

How Effectively Can EU's Clean Energy Policies be Applied in the SE European Region?

The European Green Deal and the Bulgarian Energy Transition

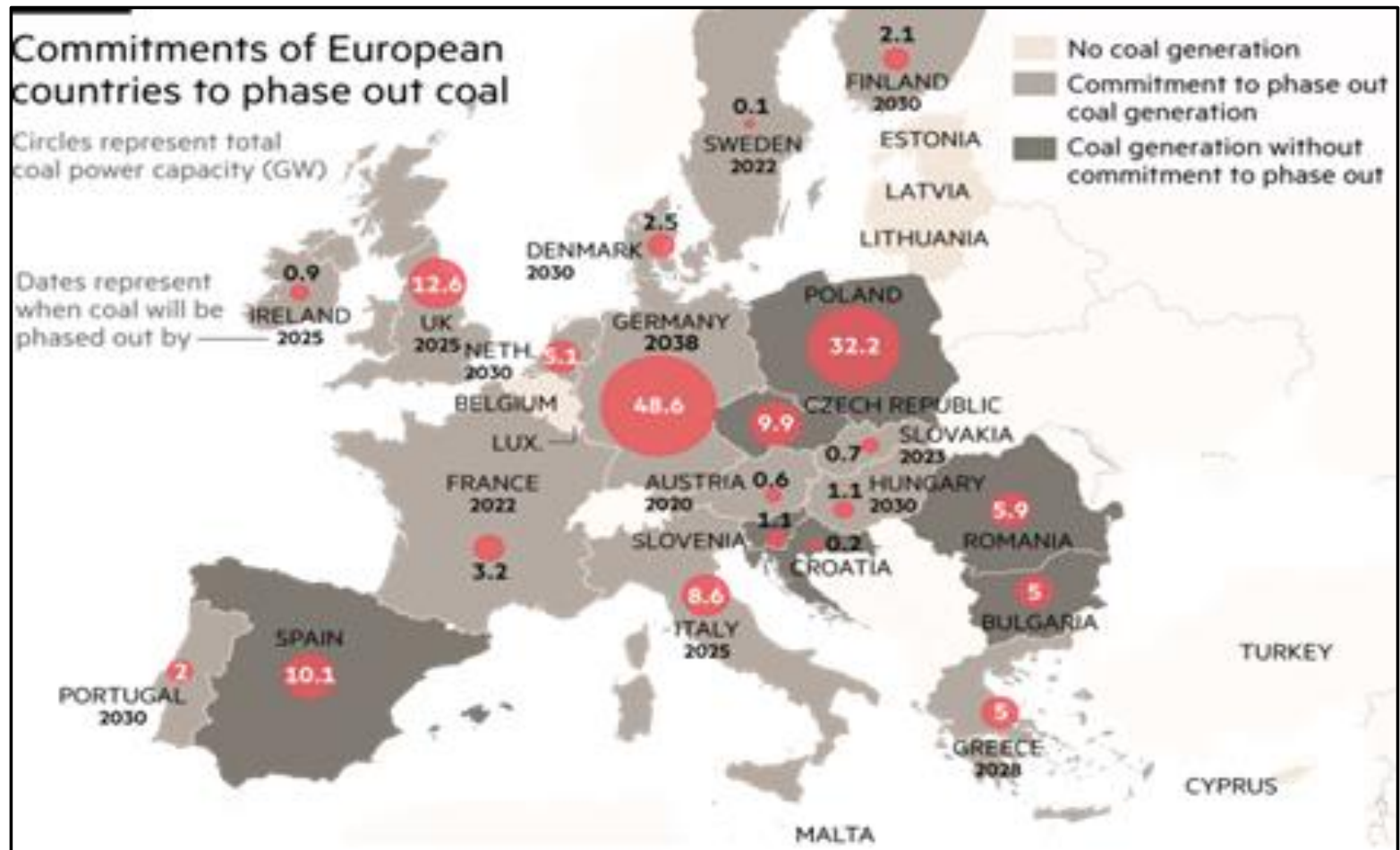
Sofia Hotel Balkan
October 15-16, 2020

A Presentation by **Costis Stambolis**,
Chairman and Executive Director
Institute of Energy for SE Europe (IENE), Athens

Introduction

- On July 8, 2020, the EU adopted strategies for **energy system integration** and **hydrogen**, aiming to become climate-neutral by 2050.
 - The plans will transform Europe's energy system, which accounts for 75% of the EU's greenhouse gas emissions, paving the way towards a more efficient and interconnected energy sector, driven by the twin goals of a cleaner planet and a stronger economy.
- The European Commission says that the two strategies present a **new clean energy investment agenda**, in line with the **Next Generation EU recovery package** and the **European Green Deal**. The planned investments have the potential to stimulate the economic recovery from the coronavirus crisis.
- According to the European Commission, this **gradual transition** will require a phased approach.
 - From 2020 to 2024, the EU will support the installation of at least 6 GW of renewable hydrogen electrolyzers in the EU, and the production of up to 1 million tonnes of renewable hydrogen.
 - From 2025 to 2030, hydrogen needs to become an intrinsic part of our integrated energy system, with at least 40 GW of renewable hydrogen electrolyzers and the production of up to 10 million tonnes of renewable hydrogen in the EU.
 - From 2030 to 2050, renewable hydrogen technologies should reach maturity and be deployed at large scale across all hard-to-decarbonise sectors, the Commission said.

Commitments of European Countries to Phase Out Coal



EU Energy Policy Framework: How Does This Stand for SE Europe? (I)

- However, many SEE countries are still committed to long term coal/lignite for power generation.
- In policy terms, it seems that an **inverted pyramid arrangement** applies in SE Europe, in direct opposition to pursued official Energy Union policies and stated targets.
- The energy policy priorities of some SEE countries would appear as follows:
 - Further large-scale development of **coal and lignite resources** without any recourse CCS/CCUS provisions and plans
 - Promotion of **oil and gas exploration activities (onshore and offshore)** aiming towards maximizing production in the mid- and long-term (*largely affected by COVID-19*)
 - Further development of **renewables** in all application areas (i.e. solar, wind, biomass, hydro and geothermal) without necessarily adhering to the specific ceiling targets set by the EU
 - Promotion of **energy efficiency**, focusing primarily on the building sector
 - Further development of **electricity and gas interconnections**
 - **Diversification** of energy supply routes and supplies
 - Reduction of CO₂ emission levels

Under Construction and Planned Coal Plants in SEE Countries (MW)*, as of July 2020

Country	Announced New Plants	Pre-permit	Permitted	Announced + Pre-permit + Permitted	Under Construction	Shelved	Operating	Cancelled (2010-2020)
Turkey	13,460	12,925	5,680	32,065	1,610	5,670	17,717	65,867
Bosnia & Herzegovina	1,830	600	1,100	3,530	0	550	2,073	1,020
Serbia	1,000	350	0	1,350	350	375	4,405	1,070
Romania	0	600	0	600	0	0	4,675	5,105
Kosovo	650	0	0	650	0	0	1,290	830
Hungary	0	0	0	0	0	0	944	3,520
Israel	0	0	0	0	0	0	4,900	1,260
Bulgaria	0	0	0	0	0	0	4,829	2,660
Greece	0	0	0	0	660	0	3,175	1,250
Slovenia	0	0	0	0	0	0	1,069	0
North Macedonia	0	0	0	0	0	0	800	730
Montenegro	0	0	0	0	0	0	225	1,664
Croatia	0	0	0	0	0	0	210	1,300
Albania	0	0	0	0	0	0	0	800

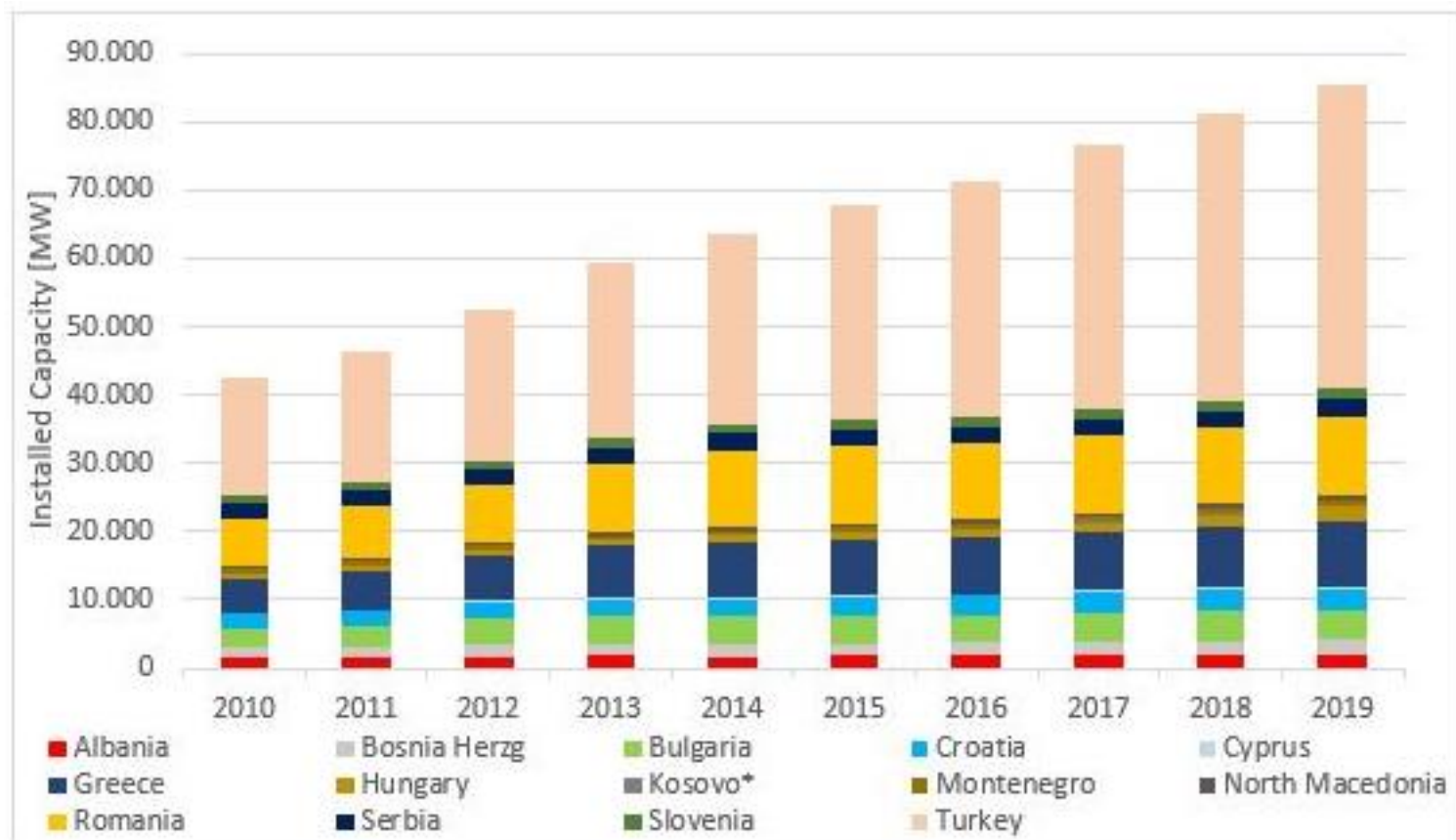
***Note:** Includes units 30 MW and larger

Sources: EndCoal, IENE

EU Energy Policy Framework: How Does This Stand for SE Europe? (II)

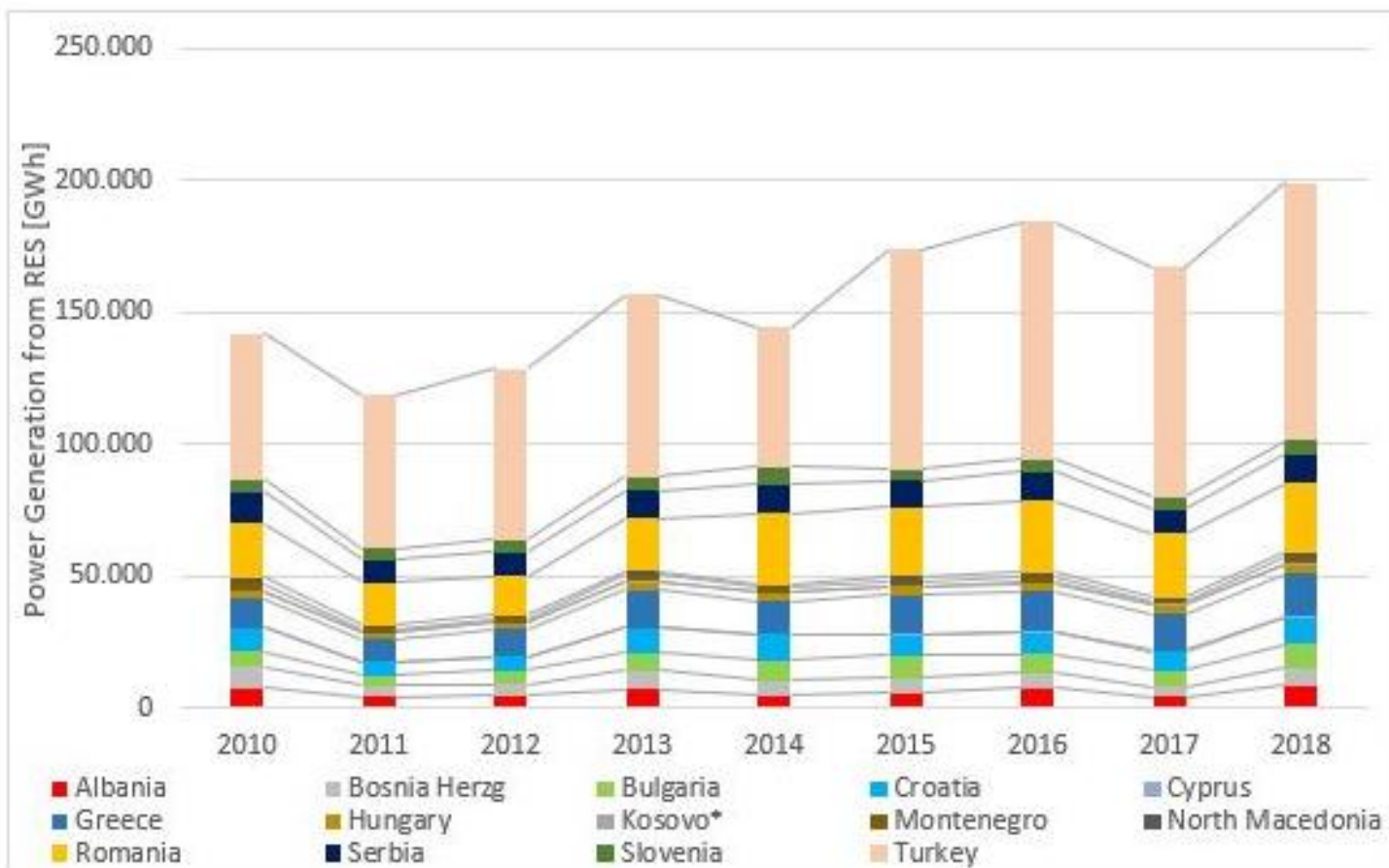
- ❑ In parallel to solid fuel commitments, currently pursued policies in most SEE countries support RES and Energy Efficiency.
- ❑ Over the last 10 years, notable progress has been achieved in RES installations and energy efficiency applications, especially in the buildings sector.
- ❑ The sharp drop in the cost of solar PV, offshore wind and other technologies favours the large-scale introduction of clean technologies across SEE.
- ❑ Greece is at the forefront in promoting such large-scale RES-Energy Efficiency applications, while at the same time going ahead with an aggressive decarbonisation plan.
- ❑ Lignite's participation in the country's electricity mix has already been minimized to approx. 5% in H2 2020.

Total Installed Capacity of RES Systems by Country in SE Europe, 2010-2019



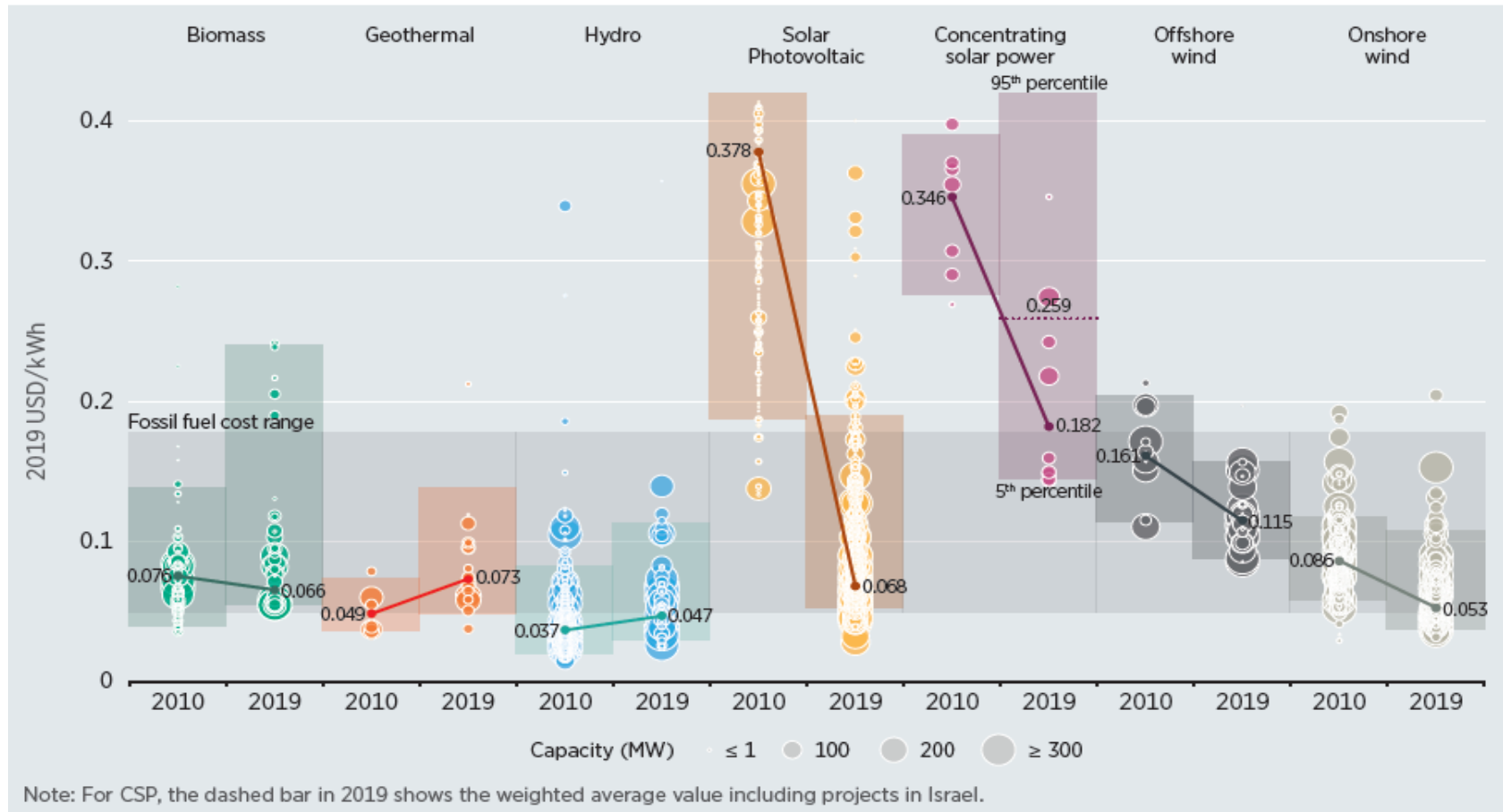
* Kosovo is presented separately without prejudice to positions on status and in line with the United Nations Security Council Resolution 1244 (1999)

Power Generation from RES, Including Hydro, in SE Europe, 2010-2019














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Global LCOEs from Newly Commissioned Utility-scale RES Power Generation Technologies, 2010-2019



Note: This data is for the year of commissioning. The diameter of the circle represents the size of the project, with its centre the value for the cost of each project on the Y axis. The thick lines are the global weighted-average LCOE value for plants commissioned in each year. Real weighted average cost of capital (WACC) is 7.5% for OECD countries and China and 10% for the rest of the world. The single band represents the fossil fuel-fired power generation cost range, while the bands for each technology and year represent the 5th and 95th percentile bands for renewable projects.

Technical Potential for Utility-scale Solar PV, Wind and Hydropower in the Electricity Sector in SE Europe (TJ)

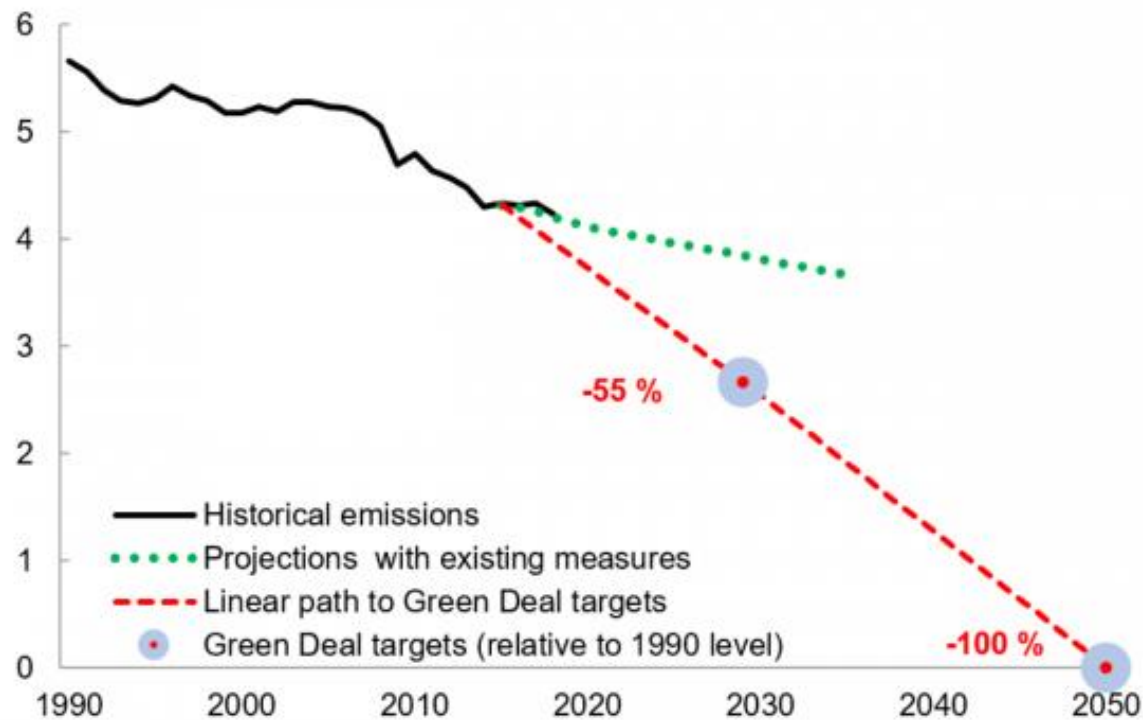
	Utility-scale solar PV	Onshore wind	Hydropower
 Albania	13 342	49 154	56 059
 Bosnia and Herzegovina	14 886	94 810	88 193
 Bulgaria	36 468	190 264	48 071
 Croatia	15 682	104 951	30 600
 Kosovo*	3 006	13 860	4 853
 Montenegro	3 874	23 332	18 079
 North Macedonia	8 014	27 558	14 421
 Republic of Moldova	21 758	180 450	12 099
 Romania	92 902	554 522	136 800
 Serbia	33 509	188 590	64 800
 Slovenia	1 613	8 266	58 539
SEE	245 052	1 436 156	532 515

TJ = Terajoule

New EU Targets

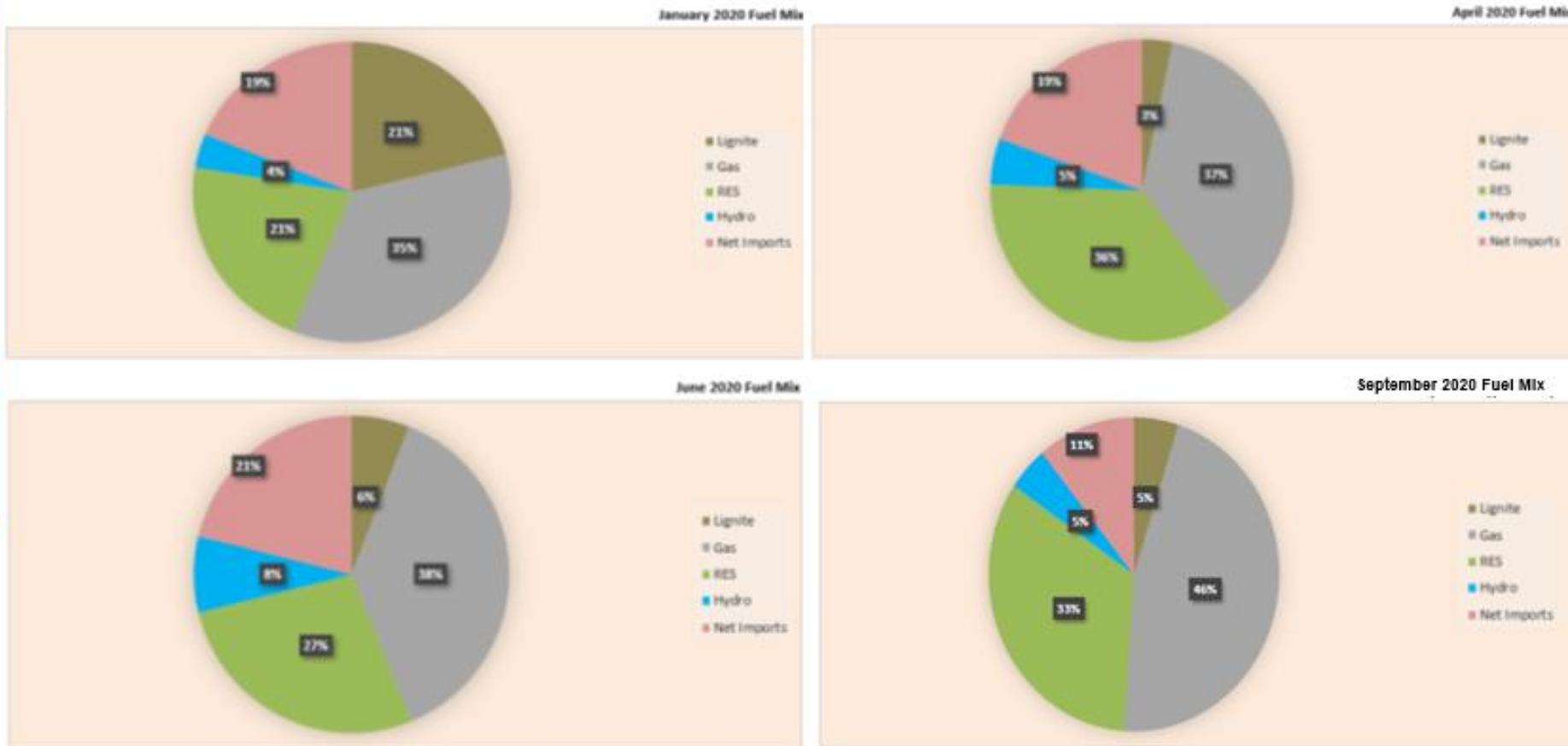
The European Union proposes an ambitious reduction of emissions.

(millions of kilotons of CO₂ equivalents)



Sources: United Nations Framework Convention on Climate Change; and European Environment Agency.

Greece's Fuel Mix in Power Generation in the Interconnected System, January, April, June and September 2020 – The Share of Lignite Has Been Minimised



The Way Forward

- ❑ The COVID-19 crisis, the EU energy system integration and hydrogen strategies, in line with the Next Generation EU recovery package and the European Green Deal, are creating **huge opportunities for increasing RES penetration** in both SE European energy and electricity mix.
- ❑ **Energy cooperation** between the various countries in the region is of paramount importance and necessary in order to introduce lasting changes aiming towards sustainability. **Hydrogen produced from renewables, among others, could play a decisive role in achieving such sustainability and should be examined in great detail for each different country of the region.**
- ❑ In the case of Western Balkans, the EU could deploy several **international cooperation initiatives** so as to include WB6 in the European Green Deal.
- ❑ This transactional side of integrating Western Balkans into the European Green Deal will not only **accelerate the region's transition**, but it could also **increase the chances of success of the EU climate-neutral agenda right across the continent.**
- ❑ **The EU should negotiate such a deal with the Western Balkans** on the basis of the contributions and the assets that the WB6 countries could bring into the deal and their existing cooperation with the EU member states of the SEE region.
- ❑ Now that the EC, backed by the European Parliament, is going ahead with even higher targets for 2030 (RES-38-40%, Energy Efficiency-36-37% and GHG Emissions-60%), the challenges and demands for SEE countries and compliance needs are becoming even **tougher.**
- ❑ **The question therefore arises if over the coming 12 months SEE country governments are going to take any decisive steps to revise policies and at what cost. This concerns all SEE countries, EU member states, WB6 and Turkey.**



INSTITUTE OF ENERGY
FOR SOUTH-EAST EUROPE

Thank you for your attention!

cstambolis@iene.gr

www.iene.eu