

Economic payoffs of energy efficiency in Kosovo



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Abbreviations

EEKA	Energy efficiency Kosovo Agency
GDP	Gross Domestic Products
RES	Renewable Energy Sources
EED	Energy Efficiency Directive
EEDP	Energy Efficiency Directive in Buildings
EE	Energy Efficiency
ESCO	Energy Service Companies
KEEF	Kosovo Energy Efficiency Fund
HUPX	Hungarian Power Exchange
IPAA	Instrument for Pre-Accession Assistance
KEDS	Kosovo Energy Distribution Services
KEK	Kosovo Energy Corporation
KESCO	Kosovo Company for Supply of Energy
KIESA	Kosovo Investment and Enterprise Support Agency
Kne	Kilograms of oil equivalent
Ktoe	Kiloton of oil equivalent
MCC	Millennium Challenge Corporation
ME	Ministry of Economy
MFK	Millennium Fondation in Kosovo
MFPT	Ministry of Financy Labour and Transfer
GK	The Government of Kosovo
NES	National Energy Strategy 2022–2031
ERO	Energy Regulatory Office

Executive Summary

Kosovo has the highest energy intensity in Europe. The residential sector is main consumer of energy, which means it is the sector with the highest energy-saving potential. Implementing energy efficiency programs has many benefits. Despite direct benefits in reducing energy consumption, macroeconomic through impact on GDP improvement, the energy efficiency programs ensure a sustainable employment flux in industry as well as an increase in economic activity in construction and renovation industry, on private and public income; stability and security of energy systems, etc.

During 2016–2022, several governmental projects in energy efficiency fields have been implemented; however, these projects were mainly focused on the public sector, public lighting, and only marginally on the residential sector and on the industry. During these years, the implemented projects achieved energy savings of 8.01 ktoe (kiloton of oil equivalent) in the public sector, with an investment cost of 48.8 million euros.

A savings value of 21.6 ktoe, with an investment cost of 130 million euros, was achieved in the residential and private/commercial sectors with the help of the Millennium Challenge Corporation (MCC) project, consumer co-financing, and the favorable green loans from commercial banks.

As a result of the aforementioned implemented projects, a savings value of 29.61 ktoe (344.36GWh) or around 1.77% of the overall energy consumption, has been achieved in 2022. This has resulted into an annual savings of 29 million euros from imports in real time (where market price is 85 euros/MWh) or 130 million euros for the period of energy crisis (where the price has reached values over 300 euros per MWh). For 2023, the Government has allocated a budget of 40 million euros (through mechanisms developed by the Ministry of Economy (ME) and Energy Efficiency Fund) to implement projects aimed at achieving a savings value of 11.47 ktoe.

In order to give priority to investments in the energy sector and especially in energy efficiency (the national strategic objective 3), the government has drafted the National Energy Strategy (NES) 2022–2031. This strategy has defined an ambitious goal of cumulative savings of 283 ktoe by 2031.

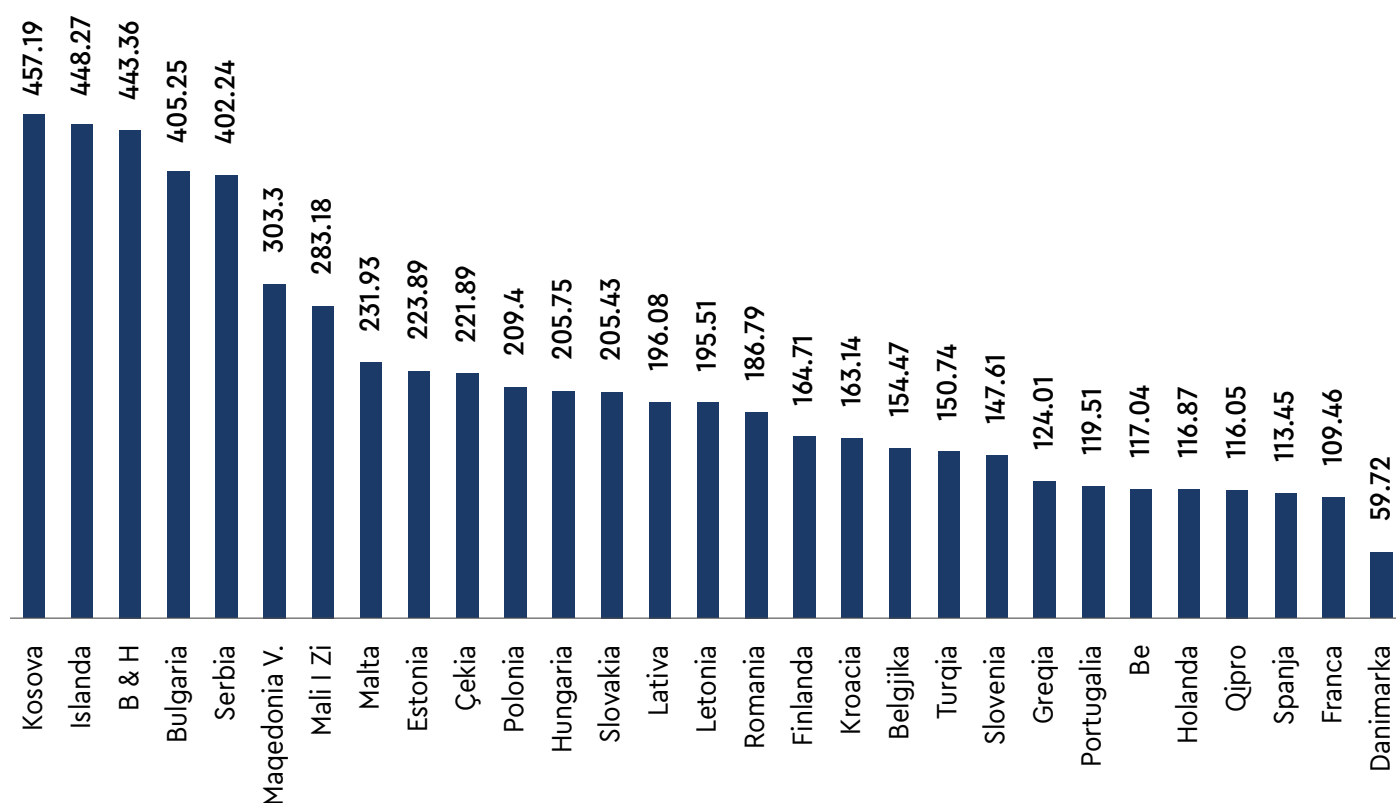
Despite defining all the strategic and legislative documents, it is the lack of proper implementation and of supportive mechanisms that has prolonged the process of investment in the energy efficiency (EE). For a successful implementation of the goals of the National Energy Strategy and of the objectives of EE, the government should redetermine the scope of the Energy Efficiency Fund, should develop private mechanisms for financing and increase the capacities of implementation in the private sector.

The implementation of these policies could create more than 4,000 jobs in the EE sector, while approximately 1,382 jobs could be created in other sectors (through capital savings and redistribution of income) over a 20-year period, which aligns with the life expectancy of the measures. Moreover, governmental co-financing also has an impact on the formalization of the labour market and on the increase of quality of provided services.

1. The Energy Sector in Kosovo

Energy intensity in Kosovo is considered among the highest in Europe. Specifically, to create an added value of 1000 euros in the economy, 467 kilograms of oil equivalent (koe) are required; such a quantity is four times larger than its average in the European Union (EU) in 2021 (see Figure 1).¹ Even though energy consumption per capita is approximately half of the average in EU, the GDP (gross domestic product) average per capita is much lower than the average in EU. This problem was quite significant during the late energy crisis, where the economy in Kosovo was affected by price increases, including also insecurity, increase of rate inflation, and electricity supply interruption.

Figure 1. Energy intensity per GDP in Europe, 2021–2022



Source: Eurostat, 2022

In 2021, primary energy consumption² was 2890 ktoe and energy final consumption was 1666 ktoe.³ The residential sector (households) is the main consumer, followed by transportation, industry, the service sector and finally the agriculture (Figure 2). Buildings account for 40% of the final energy consumption in Kosovo.⁴ With the demand for energy which is expected to have an average annual increase of 4.6%, the improvement of energy efficiency (EE) in buildings has become an urgent need in the context of economic development and environmental protection.

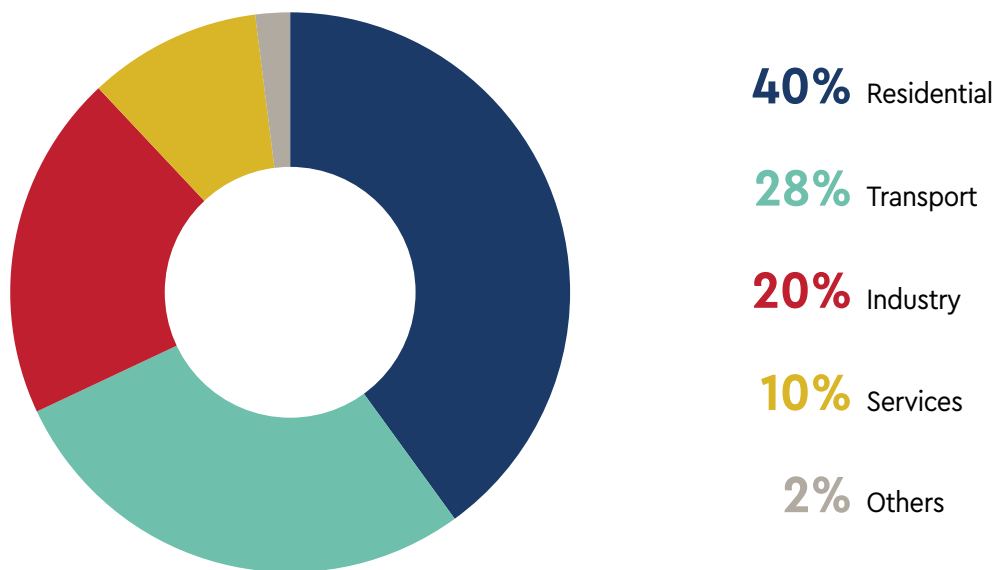
¹ Eurostat. Energy Intensity in Europe 2021. Source: <http://bit.ly/3EZdsyD>, accessed on 25.01.2023.

² Energy consumption including technical and commercial losses as well as consumption of the energy sector itself.

³ "The energy consumption billed to end consumers does not include technical/commercial losses."

⁴ ERS, The annual report 2021. Source: <https://bit.ly/3lShQR4>, accessed on 30.01.2023

Figure 2. Final energy consumption per sector



Source: Eurostat, 2022

EU has adopted a variety of policies and regulations in order to reduce energy consumption and CO₂ emissions in EU member states. Being a member of the Energy Community and a potential EU candidate, Kosovo is obliged to adopt the same regulation. To improve energy efficiency in buildings, reduce energy consumption and CO₂ emissions, the Energy Community Ministerial Council has adapted the Energy Efficiency Directive (EED) and the Energy Performance of Buildings Directive (EPBD), which also include the Energy Labelling Directive and relevant EU regulations.⁵

EED and EPBD emphasize the importance of enhancing energy efficiency in buildings, including the renovation of existing buildings. The main aim of EED and EPBD and other directives is to achieve an energy saving target of 15.7% for 2031; EED and EPBD are roadmaps for long-term environmental achievements up to 2050 in energy and low carbon.⁶The Kosovo Energy Strategy (KSE), as the main strategic document and guide for the implementation of the above-mentioned directives, does not identify all the benefits; nor does it have a detailed plan to mobilize a campaign aimed at highlighting these benefits for all stakeholders (building owners, potential investors, banks, etc.) and especially for decision makers. The construction industry and the formalization of the market can influence the improvement of GDP by ensuring a stable flow of employment, increasing activity in products and related services, as well as creating a catalytic effect in the construction sector as an important economic engine.

Investments in increasing energy efficiency may have further indirect effects beyond energy savings. These benefits typically include preserving and increasing the value of real estate, making aesthetic improvements to the facades of old buildings, positive impacts on people's well-being, reducing energy poverty, increasing employment, increasing work skills and integrating the informal economy into the tax payment system.

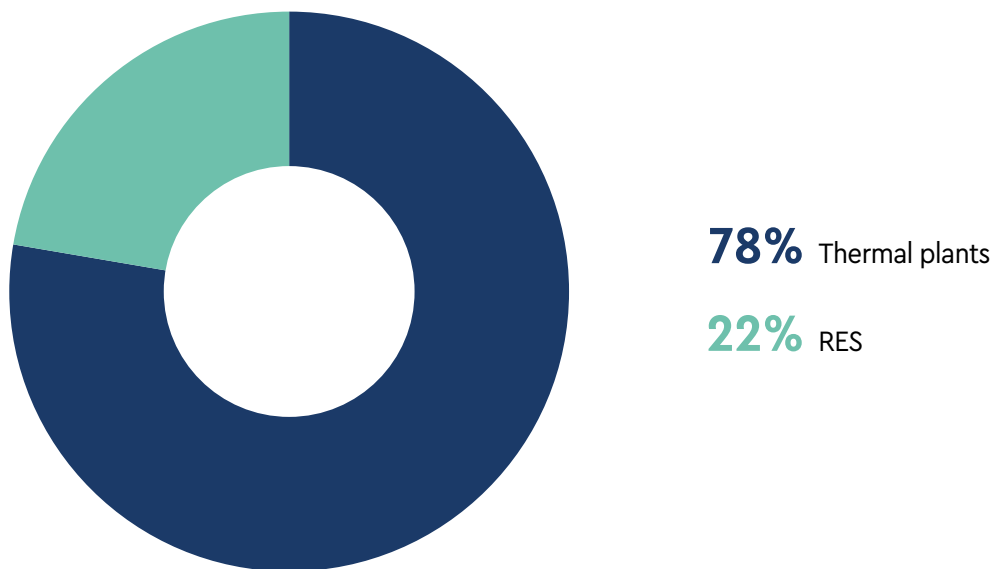
⁵ The European Parliament, EE directives for 2021. Source: <https://bit.ly/3JifoVw>, accessed on 25.01.2023.

⁶ Energy Treaty, Study on the general objectives of 2030 for the Energy Community – Energy efficiency, RES, reduction of greenhouse gases. Source: <https://bit.ly/3ZmbRuX>, accessed on 25.01.2023.

2. The energy crisis in Kosovo and the Government's measures

The energy sector in Kosovo encompasses the production, transmission and distribution of electricity, as well as several thermal plants for district heating. Most of the electricity is produced by lignite power plants, namely Kosova A and Kosova B, with a notable increase in the contribution from renewable energy sources (RES) installed in recent years. Kosovo's total generating capacity is 1,568 MW, including renewable sources, but the operating capacity is 1,236 MW, with lignite power plants contributing 77.7% of it.⁷

Figure 3. Electricity production per source



Source: The annual report of Energy Regulatory Office, 2022

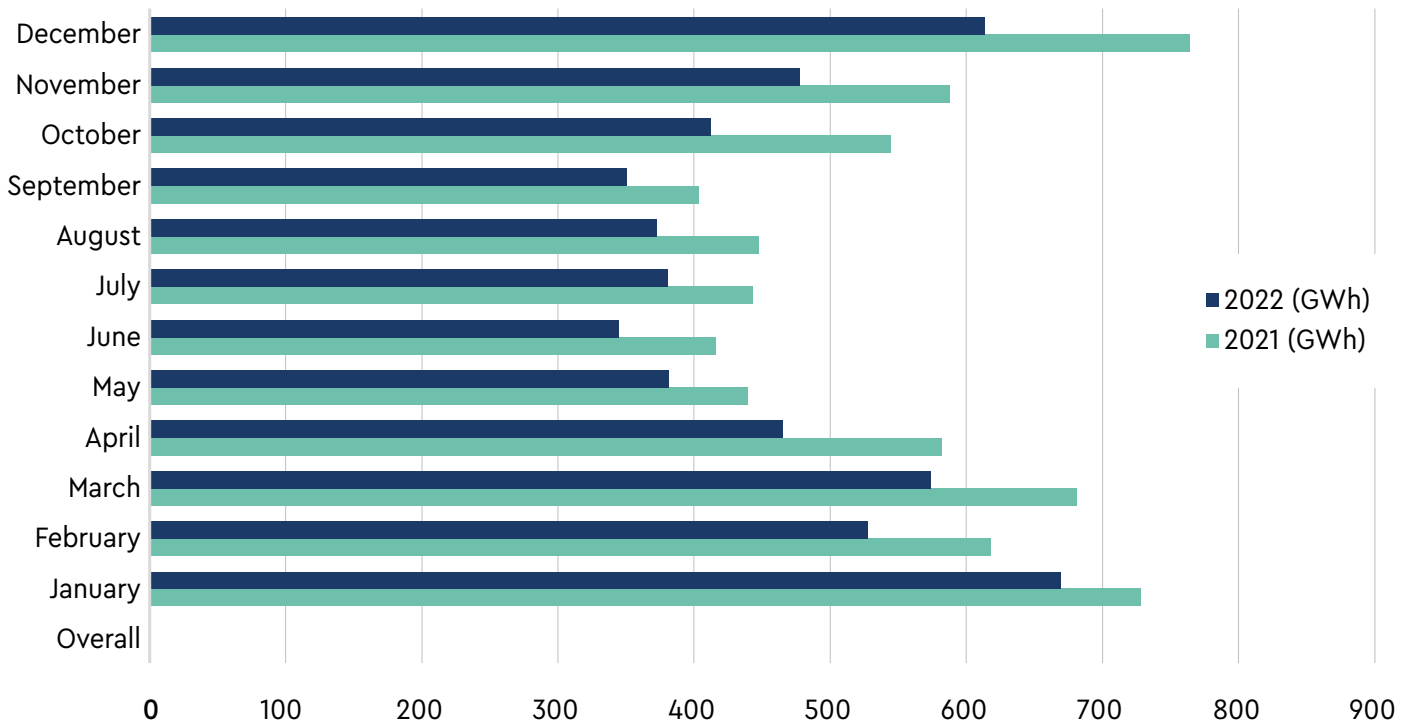
There was a mild increase of generating capacities in recent years due to the installment of several renewable sources. Nevertheless, local electricity production cannot fulfil the maximum demand of Kosovo's electricity system, which is met by importing electricity.

As a result, the total capacity of generators in Kosovo is 1,236 MW, while the highest consumption for 2021 through December was 1398 MW. The adequacy ratio of generating capacity to maximum load is 88.4%.⁸ Kosovo's energy capacity is inflexible and produces the same amount of energy throughout the year, with small deviations from renewable sources.

The consumption curve in Kosovo is higher during the winter, primarily due to residential consumers using it for heating purposes. Therefore, the inflexibility in production and the high consumption during November-March (see Figure 4) result in a heavy reliance on electricity imports and create vulnerability to international market crises in the local market.

⁷ ERO, The annual report 2021. Source: <https://bit.ly/3lShQR4>, accessed on 30.01.2023

⁸ Ibid.

Figure 4. Electricity consumption per month (2021 and 2022)

Source: The annual report of Energy Regulatory Office, 2022

The increase of electricity price in Europe in October 2021, as a result of Russia's increase of gas price, had a high impact in Kosovo, too. Inefficient energy consumption and the lack of new generating capacities have led to an unprecedented energy shortage. In December 2021, the power plants Kosova A and B were damaged and remained inoperative for a certain amount of time, even though Kosovo Energy Corporation (KEC) managed to return in function Kosova A and a unit of Kosovo B within a day. However, the Kosovo B2 remained inoperative until 23 January 2022.⁹ During the second half of 2021, there was an unprecedented increase of prices due to various factors. This resulted in a considerable increase of price up to 376 €/MWh in HUPX – Hungarian Power Exchange, which is considered as a benchmark due to its proximity and liquidity. In December 2021 alone, KEDS and KESCO imported electricity worth 32.3 million euros.¹⁰ Due to limited local capacities and high prices in the European energy market, Kosovo was obliged to review electricity tariffs.

In January 2022, the Energy Regulatory Office (ERO) decided to raise electricity tariffs for households and businesses. Final consumption rates nearly doubled, rising from 6.5 cents/kWh to 12.5 cents/kWh (after subsidies) for consumers who exceeded 800 kWh of usage. This increase was followed by a 15% increase in 2023 for all consumers.¹¹

To facilitate the increase in prices, the Government has subsidized an amount of 120 million euros to the energy sector, which were directly distributed to consumers through discounts on their final electricity bills and import subsidies. This implied that the price increase did not affect businesses and households consuming less than 800 kWh per month. Through this budget support, KEC had the task of purchasing electricity from international markets and reselling it to the supplier and distributor in Kosovo.

⁹ Ibid.

¹⁰ Po aty.

¹¹ Kallxo.com. ZRRE decides to increase KESCO's revenues, expecting an increase in electricity tariffs.

Source: <http://bit.ly/3rewi00>, accessed on 02.04.2023.

The main strategic focus over the last two decades has been on improving the energy production capacities to meet households' consumption and compensate for energy losses. Most of the electricity demand occurs in mid winter months, where the main consumers are the households. Therefore, investing in energy efficiency would be a more cost-effective solution. A comprehensive energy efficiency program would have several benefits, including reducing energy consumption, improving air quality, reducing energy imports, conserving forests, reducing government expenses on electricity, improving the well-being of citizens, increasing employment and formalizing the economy.

3. The financing of EE projects and their impact on Kosovo's economy

Financing is a key element in achieving the above-mentioned objectives; hence, mobilizing all resources (public and private) is essential to reach the strategic targets. Throughout the last few years, Kosovo has implemented a number of projects in the field of EE, but these projects were mainly focused on targeting public buildings, public lighting and – to a lesser extent – industry.

However, during the last decade, the projects have not targeted the largest consumer of electricity: households. Investments in the field of EE have been promoted when the Energy Treaty Secretariat set the target for EE for 2015-2020. Since Kosovo is a member of the Energy Treaty Secretariat, a number of projects have implemented in the public sector in order to achieve the target; a more detailed discussion of this is provided in section 3.1.

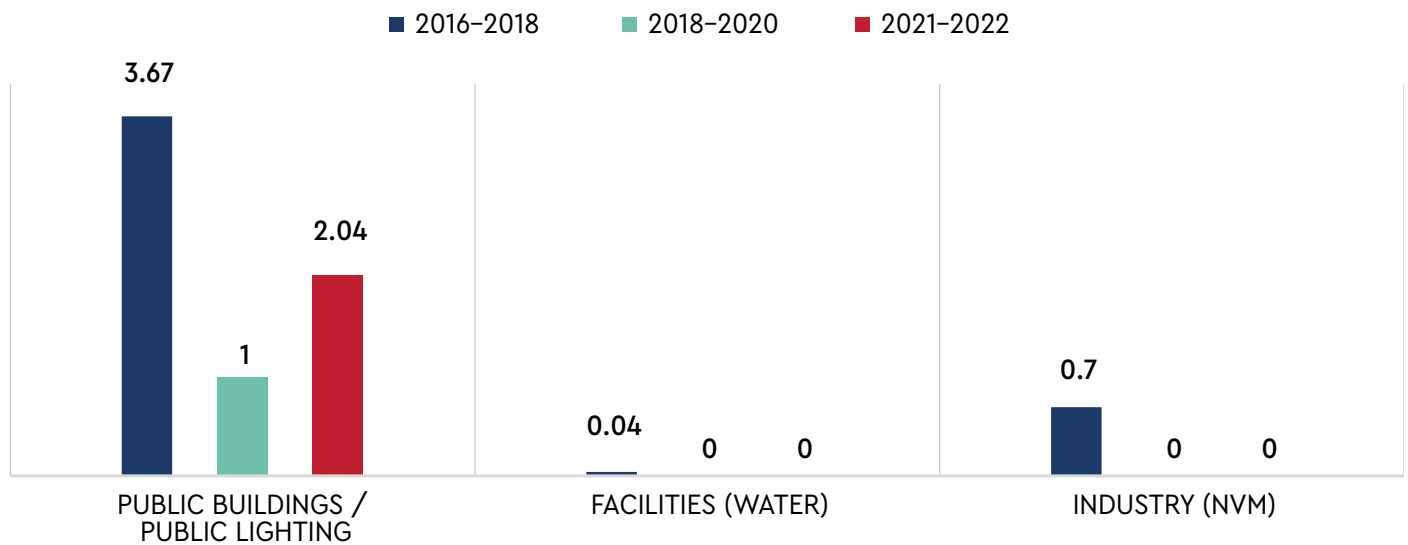
Lastly, after the approval of NES, the Government has set a target of 15.7 percent or 283 ktoe by 2031. Assuming that 6.1 million euros (based on the average of investments in existing projects) are required for 1 ktoe of energy savings, the total investment rate needed to reach the ambitious target of 15.7 percent amounts to 322 million euros in the best possible scenario, and exceeds 366 million euros in slower scenarios (see Tables 4 and 5 in the Annex). Consequently, the level of annual investments needed to achieve the strategic targets for 2031 depends on the investment curve and the development of secondary policies, such as the NES Implementation Plan. However, if the investment is extended one-way according to the above-mentioned proposal, then an investment of 32–37 million euros per year is necessary.

To achieve this target, a full mobilization of the private sector is necessary. Therefore, the Government's funding is necessary, in the first years of the energy strategy implementation, in order to promote and increase the implementation of these objectives. Therefore, a combination of government budget funding, financing mechanisms from the Kosovo Energy Efficiency Fund (KEEF), donor funding, and private sector funds is essential to make these investments more attractive to the private sector.

3.1. Investments in the Public Sector during 2016-2022

Ministry of Economy (ME), in cooperation with municipalities and Kosovo Energy Efficiency Agency (KEEA), has implemented a number of projects in 2016–2018 in the fields of public buildings, public lighting, water supply companies and small and medium enterprises. These projects achieved a total savings of 4.41 ktoe (see Figure 5).¹²

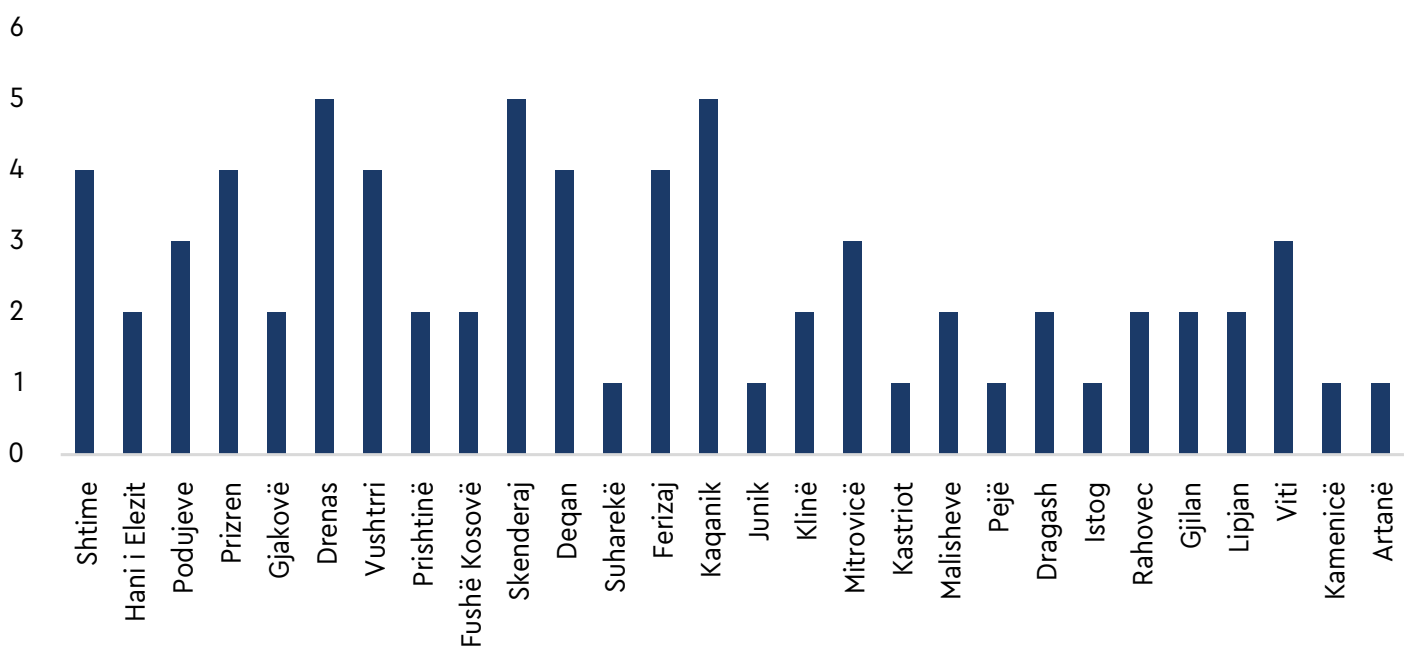
¹² The Energy Treaty, The Progress Report for EE (2017-2021), Source: <https://bit.ly/3oSoAlb>, accessed on 10.04.2023

Figure 5. EE (ktoe) savings for 2016–2022

Source: The progress report for EE, 2023

These projects have been implemented as a result of a soft loan of 5.7 million euros from the World Bank, supported by the Swiss Government (0.25 million euros), KIESA (Kosovo Investment Enterprise Support Agency) 0.7 million euros, allocation of the state budget of 1.9 million euros, and co-financing from the beneficiary municipalities.

From 2018 to 2020, ME and KEEA have consistently promoted energy efficiency (EE) measures in the public sector, with a particular focus on school buildings (see Figure 6). In 2018, the EE measures have been implemented in 26 school buildings, in a total value of 1.72 million euros; in 2019, they were implemented in 19 school buildings, in a total value of 1,08 million euros; and in 2020, 27 schools have been targeted for a total value of 1.69 million euros. The overall investment amounts to 4.49 million euros, resulting in savings of up to 1 ktoe (refer to Figure 6).

Figure 6. The number of renovated schools per municipality (2018–2020)

Source: The progress report for EE, 2023

During 2021, KEEA, in cooperation with the municipalities of Ferizaj, Kamenica, Prishtina, Lipjan, Vitija, Peja and Prizren implemented EE measures in public lighting, where the total investment reaches the value of 2.97 million euros and the saving of 0.4 ktoe¹³.

Additionally, during 2022, Kosovo has implemented projects in the field of EE, mainly projects led by KEEF, ME or KEEA and which had a direct focus on the public sector. KEEF continued public calls for the improvement of EE in the municipalities of Kosovo and signed 73 agreements with 22 municipalities, to a value of 9 million EUR and estimated savings of 1.47 ktoe. Furthermore, KEEA implemented parallel projects worth 0.96 million euros, achieving savings of 0.17 ktoe¹⁴.

3.2. Investments in the Private Sector during 2016-2022

While government-led projects were mainly oriented towards public buildings, projects funded by donors and the private sector have had a significant impact on the overall increase in energy efficiency (EE) in the private and residential sectors. It is estimated that various programs supported by commercial banks in Kosovo achieved savings of 15.91 ktoe during the period of 2016–2022. These savings were recorded as a result of green loans that were financed by international banks.

Furthermore, between 2016 and 2022, the Millennium Challenge Corporation Project (MCC) through the Millennium Foundation Kosovo (MFK) program has provided support for:

- 962 individual houses to a total investment cost of 7.7 million dollars (7.19 million euros).
- 643 families in multi-family apartment buildings, with a total investment cost of 5.5 million euros (5.14 million euros).
- 2.3 million dollars investments for women in business (2.15 million euros).

Through partial grants, this project has successfully promoted co-financing from the private sector for the implementation of energy efficiency measures. The total investment amounted to 20 million euros, resulting in savings of 3.2 ktoe.¹⁵ Moreover, it has created a precedent in support of the private sector for the implementation of EE measures.

ME opened a call for support in 2022 through a fund of 6 million euros for electrical equipment used for heating (efficient air conditioning, heat pumps, etc.). This initiative successfully mobilized the private and residential sectors to co-finance products, resulting in a total investment of 15 million euros and savings of almost 2.5 ktoe.

Consequently, the government is implementing EE measures through ME, MFTL and KAEE that target the private sector and aim to alleviate the burden of the energy crisis on households. These measures are financed by the reprogramming of funds of the IPA 2023 program (Instrument for Pre-Accession Assistance), where the government has benefited 75 million euros of direct support in the budget.

Of these, 40 million euros will be a direct aid to consumers in need and to

¹³ Ibid.

¹⁴ Po aty.

¹⁵ The Millennium Foundation in Kosovo. Source: <https://bit.ly/3ZphRD6>, accessed on 10.02.2023

consumers who save energy compared to previous years. Whereas, 35 million euros will be distributed to consumers who invest in EE. These measures are intended to support the adoption of new efficient electrical household appliances as well as solar systems and heating equipment. Consequently, investments are foreseen in the private sector (main focus micro and small enterprises) as well as household economies/residential sector.

Table 1. The EE measures designed after support from EU

Measure	Budget	Budget	Expected savings
Support of individual household consumers, by including consumers in need, by increasing the energy efficiency of housing units and buildings	20 million euros	Renovation of residential units, implementation of EE measures including cladding, doors/windows, heating systems, roof insulation etc.	6.54 ktoe
Support of individual household consumers, by including consumers in need, to invest in energy-efficient household appliances and renewable energy systems	10 million euros	Home appliances including heating/cooling systems, solar systems, etc.	3.28 ktoe
Stimulating energy savings by micro, small and medium enterprises (MSMEs)	5 million euros	Work equipment including heating/cooling systems, solar systems etc.	1.64 ktoe
Total savings potential	11.47 ktoe		

Source: Ministry of Economy, supporting schemes

Since EE measures have not been completely published, calculating their exact impact is more difficult. Yet, compared to previous measures where a co-financing by private and residential sectors is required, this investment could affect a total saving of 11.47 ktoe or 133,396.1 MWh.¹⁶

If this energy were to be imported during stable years of the energy market (85 euros/MWh), it would result in additional costs for citizens totaling 11.4 million euros. However, if it were imported during periods of crisis (at over 300 euros/MWh), savings could have reached 40 million euros per year. Therefore, by investing in these measures, ME will promote economic growth, reduction of unemployment, stabilize the energy system, and achieve a return on public investments within three years.

As a result, if the institutions' support of 120 million euros during the energy crisis were oriented in time towards investments in EE and RES, the impact of this crisis on the energy sector would have been much smaller.

4. Energy strategy, legislation and strategic objectives

Primary energy consumption has been increased by an annual average of 1.4% between 2008 and 2020. The growth rate moderated at the end of the decade, but was also affected by short-term effects (the COVID-19 pandemic); therefore, a rapid increase of consumption is predicted in the following years.

¹⁶ Working groups for designing schemes for EE, January 2023.

Final energy consumption has had a similar trend in this period, with an average annual increase rate of 2.3%, reaching 1,525 ktoe in 2020. Although energy intensity in Kosovo has improved significantly since 2008, it is still very high compared to the EU average, but also higher than the average of the countries in the region.

In addition to the Energy Strategy, Kosovo has adopted the following necessary laws and by-laws: the Law on Energy Efficiency, the Law on Energy, the Law on the Energy Regulator, the Law on Heating, and the Law on Energy Performance of Buildings. On the other hand, the activities to strengthen the expertise and the tools for building certification are being developed, including a new registry and a certification software.

Several activities that aim to expand financing of the residential and private sectors are being developed. However, the rules and regulations regarding the public procurement of energy efficiency, energy service companies (ESCO), energy performance and supply contracts have not yet been finalized and implemented, even though the primary legislation and most of the secondary legislation has been adopted.¹⁷

Energy efficiency is a crucial element in the implementation of the Energy Strategy 2022–2031. By implementing these strategic documents, the government can: mitigate energy demand, reduce import dependency, reduce greenhouse gas emissions and increase long-term affordability for consumers.

The state's strategic objectives aim to reduce energy consumption and energy intensity by promoting economic development and the green transition. The targets are set based on a regional study "Projection of energy consumption and energy saving potential in Kosovo until 2030", referred to as the EU scenario¹⁸ prepared by the Energy Community and was formally adapted by the Council of Ministers last year. The overall goal for energy efficiency is to limit final energy consumption to 1,877 ktoe in 2031¹⁹.

Achieving this target is equivalent to a 22% saving compared to the 2007 EC study modeled projects, or a 15.7% saving compared to the EU study's baseline energy consumption projection (2,226 ktoe).

The strategic objective of increasing energy efficiency is divided into two specific objectives, which include energy efficiency in buildings, the promotion of efficient co-production (cogeneration) and efficient heating systems. Improving energy efficiency in the industry and transport sectors has not been considered in the strategy, on the justification that it will be addressed in other strategic documents.

Table 2. Strategic objectives of energy efficiency

Objective Indicators: 3	The main projection	Target for 2024	Target for 2031
The level of final energy consumption	1,516 ktoe [2017]	1,709 ktoe	1,877 ktoe
Cumulative energy savings in the building sector	2.7 ktoe [2021]	26.6 ktoe	283 ktoe

Source: The Strategy of Energy 2022–2031

¹⁷ Ministry of Economy, Administrative Instruction for energy services (ESCO). Source: <https://bit.ly/3T6PtU5>, accessed on 28.01.2023.

¹⁸ N.Bizard (2019): Energy consumption forecast and energy saving potential in Kosovo by 2030, Final Report, accessed on 28.01.2023.

¹⁹ Government of Kosovo, Energy Strategy of the Republic of Kosovo 2022 – 2031, Source: <http://bit.ly/3ZfTwQ1>, accessed on 28.01.2023.

Through the Energy Strategy, the Government has set objectives for improving the energy efficiency of buildings and promoting efficiency through the capacities of district heating systems. To achieve these goals, the government must continuously improve the current policy framework and program. Currently the strategy fails to address specific programs and policies with the assumption that they will be processed further in the action plan.²⁰

Given the nature of cumulative targets where early savings are calculated over years and have the greatest impact, a rapid development of policies and programs is of great importance. As each year passes, the investment curve increases drastically, requiring additional financing mechanisms to achieve the 2031 targets.

Tables 3 and 4 in the Annex provide a better understanding of what needs to be done to implement the strategic objectives and the necessity to implement those measures immediately, so that the curve of achieving the objectives is flattened. Due to the nature of reporting and target calculation, early investment and cumulative savings over the years result in reduced investment requirements in later years.

4.1. The impact of investments in energy efficiency in employment and market formalization

The high unemployment rate in Kosovo (20.7%) was further exacerbated due to the impact that COVID-19 pandemic had on the labour market. The causes of such a high unemployment rate are numerous, including limited economic opportunities, insufficient investment, weak education and training systems, and political instability. Kosovo's small and underdeveloped economy, its limited resources and infrastructure, make it challenging to create sufficient formal employment opportunities to meet the demand for employment. Of concern is the high rate of youth unemployment, with 55% of individuals aged 15 to 24 being unemployed.²¹

The benefits of investments in energy efficiency exceed the increase of living comfort, the reduction of energy poverty and fund injected to increase the growth of economic activity. These projects are capable of supporting thousands of families through direct, indirect and induced jobs.

According to the IMPLAN methodology, which calculates the impact of economic activities on employment, the implementation of energy efficiency measures will lead to increased employment in the building and renovation sectors, thereby boosting employment rates in related sectors.²²

For example, investing in the replacement of windows with more efficient ones will generate full-time direct employment in relevant companies. This, in turn, leads to increased indirect full-time employment in companies that produce plastics and similar materials. The subsequent rise in employment for both direct and indirect beneficiaries, along with the availability of increased funds, will result in the creation of more jobs in other industries such as restaurants, hotels, and shops.

According to a study, investments in energy efficiency (EE) are primarily categorized into three areas: residential, commercial, and industrial. This study analyzes all the EE sub-sectors and shows that the direct impact on employment is greater in cases of

²⁰ Ibid.

²¹ KAS, Labor Force Survey (LFS) in Kosovo, 2021. Source: <https://bit.ly/42ecybb>, accessed on 01.04.2023

²² Brown et al. Employment evaluations based on energy efficiency investments Source: <https://bit.ly/3mkoHei>, accessed on 01.02.2023

investments in the residential sector.²³ According to the indicators used to analyze the newly created jobs, the reason for this differentiation is the intensive manual work required for the installation of these devices. It is worth noting that, in all three cases, the impact on direct employment is smaller compared to induced employment. This flows as a result of the domino effect that the distribution of money has on family economies. **The impact of investments in EE in job creation for 322 million euros investment, divided by sectors (Industrial, Residential and Commercial)**



As Figure 7 shows, and according to the IMPLAN methodology, it is estimated that (direct, indirect and induced) 4000 net jobs will be created for a total investment of 322 million euros. Consequently, for each million euros invested, it is estimated that about 12.5 net jobs will be created, consisting of 3.7 direct jobs, 3.8 indirect jobs, and 5 induced jobs.²⁴ According to this methodology, investments in all three sectors (residential, industrial and commercial) have a relatively equal impact on job creation. However, these calculations do not account for the number of jobs created due to capital savings resulting from the implementation of EE measures, particularly in the commercial and industrial sectors, where the impact is believed to be substantial.

According to a study conducted by the American Council for Energy Efficiency (ACEE), investments in energy efficiency (EE) can lead to the creation of approximately 7 net jobs for every million saved through EE measures. These jobs are created through the savings on electric bills and the reinvestment of these saved funds in other areas, such as expanding the workforce, increasing production in manufacturing companies, or covering other expenses.²⁵ Therefore, by achieving the target of 283 ktoe (or saving 3,291,290 MWh) at a minimum price of 60 euros/MWh, the Government of Kosovo can potentially create up to 1,382 jobs over a 20-year period, assuming the estimated lifespan of the EE measures.

²³ Ibid.

²⁴ Brown et al. Employment evaluations based on energy efficiency investments. Source: <https://bit.ly/3mkoHei>, accessed on 01.02.2023.

²⁵ ACEEE, How energy efficiency creates jobs. Source: <https://bit.ly/44qCNMM>, accessed on 01.02.2023

Table 3. The benefits of implementing the EE measures.

	Energy saving / year	Import saving for 20 years (euro)	The number of created jobs as a result of implementing projects	The number of long- terms jobs (20 years)
The benefits in implementing the EE measures	329,129 MWh (28.3 ktoe- 10 first years) and 697,800 MWh (60 ktoe-20 following years).	616 mil.	4,000	1,382

However, in the NES 2022–2031, the workforce is briefly addressed as a specific objective in Section 4.3, titled 'Capacity building in energy-related fields and inclusion of women.' However, this specific objective is not fully defined as it focuses solely on Energy Auditors. But, this specific objective is not fully determined as it targets specifically only the Energy Auditors. As their inclusion is undeniably important, there should be other programs which target other professions: energy certifiers, market inspectors, energy engineers, etc. Moreover, NES should also target medium and low-level professions, such as service providers (installers) including ERS, manufacturers of energy efficient equipment, new technology providers, etc.

In addition to creating a completely new employment sector (the green sector), the Government will be able to create (through energy efficiency programs) the conditions for the formalization of the market, for financing the private sector and for the quality assurance of the offered services/products.

This phenomenon has been very visible during the last round of grants, where the Government has targeted (through the EE scheme for efficient appliances) households and heating technologies. Through a 6 million euros fund, ME has managed to mobilize the private/residential sector by co-financing their products, where a total investment of 15 million euros and savings close to 2.5 ktoe, have been achieved and which have been circulated through the formal channels of the labor market. As a result of demands, (submission of the final invoice through the E-Kosova system) the Government motivated new businesses to enter the formal market and offer their services to more than 9,000 households.

Such results have been observed in the MCC/MFK project, where the benefits from this project are particularly evident in the creation of a precedent for partnership with the private sector, as well as for the formalization of the labor market across sectors. This project has managed to train 133 providers of the aforementioned services. Additionally, it has facilitated the participation of women in the labor market, particularly within the construction sector. Given the gained experience, these companies are ready to further implement similar projects in the future.

Recommendations

Despite the very ambitious targets, the improved legislation and the huge energy saving potential, the EE market is still in its infancy. Such slow development is a result of various barriers, including the lack of private sector awareness, limited market demand, insufficient offers from financial institutions, and the absence of ESCO companies.

For a successful and cost-effective implementation of the energy transition, it is necessary to invest in their generating capacities, through RES and in energy reduction demand through EE. Investments in EE will not only help to achieve the objectives set by the EU, but will also increase the quality of life of Kosovo's citizens, reduce energy poverty, increase independence and state security, reduce unemployment and increase economic activity. Therefore, to achieve these goals, the Government must design and implement a comprehensive action plan.

To promote Energy Efficiency in the private sector, the Government of Kosovo should undertake the following actions:

- Ensure continuous flow of funding in the Energy Efficiency Fund through the implementation of mandatory schemes based on the Energy Law. Through this scheme, every energy company is obliged to invest a part of their profit for the development of Energy Efficiency measures in third parties.
- Expand the scope of the Energy Efficiency Fund by making it a fund for the energy transition, with the mandate to support households, the private sector and the public sector in the implementation of energy efficiency measures.
- Create a market for ESCO companies by developing model contracts²⁶ to ensure private market investment in Energy Efficiency projects
- Expand the support of the Credit Guarantee Fund in support of the private sector for risk reduction in the investment of EE projects
- Develop complementary strategies that promote energy efficiency in the transportation and industry sectors.

Furthermore, the Government should continue implementing programs to support municipalities in implementing energy efficiency measures for public buildings. Additionally, municipalities should receive financial support from international institutions to carry out their own projects and further their green agenda.

Finally, the Government and its local/international partners (in preparation for the implementation of the NES), should start preparing the labor market and the market in general to enhance absorptive capacities, reduce the risk of increased inflation of the aforementioned services and increase the quality of services/products.

²⁶ The contracts developed by ME/EEKA include the best practices for contracting ESCO services, guaranteeing energy savings and the rights of end consumers

Annex

Table 4. Scenario 1 for reaching the EE target

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Annual savings (ktoe)	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
Annual savings (ktoe)	X	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	
Annual savings (ktoe)	X	X	6.1	6.1	6.1	6.1	6.1	6.1	6.1	6.1	
Annual savings (ktoe)	X	X	X	5.4	5.4	5.4	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	5.4	5.4	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	5.4	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	X	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	X	X	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	X	X	X	5.5	5.5	
Annual savings (ktoe)	X	X	X	X	X	X	X	X	X	5.4	
Annual savings (ktoe)	2.7	8.9	15	20.4	25.8	31.2	36.6	42	47.5	52.9	283

Table 5. Scenario 2 for reaching the EE target

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Annual savings (ktoe)	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	
Annual savings (ktoe)	X	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Annual savings (ktoe)	X	X	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Annual savings (ktoe)	X	X	X	5.4	5.4	5.4	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	5.4	5.4	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	5.4	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	X	5.4	5.4	5.4	5.4	
Annual savings (ktoe)	X	X	X	X	X	X	X	8	8	8	
Annual savings (ktoe)	X	X	X	X	X	X	X	X	9	9	
Annual savings (ktoe)	X	X	X	X	X	X	X	X	X	8.5	
Annual savings (ktoe)	2.7	7.8	12.9	18.3	23.7	29.1	34.5	42.5	51.5	60	283



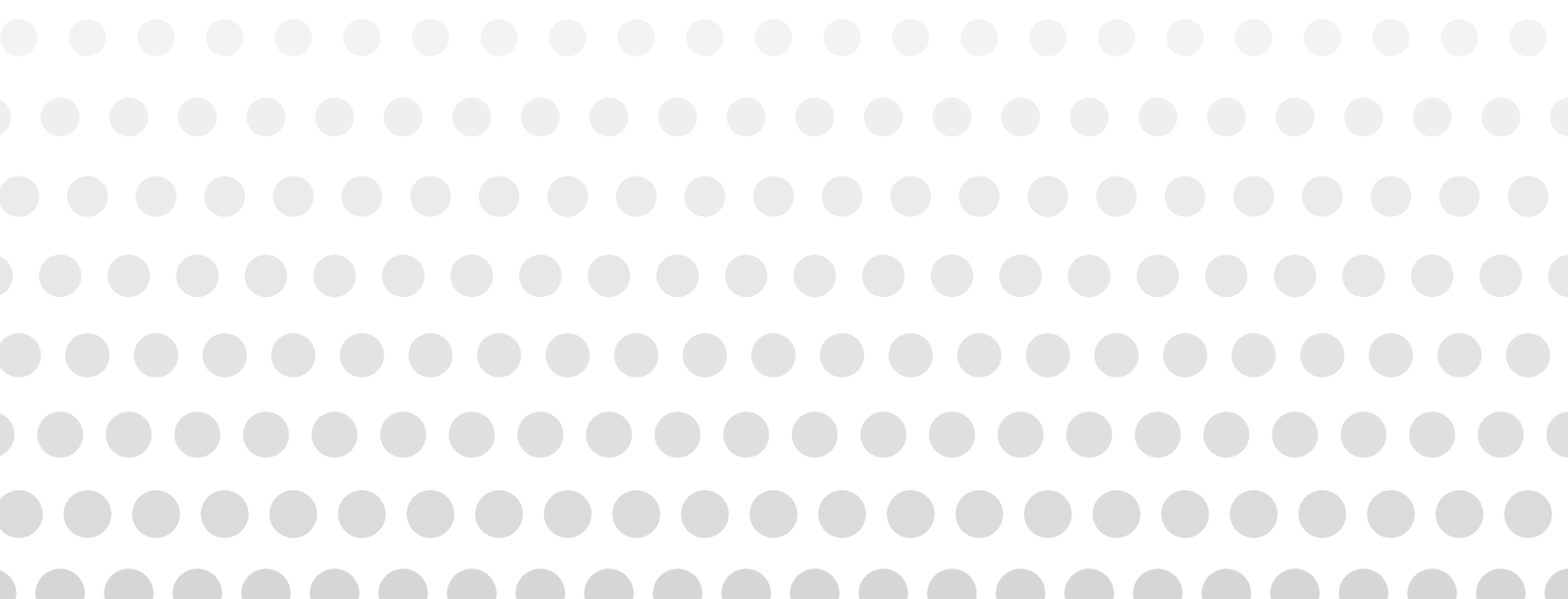
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