



Energy Institute Hrvoje Požar

Zagreb, February 2022



EIHP IN BRIEF

ENERGY BALANCES

RES II DIRECTIVE

SHARES TOOL



FACTS:

- **100%** state-owned
- **Fully project oriented** (not relying on the state budget)
- **Non-profit** scientific institution
- **2/3 of income** from abroad (out of Croatia)
- Large number of projects – more than **200 per year**
- Large number of partners – more than **150 international partner** institutions
- Very challenging working environment

MISSION:

- Support to national and local authorities, energy companies and investors
- Regional center of energy planning and analyses competence
- Regional leader in preparation of strategic and planning documents, energy sector analyses and development
- Energy and environment consulting on-stop-shop covering all energy and environment related fields





Number of employees: **≈80**

Number of projects: **>200 a year**

Annual income: **4 mil.€**

Currently active / recently accomplished projects in:
**Zambia, Etiopia, Tanzania, Vietnam, Bangladesh,
Kyrgyzstan, Georgia, Moldova, Ukraine, Azerbaijan, Armenia, Tajikistan, Belarus,
Slovenia, Kosovo, Bosnia – Herzegovina, Albania, Croatia
along with many SEE regional and EU projects...**

ENERGY IN CROATIA

REPUBLIKA HRVATSKA
MINISTARSTVO GOSPODARSTVA
I ODRŽIVOG RAZVOJA



REPUBLIC OF CROATIA
MINISTRY OF ECONOMY
AND SUSTAINABLE DEVELOPMENT

ENERGIJA U HRVATSKOJ ENERGY IN CROATIA

20 20

GODIŠNI ENERGETSKI PREGLED
ANNUAL ENERGY REPORT

ENERGY BALANCE

ENERGIJA U HRVATSKOJ 2020. | ENERGY IN CROATIA 2020
ENERGETSKE BILANCE | ENERGY BALANCES

Tablica 11.2.2. Energetska bilanca za 2020. godinu (Eurostat)

Table 11.2.2. Energy Balance Table, 2020 (Eurostat)

1000 ten	1000 toe	Sveukupno	Kameni ugljen	Koks	Lignit ukupno	Sirova nafta	Poluproizvodi	Ukupno derivati nafte	Rafinerijski plin
		Total all products	Hard coal	Coke	Total lignite	Crude oil	Feedstocks	Total pet products	Refinery gas
Primarna proizvodnja	Primary production	3 738,1				657,4			
Uvoz	Imports	7 641,2	355,3	21,4	7,1	1 982,4	556,4	1 911,4	
Saldo skladišta	Stock change	132,3	-22,4	0,8		5,9	28,9	42,1	
Izvoz	Exports	3 184,0		1,1		566,4		1 816,3	
Bruto raspoloživa energija	Gross available energy	8 327,5	333,0	21,1	7,14	2 079,3	585,3	137,2	
Bunker brodova	Bunkers	20,4						20,4	
Ukupna potrošnja energije	Gross inland consumption	8 307,2	333,0	21,1	7,1	2 079,3	585,3	116,8	
Međunarodni zračni promet	International aviation	54,0						54,0	
Ukupna opskrba energijom	Total energy supply	8 253,2	333,0	21,1	7,1	2 079,3	585,3	62,9	
Energija za transformacije	Transformation input	4 100,1	260,6		1,2	2 027,4	585,3	9,9	3,0
Javne termoelektreane	Public thermal power stations	1 275,6	260,6					1,1	
Samostalne termoelektreane	Autoprod. thermal power stations	76,8			1,2			5,6	3,0
Gradske plinare	Gas works								
Rafinerije	Refineries	2 678,0				2 027,4	585,3		
Javne kotlovnice	District heating plants	47,6						3,1	
Proizvodnja drvenog ugljena	Charcoal production plants	22,1							
Proizvodnja transformirane energije	Transformation output	3 462,7						2 627,9	116,2
Javne termoelektreane	Public thermal power stations	751,8							
Samostalne termoelektreane	Autoprod. thermal power stations	34,3							
Gradske plinare	Gas works								
Rafinerije	Refineries	2 627,9						2 627,9	116,2
Javne kotlovnice	District heating plants	39,9							
Proizvodnja drvenog ugljena	Charcoal production plants	8,8							
Promjene i transferi, povrat	Exchanges and transfers, returns	4,1				-51,9		56,1	
Transferi među proizvodima	Interproduct transfers	4,1				-51,9		56,1	
Potrošnja energetike	Consumption of the energy branch	449,4						148,7	113,2
Gubici distribucije	Distribution losses	216,6							
Neposredna potrošnja	Available for final consumption	7 008,0	72,4	21,1	6,0	0,0		2 642,2	0,0
Neposredna neenergetska potrošnja	Final non-energy consumption	530,5						135,4	
Kemijska industrija	Chemical industry	401,7						6,7	
Ostali sektori	Other sectors	128,7						128,7	
Neposredna energetska potrošnja	Final energy consumption	6 477,5	72,4	21,1	6,0	0,0		2 506,8	0,0
Industrija	Industry	1 166,5	72,4	21,1	3,6			224,3	
Industrija željeza i čelika	Iron & steel industry	13,8	0,5	0,2					
Industrija obojenih metala	Non-ferrous metal industry	19,6						1,2	
Kemijska industrija	Chemical industry	163,2						2,1	
Industrija stakla i građ. materijala	Glass, pottery & building mat. industry	363,5	71,8	18,4				85,6	
Rudarstvo	Ore-extraction industry	5,9						3,2	
Industrija hrane, pića i cigareta	Food, drink & tobacco industry	181,2		2,5	3,6			15,9	

DIRECTIVE (EU) 2018/2001 on the promotion of the use of energy from renewable sources

Article 7

Calculation of the share of energy from renewable sources

1. The gross final consumption of energy from renewable sources in each Member State shall be calculated as the sum of:
 - (a) gross final consumption of electricity from renewable sources;
 - (b) gross final consumption of energy from renewable sources in the heating and cooling sector; and
 - (c) final consumption of energy from renewable sources in the transport sector.

2. For the purposes of point (a) of the first subparagraph of paragraph 1, gross final consumption of electricity from renewable sources shall be calculated as the quantity of electricity produced in a Member State from renewable sources, including the production of electricity from renewables self-consumers and renewable energy communities and excluding the production of electricity in pumped storage units from water that has previously been pumped uphill.

In multi-fuel plants using renewable and non-renewable sources, only the part of electricity produced from renewable sources shall be taken into account. For the purposes of that calculation, the contribution of each energy source shall be calculated on the basis of its energy content.


The electricity generated by hydropower and wind power shall be accounted for in accordance with the normalisation rules set out in Annex II.

3. For the purposes of point (b) of the first subparagraph of paragraph 1, gross final consumption of energy from renewable sources in the heating and cooling sector shall be calculated as the quantity of district heating and cooling produced in a Member State from renewable sources, plus the consumption of other energy from renewable sources in industry, households, services, agriculture, forestry and fisheries, for heating, cooling and processing purposes.

In multi-fuel plants using renewable and non-renewable sources, only the part of heating and cooling produced from renewable sources shall be taken into account. For the purposes of that calculation, the contribution of each energy source shall be calculated on the basis of its energy content.

4. For the purposes of point (c) of the first subparagraph of paragraph 1, the following requirements shall apply:
 - (a) Final consumption of energy from renewable sources in the transport sector shall be calculated as the sum of all biofuels, biomass fuels and renewable liquid and gaseous transport fuels of non-biological origin consumed in the transport sector. However, renewable liquid and gaseous transport fuels of non-biological origin that are produced from renewable electricity shall be considered to be part of the calculation pursuant to point (a) of the first subparagraph of paragraph 1 only when calculating the quantity of electricity produced in a Member State from renewable sources.
 - (b) For the calculation of final consumption of energy in the transport sector, the values regarding the energy content of transport fuels, as set out in Annex III, shall be used. For the determination of the energy content of transport fuels not included in Annex III, Member States shall use the relevant European Standards Organisation (ESO) standards in order to determine the calorific values of fuels. Where no ESO standard has been adopted for that purpose, Member States shall use the relevant International Organization for Standardisation (ISO) standards.

5. The share of energy from renewable sources shall be calculated as the gross final consumption of energy from renewable sources divided by the gross final consumption of energy from all energy sources, expressed as a percentage.

	A	B	H	I	J	K	L	M	N	O	P	Q	R	S
1	ktoe (thousand tonnes of oil equivalent)		Croatia											
2	eurostat 													
3														
4														
5			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
6	Electricity													
7	Hydro		558,2	591,3	573,6	566,7	593,9	601,6	603,3	597,8	592,5	606,2	593,0	582,2
8	Wind		6,4	11,2	16,4	25,8	38,9	57,6	72,7	87,6	103,6	113,5	120,6	144,6
9	Solar		0,0	0,0	0,0	0,2	1,0	3,0	4,9	5,6	6,8	6,4	7,1	8,2
10	Solid biofuels		0,3	0,3	1,6	3,2	4,1	4,3	7,7	16,7	18,6	26,9	41,0	48,1
11	All other renewables		1,8	2,6	3,1	4,9	6,7	9,8	15,1	20,4	26,6	30,7	42,4	44,1
12	Total (RES-E numerator)		566,8	605,4	594,7	600,8	644,6	676,4	703,7	728,1	748,1	783,8	804,2	827,2
13	Notes: Hydro is normalised and excluding pumping. Wind is normalised. Solar includes solar thermal, gaseous and liquid biofuels, renewable municipal waste, geothermal, and tide, wave & ocean.													
14	Electricity generation from all sources													
15	Total (RES-E denominator)		1.579,8	1.613,4	1.582,0	1.549,8	1.531,9	1.495,2	1.549,8	1.560,2	1.611,1	1.628,1	1.615,4	1.537,1
16	RES-E [%]		35,88%	37,52%	37,59%	38,76%	42,08%	45,24%	45,41%	46,67%	46,44%	48,14%	49,78%	53,82%
17														
18	Transport													
19	Ren. electricity in road transport		0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1
20	Ren. electricity in rail transport		7,0	7,1	7,4	7,4	6,9	6,9	7,7	8,4	8,9	9,5	9,6	9,3
21	Ren. electricity in all other transport modes		0,8	0,7	0,6	0,6	0,8	0,8	1,1	1,3	1,5	1,7	1,3	1,5
22	Compliant biofuels*		7,1	2,9	0,0	0,0	31,8	29,9	24,3	1,0	0,6	27,0	62,8	65,6
23	Annex IX		x	x	0,0	0,0	0,4	0,3	0,3	0,4	0,3	0,4	37,8	35,2
24	3(4)d first paragraph		x	x	0,0	0,0	31,4	29,6	23,9	0,7	0,3	26,6	25,0	30,4
25	3(4)d third paragraph subsection (i) and (ii)		x	x	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
26	other compliant biofuels		x	x	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
27	Non-compliant biofuels		0,0	0,0	3,5	36,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
28	Other renewable energies		0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
29	Total (RES-T numerator with multipliers)		25,4	21,3	19,2	19,2	50,2	48,3	45,1	23,8	24,8	53,2	126,1	125,9
30	* In period 2004-2010 all consumed biofuels are included in this category; as of 2011 only those													

SHARE OF RENEWABLE ENERGY SOURCES IN GROSS FINAL ENERGY CONSUMPTION

	2010.	2011.	2012.	2013.	2014.	2015.	2016.	2017.	2018.	2019.	2020.*
RES-E (%)	37,5 %	37,6 %	38,8 %	42,1 %	45,2 %	45,4 %	46,7 %	46,4 %	48,1 %	49,8 %	53,8 %
RES-T (%)	1,1 %	1,0 %	1,0 %	2,7 %	2,7 %	2,4 %	1,2 %	1,2 %	2,6 %	5,9 %	6,60 %
RES-H&C (%)	32,9 %	33,8 %	36,6 %	37,3 %	36,2 %	38,6 %	37,6 %	36,6 %	36,7 %	36,8 %	37,0 %
RES (%)	25,1 %	25,4 %	26,8 %	28,0 %	27,8 %	29,0 %	28,3 %	27,3 %	28,0 %	28,5 %	31,05 %



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Thank you for the attention!

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