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Halifax, Nova Scotia Canada

[ICOE2014CANADA.ORG](http://ICOE2014CANADA.ORG)



# Harnessing the Fundy Tides

with a 2<sup>nd</sup> Generation Tidal Energy Device

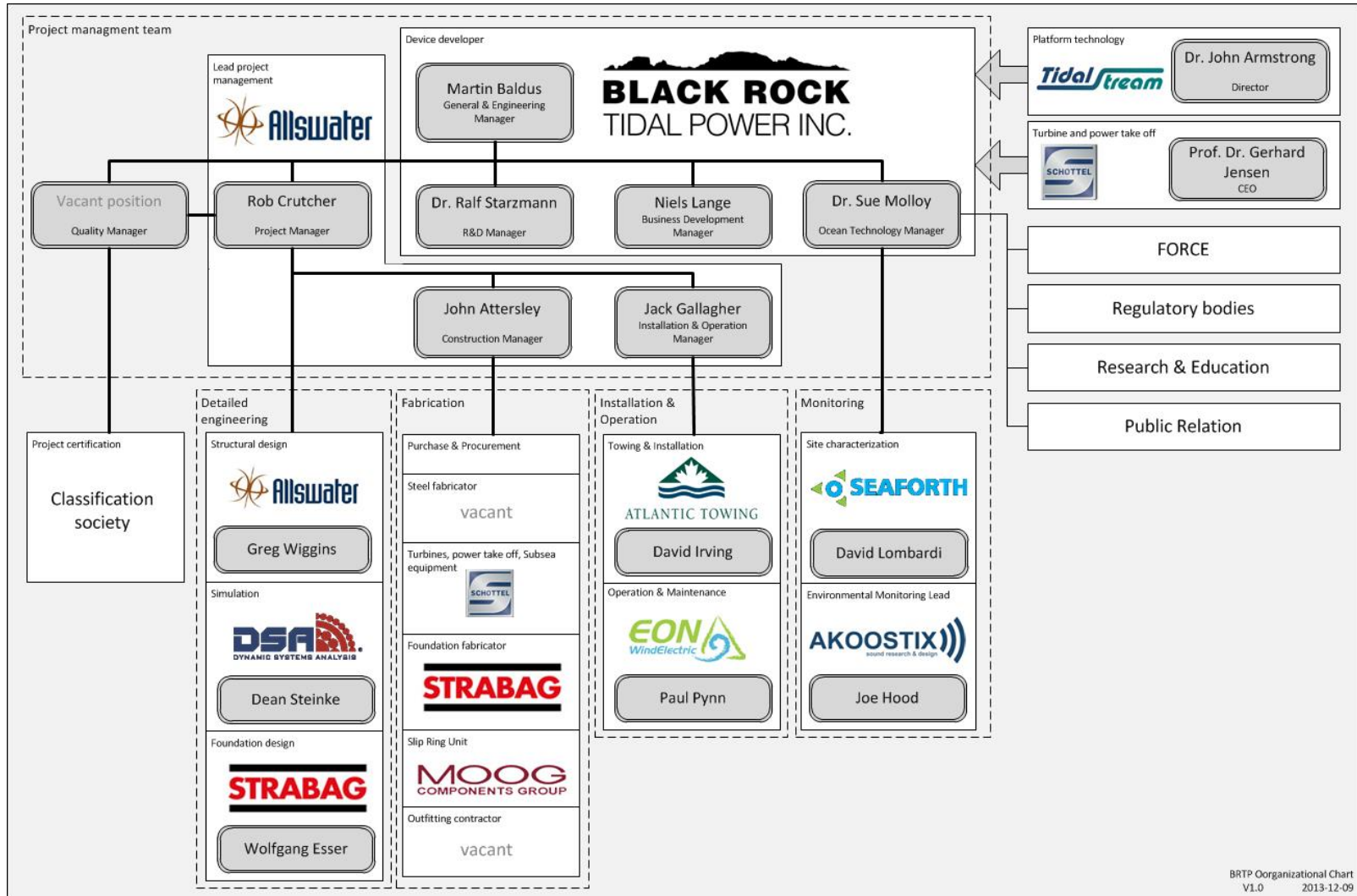
BLACK ROCK TIDAL POWER INC.  
Martin Baldus 2014/11/04



# CONTENT

- ABOUT BLACK ROCK TIDAL POWER INC.
- THE TECHNOLOGY
- THE PROJECT
- RISK MITIGATION
- THE SCHEDULE

# ABOUT BLACK ROCK TIDAL POWER INC. ORGANIZATIONAL CHART



B RTP Organizational Chart  
V1.0 2013-12-09

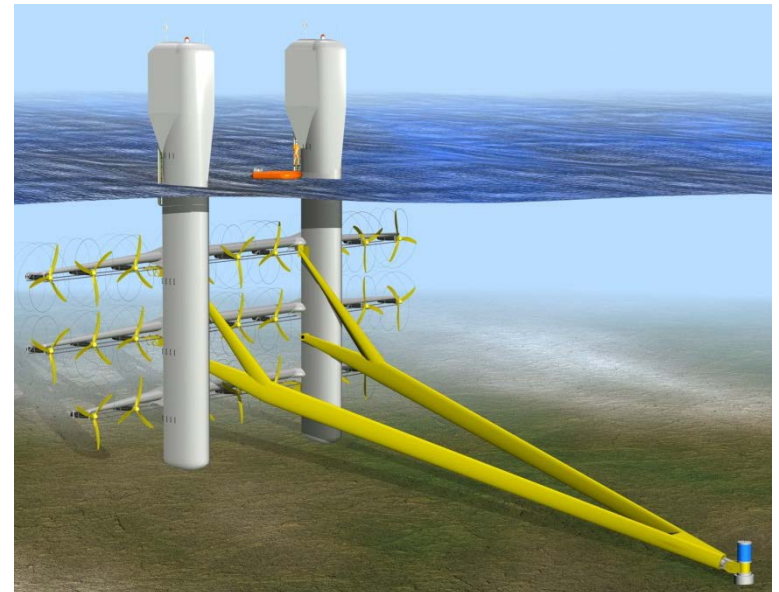
# THE TECHNOLOGY PROPOSED SYSTEM



## STG TURBINE & CONTROL



## TRITON PLATFORM



# THE TECHNOLOGY

## STG DESIGN PHILOSOPHY

### Turn the cube/square law into benefit

- Downsize turbines to 50 kW
- Turbine weight 800kg @ 50 kW
- 20 x 50 kW = 1 MW @ 16 tonnes!



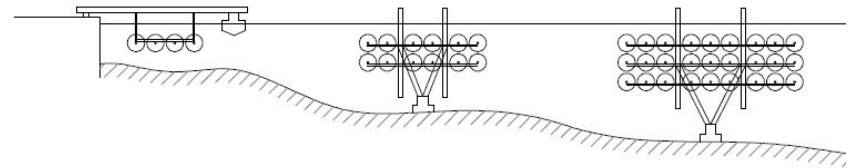
### Apply the KISS principle

- Simple and robust drive train
- Fixed pitch, variable speed
- Cooled by ambient water



### Be adaptive to a wide range of sites

- Scalable in terms of quantity
- 3 speed classes ( $D_{\text{rotor}} = 3.0 / 4.0 / 5.0 \text{ m}$ )
- Platform agnostic (horses for courses)



# THE TECHNOLOGY

## STG – PROVEN TECHNOLOGY

### COMMERCIAL AVAILABLE

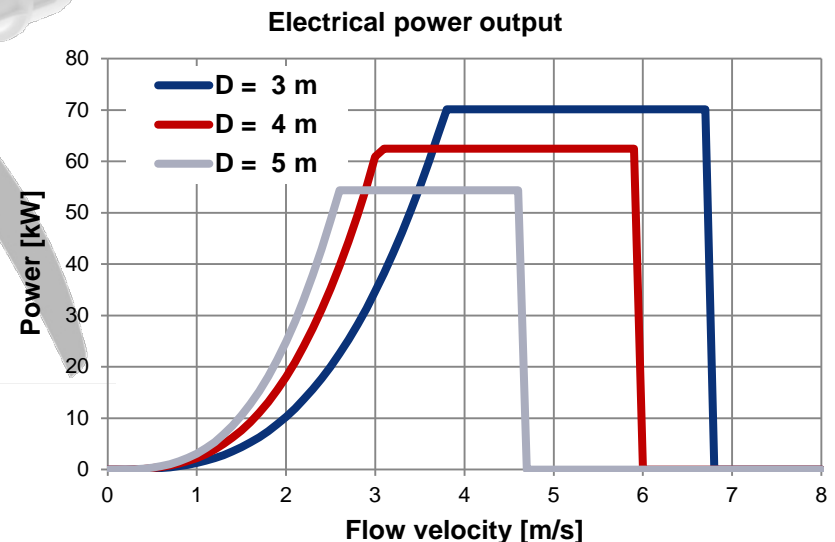
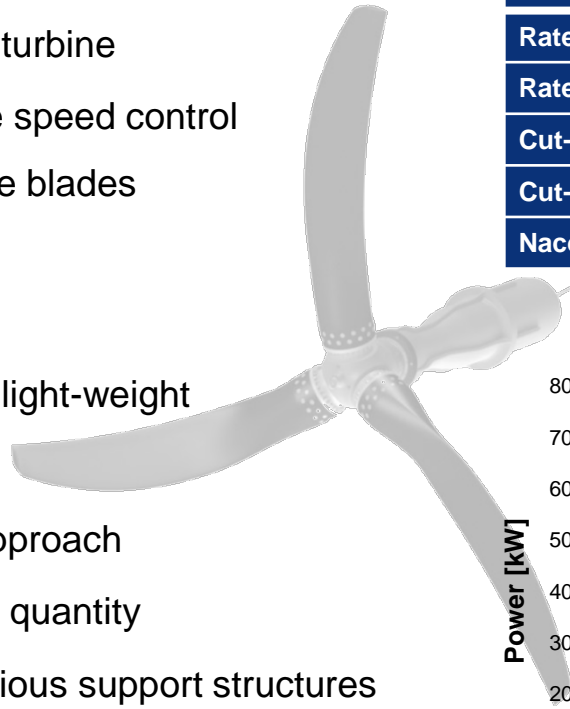
### STG DESIGN PARAMETERS

- Horizontal free flow turbine
- Fixed pitch, variable speed control & passive – adaptive blades

Rotor diameter	[m]	3.0	4.0	5.0
Rated power (grid-ready)	[kW]	70	62	54
Rated water velocity	[m/s]	3.8	3.0	2.6
Cut-in speed	[m/s]	0.9	0.8	0.7
Cut-out speed	[m/s]	6.75	6.0	4.7
Nacelle weight	[kg]	approx. 800		

### STG ADVANTAGES

- Robust, simple and light-weight
- Cost-effective
- Flexible, modular approach
- Scalable in terms of quantity
- Compatible with various support structures
- Easy to maintain
- Cost-effective



# THE TECHNOLOGY

## TRITON PLATFORM

### SEMI-SUBMERSIBLE PLATFORM FOR MOUNTING MULTIPLE TIDAL TURBINES

*TidalStream*

**TIDALSTREAM TRITON PLATFORMS ARE  
SEMI-SUBMERGED FLOATING PLATFORMS  
SUPPORTING MULTIPLE TIDAL TURBINES**

- Flips between operating and maintenance position
- Access in situ
- Electrical power conversion into grid ready electricity inside spar buoy
- Increased capacity per installation
- Passive yawing around subsea hinge
- Float out installation

