## Offshore Ocean Energy System

proposed and presented by



#### **"SYSTEM"** For Synergistic Use of Multiple Sources of Ocean Energy



Float Inc Offshore Ocean Energy System accommodated on the Pneumatically Stabilized Platform (PSP)

- Offshore Wind Energy
- Offshore Wave Energy
- Offshore Ocean Current Energy
- Potential Energy Storage (PES)
- Ancillary Applications:
  - Aquaculture activities
  - Desalination plant
  - LNG Liquefaction & Regasification Facilities
  - Offshore Ro-Ro and/or Container Port



#### All on the same Platform - PSP FLOAT INCORPORATE

## **Pneumatically Stabilized Platform (PSP)**



- A monolithic floating platform, preferably of very large size
- Up to ~50% Buoyancy in Mobile Air
- Large Variable Deck Load / Moment Capacity
- Modular build; reconfigurable
- Pre-Stressed Reinforced concrete construction
- Long life with minimal hull maintenance & no out-ofservice time



## **Offshore Wind Energy**

- Structural stability that allows any standard Offshore Wind Turbine to be easily deployed.
  - Wind Turbine foundations same as onshore
- Access, maintenance and operation similar to land
- Transformer station in-the-dry
- Storage of spare and repair parts
- No new vessels needed to transport personnel or equipment directly from ports to platform





## **Offshore Wave Energy**



#### "Rho-Cee WEC" ( $\rho$ C) or

- "The Impedance –Matched Terminator"
- Constructed in reinforced concrete
- All equipment in air; none in water
- <u>All equipment accessible for</u> <u>maintenance by personnel on</u> <u>foot</u>



## **Offshore Ocean Current Energy**



US Department of Energy

http://www1.eere.energy.gov/windandhydro/hydrokinetic/techTutorial.aspx

- Ocean Current devices structurally integrated into PSP
- All equipment raised to deck level for maintenance
- Reduced O&M costs



### How Does a PSP Store Energy? As compressed air in its Internal Spaces/Volumes



- It's already there !
- Roots blowers with motor generators
- Typically 10MW-hr/He (4MW-hr/Acre) @ 3 Atm.-staged



#### **Extending the Wind Turbine farm**

#### provided by the Float Inc Offshore Ocean Energy System

"span": 1040m; WT spacing: 200m (extendable-leeward); rotor diameter: 90m; ρC length: 1200m WT rating: 3MW; ρC rating: 30kW/m; 200m dock; struts: 200m x 3m concrete culvert pipe, w/rails





# Thank you for your kind attention <u>www.floatinc.com</u>

