

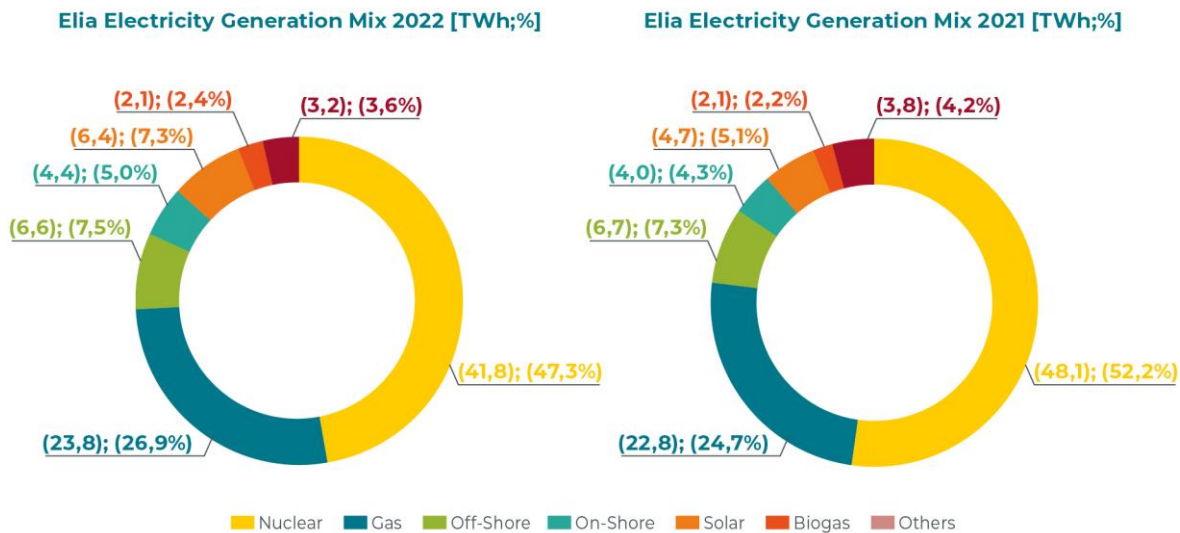


Belgium’s 2022 electricity mix: the increase in renewable energy and availability of nuclear power plants kept exports high

Trends

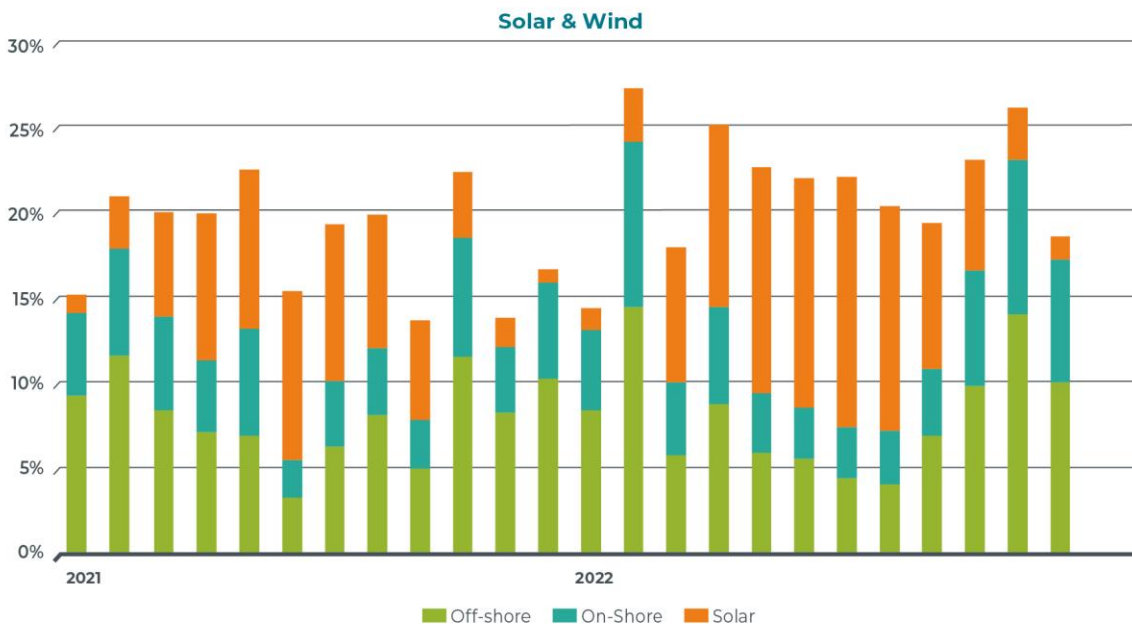
- The production of wind and solar energy continued to increase, leading to many new records being broken;
- An all-time high of combined wind and solar energy production was reached on 11 May 2022 (7112 MW);
- Nuclear power production made up 47.3% of Belgium’s electricity production mix and 26.9% of its gas-fired production;
- Belgium was, once again, a net exporter of electricity;
- Electricity consumption fell by 3.3% compared with 2021;
- The average annual price per MWh on the day-ahead market reached historic highs (€245/MWh).

Electricity mix in 2022 and 2021



Renewable energy production continued to increase in 2022

Wind and solar energy production amounted to 17.4 TWh (compared with 15.2 TWh in 2021), mainly due to a gradual increase in installed onshore (+14%) and solar (+35%) production. Offshore wind power production remained stable, with no increase in offshore wind farm production capacity expected before 2027-2028.



Many renewable production records broken

The total production of solar and wind power hit an all-time quarter-hourly high in Belgium of 7112 MW on 11 May 2022. This corresponded to 67% of the total consumption relating to this quarter-hour and the energy consumption of 7 million residents. Having half of Belgium's consumption needs covered by renewable energy sources is rare. However, with each passing year, this is becoming increasingly common. In 2022, this was the case 4.0% of the time, which is double the figure for 2021.

Production (Wind + PV) / Total Load > 50%

Year	Frequency [h/year]	Frequency [%]	Max (Wind + PV) [MW]	Date of Max (Wind + PV)
2018	0	0,0%	4138	11/09/2018
2019	8	0,1%	4594	08/06/2019
2020	119	1,4%	5824	11/05/2020
2021	168	2,0%	6420	21/05/2021
2022	353	4,0%	7112	11/05/2022

New **solar power production** records were set in 2022. July 2022 witnessed the highest amount of electricity being produced from solar power: 936 GWh. In addition, the total solar energy production increased significantly in 2022. The total production in 2022 was 6413 GWh, or 37% more than in 2021.

14 June 2022 became the most productive day of all time in Belgium in terms of solar energy, with a production of 41 GWh (the previous record stood at 33.4 GWh on 1 June 2021).

It should be noted that we have been using a more comprehensive methodology for estimating the total installed capacity since March 2022. The latter had been previously underestimated because some of the units were missing from our database. This also explains the significant increase in data this year.

Solar (GWh)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total	yearly increase
2013	33	81	167	293	290	328	389	325	235	149	56	67	2413	
2014	67	109	295	341	368	404	357	313	269	166	96	36	2821	16.9%
2015	65	131	232	390	412	459	388	379	264	162	82	66	3030	7.4%
2016	73	135	236	325	411	332	407	380	309	171	82	64	2925	-3.5%
2017	80	94	257	338	412	432	397	335	262	164	84	33	2888	-1.3%
2018	54	195	228	364	517	464	555	422	344	242	111	57	3553	23.0%
2019	60	191	244	414	451	504	477	444	358	196	118	71	3528	-0.7%
2020	81	138	386	581	683	578	548	495	397	180	126	66	4259	20.7%
2021	86	214	445	596	630	655	597	517	475	274	125	64	4678	9.8%
2022	99	222	559	714	888	875	936	859	545	420	198	76	6412	37%

Regarding **offshore wind power**, February was a very windy month, leading to a new record being set: 1003 GWh produced in one month. The total annual production amounted to 6644 GWh, which was slightly lower than the total production in 2021 (-2%).

Offshore (GWh)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total	yearly increase
2013	65	66	63	66	102	124	75	55	102	165	159	195	1237	
2014	237	260	160	121	146	82	134	195	82	239	184	312	2152	74.0%
2015	280	194	233	148	194	167	204	138	185	125	331	372	2571	19.5%
2016	332	256	212	181	159	143	156	177	131	169	246	182	2344	-8.8%
2017	197	240	268	130	166	209	199	159	184	376	291	369	2788	18.9%
2018	364	320	274	201	169	196	131	200	281	331	393	452	3312	18.8%
2019	412	307	448	247	252	312	243	393	454	518	445	616	4647	40.3%
2020	628	803	702	340	419	361	370	357	437	881	639	793	6730	44.8%
2021	736	815	609	486	461	213	405	532	328	808	591	795	6779	0.7%
2022	657	1003	404	582	393	357	279	259	437	643	909	341	6644	-2%

With regard to **onshore wind power**, a new record was also set: 677 GWh was produced in February. 2022 was also the most productive year in terms of onshore wind power: 4376 GWh produced across the whole year.

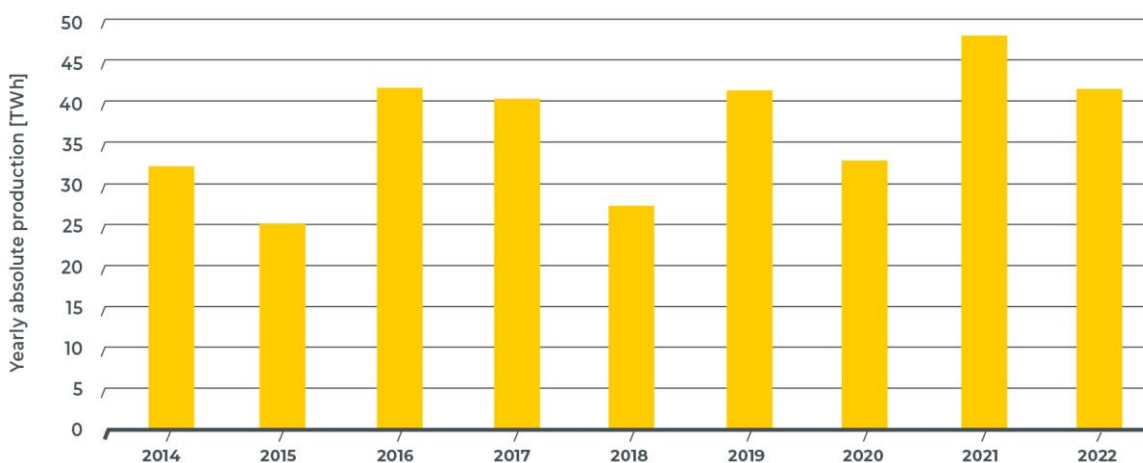
Onshore (GWh)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total	yearly increase
2013	152	148	152	156	142	133	80	59	87	208	192	301	1810	
2014	306	333	139	99	161	74	94	143	69	201	191	303	2113	16.7%
2015	303	201	231	149	181	136	162	116	170	93	322	379	2443	15.6%
2016	325	302	224	180	141	117	131	156	127	135	220	181	2239	-8.4%
2017	173	251	304	145	145	201	195	150	197	311	238	332	2642	18.0%
2018	403	277	317	226	158	157	146	185	193	237	296	367	2962	12.1%
2019	318	288	460	209	179	198	161	210	248	316	277	499	3363	13.5%
2020	444	629	439	227	244	195	204	203	185	494	394	433	4091	21.6%
2021	388	439	396	292	426	146	252	255	187	489	277	433	3980	-2.7%
2022	375	677	308	385	236	199	192	205	252	442	590	171	4376	9.9%

Combining onshore and offshore wind power figures leads to the identification of a new daily production record: a total production of 105.2 GWh on 28 December 2022 (the previous record was set on 4 May 2021 and stood at 91 GWh). On 28 December 2022 at 6.30 p.m., the record for wind power production (quarter-hourly average) was broken with 4603 MW.

High availability of nuclear production plants

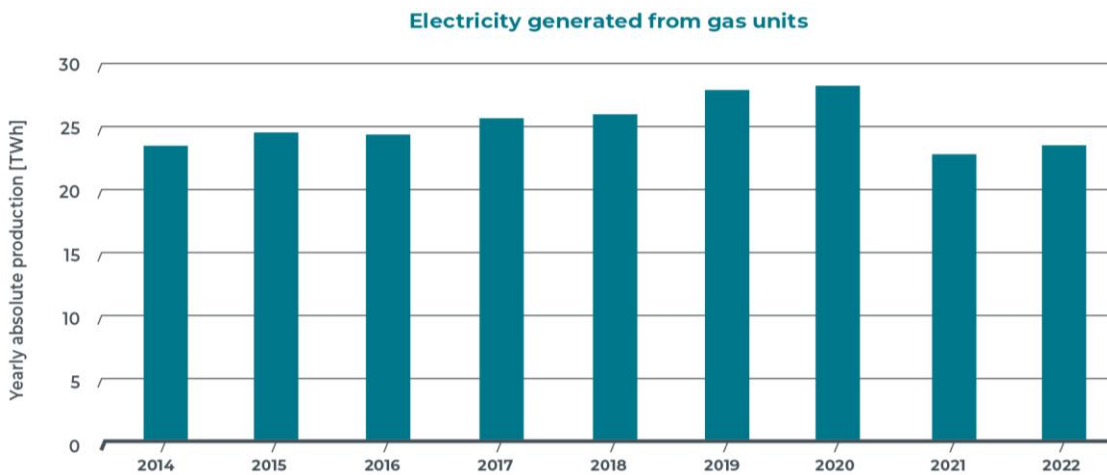
Despite the permanent closure of the Doel 3 power plant in late September 2022, the availability of the fleet of nuclear plants was again very high in 2022, with nuclear energy accounting for 47.3% of the electricity mix. However, this is a lower figure than in the previous year.

Electricity generated from nuclear units



Gas-fired production accounted for 26.9% of the mix

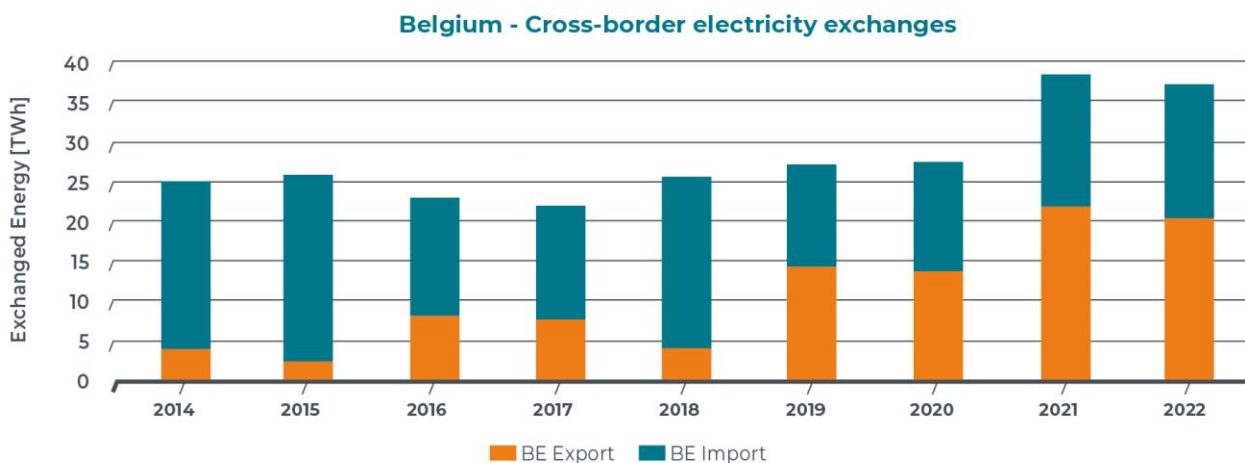
The high availability of nuclear production capacity tends to result in the reduced use of gas-fired power plants, but the figure relating to gas remained high in 2022.



Increases in cross-border trading and a new exports record set

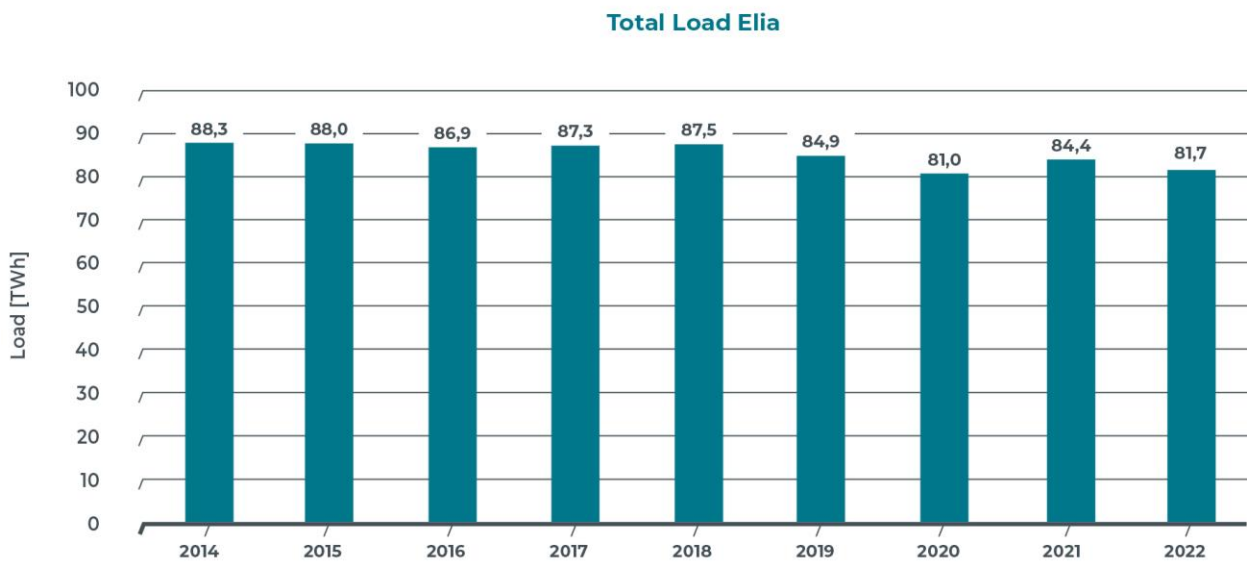
Cross-border trading increased for the fourth year in a row. This trend is continuing and Belgium is increasingly becoming a net exporter (6.6 TWh in net exports in 2022). Our country exported 22.2 TWh. This represents a slight decrease compared with 2021 (22.8 TWh). The increase in renewable energy production capacity in addition to traditional power plants created a surplus of electricity, which could be exported to our neighbouring countries (principally France, given the low availability of nuclear plants there, but also Great Britain).

The total amount of TWh traded (37.7 TWh in both directions in 2022) did not increase compared with 2021, although it nevertheless remained very high. There are several reasons for this trend: the commissioning of the Nemo Link (2018) and ALEGrO (2020) interconnectors and the upgrading of our Avelgem-Avelin connection with France (2022); the growing share of intermittent renewable energy in Europe, which increases the need for trading between countries to occur; and finally, the complicated international situation in 2022.



Electricity consumption fell by 3.3% compared with the total annual consumption in 2021

Electricity consumption in 2022 (81.7 TWh) gradually decreased compared with its normal level. This value corresponds to the values observed during the COVID-19 pandemic. High prices linked to the current international situation caused consumers to reduce their consumption. Throughout October, November and December, the consumption of electricity in Belgium was 8% lower than the average over the preceding 5 years. This decrease was more notable in November (-11%). From January to September, electricity consumption dropped by an average of 2%.



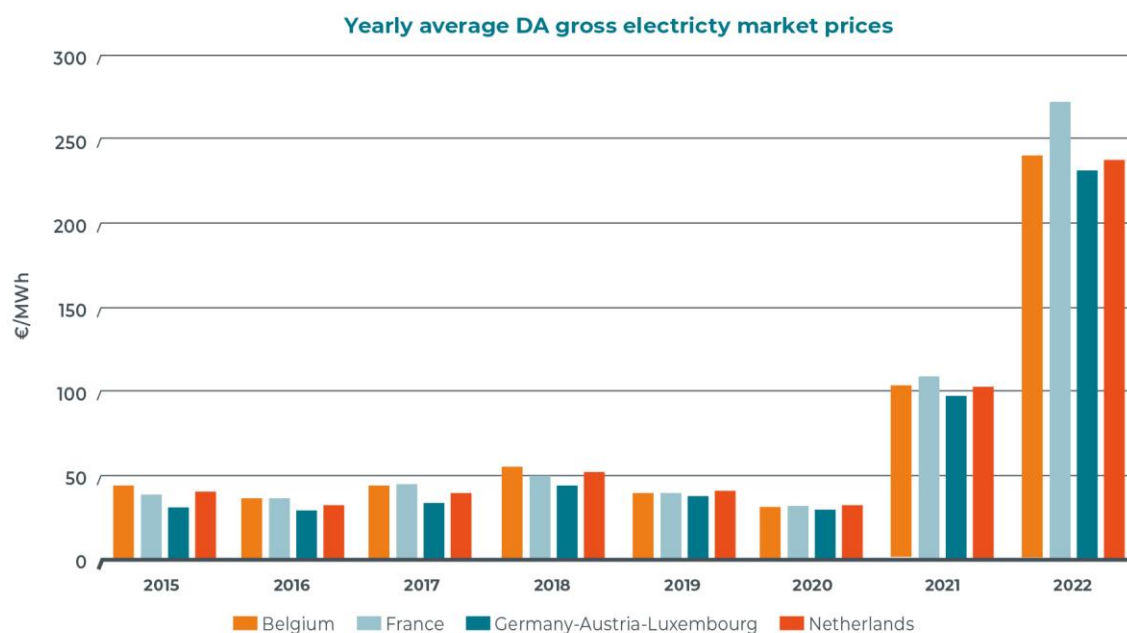
The average price of electricity rose significantly

The COVID-19 pandemic led to extremely low prices in 2020. In 2022, the opposite occurred: the average annual price per MWh on the day-ahead market was exceptionally high (€245/MWh), mainly due to high gas prices, the international situation and supply difficulties observed in certain European countries. August 2022 saw an all-time record high of €448.1/MWh.

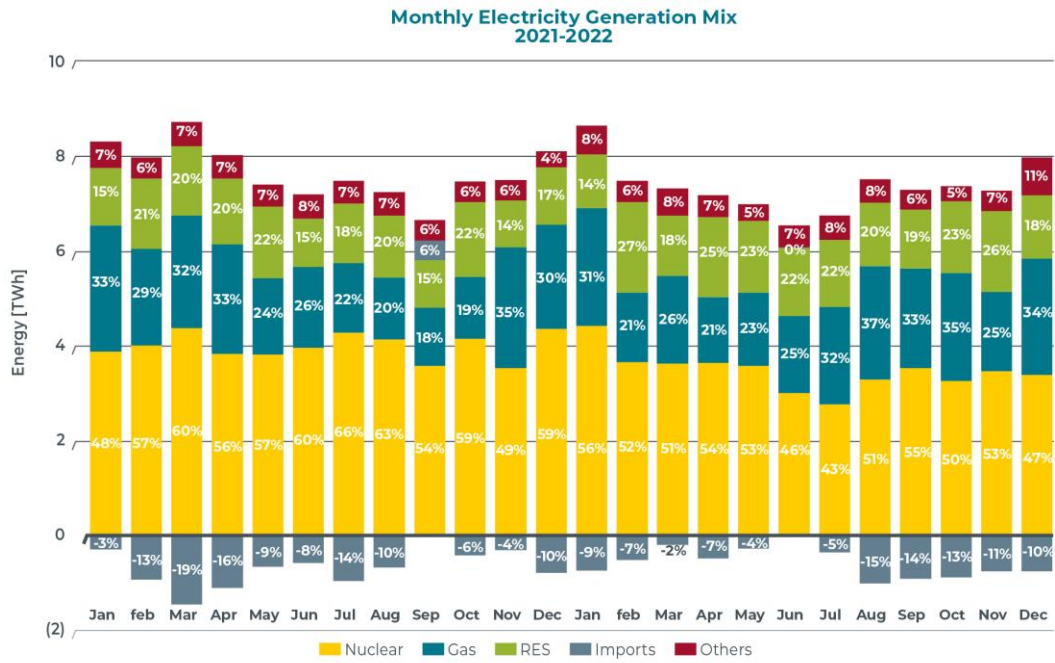
Clearing price day-ahead [€/MWh]

Month	2014	2015	2016	2017	2018	2019	2020	2021	2022
January	39.7	42.9	32.6	72.6	36.8	60.5	37.9	57.5	191.4
February	38.7	50.5	25.4	47.6	47.4	47.6	28.4	48.6	162.6
March	37.4	47.1	27.1	34.5	50.7	37.6	24.0	46.6	265.7
April	41.9	47.7	25.4	37.3	37.8	37.9	14.7	57.0	186.6
May	38.7	37.6	25.4	37.2	44.5	38.0	15.4	55.6	176.6
June	36.8	39.0	30.7	32.7	50.0	27.5	25.6	74.4	219.1
July	33.8	42.6	31.3	33.6	52.9	37.7	29.8	77.4	321.3
August	37.4	42.4	28.9	31.8	60.7	33.7	35.5	79.5	448.1
September	46.2	52.5	37.7	37.2	68.8	33.6	44.2	136.2	337.4
October	46.2	55.4	57.2	49.0	76.0	37.6	39.4	165.2	157.4
November	45.1	43.1	62.3	66.6	77.8	44.4	39.9	202.2	180.4
December	47.7	35.9	55.0	55.1	59.7	36.4	47.4	245.4	269.3
	40.8	44.7	36.6	44.6	55.3	39.3	31.9	104.1	245

Yearly average day-ahead market prices in neighbouring countries



Electricity mix per month 2021 – 2022



About Elia Group

One of Europe's top five TSOs

Elia Group is a key player in electricity transmission. We ensure that production and consumption are balanced around the clock, supplying 30 million end users with electricity. Through our subsidiaries in Belgium (Elia) and the north and east of Germany (50Hertz), we operate 19,192 km of high-voltage connections, meaning that we are one of Europe's top 5 transmission system operators. With a reliability level of 99.99%, we provide society with a robust power grid, which is important for socio-economic prosperity. We also aspire to be a catalyst for a successful energy transition, helping to establish a reliable, sustainable and affordable energy system.

We are making the energy transition happen

By expanding international high-voltage connections and incorporating ever-increasing amounts of renewable energy into our grid, we are promoting both the integration of the European energy market and the decarbonisation of society. We also continuously optimise our operational systems and develop new market products so that new technologies and market parties can access our grid, thus further facilitating the energy transition.

In the interest of society

As a key player in the energy system, Elia Group is committed to working in the interest of society. We are responding to the rapid increase in renewable energy by constantly adapting our transmission grid. We also ensure that investments are made on time and within budget, with a maximum focus on safety. In carrying out our projects, we manage stakeholders proactively by establishing two-way communication channels between all relevant parties very early on in the development process. We also offer our expertise to different players across the sector in order to build the energy system of the future.

International focus

In addition to its activities as a transmission system operator, Elia Group provides consulting services to international customers through its subsidiary Elia Grid International. In recent years, the Group has launched new non-regulated activities such as re.alto - the first European marketplace for the exchange of energy data via standardised energy APIs - and WindGrid, a subsidiary which will continue to expand the Group's overseas activities, contributing to the development of offshore electricity grids in Europe and beyond.

The legal entity Elia Group is a listed company whose core shareholder is the municipal holding company Publi-T.

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