

Support for Low Emission Development in South East Europe (SLED)

Jozsef Feiler, 5 December 2015



Project summary

- The project is financed by the Austrian Development Cooperation and implemented by the Regional Environmental Center
- Aim: to support stakeholders and decision makers with detailed information about the options, costs and benefits with modelling of decarbonisation scenarios
- **Electricity sector decarbonisation scenarios** for Serbia, Montenegro, Macedonia and Albania on 2030 time horizon
- **Residential building sector decarbonisation** scenarios in Serbia, Montenegro and Albania
- UNDP Kosovo climate awareness and climate strategy related activities



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ELECTRICITY SECTOR DECARBONISATION



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Scenario assumptions

- The SLED project has assessed various CO₂ reduction scenarios in the power sector of the four target up to 2030: 4 country analysis
- Scenarios differ in carbon taxation, supply and demand conditions
- Scenarios reflect realistic planned energy policies based on inputs from national stakeholders
- The European Electricity Market Model (EEM) of REKK (Hungary) was applied for the market assessment, while the EKC (Serbia) network model assessed network impacts
- A regional assessment prepared as well in addition to the country reports
- Continuous and on-site meetings with relevant ministries/policy makers made the assessment policy relevant for the countries - Albania and Montenegro also utilised the results in the INDC process of the UNFCCC



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Results

- More ambitious climate policies in the countries would have limited impacts on wholesale prices, at the same time would help to improve reducing imports of various countries (Albania, Montenegro).
- Carbon revenues (if introduced) would cover spending on planned RES-E supports on the long term
- Carbon prices need to be in the range of 30-35 €/tCO₂ by 2030 to trigger significant fuel shifts and carbon reductions in the countries
- Countries are facing significant decisions in their current energy policy: pursue carbon/lignite based capacity developments or increase hydro/renewable base? Present lack of carbon pricing, uncertain timing of EU accession and already high exposure to hydro resources makes this decision very uncertain/volatile.
- Most countries still have significant potential in hydro based generation but hydro as it is already at high level in the electricity system, further increase makes countries even more sensitive to precipitation level.
- Higher interconnection level would help to ease this problem, as demand could be covered even in dry years.
- Gas based generation increase needs gas network expansion as well as competitively priced gas to arrive to the region. High carbon prices are also prerequisite for significant gas deployment.



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RESIDENTIAL SECTOR DECARBONISATION



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Situation and scenarios

- The residential buildings contribute 23-30% to the final energy consumption and 37-60% to the electricity consumption in AL, MN, and SR
- The quality of thermal energy services is low: households can only afford the heating of only 50% of dwelling floor area for few hours a day
- The use of traditional wood stoves result in environmental issues
- There is little understanding of the sector structure for policy-making
- This gap was addressed by designing a very detailed topology of the residential buildings and modelling their transformation to the low energy and carbon future by 2070 in SR and MN, and in 2050 – in Albania, in line with the EU Energy Roadmap 2050
- Our moderate scenario ensured that the performance of the stock corresponds to the standard renovation or the level of building codes, introduced after the transposition of the EPBD in 2011-2016 (MN, SR in 2070; AL – 2050)



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Results

- The scenario results in a 13-27% reduction in final energy consumption in 2030, a 30%-46% electricity of electricity consumption, and a 46%-73% reduction in CO₂ emissions depending on the country
- It is more beneficial to conduct thermal efficiency improvement together with the business-as-usual improvement in order to take advantage of anyway occurring costs
- Assuming the discount rate of 4% and the growing energy prices with in line with the European market trends, saved energy costs exceed the annualized energy costs, i.e. the scenario pays back
- The scenario also assumed a significant increase in thermal comfort delivered and the decrease of energy costs
- The transformation requires a very strong political commitment, enforcement of buildings codes as well as the careful design and massive provision of financial products for the residential energy efficiency
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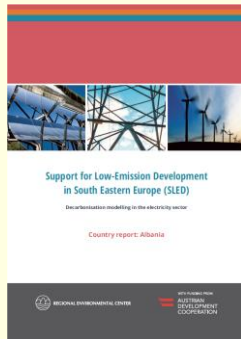
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Thank you for your attention!



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