

GENERAL DATA

Population, income and energy consumption in Italy

Figure 1

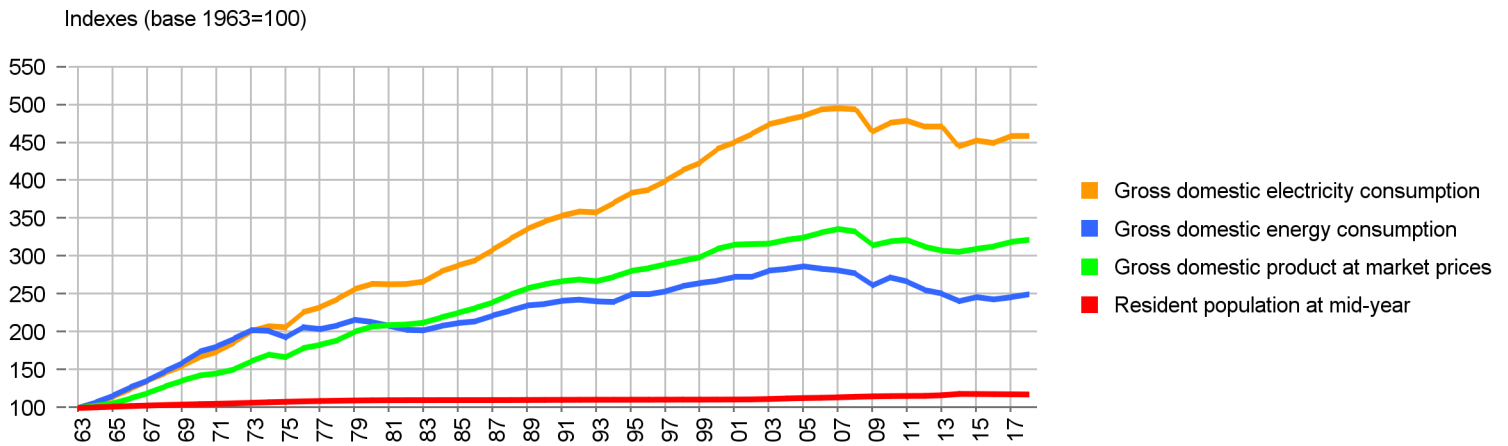


Table 1

		2017(1)	2018	2018/2017
resident population at mid-year	thousand inhabitants	60,506.9	60,403.1	-0.2 %
gross domestic product at market prices	in millions of 2010 euros (2)	1,601,122.8	1,614,864.6	+0.9 %
final energy consumption (3)	in millions of toe	161.5	163.6	+1.3 %
energy used in power plants (3)	% of gross domestic energy consumption	37.2	37.4	+0.4 %
energy used in power plants (3)	in millions of toe	63.2	64.4	+1.9 %
gross domestic electricity consumption (before pumping)	GWh	333,590.8	333,607.2	+0.0 %

Resident population at mid-year is calculated at 30 June of the year considered.

Gross domestic product at market prices is the value of final goods and services produced by the economy in the reference year, gross of provisions for depreciation and of indirect taxes.

Final energy consumption consists of gross domestic energy consumption, less the consumption by the energy sector (the latter including the related inventory variations).

Gross domestic consumption of energy represents the sum of the quantities of primary sources produced, primary and secondary sources imported and the variation of inventories of primary and secondary sources held by producers and importers, less the quantities of exported primary and secondary sources.

Gross domestic electricity consumption represents the sum of gross electricity production and net electricity imports. It is defined as net of pumping if the electricity produced by pumping in hydro plants is not included.

Gross electricity production by a group of power plants in a given period is the sum of the quantities of electricity produced, measured at the generator terminals.

millions of toe and % breakdown	2017	(1)	2018	2018/2017
gross domestic energy consumption (3)	169.7	100.0%	172.3	100.0%
of which:				+1.6%
petroleum products	57.7	34.0%	58.6	34.0%
natural gas	61.6	36.3%	59.5	34.5%
solid fuels	10.4	6.1%	9.2	5.4%
renewables	31.7	18.7%	35.3	20.5%
primary electricity (net imports)	8.3	4.9%	9.7	5.6%

Gross electricity production by a group of power plants in a given period is the sum of the quantities of electricity produced, measured at the generator terminals.

GWh and % breakdown	2017	2018	2018/2017
Gross domestic electricity consumption (net of pumping)	331,765	331,891	100.0%
of which:			0.0%
Traditional sources	190,106	173,577	52.3%
<i>Solid fuels</i>	32,627	28,470	8.6%
<i>Natural Gas</i>	140,349	128,538	38.7%
<i>Petroleum products</i>	4,083	3,289	1.0%
<i>Other fuels</i>	13,047	13,281	4.0%
Renewables	103,898	114,415	34.5%
<i>Hydro from natural inflows</i>	36,199	48,786	14.7%
<i>Geothermal</i>	6,201	6,105	1.8%
<i>Wind</i>	17,742	17,716	5.3%
<i>Photovoltaic</i>	24,378	22,654	6.8%
<i>Bioenergy</i>	19,378	19,153	5.8%
Net imports	37,761	43,899	13.2%

(1) Revised figure.

(2) Annual series resulting from the General Revision of National Account carried out by Istat. Figures linked to the 2010 benchmark year.

(3) The conversion into toe of hydro, PV, geothermal energy and net imports of electricity was calculated on the basis of a conventional average gross heat rate in conventional thermal power plants equivalent to 2,200 kcal/kWh (9,210 kJ/kWh).

SOURCES: General report on the Economic Situation of the Country, "National Energy Balance".

Electricity in Italy

Table 2

Situation of plants

at 31 Dec. 2018

		Producers	Autoproducers	Italy
Hydro plants				
Plants	no.	4,248	89	4,337
Gross maximum capacity	MW	22,801.0	109.5	22,910.5
Net maximum capacity	MW	22,393.1	105.5	22,498.6
Average annual production	GWh	54,015.3	532.3	54,547.6
Thermal plants (*)				
Plants	no.	4,612 (34)	1,398	6,010
Sections	no.	5,650 (36)	1,830	7,480
Gross maximum capacity	MW	59,203.4 (813.1)	5,630.7	64,834.1
Net maximum capacity	MW	56,968.4 (767.2)	5,416.1	62,384.5
Wind plants				
Plants	no.	5,640	2	5,642
Gross maximum capacity	MW	10,264.7	..	10,264.7
Photovoltaic plants				
Plants	no.	822,301	-	822,301
Gross maximum capacity	MW	20,107.6	-	20,107.6

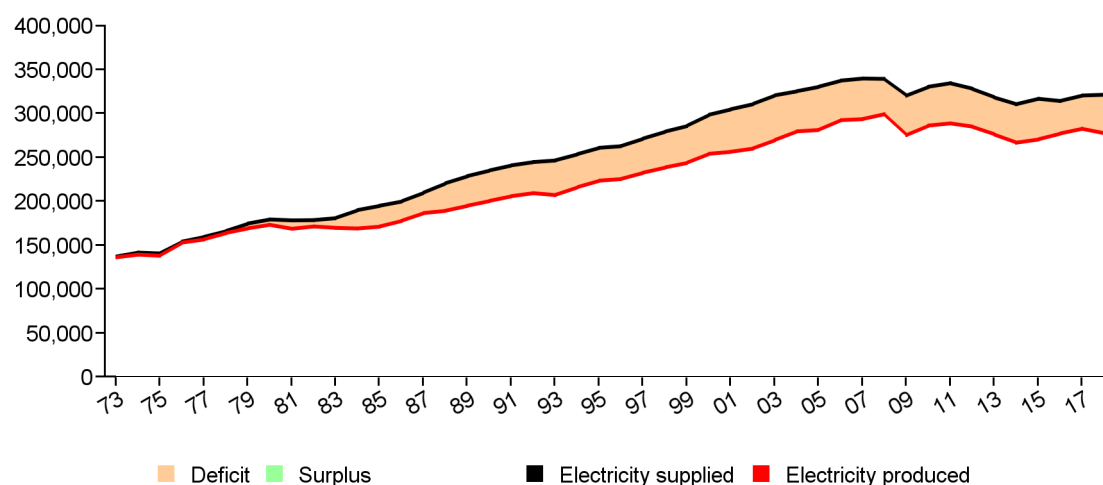
(*) The figures in brackets refer to geothermal plants.

Energy Supplied

Energy Supplied in Italy	GWh	321,431.1
Deficit (-) Surplus (+) of production versus demand	GWh	-43,898.8 (-13.7%)

Deficit 1973 = -879.0

Deficit 2018 = -43,898.8



Consumption: total 303,443.0 GWh; per inhabitant 5,024 kWh

Consumption by category of consumer

	Agriculture	Industry	Service sector (1)	Household	Total (1)
Italy	5,843.3	126,432.0	100,328.4	65,137.8	297,741.6

(1) Net of railway consumption for traction equal to GWh 5,701.4

Electricity balance

GWh		2018		
		Electricity market participants (2)	Autoproducers	Italy
Gross production				
- hydro		50,036.9	465.8	50,502.8
- conventional thermal		170,412.3	22,317.7	192,730.0
- geothermal		6,105.4	-	6,105.4
- wind		17,716.4	0.0	17,716.4
- photovoltaic		22,653.8	-	22,653.8
Total gross production		266,924.9	22,783.5	289,708.4
		-	-	-
Auxiliary services of production		9,104.5	759.4	9,863.8
		=	=	=
Net production				
- hydro		49,467.8	461.2	49,929.0
- conventional thermal		162,773.2	21,562.9	184,336.1
- geothermal		5,757.3	-	5,757.3
- wind		17,556.8	0.0	17,556.8
- photovoltaic		22,265.4	-	22,265.4
Total net production		257,820.4	22,024.2	279,844.6
		-	-	-
Pumping consumption		2,312.3	-	2,312.3
		=	=	=
Production allocated for consumption		255,508.2	22,024.2	277,532.3
		+	+	+
Electricity sold by Autoproducers to Participants		+2,271.2	-2,271.2	-
		+	+	+
Net import/export		+43,898.8	-	+43,898.8
		=	=	=
Energy Supplied		301,678.2	19,752.9	321,431.1
		-	-	-
Losses		17,925.0	63.2	17,988.2
		=	=	=
	Self-consumption	9,434.9	19,689.8	29,124.7
Final consumption	Free market (3)	228,501.2	-	228,501.2
	Captive market	45,817.1	-	45,817.1
	Total consumption	283,753.2	19,689.8	303,443.0

(2) Producers, Distributors and Traders.

(3) "Safeguarding Service" is included.

Electricity supplied to the Italian network in each month of 2018

Table 3

	January	February	March	April
GWh				
Gross production	23,996.9	22,672.2	24,420.8	21,831.1
- of hydro production	2,917.6	2,633.2	3,285.7	5,064.3
- of conventional thermal production	17,526.9	16,812.7	16,546.0	12,564.4
- of geothermal production	527.6	474.9	525.4	508.5
- of wind production	2,037.7	1,740.7	2,459.7	1,262.2
- of photovoltaic production	987.1	1,010.6	1,604.0	2,431.6
electricity consumed by auxiliary services	858.0	810.1	892.9	725.2
- of hydro production	47.0	56.4	57.4	58.4
- of conventional thermal production	746.9	694.3	757.7	585.2
- of geothermal production	29.5	26.8	29.3	29.0
- of wind production	16.9	14.8	20.5	11.0
- of photovoltaic production	17.7	17.8	27.9	41.7
net production	23,138.9	21,862.1	23,527.9	21,105.9
electricity consumed by pumping	242.7	195.4	295.2	311.7
production allocated for consumption	22,896.2	21,666.7	23,232.7	20,794.2
net imports-exports	4,572.0	4,409.6	4,553.8	3,665.1
electricity supplied to the Italian network	27,468.2	26,076.3	27,786.5	24,459.3
variation of electricity supplied in 2018 - 2017	-1.7%	3.4%	3.9%	2.2%

May	June	July	August	September	October	November	December	Year
23,885.3	24,541.5	26,831.4	24,559.5	24,791.4	23,637.7	24,660.0	23,880.5	289,708.4
6,758.9	6,096.0	4,899.1	4,264.1	3,440.4	2,833.2	4,662.9	3,647.3	50,502.8
13,172.9	13,665.1	17,150.6	16,379.5	17,587.0	17,247.0	17,219.0	16,858.8	192,730.0
518.8	498.8	503.2	505.1	497.9	517.1	499.5	528.6	6,105.4
933.7	1,450.3	1,251.1	761.6	966.8	1,521.9	1,397.4	1,933.3	17,716.4
2,501.0	2,831.3	3,027.3	2,649.2	2,299.3	1,518.5	881.2	912.5	22,653.8
750.9	763.6	878.3	827.4	855.8	845.4	827.6	828.7	9,863.8
57.7	53.6	45.0	41.3	34.0	31.5	46.0	45.5	573.7
611.4	620.9	741.5	702.7	743.3	744.3	725.0	720.7	8393.9
29.5	28.6	28.8	29.2	28.9	29.8	28.6	30.1	348.1
9.8	12.9	11.7	9.4	10.3	13.6	12.4	16.3	159.6
42.5	47.6	51.2	44.9	39.3	26.3	15.6	16.0	388.5
23,134.4	23,778.0	25,953.1	23,732.2	23,935.6	22,792.3	23,832.4	23,051.8	279,844.6
209.4	146.0	142.7	107.0	108.7	159.1	172.0	222.2	2,312.3
22,925.0	23,632.0	25,810.4	23,625.1	23,826.9	22,633.2	23,660.4	22,829.6	277,532.3
3,300.0	3,337.4	4,358.0	2,706.8	3,018.2	3,952.4	2,469.9	3,555.6	43,898.8
26,225.0	26,969.4	30,168.4	26,331.9	26,845.0	26,585.6	26,130.3	26,385.2	321,431.1
1.1%	-3.7%	0.5%	-1.7%	2.9%	1.1%	-1.9%	-2.0%	0.3%

Exchange of electricity between Italy and neighbouring countries

Table 4

	Electricity imported to Italy from							Electricity exported from Italy to							Net imports
	France	Switzerland	Austria	Slovenia	Greece	Malta	Total	France	Switzerland	Austria	Slovenia	Greece	Malta	Total	
GWh															2017
january	682.3	912.0	68.8	409.7	0.4	..	2,073.1	221.6	282.6	30.6	27.2	108.9	132.2	803.1	+1,270.1
february	1,340.1	1,622.2	96.9	468.3	40.4	..	3,567.9	50.2	15.7	7.0	8.8	193.5	107.8	383.0	+3,184.9
march	1,794.1	2,546.8	153.4	627.8	32.6	..	5,154.7	58.2	32.9	5.1	6.2	196.0	105.5	403.9	+4,750.8
april	1,295.4	1,622.4	106.1	551.8	37.4	0.0	3,613.1	106.3	175.1	22.0	10.5	155.0	68.3	537.3	+3,075.8
may	1,232.0	1,791.0	104.9	535.3	37.6	0.0	3,700.7	79.2	183.3	13.6	12.3	118.0	91.0	497.5	+3,203.2
june	942.1	1,737.0	112.3	481.1	17.7	0.0	3,290.2	58.9	224.1	6.7	10.2	97.4	64.0	461.3	+2,829.0
july	1,351.8	2,229.1	126.4	435.2	18.3	0.0	4,160.8	68.4	65.0	2.9	14.6	274.4	82.3	507.5	+3,653.3
august	806.6	1,751.8	36.3	360.1	57.4	..	3,012.3	56.2	52.1	0.8	19.5	175.0	69.1	372.7	+2,639.7
september	1,441.8	1,780.2	152.6	474.2	22.1	15.7	3,886.7	46.2	43.0	0.6	14.6	231.2	10.8	346.5	+3,540.2
october	1,177.9	1,944.0	136.0	505.0	1.6	17.7	3,782.1	54.4	46.2	5.4	11.5	54.7	31.0	203.1	+3,579.0
november	776.5	1,632.5	125.5	456.3	0.0	0.0	2,990.7	121.7	77.7	11.8	10.2	0.0	86.7	308.2	+2,682.6
december	876.0	2,023.1	113.3	589.6	59.2	1.2	3,662.4	136.8	67.7	13.4	5.9	33.5	53.0	310.3	+3,352.1
year	13,716.6	21,592.2	1,332.4	5,894.3	324.7	34.6	42,894.9	1,058.0	1,265.4	120.0	151.4	1,637.6	901.7	5,134.2	+37,760.7

	Electricity imported to Italy from							Electricity exported from Italy to							Net imports
	France	Switzerland	Austria	Slovenia	Greece	Malta	Total	France	Switzerland	Austria	Slovenia	Greece	Malta	Total	
GWh															2018
january	1,675.5	2,391.8	129.8	649.5	51.0	..	4,897.7	80.3	16.9	5.1	4.3	130.4	88.7	325.6	+4,572.0
february	1,331.8	2,415.1	128.3	606.9	126.7	0.5	4,609.3	78.8	10.6	0.5	1.4	71.7	36.6	199.6	+4,409.6
march	1,576.1	2,076.2	125.5	670.0	284.3	..	4,732.0	51.8	36.0	5.1	0.4	8.1	76.8	178.2	+4,553.8
april	1,327.6	1,758.1	111.4	647.7	158.3	..	4,003.0	39.7	155.4	8.1	3.6	51.8	79.5	338.0	+3,665.1
may	1,394.8	1,509.9	146.9	570.4	47.4	1.0	3,670.4	31.0	226.2	4.7	6.0	66.9	35.6	370.4	+3,300.0
june	1,346.4	1,603.9	116.3	534.1	10.6	0.9	3,612.1	40.5	167.7	..	10.3	0.7	55.5	274.7	+3,337.4
july	1,418.8	2,327.3	131.9	657.3	149.0	0.7	4,685.0	63.0	155.3	..	1.5	61.4	45.8	327.0	+4,358.0
august	858.2	1,431.7	93.7	367.9	239.0	1.7	2,992.2	86.9	109.1	0.1	10.3	26.4	52.6	285.4	+2,706.8
september	1,303.5	1,316.4	115.8	429.6	1.4	0.6	3,167.2	52.3	37.7	0.3	4.9	0.0	53.9	149.1	+3,018.2
october	1,160.9	2,224.0	102.3	577.1	0.0	0.3	4,064.6	55.7	15.7	..	2.3	0.0	38.5	112.2	+3,952.4
november	740.0	1,428.7	97.0	502.6	0.6	1.4	2,770.3	123.7	142.7	..	7.8	0.6	25.5	300.4	+2,469.9
december	1,252.3	2,057.1	118.1	525.8	9.5	3.6	3,966.4	102.1	66.1	..	7.3	192.6	42.6	410.8	+3,555.6
year	15,385.8	22,540.3	1,417.0	6,738.7	1,077.7	10.8	47,170.2	805.9	1,139.3	23.9	60.0	610.6	631.7	3,271.4	+43,898.8

Exchanges with foreign countries are measured in the substations closest to the border.

Exchange of electricity between Italy and neighbouring countries from 1963 to 2018

Figure 2

