MAON

European Electricity Wholesale Price Forecast

Derived with fundamental market simulation Maon

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FUNDAMENTAL MARKET SIMULATION RESULT

Exemplary Electricity Wholesale Base Price Forecast

$€_{nominal}$ / MWh

Country	Bidding zone	2025 National Trends	2030 National Trends	2030 Distributed Energy	2030 Global Ambition	2040 National Trends	2040 Distributed Energy	2040 Global Ambition	2050 Distributed Energy	2050 Global Ambition
Albania	AL	126	156	76	98	117	55	48	22	47
Austria	AT	120	123	107	85	81	74	63	64	51
Bosnia & Herzegovina	BA	124	154	99	95	117	58	70	21	51
Belgium	BE	120	109	108	71	69	100	76	77	73
Bulgaria	BG	127	158	89	103	117	73	57	29	47
Switzerland	CH	120	128	103	78	89	90	68	76	69
Cyprus	CY	169	212	59	64	112	52	42	22	32
Czech	CZ	126	144	109	87	87	90	67	70	49
Germany	DE	120	113	109	88	77	92	77	78	72
Germany	DEKF	117	105	97	80	77	88	72	72	72
Denmark	DKE	113	94	82	69	78	84	60	63	71
Denmark	DKKF	113	94	82	69	77	83	67	63	72
Denmark	DKW	114	100	97	68	70	100	63	83	76
Estonia	EE	91	77	46	37	35	10	9	15	27
Spain	ES	64	62	49	29	37	60	57	45	31
Finland	FI	23	31	9	4	35	10	9	15	27
France	FR	87	62	74	41	60	82	56	69	56
France	FRC	114	142	83	74	95	63	46	24	32
Great Britain	GB	109	73	114	69	66	103	76	74	79
Greece	GR	128	150	59	64	111	50	42	21	32
Croatia	HR	126	145	100	86	89	59	66	48	49
Hungary	HU	126	145	104	86	89	72	67	62	51
Ireland	IE	126	97	116	67	74	117	78	69	78
Italy	ITCN	125	145	106	91	103	86	80	67	66
Italy	ITCO	114	142	83	74	95	63	82	24	67
Italy	ITCS	117	148	85	73	103	64	60	24	30
Italy	ITN	125	146	110	93	105	92	80	74	67
Italy	ITS	116	148	75	66	102	51	60	20	30
Italy	ITSAR	114	142	83	74	95	63	64	24	32
Italy	ITSIC	120	147	62	54	93	33	59	16	30
Lithuania	LT	95	69	66	47	64	75	24	58	63
Luxembourg	LU	120	113	109	88	77	92	77	78	72
Latvia	LV	93	67	58	37	31	66	11	56	60
Montenegro	ME	124	155	91	95	118	55	61	22	48
North Macedonia	MK	127	156	76	98	116	55	48	22	47
Malta	MT	131	174	102	78	208	42	65	17	30
Northern Ireland	NI	126	97	109	64	74	104	75	72	78
Netherlands	NL	120	111	108	74	65	105	79	71	74
Norway	NO1	42	31	51	25	32	80	28	53	70
Norway	NO2	42	31	51	25	32	80	28	53	70
Norway	NO3	37	30	38	21	29	50	27	34	69
Norway	NO4	16	15	6	3	22	10	10	9	63
Norway	NO5	42	31	51	25	32	80	28	53	70
Poland	PL	134	229	112	101	123	81	76	64	43
Portugal	PT	64	60	41	28	35	49	56	41	26
Romania	RO	125	151	72	106	115	56	69	16	50
Serbia	RS	124	155	103	106	119	64	72	23	52
Sweden	SE1	17	14	6	1	19	10	10	8	63
Sweden	SE2	29	23	34	18	28	40	18	26	64
Sweden	SE3	34	27	34	18	33	44	18	28	64
Sweden	SE4	34	27	36	24	33	74	20	56	63
Slovenia	SI	126	145	104	85	89	71	67	65	50
Slovakia	SK	126	145	109	88	88	91	69	75	51
Tunisia	TN	175	212	151	151	140	133	133	91	91
Turkey	TR	149	180	144	142	174	99	98	76	80

AIM

- Provide exemplary fundamental long-term electricity price forecast for Europe
- Transparent keywords, scenarios, additional assumptions and method

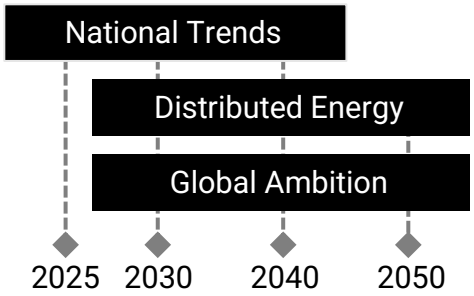
KEYWORDS

- Maon: Market simulation web software
- European: All generators, storages and consumers in every country in Europe
- Electricity: Market for electricity and its interplay to other markets and sectors
- Wholesale: Consider only wholesale markets without taxes, levies and fees
- Price: Derive hourly spot price estimation and its annual average as base price
- Forecast: Predict prices long-term based on assumed future scenarios
- Fundamental: Use traceable simulation method from scientific research
- Simulation: Derive dispatch of supply and demand for given capacities and costs

SCENARIOS

https://2022.entsos-tyndp-scenarios.eu

- Demand and supply: Ten-Year Network Development Plan 2022 (TYNDP)
- Profiles for renewable feed-in, heating, cooling and load: historical year 2018



ADDITIONAL ASSUMPTIONS

- Natural gas, hard coal and emission cost for 2025 set to traded future prices from 2023/03/23 and after 2025 the growth rates from TYNDP apply
- TYNDP demand reduced by 10 %

METHOD

Fundamental Electricity Market Simulation *https://cloud.maon.eu/handbook*

Input data
Exogenous values
- Renewables
- Batteries
- Electrolyzers, cogeneration and electric vehicles
- Hydropower cascades
- Thermal power plants
- Exchange capacities
- Price-taking demands
- Flexible consumers
- Various other inputs

Solving optimization problem

Target function
- Total cost minimization

Degrees of freedom
- Dispatches
- Exchanges

Restrictions
- Load coverages
- Dispatch restrictions
- Exchange capacities

Hourly results
Endogenous variables
- Wholesale electricity prices
- Dispatches
- Exchanges
- Operating expenses
- Emissions
- Remaining capacities
- Assessments for storages, consumers and generators
- Social welfares
- Various other outputs

DISCLAIMER

- Prices need to be interpreted against the assumptions which will change over time
- Suitable assumptions and interpretations necessary to answer individual questions
- Maon excludes any liability for any use derived from this price forecast example

EXPERT KNOWLEDGE

Selected consultants currently using Maon and providing associated decision support

e-venture consulting
www.e-vc.org

E-Bridge Consulting
www.e-bridge.de

optEnergy Consulting
www.optenergy.de

Umlaut Energy
www.umlaut.com