

Personalised for:
Kostya Tsolakis

17 March 2020

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Small-scale LNG fans out in Spain

- Spain is home to the second biggest network of LNG fuelling stations in Europe after Italy
- Four out of Spain's six operating regas terminals offer LNG bunkering services; upgrades planned
- LNG bunkering operations tripled in 2019 to nearly 200; ship-to-ship carried out by five vessels
- Enagas plans numerous initiatives, from LNG in rail to small-scale import projects in the Canaries

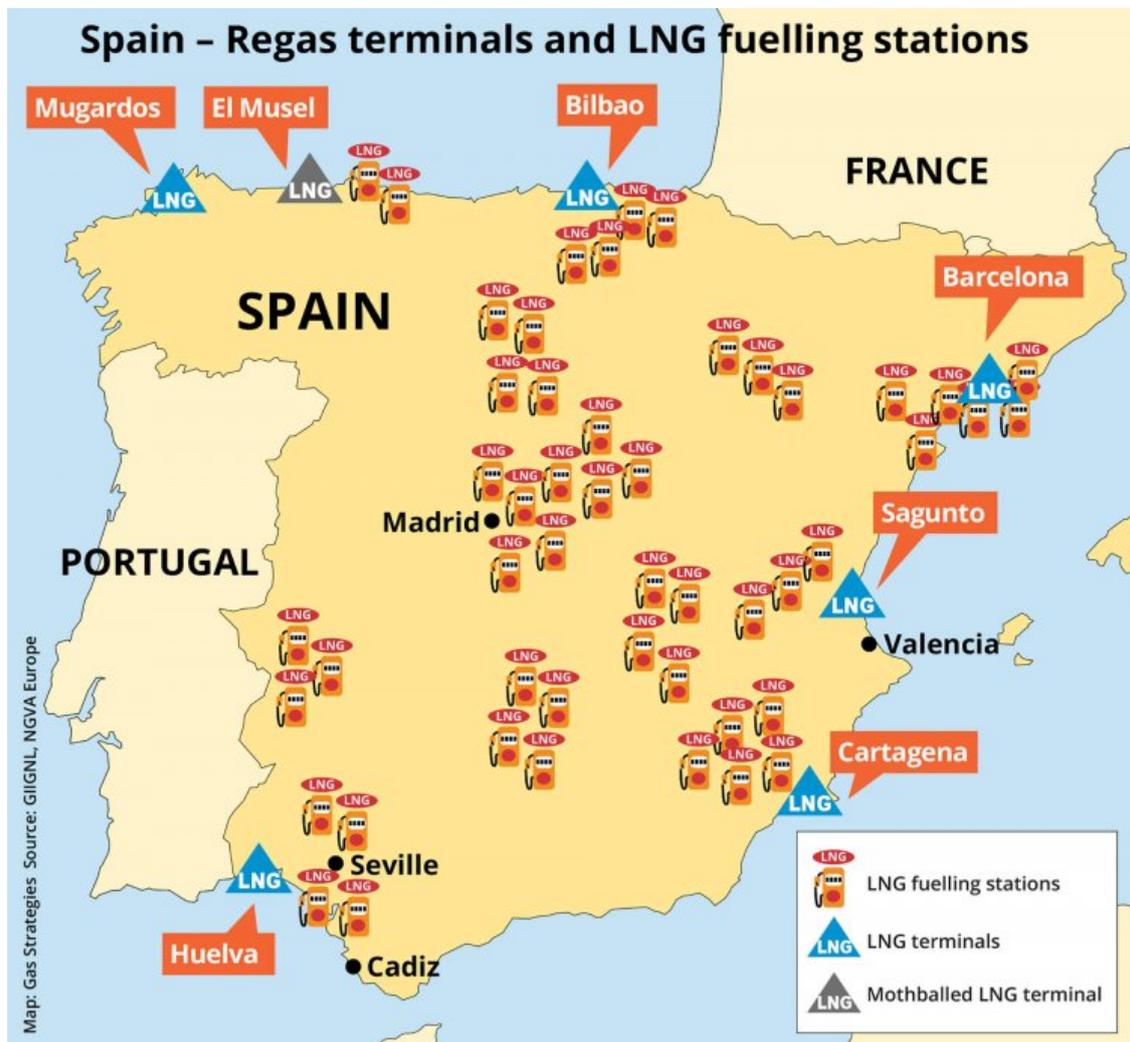
Growing demand in the maritime, road and railway segments, combined with a mature LNG import infrastructure, as well as regulatory support, are driving the growth of the small-scale LNG sector in Spain.

Small-scale LNG activities are currently conducted out of Spain's six operating LNG import and reload terminals: Barcelona, Cartagena and Sagunto on the Mediterranean coast, Huelva on the Bay of Cadiz in the south-west, and Bilbao and Mugardos on the Bay of Biscay in the north. A seventh terminal, El Musel in Asturias, also in the north, is mothballed.

One key sector serviced by Spain's LNG terminals is road transport, with Spain being among the leading countries in Europe in the adoption of gas-fuelled vehicles. The Spanish market "was the first in Europe to develop LNG as an alternative fuel for road transport" and was among the promoters of the EU LNG Blue Corridor initiative, says Manuel Lage, secretary general of Spanish small-scale LNG association AESSGAN.

LNG transporting companies were the first to use LNG in their trucks, with dual fuel engine conversions being followed by fully LNG-fuelled trucks as technology developed, he explains.

Data from the Natural Gas Vehicle Association (NGVA) Europe shows that Spain is currently home to 48 LNG fuelling stations, putting it second behind Italy, which has 62. In contrast to Italy, where the network of LNG fuelling stations is mainly concentrated north of Rome, Spain's network is more evenly spread out in the country.



[1]

For Spanish road transport clients, LNG as fuel is attractive in the context of reducing emissions in the segment, says Lage. “[For] urban distribution, city cleaning services and public transport on all routes, natural gas, in this case CNG, is the best solution to have the job done with near zero emissions,” while for vehicles covering longer distances, “the only real alternative to diesel in a short and medium term is LNG,” he adds.

According to Lage, Spanish supermarket chains and food suppliers are among the main users to have taken up this alternative for road transport distribution, prompted in part by efforts to improve their green credentials to customers. Among them, Asturias-based Alimerka stands out: its entire heavy-duty fleet, comprised of 66 Scania vehicles, is now LNG-fuelled.

Alimerka says its LNG-fuelled fleet not only helps reduce its CO₂ emissions, but its trucks also produce about half the noise of a conventional vehicle, making them less disruptive in an urban environment. With a range of 1,000 km, the chain’s trucks are refuelled in Lugo de Llanera, a town located about halfway between Asturias’ main two cities, Oviedo and Gijon, where they are served by their own storage tank. The trucks distribute goods to 173 Alimerka supermarkets in

Asturias and in the neighbouring regions of Castile and Leon and Galicia.

“In total, they travel more than 3 million km per year, and can transport 6-12 tonnes of goods per vehicle in each round,” says Alimerka. “In this way, the supermarket chain concludes a process that was born with the objective of providing a sustainable and efficient solution for its mobility, while guaranteeing the reduction of its energy consumption.”



[2]

While the number of truck manufacturers offering LNG-fuelled heavy duty vehicles has been limited so far, more companies are coming forward with new products, further supporting the development of this market, Lage says.

Data released on 26 February by NGVA Europe shows that 4,510 new LNG-fuelled truck registrations took place in 2019, out of which 12%, or 541 units, were in Spain.

Bunkering operations triple

Meanwhile, Spain witnessed a significant development in small-scale LNG in 2019, as LNG bunkering operations tripled, rising from 60 in 2018 to 195 last year. The total volume of LNG involved was 81,704 cm, according to CORE LNGas hive, a European Commission-backed project that monitors small-scale LNG activities in the Iberian Peninsula.

Out of all the LNG bunkering operations carried out in Spain last year, 165 were truck-to-ship while 30 were ship-to-ship. The latter were carried out by four supply vessels: the 7,551 cm Coral Methane and 10,000 cm Coral Fraseri, owned by Dutch shipping company Anthony Veder, Shell's 6,000 cm Cardissa and the 5,000 cm Engie Zeebrugge. This past January, 35 LNG bunkering operations were carried out, with 12,055 cm of LNG supplied. This suggests that 2020 could turn out to be yet another year of growth for the segment in Spain.

Moving forward, the prospects for LNG bunkering in Spain are looking promising, says Lage, as "Spanish coastal cities are much sought after in cruise routes, and all the new cruises and ferries under construction will be LNG-powered." Unlike Italy, there are no plans for the creation of standalone, small-scale LNG depots on Spain's coastline, but all four terminals that offer LNG bunkering services – Barcelona, Bilbao, Cartagena and Mugardos – are looking to improve operations by implementing a number of upgrades.

For example, terminals are looking at implementing the 'unique tank' approach. According to Lage, this means that all the LNG tanks of the six Spanish terminals in operation today would work, under a logistical and storage point of view, as if they were a single virtual tank. An LNG operator would then be able to discharge a ship in any of the terminals and later take 'their' LNG from any other, as if all of them were connected.

"This would give a great flexibility to the system and particularly to the operators," says Lage. He adds that, "so far, most of the bunkering operations have been done truck-to-ship, offering high flexibility to bunker LNG in any port." However, most of the important ports are developing, or already have in place, a ship-to-ship service.

LNG services in Spain's regas terminals						
	Capacity in mtpa	Bunkering	Cool-down	Reloading	Transshipment	Truck loading
Barcelona	12.6	Yes	Yes	Yes	Yes	Yes
Bilbao	6.5	Yes	Yes	Yes	No	Yes
Cartagena	8.7	Yes	Yes	Yes	Yes	Yes
El Musel*	5.1	No	No	Yes	No	Yes
Huelva	8.7	No	Yes	Yes	Yes	Yes
Mugardos	2.6	Yes	Yes	Yes	No	Yes
Sagunto	6.4	No	Yes	Yes	No	Yes
*mothballed						
Source: GIIGNL						

[3]

Barcelona also offers electricity bunkering from an LNG-operated power generator in the port, while the LNG terminal in Huelva in Andalusia recently succeeded in carrying out a truck-to-ship operation that involved three trucks simultaneously. This took place in November and succeeded in bunkering the 2018-built Ro-Pax cruise ferry Marie Curie, which is operated by Balearia and Fred. Olsen Express and runs on the Huelva-Tenerife route, six times faster than usual.

The multi-truck bunkering solution was developed by gas storage and transport systems manufacturer CMC Cerezuela and includes innovations that prevent flow losses and allow a high supply speed. For this, a collector is used that joins up the three vehicles, which also are equipped with a cryogenic pump discharge system. The top discharge speed during the

operation in Huelva was 168 cm per hour, but the target is to reach 180 cm per hour. A single-truck-to-ship operation usually discharges at a speed of 30 cm per hour, but taking into consideration the limited time some ships can spend moored at a port, this can be too slow.

Spanish gas grid operator Enagas, which owns and operates Huelva, is planning to redesign the jetty at the terminal. The revamped mooring setup will enable the loading of small-scale LNG carriers and the direct loading of bunker tanks on LNG-fuelled ships.

Meanwhile, though plans to build micro-liquefaction plants in Spain, as is the case in Italy, are not currently being pursued, this option could be viable for bio-LNG projects, says Lage.

Disa Group, Spain's fourth largest distributor of fuels, and owner of the Shell brand in the country, is a member of BioLNG EuroNet, a project that includes Shell and truck manufacturers Scania and Iveco, and plans to create a road network corridor from eastern Poland to Spain that will be serviced by 39 bio-LNG fuelling stations, with seven of them in Spain.

Tax incentives

Overall, the prospects for the growth of small-scale LNG in Spain are looking very positive, Enagas tells LNG Business Review, as "Spanish ports enjoy an excellent position, being a mandatory step along the main international sea routes."

The company stresses that the Iberian Peninsula has "enormous potential for the development of LNG bunkering," in great part due to the Strait of Gibraltar being one of the world's main bunkering hubs. According to the Algeciras Port Authority – the port is located just across from Gibraltar – more than 100,000 ships sail through the strait every year. Bunker fuel sales at Algeciras stood at 2.4 mt in 2018.

Moreover, regulatory support has helped drive growth in the sector, Enagas adds. Specifically, tolls to ships have been "drastically reduced, so the reloading of LNG ships in the county is very competitive compared to other European countries."

State-owned port authority Puertos del Estado has established a 50% reduction in port taxes for ships that use LNG as fuel for offshore propulsion, as well as for ships that use natural gas to feed their auxiliary engines during their stay in the port, as an incentive measure for ships to use LNG as fuel.

LNG bunkering is also making inroads, however small, in Spain's Canary Islands – another key bunkering location. In January, Anthony Veder carried out its first LNG bunkering operation in Tenerife, when the Coral Methane supplied the cruise ship AIDAnova with fuel provided by Shell. This made AIDAnova the first LNG-fuelled cruise ship to have been supplied with LNG both during a ship-to-ship and truck-to-ship operation.

Although the Canaries do not currently have any regas capacity, Enagas is looking to develop floating LNG supply solutions for Tenerife and Las Palmas in Grand Canaria. In the meantime, in August and September last year, Enagas shipped LNG from Huelva to Tenerife in containers, via the port of Cadiz, for the first time.

Hive of activity

Enagas is the coordinator of the CORE LNGas hive project, mentioned earlier, as well as LNGhive2 – another EC-backed project, which aims to promote the use of LNG as bunker fuel in southern Europe.

CORE LNGas hive, in which Puertos del Estado also is involved, is comprised of 42 partners who aim to develop an integrated logistics and supply chain for LNG in the transport industry, and specifically maritime transport, across the Iberian Peninsula. According to Enagas, it involves “studies and pilot projects aimed at identifying standards needed for an adequate development of LNG as fuel, defining required training programmes and accreditation processes.” The pilots are designed to adapt the Iberian Peninsula’s existing infrastructure and boost logistical/commercial development to offer small-scale supply services and bunkering.

LNGhive2, led by Puertos del Estado, is a strategy that plans to adapt the LNG regas plants in Huelva and Sagunto near Valencia to offer bunkering and other small-scale LNG services, as right now the two facilities only offer truck loading. LNGhive2 also aims to introduce LNG in a maritime-rail green corridor between the port of Huelva and the dry port of Seville by retrofitting a diesel-hauled locomotive to LNG.

Another plan under the LNGhive2 strategy is the retrofit of five Balearia ferries that operate in the Mediterranean – the Abel Matutes, Naples, Sicily, Bahama Mama and Martin i Soler – to run on LNG. The ships’ retrofit will involve several European engine and equipment manufacturers, shipyards, engineering companies and certification societies, which Balearia says will “provide opportunities to further develop European technological know-how in a sector with vast potential.”

Moreover, LNGhive2 envisages the development of LNG bunkering infrastructure in Santander in Cantabria, northern Spain – an active port with regular ferry services to the UK.

Enagas says that all these projects are “accelerators” for the implementation of the Clean Power for Transport EU Directive.

Aside from road transport and bunkering, Enagas is also developing projects in the railway sector, such as RaiLNG, which carries out studies on the technical, economic and environmental feasibility of establishing LNG infrastructure to serve rail in the EU.

Spanish fanbase

At a time when suppliers are grappling with the effects of LNG oversupply – not to mention the impact of the new coronavirus, Covid-19, on global markets – small-scale initiatives, which have quickly grown in number in recent years, are welcome new outlets for many in the LNG business. In fact, while oversupply and the low-price environment persist, the appeal of small-scale LNG is bound to become bigger and bigger this coming decade.

In Spain, ensuring that every one of its six regas terminals – which, in contrast to Italy, already serve every corner of Spain – offer the gamut of small-scale services, will be key in supporting the growth and evolution of this nascent segment. Add to this an increasingly green-conscious mindset among Spanish shippers and retailers, as well as political support on a local and EC level, and Spain’s small-scale LNG story, already very positive, becomes one to watch. - BB



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