



NSAI

ANNUAL REPORT 2018

**NSAI TECHNICAL COMMITTEES
(NSAI ETC TC18 – MARINE
ENERGY - WAVE, TIDAL AND
OTHER WATER CURRENT
CONVERTERS)**

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1 Chairman's Statement

2018 was a productive year for NSAI ETC TC18 as we continued our longstanding engagement with IEC TC114 in the development of Marine Energy Standards. I would like to thank ETC TC18 committee members for their confidence in nominating me as their new Chairperson. I look forward to continuing our work in 2019.

2 Introduction

NSAI ETC TC18 is Ireland's National Mirror Committee of the IEC/TC 114 - Marine energy - Wave, tidal and other water current converters.



The industry currently has 16 number of experts involved in international work

3 Scope of TC

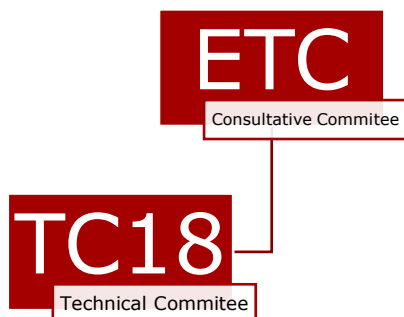
To support the preparation of international Technical Specifications for marine energy conversion systems. The primary focus is on the conversion of wave, tidal and other water current energy into electrical energy, although other conversion methods, systems and products are included. Tidal barrage, dam installations and Off-shore wind energy, as covered by IEC TC 4 and TC 88, respectively are excluded. The committee mirrors the following international committees:

Committee Name	Committee Title
IEC/TC 114	Marine energy - Wave, tidal and other water current converters

4 Structure and Membership

4.1 Structure

The Figure below illustrates the structure of the Committee:



4.2 Members

The list below are the members for the year:

Organisation	Name	Role
Exceedence	Ray Alcorn	Chairperson
Impact9	John Fitzgerald	Committee Member
DP Energy	Sara Armstrong	Committee Member
BME Consulting	Sean Barrett	Committee Member
ARR Ltd	Cuan Boake	Committee Member
Pure Marine	Paul Brewster	Committee Member
Smart Bay	Rogério Chumbinho	Committee Member
SEAI	Patricia Comiskey	Committee Member
Wave Venture	Ronan Costello	Committee Member
Open Ocean Energy	Theo Devaney	Committee Member
UCC	Fiona McAuliffe	Committee Member
Techworks	Jenny Hanafin	Committee Member
Rockall Research	Alan Henry	Committee Member
UCC	James Kelly	Committee Member
UCC	Tony Lewis	Committee Member
UCC	Matthew Shanley	Committee Member
	Brian Holmes	Committee Member
	Kevin Harnett	Committee Member

5 Summary of 2018 Activities

5.1 National

5.1.1 Meetings

Committee members attended the following national meetings in NSAI as follows:

Meeting No.	Date	Minutes Reference
1	01 February 2018	
2	04 December 2018	N0518

5.1.2 National Work

NSAI ETC TC18 were not involved in any National deliverables in 2018. TC18 supports all National parties who have an interest in Marine Energy in benefitting from Standards being developed at IEC level.

5.2 International/Regional

5.2.1 Meetings

Committee members attended IEC meetings as follows:

Committee Name	Location	Date	No. of Attendees
IEC/TC 114	Seattle, U.S.	19-23 March	5

5.2.2 International/Regional Work

Several committee members attended IEC/TC 114 PT/WG meetings throughout the year. The IEC TC114 Plenary Meeting was held in Seattle, U.S. in March. The Chairman of IEC TC114 Jonathan Colby was keen that as many Project Teams as possible meet during this week in Seattle. Ireland was well represented during the week. We are also represented by nominated experts from our committee at all the current Project Teams/Working Group of TC114.

The committee is extensively represented on these PT's resulting in Ireland having a strong influence on the development and content of the Technical Specifications being produced. This continued representation is vital in maintaining Ireland's position as one of the leaders in Wave and Tidal Power development.

It should be noted that the support of the Sustainable Energy Authority of Ireland (SEAI), through their continued funding of expert attendance at international meetings, has been instrumental in maintaining Ireland's position as a global leader in Marine Energy Standards development.

5.2.3 International/Regional Standards Development

The following table consist of a list of the IEC TC114 project/maintenance teams where Irish experts were directly involved in 2018;

Project Number	Description	Irish Expert
MT 62600-1	Terminology	T Lewis
MT 62600-2	Design requirements for marine energy systems	R Costello Alan Henry
PT62600-20	Guideline for design assessment of Ocean Thermal Energy Conversion (OTEC) system	No member
PT 62600-3	Marine energy – Wave, tidal and other water current converters – Part 3: Measurement of mechanical loads	Alan Henry Sean O'Callaghan
PT 62600-40	Acoustic characterization of marine energy converters	Rogério Chumbinho Jenny Hanafin
PT 62600-202	Scale testing of tidal stream energy systems	Cuan Boake M Shanley

PT 62600-300	Electricity producing river energy converters -- Power performance assessment	B Holmes Vincent McCormack
PT 62600-301	Marine Energy - Wave, tidal and other water current converters - Part 301: River energy resource assessment and characterization	No member in 2018
PT62600-103	Guidelines for the early stage development of wave energy converters: Best practices & recommended procedures for the testing of pre-prototype scale devices	B Holmes
MT 62600-10	Assessment of information received on IEC TS 62600-10, Assessment of mooring system for marine energy converters (MECs)	P Brewster (Contact)
AHG 3	Assessment of information received on IEC TS 62600-100, Power performance assessment of electricity producing wave energy converters, and on IEC TS 62600-102, Wave energy converter power performance assessment at a second location using measured assessment data	R Costello Sean Barrett
MT 62600-200	Assessment of information received on IEC TS 62600-200, Power performance assessment of electricity producing tidal energy converters	K Hartnett
MT 62600-101	Assessment of information received on IEC TS 62600-101, Marine energy - Wave, tidal and other water current converters - Part 101: Wave energy resource assessment and characterization	C Cooney, J Hanafin
MT 62600-201	Assessment of information received on IEC TS 62600-201 - Marine Energy - Wave, tidal and other water current converters - Part 201: Tidal	C Boake, J Hanafin

	energy resource assessment and characterization	
AHG 8	Proposal for a plan for the alignment of future work activities under the existing AHGs, PTs and MTs	R Alcorn, J Fitzgerald
AHG 10	Electrical power quality requirements for wave, tidal and other water current energy converters: Action Plan	Sara Armstrong James Kelly

5.2.4 International/Regional Voting Results

IEC/TC 114: Ireland voted on a total no. of 5 documents open in 2018 with a 100% overall voting record

5.3 Regulatory Development/Update

IEC TC114 is a relatively young TC and currently develops Technical Specifications to reflect an industry that is still under development. Nevertheless, long-term consideration requires members to remain aware of the following European Regulations and Directives;

- Directive 2014/30/EU - Electromagnetic Compatibility (EMC)
- Directive 2014/35/EU - The Low Voltage Directive (LVD)
- Directive 2014/53/EU - Radio Equipment Directive (RED)

6 Irish Publications/Reviews

6.1 Publications

The Committee did not publish any national deliverables in 2018.

6.2 Reviews

The committee did not review and national publications in 2018.

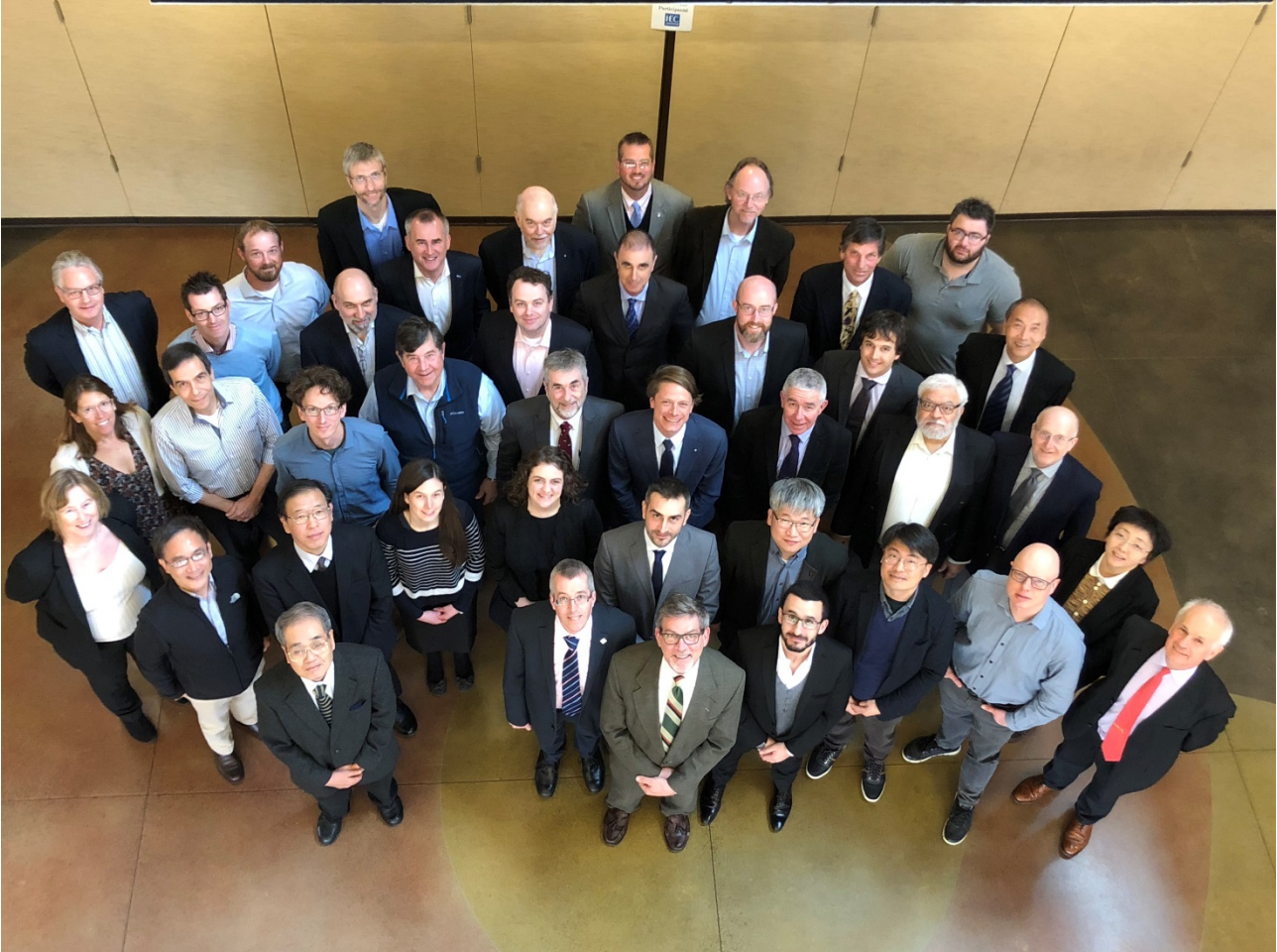
7 Work programme for 2019 onwards

When measured on number of Irish experts engaged with IEC Standards development overall the NSAI ETC TC18 is the most successful committee within the ETC. There are a very high number of experts who are active on PT/MT within IEC TC114. Ireland is ranked 3, behind only the U.S. and U.K., for number of active members.

The success of the NSAI ETC TC18 committee is, in part, due to the strong relationship with the SEAI who have funded International travel for experts for several years. The 2019 work programme will seek to build on this success with the likelihood of a new model being agreed fund experts.

With the continued support of the SEAI the work programme for 2019 will build upon the success of 2018 and, it will see Irish experts continue to play a pivotal role in the development of International Standards for Marine Energy.

8 Additional Information



A photo of from the IEC TC114 Plenary meeting that took place in March 2018 in Seattle, U.S. Irish experts were well represented at the meeting thanks to funding secured under the SEAI Ocean Energy Prototype Research and Development Programme.