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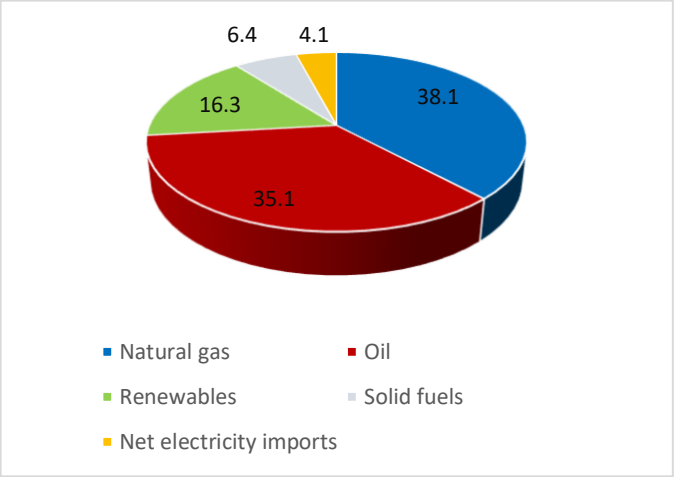
The role of natural gas in the Italian energy system

Natural gas has gradually replaced oil derivatives in the Italian energy system (gas oil in residential heating and fuel oil in electricity generation).



Energy use in Italy 2017 - source: UP estimates on MISE and ENEA data

Incidence of natural gas on domestic consumption of primary energy	
1970s	~ 9%
1990s	~ 24%
Recent years	~ 35%

In 2017, natural gas met **38%** of primary energy demand in Italy (**+6%** compared to 2016): it is therefore the **primary source,** followed by oil (35%) and renewable sources (16%).

Gas will maintain a key role, with a share of approximately **35% of** primary energy **consumption**, since:

- **Italy historically leans towards gas**: 88% of homes are reached by the gas transportation network, which was built through public and private investments;
- Natural gas is the cleanest among all fossil fuels, offering **environmental compatibility** and ensuring the **security of supplies.**

Return, energy used and emissions for electrical production from fossil fuels		
Energy used (thousands of TEP)	**1 TWh of energy from...**	**CO2 emissions** (thousands of tonnes)
156	Gas (return: 55%)	375
215	Coal (return: 40%)	820
230	Fuel oil (return: 37%)	690

Source: RIE figures

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Gas in Italy: consumption, production, imports

Gas consumption in Italy (2017)	**~ 75.1 billion m^3**
Gas production in Italy (2017)	**~ 5.5 billion m^3** - equal to 7% of consumption
Imports of gas in Italy (2017)	**~ 69.6 billion m^3** - equal to 93% of consumption

Source: MISE, Statistical Energy Observatory

National gas consumption

In 2017, Italy consumed 75.1 billion m^3 of gas. It is the third European country in terms of gas consumption after Germany and the United Kingdom (in Europe, the demand for gas totalled 491 billion m^3 - Source: Eu Commission 4th Quarterly Report 2017).

Total consumption of gas in Italy (2017)		**75.1 billion m^3**
Gas used	for civil uses (residential and tertiary)	39%
	for electric generation	34%
	for industrial purposes	21%
	for other uses (including transport)	6%

Source: MISE, Statistical Energy Observatory

With respect to the natural gas consumption peak in 2005-2008 (85 billion m^3) is mainly due to three factors:

a) the **economic crisis**, which reduced industrial methane consumption and the electricity demand (hence the use of natural gas to produce it);

b) the introduction **of renewable sources for the production of wind and photovoltaic,** incentivised by state measures;

c) **energy efficiency** policies**.**

National gas production

Total production of gas in Italy (2017)		**5.5 billion m^3** (Equal to approximately 7% of consumption)
Through	Land-based fields	34%
	Seaward cultivation	66%

Source: MISE, Dgs-Unmig

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In 1994, national gas production reached its peak (20 billion m^3), consisting in approximately one-third of domestic consumption. Since then, the decline has been constant, and the coverage of domestic needs has fallen near to the current 7%.

National gas imports

Total imports of gas in Italy (2017)		**~ 69.6 billion m^3** (Equal to approximately 93% of consumption)
Through	Gas pipelines	88%
	Liquefied Natural Gas (LNG)	12%

Source: MISE, Statistical Energy Observatory

In line with the decrease of domestic production, the incidence of **imports has increased (93% of total consumption).**

In 2017, 88% of gas was **imported through gas pipelines** and **12% through liquefied natural gas (LNG)**, of which **10%** was via **the Adriatic LNG terminal**.

The nominal import capacity of Italy with its pipelines and LNG regasification terminals amounts to 130 billion standard m^3.

The first supplier country in Italy is Russia, which met **42%** of the Italian demand.

Supplier	**Gas pipeline (entry point)**	**Annual nominal capacity and 2017 usage rate**	**Gas imported in 2017**	**Comparison with use in 2016**
Russia	TAG (Tarvisio)	39 billion m^3 (76%)	30.1 billion m^3	+6.8%
Algeria	Transmed (Mazara del Vallo)	39 billion m^3 (49.8%)	18.8 billion m^3	0%
Norway/the Netherlands	Transitgas (Gries Pass)	22 billion m^3 (33%)	7.2 billion m^3	+8.2%
Libya	Green Stream (Gela)	17 billion m^3 (26%)	4.6 billion m^3	-3.5%

Source: MISE, Statistical Energy Observatory