

PROJECT SHOWPLACE TEXAS GULF COAST

Storing **H**ydrogen from **O**ffshore **W**ind **P**ower
for **L**oad-balancing and **C**arbon **E**limination

- An Industry-Government-Public-
Academia Collaborative Demonstration
Project



CENTER FOR  HOUSTON'S FUTURE

Project SHOWPLACE

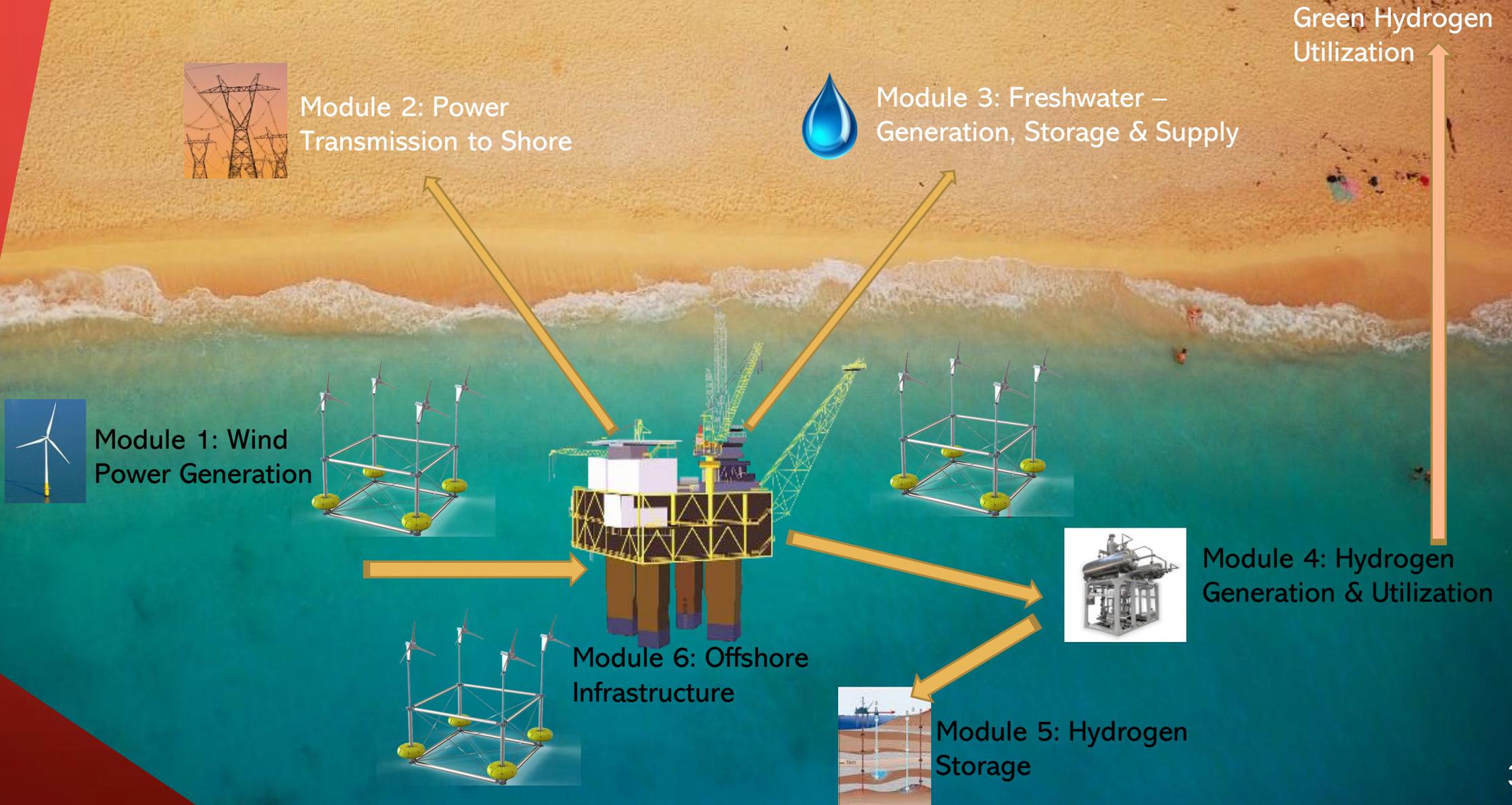
OBJECTIVE:
ESTABLISH COMMERCIAL
FEASIBILITY OF SYNERGIES
BETWEEN OFFSHORE WIND
POWER & HYDROGEN
GENERATION & STORAGE

KEY CONCEPT ELEMENTS

- ❑ Re-purpose existing offshore Gulf of Mexico oil and gas platforms and pipelines
- ❑ Install floating or fixed (to platform) wind turbines
- ❑ Transport power to onshore electric grid within capacity constraints
- ❑ Utilize excess wind power to generate freshwater via desalination
- ❑ Generate hydrogen from freshwater via electrolysis
- ❑ Store hydrogen in subsurface geological reservoirs
- ❑ Transport freshwater to shore or reuse later for subsequent hydrogen production
- ❑ Transport hydrogen to shore for use as industrial feedstock or for power generation
- ❑ Comprehensive roadmap that also addresses
 - ❑ Ocean observing systems
 - ❑ Hydrogen safety
 - ❑ STEM curriculum and workforce retraining programs
 - ❑ Community engagement, economic growth, and job creation opportunities
 - ❑ Regulatory requirements

Project SHOWPLACE – 6 Key Technical Modules

Can Be Funded and Advanced in Parallel



Project SHOWPLACE Concept Workshop

THE POTENTIAL OF PROJECT SHOWPLACE

- ❑ Capital outlay reduction through reuse of installed infrastructure
- ❑ Long term energy storage via hydrogen and freshwater enables utilization of all available windpower (zero curtailment goal)
- ❑ Active hydrogen economy in Texas Gulf Coast
- ❑ Multiple revenue streams with potential for revenue optimization
- ❑ Individually technologies generally proven; key challenge is cost-effective combination of these proven technologies offshore
- ❑ Scalable with accompanying cost reductions
- ❑ Skilled energy industry workforce in Texas Gulf Coast
- ❑ Leverage learnings from multiple similar projects globally

Join Our Team and Shape the Future of Texas Energy!

KEY COLLABORATORS AND ADVISERS

Current Collaborators

- University of Houston
- Texas General Land Office
- Center for Houston's Future
- American Bureau of Shipping
- Strategic Ventures Group
- Texas A&M University
- Siemens – digitalization, wind turbines, and power systems
- Lummus Consultants
- Technip FMC

CONTACT US

FOR MORE INFORMATION

Dr. Ram Seetharam

Energy Center Officer, UH Energy

rvseetharam@uh.edu

832-538-2667

Prof. Ramanan Krishnamoorti

Chief Energy Officer, UH

ramanan@uh.edu

713-743-4307

•