

# **ALTERNATIVES TO DECOMMISSIONING OFFSHORE INFRASTRUCTURE**

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# AGENDA

- Introduction
- Criteria
- Standard Decommissioning Process
- Artificial reefs
- Wind energy
- Wave energy
- Tourism
- Fisheries
- Assessment
- Conclusion
- More on Artificial Reefing
- Questions

# INTRODUCTION

- 1,000 decommissioning projects in Gulf of Mexico in next 10 years
- \$4+ million per project
- Estimated \$150 billion by 2040
- Alternatives?

# CRITERIA

- Economics
- Feasibility
- Environmental friendliness

# STANDARD DECOMMISSIONING PROCESS

## Step 1: Obtain permits and meet legal requirements

- Cleaning, equipment removal, structure reinforcement

## Step 2: Remove top section

- Piece-by-piece
- Placed onto barge

## Step 3: Refurbish, recycle, or dispose of materials

- Final survey to check for remaining debris



# ALTERNATIVE ENERGY

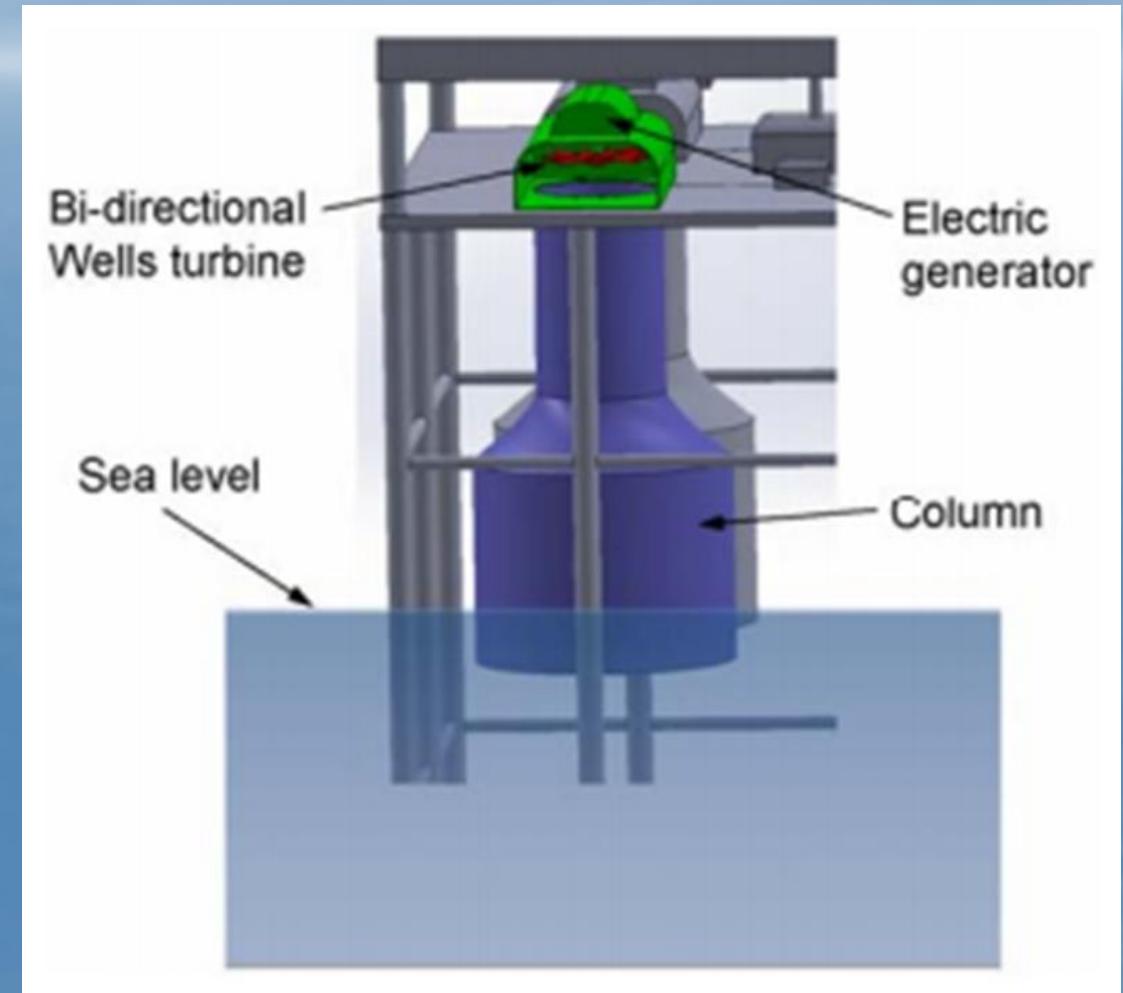
## Wind Energy

- Placement of turbine on old platform
- Currently not economic
  - High operation and maintenance costs
- Has never been attempted large scale

# ALTERNATIVE ENERGY

## Wave Energy

- Enough to power 60,000 homes
- Potential economic boost of tens of millions of dollars
- Requires extensive changes to existing platform
- Concerns with efficiency, maintenance, and high probability of failure
- Never attempted



# TOURISM

- Helps avoid some decommissioning costs
- Maintain small revenue
- Good publicity
- Has been done
- Low demand and high supply
  - Cannot turn every rig into an attraction





# FISHERIES

- Fish cages mounted under platform
- Fish are raised, harvested, and sold
- Has been done a few times
- Concerns with safety, crew maintenance, and logistics

# ASSESSMENT

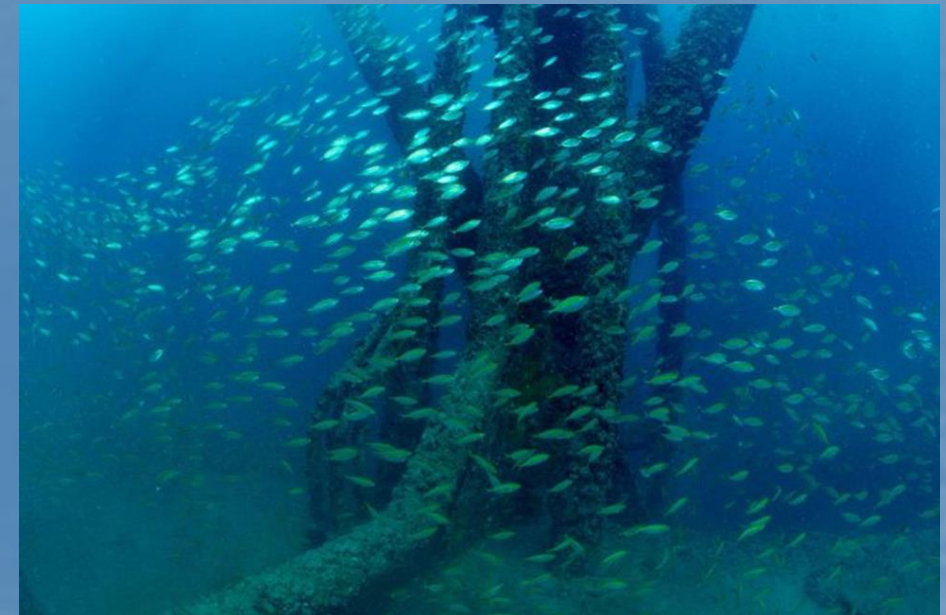
- Need improved technology for alternative energy
- Only so many structures can be used as tourist attractions
- Fisheries have yet to be implemented on a commercial scale
- Artificial reefing meets all criteria

	Economics	Feasibility	Environmental Friendliness
Artificial reefing	✓	✓	✓
Wind energy	X	X	✓
Wave energy	X	X	✓
Tourism	✓	X	O
Fisheries	✓	X	O

✓ = meets  
X = fails to meet  
O = neutral

# ARTIFICIAL REEFS

- Marine life flourishes around offshore structures
- Eight-leg structure supports 14,000 fish
- Rigs-to-Reefs
  - Over 530 projects completed in Gulf of Mexico
  - Less expensive, donate to the cause
- Opposing viewpoints on this concept



# CONCLUSION

- Therefore, **artificial reefing is currently the best option**
  - Win-win situation
  - Proven



# MORE INFO ON ARTIFICIAL REEFING

- Cut off 80 ft below water surface
- Primarily in GOM
  - Legal complications in California
- Vertical structures are most efficient with aquatic real estate
- Studies show artificial reefs to be healthier than natural reefs
- Fish can build on each other (literally and figuratively)
- Great for stakeholders like divers and fishermen

**QUESTIONS?**