



IES

News Bulletin

October 2021

The Institution of Engineers in Scotland A Multi-disciplinary Engineering Institution

Message from our President

Dr Andy Pearson

Welcome to the second Bulletin of the 2021-22 session. By the time you read this the 26th Conference of Parties to the Kyoto Protocol will be gearing up in Glasgow with high hopes for a significant commitment from the delegate governments in addressing the effects of climate change. I hope to be able to attend some of the sessions in the Blue Zone and perhaps to be present in the room as history is made. Or perhaps not... Either way, I hope to be able to give you an update in a future bulletin.

Our evening talks for the year are now underway, so far still only as online presentations. We plan to host two events during COP26 at Glasgow University on very different aspects of sustainability: firstly looking at alternative power for transport (Tuesday 2nd November) and then alternative ways of providing domestic and commercial heating to communities (Tuesday 9th November). I hope that you will feel able to join us in person for these and I look forward to seeing you there.



Prof Stuart Cameron



We were saddened to hear of the unexpected death of our Honorary Treasurer, Professor Stuart Cameron, on 7 October. Stuart joined Babcock & Wilcox of Renfrew as a graduate engineer in 1970 and worked there for 40 years, rising to become Chief Engineer before retiring in 2010. He was honoured to be appointed as Visiting Professor in Mechanical and Aerospace Engineering by his alma mater, the University of Strathclyde. He remained active in many engineering societies, serving as Vice President of the Institution of Mechanical Engineers from 2010 to 2013 and as a member of the Board of Governors of the American Society of Mechanical

Engineers from 2016 to 2020 as well as contributing significantly to the work of Primary Engineer in the UK as a member of their advisory board. He was a member of the Incorporation of Hammermen in Glasgow, and was the recipient of their Prince Philip prize as a student in the 1960s. A member of the Institution of Engineers and Shipbuilders in Scotland since 2011, Stuart became Honorary Treasurer in 2019 and gave generously of his time, experience and wisdom through several significant changes for the Institution. Our condolences go to his wife, Flora, and family. He was an exemplary role model and will be greatly missed by us all.

Managing our Subscriptions

Thank you all for your very positive response to our MemberMojo subscription reminders. What a success. We have been able to collect more of our subscriptions earlier and many more with Stripe which will give us a greater amount of your fees.

Thank you for your enquiries about additional donations –

if you would like to make an additional donation to any of our activities that are close to your heart via MemberMojo you can select 'Visit Store' on your membership page then make your selection, or donate via BACS or cheque.

This system is still fairly new to us - we will be very happy to receive any feedback.

Engineers have something to say

Are there any engineering topics that are interest or even frustrate you? EV infrastructure, energy, the 'Rest and Be Thankful' road closures, transport in Scotland, sustainability, potholes, engineering education.....

Why not contribute an opinion piece to our new website? Please visit the site and have a look at the existing opinions – lots there to get you thinking!

You could also bring up your favourite topic at our Cuppa and Chat meetings.....

Let's get talking – Cuppa and Chat meetings



Many of our participants have asked for the Cuppa and Chat meetings to be continued. It has been suggested that we invite members to bring a friend along (virtually) and join in the discussions.

The dates for the remainder of this year are:

- Tuesday 23rd Nov 5pm
- Tuesday 14th Dec 5pm

Let us know which date you would like to join, numbers for each meeting will be capped at 10

Bookshelf – review by Dick Philbrick

200 Years of Muddling Through – Duncan Weldon

This very readable, if depressing, book explains how Britain lost its dominant position in world trade and provides lessons from the past which could guide us now. In 1870 40% of world exports came from Britain; in 2018 'only' 13% come from China. Weldon argues that the seeds of our decline were sown by the late 19th century as Germany and the USA invested more and spent more on education and training.

WW1 was a brutal turning point which caused the loss of export markets for 'things' and coal and our dominant position in finance to USA. The difficulties of the 1920's lasted longer in Britain and the series of almost knee-jerk lurches in policy, with endless boom and bust have been a feature of our economy for the last 100 years. Sterling was often over-valued, which penalised exporters, with intermittent spectacular devaluations (30% in 1949 and 17% in 1992), interest rate changes peaked at 17% in 1979, etc... Lurches neither encourage investment nor development of export markets

Successive governments clutched at different initiatives. Legislation giving Imperial Preference for empire countries in 1932 might have brought a little protection but sapped the will to compete as did government fostered company mergers. Shipbuilders were busy in WW2, and enjoyed an orders bonanza after, which meant they continued to rely on craft-based skilled workers rather than the large-scale manufacturing techniques employed with 40% higher productivity in Sweden, Germany and USA. Nationalisation in several sectors created a number of monopolies 'insulated from competition'. Short term measures by politicians have led to long term decline. Companies must plan for the long term too; short-termism is death for both engineering and maintenance of high productivity.

This is not a cheerful Friday evening read. We have neither invested nor traded consistently. Engineering companies that fail to export widely, risk competitors selling high where they face no competition allowing them to dump where they do. In a tough post-Covid world we must learn lessons from the past.

Scottish Engineering Hall of Fame Inductees 2021

After the very difficult decision was made to cancel this year's James Watt Dinner our spirits were raised with the prospect of the announcement of this year's inductees into the Scottish Engineering Hall of Fame. We were not disappointed – on Friday 8th Oct the inductees were announced during a lighthearted but captivating online meeting. Many friends and supporters joined us and shared the excitement of the 'Grand Reveal'

This year judges paid particular attention to candidates who worked in areas of sustainability

George Balfour –pioneer of hydro power

James Blyth –pioneer of wind power

George Forbes – a polymath who worked on hydro schemes across the world

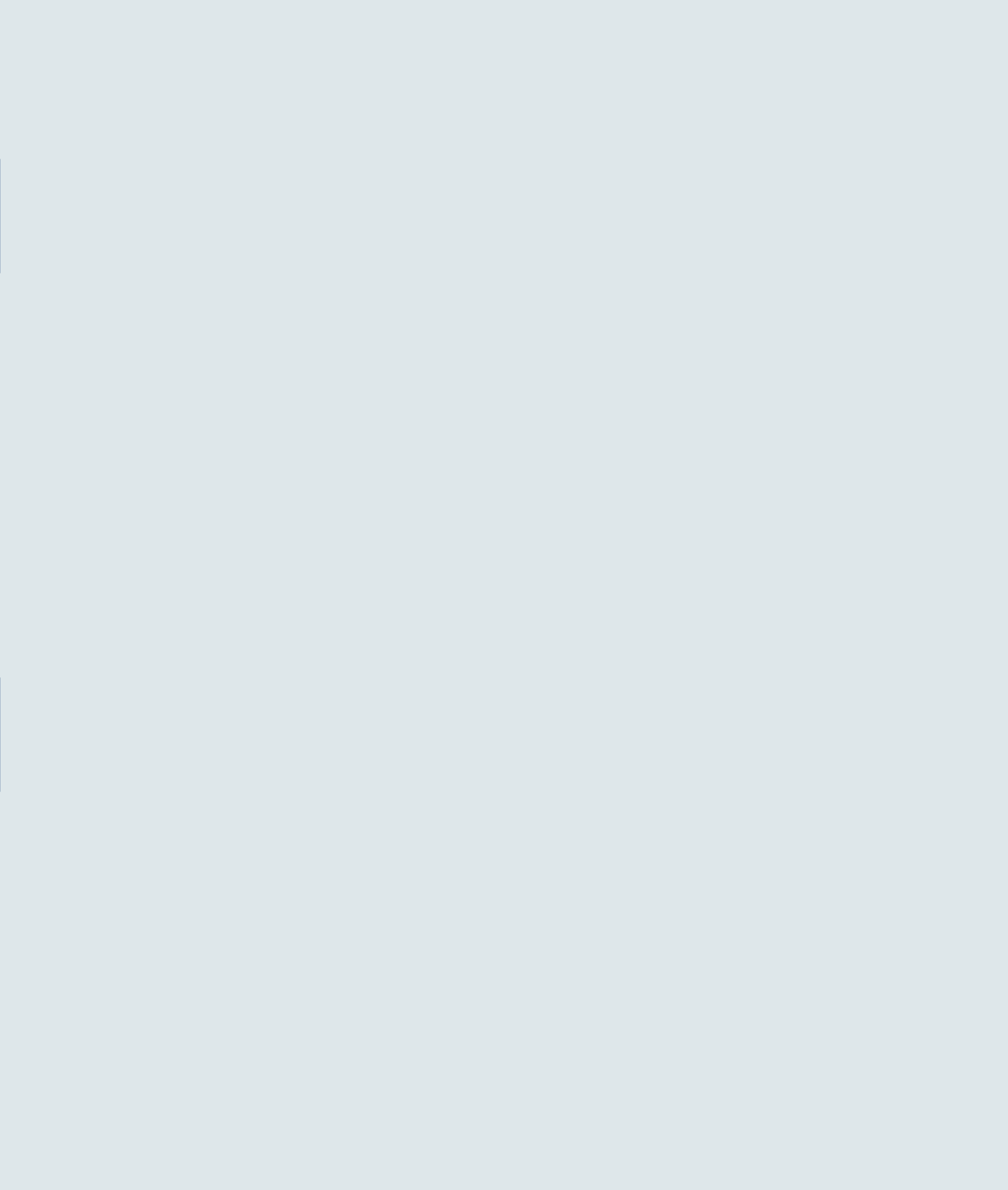
Graeme Haldane – the first use of a domestic heat pump in the world

Alexander Kirk – pioneer of refrigeration and developer of the triple expansion marine engine

James Newlands – public health engineer who designed the world's first civic sanitation scheme

Stephen Salter – inventor of the wave power generator, the "Salter Duck"

Robert Thomson – inventor of the pneumatic tyre





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Remaining Programme for 2021-2022

Joint meeting with the University of Glasgow

COP26 Fringe Event - Hydrogen Train - a game changer for Scotland's rail rolling stock?

Dr Ben Todd, Chief Executive Officer Arcola Energy

Tuesday 2nd November 2021, 18.30pm

[venue James McCune Smith Building Glasgow University – this will also be online]

This lecture will look at the project which will convert a retired ScotRail Class 314 train to hydrogen-power – a cleaner, greener alternative to diesel for non-electrified routes. Transport Secretary Michael Matheson said: "This project has the potential to be a game changer for the future of Scotland's rail rolling stock."

Joint meeting with the University of Glasgow

COP26 Fringe Event - Making River Source Heat Pumps Work – Operational Experience from UK Installations

Dave Pearson, Group Sustainable Development Director at Star Refrigeration.

Tuesday 9th November 2021, online 18.30pm

[venue James McCune Smith Building Glasgow University – this will also be online]

Queens Quay is a £250 million regeneration of the former John Brown shipyard in Clydebank. Designed to take advantage of its waterfront location, the development will feature a variety of mixed-use spaces and a pioneering district heating system. This system will utilise Scotland's first major and the UK's largest high temperature water-sourced heat pump. In this lecture Dave Pearson will take a look at how heat pumps and district heating systems operate, and their application in the Queens Quay development in Clydebank and other locations.

Joint meeting with RINA

From world's biggest offshore windfarm to world's biggest and best value offshore windfarm

Patrick Harnett, Senior Programme Director for Hornsea 2.

Tuesday 7th December 2021, 18.30pm [venue tbc – this will also be online]

Hornsea1 is currently the world's biggest offshore windfarm at 1200MW. This lecture will look at how knowledge gained from building Hornsea 1 led to a 60% CFD price drop on the Hornsea 2 windfarm, which will take the crown of the world's biggest operational offshore windfarm in 2022 with a capacity of 1400MW.

Joint meeting with IMarEST

Prof Malcolm Robb,

Tuesday 11th January 2022, 18.30pm [venue tbc – this will also be online]

Text

Joint Meeting with Heriot-Watt University and IStructE

How do you produce a traditional product in an innovative space?

Ian Stirling, Co-CEO, The Port of Leith Distillery

Tuesday 15th February 2022, 18.30pm [venue tbc – this will also be online]

This lecture will look firstly at the structural engineering challenges of the building. We will then hear how this structure has changed process engineering for whisky production. We will find out the key elements of how to produce a traditional product in an innovative space.

Edison vs Tesla...who was really right?

The Evolution of the Smart Grid for the 21st Century

Dr Nigel Jakeman, Engineering & Business Development Director at TPS

Tuesday 15th March 2022, 18.30pm [venue tbc – this will also be online]

Smart Grids are intelligent networks that monitor the distribution of electricity and enable a two-way dialog where energy can be exchanged between utilities and their customers. This in turn facilitates a demand-supply balance and helps distribution networks deliver electricity more efficiently and sustainably.

This exciting lecture will explain how the Smart Grid works and what we can expect in the future

Boeing Scotland Alliance: research and development project

Craig Knowles, Senior Manufacturing Engineer, AFRC, NMIS

Tuesday 19th April 2022, 18.30pm [venue tbc – this will also be online]

Boeing and Scottish Enterprise have signed a new strategic agreement, called the Boeing Scotland Alliance, which will explore opportunities to work together in Scotland, with the aim of doubling Boeing's supply chain and creating 200 new quality jobs in the next five years. The alliance with Scottish Enterprise, Scotland's national economic development agency and a non-departmental public body of the Scottish Government, will focus initially on sectors like space, advanced manufacturing and digital technologies.

It is expected to create significant new opportunities for Scottish companies, universities and regions across Scotland. In this presentation, Craig Knowles will outline the aims and progress of this project

AGM – details to be confirmed

Please visit www.engineers.scot for further the latest and most up-to-date information and registration details