

The history of the “*Electricity bridge*” between Sicily and Calabria *From 1948 to 2011: over 60 years of electricity connection between the island and the mainland*

1948-1955: origins of the project, building the electricity bridge and its entrance into operation

The history of the of the power line that crosses the Strait of Messina began in 1948, with the planning of the electricity connection between the mainland and the major Italian island. Seven years later, in 1955, work was completed for the overhead electricity line with futuristic concepts for those times and the line entered into operation: the “electricity bridge” between Calabria and Sicily was built. The technology for building the power line was so advanced that in 1958 the work won the ANIAI Prize 1957, conferred by the National Association of Italian Engineers and Architects as the best project implemented by Italian Electro-technical engineering between 1951-1956.

Principal characteristics of the overhead electricity line on the Strait of Messina

- Double 220 kV overhead circuit
- Single overhead span of 3,600 meters
- 2 suspension towers 224 meters tall
- Entrance into operation: 1955
- Date of dismissal: 1985

Towers, span, voltage: the original connection in numbers

The electricity line’s first setup included two twin towers, each one 224 meters tall, mounted on an 11 meter tall reinforced concrete base. The maximum height reached by the towers was of 235 meters. On the Sicilian side, the tower

was built on the Capo Peloro beach in Messina, and on the Calabria side, the tower was built on a hill 165 meters above sea level in Santa Trada, in Villa San Giovanni. The span between the two towers was suspended across the sea for the passage of electricity and was of 3,646 meters in length. Initially, the power line had only 4 conductors, of which one as a reserve, and was of 150 thousand Volts. It was only in 1971 that other 2 were installed, doubling the connection and bringing the voltage to 220 thousand Volts.

Principal characteristics of the first cable crossing of the Strait of Messina

- Single circuit overhead/buried 380 kV cable
- Number of cables: 3 plus 1 reserve
- 2 transition stations: *Paraiso and Bolano*
- Power: 1.000 continuing MVA
- Entrance into operation: 1985
- Additional technical data: 2 pumping stations, 8 land-sea connectors, 32 land connectors, 8 terminals

1985: entrance into operation of the new submarine cable, replacing the old power line

In 1985, the new HV 380 thousand Volt submarine connection between Sicily and Calabria entered into operation as a prelude to removing the old power line that was concluded in August 1993 with the demolition

of the original conductors that crossed the Strait of Messina. The new power line transmitted electricity up to 1,000 MW. The former project also included removing the two suspension towers since they were no longer needed for the original purpose they had been built for. This idea, however, was abandoned following the interest expressed by the Municipal Authorities of Messina and by the Superintendent of Messina's Cultural and Environmental Heritage to maintain the Sicilian tower on its site considered as being an example of industrial archaeology characterizing the area of Capo Peloro.

2000: the Messina tower becomes a work of art

In 2000, based on an initiative launched by Messina's Municipal and Port Authorities, on occasion of the Jubilee, the artistic lighting was created on the Sicilian tower: the objective was to highlight the work in all its grandness, relying on the sophisticated technology in lighting. The lighting system was formed by 32 projectors each one 2,000 Watts with metal halide lamps and glass with controlled beams. Their placement at the base of the tower was studied so as to create a lighting effect that would enhance the verticality of the structure, focusing on its beauty, transparency and volume. Since 2002, the Messina tower was transferred to Messina's Municipal Authorities that included it into a broader redevelopment plan for the entire area. Similarly, the tower in Calabria was transferred to a private owner, also owner of a piece of land bordering along the one where it was built, to be included in the area's enhancement project.