



13TH SE Europe Energy Dialogue

JUNE 16 & 17, 2022



Energy Efficiency and RES in SEE – A Quick Review

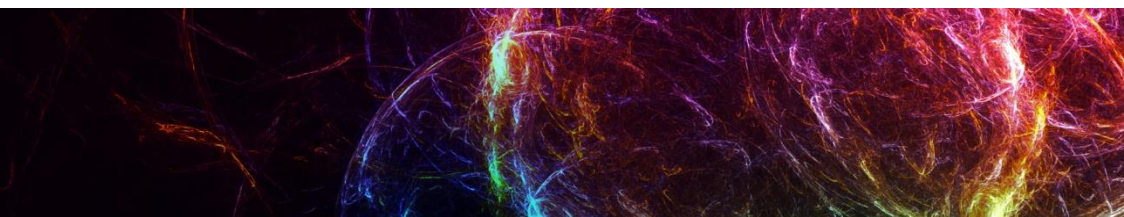
Presentation in Thessaloniki
June 17, 2022

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Gen. Secretary of IENE/Chairman of EE Committee



2.1 ENERGY EFFICIENCY IN SE EUROPE

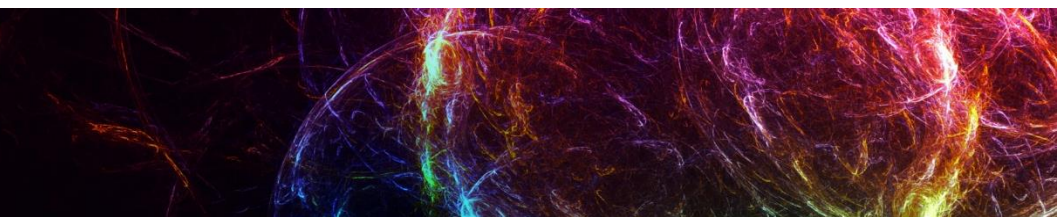
- ❑ All states in the Region have transposed the EU legislation on Energy Efficiency, EE, (EED – Green Deal, etc.)
- ❑ The Outlook analyses the NEEAP and NECP of each SE European M-S, as EU requested each Member State, M-S, to set their own indicative national EE target, to prepare and publish a three-year National EE Action Plan, NEEAP, as well as to prepare an annual progress report.
- ❑ The Outlook presents the incentives/plans for the promotion of EE and EE Programmes funded by EU & IFIs.



2.1 EE – NEEAPs & NECP OF SEE COUNTRIES



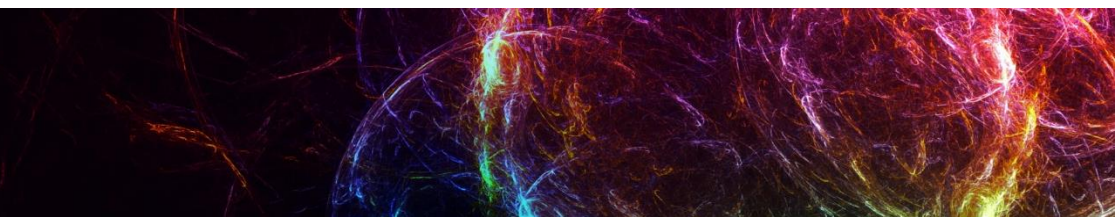
Country	In compliance with EED	Targets by 2030
Bulgaria	√	PEC 17.46 Mtoe – FEC 10.32 Mtoe
Croatia	√	PEC 8.3 Mtoe – FEC 6.89 Mtoe
Cyprus	√	PEC 2.4 Mtoe – FEC 2.00 Mtoe
Greece	√	PEC up to 21.0 Mtoe – FEC 16.5 Mtoe ambitious twice revised
Hungary	√	FEC up to 18.75 Mtoe (2005), meaning steady annual saving 0.17 Mtoe or 0.8% annual saving
Romania	√	PEC: BAU=58.7 Mtoe to 32.3 Mtoe (-45.1%) FEC: BAU=43.2 Mtoe to 25.7 Mtoe (-40.4%)
Slovenia	√	Up to PEC 6.35 Mtoe and FEC : 4.72 Mtoe
Israel	√	PEC: BAU = 8.25 Mtoe to 6.88 Mtoe (-16.7%)
Turkey	√	-23.9 Mtoe of PEC
Albania – B & H – Kosovo- Montenegro - N. Macedonia		NECPs expected in late 2021



2.1 INCENTIVES FOR PROMOTING EE

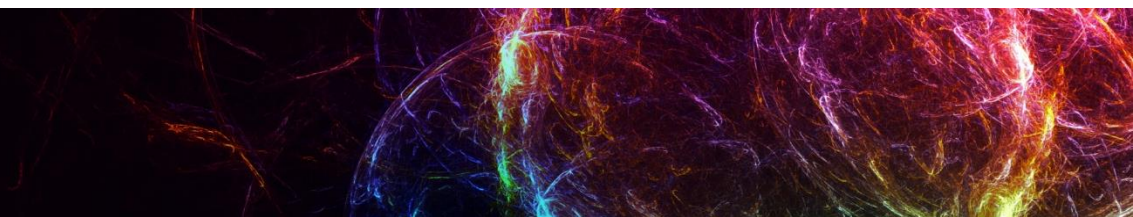


Country	Actions
Bulgaria	DESIREE Programme grant 10.9 m€ for gasification 10,000 households Important role of European Structural Fund, ESF
Croatia	EE of Family Houses (2014-20) 26.7m€ - Renovation of Public/Apartment buildings 211 m€ + 25 m€ loan from IFIs
Cyprus	ESF: 8.7 m€ for SME – 18.4 m€ for households – 20 m€ for Public buildings – 1.17 m€ for pilot HECHP (hospitals, etc)
Greece	Envisaged National EE Fund (lending & guarantee fund) +role of ESCOs – Important role of EE in households of EXOIKONOMO -3 rd phase (500+ m€)
Hungary	EU- Operational Programmes/ESF for EE actions in households/SMEs
Slovenia	EE in households via subsidies/soft loans (100% for weak households) – ESF
Israel	145m\$ for qualified EE projects via tender
Serbia	Funds for EE in all sectors by EU – JICA - UNDP
Turkey	Actions for EE through incentives – Loans from IFIs (WB, etc.)
Albania - B & H - Kosovo- Montenegro - N. Macedonia	Critical the role of IFIs (EU/WB/UNDP/etc) and International Funds



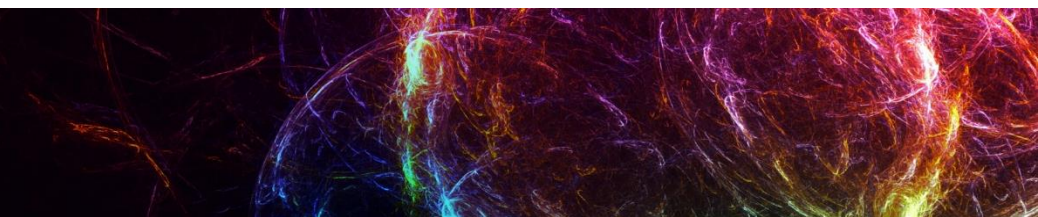
2.1 ENERGY EFFICIENCY IN SE EUROPE

- ❑ Energy Efficiency in building sector (especially public buildings) is acting as a “locomotive train” pushing forward other sectors as transportation and SMEs/Industry.
- ❑ Summing up the situation of energy efficiency in SEE states, it is evident that there is an **ongoing plethora of national efforts and programmes** in support of the EU long-term target to become the first “climate-neutral” continent, by 2050.
- ❑ However, as Eurostat announced in early 2020, the EU energy consumption is rising despite the efforts to reduce it across Europe.
- ❑ The EU-27 gross domestic product grew rapidly, between 2014 to 2017, from €11,782billion to €13,964billion, indicating that economic activity has not yet decoupled from energy consumption.



3.1 RES Installed Capacity in SE Europe (%) w/ & w/o Hydro

Country	RES Installed Capacity % (With Hydro)	RES Installed Capacity % (Without Hydro)
Albania	98%	0%
Bosnia & Herzegovina	47%	3%
Bulgaria	37%	15%
Croatia	65%	18%
Cyprus	17%	17%
Greece	50%	35%
Kosovo	8%	3%
Montenegro	80%	11%
North Macedonia	22%	2%
Romania	50%	20%
Serbia	40%	6%
Turkey	50%	18%



3.1 RES – The situation in West Balkan

The West Balkan countries (Albania, Serbia, Bosnia & Herzegovina, Montenegro, Kosovo, N. Macedonia)

- **the six countries lag significantly behind the rest of Europe in the modernisation of their energy sectors**, which are characterised by limited market mechanisms and limited private sector participation, insufficient and ageing infrastructure, high reliance on fossil fuels, late adoption of renewables (excl. hydro)
- **Albania, North Macedonia, Serbia and Kosovo have not yet reached their 2020 renewable energy targets** for the share of renewable energy in gross final energy consumption by 2020. Montenegro reached its national targets in 2015.
- need to invest considerably in moving from coal-fired to renewable energy production, and have a good potential
- According to estimation WB countries will need some €15bn in hydro investments or up to €20bn in wind investments to achieve their goals by 2030. Capacities of 12.2 GW for wind and 4.4 GW for solar power could be cost competitive in the region. The Western Balkans' current total power generation capacity is 18.6 GW
- RES developments: The main non-hydro emerging RES are primarily wind farms. Serbia and Montenegro built their first wind farms in 2017, the largest wind farm in the West Balkans, Čibuk 1, was inaugurated in Serbia in October 2019, with a capacity of 158 MW. In Bosnia, the first wind farm started operation in 2018 and two others are under construction. North Macedonia, has only one wind power plant,
- The solar projects in the region are still at an early stage with construction scheduled to start in Montenegro in 2022 and involves a 250 MW installation. The Government of North Macedonia has given the green light to develop a 415 MW wind farm and to build a 80 MW solar photovoltaic facility.

Turkey

- **Turkey has tripled its installed renewable capacity** to 46,000 MW and invested nearly €50 billion in renewable energy projects.
- **Turkey ranks sixth in Europe and 13th in the world in terms of renewable capacity.** It generated 12% of its electricity from wind and solar in 2020, compared to the world average of 9,4%.
- Among renewables, hydro has about 29,2 GW of generation capacity, followed 7.6 GW coming from wind energy and solar with about 6 GW.
- It is expected that installed solar photovoltaic capacity will rise to about 14 GW by 2023, with solar and wind reaching a combined capacity of 30 GW by 2030.
- Turkey is among the largest developing markets for solar heating systems and a considerable installed capacity of geothermal energy

Israel

- **Renewable energy in Israel accounted for a minor share of electricity production,** with a relatively small solar photovoltaic installed capacity (2 GW).
- There is a total of over 1.6 million **solar water heaters installed** as a result of pre-existing (since the 1960s) mandatory solar water heating regulations.
- In 2020, 70% of electricity came from natural gas, and 10% from renewables, almost all from PV, representing 6% of gross final energy consumption.

3.1 RES for Power Generation and for Heating and Cooling



RES for Power Generation

- Countries throughout SEE have high shares of electricity generated by an ageing fleet of coal-fired power plants.
- **The most important change for the region is the sharply falling share of coal- and lignite based generation.** Compared with 2017, it is forecast that less than half of the production from these fuels will remain in the system by 2030. The reduction will be compensated by an increase in RES generation of 20 TWh, in natural gas-based production (25 TWh) and in nuclear generation (11 TWh).
- **RES have increased their regional share in power generation to 33.89% in 2019**, i.e. by more than 5.5 percentage points compared to 2014, when they contributed 28.2%. In addition, in 2019, the share of RES in total regional electricity consumption rose to 33.2% from 26.3% in 2014.
- A diverse mix of flexible generation technologies in SEE (hydro technologies, flexible biomass, natural gas and storage) can facilitate the integration of RES – especially wind and PV.
- However, the promising potential of wind, solar PV and biomass is not yet reflected in the energy policy of most of the SEE countries. Only Turkey, Greece, Romania and Bulgaria are exhibiting an emerging trend towards alternative renewable energy sources.

RES for Heating and Cooling

- The main source of RES for heating and cooling in SEE derives from **biomass, shallow geothermal and solar thermal applications.**
- Huge amounts of renewable heating and cooling can be supplied by solar thermal, geothermal and biomass to satisfy the entire heating and cooling needs of millions of buildings and also to satisfy in part the needs of industry.
- Many buildings in SE Europe have the potential to be independent of or less dependent on fossil fuels or electricity for heating and cooling. Progress is much slower in Croatia, Slovenia, Bosnia and Herzegovina, in N. Macedonia and Serbia.

4. Conclusions

- **The potential EU climate-neutrality target for 2050 is unprecedentedly ambitious, especially for the SEE region.** While all EU M-S will face challenges in delivering the required transformational changes under the European Green Deal, it would do well for the EU to continue paying special attention to the SEE region. Given the different starting points of these countries, the state of the market and their political discourses, actual and practical solutions are needed in overcoming the existing barriers.
- The electricity-oriented **investments** correspond to approx. 34% of the total energy investments in the region at €150 billion. Following electricity investments are the RES related investments corresponding to 25% of the total at about €110 billion, while EE to 20%. Thus, Electricity EE and RES form the backbone of investment activity in the region's energy market and the area for new business opportunities.
- To harness RES potential in the region and progressively phase out fossil fuels, **the region needs updated renewable energy targets**, sustained investment in solar and wind technologies, incentives to develop modern biomass, geothermal and small hydro and a holistic policy framework to create new jobs and maximize socioeconomic value.
- **ESF and EED are highly beneficial instruments** for all states in the Region for **promoting EE** in all sectors (buildings, transportation, SMEs/industry).