
**NOTA
DE PRENSA**

50 years have now passed since the commissioning of the Tavascan hydro plant

- *Originally commissioned on 30 November 1971, the plant is a unique complex located 500 metres deep inside the mountain and is home to one of the biggest waterfalls in Europe.*
- *The different activities planned by Endesa and Lladorre town hall to commemorate the anniversary include a commemorative turbine having been installed in the town of Tavascan and the informative and educational space at the plant, which is open to visits, has been renovated.*
- *The plant, which is 50 years old and has produced more than 7 million MWh, continues to harness the power of water to produce emission-free energy while contributing to the economic and social development of the region.*

Tavascan, 29 November 2021 - On 30 November, 50 years ago, the Tavascan hydro plant produced its first megawatt of power. Half a century and more than 7,323,000 MWh later, the plant continues to harness the power of water to produce emission-free energy using state-of-the-art and largely digitised systems. The hydroelectric complex, which is one of a kind, as it is located 500 metres deep inside the mountain and is home to one of the biggest waterfalls in Europe, has carved out the economic and social path of the region, and continues to represent its backbone to this day.

To commemorate its 50th anniversary, Endesa and Lladorre town hall presented a commemorative logo last July, created especially for the occasion, as well as a calendar of events scheduled to take place in the coming months, such as an institutional ceremony at the plant and a webinar summarising its history. To date the actions undertaken include the inauguration of a new exhibition space performed by the Endesa Foundation, which can be seen as part of the guided tour of the plant, as well as the installation of a turbine at the roundabout at the entrance to the town of Tavascan. This Pelton-type turbine, which was used at the Tavascan plant between 1971 and 2010, installed a few weeks ago now, serves as a reminder to visitors and local residents of the importance and commitment of this infrastructure in the past, but also in the present and future of the region.



**Ajuntament
de Lladorre**

CENTRAL HIDROELÈCTRICA
TAVASCAN

A major project that changed life in the town

Work began to study and plan the project in 1958, when the first surveyors travelled to the area to design the new access road and adapt the bridge over the River Noguera Pallaresa, in Llavorsí, to allow for the passage of heavy goods vehicles. In addition to opening new roads and mountain trails and building camps, dams had to be constructed on the lakes to increase their storage capacity, the rock had to be drilled to set up the underground power plants and valves installed under the lakes. Up to 75 kilometres of tunnels, pipelines, channels and service galleries were constructed, in addition to high and low voltage lines.

These works of an enormous magnitude continued non-stop from 1950 to 1974 and saw 10,000 workers from across Spain participate. The height came in 1965, when there were 2,677 workers on site, whereas the annual average between 1958 and 1975 came to 1,512. These workers lived in barracks in the mountains during the week and went down to the town of Tavascan on their days off. Their arrival saw the town's population increase and its layout change, since it involved the need to construct new services to serve them.

Tavascan power plant

The Tavascan power plant forms part of the Alt Cardós hydroelectric complex, which consists of three underground waterfalls (Tavascan Superior, Tavascan Inferior and Montamara); it is supplied by the reservoirs and lakes of Certascan, Romedo, Vallferrera, Montalto and Graus.

The complex is located in a cave 500 metres deep into the mountain of Pic de Guerón. One of its unique features is that it integrates one of the first reversible hydro generation systems, the first of its kind to be commissioned in Spain, located at the Montamara waterfall. During the day, it collects water from the lakes to produce electricity, and at night it operates as a pumping station: it takes the water back to the upper lakes to reuse it as a source of energy.

Its operations are fully automated and remotely controlled from the Endesa control centre in Lleida, where its valves and gates are opened and closed to regulate the water used to move the corresponding turbines.

The three plants at the complex allow for different production variants, which are used depending on the energy to be generated and the water available in each reservoir. During 2020, a total of **260,534 MWh** were produced, equivalent to the consumption of approximately **65,000 homes**.

Layout of the complex



The main cave is home to two turbine-alternator groups at Tavascan Superior (two Pelton-type turbines) and a turbine-alternator group (Francis-type), in addition to a control room.

The water passing through Tavascan Superior comes from Lake Romedo and the water in Tavascan Inferior comes from the Graus reservoir.

The transformers that increase the generation voltage, from 11 kV to 220 kV, as well as the switches (11 kV), are located in the ancillary cave.

Together, the three units produce approximately 150 MW of maximum effective power, which is one-seventh of what a nuclear power plant produces (1,000 MW).

Datos técnicos	Tavascan Inferior	Tavascan Superior	Montamara
Año de puesta en macha	1971	1971	1974
Tipo de central	Embalse	Embalse	Bombeo
Tipo de presa	Gravedad	Gravedad	Gravedad
Capacidad embalse	0,332Hm3	1,303 Hm3	1,303 Hm3
Salto bruto	247,3 m	898,5 m	636,3 m
Cauda máximo	14 m3/s (plena carga)	14 m3/s (plena carga)	16/13 m3/s
Tipo de turbina	1 Francis	2 Pelton	2 Pelton
Potencia nominal	38,5 MVA	70 MVA	55 MVA



**Ajuntament
de Lladorre**

Visits to the plant

Visits to the plant's facilities, which are due to resume this week, are a perfect way to round off a visit to the Tavascan Water Interpretation Centre, where an explanation is provided of the construction history of the complex and the basic concepts of hydroelectric power generation are summarised. One of the new features offered by the Centre this year is the screening of a new informational documentary about this topic. After the explanations at the Centre, the visit continues inside hydroelectric infrastructure, lasting an hour and a half, providing visitors with the experience of understanding and seeing first hand how the force of water itself is used to generate emissions-free energy. Recently, a new exhibition space has been set up, providing information and graphic panels, to offer a better understanding of how the plant operates. These works have been undertaken by the Endesa Foundation.

Endesa and hydroelectric production

Endesa, through its renewables division, Enel Green Power España, manages 54 hydroelectric plants across Catalonia with a total installed capacity of 2,382 MW. These plants have been built since the end of the nineteenth century by companies including Riegos y Fuerzas del Ebro, ENHER (Empresa Nacional Hidroeléctrica del Ribagorzana) or Hidroeléctrica de Cataluña (HEC) which, over the years, would be merged into FECSA (Fuerzas Eléctricas de Cataluña) and, ultimately, Endesa.

Following in the footsteps of its predecessors, Endesa continues to ensure responsible water management, aware of its natural value, in addition to its economic and social value for the region. In addition to generating clean and emission-free energy as we make progress towards a decarbonised society, hydro power plants allow the flow of rivers to be regulated for environmental purposes, for use in irrigation and tap water and for them to be enjoyed as part of recreational and sports activities. Energy and territory coexist and complement one another.

About Enel Green Power España

Endesa currently manages, through EGPE, more than 7,779 MW of installed renewable capacity in Spain, including 4,745 MW of hydropower, 2,422 MW of wind power, 609 MW of solar power and 3 MW of power from other renewable sources.

Enel Green Power, a part of the Enel Group, specialises in the development and management of renewable energies worldwide, with a presence in Europe, America, Asia, Africa and Oceania. Enel Green Power is a global leader in clean energy and has installed capacity of around 50 GW with a generation mix that includes wind, solar, geothermal and hydroelectric power and it is spearheading the integration of innovative technology at its renewable energy plants.