors to have an effect is the slowdown in EU economic activity because the EU is the leading trading partner for Bulgaria; a small open economy with exports comprising around 2/3 of the country's GDP.

The effects of changing economic conditions in the EU usually spill over to Bulgaria with a 6-12 months lag. The second major factor is the new PV capacity installed in Bulgaria, which has increased by 327 MW in 2022 and 1495 MW in 2023, more than doubling the aggregate PV installed capacity in the years before 2021. Some of the new installations are used both for self-consumption (which would suppress power demand during sunny hours) and to feed power back into the grid. These figures do not include RES installations used solely for self-consumption, which would further suppress power demand during sunny hours.

Although the power support mechanism in Bulgaria was not designed to influence power demand, the introduction of a price cap on consumption and power generation has had an adverse effect on the power market. We have seen a considerable and permanent increase in DAM trading quantities, while longer-term contracts have declined to their lowest levels in 2023. Last year also saw a sharp increase in trading on the Intraday Market, suggesting another imbalance in the power market. While short-term contracts were the norm in the EU during 2022, the situation has considerably changed since then in favour of longer-term contracts, as companies once again seek to hedge a part of their market risks. This has not been the case in Bulgaria, and one explanation is that the consumption price cap effectively eliminates the need for a market hedge since a state subsidy will compensate any price above the cap. This starkly contrasts with market developments in the EU and the new market reform, which aims to strengthen long-term markets.

*Figure 9:*

## Share of Power Quantities Traded in Different Market Segments

| | DAY-AHEAD MARKET | INTRADAY MARKET | BILATERAL CONTRACTS |
|---|---|---|---|
| 2020 | 64.2% | 3.8% | 32.0% |
| 2021 | 73.4% | 3.7% | 22.9% |
| 2022 | 73.8% | 3.1% | 23.1% |
| 2023 | 73.8% | 6.1% | 20.1% |

*Source: National Regulatory Agency, annual reports*

# 6 COMPARATIVE ANALYSIS OF POLICY MEASURES SUPPORTING CONSUMERS AND BUSINESSES ACROSS THE EU

EU countries have implemented a variety of policy measures to support both final consumers, particularly energy-poor and vulnerable households, and businesses. These measures are designed to alleviate the economic pressures brought on by rising energy costs and to ensure economic stability.

A large part of the fiscal measures in the EU targeted households and involved transfers to vulnerable consumers such as hospitals, educational institutions, etc. Still, another significant part of the measures aimed to support businesses and energy companies. Some of these measures targeted the workforce, aiming to increase their disposable income, thereby reducing the pressure on employers to increase wages to compensate for higher consumer prices in the last three years.

Such measures included reducing taxes on labour costs and social security, increasing income thresholds for individual tax groups (in countries with progressive income taxation), increasing the amount of the non-taxable minimum for bonuses outside the salary and additional allowances for transport costs (Austria, Belgium, Italy, the Netherlands, Poland and Portugal). Similar measures have not been introduced in Bulgaria, although they would have eased the pressure on companies' costs.

Another significant group of measures involved reducing taxes - mainly VAT, excise duties, and surcharges on electricity bills to support green energy and high-efficiency thermal and power cogeneration, as well as providing tax credits or deferring payments of due taxes (similar measures were introduced in 2020 due to the COVID pandemic).

The applied measures vary widely in terms of their duration (month, quarter, until the end of 2023) and the size and scope of the measures. Some measures are specifically targeted at small companies (e.g., with a provided capacity of 4.5 kW), and the amount of aid is limited - tax credit up to 30% of electricity costs and up to 40% of natural gas costs (Italy). Other measures covered all consumers, e.g. Bulgaria. In Bulgaria, a reduced VAT rate – from 20% to 9% - was introduced for the supply of central heating and natural gas for households and companies from July 2022 to June 2023.

**However, it is noticeable that most support measures only cover part of energy consumption (when price ceilings are imposed) or part of the price increase (when covering entire consumption).**

The largest group of measures included granting subsidies to businesses in various forms - fixed compensations for electricity and natural gas consumption, floating compensations (a share of prices), reducing network service fees, loans, grants, etc. Again, there is a great diversity in the applied measures, with most of them targeting hospitals, educational institutions, small and medium-sized enterprises. However, it is noticeable that most support measures only cover part of energy consumption (when price ceilings are imposed) or part of the price increase (when covering entire consumption). Furthermore, the measures are introduced gradually and are temporary in nature, with their scope and coverage expanding only later.

The most common measure was imposing a ceiling on the price of electricity and/or natural gas consumption, applied in Bulgaria, Germany, the Netherlands, Poland, Romania, Slovenia, and the Czech Republic. However, in Bulgaria (127.82 €/MWh) and the Czech Republic (6000 CZK/MWh for electricity and 3000 CZK/MWh for natural gas[20]), the measure applied to the entire business, while in other countries, conditions were introduced:

- **Germany** - 70 €/MWh for 70% of consumption in 2021, effective from January 2023;
- **Netherlands** - 400 €/MWh for electricity consumption up to 2.9 MWh and 1.45 €/$m^3$ for natural gas consumption up to 1200 m3 for self-employed persons, shops, multiple associations, small social organisations, and micro- and small enterprises for the period January-December 2023;
- **Poland** - 785 PLN/MWh[21] for electricity for SMEs for 90% of consumption for the period December 2022 - December 2023;
- **Romania** - multiple measures are introduced depending on the vulnerability of consumers, consumption volume, etc.;
- **Slovenia** - 118 €/MWh for high tariff, 82 EUR/MWh for low tariff, and 98 EUR/MWh for universal tariff for the period September 2022 - August 2023.

It is noteworthy that price ceilings in other EU countries were introduced considerably later compared to Bulgaria, where they came into effect in July 2022, were later extended into 2024, and were significantly more generous.

It is noteworthy that price ceilings in other EU countries were introduced considerably later compared to Bulgaria, where they came into effect in July 2022, were later extended into 2024, and were significantly more generous. The price cap in Bulgaria has been reduced to 102.26 €/MWh for 2023-2024 despite falling power prices in 2023 and negative prices on the DAM in 2024.

The second most popular measure was the introduction of a floating subsidy, calculated as a share of energy prices or their increase. This mechanism was applied in Bulgaria in the beginning (October 2021 – June 2022), Latvia, Luxembourg, Norway, Poland, and Slovenia. However, in Bulgaria it covered all non-household consumers, while in other countries, it was reserved only for energy-intensive companies - usually those with at least a 3% share of energy costs in their turnover. Poland is an exception to this rule, but the aid there took effect from the beginning of 2023 and was tied to achieving a 10% energy saving compared to 2018-2022.

20 Between 250-258 €/MWh for power and 125-129 €/MWh in 2023 depending on the exchange rate.

21 Between 163-182 €/MWh in 2023 depending on the exchange rate.

**Here is a list of other country-specific approaches across the EEA:**

- **Latvia**: 30% of electricity and natural gas expenses, but not exceeding € 2 bn;
- **Luxembourg**: 30% of the difference between market prices of electricity and natural gas and their doubled size for the respective period of the previous year; the aid can be increased to 70% if the company is reporting financial losses;
- **Norway**: 25% of the price above 7000 NOK/MWh[22] for electricity;
- **Slovenia**: - 70% of the difference between the market price of electricity and its doubled size for the previous year's respective period.

In Bulgaria, this mechanism operated from December 2021 to June 2022, and the subsidy being 75% of the difference between the average DAM price for a selected month and the average DAM price for July 2021. Similar to the introduced price caps, this mechanism impresses with its broad support coverage and high level - only in Slovenia is there a similar cap as a ratio, but it is calculated on the difference from market prices of the previous year. Luxembourg has a similar cap, but the mechanism is differentiated and accessible only to companies experiencing losses due to rising energy prices.

Another widely applied measure is reducing or eliminating network service charges, which was applied in Estonia, Spain, Italy, Latvia, and Slovakia. The implementation mechanisms vary in individual countries, but the difference between actual and reduced costs is financed from state budgets.

Next is the measure of providing fixed support for energy consumption. It is applied in Bulgaria, Greece, Luxembourg, and the Netherlands. In Bulgaria, this measure was in effect from October to November 2021 for electricity consumption at a rate of 56.24 €/MWh, and it appears similarly in other countries. Austria, Hungary, and the Czech Republic apply various measures to support energy-intensive companies based on the temporary crisis framework of the EU introduced in March 2022.

Countries like Luxembourg, Spain, and the Czech Republic support the industry in other ways as well, covering part of the increase in electricity prices caused by increased costs for CO2 emissions. Mechanisms to cover part of the so-called indirect emission costs have long been in place in various EU countries. In recent years, they have also been discussed in Bulgaria but have not been implemented.

22 Between 583-697 €/MWh in 2023.

Last but not least, is the provision of state guarantees and/or liquidity support for energy companies. Such measures have been introduced in Austria, Germany, the United Kingdom, Denmark, Italy, Luxembourg, Slovenia, Finland, France, Croatia, the Czech Republic, Switzerland, and Sweden. These measures are necessary as energy companies have faced new risks over the past two years, such as volatile prices, the need to secure additional working capital due to long payment terms from consumers, increasing the size of guarantees for transactions, additional costs for administering state aid mechanisms, and more. Only through this measure, around € 200 bn are envisaged, with some being provided from state budgets, others in the form of state guarantees, and the measures themselves being financed by banking institutions. Similar measures are not implemented in Bulgaria, although the issue has been raised since the autumn of 2021. Measures for liquidity support were introduced in 2020 as part of a package of policies to address the consequences of the COVID pandemic and include various indicators for accessing assistance. A similar mechanism could have been created and linked to various financial indicators of energy companies. For example, in Germany, a special mechanism can be used to cover costs for securing futures trading in electricity, natural gas, and the EU ETS market.

**In most cases, more than one support measure is applied, which allows for greater flexibility in support policy, hence - higher effectiveness and efficiency in supporting businesses.**

The review shows that the measures applied in the countries under consideration are diverse and adapted to businesses' specific local challenges. In most cases, more than one support measure is applied, which allows for greater flexibility in support policy, hence - higher effectiveness and efficiency in supporting businesses. In general, measures are gradually introduced and limited in terms of the scope of companies accessing them and the size of the assistance provided. Over time and with the worsening of the energy crisis, including after the start of the war in Ukraine, the scope is expanded, the amount of assistance is increased, and sometimes additional measures are introduced. The measures usually target vulnerable consumers, such as micro and small enterprises, hospitals, educational institutions, and households, and assistance is expressed as a percentage of the price and/or is provided for a limited amount of consumption. Additional measures are also introduced, separately targeting small and medium-sized enterprises and energy-intensive companies.

The approach in Bulgaria is almost diametrically opposite. Bulgaria is one of the first countries to introduce measures to support non-household con-

sumers.. Moreover, the scope of assistance from the outset is too broad, as it is available to all non-household consumers and is not targeted and/or differentiated towards the most needy consumers. Initially, the assistance is fixed - 56.24 €/MWh, but two months later it increases to 75% of the difference between the average DAM price for a selected month and the average DAM price for July 2021, and from July 2022, it is already in the form of a ceiling (a kind of regulated price) of 127.82 €/MWh; January 2023 – December 2024 the price cap is 102.26 €/MWh.

# REGULATORY ASSESSMENT OF THE SUPPORT MECHANISMS[23]

## Tax Breaks

A significant, albeit decreasing, portion of the energy bill consists of taxes (political surcharges/payments for policy promotion) and VAT. Regardless of the fiscal implications for member states, reducing or eliminating taxes is a quick and easy way to reduce expenditures. This measure is already being implemented to some extent in many markets, but taxes continue to constitute a significant part of the overall energy expenditure. Given the likely duration of the energy crisis, however, such taxes cannot be reduced only in the short term, and the change in the taxation of energy products (potentially even complete elimination of taxes) should be considered a long-term if not permanent measure. However, the risk in implementing such measures is that the increase in energy prices may partially or completely neutralise the benefits of tax reduction, as seen in many countries. A similar measure, with insufficient competition and markets with low competition and high concentration, will likely have a weak impact on final energy costs. This issue should also be considered in light of the high rate of energy supplier bankruptcies in 2021-2022 in the EU, which, reduces choices for consumers both in terms of suppliers and consumer offers.

However, the risk in implementing such measures is that the increase in energy prices may partially or completely neutralise the benefits of tax reduction, as seen in many countries.

[23] ACER-CEER (2022): *Provision of Retail Energy Market Data and Analysis for ACER*. Presentation. October 2022.

## Subsidies

Although these measures can obviously reduce prices, they also decrease transparency and distort the market. In any case, such measures and reducing taxes and VAT should be viewed as long-term commitments. It can also be concluded that it is pointless to levy taxes and VAT only to reimburse them in the form of subsidies afterwards.

## Price Caps

Price caps can maintain low energy prices, but since the profit margin in the retail trading sector is already very low across the industry, the only way for end prices to decrease significantly below current levels is through subsidisation. In the UK, where the net profit margin of companies in the retail segment was extremely low even and before the introduction of price caps, they led to negative profit margins and, subsequently - to the insolvency of energy suppliers. Keeping end prices at affordable levels during the crisis inevitably requires extremely subsidised caps, which no longer reflect wholesale prices. Therefore, without targeted measures or even wholesale market reform, price caps have limited impact if energy companies are not subsidised.

## Wholesale Market Changes

What is absolutely clear is that retail prices closely track wholesale market (spot) and futures market prices. Furthermore, the profit margin in retail trading (both gross and net) is relatively low. Although measures can be taken to set a ceiling on retail prices or on company profits, their share in the final energy expenditure is relatively small. Profits are made upstream in the wholesale market chain, not at the end suppliers. Therefore, wholesale market measures have the greatest potential to impact end consumers' energy bills.

## Liquidity

The working capital requirements of suppliers (e.g., guarantees) related to wholesale markets are elevated to extreme levels during the energy crisis. As a result, and in combination with hedging costs, both large and small suppliers are experiencing difficulties in remaining in the market. Not only does this increase costs, but it also amplifies risk, which in turn is transferred to end-client prices.

Measures are needed to reduce the working capital requirements of suppliers, at least during the crisis. It should be noted that capital requirements for suppliers are high in other respects as well.

According to the Agency for Cooperation of Energy Regulators, the likelihood of "breaking" some markets is critically high, as several major suppliers may become insolvent, causing a domino effect on the wholesale market. Measures are needed to reduce the working capital requirements of suppliers, at least during the crisis. It should be noted that capital requirements for suppliers are high in other respects as well (e.g., due to long payment terms from consumers and the fact that the supplier usually bears the risks of non-payment).

## Energy Efficiency Measures

While retail deals offered for end consumers during a crisis decrease, very few consumers are aware of the still available retail market opportunities for significant energy savings. Few know the consequences and risks of various tariff options in a highly volatile wholesale market. The presence of price comparison tools is not enough. Not all major suppliers are necessarily secure, and not all small suppliers are dubious. Fixed prices can enhance security, but not if they are too high for too long. Variable tariffs may seem attractive in periods of low prices (e.g., 2019-2020), but what if prices continue to rise? Market-based tariffs can be beneficial for charging electric vehicles, but what should households with limited demand flexibility do? What consumers need are clear guidelines to help them realise the potential savings they can achieve and the pros and cons of different options for achieving them.

# 7

# RECOMMENDATIONS FOR OPTIMISING SUPPORT MECHANISMS IN BULGARIA

With energy prices, both natural gas and electricity, below any previously forecasted levels for that period and negative energy prices being the new normal, efforts to develop and suggest optimal policy measures and tools for support mechanisms in times of extremely high energy prices might never be useful. Yet, based on the main findings and observations explained in this report, some key takeaways could be drawn and used as benchmarks in similar situations in the future, especially when it comes to designing support mechanisms for end customers in Bulgaria:

Despite current energy prices for both natural gas and electricity being below previously forecasted levels and negative energy prices becoming commonplace, the necessity of developing and proposing optimal policy measures and support mechanisms for times of exceptionally high energy prices may initially seem redundant. Nevertheless, based on the main findings and observations detailed in this report, **several key takeaways can be gleaned and used as benchmarks for future similar situations, particularly in designing support mechanisms for end customers in Bulgaria:**

- The current design of the price support mechanism has failed to achieve the envisioned reduction in energy intensity. Likewise, energy efficiency improvements have not been realized.

- The capping of electricity prices through a universal ceiling has not effectively incentivized renewables and energy efficiency among end consumers.
- A fundamental aspect of support mechanisms should focus on encouraging increased investments by end-users in renewables and energy efficiency, promoting decentralized approaches for system-wide benefits, and ensuring incentives are predictable in terms of their financial outcomes over at least a 5-year period.
- Instead of imposing caps, mechanisms should be designed to offer financial incentives that boost local production and consumption of electricity.

Examining the approaches taken by other EU countries reveals highly diverse measures aimed at mitigating the impacts of high energy prices, though significant disparities exist in the challenges faced by businesses across these nations.

**Despite variations in their specifics, there are commonalities in how these measures are formulated and implemented:**

- Measures typically have a defined scope of beneficiaries, level of assistance, and duration.
- Adjustments are made as needed to expand or prolong their application, sometimes introducing additional measures.
- Most countries employ a mix of strategies including workforce support, tax relief, subsidies, liquidity injections, government loans, and investment incentives.
- Measures are tailored to benefit vulnerable consumer groups such as micro, small, and medium-sized enterprises, hospitals, and educational institutions.
- Certain countries have introduced supplementary measures specifically targeting energy-intensive industries.
- These measures have generally encouraged reduced energy consumption.

Guidelines for providing state aid to affected companies, endorsed by both

the Agency for Cooperation of Energy Regulators and the International Monetary Fund, align closely with the identified approaches.

In contrast, Bulgaria's approach diverged from recommended best practices by ACER and the IMF, as well as the experiences of other EU countries with the folllowing:

- Business aid was swiftly introduced from October 2021, covering all non-domestic customers with a fixed amount, but failing to incentivize changes in consumer behavior.
- While aid amounts increased by December 2021, the consumer scope remained unchanged.
- From mid-2022, assistance took the form of a price cap at €127.83/MWh, unprecedented in Europe in terms of its scale and applicability.
- This price cap was extended through 2023-2024, albeit reduced to €102.26/MWh.
- This represents the largest business support measure undertaken.
- Total expenditures on support measures in Bulgaria from October 2021 to December 2023 amounted to approximately €3.4 billion, with 25% financed by the State Budget and the remainder sourced from earmarked transfers from State-Owned Enterprises (SOEs) and price caps on nuclear, hydropower, and renewable energy generation.

According to the National Revenue Agency's annual report, corporate tax profits declared increased by 38.2% in 2021, 35% in 2022, and a modest 9% in 2023, with around 75% of power support concentrated in 2022 contributing to this rise.

Given that the support primarily excludes power generation companies, its impact on local market prices remains uncertain. Wholesale prices on the IBEX were chiefly influenced by external demand during the 2021-2023 period due to the country's robust power interconnection capacity.

The mechanism's limited focus on energy efficiency measures, low-carbon investments, and renewable energy self-consumption, coupled with households paying regulated prices without incentives to reduce consumption, has resulted in negligible effects on domestic demand.

Despite not being designed to influence power demand, the introduction of a consumption and generation price cap adversely affected the power

market. Notably, there was a significant and lasting increase in DAM trading volumes, while long-term contracts reached their lowest levels in 2023.

**This poses a growing challenge for retail traders and end suppliers amid the ongoing liberalization of the household retail power market.**

The scarcity of long-term contracts limits traders from offering fixed-price contracts, exposing consumers to price risks without adequate hedging options. This poses a growing challenge for retail traders and end suppliers amid the ongoing liberalization of the household retail power market.

The surge in supplier bankruptcies and market exits across the EU in 2021-2022, correlating with the initial spike in wholesale power prices, marked the beginning of a contraction in retail market offerings. ACER-CEER's annual monitoring report on electricity and natural gas markets underscores the potential for reduced competition and heightened market concentration as a consequence.

The report also highlights inconsistencies and inadequate coherence among National Regulatory Authorities (NRAs) in monitoring available market offerings across national markets. In jurisdictions where such monitoring is conducted, fixed-price contracts dominate current offerings.

While these contracts have shielded customers from price volatility through 2021 and 2022, many are set to expire in 2022 amidst high energy prices, prompting a potential shift to indexed contracts in the absence of fixed alternatives.

Currently, only 10 EU member states have adopted a standardized definition of energy poverty, with substantial discrepancies among them. Bulgaria recently joined this group with amendments to its Energy Act, yet challenges in its practical implementation remain to be seen. Significant disparities persist in the deployment rates of smart meters among member states, with Bulgaria lagging in this respect as well. Member states have implemented a wide array of measures to support energy consumers, without which retail electricity prices would have been 22% higher than observed levels.

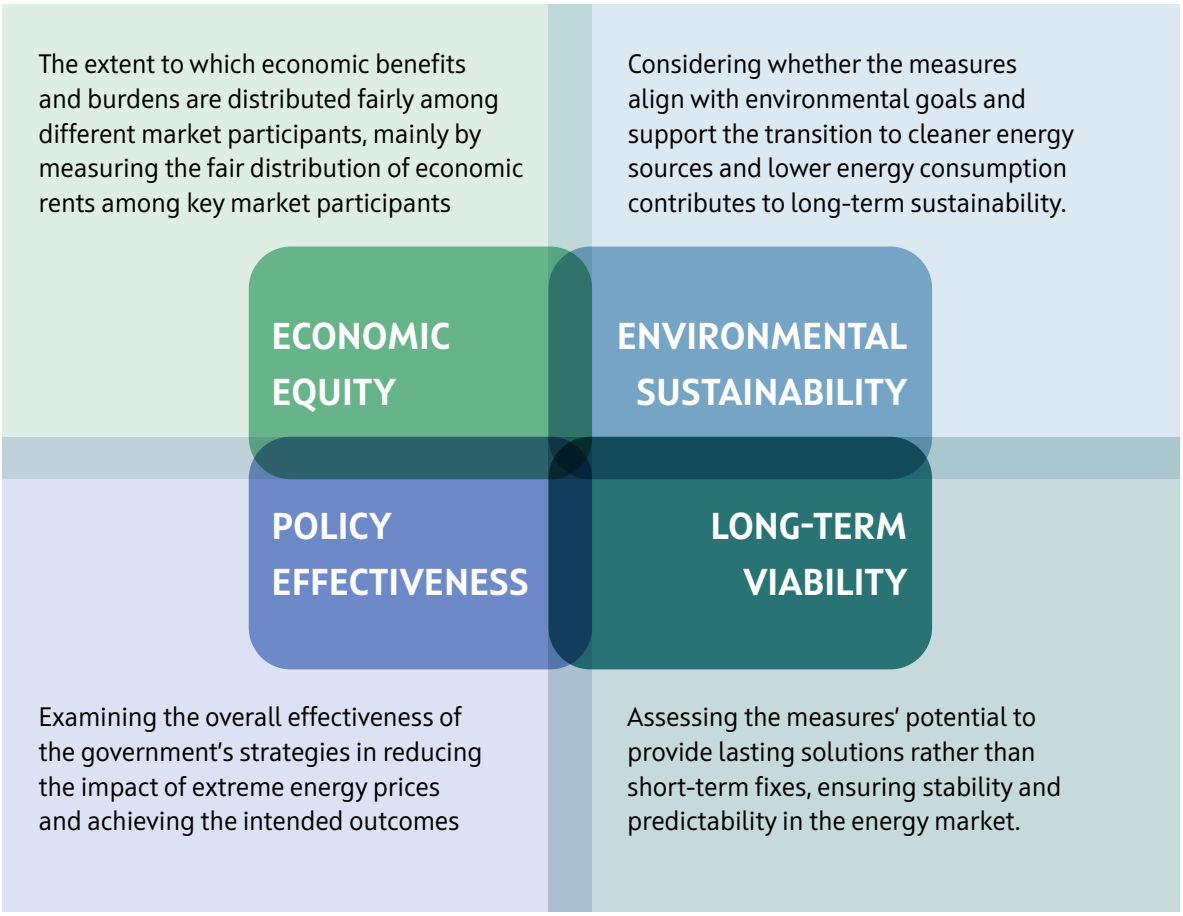
However, the report unequivocally criticizes the targeting of these measures, arguing that they have not adequately supported the most vulnerable groups. This critique extends even to regulated prices, which, according to the authors, should exclusively benefit vulnerable consumers and those at risk of energy poverty. Consequently, substantial public resources have been expended without clear sight on the benefits or targeted outcomes of these compensatory measures.

The increasing proportion of consumers switching suppliers is seen as a critical indicator of market awareness among consumers, with significant rises observed in 2021-2022. However, this figure includes involuntary switches triggered by the Supplier of Last Resort mechanism in many member states, raising doubts about whether higher switching rates truly reflect improved consumer awareness of market alternatives.

Based on the above conclusions, four main principles of future policy and support mechanisms could be identified:

*Figure 10:*

**Main principles of future policy and support mechanisms in times of extreme energy prices**




Policy makers must ensure that any emergency measures, while justified in their urgency, adhere to these foundational design principles to ensure they deliver universal public benefits to all stakeholders involved.

# Charting a Course Through the Energy Crisis: Assessing Bulgaria's Response to Soaring Prices

**Regulatory Insight Report**

Sofia University St. Kliment Ohridski, 2023

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