

Key factors predetermining the need for the development of renewable energy in Ukraine:

- High energy potential of major types of RES
- Own energy deficit (dependence on import of conventional energy resources, increase of their value in the world market, problems related to their external supply)
- Exhaustion of own energy resources (estimated oil and gas reserves – for 40-50 years)
- Environmental impact of energy generation at thermal power plants, radioactive pollution of territories resulting from Chernobyl disaster.
- International commitments of Ukraine (RES share in total energy consumption of Ukraine, which aspires to accede to the European Union, must be at least 11% by 2020)

Major factors promoting the development of renewable energy in Ukraine

- Implementation of the “green” tariff
- Profit tax exemption for core activities of energy companies generating electricity only from renewable energy sources
- Decrease of land tax for renewable energy companies
- VAT exemption for operations on importing certain types of renewable energy equipment to the customs territory of Ukraine
- Import duty exemption for certain types of renewable energy equipment

Estimate of total RES consumption (installed capacity, gross electricity generation) in Ukraine for meeting mandatory indicative target through 2020

ELECTRICITY

	2009		2015		2018		2020	
	МВт	ГВт·год	МВт	ГВт·год	МВт	ГВт·год	МВт	ГВт·год
HPP	4 549	11 430	4 898	12 515	5 167	12 965	5 350	13 290
< 1MW	19	12	33	75	47	110	55	130
1MW –10 MW	30	18	65	140	80	175	95	210
> 10MW	4 500	11 400	4 800	12 300	5 040	12 680	5 200	12 950
Geothermal energy	0	0	11	60	30	180	50	300
Solar (photovoltaic)	0	0	1 140	1 050	2 100	2 010	2 800	2 600
Wind power plants (ground based)	76	41	1 000	2 100	2 100	4 670	3 000	6 700
Biomass:	0	0	120	440	355	1 570	530	2 350
solid	0	0	80	320	285	1 260	400	1 790
biogas	0	0	30	110	70	310	130	560
Total	4 625	11 471	7 271	16 595	9 752	21 395	11 730	25 240
of which CHP	0	0	120	430	355	1 570	530	2 350

Structure of electricity generation from respective RES in 2015 and 2020, %

	2015	2020
Wind power plants	13,0	26,5
Solar power plants	6,5	10,3
Large HPPs	76,1	51,3
Micro, mini, and small HPPs	1,3	1,4
Bio power plants	2,7	9,3
Geothermal power plants	0,4	1,2
Total	100,0	100,0

In the sphere of electricity generation, full-scale implementation of **NREAP** will require the commissioning of:

- **2 471 MW** renewable energy capacity/facilities in 2015 and 6 530 MW renewable energy capacity in 2020 (exclusive of the capacity of large HPPs)
- **7 271 MW** renewable energy capacity in 2015 and 11 730 MW in 2020 (including the capacity of large HPPs)

This will make it possible to generate **16 595 GWh** of RES electricity in 2015 and **25 240 GWh** in 2020 constituting, accordingly, 8,3% and 11,5% of total electricity consumption