

Enagás has successfully completed the final sealing of the wells at the Castor underground storage facility

The highly complex works have made it possible to permanently seal the 13 wells in accordance with the established technical, environmental and safety requirements.

Madrid, 05 October 2026. In accordance with the mandate issued by the Ministry for Ecological Transition and Demographic Challenge (MITECO), Enagás has successfully completed the permanent sealing of the 13 wells at the Castor storage facility by installing three plugs in each one. This follows the agreement adopted by the Council of Ministers on 31 October 2019 for the permanent sealing and decommissioning of the wells.

These well operations are highly complex and require a high level of technical expertise. They involved deploying the Noble Resolve jack-up floating offshore platform to install the barriers that guarantee the wells' permanent sealing and restore the natural geological conditions that ensure permanent isolation.

Once this process was complete, the well conductors were cut off more than three metres below the seabed to remove any protruding parts of the installations. Consequently, the seabed was completely cleared of pipes associated with the wells, while maintaining the site in the safest possible conditions.

Sealing the wells marks the completion of one of the most significant stages of the process, which began with the technical hibernation of the storage facility. The site is now ready for the final phase of plugging and abandonment of offshore and onshore surface facilities.

The sealing operations comply with Spanish regulations and international standards for the plugging and abandonment of offshore wells (OEUK P&A Guidelines) and have been carried out in accordance with the environmental and safety criteria set out in the project's Environmental Impact Statement and current Spanish legislation. All permanent plugs have been approved by an independent third party, the Well Examiner, as required under Royal Decree 1339/2018 on offshore safety.

The total estimated cost of permanently sealing the wells at the Castor underground storage facility is 241 million euros, pending receipt of the final certifications.

Preparatory work to ensure safe decommissioning

Prior to the permanent sealing of all the wells, Enagás completed the process of putting the Castor underground storage facility into hibernation by temporarily sealing the wells. By doing so the company fulfilled the work entrusted to it by the government in Royal Decree-Law 13/2014 of 3 October, in which urgent measures were adopted relating to the gas system and the ownership of nuclear power plants.

Since the beginning of the process, the following phases have been undertaken:

- Phase 0. Analysis of the situation: As required by the government, a preliminary study of the asset and an exhaustive risk assessment taking different alternatives into account were carried out; a hibernation plan was drawn up to begin the process in March 2015. The subsequent phases were carried out after this analysis.
- Phase 1. Inertisation: The controlled reduction of the pressure of the gas remaining on the surface was carried out as scheduled on the platform, in the gas pipeline and at the onshore facilities, leaving the infrastructure

with minimum gas pressure. As part of the isolation process, all gas was removed from the surface installation, and the lines were inerted with low-pressure nitrogen.

- Phase 2. Equipment conservation: Equipment conservation work was carried out in order to keep it in safe and working condition. Specifically, all of the compressors were preserved from both the plant and the platform; the electrical elements were protected and the valves were lubricated and covered with insulating material to protect them from the marine environment. The process also included: remote-control tasks for the platform; the rental of generators to supply the platform with electricity; the safe emptying of chemicals from the tanks, and the conservation of the other equipment
- Phase 3. Temporary sealing of the wells: Once it had been verified that all 13 storage wells and valves, both on the surface and at a depth of 150 metres, were leak-tight, two additional mechanical plugs were installed in each well, in addition to the two existing valves.
- Phase 4. Sealing and permanent abandonment of wells. This involved installing permanent barriers inside each well using a combination of mechanical isolation elements and cement plugs designed to ensure long-term integrity. These barriers provide a permanent seal between the various geological formations encountered during drilling. This eliminates any possible route for fluid migration between the different subsurface strata or into the marine environment. This ensures that the wells are sealed safely and permanently in accordance with international standards and best practice in the offshore industry.

In addition to the subsea wells, the Castor storage facility comprises two surface installations: an onshore operations centre in the municipality of Vinaròs (Castellón), and an offshore structure situated in Spanish territorial waters, 21.6 km off the Mediterranean coast. The two installations are connected by a 30-inch-diameter gas pipeline, comprising a 21.6-km subsea section and an 8.7-km onshore section, as well as a parallel fibre-optic communications cable.

The offshore installation consists of a Wellhead Platform (WHP) and a Process, Utilities and Quarters Platform (PUQ), which are connected by a gangway. The 13 wells extended down from the WHP to the storage facility: 8 production wells, 4 monitoring wells and 1 fluid reinjection well.

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