

ME/ESE 4470

Wind and Tidal Power

Tidal Energy

Tidal Energy

A. Introduction



Tidal Energy

A. Introduction

1. Wave Energy



Tidal Energy

A. Introduction

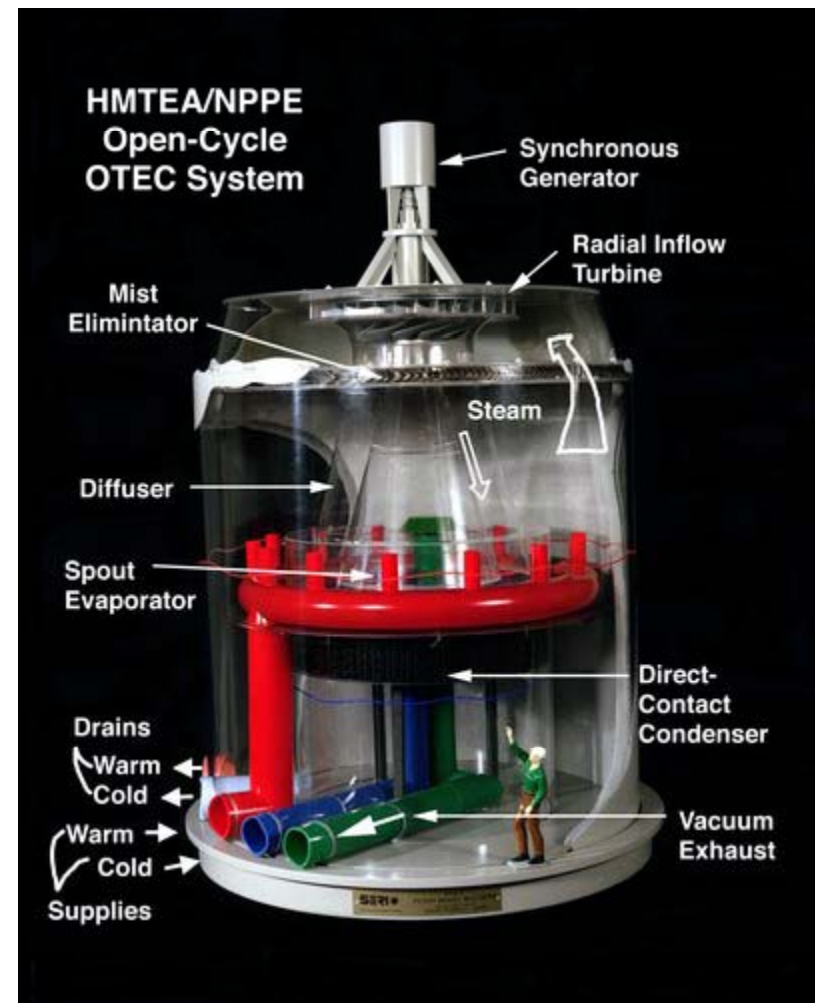
1. Wave Energy



Tidal Energy

A. Introduction

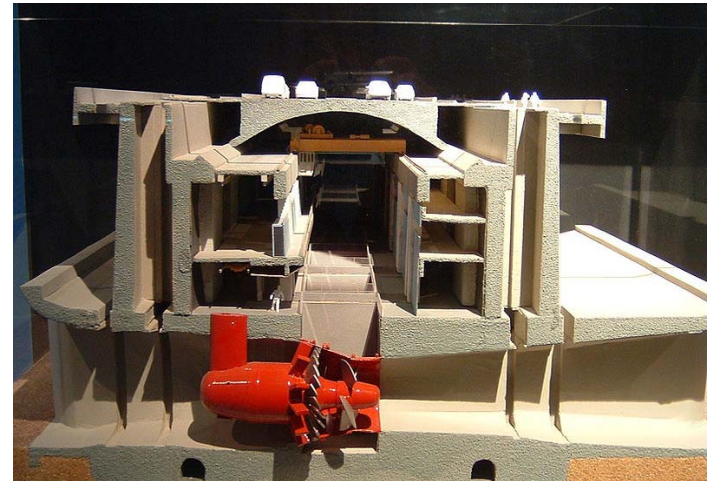
2. Ocean Thermal Energy (OTEC)



Tidal Energy

A. Introduction

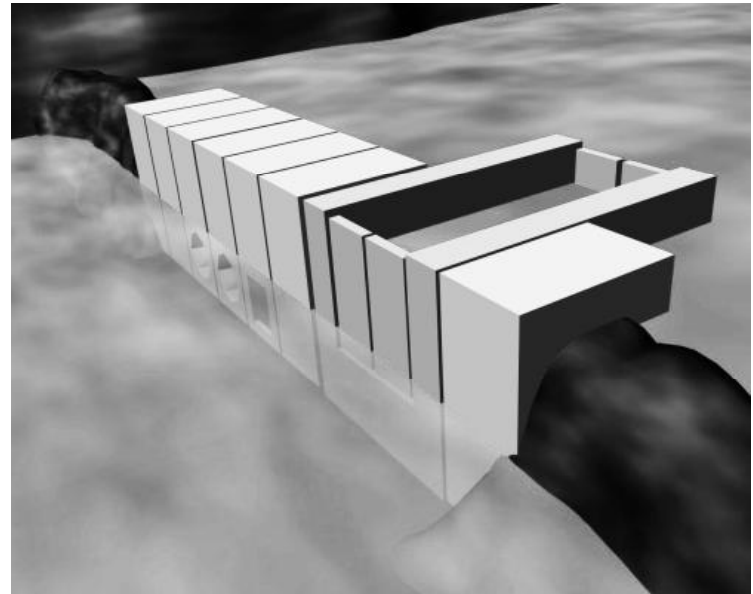
3. Tidal Energy



Tidal Energy

A. Introduction

3. Tidal Energy



Tidal Energy

A. Introduction

3. Tidal Energy



Moulin à marée de l'île de Bréhat (Bretagne, France).
Photographer: Flore Allemandou

Tidal Energy

A. Introduction

3. Tidal Energy



Tidal Energy

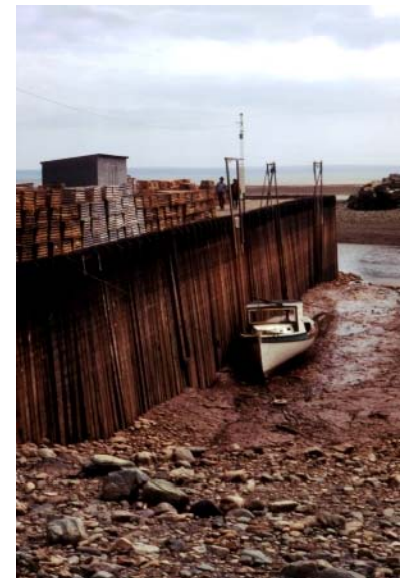
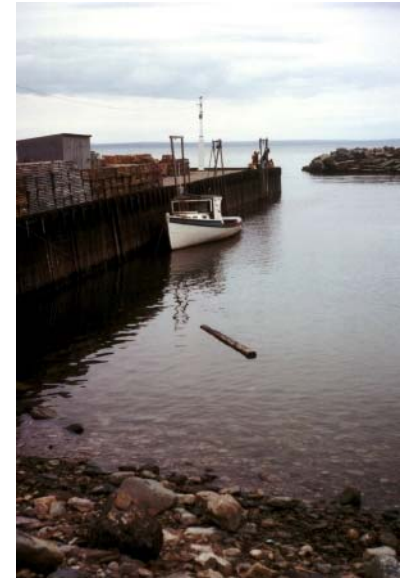
A. Introduction

3. Tidal Energy



Tidal Energy

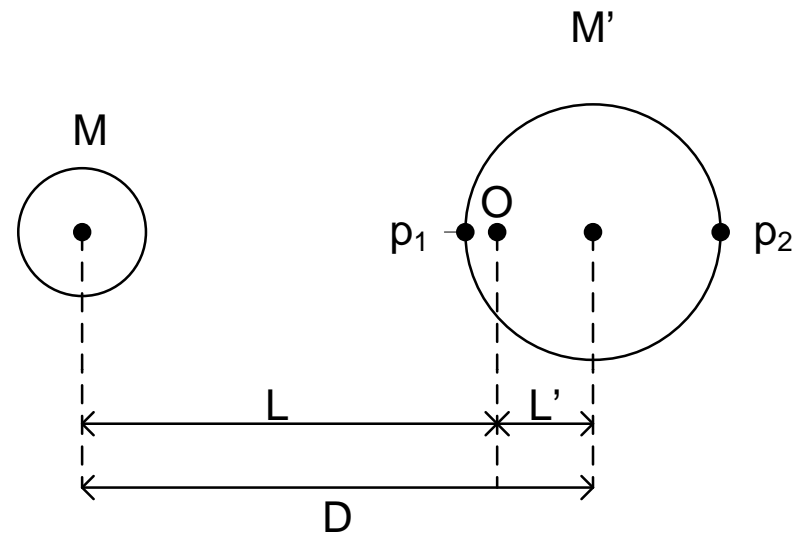
B. Tide Physics



Tidal Energy

B. Tide Physics

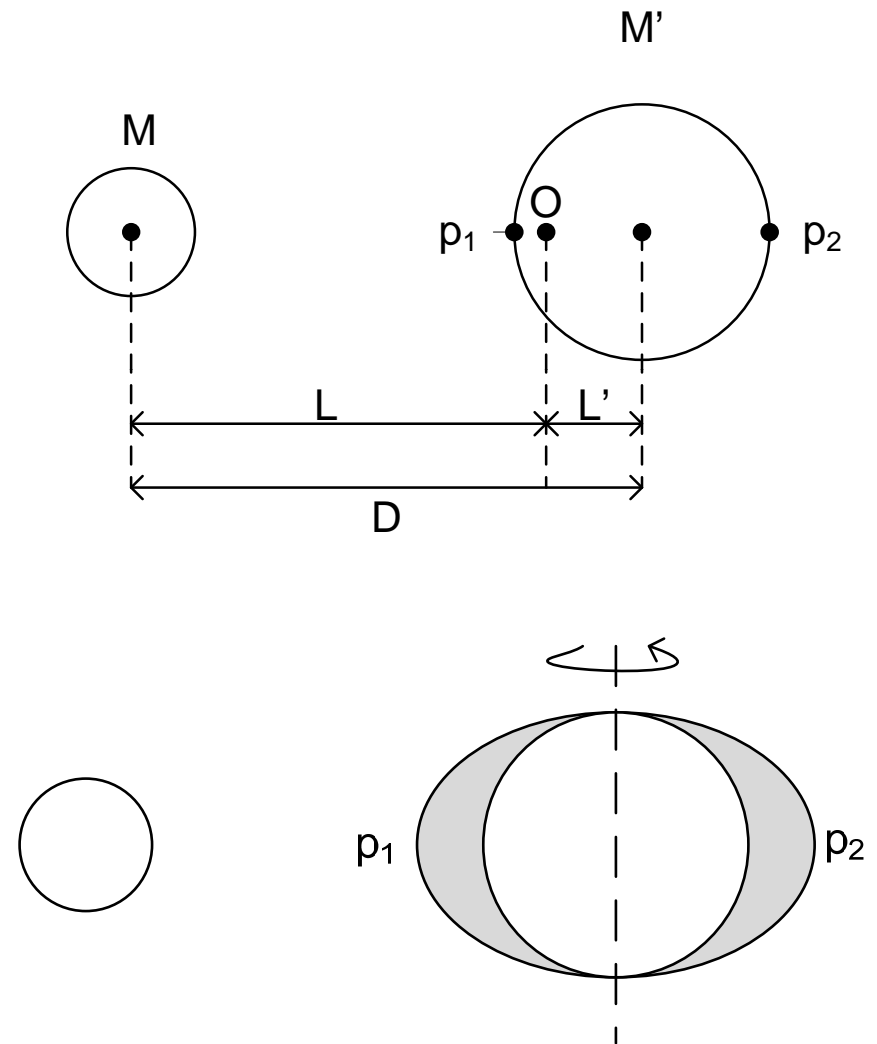
1. Lunar Tide



Tidal Energy

B. Tide Physics

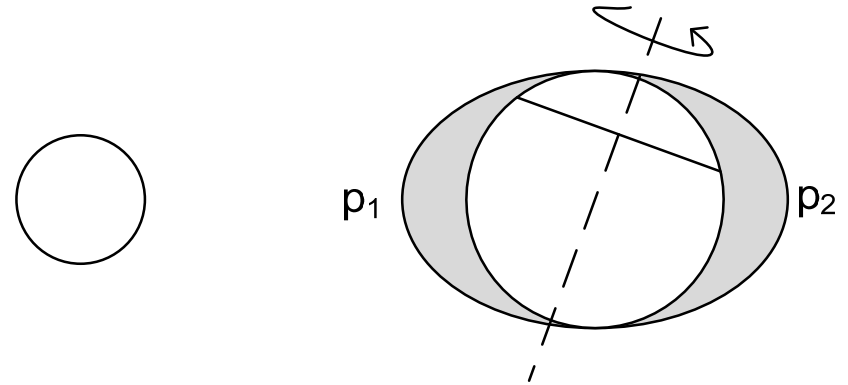
1. Lunar Tide



Tidal Energy

B. Tide Physics

1. Lunar Tide



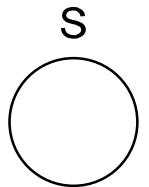
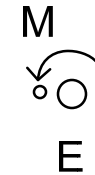
Tidal Energy

B. Tide Physics

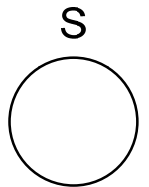
2. Solar Tide

Moon
Cycle

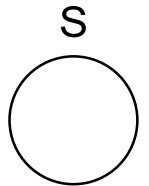
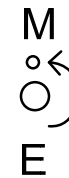
Full



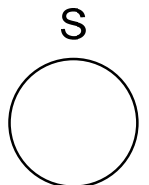
New



Waxing



Waning

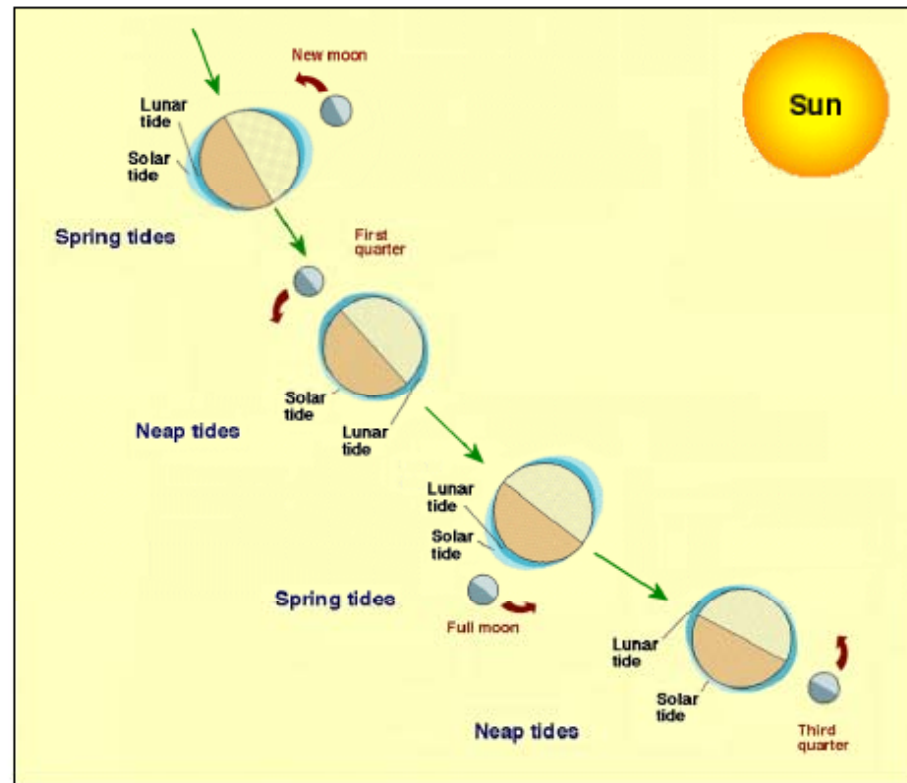
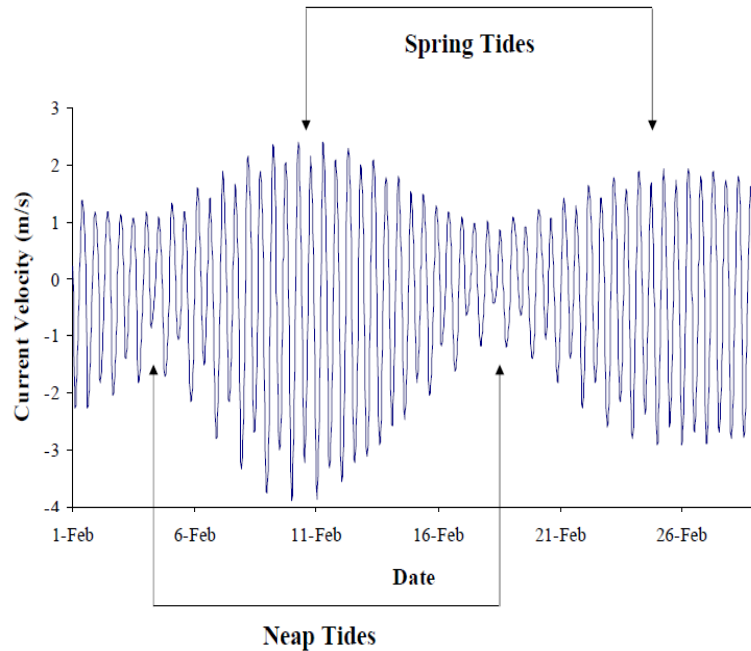


Tidal Energy

B. Tide Physics

Source: EPRI

3. Combined Solar/Lunar Tides

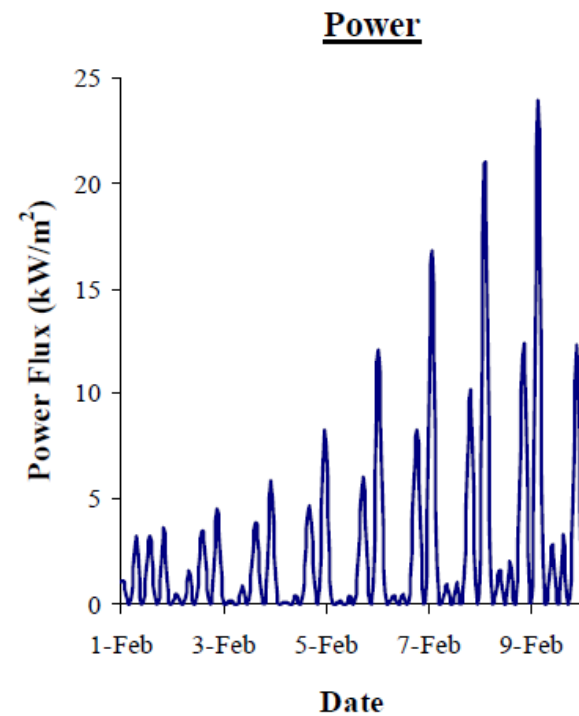
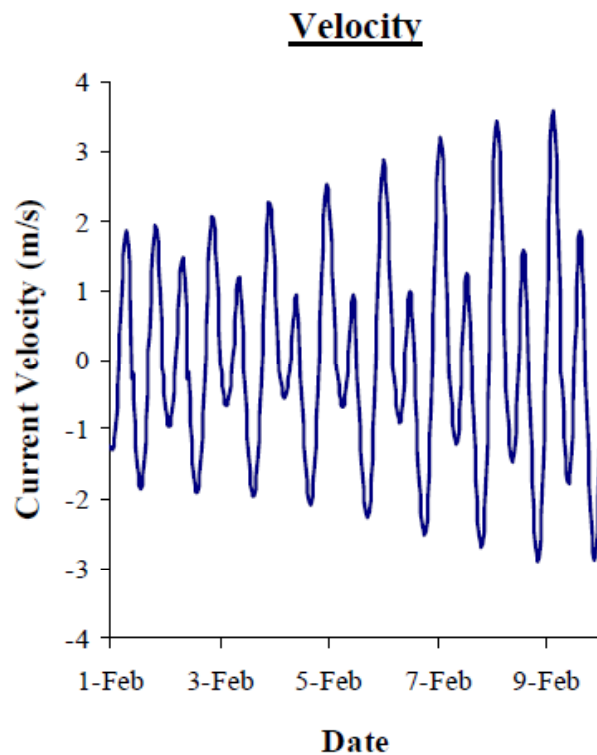


Tidal Energy

B. Tide Physics

Source: EPRI

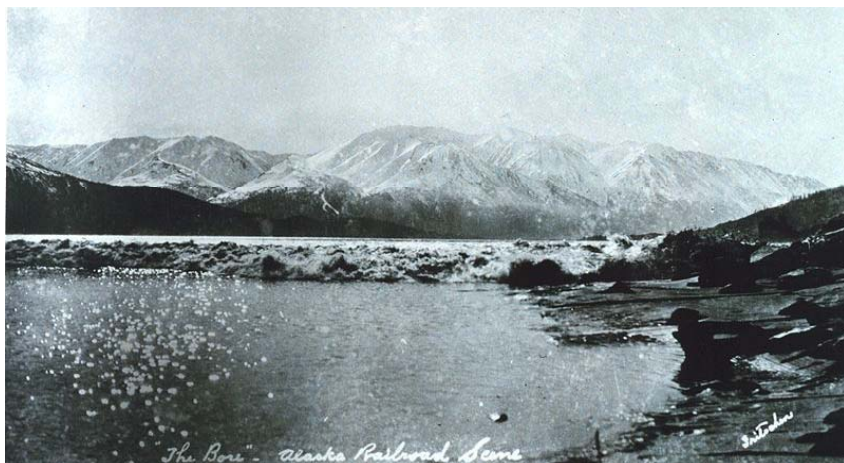
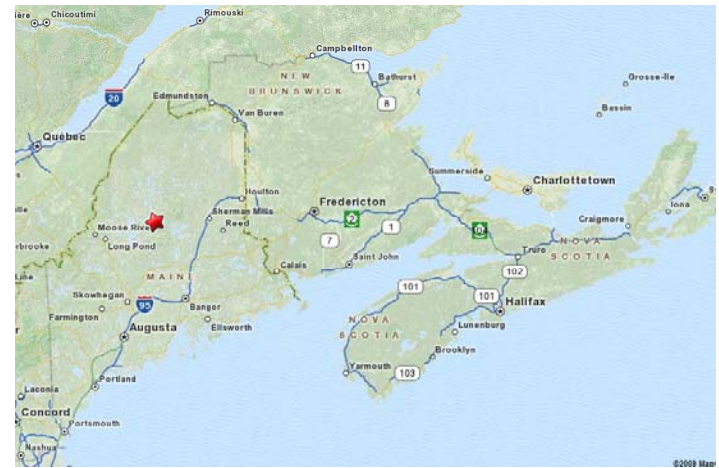
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Tidal Energy

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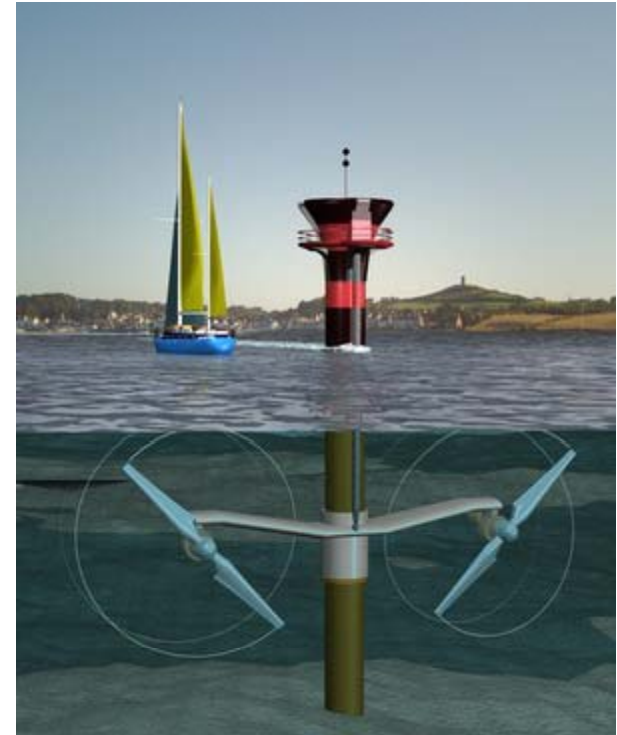
4. Basin Focusing Effects



Tidal Energy

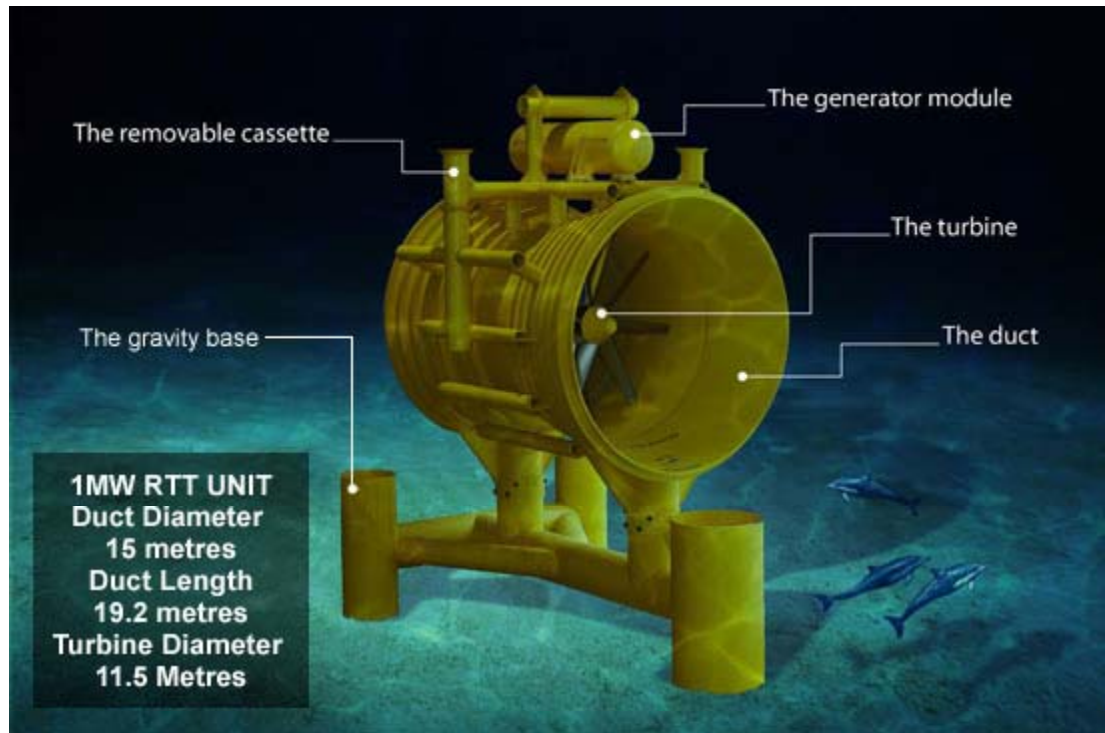
C. Power Conversion

2. Unducted Rotors



Tidal Energy

C. Power Conversion 2. Ducted Rotors



Tidal Energy

C. Power Conversion

3. Vertical Axis Turbines



Tidal Energy

C. Power Conversion 4. Other

