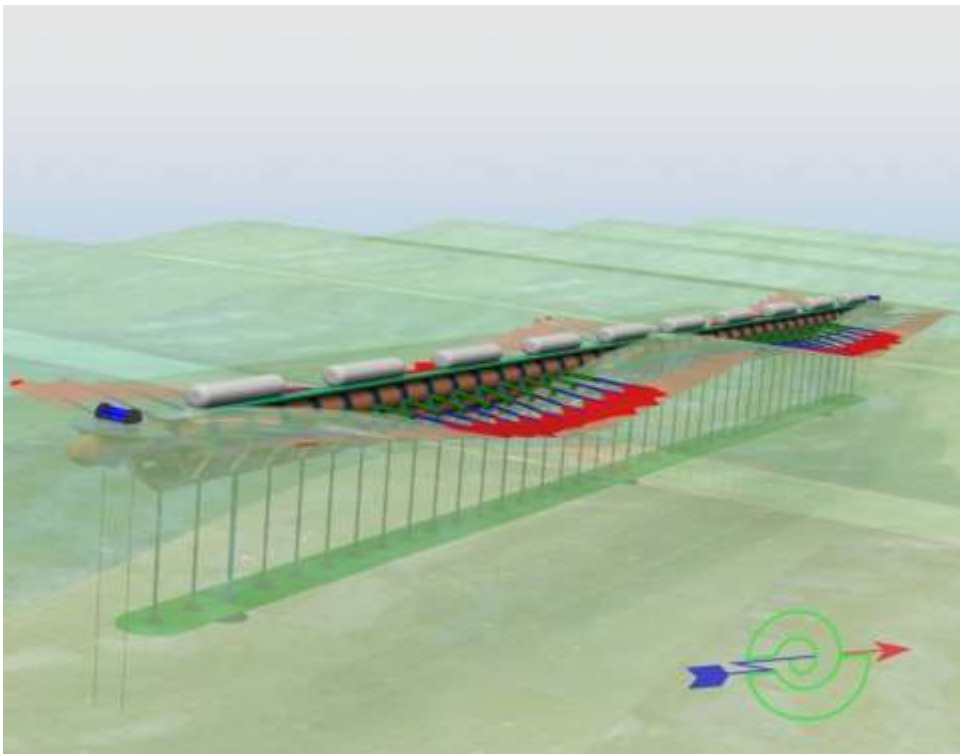


"Wave desalination and power plants designed by Ovsiankin"

Wave desalination station Ovsyankin's designs Global Climate Change, Earth Population Growth, systematic destruction and pollution of the environment lead to significant shortage of fresh water in most countries of the world, which confirmed by UN authoritative assessments and reports. Fresh water becomes the main strategic resource for survival.

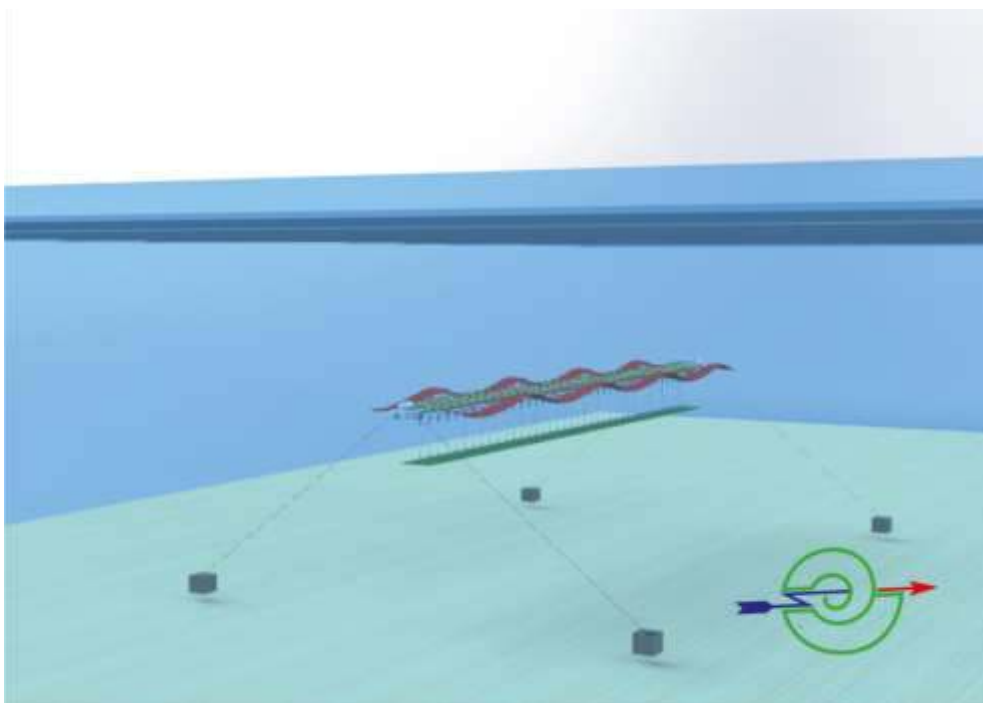


The increasing shortage of fresh water can only be compensated for due to desalination of sea water in industrial volumes. But, existing desalination technologies require high energy consumption, up to 10kW per 1m³ of water. Production of one kilowatt-hour of electricity from hydrocarbon feedstock leads to emissions of 0.5 kg of CO₂ into the atmosphere and respectively, up to 5kg of CO₂ per 1m³ of fresh water produced. That's why increasing the production of fresh water by traditional methods desalination, significantly increases CO₂ emissions into the atmosphere and, as consequently, it accelerates negative climatic changes.

Wave desalination stations designed by Ovsyankin, developed by the Research and Production Company Krok-1, work for account of environmentally friendly,

renewable energy of sea waves and currents and will allow you to receive fresh water in sufficient quantities, without providing with this negative impact on the environment. Wave stations are an anchored floating vehicle capable of in case of storms, dive under water to the required depth, into the zone of action of waves of the calculated range and continue to produce freshwater or electricity.

One module Wave desalination station, capacity which for the ocean area is up to 1000 m³ per hour of fresh water, will allow avoiding CO₂ emissions in the amount of more than 30,000 tons per year.



The basis of the project "Wave desalination plants Ovsyankin" contains innovative solutions patented in Ukraine, USA, EU, Russia, Canada and Australia.

The efficiency of a wave station is ensured by its main properties such as:

- the presence of a flexible self-adapting energy-absorbing element, which changes its shape under the influence of each incident wave, from a flat longitudinal body to a spatial spiral;
- the design of the station is permeable to waves and has the ability diving to a depth, into the zone of action of the waves of the calculated parameters;

- the main structural elements of the station are made of composite polymer materials;
- the presence of a hydraulic system that provides the supply of marine pressurized water to desalination sections or to a water turbine.

The wave station can be adapted to any sea area and oceans in a wide range of wave parameters.

Wave station models have passed multiple tests in the wave station the basin of the Institute of Hydromechanics of the National Academy of Sciences of Ukraine, a pilot sample - in natural conditions of the Black Sea.



Participated in the works :

Chief Contractor: Scientific and Production Company Krok-1.

Co-executors: Kiev ship repair - shipbuilding plant., Kiev National Aviation University, Institute of Hydromechanics of the National Academy of Sciences of Ukraine, Bosh Rexroth, Esta LTD, NATIONAL UNIVERSITY SHIPBUILDING NAMES OF ADMIRAL MAKAROV (Nikolaev), Research Center of the Ministry of Defense of Ukraine "State Oceanarium". The results of the work were reflected in scientific articles, methods for calculating parameters and test reports.

A wave station can generate:

- for oceans up to 1000 m³ of fresh water per hour and up to 5 MW per hour electricity;
- for inland seas up to 300 m³ of fresh water per hour and up to 1 MW per hour of electricity.

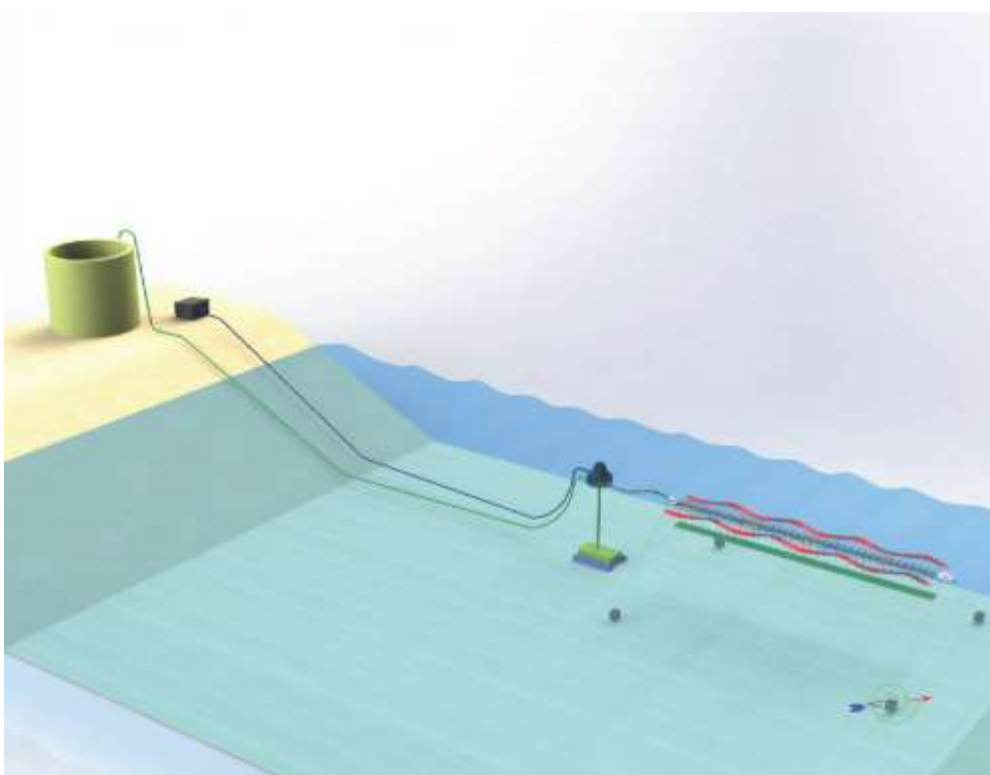
Specific capital investments per unit of installed capacity

- m³ h - 15,000 - 20,000 €;
- kWh - 2500 - 3500 €.

The prime cost of one cubic meter (1 m³) of fresh water is 0.2-0.3 €, electricity for 1 kWh is 0.03-0.04 €.

The average annual coefficient of installed capacity utilization is 0.6 - 0.8;

The return on investment directly depends on the tariffs for the generated resources (fresh water, electricity).



To implement the obligations on interaction with the UN, in order to achieve the goals in the field of Sustainable Development 2030, the technology "Wave desalination and power plants of the Ovsyankin design" is being commercialized. Today the project is at the TRL - 7 stage.

Commercialization program:

- Formation of a consortium of project participants;
- Expert testing of the 1:10 Wave station model in the wave pool of a certified

research center;

- Creation and development of intellectual property (IP) to monetize the value of intangible assets;
- Construction and testing of a full-scale pilot model of the wave station on the PLOCAN Ocean platform;
- Creation in the structure of the consortium of serial production of wave stations;
- Formation of an action strategy for the construction of wave stations in different countries and regions on the basis of interaction with the UN and other international organizations.

The launch of the massive construction of wave desalination plants in different countries and regions of the world will be a direct implementation of the UN SDG 2030 Programs, will help improve water and food security, promote the development of agriculture, living standards and gender equality in society.

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