FOI/19/00422 - Please provide a copy of all the correspondence that the Scottish Government has had with the Saltire Prize Challenge Committee since 1 January 2014.

1. Saltire Prize website - Committee membership changes - 15 January 2014

Dear All

SPCC Membership/ webpage

As David Wilson moved posts last August his membership on the Saltire Prize Challenge Committee has been taken by our new Director of Energy and Climate Change, Mary McAllan. I am currently amending the website to reflect this:

http://www.saltireprize.com/committee

Similarly if there are any changes/ updates you would like me to make to your own page please let me know.

Mary will be attending the next meeting on Tuesday 18 March and will have a chance to meet with you all then.

Many Thanks

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Electricity Division | E&CC Directorate

Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel: [Redacted]Blackberry:[Redacted] E-mail: [Redacted]@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

From: **[Redacted]**scotland.gsi.gov.uk**[Redacted]**]
Sent: 14 January 2014 12:23
To: **[Redacted]**@ngs.org; **[Redacted]**; **[Redacted]**@rbs.com; **[Redacted]**@thecommonpool.com; **[Redacted]**@hw.ac.uk; **[Redacted]**@forumforthefuture.org; **[Redacted]**@btinternet.com; **[Redacted]**@pure-energy-partners.com; **[Redacted]**@scotland.gsi.gov.uk
Cc: **[Redacted]**@ngs.org; **[Redacted]**@rbs.com; **[Redacted]**@forumforthefuture.org; **[Redacted]**@scotland.gsi.gov.uk; **[Redacted]**@scotland.gsi.gov.uk; **[Redacted]**@pure-energy-partners.com; **[Redacted]**@scotland.gsi.gov.uk; **[Redacted]**@scotland.gsi.gov.uk; **[Redacted]**@scotland.gsi.gov.uk; **[Redacted]**@scottishrenewables.com; **[Redacted]**@scottishrenewables.com
Subject: Saltire Prize Medal 2014 - Nominations welcome!

Dear All

Just a gentle reminder that I am now accepting nominations for this year's Saltire Prize medal.

The closing date is Friday 7 February

Many thanks

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Electricity Division | E&CC Directorate

Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel: **[Redacted]**| **Blackberry**[Redacted]| **E-mail:** **[Redacted]**@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

---

From: [Redacted]

Sent: 09 December 2013 14:29
Subject: Saltire Prize Medal 2014 - Nominations welcome!

Dear All

Saltire Prize Medal 2014

Please be advised that we are now accepting nominations for the **Saltire Prize Medal 2014.** As with previous years this will be awarded at the Scottish Renewables Annual Conference dinner, scheduled for Tuesday 18 March next year.

We are looking for someone who can demonstrate as many of the below listed qualities as possible:

- innovation in response to global needs;

- pioneering novel marine technology and techniques;

- dedication to testing and demonstrating marine energy technology;

- influencing others to drive development of the marine energy industry;

- dedication of career and experience to the marine energy industry; and

- contribution towards reaching global carbon reduction and renewable energy targets.

The closing date for this year's nominations is Friday 7 February 2014

A nomination form is attached.

<< File: Saltire Prize Medal 2014 - Nomination Form.docx >>

http://www.saltireprize.com/news-events/saltire-prize-medal-2014

Many thanks and please feel free to forward this on.

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Electricity Division | E&CC Directorate

Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel: [Redacted]| Blackberry: [Redacted]| E-mail:
[Redacted]@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

Saltire Prize website - Mary McAllan member page sent to CC - 06 February 2014

Dear All

Following on from January's email below please find attached a link to the updated webpage for the new Saltire Prize Challenge Committee member - Mary McAllan, Director of Energy and Climate Change, Scottish Government.

http://www.saltireprize.com/committee/mary-mcallan

Many thanks

[Redacted]

2. Saltire Prize Medal - conference call to agree winner – 20/02/14

Dear Mary, **[Redacted]**, **[Redacted]**, **[Redacted]**, **[Redacted]**, **[Redacted]** and **[Redacted]**

Many thanks for the scoresheets that have been submitted so far. I am collating these and hope to set up a brief call for the panel to discuss the outcomes and agree on the chosen winner.

Please find attached a link to some suggested times next Thursday and Friday, grateful if you could complete

http://doodle.com/erbepkdm782usxuf

Many thanks

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel: [Redacted]| Blackberry: [Redacted]| E-mail: [Redacted]@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

3. Saltire Prize website - Mary McAllan member page sent to CC - 06 February 2014

Dear All

Following on from January's email below please find attached a link to the updated webpage for the new Saltire Prize Challenge Committee member - Mary McAllan, Director of Energy and Climate Change, Scottish Government.

http://www.saltireprize.com/committee/mary-mcallan

Many thanks

[Redacted]

4. Saltire Prize - Medal 2014 - Virtual judging panel: request to proposed panel to take part - 07 February 2014

Dear Mary, **[Redacted]**, **[Redacted]**, **[Redacted]**, **[Redacted]** and **[Redacted]**

Copy: **[Redacted]**

SALTIRE PRIZE ANNUAL MEDAL: VIRTUAL JUDGING PANEL

You may be aware that every year we award a Saltire Prize Medal at the Scottish Renewables Annual Conference Dinner (this year being held on Tuesday 18 March). The award goes to individuals/organisations who are driving the development of the wave and tidal sector and recognises an outstanding contribution to Scotland's marine energy future.

Previous winners have included - **[Redacted]**, the 'founding father' of wave energy in 2011; **[Redacted]**, founder of Pelamis Wave Power in 2012; and **[Redacted]**, co-founder of Marine Current Turbines (MCT), in 2013.

Currently we have 3 nominations, with possibly another couple to be submitted at the start of next week. I am writing to ask that you consider being part of a virtual judging panel to decide which of these candidates you would wish to see win this year's award.

I have attached the judging criteria and example nomination form below, to allow you to consider how much time you might have to spend on this exercise, but it goes without saying I would be delighted if you could agree to join the virtual panel.

The planned process would be for you to mark the candidates in order of merit, 3,2 and 1, with 3 being your choice of winner. If you can commit to joining the panel, I can then send you information on our shortlisted candidates for you to consider, and a template to indicate your markings.

I would be grateful if you could let me know whether or not you would like to be part of this panel by close of play **Wednesday 12 February.**

Many thanks

[Redacted]

SALTIRE
PRIZE

Medal criteria

Criteria to be considered as follows:

- innovation in response to global needs;
- pioneering novel marine technology and techniques;
- dedication to testing and demonstrating marine energy technology;
- influencing others to drive development of the marine energy industry;
- dedication of career and experience to the marine energy industry; and
- contribution towards reaching global carbon reduction and renewable energy targets.

Medal criteria

Criteria to be considered as follows:

- innovation in response to global needs;
- pioneering novel marine technology and techniques;
- dedication to testing and demonstrating marine energy technology;
- influencing others to drive development of the marine energy industry;
- dedication of career and experience to the marine energy industry; and
- contribution towards reaching global carbon reduction and renewable energy targets.

NOMINATION FOR THE SALTIRE PRIZE MEDAL 2014

GUIDANCE NOTES

WHO MAY MAKE A NOMINATION

Anyone may make a nomination by completing this form and forwarding it to the Scottish Government's Offshore Renewables Policy Team at the address given below.

COMPLETING THE NOMINATION FORM

Please complete the nomination form as fully as possible, following the instructions in each section closely. It is important that you provide as much information as possible about your nominee, and try to explain what their actual contribution in an area has been, as opposed to simply listing jobs or posts held.

TIMING OF NOMINATIONS

The deadline for the receipt of nomination forms is **Friday 7 February 2014**. The Saltire Prize Medal will presented at the Scottish Renewables Annual Conference Dinner on 18 March 2014.

CONFIDENTIALITY

All nominations for the medal are treated in the strictest confidence. The nominee should **not** be informed that they have been nominated, as it is not fair to raise expectations in case they are not met.

[REDACTED]
Offshore Renewables Policy Team,
The Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU
Telephone number: *[REDACTED]*
Email:[REDACTED}@scotland.gsi.gov.uk

NOMINATION FOR THE SALTIRE PRIZE MEDAL

Please read the accompanying guidance notes before completing this form.

NOMINEE
Please clearly print or type the following details about the person you are nominating. You must ensure that all sections of this form are completed or we will be unable to consider your nominee.

I nominate the following person for the Saltire Prize Medal:

Surname: _____ *It is most important that the name given is accurate and that the spelling is correct.*

Forenames: _____

Known as: _____ *If different from above.*

Title: _____ *E.g. Mr, Mrs, Miss, Ms, Dr, Rev etc.*

Address: *Please include as full an address as possible.*

_____

_____

_____

_____

City/County: _____

Post Code: _____

Date of Birth: _____ *Or approximate age if date of birth is not known.*

Telephone no: _____ *If known. (Incl. area code if land line number.)*

Nationality: ☐ British *Please tick.*

☐ Other (please specify)

_____

The information contained in this nomination is strictly confidential and will not be communicated to any person other than those involved in the administration of the Saltire Prize Medal.

THE RECOMMENDATION

The Saltire Prize Medal was created to recognise outstanding contributions to the development of marine renewable energy. In this section, space has been provided for you to set out why your nominee deserves the award.

We are looking for someone who can demonstrate as many of these qualities as possible:

- innovation in response to global needs;
- pioneering novel marine technology and techniques;
- dedication to testing and demonstrating marine energy technology;
- influencing others to drive development of the marine energy industry;
- dedication of career and experience to the marine energy industry; and
- contribution towards reaching global carbon reduction and renewable energy targets.

We would welcome nominations from under-represented groups, particularly women.

It is important that you give as much detail as possible about what your nominee has achieved, considering what will make them stand out against others.

What is the main contribution the nominee has made? Please state in not more than 20 words.

Please list the post(s), with start and end dates, in which the nominee has excelled. If you do not know the exact dates, please estimate the period of time.

Please describe the benefits resulting from the nominee's involvement in the marine renewables sector.

- **What has their impact been?**
- **How wide is their influence?**
- **What are their main achievements?**

DETAILS OF PERSON MAKING THE NOMINATION

My name and address:

Surname: _____ *(Incl. title e.g. Mr, Mrs, Miss, Ms, Dr, Rev etc)*

Forenames: _____

Address: _____ *This address will be used for an acknowledgement and any future correspondence.*

_____

_____

_____

_____

Post Code: _____

Telephone no: _____ *(Incl. area code if land line number.)*

Facsimile no/Email address: _____

Relationship to nominee: _____ *Please state your relationship to the nominee (e.g. son, colleague, friend).*

Signature: _____ Date: _____

Please send this form and any enclosures to:

[REDACTED]
Offshore Renewables Policy Team,
The Scottish Government
4th Floor
5 Atlantic Quay
150 Broomielaw
Glasgow
G2 8LU

Telephone number: *[REDACTED]*
Email:*[REDACTED]*

FOR SECRETARIAT USE ONLY:

Date form received: _____

Reference number: _____

Date acknowledged: _____

EQUALITY MONITORING

The information provided in this section is used for monitoring purposes only, to allow us to compile information about who nominates and is nominated for awards. It is not used to assess nominations and has no bearing on the outcome of the nomination. You do not have to provide this information, but it helps the monitoring of the awards system if you do.

Disability

Under the Equality Act 2010, a person has a disability if they have a physical or mental impairment and the impairment has a substantial and long term adverse effect on their ability to perform normal day-today activities.

Do you consider that you have a disability? (Please delete as appropriate.)
Yes/No/Prefer not to say.

Do you consider that the nominee has a disability? (Please delete as appropriate.)
Yes/No/Prefer not to say.

Ethnic Origin

Which group do you identify with? Please tick one box. The options are listed alphabetically.

Asian	Black
☐ Bangladeshi	☐ African
☐ Indian	☐ Caribbean
☐ Pakistani	☐ Any Other Black Background (specify if you wish)
☐ Any Other Asian Background (specify if you wish)	.....
.....	Mixed Ethnic Background
Chinese	☐ Asian and White
☐ Any Chinese Background (specify if you wish)	☐ Black African and White
	☐ Black Caribbean and White
.....	☐ Any Other Mixed Ethnic Background (specify if you wish)
White	.....
☐ White background (specify if you wish)	Any Other Ethnic Background ☐ Any Other Ethnic Background (specify if you wish)
.....	.....

[Redacted]
Offshore Renewables Team – Saltire Prize
Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel: **[Redacted]**| Blackberry: **[Redacted]**| E-mail: **[Redacted]**scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

5. SPCC09 meeting - DRAFT agenda & Options paper for 18 March – 28/02/14

[Redacted], [Redacted]

As discussed in today's call please find attached the Saltire Prize Options Paper as submitted by the Catapult team, together with an amended draft agenda. Grateful for comments on both.

I will contact the Saltire Prize competitors to request submission of a 1 page written update and aim to get this for w/c 10 March if possible and am currently clarifying whether they are attending the dinner in the evening.

Many thanks

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel:[Redacted]| Blackberry: [Redacted]| E-mail: [Redacted]@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

SALTIRE PRIZE CHALLENGE COMMITTEE
Tuesday 18 March 2013, 13:00 – 16:30
Menteith Room, Edinburgh International Conference Centre,
150 Morrison Street, Edinburgh EH3 9EE

AGENDA

Item	Time	Paper no.
1. **Lunch**	13:00	
2. **Welcome and introductions** • apologies • approval of minutes of last meeting	13:30	 SPCC09 (01) SPCC09 (02)
3. **Update on policy developments since March 2013** (Mary McAllan/ [redacted])	13:40	SPCC09 (03)
4. **Overview of the Saltire Prize project updates** • Discussion on 1 page written updates	14:00	SPCC09 (04)
5. **Tea/coffee break**	14:20	
6. **Presentation of the Saltire Prize re-design options paper** (Dr [redacted] Catapult)	14:40	SPCC09 (05)
7. **Saltire Prize re-design/ options discussion**	15:00	
8. **Any other business and close**	16:00	

The Inovo Building 121 George Street Glasgow G1 1RD Tel: +44 (0) 330 222 0335
ore.catapult.org.uk

Saltire Prize – Options Paper

Contents

Example Pathway 2	Date	Description	Prepared by	Checked by	Approved by
8 Revision					
Draft 1	14/02/14	For review and comment	[Redacted]	[Redacted]	[Redacted]

2.1 Projects

The status of the Challenge Competitors' projects and other wave and tidal array projects under development in Scottish Waters are summarised in the table below. Note that the table excludes the remaining Pentland Firth and Orkney Waters projects, as these are not scheduled for significant development until the 2020s:

	Team	Project Name & Location	Capacity (MW)	Technology	Lease status	Grid Status	Consent
Challenge Competitors	Aquamarine Power	Isle of Lewis	≤ 40	Wave: Oyster wave energy converter	Agreement for Lease secured	Delayed beyond 2018	Full consent received
	MeyGen Ltd	Inner Sound, Pentland Firth	≤ 400	Tidal: Andritz Hydro Hammerfest tidal turbine	Agreement for Lease secured	253MW capacity secured	Full consent for 86MW
	Pelamis Wave Power	Farr Point, Pentland Firth	≤ 50	Wave: Pelamis WEC	Agreement for Lease secured	7.5MW capacity secured	Applied 2011
	ScottishPower Renewables	Ness of Duncansby, Pentland Firth	≤ 95	Tidal: Andritz Hydro Hammerfest	Agreement for Lease secured	Delayed beyond 2018	Applied 2013
	West Islay Tidal Energy Park Ltd[3]	West Islay	≤ 30	Tidal: Andritz Hydro Hammerfest tidal turbine	Agreement for Lease secured	Not yet secured	Submitted early 2013
Other Scottish Waters Projects	Scotrenewables	Lashy Sound, Eday, Orkney	≤ 30	Tidal: SR2000	Agreement for Lease secured	Affected by 2018 grid delay	Not submitted
	Aegir	South West Shetland	≤ 10	Wave: Pelamis	Agreement for Lease secured	Affected by 2018 grid delay	EIA starts 2014
	Nova Innovation	Bluemill Sound, Shetland	≤ 0.12	Tidal: Nova Innovation turbine	Agreement for Lease secured	Options being considered	Consent received
	ScottishPower Renewables	Sound of Islay	≤ 10	Tidal: Andritz Hydro Hammerfest Alstom	Agreement for Lease secured	Secured	Full consent received

[1] Scottish Government, May 2013. Challenge Committee Saltire Prize Options Paper, restricted.
[2] Scottish Government, April 2013. Challenge Committee, Options paper, Competitor and committee suggestions. Ref SPCC08.
[3] Joint Venture by a consortium of DP Marine Energy and DEME Blue Energy

	SeaGeneration (Kyle Rhea) Ltd[4]	Kyle Rhea	≤ 8	Tidal: SeaGen	Agreement for Lease secured	Not yet secured	Submitted
	Nautricity	Mull of Kintyre	≤ 3	Tidal: CoRMaT	Agreement for Lease secured	Connection agreement 2013	Preparing submission
	AlbaTERN	Not yet identified	≤ 0.045	Wave: WaveNET, SQUID wave energy converters	Not applied	Not applicable[5]	Not applied

Since applications were made to the Saltire Prize, the immediate focus for some competitors has shifted to deploying and demonstrating first arrays at alternative sites. The greatest progress has been seen in the tidal projects; for example ScottishPower Renewables is concentrating on the Sound of Islay project, while the development of their larger Ness of Duncansby commercial site will follow in the late 2010s/early 2020s. Progress has been slower in the wave projects, where focus has been on proving the technology rather than on development work of the project in question. Overall we consider that progress has been slower than anticipated when the prize was first defined, significantly so in the case of wave. We believe that the projects are between two to four years behind where we believe they should be to secure the Grand Prize as was originally conceived.

2.2 Grid

The availability of grid capacity has also impacted the Challenge Competitors. As identified in May 2013, within the current prize parameters, the delay to 2018 to grid upgrades to Orkney and Shetland from Scottish Hydro Electric Transmission Ltd (SHETL) affects or could affect four of the five Challenge Competitors. Only MeyGen's Pentland Firth project was reported as unaffected. This has a direct impact on the timelines of connecting the affected projects, which makes securing finance for the projects more difficult. This has the subsequent effect of slowing the momentum of development prior to the need for connection.

2.3 Deployment

Our view of the anticipated cumulative deployments of wave and tidal energy devices in Scottish Waters for projects in and outside of the Saltire Prize competition is presented in the table below. These figures are drawn from our knowledge of the status of projects, many of which are receiving support under other public sector programmes such as Marine Energy Array Demonstrator (MEAD) and Marine Renewables Commercialisation Fund (MRCF), as well as projects outwith the Saltire Prize entrants.

Timeline		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Wave (estimated cumulative MW deployed)	Low	2	2	3	3	5	8	10	15	20	34	50	75
	High	2	3	5	10	15	20	25	37	45	60	120	250
Anticipated average project size (MW)		1	1	2	2	3	4	5	5	8	10	15	20

Timeline		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tidal (estimated cumulative MW deployed)	Low	4	4	6	9	15	18	22	25	28	30	35	70
	High	4	4	7	15	22	30	40	60	90	130	200	350
Anticipated average project size (MW)		1	1	2	3	4	5	8	10	12	15	15	20

Based on known project deployment timelines, the first devices of the first tidal array projects are scheduled to be installed in 2015.

Wave array projects are a number of years behind tidal deployments. Teams are focussed on technology demonstration of single commercial-scale devices. The first deployments of multiple connected devices on commercial sites are anticipated to be towards 2020.

2.4 Saltire Prize

The Saltire Prize competition guidelines require that a potential winner generates a minimum of 100GWh over a continuous period of two years by June 2017. This is equivalent to a project of approximately 15 to 20 devices (15 to 20MW installed capacity) operating continuously by June 2015 through to June 2017. Due to the status of the competition projects, the grid delays and the anticipated deployment rates, it is clear that in its current form the Saltire Prize could not be won.

We believe that the Grand Prize is not currently driving behaviour for two reasons:

1. The target is now considered unachievable by industry and therefore does not change the behaviour of project developers; and

2. The quantum of the prize is not material to project developers compared to the £150-200m required to construct a marine project of the scale necessary to win the Grand Prize.

3. Prize Options

3.1 May 2013 Options

In the May 2013 Options Paper, seven options for the prize were proposed. These have been reviewed and our commentary is provided in the table below:

May 2013 Options		Commentary
1	Status quo – no change to the criteria	The Prize cannot be won under these guidelines.
2	Status quo with an interim challenge or challenges	We have considered a series of supply chain prizes as interim prizes in the options below.
3	Timescale extended beyond 2017	It is anticipated that in its current guise, the Prize would more likely be won after 2020.
4	Removal of the word 'continuous'	The scale of project required to generate a total of 100GWh would still push the winning timeline back into 2020s.
5	Target of 100GWh threshold removed	Alternate performance targets have been proposed below.
6	Prize awarded to the project with the highest GWh outage by 2017	This is considered to be a valid option[6].
7	Divide the Saltire Prize into two challenges: tidal and wave	Agreed that it is valuable to recognise differences in the industries and we have taken this forward in the options below

[6] We would suggest that 'highest generation' is more appropriate terminology than 'highest outage' as a power outage generally refers to the loss of electrical power to a system rather than generation.

3.2 Alternate Options

The aspiration of the Saltire Prize is to accelerate the commercial development of wave and tidal technology with demonstration in Scotland. Based on the 'state of the industry' we have developed a series of alternate options for recasting the Prize, which could support the commercialisation of wave and tidal projects in Scottish Waters.

We have explored three new options:

- Separate **tidal sector prizes** that are achievable in a shorter timescale than the current prize and could pull forward the deployment of arrays;
- Separate **wave sector prizes** that are achievable in a shorter timescale than the current prize and could pull forward technology readiness and deployment of arrays; and
- **Supply chain prizes** that could support accelerated commercialisation via the supply chain.

New targets for the wave and tidal sectors have been developed under three key themes central to successful commercialisation: technology milestones, reliability and performance. These targets have been shaped to provide realistic/achievable targets for leading developers. Their aim is to provide motivation to the developers to ensure that their projects stay on track and deliver towards the original Grand Prize goal.

Two paths for potential supply chain prizes have been proposed. They focus on rewarding success in the existing supply chain and leveraging new solutions and products into the sector. The development of the supply chain to the industry is recognised as an essential part of supporting and growing the wave and tidal sectors.

Tidal Sector Prizes

		THEMES and TARGETS		
Timeline	**Narrative**	**Technology Milestones** Installation targets	**Reliability** Availability targets	**Performance** Energy yield targets
2014				
2015				
2016	First demonstration tidal arrays of two to four devices (approx. 2-4 MW) installed, commissioned and generating to grid			
2017		At least two devices on a single site generating concurrently for 30 days		
2018		At least four devices on a single site generating concurrently for 30 days	At least two devices on a single site generating for a minimum of 12 months at 80% availability	
2019				Generating 5GWh within a 12 month period
2020	First 10MW scale array generating to grid		At least four devices on a single site generating for a minimum of 12 months at 80% availability	
2021				Generating 10GWh within a 12 month period
2022				
2023	First commercial (>10MW) arrays generating to grid			
2024				
2025	More likely timescale when current Saltire Prize could be won			

Wave Sector Prizes

		THEMES and TARGETS		
Timeline	**Narrative**	**Technology Milestones** Installation targets	**Reliability** Availability targets	**Performance** Energy yield targets
2014	Single device demonstration at EMEC			
2015				
2016				
2017	First demonstration two devices (2MW or greater) installed at the same site (likely EMEC) installed, commissioned and generating to grid.	Two installed devices delivering 24hr continuous autonomous delivery to the grid		
2018			At least two devices on a single site generating for a minimum of one month at 80% availability	
2019	First demonstration wave array of two or more devices installed, commissioned and generating to grid on a commercial site			Generating 2.5GWh within a 12 month period
2020		At least two devices on a single site generating concurrently for a month		
2021			At least two devices on a single site generating for a minimum of 12 months at 80% availability	
2022				Generating 5GWh within a 12 month period
2023	First commercial (>10MW) arrays generating to grid			
2024				
2025	More likely timescale when current Saltire Prize could be won			

Supply Chain Prizes

Advancing the development of the supply chain for wave and tidal projects will support the commercial development of arrays. We have considered two potential scenarios for differing levels of prize support:

1. Rewarding success in 'business as usual'. In this scenario, prizes of the order of £100k could be awarded to companies or teams that are already developing supply chain technologies, in order to acknowledge their success in their given field. This could potentially take the form of an annual prize, similar to the Saltire Medal, with annual themes selected for submissions from across industry. Suggested themes relevant to current industry challenges are foundations, electrical connectors and cable protection. These prizes would be awarded in retrospect, but established as an annual occurrence.

2. Disruptive solutions. In this scenario, a larger prize of the order of £1-2m could be awarded to companies or teams that develop a new technology or method that overcomes a specified technology hurdle or provides a sizeable cost reduction. A prize of this level would likely provide the pull required to draw teams in to the competition. This prize or prizes would likely take the form of a directed call or competition, rather than an annual prize, thereby acting as a call to action. An example technology hurdle is the connection mechanism to subsea wetmate connectors. Finding a universal solution could provide significant time and therefore cost savings on offshore deployments. Similarly, a sizeable cost reduction could be a step-change in blade manufacture costs through new manufacturing techniques, processes and/or materials.

These prize ideas can be developed further, drawing in evidence and ideas from across the ORE Catapult's portfolio by: identifying and prioritising annual prize themes based on industry requirements and priorities; and investigating technology hurdles and identifying areas for cost reduction, to develop an appropriate competition call.

4. Recommendations and Mechanics

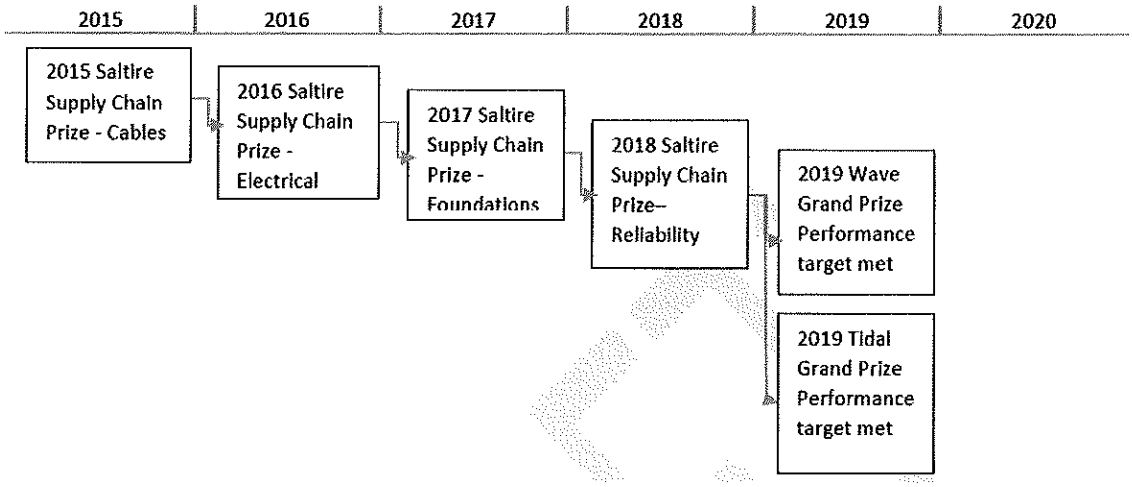
The key conclusions from the investigation into potential opportunities for amending the Saltire Prize were:

1. The progress of wave and tidal project development has been slower than anticipated when the Saltire Prize was conceived and defined.
2. The decision by SHETL to delay grid upgrades to Orkney and Shetland to 2018 has affected four of the five current Challenge Competitors.
3. The first deployments of tidal array projects in Scottish Waters are expected in 2015 and for wave projects they are expected towards 2020.
4. In its current form the Grand Prize is unlikely to be won.
5. In its current form the Grand Prize is not driving project developer behaviour because of its size in comparison to the capital cost of deploying a large-scale marine energy project.
6. Splitting the Saltire Prize into separate wave and tidal prizes is sensible going forward, as it reflects the differing development rates of the sectors.
7. Adding interim prizes related to the supply chain targets an essential support mechanism for the acceleration of the wave and tidal sectors and draws in additional interest to the sector.

Based on the alternate options for an amended Saltire Prize portfolio detailed above, two potential pathways for the recast prizes are presented overleaf. Saltire Prize – Options Paper February 2014

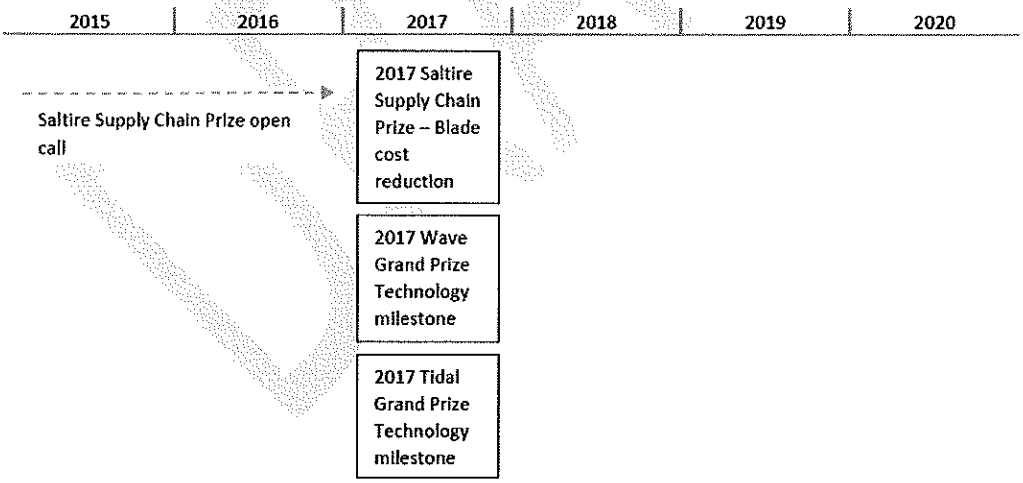
Example Pathway 1

This pathway provides an example of following an annual supply chain prize until a wave and/or tidal sector prizes based on the theme of performance are won. This pathway could provide annual interest along the original Saltire Prize timeline to 2017 via the supply chain prizes and beyond 2017 to demonstrate achievement in the original Saltire Prize theme of achieving a performance target.



Example Pathway 2

This pathway provides an example of setting a large disruptive supply chain prize and separate wave and tidal prizes based on achieving a technology milestone. It is an example of how the prizes could be aligned and awarded to the original Saltire Prize award deadline of 2017.



The alternate options and example pathways presented here, provide a range of opportunities for the Saltire Prize to be expanded, advanced and redistributed.

6. RE: SPCC09 meeting - DRAFT agenda & Options paper for 18 March – 04/03/14

[Redacted]

Thanks for sending the paper through. I've no comment on the Agenda which looks OK to me.

As to the prize options paper:

1. I remain concerned to split the prize if the prize money is to be divided. From the perspective of the winner this would mean 'their' prize purse would have been halved. If there is an appetite to make it £10M for each then I can see it working, but otherwise I'm not sure how it helps.
2. I believe the assessment of it being unwinnable is accurate and I would support the removal of the end date. It is not up to Government to determine a new date, it will be what it will be, but it will be faster if there is competition and the nature of the competitors is that they will want to out-do each other.
3. Supply chain prizes. Good idea, but not sure how that would be judged. Who says this is a good or bad idea? Civil Servants, device developers, project developers, Prize Committee? I can see a lot of admin overhead for the scrutiny of how SG is shelling out £100k/yr for small prizes. Can this be done? The overhead would be proportionally smaller on a bigger prize. I do think that maybe there is scope for a competition to ask how to set up supplemental competitions. (I am not being funny here).

Other items:

I do think there should be an Apprentice Prize. There are people going through technical training and I think it would do no harm to have a prize for the best working model of a device – they could then be used in museums or exhibitions. The act of making them could form part of the coursework at assorted establishments.

There should be a Saltire Archive being set up. Experimental kit is going to start to be scrapped and reports lost as the industry moves on. Who is tasked with collecting it and safeguarding it?

I hope this all helps and I am looking forward to the meeting,

[Redacted]

[Redacted]

[Redacted]

[Redacted]Tel: **[Redacted]**Mob: **[Redacted]**

7. SPCC09 / SR Conference – March 2014

Dear All

SPCC09 / Scottish Renewables Annual Conference – 18 March 2014

The upcoming Challenge Committee meeting is due to take place from 13:00-16:30 in the Menteith Room of the Edinburgh International Conference Centre (EICC). This is also where the Scottish Renewables Annual Conference is scheduled to be held, with the evening's dinner taking place at Mansfield Traquair.

Dinner places have been reserved for you all, however can you advise if you intend to attend the conference in the morning prior to the meeting as Scottish Renewables will be making up passes for you all.

Thanks

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Electricity Division | E&CC Directorate

Scottish Government |5 Atlantic Quay | 150 Broomielaw |4th Floor | Glasgow | G2 8LU

Tel:[Redacted]| Blackberry: [Redacted]| E-mail: [Redacted]@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

8. RE: SPCC09 / SR Conference - March 2014 06/03/14

Dear All

I have spoken with Scottish Renewables this morning and they have agreed to sort you all out with conference passes to use if you wish on Tuesday 18 March. Of course you are under no obligation to attend this before the meeting, however are more than welcome to do so.

Thanks and hope this helps

[Redacted]

From: [Redacted]
Sent: 06 March 2014 10:11
To: [Redacted]
Cc: [Redacted]; **[Redacted]**rbs.com; **[Redacted]**; **[Redacted]**@hw.ac.uk; **[Redacted]**; **[Redacted]**@btinternet.com; **[Redacted]**; **[Redacted]**; **[Redacted]**@forumforthefuture.org; **[Redacted]**@pure-energy-partners.com
Subject: RE: SPCC09 / SR Conference - March 2014

Please find attached a link to the Conference programme for Day 1:

http://www.scottishrenewables.com/events/ac14/day1-keynote-sessions/

[Redacted], **[Redacted]**and **[Redacted]** – I have passed on your requests already.

Thanks

[Redacted]

From: [Redacted] [mailto:**[Redacted]**@ngs.org]
Sent: 05 March 2014 22:36

To: [Redacted]
Cc: [Redacted]; **[Redacted]**@rbs.com; **[Redacted]**; **[Redacted]**@hw.ac.uk; **[Redacted]**; **[Redacted]**@btinternet.com; **[Redacted]**; **[Redacted]**;**[Redacted]**; **[Redacted]**@forumforthefuture.org; **[Redacted]**@pure-energy-partners.com
Subject: Re: SPCC09 / SR Conference - March 2014

[Redacted]

Can you send out a link to the conference agenda? Thanks. **[Redacted]**

[Redacted]
[Redacted]

[Redacted]
National Geographic Society
[Redacted]Office**[Redacted]**Mobile

9. PAPERS FOR SPCC09 - Challenge Committee meeting on 18 March, 13:00-16:00 – 13/02/14

Dear All

Challenge Committee (SPCC09) meeting

Date: Tuesday 18 March

Time: 13:00-16:00

Location: Edinburgh International Conference Centre (EICC), The Exchange Edinburgh, 150 Morrison Street, EH3 8EE http://www.eicc.co.uk/attending/city-centre-map/
Room: Menteith Room, Level -1

As mentioned before passes have been organised for each of you to access the Scottish Renewables Annual Conference, being held at the same venue. A guide to the programme for Tuesday can be found here: Scottish Renewables Day 1 programme . You may be interested to note that Rt Hon Ed Davy MP, Secretary of State for Energy and Climate Change is delivering a keynote speech at 16:30.

Please find attached below the papers for Tuesday's meeting, I am aware some of you are travelling far distances and will make sure that I have spare copies of these to hand.

Agenda - SPCC09 (00)

SALTIRE PRIZE CHALLENGE COMMITTEE

Tuesday 18 March 2013, 13:00 – 16:30

Menteith Room, Edinburgh International Conference Centre,

150 Morrison Street, Edinburgh EH3 8EE

AGENDA

Item	Time	Paper no.

1.	**Lunch**	13:00	
2.	**Welcome and introductions** • apologies • approval of minutes of last meeting	13:30	 SPCC09 (01) SPCC09 (02)
3.	**Update on policy developments since March 2013** (Mary McAllan/ **[Redacted]**)	13:40	SPCC09 (03)
4.	**Overview of the Saltire Prize project updates** • Discussion on written updates	14:00	SPCC09 (04-08)
5.	**Tea/coffee break**	**14:30**	
6.	**Presentation of the Saltire Prize re-design options paper** (**[Redacted]**, Catapult)	14:45 15:00	SPCC09 (09)
7.	**Saltire Prize re-design/ options discussion**		

8. **Any other business and close** 16:00

Attendees - SPCC09 (01)

SALTIRE PRIZE CHALLENGE COMMITTEE
NINTH MEETING: TUESDAY 18 MARCH 2014

Attendees

Name	Meeting	Dinner	Flight/Train	Hotel
1. [redacted]	Yes	Yes	Flight (PA to book)	Caledonian Hotel booked (ref: 19689914)
2. [redacted]	Yes	Yes	Flight (PA to book)	Hotel booked by his PA
3. [redacted]	Yes	Yes	Flight (PA to book)	Caledonian Hotel booked (ref: 19686370)
4. [redacted]	Yes	Yes	Not required	
5. [redacted]	Yes	Yes	Will book own train travel	Caledonian Hotel booked (ref: 19686364)
6. [redacted]	Yes	Yes	Flight (PA booked & been reimbursed)	Caledonian Hotel booked (ref: 19686374)
7. [redacted]	Yes	Yes	Flight & Sleeper (PA to book)	
8. [redacted]	Yes	Yes (vegetarian)	-	Caledonian Hotel booked (ref: 19686412)
9. Mary McAllan	Yes	No	-	-
10. [redacted]	Yes (to present agenda item 6)	No	-	-
11. [redacted]	In official capacity	Yes	Train (SG tickets)	-
12. [redacted]	In official capacity	Yes	Train (SG tickets)	Hotel booked
13. [redacted]	In official capacity	No	-	-
14. [redacted]	In official capacity	No	-	-

Minutes of last meeting on 18 May 2013 - SPCC09 (02)

SCOTTISH GOVERNMENT'S SALTIRE PRIZE CHALLENGE COMMITTEE
EIGHTH MEETING – 17 MAY 2013
BY CONFERENCE CALL

Attendees

[redacted]	National Geographic
[redacted]	European Marine Energy Centre
[redacted]	Forum for the Future
[redacted]	Royal Bank of Scotland
[redacted]	Heriot-Watt University
[redacted]	Pure Energy Partners
[redacted]	DECC
[redacted]	Scottish Government
Chris Stark	Scottish Government
[redacted]	Scottish Government

1. Welcome and introductions

1.1 [redacted] thanked those present for joining the conference call. Chris Stark introduced himself to Committee members.

2. Apologies

2.1 [redacted] advised that [redacted] had sent his apologies. [redacted] informed members that he would have to leave the call briefly after the first hour but would rejoin as soon as possible.

3. Conference call aims

3.1 [redacted] summarised the objectives of the conference call, which were to have a frank discussion about the future direction of the Saltire Prize; to discuss the impact of the Prize to date and the feedback from competitors at previous meetings; and to make a decision, based on that evaluation, on whether there was a need to refine the success criteria or make other improvements to the prize. It was felt that by the end of the call, the Committee should (i) be agreed on whether change was needed now or not; and (ii) have identified what further information was needed to inform future decision-making.

4. Discussion

4.1 [redacted] added that the Committee may wish to consider whether the Prize was still on track to deliver on the original aspiration (to accelerate the commercial development of wave and tidal technology), and if the challenge of achieving electrical output over the set minimum hurdle of 100 gigawatt hours over a continuous two year period was still fit for purpose given the current state of the industry. It was noted that any proposed changes to the Prize would need to take account of important dates in the political calendar.

Policy developments update - SPCC09 (03)

SALTIRE PRIZE CHALLENGE COMMITTEE

NINTH MEETING: TUESDAY 18 MARCH 2014

Update on policy developments since the last meeting

FUNDING FOR MARINE ENERGY

Marine Renewables Commercialisation Fund

In May 2013, the Scottish Government announced a refocusing of its £18m Marine Renewables Commercialisation Fund to provide a bespoke programme of support for Scotland's wave industry and an innovation support programme for the technologies that are crucial to the success of the first wave and tidal arrays. In September 2013, we announced that leading Scottish wave developers Aquamarine Power Limited and Pelamis Wave Power would share a slice of the £13m wave first array support programme; and in February 2014, we announced that five innovation projects would share £2.8m from the array technology innovation programme. The remainder of the fund will be used to support a Marine Farm Accelerator, where industry members pool resources to tackle shared technology challenges. The aim of the accelerator is to reduce the costs of marine energy through innovation.

WATERS (Wave & Tidal Energy: Research, Development & Demonstration Support)

In February 2014, we announced that there would be a third round of WATERS research and development funding worth £6m. This call will open in April and will be administered by our main economic development agency, Scottish Enterprise.

Renewable Energy Investment Fund

In February 2014, Scotland announced the latest marine energy investment (£2m in Atlantis Resources Corporation) from the Renewable Energy Investment Fund. Further marine energy investments are expected in the coming months.

UK Government funding

In October 2013, UK energy minister Greg Barker announced that up to £7m would be available through the Technology Strategy Board's Infrastructure for Offshore Renewables

funding competition. The competition opened on 2 December 2013. Further details are available at https://www.innovateuk.org/offshorerenewables.

European funding

Two UK marine energy projects were awarded funding from the European Commission's NER300 funding programme in December 2012. The Commission is currently considering change requests from the projects named in the NER300 first call awards (ScottishPower Renewables' Sound of Islay tidal project and Marine Current Turbines' Kyle Rhea tidal project). A formal decision is expected at end April/early May 2014.

EUROPEAN POLICY DEVELOPMENTS

On January 20th 2014, Commissioner's Damanaki & Oettinger launched the European Commission's Communication on Ocean Energy, which recognises the potential for growth, employment, technological leadership and clean energy production which exists in Europe today. This Communication sets out a framework for EU support of the sector up to 2020 through the Ocean Energy Forum. The first meeting is scheduled to take place on Friday 4 April, a ministerial summit is planned for October 2014.

The Scottish Government is also working with Ocean Energy Europe and the European Marine Energy Centre (EMEC) to host an open day at EMEC on Tuesday 3 June. The Minister for Energy, Enterprise and Tourism has confirmed his attendance at the event.

The Scottish Government is also leading an ERA-NET Confund call, on behalf of the UK government, under Horizon 2020. The goal of this call is to realise the potential of ocean energy across Europe.

WHITE PAPER ON ENERGY

The Scottish Government published its white paper on independence, Scotland's Future - Your Guide to an Independent Scotland, in November 2013, ahead of the referendum on 18 September 2014. An extract from Scotland's Future, detailing how independence will allow Scotland to maximise the benefits from its energy wealth and meet its ambitious climate change targets, was published in March 2014: Scotland's Future and Scotland's Energy (hard copies available at meeting).

SALTIRE PRIZE ACTIVITY

Competitor consents

In May 2013, wave energy developer Aquamarine Power received consent from Scottish ministers for a 40MW wave farm off the north-west coast of Lewis, making it the world's largest fully-permitted commercial wave array site.

In September 2013, Scottish ministers gave the go ahead to MeyGen Limited to build the first tidal energy project in the Pentland Firth. The company will install the tidal array in stages, beginning with a nine megawatt demonstration project of up to six turbines.

Website and social media

Work on the Saltire Prize website has been ongoing throughout the past year. The following are some of the updates made:

- A page and headline banner picture for the fifth competitor, West Islay Tidal (http://www.saltireprize.com/competitors/west-islay-tidal)

- An amendment to the Challenge Committee member pages to replace David Wilson with Mary McAllan (http://www.saltireprize.com/committee/mary-mcallan)
- An 'About Us' page added to include detail on the Scottish Government policy team that lead on the Saltire Prize (http://www.saltireprize.com/about-us)

- Various 'News & Events' entries, for example the Junior Saltire Prize 2014, the Saltire Prize Medal call for nominations, funding announcements, SP project related announcements and upcoming conference details (http://www.saltireprize.com/news-events)

We also continue to use our twitter account (www.twitter.com/SaltirePrize) to share news of marine energy developments and to raise the profile of the marine sector in Scotland.

Saltire Prize lecture

In September 2013, Professor **[Redacted]**, third recipient of the Saltire Prize Medal, delivered an inspiring Saltire Prize lecture in Inverness, showing how the pioneers of wave and tidal energy are learning to tame forces on an exceptional scale.

Junior Saltire Prize

This is the fourth year of the Junior Saltire Prize, created to raise awareness amongst young people of the exciting developments within the marine renewable sector in Scotland. The competition is for teams of four in three age groups – P5/P7, S1/S3 and S4/S6 pupils in Scotland. The 2014 brief is to design, build and test a simple Hydrokinetic Generator. Hydro-kinetic devices use the energy in flowing river streams, tidal currents or artificial water channels as a source of renewable power.

The numbers registering have steadily increased over the years with this year seeing a high of 157 teams. Finalists will be invited to attend the Celebration of Engineering and Science in June 2014 where fantastic prizes of up to £750, plus Saltire medals, will be awarded by Fergus Ewing, the Minister for Energy, Enterprise and Tourism.

Saltire Prize-sponsored doctorate

The Saltire Prize Studentship is part of the ETP Industry Doctorate Programme and is unique in that it is supervised by and directly supports the work of the five Saltire Prize Official Competitors: Aquamarine Power, Meygen, Pelamis Wave Power, Scottish Power Renewables and West Islay Tidal which have all agreed to be industry supervisors. The doctorate will study how marine energy projects can be designed to maximise economic energy production while protecting the environment and is entitled "Effective Marine Energy Design Subject to Ecological and Social Constraints".

In April 2013 the University of Edinburgh officially approved [Redacted] for this Saltire studentship project. The first project task, a review of the ecological and social impacts of marine energy, has been completed and work is currently underway on the second project task, an assessment of constrained design practice.

Further updates will appear on the Saltire Prize website and be circulated to the Committee.

WAVE ENERGY SUMMIT

On 14 January 2014, the First Minister hosted a wave summit with industry leaders [from SSE, ScottishPower Renewables, Vattenfall and ABB] to hear their views on how government and industry can work together to maintain Scotland's early global lead in wave energy and move more rapidly along the path to commercialisation. At the meeting, it was agreed that the enterprise agencies would commission an assessment of the current wave technologies and an economic analysis of the global potential of the wave energy sector, including the economic opportunities for Scotland. This work is almost complete and we are due to feed back the findings to industry at the end of April.

SCOTTISH GOVERNMENT'S RENEWABLE ENERGY TARGETS

Renewable sources delivered just over 40% of Scotland's gross electricity consumption in 2012, representing substantial progress towards the target to meet the equivalent of 100% of Scotland's gross electricity consumption from renewables by 2020, and the interim target of 50% by 2015. Good progress is also being made towards the Scottish Government's targets for renewable heat and the community and local ownership of renewable energy projects.

PROJECT TRANSMIT/INDUSTRY PANEL ON TRANSMISSION CHARGING

In May 2012, Ofgem directed an industry panel – the Connection and Use of System Code (CUSC) Panel – to take forward its conclusions on Project TransmiT. Ofgem is now reviewing responses to a consultation on its impact assessment and minded-to position published on 1 August 2013 and is working towards making an announcement this spring.

ISLAND RENEWABLES

Shetland, Orkney and the Western Isles, as islands with great renewable resources that would be at the end of high capacity radial transmission links to the mainland, face particular challenges due to the scale of transmission charges and connection securities and liabilities likely to apply. As part of the EMR final Delivery Plan, DECC confirmed a strike price for Scottish islands onshore wind of £115 MW/h. The Scottish Government believes the proposals fall short of supporting deployment on all three island groups. Scotland's energy minister Fergus Ewing hosted a summit in February 2014 to explore how progress can be made to address the remaining barriers. Points raised included the uncertainty of the level of support provided to projects which commission after 2018/19; the mechanism for allocation of contracts for difference; and how island projects will compete for contracts. The Scottish Government will continue to engage with DECC on the importance of resolving these matters. Consultants Xero Energy are finalising a report for the UK and Scottish governments to provide further analysis of options to tackle barriers to grid access associated with high securities and liabilities and potential aggregation of developers.

ELECTRICITY MARKET REFORM (EMR)[1]

The Department of Energy and Climate Change's (DECC's) final EMR delivery plan was published in December 2013, with the "strike price"[2] for marine technologies set at £305 a megawatt hour with forecast deployment of 100MW by 2020. DECC will consider a Scottish Island specific uplift for wave and tidal as part of the second delivery plan (expected Q4 2014). The UK Government is still consulting on important details, including the design of Contracts for Difference auctions and budget allocation. The Scottish Government will continue to press the UK Government for a clear and ring-fenced commitment to support the delivery of meaningful capacity in these areas.

The UK Government has taken powers in the Energy Act 2013 to close the Renewables Obligation[3] across the UK with an intention to close it to new generating capacity from 31 March 2017. This means the Renewables Obligation in Scotland would also be closed to new capacity from that date.

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[1] The aim of electricity market reform is to promote the development of a mix of low carbon electricity generation that will help meet the UK's targets on renewable electricity and climate change, maintain security of supply and keep the price of electricity affordable.

[2] The strike price is a predetermined price and if the wholesale price of electricity is less than the strike price, the generator receives top-up payments covering the difference.

[3] The Renewables Obligation is the existing support mechanism for renewable generation.

[Redacted] / [Redacted]

Electricity Division

Saltire Prize project written updates - SPCC09 (04-08)

Aquamarine Power – Saltire Prize update

Promising power production figures

Summer 2013 saw some promising power production figures from Oyster 800 – including generation of 1MWh over a five hour period on one cylinder. Normally the Oyster operates on two cylinders, but most generation periods were when the Oyster was operating on only one cylinder – a capability included in the original design – which makes the figures even more encouraging.

Highlights include:

- 1MWh generated in a 5 hour period on a single power cylinder (we believe this to be the highest sustained power output of any wave energy machine in the world)
- 2MWh generated in 13 hours and 50 minutes (single cylinder operation)
- 1MWh generated in 9 hours
- Peak output of 560kW

Oyster 800 operational in eight metre waves

Aquamarine Power released a short video showing Oyster 800 operating in waves over eight metres high. Waves this severe are encountered less than one percent of the time and the film demonstrates the incredible durability of the Oyster, which has now been at sea for nearly three full winters. The footage, which was captured at the European Marine Energy Centre, has had over 10,000 hits worldwide since it was posted on YouTube. http://www.youtube.com/watch?v=62GXbSNeYEI

Major overhaul targeted at increased reliability

The summer and autumn of 2013 saw a major programme of planned improvements to the company's flagship Oyster technology. The improvements, known as the Oyster 800 Product Improvement Programme, involved shutting down the Oyster 800 to undertake work on five specific areas on the machine – with the overall goals of improving performance and reliability of the near shore wave technology.

The planned shutdown allowed the company to install significant upgrades in five key areas including enhanced cylinder and accumulator modules, improved control and instrumentation architecture, data analysis to improve machine efficiency and work to increase the performance of the on-shore header tank and accumulator plant.

"The product improvement programme went extremely well," says Aquamarine Power Chief Executive Officer **[Redacted]**. "The Oyster concept is proven – we have shown the machine works in all seas and can produce significant and consistent power. The challenge for us, and for the whole industry, is to produce power reliably and then drive down the cost of energy.

"The product improvement programme was a very cost-effective way of using what we have learned so far to improve the Oyster 800's performance and reliability. Currently Oyster 800 is out of service, following the identification of some damage sustained during a recent series of storms to some areas of subsystems which were not included in the product improvement programme. We have a full scale research and development platform in Oyster 800 and we will continue to maximise our learning on this machine. Our next phase of work, part-funded through the Scottish Government's Marine Renewables Commercialisation Fund, will take what we have learned from Oyster 800 and commence pre-design of the Oyster 801," **[Redacted]** says.

This work involves looking at other areas of Oyster which continue to have reliability issues, with a particular focus on ensuring the future robustness of the Oyster 800 and a full return to service as soon as is practical.
The PIP+ programme, as it is known, will have a particular focus on the power take off system (PTO) and will use Oyster 800 as the test bed for three different PTO concepts: a 'closed loop' (as per the current design), but with increased salt water tolerance; and an 'open loop' running on salt water – both of which would continue to use the onshore hydro-electric plant.
A third system, known as the 'offshore PTO' would generate electricity at sea using a sealed electro-hydraulic unit and could present a major leap forward both in reliability and cost of energy for Oyster. All three systems will be tested on the Oyster 800 and findings will be used to inform the design of the Oyster 801.

Full Consent for 40MW Lewis wave farm

Aquamarine Power has received full consent from the Scottish Government for a 40MW wave farm off the north-west coast of Lewis, Scotland – making it the world's largest fully-permitted ocean energy site.
The green light from the government and its regulator Marine Scotland, along with onshore planning from the local council, Comhairle nan Eilean Siar (Western Isles Council) means Lewis Wave Power Limited (a wholly-owned subsidiary) will be able to begin installing Oyster wave energy machines at the site – once the necessary grid infrastructure has been put in place.
This will ultimately see the deployment of between 40 and 50 Oyster devices along the coast at Lag na Greine, near to Fivepenny Borve, in one of the best wave energy locations in Europe. Once complete, the farm will have the capacity to power nearly 30,000 homes.

Industry challenges

The major hurdles in the short to medium term are technology, finance and grid.
With **technology**, although we have seen a number of devices demonstrated at scale, there are still considerable technical challenges to overcome, particularly associated with reliability. The tidal sector has proved more successful in demonstrating consistent power generation and has been able to attract significant inward investment, to some degree driven by greater technological convergence and opportunities for standardisation.
Finance remains crucial. A number of major tidal projects have secured significant public sector support through schemes including the UK Marine Energy Array Demonstrator fund, and the European NER 300 programme. The capability of these projects to use these funds to leverage considerable private sector investment to enable projects to go ahead is a major step, and will rely as much on the long-term signals provided by government as the progress of the technologies themselves.
In parallel, there remains a continuing requirement to support technology development, for both wave and tidal sectors. Building devices which can operate reliably in our wild seas means that machines, by their nature, must be big and robust and any testing programmes requires many £millions of investment.
This will require continuing and significant private sector investment and in the short to medium term there will still be a role for the public sector to play in de-risking private capital. There may be a requirement for radical new approaches – for instance funding industry-wide solutions for power take off systems, mooring and cylinder seals could, for example, help a number of technologies make better progress.
Thirdly, we need to address the lack of **grid connections to our Scottish islands** – home to over 90 per cent of the UK's wave energy projects. The UK Government now recognises the unique nature of connecting Scottish islands, and is working closely with the Scottish Government, industry and the public sector – all seeking solutions to the twin challenges of high transmission charges and the significant securities and liabilities that single island links entail.

MEYGEN

THE TIDE OF CHANGE IN CAITHNESS

Saltire Prize Update – Q1 2014

12th March 2014

ATLANTIS

Development Status

Component	Status	Update
Seabed lease		Agreement for Lease signed in October 2010. Lease must be entered into by October 2015.
Onshore Consents		Onshore consents for Ness of Quoys obtained in Q1 2013 from The Highland Council. Road bond entered into and environmental conditions now extinguished. Works permitted include all civil construction for up to 86MW. Slight alteration to buildings (reduction in height) is required but will be deemed at local level and is not thought to pose any controversy to the original application (the plans will have less of an impact)
Offshore Consents		All offshore consents for 86MW have been received (Section 36 and Marine License). Under the deploy and monitor conditions the project can only deploy up to 6 turbines for Phase 1A. In order to define the environmental monitoring we have worked with Scottish Government and Stakeholders in order to set up a Steering Group which has now met 4 times. Monitoring strategy is now in draft form and will be ratified within next couple of months.
Onshore Landowner(s)		Onshore landowner at Ness of Quoys has signed Option to Lease. Cable from Hastigrow under SHEPD control finalising wayleaves. Good progress made and scheduled to have all signed by end of April '14.
Grid (14.9MW)		SHEPD works completed upto Hastigrow. 12KM of buried cable remaining. On schedule for connection at to be available at Ness of Quoys at the end of this year. All securities paid .
Construction & PPA		All negotiations with construction contractors in mature state with aim of completing all negotiations by the end of March. Multi-Contract FIDIC Yellow Book approach taken in order to attract project finance in the future as well as provide the project and industry with firm contracting template to progress future arrays from.
Stakeholders		Positive dialogue with all 3rd parties interested in the project.
Funding		We have a clear line of sight to the funding of Phase 1a of the project and we are aiming to close this within the next few months. Funding is now confirmed by DECC (£10M Grant) and Atlantis Resources Ltd. (Equity), Interested parties who are carrying out Due Diligence in order to assist with funding include, Highlands & Islands Enterprise, Scottish Investment Bank and The Crown Estate. We are in an intense period.

Should you wish to see the project scheme animation we have produced a video that describes the project in full please click on:
http://youtu.be/EZVegcyxTJY

PELAMIS WAVE POWER – Farr Point Wave Farm
Saltire Prize Progress Update – March 2014

The development of Farr Point Wave Farm has seen significant progress in the past 12 months, due to award of the Marine Renewables Commercialisation Fund (MRCF) grant via the Carbon Trust. The grant has provided the necessary funding to take forward critical project development activities to prepare the Farr Point Site for the first machine deployments from 2017.

The project is being progressed based on a first phase build out of 10 MW or up to 10 Pelamis machines, which will be an enhancement of existing P2 machines at EMEC. Critical balance of plant infrastructure elements (i.e. subsea export cables and substation) will be 'future proofed' to facilitate subsequent build out beyond 10 MW.

Multiple aspects of project development are already underway with several key milestones already completed:

- **Grid Connection:** a firm grid connection for 7.5 MW has been secured and committed within the next 3 years. The grid connection for Farr Point is unique in that Farr Point represents the only wave project currently under development which does not rely on the delivery of new island interconnection.
- **Environmental Impact Assessment (EIA):** consultants were appointed last year to progress the EIA, the majority of baseline survey and analysis is now underway. Crucially to timescales, long lead time survey items have been removed due to availability of existing survey data, fisheries information, and

ecological information gathered by Marine Scotland.

- **Resource Assessment:** two wave measurements buoys were installed by a local contractor in December 2013 to gather information on wave resource. Information will inform energy yield analysis, operational activities and engineering design. Wave measurements will be supplemented with current measurements in spring 2014.
- **Offshore Survey:** significant high quality geophysical data has been gathered at Farr Point by Marine Scotland Science. A tender has been issued to contract the remaining suite of data requirements with the full suite of survey requirements to be completed in summer 2014.
- **Land Leases**: landowner permissions are required to provide wayleave for the export cable and onshore substation. A cable landing point has been selected and negotiations are progressing positively with all relevant landowners.

Farr Point is currently on schedule for an offshore consent application in Q2, 2014 and onshore planning application: Q3, 2014, with anticipated consent determination in Q1 2015. Build out of infrastructure and site preparation is expected over 2015 – 2017 with energisation in 2017.

Saltire Prize Challenge Committee Update – March 2014

ScottishPower Renewables – Ness of Duncansby/Sound of Islay Update

ScottishPower Renewables (SPR) is committed to the growth of the marine renewables industry. We have played a leading role to date, investing in the development and testing of both tidal (ANDRITZ HYDRO Hammerfest) and wave (Pelamis Wave Power) technologies.

Our current focus is the development of our first tidal array project, the Sound of Islay, 10MW, tidal demonstration project on the west coast of Scotland. Adopting a staged approach to the development and expansion of our marine business, the Islay demonstration project is important for valuable learning before moving to larger commercial scale sites. The Ness of Duncansby site (95MW) is the first of our commercial-scale projects and is our Saltire Prize contender project given that the Sound of Islay project (10MW), despite being the world's largest demonstration array, is considered too small under the competition guidelines.

This note provides an update on the progress SPR is making in developing the Sound of Islay project.

Sound of Islay Tidal Array: Project Summary

- **Overview** - The project will comprise 8 units, each rated at 1.25MW and will be located between Islay and Jura on the west coast of Scotland
- **Technology** – We are currently appraising technology options, namely those of ANDRITZ HYDRO Hammerfest (AHH) and Alstom TGL (Alstom), which are

currently progressing through test programmes at EMEC. The AHH HS1000 device has generated continuously since September 2013 with promising results. Alstom device's testing programme has progressed at a slower pace with the device currently out of the water for repairs. It is scheduled to be reinstalled next month for continued testing;

- **Funding** – Securing the considerable capital expenditure to invest in these first demonstration projects is challenging given the technical, financial and environmental risks involved in these pioneering first array projects. SPR is in active negotiation with partners for investment in the project;
- **Development** –SPR is engaged with Marine Scotland to extend the existing project consent from 14 to 25 years;
- **Timing** - Subject to reaching a positive FID by the end of this year, the devices are scheduled to be installed during 2015/16, with first generation anticipated 2016.

The Future of the marine sector in the UK

2013 was a challenging year for the wave and tidal industry, with 2014 looking equally so. Competition for limited capital given the risks noted above, coupled with alternative opportunities in other technologies or jurisdictions, means securing investment continues to be extremely challenging. 2013 saw utility players exit the sector, with SPR the only remaining utility continuing to actively invest in the UK's wave and tidal industry.

I. Tidal

- It is crucial that the first tidal array projects reach FID this year and are successfully deployed and generating by 2016 as currently anticipated. Given the level of risk and capital expenditure required to support these first arrays, access to public sector support (by way of grant funding or support of enabling works) and investment is necessary to help these projects reach FID. The deployment and operation of these first arrays would undoubtedly increase much-needed confidence in the viability of the technology to operate in future commercial arrays, attracting much needed private investors to the sector;
- Following deployment of the first arrays, in order to attract investors to the industry as well as all key players involved in the supply chain, development of a pipeline of commercial scale projects is imperative, Signaling around the provisions of a minima under the CFD Allocation Framework by DECC is helpful but details have yet to be consulted on. Given the current status of the technology, and therefore projects, it is highly probable that commercial projects will deliver beyond the currently advised Delivery Period under EMR (ending 2018/19). Foresight of revenue support mechanism post 2019 is therefore critical to support development of, and investment in, these commercial projects.

II. Wave

- Wave technology is not as far advanced as tidal and requires further R&D development before the technology is ready for array scale deployment and significant investment by private investors;
- Given the scale of the global wave resource, the potential of wave technology is immense. However, in order for it to be exploited, further public R&D support is needed to move the technology to a stage where private investors and developers will have the confidence to utilise the technology to develop and build array projects in this decade.

ScottishPower Renewables
March 2014

West Islay Tidal Energy Project

Project Update for Saltire Prize Committee

The application for consent for the 30MW Saltire Prize project including both the tidal farm and the sub-sea cable connection to Islay was lodged in September 2013. The application has been made on a technology neutral basis with a broad project envelope which brings with it some challenges for stakeholders in respect of understanding specific impacts and mitigation measures.

Preliminary feedback from the key ecological stakeholders including SNH has been very positive, as has feedback from the navigational bodies MCA and NLB although they have noted the difficulty of applying appropriate conditions where the design envelope is not fully defined. This issue is being discussed with Marine Scotland and is expected to be resolvable.

Recreational users as represented by the RYA are satisfied the project does not substantially affect their member's interests. Potential impacts have been highlighted in respect of commercial fishing interests by SFF and CFA and DPME will be moving this forward with regular stakeholder meetings with those with fisheries interests following the model set up for the east coast wind farm proposals.

Argyll and Bute Council are supportive of the project but are keen to obtain better visibility of the Islay onshore supporting infrastructure including grid and substations. DPME have set a target of lodging an application for the relevant consents for this work before the end of the summer 2014. Goal is for all consents to be in place by the end of 2014

In parallel with the environmental surveys required to achieve consents DPME is progressing landowner agreements for cable wayleaves and substation locations on both Islay and Kintyre. The Kintyre section of the grid route has been complicated by the necessity to undertake additional discussions with a number of the Kintyre wind farms in order to look at common routing. Whilst this potentially delays matters it also brings with

it the potential for shared infrastructure between both the tidal energy site and the onshore wind developments.

Along with the larger grid connection strategy DPME is progressing a proposal to displace the heavy fuel usage in the Islay and Jura Distilleries by replacing the existing oil fired steam raising boilers with electric boilers powered by tidal energy. This exciting possibility brings with it significant CO2 savings.

12 March 2014

Saltire Prize re-design options paper (by Catapult) – SPCC09 (09)

* Please note this is a draft options paper for discussion*

Saltire Prize – Options Paper

Contents

8 Revision	Date	Description	Prepared by	Checked by	Approved by
Draft 1	14/02/14	For review and comment	**[Redacted]**	**[Redacted]**	**[Redacted]**

2.1 Projects

The status of the Challenge Competitors' projects and other wave and tidal array projects under development in Scottish Waters are summarised in the table below. Note that the table excludes the remaining Pentland Firth and Orkney Waters projects, as these are not scheduled for significant development until the 2020s:

	Team	Project Name & Location	Capacity (MW)	Technology	Lease status	Grid Status	Consent
Challenge Competitors	Aquamarine Power	Isle of Lewis	≤ 40	Wave: Oyster wave energy converter	Agreement for Lease secured	Delayed beyond 2018	Full consent received
	MeyGen Ltd	Inner Sound, Pentland Firth	≤ 400	Tidal: Andritz Hydro Hammerfest tidal turbine	Agreement for Lease secured	253MW capacity secured	Full consent for 86MW
	Pelamis Wave Power	Farr Point, Pentland Firth	≤ 50	Wave: Pelamis WEC	Agreement for Lease secured	7.5MW capacity secured	Applied 2011
	ScottishPower Renewables	Ness of Duncansby, Pentland Firth	≤ 95	Tidal: Andritz Hydro Hammerfest	Agreement for Lease secured	Delayed beyond 2018	Applied 2013
	West Islay Tidal Energy Park Ltd[3]	West Islay	≤ 30	Tidal: Andritz Hydro Hammerfest tidal turbine	Agreement for Lease secured	Not yet secured	Submitted early 2013
Other Scottish Waters Projects	Scotrenewables	Lashy Sound, Eday, Orkney	≤ 30	Tidal: SR2000	Agreement for Lease secured	Affected by 2018 grid delay	Not submitted
	Aegir	South West Shetland	≤ 10	Wave: Pelamis	Agreement for Lease secured	Affected by 2018 grid delay	EIA starts 2014
	Nova Innovation	Bluemill Sound, Shetland	≤ 0.12	Tidal: Nova Innovation turbine	Agreement for Lease secured	Options being considered	Consent received
	ScottishPower Renewables	Sound of Islay	≤ 10	Tidal: Andritz Hydro Hammerfest Alstom	Agreement for Lease secured	Secured	Full consent received

[1] Scottish Government, May 2013. Challenge Committee Saltire Prize Options Paper, restricted.

[2] Scottish Government, April 2013. Challenge Committee, Options paper, Competitor and committee suggestions. Ref SPCC08.

[3] Joint Venture by a consortium of DP Marine Energy and DEME Blue Energy

	SeaGeneration (Kyle Rhea) Ltd[4]	Kyle Rhea	≤ 8	Tidal: SeaGen	Agreement for Lease secured	Not yet secured	Submitted
	Nautricity	Mull of Kintyre	≤ 3	Tidal: CoRMaT	Agreement for Lease secured	Connection agreement 2013	Preparing submission
	AlbaTERN	Not yet identified	≤ 0.045	Wave: WaveNET, SQUID wave energy converters	Not applied	Not applicable[5]	Not applied

Since applications were made to the Saltire Prize, the immediate focus for some competitors has shifted to deploying and demonstrating first arrays at alternative sites. The greatest progress has been seen in the tidal projects; for example ScottishPower Renewables is concentrating on the Sound of Islay project, while the development of their larger Ness of Duncansby commercial site will follow in the late 2010s/early 2020s. Progress has been slower in the wave projects, where focus has been on proving the technology rather than on development work of the project in question. Overall we consider that progress has been slower than anticipated when the prize was first defined, significantly so in the case of wave. We believe that the projects are between two to four years behind where we believe they should be to secure the Grand Prize as was originally conceived.

2.2 Grid

The availability of grid capacity has also impacted the Challenge Competitors. As identified in May 2013, within the current prize parameters, the delay to 2018 to grid upgrades to Orkney and Shetland from Scottish Hydro Electric Transmission Ltd (SHETL) affects or could affect four of the five Challenge Competitors. Only MeyGen's Pentland Firth project was reported as unaffected. This has a direct impact on the timelines of connecting the affected projects, which makes securing finance for the projects more difficult. This has the subsequent effect of slowing the momentum of development prior to the need for connection.

2.3 Deployment

Our view of the anticipated cumulative deployments of wave and tidal energy devices in Scottish Waters for projects in and outside of the Saltire Prize competition is presented in the table below. These figures are drawn from our knowledge of the status of projects, many of which are receiving support under other public sector programmes such as Marine Energy Array Demonstrator (MEAD) and Marine Renewables Commercialisation Fund (MRCF), as well as projects outwith the Saltire Prize entrants.

Timeline		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Wave (estimated cumulative MW deployed)	Low	2	2	3	3	5	8	10	15	20	34	50	75
	High	2	3	5	10	15	20	25	37	45	60	120	250
Anticipated average project size (MW)		1	1	2	2	3	4	5	5	8	10	15	20

Timeline		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Tidal (estimated cumulative MW deployed)	Low	4	4	6	9	15	18	22	25	28	30	35	70
	High	4	4	7	15	22	30	40	60	90	130	200	350
Anticipated average project size (MW)		1	1	2	3	4	5	8	10	12	15	15	20

Based on known project deployment timelines, the first devices of the first tidal array projects are scheduled to be installed in 2015.

Wave array projects are a number of years behind tidal deployments. Teams are focussed on technology demonstration of single commercial-scale devices. The first deployments of multiple connected devices on commercial sites are anticipated to be towards 2020.

2.4 Saltire Prize

The Saltire Prize competition guidelines require that a potential winner generates a minimum of 100GWh over a continuous period of two years by June 2017. This is equivalent to a project of approximately 15 to 20 devices (15 to 20MW installed capacity) operating continuously by June 2015 through to June 2017. Due to the status of the competition projects, the grid delays and the anticipated deployment rates, it is clear that in its current form the Saltire Prize could not be won. We believe that the Grand Prize is not currently driving behaviour for two reasons:

1. The target is now considered unachievable by industry and therefore does not change the behaviour of project developers; and

2. The quantum of the prize is not material to project developers compared to the £150-200m required to construct a marine project of the scale necessary to win the Grand Prize.

3. Prize Options

3.1 May 2013 Options

In the May 2013 Options Paper, seven options for the prize were proposed. These have been reviewed and our commentary is provided in the table below:

May 2013 Options		Commentary
1	Status quo – no change to the criteria	The Prize cannot be won under these guidelines.
2	Status quo with an interim challenge or challenges	We have considered a series of supply chain prizes as interim prizes in the options below.
3	Timescale extended beyond 2017	It is anticipated that in its current guise, the Prize would more likely be won after 2020.
4	Removal of the word 'continuous'	The scale of project required to generate a total of 100GWh would still push the winning timeline back into 2020s.
5	Target of 100GWh threshold removed	Alternate performance targets have been proposed below.
6	Prize awarded to the project with the highest GWh outage by 2017	This is considered to be a valid option[6].
7	Divide the Saltire Prize into two challenges: tidal and wave	Agreed that it is valuable to recognise differences in the industries and we have taken this forward in the options below

[6] We would suggest that 'highest generation' is more appropriate terminology than 'highest outage' as a power outage generally refers to the loss of electrical power to a system rather than generation.

3.2 Alternate Options

The aspiration of the Saltire Prize is to accelerate the commercial development of wave and tidal technology with demonstration in Scotland. Based on the 'state of the industry' we have developed a series of alternate options for recasting the Prize, which could support the commercialisation of wave and tidal projects in Scottish Waters.

We have explored three new options:

- Separate **tidal sector prizes** that are achievable in a shorter timescale than the current prize and could pull forward the deployment of arrays;
- Separate **wave sector prizes** that are achievable in a shorter timescale than the current prize and could pull forward technology readiness and deployment of arrays; and
- **Supply chain prizes** that could support accelerated commercialisation via the supply chain.

New targets for the wave and tidal sectors have been developed under three key themes central to successful commercialisation: technology milestones, reliability and performance. These targets have been shaped to provide realistic/achievable targets for leading developers. Their aim is to provide motivation to the developers to ensure that their projects stay on track and deliver towards the original Grand Prize goal.

Two paths for potential supply chain prizes have been proposed. They focus on rewarding success in the existing supply chain and leveraging new solutions and products into the sector. The development of the supply chain to the industry is recognised as an essential part of supporting and growing the wave and tidal sectors.

Tidal Sector Prizes

		THEMES and TARGETS		
Timeline	**Narrative**	**Technology Milestones** Installation targets	**Reliability** Availability targets	**Performance** Energy yield targets
2014				
2015				
2016	First demonstration tidal arrays of two to four devices (approx. 2-4 MW) installed, commissioned and generating to grid			
2017		At least two devices on a single site generating concurrently for 30 days		
2018		At least four devices on a single site generating concurrently for 30 days	At least two devices on a single site generating for a minimum of 12 months at 80% availability	
2019				Generating 5GWh within a 12 month period
2020	First 10MW scale array generating to grid		At least four devices on a single site generating for a minimum of 12 months at 80% availability	
2021				Generating 10GWh within a 12 month period
2022				
2023	First commercial (>10MW) arrays generating to grid			
2024				
2025	More likely timescale when current Saltire Prize could be won			

Wave Sector Prizes

		THEMES and TARGETS		
Timeline	**Narrative**	**Technology Milestones** Installation targets	**Reliability** Availability targets	**Performance** Energy yield targets
2014	Single device demonstration at EMEC			
2015				
2016				
2017	First demonstration two devices (2MW or greater) installed at the same site (likely EMEC) installed, commissioned and generating to grid.	Two installed devices delivering 24hr continuous autonomous delivery to the grid		
2018			At least two devices on a single site generating for a minimum of one month at 80% availability	
2019	First demonstration wave array of two or more devices installed, commissioned and generating to grid on a commercial site			Generating 2.5GWh within a 12 month period
2020		At least two devices on a single site generating concurrently for a month		
2021			At least two devices on a single site generating for a minimum of 12 months at 80% availability	
2022				Generating 5GWh within a 12 month period
2023	First commercial (>10MW) arrays generating to grid			
2024				
2025	More likely timescale when current Saltire Prize could be won			

Supply Chain Prizes

Advancing the development of the supply chain for wave and tidal projects will support the commercial development of arrays. We have considered two potential scenarios for differing levels of prize support:

1. Rewarding success in 'business as usual'. In this scenario, prizes of the order of £100k could be awarded to companies or teams that are already developing supply chain technologies, in order to acknowledge their success in their given field. This could potentially take the form of an annual prize, similar to the Saltire Medal, with annual themes selected for submissions from across industry. Suggested themes relevant to current industry challenges are foundations, electrical connectors and cable protection. These prizes would be awarded in retrospect, but established as an annual occurrence.

2. Disruptive solutions. In this scenario, a larger prize of the order of £1-2m could be awarded to companies or teams that develop a new technology or method that overcomes a specified technology hurdle or provides a sizeable cost reduction. A prize of this level would likely provide the pull required to draw teams in to the competition. This prize or prizes would likely take the form of a directed call or competition, rather than an annual prize, thereby acting as a call to action. An example technology hurdle is the connection mechanism to subsea wetmate connectors. Finding a universal solution could provide significant time and therefore cost savings on offshore deployments. Similarly, a sizeable cost reduction could be a step-change in blade manufacture costs through new manufacturing techniques, processes and/or materials.

These prize ideas can be developed further, drawing in evidence and ideas from across the ORE Catapult's portfolio by: identifying and prioritising annual prize themes based on industry requirements and priorities; and investigating technology hurdles and identifying areas for cost reduction, to develop an appropriate competition call.

4. Recommendations and Mechanics

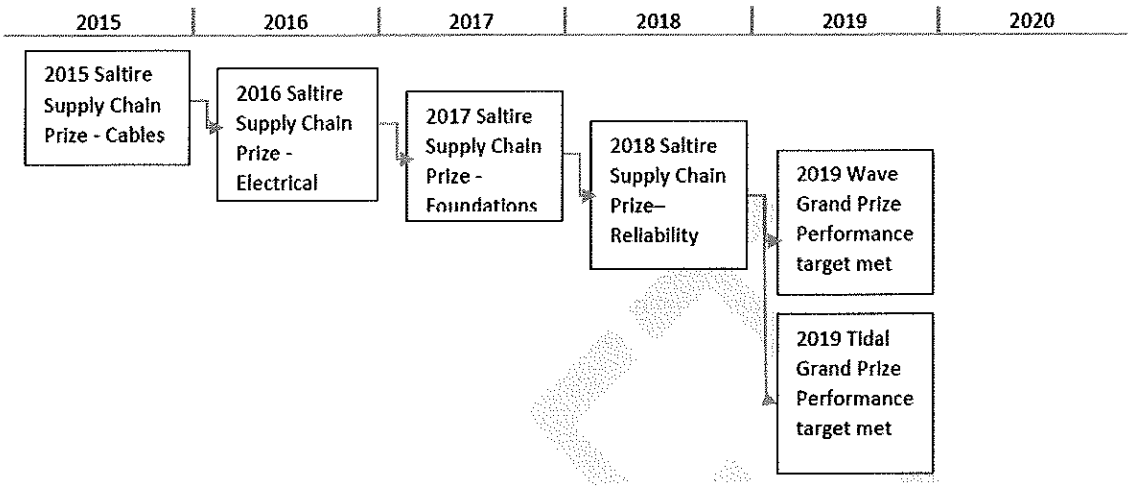
The key conclusions from the investigation into potential opportunities for amending the Saltire Prize were:

1. The progress of wave and tidal project development has been slower than anticipated when the Saltire Prize was conceived and defined.
2. The decision by SHETL to delay grid upgrades to Orkney and Shetland to 2018 has affected four of the five current Challenge Competitors.
3. The first deployments of tidal array projects in Scottish Waters are expected in 2015 and for wave projects they are expected towards 2020.
4. In its current form the Grand Prize is unlikely to be won.
5. In its current form the Grand Prize is not driving project developer behaviour because of its size in comparison to the capital cost of deploying a large-scale marine energy project.
6. Splitting the Saltire Prize into separate wave and tidal prizes is sensible going forward, as it reflects the differing development rates of the sectors.
7. Adding interim prizes related to the supply chain targets an essential support mechanism for the acceleration of the wave and tidal sectors and draws in additional interest to the sector.

Based on the alternate options for an amended Saltire Prize portfolio detailed above, two potential pathways for the recast prizes are presented overleaf. Saltire Prize – Options Paper February 2014

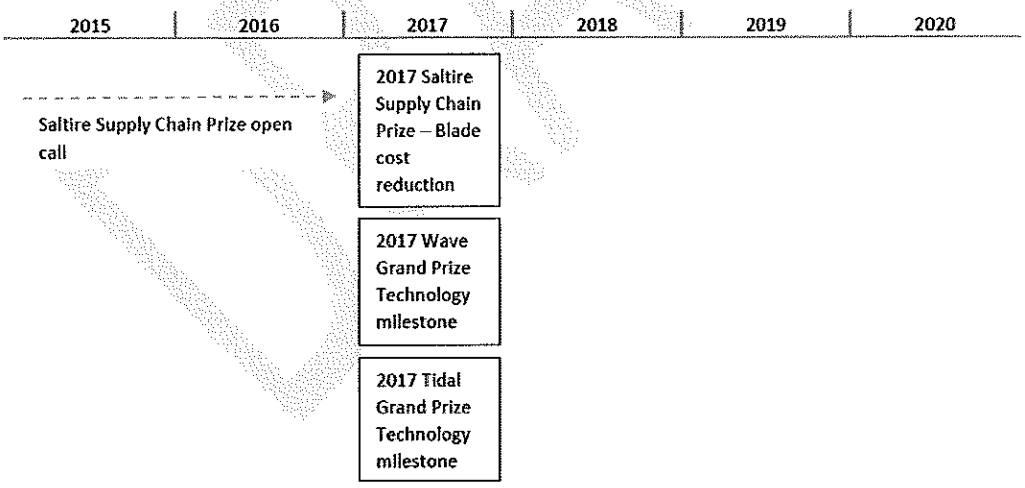
Example Pathway 1

This pathway provides an example of following an annual supply chain prize until a wave and/or tidal sector prizes based on the theme of performance are won. This pathway could provide annual interest along the original Saltire Prize timeline to 2017 via the supply chain prizes and beyond 2017 to demonstrate achievement in the original Saltire Prize theme of achieving a performance target.



Example Pathway 2

This pathway provides an example of setting a large disruptive supply chain prize and separate wave and tidal prizes based on achieving a technology milestone. It is an example of how the prizes could be aligned and awarded to the original Saltire Prize award deadline of 2017.



The alternate options and example pathways presented here, provide a range of opportunities for the Saltire Prize to be expanded, advanced and redistributed.

If there are any problems please feel free to contact me on **[Redacted]**, otherwise I look forward to meeting you all next Tuesday.

Thanks

[Redacted]

[Redacted]
Offshore Renewables Team – Saltire Prize
Scottish Government | 5 Atlantic Quay | 150 Broomielaw | 4th Floor | Glasgow | G2 8LU

Tel: [Redacted]| Blackberry: [Redacted]| E-mail: [Redacted]@scotland.gsi.gov.uk

Website: www.saltireprize.com **Follow us on Twitter:** www.twitter.com/SaltirePrize

10. SPCC09 - Minutes and presentation from the meeting on 18 March 2014 – 26/03/14

Dear All

SPCC09 – Meeting minutes

Please find attached a copy of the minutes from the 9th Saltire Prize Challenge Committee Meeting held on 18 March 2014, together with a copy of the powerpoint presentation delivered by **[Redacted]** of the Offshore Renewable Energy Catapult Team.

SCOTTISH GOVERNMENT'S SALTIRE PRIZE CHALLENGE COMMITTEE

NINTH MEETING – 18 MARCH 2014

EDINBURGH INTERNATIONAL CONFERENCE CENTRE

Attendance:

[Redacted]	National Geographic
[Redacted]	European Marine Energy Centre
[Redacted]	Forum for the Future
[Redacted]	Commonpool
[Redacted]	Royal Bank of Scotland
[Redacted]	Heriot-Watt University
[Redacted]	Pure Energy Partners
[Redacted]	DECC
Mary McAllan	Scottish Government
[Redacted]	Scottish Enterprise
[Redacted]	Scottish Government
[Redacted]	Scottish Government

1. Welcome and introductions

1.1. **[Redacted]** welcomed everyone and outlined the different format for this year's meeting. Instead of personal presentations from Saltire Prize competitors, written updates for each project had been submitted to allow time for detailed discussions on the future of the Saltire Prize.

1.2. **[Redacted]** advised that **[Redacted]**) had been unable to attend.

1.3 The minutes from the teleconference on 17 May 2013 were approved as an accurate record of that meeting.

2. Update on policy developments since March 2013

2.1. **[Redacted]** and Mary McAllan provided an update on policy developments since the last Challenge Committee meeting:

- ***White Paper***

The Scottish Government published its White Paper on Independence on 26 November 2013. An extract focusing on 'Scotland's Future and Scotland's Energy' was circulated to all members of the Challenge Committee. http://www.scotland.gov.uk/Publications/2014/03/7306

- *EMR*

The UK Government published its first Energy Market Reform delivery plan at the end of last year. The strike price for marine energy was set at £305 MWh. However, there remains considerable uncertainty beyond 2018/19 as commercial-scale marine projects are not expected to deploy during the first EMR delivery plan period.

- *Grid*

The majority of wave and tidal projects are located on the Islands. There is also considerable uncertainty in relation to grid investment partly flowing from the investment hiatus created by EMR across various renewable technologies and partly due to on-going uncertainty over OFGEM's review of transmission costs . In Orkney in particular this combination of factors is problematic as the grid is nearing absolute capacity.

Wave and tidal policy

The Scottish Government is already treating wave and tidal separately in funding policy terms. Committee members may therefore wish to consider how the Saltire Prize might complement existing marine energy policy.

3. Saltire Prize competitor updates

3.1. **[Redacted]** was invited to comment on the Saltire Prize competitor updates. He said that the reports were consistent with his understanding of the progress of each project.

3.2. Some general discussion on the current state of the prize followed:

- **[Redacted]** highlighted that all competitor updates lacked reference to the Saltire Prize and **[Redacted]** stated that there was a concern that the prize was no longer driving behaviour.
- **[Redacted]** commented that this did not mean the Saltire Prize had not advanced Scottish Government goals, but that no competitor was in a position to win it in the current timescales. Any announcement on a prize redesign would have to cover (i) the impact of grid delays on competition timescales; (ii) the investment that has been made to date as a result of each project; and (iii) the scope for collaborative working with the US Department of Energy, who are interested in developing a wave prize.

- **[Redacted]** remarked that prizes have changed over the years and that they are now more about the benefits competitors get from participating rather than winning. He stated there was a need to shift towards another value proposition so that those that don't win reap benefits. He said this was a more effective way of attracting more players. There are many more examples now of 'more for less' prizes, where a relatively modest prize can still generate impressive economic and social benefits.
- **[Redacted]** also gave an overview of the energy access market prize initiative that he designed recently for the National Geographic: the TERRA WATT PRIZE: http://www.terrawattprize.com/. It challenges companies to deliver electricity to rural villages in developing/transition economies. **[Redacted]** team identified that there was a huge market for this but that the real difficulty was in connecting entrepreneurs and investors. To facilitate this interaction, investors were made part of the judging panel, which incentivised applicants as they knew that project ideas would receive valuable feedback. In other words, even if competitors don't win the ultimate prize, they can still be a winner as they may attract an investor.

4. Saltire Prize re-design options paper / discussion

4.1. **[Redacted]** from the ORE Catapult gave a presentation on his recent Saltire Prize options paper covering deployment projections; proposals for a new prize scope; and other ways of configuring the prize.

4.2. Discussion then took place on the future of the Saltire Prize and the next steps:

- **[Redacted]** suggested that the prize could remain unchanged until 2017 and if no-one made it then that would be the outcome. However **[Redacted]** and **[Redacted]** all highlighted that the Committee were aware now that the prize is unachievable and the argument now would be just the same in 2017.
- Mary McAllan stated that any redesign of the prize to have to take into account the current challenges facing the sector.
- **[Redacted]** highlighted the importance of attracting innovators from across the globe. He asked if competitors could be awarded funds to attract innovators but others noted that this might duplicate existing grant programmes.
- **[Redacted]** summarised the discussions so far. He noted the consensus from committee members that the prize is unlikely to be won as it stands and needs to be redesigned in a way that will maintain interest in Scotland's marine energy sector and attract new competitors. He added that there had been many positive developments during the past six years of the prize and in a sense a victory has been achieved, but that the prize had to be assessed against present . Given his experience in prize design, **[Redacted]** agreed to discuss options further with Scottish Government officials and submit a draft proposal.

Mary McAllan highlighted that **[Redacted]**

5. Date of Next Meeting

5.1. A meeting via teleconference will take place to discuss the redesign in more detail and a full meeting of the Challenge Committee will take place in March 2015 to coincide with the next Scottish Renewables Annual Conference.

Summary of Action points

AP1 – [Redacted] to submit a draft proposal to SG officials.

AP2 – [Redacted] to seek advice on Scottish Government procurement processes.

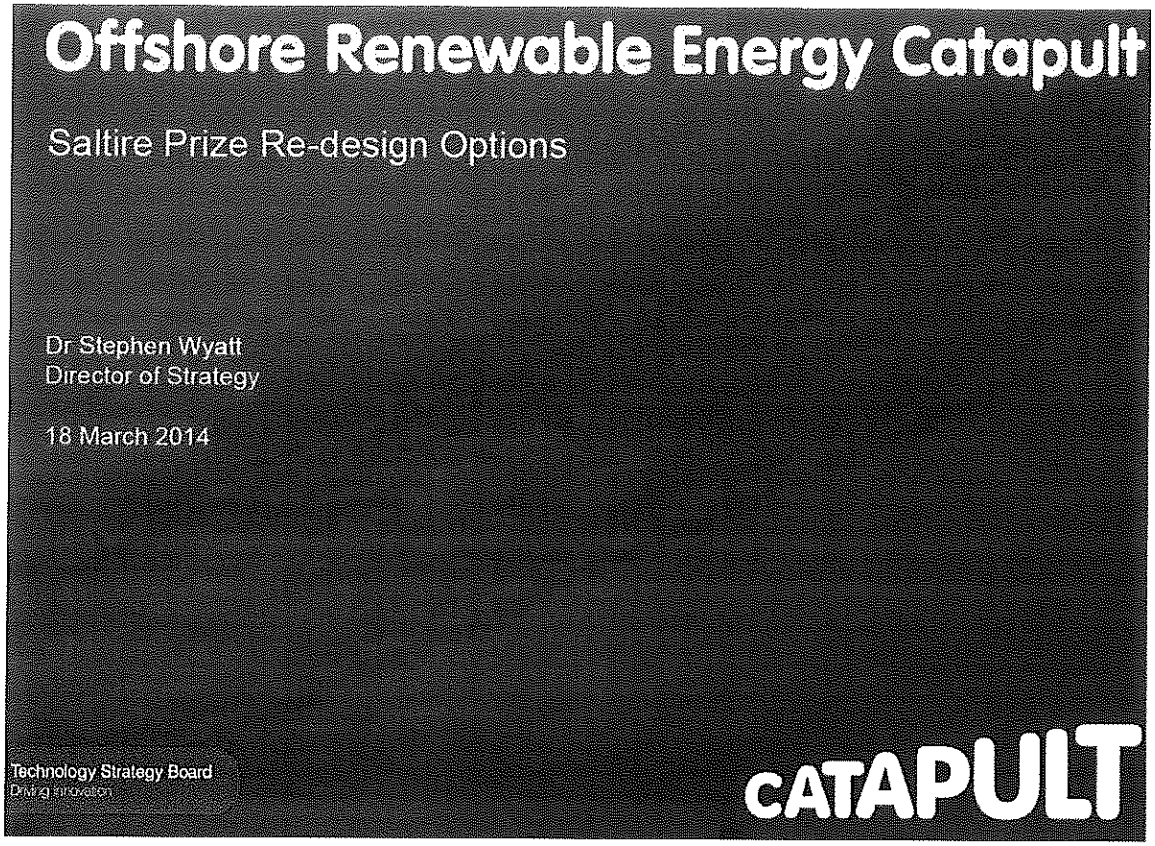
AP3 – Challenge Committee members to send any input or feedback on re-design options by Friday 11 April.

AP4 – [Redacted] to make arrangements for next meeting via teleconference.

[Redacted]

Offshore Renewables Policy Team

21 March 2014



Agenda

- Key findings
- Deployment projections
- Proposals for a new prize scope
- Other prize options

Overview

The Scottish Government has commissioned the Offshore Renewable Energy Catapult (ORE Catapult) to investigate potential opportunities for amending the Saltire Prize.

The options presented in this paper have been developed by the in-house team at the ORE Catapult - a new team drawn from a number of leading organisations (Carbon Trust, Ove Arup, Scottish Power, the Energy Technology Institute)

We have considered the status of wave and tidal energy projects in Scottish Waters and their current development timescale against the timeline of the Grand Prize.

Reflecting key development themes and the projects' status, we have developed a series of options for amending the criteria of the prize if desired.

CATAPULT
Offshore Renewable Energy

Study Conclusions: The Prize is not material in driving behaviour as it stands, we have developed a range of options to help re-focus

FINDINGS

Wave and tidal project progress slower than anticipated when the Saltire Prize was conceived and defined.

Delay grid upgrades to Orkney and Shetland affect four of the five Challenge Competitors.

First deployments of tidal array projects in Scottish Waters are expected in 2015, wave will be somewhat later

ISSUES

In its current form the Grand Prize is unlikely to be won against the 2017 timeline.

The prize is not driving behaviour because of its size in comparison to the cost of deploying a large-scale marine energy project. Tidal appear to be closer to winning the prize then wave.

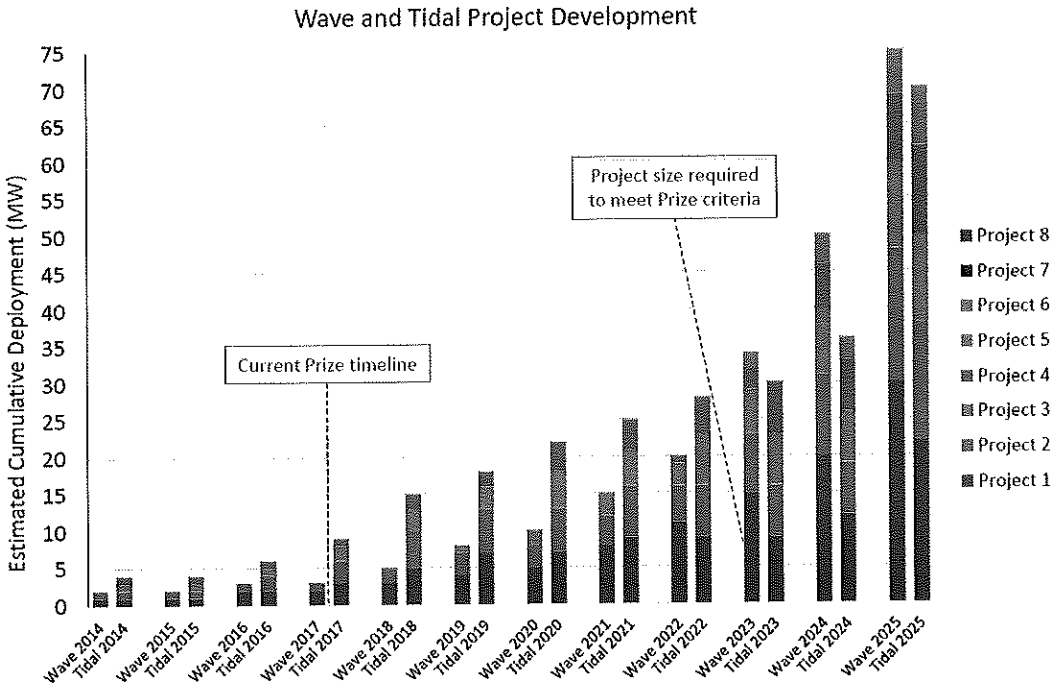
OPTIONS

Remove the end date for the prize and wait for it to be won, consider increasing the prize amount to change behaviour.

Split the Saltire Prize into separate wave and tidal prizes to reflect the differing development rates and industry feeling.

Add interim prizes related to the supply chain to target essential support mechanisms and drawing in additional interest to the sector.

To win the prize as it stands requires 15-20MW to be installed and operating in a single project by 2015. We predict that if the timescale was unbounded it would be won by ~2025



We have looked at Technology, Reliability and Performance milestones which could be appropriate to recast the prize on a shorter timeframe

Tidal

Timeline	Narrative	THEMES and TARGETS Technology Milestones Installation targets	Reliability Availability targets	Performance Energy yield targets
2014				
2015				
2016	First demonstration tidal arrays of two to four devices (approx. 2-4 MW) installed, commissioned and generating to grid			
2017		At least two devices on a single site generating concurrently for 30 days		
2018		At least four devices on a single site generating concurrently for 30 days	At least two devices on a single site generating for a minimum of 12 months at 80% availability	
2019				Generating 5GWh within a 12 month period
2020	First 10MW scale array generating to grid		At least four devices on a single site generating for a minimum of 12 months at 80% availability	
2021				Generating 10GWh within a 12 month period
2022				
2023	First commercial (>10MW) arrays generating to grid			
2024				
2025	More likely timescale when current Saltire Prize could be won			