GREEN & DIGITAL

WHERE DOES KOSOVO STAND?

The twin transition – a term used to link green and digital transitions - is a relatively new phenomenon in the last few years. COVID-19 has turned it into an imperative of time. The twin transition involves a shift of development paradigm from a linear economy based intensively on resources to a circular economy that spends less but generates more value through sharing, using, repairing and reusing resources, as much as possible, making full and wiser use of data and digitalisation processes.

Less developed countries, especially those that rely almost entirely on extractive industries and energy generated from coal, may be less equipped to successfully engage in it. Such factors impact countries' ambitions, the pace of reform, and above all support from the public, as the transition to green and digital will close some traditional jobs and open new ones - but not necessarily in the same region and for the same people.

Kosovo has started to engage in a twin transition and is still in the very early stages. The country is in the process of finalising its strategic framework before it embarks on completing its legislative framework, and then implementing measures foreseen by the transition - and these new strategies and laws. Nevertheless, it aims to play its part in the global green transition which has ambitious targets of climate neutral economy by 2050 and cannot afford to miss out on the digital revolution that is occurring worldwide. However, Kosovo is a post-war country with a nascent economy reliant on remittances for any type of growth; high unemployment and unskilled labour, and 93% energy consumption from two very old coal-fired power plants.[1] So the twin transition is a very big challenge to surmount.

RECOMMENDATIONS

• Following the adoption of various strategies linked to green and digital agenda, starting with the National Development Strategy to continue with the completion of the vital legislative and regulatory framework related to green and digital transition, emulating those of the EU which is the leading standard-setter in this area. E.g. on the green transition- introduce new legislation on the circular economy, waste management, construction permission, farming methods, innovation, etc; whereas on the digital transition- strengthen general data protection, copyright; IT security, liability and state aid laws.

• Develop monitoring frameworks for measuring well-being beyond GDP and assess the enabling effects of digitalisation and its overall carbon, energy, and environmental footprint as a way to raise awareness and promote behavioural change.

• Undertake deliberate steps to concisely link and develop the two tracks of the transition, in such a way, that they mutually reinforce each other, taking care of leaving no one behind to maximise the population support for the transition.

• Continue with the digitalisation of public services through the concentration of currently dispersed or missing data.

• Ensure robust cybersecurity and secure data-sharing framework so that critical entities can prevent, resist and recover from disruptions, and ultimately, build trust in technologies linked to the twin transitions.

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[1]   Energy Regulatory Office, Annual Report 2021, at Annual Report 2021.pdf (ero-ks.org).

• Adapt education and training systems to match a rapidly transforming technological and socio-economic reality, as well as support labour mobility across sectors.

• Condition scholarships and specialised training with certain years of work for the public sector in exchange.

• Embrace closer cooperation with the private sector and civil society organisations that are at the centre of technological change.

• Use wisely scarce budget resources and foreign development assistance, orienting projects and investments in areas that are future-proof.

• Seek to join international fora to learn from their experiences, expand funding streams and promote Kosovo's positive examples to generate more green investments in the country that creates more jobs.

LINKING GREEN AND DIGITAL – THE TWIN TRANSITION

The coupling of green efforts with the digital agenda is a relatively new phenomenon.

The European Union (EU) - started to meaningfully link the dual track of green and digital-only in the last couple of years. Nevertheless, the usefulness of digital solutions to energy, the environment, and agriculture had been demonstrated for a longer period. Today, this interlinkage is widely recognised as the twin transition.

Although the EU has been an important standard-setter of environmental protection and a key player in the global efforts to reduce carbon emissions and curb the effects of climate change, the EU Green Deal was presented only in December 2019.[2] The Green Deal is now the EU's new main growth strategy to transition the EU economy to a sustainable economic model. The objective of the EU Green Deal is to make the EU the first carbon-neutral continent by 2050, resulting in a cleaner environment, more affordable energy, smarter transportation, new jobs, and an overall better quality of life.[3] This ambitious agenda will be supported by significant investments in this sector.

The first digital agenda for Europe dates back to 2010.[4] However, the ten-year plan, at that time, focused more on business and consumers, broadening internet connectivity and broadband, and lowering electronic communication prices. The EU's second digital agenda 2020-2030, already reflects the profound changes introduced by new technologies.[5] It sets out four ambitious targets for digital skills, businesses, infrastructure, and public services.[6] Nowadays, digital solutions play a key role in implementing ambitious Green Deal objectives.

Digital solutions are not only a possibility but a vital tool for greener development. They have an enormous capacity to generate efficiencies, flag problems for better use of scarce resources, track in real-time extreme

Today, the twin transition is a widely accepted orthodoxy.

weather events to be able to save the lives of people in vulnerable situations or simply produce data for better policymaking.

One disadvantage of digitalisation is that the increased use of digital devices and solutions relies on the reliable and uninterrupted supply of electricity. In less developed countries, electricity is still produced using various fossil fuel methods. This is an important consideration that Kosovo should take into account in its transition efforts. Digital devices should support sustainability and the green transition. People need to know about their devices' environmental impact and energy consumption to modify their behaviours.

THE CURRENT LEGAL FRAMEWORK – WHAT MORE IS NEEDED?

As an aspiring and potentially candidate country for EU accession, Kosovo's legal framework is broadly approximated with *acquis communautaire*. Bearing in mind that the twin transition is a phenomenon for the last four years, Kosovo is still in the early stages of adopting them to its strategic and legal framework. However, it has started this path initially with strategies and overarching documents, leaving most of the specific laws and administrative instructions that derive from such strategies to be developed in the years to come.

On 10 November 2020, Kosovo, and the rest of the Western Balkan countries (WB), signed the Sofia Declaration on the Green Agenda, which aligns them with the EU Green Deal.[7] This important milestone is supposed to accelerate changes and processes in the region towards the overarching goal of addressing climate change. With the EU experience in mind, communication technologies and digital services are key components of any solution to meet such climate targets and goals.

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2 European Commission, A European Green Deal: Striving to be the first climate-neutral continent, at A European Green Deal, europa.eu.

3 What is the European Green Deal? at What is the European Green Deal? europa.eu

4 Publications Office of the EU, Digital Agenda for Europe 2010 – 2020, at europa.eu.

5 European Commission, Europe's digital decade: digital targets for 2030, at europa.eu.

6 2030 Digital Compass: the European way for the Digital Decade, at communication-digital-compass-2030_en.pdf (europa.eu).

7 Regional Cooperation Council, Sofia declaration on the green agenda for the Western Balkans, at rcc.int.

> **Kosovo is in the process of drafting its new National Energy and Climate Plan and has already approved its new Energy Strategy.**

The newly adopted Energy Strategy and the draft National Energy and Climate Plan contain important shifts in the positive direction towards green and digital transitions. The Energy Strategy 2022 – 2031 contains a commitment to phase out coal by 2050, a higher target for renewable energy sources, just and affordable transition, incorporation of innovation and technology and strengthening of cyber resilience in the energy sector.[8] However, the best indication of whether such measures will be implemented, is if serious work has gone into costing the Energy Strategy and if sufficient financial resources will be allocated towards its implementation year on year. The new Energy Strategy has an indicative cost of over €3bn, to be sourced through public, private and grants.[9]

One potential shortcoming of the draft Energy Strategy is that it does not include transport and industry. Instead, these two sectors will be regulated with a separate document. This will risk insufficient incorporation of energy and digitalisation considerations if detached from the Energy Strategy. Clear priorities for a greener and smarter economic transition and good planning can easily overcome this particular concern. Yet, such coordination and planning always prove more challenging in practice.

Kosovo is also plucked into the wider global, European, and regional blueprints for the green and digital transition. Sustainable Development Goals, the EU green and digital transformation agenda, or regional work to support the transition of the WB countries into more competitive economies, e.g., through the Regional Cooperation Council. As such, Kosovo is aware of the global trends and the need to accelerate its green and digital transition. Yet, its relatively weak planning capacities, competing priorities, low budget, and exclusion from some important international mechanisms (e.g., funding from UNCCC opportunities) make this transition a little harder. Nevertheless, although Kosovo is not a party to the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, and therefore not required to submit Nationally Determined Contributions (NDCs), in 2021 it indicated it wanted to voluntarily start developing NDCs.[10] This is because it wants to stay relevant and play its part in this process.

On numerous occasions, Prime Minister Albin Kurti emphasised his vision for an economic transformation based on the digital agenda.[11] However, the Kosovo 2030 Digital Agenda is not finalised yet, although the current government started

> **Digitalisation is a relatively new development in Kosovo.**

working on it in 2021. This policy document should provide a comprehensive framework for digital transformation, including 5G technologies, digital transformation of businesses and public services, and cyber security.[12] Any developments in this regard need to come from the National Development Strategy (NDS), which is also just a draft. The draft NDS incorporates the digital agenda, inclusion and green agenda, as cross-cutting horizontal issues.[13] It also includes the E-governance Strategy which is another key document in the modernisation of services and the way the government operates.[14] The delays in approving the NDS are holding back some of the progress in other strategies mentioned in this section, as everything needs to be aligned and derive from NDS - otherwise considered as the 'mother strategy'.

Another strategic document on which the government is working is the Smart Specialisation Strategy.[15] This draft strategy will potentially be a significant one as it focuses on the ICT, creative industries, food and wood production, and energy sector. The Government has also completed the Roadmap for Circular Economy, which is already published for public consultation.[16] However, as both documents are not finalised yet, it remains to be seen what contributions they will make to Kosovo's economic transformation.

Kosovo has no time to lose and should catch up with digital innovation and transformation. When Kosovo obtained its 4G technology, only Romania was ahead of it in the region.[17] Years later, Kosovo seems to have stalled and lost a step with time and developments in this regard. Graduation to 5G technology is of paramount importance and is yet to be introduced. A positive step in this regard was done in February 2022, when the Regulatory Authority for Post and Electronic Communications awarded two 5G licenses to IPKO and Telecom.[18] Telecom had signed

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8   Energy Strategy of the Republic of Kosovo 2022 – 2031, Prishtina, 8 March 2023, at https://me.rks-gov.net/repository/docs/Strategjia_e_Energjise_e_Republikes se_Kosoves_2022_2031.pdf.

9   Ibid.

10   UNDP Kosovo, Climate promise, updated on 25 January 2023, at https://climatepromise.undp.org/what-we-do/where-we-work/kosovo.

11   PM Kurti speech at the KOSICT conference, Prishtina, 7 October 2022, at https://kryeministri.rks-gov.net/blog/kryeministri-kurti-tik-u-nje-nga-pese-sektoret-prioritare-me-potencial-per-rritje-dhe-inovacion/.

12   Ministry of Economy, at https://me.rks-gov.net/en/news/ministry-of-economy-and-raepc-held-the-meeting-on-the-draft-digital-agenda-2030-#.Y5xFE3bMLrc.

13   Office of the Prime Minister, draft National Development Strategy 2030.

14   Office of the Prime Minister, draft E-Governance Strategy.

15   Office of the Prime Minister, draft Smart Specialisation Strategy.

16   Ministry of Environment, Spatial Planning and Infrastructure, Roadmap for Circular Economy, at https://konsultimet.rks-gov.net/viewConsult.php?ConsultationID=41749.

17   IPKO, Prishtina, 2 October 2014, at https://www.ipko.com/en/ipko-launches-4g-for-the-first-time-in-kosovo/; Romania Insider, November 2012, at https://www.romania-insider.com/vodafone-launches-4g-services-in-romania-but-service-extremely-limited-in-bucharest.

18   Kosovo awards 5G licenses to IPKO and Telecom Kosovo, 20 February 2023, at https://www.datacenterdynamics.com/en/news/kosovo-awards-5g-licenses-to-ipko-and-telecom-kosovo/.

a contract with Croatian Ericsson Nikola Tesla for the modernisation of its infrastructure and preparation for 5G in December 2022, whereas IPKO had announced in July 2022 that it had successfully tested its 5G capabilities reaching the speed of 1.2GBps.[19]

> **The COVID-19 pandemic has leapfrogged Kosovo - and many other countries - into a new era of increased use of digital devices and services.**

The use of the e-Kosova portal has increased, not only for managing the inoculation process for citizens but also because the government has kept adding other services to the platform.[20] Kosovo needs to capitalise on this momentum to usher its economy and citizens into a new way of doing things. The digitalisation of the economy is in progress. Today, 96% of households in Kosovo have access to a broadband internet connection.[21]

However, regardless of how well the abovementioned strategies and initiatives are prepared and what strategic objectives they contain, the real proof of Kosovo's commitment towards the twin transition will be in their transposition into legislation, their implementation, well-maintenance and continuous funding.

The recent European Commission report on the status of environment and climate in the Western Balkans notes that air quality in WB countries continues to be critical; the state of waterbodies is unsatisfactory; soil degradation is prevalent; and pollution from transport and energy sectors is now documented.[22] In other words, Kosovo shares many common challenges on its road to sustainable development as other WB countries do.
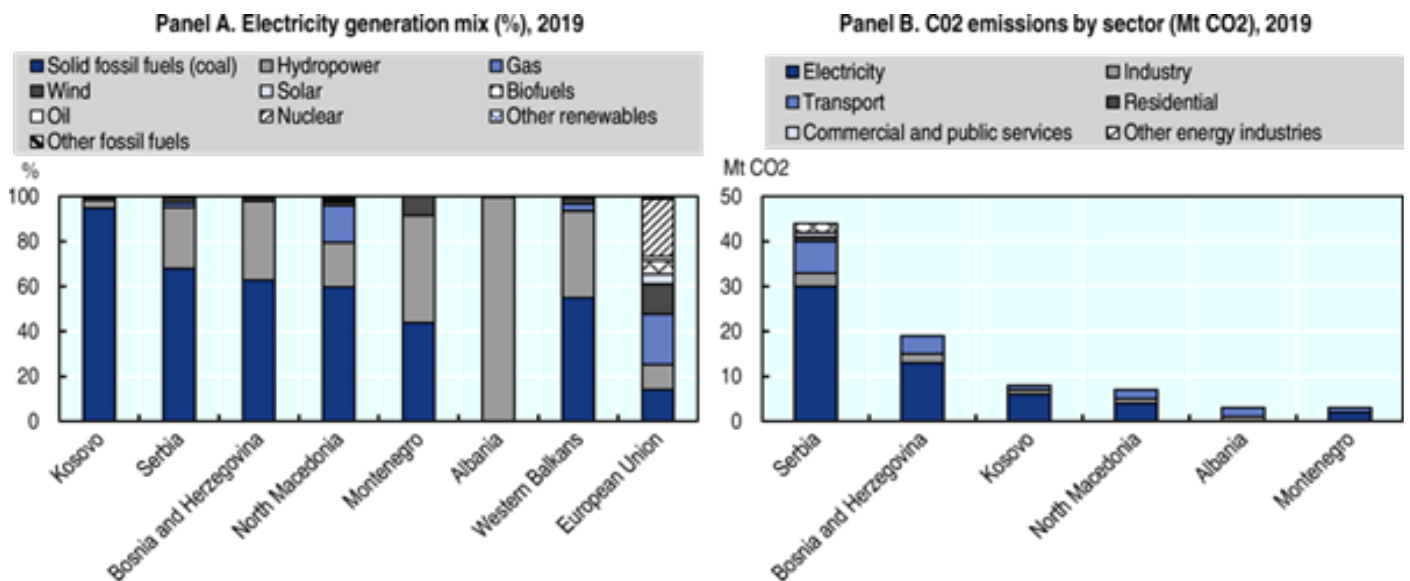

Figure 1. Coal-fuelled electricity generation drives CO2 emissions in Western Balkans Electricity generation mix (%), 2019 (Panel A), and CO2 emissions by sector (Mt CO2), 2019 (Panel B)[23]

Whilst challenges to twin transition are plenty, there are three key ones that could put Kosovo on a good footing, if addressed properly.

Data and Cybersecurity

Data is important for policymaking, monitoring and evaluation and risk mitigation; cyber security underpins the well-functioning of the entire system, and the development of adequate skills is a precondition not only for successful transition but also the sustainability of all green and digital efforts.

Although institutions are on the upward trend of transparency and digitalisation, these efforts are still in their early days. These efforts get more complex in cases where Kosovo – due to its legacy of war and break-away from Yugoslavia – does not own much data from the past. A staggering example of this is the lack of a register of forests since 1968.[24]

> **One of such major issues with data in Kosovo is its availability, accessibility, reliability, and connectivity.**

Similarly, there is a lack of a register for schools. Geographic Information Systems would be an ideal solution for these purposes, as in addition to information about forests or schools respectively, they can capture a lot of other useful information, e.g., location of water pipes, type of land, vicinity to critical infrastructure,

19   Broadband TV News, 'Ericsson inks Kosovo deal', 20 December 2022, at https://www.broadbandtvnews.com/2022/12/20/ericsson-inks-kosovo-deal/; IPKO, IPKO is ready to offer 5G experience, on 15 July 2022, at https://www.ipko.com/ipko-eshte-gati-te-ofroj-eksperiencen-5g/.

20   Service statistics, at https://ekosova.rks-gov.net/.

21   EU Report for Kosovo 2022, at https://ec.europa.eu/commission/presscorner/detail/en/country_22_6090.

22   European Commission, Joint Research Centre, Belis, C., Djatkov, D., Lettieri, T., et al., Status of environment and climate in the Western Balkans: benchmarking the accession process progress on environment, Publications Office of the European Union, 2022, at https://data.europa.eu/doi/10.2760/294516.

23   OECD 2022, Multi-dimensional Review of the Western Balkans, at StatLink https://stat.link/7mo83t.

24   Interview with a representative of the Ministry for Environment, Spatial Planning and Infrastructure, Prishtina, 28 October 2022.

etc., so that crucial data is saved in one space and used by many interested stakeholders. Currently, data tends to be scarce, and oftentimes it is obtained and maintained in silos *(more on connectivity and interoperability below)*.

Where data is available, often it is not stored in the right format, but rather in PDF, making extraction difficult to generate statistics.[25] Several Civil Society Organisations (CSOs) report challenges in obtaining information; often they need to request access to official documents for information that should be available online.[26] Although all institutions have appointed responsible officers to deal with such requests, in a few of them, the responses remain at the discretion of such officials. However, according to the Agency for Information and Privacy, public institutions are quite transparent in granting access. Out of 7561 requests for access to official information received in 2021, 7408 (98%) requests were granted access; 46 were granted partial access, and 95 were refused.[27]

> **There are cases where available data is not accurate or comprehensive.**

An example of this would be the data from the Kosovo Environmental Protection Agency, regarding medicinal waste. These data are not comprehensive because they include only the medicinal waste of public hospitals and health clinics.[28] They do not yet include medicinal waste from numerous private clinics across Kosovo.

Where available, connectivity of government data can also be an issue. The government is working on interoperability and developing a unique database.[29] However, in addition to domestic considerations when building such systems, Kosovo needs to make sure that its data can communicate and link with other global databases to eliminate the risk of becoming a digital data black spot. For this reason, Kosovo should follow global trends and European standards to make sure its digital system is compatible with that of the rest of Europe e.g. in the rail transport sector start collecting data in the format used by the EU Route Compatibility Check or learning from the EU Kohesio Platform on how to link and make transparent data related to various funding schemes.[30]

Enhancing digitalisation raises the need for cyber security. As with any new challenge, Kosovo's legal framework, mechanisms, and capacities to operate in cyberspace are quite basic. The EU has recommended Kosovo to adopt a Law on Cybersecurity (approved in February 2023) and the Strategy and Action Plan on Cybersecurity (still in draft form).[31] Various cyber-attacks in Kosovo, but perhaps more prominently in the countries of the region, such as Albania and Montenegro, accentuate vulnerabilities and the immediate need to treat cyber security resilience seriously.[32]As digitalisation is mainstreamed into all policy sectors, cyber-security should be an important consideration from the beginning. Due to the connectivity of databases and devices, cyber resilience is as strong as its weakest link. The fact that cyber resilience does not feature so much in the public discourse best illustrates the collective low awareness associated with its risks.

Whilst both have made strides on their track, there is more work that needs to be done to link them together. The awareness of cyber security is still at the basic level if one excludes the ICT savvy professionals. The language of the twin transition still needs to become established in Kosovo, and as such, has not trickled down into data collection, analysis, and generation, or even green undertakings and projects.

> **Green and digital are two different sectors and operate in relative silos from one another in Kosovo.**

A few large government interventions and programmes that are beneficial in and of themselves, but which could begin to disseminate awareness of the benefits of the link between green and digital transitions, are: expanding metered district heating in other municipalities around Kosovo to increase the current dismal 3-5% coverage of the general demand, and/or tracking energy performance of buildings (energy); implementation of the integrated management system in the health and education sectors for better expediency and prevention when needs be (health and education); introduction of a system that enables business payroll software to automatically report data to tax authorities (tax); integration of intelligence databases of law enforcement institutions for better crime prevention and prosecution (law enforcement); venturing into government big open data commitment (transparency/ public sector); installing censors in forests and rivers for better warning and risk management in cases of fire and flooding (emergency management), etc.[33] Inevitably, all such programmes come with significant financial and human resource implications.

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25   Interview with a representative of the Open Data Kosovo, Prishtina, 28 October 2022.

26   ÇOHU, Difficulties accessing public documents, at 24_-_Cohu_-_Katalogu_-_ENG_(1)_956581.pdf.

27   Information and Privacy Agency, Annual Report 2022, at https://aip.rks-gov.net/download/raporti-vjetor-i-punes-per-vitin-2021/?wpdmdl=2476&refresh=6387cab6 87cfb1669843638.

28   Interview with a representative of the Ministry for Environment, Spatial Planning and Infrastructure, Prishtina, 28 October 2022.

29   Open Data Kosovo, Kosovo digital agenda observatory 2022, Prishtina, at https://opendatakosovo.org/portfolio/kosovo-digital-agenda-observatory-2022/.

30   Linking data: Kohesio platform, 21 October 2022, at https://data.europa.eu/en/publications/datastories/linking-data-kohesio-platform; Linking data: Route Compatibility Check, 30 September 2022, at https://data.europa.eu/en/publications/datastories/linking-data-route-compatibility-check.

31   EU Report for Kosovo 2022, at https://ec.europa.eu/commission/presscorner/detail/en/country_22_6090

32   Balkan Insight, Prishtina, at https://balkaninsight.com/2022/09/14/kosovo-to-establish-agency-for-cyber-security-amid-recent-attacks/; BBC News, at https://www.bbc.com/news/world-europe-62821757; Reuters, at https://www.reuters.com/world/europe/montenegro-blames-criminal-gang-cyber-attacks-government-2022-08-31/.

33   Energy Regulatory Office, Annual Report 2021, at Annual Report 2021.pdf (ero-ks.org).

The skills gap

With every innovation comes the need to upskill people to take them along in the transformation path. Increasing digital skills to meaningfully contribute to the demands of a greener and more circular economy and be able to realise benefits from it is a long endeavour. This is the kind of undertaking that is not only contingent on the government and its actions, although the government can always play a helpful and enabling role. Rather, it involves a wider segment of society, including academia and the private sector.

> **Generation Z and Y are digital natives. They show stronger sensibilities for the environment and the fight against climate change.**

Once they are in the labour market or decision-making positions, the expectations are that they will orient policies and behaviours towards the digital and green twin transition. Whilst this is certainly true in the Western hemisphere, the picture is a bit more nuanced in Kosovo. Kosovo's youth may be digital skill hungry but shows little awareness of the green agenda and challenges.[34]

One of the most serious initiatives Kosovo can undertake to prompt the twin transition is by investing in digital and green skills. To this end, the curriculum in public universities should be more agile and nimble, as in the ICT sector in particular, the curriculum can rapidly become outdated. A good example of investing in skills for the future is the Centre for Energy and Sustainability at the University of Prishtina, which trains and certifies auditors for energy efficiency. This is a key skill to vitalize the market of energy service companies (ESCO's) and make the construction and building sector greener compliant.

Currently, they are not very attractive learning establishments, as society seems to value a university diploma rather than practical skills. As a result, businesses report students to learn theory more than they should at the expense of practical work, with insufficient practical work experience or scarcity of support staff in e.g., installation of energy and other technical jobs.[35]

> **Vocational Education and Training schools should also step up their game and cater for the needs of the 21st century economy.**

In public institutions, the government needs to assess the skills of its people, invest in serious learning and development programmes, orient people into specialised jobs, and promote labour mobility across sectors. As a matter of urgency, the government needs to allocate additional resources and training to improve the environmental impact analysis evaluation. The Ministry of Environment, Spatial Planning, and Infrastructure (MESPI) consider the quality of environmental impact analysis reports to be generally poor, even though it is precisely this Ministry that licenses people who can write them.[36] The harm to the environment, caused by investments with poor environmental impact analysis, is most staggering in licenses for hydro-plants.[37]

> **The biggest proponent of upskilling for twin transition are businesses themselves.**

Businesses tend to be more adaptable and embrace new solutions earlier. A good example of this is private universities which all have IT departments that quickly become oversubscribed by students' high interest in them.[38] These cohorts of programmers and coders have contributed to a proliferation of new start-up companies and freelancing work done remotely from Kosovo for many countries in the world, but primarily the U.S., the EU and the UK.[39] Many have also left Kosovo, which is an inevitable trend in today's globalised world.[40]

The basic rule of economics 'when there is demand, there is supply' is certainly true in the ICT sector. Many companies run private courses on various programming languages and businesses have started opening academies of their own to spot, nurture and potentially harness the talent of students who benefit from them. The energy distribution company, KEDS, runs its academy, and the IT companies, such as Cacttus and Gjirafa have their accredited programme, respectively Cacttus Education and LIFE Academy programme.[41] The latter promises youngsters guaranteed employment in the company.

A major challenge in the skills gap crisis is going to be the retention of qualified staff, be it in the public sector or the private sector in Kosovo. One way to address this issue would be to put conditions on scholarships and training received that would stipulate an obligation to remain in the institutions for a determined period. Notwithstanding this solution, a certain amount of staff turnover and work disruption is an inevitable risk. Another measure that

34   United Nations in Kosovo, Kosovo Team, at https://www.undp.org/kosovo/publications/youth-challenges-and-perspectives-kosovo.

35   KEEN, Linking VET institutions to businesses in Kosovo, at http://kosovoprojects.eu/wp-content/uploads/2020/02/Linking-VET-institutions-to-businesses-in-Kosovo.pdf.

36   Interview with a Ministry for Environment, Spatial Planning and Infrastructure representative, Prishtina, 28 October 2022.

37   Radio Free Europe, at https://www.radiokosovaelire.com/dr-zeqir-veselaj-degradimi-natyror-me-pelqimet-mjedisore/.

38   Statistics, the future workforce, 49% growth in the last 5 years of ICT graduates in universities, at thefutureworkplace.org.

39   Ibid, 187% growth in the last 10 years of ICT Businesses, at thefutureworkplace.org; ECIKS Management Consulting, at https://eciks.com/youth-takeover-outsourcing-from-kosovo/.

40   Balkan Insight, at https://balkaninsight.com/2021/11/03/virtual-brain-drain-kosovos-booming-ict-sector-exports-talent-abroad/.

41   KEDS Academy, Prishtina, at https://www.keds-energy.com/eng/csr/keds-academy/; Cacttus Education, Prishtina, at https://cacttus.education/en/about-school/; Gjirafa, Life Academy, at https://life.gjirafa.com/about.

very much fits with the government as an enabler of the twin transition, would be stimulating and subsidising training establishments that offer skills needed for future jobs. A good initiative in this regard is that of the Ministry of Education, Science, Technology, and Innovation (MESTI) which has doubled its allocation from €1m to €2m for scholarships for students to study STEM (science, technology, engineering, and maths) profiles.[42] Girls and students from minority communities are particularly encouraged to apply. The application for this goes through the e-Kosova platform.

On the other hand, cyber security education programmes are a bit more niche and harder to come by. One such programme is the UK Chevening Western Balkans Cyber Security Fellowship hosted by Cranfield University.[43] To date, 12 Kosovo professionals from the public and private sectors, including academia, have benefited from this fellowship programme.[44] Another opportunity is the Cyber Security course provided by the EU-funded ICT for Kosovo's growth project.[45]

Positive developments

They are applicable and present in many solutions in Kosovo today, although the needs of Kosovo for this twin transition are wide-ranging, from very basic to smart and advanced solutions.

> **Technological developments related to 5G, Web 3.0, Artificial Intelligence, and the Internet of Things have progressed massively in the last years.**

Via IPA funds, the EU has supported the energy, environment, and digital sectors in Kosovo. However, as Kosovo's Greenhouse Gas (GHG) emissions are closely linked to coal-generated electricity, energy is a big polluting sector. As such, around €200m of IPA funds have been invested only in the energy sector, focused on improving filters and infrastructure of Kosovo B, and decommissioning of facilities that are not operational.[46] In light of the recent energy crisis, the EU has offered a further €75m for energy, which will be channelled to the support of emergency measures launched by the Ministry of Economy (ME).[47] Such emergency measures foresee investment in more energy-efficient appliances, such as heaters and energy efficiency measures, as well as insulation, doors, and windows.

> **The EU is a big investor in energy efficiency efforts and district heating currently.**

Addressing heating demands can help alleviate a lot of the electricity demand in Kosovo, which generally peaks in the cold winter months. In early September, a €15m EU investment and €5 from Switzerland enabled the first biomass heat-and-power station in Gjakova, which will generate 15MW of thermal energy and 1.5MW of electricity.[48] The system, which was three years in the making, will run at full capacity this winter, providing 35% of Gjakova with heat. This is a landmark development, as small dry pieces of biomass are the biggest threat to forest incinerations. As long as there is a thermal plant that needs them, businesses will want to collect and sell this biomass for profit. This is an excellent example of how an economy could be created around one investment. Further investments in district heating with biomass in another big city would create real business and employment opportunities. It would probably also lead to more planting of hybrid trees in forests, the kind that grows fast, to be able to harness electricity.

A good example of development cooperation and channelling investment to needed and future-proofed areas is the deployment of Millennium Challenge Corporation (MCC) funds into energy and digital sectors. Kosovo and the MCC have agreed on a new Compact programme of $202m from MCC funds and $34m from Kosovo funds, to be channelled to energy, battery storage, and equitable and just transition purposes.[49] Around $16m from this programme is allocated only for building skills. In programming this support, the Government of Kosovo and the US have done a lot of outreach activities and publicity to help bring the population and businesses along to see the benefits of such interventions. This acquired experience of drafting meaningful proposals, agreeing the development assistance, and the publicity that has gone on to promote what the support will entail, is an invaluable experience for Kosovo, and it should replicate in future green investments too.

Kosovo cooperates with the World Bank as well, on the Kosovo Digital Economy (KODE) project. This is a €20.7m investment over a period of four years (2019 – 2023), which focuses on digital inclusion - broadening access to broadband all across Kosovo, with a particular emphasis on providing high-speed internet for schools and public institutions; and digital work and empowerment.[50] Coupled with the new Kosovo Education Strategy, which for the first time incorporates digitalisation of education as one of the five strategic objectives of the strategy, KODE completes the first necessary step

42   Ministry of Education, Science, Technology and Innovation, Open call for scholarships in STEM, Prishtina, at https://masht.rks-gov.net/thirrje-per-mbeshtetje-financiare-te-studenteve-ne-fushat-e-shkences-teknologjise-inxhinierise-dhe-matematikes-apo-stem-te-arsimit-te-larte-ne-kosove/.

43   Chevening, at https://www.chevening.org/fellowships/meet-our-fellows/chevening-western-balkans-cyber-security-fellowship/#:~:text=This%20fellowship%20delivered%20at%20Cranfield,and%20the%20right%20to%20privacy.

44   Interview with a representative from the British Embassy Pristina, Prishtina, 1 November 2022.

45   Learning Management System, ICT for Kosovo's growth, at Online Courses.

46   Ministry of Economy, Energy donor coordination meeting, Prishtina, 6 December 2021.

47   Joint press conference of President Osmani and President Von Den Leyen, Prishtina, 27 October 2022.

48   DeustcheWelle. Prishtina, 9 March 2022, at https://www.dw.com/en/kosovo-opens-first-biomass-heat-and-power-station/a-62960129#:~:text=A%20biomass%20heating%20plant%20has,a%20model%20for%20the%20region.

49   Millennium Challenge Corporation, at https://www.mcc.gov/news-and-events/video/video-072822-kosovo-compact-signing-ceremony#:~:text=On%20July%2027%2C%202022%2C%20MCC,building%20modern%2C%20clean%20energy%20solutions.

50   World Bank, KODE Project, at https://projects.worldbank.org/en/projects-operations/project-detail/P164188.

to enable the digital infrastructure.[51]

Through the support of USAID, Kosovo is also investing in a one-stop-shop portal of information for Renewable Energy Sources (RES). This information portal will include everything an investor needs to know about RES laws and policies, Energy Regulatory Office (ERO) decisions and tariffs and the latest developments in the area.[52] USAID is also helping Kosovo organise its first auction for RES, using public land which has been surveyed using drones.[53] Centralisation of data and attracting private capital to increase clean energy generation is an important step toward the target of RES generation of 32% by 2030.[54] The Ministry of Environment, Spatial Planning and Infrastructure is in parallel working to digitalise its hydro acts and permissions system to make it more accessible and transparent to all.[55]

Through the Swiss Water Partnership (SWP), Kosovo is working on a master plan for water. SWP is the unique multi-stakeholder platform in Switzerland that aims to find innovative solutions to address water challenges in developing and transition countries. The project has deployed smart meters that detect and alert floods.[56] The Kosovo Emergency Management Agency is also investing in a fire alarm system, to be deployed in 2-3 years.[57]

Whilst there are efforts to include other municipalities in such endeavours, the investment that goes into them does not compare with that of Prishtina, which has the biggest gravitation of the population in Kosovo. Prishtina alone has numerous projects to help it bring into the twin transition track.

These investments are not at the central level only.

The PrishtinaOnline portal is one of the first municipal portals that made all municipal documents transparent.[58] Some other worth mentioning undertakings in the Prishtina Municipality is the Green Cities Project with EBRD of €6m for energy efficiency of public buildings; the Termokos District Heating project of €37m and the MCC District Heating metering project of $10m; the MCC Energy Efficiency Ulpiana project of €2.5m; as well as the Central Composting Plant project.[59]

Similar promising undertakings in cooperation with civil society organisations can also have a high impact. E.g., the Government has joined forces with Global Conservation to digitalise the protection of Sharr Mountain trees and forests which will start in 2023. Global Conservation is doing the same with the Government of North Macedonia, as well. Through a co-financing of €400k each, the project in Kosovo will invest in drones to help protect forests, doing it a lot more efficiently and comprehensively than with guards.[60] Hopefully, this will prevent illegal acts. Global Conservation intends to further its activity in Kosovo and the region. A consortium of a few Kosovo organisations led by the Balkan Green Foundation is also launching a project for Kosovo which will work 1) with e-gov and digital public infrastructure; 2) with the management of data and digital info, and 3) contribute to the digital economy.[61]

A common denominator of all of the above is that they are all initiatives, investments, and projects of Kosovo's developing partners, with the ultimate beneficiary being the Kosovo government, society, and citizens. This is understandable for a country with the budget capabilities of Kosovo. However, if Kosovo is serious about the twin transition, it needs to commit resources of its own to such endeavours. The current global economic recession has inevitably hit Kosovo too. In this climate of scarcity, it is important that Kosovo joins forces with all stakeholders, including civil society organisations, and orients its funding, as well as that of development partners only into projects that will be clean, green and can stand the test of future needs.

The recent participation of Kosovo in COP27 discussions, as part of the German Delegation, is an excellent way for Kosovo to become part of the dialogue. as 'climate change recognizes no borders and impacts Kosovo, which is not a UN member, just as much as it impacts UN members. Therefore, Kosovo should continue the conversations it has started with the UNCCC to eventually open its financial mechanisms to Kosovo as well.[62] It should seek to learn from the experience of others in implementing smart cities, villages, agriculture, and circular economy to try to bring those practices home.

Kosovo should stay active and relevant not only domestically, but in the international fora as well.

51   Ministry of Education, Science, Technology and Innovation, Education Strategy 2022-2026, Prishtina, at https://masht.rks-gov.net/strategjia-e-arsimit2022-2026/.
52   Interview with a representative of the Ministry of Economy, Prishtina, 28 October 2022.
53   Ministry of Economy, Energy donor coordination meeting, Prishtina, 6 December 2021.
54   Ministry of Economy, draft Kosovo Energy Strategy 2021 – 2031, Prishtina.
55   Interview with a Ministry for Environment, Spatial Planning, and Infrastructure representative, Prishtina, 28 October 2022.
56   Interview with a Ministry for Environment, Spatial Planning, and Infrastructure representative, Prishtina, 28 October 2022.
57   Ibid.
58   Prishtina Online, at https://prishtinaonline.com/.
59   European Bank for Reconstruction and Development, at ebrdgreencities.com; Termokos, Cogeneration Project, at https://termokos.org/en/2017/09/21/the-cogeneration-project/; Termokos and Millennium Challenge Corporation HeatSave project, Prishtina, at https://termokos.org/heatsave/; Millennium Foundation Kosovo, Prishtina, at millenniumkosovo.org; Green Foundation, Launch of the first Central Composting Plant with the Municipality of Prishtina, Prishtina, 26 October 2022.
60   Interview with a Ministry for Environment, Spatial Planning, and Infrastructure representative, Prishtina, 28 October 2022.
61   Interview with a representative of the Balkan Green Foundation, Prishtina, 1 November 2022.
62   Interview with a Kosovo delegate to COP27, Prishtina, 22 November 2022.

CONCLUSION

Kosovo has no alternative, but to embark on the twin transition. It has started this process, but collectively it is still in the very early stages. The quicker it can make progress, the more benefits it can have for a more sustainable, efficient and smarter way of doing things. The time when well-being was squarely measured with GPD output is long gone. New and greener metrics will increasingly be part of the EU conditions for any progress in the EU integration path. Green and digital transformations will be a requirement for all and not only for developed countries.

The external momentum for more digitalisation created by the post-COVID-19 pandemic and for better climate action created from COP26 and 27, and internal pressures of high unemployment, especially amongst youth, are significant push factors for proper planning and upskilling of the population, administration, and processes as to be able to reap the benefits that the 21st-century economy has to offer through the dual track of green and digital transformation.

There are many priorities in the twin transition, however, Kosovo would do well to initially focus its efforts in:

• Completing the legislative and strategic framework;

• Digitalising processes, services and data;

• Strengthening its cyber-resilience; and

• Investing resources in developing new skills linked to twin transition.

Although the government has a crucial role to play in enabling a permissive environment or creating incentives, this is not a solo game. The government should seek to foster partnerships, not only with external development partners and financial institutions whose technical expertise and resources have been most helpful, but it should specifically strive to cooperate with civil society, academia, and local businesses to take everyone along into the transformation. Issues of just transition are real, and as people move from one economic paradigm into the other, they should be supported with proper training and upskilling, and be able to move from one sector to the other where there is more need.

Examples of projects initiated that combine digital solutions for green and environmental purposes have already been illustrated in the section above. This demonstrates that a lot of good work has already been initiated, mainly through the support of development partners. Whilst the resources of Kosovo's budget and skills may be limited, Kosovo should be really careful not to externalise this agenda but take ownership and be convinced of its merits. Kosovo should embark on a twin transition because it makes sense for its economy and citizens, and not only due to external pressures. Its budget and public policies should reflect this ownership, and so should the everyday actions of the government and the administration it leads.

Globalisation has its advantages and disadvantages. A certain level of brain drain, particularly of the digital-savvy professionals is to be expected and tolerated as an inevitable occurrence. However, Kosovo can stand to benefit from the experience and collaboration with others in seeking creative solutions to local problems. Linking Kosovo to European and global networks, fora, and funding opportunities can potentially motivate and amplify the job satisfaction that professionals get in Kosovo from the ability to pioneer new developments in the green and digital transformation of this young country. This is an exciting opportunity for Kosovo and its youth. What Kosovo makes of it, remains to be seen in the times to come.

Norwegian Embassy