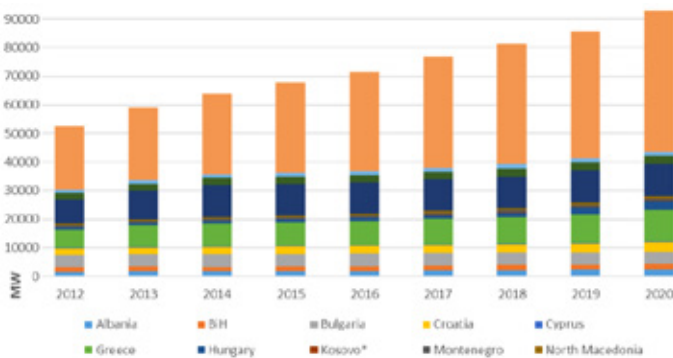


# RENEWABLE Energy in SE Europe

## Renewable Energy Sources increase their share in SE Europe's Electricity mix

As SE Europe doubles down on its efforts to decarbonate power generations the installed capacity of renewable energy systems in the region has almost doubled during the past decade, with local systems reaching 98.19 GW of installed capacity in 2021, according to latest IRENA's data. This represents an increase of 86.7% since 2012, when the region counted 52.6 GW of installed RES units. In addition, the power generation from RES, including hydro, has exceeded 222 TWh in 2020, which corresponds to a 72.5% increase over the last decade.

**Total installed capacity of RES systems by country in SE Europe, 2012-2021**

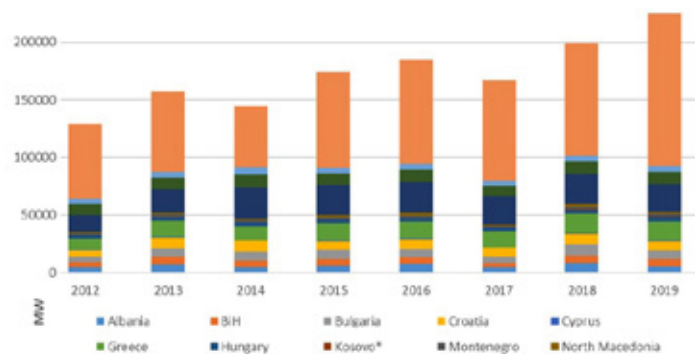


Note: \*Kosovo is presented separately without prejudice to positions on status and in line with the United Nations Security Council Resolution 1244 (1999)  
Source: IRENA

Electricity generation from RES in SE Europe is heavily affected by the hydrologic cycle, which has shown signs of heavy volatility throughout the decade. Most notably the region was affected by drought especially during 2014 and 2017, when it halted the increase of y-y generation from RES, despite the increased deployment of other RES systems, mainly wind and solar. The most affected countries by the hydrologic cycle were Turkey, Croatia, Albania and Bosnia and Herzegovina.

The most widely deployed renewables are by far in Turkey, which has an RES fleet that consists mostly of hydro and wind, with a considerable capacity of geothermal energy, which in total exceeded 53.2 GW of installed capacity in 2021. Turkey is followed by Greece and Romania, with installed RES capacity of 11.5 GW and 11.1 GW respectively in 2021.

**Power generation from RES, including hydro, by country in SE Europe, 2012-2020**



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

As RES are being recognized as one of the most important energy resources in mitigating climate change, the global market is amidst an ongoing ramp up in terms of new installations, with production costs of variable renewables' systems having fallen rapidly during the past decade. Consequently, lower costs have driven an escalation in the deployment of solar PV and wind turbines across the region, making them competitive.

	Total installed costs			Capacity factor			Levelised cost of electricity		
	(2021 USD/kW)			(%)			(2021 USD/kWh)		
	2010	2021	Percent change	2010	2021	Percent change	2010	2021	Percent change
Bioenergy	2 714	2 353	-13%	72	68	-6%	0.078	0.067	-14%
Geothermal	2 714	3 991	47%	87	77	-11%	0.050	0.068	34%
Hydropower	1 315	2 135	62%	44	45	2%	0.039	0.048	24%
Solar PV	4 808	857	-82%	14	17	25%	0.417	0.048	-88%
CSP	9 422	9 091	-4%	30	80	167%	0.358	0.114	-68%
Onshore wind	2 042	1 325	-35%	27	39	44%	0.102	0.033	-68%
Offshore wind	4 876	2 858	-41%	38	39	3%	0.188	0.075	-60%

Source: IRENA (2022), Renewable Power Generation Costs in 2021, International Renewable Energy Agency, Abu Dhabi.

## Who are we?

The Institute of Energy for SE Europe (IENE) is a nonprofit organization active throughout South East Europe, focusing on energy policy and analysis but also on information dissemination. IENE aims to promote a broader understanding of the major energy and environmental issues in the region. Key objective of the Institute is to contribute towards the implementation of the European Union's sustainable strategy which combines economic and social development, security of supply, environmental protection and climate change mitigation.

Further information on the Institute, its mission and vision and its various activities can be found in [www.iene.eu](http://www.iene.eu)

## The SE European Region as defined by IENE



**INSTITUTE OF ENERGY  
FOR SOUTH-EAST EUROPE**