

LNG AND BIOLNG AS A SOLUTION TO DECARBONIZE THE HEAVY DUTY TRANSPORT

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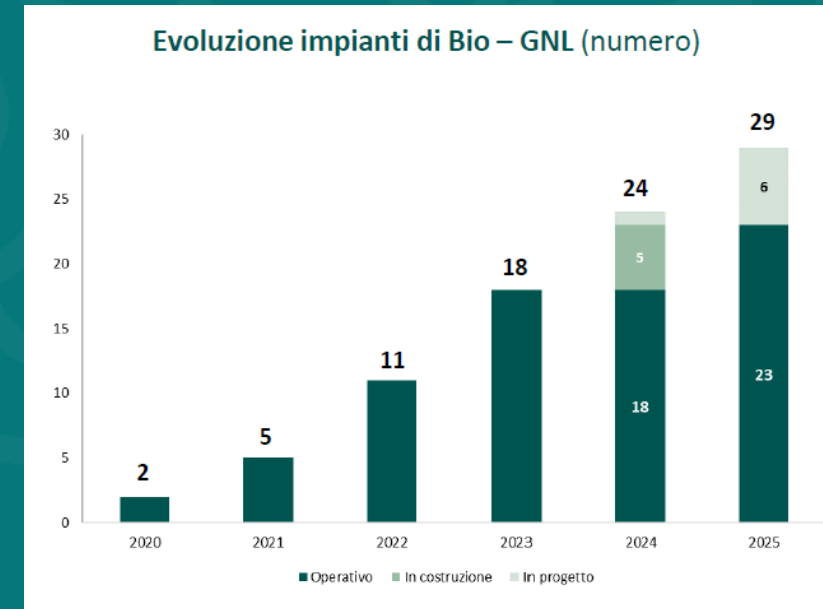
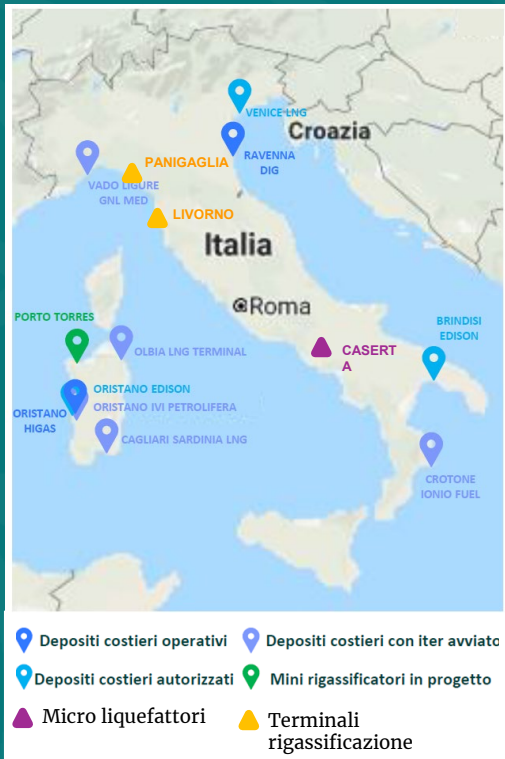
LNG and bioLNG logistics

Supply infrastructure

The supply infrastructure consists of 2 operational SSLNG depots, 3 authorized, and 5 in the process of obtaining authorization. Regarding LNG availability, it is also important to consider the developments in liquefaction plants for bio-LNG production, which in 2023 consisted of 18 plants with a production capacity of 40,000 tons per year. Additionally, there are 5 more plants under construction, with an additional 6 in the design phase.

Finally - alongside the virtual liquefaction service offered by regasification terminals -work is ongoing on two micro-liquefaction plants in southern Italy, one of which is funded by allocations from the Complementary Fund to the PNRR, with a total capacity of 75,000 tons per year of LNG and bioLNG.

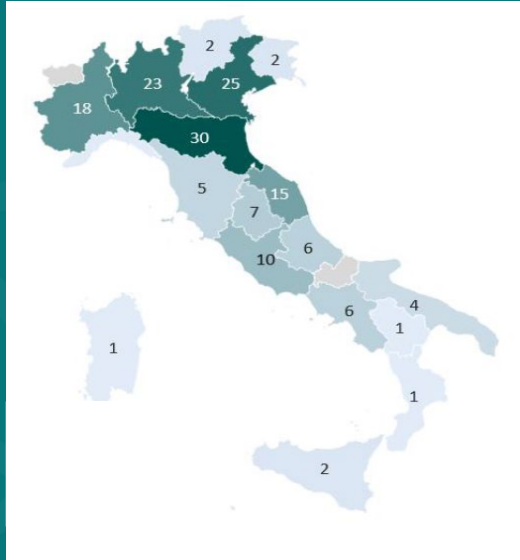
Some of these projects (displayed in the map) are funded by the Complementary Fund of PNRR: the completion of these projects must be finalized by 2026 and will result in an increase of the availability of volumes of both fossil and bio-based LNG products



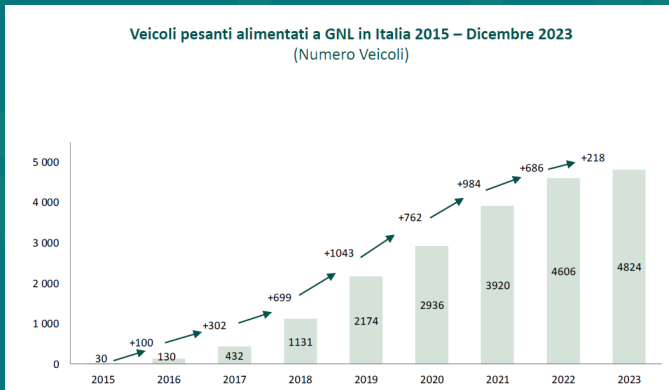
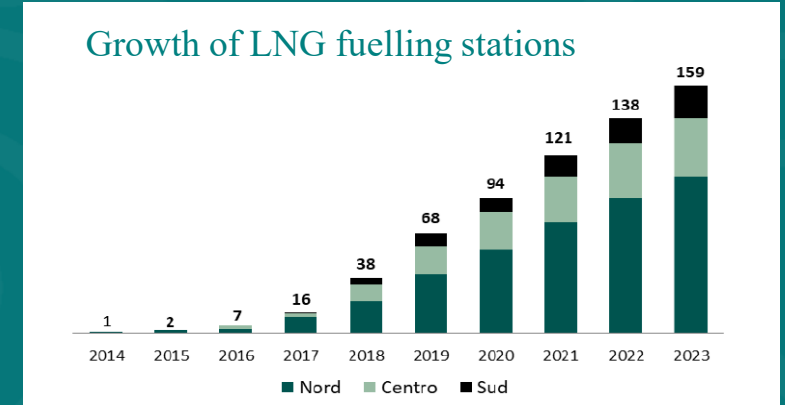
fonte MBS Consulting, rielaborazione Federchimica Assogasliquidi

LNG/bioLNG logistics

Distribution chain and LNG fuelled trucks fleet



Regarding the distribution infrastructure, the growth trend is confirmed also in 2023, bringing the network to a total of 159 operational facilities. Compared to 2022, 19 new facilities were added, four of which are located in southern Italy. Also in the first 10 months of 2024 has been recorded a growth of the distributing infrastructure, with a consistency of 170 distributing points.



Notwithstanding the slight increase of registration trend in the first three quarters of 2024 (with 235 vehicles registered), the market is still far from the consistency of the pre crisis period where new vehicles registrations recorded a peak of more than 1000 units. The reduction in registrations, despite the fact that the competitiveness of LNG compared to diesel has returned to pre-crisis levels, was mainly due to the lack of orders in recent years, caused by the uncertainty in the gas market. It is then necessary to change the pace, adopting an *ad hoc* plan of supporting measures for the sector.

fonte MBS Consulting, Ecomotori, Anfia, rielaborazione Federchimica Assogasliquidi

LNG and BIOLNG for heavy duty transport

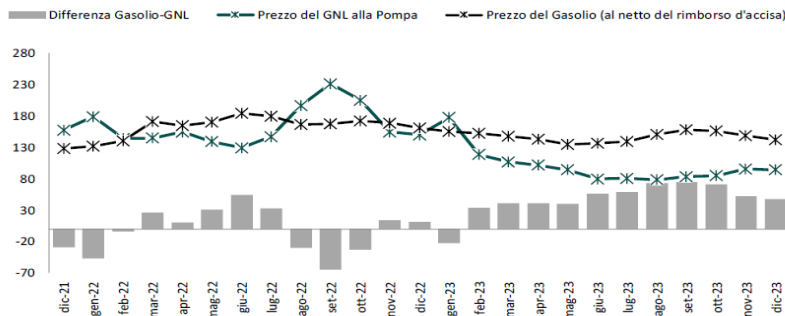
Environmental benefits and economic competitiveness



Through a Well-to-Wheel analysis, bio-LNG can result in a substantial reduction of greenhouse gas emissions, potentially even achieving a negative carbon footprint depending on the feedstock used, with CO₂_{eq} reductions of up to over 120% compared to diesel-powered vehicles

During 2023, LNG regained competitiveness against diesel.

Differenziale costo gasolio-GNL mensile per le imprese di autotrasporto (€/MWh)



- In 2023, the average cost of diesel for haulage companies fell by -11% compared to 2022, while the cost of LNG fell by -40% on average, compared to the 2022 average price.
- The sharp drop in gas prices during the year led to a markedly positive cost differential between diesel and LNG in almost all months of the year (excluding January), averaging €47/MWh, in line with 2021 levels.
- It is possible to estimate that in the period 2024-2026 the competitiveness of LNG against diesel could stabilise at decidedly positive values, above the pre-crisis levels of 2019