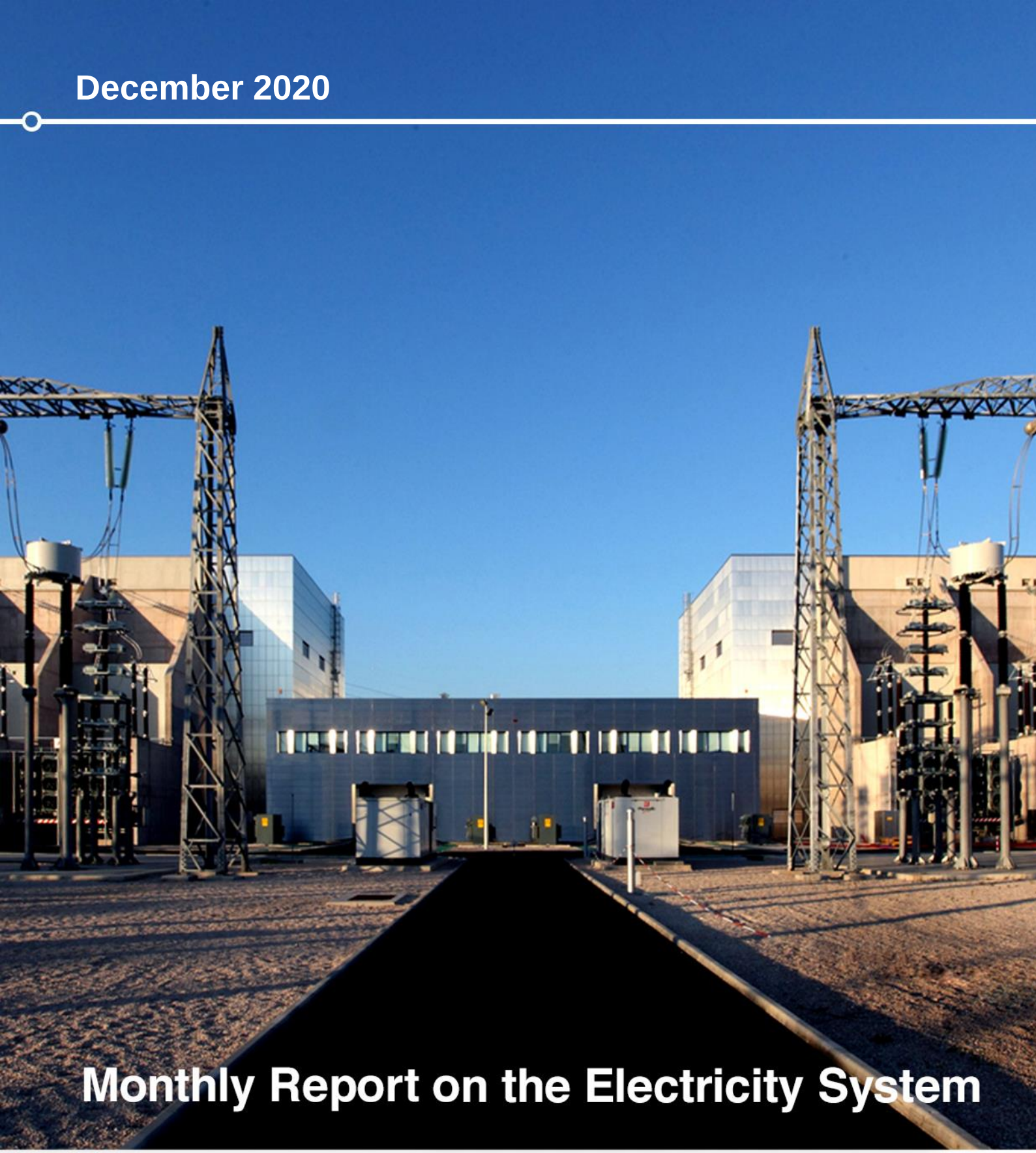
December 2020



Monthly Report on the Electricity System

Terna

December 2020

Monthly Report on the Electricity System

December 2020

Monthly Report on the Electricity System

In December 2020, electricity demand was 25,944 GWh, an increase compared to the same month of the previous year (+1.1%). In particular, there was a drop in hydroelectric production (-23.1%) and wind production (-17.1%), as well as an increase in thermoelectric production (+14.0%), compared to the same month of 2019.
In 2020, demand (302,751 GWh) fell (-5.3%) compared to 2019.
The December 2020 result was achieved with one more working day (21 vs 20), and with an average monthly temperature almost 1°C lower compared to November last year. When adjusted for seasonal, temperature and calendar effects, the figure represents a -0.6% variation.

In December 2020, electricity demand was met 55% via production from Non-Renewable Energy Sources, 32% via Renewable Energy Sources and the remainder via foreign exchange.
In December, production from Renewable Energy Sources decreased (-16.2%) compared to the same month of the previous year. Specifically, there was a significant reduction in renewable hydroelectric production (-23.6%), wind production (-17.1%) and photovoltaic production (-16.2%) compared to the previous year.

The December total for withdrawal programmes on the DAM was approximately €1.4 Bn, up 17% compared to the previous month and 26% compared to November 2019.
In December, the spread between average bid-up and bid-down prices on the DSM was €142/MWh, up compared to the previous month by 29% and up by 2% compared to December 2019. Total volumes increased compared to the previous month (+33%).
In December the spread between bid-up and bid-down prices on the Balancing Market was €118/MWh, down compared to both the previous month (€130/MWh; -9%) and compared to December 2019 (€162/MWh; -27%). Total volumes increased compared to the previous month (+14%).

This month, we present a selection of ARERA resolutions relevant for dispatching and transmission activities.

Monthly Report on the Electricity System

Monthly Summary and Short-Term Analysis

In December 2020, electricity demand was 25,944 GWh, an increase compared to the same month of the previous year (+1.1%). In particular, there was a drop in hydroelectric production (-23.1%) and wind production (-17.1%), as well as an increase in thermoelectric production (+14.0%), compared to the same month of 2019.
In 2020, demand (302,751 GWh) fell (-5.3%) compared to 2019.

Demand breakdown – coverage by sources

[GWh]	Dec 2020	Dec 2019	%20/19	Jan - Dec 20	Jan - Dec 19	%20/19
Hydro	3.615	4.699	-23,1%	47.990	47.590	0,8%
of which Pumping Production	*179*	*199*	*-10,2%*	*1.790*	*1.728*	*3,6%*
Thermal	16.061	14.088	14,0%	175.376	187.317	-6,4%
of which Biomass	*1.569*	*1.551*	*1,1%*	*18.025*	*17.967*	*0,3%*
Geothermal	475	461	3,0%	5.646	5.689	-0,8%
Wind	2.009	2.423	-17,1%	18.547	20.034	-7,4%
Photovoltaic	738	881	-16,2%	25.549	23.320	9,6%
Net Total Production	**22.898**	**22.552**	**1,5%**	**273.108**	**283.950**	**-3,8%**
of which Renewable Production	*8.228*	*9.816*	*-16,2%*	*113.967*	*112.871*	*1,0%*
Import	3.859	3.954	-2,4%	39.787	43.975	-9,5%
Export	558	554	0,7%	7.587	5.834	30,0%
Net Foreign Exchange	**3.301**	**3.400**	**-2,9%**	**32.200**	**38.141**	**-15,6%**
Pumping	**255**	**284**	**-10,2%**	**2.557**	**2.469**	**3,6%**
Electricity demand(1)	**25.944**	**25.668**	**1,1%**	**302.751**	**319.622**	**-5,3%**

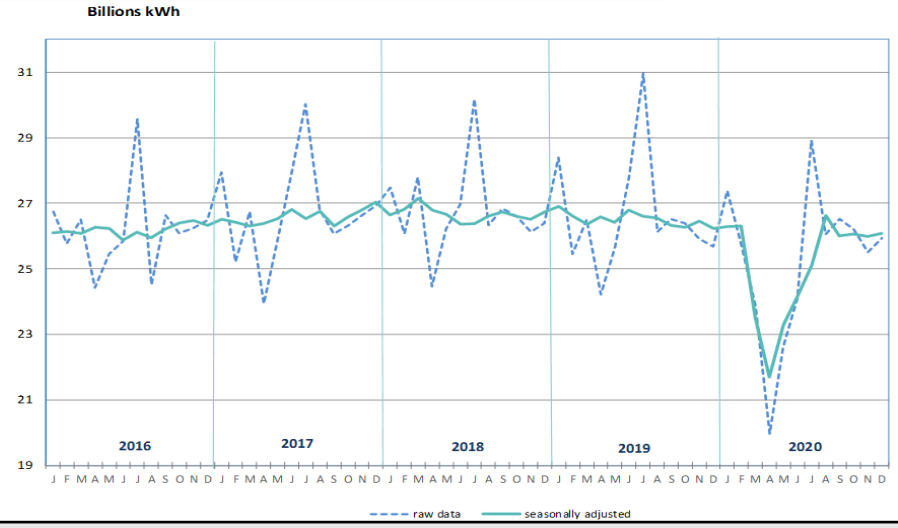
(1) Electricity Demand = Production + Foreign Balance - Pumping Consumption
(2) Pumping production is calculated assuming theoretical efficiency during the pumping phase
(3) RES Production = Hydro - Pumping production + Biomass + Geothermal + Wind + Photovoltaic

Source: Terna

In December 2020, an reduction was recorded in photovoltaic production (-16.2%) and foreign exchange (-2.9%), whilst there was an increase in geothermal production (+3.0%) compared to the previous year.
In 2020, exports rose significantly (+30.0%) compared to 2019.
The trend of total net production in December was up +1.5% compared to the same period of 2019.

The December 2020 result was achieved with one more working day (21 vs 20), and with an average monthly temperature almost 1°C lower compared to November last year. When adjusted for seasonal, temperature and calendar effects, the figure represents a -0.6% variation.
In 2020 there was a decrease of 5.3% compared to the same period in 2019. With adjusted values, this variation does not change.
The short-term data for December 2020, adjusted for seasonal, calendar and temperature effects, recorded a slight increase in electricity demand: +0.3% compared to the previous month. Considering this result, the trend remains stable.

Demand – seasonality adjusted



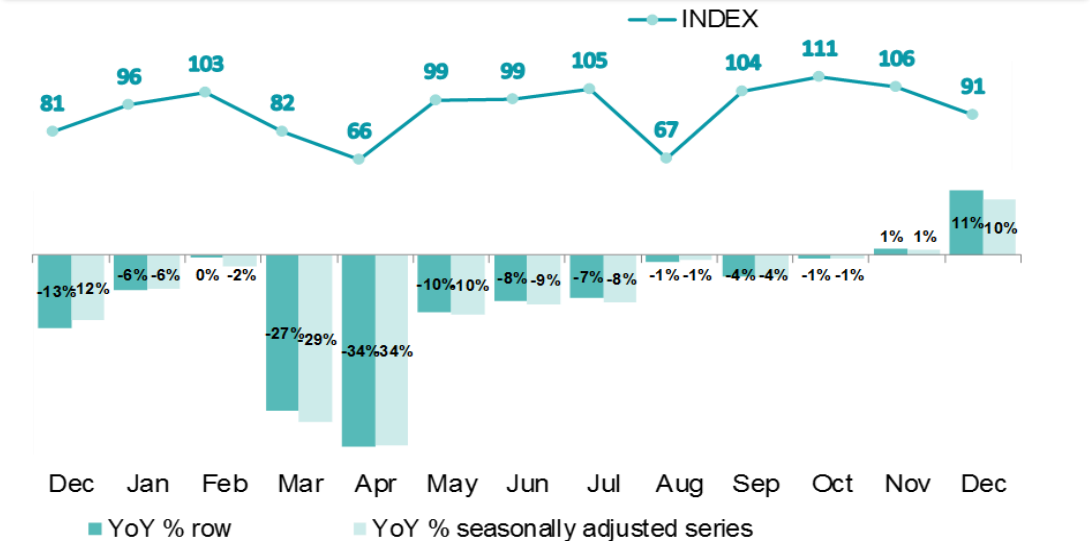
Source: Terna

When adjusted for seasonal, temperature and calendar effects, the figure for the period represents a slightly positive fluctuation of +0.3%.

IMCEI

The annual trend of December 2020 (compared to December 2019) increased by 11.4% with raw data. When adjusted for seasonal, temperature and calendar effects, this variation was +9.8%.
In 2020, the change in withdrawals by HV customers was -7.7%; with data adjusted for seasonal and calendar effects the change comes to -7.9%.

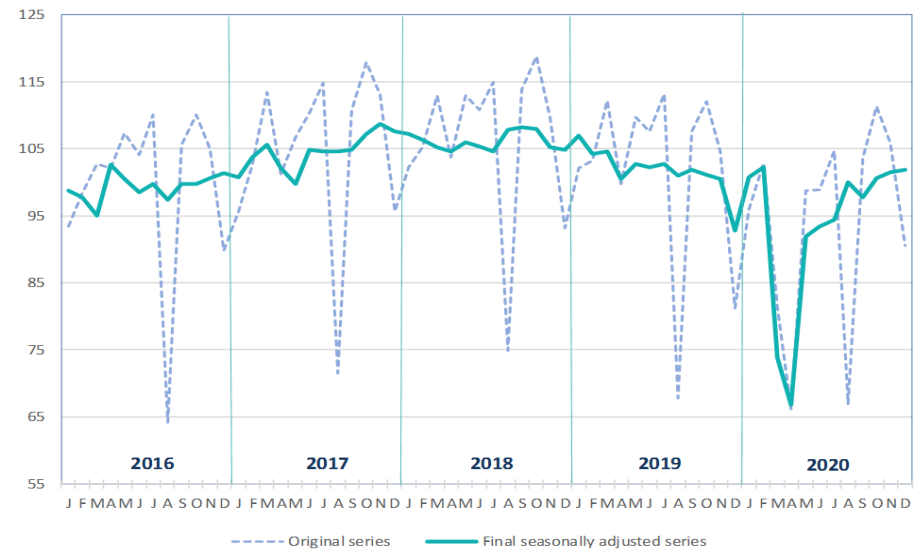
Monthly Industrial Electrical Consumption Index - IMCEI (2015 base = 100)



In December, the change in the monthly index of Italian electricity consumption increased by 11.4% compared to December 2019.

The December 2020 data, adjusted for seasonal, calendar and temperature effects, for the industrial electricity consumption index, increased for the third consecutive month: +0.4% compared to November.

IMCEI short-term analysis (base 2015 = 100)



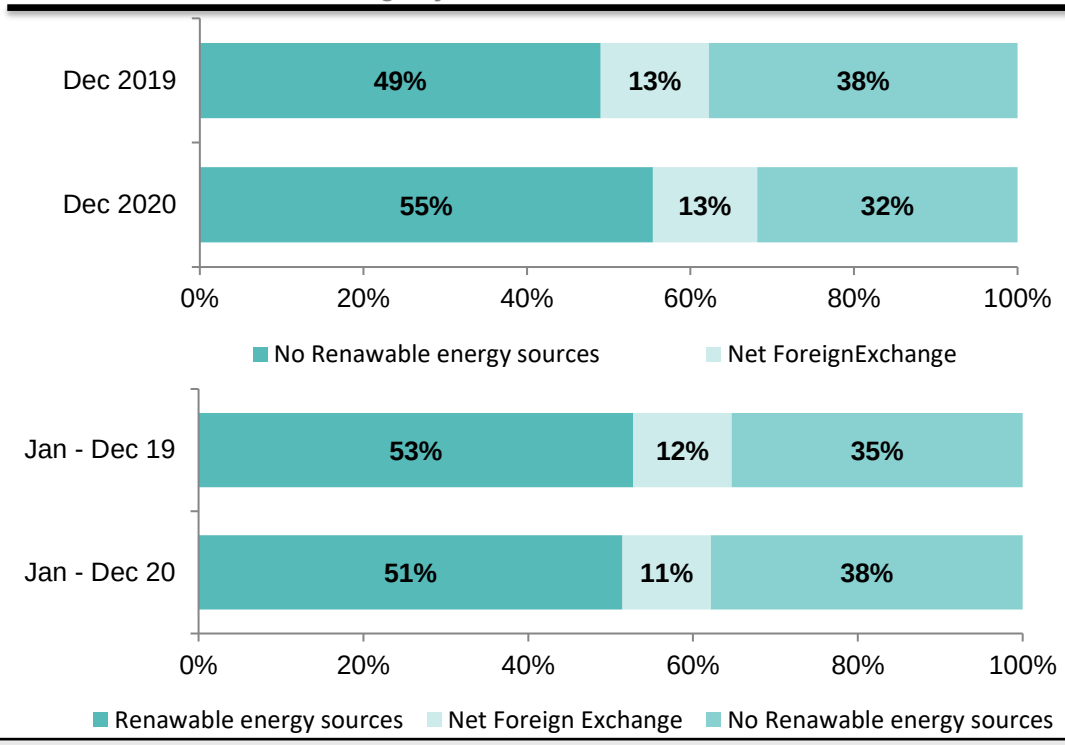
When adjusted for seasonal, temperature and calendar effects, the monthly figure for December 2020 was an increase of 0.4% compared to the previous month.

Source: Terna

Energy Demand Mix

In December 2020, electricity demand was met 55% via production from Non-Renewable Energy Sources, 32% via Renewable Energy Sources and the remainder via foreign exchange.
In 2020, electricity demand was 302,751 GWh, 51% of which was met via production from Non-Renewable Energy Sources, 38% from Renewable Energy Sources and the remainder from the foreign balance.

Demand breakdown – coverage by sources

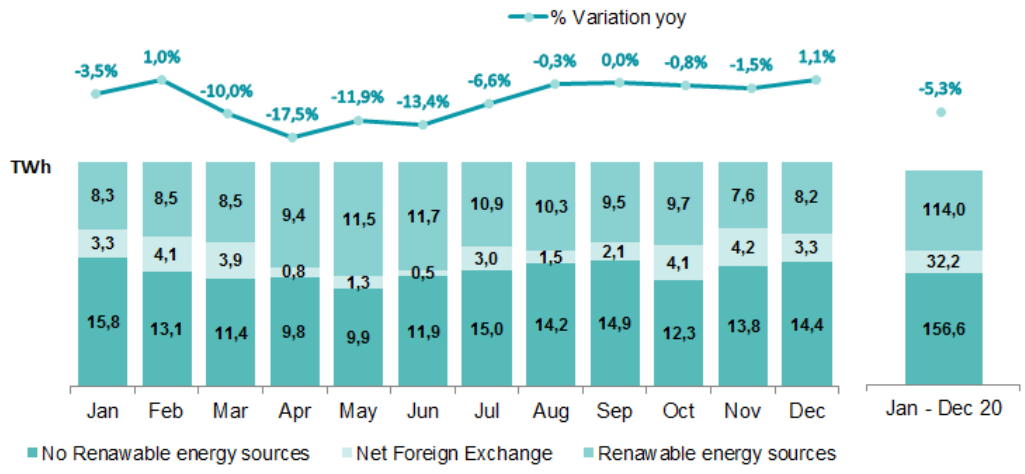


In December, production from renewable sources fell significantly compared to the same month of 2019 (-16.2%).

In 2020, production from Non-Renewable Energy Sources recorded a percentage decrease of -7.1% compared to 2019.

Source: Terna

Trend of 2020 energy demand mix compared to 2019



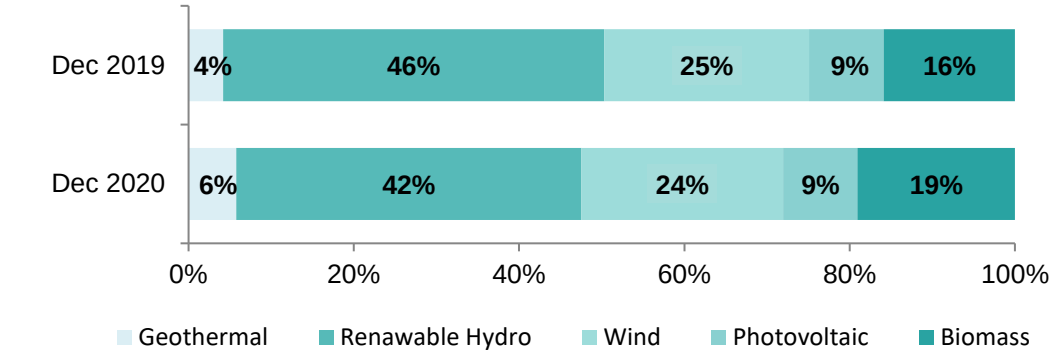
In 2020, the demand for electricity from the grid saw a decrease of -5.3% compared to 2019.
In 2020, energy production from renewable sources totalled 114.0 TWh, a +1.0% increase compared to 2019.

Source: Terna

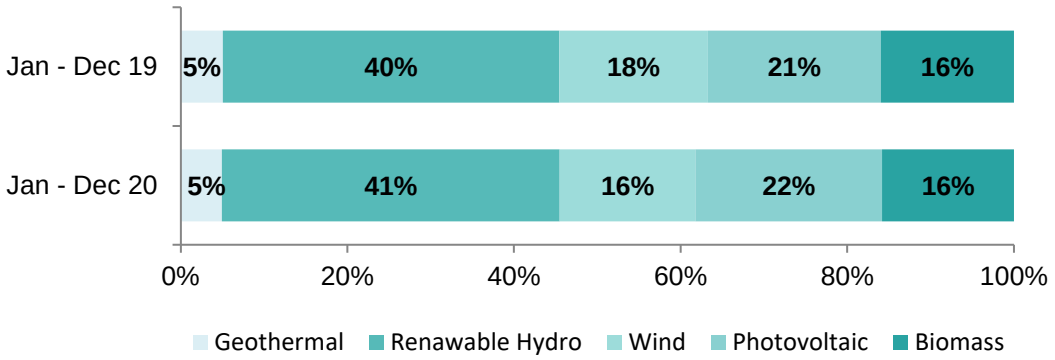
Details of Renewable Energy Sources

In December, production from Renewable Energy Sources fell (-16.2%) compared to the same month of the previous year. Specifically, there was a significant reduction in renewable hydroelectric production (-23.6%), wind production (-17.1%) and photovoltaic production (-16.2%) compared to the previous year.

RES Production - Breakdown



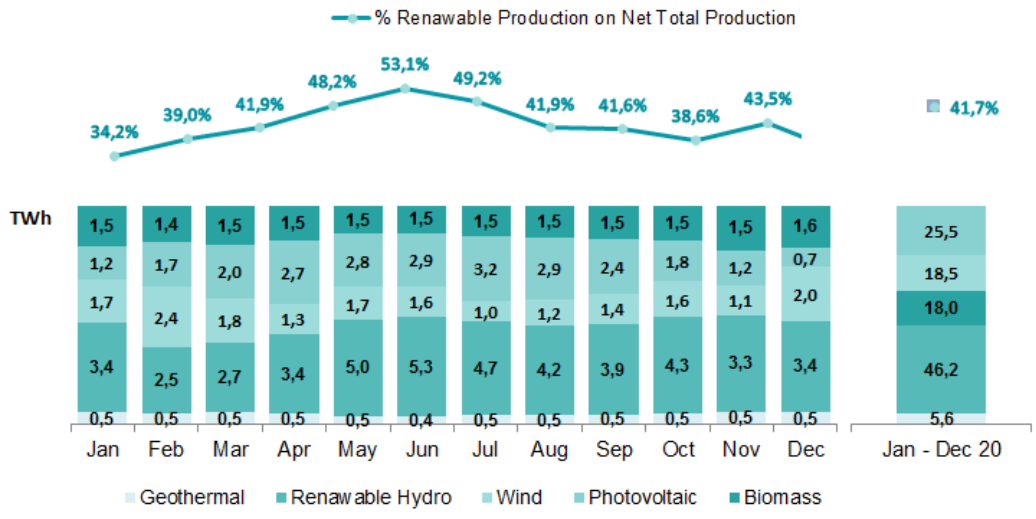
In December 2020, the detailed breakdown of production from renewable energy sources recorded a M-o-M percentage increase (+8.9%).



In 2020, production from renewable energy sources increased by +1.0% mainly due to the increase in photovoltaic production (+9.6%).

Source: Terna

Trend of 2020 RES net production compared to 2019



In 2020, 41.7% of net national production was from Renewable Energy Sources
In December 2020, renewable production represented 35.9% of total net national production, a decrease compared to the same month in 2019 (43.5%).

Source: Terna

Historical Energy Balance Sheets

In 2020, total net production allocated for consumption (270,551 GWh) met 89.4% of national electricity demand (302,751 GWh).

2020 Historical Monthly Energy Balance Sheet

[GWh]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Hydro	2.765	2.591	2.194	3.456	4.948	6.013	5.246	4.367	3.585	3.007	4.719	4.699	47.590
of which Pumping Production (2)	*179*	*131*	*158*	*162*	*143*	*130*	*97*	*90*	*110*	*190*	*139*	*199*	*1.728*
Thermal	19.239	14.912	15.504	14.346	13.333	14.311	17.748	15.790	16.513	16.796	14.737	14.088	187.317
of which Biomass	*1.528*	*1.391*	*1.570*	*1.509*	*1.488*	*1.389*	*1.507*	*1.529*	*1.470*	*1.556*	*1.479*	*1.551*	*17.967*
Geothermal	496	438	482	473	491	468	480	484	469	482	465	461	5.689
Wind	2.308	2.329	2.486	1.495	1.655	997	1.240	714	1.189	1.025	2.173	2.423	20.034
Photovoltaic	1.016	1.547	2.277	2.139	2.296	2.930	2.858	2.680	2.157	1.667	872	881	23.320
Net Total Production	**25.824**	**21.817**	**22.943**	**21.909**	**22.723**	**24.719**	**27.572**	**24.035**	**23.913**	**22.977**	**22.966**	**22.552**	**283.950**
of which Renewable Production (3)	*7.935*	*8.165*	*8.851*	*8.910*	*10.735*	*11.667*	*11.233*	*9.684*	*8.760*	*7.547*	*9.569*	*9.816*	*112.871*
Import	3.352	4.155	4.203	3.039	3.548	3.694	4.119	2.783	3.344	4.183	3.601	3.954	43.975
Export	531	326	419	509	411	409	588	559	582	494	452	554	5.834
Net Foreign Exchange	**2.821**	**3.829**	**3.784**	**2.530**	**3.137**	**3.285**	**3.531**	**2.224**	**2.762**	**3.689**	**3.149**	**3.400**	**38.141**
Pumping	**255**	**187**	**226**	**232**	**204**	**186**	**139**	**129**	**157**	**271**	**199**	**284**	**2.469**
Electricity demand(1)	**28.390**	**25.459**	**26.501**	**24.207**	**25.656**	**27.818**	**30.964**	**26.130**	**26.518**	**26.395**	**25.916**	**25.668**	**319.622**

Source: Terna

In 2020, net total production was down (-3.8%) compared to 2019, and peak electricity demand was reached in July, with 28,908 GWh.

The developments in the monthly balance sheet for 2019 are provided below.

2019 Historical Monthly Energy Balance Sheet

[GWh]	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Hydro	2.765	2.591	2.194	3.456	4.948	6.013	5.246	4.367	3.585	3.007	4.719	4.699	47.590
of which Pumping Production (2)	*179*	*131*	*158*	*162*	*143*	*130*	*97*	*90*	*110*	*190*	*139*	*199*	*1.728*
Thermal	19.239	14.912	15.504	14.346	13.333	14.311	17.748	15.790	16.513	16.796	14.737	14.088	187.317
of which Biomass	*1.528*	*1.391*	*1.570*	*1.509*	*1.488*	*1.389*	*1.507*	*1.529*	*1.470*	*1.556*	*1.479*	*1.551*	*17.967*
Geothermal	496	438	482	473	491	468	480	484	469	482	465	461	5.689
Wind	2.308	2.329	2.486	1.495	1.655	997	1.240	714	1.189	1.025	2.173	2.423	20.034
Photovoltaic	1.016	1.547	2.277	2.139	2.296	2.930	2.858	2.680	2.157	1.667	872	881	23.320
Net Total Production	**25.824**	**21.817**	**22.943**	**21.909**	**22.723**	**24.719**	**27.572**	**24.035**	**23.913**	**22.977**	**22.966**	**22.552**	**283.950**
of which Renewable Production (3)	*7.935*	*8.165*	*8.851*	*8.910*	*10.735*	*11.667*	*11.233*	*9.684*	*8.760*	*7.547*	*9.569*	*9.816*	*112.871*
Import	3.352	4.155	4.203	3.039	3.548	3.694	4.119	2.783	3.344	4.183	3.601	3.954	43.975
Export	531	326	419	509	411	409	588	559	582	494	452	554	5.834
Net Foreign Exchange	**2.821**	**3.829**	**3.784**	**2.530**	**3.137**	**3.285**	**3.531**	**2.224**	**2.762**	**3.689**	**3.149**	**3.400**	**38.141**
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Source: Terna

In 2019, the month with the highest demand for electricity was July, with 30,964 GWh.

(1) Electricity Demand = Production + Foreign Balance - Pumping Consumption
(2) Pumping production is calculated assuming theoretical efficiency during the pumping phase
(3) RES Production = Hydro - Pumping production + Biomass + Geothermal + Wind + Photovoltaic

Demand by Operational Area

In December 2020, there was an increase in demand in the Northern zone (TO-MI-VE) and on the Islands (CA-PA), in line with the Centre (RM-FI) and the South (NA) compared to the corresponding period of the previous year.

Demand by Operational Area

[GWh]	Turin	Milan	Venice	Florence	Rome	Naples	Palermo	Cagliari
Dec 2020	2.754	5.532	3.909	3.898	3.653	3.778	1.628	792
Dec 2019	2.704	5.477	3.895	3.895	3.609	3.758	1.562	768
% Dec 2020/2019	1,8%	1,0%	0,4%	0,1%	1,2%	0,5%	4,2%	3,1%
Cumulated 2020	30.548	64.890	46.611	46.319	42.478	44.713	18.677	8.515
Cumulated 2019	32.753	69.645	49.198	49.529	43.950	46.205	19.173	9.170
% Cumulated 20/19	-6,7%	-6,8%	-5,3%	-6,5%	-3,3%	-3,2%	-2,6%	-7,1%

Source: Terna

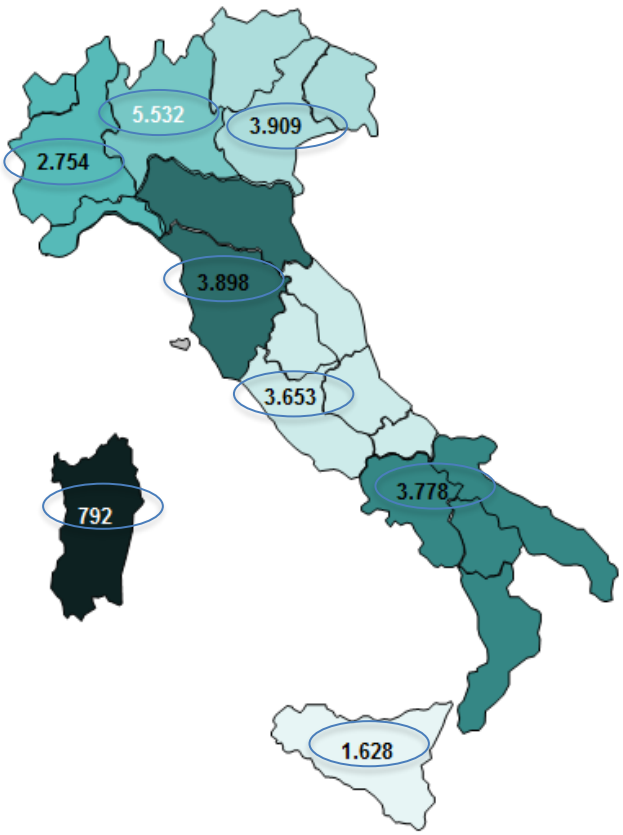
In 2020, the Y-o-Y percentage change in demand is -6.3% in the Northern zone, -5.0% in the Centre, -3.2% in the South and -4.1% for the Islands.

Demand by Operational Area – Map Chart

[GWh]

The regions are combined in clusters on the basis of production and consumption:

- TURIN: Piedmont - Liguria - Valle d'Aosta
- MILAN: Lombardy (*)
- VENICE: Friuli Venezia Giulia - Greater Venice - Trentino Alto Adige
- FLORENCE: Emilia Romagna (*) - Tuscany
- ROME: Lazio - Umbria - Abruzzo - Molise - Marche
- NAPLES: Campania - Apulia - Basilicata - Calabria
- PALERMO: Sicily
- CAGLIARI: Sardinia



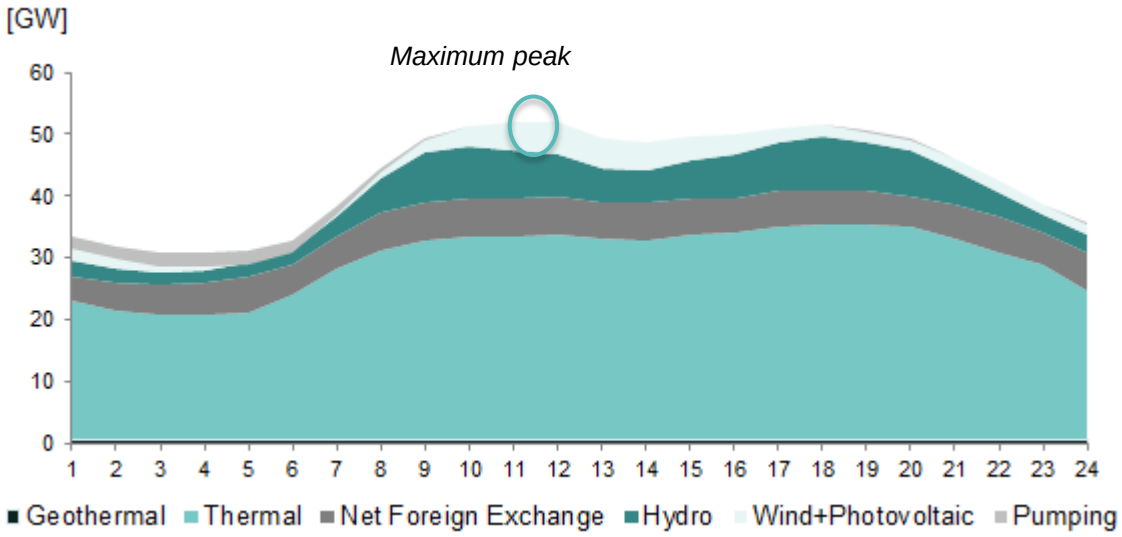
Source: Terna

(*) In these two regions, the geographical borders do not correspond to the electrical borders. Lombardy includes production plants that are part of the geographical administrative territory of Emilia Romagna.

Peak Demand

In December 2020, Peak Demand was recorded on **Thursday 03 December, 11:00-12:00** and was 52,027 MW (-3.3% Y-o-Y). The hourly demand diagram of the peak day is presented below.

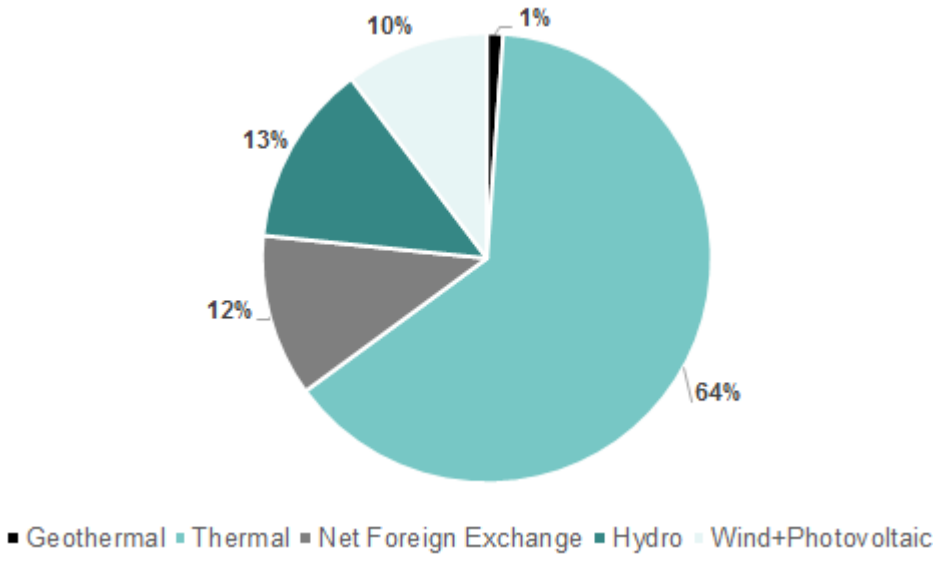
Peak Demand



At peak, the contribution from thermal production was 33,184 MW, down +5.7% compared to the contribution from thermal production at the December 2019 peak (31,392 MW).

Source: Terna

Coverage of demand - 03 December 2020 11:00-12:00



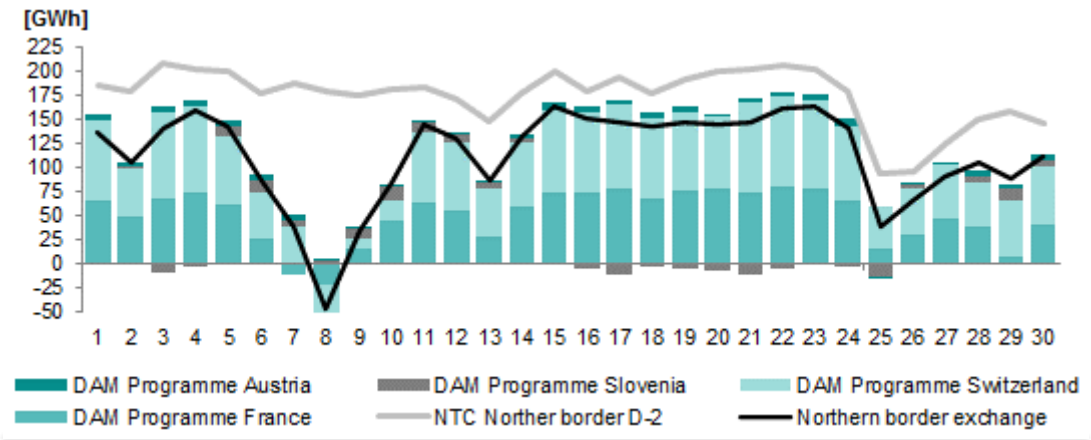
At its peak, production from renewable sources contributed to covering 24% of demand, with thermal production covering 64% and the remainder covered by the foreign balance.

Source: Terna

Net Foreign Exchange – December 2020

In December there was good saturation on the Northern border. Moreover, net exports were recorded on 8 December across the Northern border and on other days of the month on the Slovenian border.

Net Foreign Exchange on the Northern border



In December 2020, there were imports of 3,859 GWh and exports of 558 GWh.

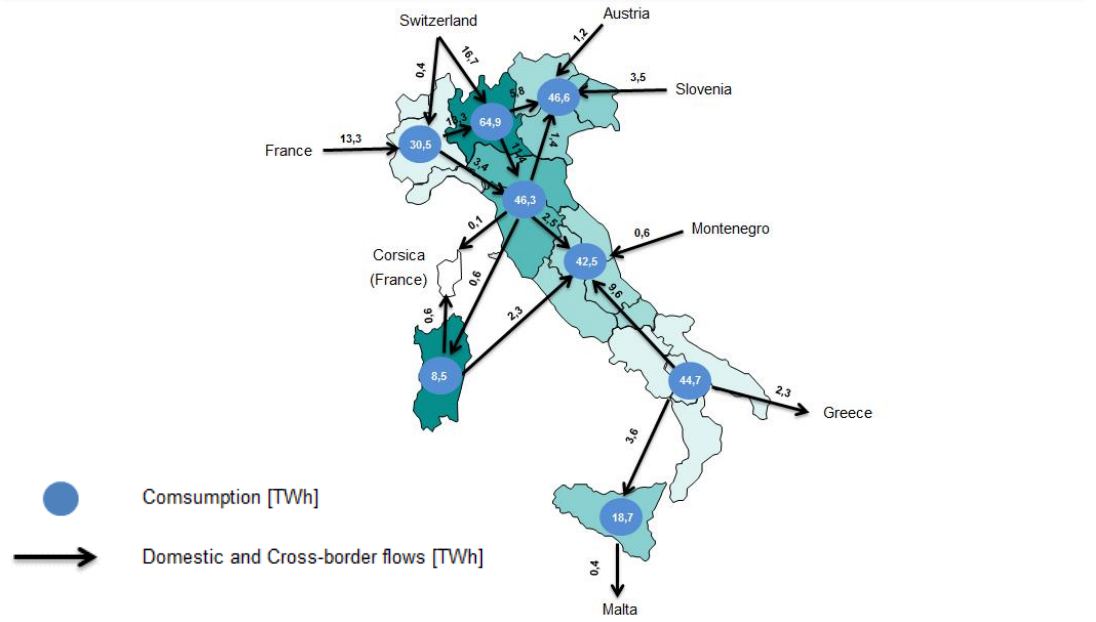
Source: Terna

Balance of Physical Exchanges – Annual Cumulative Figure

The balance of physical electricity exchanges mainly shows the energy flows among the various areas identified in the Italian electricity system.

The 380 kV connection between Sicily and the Mainland ensures secure management of the electricity system in Sicily and Calabria.

Balance of physical electricity exchanges: map



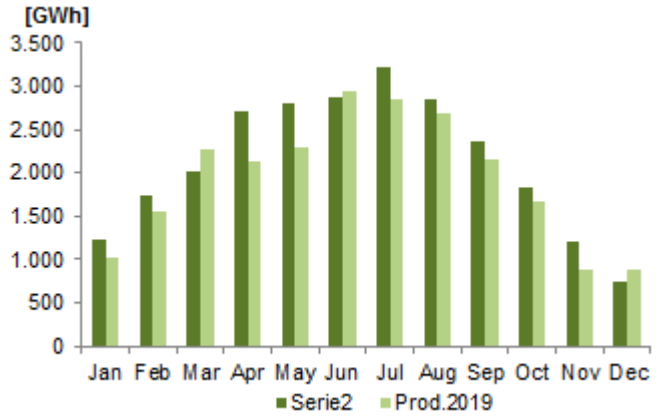
In 2020, a net exchange was recorded from the Northern zone to Emilia Romagna and Tuscany of 13.4 TWh. The Continent recorded a net exchange towards Sicily of 3.6 TWh.

Source: Terna

Production and Installed Capacity

Energy produced by photovoltaic sources in December 2020 was 738 GWh, down on the previous month by 462 GWh. The annual cumulative figure increased sharply compared to the previous year (+9.6%).

Photovoltaic Production and Capacity



[MW]

P_{inst} ≤1500

1500< P_{inst}≤ 2500

2500< P_{inst}≤ 3500

3500< P_{inst}≤ 4500

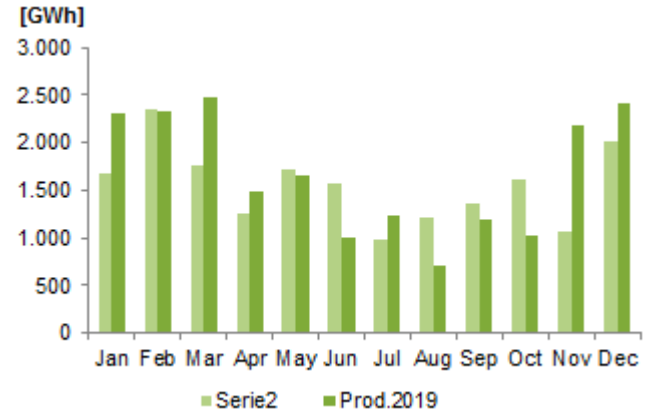
P_{inst}> 4500

Production from photovoltaic sources down -38.5% compared to the previous month.

Source: Terna

Energy produced by wind power in December 2020 was recorded at 2,009 GWh, up compared to the previous month by 952 GWh. The annual cumulative figure fell compared to the previous year (-7.4%).

Wind Production and Capacity



[MW]

P_{inst}≤ 150

150< P_{inst}≤ 1000

1000< P_{inst}≤ 2000

2000< P_{inst}≤ 3000

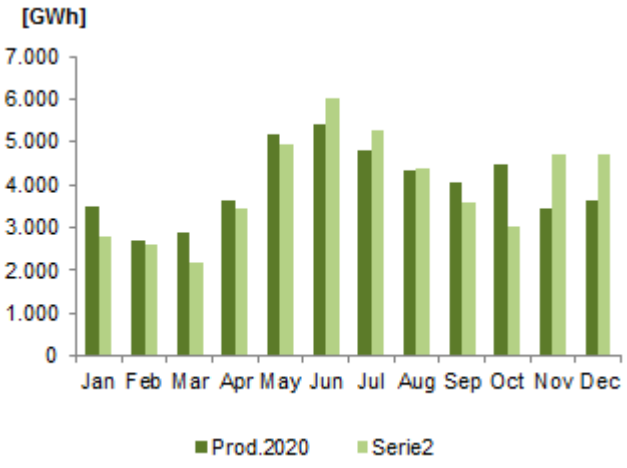
P_{inst}> 3000

Production from wind sources was up compared to the previous month by +90.1%.

Source: Terna

Energy produced by hydroelectric sources (e.g. reservoirs, storage and run-of-river) in December 2020 was 3,615 GWh, up compared to the previous month by 171 GWh. The annual cumulative figure has slightly increased (+0.8%) compared to the previous year.

Hydroelectric Production and Capacity

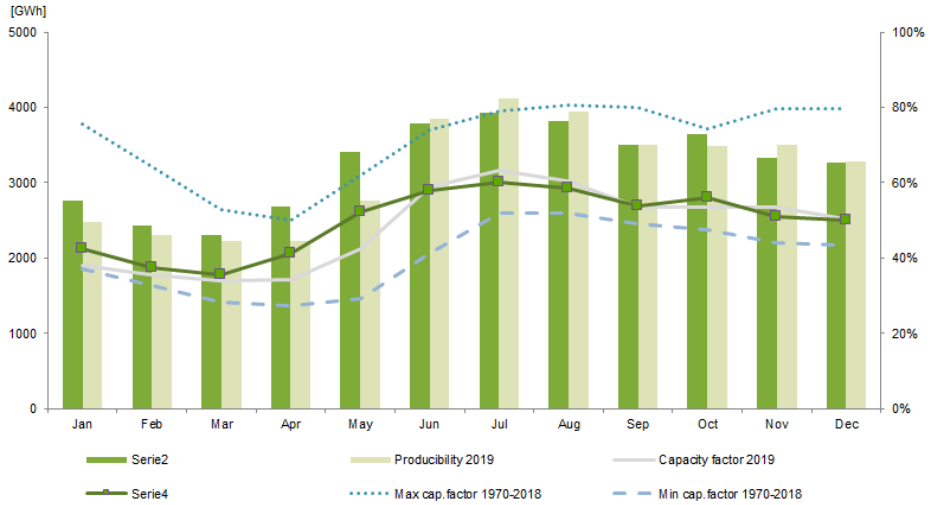


Production from hydroelectric sources up compared to the previous month (+5.0%).

Source: Terna

In December, hydroelectric producibility remained stable compared to the previous month.

Hydroelectric Producibility and Reservoir Percentage



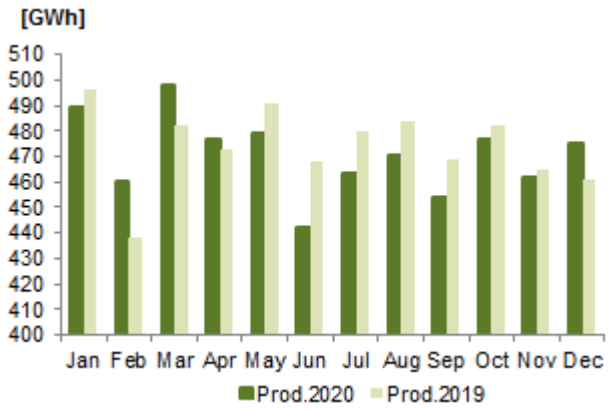
In December 2020, considering Italy as a whole, the current reservoir percentage compared to the maximum reservoir capacity was 50.2%, in line with the same month in 2019 (50.4%).

	Reservoir Capacity	NORTH	CENTRE SOUTH	ISLANDS	TOTAL
2020	[GWh]	2.163	887	220	3.270
	%(capacity / max capacity)	50,0%	48,9%	57,9%	50,2%
2019	[GWh]	2.169	840	274	3.284
	% (capacity / max capacity)	50,2%	46,3%	72,1%	50,4%

Source: Terna

Energy produced by thermal sources in December 2020 was 475 GWh, up compared to the previous month by 13 GWh. The annual cumulative figure was down (-0.8%) compared to the previous year.

Geothermal Production and Capacity



[MW]

$P_{inst} = 0$

$0 < P_{inst} \leq 500$

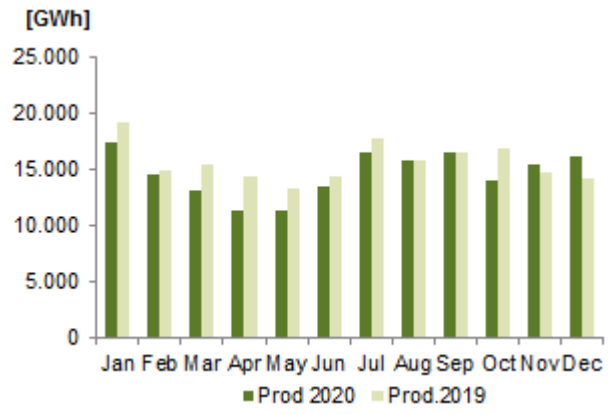
$500 < P_{inst} \leq 1000$

Thermal production increased (+2.8%) compared to the previous month.

Source: Terna

Energy produced by thermal sources in December 2020 was 16,061 GWh, up compared to the previous month by 706 GWh. The annual cumulative figure was down (-6.4%) compared to the previous year.

Thermal Production and Capacity



[MW]

$P_{inst} \leq 5000$

$5000 < P_{inst} \leq 10000$

$10000 < P_{inst} \leq 15000$

$15000 < P_{inst} \leq 20000$

$P_{inst} > 20000$

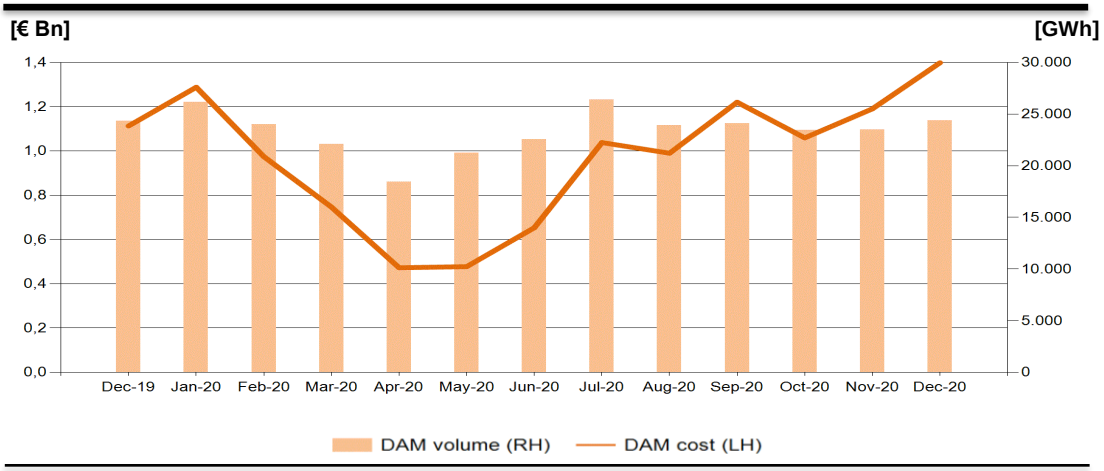
Thermal production was up (+4.6%) compared to the previous month.

Source: Terna

Day-Ahead Market

The December total for withdrawal programmes on the DAM was approximately €1.4 Bn, up 17% compared to the previous month and 26% compared to November 2019.
The increase compared to November is due to growth in both average PUN and demand, while the increase on the previous year is almost entirely due to growth in past average PUN from €43.3/MWh (December 2019) to €54/MWh (December 2020).

Day Ahead Market – amounts and volumes

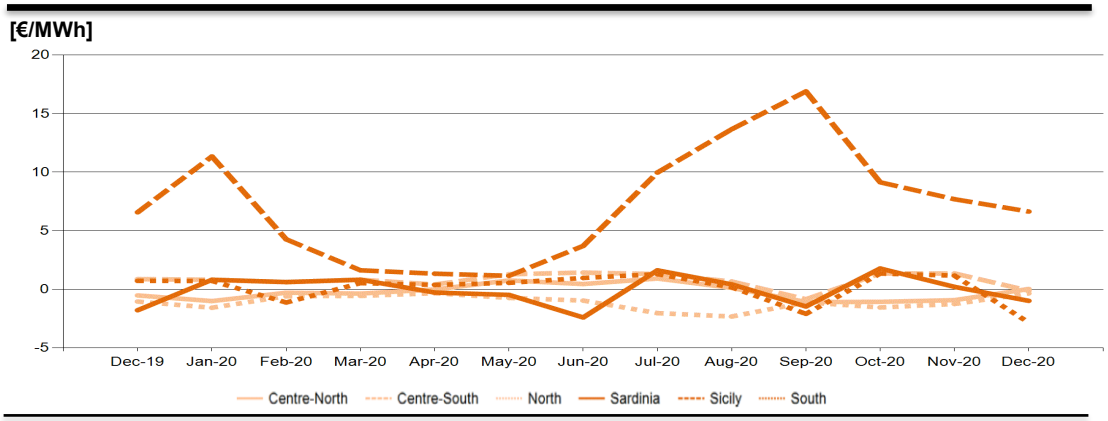


Total amount in December 2020 up by 26% compared to December 2019

Source: Terna calculation on GME data

In December, the zonal prices were predominantly in line with the PUN, with the exception of the Sicily zone, which recorded a spread of +€6.6/MWh.
Compared to December 2019, the price for the Sicily zone recorded an average increase of €10.8/MWh, while for the other zones there was an average increase of €10.2/MWh.

Spread compared to the SNP



December 2020 zonal prices in line with the PUN for all zones with the exception of Sicily

Source: Terna calculation on GME data

In December, the spread between the peak and off-peak prices was €15.1/MWh for the Southern zone, €16.2/MWh for the Sicily zone and €22.2/MWh on average for the remaining zones.

In November, the spread between the peak and off-peak prices was €15.1/MWh for the Northern and Centre-North zones and €11.2/MWh on average for the remaining zones.

Day Ahead Market – PUN and zonal prices [€/MWh]

€/MWh	PUN	North	Centre-North	Centre-South	South	Sicily	Sardinia
Average	54	53.7	54.1	53.9	51.2	60.7	53
Y-o-Y	10.7	11.4	11.2	9.7	7.1	10.8	11.5
Δ vs PUN	-	-0.4	0	-0.1	-2.8	6.6	-1
Δ vs PUN 2019	-	-1.1	0.5	0.9	0.7	6.6	-1.8
Peak	68.5	68.9	69.7	68.7	61.2	71.4	66.2
Off Peak	46.6	45.9	46.1	46.3	46.1	55.2	46.3
Δ Peak vs Off Peak	21.9	23	23.6	22.4	15.1	16.2	19.9
Minimum	8	8	8	8	8	8	0
Maximum	106.7	114	114	114	92.4	104.4	110.6

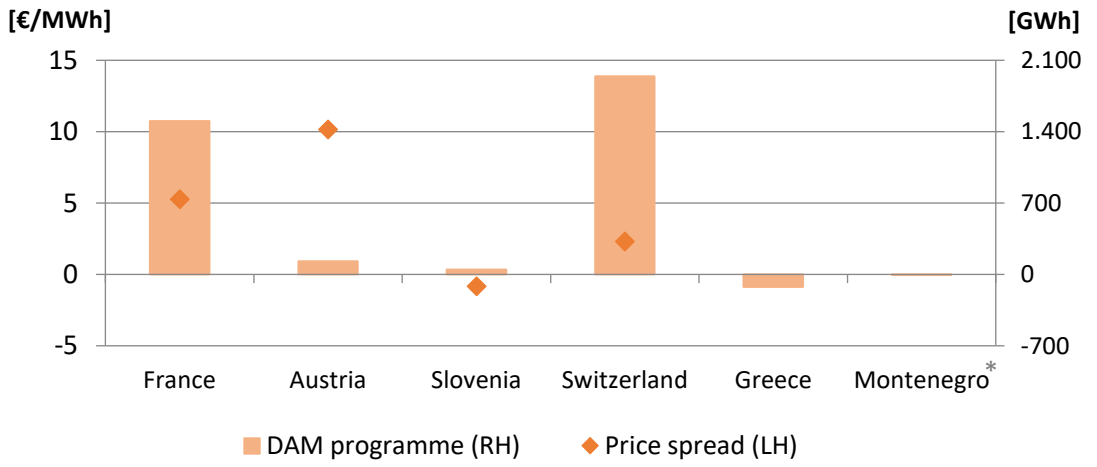
Source: Terna calculation on GME data

Peak-off peak spread up compared to the previous month across all zones

December saw a decrease in the price spread on the borders with France and Switzerland compared with the previous month, and an increase on all other borders.

Imports totalled 4.1 TWh, with France and Switzerland accounting for 38% and 50% of the total respectively. Total exports were 0.6 TWh, with Greece accounting for 33% and Montenegro 19%.

Price spread with foreign exchanges and day ahead programmes



Source: Terna calculation

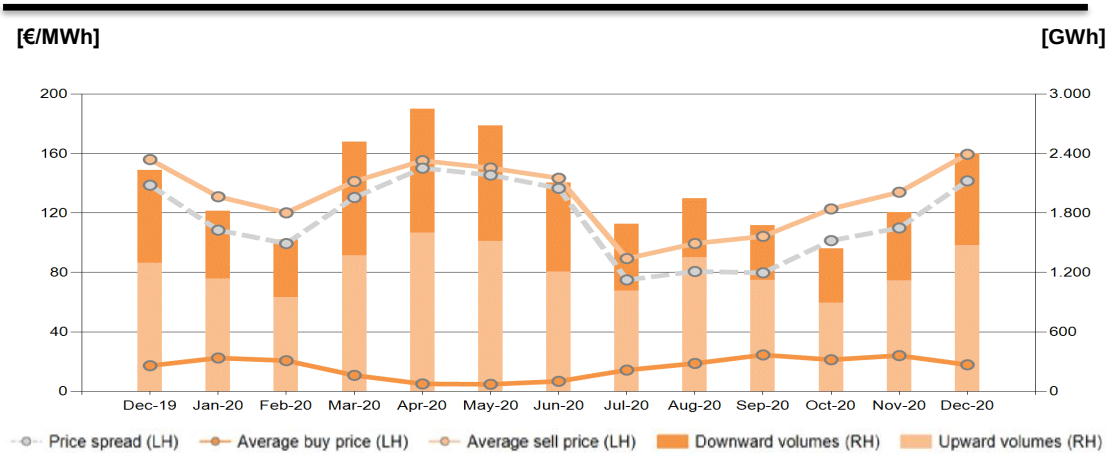
Net imports on the Northern border of 3.6 TWh

*No spread is represented for Montenegro because there is no power exchange.

Ex-ante Ancillary Services Market

In December, the spread between average bid-up and bid-down prices was €142/MWh up compared to the previous month by 29% and up by 2% compared to December 2019.
The total volumes increased compared to the previous month (+33%), in particular bid-up volumes increased by 32% and bid-down ones by 34%.
The upward volumes increased by 14%, while downwards volumes were stable (-1%) compared to the same month of the previous year.

Ex-ante Ancillary Services - prices and volumes

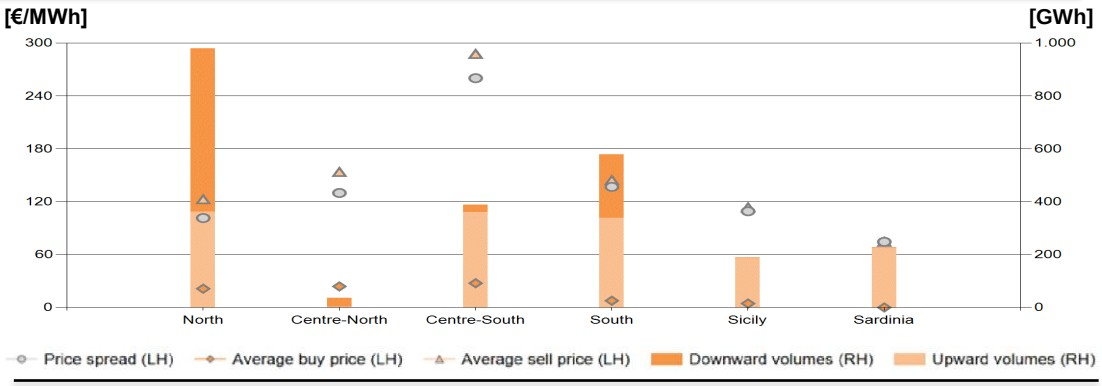


Average bid-up price in December 2020 of €159/MWh
Average bid-down price in December 2020 of €18/MWh

Source: Terna

The market zone featuring the highest spread (€260/MWh) was the Centre-South.
This spread recorded a 11% increase compared to the previous month, following both to an increase in the average bid-up price of 11% (from €260/MWh of November to €288/MWh of December) in part balanced by an increase in the average bid-down price of 5% (from €26/MWh in November to €27/MWh in December).

Ex-ante Ancillary Services - prices and volumes by market zone



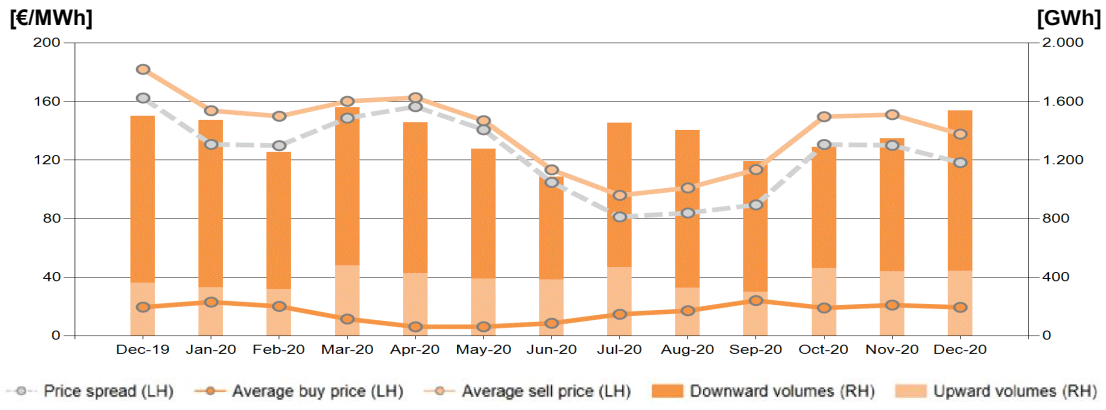
Centre-South: zone with the highest price spread
North: zone with the most volumes moved

Source: Terna

Balancing Market

In December, the spread between bid-up and bid-down prices was €118/MWh, substantially in line with the previous month (€130/MWh) and down compared to December 2019 (€162/MWh; -27%).
Total volumes increased compared to the previous month (+14%), in particular upward volumes increased by 1% and downward volumes increased by 20%. Compared to December 2019, upward volumes increased by 22% and downward volumes fell by 4%.

Balancing market – prices and volumes

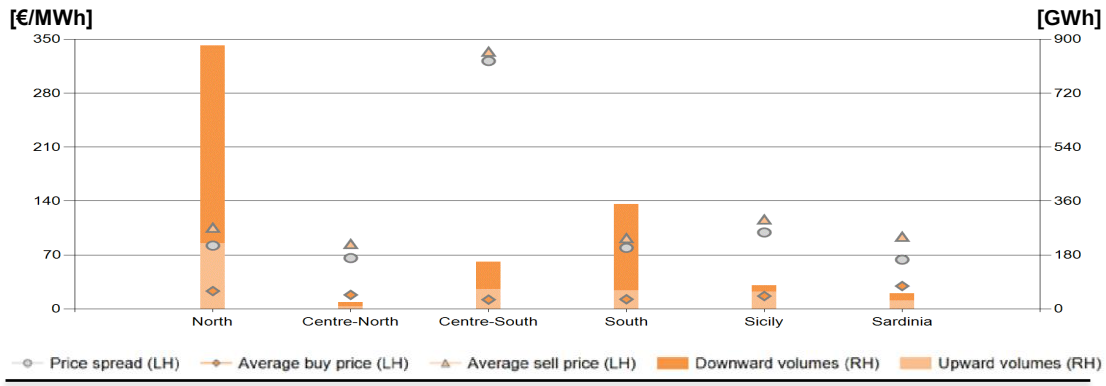


Average bid-up price in December 2020 of €138/MWh
Average bid-down price in December 2020 of €19/MWh

Source: Terna

The market zone featuring the highest spread (€322/MWh) was the Centre-South, in line with the previous month (spread of € 320/MWh).
In December, the Northern zone was confirmed as the area with the highest volumes (634 GWh downward and 138 GWh upward).
The price spread increased across all zones, with the exception of the Southern zone. The zone with the greatest percentage change in spread compared to the previous month is the Northern zone (+€17/MWh; +27%)

Balancing market – prices and volumes by market zone



Centre-South: zone featuring the highest price spread
North: zone with the most volumes moved

Source: Terna

Commodities – Spot Market

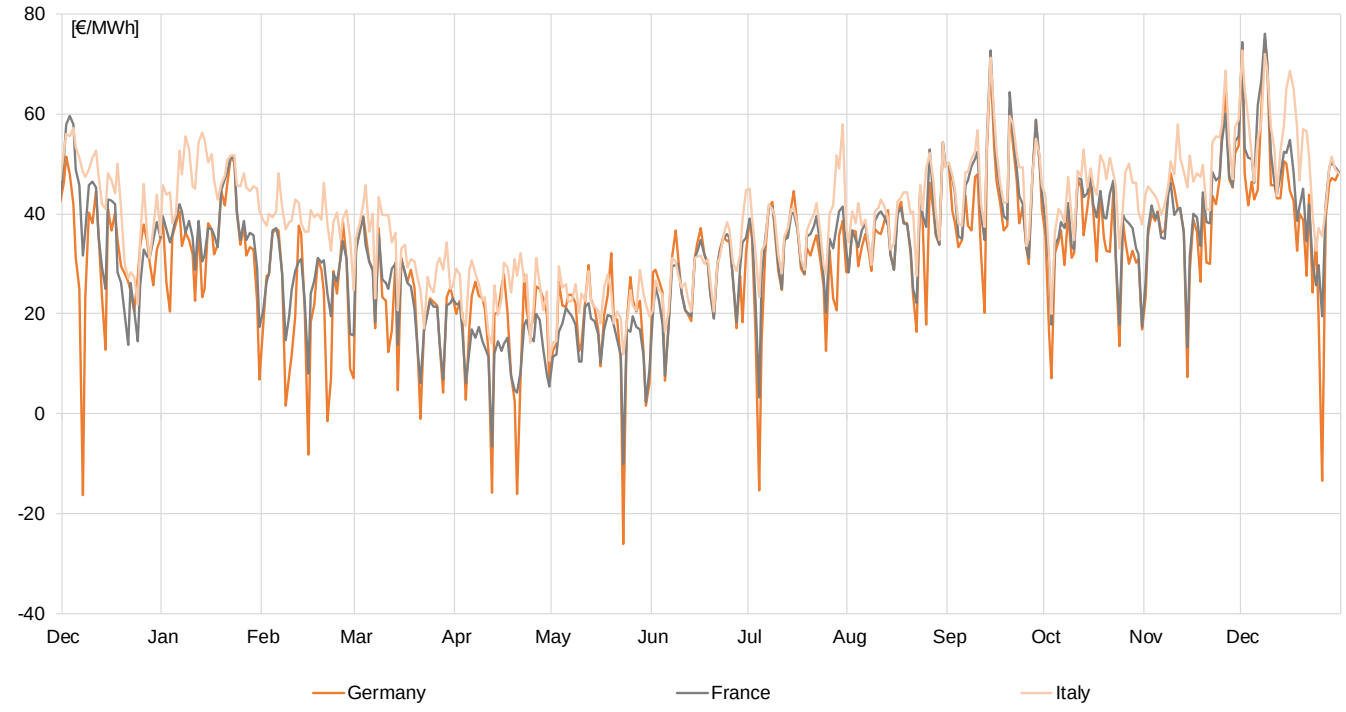
In December 2020, Brent prices increased compared to November and settled at $50/bbl (+16.2%).

Coal prices (AP12) stood at $65.4/t, an increase compared to the previous month (+24%).

Gas prices in Europe increased in December with a monthly average of €16.3/MWh (+18.1% compared to the previous month); the PSV also recorded an increase and settled at €16.5/MWh (+18.2%).

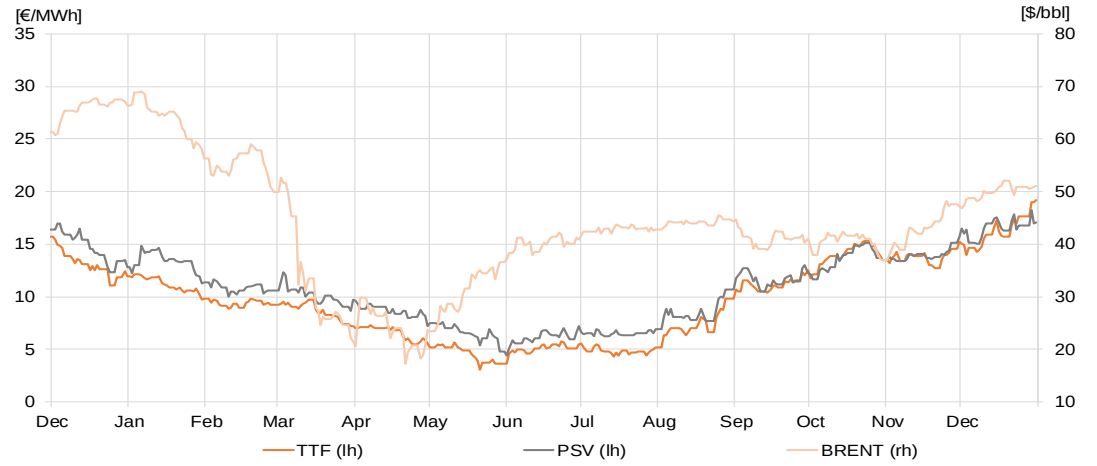
Electricity prices in Italy rose in December compared to the previous month, with a monthly average of €53.7/MWh (+8.6%). The French stock exchange also saw an increase, with the price of electricity at €48.2/MWh (+16.4%); as did the German stock exchange, with €43.3/MWh (+8.3%) compared to November.

Spot electricity prices



Source: Terna calculation on GME, EPEX data

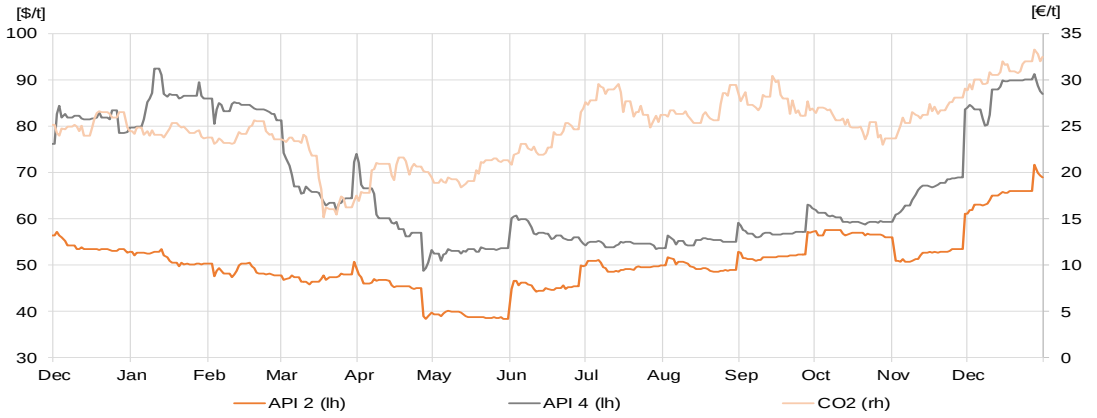
Gas & Oil spot prices



Monthly average change PSV-TTF = +€0.2/MWh

Source: Terna calculation on Bloomberg data

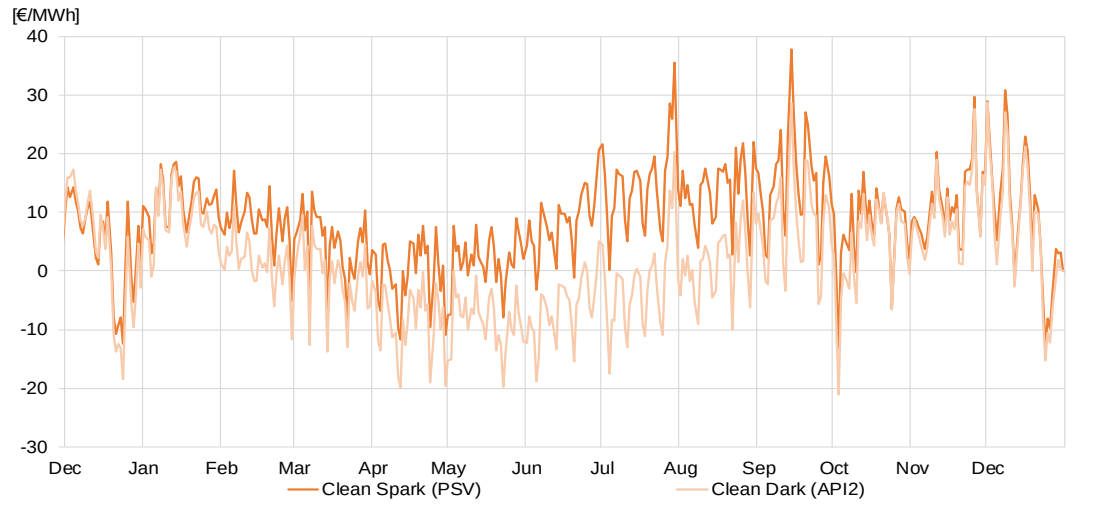
Coal & Carbon spot prices



Monthly average change API2-API4 = -$21.9/t

Source: Terna calculation on Bloomberg data

Clean Dark & Spark spreads Italy



Clean spark spread PSV monthly average = +€9.1/MWh

Clean dark spread API2 monthly average = +€7/MWh

Source: Terna calculation on Bloomberg data

Commodities – Forward Market

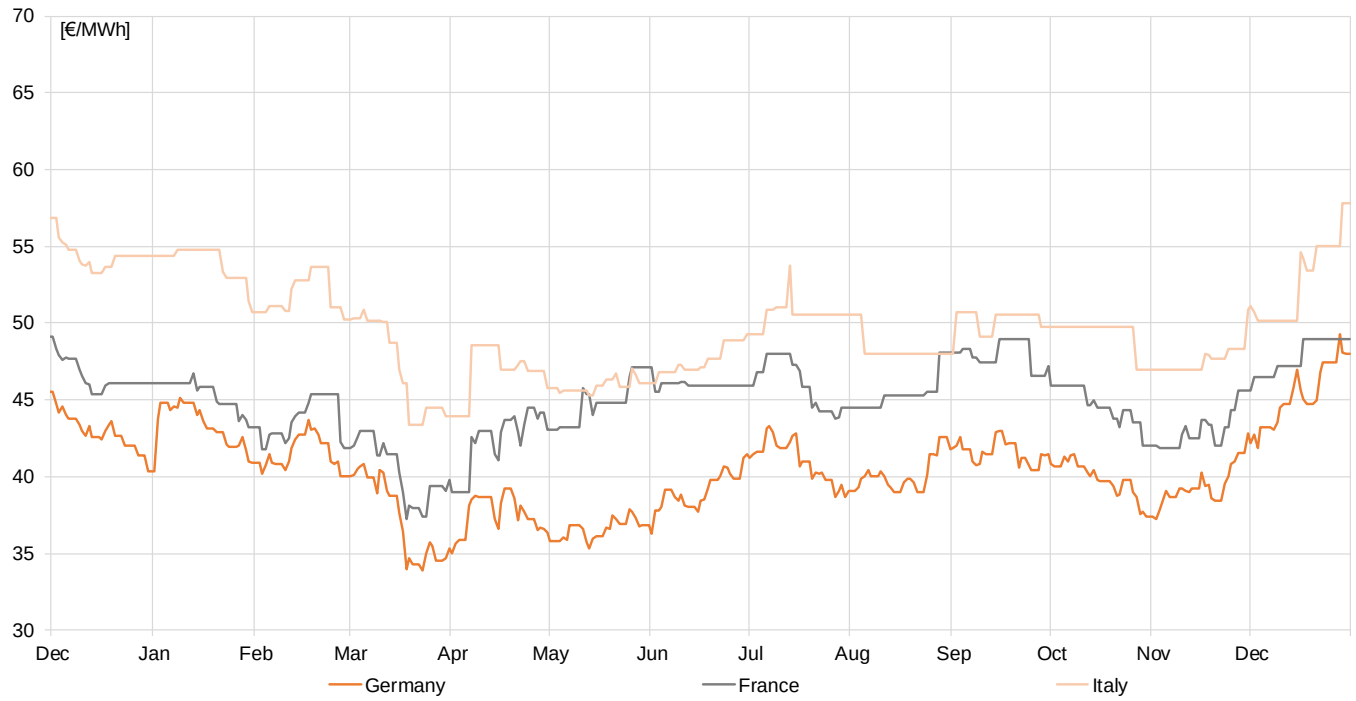
In December 2020 the Brent forward prices stood at around $49.7/bbl, up compared to the $45.3/bbl of November (+9.7%).

The average forward prices of coal (API2) were up compared to November, at around $66.3 (+13.8%).

The average forward prices of gas in Italy (PSV) increased compared to the previous month (+13.2%), settling at around €16/MWh; forward gas prices in Europe (TTF) also increased, settling at €15.1/MWh (+10.8%).

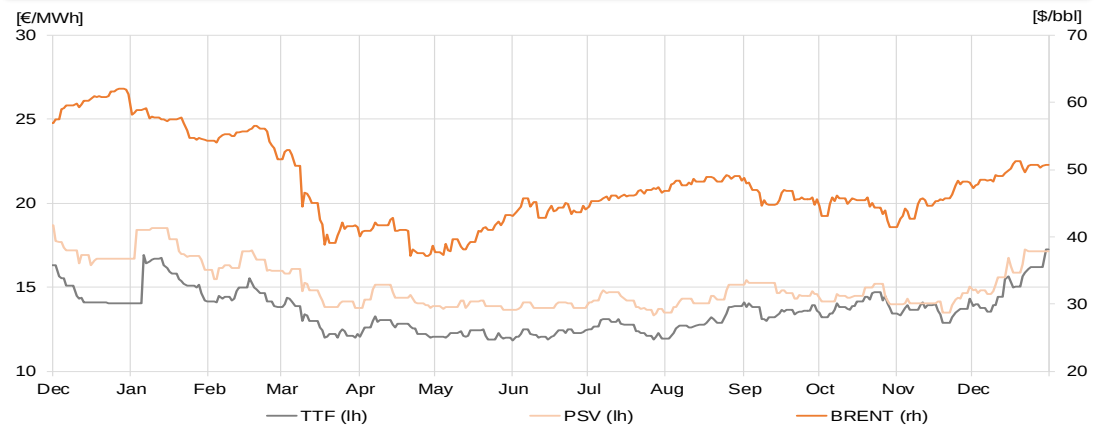
The average forward prices of electricity in Italy stood at around €52.8/MWh, up compared to the previous month (+10.9%). There was also an upward trend on the French stock exchange, where the price stands at around €47.9/MWh (+11.2%); as is the case in Germany, where the price settled at around €45.3/MWh (+15%).

Forward Electricity Prices – Year+1



Source: Terna calculation on Bloomberg data

Year+1 Forward Gas & Oil Prices



Monthly average change PSV-TTF = +€0.9/MWh

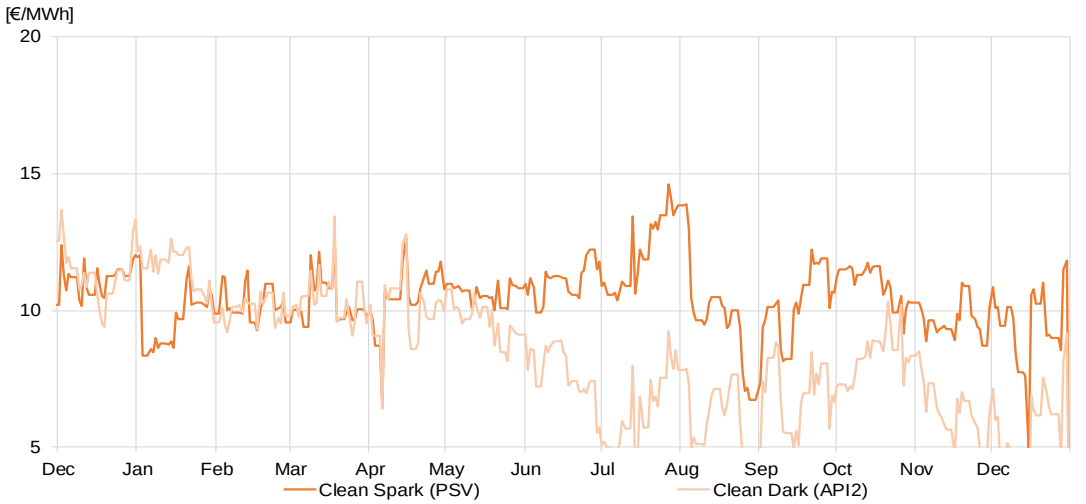
Source: Terna calculation on Bloomberg data

Year+1 Forward Coal & Carbon Prices

Monthly average change API2-API4 = -$9.3/t

Source: Terna calculation on Bloomberg data

Clean Year+1 Forward Dark & Spark spreads Italy



Clean spark spread PSV monthly average = +€9.1/MWh

Clean dark spread API2 monthly average = +€5.4/MWh

Source: Terna calculation on Bloomberg data

Below is a selection of ARERA provisions of major interest for dispatching and transmission activities in December 2020. This selection is not exhaustive with respect to the regulatory framework.

Provisions on essential plants for the year 2021. Amendments and supplements to Authority Resolution 111/06

Resolution 509/2020/R/eel

The Authority approved the standard and typical parameters of essential plants for 2021 relative to essential typical systems (ordinary and cost coverage).

Validation of feasibility study for the market coupling project between Albania, Italy, Montenegro and Serbia.

Resolution 515/2020/R/eel

The Authority confirmed the results of the preliminary feasibility studies of the market coupling project between Albania, Italy, Montenegro and Serbia conducted by the grid operators and market operators of the countries involved, issuing the recommendation for Terna and GME to proceed with the gradual implementation of the project.

Approval of the allocation rules for long-term and daily transmission rights on the border with Montenegro, applicable from 2021

Resolution 516/2020/R/eel

The Authority approved the updated version of the allocation rules for capacity on the Italian - Montenegro border ("Forward Allocation Rules IT-MN" and "Daily allocation Rules IT-MN"), to be adopted following the tender procedures for the 2021 delivery period.

Compared to the previous version, the only substantial amendment regarded moving the D-1 of the "day ahead firmness deadline" valid on the Italy-Montenegro border from 08:30 to 7:30, in order to align with other deadlines on the Montenegro border.

Launch of procedure for the drafting of a proposal to the Italian Ministry of Economic Development regarding the reliability standards of the Italian electricity system, pursuant to Regulation (EU) 2019/943.

Resolution 507/2020/R/eel

The Authority launched the procedure to draft a proposal to the Italian Ministry of Economic Development regarding the Reliability Standards (RS) of the Italian electricity system, pursuant to Regulation (EU) 2019/943. Regulation (EU) 943/2019 states that the RS, used to identify the demand curves of the capacity market, is defined by Member States or by competent authorities appointed by Member States, upon the proposal of the Regulator. To this end, the Authority authorised Terna to conduct a study to identify the RS values.

Launch of market coupling on the Italian-Greek border: confirmation of contractual frameworks

Resolution 514/2020/R/eel

In view of the launch of day-ahead market coupling on the Italian-Greek border on 15 December 2020, the Authority has confirmed the agreements prepared by Terna, GME, the grid operator and the Greek stock exchange to enable this launch.

Approval of the second version of the fallback procedure for the Greece - Italy Region (CCR), under the terms of Article 44 of EU Regulation 2015/1222 (CACM)

Resolution 531/2020/R/eel

The Authority approved the update to the Fallback Procedures (the procedures that apply should the market coupling fail) for the GRIT region, proposed by Terna and the Greek TSO pursuant to Article 44 of the CACM Regulation.

The update was necessary to enable the entry into operation, from 15 December 2020, of the market coupling mechanism on the Italian-Greek border (IT-GR). The Fallback Procedures provide for the implementation of an explicit allocation regulated by the Shadow Allocation Rules.

Postponement of terms for application of the Integrated Text on Simple Production and Consumption Systems (TISDC) for port and airport electricity networks included in the ASDC Register after 31 December 2019

Resolution 526/2020/R/eel

The Authority postponed to 1 January 2022 the application of the provisions of the Integrated Text on Simple Production and Consumption Systems (TISDC) to the port and airport electricity networks included in the ASDC register (simple production and consumption systems other than RIU) after 31 December 2019.

Individual regulation of micro-outages for high and very high voltage end clients

Resolution 524/2020/R/eel

The Authority introduced, for the 2021-2023 three year-period, the individual regulation of micro-outages (voltage dips and transient interruptions) for HV/VHV end clients of the NTG subject to monitoring in the period from 1 July 2017 to 30 June 2019.
The regulation provides for the adoption of specific standards (maximum number of micro-outages/year per withdrawal point) and the payment of automatic compensation by Terna in the case of failure of meet said standards.
Furthermore, ARERA introduced a trial sharing mechanism by distributors for the compensation paid by Terna for voltage dips on the VHV/HV networks.

Update, for the 2021-2023 three-year period, to the guidelines for forward purchasing procedures relative to interruptible load resources. Approval of the new procedure guidelines and the new standard contract for the provision of services

Resolution 558/2020/R/eel

The Authority updated the guidelines for the forward purchasing of interruptible load resources for the 2021-2023 three-year period in light of the guidelines issued by the Italian Ministry of Economic Development and the proposals put forward by Terna following consultation with operators. With this resolution the Authority also approved the guidelines that regulate the tender procedures and the framework agreement for the interruptibility service as provided by Terna.
The main changes compared to the previous three-year period are:

- the introduction of the three-monthly product in addition to the existing products (three-yearly, yearly and monthly);
- the introduction, in the case of buy-backs (temporary or definitive) of the interruptible capacity, of the priority buy-back obligation of contractualised capacity at a higher price;
- the assignment of the higher charger incurred by the system for capacity reallocation on a pro-rata basis between all assignees that have contributed to the generation of said higher cost.

Determination of the bonus related to electricity transmission service quality, for the year 2019

Resolution 540/2020/R/eel

The Authority determined the quality of electricity transmission service award - for the transmission service quality indicator (Energy Not Supplied as Reference, ENSR) - for the year 2019. The amount of the bonus is €13.64 million.

Approval of request for exemption from the minimum level of capacity to be made available for trade between market areas drafted by Terna S.p.A. with reference to the Italy-North region for 2021

Resolution 551/2020/R/eel

For the year 2021, the Authority approved the request for exemption request submitted by Terna with reference to the minimum cross-border capacity levels to be made available to markets (set at 70%) for Italy's northern borders. ARERA deemed that the grounds for the request were consistent with the provisions of Regulation (EU) 2019/943, in that these were associated with the effective requirements of operational security.

Extension of the forward purchasing of balancing resources through Mixed Enabled Virtual Units (UVAM) pursuant to Authority Resolution 300/2017/r/eel.

Resolution 579/2020/R/eel

The Authority extended the existing regulation relative to the forward purchasing of balancing resources through UVAMs until the date of effectiveness of the amendments, proposed by Terna, relative to the new UVAM Regulation and the new forward purchasing procedure, and has provided that Terna, during the transition period, may use the existing procedure for the forward purchasing of resources through UVAMs exclusively for monthly products.

Instructions to Terna S.p.A. for the implementation of further amendments to the proposed methods for the allocation of inter-zonal capacity for the exchange of balancing capacity or for the sharing of reserves drafted pursuant to Regulation (EU) 2017/2195 (Balancing Regulation) for the Greece-Italy region.

Resolution 588/2020/R/eel

The Authority issued instructions to Terna for it to amend, jointly with the Greek TSO, the proposed regional methods for the allocation of inter-zonal capacity for the purposes of balancing capacity exchanges and the sharing of reserves based on market criteria and according to a cost-benefit analysis.

Implementation of the provisions of Decree Law 34/20, coordinated with Conversion Law 77/20, relative to photovoltaic plants that access the so-called "superbonus" fiscal benefits and amendment of the criteria for identification of production units.

Resolution 581/2020/R/eel

The Authority implemented the provisions of Decree Law 34/20 (Relaunch Decree) relative to the payment of a of 110% deduction rate on the installation costs on buildings of photovoltaic plants (including storage buildings if integrated with the photovoltaic plants). In this regard, among other things the Authority requested that Terna amend the criteria defined in the Grid Code and the procedures provided by the GAUDI system for the purposes of defining the production units (PU), so that each section of a production plant constitutes a single, autonomous PU.

Approval of the second version of the methodology for calculation of capacity for the Greece - Italy Region (CCR), pursuant to Articles 20 and 21 of Regulation (EU) 2015/1222

Resolution 587/2020/R/eel

The Authority approved the amendments to the methodology for the coordinated calculation of capacity to be made available to the day-ahead and intra-day markets pursuant to Regulation (EU) 1225/2015 (CACM) in the Greece-Italy Region (CCR). The main changes regarded:

- the adoption of the requirement of Regulation (EU) 943/2019 to guarantee markets at least 70% of the transit capacity between zones;
- the subdivision of the capacity calculation for the intra-day period into two phases, one on day D-1 and one on day D.

Update to the dispatching fees from 1 January 2021

Resolution 599/2020/R/eel

The Authority approved the dispatching fees for the year 2021, including the fee to cover costs for Terna's operations (DIS).

Update of the fees for the electricity transmission service, for the year 2021

Resolution 565/2020/R/eel

The Authority approved the unit fees for the transmission service for 2021. Furthermore, with this resolution the Authority:

- introduced a new asset category relating to digital station systems with a regulatory useful life of 15 years;
- with reference to the impacts of the health emergency, extended by six months the bonus mechanisms for acquisitions of grid sections owned by third parties.

Key

API2 – CIF ARA: the reference index for the coal price (with PCI of 6, 000 kcal/kg) imported from north-west Europe. It is determined on the basis of an assessment on the CIF (Cost, Insurance and Freight) prices of coal contracts, with delivery to the ports of Amsterdam – Rotterdam – Antwerp (ARA).

API4 – FOB Richard Bay: the reference index for the coal price (with PCI of 6,000 kcal/kg) exported from Richards Bay in South Africa. It is calculated on the basis of an assessment on the FOB (Free On Board) prices of contracts excluding transport starting from the port of Richards Bay.

Territorial Areas: these consist of one or more adjacent regions and are aggregated as indicated:

TURIN: Piedmont - Liguria - Valle d'Aosta
MILAN: Lombardy (*);
VENICE: Friuli Venezia Giulia - Veneto - Trentino Alto Adige
FLORENCE: Emilia Romagna (*) - Tuscany;
ROME: Lazio - Umbria - Abruzzo - Molise - Marche
NAPLES: Campania - Apulia - Basilicata - Calabria;
PALERMO: Sicily
CAGLIARI: Sardinia

(*) In these two regions, the geographical borders do not correspond to the electrical borders. Lombardy includes production plants that are part of the geographical administrative territory of Emilia Romagna.

The data related to the reservoirs table of tanks are **aggregated by ZONE** as indicated:

NORTH - includes the Territorial Areas TURIN, MILAN and VENICE;
CENTRE and SOUTH – includes the Territorial Areas FLORENCE, ROME and NAPLES;
ISLANDS – includes the Territorial Areas PALERMO and CAGLIARI;

Brent: the oil price as global reference for the crude oil market. Brent Crude is the result of a mixture deriving from the union of different types of oil extracted from the North Sea.

Clean Dark Spread: the difference between the price of electricity and the cost of the fuel of a coal power station and the cost of the CO2 emission quotas.

Clean Spark Spread: the difference between the price of electricity and the cost of the fuel of a gas power station and the cost of the CO2 emission quotas.

Dirty Dark Spread: the difference between the price of electricity and the cost of the fuel of a coal power station.

Dirty Spark Spread: the difference between the price of electricity and the cost of the fuel of a gas power station.

Day-Ahead Market (DAM): the trading venue of offers to buy and sell electricity for each relevant period of the day after that of trading.

Balancing Market (MB): the set of activities performed by the Operator for selecting the offers presented on the Dispatching Services Market to resolve the congestions and establish secondary and tertiary reserve power margins, carried out on the same day as that to which the offers refer.

Dispatching Services Market (MSD): the trading venue of the resources for the dispatching service.

Dispatching Services Market - planning stage (Ex-ante Ancillary Services Market): the set of activities performed by the Operator for selecting the offers presented on the Dispatching Services Market to resolve the congestions and establish secondary and tertiary reserve power margins, carried out in advance with respect to real time.

M-o-M - Month on Month: percentage change of the difference between the reference month and the previous month

NET TRANSFER CAPACITY - NTC: the maximum transfer capacity of the grid for interconnection with other countries. NTC D-2 indicates the same capacity defined in day D-2.

Peak hours: these, according to the agreement with the electricity market operator (Gestore del Mercato Elettrico - GME), are the hours between 8:00 and 20:00 of working days only. **Off-peak hours** are all hours that are outside of peak hours.

CO_2 Price: determined by the European Union Emissions Trading Scheme (EU ETS), a system for the trading of greenhouse gas emission quotas in Europe aimed at reducing emissions.

Single National Price - PUN: the Single National Price calculated as a result of the Day-Ahead Market (DAM).

DAM Zonal Price: the balanced price of each zone calculated as a result of the Day-Ahead Market (DAM).

PSV - Punto Scambio Virtuale: the price at the virtual exchange point for the buying and selling of natural gas in Italy.

TTF - Title Transfer Facility: the price at the virtual exchange point for the buying and selling of natural gas in the Netherlands.

Y-o-Y – Year on Year: percentage change of the difference between the period of the current year and the same period of the previous year

IMCEI - Monthly Industrial Electrical Consumption Index: The monthly IMCEI index was constructed based on the size of the monthly withdrawals of the approximately 530 customers directly connected to the high voltage grid and for which Terna is responsible. These customers have been reclassified pursuant to the Ateco2007 Codes and aggregated by electrically relevant product class. The adimensional index has been created taking 2015 as a basis 100.

Disclaimer

1. The monthly electricity reports for 2019 are definitive, while those for 2020 are provisional.
2. More specifically, the monthly electricity reports for 2020 – prepared at the end of each month using the operating archives – are subject to further and precise verification or recalculation in the following months based on additional information. This operation to refine the monthly figures translates, for the reporting data, into a higher degree of precision compared to the sum of the data processed in the single Monthly Reports published on the website www.terna.it.