INDEP
INSTITUTE FOR DEVELOPMENT POLICY
INSTITUTI PËR POLITIKA ZHVILLIMORE

Step by Step Towards Fully Embracing the Energy Transition in Kosovo

ANALIZË E POLITIKAVE

/2019

Step by Step Towards Fully Embracing the Energy Transition in Kosovo

Autor: **Learta Hollaj**

Burim Ejupi

Programi: **Zhvillim i qëndrueshëm**

Publikimi: **Qershor, 2019**

Foto e ballinës: **Getty Image**

ISPN: **F3824284234**

Mbështetur nga:

Agora Energiewende

Ky punim është publikuar me mbështetjen e Fondacionit të Vëllezërve Rockfeller. Përmbajtja e këtij dokumenti, duke përfshirë opinionet e shprehura, jo domosdoshmërisht reflektojnë ato të donatorëve të INDEP, stafit të tyre, bashkëpunëtorëve apo Bordit.

Contents

ENERGY TRANSITION – WHY IS IT SO RELEVANT?

The energy transition is now clearly a global undertaking and it calls for the transformation of energy systems from fossil-based to zero-carbon by the second half of this century. While historical transitions between major energy sources have occurred, most of these shifts lasted over a century or longer and were stimulated by resource scarcity, high labor costs, and technological innovations. The energy transition of the 21st century will need to be more rapid. However, the way forward is undefined and scenarios on how to best embrace it must be designed on country by country basis.[1]

The driving forces of this transition are the global efforts to tackle climate change, hence calling for the reduction of energy-related CO_2 emissions. In this endeavor, renewable energy and energy efficiency reportedly have a potential of contributing with 90% of the required carbon reductions when coupled with deep electrification of end-use energy sectors.[2][3]

In 2018, renewable power generation counted for more than half of additions in power generating worldwide capacities compared to 2012. More than 2,000 GW of renewable power generation took place in 2016[4], with hydropower dominating the mix, followed by wind, bioenergy and solar photovoltaic (PV). Moreover, in 2017, investments in renewable capacity surpassed investments in fossil based generating capacity. It is important to note that most of these investments are taking place in developing and/or emerging countries. In this regard, the continuously decreasing costs of PV and wind technologies, in particular, are contributing to record global low prices for auctions. The lowest prices for PV projects are reported in Kuwait with $25 per MW/hour, followed by Morocco with $30 per MW/hour, and Germany with $50 per MW/hour.[5] However, to keep this momentum going and in order to safeguard an enabling environment for a smooth integration of large scale renewables, there is a need for coordinated policymaking and the creation of a sound regulatory environment, introduction of new and innovative financial instruments, and investment in education and awareness raising about the positive outcomes of this transformation.

With energy access and energy security being two of the major concerns of the policy makers around the world, contrary to a massively prevailing belief, energy transition is believed to have the solutions to the two. Different from the case with fossil fuels, renewable energy sources are available in one form or another in most geographic locations.[6] As a result, enhanced security is expected and at the same time, a greater energy independence for most states as well as greater social wellbeing and enhanced employment opportunities.

---

[1] https://www.sciencedirect.com/science/article/pii/S0301421511006987
[2] IRENA, Global Energy Transformation, A roadmap to 2050, pg. 9
[3] End use energy sectors refer to transport and heating and cooling for buildings
[4] https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_2017_Power_Costs_2018.pdf
[5] Redel, Agora
[6] IRENA, A New World: The Geopolitics of the Energy Transformation

HOW DOES ENERGY TRANSITION RELATE TO KOSOVO?

In line with global developments, energy transition is a journey that awaits Kosovo has well. Based on modeling presented by the Ministry of Economic Development, large-scale intake of renewables is expected after 2019, with more than 50% of the overall power demand covered by RES by 2040 and a 100% coverage by the year 2060.[7]

Kosovo has a mandatory target of 25% renewable energy penetration at the consumption level until 2020 and on top of it a 29.47% voluntary target. However, the progress in this regard is really slow. Despite the call of groups of civil society organizations towards the government to make Renewable Energy Sources (RES) a priority, there is also a constant appeal coming from the European Union as evidenced in the country report and related documents, which put a high emphasis on the necessity to act more actively in terms of integrating renewables. In this regard, Kosova has revised the National Renewable Energy Action Plan 2010-2018, now updated for the period 2018-2020. According to this document, the country has raised its solar target from 10 MW to 30 MW, and the most important share, a target of 124.1 MW, is expected to come from small & medium hydro power plants, while, a 173.8 MW capacity has been projected for wind farms.

Despite the global developments and major technological innovations and breakthroughs, the country once more confirmed its focus on a lignite based energy future, when in the beginning of 2018 the Government has singed the commercial agreement for the Thermal Power Plant (TPP) Kosova e Re. Moreover, this is further confirmed in the Energy Strategy of Kosovo for the period 2017-2026 in which document, the main emphasis is on the '*construction of new electricity generation capacities as replacements for the old ones in order to cover growing electricity demand and system reserve requirements*', whereby coal investments take a predominant lead.

Nonetheless, despite the political and policy level developments, the interest of investors for wind and solar projects is ever increasing. Moreover, there is increasing pressure to increase the RES targets. In particular, the investors' community is regularly endorsing the fact that Kosovo has good wind resources, which is in full contradiction with what the Government has been saying for years now. This is also proved given the fact the investments in RES are thriving, although still at a slow pace. In October 2018, a wind farm with a 32.4 MW capacity has been launched. It is expected that it will produce 110 million kWh per year. On the other hand, the SOWI Kosovo L.L.C, a Kosovo-German joint investments, of a 105 MW capacity, is expected to be online in 2020. On the other hand, developments with PV installations are rather moving forward with a slower pace, however, a total of 7 preliminary authorizations have been issued in 2018 by the Energy Regulatory Office for 7 projects with a total capacity of 21 MW.

Seemingly, it is no longer a matter of whether wind or solar are a viable alternative for Kosovo, now it is a question whether we want to prioritize investments in an environmentally friendly and green

[7] http://mzhe-ks.net/repository/docs/Newsletter-No_2-ENG.pdf

oriented future for the energy sector or we choose to remain locked in energy planning of the past. Besides, embracing energy transition in Kosovo would have multiple positive implications. It is expected to contribute to the creation of new business opportunities, new jobs, green growth, sustainable economic development in the country, and also, it would contribute towards the empowerment of rural communities. Specifically, a focus in renewables 'can drive economic growth, secure energy supply, and broaden energy access, while simultaneously combating climate change and air pollution."[8]

With major enabling technology developments for RES and market dynamics, the challenge remains the adopting policies and regulations and the need for a wide institutional and policy timely response, in order not to miss the momentum. With this in mind, this policy paper focuses on unveiling a step by step scenario towards the decarbonization of the electricity sector in Kosovo, while evidencing necessary policy measures to deliver in this regard.

WHY EMBRACING TIMELY THE ENERGY TRANSITION IS HIGHLY RELEVANT?

The Paris Agreement, signed by 196 state parties at COP21, provided orientation to fight climate change by keeping global warming *'well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C'.*[9] In order to meet these objectives, countries need to design long term plans, or Nationally Determined Contributions[10], that jointly would contribute to the achievement of these goals. On the other hand, the Inter-Governmental Panel on Climate Change (IPCC) report published in 2018 has underlined the urgency of taking decisive action to tackle climate change. Considering that two-thirds of global greenhouse gas (GHG) emissions originate from the energy sector, the Paris Agreement and the IPCC unequivocally call for an urgent large-scale energy transformation. Hence, the decarbonisation of the electricity sector is at the heart of the response to the climate change threat. Currently, the NDCs of most countries rely on renewable energy action to mitigate and adapt to climate change, whereby the focus is on power generation, but a few of those also address end-use energy sectors such as transport and heating and cooling for buildings.

Kosovo, on the other hand, not a UN members and hence neither a signatory of the UNFCCC, did not sign the Paris Agreement. However, being a signatory to the Energy Community Treaty and aspiring EU membership, Kosovo is equally bound to deliver on the COP21 agreed objectives. In line with the global trends, the decarbonisation of the power sector represents the first major challenge for the Energy Community contracting parties on the road to energy transition. Members of the Energy Community have to transpose and abide to the *acquis communautaire* in the climate and energy

[8] https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Apr/IRENA_IEA_REN21_Policies_2018.pdf
[9] https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf
[10] NDC's are documents which present efforts by each country to reduce national emissions and to adapt to the impacts of climate change.

sectors. In that regard, Kosovo has already taken concrete steps in this regard by transposing the relevant EU legislation, and in particular by designing and approving the national Renewable Energy Action Plan (NREAP) and the National Energy Efficiency Action Plan (NEEAP). At the same time, upon the publication of the EU Commission's Long-Term Climate Strategy for 2050 aiming at net zero greenhouse gas emissions, the ministers of Western Balkan countries (including Kosovo) at the Ministerial Council, the Energy Community's governing body, pledged allegiance to the EU's climate plans. In December 2018, they adopted the "General Policy Guidelines on 2030 energy and climate targets for the Energy Community", hence committing to the reduction of greenhouse gas emissions, increasing energy efficiency and the share of energy from renewable sources.

It is important to highlight that EU is aspiring to be the global leader in energy transition and in this regard the decarbonization process of the energy sector has become quintessential for reaching the Paris goals. As such, the Long Term Climate Strategy of the EU will provide a clear roadmap in this regard and the National Energy and Climate Plans (NECP Acronym) are expected to play a crucial role in this regard. Kosovo, as well, it is currently in the process of preparing its National Energy and Climate Plan (NECP), which ideally should unveil a scenario towards carbon neutrality and the phase out of coal.

But, despite these policy processes, it is considered that the energy transition is feasible for the region. The South Eastern Europe (SEE) region's power sector comprises over 118 GW of installed capacity; 62 GW of which comes for over 40 years old coal power plants. In the Western Balkans region, there are 16 plants with a capacity of 16 GW and these are responsible for an amount of annual emissions which equals the amount of emission from 296 existing plants (a capacity of 156 GW) in the EU-28. On top of the negative environmental implications, these plants are major sources of health serious health problems. In particular, the coal power plants in the Western Balkans are evidenced as Europe's top polluters for emissions of particulate matter (PM 2.5) and sulphur dioxide (SO2).

Similarly in Kosovo, the energy sector is by far the largest polluter in the country. The two outdated lignite power plants are labeled as some of the worst sources of pollution in Europe, with CO2 emissions from the total coal use for operating the 2 TPPs Kosovo A and Kosovo B estimated at 5 million tonnes per year. Given that these plants are also the source of pollutants such as sulphur dioxide (SO2), dust, NOX, etc., the air pollution becomes another issue of serious concern, especially since the emissions are reported to be significantly above EU suggested levels. With Kosovo and most of the countries of the region unveiling their plans to continue the reliance on coal, the mobilization of stakeholders to fight this mentality of policy making becomes a matter of utmost priority.

Given the technological innovation, the global commitment to address climate change and the ever enabling policies, and lately a well-grounded business case, renewables are now at the center of discussion related to the energy transformation. At the same time, technology and markets for renewables develop much faster than reflected in current energy plans in most countries of the world, and only based on this year's developments; the Kosovo Energy Strategy could already be considered

an outdated document. By deploying the RES potential, Western Balkans and Kosovo can advance towards sustainability and address some of the most pressing issues such as energy poverty to energy security. And it is the most promising alternative to offering a better wellbeing for the citizens at large.

The greatest obstacle for the Kosovan energy transition will be the political mindset. Up till now, there is a political bias in favour of lignite as opposed to renewables. Yet renewables would pose a sustainable and promising solution for addressing local needs, while at the same time, contributing to a well interconnected Western Balkans.

A POLICY ROADMAP FOR TRANSFORMATION OF THE ENERGY SECTOR

In 2018, the Government of Kosovo signed the commercial agreement for the construction of the new TTP 'Kosova e Re'. The project at hand hinders significantly any serious plans to prioritize a genuine transformation of the energy sector in the country. Justifying the investment for the sake of energy security and energy independence is on one hand unfair and on the other hand unjustified. On the first instance, the need for immediate deployment of large scale capacities is rather a result of long term bad planning hence bringing the country at the verge of an energetic collapse, and on the other hand, this becomes unnecessary given the pending unexploited sustainable options which go hand in hand with global trends and objectives. The following section offers a step by step approach to addressing currently prevailing issues in the energy sectors and also provides a combination of measures, which, if systematically applied, would contribute to a smooth and sustainable energy transition in the country.

Energy Efficiency

Energy efficiency is considered to be one of the most defining features of the energy transition. The International Energy Agency (IEA) has officially recognized energy efficiency as 'the first fuel'. Following this logic, every unit of energy that isn't consumed is actually energy that doesn't need to

be generated. Respectively, energy efficiency delivers capacity at a much lower cost than would otherwise the energy supply. Energy Efficiency is considered optimal on many fronts, respectively in helping address climate change, attaining energy security, boosting economic performance, and ensuring environmental and social benefits. In particular, energy efficiency is seen as a solution to decoupling economic growth form increase global energy demand. Energy efficiency measures, combined with deployment of renewables, have contributed towards the stabilization of carbon

emissions worldwide in the period between 2014 and 2016. It's been estimated that without improvements in energy efficiency since 2000, global energy use would have been 12% higher in 2016, representing the equivalent of the energy use of the entire European Union.[11]

It is important to highlight that energy sector reforms are a key priority for the EU integration agenda, and energy efficiency is at the core of these reforms. In line with this, the European Union appeals to be given primary consideration to energy efficiency in their energy policy planning and to consider it an energy source in its own right.

In Kosovo, energy demand in 2018 was 5, 671 GWh, which is 0.27% less than in 2018 (5,686 GWh), while it represents a 13.5 % increase compared to 2008 (4,994 GWh). Kosovo has high energy intensity, respectively 0.46 toe/000 US $ GDP,[12] and performs poorly in terms of energy efficiency. In comparative terms, energy intensity is 0.24 time higher than the intensity of OECD countries and the global average and even over 4 times higher than in many EU countries. Households represent the highest share of electricity consumption, which is generally attributed to wasteful practices of high electricity consumption. In particular, residential consumers represent almost 42% of the overall demand. This is particularly explained by the findings of a study conducted in 2014, which found that 67% of households in Kosovo have no insulated roofs, 52% don't have double-glazed windows, and 69% live in privation without insulated walls. This picture clearly indicates that there is large untapped potential and vast amount of possibility to capitalize on energy efficiency projects. On top of this, a 2013 World Bank study, found that public buildings showed the highest savings potential, with 38-47% in municipal buildings and up to 49% in central government buildings. The other largest energy end use sectors, as per the 2nd NEEAP, are the industrial sector (approximately 27%), transport sector (approximately 23%), service sector (approximately 9%), and agricultural sector (approximately 2%).

In November 2018, Kosovo Parliament adopted the Law on Energy Efficiency, hence transposing Directive 2012/27/EU on energy efficiency. This Law automatically created the grounds for the establishment of the Energy Efficiency Fund – 'an independent, autonomous and sustainable entity to enable Government of Kosovo to achieve its policy objectives on Energy Efficiency by promoting, supporting and or implementing energy efficiency measures, as well as attracting and managing financial resources in order to finance and implement investment projects in the area of Energy Efficiency in a sustainable manner[13]'. The establishment of this fund is expected to contribute towards providing incentives for energy saving and cleaner energy in Kosovo. Nonetheless, full implementation of the Energy Efficiency Directive will require adoption of secondary legislation.

The Kosovo National Energy Efficiency Action Plan (NEEAP) represents the reference document for the implementation of energy efficiency policies in the country. According to the 2nd NEEAP (2010 – 2018), Kosovo set an indicative target of 9% of 1021.08 ktoe to be achieved by the end of

[11] International Energy Agency, 2017

[12] Energy Intensity is measured by the quantity of energy required per unit output or activity, so that using less energy to produce a product reduces the intensity. Energy Efficiency improves when a given level of service is provided with reduced amounts of energy inputs or services are enhanced for a given amount of energy input.

[13] https://gzk.rks-gov.net/ActDocumentDetail.aspx?ActID=18216

this period. According to the 1st Annual Report under the Energy Efficiency Directive submitted on 26 June 2018, final energy consumption increased by 7,9% compared to 2015. This was mainly as a result of rising energy consumption in buildings sector. The 3rd NEEAP which was adopted in August 2017 set a 2020 final energy cap consumption target amounting to 1556 ktoe.

It is important to highlight that investment in energy efficiency accrue to a number of direct benefits for citizens and the society at large. In particular, improvements in this regards lead to affordable and reliable services, stronger economy and enhanced quality of life in the medium to long term. Besides, energy efficiency provides good grounds for enhancing security of supply, delivering on economic development by improving on energy intensity, and most importantly, it contributes to locally generated greener employment. In Kosovo, there is a clear potential for job creation in this sector. In this regard, particularly important for the country is the fact that *energy efficiency is a local process and requires local firms, employees, and necessitates capacity building to induce locally attained skills and expertise that are appropriate for Kosovo's context*. [14]

Reduction of grid losses

Inefficiency of electricity network causes substantial losses of energy. Besides investment in energy efficiency measures, there needs to be a priority addressing of the energy losses at the distribution level and the enhanced efficiency of the power grid. Strategically, each operator of the distribution grid would strive for the reduction of technical and commercial losses.

Kosovo has privatized the distribution operator in 2012, which also marked the beginning of the process of unbundling of distribution and supply of electricity. One of the main contractual obligations of the new owner was to reduce losses and to invest an amount of 300 million EUR in the upcoming 15 years since the finalization of the privatization process for upgrading the grid infrastructure. In the case of Kosovo, electricity losses in the system consist of losses in transmission, losses in distribution (technical and commercial) and unbilled electricity in four municipalities in the north of the country. While there have seen promising reductions of commercial losses, from 25.8% in 2008 to 14.7% in 2018, for while technical losses have dropped from 17.1% in 2006 to 13.2% in 2018. In total, the amount of losses in distribution accrued to 27.9% or 1,429 GWh. The technical losses are mainly as a result of the old grid infrastructure, the length of the lines, the quality and type of conductors and transformers, the loading of the equipment as well as their maintenance. As such, investments are needed to reduce technical losses. On the other hand, represent the unauthorized energy consumption as well as the unbilled energy in the northern part of Kosovo, which represents 5.31% (272 GWh) of total demand for distribution. Reduction of commercial losses will have a positive impact in terms of the reduction of the level of consumption, hence reducing the grid load and in parallel the technical losses. Yet, despite investments carried out so far in the distribution network, the electricity losses continue to remain high and represent concerning problems to the

[14] https://www.kosid.org/file/repository/1064_INDEP_Energy_Efficiency_Fund_Kosovo_Policy_Paper.pdf

electricity sector. Losses also have a negative impact on the supply of customers and financial sustainability for supply and distribution system operators, as well as the entire energy sector.

Additionally, investments in upgrading of the grids are mandatory for systems which are undergoing major transformations. The huge intake of renewables, especially the intermittent ones, requires real grid flexibility. The centralized grid systems are almost a story of the past now; hence, the investments on grid infrastructure become a matter of high relevance for investment planning.

Regional cooperation and market integration

One of the main features of the EU policy is the trading across the borders. EU has adopted and is constantly promoting regulatory frameworks which encourage and support cross border trading through liquid markets. Ideally, the idea is to move towards a unified electricity market for the entire EU area. Given the developments and transformation of the energy sector, larger and better integrated networks are considered to create an enabling environment for the integration of large scale Variable Renewable Energy (VRE), respectively allowing cost effective utilization of flexibility options. Besides, as a signatory of the Energy Community Treaty, Kosovo is exposed to cooperation opportunities with other countries of the region. On top of it, the EnC requirements and EU energy legislation include a set of regulations, directives and guidelines for operation of energy systems in the Energy Community.

Western Balkans countries shares a history and the energy markets are based on complementary sources. Regional cooperation would lead to a larger market, hence creating opportunities to substitute thermal and hydro power plants. The region is composed of small markets, highly characterized by energy intensive. On top of it, due to prevailing subsidies, the prices are generally kept low while the tariff structures are considered inappropriate. Currently, Kosovo is connected to the regional energy market and the European one through the following lines: 1) Albania, Macedonia, Montenegro and Serbia (400 kV); 2) Albania and Serbia (220 kV); and Serbia (two lines of 110 kV). However, energy trade in the region is hampered by poor infrastructure but also quite some political interference – especially in the case of Kosovo and Serbia.

Respectfully, the interconnection line 400 kV SS Kosova B - SS Kashar (Tirana) is still not functional, despite being finalized in 2016. On top of it, also the agreement signed for secondary regulating frequency/power between KOSTT and OST in Albania could not be implemented given that KOSTT has not yet begun to operate as a regulated area within ENTSO-E and is not able to allocate transmission capacities due to not being recognized as a regulatory zone. The solving of this issue was at the center of the energy agreement signed between Serbia and Kosovo and was supposed to be implemented by November 2015. However, it remains one of the most pressing issues to this date, given that it is conditioned with the licensing and operationalization of an electricity supplier in the north of Kosovo. The full implementation of this agreement would transform KOSTT into a regulatory zone, which would serve as a source of revenues which could later be used for service improvement and infrastructure investments. This is mainly hampering the ability of the country to engage in genuine cross border energy trading and to utilize the benefits of the recently constructed interconnection line with Albania. The ability to engage in fully fledged cross border energy trading

brings a number of benefits, as is the direct contribution towards the security of supply, lower prices for end consumers, and ultimately offers a great option to fight the regional fixation to construct large generating capacities based on coal/lignite and creates an enabling environment for VRE to thrive. However, projects such as the case of Kosova e Re threaten the idea of regional cooperation and market integration, as it seems that countries of this region are striving for exclusive energy independence, fearing that political interference could impose a lot of uncertainties. Nonetheless, despite the developments, as part of the Berlin Process, in the summit held in Trieste, Italy in 2017, priority has been placed on economic cooperation within the region, with a particular emphasis on the connectivity in the energy, transport and digital sectors, including the pan-European corridors. This is particularly relevant, as currently the region is being faced with recurring problems such as the inability to fully define national and transnational transmission capacity, lack of adequate infrastructure to manage congestions, limited cooperation in the field of energy, and a highly emphasized preference of all countries to rely on their own suppliers.

Despite the development, the very nature of the energy markets in this region is highly in favor of regional cooperation and integration of the markets. The differences in the sources of electricity generation provide an ideal framework for complementary energy system, and hence the creation of a common energy market. This in turn would lead to addressing the issue of the volatility of prices, enhance intra-regional trade, and in particular, ensuring security of supply.

Market liberalization

Increased competition, improved services and variety of options for customers, as well as, better prices, are some of the direct outcomes of a liberalized energy market. The countries of the region and Kosovo included are taking measures to improve performance in this regard. The reform of the energy sector in Kosovo started in 2004 when the first package of energy laws was adopted, which also created the grounds for the establishment of the Energy Regulatory Office (ERO), hence initiating the process of market liberalization. This was further complemented with the unbundling of the Kosovo Energy Corporation – KEC, which was historically a vertically integrated company, and later the unbundling of the distribution and supply. In the meantime, in 2006, Kosovo established the Transmission System and Market Operator – KOSTT. The whole process of the market liberalization is guided by the document "Guidelines on liberalization of the electricity market in Kosovo" approved in 2017, which required from electricity producers to engage in transparent, non-discriminatory and market-based practices when offering their services to the customers in the wholesale and retail markets. Besides developments at the wholesale market, since 21 March 2017, customers connected to the 220 kV and 110 kV transmission level are subject to market conditions and prices applicable. The same was supposed to take place for commercial customers (connected to 35 kV and 10 kV voltage levels) as of 31 March 2018. However, despite these developments, Kosovo customers are still exposed to only one option when it comes to the supplier, respectively KES-CO, established in 2015 and currently serving approximately 500 000 customers, although ERO has licensed 7 suppliers from whom consumers can buy their energy at unregulated prices.

Yet, despite positive developments in the regulatory and policy aspects, there are strategic investment decisions that are in direct contradiction with these. Such is the case of the project 'Kosova e Re'. According to the terms of the commercial contract, the Government of Kosovo has established a new public company (NKEC), which is committed to acquiring the entire production capacity of the TTP Kosova e Re at a price of EUR 80 per MWh, which is two times higher than the price that KEK is charging today. In addition, this acquired electricity will be sold to KEDS at a market price, whereby the price difference is expected to be subsidized by the Kosovo budget. The construction of Kosova e Re, the establishment of NKEC and the execution of the related project based contractual obligations are expected to hamper competition, isolate the energy market, and increase electricity tariffs for consumers.[15]

Related to these concerns, investigations are under way now by the Energy Community Secretariat to see compliance of "Kosova e Re" Commercial contracts with Kosovo's legal framework, the Energy Community Treaty legal framework, and the EU energy policies and evaluate whether the current content represents a case of state aid and hence a direct impediment for the full liberalization and thriving of genuine competition in the energy market.

Demand side management (DSM)

DSM. the modification of consumer demand for energy through various methods such as financial incentives and behavioral change through education.

Energy management is becoming more important as the proportion of generation coming from renewable energy is rising. Reducing our demand for energy and better aligning when we generate and use energy will dramatically reduce the cost of generation, storage and network infrastructure. In this regard, there is a need to introduce demand side management strategies. These have double effect, respectively; they contribute to the reduction of electricity consumption levels and at the same time, offer chances for greater efficiency and flexibility in the grid management. In particular, demand side management is the solution to ensuring that supply meets demand optimally.

Peak demand in electricity use is the major driver for investment in electricity infrastructure and consequent electricity price rises. The capacity of the electricity network can be more effectively used by reducing the total amount of electricity used (energy conservation) and shifting electricity use from peak times (demand management).

Besides that, lack of demand management measures is posing problems at all levels. The energy system balancing in Kosovo is rather complex and difficult. This is particularly affected by two main factors, such as: inflexibility of generating units and great difference for electricity between day-time and night-time. The difference in the demand for electricity during different periods of the same day poses serious obstacles for following the demand diagram and keeping the system deviation within permitted limits.

[15] http://balkangreenfoundation.org/news/44

As such, there is a need for institutionalized efforts to change consumer behavior and manage demand. Usually, the goal of demand-side management is to encourage the consumer to use less energy during peak hours, or to move the time of energy use to off-peak times such as nighttime and weekends. Peak demand management does not necessarily decrease total energy consumption, but could be expected to reduce the need for investments in networks and/or power plants for meeting peak demands. An example is the use of energy storage units to store energy during off-peak hours and discharge them during peak hours. A newer application for DSM is to aid grid operators in balancing intermittent generation from wind and solar units, particularly when the timing and magnitude of energy demand does not coincide with the renewable generation.

Nowadays, DSM technologies become increasingly feasible due to the integration of information and communications technology and the power system, new terms such as integrated demand-side management (IDSM), or smart grid.

Integrating renewables

As emphasized many times already, energy efficiency will go hand in hand with RES integration as a precondition to facilitating the energy transition. There are many synergies between renewables and energy efficiency in both technical and policy contexts. As the delivery of energy services becomes more efficient, the provision of the same level of energy services requires less primary energy; and as the share of renewables in the energy mix increases, those renewables play a growing role in the supply of primary energy.

According to International Renewable Energy Agency (IRENA) assessment, South-East Europe possesses vast technical renewable energy potential (approximately 740 GW). The same report assesses that the region has a capacity of 532 GW of wind energy and 120 GW of solar PV, which potential is largely untapped. Further on, findings in 2017 study revealed that 126.9 GW of the overall renewable energy potential is already available for implementation in a cost-competitive way.

In Kosovo, despite policy and legislative developments, the progress with RES deployment is still far from wishful levels. The applicable Law No. 05/L-081 on Energy has established the RES policy. According to this law, the focus is on promoting the economic and sustainable exploitation of the local potentials of RES. This in return would meet the energy demand; increase the security of supply and enhance environmental protection. As per Article 4 of the Decision No. D/2012/04/MC –EnC of the Ministerial Council of the Energy Community, Kosovo has a mandatory target of 25% renewable energy penetration until 2020 and a 29.47% voluntary target. In May 2017, the Ministry of Economic Development reviewed the Administrative Instruction No. 01/2013 on RES Targets and has issued a new sub-legal act for RES targets for 2020. In the revised National Renewable Energy Action Plan 2010-2018, now updated to 2018-2020, the country's 2020 solar target has been raised from 10 MW to 30 MW and the biomass targets have increased from 14 MW to 20 MW. Nonetheless, the most important share, respectively a target of 124.1 MW, is expected to come from small &

medium hydro power plants. While, the total projected capacity for wind farms is 173.8 MW. On top of the increased interest of investors to invest in wind and solar, even the Minister of Economic Development has lately confirmed that there is a greater potential of both foreign and local investors for this type of energy source. Investors, on the other hand, are requesting to increase the targets, as they claim that the wind is good and Kosovo has good wind resources (which is quite the opposite of what the Government has been saying for years).

In October 2018, a wind farm with a 32.4 MW capacity has been launched. It is expected that it will produce 110 kWh per year, On the other hand, SOWI Kosovo L.L.C is a Kosovo-German joint venture have signed an agreement with KOSTT on connecting the Selaci 1, 2 and 3 wind farm to the power grid of Kosovo. The 105 MW wind farm is expected to be online in 2020.

On the other hand, with very rapid reductions in solar PV module and balance of system costs, utility-scale solar PV is now increasingly competing head-to-head with alternatives – and without financial support. However, due to the slow progress in terms of integrating RES, in April last year, the EU urged Kosovo to do more for renewable energy. It is clear now that it is no longer a matter of whether wind or solar is a viable alternative, now it is a question whether we want to prioritize investments in an environmental friendly and green oriented future for the energy sector or we chose to remain locked in energy planning of the past. Soon, respectively, by the end of 2020, a completely new Action Plan will be designed, planning on the objectives, developments and insights known at that time.

A key impediment, however, to renewable energy development for both the public and private sector in Kosovo has been the underdeveloped regulatory regime and a lack of complete and reliable resource data. Regulatory enhancements, along with select renewable energy assessments and feasibility studies, should therefore be supported in areas not covered by other donors and consistent with Kosovo's renewable energy development plan.

It therefore becomes a priority to create favorable market and policy conditions, with a great emphasis on a favourable regulatory and institutional framework; low offtake and country risks; a strong, local civil engineering base; favourable taxation regimes; low project development costs; and excellent resources. Currently, the transmission operator accommodates 270MV of installed capacity for RESs and is in consultation with international institutions to undertake a study to know what capacity is the last limit for the inclusion of RES in the transmission system so to avoid balancing problems in the power system.[16]

[16] http://www.kostt.com/website/index.php/sq/komunikata-per-media/1342-31-tetor-2018-kryeshefi-ekzekutiv-i-kostt-pjese-e-konferences-mbi-tranzicionin-e-energjise-sfidat-dhe-mundesite-ne-kosove-dhe-rajon.html

Coal phase out

Kosovo has real potential and great prospects to engage in a real energy transition. As such, focus on coal represents a real obstacle in this regard. By 2050, the lignite power plant Kosova e Re (not equipped with CCS) will not be commercially viable. Due to low utilization prospects, investments in lignite plants runs the risks of turning into stranded assets[17]. According to SEERMAP scenarios, the utilization rate of most lignite based generation capacities in most of the countries in the Western Balkans region drops below 15% after 2040. In particular, the support needed for the unprofitable lignite plants in Kosovo built in the period 2017- 2050, would be significantly higher than support given for renewables in order to meet EU mission reduction targets.[18]

The Government of Kosovo alongside the Governments of the countries of the Western Balkans could avoid the case of stranded assets by avoiding overbuilding new plants, engaging in the retirement of old amortized ones, and designing operational lifetime policies for remaining coal plants.

Kosova was expected to decommission its 40-year-old plant Kosovo A by the end of 2017. According to the energy strategy, the old plant will go out of the market once the new capacities (Kosova e Re) are fully operationalized. In that respect, Kosova A is still running, while Kosova B power plant is expected to undergo a rehabilitation process, in order to bring it in compliance with EU standards.

Despite the real threat of stranded costs and the ageing inefficient generating capacities, the concern over environmental and health aspects is more present than ever before. Continuing reliance on coal in a world where fossil fuels are gradually being labeled as the energy source of the past, represent a modern times paradox and a serious reflection of lack of vision by the policy makers in the country and the region at large.

On top of it, delaying decarbonisation of the energy sector would make the energy transition more expensive and going back to the initial claims, would double the assets stranded between today and 2050. In addition, delaying action could make it necessary to adopt costly technologies to remove carbon from the atmosphere. Besides, carbon prices are soaring to record highs, having further financial implications currently unaccounted in any energy planning scenarios in our country.

OTHER ASPECTS OF ENERGY TRANSITION

A successful energy transition is only possible if the country engages in cross sectorial policy design and planning. Besides a full commitment towards enhanced energy efficiency measures, deployment of renewables, and market design, there is a need for a wide sectorial coordination. One needs to take into consideration the technical (flexibility of the power systems), institutional (clearly defined responsibilities of responsible actors) and economic aspects (market rules) of this process. What's

[17] https://rekk.hu/downloads/projects/SEERMAP_CR_KOSOVO_A4_ONLINE.pdf
[18] Ibid.

most important, despite the progress made over the past decade and the growth in policy support, renewables have yet to reach their full potential and key barriers still inhibit further development. These relate to technology, awareness and capacity, cost, finance, infrastructure and public acceptance, in addition to policy, regulatory, institutional and administrative barriers.

De-risking policies

No energy transition process will be feasible or successful without reform and adaptation of supporting sectors. Properly designed fiscal incentives and financial supporting mechanisms, lead to improved chances for access to capital, reduce the financing costs, reduce high upfront costs for new RES projects, etc. They can be presented in various forms, such as: tax incentives, rebates, performance-based incentives, concessional loans and guarantees, and measures to mitigate risks. When combined with regulatory and pricing policies, they pave the way for enhanced RES investments. Moreover, the de-risking financial mechanisms are a strong signal for the investors as they offer assurance and guarantee for their investment, hence also creating an appealing environment for the investors at large. As such, the Government of Kosovo should focus on ensuring a reliable framework, both in regulatory and economic terms, so investors are ensured an economic profitability. The idea is to identify best mechanisms to cost-effectively promote and scale-up private sector investment in renewable energy. The focus in de-risking mechanism is especially relevant for developing countries due to the technology costs (although regularly falling). More importantly, it is about ensuring long-term affordable finance. Given the high upfront costs for renewable sources, financing cost becomes the primary determinant of generation cost for renewable sources. UNDP has split de-risking measures in two broad categories:

Policy derisking instruments	Financial derisking instruments
These instruments seek to remove the underlying barriers that are the root causes of risks. These instruments include, for example, support for renewable energy policy design, institutional capacity building, resource assessments, grid connection and management, and skills development for local operations and maintenance (O&M).	These instrudments do not seek to directly address the underlying barriers but, instead, transfer the risks that investors face to public actors, such as development banks. These instruments can include, for example, loan guarantees, political risk insurance (PRI) and public equity co-investments.

Source: *Derisking Renewable Energy Investment, UNDP, 2013*

Pricing and supporting mechanisms

In Kosovo, same as else in the world, the deployment of renewables is initially supported through feed-in-tariffs, combined with other supporting policies such as guaranteed access to the grid and granted priority of dispatch. Currently, the FiT framework in Kosovo looks as below:

Technology	EUR/MWh
Wind	85.00
Photovoltaic	136.40
Small HPPs	67.47
Biomass	71.30

However, considering that renewable technologies have matured significantly and as a result the costs are falling significantly, RES large scale projects are now supported by auctions instead. The development of a well-designed auction based RES sector should be the focus of the government from now on. Moreover, this has become an almost global undertaking as countries are massively moving to auctions. These mechanisms are automatically adjusted for new information that is placed in the market and also internalize market developments and technological advancements.

IRENA assessed that more than 70 countries had adopted auctions by the end of 2016. Another important aspect of auctions is also the fact they can be tailored to country-specific needs and objectives and what's more, they ensure transparency and commitment. Although auctions are the way forward, attention must be paid to the way they are designed. On some cases they can lead to underbidding while at other times they risk to limit the entry of small and new players in the market. As such, while moving from FIT to auctions is highly encouraged and massively supported on all levels, it is advisable to also preserve FIT for smaller scale projects.

Regulatory and institutional support

Issues such as bad policy design, inconsistent and discontinued policies, lack of transparency, lack of institutional coordination, represent some of the recurring barriers to the integration of RES.

Unclarities deriving as a result of these practices lead to increased uncertainties amongst investors and hence lack of investments in this regard. Despite the immediate necessity to engage in revision of current institutional practices and harmonization of the regulatory framework, mechanisms such as the establishment of a One Stop Shop have been widely discussed. For years now, the Ministry of Economic Development has been engaged with the idea of establishing the supporting entity that would contribute toward facilitating procedures for investors in RES technologies. What needs to be clarified is that the establishment of an OSSH as such will not be enough and that it is the time to become more proactive in this regard. It is clear that other factors like non-coordination between institutions, lack of capacity for technical appraisal of applications, intertwining between deadlines for obtaining licenses and authorizations, etc. will continue to present a challenge and establishing a One Stop Shop which would only serve as an information entity risks ending up as a cosmetic intervention and simply an additional burden for the budget Kosovo, rather than a mechanism to support investments in RES. As such, despite the necessity to engage in thorough evaluation of institutional and regulatory framework, whatever steps that are presented as tools to facilitate RES integration should be carefully crafted and designed, so they meet the actual needs and are aligned with national processes and contexts of developments in the sector.

Distributed generation

Invoking only traditional approaches for meeting the objectives of the energy transition will certainly not suffice. As more renewable energy comes in, the share of smaller production plants increases. As such, decentralized solutions, respectively, distributed generation, which offers wide electricity access is now at the forefront of global discussions. Distributed generation is considered to have significant impacts on empowering local communities, improving livelihoods, creating employment opportunities, etc.

In Kosovo although we do have approved set of rules for supporting the microgenerators from Renewable Sources, the implementation seems to present a major challenge. Despite the lack of awareness of citizens, this scheme also has limitations in terms of the output and the level of compensation. What's more, positive balances are not compensated and prosumers are only compensated by return of energy. As such, only 3 applications have been approved during the year 2018 by ERO. Therefore, such developments send a clear signal that much is yet to be done in this regard. Especially since, decentralized energy systems implement deliver on some of the most crucial objectives such as the increase use of RES, enhanced EE performance, and reduced dependency on fossil fuels and large generators. Besides, distributed energy systems jointly with microgrid integration, hand in hand with enhanced use of battery storage, are seen an optimal combination to preserve energy systems from failures.

Developing countries are growingly investing in Distributed PV, as on one hand it leads to savings for the consumer and on the other hand it leads to savings for the entire system. Main accelerators of these developments are innovative finance and business models as well as the continuous decline of technology costs. What's more, citizens in some significant parts of the world are leading the efforts to embrace energy transition, and the distributed generation is one way to ensure success in this regard

in the medium to long run. As such, prioritization of energy policies in this regard in Kosovo most attain higher attention and institutional commitment.

Sector coupling

As can be seen, the focus and the main emphasis in this process is placed generally with the power systems. Respectfully, not much work or progress has been marked in other areas and sectors such as heating and cooling and transport. These are lagging significantly behind. However, with electricity becoming cleaner, this represents a part of the solution to reduce greenhouse gas emissions in other sectors such as heating and cooling and transport. Besides reduction of CO2 emissions and oil imports, this would present an opportunity for having more quality air and better cities to live in. The most promising aspect is the fact that the technologies enabling electrification are already existing and most of them in the phase of massive market deployment. Such technologies are: electric vehicles, heat pumps, smart technologies controlling energy consumption, and direct heating based on low carbon generation. Electrification of end use energy sectors has become an EU priority and as such, policy planning and design in Kosovo should internalize these developments and necessary steps must be taken to ensure that policies across sectors are fully integrated.

Education and capacity building

Energy transition is not an energy sector policy reform undertaking alone. In order for us to deliver successfully in this regard, creation of synergies with well fit socio-economic structures to support it is mandatory. Beyond this, integration of renewables should no longer be only attributable to the institutions, yet they are directly responsible for investing in education and awareness raising and information of citizens about existing alternatives and opportunities. It is necessary that renewables slowly become a lifestyle and enabling environments must be created to make consumers and prosumers active actors in the energy market.

Yet, beyond awareness raising and education about the relevance of thoroughly embracing energy transition at all levels, there is a need of educational policies and reforms to ensure that the labor force is ready for this transition. This is particularly relevant, as RES integration is regularly reported to contribute to enhanced employment prospects globally. IRENA(2018) notes that a growing number of countries derive benefits from renewable energies, but, China, Brazil, the US, India, Germany and Japan account for over 70% of all renewable energy jobs globally.[19] According to the International Labor Organization (ILO) around 18 million more jobs will be created in the RE energy sector by 2030. There will be a net job creation representing around 19 million jobs globally. In contrast there will net job losses of around 6 million.[20] As such, beyond the need to update the curricula and respond to market trends, an efficient solution in this regard is the utilization of Vocational and Educational Training Centers in Kosovo to invest towards a readily available labor force that is able and capacitated to actively engage in the gradually transformed energy system.

[19] Cf. International Renewable Energy Agency, 2018, p. 6-14.
[20] See www.ilo.org/weso-greening

CONCLUSIONS

With regards to picking the way forward in terms of embracing the energy transition, the only certainty is that this endeavor is no longer optional and that any delays in terms of embracing it will merely result in stranded costs and many lost opportunities.

In the case of Kosovo, besides declarative statements of policy makers and considerate progress with policy and regulatory reforms, the political mindset is hindering the real prospects of this transformation. The mere decision of the Government to sign a commercial agreement for the construction of the new TTP Kosova e Re is a sufficient indicator of the vision that policymakers have for the sector. As such, no matter what policy combinations will be chosen to pursue the path of energy transition, unless there is not stopping of the project at hand, the entire embankment on this journey might be seriously jeopardized. Kosovo at this stage doesn't need new large scale lignite based capacities; instead, it only needs to engage in thorough and well-coordinated planning and policy design for the energy sector. This document offers a potential roadmap of sequencing policy interventions that if invoked properly, could easily facilitate the entire process and as such unjustify the need for investing in a lignite based future.

The immerse unexploited energy efficiency potential, the need to upgrade grid infrastructure, the immediate implementation of policies and regulations enabling a competitive energy market, the active participation and commitment in regional energy trading and exchange, the genuine engagement in demand side management, the full exploration of the renewables potential – jointly combined, could lead Kosovo to an accelerated coal phase out future.

Yet, transformation of the energy systems is only possible with the creation of rightful cross sectorial policies and coordinate policy planning at all levels. Energy transition will require an upgrade of the financial systems and fiscal policies, it will require a close coordination with the labor market and the education policies, while ultimately, it'll have to become an internalized process, meaning, a process led by the citizens for the improvement of their own well-being.

Most importantly, energy transition is available card in our hand which, if played correctly, will ultimately address the issue of sustained economic growth avoiding direct harms to the environment, the health, and the everyday quality of living of the citizens.

It is the ultimate moment for Kosovo to avoid wasting further time without designing a clear roadmap forward and in doing so, the process has to be characterized by highly transparent and inclusive practices, as decisions of today would certainly lead to really costly and irreparable outcomes in the near future. Embracing this energy transition in a rightful manner is our biggest opportunity and it must be made sure that the resources are effectively and efficiently utilized to ensure a transformation which is acceptable and ultimately beneficial for everyone.