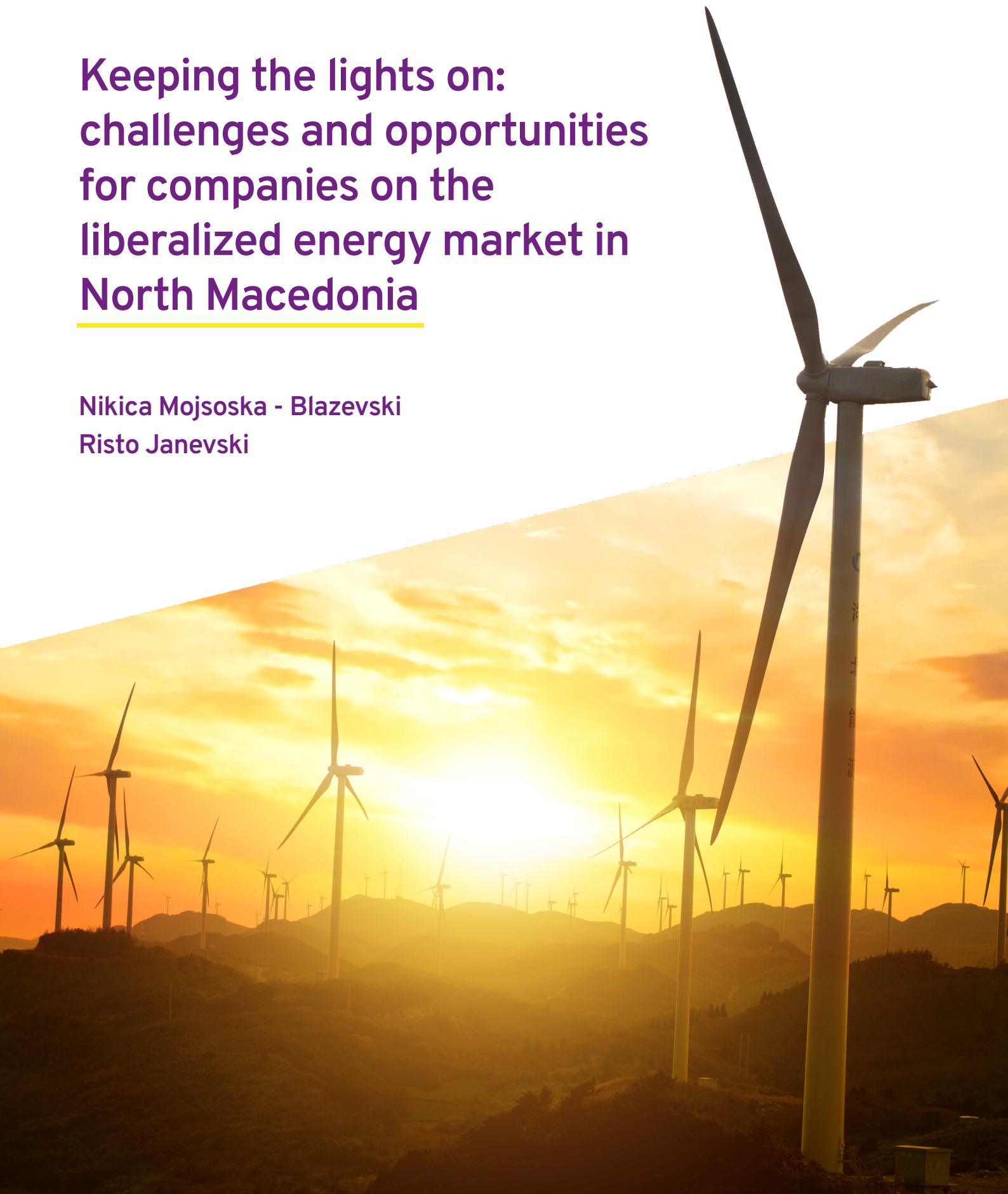




Организација на
работодавачи на
Македонија

Keeping the lights on: challenges and opportunities for companies on the liberalized energy market in North Macedonia

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Abbreviations and acronyms

DBNM - Development Bank of North Macedonia

ECB - European Central Bank

ERC - Energy and Water Services Regulatory Commission (North Macedonia)

GDP - gross domestic product

HUPX - Hungarian Power Exchange

ILO - International Labour Organization

kWh - kilowatt hour

MKD - Macedonian dinar

MWh - megawatt hour

OEM - Organization of Employers of Macedonia

REK Bitola - Mining and Energy Combine Bitola

RES - renewable energy sources

VAT - value added tax

ZELS - Association of Local Self-Government Units

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Executive summary

Following a relatively robust rebound from the COVID-19 pandemic in 2021, economic activity slowed to 2.6 per cent annual growth in the first half of 2022, with recovery momentum fading amid the global energy crisis. Soaring energy and food prices have pushed inflation to levels unseen for decades, amounting to 13.2 per cent for the period of January-October 2022. The country is particularly exposed to the energy crisis owing to its high dependency on imports from the Russian Federation and the neglect of domestic infrastructure for energy production.

Despite the fiscal buffers having been severely depleted by the health crisis, the Government intervened with support measures to shield households and micro- and small enterprises from rising electricity prices and high inflation. The latest package, estimated at €360.2 million, was announced in November 2022, with additional support aimed at boosting renewable energy production. However, medium and large enterprises, which account for 53 per cent of the total added value and 43 per cent of employment, have been left without any support and are directly exposed to electricity price fluctuations on the liberalized energy market.

In a survey of companies purchasing electricity on the liberalized market, the vast majority of respondents identified the spike in energy prices and the resulting increase in inflation as the two most acute challenges they faced. More than half of respondents anticipate falling well short of profit targets, with one third of companies considering temporary closure if energy costs do not decrease or if support from government is not provided. The cost of electricity as a proportion of operating costs has multiplied by between 3 and 5 times within a year. The impact of this has been felt by all companies, with 19 per cent of respondents reporting an increase in operating costs of more than 60 per cent. A quarter of companies estimated that the increase varied between 40 and 60 per cent, and a third reported an increase of between 20 and 40 per cent.

The competitive capacity of Macedonian companies has been affected by regional disparities in electricity prices, and by lower energy costs in some countries in the European Union. Hence, companies see themselves as being inexorably excluded from international markets. A further challenge to competitiveness arose from the minimum wage increase in March 2022, with net wage growth reaching 9.6 per cent in August 2022. As a result of the high costs of doing business, some companies are considering temporary closure. Such a strategy poses a dilemma for companies, however, as to how to preserve their workforce during the shutdown; while doing so may prove prohibitively expensive, dismissing staff in an increasingly tight labour market might end up backfiring once activity is resumed.

Only 10 per cent of surveyed companies that purchase electricity on the liberalized market were satisfied with the existing government support measures, and more than a half found them inadequate. In the absence of sufficient support, the vast majority of companies (97 per cent) had independently initiated mitigation efforts at the time of the survey. These include accelerated uptake of renewable energy technologies for independent electricity generation (71 per cent of companies), the development of an energy saving plan (67 per cent of companies) and adjusting the working hours of staff (17 per cent of companies).

The current crisis has accelerated the adoption of green technologies for independent electricity production. Over a third (36 per cent) of all surveyed companies have started or fully completed the process of transitioning to self-generation of electricity from renewables. The survey findings align with official data showing that the number of companies that applied for an electricity generation licence in 2022 has increased ninefold compared to 2021. However, the administrative procedures are time-consuming and cumbersome, involving institutions at both central and local levels which do not apply the procedures or impose taxes consistently. This process takes at least one year in the best-case scenario, but it can also take up to three years. In its current form, the process is discouraging and off-putting for companies ready to adopt renewable energy technologies.

Two sets of support measures have emerged from the survey, with one aimed at mitigating the effects of the crisis through financial support measures, and the other aimed at facilitating the transition to renewable energy production by companies. Regarding the former, two intervention approaches were developed which capped energy prices at €100/MWh and €200/MWh respectively. If the ceiling is set at €100/MWh, the subsidies will cost from €7 million to €52 million per month (depending on the energy price at the HUPX energy exchange). If the cap is set at €200/MWh, the subsidies will cost from €7 million to €30 million per month. Subsidizing the electricity price is the highest ranked type of support measure among 95 per cent of surveyed companies. Many companies also support the expansion of the preferential value added tax (VAT) rate for electricity and limiting or subsidizing the distribution fee. Measures to facilitate investments in renewable energy include simplifying investment procedures, improving access to financing and providing consultancy services to inform enterprises' decisions on investing in renewable energy technologies.

Introduction

The war of aggression by the Russian Federation against Ukraine has blindsided the global economy at a time when the recovery from the COVID-19 pandemic was losing momentum. The crisis caused the steepest hike in energy prices and the highest inflation rates in decades, with the European region being affected the most. The shock wave has severely impacted North Macedonia's small and open economy and further weakened its fragile energy security. Despite limited fiscal space and elevated public debt, the Government intervened with financial support measures to mitigate the effects of the crisis, targeting in particular the most vulnerable households and companies. Additional measures were adopted with a view to boosting private sector investments in renewable energy production. However, medium and large enterprises, which account for 53 per cent of total added value and 43 per cent of employment, have been left without any support and are directly exposed to electricity price fluctuations on the liberalized energy market.

In response to anecdotal evidence showing that these companies were facing major challenges in maintaining their operations and were considering temporary closure, the Organization of Employers of Macedonia (OEM) resolved to conduct a survey on business challenges and needs arising from the crisis. Carried out between 18 October and 8 November 2022 with the support of the International Labour Organization (ILO), 125 enterprises completed the survey. In addition, the survey collected evidence on the experience of enterprises transitioning to renewable energy production. Companies purchasing electricity on the liberalized market (38 per cent of responses) completed the full survey, while companies on the regulated electricity market completed only the section on renewable energy. Two focus group discussions were conducted to give the analysis more depth and shed additional light on some of the survey results. The study was complemented by desk research and comparative analysis of economic support measures implemented in the Western Balkans to mitigate the effects of the energy crisis. The survey findings and comparative analysis will be used as the basis for defining adequate support measures for companies purchasing electricity on the open market.

This report consists of four main sections. The first section captures recent developments in the macroeconomic environment. The second section provides an overview of the energy market in North Macedonia, highlighting its structure and vulnerabilities, as well as the recent changes in the calculation of electricity tariffs. The third section presents an analysis of survey data, shedding light in particular on effects of the crisis on enterprise operations and revenue, while also providing the views of enterprises on existing support measures. The fourth section contains a comparative analysis of government measures to contain the effects of the crisis adopted by Governments in the Western Balkans region. Finally, this report provides two sets of actionable recommendations, with one set aimed at mitigating the effects of the crisis through financial support measures and the other aimed at facilitating the transition to renewable energy production by companies.

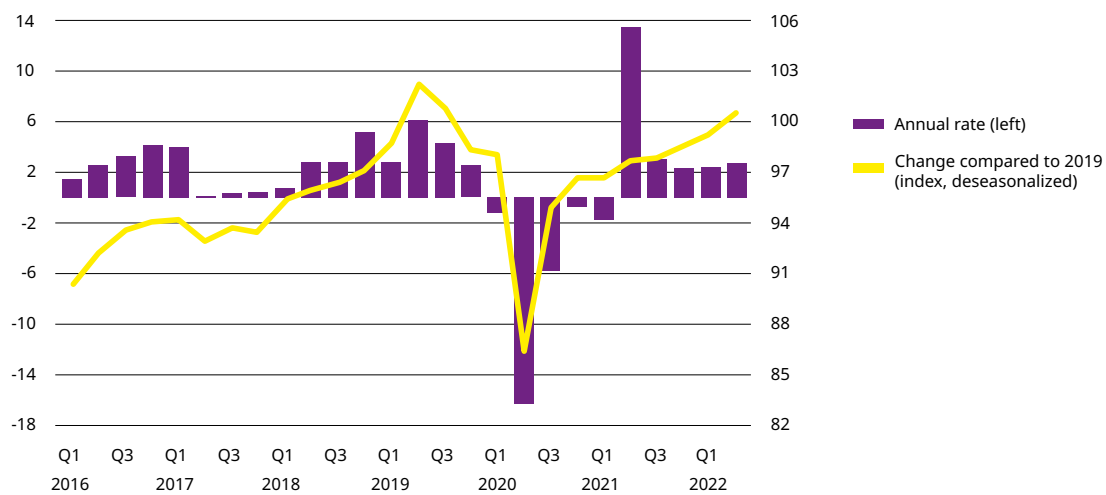
It should be noted that after the roll-out of the survey, the Government of North Macedonia adopted a new package of support measures that transferred all domestic food producers to the regulated energy market and subsidized their electricity consumption to €80/MWh.

1. Recent developments in the macroeconomic environment

Following the 2008 global financial crisis, the economy of North Macedonia experienced a period of steady growth which was then curtailed by the outbreak of the COVID-19 pandemic in 2020. In the years preceding the pandemic, output had grown by an average annual rate of 2.6 per cent, with an inflation rate of 1.5 per cent per year and continuously decreasing unemployment in a context of generally active fiscal policy (an average budget deficit of 2.9 per cent of gross domestic product [GDP]) and an accommodative monetary policy. After the decline in economic activity in 2020 due to the consequences of the COVID-19 pandemic and lockdown measures, the economy recovered in 2021, but it still has not returned to pre-pandemic levels (chart 1).

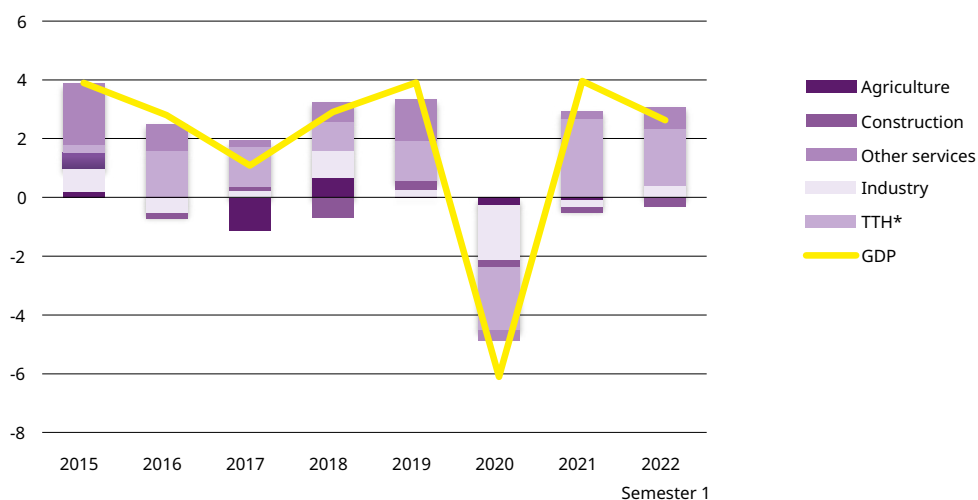
Chart 1. Economic growth (annual rate and base index)

Source: State Statistical Office and author's calculations.



The beginning of 2022 saw output growth fall below potential as the recovery momentum of the previous year faded and the energy crisis hit. Output increased by 2.6 per cent in the first half of 2022, driven by the continued recovery of the trade and service sectors after the lifting of restrictions related to COVID-19. The industry sector also made a positive contribution to economic growth in the same period, but agricultural growth was anaemic, and the construction sector saw a decline (chart 2).

Chart 2. Structure of the economic growth of selected sectors (percentage)



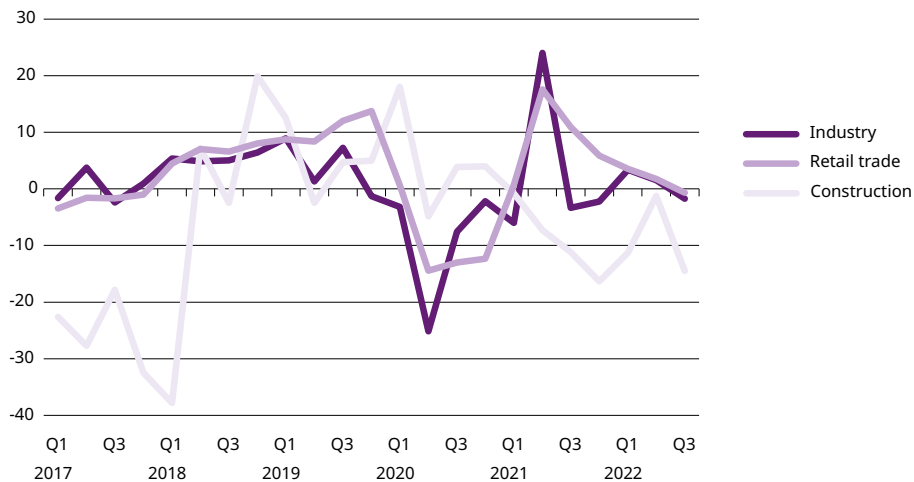
*Trade, transport and hospitality.

Note: 2020 data are preliminary data, and 2021 and 2022 data are estimates.

Source: State Statistical Office and author's calculations.

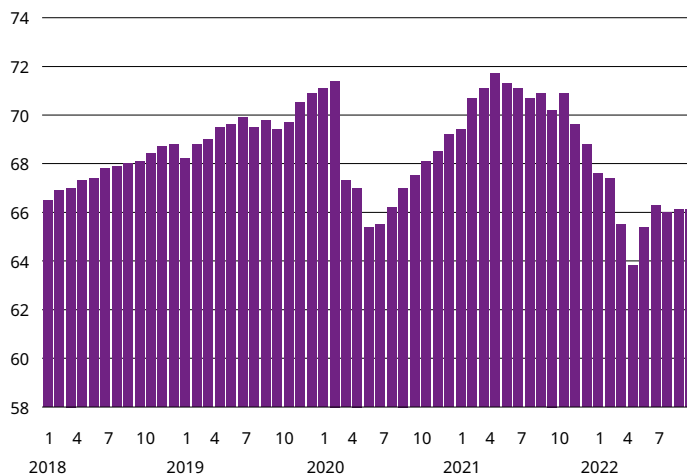
While growth in the first half of 2022 proved to be relatively robust, it slowed down in the third quarter and is likely to have stagnated in the last quarter of the year. In the period July-August, construction recorded a drop of 14.6 per cent on a real basis, as a result of unfavourable developments in civil engineering and reduced capital expenditure. Industrial production decrease by 1.8 per cent in July-September, mostly accounted for by the decline in mining, metal processing, the food industry and the production of tobacco and chemical products. All of these energy-intensive industries are facing serious problems due to the increase in electricity costs. The decline in these industries has been mitigated by positive trends in areas dominated by foreign direct investments, such as the production of machinery, equipment and motor vehicles, combined with improvements in global production chains. Turnover in retail trade in July-September 2022 decreased by 0.7 per cent on a real basis, mostly due to declining trade in food products (chart 3). Capacity utilization in the processing industry during the third quarter of 2022 was at 66 per cent, which is significantly lower than the previous year (chart 4).

Chart 3. Annual real changes in industry, retail trade and construction (percentage)



Note: Calculations per quarter are in accordance with monthly data. Construction data for Q3 2022 refer to data for July and August. Source: State Statistical Office and author's calculations.

Chart 4. Capacity utilization in the processing industry (percentage)



Source: State Statistical Office and author's calculations.

Business sentiment has deteriorated amid the energy crisis. The plunge in business sentiment in October 2022 was the sharpest compared to the same period of 2021 and shows lowered expectations of company managers operating in processing industry and service sector vis-à-vis the economic outlook in the coming months. It should also be noted that business sentiment has not returned to the pre-pandemic level (chart 5).

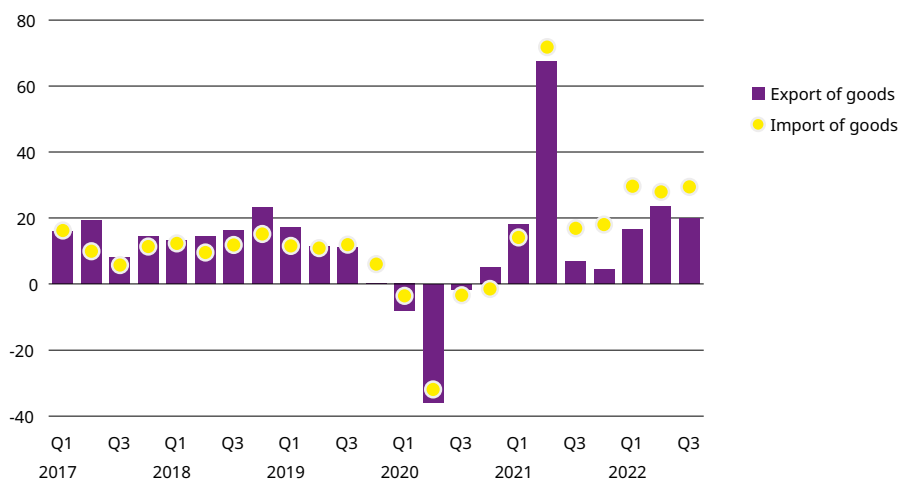
Chart 5. Economic Sentiment Indicator (2018-2022)



Source: EUROSTAT, European Commission.

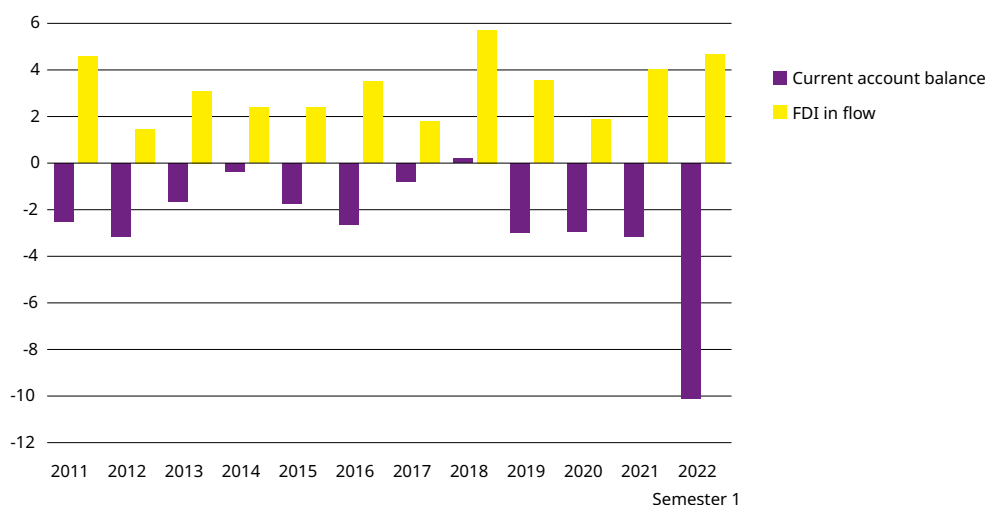
Trade deficit has doubled compared to 2021. The high growth of foreign trade continued in the first nine months of 2022, with a nominal growth of exports and imports of 20.1 per cent (or 28.9 per cent according to data presented in euros) with a significant part of the increased foreign trade attributable to the strong growth of prices (chart 6). The increased exports were driven by the favourable performance of the export capacities of the automotive industry, reflected in the growth in exports of chemical products and road vehicles. On the import side, energy resources (oil and oil products, electricity and gas) accounted for the majority of the growth in imports. The higher growth of prices of imported products adversely affected the trade deficit, which doubled in 2022 compared to the same period of the previous year. The data from the balance of payments in the first half of 2022 indicate a widening of the current account deficit, as a result of the higher trade deficit. This was partially offset by increased transfers from abroad, which covered only 61.2 per cent of the trade deficit in 2022 (compared to 81 per cent in the previous year). Foreign direct investments in the first half of 2022 account for 4.6 per cent of GDP (chart 7).

Chart 6. Annual changes in the export and import (percentage)



Source: State Statistical Office and author's calculations.

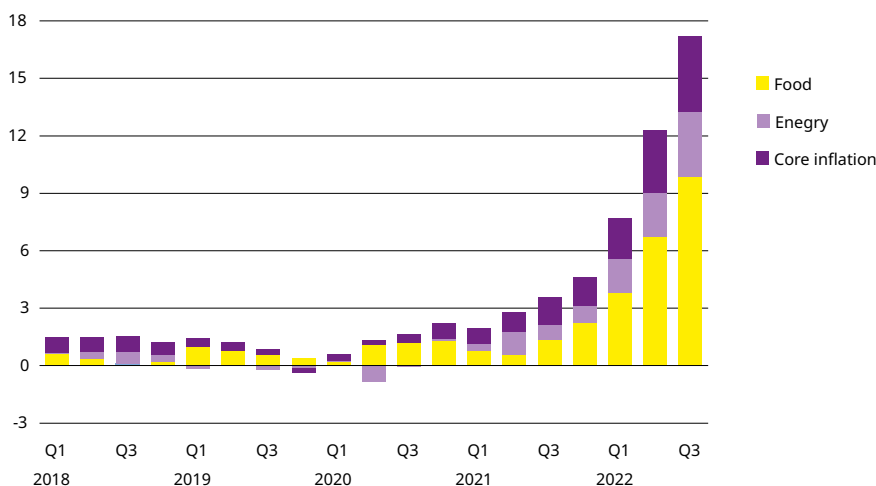
Chart 7. Current account balance and foreign direct investment (percentage of GDP)



Source: The National Bank and author's calculations.

Inflation grew rapidly over the course of 2022, reaching 19.8 per cent on an annual basis in October and amounting to 13.2 per cent for the period of January-October as a whole. This price growth mainly reflected increased import prices caused by disruptions in the global food and energy markets owing to the war in Ukraine. Hence, the food and energy components showed the highest growth in prices, accounting for about three quarters of the increase in consumer prices in this period. Food prices increased by 19.9 per cent, mainly due to increased prices of bread, cereals, milk, cheese, eggs and meat.¹ Energy prices recorded a growth of 19.5 per cent, due to the regulatory increase in electricity prices for households and central heating, as well as higher prices of petroleum products and firewood. Higher prices of food and energy had a knock-on effect on core inflation, which grew by approximately 6 per cent, mostly due to higher prices of food service activities (chart 8).

Chart 8. Contribution of components to annual inflation rate (percentage)



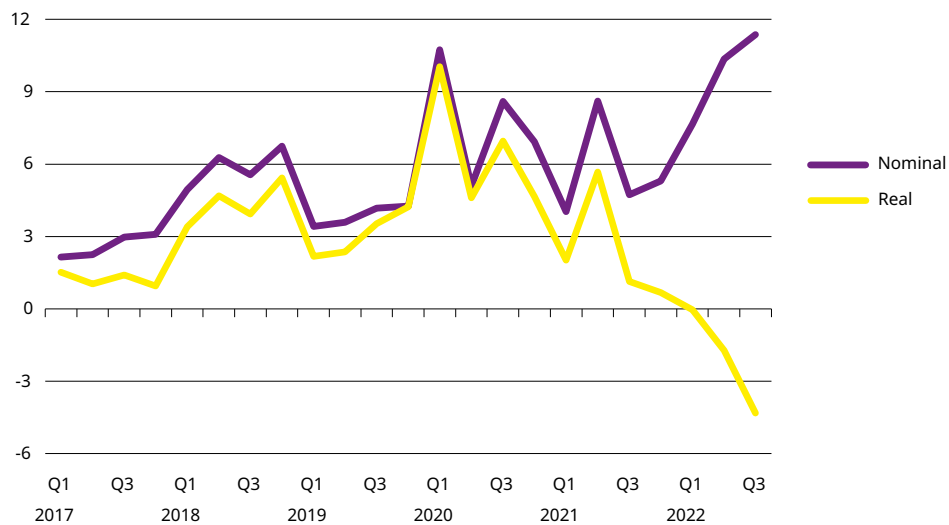
Source: State Statistical Office and author's calculations.

The labour market has remained relatively resilient. Employment increased by 0.4 per cent from the first to the second quarter of 2022, and the unemployment rate decreased to a historical low of 14.5 per cent, accompanied by a decline in the activity rate. The average nominal net wage recorded a growth of 9.6 per cent in the period January-August 2022, which largely resulted from the increase in the minimum wage that was enacted in April 2022. Hence, there was a

¹ In order to mitigate rising prices, the Government adopted the following temporary measures: limitations on prices, further limitations on trade margins and reduction of the value added tax (VAT) rate of staple foods, reduction of the VAT rate for the sale of certain energy resources, as well as the excise duty, abolition of the customs duty for the import of edible sunflower oil, milk and cream and restriction of exports of certain products. Concerning electricity, in September, the Government made a determination of the highest trade margin, and at the end of October, the Government decided to subsidize the price for producers of staple foods.

high growth in wages in the hospitality and processing industries, areas in which wages are lowest. However, due to high inflation, real wages recorded a drop of 1.8 per cent (chart 9).

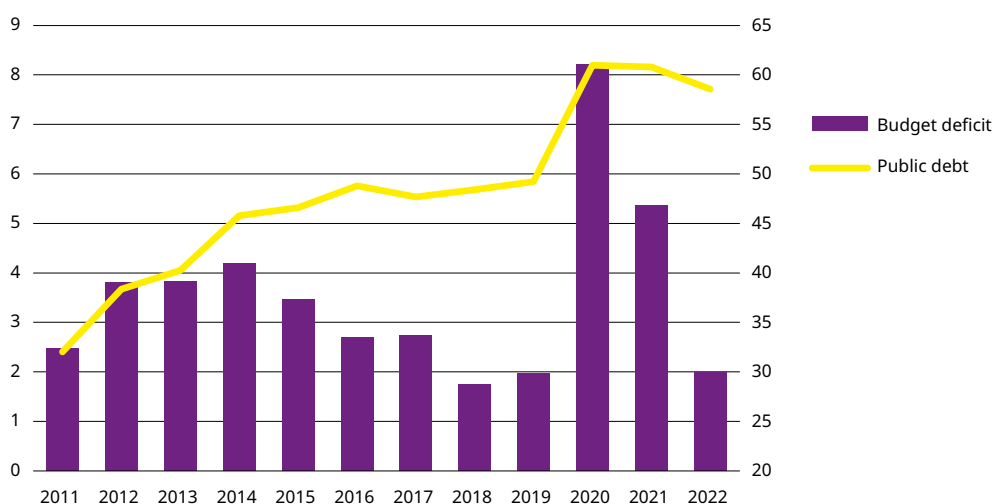
Chart 9. Annual change in the average net wage (percentage)



Note: Salary data for Q3 2022 refer to the period July-August.
Source: State Statistical Office and author's calculations.

After strong fiscal loosening in 2020 in the form of four packages of economic measures as a response to the COVID-19 crisis, the budget deficit narrowed in 2021 and 2022², a trend that is expected to continue in 2023³. Budget revenues in the first nine months of 2022 increased by 13 per cent, and growth in all types of tax revenues and social contributions was noted, with the exception of excise duties which remained unchanged. Budget expenditures recorded a growth of 6.6 per cent, resulting in a narrowing of the budget deficit by almost 35 per cent, corresponding to 2 per cent of the projected GDP. Capital expenditures recorded a drop of 4.6 per cent, while current expenditures increased by 7.5 per cent. After stabilizing in 2021, the public debt (as a share in GDP) decreased by 2.2 percentage points in September 2022 as compared to the end of 2021, amounting to 58.6 per cent of the projected GDP (chart 10).

Chart 10. Budget deficit and public debt (percentage of GDP)



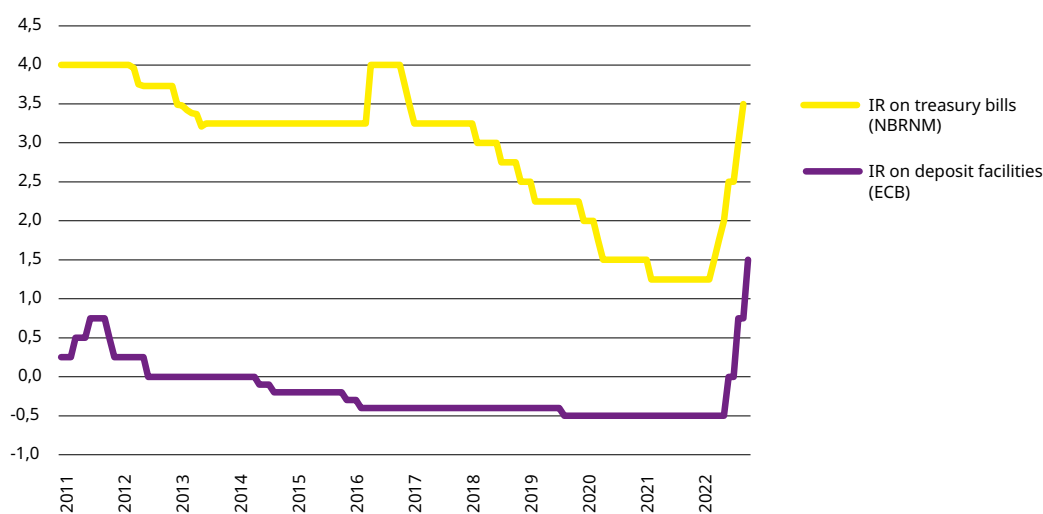
Source: Ministry of Finance.

2 In July, a rebalancing of the budget was adopted ([link](#)), according to which the planned budget deficit was corrected from 4.3 per cent to 5.3 per cent of GDP, and in November, a decision was adopted on the redistribution of funds between the budget users of the Government and between funds ([link](#)), according to which €61 million was provided to tackle the energy crisis.
3 In accordance with the budget proposal of North Macedonia for 2023 ([link](#)), adopted by the Government.

In the course of 2022, the Government adopted a series of measures to mitigate the effects of the energy crisis and high inflation, some with fiscal implications and some without. Some of the measures affect budget revenues, while others have an impact on expenditures. Some measures are broad, in the sense that they have a general impact on prices, while others are targeted to bolster the purchasing power of the most vulnerable groups in the population.⁴

Monetary policy tightened amid rising inflation. In response to growing inflation, the central bank announced an increase in the base interest rate in April 2022. This signified a change in monetary policy direction. By October, the interest rate on treasury bills had increased by a total of 2.25 percentage points to the level of 3.5 per cent. This policy was supported by changes in the mandatory reserve aimed at reducing euroization, while also encouraging loan financing projects for renewable energy sources. In line with the strategy of a fixed exchange rate in relation to the euro, these monetary policy changes largely reflect those of the European Central Bank (ECB) (chart 11). Despite the tightened monetary policy, the growth of credit activity continued at a strong pace. In September 2022, this amounted to almost 10 per cent on an annual basis, with lending to enterprises growing by 12.6 per cent and to households by 7.6 per cent. Total deposits in September 2022 recorded an annual growth of 3.4 per cent, as a result of increased foreign currency deposits.

Chart 11. Base interest rate of the National Bank of North Macedonia and European Central Bank



Source: National Bank and ECB.

The prospects for economic growth have significantly worsened. This is mainly based on: (i) the high and long-term increase of food and energy prices, which have reduced the purchasing power of households and significantly increased the operating costs for enterprises; (ii) the tightening of monetary policy in order to deal with inflation pressures, which limits credit activity; (iii) the significant narrowing of the fiscal space after the measures undertaken to deal with the pandemic and the energy crisis, with financing becoming increasingly expensive due to the tightening of global financial conditions; (iv) the unfavourable geopolitical situation negatively impacting investor and consumer confidence; and (v) the constraining of foreign trade due to deteriorating economic growth expectations among trading partners, as well as continued disruptions in global supply chains. All of the above pose new challenges for policymakers.

⁴ The latest package of measures is available at the following [link](#).

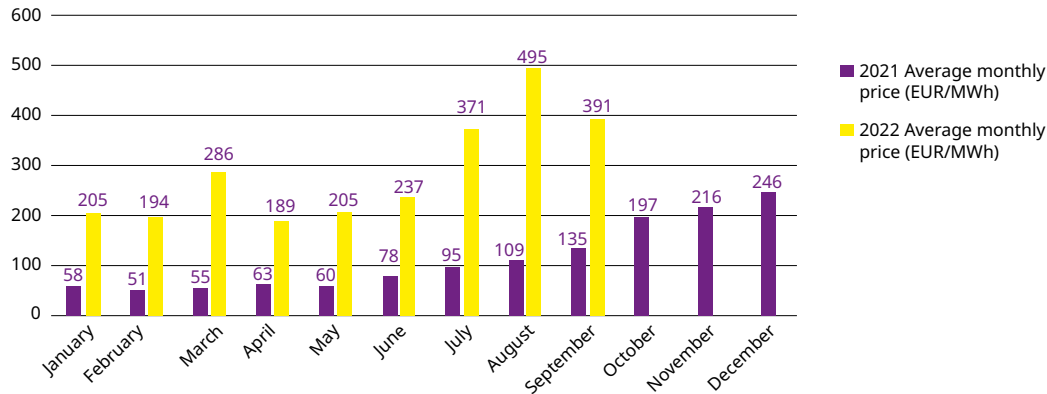
2. The energy market in North Macedonia

The energy mix of North Macedonia is dominated by domestic thermoelectric power plants mostly using lignite, fuel oil and natural gas for electricity production. The state-owned plant, AD ESM, accounted for 62 per cent of the entire electricity production in 2021, followed by TE-TO AD Skopje with 28 per cent, EVN power plants with 3 per cent, and other plants with approximately 7 per cent. Renewable energy (other than hydropower plants) made up only 4 per cent of the entire energy production of the country in the same period.

The wholesale electricity market is fully liberalized, while the regulated electricity market is overseen by the national electricity market operator, MEMO. Wholesale electricity is sold by way of bilateral agreements, and the balancing energy market has been operational since January 2021. The wholesale electricity market was divided in 2021 among EVN Trade (with a 22 per cent market share), TE-TO AD Skopje (with 35 per cent), and GEN (with 15 per cent), with other operators accounting for 28 per cent of the market. AD MEPSO Skopje, a fully state-owned company, is the sole operator of electricity. Regarding electricity distribution, Elektodistribucija DOOEL Skopje, which is part of EVN, accounts for 99.4 per cent, while AD ESM accounts for only 0.6 per cent. During 2021, 18 electricity suppliers were active on the free retail market, supplying both large and small consumers. EVN Supply accounted for 32 per cent of the market, EDS for 20 per cent, EFT for 17 per cent, and other smaller suppliers for 31 per cent.

Electricity consumption in 2021 recorded a growth of 6 per cent compared to the previous year, demonstrating that the economy has recovered from the effects of the COVID-19 pandemic. Regarding the structure of electricity consumption, it should be noted that the 14 largest companies that are included in the transmission system account for 13 per cent of consumption, with 54 per cent accounted for by electricity consumers through the universal supplier, and 33 per cent accounted for by other consumers. On a different but related note, electricity prices have increased significantly for households and small consumers as shown in chart 12.

Chart 12. Comparison of monthly average electricity prices at the energy exchange in 2021 and 2022



Note: The prices of the HUPX are used as reference when establishing the trading price of electricity for the companies that are supplied with electricity on the open market in the country and in the region.

Source: HUPX.

With the aim of incentivizing energy saving, the 2022 decision of the Regulatory Commission for Energy and Water Services (ERC) made changes to the methodology for calculating electricity prices for households and small consumers. Specifically, the price each household pays for electricity is determined by their monthly consumption of energy during peak times. The comparison of electricity prices for households and small consumers in the period from August 2020 to July 2022 is shown in table 1. Four blocks were introduced to the peak load tariff:

1. Consumed electricity to 210 kWh;
2. Consumed electricity from 211 kWh to 630 kWh;
3. Consumed electricity from 631 kWh to 1050 kWh;
4. Consumed electricity over 1051 kWh.

With the new methodology, households will be charged additionally for grid distribution costs, which will be added to each tariff. The grid fee, that is, the distribution fee, has also increased in the last two years together with electricity prices, rising by 48.4 per cent between 1 August 2020 and 1 July 2022.

Table 1. Comparison of electricity price by category according to decisions of the ERC, by date (MKD/kWh)

Category	1/7/2022	31/12/2021	1/7/2021	1/8/2020
Households TIME-OF-USE tariff (peak load tariff 1)	4,3484	7,3200	6,6900	5,9500
Households TIME-OF-USE tariff (peak load tariff 2)	4,7017	\	\	\
Households TIME-OF-USE tariff (peak load tariff 3)	5,2877	\	\	\
Households TIME-OF-USE tariff (peak load tariff 4)	14,1025	\	\	\
Households TIME-OF-USE tariff (off-peak load tariff)	0,6193	3,6700	3,3600	2,9900
Small consumers (peak load tariff)	13,8204	11,4100	10,4200	9,2700
Small consumers (off-peak load tariff)	10,1348	\	\	\
Distribution fee	2,6237	2,4570	1,767	1,768

Source: Author's presentation based on ERC data.

The total prices per kWh that households and small businesses will pay according to the new price calculation methodology are shown in table 2. No analyses have yet been made on what percentage of households fall into each of the four block rate tariffs, and therefore on the potential energy saving impact of the measure.

Table 2. Comparison of electricity price per categories according to decisions of the ERC, by date, including distribution fee in tariff categories (MKD/kWh)

Category	1/7/2022	31/12/2021	1/7/2021	1/8/2020
Households TIME-OF-USE tariff (peak load tariff 1)	6,9721	7,3200	6,6900	5,9500
Households TIME-OF-USE tariff (peak load tariff 2)	7,3254	\	\	\
Households TIME-OF-USE tariff (peak load tariff 3)	7,9114	\	\	\
Households TIME-OF-USE tariff (peak load tariff 4)	16,7262	\	\	\
Households TIME-OF-USE tariff (off-peak tariff)	3,243	3,6700	3,3600	2,9900
Small consumers (peak load tariff)	16,4441	11,4100	10,4200	9,2700
Small consumers (off-peak load tariff)	12,7585	\	\	\

Source: Author's presentation based on ERC data.

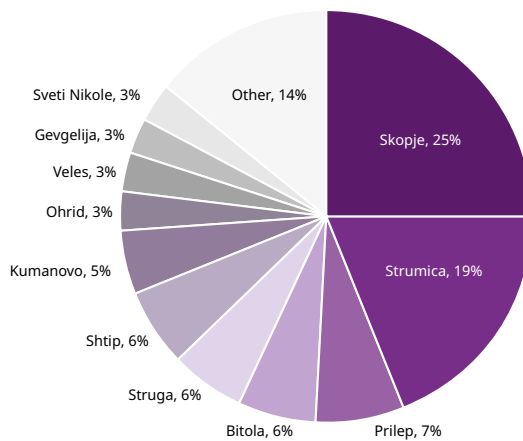
In order to reduce electricity costs, some companies, including public enterprises at the municipal level, have engineered a move to the regulated energy market by dividing companies into several smaller organizational units. A large number of medium and small companies that were previously on the open market transitioned to the regulated energy market by re-registering as several smaller companies, motivated by the lower prices on the regulated market. This transition may have harmful consequences for the overall energy balance, and the Government needs to react by setting out comprehensive measures for all companies in this regard. At the beginning of 2022, ERC was the first institution to identify the manipulative behaviour of some of the companies that had switched from the free to the regulated market, promptly informing the relevant institutions that took appropriate measures.

3. Impact of the energy crisis on companies

3.1 Profile of surveyed companies

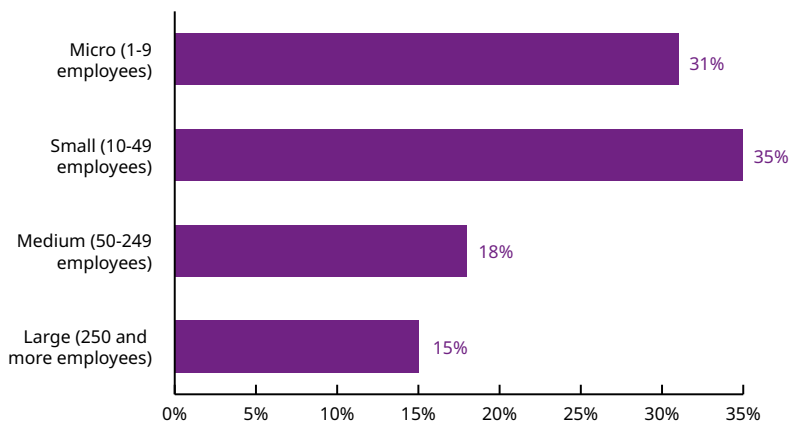
The largest proportion of surveyed companies are based in Skopje (25 per cent), followed by Strumica (19 per cent), Prilep (7 per cent) and Bitola, Shtip and Struga, each participating with 6 per cent (chart 13). Eighty-two per cent of survey responses came from companies under domestic ownership, with one company being state-owned and the remainder foreign-owned.

Chart 13. Geographic distribution (percentage of all surveyed companies)



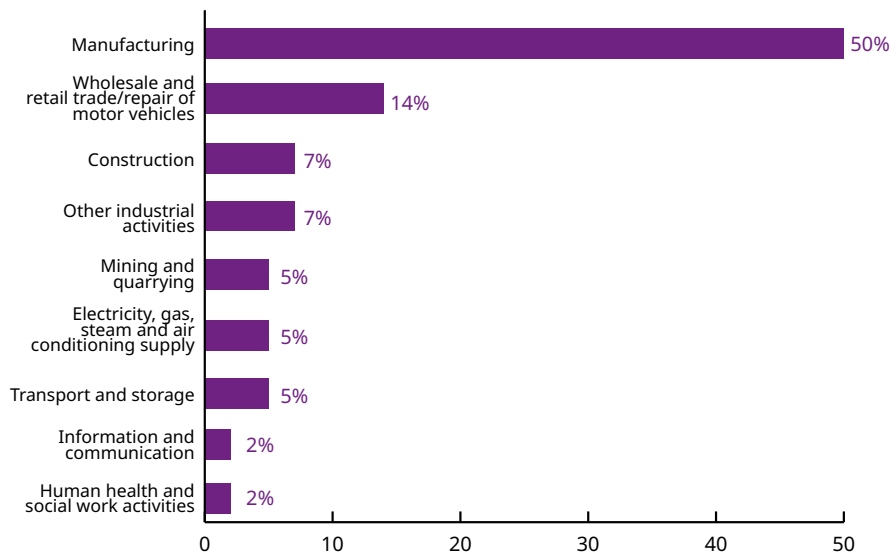
About one third of respondents (42 companies) are large and medium-sized enterprises, currently supplied with energy on the liberalized market (chart 14).

Chart 14. Distribution by size (all surveyed enterprises)



Of companies supplied with electricity on the open market that responded to the survey, the largest shares operate in the manufacturing (50 per cent) and trade sectors (14 per cent), followed by construction and other industrial activities (both with 7 per cent). Companies in the mining, electricity supply, and transportation and storage sectors account for 5 per cent each (chart 15).

Chart 15. Distribution of medium and large enterprises by sector (percentage of respondents)



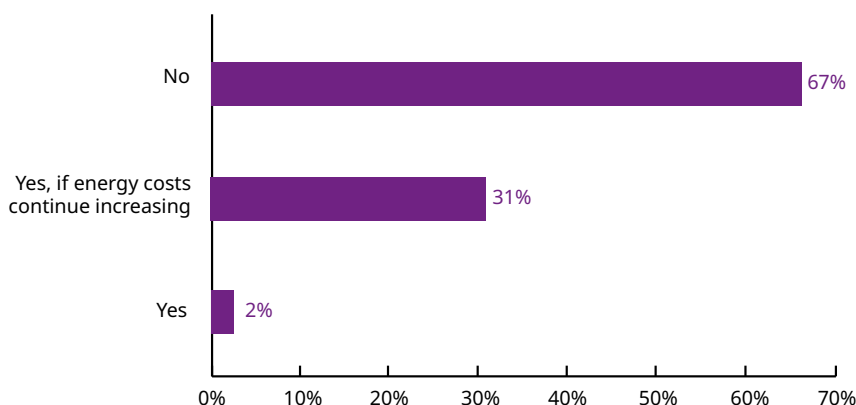
The average profit of the companies that participated in the survey was €3.57 million. Most of the surveyed companies (53 per cent), had an annual income of over €10 million in 2021, with 13 per cent and 20 per cent of participants reporting an income of between €5 million and €10 million and less than €2 million respectively.

3.2 Effects on company operations and revenue

This section contains an analysis of the responses from medium and large enterprises that are directly exposed to fluctuations on the liberalized energy market. Although these companies account for 53 per cent of the total added value and 43 per cent of employment, so far they have not been included in the economic support measures adopted by the Government.

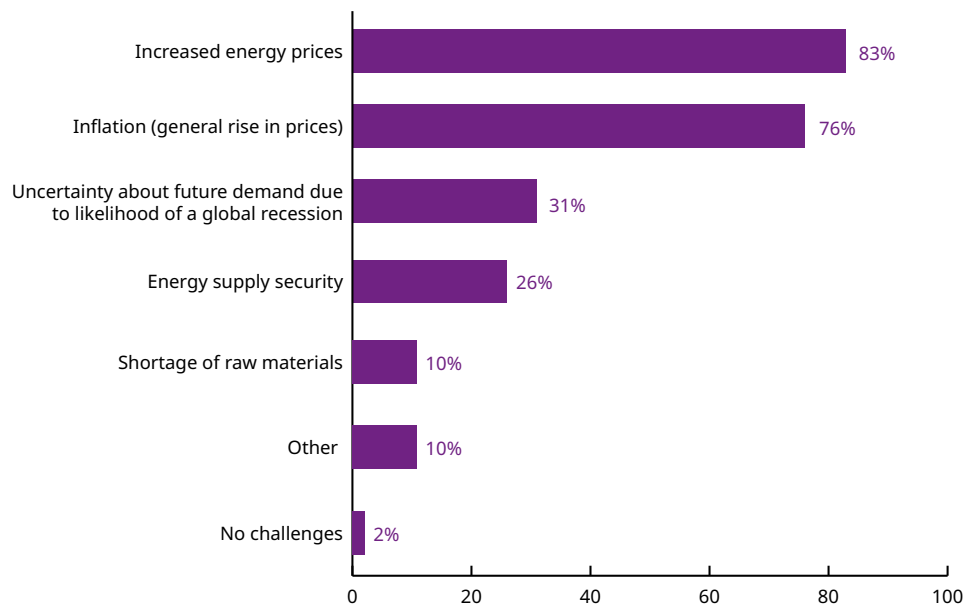
Despite all companies bar one being in operation at the time of the survey, the situation is likely to deteriorate with one third of companies considering temporary closure if energy costs do not decrease or if support from the Government is not provided (chart 16). The outlook for profitability also looks gloomy with more than half of surveyed companies (55 per cent) anticipating that they would fall well short of their profit targets.

Chart 16. Business sentiment on whether temporary closure is being considered in the event of no improvement in energy prices



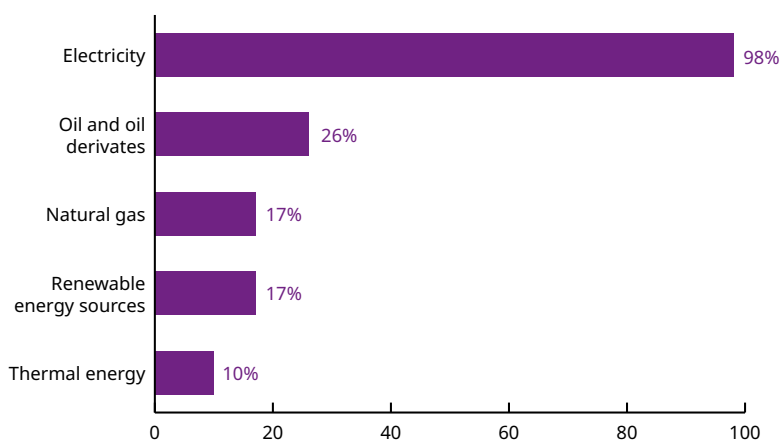
The spike in energy prices and the resulting increase in inflation were identified by an overwhelming 83 per cent and 76 per cent of respondents respectively as the two most acute challenges facing companies purchasing electricity on the open market. About one third of respondents (31 per cent) expressed concern regarding the prospect of a global recession, with another quarter of respondents (26 per cent) citing the security of the energy supply as a major threat to their businesses (chart 17).

Chart 17. Most acute challenges for company operation



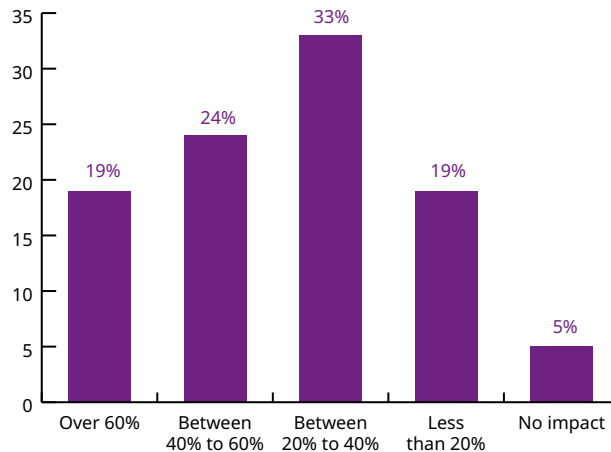
The cost of electricity in proportion to operating costs has multiplied by between 3 and 5 times within a year. Survey data indicate that energy costs were responsible for 10 per cent of total operating costs in 2021, with this share increasing to 17 per cent by the time of the survey. Insights from focus group discussions revealed that the share of energy costs in the total operating costs of companies had increased by about three times (for example, from 2.2 per cent to 7.4 per cent in the textile industry) if companies generated their own energy from renewable sources, or by up to five times if the supply of electricity depended solely on the open market. The impact of the increase in energy prices on enterprises therefore varies depending on the sector, on energy efficiency opportunities and on the type of energy supplied to the enterprise. The survey showed that electricity is used by almost all survey respondents (98 per cent) with some supplementing it with electricity from other sources, such as oil (26 per cent), natural gas and renewable energy (with 17 per cent each), and thermal energy (10 per cent) (chart 18).

Chart 18. Energy type used by companies



The rise in energy costs has dramatically driven up the operating costs of companies. A third of respondents (33 per cent) reported an increase in operating costs ranging between 20 and 40 per cent. A quarter (24 per cent) estimated that the increase varied between 40 and 60 per cent, while 19 per cent indicated an increase in costs below 20 per cent, and an equal proportion reported a rise of more than 60 per cent. A small minority of companies (5 per cent) were not impacted by the increase in energy costs. Focus group participants expressed concern vis-à-vis the increase in the cost of various energy sources, such as vehicle fuel or methane (the latter having increased in cost threefold since 2021) which increases the cost of road transport and negatively impacts exporting companies (chart 19).

Chart 19. Impact of the increased energy costs on operating costs



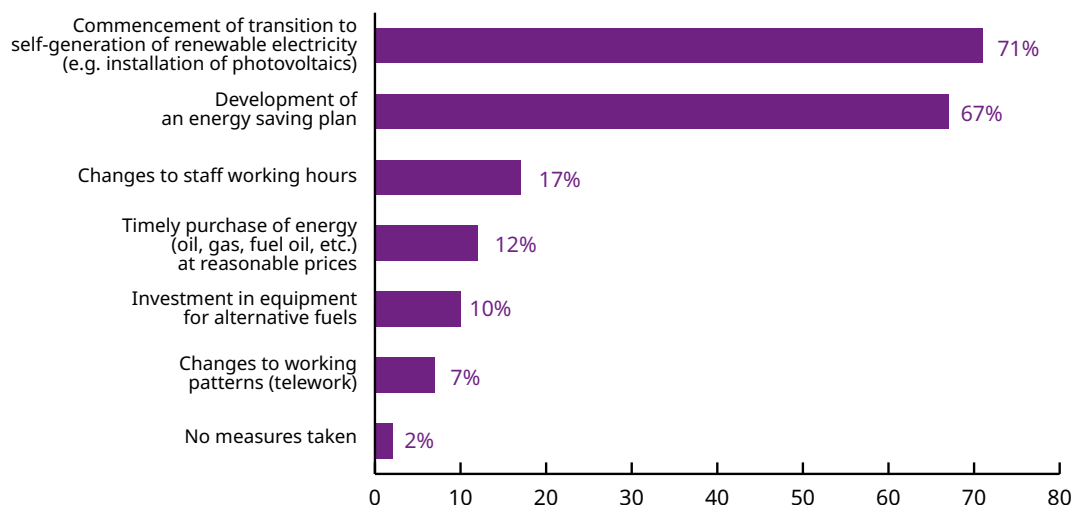
Coping with increasing competitive pressure to retain foreign markets is close to becoming an unattainable goal.

Focus group participants explained that their competitive capacity has been affected by regional disparities in electricity prices, and by lower energy costs in some countries in the European Union. For instance, in some of the neighbouring countries, the price of electricity is lower owing to the fact that they are not import dependent (such as Bosnia and Herzegovina, Montenegro), or because the cap is set at a relatively low level (such as €86/MWh in Serbia). Hence, companies see themselves as being inexorably excluded from international markets. According to some focus group participants, for example, companies in the metal processing sector in the European Union benefit from more affordable energy prices than their counterparts in North Macedonia. Another challenge affecting enterprise competitiveness is the increase in wages, including the minimum wage. Companies considering temporary closure due to high energy costs are facing a dilemma as to how to preserve their workforce during the shutdown. Dismissing staff in an increasingly tight labour market may prove prohibitively expensive, and it could backfire once market activity resumes.

The current crisis has accelerated the uptake of renewable energy technologies for independent electricity generation.

A large majority of respondents (71 per cent) had initiated such activities at the time of the survey (for example, installation of photovoltaics). Regarding other mitigation measures, 67 per cent of respondents had developed an energy saving plan, and 17 per cent had adjusted staff working hours. Overall, almost all companies (97 per cent) had taken various measures to mitigate the effect of increased energy prices (chart 20).

Chart 20. Measures taken to mitigate the effect of rising energy prices

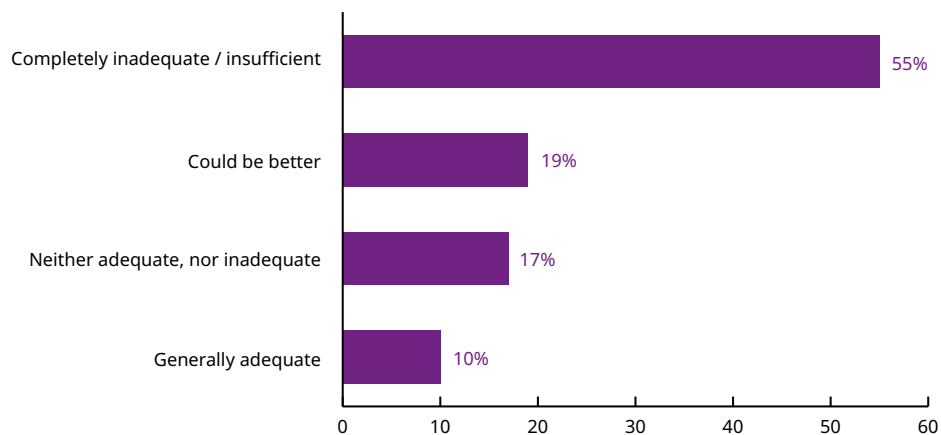


3.3 Company assessment of government support measures

This section is based on the results of the survey that were collected in the period before the adoption of the Government's package of measures, which transferred all companies from the food sector, irrespective of their size, to the regulated energy market. However, as in the previous section, the analysis focuses on the responses from companies purchasing electricity on the open market.

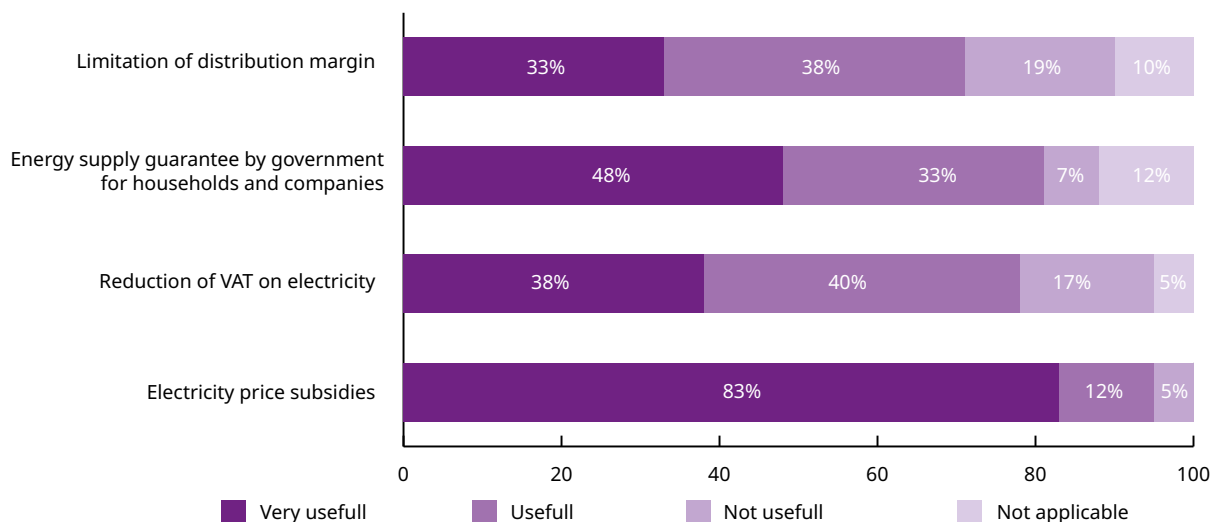
More than half of surveyed companies (55 per cent) stated that the existing support measures were neither sufficient nor adequate. Almost a fifth (19 per cent) were of the opinion that the measures could be improved, while another 17 per cent found them neither adequate nor inadequate. Only 10 per cent of respondents were satisfied with the existing support measures (chart 21).

Chart 21. Company views on government support measures



Among all types of support, subsidizing the electricity price was the highest ranked measure in the view of 95 per cent of survey respondents. The second highest ranked measure concerns energy security, with 81 per cent of respondents requesting a guarantee from the Government to provide sufficient energy to households and businesses during the crisis period. A reduction in VAT on electricity was rated as relevant by 78 per cent of respondents, with another 71 per cent opted for a cap on distribution fees. With regard to subsidies, a large proportion of respondents (79 per cent) proposed subsidizing the price of electricity above the threshold of €200/MWh. Some respondents were of the opinion that it was necessary to set an upper threshold (price cap) on the cost of electricity, but at a much lower level than €200/MWh, based on a comparison of the electricity prices in North Macedonia and those in neighbouring countries. Focus group participants supported the proposal to subsidize the price of energy (above a certain agreed cap), but they believed that the cap should be set at an even lower level, at a maximum of €150/MWh (chart 22).

Chart 22. Support measures for companies to overcome the energy crisis



Survey respondents put forward several additional proposals that would help them to better navigate the energy crisis. The first set of measures refer to business environment predictability, which needs to be improved to allow enterprises to adapt their operations within the time provided to comply with new laws and regulatory changes. They requested that there be no amendments to legislation that would come into force quickly and/or that would incur huge costs, such as software changes (as is the case with margin restrictions or changes in VAT rates). The second set of proposed measures refer to labour legislation flexibility, with respondents from the trade, accommodation and food services sectors asking, among other things, for amendments that would allow companies to hire young people (over the age of 16) following the example of other countries. Finally, the third set of measures are related to enabling conditions and simplified investment procedures for the development of private infrastructure for the production of renewable energy.

Finally, surveyed enterprises brought into stark relief the fact that additional support is needed and should be provided as a matter of urgency if they are to survive the upheaval. After COVID-19, companies are now facing another major shock. With depleted financial reserves, companies can hardly stay afloat and are likely to be forced to close if immediate support is not forthcoming. Electricity costs are very high, which only adds to price increases and high costs for social contributions, making it more difficult for companies to invest in self-generated energy. Thus, a more enabling environment, including better access to financing, is needed to facilitate private investment in renewable energy infrastructure.

3.4 Obstacles to the transition of companies to renewable energy production

This section provides an analysis of the views of all survey respondents on existing trends and obstacles in transitioning to renewable energy production.

High energy costs accelerated private investments in the development of renewable energy infrastructure by companies. According to the report of the ERC for 2021, in previous years, an average of about 20 companies annually submitted requests for a licence to generate electricity from photovoltaics, while in 2022, 180 requests were received. In 2021, photovoltaic power contributed 0.97 per cent to the production of electricity from renewable sources.

The regulation and procedure for developing infrastructure to produce electricity from renewable energy sources depends on a range of specificities. Three models can be differentiated according to such peculiarities as type of economic entity (household or company, including company size), technology, power generation capacity, technical capabilities of the transmission/distribution grid in the area, roof construction or land, and so on. Box 1 explains in detail the possible models for independent renewable energy production, and Annex 1 explains in detail the regulations and procedures for each model.

Box 1. The current legislation prescribes several models for independent renewable energy production

Model 1. The consumer-producer (prosumer) of electricity. This category encompasses households, collective residential buildings, small businesses and public institutions that install photovoltaic power stations or small wind turbines to generate electricity for their own needs. This model is designed for limited capacity – up to 6 KW for households and 40 KW for businesses – after installation. The installation procedures for these electricity generators are simple and do not require a generation license from the ERC.

Model 2. The “holder of an electricity generation license without limitation of the capacity of the renewable energy plant”. This means that a legal entity can generate electricity for its own needs based on an electricity generation license. Excess electricity can be sold on the wholesale electricity market. The complexity of the procedure for obtaining an electricity generation license depends on the technology, the power generation capacity and the technical capabilities of the transmission/distribution network in the area where the photovoltaic station is to be installed.

Model 3. TOff-grid photovoltaic power production. The specific feature of this model is that it has an energy storage capacity and is not connected to the distribution/transmission grid. With this model, households or legal entities gain more independence, relying on self-generated electricity and the storage of excess electricity in a battery system. This model does not require an electricity generation license. As a sub-variant of this model, there might be a system without batteries, but without connection to a distribution/transmission grid. In general, this model is suitable for locations where the distribution/transmission grid is overloaded and/or connection costs are very high.

The procedure for independent renewable energy production is very complex and includes several steps that differ according to the investment model. Diagram 1 shows the necessary steps for the construction of photovoltaic power stations and the competent institutions involved in the process. The collected views from companies refer to model 2 and 3,

Diagram 1. Model 2 - Necessary steps for the construction of photovoltaic power stations

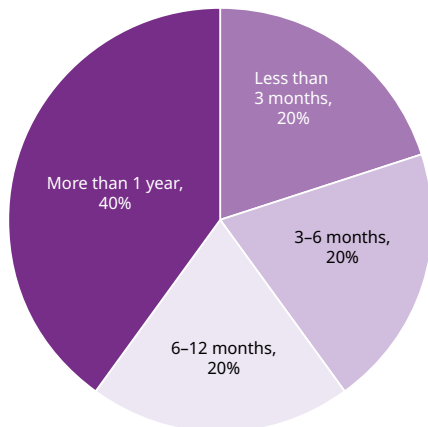


Of survey respondents, 36 per cent (45 companies) have initiated procedures for developing the infrastructure for the production of own energy from renewables. The photovoltaic power stations are dominating among all renewable technologies. Some focus group participants mentioned having started building their own hydropower facilities. The procedure for setting up the renewable technologies varies depending on the company profile, as well as the place where the system is installed (for example on company's premises or nearby land/area (Annex 1)). Of companies that launched the procedure for installing photovoltaic power stations, 16 per cent were requested to convert the land intended for use of other activities into land for the construction of facilities for renewable energy infrastructure. For another 84 per cent, this procedure was not needed as the stations were installed on land for construction or in the production facilities or on the roofs of company-owned buildings.

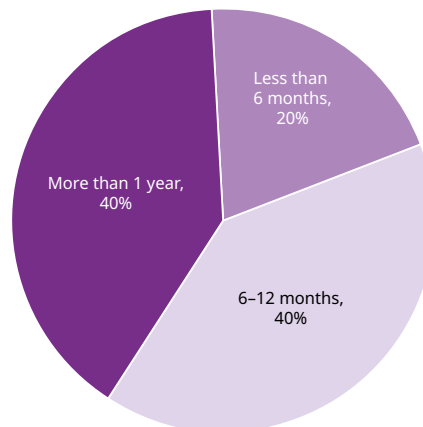
Administrative procedures for land conversion approval are time-consuming and cumbersome. Some 60 per cent of respondents reported there were no clear instructions on the steps to follow for land conversion procedures in the municipalities where they operate. In 40 per cent of cases the procedure lasted more than one year (chart 23 a). After completion of the conversion procedure, the next stage is the modification of the detailed urban plan or its approval by the municipality, which is also lengthy. In 40 per cent of the cases it lasted more than one year, and in an additional 40 per cent of cases, it lasted 6-12 months. In the remaining 20 per cent of cases, the procedure was completed in a period of 3-6 months (chart 23 b). The procedure for obtaining a building permit in time is also consuming. For 40 per cent of respondents it lasted more than 1 year, and in an additional 42 per cent, it lasted 6-12 months.

Chart 23. Duration of procedures for...

a) Land conversion into construction land



b) Modification/approval of the detailed urban plan

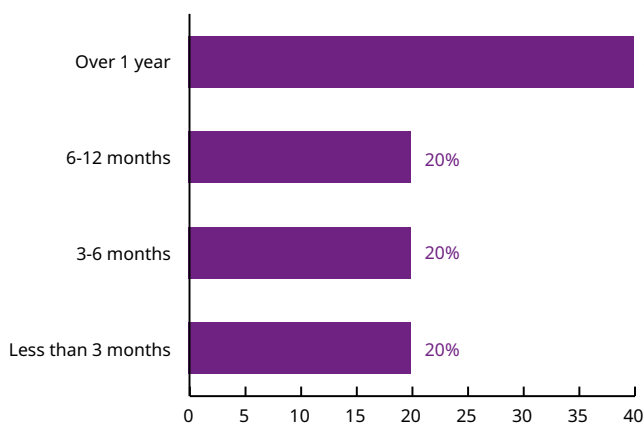


The entire process, which includes obtaining the land conversion certificate, building permit, grid connection and production licence, will take at least one year in the best-case scenario, but may exceed three years (chart 24.a). The process largely depends on the efficiency of responsible municipal authorities (clear lines of accountability, available human resources, and so on) and having clear guidelines on the procedures in place. More than half of the companies that have fully completed the procedure paid a utility fee, while 46 per cent of the companies have not yet reached the final stage. The survey shows that municipality authorities charge the utility fee disproportionately, with some companies being charged while others are not. This fact highlights the inconsistency of the process. Focus group discussions revealed some paradoxical situations with the utility fee charged from companies which have installed the photovoltaic panels on the roof structures of their companies. In several municipalities, unresolved property and legal issues are a major obstacle to investing in renewables (for example, installing photovoltaics over parking lots).

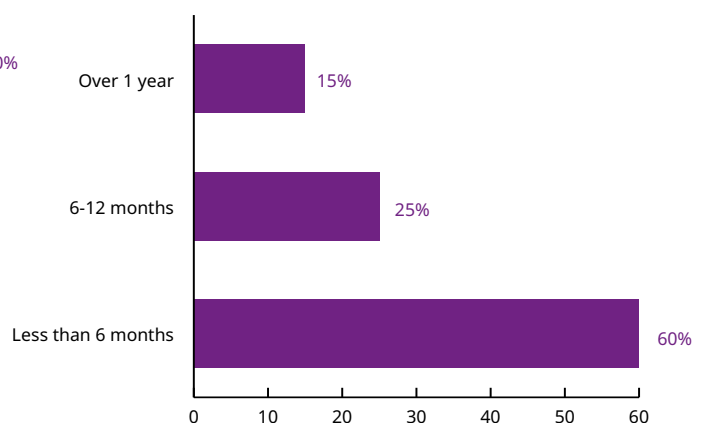
More than 60 per cent of survey respondents that had initiated a procedure for independent renewable energy production had also initiated a procedure to connect photovoltaic power stations to the distribution operator EVN, as well as the transmission operator MEPSO. The largest majority (78 per cent) of respondents declared that they received clear instructions from EVN and MEPSO regarding the procedure in place for obtaining the consent to connect a photovoltaic station to the distribution/transmission grid. Three quarters of the respondents had already obtained the consent to connect, the majority of which completed the process in a period of less than 6 months (60 per cent). A quarter of the respondents completed the procedure in a period of 6-12 months (chart 24 b).

Chart 24. Duration of processes for ...

a) Obtaining building permit by the Ministry of Transport and Communications



b) Obtaining consent to connect to the EVN/MEPSO systems



More than half of the respondents (55 per cent) applied for an electricity generation license from the ERC. The largest majority of respondents (80 per cent) said they received clear guidelines from the ERC in this respect. Two thirds of companies that applied for a licence managed to obtain it within a period of 3–6 months. For some 15 per cent of respondents the process lasted 6–12 months, while the process was surprisingly short for about a quarter (23 per cent) of respondents who obtained the licence in less than a month.

Companies need simplified procedures and better access to financial support to adopt renewable energy. The survey respondents clearly voiced the need for a more enabling environment to facilitate private investment in renewable energy. Companies need clear information on the procedures for investing in renewable energy. Some companies seek funds (government or credit lines) to support investments in photovoltaics and other renewable energy sources. Companies that have already started the investment process advocate for the simplification of the procedure and accelerating all phases of it (from conversion of land to consent for connection to the electricity network, including by providing a connection from EVN/MEPSO, such as cabling and substation).

4. Comparative analysis of government support measures in North Macedonia and Western Balkans

Since declaring a state of emergency, the Government of North Macedonia has adopted two packages of measures to protect households and companies from the energy crisis and rising prices. A state of crisis in the electricity supply was declared by the Government on 9 November 2021, which was extended by the Assembly of North Macedonia until 9 June 2022. In this period of crisis, the Government took several measures and provided significant subsidies to the participants in the electricity market. There is no officially available data on the amount of direct and indirect subsidies in the electricity market, however, government officials cited the amount of €172 million during 2022 (until mid-October). Throughout this period, the Government provided protection against rising prices for households and micro- and small enterprises, by providing subsidized prices for the so-called regulated electricity market. However, medium and large enterprises are supplied with electricity on the liberalized market, and they are directly exposed to electricity price changes in the global stock markets.

The price of electricity in North Macedonia increased in 2022 compared to 2021 for households and small enterprises, although the exact size of the increase depends on particular tariffs and blocks (see section 3). In accordance with the new methodology for calculating the electricity price for households and small business consumers, the electricity price in September 2022 was reduced in the off-peak tariff by 3.48 per cent compared to September 2021, while the price in the peak demand tariff increased. In September 2022, peak demand tariff 1 increased by 4.22 per cent, peak demand tariff 2 increased by 9.50 per cent, peak demand tariff 3 increased by 18.26 per cent, while peak demand tariff 4 increased by 150 per cent, compared to the single peak demand tariff in September 2021. As for small business consumers, the electricity price on the regulated market increased by 34.93 per cent in September 2022 compared to the same period in 2021. However, this increase in prices on the regulated market is insignificant compared to the increase in the electricity price on the open market, where prices on the HUPX energy exchange rose by 189.67 per cent, compared to the same period in 2021.

In March 2022, the Government adopted a package of 26 measures aimed at slowing down the spillover effect of imported inflation on domestic products. The package included measures and recommendations to protect the standard of living of citizens and maintain the liquidity of companies, as well as measures for financial support of companies through the Development Bank of North Macedonia (DBNM), estimated at €400 million. In addition, measures were implemented aimed at mobilizing capital from the private sector, that is, commercial banks, with expected overall effects of around €500 million. At the same time, the anti-crisis measures from March 2022 allowed for an extended application of a preferential VAT tax rate of 5 per cent for the sale of electricity to households until 31 December 2022.

On 9 October 2022, the Government adopted further measures to deal with the energy and price crisis, taking into account the length and severity of the energy crisis as well as price pressures, especially for vulnerable citizens. Through these measures, the Government authorized the company, ESM Trade, to sell electricity to public sector companies, schools and water supply companies at a subsidized price of €90/MWh, and to companies producing staple foods at a subsidized price of €80/MWh.

Unfortunately, no provision was made for large companies, although they bear part of the burden of the measures (for example, through limitation of the trade margin). Although credit lines to support liquidity or a guarantee scheme were also provided, large companies were excluded from these measures.

Two of the proposed measures apply to companies that buy electricity on the open market:

- Provision of favourable consulting support for the development of projects/studies for investments in energy efficiency and renewable energy sources, in order to enable easier access to capital;
- Continuation of enabling loans through the DBNM and commercial banks for investment in projects for energy efficiency and renewable energy sources (with large companies excluded).

Box 2. Credit line for energy efficiency and renewable energy sources

The Development Bank of North Macedonia (DBNM) offers a special credit line for energy efficiency and renewable energy sources.⁵ Its purpose is to reduce the consequences of the global energy and economic crisis, and it is realized through participating banks. The amount and conditions are listed below:

Energy efficiency (EE)	Renewable energy sources (RES)
The maximum value of the project is MKD30,750,000.	The maximum value of the project is MKD49,200,000.
DBNM will credit up to 60 per cent of the project amount, that is, up to MKD18,450,000.	DBNM will credit up to 60 per cent of the project amount, that is, up to MKD29,520,000.
The remaining minimum of 40 per cent will be credited from other sources as a loan from the participating bank or the investor's own assets (building materials, equipment, working capital, cash, and so on).	The remaining minimum of 40 per cent will be credited from other sources as a loan from the participating bank or the investor's own assets (building materials, equipment, working capital, cash, and so on).
Repayment term: up to 8 years with a grace period of up to 12 months.	Repayment term: up to 12 years with a grace period of up to 24 months.
Interest rate of up to 1.6 per cent per year.	Interest rate of up to 1.6 per cent per year.
Beneficiaries are micro, small and medium enterprises, as well as trade companies and craftsmen.	Beneficiaries are micro, small and medium enterprises, as well as trade companies and craftsmen.

When analysing the experiences of neighbouring countries regarding government measures and support to the economy, it should first be noted that each country is affected by the energy crisis in a different manner, which in turn impacts the range and strength of measures adopted by each country. The countries in the Western Balkan region have taken various measures to overcome the energy crisis, some of which began in 2021 by declaring a state of crisis (similar to North Macedonia). Many factors have determined the impact of the crisis in each country, including⁶:

- The structure of energy sources, that is, the degree of dependency on particular energy sources (coal, water, liquid fuels, natural gas, renewables). North Macedonia is strongly dependent on coal (lignite), hydropower, fuel oil and natural gas. Unlike other countries from the Western Balkans, North Macedonia prolonged the use of coal at the expense of embarking on a transition to renewables, resulting in a shortage of coal because existing mines have been exploited close to exhaustion.
- The status of the country as a net importer or net exporter of energy, with North Macedonia being a net importer.
- The degree of dependence on Russian gas and oil. Serbia is 89 per cent dependent on Russian gas, while North Macedonia and Bosnia and Herzegovina are 100 per cent dependent on Russian gas. The Russian oil and gas embargo and the resulting need to find new markets represent a significant challenge for such countries.
- The environmental impact factor, that is, the obligations that the countries of the Western Balkans undertook from the European Community in relation to the environment, in the form of national energy and climate plans.

The fiscal space in the countries has an influence on the measures to support households and companies, which in most cases narrowed significantly during the COVID-19 pandemic and the anti-crisis measures undertaken by all governments.

North Macedonia is among the countries in the region that are most affected by the increase in energy prices. This is the result of several factors: the dependency on energy imports, the shortage and low quality of coal, the total dependence on Russian gas and so on. Sustainability of energy supply also poses a challenge. The appropriate measures to deal with the crisis should be created based on these factors. Table 3 includes measures from the experiences of the countries of the Western Balkans.

⁵ Development Bank of North Macedonia (www.mbdp.com.mk)

⁶ Balkan Green Foundation, 2022.

Table 3. Measures taken in neighboring countries to address the energy crisis

Country	Measures
Albania	<ul style="list-style-type: none"> Declared a state of emergency regarding the energy crisis and energy supply in October 2021; €200 million were allocated to mitigate the effect of the energy crisis for 2021–2022; Increased tariff prices for consumers who consume more than 700 kWh.
Bosna and Herzegovina	<ul style="list-style-type: none"> Amended the Electricity Law that limits the increase in the electricity price to a maximum of 20 per cent for eligible customers in 2021; The Government supplied all schools with electricity in 2022; Increase in network tariffs.
Kosovo	<ul style="list-style-type: none"> Declared a state of emergency in December 2021 and allocated subsidies in the total value of €120 million for energy (for small consumers, namely households and microenterprises); Changed the tariff structure: consumers who consume more than 800 kWh per month shall pay higher prices; Daily two-hour power outages in December 2021 (this measure was extended until August 2022); Additional subsidies of €20 million were allocated for electricity import.
Montenegro*	<ul style="list-style-type: none"> An increase in network tariffs is expected, but it is still not in effect; No specific measures have been undertaken.
Serbia	<ul style="list-style-type: none"> Introduced ceiling prices for oil products. The import price of gasoline is set at the level it was in 2019; Increase in network tariffs is expected; The Government passed a decree for Energy Vulnerable Users to support 200,000 households in paying for electricity, 1,500 households can apply for gas subsidies and 50,000 consumers can receive support with heating costs; At the beginning of 2022, the Ministry of Mining and Energy in Serbia published an announcement for the installation of solar panels; The state allocated €230 million for energy efficiency.

Note: Open market consumers in Montenegro are directly exposed to rising prices, but Montenegro has sufficient self-generated electricity.

Source: Author's presentation based on Balkan Green Foundation, 2022.

In all the countries of the region, it is evident that the main focus of government measures is the protection of the standard of living of citizens, while the support for companies comes second. The measures mainly target vulnerable low-income people (social welfare recipients, low-income retired persons, and so on). Declaring a state of emergency can enable governments to transfer funds more easily to the designated target groups. Concerning company support policies, the lack of planned and long-term measures and the uncertainty of the measures is evident in almost all countries. There are no measures for financing or subsidizing energy efficiency or renewable energy projects that can yield results in the short term.

Table 4. Measures undertaken in the countries of the region to overcome the energy crisis

Type of measure	Electricity price subsidy for households	Electricity price subsidy for businesses	Support for investments in renewable energy sources (consultancy or co-financing)	Incentives for energy savings/ Cascading price model in relation to consumption	Cap on price/ price increases	Institutional approach (schools, public institutions)
North Macedonia	✓	✓	✓	✓	✓	✓
Albania	✓			✓		
Bosna and Herzegovina					✓	✓
Kosovo	✓	✓		✓		
Montenegro						
Serbia	✓		✓		✓	

*Note: Montenegro and Bosnia and Herzegovina are not directly affected by the energy crisis due to the dominant self-generated electricity.
Source: Author's presentation based on Balkan Green Foundation, 2022.*

5. Recommendations

Based on the findings of the survey, as well as the comparative experience of neighbouring countries, the Organization of Employers of Macedonia (OEM) proposes the following recommendations to the Government so that further support measures can be pursued for companies to overcome the negative effects of the energy crisis. Two sets of support measures are proposed, with one set aimed at mitigating the effects of the crisis through financial support measures, and the other aimed at facilitating the transition to renewable energy production by companies.

1) Direct and indirect support measures for companies purchasing electricity on the liberalized market

- Subsidize the price of electricity for participants in the open electricity market:** An overwhelming majority (95 per cent) of surveyed companies, as well as the focus group participants, identified the subsidizing of electricity as the most needed type of support in the current circumstances. During the survey period the Government adopted a measure by which electricity is subsidized to €80/MWh for domestic producers of food products. The same approach was used in modelling two intervention approaches which capped energy prices at €100/MWh and €200/MWh, as proposed by surveyed companies. The price cap sets a maximum threshold for the costs the companies themselves bear, while the Government subsidizes the electricity price above that threshold. The calculations were based on actual power consumption in the period January–March 2022, which amounted to a total of 502,799 kWh. If the cap is set at €200/MWh, depending on the energy price at the HUPX energy exchange, the subsidies will cost from €7 million to €30 million per month. If the ceiling is set at €100/MWh, the subsidies will cost from €7 million to €52 million per month (tables 5 and 6).

Table 5. Subsidy costs at a price ceiling of €200/MWh

	Three months	Monthly cost / Subsidy	Subsidy amount excluding tax
The price is €200/MWh, cost of companies in the open market	148.834.377	49.611.459	
Need for subsidy (price exceeds €200/MWh)			
Scenario 1: The price is €250/MWh, subsidies for the price above €200	25.139.949	8.379.983	7.541.985
Scenario 2: The price is €300/MWh, subsidies for the price above €200	50.279.898	16.759.966	15.083.969
Scenario 3: The price is €400/MWh, subsidies for the price above €200	100.559.796	33.519.932	30.167.939

Source: Authors' calculations, available on request.

Table 6. Subsidy costs at a price ceiling of €100/MWh

	Three months	Monthly cost / subsidy	Subsidy amount excluding tax
The price is €100/MWh, cost of companies in the open market	98.554.479	32.851.493	
Need for subsidy (price exceeds €100/MWh)			
Scenario 1: The price is €150/MWh, subsidies for the price above €100	25.139.949	8.379.983	7.541.985
Scenario 1: The price is €200/MWh, subsidies for the price above €100	50.279.898	16.759.966,03	15.083.969
Scenario 1: The price is €300/MWh, subsidies for the price above €100	173.974.326	57.991.441,96	52.192.298

Source: Authors' calculations, available on request.

The preference for either of the two scenarios depends on the maturity of the company and its ability to compete internationally, as well as the attitude of the management towards economic uncertainty and their outlook on the evolution of the energy market.

- **Implement additional measures for lowering the electricity price:** Reducing VAT on electricity or capping the distribution fee could be used to alleviate the burden of energy costs on consumers. Such measures are expected to have a negative fiscal impact on the Government in the form of lower revenues from VAT, as well as on the companies that sell electricity. In practice, a preferential VAT rate is already applied (from 18 per cent to 5 per cent), but the distribution fee, which grew by 48.5 per cent in the period from September 2021 to September 2022, significantly adds to the burden of electricity prices for companies. The question is whether to freeze the already increased distribution fee, or to consider reducing it by subsidizing the costs of the distribution operators.
- **Further improve the business environment to enable enterprises to navigate the energy crisis:** The reverberations of the crisis have amplified the need for an enabling business environment. Most survey respondents and focus group discussion participants emphasized the need to deal with administrative issues and structural challenges that predated the crisis and that were worsened by it. In response, the Government should prioritize the following actions:
 - **Enhance predictability of the business environment through regulatory stability:** Considering the deteriorating outlook in the macroeconomic environment and ongoing uncertainty related to the energy crisis and geopolitical instability, companies requested that regulations on business operations should not be amended within a certain period of time (such as three months) following their enactment or last amendment. As an alternative, new regulations could come into effect only after a preparatory period. This would allow businesses to adapt their operations within the time provided and alleviate the financial burden of complying with new laws and regulatory changes. This is a perennial request emerging from the latest business surveys conducted by the OEM.
 - **Factor in the administrative and financial burden on business when proposing and implementing new measures:** Some of the measures undertaken by the Government, such as those in response to the energy crisis or the COVID-19 pandemic, have created additional unforeseen costs for companies. One such example is the obligation to adopt new software for changing tax rates for certain products or the limitation of trade margins.
 - **Amend labour legislation to enable greater labour market flexibility:** Current regulations restrict the employment of certain groups of young people, specifically full-time secondary education students and university students. This restriction reduces the pool of available workers at a time when companies face great challenges in finding suitable employees. Hence, companies from the trade, accommodation and food services sectors have requested legislation to allow the hiring of young people (high school students over the age of 16 and university students) following the example of other countries.

2) Measures to facilitate and boost investment by companies in renewables to foster energy self-sufficiency

- Provide clear and complete guidelines on all the requirements and procedural stages for renewable technology deployment by companies:** The survey findings highlighted that the absence of clear guidelines and instructions (at a local and central level) regarding the process of obtaining the needed permits and licenses for the installation of solar panels is a major challenge for companies. Better institutional coordination, in particular at the municipal level, is needed if the goal is to support businesses in reducing their dependency on traditional sources of energy. It is suggested that each municipality (or at the level of the Association of Local Self-Government Units [ZELS]) prepare a manual on procedures consistent with those applied in other municipalities.
- Ensure a level playing field for all businesses seeking to implement renewable energy technologies in terms of procedures applied and costs charged by the authorities:** The analysis showed that the applied procedures differ from one municipality to another, and the collection of utility fees is inconsistent, with some companies being charged, while others are not. Procedural harmonization at the municipal level and equal treatment of businesses is needed in this area, through coordination, which can best be realized by ZELS. Exemption from the utility tax is also recommended in the case of installing solar panels on the roof of a pre-existing commercial building, because the municipality does not incur any costs in such a case.
- Examine the possibility of setting up a one-stop shop to support companies seeking to initiate independent production of renewable energy:** The process for deploying infrastructure for self-generation of renewable electricity is complex, involving institutions at both central and local levels, which constitutes a significant hurdle for companies. The experiences of companies that have gone through or are undergoing this process are different. Although the majority complain that the most serious delays exist at the local level, there are also complaints about the central level (EVN, MEPSO and ERC). Therefore, it is expected that establishing a one-stop shop for collecting requests and deciding on individual cases would make the process smoother. Such a centralized structure would allow the pooling of knowledge in one system and could facilitate the provision of advisory services for companies interested in investing in renewable technologies in the future.
- Implement financial support schemes to facilitate the deployment of renewable energy infrastructure:** The transition to renewable sources of energy is not only very complex, but it is also costly, with companies forced to engage in the process in a highly volatile macroeconomic environment and following an incomplete COVID-19 rebound. Financial support mechanisms are needed to incentivize the uptake of renewables, such as: i) direct transfer to companies of subsidies for the purchase of renewable energy equipment; and/or ii) favourable loans through commercial banks for a minimum term of ten years for the deployment of renewable energy infrastructure. The possibility for the DBNM to support investments in storage of renewable electricity should be also investigated in order to ensure future system efficacy and sustainability. It should be noted that the DBNM currently offers a credit line for energy efficiency and renewable energy production investments, but this is not available to large companies. It is equally important to inform companies about the available financing opportunities; the survey showed that only a very small proportion of surveyed companies knew about the aforementioned favourable loans available from the DBNM.
- Provide government supported consultancy services to inform companies' decisions on investing in renewable energy technologies:** This measure was announced by the Government as part of the package of measures adopted at the 88th session of the Government from October 9, 2022. However, the mechanism to put the measure in place has not been announced yet. Taking into consideration that the problem is relatively new, there is insufficient availability of consultancy services regarding investments in renewable energy production. Hence, support from the Government is in high demand, and this service can be an integral part of the one-stop shop system. It is equally important to raise private sector awareness of the benefits of renewable energy production both for business itself and for society and the environment at large.
- Examine the possibility of introducing other forms of support (indirect subsidies) to companies investing in renewable electricity production:** Because the financial benefits of investment in renewable energy production accumulate over a matter of years, the large up-front investment required may often be a deterrent. Therefore, in addition to a fast-track investment procedure, additional incentives could make the process more affordable. Such incentives could include decreasing or removing customs duties and other taxes on the import of renewable technology equipment (for instance for photovoltaic panels, wind turbines, and so on) or components thereof. Such measures need careful design to ensure that they are fair, effective and feasible.

- **Create opportunities for public-private partnerships to accelerate the deployment of renewables in publicly owned facilities:** Forging alliances and cooperation, including through public-private partnerships is crucial to leverage private capital and expertise to support the implementation of renewable energy projects of public interest and accelerate the green transition of the country. Such partnerships can be implemented to scale up the deployment of technologies in public facilities, such as the use of photovoltaic panels on the roofs of schools, hospitals, parking lots and other public buildings. This is particularly advisable given that solar energy is one of the cheapest sources of energy available and can be rolled out rapidly to the direct benefit of citizens and businesses.

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Annex 1: Detailed description of models, regulations and procedures for investing in self-generation of renewable electricity

The current energy regulation foresees the possibility of self-generation of electricity from renewable energy sources for own needs. Several feasible models are possible:

Model 1. The consumer-producer (prosumer) of electricity. This category encompasses households, collective residential buildings, small businesses and public institutions that can install photovoltaic power stations on the roofs of their buildings or small wind turbines to generate electricity for their own needs. This model is designed for limited production capacity - up to 6 KW for households and 40 KW for businesses - after installation. The installation procedure is simple and does not require a generation license from the ERC.

Model 2. The so-called "holder of an electricity generation license (licensee) without limitation of the capacity of the renewable energy plant". This means that a legal entity can self-generate electricity for its own needs based on an electricity generation license. Excess electricity can be sold on the wholesale electricity market. The complexity of the procedure for obtaining an electricity generation license depends on the technology, the energy production capacity and the technical capabilities of the transmission/distribution grid in the place (area) where the photovoltaic plant is to be installed.

Model 3. Off-grid photovoltaic power plants. The specific feature of this model is that it has an energy storage capacity and is not connected to the distribution/transmission grid. With this model, households or legal entities gain more independence, relying on the self-generated electricity and the storage of excess electricity in a battery system. This model does not require an electricity generation license. As a sub-variant of this model, there might be a system without batteries, but without connection to a distribution/transmission grid. In general, this model is suitable for locations where the distribution/transmission network is overloaded and/or connection costs are very high.

Brief description of the regulations pertaining to obtaining of approvals, permits and licenses for renewable technology deployment

Regulation of Model 1

In terms of property-legal matters, the consumer-producer should be the owner of the building or have the right to lease the building where the photovoltaic power station will be installed. With the latest amendments to the Law on Construction, the consumer-producer category of electricity is exempt from the obligation to have a building permit for the installation of photovoltaic power stations. The consumer-producer is only obliged to notify the municipality where the photovoltaic station will be installed.

With the notification for the installation of the photovoltaic station, the consumer-producer should provide a basic design for the photovoltaic station that will address the architectural and electrical feasibility of the project. The basic design should be developed by a licensed company. The commissioning of the photovoltaic station will be carried out on the basis of a notarized statement issued by the contractor company. The consumer-producer should also submit this statement to the municipality and the Energy Agency. Based on the distribution rules of the network, the consumer-producer should submit a request to the distribution operator for permission to connect the photovoltaic station. The consumer-producer has no obligation to obtain an electricity generation license

Regulation of Model 2.

As per the Model 2 regulation, several technical prerequisites for obtaining a building permit should be considered.

Depending on the capacity of the plant and the type of technology, a building permit is required:

- In the case of a photovoltaic plant installed on the roof of the building.
- In the case of a photovoltaic plant installed on land and if the capacity of the photovoltaic plant is up to 1 MW, a

building permit is issued by the municipality where the plant is installed.

- In the case of a photovoltaic plant installed on land and if the capacity of the photovoltaic plant is above 1 MW, a building permit is issued by the Ministry of Transport and Communications.

As regards the issuance of a building permit as referred to in point 1, the procedure is simpler, and the following documents are required for it:

- Revision of the basic design (architecture, static calculation, electrical installations) for the photovoltaic power plant on the roof.
- Proof of ownership or lease rights on the roof of the building.
- Decision to connect to the distribution network.

As regards the issuance of the building permit as referred to in points 2 and 3, the procedure is more complex because it is necessary to fulfill several technical prerequisites:

- Regulating the status of the land: the construction of the photovoltaic plant should be foreseen with the urban planning documentation. If the investor has to conduct this procedure, this can be time-consuming, as multiple institutions are involved in the process. The purpose of the land should be construction of commercial plants, that is, photovoltaic power plants cannot be built on agricultural land. If the land is agricultural, the investor should undertake a procedure for conversion of the land.
- Geodetic surveys approved by the Ministry of Environment and Spatial Planning should be developed for renewable energy up to 200 MW.
- Development of a basic design and other technical documentation.

The process of connecting to the transmission/distribution grid can be complex with high costs if the transmission/distribution grid is not developed in the location where the photovoltaic plant is to be built.

- Decision to connect to the transmission/distribution grid is required.
- An electricity generation license issued by the Energy Regulatory Commission is required. An electricity production license can be valid for up to 35 years.
- It is necessary to register the photovoltaic power plant in the register of plants for electricity generation of the Energy Agency.
- Registration as a participant in the electricity market with the operator of the electricity market – MEMO is required.

It is recommended to examine whether it is in a protected area or is subject to a regime established in the Water Act.

Diagrams with the necessary steps for the construction of photovoltaic power plants and the responsible institutions involved in the process for the previously described three models are presented below.

Diagram. Model 1



Diagram. Model 2



Diagram. Model 3





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