

Regional Panel – PAMEC 2024



PAMEC 2024

Pan American Marine Energy Conference
Barranquilla, Colombia Jan 22-24, 2024



SISSTEM

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SISSTEM is funded by the
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Diego Acevedo

BSc. Mechanical and Engineering – University of Florida (2003)

MSc. Sustainable Energy – TU Delft (2016)

PhD candidate – SISSTEM – KU Leuven Chemical Engineering
(Sustainable uses for Reverse Osmosis Brine)

Parallel research/ Areas of Interest:

- Industrial Ecology
- Fresh water production systems
- Wastewater treatment systems
- Ocean Energy
- Tropical food production systems

"People protect what they love, they love what they understand and they understand what they are taught."

- Jacques Yves Cousteau



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Small Islands

- 💧 Environment
- 💧 Vulnerability of Ecosystem
- 💧 Education
- 💧 Employment and economy
- 💧 Scale and Isolation
- 💧 Population density and immigration
- 💧 Tourism
- 💧 Water
- 💧 Energy
- 💧 Waste
- 💧 Ownership and responsibility
- 💧 History, Politics and Autonomy



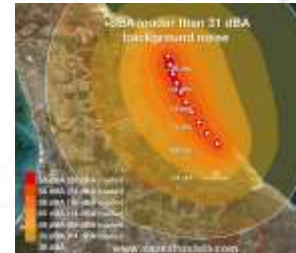
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Island Energy

- Small Island Developing States (SIDS) have some of the electricity prices in the world (mainly HFO and Diesel based)
- Petroleum products still account for over 90% of the Caribbean's energy supply
- Variable sustainable energy in islands without 'baseload' renewable sources is difficult to implement, no examples of non-subsidized examples with penetrations over 50% of variable renewables.



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PROJECT PARTNERS



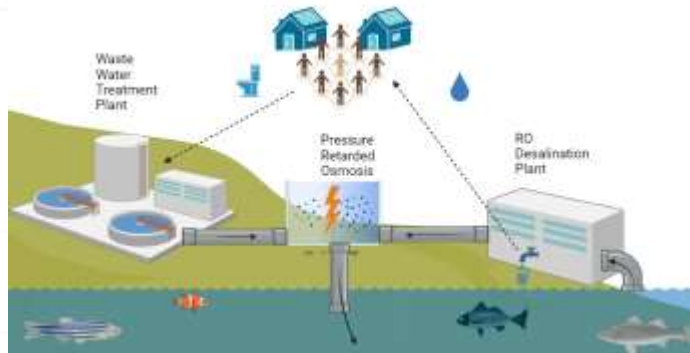
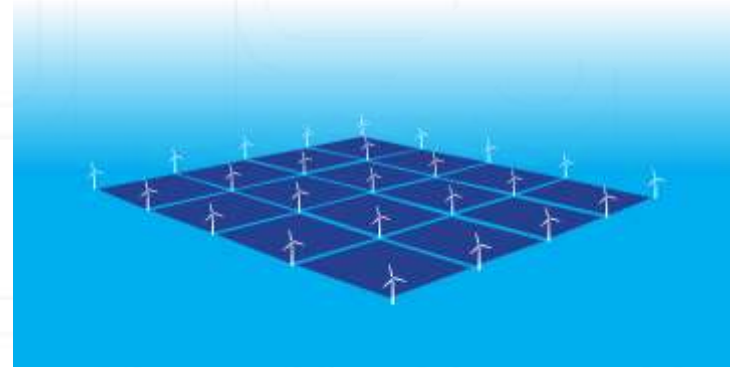
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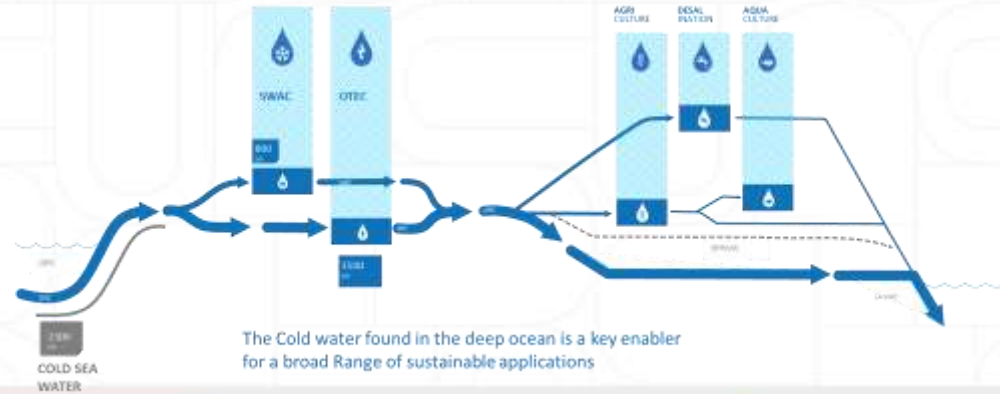
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Schematic of RO-WWTP PRO connection



The Cold water found in the deep ocean is a key enabler for a broad Range of sustainable applications



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Current status

- 💧 Offshore-wind, OTEC, Seawater Cooling main technologies considered at policy level throughout the region
- 💧 Dutch independent Islands (Aruba, Bonaire, Curacao) - Government policy drafted, OTEC/SWAC seen as strategic importance but no support mechanisms (yet)
- 💧 CARICOM – CCREE (<https://www.ccreee.org/>) with ambition to harmonize policy and regulation
- 💧 Bermuda – implemented a “technology sandbox” (→ Seabased wave park 40MW?)
- 💧 Barbados - IDB supported Ocean energy report – OTEC + offshore wind
- 💧 Cayman - OTEC as part of Utilities IRP



Current funding options

💧 Dutch Islands (Aruba, Bonaire, Curacao, Saba, St Eustatius, St Maarten)

DEI, SDE++, other Dutch based subsidies available to finance innovation (specific to the unprofitable margin of new technologies)

Curacao currently planning to build a large offshore wind/hydrogen pilot (Fugro finished surveys in 2023)

💧 EU-OCTA (Overseas countries and territories association)

Horizon funds, RESEMBID - Resilience, Sustainable Energy and Marine Biodiversity Programme, etc.

Pro tip: - put the word hydrogen or lithium on proposals to ensure success



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