

WIND POWER - NEXT LEVEL



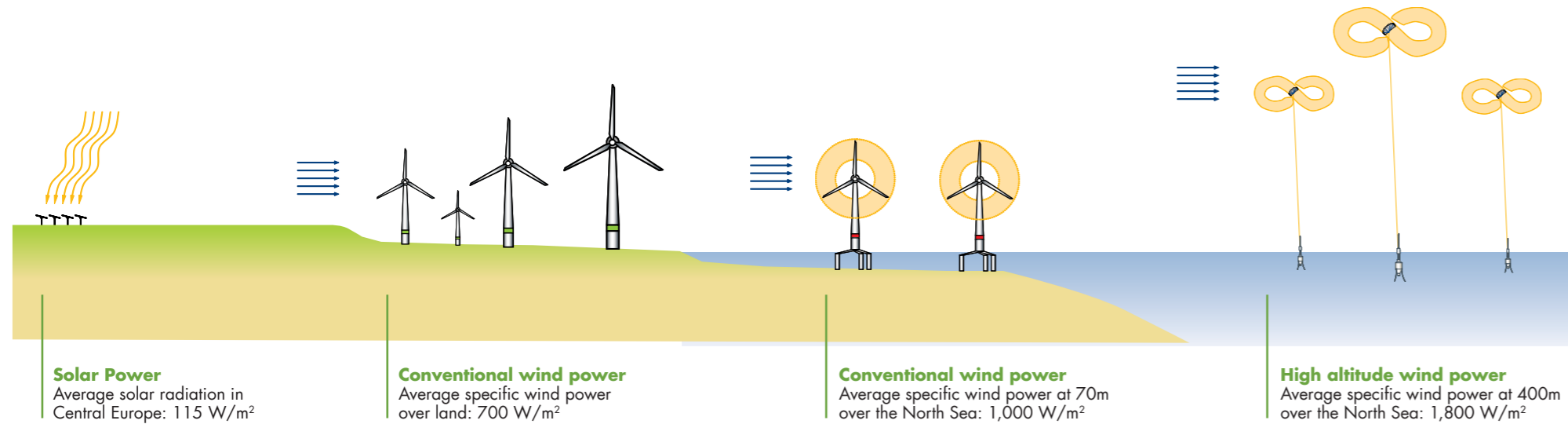
OUR WORLD NEEDS MORE (WIND) ENERGY

Our world needs more energy. Global energy demand will double in the next 20 years.

Our current energy sources, such as oil, coal, gas and even uranium, are simply not enough to satisfy this need.

The result of this will be rising energy prices and a gap in the planned supply of energy, which will have to be closed with the help of renewable sources.

Here is where the use of wind energy is regarded as one of the most attractive technologies. After all, we have a nearly unlimited supply of wind energy almost everywhere in the world that is relatively inexpensive to exploit.



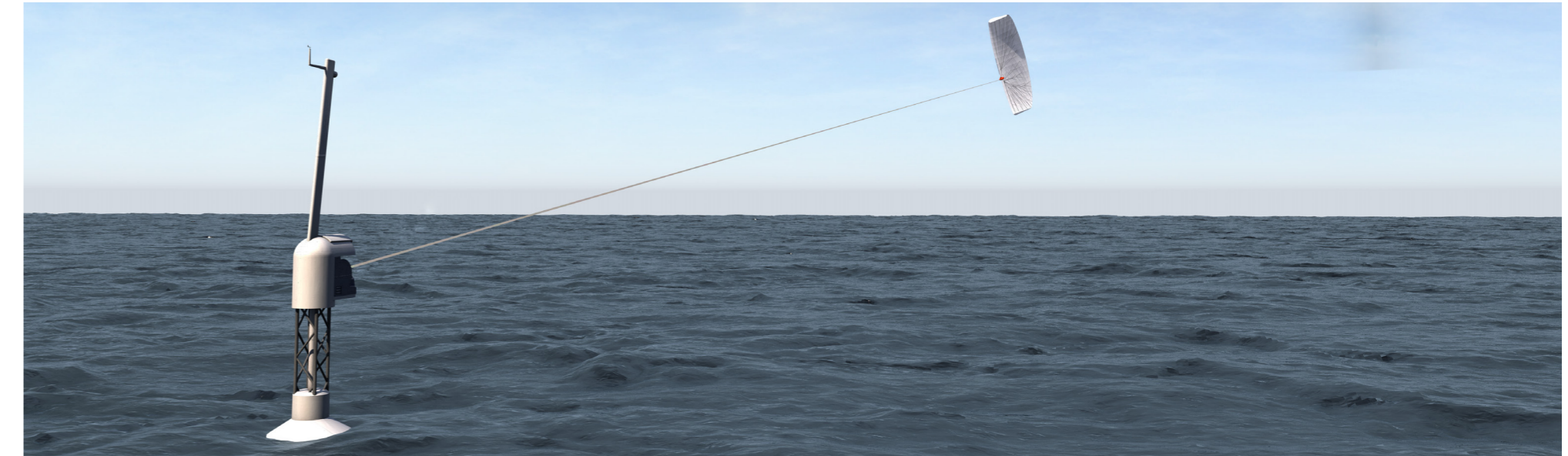
SKYSAILS POWER – THE NEXT GENERATION OF WIND POWER

"There is enough energy in high altitude wind to power civilization 100 times over."

Professor Ken Caldeira - Department of Global Ecology, Carnegie Institution for Science, Stanford University

Too often there is not enough land available to construct wind power generation facilities to accommodate the rising demand, particularly in those regions with the greatest energy needs. Even offshore – on the seas – space is limited. This is because it is not cost effective to install conventional wind turbines at depths beyond about 40 meters.

Therefore, and if we are ever to meet future energy needs, a new generation of wind power systems must be developed that can produce more energy on whatever space is available and/or can be installed in those areas that have not previously been usable. These include for example offshore regions that are up to several hundred meters deep.



It's a simple fact: Winds at high altitudes provide abundantly more energy than winds at surface level.

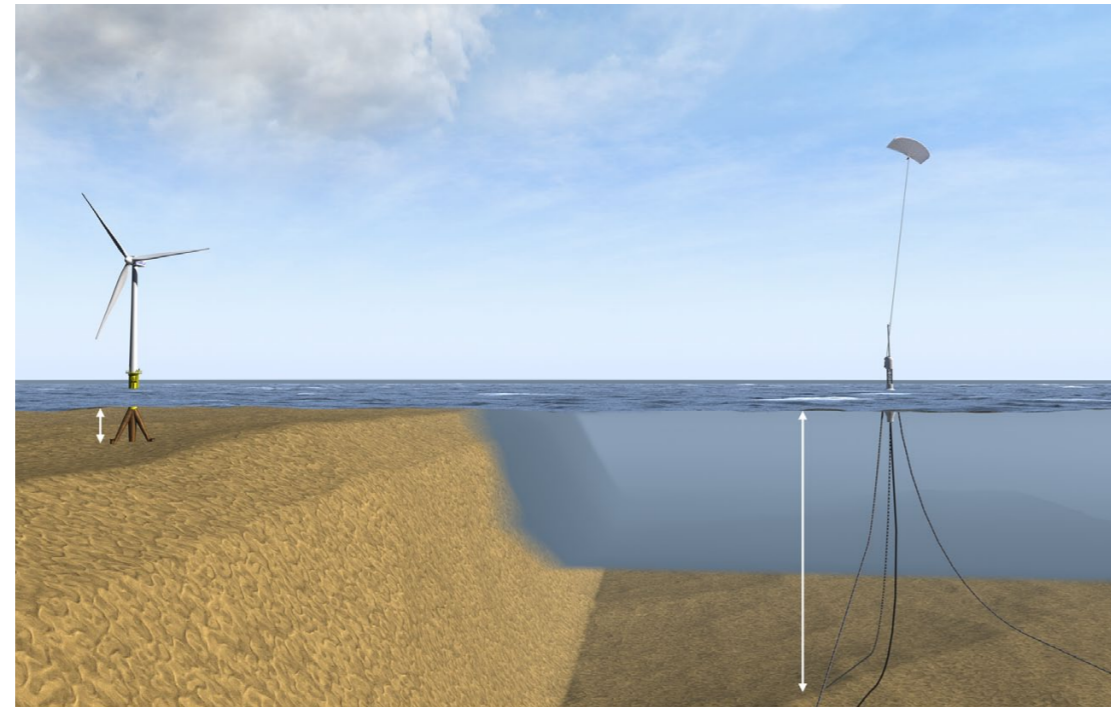
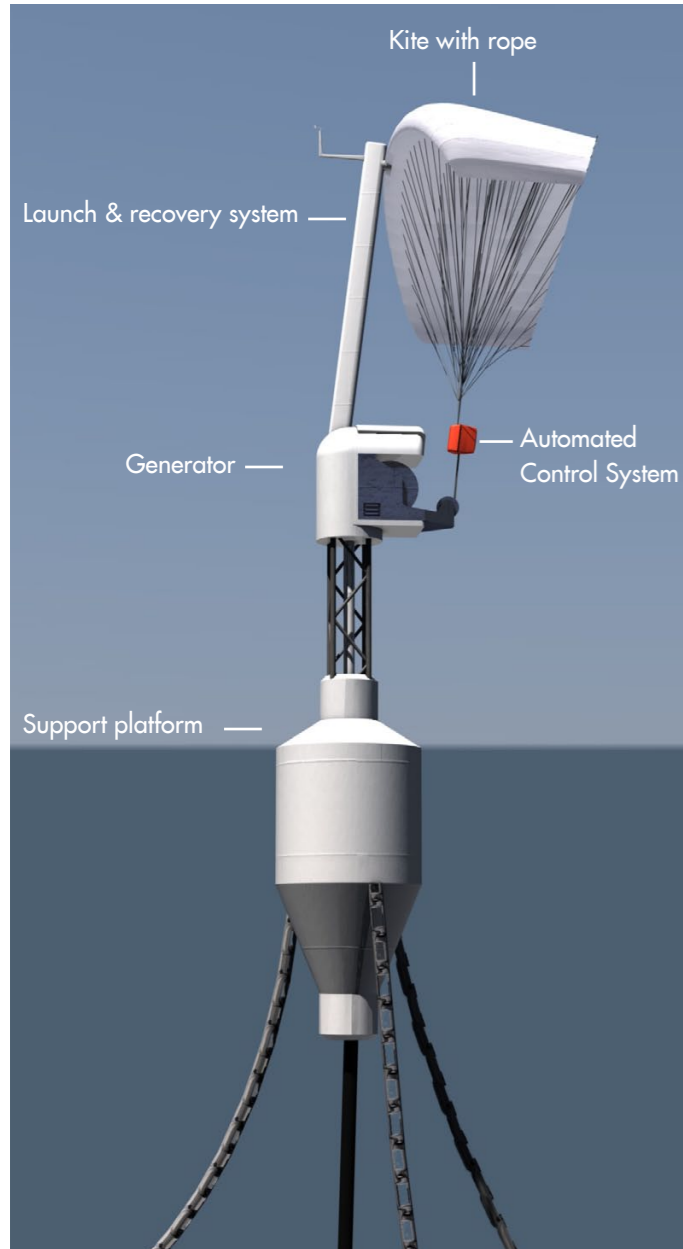
The use of energy-rich high-altitude winds represents the next generation of wind power.

Large and fully automated kites are the key technology through which energy can be generated from high-altitude winds.

Building on the proven SkySails technology, SkySails Power is developing wind power systems that for the first time can be used to tap into the enormous energy potential of high-altitude winds on an industrial scale, so-called high-altitude wind energy systems.



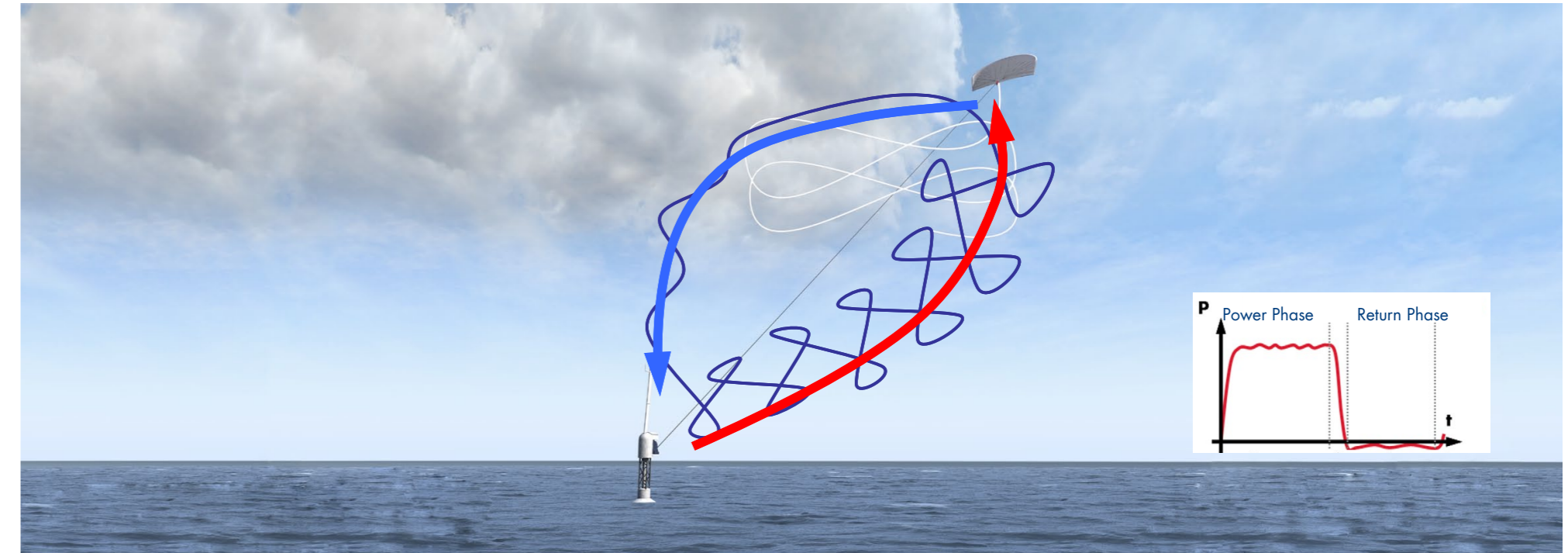
SkySails wind propulsion for cargo ships



A COMPELLING TECHNOLOGY

The worldwide patented SkySails Power system consists of five main components: a free flying kite with rope, a launch and recovery system, an automated control system, a generator for producing electrical power and a support platform.

The SkySails Power system is operated at altitudes of between 200 and 800 meters. It can be installed on both conventional offshore foundations and on floating platforms. That way the SkySails Power system can also be secured quickly and easily at water depths of down to 700 meters using traditional anchoring technologies and readily available offshore support vessels.



Energy is generated as the kite pulls the rope from a drum that is connected to an electric power generator. This is the power phase in which electrical power is produced.

The return phase begins once the rope has been extended to its maximum length. The kite is then automatically flown into a position where its pulling force is very low. This is when the generator acts as a motor and reels in the rope until its extended length is short enough for the next energy-generation phase to begin. This process consumes only a fraction of the power generated during the power phase. The residual excess energy is fed into the electrical power grid.

The SkySails Power system can also be utilized onshore. Mobile units are also available that can be used as stand-alone solutions to provide electricity and/or fresh water through seawater desalination.





MAJOR BENEFITS

Cheap wind power

The fact that the SkySails Power system uses high-altitude winds means that it can generate more energy than comparable offshore wind turbine systems. This in turn makes generating wind power cheaper, which for operators translates into much greater profitability.

Virtually unlimited space availability

The SkySails Power system floats. This means that it can also be employed in places where extremely deep water would make it uneconomical to install conventional offshore wind turbines. This allows the many high-wind areas, particularly in Europe, North America or for example Japan, to be exploited, which are inaccessible to conventional wind turbine systems. This also includes hurricane and typhoon regions where conventional systems cannot be installed since such extreme weather systems would simply destroy them. The kite of the SkySails Power system, on the other hand, can be retracted and survive hurricanes and typhoons.

Easy maintenance

SkySails Power system's compact and modular construction makes servicing and maintaining the system much simpler. When services are required, the entire system can be exchanged with a replacement system and brought to a nearby port for maintenance or repairs. This ability to replace components or entire systems reduces downtimes to an absolute minimum.

Rapid availability

The SkySails Power system's small size makes mass production easy. This kind of availability combined with the ease and speed of installing the SkySails Power system, means that major wind farms can be constructed in a very short period of time. Wind farm operators benefit from a lower capital commitment due to the shortened construction phase.



PROVEN TECHNOLOGY BASE

SkySails Power technology is based on the acclaimed SkySails propulsion system for ships.

This worldwide patented towing kite propulsion system for cargo ships has been proven and tested in the tough day-to-day use on board seagoing vessels. In good wind conditions, it can replace up to 2 megawatts of power from the main engine, which allows ships to save up to 10 tons of oil a day.

SkySails is the only company in the world that now offers industrial products for using those particularly abundant high-altitude winds. Its customers include respected shipping companies and major international corporations.

SkySails GmbH promotes and maintains longstanding development partnerships with leading suppliers, such as with DSM Dyneema and Gleistein Ropes for producing the ropes and NorthSails NZ for manufacturing the towing kites.

SkySails Power draws on the many years of experience that SkySails GmbH has acquired in the daily use of towing kites on the high seas. SkySails Power also benefits from the company's broad and global patent portfolio that includes some 300 patents issued or applied for, in 16 patent families.

SkySails enjoys a level of expertise in exploiting high-altitude winds that is unequalled in the world.



ENERGIZE YOUR PROJECTS

SkySails Power's planned product program starts with systems having a capacity of from 1 to 3.5 megawatts for stationary use, and mobile systems of from 250 kilowatts to 1 megawatt.

Talk to us today about the projects you are planning. We look forward to helping you make them a success:

Stephan Wrage
CEO

SkySails GmbH
Phone: +49 40 702 99-0
E-mail: stephan.wrage@skysails.de

Stephan Brabeck
CTO

SkySails GmbH
Phone: +49 40 702 99-0
E-mail: stephan.brabeck@skysails.de





SkySails GmbH

Veritaskai 3

21079 Hamburg - Germany

Phone: +49 40 702 99-0

Fax: +49 40 702 99 - 333

E-mail: contact@skysails.com

www.skysails-power.com