

HYBRID TAXI IN VENICE

THE SOUND OF SILENCE



It's hard to think of something more evocative than a fresh summer morning at dawn, cruising along the Grand Canal on one of those superb taxi limousines that cast a spell on tourists with their seductive shapes and luxurious leather and wood finish. The sun glances through the houses, noises on the water and from the docks tell us this city where time seems to stand still is waking up, as the taxi follows the serpentine course of the most enchanting waterway in the world. Gliding in absolute silence, except for the sound of water splashing against the hull, with no exhaust fumes to mask the natural smell of the Canal would make this the perfect scenario. Is this possible? It is. Water taxi builder Cantieri Vizianello have designed a hybrid taxi

Need torque to boldly cross the lagoon towards the airport? The V6 by Hyundai Seasall is there for you. Need to glide silently and 'courteously' in electric mode along Venetian canals? Here is when Huracan Power comes into play. Meet Thunder, the hybrid taxi limousine by Cantieri Vizianello

limousine that combines an electric motor with a Hyundai Seasall, derated to 110kW at 3000 rpm to comply with

the standard governing non-scheduled passenger service. Adding a few tens of electric kW has proved to be enough to completely change the usage profile of a classic water taxi crossing the lagoon, turning it into a boat capable to cruise up to a speed of 15 km/h with no emissions and in perfect silence. By the way, the maximum speed limit on many of the Venetian canals has been progressively reduced to 10 km/h – and sometimes even less. So, the electric mode's speed is more than sufficient, and the same goes for the 14 kWh standard battery pack which allows to cruise up to 90 minutes. A 220 V connector is all you need for charging it up. In case you need more range, a larger capacity 22kWh battery pack is also available. True, the weight will also be different than the

168 kg of the standard version, but the hull is already fit for the installation of additional battery sets - and that's what matters most in the end. Actually, to tell the truth, should you run out of batteries far from a charging station, charging can be done using diesel. Indeed, thanks to the electronic relays and controls developed in cooperation with Huracan, all the captain has to do is setting the required power and the system will automatically switch from electric to diesel propulsion and vice versa. When batteries need charging, the control system adjusts power according to the cruising needs, using only extra power for recharging. There are no special limits, of course, on diesel range: the standard tank is 200 L but larger capacities can be requested to fit the owner's needs.



Luigi Brugnaro, Mayor of the Metropolitan City of Venice: «We are ready to invest on the hybrid repowering of 35 steamers. Then we will proceed with the purchase of 62 diesel-electric vessels, of which 34 are steamers, 25 motorboats and 3 new ferry boats.»

Again interestingly, a choice was made to use a toothed timing belt to connect the engine and the motor, so that they can run in parallel. A configuration that's more than well-suited for the required power, as well as totally noise- and vibration-free and perfect to navigate in a marine environment. A Mercury Bravo 3 stern thruster completes the powerline (even though prototypes had been spotted around with a Volvo Penta) with dual contra-rotating propeller ideal to maximize efficiency and guarantee top performance including in reverse. Speaking of Huracan Power, theirs is the hybrid FH-H powertrain with a 27kW electric motor; batteries are available with a 14 or 23.5 kWh capacity and have a C-rate of 1 for charge and 2 for discharge current.

To keep temperature under control even in the most demanding working cycles, everything - engine included - is liquid cooled. Apart from the Hyundai SeasAll chosen for the Thunder, the FH-H can also be coupled to a diesel Mercury or a Volvo. The automated management system for the engine and motor is premiering globally. It's a system capable to simplify their management as much as possible while also ensuring the right power is delivered at all times during navigation, using extra power to charge batteries. Definitely an excellent result, which, however, comes as no surprise, given that the man behind Huracan is Franco Moro, company owner and former Aprilia Chief Technician in the Moto GP motorcycle racing championship.