

STATISTICS ON MINING AND QUARRYING EXTRACTION ACTIVITIES | YEAR 2017

Mineral water withdrawals increased Quarrying mineral extractions decreased

➔ In 2017, in Italy **mining and quarrying sites** amounted to 5,154. Among them, **2,196** were into production sites (-4.3% compared to 2016). National extraction of non-energy mineral resources, including mineral waters withdrawals, amounted to **180.6 million tons** (82.6% was from quarrying), with a 1.9% decrease over the previous year.

In 2017, 44.3% of the national amount of mineral resources extracted from quarries came from the **North of Italy**, consisting of **83.1 million tons** (+2% over the previous year). South and Islands contribute with **55.8 million tons** (-2.4% compared to 2016).

-3.3%

Decrease of mineral resource extractions from quarrying with respect to 2016

149.1 million tons quarrying extractions; 48.5% is "limestone, travertine, gypsum and sandstone"

+8.4%

Increase of mineral resource extractions from mining

+2.7%

Increase of mineral natural waters withdrawals

16.6 cubic meters of mineral waters extracted; 54% came from North of Italy

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The downward trend in quarrying continued

In 2017, in Italy *active* and *not active* mining and quarrying sites – excluding extractive sites of energy producing mineral resources and natural mineral waters – amounted to 5,154 (-2.3% compared to 2016). Mining sites were 130 and quarrying sites 5,024. Active extraction sites – where authorizations to the extraction right are in force – amounted to 4,475. Municipalities with at least one active extraction site were 1,810. Among active extraction sites, 2,196 were *into production sites*, namely sites from which quantities of mineral resources had been actually extracted (71 mines and 2,125 quarries).

In 2017, national extraction of mining and quarrying of mineral resources from mining and quarrying (with the exception of mineral waters) amounted to 164 million tons (-2.3% over the previous year). The decrease was due to reduced extractions from quarrying, consisting of 149.1 million tons (-3.3% compared to 2016) This confirms a decreasing trend of quarrying extraction, at a -4.5% yearly rate - since 2013, first year of the Istat survey on extraction activities. Conversely, extractions from mining increased, reaching 14.8 million of tons (+8.4% compared to 2016), inverting the decreasing trend recorded in the last years.

The pressure indicator “Extraction Intensity” (IE) at a national level (calculated ratio between quantities extracted and territorial surface) was equal almost to 543 tons per square km, following a declining trend with respect to 2016 levels (556 tons per square km).

In 2017, 1,810 extraction companies were into production, among them 1,777 are active in quarrying (mostly in Northern Italy) and 43 in mining (mostly in Sardegna, Piemonte and Toscana).

EXTRACTIONS IN ITALY, KEY FIGURES

Year 2017, absolute values and percent variations

	QUARRYING		MINING ^(a)	
	absolute values	% var 2017/2016	absolute values	% var 2017/2016
AUTHORIZED EXTRACTION SITES				
Active extraction sites	4,368	-4.4	107	-3.6
Active extraction sites into production	2,125	-4.6	71	+4.4
EXTRACTION ACTIVITIES				
Mineral resources extractions (million tons)	149.1	-3.3	14.8	+8.4
Extraction Intensity Indicator IE (tons/square Km)	494.2	-3.3	49.1	+8.4
Authorized into production companies	1,777	-7.1	43	-4.4

(a) Mineral natural waters excluded.

Active sites of quarrying reduced

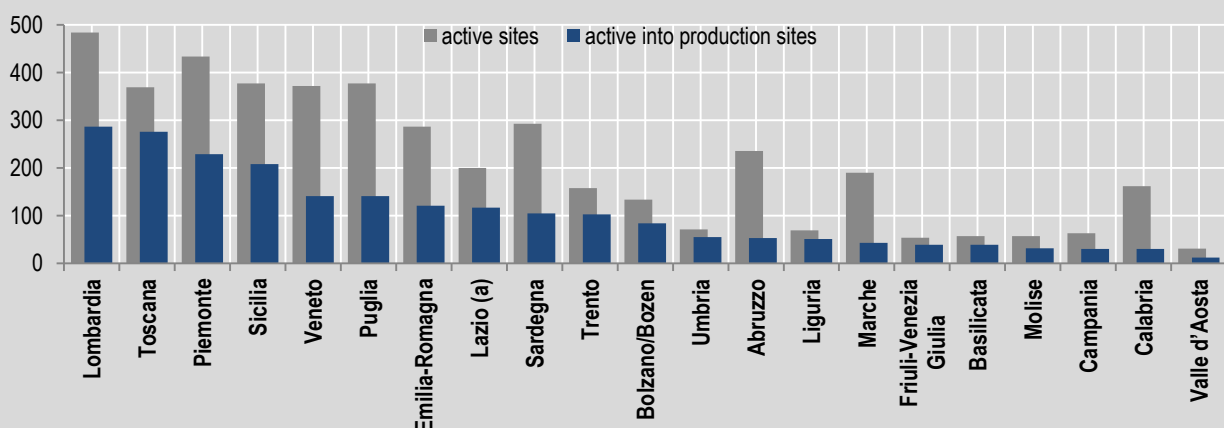
In 2017, authorized sites amounted to 5,154 (-2.3% compared to 2016), including 5,024 quarries and 130 mines. Among authorized sites, 4,475 were active (-4.4%) including 4,368 quarries and 107 mines. Active quarrying sites decreased by 200 units with respect to 2016 and, in particular, into production quarries reduced by 102 sites. The productive quarries reduction was widespread, having affected all Italian areas, (excluding the South of Italy). Productive quarrying sites were mostly located in Lombardia (282), Toscana (264), Piemonte (213) and Sicilia (205).

On the other side, since 2016 active mining sites decreased from 111 to 107. In particular, into production mines slightly increased, from 68 (in 2016) to 71, inverting the decreasing trend of last years. Productive mining sites were mostly located in Piemonte (16), Sardegna (16) and Toscana (12).

Not active sites were 679 (+14.3% over 2016), that is sites when authorization, licence or other events lead to the cessation of the extraction activity. They are 656 quarries and 23 mines and includes: i) a site which has no longer valid authorization or licence due to expiration (cessation); ii) an authorized site but suspended, because of a new provision; iii) a site that does not exhibit any excavation work or lack of activation.

FIGURE 1. ACTIVE EXTRACTION SITES AND ACTIVE INTO PRODUCTION SITES, BY REGION

Year 2017, absolute values



(a) Provisional data

Marble extractions increased

In 2017, national extraction of mineral resources from mining and quarrying (with the exception of mineral waters) amounted to 163.9 million tons (-2.3% over the previous year). More in detail, the decrease was mainly due to reduced extractions from quarrying (149.1 million tons, -3.3% compared to 2016).

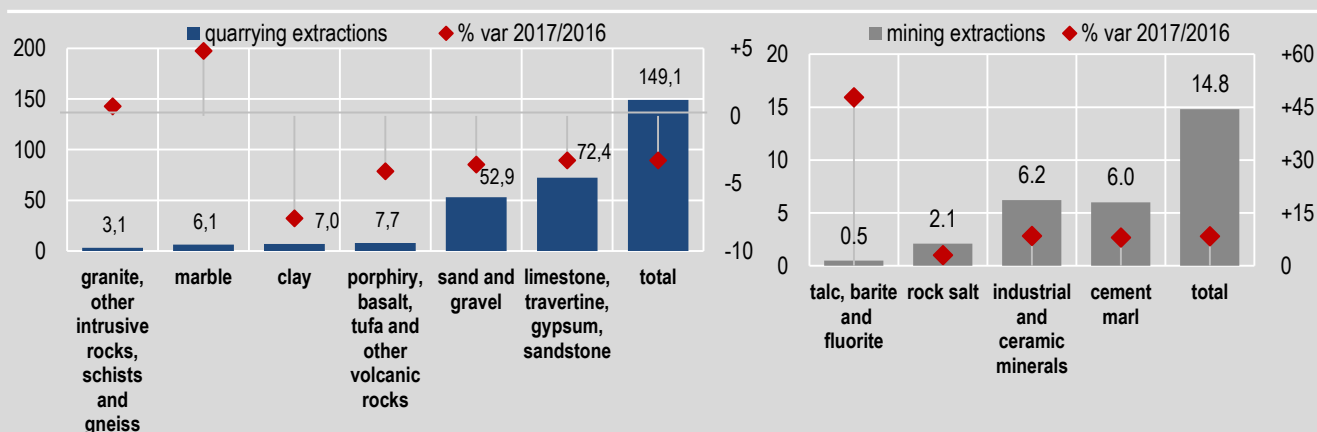
Istat Survey on extraction activities collects on yearly base data on about 100 lithotypes of no energy producing mineral resources (according to the International Mineralogical Association classification IMA). Mineral resources data are grouped in ten main aggregates for the purpose of the analysis, using minerals classification criteria.

In 2017, “*limestone, travertine, gypsum and sandstone*” was confirmed as the most relevant aggregate (in physical terms), with 72.4 million tons extracted (-3.3% over 2016) accounting for 48.5% of national quarrying extractions. The second aggregate was “*sand and gravel*” with 52.9 million tons (-3.6% over 2016), followed by “*porphyry, basalt, tufa and other volcanic rocks*” (7.7 million tons), “*clay*” (7.0), “*marble*” (6.1), and “*granite, other intrusive rocks, schists and gneiss*” (3.1).

All examined aggregates showed a decrease in extracted quantities over 2016, except for “*marble*”, highlighting an increase (+4.8%) and “*granite, other intrusive rocks, schists and gneiss*” (+0.8%).

In 2017, unlike quarrying, mining extractions in 2017 increased, reaching 14.8 million of tons (+8.4% compared to 2016), so inverting the decreasing trend recorded in last years. In detail, “*ceramic and industrial minerals*” and “*cement marl*” were the most relevant, with respectively 6.2 and 6.0 million tons extracted (about +8% increase over 2016). “*Rock salt*” (2.1 million tons) and “*talc, barite and fluorite*” (0.5 million tons) followed.

FIGURE 2. MINERAL RESOURCES EXTRACTIONS FROM QUARRYING AND MINING BY AGGREGATE, ITALY
Year 2017, absolute values in million tons and percent variations



Almost half of quarrying extraction come from the North of Italy

A regional analysis showed that 47% of the 2017 national amount of quarrying extractions came from the North of Italy, with almost 70 million tons. Lombardia is the first region with 22.7 million tons (+1.9% compared to 2016), followed by Piemonte (15.6 million tons), Puglia (13.5) and Toscana (13.3).

Mineral resources of “*limestone, travertine, gypsum, sandstone*” aggregate were extracted mainly in Puglia, with 12.5 million tons (representing 17.2% of national extractions of this aggregate), Lombardia (8 million tons), Toscana (6.9), Sicilia (6.9) and Campania (5.4).

Lombardia was the region with the highest extractions of “*sand and gravel*”, with 13.2 million tons (-8.3% over 2016), followed by Piemonte (11.2 million tons) and Emilia Romagna (7.6).

The major quantities of “*porphyry, basalt, tufa and other volcanic rocks*” were extracted in Lazio (2.1 million tons; 27.9% of the national quantities), Sicilia (1.6 million tons) and Umbria (1).

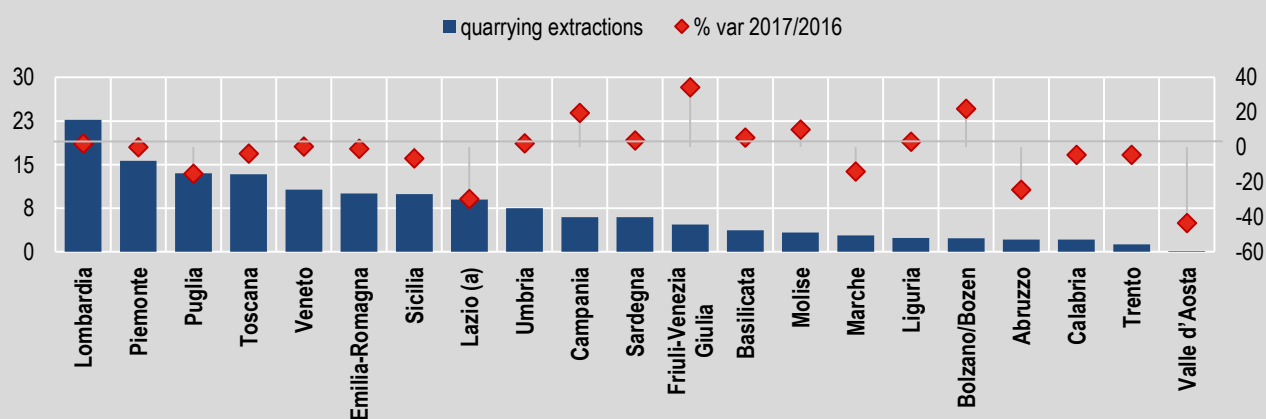
Emilia-Romagna and Umbria showed the highest level of extractions of “*clay*” respectively with 1.3 and 1.1 million tons.

Toscana accounted for 62.4% of national extractions of “*marble*” with 3.8 million tons, followed by Lombardia (1.1) and Sicilia (551 thousands of tons).

“*Granite, other intrusive rocks, schists and gneiss*” aggregate includes some ornamental stones. Most of extractions occurred in Sardegna and Piemonte (1.2 and 1 million tons, respectively).

FIGURE 3. MINERAL RESOURCES EXTRACTIONS FROM QUARRYING, BY REGION

Year 2017, absolute values in million tons and percent variations



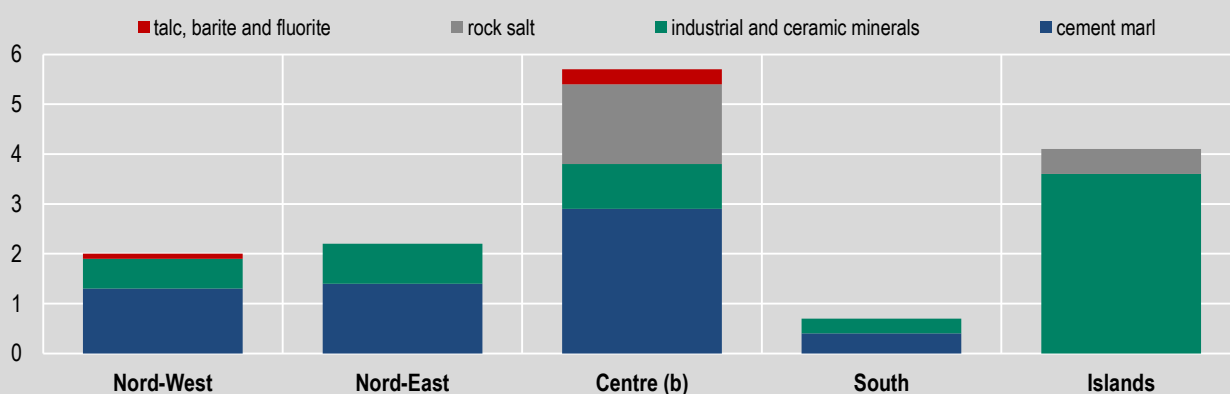
(a) Provisional data

Mining extractions increased

Extractions of solid mineral resources from mining (excluding natural mineral waters) increased from 13.7 million tons in 2016 to 14.8 in 2017 (+8.4%), breaking the decreasing trend measured in last years. All regions showed increased extraction quantities, except the Northwestern area of Italy. The highest quantities are registered in Sardegna (3.8 million tons), Toscana (3) and Umbria (1.9). The three regions together covered about 59.6% of the national mining extractions.

The increase in mining extractions affects all mineral aggregates: “*ceramic and industrial minerals*” with 6.2 million tons extracted (+8.5%) coming mostly from Sardegna; “*cement marl*” with 6.0 million tons (+8%), mainly from the Centre (Toscana and Umbria) and the North (Lombardia); “*rock salt*” with 2.1 million tons (+3%) quite exclusively coming from Toscana, Sicilia and Sardegna; finally “*talc, barite and fluorite*”, with 0.5 million tons (+32%), mainly from Central regions.

FIGURE 4. MINERAL RESOURCES EXTRACTIONS^(a) FROM MINING, BY GEOGRAPHICAL AREAS
Year 2017, absolute values in million tons



(a) Gold minerals are not included

(b) Provisional data for Lazio.

Extraction intensity indicator decreased in all regions, except for the North.

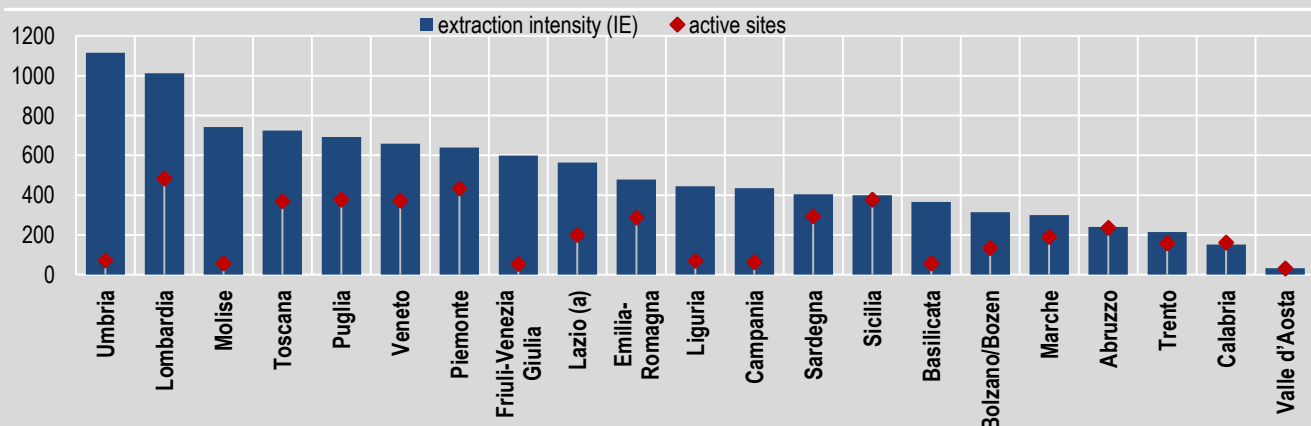
In environmental economics, pressures represent phenomena linked to anthropic activities that alter the state of environmental components. Environmental pressures indicators specifically linked to mining quarrying activities have been calculated at a municipality scale for year 2017, adhering to a conceptual framework named DPSIR Model (Driving forces, Pressures, State, Impact, Responses), that ensure methodologic harmonization, scientific requirements, reproducibility and reliability. Developed in the '80s by the EEA (European Environmental Agency) and OCSE, DPSIR conceptual model is one of the framework internationally used to describe interactions between economy and natural environment and it is characterized by causal relationships.

In 2017, 1,810 Italian municipalities hosted 4,475 active mining and quarrying extraction sites. The indicator “*Active Extraction Sites Density*” (DSE) – calculated as ratio between number of active sites by municipality and the respective municipality areas – revealed that 38% of the Italian municipalities with active sites recorded medium-high pressure in their territories, exerted by the presence of more than 5 active sites per 100 square km (in particular, 17.5% with more than 10 active sites).

In 2017, the “*Extraction intensity*” (IE) indicator – ratio between quantities of mineral resources extracted by municipalities and the respective municipality areas – calculated at a national level was equal almost to 543 tons per square km. Among 1,190 municipalities with at least 1 into production site, 29.3% recorded withdrawals up to 300 tons per square km, recording a low extraction intensity. A significant share of municipalities (38.2%, half located in the North) extracted between 1,000 and 10,000 tons per square km, whereas 11.3% extracted more than 10,000 tons of mineral resources per square km.

FIGURE 5. EXTRACTION INTENSITY INDICATOR (IE) AND NUMBER OF ACTIVE SITES, BY REGION

Year 2017, absolute values (tons per squared Km of regional surface and number of active sites)



(a) Provisional data

Mineral waters withdrawals increased

According to current legislation (Royal Decree n. 1443/1927), mineral waters are included among mining mineral resources. Since 2018, Istat has been collecting data on natural mineral waters withdrawals (volumes for production purposes, first reference year 2016). In 2018, the Ministry of Economic Affairs and Finance (MEF-DT) and Istat engaged an inter-institutional collaboration mainly aimed at integrating information of administrative archives, to develop a coherent and complete knowledge data framework at territorial level, accessing to information about mining licenses on the Assets of the State Census, conducted by the MEF-DT.

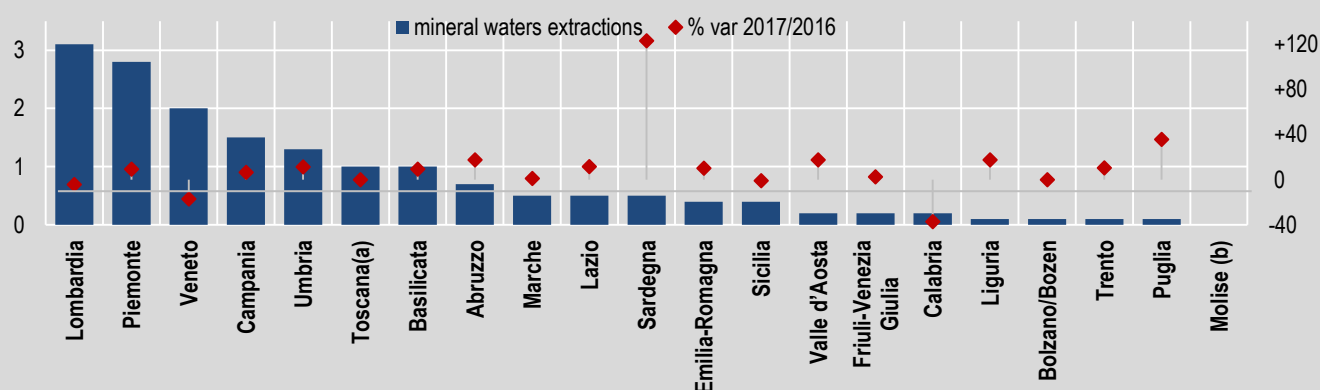
At national level, mineral waters withdrawals increased, reaching in 2017 16.6 million cubic meters (+2.7% compared to 2016). Lombardia (3.1 million cubic meters), Piemonte (2.8) and Veneto (2) were the more representative extraction areas and, in general, 54% of the national withdrawals came from the North of Italy. In the North East withdrawals decreased (-11.3%), whereas in the other geographical areas they increased (North West +2.4%, Centre +6.1%, South +5.3% and Islands +4.3%).

In 2017, natural mineral waters extraction sites were located in 173 municipalities, especially in the North of Italy (43.4%) and 185 firms were operating in this sites.

The “*Extraction Intensity*” (IE) indicator calculated at national level, accounted for 55 cubic meters of mineral water per square km. The highest value was registered in the Northwestern area with 108 cubic meters per square km.

FIGURE 6. NATURAL MINERAL WATERS WITHDRAWALS FOR PRODUCTION PURPOSE, BY REGION

Year 2017, absolute values in million cubic meters and percent variations



(a) 2016 data, Istat elaborations on data provided by Ministry of Economic Affairs and Finance - Treasury Department, Census on "Public Administration Assets" years 2015-2016

(b) Not available data

Crude oil extractions are recovering

A complete framework of mining withdrawals statistics is offered by joining Istat data on non energy mineral resources extractions with energy producing mineral resources data provided by Italian Ministry of Economic Development (MISE - DGS-UNMIG). The latter data refers to the extractions of crude oil, gasoline, natural gas, both onshore and offshore in Italian territory.

On December 2017, 200 hydrocarbons extraction licenses were active (133 onshore and 67 offshore) and 765 extraction sites were into production. The national amount of extractions accounted for 4.1 million tons of crude oil (+10.5% compared to 2016), 10 thousand tons of gasoline (-27%) and 5.7 billion standard cubic meters of natural gas (-6%). Southern Italy contributed the most, both for crude oil (71.4% of the national production) and natural gas extraction (26.7%).

For more details, please refer to the Italian version of the Statistical Report (Tables of data and Methodological Note) published on 22nd October 2019 on the Istat web site www.istat.it.

Survey Responsible:

Environmental and Territorial Statistics Directorate (DCAT)

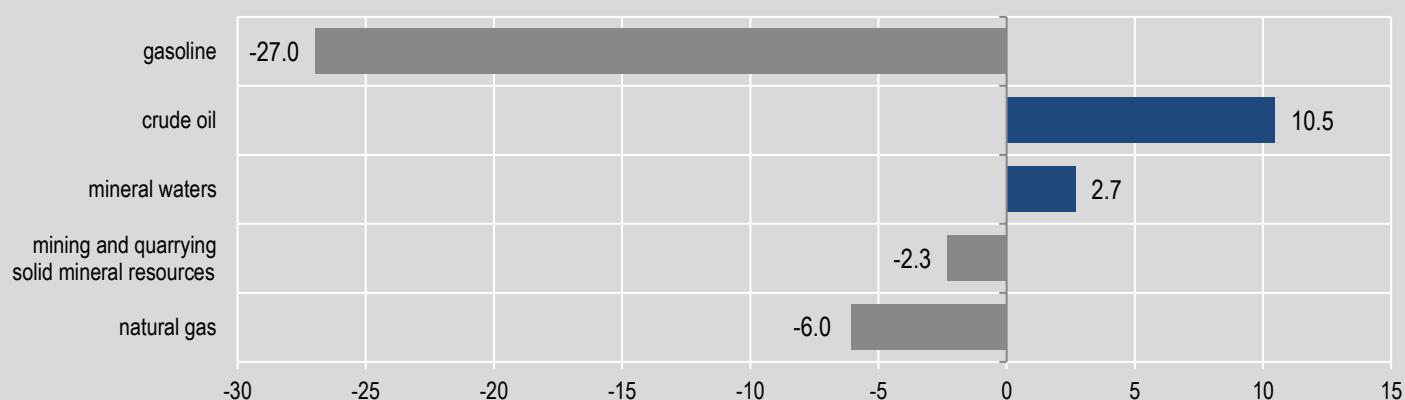
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FIGURE 7. ENERGY PRODUCING ^(a) AND NON ENERGY MINERAL RESOURCES EXTRACTIONS, BY TYPE

Year 2017, percent variations with respect to 2016



(a) Concerning energy minerals onshore and offshore, Istat elaborations on data provided by the Ministry of Economic Development (MISE) – General Directorate for safety, environmental safety of mining and energy activities - National Mining Office for Hydrocarbons and Georesources (DGS-UNMIG)

