Economics of Floating Wind for Green Hydrogen

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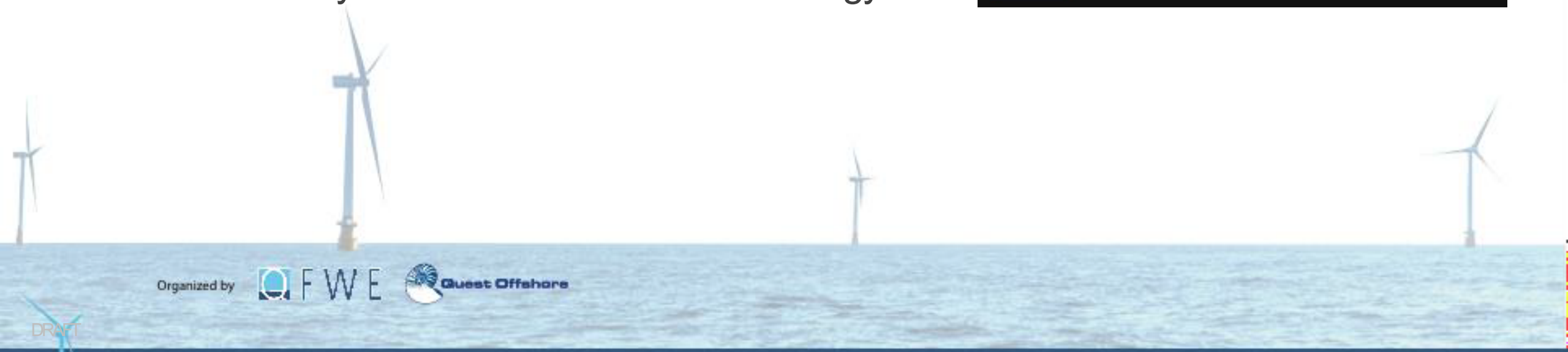
BU Institute for Sustainable Energy



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BU Institute for Sustainable Energy

63	19	48	80
Faculty	Fellows	Reports	Events

Scientists **Engineers** **Economists** **Policy Advisors** **Investors**

ACADEMIC BACKGROUNDS, e.g.:

PhD Mechanical Engineering, MIT
PhD Materials Science, MIT
PhD Physics, UC Berkeley
PhD Engineering Systems, MIT
PhD Energy Control Systems, MIT
Etc.

- Process Control & Smart Grid
- Hydrogen storage
- High temperature fuel cell technology
- Hydrogen generation

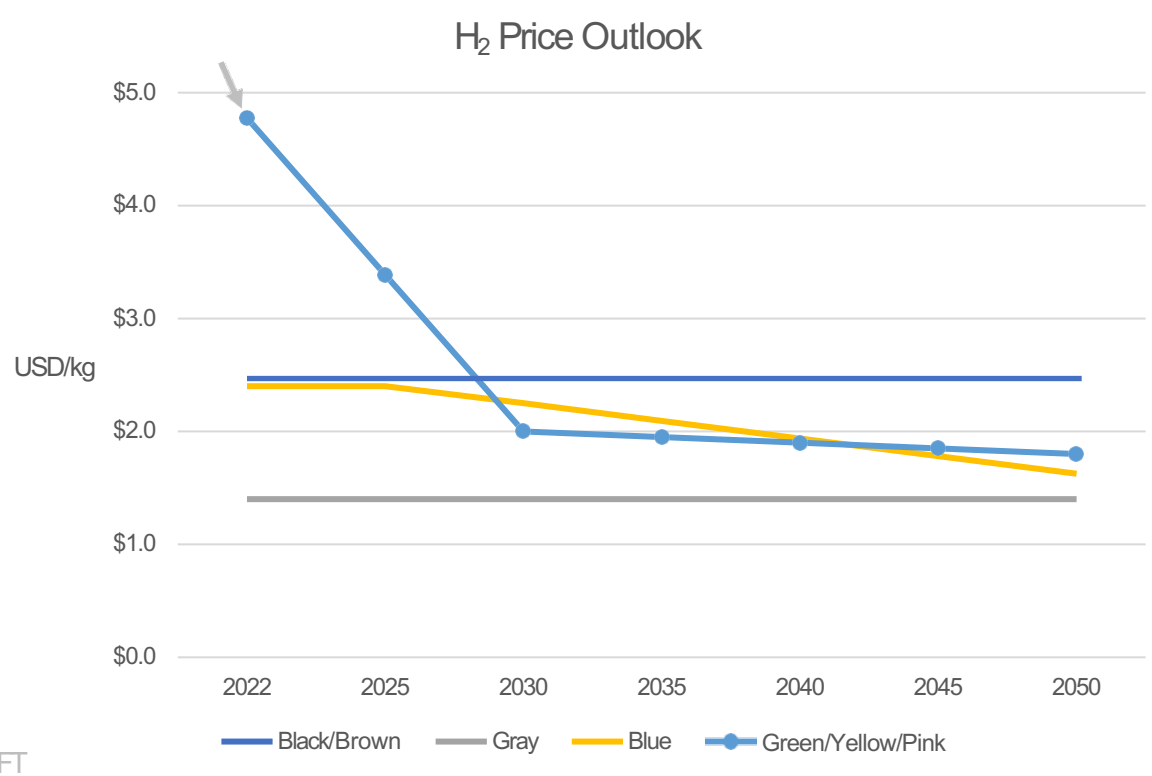
SPECIALTIES, e.g.:

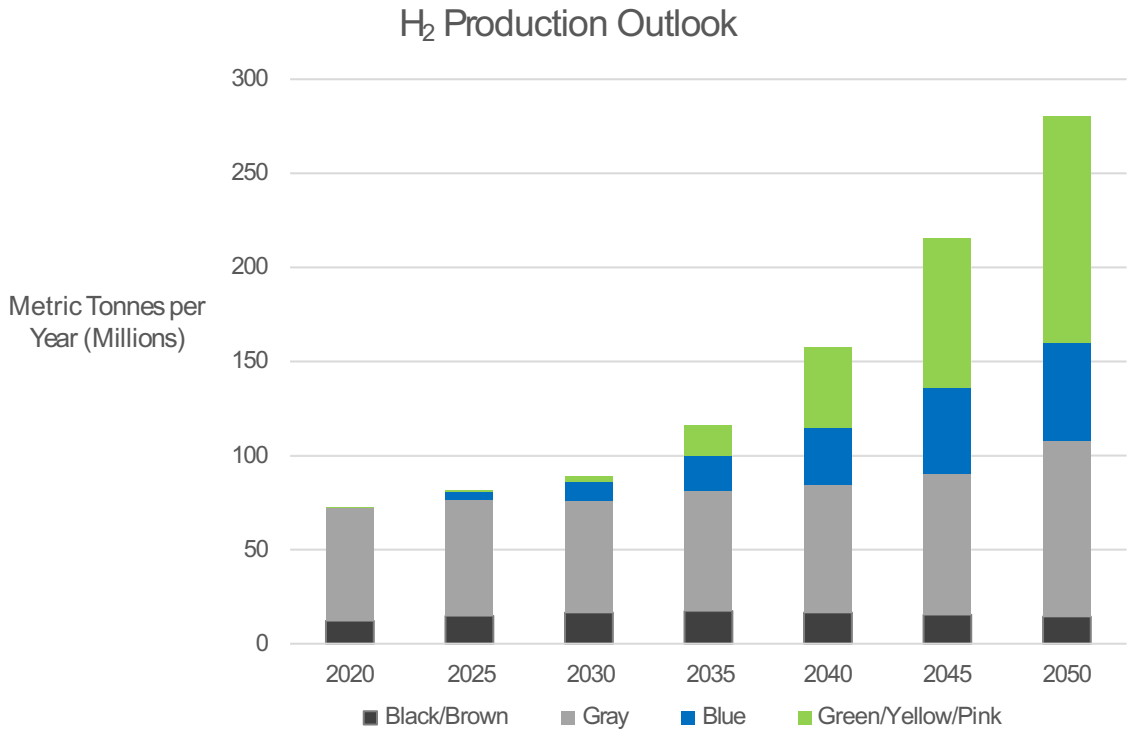
- CO_2 separation and sequestration
- Waste to energy conversion
- Solid oxide fuel cells
- Metal/metal oxide systems

- Grid level energy storage
- Green processing for solar grade silicon production
- Methane leaks
- Etc.

Massive Long-Term Anticipation for Green H_2

- Massive per-kg cost decreases by 2030
- Green H_2 will scale to nearly half of all production between 2030 and 2050





Source: Boston Strategies International analysis of data from DNV.

Source: Boston Strategies International analysis. Some base data from Rystad, IRENA, USDOE, BNEF, et al.

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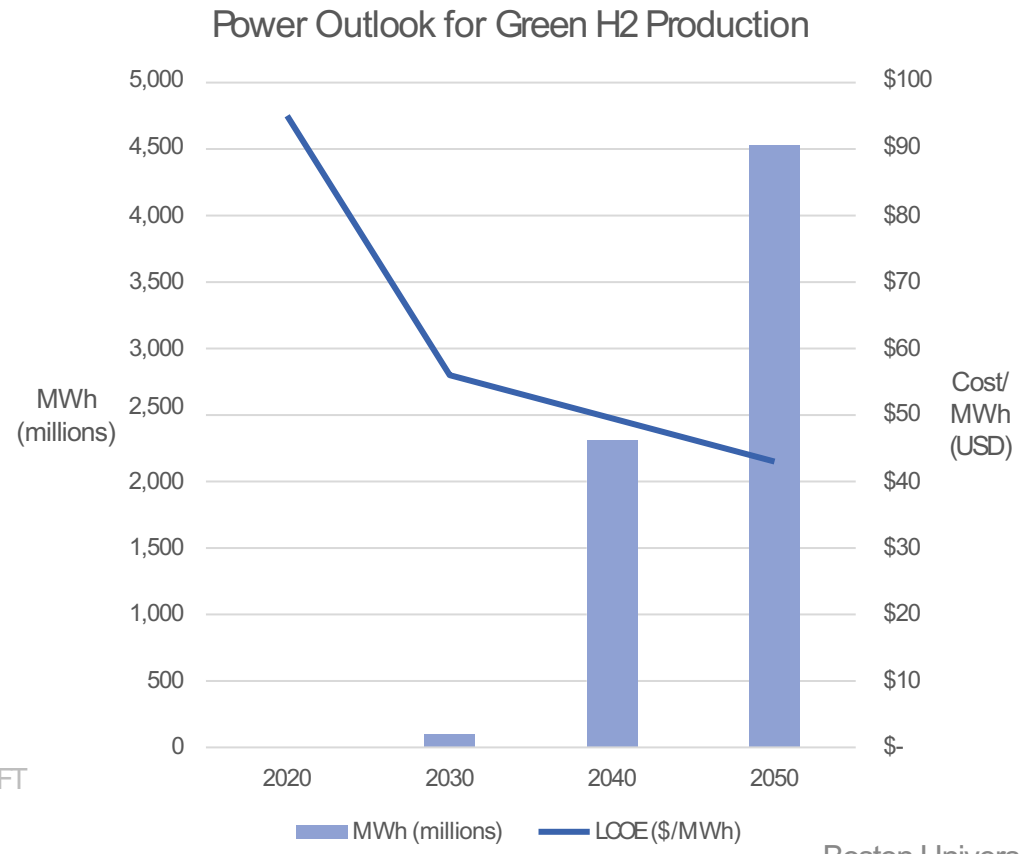
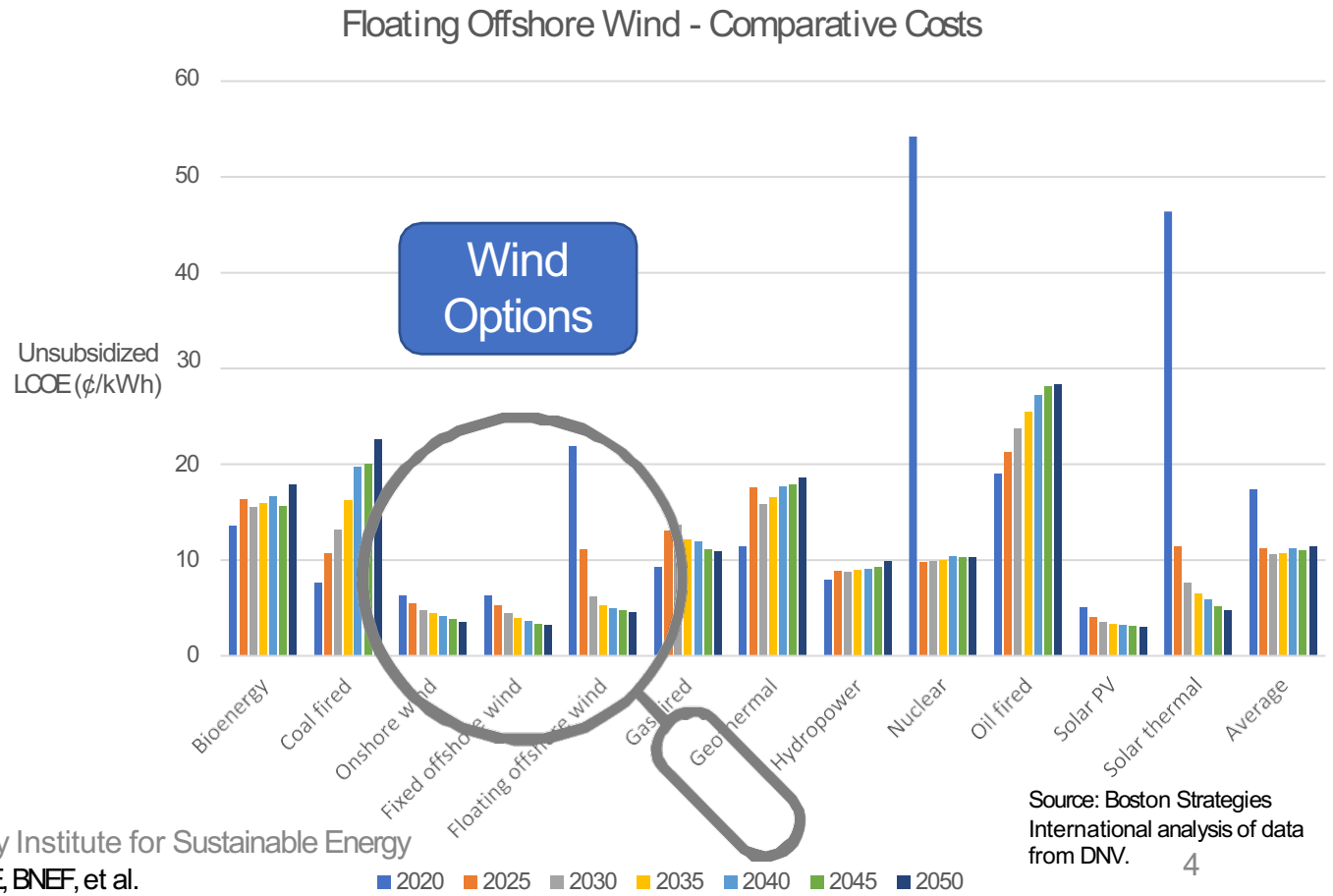
Viability of Floating Wind for Green H_2

- Massive LCOE cost decreases by 2050
- Financial viability depends on ability to scale and subsidies





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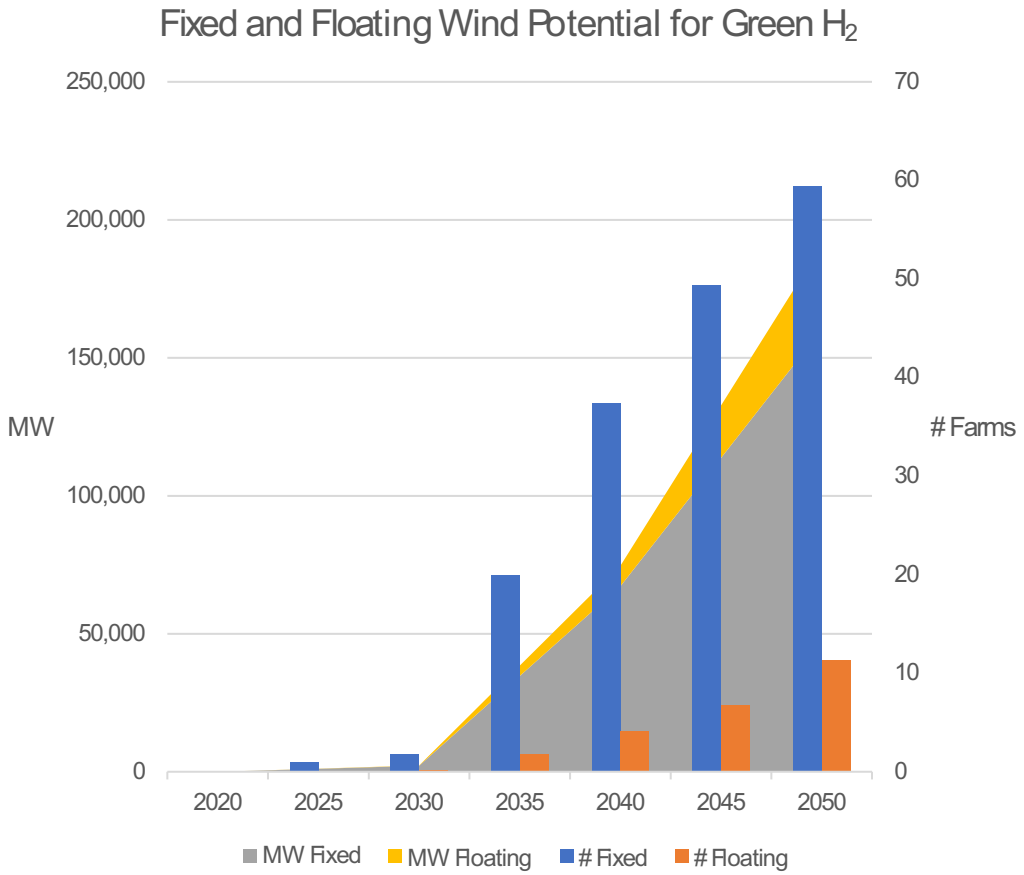
Source: Boston Strategies International analysis. Uses base data from Rystad, IRENA, USDOE, BNEF, et al.

Source: Boston Strategies International analysis of data from DNV.

Tapping the Market Potential

Illustrative Potential



DRAFT Source: Boston Strategies International modeling of energy sources for green hydrogen production by wind vs. other sources, offshore vs. onshore, floating vs. fixed, etc. Relies on base data from DNV, Rystad, IRENA, USDOE, BNEF, NREL, CNBC, et al.

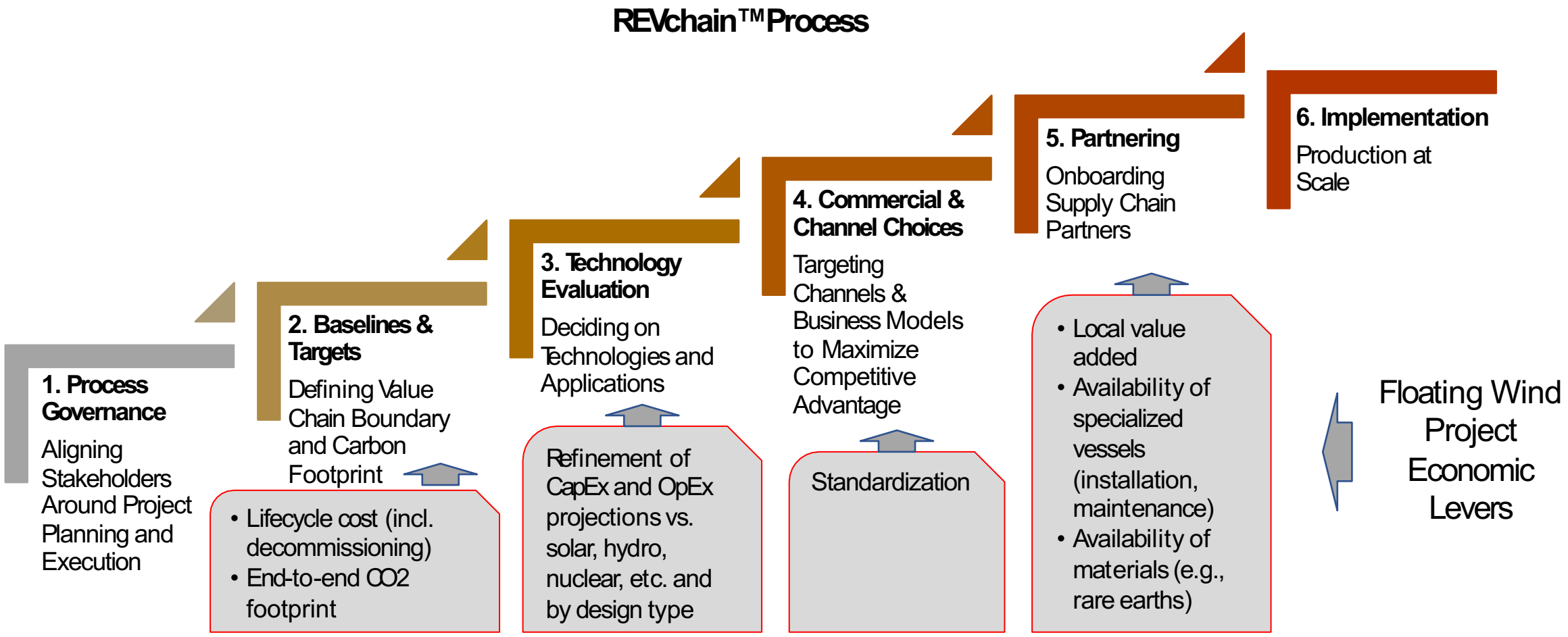
Project Economic Levers

- Refinement of CapEx and OpEx projections vs. solar, hydro, nuclear, etc. and by design type, including cost and end-to-end CO_2 footprint
- Standardization
- Local value added
- Availability of specialized vessels (installation, maintenance)
- Availability of materials (e.g., rare earths)
- Lifecycle cost (including decommissioning)

Relative to fixed offshore

Source: Analysis by David Steven Jacoby

The Role of Analytics in Lowering LCOE



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Source: David Steven Jacoby's analysis using REVchain™ framework

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