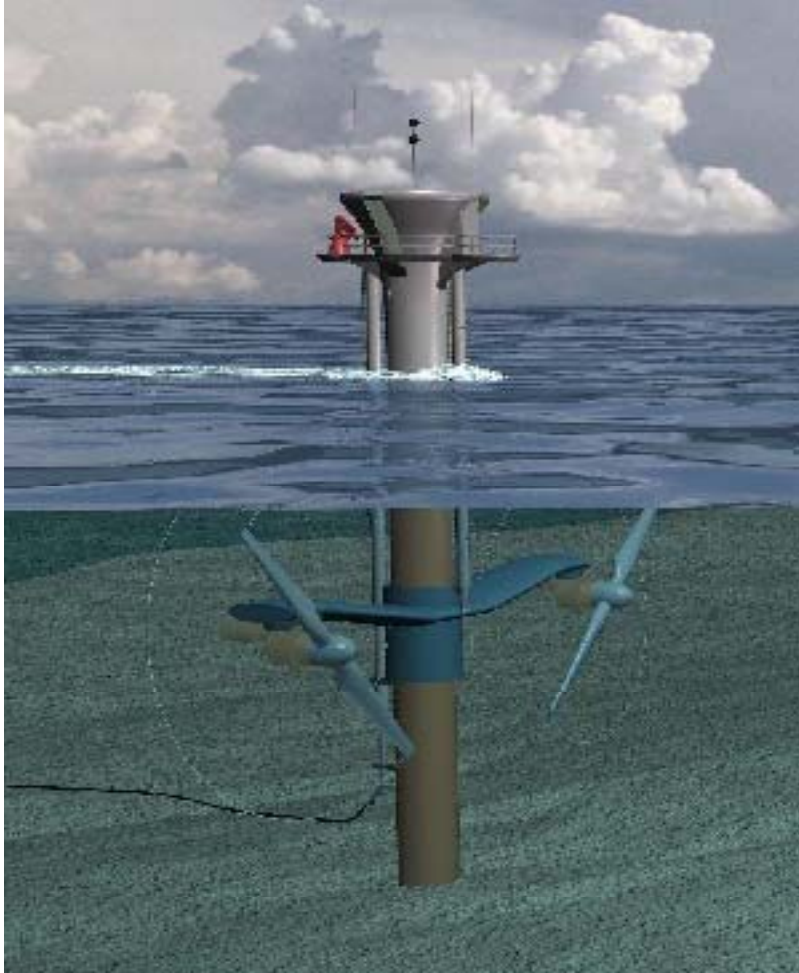


Accessing the Market

- Getting it right.
- By making it financeable.
- It's all about rules and risks of development.

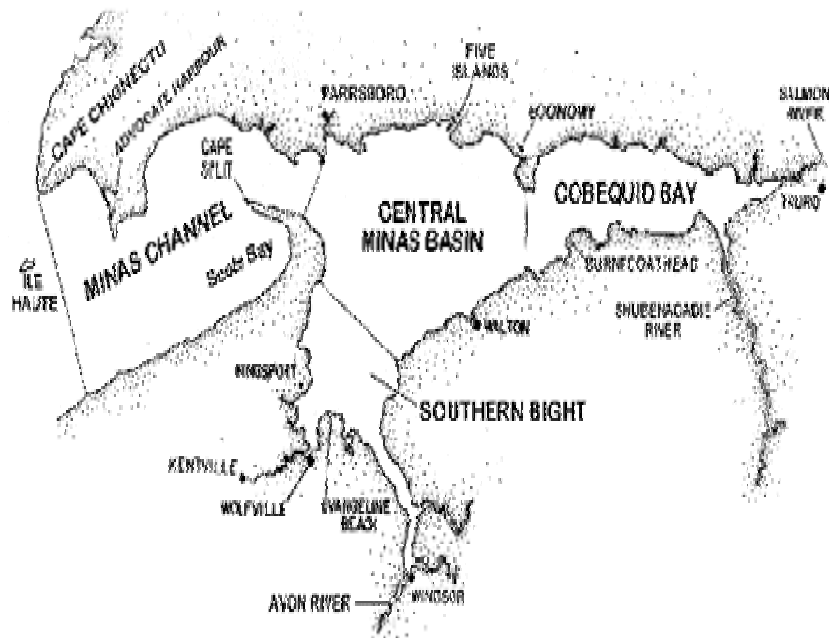
By: James R. O'Hagan
Project Development Advisor
William Alexander and Associates Ltd.

Technologies



- Start with the most developed ones.
- Reliability and productivity.
- Promise economics of scale.
- What does owner want?
 - Royalties?
 - Purchase?

The Site Selection



- Suitable Site
- Access Grid/Ocean
- Sufficient Energy
- Seafloor Conditions
- Public & Government Support

Markets



- Credit Worthy Counter-party?
- Power Purchase Agreement?
- Proximity to Transmission?
- Market for Renewable Energy?

Transmission/Interconnections



- Terrestrial & Subsea lines and cables?
- Cost to install?
- System interconnections costs & upgrades?

Model Project

COSTS (£m)	Stg 2 Bid	SSC Setup		SSC Operations & improvement								Total over 10 years (£m)
	FY05/06	FY06/07	FY07/08	FY08/09	FY09/10	FY10/11	FY11/12	FY13/14	FY14/15	FY15/16	FY16/17	
Stage 2 bid preparation:	0.350	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.350
SSC Setup & Operations:	0.000	3.750	2.850	0.787	0.787	0.787	0.787	0.787	0.787	0.787	0.787	12.896
Project Costs (External):	0.000	1.900	1.900	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	4.200
Project Costs (Internal):	0.000	0.800	1.700	0.180	0.180	0.180	0.180	0.180	0.180	0.180	0.180	3.940
Overall Costs (£m) :	0.350	6.450	6.450	1.017	1.017	1.017	1.017	1.017	1.017	1.017	1.017	21.386
BENEFITS (£m)												
Finance and Procurement												
Sourcing Savings	0.000	0.000	0.670	0.844	0.844	0.844	0.844	0.844	0.844	0.844	0.422	6.997
Budget Monitoring	0.000	0.000	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.250	0.125	2.125
Purchase to Pay	0.000	0.000	0.651	0.819	0.819	0.819	0.819	0.819	0.819	0.819	0.409	6.792
Sales to Collection	0.000	0.000	0.350	0.563	0.563	0.563	0.563	0.563	0.563	0.563	0.260	4.548
HR												
Payroll improvements in service return	0.000	0.000	0.000	0.324	0.324	0.324	0.324	0.324	0.324	0.324	0.162	2.429
HR Generic savings in Services	0.000	0.000	0.451	0.874	0.874	0.912	0.912	0.912	0.912	0.912	0.456	7.214
Systems												
Replacement of legacy systems	0.000	0.000	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.127	0.063	1.079
Improvement in Maintenance contract	0.000	0.000	0.000	0.000	0.000	0.000	0.075	0.075	0.075	0.075	0.038	0.338
Overall Benefits (£m) :	0.000	0.000	2.499	3.800	3.800	3.837	3.912	3.912	3.912	3.912	1.935	31.521
NET BENEFIT (£m) :	-0.350	-6.450	-3.951	2.783	2.783	2.820	2.895	2.895	2.895	2.895	0.918	10.135

- Revenues (All)
- Costs (All)
- Financing Cost
- Return on Equity

Federal Government Regulatory



- Regulatory Approval Process & Costs?
- Royalty Payments?
- Permitting Costs?
- Harmonized?

Provincial Government Regulatory



1. Competition Award for sea bed access.
 - Selection Criteria?
 - Costs?
 - Process & Timing?
2. Harmonized Fed/Prov Regulatory Permits & Approval Process?
 - Costs?
 - Process & Timing?

A Piece of The Action



- Technology owner's royalty/licensing fees?
- Government royalties, fees, socio-economic benefits agreement?
- Community Benefits?
- Interest Payments Financing?
- Utility PPA?
- Transmission Costs?
- Return on Equity still sufficient?

Power Purchase Agreement



- Take or pay?
- Credit worthy counter party?
- Utility credit rating?
- Need 20 years term to amortize debt.
- Inflation protection?

Model - Construction

“The Trouble Begins”



- Engineering, procurement, construction, (EPC) contract?
- Deep Pockets: Contractor
- Construction risk?
- Contract schedule risk?
- The unexpected?

Equity and Financing

“Show me Your Model”



- How much cash thrown off?
- R.O.E. risk rates?
- Hurdle rates of return?
- State of finance markets?
- Value/currency fluctuations?
- EPC locked in costs?
- Technology risk?

Equity and Financing

“Show me Your Model”



- P.P.A. – counter party risk?
- Project on Project Risk?
 - Generation
 - Transmission
- Government risk?
- Market risk?

Equity and Financing

“Show me Your Model”



- Do you have access to commercial site?
- What government approvals do you still need?
- How long to financial close ?
- To start of construction?

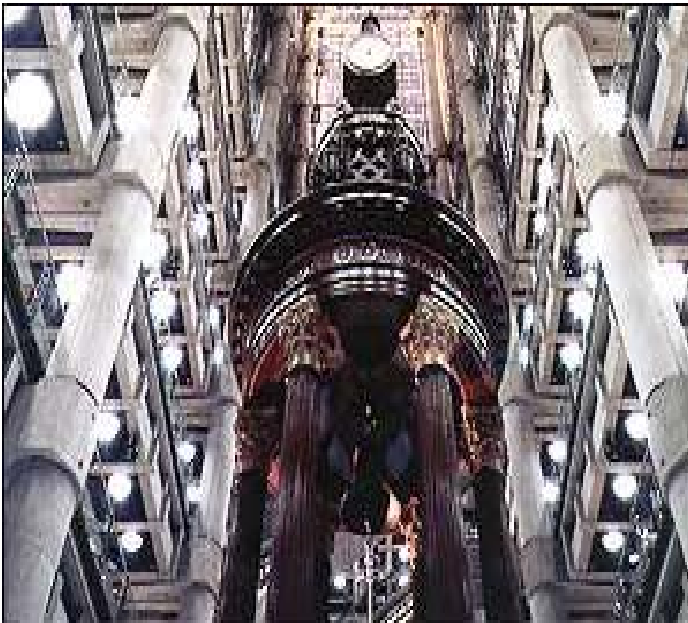
Equity and Financing

“Show me Your Model”



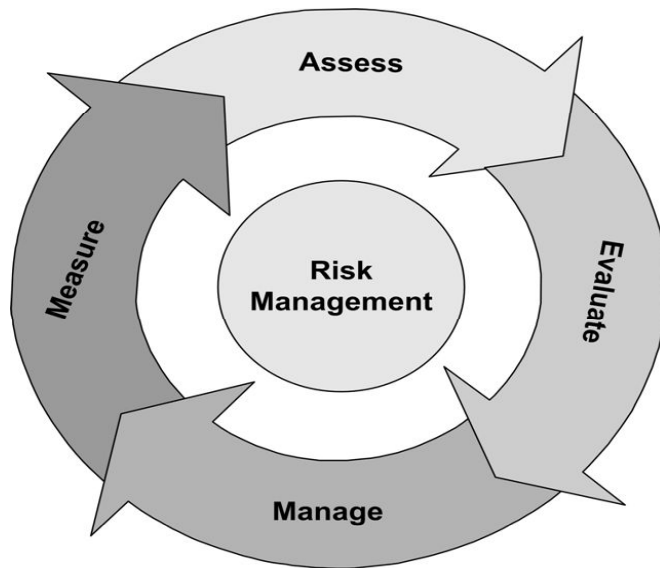
- Suez or Panama Canal?
 - What is the take by governments and technology owners?
 - Accommodates circumstances/unknowns?
 - What about insurance?
 - What about currency & interest rate swaps?

The Lutine Bell – Rings for you?



- Construction Insurance?
 - EPC Warranty
 - Ships Flood
 - Ships Sink
 - Stuff happens...
- Operational Insurance?
 - Ice & ice Storms
 - Cable/Currents/Anchors Aweigh!
 - Technology Failure
 - EPC Warranty
- Insurance will cost millions!

Risk Management – Still interested?



- Developer has all the risk first.
 - Loss of Equity
- Developer may have rewards.
 - Profit
- The financial debt market has risk but claim on assets.
- Technology owner has risk/reward.
- EPC contractor has risk insurance and profits.
- Government has little or no risk.
- Utility has the risk of disappointment offset by contract.

Development Climate



Flexible governments can do much to encourage development:

- Reduce Unknowns
- Clarify Regulatory Process/Schedule
- Clarify lease award process
- Reduce wait times
- Harmonize Regulatory Process
- Socio-economic benefits/royalties?
- Consult with developers/rules

Project Development



- Project Financial Model is a tight rope walk for all.
- Is it robust enough to turn a profit and attract risk capital and financing at affordable rates?
- Government can help access markets to create a “go or no go” project investment climate.