

International Conference

Towards a low carbon economy in the Danube Region: State of affairs, challenges and prospects

Brussels, 9 July 2013

Organized by: Southeast Europe Association (Südosteuropa-Gesellschaft), Munich and Representation of the State of Baden-Württemberg to the European Union, Brussels

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Background of the conference

The all encompassing goal of a “low carbon economy” has become an integral part of EU-Energy Policy (EEP) and can be regarded as a guiding principle for discussions on future economic strategies and pathways on European level. Member states committed themselves not only to significantly reduce greenhouse gas emissions by 20% but also to increase energy efficiency (EE) and renewable energy sources (RES) up to 20% until 2020 (20-20-20 targets¹). A new framework for 2030 will soon be drafted and is likely to bring the Union one step closer to the ambitious long-term vision of a new energy regime, as developed by the 2050 roadmap.²

The European Strategy for the Danube Region (EUSDR) with its activities under Priority Area 2 (“to encourage more sustainable energy“) reflects these European goals and the necessity to reorganize energy markets accordingly. This institutional framework, following a macro-regional approach, as well as the common challenges regarding security of supply, market opening, infrastructure, and the climate targets make the region highly relevant for the EU’s energy transition.

Both organizing institutions, the Representation of the State of Baden-Württemberg to the EU in Brussels and the Southeast Europe Association (SOG) in Munich have been active in promoting the EUSDR since it was launched in 2011, as *Hansjörg Brey* from SOG pointed out in his opening remarks. Further, the SOG has been discussing questions of sustainable energy use and climate protection in Southeast Europe in a number of substantial workshops and conferences.

The main objectives of the conference structuring the debate were also highlighted by *Brey*. Besides (1) furthering a better understanding of the ongoing debates on the European level the meeting aimed at (2) providing an insight into the energy characteristics dominant in the countries of the Danube Region thus elaborating challenges and constraints in meeting low carbon and climate goals, respectively. This ultimately raises the question of (3) how the vision of a safe, affordable and sustainable energy regime can be practically implemented.

To address all these aspects the conference gathered representatives from academia, European institutions, national and regional public administrations, energy companies, as well as civil society - many of which already represent one part of the solution. Their contributions made it possible to discuss the topic from various perspectives and provided valuable insight into the current state of affairs, challenges and prospects regarding the region’s path towards a “low carbon economy”.

¹ The 2008 climate and energy package represents the main legal basis: http://ec.europa.eu/clima/policies/package/index_en.htm

² The EU’s long term objective is a 80-95% emissions reduction by 2050 compared to 1990.

Baden-Württemberg as low carbon pioneer

It is important to note that with respect to the German *Energiewende* the state of Baden-Württemberg - one of the most advanced and globalized regions in Europe - is confronted with similar problems as the eastern countries of the Danube region. As *Johannes Jung* (Representation of the State of Baden-Württemberg to the European Union) outlined in his introduction, the upcoming challenge is to reorganize the state's energy sector and develop new business models including energy efficiency. As the source region of the Danube has already launched an ambitious sustainable development agenda the tasks ahead are quite concrete.

Karl Greiβing (State Government of Baden-Württemberg, Stuttgart) presented the state's integrated **energy and climate protection strategy** which sets three ambitious targets for 2050: 50% reduction of energy consumption compared to 2010 through EE-promotion, an overall RES share of 80% and a reduction of GHG emissions by 90% compared to 1990.³ As the state is particularly affected by the German nuclear phase out and lacking behind in wind power substantial growth of RES is of crucial importance. But according to *Greiβing* in the medium and long term the energy transition will not only secure energy supply but also reduce energy prices.

The well developed RES-sector of the state (based on scientific and technical knowhow) provides a solid basis for this strategy as it not only attracts significant investment but - as has been proven on the national level - also has the potential to serve as a job motor.

European and global environment

Although the conference had a regional scope, it is of vital importance to understand the European and global context in which the economies of the Danube Region and their energy regimes are "embedded". This is particularly true regarding globally diverging energy paths, especially the American Shale Gas Revolution which is also (in)directly affecting the European energy transition. According to *Kirsten Westphal* (German Institute for International and Security Affairs) the hype surrounding unconventional fossil fuels does not only neglect obvious facts related to a drastically rising worldwide energy demand⁴, it also increases the opportunity costs of low carbon technologies. *Westphal* underlined the urgency of a sustainable European (and global) energy transition due to environmental *and* security of supply reasons. In this respect she criticized the widespread short term perspective in politics that adheres to putatively cheaper "traditional" energy paths while neglecting long term benefits of a low carbon system. This is particularly precarious as lock-in effects created by existing capital stock and infrastructure are likely to hamper system change in the future. As markets tend to be governed by path dependencies and will not deliver a low carbon system on their own, political action is required.

Regional diversity but a common strategy

Not only among the key note speakers there was widespread agreement on the necessity to better coordinate these measures in order to make them cost-effective and feasible. Europeanization of European energy policies, as well as a stable and integrated climate and energy framework are preconditions for success and the EUSDR has the potential to serve as a regional catalyst in this respect. Despite the obvious heterogeneity of the region in terms of economic development, there are - with regard to energy - common challenges that need to be addressed together. Only a holistic, cross-national approach is appropriate to overcome the major obstacles stated above.

This also applies to the energy transition in Baden-Württemberg. *Peter Friedrich* (State Government of Baden-Württemberg) stressed the fact that it is hardly possible (and immensely costly) to achieve energy-autonomy. The state is very much focused on the EUSDR as partnership with neighbouring countries offers many interesting possibilities regarding e.g. storage- and grid-infrastructure, technology transfer but also the promotion of small-and-medium-sized enterprises.

³ For more information see: www.50-80-90.de

⁴ Until 2030 demand will rise worldwide by almost 40% while the World Energy Outlook of the IEA is based on the very optimistic assumption of increasing EE.

According to *Günther Oettinger* (EU Commissioner for Energy) there are several tasks ahead which have to be tackled within the EUSDR-framework, such as: Increasing regional cooperation in energy technology and the exchange of expertise, enhancing EE and implementing the EE-directive, integrating RES into the regional energy system and establishing an interconnected energy grid. In this context the Commissioner also emphasized the central role of the **internal European energy market** which provides the foundation for a low carbon economy.

Also for *Oliver Koch* (DG Energy, European Commission, Brussels) the organization of a cooperative market is the key to the energy transition. Without this basis low carbon policies and RES support schemes are likely to fail as it is impossible to be successful with an isolated approach that does not make use of complementarities. The shortcomings of such a strategy are currently reflected by massive problems in organizing the European energy transition.

According to *Colin Wolfe* (DG Regio, European Commission, Brussels), the widening of the geographic scope furthers not only the exchange of experience but also investment and market opportunities.

Apart from that cohesion policy and specific funding programmes play a vital role as the low carbon path requires - just in this decade - hundreds of billions of Euros in investments. Against this backdrop, *Wolfe* provided an insight into European Regional Policy and its close ties with the Danube strategy and EEP. To achieve climate targets regional policy is already providing significant funding. The current programming period (2007-2013) dedicated 10 billion Euros for the development of RES, EE and clean transport. A further increase of investment in sustainable energies can be expected.

1. Energy characteristics and challenges

Regional Integration and Cooperation

Besides the EUSDR various additional institutional frameworks, organizations and projects further regional cooperation and partnership in the energy area. Most of them support the goals of the Danube Strategy and can be regarded as complementary:

The **Energy Community** (EnC) plays an important role in strengthening the market basis of the energy transition. The Organization comprises all EU countries and integrates also the non-member states of the Danube region into the EEP. According to *Dirk Buschle* (Energy Community Secretariat, Vienna) the central focus of the Energy Community is the implementation of the two closely interlinked projects internal market and low carbon economy. Implementation results with respect to these two transitions are currently mixed. Although legal rules were widely adapted to EEP goals in the region the practice hardly follows these adjustments. At least in part the observed deficit can be attributed to the “difficult” point of departure (see below).

But also the **Regional Cooperation Council** which promotes stability, rule of law, as well as partnership in the region provides a cooperation framework that is highly relevant for the energy transition. *Miroslav Kukobat* (Regional Cooperation Council, Sarajevo) presented the recently adopted **Southeast Europe (SEE) 2020 strategy** which will represent the focus of RCCs work in the future. This coordination instrument involving national authorities and external actors is a regional response to the Europe 2020 growth framework and has been adjusted to the region’s specific requirements. As the idea of sustainability is engrained in all SEE 2020 policies energy and climate (and environmental) concerns stand at the heart of the growth agenda and constitute one of its central pillars. *Kukobat* highlighted that greening of the economies - though cost-intensive - offers the perspective of considerable socio-economic benefits including jobs and competitiveness in the future. It is also planned to fully incorporate the EU 20-20-20 targets established under the EnC framework into SEE 2020. To achieve this - and also to align the region to the long term EU 2050 vision - the RCC engages in close cooperation with the EnC and other stakeholders.

Besides these top-down integration approaches also more bottom-up (capacity building) projects try to move the region closer to the 20-20-20 goals. A good example is the **Public Dialogue Initiative on the Sustainable Use of Energy in South-East Europe** which was initiated 2010 and is

supported by the German Society for International Cooperation (GIZ). By stimulating platforms for public dialogue that focus on national parliaments but also include (local) governments, business, media and civil society representatives this initiative aims at creating a proper environment for the successful implementation of relevant policies, especially in the area of EE. The project itself is implemented by a network of schools for political studies in SEE which operate under the umbrella of the Council of Europe.

Heterogeneity of the energy markets and unsustainable energy mixes

With respect to RES-development the Danube countries are as heterogeneous as the EU. The scope reaches from highly fossil fuel based countries like Moldova to Austria which already produces 60-70% electricity (thanks to hydropower) from RES. Though hydropower can be considered one of the region's strengths it is - according to *Koch* - not easy to find a common strategy towards a low carbon system that is economically feasible for the countries with a fossil based production structure. According to *Nataša Mihajlović* (Ministry of Economy, Zagreb), even Croatia, a country that completely adapted its new national energy strategy to the 20-20-20 goals faces severe challenges to meet CO₂ reduction targets in practice.

Concerning RES, bioenergy dominates the sector with an overall share of 60% and according to *Ulla Engelmann* (JRC, European Commission, Brussels) a large increase can be expected for this energy source. But in practice the use of biomass, especially the use of wood in the **heating sector**, does not necessarily lead to a sustainable solution. In some countries electricity and wood based household heating affects the environment and makes the sector highly inefficient. In SEE people commonly (and increasingly) use wood and coal for heating.

Socialist legacies and highly regulated markets

To understand the obstacles the region is facing regarding a green energy transition, it is vital to keep in mind that most countries are still undergoing a post-communist (economic) transition. According to *Ruslan Stefanov* (Center for the Study of Democracy, Sofia) the transition from a centrally-planned, state owned energy sector towards a decentralized more market based model characterizes the economic environment. Highly regulated prices (often below market level!), that prevent investment in EE, and dominating local incumbents are still common in many countries. Furthermore, the region attracts no private investment which is essential for the energy transition and remains dependent on public investors, especially International Financial Institutions (IFIs). Though IFI's contributions are indispensable particularly to enhance EE these actors cannot replace the role of a green energy business. Although RES support schemes are widely regarded as appropriate measure to incentivize business actors to participate, the Bulgarian case shows these need to be intelligently designed and adapted to the region's peculiarities. According to *Buschle* RES support tends to collide with the social political obligation to keep prices at a low level.

Energy poverty

Regulation of energy prizes is a highly sensitive issue and closely linked to widespread consumer price sensitivity and low purchasing capacity in the region. It seems that contrary to fuel prizes energy consumers expect their politicians to control electricity prices as it has been done for decades. A good example to illustrate this problem is Bulgaria, where electricity prizes are the lowest in Europe while at the same time the highest when converted to purchasing power parity. Having this in mind market transition can be detrimental from a social perspective. But according to *Stefanov* the "double transition" is also a chance to diversify energy sources and provide a viable gas-alternative for household heating.

Furthermore, the acceptance of RES is closely linked to energy poverty though the Bulgarian case shows that a more transparent governance and transparency concerning pricing is even more important in this respect. Although RES-support accounts for a minor share in electricity bills in the country these are in the centre of public discontent and blamed for rising energy prices. Thus a lack of communication with final consumers appears to be another major problem.

Lack of awareness, good governance and political will

A lack of political and social awareness and knowledge concerning EE and RES solutions is maybe the most pressing problem for the energy transition. According to *Maja Božičević Vrhovčak*, (Society for Sustainable Development Design, Zagreb) the deficient (practical) implementation of low carbon policies is directly linked to the fact that there is no political will to engage in public dialogue. Initiating and furthering a multi-stakeholder consultation process (prior to policy adoption) thus appears to be vital for effectively implementing sustainable energy goals. *Vrhovčak* concluded that this dialogue needs external support as many MPs still have no sufficient understanding of energy policy issues. Also investments provided by IFI's into the energy sector could be better channelled into a more „sustainable“ direction, if governments would engage in a dialogue process with all relevant stakeholders, e.g. from business and civil society.

Many governments largely neglect decarbonisation and do not see the potential respective policies could have for economic development. The deficient institutional base and lacking long-term support for RES and EE can be directly related to this fact.

Another problem is the competition with nuclear energy investments, as some countries (e.g. Hungary, Czech Republic) restrict their low carbon policies to the nuclear path while neglecting other decarbonisation options. It seems that an overall “belief system” based on climate scepticism is a major obstacle that is still blocking the reform process while “traditional” energy sources such as nuclear and coal energy still receive huge subsidies in the region.

High investment needs and deficient infrastructure

In many Danube countries a lack of infrastructure modernisation that can be attributed to wars and socialist legacies, but also the difficult economic situation, are additional burdens for the energy sector. Generation capacity (particularly old coal fired power plants) needs to be replaced and also investment in grid infrastructure is lacking behind. According to *Sandrine Dixson-Declève* (University of Cambridge Programme for Sustainability Leadership, Brussels) network upgrade - which is essential for the integration of RES - is still neglected. Furthermore, most Danube/SEE countries have very energy intensive economies. Only tackling the EE-problem requires significant investment in the future. According to *Albrecht Kaupp* (GIZ, Berlin) EE and energy saving is one of the most pressing issues and at least equal important as RES-development.

Lacking technological and legal/administrative base

From a technological point of view the main obstacle is (besides lacking EE) the high concentration of technological capacity in the traditional sector. *Stefanov* pointed out that contrary to Germany SEE countries have no economic, technological and scientific base to support the greening of their energy regimes. As a consequence mainly foreign producers and “traditional” investors profit from RES-subsidies. This directly affects the social acceptance of this economic project. According to *Dixson-Declève* RES are perceived as Western technology (helping foreign multinational companies) and not local technology assisting entrepreneurial activity in the region.

Furthermore, frequently changed RES policies, especially retroactive cut of subsidies, created a climate of uncertainty for investment in RES that also undermines local manufacturing potential.

2. Enhancing energy transition in the Danube Region

The EUSDR

The energy priority area of the EUSDR is coordinated by Hungary (Ministry of Foreign Affairs) and the Czech Republic (Ministry of Industry and Trade) in cooperation. This framework can also be regarded as a tool to assist the EU to meet the market integration objectives. According to *István Joó* (Ministry of Foreign Affairs, Budapest) it bridges the gap between the EU and member state's level in energy planning and implementation and provides a new platform for furthering the dialogue between the EU and neighbouring countries with respect to energy acquis implementation but also infrastructure projects, e.g. to develop gas storage capacities. Furthermore, the Priority

Area is committed to launch technology developments which will increase EE and enhance the use of RES. Projects concerning biomass, geothermal energy and EE in public buildings are currently in a process of strategy formulation, data collection and assessment to provide a reliable knowledge base.

Business and financing - opportunities and obstacles

Most participants agreed that the availability of technologies and funding is not restricting decarbonisation of economies. *Dixson-Decleve* identified (besides infrastructural needs) governmental (un)willingness to introduce necessary structures to promote the technology as a major problem for the finance sector. Administrative barriers for RES and uncertain policies deter private investors. Although the energy transition promises considerable socio-economic benefits for the countries of the region in terms of innovation, growth and jobs governments still regard decarbonisation as economic barrier.

In spite of these obstacles a considerable amount of RES-projects got funded, what resulted in overall growing RES shares in the countries.⁵ Investment is available from various sources that can (and should) be used complementarily:

According to *Ann-Jasmin Krabatsch* (DG Regio, European Commission, Brussels) the current financial period has assigned 47 billion Euros to climate issues, with 10 billion of **structural funds** (ERDF) used for sustainable energy projects in all macro-regions. Also in the next period EU funds will presumably continue to support the shift towards a low carbon economy in all sectors.

EBRD, EIB and a large number of **private investors** are very active in the region as well. Unfortunately, many projects conducted by RES-companies are too small and often not based on viable long-term business plans. Apart from that IFI's like the EBRD face a situation in which their funding opportunities are not exploited - a severe problem that further highlights the importance of information and capacity building activities.

Vlasta Zanki (HEP Energy Service Company, Zagreb) presented the business model of **HEP-ESCO**, a public company that is developing, managing and financing EE projects in Croatia. HEP-ESCO invests in (mainly public) projects in the building, public lightning, industry and energy supply sector and gets repaid from energy savings over the course of the contracting period. A typical ESCO-measure is the modernization of lightning and heating systems as this requires rather short payback periods. Unfortunately, the attractiveness of the model decreases with the duration of the contracting period which repels private but also public utility owners from EE-measures. Thus in particular deep renovation projects (with payback periods over 15 years) are often not feasible. Widespread short-termism, relatively low energy prices and administrative/legal hurdles such as complicated procedures for public procurement and project permission appear to be the main challenges for ESCO companies.

Experiences from Germany

Thanks to stable policy support based on a feed-in tariff system Germany has already achieved a 23% RES share in electricity consumption and created a new economic sector and job motor⁶. But this development is facing some challenges, as base load capacity gets replaced by fluctuating energy sources. System integration of RES does not only require significant grid expansion but also the establishment of considerable storage/backup capacity. According to *Daniel Vallentin* (Wuppertal Institute for Climate, Environment and Energy) energy stability thus needs to be understood as a market product. Consequently, a new market design that integrates these capacities (e.g. in form of gas fired power plants) needs to be established in order to ensure energy security. *Vallentin* further pointed out that the energy transition requires a broad public consensus as well as active participation of citizens and local communities. In Germany, several "tools" were developed to ensure this bottom-up dynamic.

⁵ But unfortunately in many cases a proper integration into network structures did not occur.

⁶ Employment in Germany's RE sector in 2012: 377,800 jobs

Best practice projects - first steps into a sustainable energy transition?

Most participants underlined the importance of transparent consultation processes, either to ensure effective allocation of funding, to develop policies that take into account the needs of the industry and finance sector, or to gain public acceptance and trigger a domestic learning process. Besides, national consultation structures also more local and creative approaches appear to be promising here.

Defining legal goals but leaving the trajectory to public stakeholders - The dialogue process of the state government of North Rhine-Westphalia: Vallentin presented the implementation approach pursued by the state government after passing a Climate Protection Law⁷. Way and milestones on how to achieve the goals of the law shall be decided in collaboration with stakeholders from business (including all relevant economic sectors), civil society and science. In the course of a complex multi-stakeholder consultation process GHG mitigation potentials have to be identified and, based on this assessment, technical strategies and policy instruments are to be formulated. The overall outcome in form of a draft climate action plan is handed over to state government and parliament.

Forms of direct implementation - Creating and spreading local examples of good practice: In general discussion, it was highlighted that supporting local and regional communities to transform their energy supply and building a network that enables local nodes to spread best practice is a central strategy to implement a low carbon economy. The willingness of local authorities to engage in such measures is a restricting parameter here, too. But as the number of participating units grows this approach can help to develop a more decentralized supply system that enables municipalities to participate in value creation. In Germany various supporting frameworks and schemes have already been established, such as the network of local and regional energy agencies which can be consulted by potential investors in order to receive guidance e.g. to apply for funding.

The EU has also established an effective instrument to directly address cities: the *Covenant of Mayors*, which provides comprehensive guidelines for municipalities who want to develop a sustainable energy action plan (SEAP). According to *Klaus Hoppe* (Municipality of Freiburg) the implementation of SEAPs challenges municipal structures as it requires close cooperation and coordination within the municipality, in particular across departments. To tackle this problem in SEE the GIZ has established - within the framework of the *Covenant of Mayors* - a Network of Energy Efficient Capitals (including Freiburg as “senior partner”) that assists participating cities⁸ in implementing SEAPs through special workshops.

3. The future of a sustainable energy system in the Danube Region – Concluding remarks

Energy Efficiency and Saving as first step into the energy transition: Though EE is the only EU climate target that is not legally binding, it appears to be the first challenge that has to be tackled. As in the RES domain, attracting more (private) investors is a key issue here. According to *Kaupp* this is only possible by declaring EE a tradable resource and integrating it into the energy market. *Dixson-Decleve* highlighted the same point and sees in EE-measures the highest initial potential, also because these are easier acceptable by the public. There is obviously huge potential for EU funds to increase EE in (public) buildings and housing, though information and public campaigns are needed to trigger such projects.

Rising attractiveness of RE-technologies: The establishment of enabling schemes and institutions at local and regional level to distribute knowledge to actors is another important task for the future. The model of energy agencies appears to be promising in this respect, as they promote, according to *Alexander Knebel* (Agency for Renewable Energies, Berlin), RES on the grassroot level while creating a supportive climate in public and media.

⁷ Targets: 25% emissions reduction by 2020 and 80% by 2050

⁸ Zagreb, Sarajevo, Podgorica, Skopje, Tirana

On the national level the first steps were already taken. According to *Mihajlović* and *Stelian Alexandru Gal* (Romanian Energy Centre, Brussels) the governments of Croatia⁹ and Romania are determined to exploit RES potentials to attain the required shares until 2020. In Romania wind (18%) and solar (9%) energy are even number one choices. As it can be expected that mid to long term RES will become (with 5-9 cents/kWh) competitive even under current market conditions, economic viability of a RES path is no longer just a vision. In this context it should be taken into account that (from a technological perspective) fluctuations in wind and solar power output do not need to remain an obstacle as the commercial availability of storage technologies (e.g. converting wind power into gas) is only a matter of time.

Knebel further pointed out that the production of RE-applications is only one step in the value chain. Even if solar panels have to be imported a lot of possibilities for entrepreneurial activity remain at the local level.

Overcoming (socialist) legacies and state monopolies: One central issue of all discussions that also dominated the last panel was the problem of path dependencies in the energy sector, in particular regarding state-owned incumbent generators. To exploit the above mentioned potential it is not only vital to introduce free pricing but also a competitive energy market that is open to new suppliers. *Helge Tolksdorf* (German Federal Ministry of Economics and Technology, Berlin) highlighted the importance of breaking up state monopolies to end governments veto power in the sector. This could even (in)directly decrease the attractiveness of nuclear power - a technology that is hardly compatible with RES. It is crucial to end a tradition of highly subsidizing centralized conventional energy production.¹⁰

Education and capacity building: *Tolksdorf* also raised the issue of education as a future challenge. Currently all countries of the region hardly spend money for energy education - though this is another EU energy target. In particular vocational training for craftsmen installing RES applications or improving EE in the building sector is a vital capacity building measure. Currently the EU finances several projects to prepare labour force for transition and officials dealing with respective funding programmes.

Future EU energy targets: European liberalization requirements will remain an important factor in the future and according to *Rebecca Harms* (MEP, Group of the Greens) they will have to be further tightened up. Apart from that the EU's climate framework for 2030 will have significant impact on the decarbonization course of the region. In light of the above mentioned it can only be recommended to decide on binding and ambitious targets for EE, GHG emissions and RES to promote a reliable framework for (private) investments at least on EU-level. As many participants were very critical about the (economic and environmental) viability of a nuclear-based low carbon economy continuing the course of separate RES-targets appears to be vital. According to *Harms*, encouraging countries to promote (and subsidize) nuclear power sends the wrong signals, because in the long-term new plants disproportionately burden the budget and drastically decrease the attractiveness of RES-exploitation in a decentralized system.

The role of public financing: According to *Markus Trilling* (CEE Bankwatch Network, Brussels) goal-oriented design of cohesion policy and IFI lending is crucial. But in particular IFI's, such as the EIB and EBRD, do not use their full potential to trigger the energy transition. Still fossil based technologies receive by far most financial resources in the region's energy sector while non-hydropower RES (and EE-measures) receive only a minor share.

In this regard, the EU's enhanced cross-sectoral climate mainstreaming appears to be the appropriate tool to tackle this problem. According to *Damyana Stoyanova* (DG Climate Action, European Commission, Brussels) for the next budget all EU funding programmes will contribute to raise the share of climate-related spending to 20%.

⁹ Croatia aims at attaining the required RES-share until 2020 by exploiting its hydro-, biomass and wind potential.

¹⁰ In this respect, Germany is affected by similar legacies. According to *Knebel*, the country's nuclear sector received almost 200 billion and the coal sector more than 200 billion Euros in the last 4 decades.

In light of the poor absorption of EU-funds in some countries of the region it can be concluded that the supranational level and cooperation networks, though highly important, have their limits to pressure an energy shift or at least to induce change. They need to be complemented and driven by domestic change agents and a (participating) public basis who demand their governments to pursue a sustainable low carbon path. Thus the energy transition rather represents an evolutionary process that gains momentum over time. Creating strong new path dependencies and a supportive climate for this to happen are the main tasks of the above described frameworks and initiatives.