

CHANGI OCEAN TECH Co., Ltd. shall lead the expansion of the marine energy & marine plant industries of Korea into the world stage.

# Marine Energy Technology

Cherish the Power of Water

**CHANGI OCEAN  
TECH CO., LTD.**



Floating Wave Power Generation Plant

Floating Wind Power Generation Plant



Principal technology company

Cherish the Power of Water

**CHANGI OCEAN  
TECH CO., LTD.**



[www.ocean-tech.co.kr](http://www.ocean-tech.co.kr)

Opening of new era through marine energy. CHANGI is striving towards the re-establishment of the leading status of the ship-building and marine plant industry of Korea in the world.

# Floating Wave Power Generation

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## Circular & Cylindrical Turbine of technically advance country

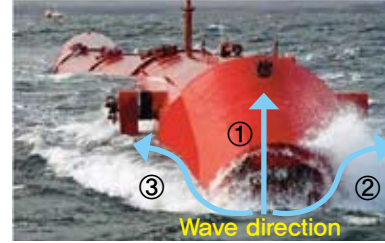
- Wave energy conversion rate in the range of 0% ~ 66%



Australia – CETO (0%)



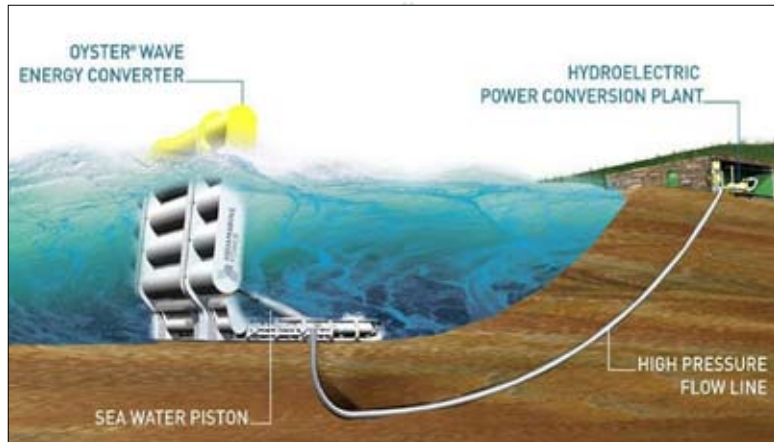
USA – Aqua Buoy (0%)



United Kingdom – Pelamis (0%)



Scotland – Oyster800 (0~66%)



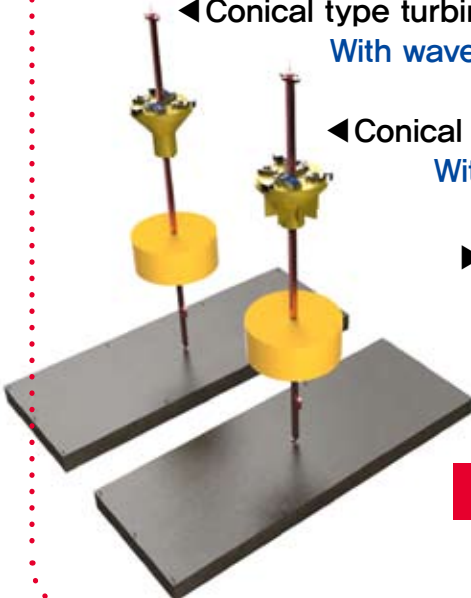
- ▶ Power transmission format : **Seawater Pumping System**
- ▶ **90% reduction in the output conversion rate** due to the resistance of the flux liney the resistance of the flow line

## Conical & Conical Fin Type Turbine of CHANGI OCEAN TECH Co., Ltd.

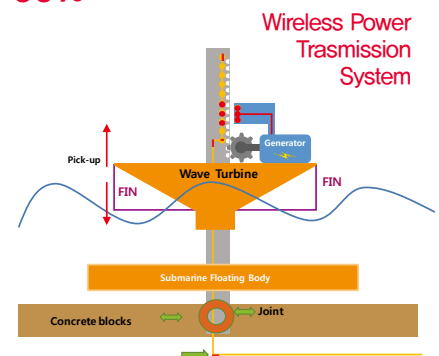
◀ Conical type turbine: 2010~2013  
 With wave energy conversion rate of **27%**

◀ Conical fin type turbine, 2013  
 With wave energy conversion rate of **66%**

- ▶ Power transmission Type : **Wireless Power Transmission System with no resistance**



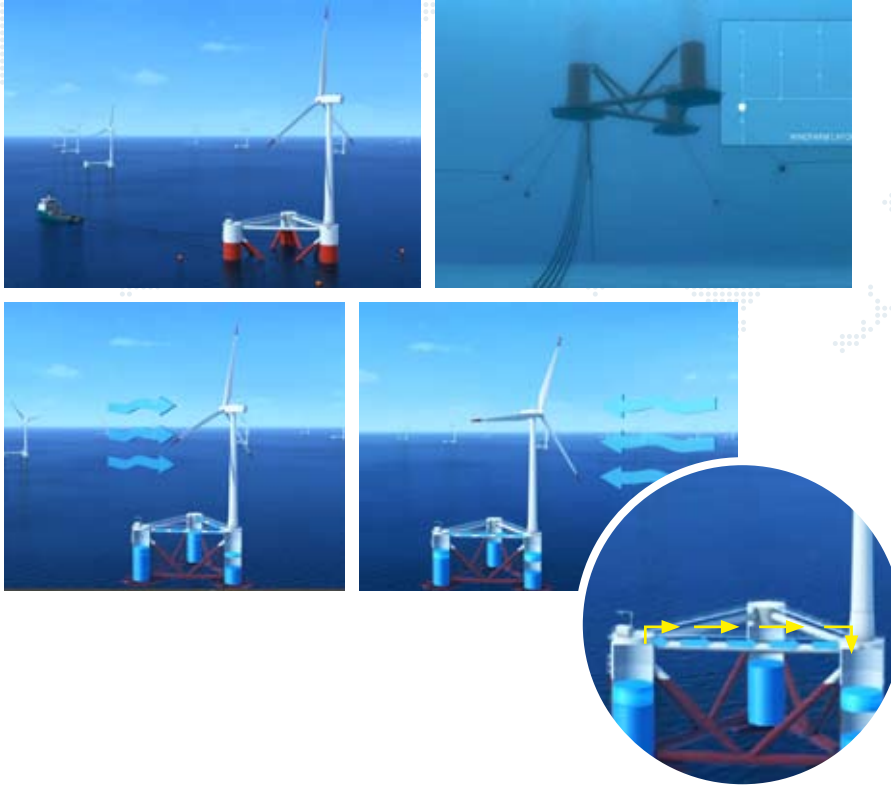
**Output conversion rate : 85~93%**



# Floating Wind Power Generation

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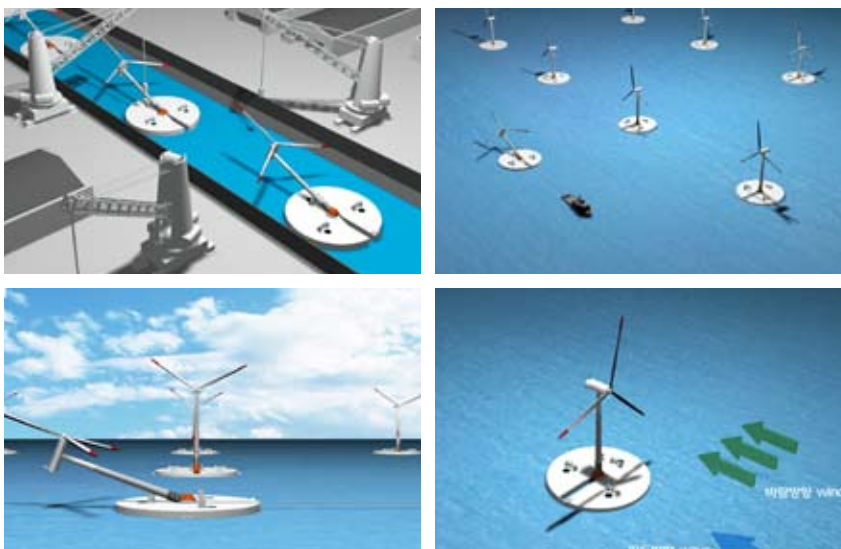
## Seawater-transfer chamber type horizontal level control system of technologically leading countries of Japan and Portugal (2013)



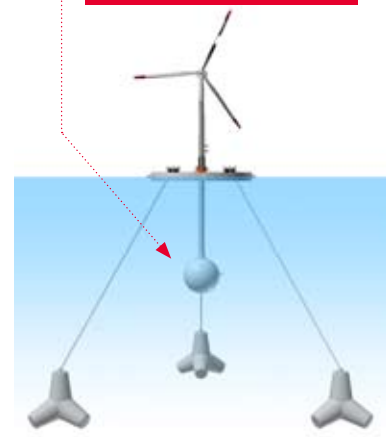
- Achieving constant horizontal leveling in real time is not possible due to the time taken for the transfer of seawater between the chambers
- Increase of the project cost by 2.5~3 folds in comparison to fixated marine type
- Not able to apply plant stabilization system at the time of hurricane
- Difficulties in maintenance of the plant (needs to use extremely large barge)
- Horizontal level control system by transferring seawater into conical type chamber in accordance with the direction of the wind. Difficulties in quickly coping with the consistently changing direction of the wind

## Marine wind power generation plant with 'Ball-structured gravitational type horizontal level control system' of CHANGI OCEAN TECH Co., Ltd. 2016

- Real-time constant horizontal leveling is possible
- Can apply plant stabilization system at the time of hurricane
- Increase in the project cost by 1.5~2 folds in comparison to the fixated marine type
- Very easy to maintain (can be provided with small barge)



Constant horizontal level control system through use of gravity



Korea, the center of global ship-building industry,  
Leading the marine energy & marine plant industry  
with core leading technology for low-carbon green growth



Company leading the future marine energy technology

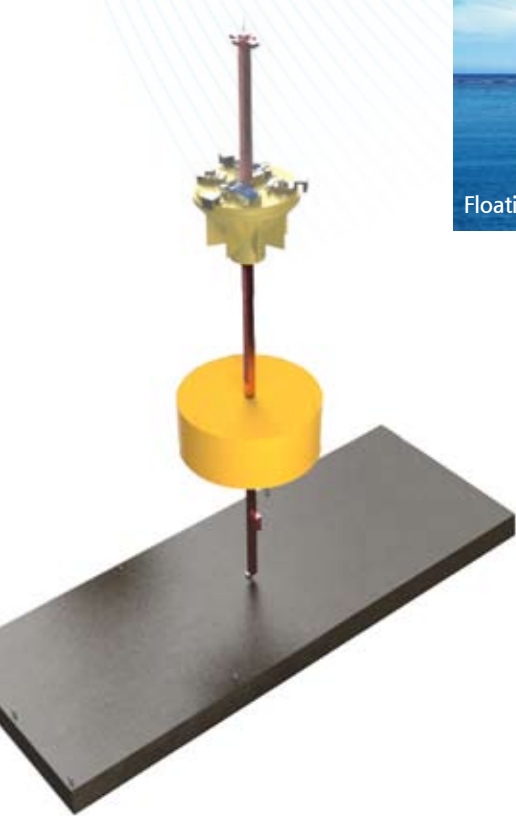
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