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MULTIHULLS TODAY

CATAMARAN RENDEZVOUS
IN THE ABACOS, BAHAMAS

SILENT YACHTS
EXPLORED



ELECTRIC-POWERED
MULTIHULLS SHOCK
THE CRUISING
WORLD

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The Remarkable Silent Yachts Story

Last spring, *Multihulls Today* had a long Zoom interview with Michael Kohler, founder and president of Silent Yachts, the builder of the unique solar powered, electric driven cruising catamarans. Many years in development, the Silent Yachts systems have proven extremely reliable, efficient and eco-friendly.

The company builds seven models from 60 to 120 feet in three factories around the world. In 2022 they are introducing a diesel-electric hybrid design called the VisionF 82. You can visit the Silent Yachts website [here](#).

Multihulls Today: How did the concepts behind Silent Yachts all-electric cruising boats come about?



Michael Kohler: In 2006, we decided to explore the feasibility of designing a cruising catamaran that was all electric and powered only by natural energy sources, solar and wind. We built the boat and equipped it with everything that a cruising family would need to be comfortable in their floating home. We put on an electric stove and oven, a dishwasher and washing machine. We put on a fridge and freezer and a watermaker and then we tested it with both wind generators and solar. Over the course of a voyage from Europe to the Caribbean and back, we learned a lot about actual performance and learned that wind power was superior to solar on only a very few days a month. In the end you always have a schedule, so if the wind is not coming from the right direction, we and most sailors turn on what we call the

“iron genoa” – the engine. In the end, over the course of five years, we measured the time spent sailing and motoring and discovered that it was more favorable to focus on motors instead of sails. Based on what we learned over that time, we began building a new 46 with an all-electric drive train and solar panels to charge the battery banks. We equipped the 46 with all of the electric appliances we put on the first boat. We then tested the 46 for another four years before deciding to put it into production.

MT: *Can you tell us something about the all-electric, solar panel driven power train?*

MK: in fact it is quite simple. We did not have to reinvent the technology. Electric motors , gensets and solar panels are all available on the market. The thing that was unique to Silent Yachts, was the hybrid technology. We are able to charge the batteries mainly with solar but we have a



MT: *I was aboard the Silent 60 in Cannes and was impressed by the control panel and software you use to track battery condition and the performance of the whole integrated system. Is that unique to Silent Yachts?*

MK: Yes, we created our own proprietary software based on our many years of experience and testing. This is in fact the secret thing that makes the whole system work so well. In fact, integrating all of the pieces so they work together well is not so easy. If it was, many others would have done it. The solar panels and batteries, the generator and inverters, the motors and the drive train all have to talk to each other. At least, you need this software to do this in a professional way. For use by regular cruisers, the system needs to be safe, reliable and easy. So, all of the components need to speak a common language and work together. So, this is the software that we developed and what makes Silent Yacht unique.

MT: *Over the many years that you have been developing your solar*

generator as a back up in case we need it. And, also, we can charge the batteries in a marina with the power cords. The unique aspect of this is that we have connected all of the power source and all of the appliances and electronics in a way that works. There are many boats with parallel hybrid systems with both a diesel drive and an electric motor working on the same shaft. Large vessels like cruise ships and war ships, often are diesel-electric hybrids but do not have the diesel connected to the shaft, only the electric motors. This is for noise reasons since it is possible to cut down on vibration and noise. The thing that unique about our drive train is that we combine everything in one system, solar, generator, batteries and electric motors.

based electric power train, have you seen a big increase in the output from solar panels?

MK: No, we have not. Thirteen years ago, when we developed the first 46, solar panel efficiency was at about 20%. Three years later we were at 21%. Until about three years ago, we were at 22% and today we are at 23%.

MT: Batteries on the other hand have seen quite a lot of development and improvement, don't you think?

MK: Yes, this is indeed the case. With solar panels you can say they improve by one percent every five years. But with batteries, it is much quicker. We started using lithium batteries in 2012 in combination with lead-acid batteries. We kept the lead acid because lithium was brand new and we had no data on performance and reliability over the long term. The lithium bank weighed 75 kilos and had 10 kilowatt hours of capacity. The lead acid bank was much larger and weighed one ton and had the same capacity, but was about 12 times heavier than the lithium bank. After one season of hard testing in which we did a lot of things you really

shouldn't do to batteries, like fast charging and deep discharges, trying to get them hot and create an emergency shut-off situation, we found that the lithium batteries worked very well. We removed the lead-acid batteries and installed a second lithium battery bank and these are still the batteries that are on the boat.

MT: Shifting gears, you now have three factories building your boats, one in Turkey, one in Thailand and the home plant in Italy.

MK: Well, we have had to expand to meet the demand for our boats and deliver them in a reasonable time. In Thailand, they can only build two or three boats a year. In Italy, we can build up to 20 boats a year, depending on the size and model. But this is still not enough. We are also working with a large Turkish shipyard that is now building boats exclusively for us because demand



is so great. They are much bigger than our Italian production so we can really ramp up the number of boats and still make reasonable delivery times.

MT: *Your boats are pretty unique in the marketplace. What are your customers like?*

MK: You know, 50% of buyers are first time boat owners and it is interesting that each of them has the same reason for wanting a Silent Yacht. They all say that they have wanted to go on a yacht but they can't sail, did not want to learn to sail and did not want to cope with the hassles of running a sailing boat. On the other hand, for these buyers owning a motorboat was not an option because of noise and fumes and vibrations and also because of the environment. So, motorboats were never an option. So, when they learned about Silent Yacht's propulsion system and the rest that we deliver, they said yes, it is time for me to start boating and cruising.

MT: *Your vision was remarkable to see that the market for these boats was there. Have you seen many sailors buy your boats?*

MK: Yes, some, but less than I would have expected. So, 50% are first

time boat buyers and the other half are evenly mixed between sailors and motorboaters.

MT: *You have a charter operation in Majorca, Spain. How does that fit into your business model?*

MK: Yes, the main reason for that is to have a way to introduce prospective buyers to the Silent Yachts experience. Our goal is to give everybody the opportunity to sail such a yacht, but not just for a few hours but for days and weeks so they can see how it really performs. How does it work? Are we pulling a raft behind with a generator on it? Or, do we have a long power cable running to shore? People want to understand how it works. Are there any restrictions? Do they have to switch off the lights and are they allowed to use appliances? Are they going to be able to flush the toilet because that will cost power? They soon discover that life aboard is exactly the opposite. We use electricity more freely on the boat than we do at home. At home, I always turn out the lights when I leave a room but on the boat I don't because I don't care. Tomorrow the batteries will be full anyway.

MT: *We see that you are initiating a Silent Yachts resort experience.*

Can you tell us more about that?

MK: Yes, the resorts project fits very neatly into our system because there is no reason, especially on islands, to rely on diesel generators. In real life, these noisy generators need barrels of oil and they pollute not only the air but also the soil. In a resort like this, our Silent system can work in the same way it does on our boats, with solar, batteries, a back-up small diesel generator, and an electric generator. The diesel generator will only run after three or four days of terrible overcast and stormy weather. They may have to run the diesel generator a handful of times a year so pollution, noise and inconvenience is minimized. Our goal is to use sustainable energy as much as possible and reduce unsustainable energy to an absolute minimum.

MT: *Your first resort project is in the*

Bahamas. Are there others in the works?

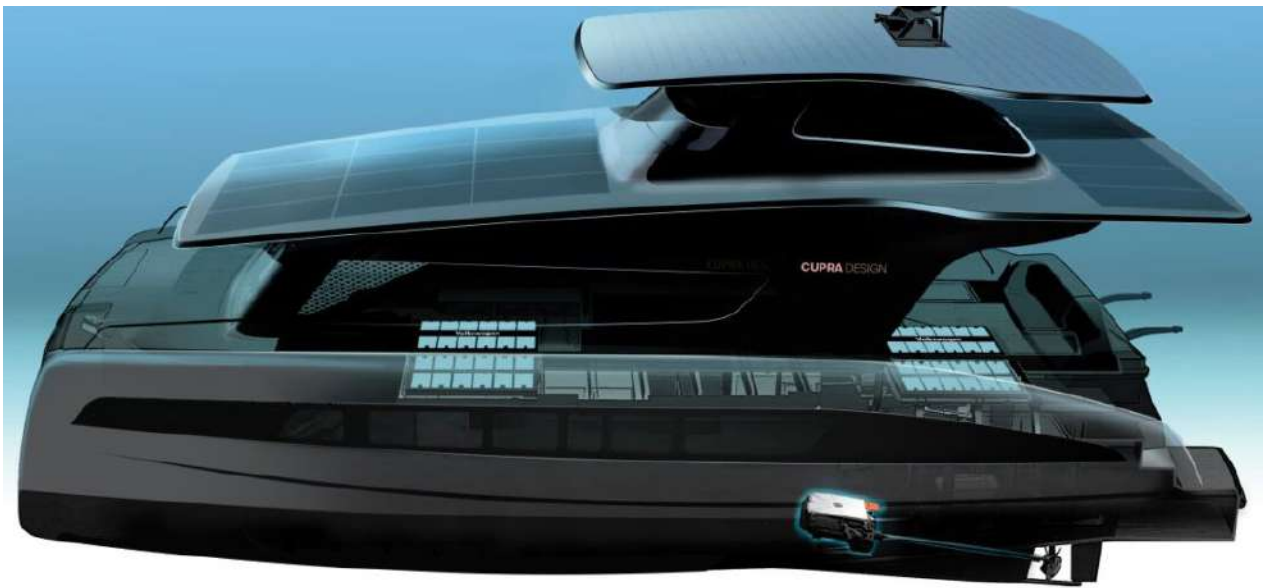
MK: Yes, the Bahamas project is already under construction. We also have projects in Central America and Greece and there are several more in discussion, including a large project in Fiji.

MT: *You are an international company. What are your plans for North America?*

MK: North America is a very important region for Silent Yachts. We have a wonderful distributor, Ed Sacks, who is 88 years old and is doing a terrific job and selling a lot of boats. This spring we delivered a new Silent 60 to the U.S. and ran numerous sea trials for prospective buyers and the marine press. Ed is doing a great job.

MT: Many thanks, Michael. We look forward to seeing you at the next boat show.





SILENT VISION F 82

SILENT-YACHTS, the creative Austrian company, just announced that it's building a new hybrid 82-foot cat with VisionF Yachts in Turkey. The new SILENT VisionF 82 will have a hybrid drivetrain; a fully electric model will also be available.

The new cat will be a bit longer than the SILENT 80, but will carry less beam. It also will have more room on the foredeck, with a sunken

standard layout calls for a large master suite and three guest cabins, all with en suite heads, in the two hulls; one of the cabins can be converted easily into an on-board office.

The extended flybridge has a large solar array like other SILENT yachts to provide electrical energy for the 160kWh lithium-ion battery bank; that's enough to run all the house appliances at anchor.

The new drivetrain comes with three modes: electric, hybrid, and power. In the electric mode, you can have sustainable power at low speeds, for transiting a harbor, for example, or waiting for a bridge opening.

In the hybrid mode, the system will automatically select the electric motor, the diesel engine, or both, depending on the speed and battery condition. In the power mode, both the electric motor and the diesel engine will be engaged to boost acceleration and top speed.

“The SILENT VisionF 82 is a fantastic yacht that will combine the best of both worlds,” said Michael Köhler, the company’s founder and CEO.

“The aim of our collaboration with VisionF Yachts is to share our expertise and know-how in order to support other manufacturers. Tesla did something similar by opening up their patents and making the technology available to everyone.”

VisionF makes yachts from 80 to 175 feet. [Read more](#)