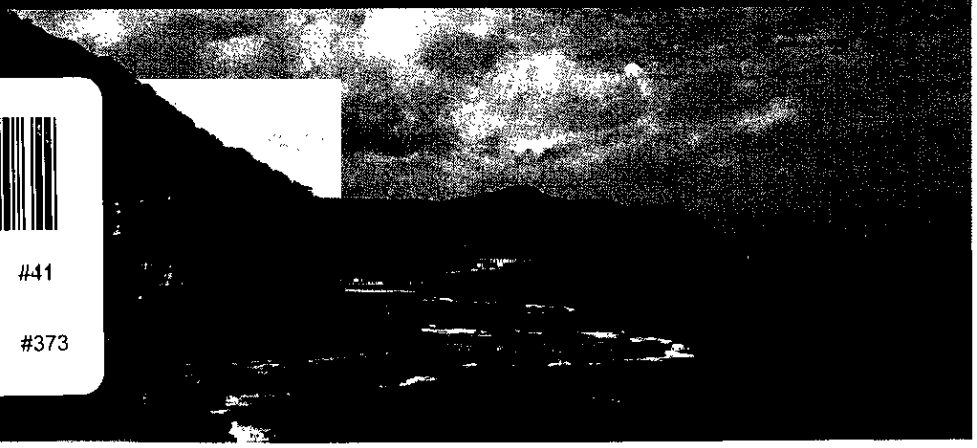
AFC Energy

AFC ENERGY PLC

ANNUAL FINANCIAL STATEMENTS

FOR THE YEAR ENDED
31 OCTOBER 2020



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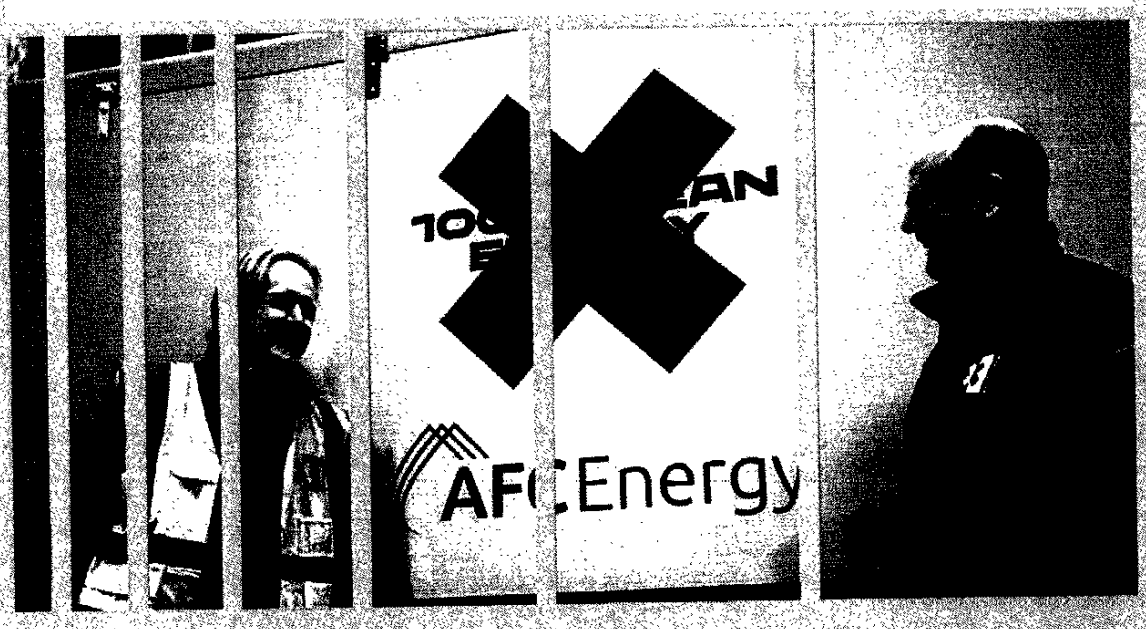
Mission

AFC Energy is the leading provider of Alkaline Fuel Cell systems for the generation of clean energy, offering best in class performance and lowest operating cost as part of global efforts to decarbonise industry.



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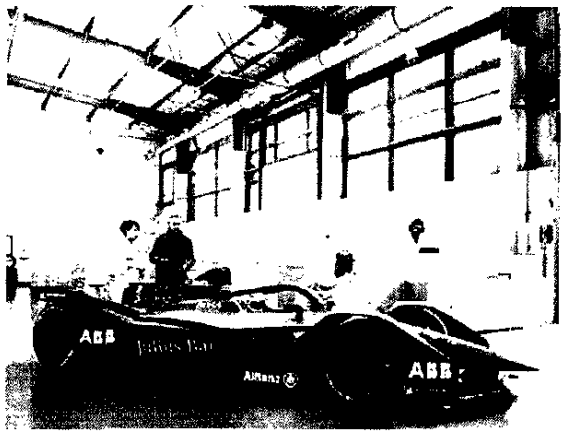
Highlights at a glance

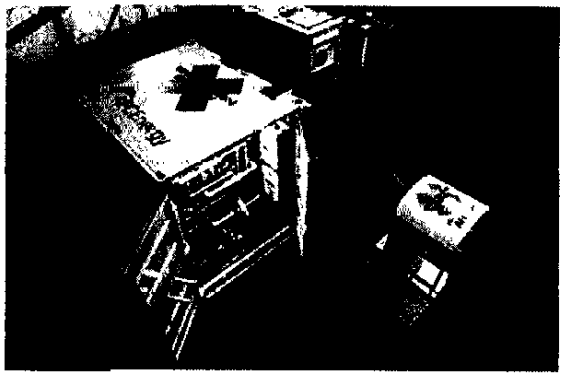
2020 was a transformational year for AFC Energy. Achievement of our first high profile commercial orders alongside growing interest from future partners and customers, a strong balance sheet, ongoing development of its technology and product range and a growing recognition of the need to decarbonise global industry to reduce the effect of climate change puts the business in a strong position for future growth.

Global route to market



- Six-month engagement with global e-mobility leader, ABB, culminating in the post year-end formation of a Strategic Partnership to develop high power Electric Vehicle (EV) charging solutions with established route to a growing worldwide EV market.
- Collaboration with global constructor, ACCIONA, to support decarbonisation of it's construction sites.
- Entered into collaboration agreement after period end with Ricardo plc to identify and develop new and innovative solutions for the maritime (shipping and ports), rail and stationary power generation industries.

First commercial orders



- Global exposure of technology through agreement to supply power to Extreme E's all electric off-road 2021 racing series.
- Sale of 100kW H-Power™ fuel cell system to Forschungszentrum Jülich ("Jülich") at its Living Lab Energy Campus ("LLEC") showcase in Germany.

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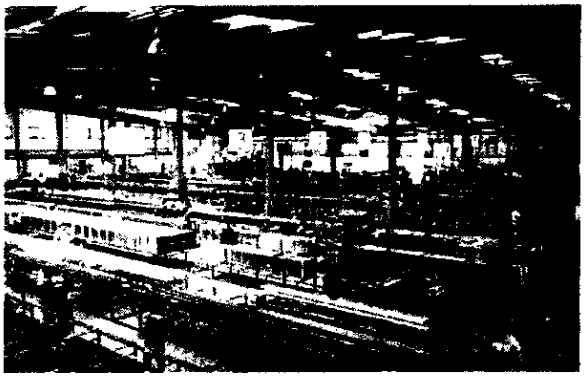
Manufacturing scale-up strategy to meet growing demand



- Long-term lease taken after period end on a 30,000 sq. ft facility at Dunsfold Park to facilitate the scale up of fuel cell system assembly and commissioning.
- Mass Manufacturing Agreement signed with BkGulf after period end to assemble containerised fuel cell balance of plant.

Product development

- Continued progress in the design, scale up and validation activities of new HydroX-Cell(S)™, with power density comparing favourably with PEM fuel cells in the market today.
- Completion of independent validation of AlkaMem® membrane in non-fuel cell applications, confirming its compatibility with market leading alkaline electrolyser separators that could open new markets for the business.
- Continued development of our new Anion Exchange Membrane via a dedicated Fuel Cell Research Centre to take development of the membrane and "S" Series fuel cell forward.

Strengthened Balance Sheet

- Successfully completed oversubscribed fundraise of £31.6m, the largest investment in the company's history, for the acceleration of existing project delivery, the scale-up of manufacturing and recruitment and the scale-up and commercial rollout of AlkaMem® and HydroX-Cell(S)™ power systems from the end of 2022.
- Commenced recruitment programme in line with the use of proceeds from the fundraise to strengthen commercial and technical capability in support of system deployment, with appointment of Chief Engineer and Product Officer after year-end and other senior appointments to follow.

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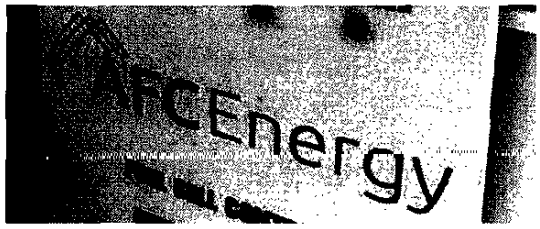
A transformational year

November 2019
Unveiling of branding of inaugural range of product lines

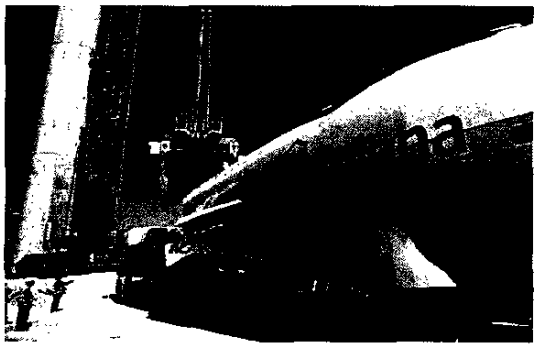
February 2020
Delivery of Dunsfold to Dundee Dash, a 500 mile hydrogen fuelled EV charger roadshow across the UK that started at AFC Energy's Dunsfold head office and finished in Dundee, Scotland

July
Successful completion of oversubscribed fundraise of £31.6m before expenses to support growth

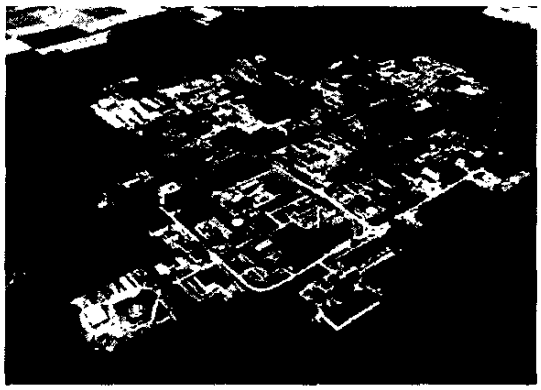


Agreement to power Extreme E's all electric off-road 2021 racing series, with deployment in the first quarter of 2021

June
Collaboration with global constructor, ACCIONA to support decarbonisation of their construction sites



September
Sale of 100kW H-Power™ fuel cell system to Forschungszentrum Jülich at its Living Lab Energy Campus showcase in Germany



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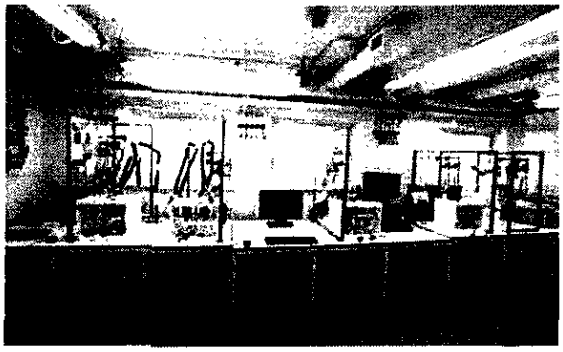
October

First delivery of AlkaMem® membrane samples to industrial and research partners for non-fuel cell applications



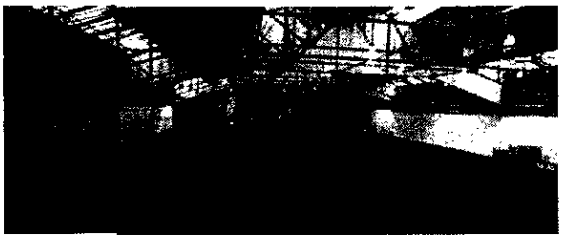
December

Signing of a strategic partnership with ABB to develop and launch a bespoke high power EV charging product for distribution through ABB's market channels from the second half of 2021

November

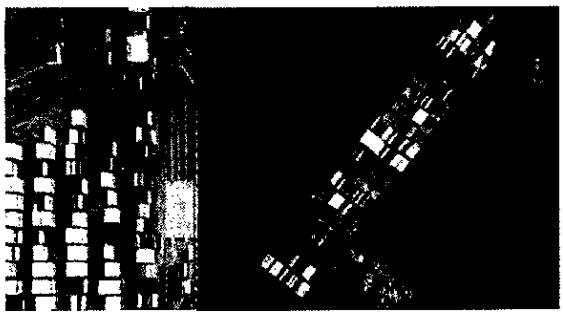
Agreement signed with BK Gulf LLC to support the immediate scale up of manufacturing capacity for delivery of H-Power™ fuel cell system

Long-term lease signed for first H-Power™ Assembly and Commissioning Facility at Dunsfold base



January 2021

Collaboration agreement signed with Ricardo to jointly identify and develop new and innovative solutions for the maritime (shipping and ports), rail and innovative stationary power generation industries



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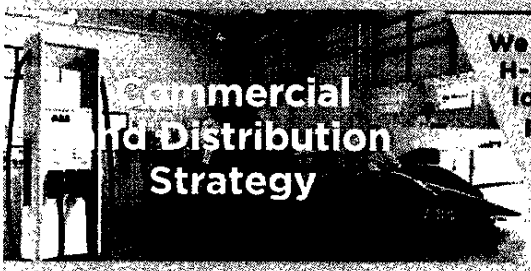
Mission

We are the world's leading alkaline fuel cell business, deploying zero-emission off-grid hydrogen power systems to a range of industries to support global decarbonisation.

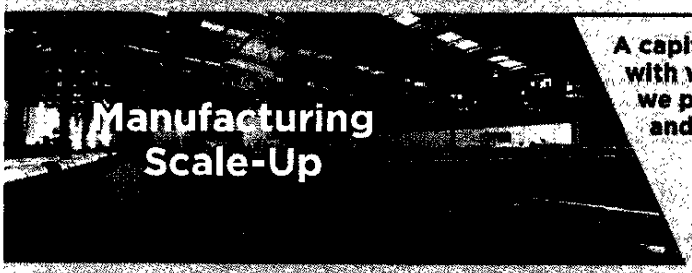
Target Markets

Our technology is capable of deployment across a range of markets to replace diesel generators. Our fuel cell systems are modular, scalable and easily transportable with the highest electrical efficiency in the market. Unlike other fuel cells, our technology can utilise all grades of hydrogen making the system significantly more cost effective relative to alternative solutions. We have five key target markets with this in mind: MOBILITY, CONSTRUCTION, MARITIME, RAIL and DATA CENTRES.



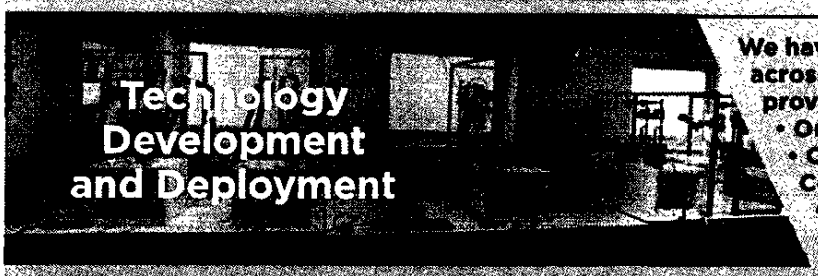
Commercial and Distribution Strategy

We will generate revenues from both the sale of our completed H-Power™ systems and subsequent annuity income through long-term service agreements. Our commercial strategy is predicated on accessing a global customer base through international distribution partners across key target markets.



Manufacturing Scale-Up

A capital light manufacturing model is employed with world-class supply chain partners, where we provide a localised assembly, commissioning and logistics function.



Technology Development and Deployment

We have a world-class patented portfolio across our three technology pillars, providing the basis of our product range:

- Our existing fuel cell: HydroX-Cell(L)™
- Our next generation fuel cell: HydroX-Cell(S)™
- Our Anion Exchange Membrane: AlkaMem®

Political and Regulatory Framework

Our strategy is supported by a marked and fundamental worldwide shift in public, industrial and Government sentiment towards climate change and the need to develop and deploy new emissions-free technologies.

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Our link to the UN Sustainable Development Goals

Our work contributes to nine of the UN's seventeen development goals – particularly goals 7 (clean energy) and 13 (climate change), given Energy is the dominant contributor to climate change, accounting for around 60 per cent of total global greenhouse gas emissions.

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Hydrogen's role in decarbonising the global economy

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Hydrogen use is central to decarbonisation

The 2019 International Energy Agency (IEA) report on the future of hydrogen highlighted the renewed interest in hydrogen as a potential pathway to a zero-carbon future. This was subsequently bolstered by the Hydrogen Council publishing its report "Path to Hydrogen Competitiveness: A Cost Perspective" in 2020, laying out a cross-industry plan for a step-change in hydrogen deployment globally. Both reports emphasised the central role hydrogen can play in the decarbonised energy system, and that hydrogen can be a cost-competitive decarbonised solution in a large number of applications before 2030.

Hydrogen has several perceived benefits as a component of the energy transition. As the Oxford Institute for Energy Studies reports:

Hydrogen and associated power technologies developed significant momentum in 2020. As the Hydrogen Council reported in January 2021, 'Large-scale projects have been announced, companies have undertaken strategic moves across the value chain, and there are increasing M&A and investment activities in the sector'.[2] In parallel, governments are committing to hydrogen as a part of their climate change strategies, with some deploying significant funds, policies, and regulatory support through newly launched hydrogen strategies and funding programmes in the context of Covid-19 economic recovery packages. An unprecedented $300 billion is pencilled for investment into new project pipelines by 2030, whilst 30 of the world's largest economies have confirmed hydrogen strategies in place - promoting the sector for the first time into mainstream clean energy portfolio solutions.[3]

This action has been influenced by the vast change in public and industry attitudes to climate change, green issues, and emissions over the past decade. Increasing Government commitment has had a further catalytic effect - the main consequence of which has been to bring forward timelines and target dates with a perception that action is now a priority rather than an inconvenience. This included the UK, who announced its ten-point climate plan – incorporating a specific commitment to hydrogen use – in the autumn of 2020, committing it to a reduction in carbon emissions by at least 68% over the next decade. The UK also intends to announce its first ever Hydrogen Strategy in Spring 2021, intended to advance the development of hydrogen as a strategic decarbonised energy carrier.

[1] Taken from Oxford Institute for Energy Studies report 'The heralds of hydrogen' (January 2021), p2
[2] Taken from Hydrogen Council report 'Hydrogen decarbonisation pathways: Executive Summary' (January 2021), p2
[3] Taken from Hydrogen Council/McKinsey report, 'A perspective on Hydrogen Investment, Deployment and Cost Competitiveness' (February 2021)

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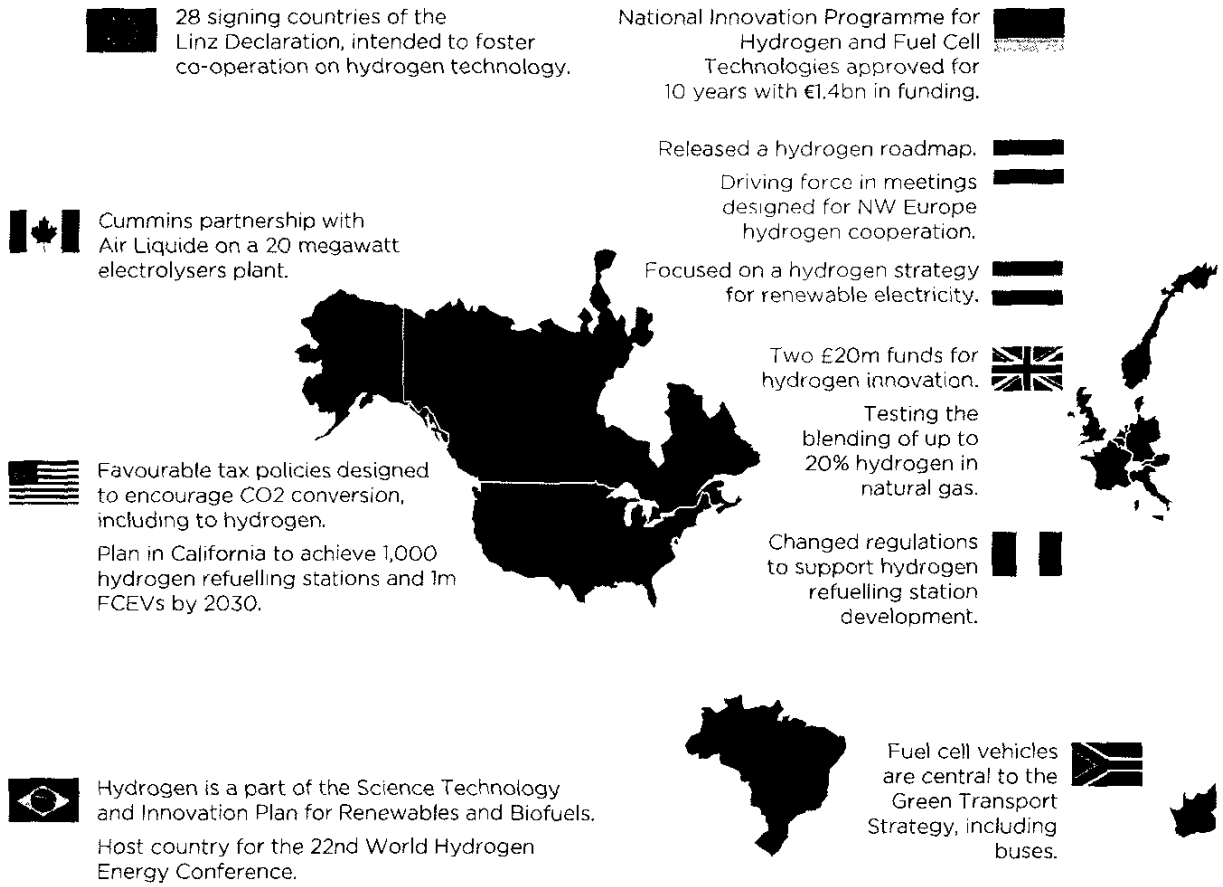
Significant global hydrogen investment in 2020

Hydrogen initiatives around the world are creating a viable framework for private capital to invest.



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Funding the creation of a hydrogen-powered ferry and a coastal route vessel.

Installation at Shell refinery of a 20 MW electrolyser using renewable energy.

Initiative for hydrogen transport in Beijing, Shanghai, and Chengdu.

Plan for Wuhan to be the 1st Chinese Hydrogen City.

Goal of 5000 FCEVs by 2020 and 1m FCEVs by 2030.

Hosted hydrogen meeting with 21 countries, leading to the joint Tokyo statement.

Created Japan H2 Mobility with a plan for 80 hydrogen refuelling stations by 2021.

Hydrogen roadmap with 2030 and 2050 targets €50m regional investment plan.

Hydrogen Deployment Plan with €100m.

2023 and 2028 targets to add hydrogen in various sectors.

Developed hydrogen economy roadmap including 2022 and 2040 targets for buses, FCEVs, and refuelling stations.

Goal to move commercial vehicles to hydrogen by 2025.

Saudi Aramco and Air Products building the 1st hydrogen refuelling station

Air Products building $5bn green hydrogen plant.

Announced > A$100m for hydrogen research and pilot projects.

Created a government working group to develop a national hydrogen strategy.

Delhi looking at fuel cell buses.

INR 60m initiative for research proposals on hydrogen and fuel cells.

Signed joint hydrogen project co-operation with Japan.

New Zealand Green Hydrogen Paper and Hydrogen Strategy initiative.

Created Green Investment Fund, which includes hydrogen.

Source: IEA/Wall Street Research

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Our commercial and distribution strategy

Revenues will be generated from both the sale of our completed H-Power™ systems and subsequent supply and service agreements to ensure their reliable and safe operation. Our commercial strategy is therefore founded on developing long-term relationships with customers to understand their key energy needs so that we can provide the right products. This sits alongside the development of strategic partnerships to accelerate the distribution and deployment of our products.

Whilst our prime short-term focus remains on the Electric Vehicle charging and diesel displacement market, the growing acceptance of using hydrogen to decarbonise industry has opened up a number of new potential markets for our technology which we are keen to exploit via a range of strategic collaborations. These collaborations in turn will develop specific products for distribution in target markets.

Developing the right products

The opportunities to deploy a fuel cell are numerous and each potential application has differing needs – thereby understanding the core need of our customers to derive and deliver the right product.

The customer drivers behind purchasing decisions are a mixture of operational and financial criteria and can be broadly summarized under eight key themes: capital cost, cost per kW, reliability, load tolerance, response time, footprint, ease of use and emissions. Depending upon the application these considerations have different weights; in standby applications which usually run for a maximum of 500 hours per annum for example, capital cost is more important than cost per kW. In a temporary baseload application, such as a construction site, the cost per kW is the deciding criterion.

Our commercial position is built upon understanding the strengths and weaknesses of our systems so that we can combine them with ancillary equipment or a portfolio of technologies to offer our customers the best fit no emissions solution. Our product development strategy is therefore developing and delivering systems that deploy standard modular fuel cells that can easily be adapted to the needs of the end user. 'Our Technology' explains in more detail how we achieve this in practice.

Our work also involves supporting our customers to build their own internal business case dealing with the financial and operational implications of our system so that they can deploy it swiftly in the field. This often involves working with Partners over several months to define system sizing and configuration, planning and permitting requirements, commercial models and pricing, operating procedures and costs and expected return on investment. The process being followed has three principal components: a desktop appraisal; a pilot rollout; and commercial rollout. This nurturing approach is essential for Partners to gain confidence in our systems to support both successful deployment and, where relevant, increasing the potential for multiple unit sales once they have satisfied themselves that our technology meets their operational and financial needs. Developing these relationships is essential for AFC Energy to deliver long-term value creation.

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The importance of Distribution Partnerships to accelerate growth

Our commercial strategy is predicated on accessing a global customer base through international distribution partners across key target markets.

These existing partnerships are explained in detail throughout this report but can be summarised as follows:

ABB (Mobility)
After period end, we entered into joint development and commercial agreements with ABB to work together in the EV charging global market - expanding our target EV charging market solely from the UK.

ABB, having deployed a sizeable market share for its rapid DC charge points across more than 80 countries, is increasingly engaged with its customer base to address the lack of power available from grid connections as the charge rate of EV charging infrastructure increases. These challenges suggest that once system utilisation starts to exceed a relatively modest level through the rapid growth in EVs, the use of batteries as a mere buffer between grid and vehicle will fall short of customer expectations. ABB provides an immediate global footprint for large-scale deployment of alkaline fuel cells in high power EV charging applications.

With this collaboration comes the ability for us to quickly scale up and further reduce costs. Further information is provided in the case study on Page 34.

ACCIONA (Construction)
In June, we announced our partnership with ACCIONA SA to support the ongoing decarbonisation of their construction sites.

ACCIONA, a major construction business that also diversified into renewable energy, will be supplied with a containerised 160-kW H-Power™ system, a battery storage system and ammonia cracker, at one of their sites in 2021. The subsequent trial will evaluate efficiency of both hydrogen and ammonia and how they fare in terms of safety, cost effectiveness and logistical supply chain compared to diesel fuel in off-grid construction applications.

Both companies are sharing the cost of the test, providing us with much needed field trial data to support future product improvement for the construction sector. Further information is provided in the case study on Page 36.

Ricardo (Maritime, Rail and Data Centres)
We also entered into a collaboration agreement with Ricardo after period end to explore jointly and engineer innovative, zero greenhouse emission products with a focus on transportation and stationary power generation, thereby taking advantage of clear growth in industrial customer demand.

This provides us with access to a world-leading engineering company with an existing global footprint. The partnership is closely considering the benefits achieved using low cost, readily available, and high energy dense green ammonia fuel (rather than hydrogen gas) as a fuel of choice in off-grid or remote power needs, including international shipping and distributed power generation.

Increasing the profile of our products through our Partnerships also forms a key commercial consideration. Whilst ABB, ACCIONA and Ricardo are global names in their own right, our partnership with Extreme E also provides a global showcase for our technology to a broadcast audience of over 200 million people worldwide, strongly supporting our ongoing commercial strategy.

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A capital-light manufacturing scale-up strategy

To deliver the systems at the right cost and quality, we employ a capital-light manufacturing programme with key assembly, commissioning, and logistics hubs remaining internal to the business at Dunsfold, whilst outsourcing component manufacture.

Key components of the power systems are outsourced, with partners including De Nora (electrodes) and BK Gulf (containerised fuel distribution and management system). We also invested in a new facility at our Dunsfold base at the end of 2020 in order to increase our internal assembly and commissioning capacity.

Our supply chain partners

Electrodes: De Nora
De Nora is a global company and the largest provider of electrodes and coatings for electrochemical processes to serve diversified markets, with a strong focus on sustainable hydrogen production and utilisation. AFC Energy has been partnering with De Nora since August 2016, for the development and mass manufacture of the fuel cell electrodes within each of our H-Power™ systems.

Fuel distribution and management system: BK Gulf
BK Gulf is a wholly owned subsidiary of the Dutco Group, and former joint venture partner of Balfour Beatty in the Middle East and specialise in the building and fit out of containerised temporary accommodation and offices for military, mining, refining and hospital applications. BK Gulf has the existing capacity to deliver several hundred fitted out containerised modules per annum to address future customer demand, with the companies working to a jointly agreed programme to deliver the first fabricated units by the end of the second quarter.

In parallel with this work, BK Gulf have commenced work on a full value engineering study of the containerised H-Power™ system to reduce costs. As a leading provider of containerised solutions they can leverage their supply chain and manufacturing efficiencies to improve further the price competitiveness of our products. Furthermore, the long experience working with international businesses demonstrates their commitment to the highest levels of European standards in health and safety and the strong reputation for the quality of their work.

Flow Plates: Advanced Plastics
Advanced Plastics provides a diverse range of technical injection moulded products for blue-chip clients across a range of market sectors and was selected for the mass manufacture of our fuel cell flow plates. The simplified flow plate construct, as designed by AFC Energy, entails a more detailed state of the art design basis and more robust, modelled and tested construct than before. The latest generation flow plates produced by Advanced Plastics forms a key performance enhancing component of our product range.

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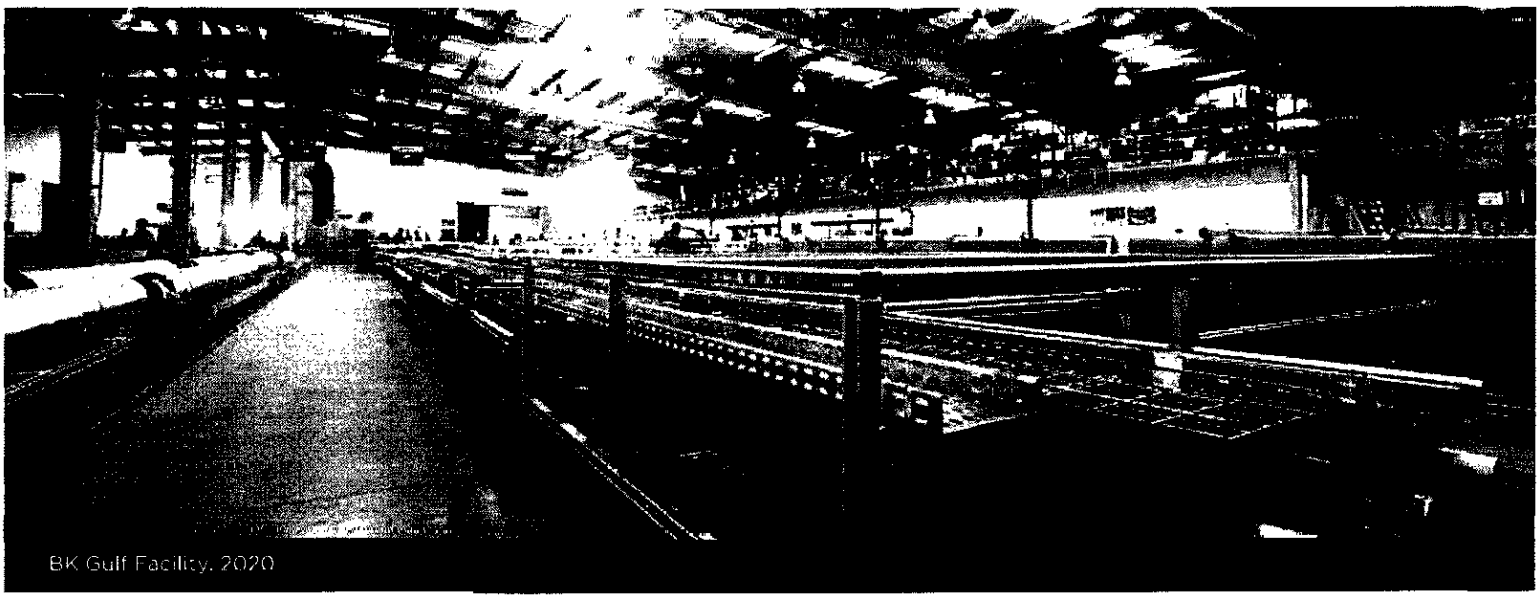
Our new assembly and manufacturing facility

To further scale up fuel cell system assembly and commissioning to satisfy existing and future orders, we announced in November that we had entered into a long-term lease over a 30,000 sq. ft unit at Dunsfold Park to serve as our first large scale H-Power™ assembly and commissioning facility.

Whilst key components of our H-Power™ systems will continue to be outsourced as described earlier, the new facility will provide the space necessary for AFC Energy to assemble fuel cell systems of any scale, before commissioning and dispatch to customers. Office space for an additional forty desks will also exist to accommodate planned and future increases in manufacturing and engineering resources on site.

The current pipeline of projects will all be assembled at the new facility, along with future orders into 2021, allowing AFC Energy's assembly capacity to meet customer demand without the need for further investment. It is also scheduled to accommodate manufacturing and assembly of the "S" Series high energy density fuel cell system from late 2022.

New Assembly & Commissioning Facility at Dunsfold prior to fit-out works, January 2021



BK Gulf Facility, 2020

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Our technology:
Deployment and development

Different fuel cell technologies must play to their own strengths to be successful. The material benefits of alkaline technology in comparison to other hydrogen fuel cells is the lower capital cost, a higher fuel efficiency and its ability to utilise low grade (and therefore lower cost) hydrogen.

As with diesel generators, the key cost driver of power generation is the fuel itself, not the genset. The same applies to fuel cells where the ability to accept lower grade cheaper hydrogen, such as that derived from ammonia, provides a key competitive advantage for AFC Energy's customers in off-grid power generation.

Our alkaline technology portfolio comprises two fundamental platforms: one exclusively designed for stationary applications based on a liquid electrolyte system, and one which offers superior energy densities (equivalent to a PEM fuel cell) which removes the need for a liquid electrolyte and replaces it with a solid alkaline membrane. The latter technology opens up new markets for us in heavy transportation applications such as shipping and rail which previously have been exclusively the domain of PEM fuel cells.

The advantages of Alkaline Fuel Cell technology

AFC Energy's Alkaline Fuel Cell technology works by the electrochemical combination of hydrogen and oxygen in a non-combustion process. In doing so electricity, heat and water are produced. Electrical generation is continuous, while fuel cells are provided with a continuous source of hydrogen and oxygen (from air) to sustain an ongoing fuel cell reaction.

Hydrogen is an important and abundant carrier of energy whose conversion into electricity through a fuel cell dates back over 100 years. The fuel cell sector and hydrogen economy has been challenged on four key fronts to bring this clean energy vector to market:

- A lack of understanding of how to harness hydrogen effectively to deliver clean energy;
- an historical lack of a cost-effective distribution system;
- the purity of hydrogen necessary for effective fuel cell operation is often measured as Ultra-Pure Scientific Grade (99.999% H_2) and comes at a significant price; and
- the high use of precious metals in the fuel cell electrode has often made for a very expensive catalytic conversion of hydrogen into electricity.

Each of these characteristics directly affects the affordability of power produced from hydrogen. The AFC Energy system successfully addresses these issues, translating into one of the lowest cost fuel cells in the market today. AFC Energy's patented Alkaline Fuel Cell affords the flexibility of using low grade, cheaper hydrogen streams (in some cases measured as low as 75% when cracking ammonia) with the opportunity to displace precious metals either entirely or to a greater extent than alternative low temperature fuel cells in the market today. Critically, this can all be achieved without a loss in either performance or efficiency.

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The advantages of using our Alkaline Fuel Cell in power systems compared to comparable technologies are:	In terms of hydrogen fuel, our power systems are flexible in being able to accommodate:
Use of lower purity and cheaper hydrogen (better fuel tolerance);	Hydrogen generated from cracked ammonia;
Higher fuel efficiency;	Hydrogen generated from water electrolysis;
More resilient to carbon monoxide and other fuel contaminants;	Vented industrial hydrogen streams; and
Low cost materials and manufacturing;	Hydrogen from industrial gas merchants.
Ability for the technology to be scaled, with 10kW base modules scalable to multi-MW configurations;	
A long operational life cycle; and	
Designed for recycling.	

The importance of ammonia to the AFC Energy story

The cost of fuel, and the cost of accessing fuel in remote locations, are often the primary drivers for off-grid power economics.

Diesel is often an ideal fuel for off-grid power applications due principally to its:

- High energy density (energy per unit of volume)
- Existing logistics and supply chain to deliver diesel to site

The use of hydrogen in off-grid locations often fails to satisfy the above criteria – so unless hydrogen is manufactured near the point of demand, or there is a pipeline in near proximity, the economic argument will favour diesel.

A key advantage of AFC Energy's fuel cell technology is its ability to utilise low grade, and therefore, low-cost hydrogen fuel, such as that derived from cracked ammonia (NH3); this is not a viable option for other fuel cell types. As summarised in a review of ammonia as a hydrogen source for fuel cells:

"Ammonia is the second most widely produced commodity chemical in the world . , with over 100 million tons per year being transported, and as such its worldwide distribution system is well established. Such is not the case for hydrogen. In fact, one major drawback with hydrogen technologies is the fact that the necessary hydrogen infrastructure does not presently exist. Essentially the ammonia economy can achieve the same benefits of a hydrogen economy but using infrastructure that already exists".[4]

Energy density is another key consideration in off-grid applications. Ammonia is up to three times more energy dense than compressed hydrogen in unit of volume[5]. This means up to three times more deliveries of hydrogen would be required (versus ammonia) for the same energy content and three times the storage space would be required for the same energy. On construction sites for example, this will often be an impediment to deployment.

The ability of our technology to utilise ammonia as a vector for transporting hydrogen, with existing and low-cost distribution chains, makes alkaline fuel cells an ideal technology for off-grid or remote power generation applications.

[4] Taken from https://www.intechopen.com/books/hydrogen-energy-challenges-and-perspectives/ammonia-as-a-hydrogen-source-for-fuel-cells-a-review (Accessed 17th February 2021)

[5] https://www.ammoniaenergy.org/articles/ammonia-for-power-a-literature-review/ (Accessed 21st February 2021)

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Our existing fuel cell: HydroX-Cell(L)™

HydroX-Cell(L)™ is our market leading Alkaline Fuel Cell module is designed to support global efforts to decarbonise.

Capable of providing zero-emissions, off-grid industrial power in a range of sizes up to multiple MW applications via its standardised 10kW modules, the HydroX-Cell(L)™ offers the following when deployed in any power system:

- Zero emissions: carbon, NOx and SOx
- Leading electrical efficiency versus other fuel cells (capable of up to 60% electrical efficiency)
- Use of low-grade industrial hydrogen feedstock, including ammonia, to reduce cost of operation
- Fully designed and engineered balance of plant to support deployment in a range of environments
- High levels of part and material recyclability

Scalability lies at the heart of the HydroX-Cell(L)™'s deployment in any power system. Bespoke or standardised units to be easily configured and connected; when containerised, most mechanical and electrical interconnections are housed within a standardised ISO container, simplifying and reducing the cost of installation and transport for any end user. The container is insulated and fitted with the required environmental controls to allow operation in a wide range of climates, without the odour or noise traditionally associated with diesel engines, making it ideal for sensitive and built-up operating environments.

Our current contracts with Extreme E and Jülich are utilising this technology. Further information is provided within each of the associated case studies within this Annual Report.

Our next generation fuel cell: HydroX-Cell(S)™

HydroX-Cell(S)™ is our next generation technology that complements our existing product range. Through adoption of our new, industry leading Anionic Exchange Membrane (AlkaMem*), the HydroX-Cell(S)™ will offer a current density repeatedly demonstrated to achieve levels equal to or greater than alternative high-power density fuel cells in the market today.

Superior power density, and therefore reduced footprint, will open further market opportunities for the Alkaline Fuel Cell not previously seen, including adoption in future target markets including Maritime and Rail. The benefits of the HydroX-Cell(S)™, compared to competing high power density fuel cells on the market, include:

- Lower cost membrane technology
- Ability to accept lower grade hydrogen
- Equivalent or enhanced power density compared to PEM fuel cells
- Zero greenhouse emissions
- Low noise and odour
- High efficiency

Progress continues to be made in the design, scale up and validation activities of this new fuel cell. Our own testing in 2020 showed the achievement of growing power density, comparing strongly with the PEM fuel cells in the market today. Prototype systems have been designed in advance of fabrication and we completed after year-end our new Anion Exchange Membrane Fuel Cell Research Centre to take development of the "S" Series fuel cell and the AlkaMem* membrane (see below) forward.

HydroX-Cell(S)™-derived power systems are still expected to be configured as either:

- 10kW stack for integration into third party applications as a primary or auxiliary power source; or
- A MegaBox™ configuration with a market leading 1-2MW of power density set for deployment within a 40' ISO container for stationary off-grid power demands.

Our Anion Exchange Membrane: AlkaMem*

Developed initially for the HydroX-Cell(S)™ fuel cell system, our leading AlkaMem* Anion Exchange Membrane ("AEM") offers a highly conductive, robust and cost-effective membrane technology for sale or licensing into ancillary market applications.

AlkaMem* applications include:

- Alkaline Water Electrolysis
- Alkaline Fuel Cells
- Fuel Synthesis
- Electrodialysis
- Desalination
- Acid Remediation
- Salt Water Batteries
- REDOX Flow Batteries

Crucially, results to date continue to confirm its compatibility with market leading alkaline electrolyser separators across several key performance metrics - potentially creating access to the fast-growing green hydrogen electrolyser component market and extending the deployment of AlkaMem* beyond the HydroX-Cell(S)™. With EU industry rising to the decarbonisation challenge in developing an ambitious plan to reach 2x40 GW of electrolysers by 2030[6]; alkaline water electrolysis is expected to be a major contributor in meeting this target.

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Our development work of AlkaMem[4] continued apace in 2020, including the first delivery of membrane samples to industrial and research partners under Material Transfer Agreements in non-fuel cell applications and extending our promotion of its efficacy and potential uses - including presenting to industry at the Fraunhofer Society in Germany at its third Advanced Alkaline Electrolysis conference in October.

To accelerate the development of both the HydroX-Cell(S)™ and AlkaMem[4] in the future, we have completed and opened our new Anion Exchange Membrane Fuel Cell Research. We have also recruited additional research scientists alongside the sponsorship of a PhD student to work with a recognised leading expert in the field to accelerate our research and testing programme.

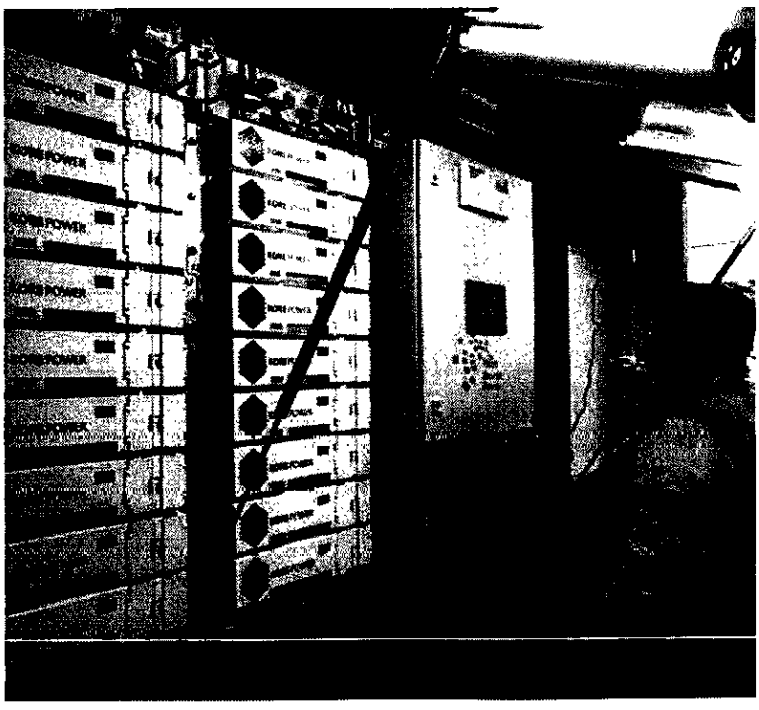
Integration with Auxiliary Equipment

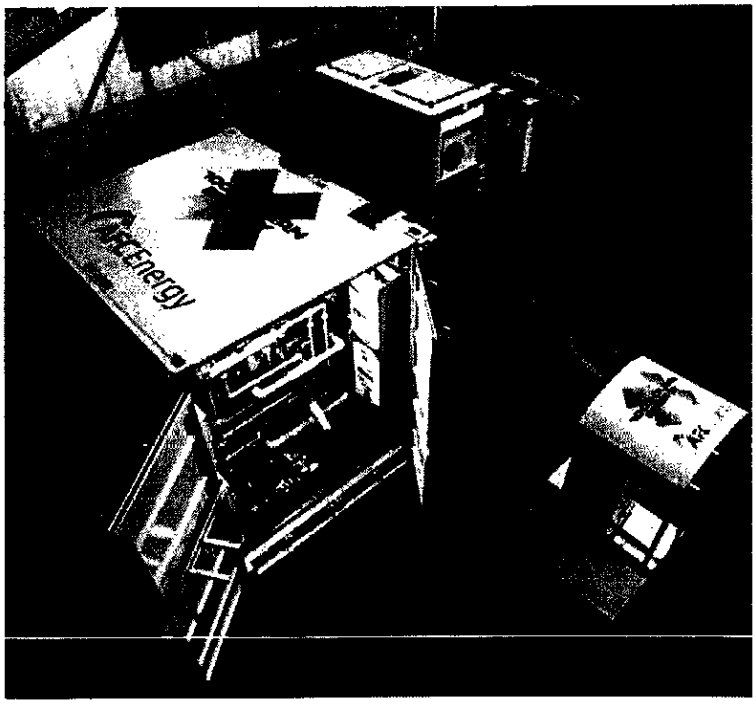
One of the other key elements of both fuel cells is their capability of being deployed as either stand-alone units or being integrated with wider hydrogen generation/conversion units to support emission free off-grid power supply dependent on the specific requirements of the end user. We successfully deployed this approach with Extreme E, with the completed power system incorporating four primary components: the fuel production, alkaline fuel cell, a battery storage unit and the charger itself.

In developing the right products for all of our target markets, our philosophy is to work closely with customers to build a tailored power solution, including integrating our equipment with auxiliary supplies where required. This auxiliary equipment can include:

- Ammonia Crackers
- Water Electrolyser
- Inverters
- Battery Storage
- Battery management system
- Fuel storage

[4] Taken from p2 of EU Hydrogen Strategy for a climate-neutral Europe (July 2020) at https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf





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Our target markets

Linked to the clear need to decarbonise industry, there is a growing acceptance and use of hydrogen within the energy mix across multiple applications as the world recognises its value as a clean fuel. This includes an ever-emerging opportunity to displace diesel generation for temporary power across the globe.

Our efforts thus far have been focused in promoting the alkaline technology as a means of rapidly charging electric vehicles in locations where grid access is constrained or non-existent and within the construction and temporary power sectors, given their present reliance on diesel and both regulatory and industry-derived targets to decarbonise. Our partnerships with ABB and ACCIONA reflect this focus.

Hydrogen carriers such as ammonia are also increasingly being seen as a fuel for decarbonisation given their relative energy density versus green hydrogen in circumstances where the fuel requires transportation and storage. This also opens up the maritime, rail and data centre markets for alkaline fuel cell-based power systems.

Immediately addressable markets

Mobility: Rapid EV Charging

An immediate focus of decarbonisation efforts has been the ratcheted replacement of fossil fuel powered vehicles with cleaner technologies such as Electric Vehicles.

Whilst the UK has banned the sales of new fossil fuel only cars from 2030, other parts of the world have gone further; in the US, states such as California have mandated that 22% of vehicles must be zero emissions as early as 2025. Several cities such as Paris, London and several German cities have already unilaterally enacted measures over and above national standards and targets.

In market terms, these actions have driven a new imperative to invest in new technologies, and a need to have a coherent network of charging locations of adequate capacity in place by 2030 to meet the projected increase in global Electric Vehicle ownership to support the delivery of those challenging targets.

The global electric vehicle fleet has begun to significantly expand over the past decade, underpinned by supportive policies and technology advances. Sales of electric cars topped 2.1 million globally in 2019, surpassing 2018 – already a record year – to boost the stock to 7.2 million electric cars. Electric cars, which accounted for 2.6% of global car sales and about 1% of global car stock in 2019, registered a 40% year-on-year increase. As technological progress in the electrification of two/three-wheelers, buses, and trucks advances and the market for them grows, the range of electric vehicles is also expanding significantly[7].

The total number of Electric Vehicles is projected to rise exponentially over the next decade, with the IEA's 'Business as usual' scenario (known as its 'Stated Policies Scenario') projecting nearly 150m vehicles worldwide by 2030. As the number of EVs increases however, charging them is likely to put the existing charging infrastructure under increasing strain. Grid reinforcement will be necessary in the longer term, but the sheer scale of this work will mean that it is impossible to reinforce the grid as fast as EV deployment strategies demand – meaning other solutions are needed.

[7] Taken from IEA's Global EV Outlook (2020), as per https://www.iea.org/reports/global-ev-outlook-2020 (Accessed 21st February 2021)

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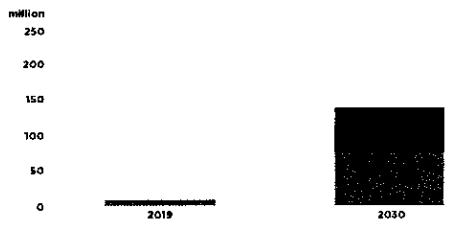
Global electric vehicle stock in the Stated Policies Scenario, 2019 and 2030

Last updated 14 Jun 2020



We already have a solution to these challenges in the form of the H-Power™ EV fuel cell electric vehicle charging unit, which can be used off-grid in areas with minimal grid coverage or places where reinforcement costs would be excessive. This fully packaged product, first demonstrated as part of our Dunsfold to Dundee Dash in early 2020, includes fuel cells, fuel storage, as well as ancillaries to optimise efficiency and provide a high level EV charging rate. In doing so it provides a clean, rapidly deployable high charge rate solution wherever needed. The containerised EV charging unit means that it is also fully portable so can be deployed on a temporary basis if required.

This proof-of-concept success encouraged ABB to enter into joint development and commercial agreements with us in order to accelerate their growth which extends our commercial footprint into the global EV market. Further information is provided within the ABB case study on Page 34.

Construction and Temporary Power

The construction industry currently accounts for circa 38% of global energy related emissions[8], many of which are produced by diesel-driven equipment. Whilst nobody expects these to disappear overnight, momentum is building to replace diesel engines through legislation.

This included the UK Government's decision in 2020 that the sector can no longer use 'red diesel' from April 2022. In making his announcement in his 2020 budget statement in the House of Commons, Chancellor of the Exchequer Rishi Sunak described its use as "a £2.4bn tax break for pollution that's also hindered the development of cleaner alternatives".

At the same point, major construction companies are increasingly emphasising their greener credentials, with one emphasising that their difference is **"combining a 'can do' attitude with a willingness to explore new technologies".**[9] The first carbon targets are now being put in place by major UK companies ahead of any direct central government legislation being introduced, with construction companies such as Costain planning to be net zero carbon by 2035[10] at the latest and developers such as British Land aiming to be net zero carbon by 2030[11]. Other companies internationally have gone further; our Partner ACCIONA for example has been a carbon-neutral company since 2016 as a result of its long-standing commitment to climate change mitigation. We anticipate a greater number of construction companies setting zero or lower-carbon targets in the near-term.

Our portfolio of technologies can be used alongside diesel generators in a progressive and incremental manner to reduce and ultimately eliminate emissions. Such an approach provides a compelling case to regulators that a logical and phased emissions reduction strategy is proceeding. Furthermore, our EV charging solution can be used to charge the new range of electric drive construction equipment.

Several construction companies have previously tried small PEM fuel cells with mixed results, predominantly due to higher operating costs due to the dependence on hydrogen rather than ammonia as a fuel; despite this experience, the willingness to try new technology to reduce emissions remains in place. Our partnership with ACCIONA provides a clear example of this; the publicity generated from our Dunsfold to Dundee roadshow resulted in the company contacting us to see whether our alkaline technology could provide a better solution compared to PEM technology. Initial desk top studies have confirmed that our fuel cell is more cost competitive than the existing PEM solutions and that our pricing and operating expenditure represents a fair and necessary premium if emissions targets are to be met. Further detail on our work with ACCIONA is provided within the associated case study on Page 36.

[8] Taken from UN report '2020 GLOBAL STATUS REPORT FOR BUILDINGS AND CONSTRUCTION', via https://globalabc.org/resources/publications/2020-global-status-report-buildings-and-construction (Accessed 22nd February 2021)
[9] Taken from Aggreko website (February 2021)
[10] Taken from https://www.costain.com/news/news-releases/costain-commits-to-deliver-low-carbon-whole-life-solutions-to-every-client-by-2023-and-to-be-net-zero-by-2035/ (Accessed 17th February 2021)
[11] Taken from https://www.britishland.com/news-insights/press-releases/british-land-commits-net-zero-carbon-portfolio-2030#:~:text=British%20Land%20commits%20to%20net%20zero%20carbon%20portfolio,73%%20reduction%20in%20carbon%20intensity%20versus%202009%20baselines. (Accessed 17th February 2021)

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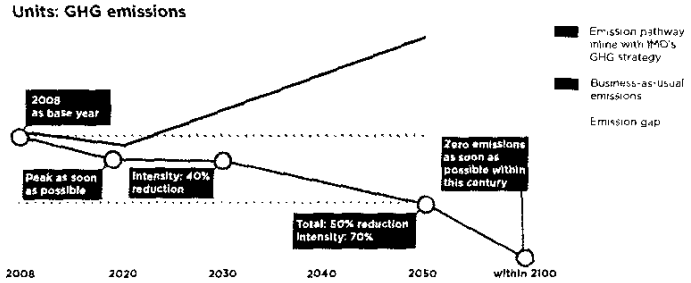
Future markets

Ports and Maritime

Stringent emissions targets have now been set in the Maritime industry, with the IMO GHG Strategy (2018) committing the maritime sector globally to reducing emissions of greenhouse gases from shipping by at least 50% by 2050 compared to 2008, while pursuing efforts to phase them out.

This daunting target was recognised in the UK's Maritime 2050 strategy (January 2019), which acknowledged that 'to reach significant reductions of greenhouse gases (GHGs) and air quality pollutants, energy efficiency technologies will not be sufficient. Low or zero-emission fuels and propulsion technologies will be necessary.' The following graph reflects the scale of the emissions challenge for the industry over the next Century, whilst also recognising that action needs to be taken now:



This could provide a number of potential future opportunities. We believe the industry could derive significant benefits from low cost, readily available, and high-energy dense green ammonia fuel (rather than hydrogen gas) as a fuel of choice in off-grid or remote power needs, including international shipping. A key part of our collaboration with Ricardo (announced after period end) is the joint exploration and engineering of innovative, zero greenhouse emission products to take advantage, whilst benefitting from Ricardo's considerable international reach in understanding the key requirements of potential maritime customers.

We also believe a market exists for stationary power generation at Ports via the replacement of traditional power sources, including diesel generator sets, with hydrogen-sourced, zero-emission off grid power for use in many of its operations, thereby showing global leadership in reducing GHGs and improving air quality.

Rail

The rail sector has also begun to recognise the need to decarbonise through improved energy efficiency, new power sources and modal shift.

The final report by the UK's Rail Industry Decarbonisation Task Force (July 2019) responded to the UK Minister for Rail's challenge to the industry to remove "all diesel only trains off the track by 2040" and to "produce a vision for how the rail industry will decarbonise".

This final report confirmed the UK rail industry's desire to lead the way in Europe on the drive to decarbonise. It set out the key building blocks required to achieve the vision that the rail industry can be a major contributor to the UK government's target of net zero carbon by 2050, emphasising that "significant decarbonisation by 2050 can only be achieved with a balanced and judicious mix of cost-effective electrification, coupled with the deployment of targeted battery and hydrogen technology where these are the best solution".

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Rail is a naturally low-carbon transport mode, comprising less than 2.5% of total transport emissions and only about 0.6% of the UK's total emissions. The industry has been focused on reducing those emissions. It has considered trains that might operate in lower-carbon modes, such as diesel-electric hybrids. However, these are incremental improvements. At the rate they are being adopted in the current policy, financial, and operational environment, they will not deliver change anywhere near fast enough.

The report recommended to Government that a clear periodic 5-year research plan should be developed and reflected within the UK's Rail Technical Strategy. The research was recommended to examine:

- freight and yellow plant decarbonisation;
- increasing the capabilities of battery and hydrogen, including through developing appropriate infrastructure and reducing whole system costs;
- increasing efficiency of both current and future rolling stock as well as infrastructure; and
- increasing the ability to model and measure system wide carbon emissions, arising from both operational and capital works.

To support the decarbonisation of the rail industry, we believe our technology could be deployed with two roles in mind. The development of new capital projects such as HS2 could utilise our power systems in its construction rather than diesel generators; this builds upon the recommendations of the UK's Rail Industry Decarbonisation Task Force, that said "to the extent possible, yellow machines - both dedicated on-track and road/rail - should seek to replace diesel engines with electric motors at the earliest economic opportunity. These are to be powered from appropriate energy storage and pantographs or other acceptable power sources".

Whilst there are already credible options to decarbonise property in rail, namely stations and depots through the use of renewable energy generation, battery storage, draught exclusion, LED lighting and energy control systems, we also believe there is a market for the use of our technology for further emission reductions - particularly in the charging of vehicles and equipment, including construction compounds.

Longer-term, there will be the continued development of non-diesel trains, including those directly powered by hydrogen. The UK's first-ever hydrogen hybrid train ran on the UK mainline at the end of September 2020; this was matched by a Government commitment that the trains "will also be available by 2023 to retrofit current in-service trains to hydrogen, helping decarbonise the rail network and make rail journeys greener and more efficient". This in turn will provide supply chain opportunities which our collaboration with Ricardo will look to explore.

Data Centres

The data centre sector has grown hugely over the last couple of decades. Data centres are already responsible for 2% of worldwide greenhouse gas emissions; they are set to consume a fifth of the entire world's power output by 2025 due to the rapid adoption of data driven services.

Diesel generators have been the stand-by solution of choice to support data centres because of their cost and rapid response times, but tighter emissions legislation is making this solution unacceptable. In the short-term diesel generators will continue to be in widespread use; we believe however that an opportunity exists to blend power from our systems with other technologies to create an alternative continuous energy strategy which reduces emissions.

As major power users - and especially where data centres are located in clusters - data centre growth must align with grid capacity. On their part, electricity grid operators are constantly challenged to maintain a stable supply as well as ensuring that there is sufficient supply to meet peak demands. With intermittent renewables growing as a proportion of the overall energy mix, grid operators are finding it even more difficult to balance supply to demand. Instead, they are looking to increase the flexibility of the grid through a number of demand-side strategies - either storing, shifting or transporting electricity.

2020 saw two interesting global developments that evidences the move away from solely diesel generation for data centre back-up power. Google announced that it will use large batteries to replace the diesel generators at one of its data centres in Belgium, describing the project as a first step towards using cleaner technologies to provide backup power for its millions of servers around the world and stating that it "aims to demonstrate that a better, cleaner solution has advanced far enough to keep the internet up and running".

Google became the second major hyperscale cloud operator in 2020 to pursue a strategy to move beyond diesel generators. In July, Microsoft said it would eliminate its reliance on diesel fuel by the year 2030 and has begun testing hydrogen fuel cells as an alternative. These announcements have implications beyond company-built facilities, as Google and Microsoft are major tenants in third-party data centres, most of which use diesel generators for backup power.

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JOHN RENNOCKS
Chairman

The successful £31.6m fundraising that took place in July was also a critical milestone in the development of the company, directly supporting the transition from the development of our products and technology into the manufacture and commercialisation of them whilst providing significant financial headroom for long-term planning. The company is therefore in a strong position for future growth.

The successful restructuring of our finances in this financial year provides a robust platform to accelerate the deployment of our products into our key target markets. The year began with several small fundraises which avoided the need for a drawdown from our £4m convertible loan facility and provided sufficient liquidity for the company to deliver against our customer commitments during the first lockdown.

The successful conclusion of our July fundraise brought the total funds raised for the year to £34 million. Careful use of this funding prior to period end meant that we ended the year with a cash balance of £31.6 million (FY 2019: £1.6 million). This strong cash position supported our decision after period end to cancel our Convertible Loan Note facility, having not drawn any amounts from it during the eighteen months it was in place.

The loss for the year was £4.2 million (FY 2019: £2.9 million), whilst cash absorbed by operations and investing activities was £4.1 million (FY 2019: £2.8 million). This directly reflected our increased investment in our operational and technical headcount, tooling, demonstration equipment and costs associated with assembling Extreme E's charging system.

Our commercial strategy has begun to be successfully demonstrated by closing the year with an order book of £1.1 million (2019: £nil); more detail is provided within the Operational Review.

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People, culture and values

Our people have worked tirelessly throughout this financial year to deliver various projects to tight deadlines within the backdrop of social distancing and remote working. The way that our employees have risen to the challenge of maintaining our research, product development, manufacturing and assembly programmes to support our projects despite the challenges posed by the COVID-19 pandemic has made me immensely proud. On behalf of the Board, I would like to thank them all for their professionalism, dedication and understanding during a year like no other.

During the year we reviewed our remuneration policy to align with our stakeholder objectives. The first step was a grant of options to existing and new staff to align them with value creation and our principal commercial targets. During the coming year we will roll out further actions to ensure that we attract and retain the right staff and that their objectives and interests are aligned with our stakeholders.

Investor communications

The COVID-19 pandemic also directly affected how we communicated with our shareholders during the period. Whilst many of our institutional and private investors were present at our Electric Vehicle Charging demonstration in December 2019, social restrictions meant that our annual investor day - planned to coincide with our Annual General Meeting - was postponed. The Board remains committed to regular communication with the market and our investors and is keen to resume its investor day activities in line with Government guidelines.

We appointed Iain Thomson as Head of Communication and Stakeholder Management in January 2021 and he will be facilitating a virtual Capital Markets Morning in the Spring to bring us closer to our investors. This event will be one of four key touchpoints across the year where investors can learn more about the company and its strategy, alongside our Annual General Meeting (AGM) and materials relating to our Full Year and Half Year results.

The Board is also committed to high standards of public reporting and will put a formal ESG reporting framework in place in 2021 to support investors to measure the positive impact the company has on wider society and in successfully future proofing itself. We believe that the company supports at least nine of the UN's 17 Sustainable Development Goals but also recognise that investors require further detail; a formal update will be provided as part of our Half Year results.

Thank you

The continued hard work and technical ability of our staff has ultimately set the foundation for what the company will achieve in coming years. My thanks also to our executive team for their leadership, to my colleagues on the Board for their counsel, to our shareholders for their support and commitment, to our customers who recognise the quality of the products we provide, and to all of our other stakeholders who provide input and guidance into our projects.

Having served as Chairman for nearly four years it is my intention to retire at the end of the forthcoming Annual General Meeting and I shall therefore not be seeking re-election. It has been a challenging and often exciting period for the company and following the most recent fundraising and the excellent new relationships with ACCIONA, ABB and Ricardo the company is well placed to accelerate its commercialisation in 2021 and beyond. The Board is progressing a process to identify a successor Chairman and once that person has been appointed I wish them and the company every success in the exciting years ahead.

JOHN RENNOCKS
Chairman
26 February 2021

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ADAM BOND
Chief Executive Officer

For AFC Energy, 2020 was a year in which foundations were laid with first commercial sales, strategic partnerships cemented with global routes to market, high profile technology branding, and unprecedented policy backing across the clean air and sustainable energy agendas.

In 2020 alone, 30 of the world's largest economies confirmed hydrogen strategies, promoting the sector for the first time into mainstream clean energy portfolio solutions. Such policy support, together with our commercial progress over these past 12 months, cements the company's position as a market leader in the global transition away from diesel generators.

COVID-19 has placed significant challenges on us all that will see huge changes in both people's day to day social interactions and in the pursuit of national and personal endeavours. Recent studies[2] have however highlighted how the global pandemic has, through implementation of national lockdowns and reduced economic activity, seen significant improvements in air quality, reduced greenhouse gas emissions and improved water quality.

As we begin to rebuild the economic drivers of our economies, the policy imperatives being driven by central governments worldwide increasingly reflect the principal of "building back better". A key element of this is a growing recognition of the role hydrogen is and will continue to play in supporting society to build back in a more sustainable and environmentally conscious manner.

For AFC Energy, this reality is reflected in the need to reduce society's reliance on fossil fuels and in particular, diesel fuelled power generation.

Diesel generators, whether in stand alone stationary power applications, or in propelling international maritime trade, all have the potential to benefit from the unique selling points of our proprietary alkaline fuel cell system technology. For over 200 million viewers who will be watching the inaugural Extreme E season powered by our zero-emission technology, AFC Energy will be at the heart of this global transition away from diesel.

Today, AFC Energy is engaging with several of the world's leading constructors, diesel generator distributors and global electrification providers in showcasing the strong environmental credentials our fuel cell technology can play in aiding the world's search for Net Zero. Our pipeline of project opportunities has, in response to these environmental circumstances, continued to grow during the course of the 2020 and 2021 lockdowns and we are excited to start converting these opportunities into long-term annuity revenue streams.

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With hundreds of billions of dollars now committed to making the hydrogen sector a reality, and a relatively small number of core commercial and near commercial technology providers in place today to make this happen, the opportunity for AFC Energy has never been more compelling.

First Commercial Orders and Pipeline Growth
2020 saw the conclusion of AFC Energy's first commercial contracts with an order book of £1.1m for delivery during 2021. Our revenue pipeline and partnerships however continue to strengthen alongside the commitment of constructors, power generators and Governments to pursue zero carbon commitments.

Our business model of working through global partners such as ABB continues to validate the merit of our focused go to market strategy.

Extreme E was a high profile first contract for the Company which not only delivers revenue, but also tremendous marketing opportunities with a projected worldwide audience of 200 million expected to watch the race series during 2021. The series will showcase the modular system's flexibility in operating in some of the harshest environmental conditions on Earth, from desert to glacier, and provide a real life, real time demonstration of our system's operability to partners and customers.

To a large degree, our pipeline is strongly supported by Government policy and regulations. These are mandating, at an accelerating rate, a reduction in diesel combustion engines in transport systems, the removal of many of the benefits available to offgrid power generation (such as the UK's subsidy on red diesel ending for the Construction sector from 2022) and enforcing new low emissions standards on stationary power generators. All of these factors are now forcing industry to reconsider the drivers of technology choice in the alternative adoption of legacy diesel generators. This, supported by our low capital cost targets and the ability of our systems to accept low grade hydrogen fuel, enables the Company to position itself in a market which reflects premium priced power, and does not require short term Government subsidy in order to be successful.

First Global Distribution Channel
Significant effort was also made during the year in promoting and demonstrating our technology both at home and abroad.

This began with the Dunsfold to Dundee roadshow in February that physically demonstrated the capabilities of our new EV charger unit and acted as a catalyst for further press coverage and interest in our products.

This roadshow culminated in both our agreement with Extreme E and the announcement after year end of our global partnership with world leaders in electrification, ABB. This partnership not only gives ABB access to AFC Energy's leading fuel cell technologies for the rapid charging of electric vehicles, it also provides AFC Energy with access to a global distribution network which has already sold rapid EV charging equipment in over 80 countries.

Work has already begun with ABB to integrate their chargepoints with our fuel cells to provide an off-grid solution where the grid is constrained (or absent) with the integrated product launch targeted for later this year. Importantly, we are already in discussions with several of ABB's customers who have expressed interest in the system in locations where large power demand exists, such as high volume logistics hubs, but where adequate grid connectivity does not.

To put the importance of this agreement into context, our commercial team can now access a global market of some 1.2 billion existing vehicles[3], compared with a domestic market of just 38.7 million vehicles[4].

This model of working through global distributors can be evidenced across all of AFC Energy's key target markets and we hope to be making further announcements in this regard later in the year.

New Partnerships and Collaborations
To accelerate our growth and extend our commercial footprint across the world, we have also begun to enter into a series of partnerships and collaborations with key global companies and we view this as a principal part of our commercial strategy moving forward in order to generate a larger volume of sales.

[1] Taken from Hydrogen Council/McKinsey report, 'A perspective on Hydrogen Investment, Deployment and Cost Competitiveness' (February 2021)
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7498239/
[3] Taken from https://about.bnef.com/electric-vehicle-outlook/ (Accessed 17 February 2021)
[4] Taken from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/882196/vehicle-licensing-statistics-2019.pdf (Accessed 17th February 2021)

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In June, we announced a partnership with ACCIONA SA in support of their stated intention to decarbonise their portfolio of global construction sites. Our programme of work with ACCIONA in 2021, will explore logistics chains, fuelling strategy (with ammonia), regulatory compliance and the cost effectiveness of our system compared to diesel fuel in off-grid construction applications.

Partnerships such as that announced with ACCIONA are being developed across several constructors and diesel genset distributors and create large opportunities for early deployment of H-Power™ systems in markets driven by sustainability agendas.

After period end for example, we also entered into a collaboration agreement with Ricardo plc for both companies to jointly explore and engineer innovative, zero greenhouse emission products with a focus on transportation and stationary power generation, thereby taking advantage of clear growth in industrial customer demand. The partnership is closely considering the benefits achieved using low cost, readily available, and high energy dense green ammonia fuel (rather than hydrogen gas) as a fuel of choice in off-grid or remote power needs, including international shipping and distributed power generation.

Manufacturing scale up

Our 2020 contracts and the strength of our potential order pipeline placed a spotlight on our dependence upon the small workforce we have at Dunsfold. We subsequently took three actions to ensure that our manufacturing capability can meet current and future orders.

Our partnership with BK Gulf, announced after period end, supports the immediate scale up of manufacturing capacity for delivery of our power systems through the delivery of the Company's containerised fuel cell balance of plant. BK Gulf has the existing capacity to deliver several hundred fitted out containerised modules per annum to address future customer demand, with the first fabricated units expected this year. In parallel with this work, BK Gulf has also commenced a detailed value engineering process to further optimise our system layout and drive cost reduction. Our partnership with De Nora also remains strong following the extension of our Joint Development Agreement, with their electrodes continuing to be used in all of our projects.

Our successful £31.6 million fundraise in July also supported two key internal actions. To further scale up fuel cell system assembly and commissioning to satisfy existing and future orders, we announced in November that we'd taken a lease over a 30,000 sq. ft unit at Dunsfold Park to serve as our first large-scale H-Power™ assembly and commissioning facility. This provides the space for the assembly of fuel cell systems of any scale before commissioning and despatch to customers.

In addition, the fundraise provided the financial headroom to recruit new manufacturing, engineering and commercial staff in support of the deployment of our systems into the Company's key target markets. In addition, the fundraise provided the financial headroom to recruit new manufacturing, engineering and commercial staff in support of the deployment of our systems into the Company's key target markets. We will be announcing a further strengthening of our executive team shortly and it's a tribute to our progress that we can now attract such talent to our business.

Product and technology development

Our technology platform is at the heart of our value proposition, and with a three pillar approach to technology development, we are confident our market leading position in alkaline fuel cell systems continues to be strengthened.

The first of these pillars represents the HydroX-Cell(L)™ fuel cell system which is currently set for deployment in all of our current and near term pipeline of projects. The focus here continues to be predicated on lowering of cost and enhancement of performance. Our partnership with Industrie De Nora continues to pay dividends as they further invest in our L Series electrode technology through Joint Development Agreement, with BK Gulf now supporting the value engineering of modular, containerised systems.

The second pillar represents to HydroX-Cell(S)™ fuel cell system which continues to be scaled up towards a full commercial prototype system expected for delivery later this year. The S Series system continues to demonstrate market leading power densities for alkaline fuel cell systems designed to compete head on with existing Proton Exchange Membrane (PEM) based technologies in mobile applications where power density and footprint are key. The key differentiator is the alkaline system's ability to accept lower grade, and therefore lower cost hydrogen (including that sourced from ammonia) with a far lower loading of high cost metals within its electro-chemistry. We continue to believe the S Series fuel cell will be a game changer for the hydrogen sector.

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Finally, the third pillar represents the AlkaMem* Anion Exchange Membrane, used within the S Series fuel cell system, but which can equally be applied in other non fuel cell applications such as alkaline water electrolysis. AlkaMem* has now been dispatched to several leading industrial and research entities and continues to highlight the potential for our technology in these markets. 2020 presented certain challenges across the AlkaMem* supply chain however we are now through this and continue to prepare the membrane for third party users in 2021.

Fuel
The unique selling point of our equipment to accept low grade, cheaper hydrogen sources - especially ammonia, which has been confirmed as our strongest competitive advantage by our customers. Adoption of ammonia as a preferred vector for the carriage of hydrogen is gaining momentum, particularly in heavy mobile applications such as shipping. We are continuing to work closely with the ammonia industry, including joining the Ammonia Energy Association as Gold Members in 2020.

Outlook
Our outlook for the coming year is one of confidence, with both Governmental policies and industry sentiment driving sustainable change in our key target markets. The company's strong balance sheet position enables us to invest in our people, products and technology and we therefore expect cash burn to modestly increase in the coming year - partly offset by an increase in customer revenues - to accelerate our commercial growth.

With regulations pertaining to diesel generation continuing to tighten, environmental and societal change agendas becoming more prevalent, the rate of Electric Vehicle deployment and their required rate of charge increasing, and the cost of hydrogen continuing to fall whilst diesel does the opposite, this will drive additional interest and ultimately drive sales of our products in our target markets.

Beyond this clear opportunity, we have also begun to put in place the required distribution channels, manufacturing and staffing to turn these opportunities into significant revenue. Leveraging the value of our international partnerships and collaborations remains central to our approach in 2021.

Whilst the COVID-19 pandemic has had an obvious impact on all businesses, we demonstrated in 2020 that we have been able to work safely and efficiently in meeting the needs of our customers whilst continuing to develop our product base. I expect us to maintain this momentum throughout 2021.

This transformational year has been the result of innovative, passionate and committed effort by a team with the single-minded desire to bring "emissions-free solutions to the world's energy challenges". I wish to take this opportunity to thank our staff, partners and supply chain for their tremendous efforts and I look forward to even greater things in the future.

ADAM BOND
Chief Executive Officer
26 February 2021

Adam Bond

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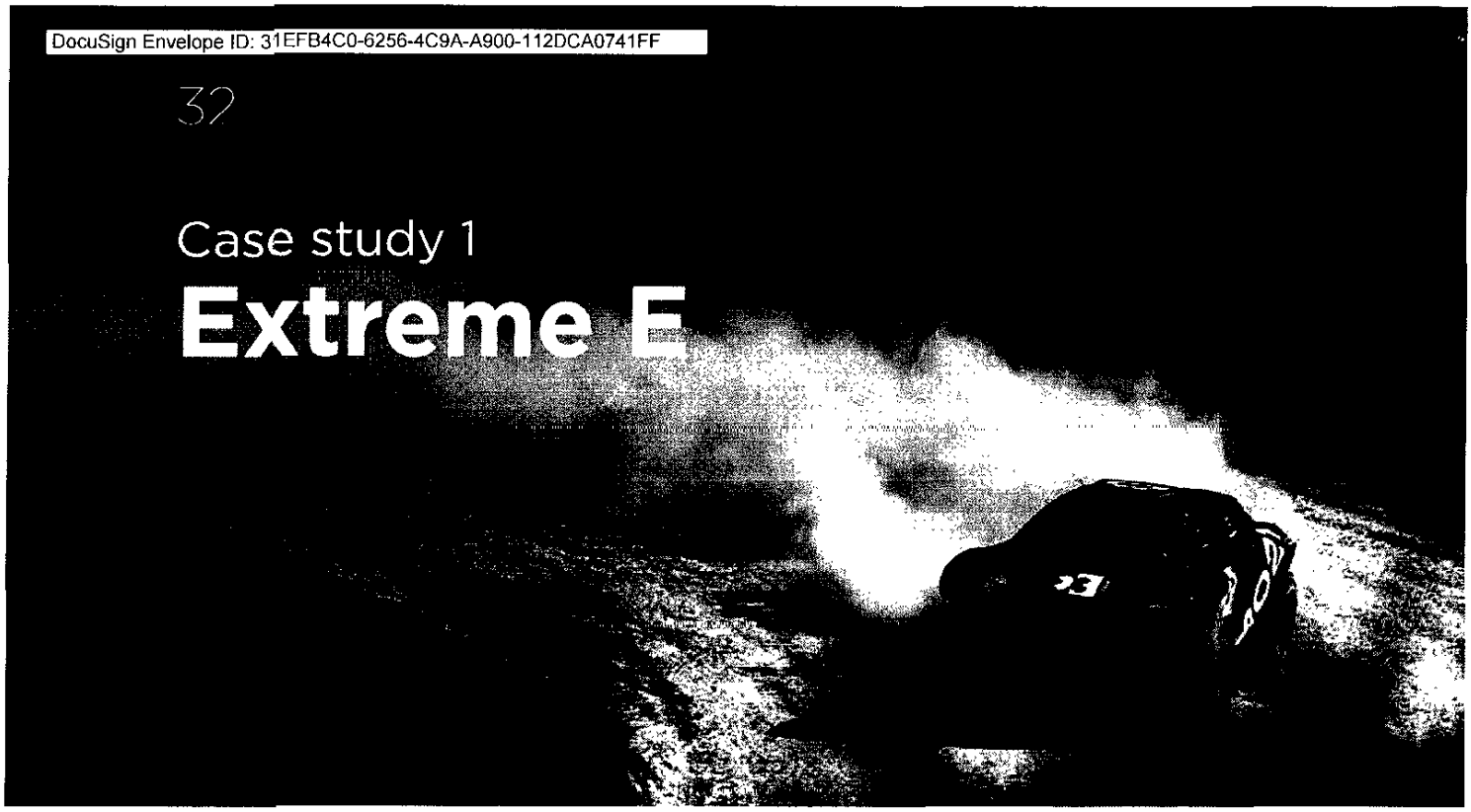
Case study 1

Extreme E



In July 2020, we announced a collaboration with Extreme E to supply zero emission, hydrogen fuelled, off-grid power to Extreme E's groundbreaking inaugural electric SUV racing series commencing in April 2021. Extreme E was established by the same visionary team behind the ABB FIA Formula E Championship and is the world's first all-electric international rally series.

The Championship will see teams racing in some of the remotest corners of the planet, in a bid to highlight the most important climate issues of our generation and to highlight technologies that can accelerate global decarbonisation efforts.

We designed and built a power system that will highlight to Extreme E's global audience the vast potential for today's newest clean power technologies to displace polluting diesel generators, to which a large quantity of worldwide greenhouse gas emissions can be attributed.

Engineered to withstand some of the world's harshest environmental conditions, our specially modified fuel cell system will power vehicles across five continents in Extreme E's first season, including race locations in the Arctic, Amazon Rainforest, Sahara Desert and the heights of Tierra del Fuego in Argentina.

Following six months of collaborative engineering with Extreme E's utilities team between July 2020 and December 2020, the fuel cell system underwent a month of intensive commissioning in January at our Surrey assembly facility, alongside battery management systems and vehicle charging infrastructure testing. Following inspection by its Engineering team, it has now been handed over to Extreme E's logistics team for shipping to the Season's first race in Saudi Arabia in early April.

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Race organisers and teams, including teams run by current Formula 1 World Champion Lewis Hamilton (X44), former Champions Nico Rosberg (Rosberg Xtreme Racing) and Jenson Button (JBXE), alongside high profile well-established teams including Andretti United and Chip Ganassi Racing, will charge their ODYSSEY 21 vehicles using electricity generated by our fuel cell power system. This in turn will inspire people, companies, and governments to consider how clean power generation, such as that found in fuel cell technology, can be utilised to urgently respond to the challenges brought on by climate change.

With broadcast deals in place with Sky and BBC (UK), Discovery (Europe), Fox Sports (US, Canada and the Caribbean) and a host of others, the series will have an estimated global TV audience of over 200 million people to highlight the environmental challenge and to showcase the technology used by the series.

The system has been transported for shipping via the St. Helena, ahead of its first race, the Desert X-Prix in AlUla, Saudi Arabia, on the 3rd and 4th of April. A small number of AFC Energy staff will travel to the first race in early April to monitor and maintain the performance of the H-Power™ system over the race weekend. The system will then subsequently be deployed to its four other races across the remainder of the year, including Dakar, Senegal (29-30 May), Kangerlussuaq, Greenland (28-29 August), Santorem, Brazil (23-24 October) and Tierra del Fuego, Argentina (11-12 December).

KEY FACTS

Size of fuel cell

Terms of contract

Specification of Odyssey EV

Race Calendar

Official Extreme E website

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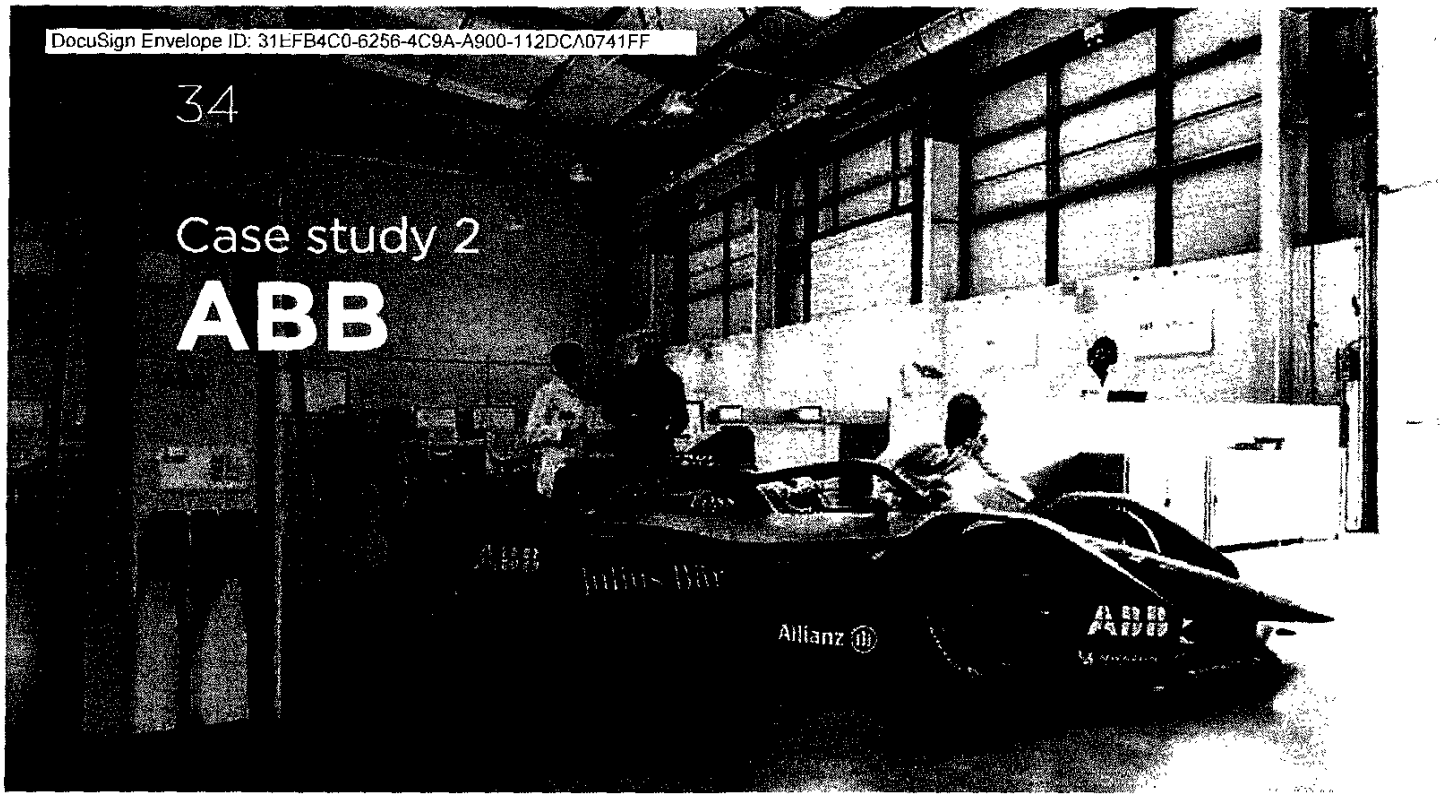
Case study 2
ABB



In December 2020, we announced the signing of a strategic partnership with ABB, a world leader in electrification and digitalisation technologies that operates in over 100 countries, to develop and launch a bespoke high power EV charging product for distribution through ABB's market channels from the second half of 2021.

ABB entered the EV-charging market in 2010, and to date has sold more than 17,000 ABB DC fast chargers across 80 countries.

The strategic partnership aims to leverage respective company technologies with regards to AFC Energy's zero emission, high efficiency fuel cell technology alongside ABB's energy storage and market leading DC high power EV charge points.

Both companies have invested in a Commercialisation and Marketing Agreement, and Joint Product Development Agreement to showcase the supply of secure, reliable and flexible on-site power generation in ultra-rapid EV charging. The global EV charging market is expected to exceed US$140bn by 2030 with power network upgrades necessary to facilitate this level of deployment forecast to exceed £50bn in the UK alone.

The Commercialisation and Marketing Agreement will focus efforts on the joint marketing and deployment of integrated high power EV charging systems across key ABB markets including:

- Private vehicle hubs;
- Charge point operators;
- Logistics hubs and distribution centres;
- Public and private urban transportation (including bus depots);
- Marine (including port and marina charging); and
- Vertical Take off and Landing Craft (VTOLs).

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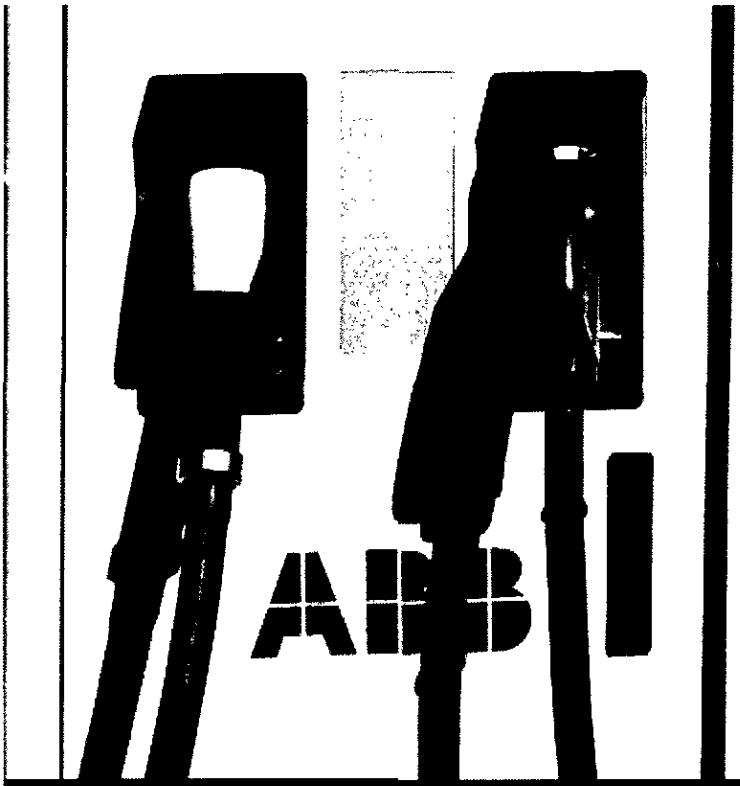
Under the agreements, AFC Energy is afforded a Right of First Refusal across multiple years, to supply H-Power™ fuel cell systems into ABB's high power EV charging network of international customers where customer or site power demands are absent or require further resilience.

Both companies will jointly market the integrated product across the key addressable markets and will collaboratively develop a communications strategy for system branding and deployment.

The Joint Product Development Agreement ("JPDA") defines the activities to be undertaken jointly by ABB and AFC Energy in designing principles of system operability, proof of concept testing and productisation *ready for customer sales.*

Work has already begun with ABB to integrate their chargepoints with our fuel cells to provide an off-grid solution where the grid is constrained (or absent) with the integrated product launch targeted for the second half of 2021. Importantly, we are already in discussions with several of ABB's customers who have expressed interest in the system in locations where large power demand exists, such as high-volume logistics hubs, but where adequate grid connectivity does not.



KEY FACTS

Key product to be developed

Principal issue to solve for customer base

Key geographic markets

Technology deployment

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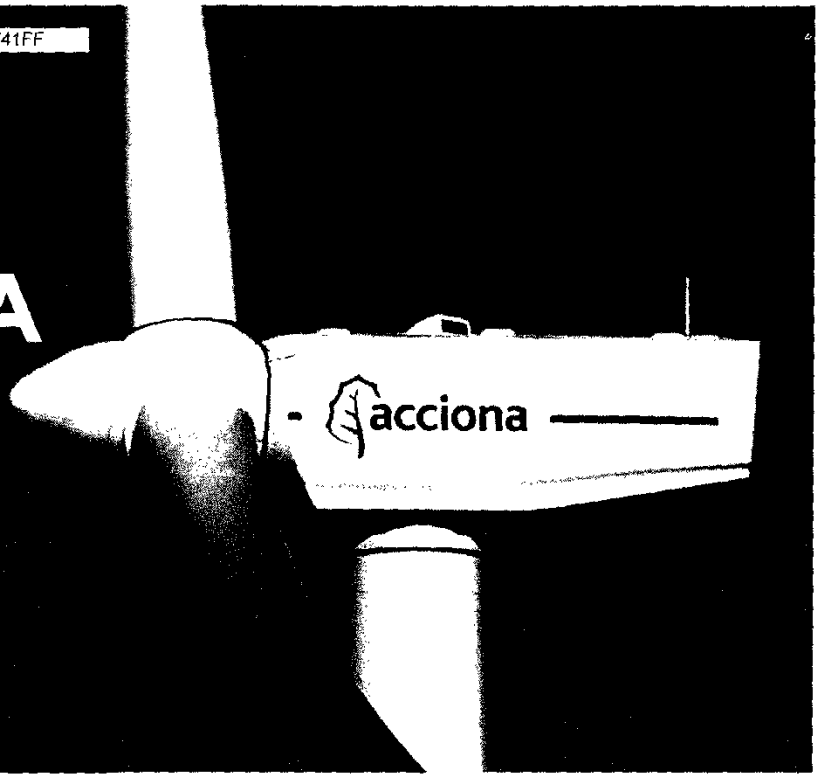
Case study 3
ACCIONA



In June 2020, we announced a strategic collaboration with ACCIONA to support the leading constructors' strategy to decarbonise its development sites in Europe and elsewhere. Our on-site work with them in Spain in 2021 will evaluate both hydrogen and ammonia as fuel sources to support comparative fuel evaluation within our H-Power™ systems in a real-world construction environment.

Decarbonisation of the construction sector is a critical objective for the delivery of a net zero economy and is therefore a key market focus for AFC Energy's H-Power™ fuel cell system. With an acute awareness emerging of the impact diesel generation from construction has on air quality post COVID-19, this objective is likely to be increasingly regulated and enforced by Governments.

As one of the world's leading construction companies with a multi-gigawatt portfolio of renewable energy investments across the world, ACCIONA, through its construction business line, has entered into an Agreement with AFC Energy to conduct field tests of a containerised 160kW H-Power™ system at one of its Spanish construction sites. In addition to a containerised H-Power™ fuel cell system, ACCIONA will be supplied with a Battery Energy Storage System (BESS) and ammonia cracker.

As a leading innovator at the forefront of research and development in the construction market, ACCIONA uses the latest techniques working with partners to carry out projects, including the reduction of the environmental footprint of its construction sites through a transition away from on-site diesel generation.

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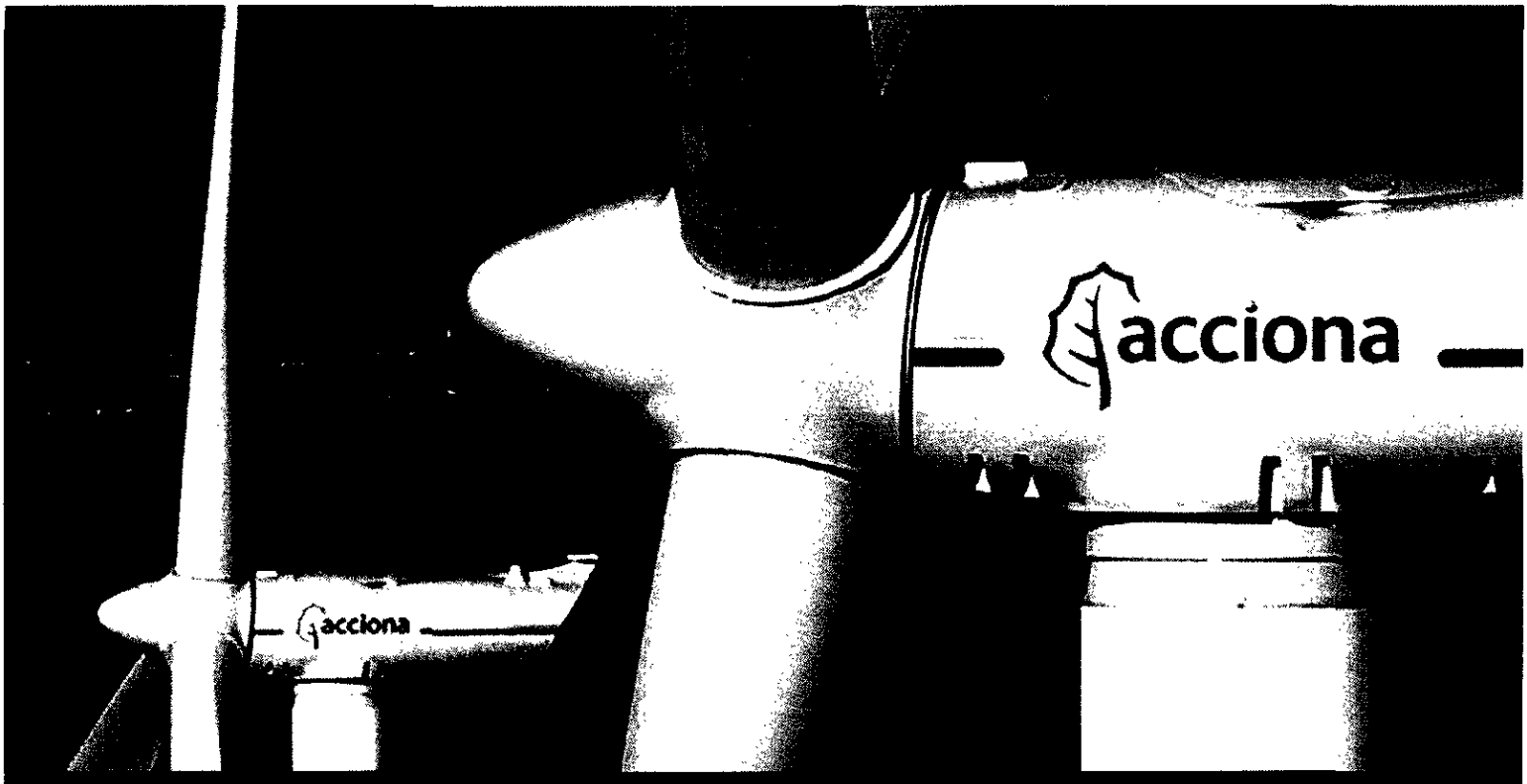
Each company is contributing to the cost of conducting the field trial. Both companies will subsequently work together to validate the technical and economic viability of the H-Power™ system as a basis upon which future collaborations will be premised.

A key selling point of AFC Energy's H-Power™ platform is the capability to accept cracked ammonia as the primary fuel source. As a more energy dense fuel with lower logistics and handling costs versus hydrogen in remote locations, adoption of ammonia could have a material impact on the fuel running costs of the fuel cell system. The project will evaluate both hydrogen and ammonia as its primary fuel so that an holistic evaluation may be made not only comparing alkaline fuel cell efficiency with comparable fuel cell technologies but also the safety, cost effectiveness and logistical supply chain of the two fuels compared to diesel fuel in off grid construction applications.



KEY FACTS

ACCIONA headquarters

Size of ACCIONA business

Fuel cell

Trial Start

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Case study 4
Jülich

In September 2020, we sold a 100kW H-Power™ alkaline fuel cell system to Forschungszentrum Jülich for deployment at its Living Lab Energy Campus showcase in Germany. Jülich is one of Europe's largest and most prestigious interdisciplinary research institutions that is working with German and global partners to develop the campus; the first of its kind in Europe, it will provide a blueprint for sustainable, decentralised and integrated smart infrastructure with an emphasis on cutting-edge renewable and hydrogen technologies.

The German Government's National Hydrogen Strategy, launched in June 2020, highlights the key role hydrogen is expected to play in the full decarbonisation of the country's energy market. With over €9bn of new investment planned for the sector, Germany's expectation of becoming a global leader in the field has seen an immediate growth in opportunities for technologies that support this brief, to commence delivery of the Government's aspiration that sees hydrogen as a fundamental enabler to the transition away from an emissions based energy sector to a net zero sustainable industrialised economy.

In this context, Jülich, as a member institute of Germany's renowned Helmholtz Association of Research Institutes, has devised a European first Living Lab Energy Campus at its site in Western Germany to articulate a blueprint for the design of smart technology based, sustainable energy systems for distributed microgrid applications.

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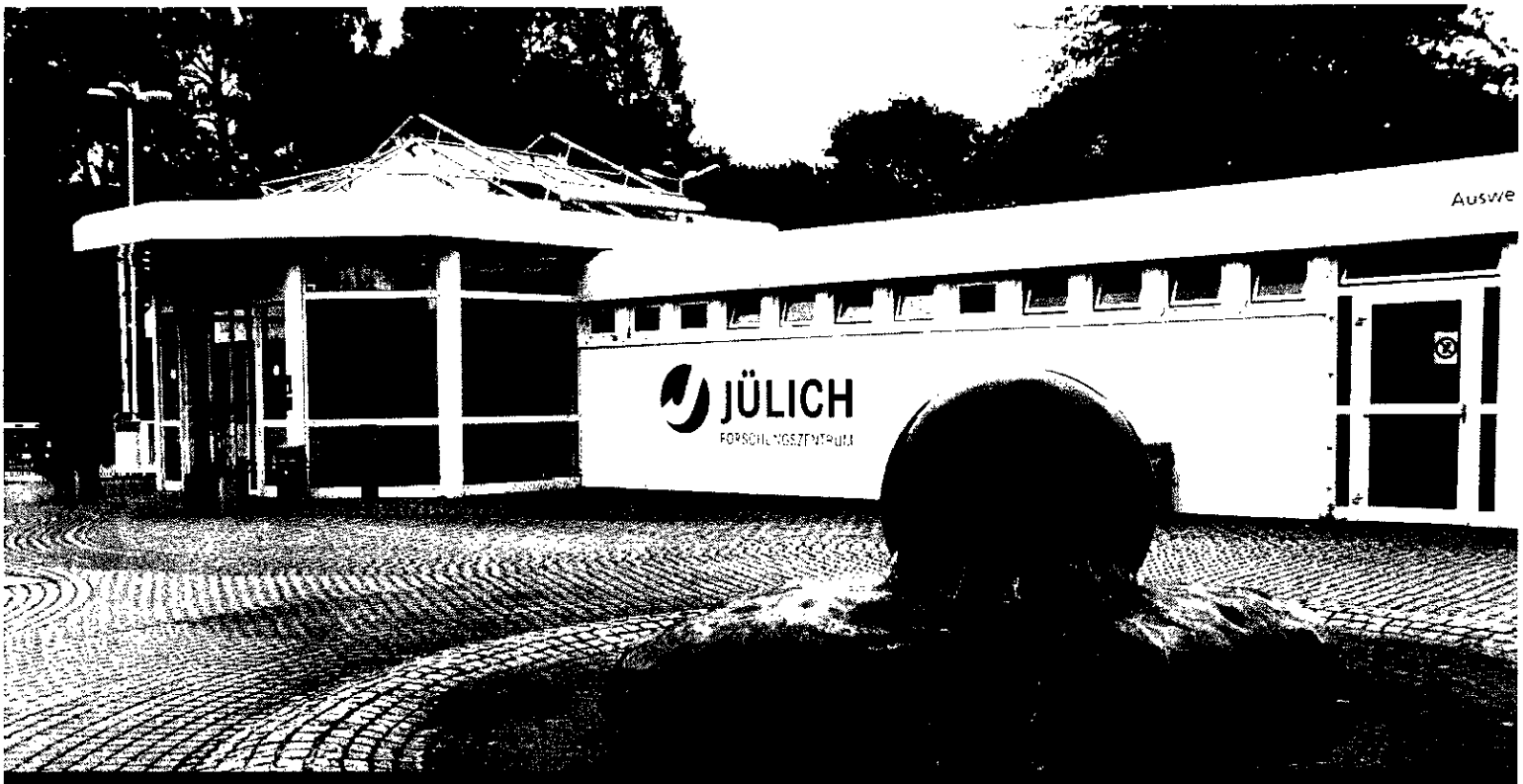
Microgrids and "Smart Cities" are seen by many of the world's largest energy system operators and original equipment manufacturers (OEMs) as the cornerstone of the world's transition away from large, high cost, centralised energy generation models, and therefore, establishing the role of hydrogen within this architecture is an important objective of Jülich's high profile initiative.

Prior to making its decision, Jülich extensively reviewed the best available technologies in the market today, prior to electing to provide a 100kW stationary alkaline fuel cell system for inclusion in the campus. Higher tolerance to lower grade, and therefore lower cost hydrogen, was a key driver in their selection process.

Under the terms of the deal, Jülich will own and operate the 100kW fuel cell system with engineering support services provided by AFC Energy to commission and train local operators on the system. The transaction value, reflecting a sale of the H-Power™ balance of plant and gas distribution infrastructure, also comes with a Long Term Services Agreement ("LTSA") to account for periodic electrode replacement over the project's life.



KEY FACTS

LLEC Location

Purpose of showcase

Size of fuel cell

Terms of contract

Schedule for delivery and commissioning

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Corporate governance

The Board is committed to achieving high standards of governance commensurate with the size and stage of development. As an AIM-listed company, the principles of the Quoted Companies Alliance Corporate Governance Code (the "QCA Code") will be adopted taking in to account the stage of development, resources available and the size of the company. The QCA Code identifies 10 principles to be followed to deliver growth in long-term shareholder value by ensuring that the management framework is efficient, effective and dynamic, supported by good stakeholder communication to promote confidence and trust.

The sections below describe how the ten principles of the QCA Code are applied to deliver medium- to long-term success without stifling innovation and entrepreneurial spirit, together with any areas of non-compliance.

Establish a strategy and business model that promote long-term value for shareholders

The principal objective is to develop alkaline fuel cell and related technologies and bring them to the global market in high performance and zero emission modular power generation equipment.

Our target customers will be committed to meeting net zero-carbon goals and operate in either

- Premium priced electricity markets, typically off-grid or near-grid applications, such as EV charging, construction, islands and remote communities and mining, or
- Suitable large-scale industrial applications where hydrogen is vented.

The strategy, objectives and business model are developed by the executive directors and the senior management team, and then approved by the Board. The management team, led by the Chief Executive Officer, is responsible for implementing the strategy and managing the business at an operational level.

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To accelerate the delivery of the strategy and grow shareholder value, long-term relationships with strategic supply chain and distribution channel partners have been concluded. New partners are continuously being reviewed with the objective to access new technologies or markets that will deliver sustainable growth or improve our products' competitive position.

Seek to understand and meet shareholder needs and expectations

AFC Energy seeks to maintain a regular dialogue with both existing and potential shareholders to communicate strategy and progress, and to understand the needs and expectations of shareholders.

Beyond the Annual General Meeting, the Chief Executive Officer and other members of the senior management team meet regularly with investors and analysts to provide them with updates on the business and to obtain feedback regarding the market's expectations of AFC Energy.

AFC Energy's investor relations activities encompass dialogue with both institutional and private investors and are coordinated by the Head of Communications and Stakeholder Management.

The Board also endeavours to maintain a dialogue and keep shareholders informed through its public announcements and website. AFC Energy's website provides not only information specifically relevant to investors (such as the Company's Annual Report and Accounts, investor presentations, regulatory announcements and share price information), but also information regarding the nature of the business itself: the technology; key projects; the background to AFC Energy's target markets; and non-regulatory press releases.

The Annual General Meeting of the Company, normally attended by all Directors, provides the Directors with the opportunity to report to shareholders on current and proposed operations and developments, and enables shareholders to express their views of AFC Energy's business activities. Shareholders are encouraged to attend and are invited to ask questions during the meeting and to meet with the Directors after the formal proceedings have ended.

The Board intends to include the detailed results of shareholder voting in its announcements to the market.

Take into account wider stakeholder and social responsibilities and their implications for long-term success

The technologies and products being developed have a strategic role in meeting net zero-carbon targets. To be successful we must not only make our customers aware of our solutions but also Government and other policy makers so that a regulatory and fiscal system is created whereby early adopters of our technology are incentivised. To this end we seek to actively participate in trade associations, global lobbying groups and Government forums.

The Board is aware of its corporate social responsibilities and the need to maintain effective working relationships across a range of stakeholder groups. These include employees, clients, suppliers and shareholders. The Company's operations and working methodologies aim to balance the needs of these stakeholder groups while maintaining focus on the Board's primary responsibility to promote the success of AFC Energy for the benefit of its members as a whole. AFC Energy endeavours to take account of feedback received from stakeholders, amending working arrangements and operational plans where appropriate and where such amendments are is consistent with the Company's longer-term strategy.

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The Company takes due account of any impact that its activities may have on the environment and seeks to minimise this impact wherever possible. Through the various procedures and systems it operates, AFC Energy ensures full compliance with health and safety and environmental legislation relevant to its activities and is currently undergoing a programme to become ISO 9001, 14001 & 45001 certified.

Embed effective risk management, considering both opportunities and threats, throughout the organisation

The Board is responsible for the systems of risk management and internal control and for reviewing their effectiveness. The internal controls are designed to manage rather than eliminate risk and provide reasonable but not absolute assurance against material misstatement or loss. Through the activities of the Audit Committee, the effectiveness of these internal controls is reviewed annually. The results of the annual review of risks and uncertainties is published in the Annual Report.

A comprehensive budgeting process is completed once a year and is reviewed and approved by the Board. This budget is maintained and updated where required throughout the year. Performance against the budget and forecasts is reviewed by the management team on a monthly basis and by the Board at each Board meeting.

The Company maintains appropriate insurance cover in respect of actions taken against the Directors because of their roles, as well as against material loss or claims against the Company. The insured values and type of cover are comprehensively reviewed on a periodic basis.

Maintain the Board as a well-functioning, balanced team led by the Chair

The objective is to maintain a Board balanced between Executive and Non-Executive Directors with an appropriate mix between technology, engineering, governance and commercial experience. The Board includes an independent Non-Executive Chairman who is responsible for leadership of the Board and ensuring all aspects of its role.

All Directors are subject to election by shareholders at the first Annual General Meeting after their appointment to the Board and will continue to seek re-election at least once every three years.

The Board is responsible to the shareholders for the proper management of the Company and meets at least six times a year to set the overall direction and strategy, and to review operational and financial performance. All key operational and investment decisions are subject to Board approval. To assist the Board in its responsibilities, three focused sub-committees, chaired by Non-Executive Directors, have been implemented. These committees are Audit, Nominations and Remuneration.

The Board considers itself to be sufficiently independent and adheres to the QCA Code recommendation that a board should have at least two independent Non-Executive Directors.

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Ensure that between them, the directors have the necessary up-to-date experience, skills and capabilities

The Board considers that the Non-Executive Directors are of sufficient competence and calibre to add strength and objectivity to its activities, and bring considerable experience in scientific, operational and financial development of clean technology products and companies.

The Board regularly reviews the composition of the Board to ensure that it has the necessary breadth and depth of skills to support the ongoing development of the Company.

The Chairman, in conjunction with the Company Secretary, ensures that the Directors' knowledge is kept up to date on key issues and developments, its operational environment and the Directors' responsibilities as members of the Board.

Directors' service contracts or appointment letters and the terms of reference of the sub-committees of the Board make provision for a Director to seek personal advice in furtherance of his or her duties and responsibilities.

Evaluate Board performance based on clear and relevant objectives, seeking continuous improvement

The Chairman reviews and appraises the performance of the Directors to determine the effectiveness and performance of each member with regards to their specific roles as well as their role as a Board member in general.

The appraisal system seeks to identify areas of concern and make recommendations for any training or development to enable the Board member to meet their objectives which will be set for the following year. The appraisal process will also review the progress made against prior year targets to ensure any identified skill gaps are addressed.

Whilst the Board considers this evaluation process is currently best carried out internally, the Board will keep this under review and may consider independent external evaluation reviews in the future.

As well as the appraisal process, the Board monitors the Non-Executive Directors' independence to ensure that a suitable balance of independent Non-Executive and Executive Directors remains in place.

The Board may use the results of the evaluation process when considering the adequacy of the composition of the Board and for succession planning. Succession planning is formally considered annually, in conjunction with the appraisal process.

Promote a corporate culture that is based on ethical values and behaviours

The Board seeks to maintain the highest standards of integrity and probity in the conduct of the Company's operations. These values are enshrined in the written policies and working practices adopted by all employees. An open culture is encouraged, with regular communications to staff regarding progress and staff feedback regularly sought. Senior management regularly monitors the internal cultural environment and seeks to address any concerns that may arise, escalating these to Board level as necessary.

AFC Energy is committed to providing a safe environment for its staff and all other parties for which the Company has a legal or moral responsibility in this area. The Company has a Health and Safety policy which is enforced rigorously.

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Maintain governance structures and processes that are fit for purpose and support good decision-making by the Board

The Board has overall responsibility for promoting the success of the Company. The Executive Directors have day-to-day responsibility for the operational management of the activities. The Non-Executive Directors are responsible for bringing independent and objective judgment to Board decisions.

There is a clear separation of the roles of Chief Executive Officer and Non-Executive Chairman. The Chairman is responsible for overseeing the running of the Board, ensuring that no individual or group dominates the Board's decision-making and ensuring the Non-Executive Directors are properly briefed on matters. The Chairman has overall responsibility for corporate governance matters. The Chief Executive Officer has overall responsibility for implementing the strategy of the Board and managing day-to-day business activities. The Company Secretary is responsible for ensuring that Board procedures are followed, and applicable rules and regulations are complied with.

The Audit Committee meets formally twice a year and at other times if necessary and has responsibility for, amongst other things, planning and reviewing the Annual Report and Accounts and interim statements, involving where appropriate the external auditors. The Committee also approves external auditors' fees and ensures the auditors' independence as well as focusing on compliance with legal requirements and accounting standards. It is also responsible for ensuring that an effective system of internal control is maintained. The ultimate responsibility for reviewing and approving the annual financial statements and interim statements remains with the Board. The Company's external auditors are invited to attend meetings of the Committee
on a regular basis.

The Remuneration Committee, which meets as required, but at least once a year, has responsibility for making recommendations to the Board on the compensation of senior executives and determining, within agreed terms of reference, the specific remuneration package for each of the Executive Directors. It also makes recommendations to the Board concerning employee incentive schemes, including setting performance conditions for share options granted under the schemes.

Communicate how the Company is governed and is performing by maintaining a dialogue with shareholders and other relevant stakeholders

The Board places a high priority on regular communications with its various stakeholder groups and aims to ensure that all communications concerning the activities are clear, fair and accurate. AFC Energy's website is regularly updated with new Company announcements and details of forthcoming presentations and events.

The results of voting on all resolutions in future general meetings will be posted to AFC Energy's website, including any actions to be taken as a result of resolutions for which votes against have

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been received from at least 20% of independent shareholders.

The role of the board

The Board is collectively responsible for the long-term success of the Company and is ultimately responsible for its strategy, management, direction and performance. The Board sets the strategic aims, ensures that the necessary financial and human resources are in place for the Company to meet its objectives, reviews progress towards the achievement of objectives and reviews the performance of management. The Board establishes the values, culture, ethics and standards of the Company and sets the framework for prudent and effective controls which enable risks to be assessed and managed. The Company does not comply with the UK Corporate Governance Code (the "Code") and has adopted the QCA Corporate Governance Code instead. The Board has delegated authority to its Committees to carry out the tasks defined in the Committees' terms of reference. The Committees are the Audit Committee; the Remuneration Committee; and the Nominations Committee. The Board has delegated the day-to-day management to the Chief Executive Officer.

The table below shows the number of Board and Committee meetings of the Company held during the year, and the attendance of the individual Directors.

	Board meeting	Audit Committee	Remuneration Committee	Nominations Committee
CHAIRMAN	John Rennocks	Joe Mangion	Gerry Agnew	John Rennocks
John Rennocks	18/22			
Adam Bond	21/22			
Jim Gibson	16/22			
Graeme Lewis (appointed 27 February 2020)	15/22			
Joe Mangion	18/22	2/2	1/1	1/1
Gerry Agnew (appointed 6 September 2020)	18/22	2/2	1/1	1/1

It should be emphasised that this information does not fully reflect the contribution made to the Company's business by many of the Directors, who have also attended other meetings and events relating to the Company's business and activities during the year.

Audit Committee

The Audit Committee's principal responsibilities are:

- To monitor the integrity of the financial statements of the Company;
- To review the annual and interim financial statements to ensure that they present a balanced assessment of the Company's position;
- To review accounting policies and their application within the Company's financial statements;
- To review with the executive management and the Company's external Auditor the effectiveness of internal controls;
- To review with the Company's external Auditor the scope and results of their audit; and

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- To oversee the relationship with the external Auditor.

The external Auditor attends meetings of the Committee except when their appointment or performance is being reviewed. Other Non-Executive and Executive Directors attend as and when appropriate. The Audit Committee meets at least twice a year, on dates linked to the Company's financial calendar, and at any other time when it has been appropriate to discuss audit, accounting or control issues.

Remuneration Committee

The Remuneration Committee's role is to determine and recommend to the Board the scale and structure of the remuneration of the Executive Directors and the basis of their service agreements. In determining remuneration, the Committee seeks to enable the Company to attract and retain executives of the highest calibre. In doing so, the Committee takes advice as appropriate from external advisers on executive remuneration. The Committee also makes recommendations to the Board concerning employee incentive schemes and award of shares or share options. No Directors participate in discussions or decisions concerning their own remuneration. Other Non- Executive Directors attend as and when appropriate.

Nominations Committee

The Nominations Committee is responsible for nominating candidates, for the approval of the Board, to fill either Executive or Non-Executive vacancies or additional appointments to the Board. The Nominations Committee meets as appropriate.

Employees

The Company's organisational structure has clearly been documented and communicated identifying levels of responsibility, delegated authority and reporting procedures.
The professionalism and competence of employees is maintained through recruitment, performance appraisal, written job descriptions, personal training and development plans.
The Board supports the highest levels of commitment and integrity from employees. Expected standards of behaviour are set out in the Staff Handbook, a copy of which is given to all employees. The Company is an equal opportunities employer and it is our policy to ensure that all job applicants and employees are treated fairly and on merit, regardless of their race, gender, marital status, age, disability, religious belief or sexual orientation. In common with many organisations we operate a performance appraisal system, the aim of which is to support employees to contribute fully to the organisation and to assist them to fulfil their potential.
The Company encourages the involvement of its employees in its performance through both Save As You Earn scheme and its Share Option plan.

Relations with shareholders

The Board considers effective communication with shareholders to be very important and encourages regular dialogue with investors. Shareholders will be given at least 21 days' notice of the Annual General Meeting, at which they will have the opportunity to discuss the Company's development and performance. The Company's website www.afcenergy.com contains full details of the Company's activities, press releases, Regulatory News service announcements, share price details and other information.

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Maintenance of a sound system of internal control

The Directors have overall responsibility for ensuring that the Company maintains a system of internal control to provide them with a reasonable assurance that the assets of the Company are safeguarded, and that shareholders' investments are protected. The system includes internal controls appropriate for a company of the size of AFC Energy, and covers financial, operational, compliance (including health and safety) controls and risk management. Such systems are designed to manage, rather than eliminate, the risk of failure to achieve business objectives; any system can provide only reasonable, and not absolute, assurance against material misstatement or loss. The process in place for reviewing AFC Energy's system of internal control includes procedures designed to identify and evaluate failings and weaknesses, and to ensure that necessary action is taken to remedy the failings. The Board has considered its policies regarding internal controls, as set out in the Code, and undertakes assessments of the major areas of the business and methods used to monitor and control them. In addition to financial risk, the review covers operational, commercial, regulatory and health and safety risks. The risk review is an ongoing process with reviews being undertaken on a regular basis. The key procedures designed to provide an effective system of internal controls that are operating up to the date of sign-off of this report are set out below.

Control environment

There is an organisational structure with clearly defined lines of responsibility and delegation of accountability and authority.

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Risk management

The Company employs Directors and senior personnel with the appropriate knowledge and experience for a business engaged in activities in its field of operations and undertakes regular risk assessments and reviews of its activities. Details of risks to the business which the Board considers to be potentially material are:

	Risk	Mitigating procedures
CORE TECHNOLOGY	• Product reputation arising from technical failure at customer trials could affect customer sentiment in some applications. • Cannot be manufactured at scale. • Cannot be manufactured at competitive price. • Fuel costs do not fall. • Fuel not freely available.	• Full scale demonstration unit delivered. • Strategic alliance with BK Gulf to assemble BoP. • Strategic alliance with Industrie De Nora to manufacture electrodes. • Investment and expansion of facilities in Dunsfold. • Continuous product improvement investment in fuel efficiency to complement convergence between diesel and hydrogen costs. • Ability to accept ammonia as fuel vector and joint development plan with HiiRoc to develop methane and biomethane as fuel vector.
INTELLECTUAL PROPERTY AND TECHNOLOGY	• Working with an increasing range of partners and customers together with additional staff, mean that there is greater risk of inappropriate information sharing, risking the protection of leak trade secrets and proprietary technology. • Loss of competitive advantage from successful challenges to patents, unauthorised parties using proprietary technology in their own products, or others infringing existing intellectual property rights (IPRs).	• Internal procedures and controls in place to capture, patent and exploit all intellectual property (IP) as well as to protect, limit and control disclosure to third parties and partners. • Use of specialist IP legal advisors. • Contractual provisions with partners include non-disclosure and other provisions to protect know how and intellectual property. • Avoid markets and customers where reverse engineering may happen.
PRODUCT COMMERCIALISATION	• Does not meet customer operational needs. • Does not meet customer price expectation.	• Targeting new markets that require different technical attributes and working in close collaboration with partners with recognised market expertise reduces these risks. • This risk has reduced with the continued commercial progress and interest from customers. • We continue to increase our pipeline of customers and have expanded market applications, mitigating the impact of individual customers choosing not to move forward. • Recruited commercial staff and appointing Chief Commercial Officer (CCO).

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	Risk	Mitigating procedures
SUPPLY CHAIN	• Major failure/disaster at key suppliers jeopardising supply and causing loss of revenue or brand damage. • Loss or failure of key contractors or service providers. • Supply chain partners may be unable or unwilling to co-develop or supply key components.	• Suppliers are constantly reviewed and categorised between operational, strategic, and technical. For operational supplies we identify three suppliers to ensure continuity. For strategic and technical suppliers, who typically are sole suppliers, financial and technical due diligence is undertaken on new suppliers and ongoing developments, product quality and lead order times are monitored constantly. • Meet regularly with major strategic suppliers to discuss and agree development plans.
TALENT ATTRACTION AND RETENTION	• Labour cost inflation accelerates cash burn. • Inability to recruit, incentivise and retain commercial, product development and research staff.	• Remuneration policy sets mix of salary, bonus and share options to attract, retain and motivate staff. • Recent and ongoing reinforcement of staff.
CYBERSECURITY	• Failure or incident leading to data loss, disruption of development, loss of intellectual property or reputational damage.	• Security programme established across all IT processes. • Staff training and updates on cybersecurity. • Annual external IT audit process.
FUNDING AND CASH BURN	• The business continues to be in a cash consumption phase, as it seeks to accelerate and build capacity ahead of anticipated demand.	• Successful oversubscribed raise £31.6 million before expenses in 2020. • Continuous business planning and cash forecasting.
RELIANCE ON STRATEGIC PARTNERS	• Roll-out plan does not align with our timescale. • Choose not to adopt our technology.	• Financial, commercial and technical due diligence of OEM and distribution partners to ensure alignment of objectives and business continuity. • Strategic partners continue to meet expectations with their go-to-market ambitions.
COMPETING TECHNOLOGIES	• Alternative technologies are adopted reducing the size of the addressable market or market shares.	• Alkaline Fuel Cells offer a lower operating cost than comparable technologies. • Continual evaluation of the competitive landscape and targeted technology improvements seeks to retain that competitive advantage. • Appointment of Chief Technical Officer (CTO) to lead continuing technology improvement. • Second generation solid membrane fuel cell development advanced. • Diversification with AlkaMem® opening up alternative markets such as electrolysis.
POLITICAL AND REGULATORY	• Fiscal compliance in multiple jurisdictions. • Legal compliance in multiple jurisdictions. • Influence of emissions regulations in target markets and territories.	• Appointment of Head of Communications and Stakeholder Management to lobby government and regulators. • OEM and distribution partners will shield from local political and regulatory risks. • Global commercial strategy minimises impact of specific political and regulatory risks from individual territories.

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	Risk	Mitigating procedures
BREXIT	• Increase in costs due to duties etc • Delay to delivery due to customs delays. • Retention and attraction of staff from EU. • Loss of ease of doing business in EU.	• The majority of our purchases are not sourced from the EU so we do not anticipate material issues. • Global OEMs and regional distributors simplify legal, fiscal and regulatory compliance. • Staff recruited from EU are likely to fill specialist roles and have post-graduation qualifications so fall under the highly skilled migrant definition.
COVID 19	• Disruption to supply chain. • Production delayed due to staff sick leave. • Customers delay purchasing decisions.	• Reorganised office layout to maximise social separation. • Constant review of order lead times. • Customer purchasing decisions driven by their net zero emissions targets. Evidence to date is that this timeline has been brought forward by the pandemic through Government stimulus plans.

Financial information

The Company prepares detailed budget and working capital projections which are approved annually by the Board and are maintained and updated regularly throughout the year. Detailed management accounts and working capital cash flows are prepared and compared to budgets and projections to identify any significant variances.

Management of liquid resources

The Board is risk averse when investing the Company's surplus cash. The Company's treasury management policy is reviewed periodically and sets out strict procedures and limits on how surplus funds are invested.

The strategic report on pages 26 to 50 has been approved by the directors on 26 February 2021.

Signed on behalf of the Board by

ADAM BOND
Chief Executive Officer
26 February 2021

Adam Bond

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Board of directors

John Rennocks

Non-Executive Chairman
Year appointed: 2017

Relevant skills and experience

A wealth of public markets and energy market experience.

Broad experience in conventional and renewable electricity generation and biotechnology, support services and manufacturing.

Fellow of the Institute of Chartered Accountants of England and Wales.

Previous appointments

Finance Director of three FTSE 100 companies: Smith and Nephew plc, PowerGen plc, British Steel/Corus plc.

Non-Executive Director or Chairman: Inmarsat plc, Babcock International Group plc, Diploma plc.

Other current appointments

Non-Executive Director and Chairman: Bluefield Solar Income Fund Ltd and Utilico Emerging Markets Ltd.

Adam Bond

Chief Executive Officer
Year appointed: 2014

Relevant skills and experience

Over 20 years' experience operating within the international energy sector both in executive management positions for listed energy companies, and in advisory capacities to both governments and the private sector.

Adam is well networked internationally across the conventional and unconventional energy sectors and has a strong understanding of energy markets and deal making within that sector.

Qualified with Bachelors' degrees in Commerce and Law and a Master in Laws (Taxation).

Previous appointments

Director of JS Yerostigaz (Uzbekistan).

Previously Non-Executive Director of AFC Energy plc from 2012.

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Jim Gibson

Chief Operating Officer
Year appointed: 2017

Relevant skills and experience

Thirty years' experience in operations management and business development roles within the engineering contracting sector.

Previous appointments

Twenty-three years at Foster Wheeler working in operational, business and commercial roles.

Two years at ThyssenKrupp working in process technology/business development.

Gerry Agnew

Non-Executive Director
Year appointed: 2019

Relevant skills and experience

Over 20 years' experience in fuel cell technology and systems both Rolls-Royce and LG Fuel Cell Systems Inc. Before joining the Board of AFC Energy, Dr. Agnew served as Senior Fellow on the Rolls-Royce Council of Fellows, attending the Group Chief Technology Officer's Technology Strategy workshops.

Previous appointments

Dr. Agnew spent seven years as Chief Technology Officer and Chief Technology Advisor to LG Fuel Cell Systems Inc and prior to this, Chief Technologist of Rolls-Royce Fuel Cell Systems, Executive VP Engineering at Rolls-Royce Fuel Cell Systems and Chief Engineer Fuel Cell Systems at Rolls-Royce.

Other current appointments

Director of Scotland's Hydrogen Accelerator and Senior Research Fellow at The University of St Andrews.

Joe Mangion

Non-Executive Director
Year appointed: 2017

Relevant skills and experience

A Chartered Accountant with over 20 years of operational experience within the environmental services and alternative energy sectors.

Previous appointments

CEO of Swiss listed Leclanché, S.A. – a developer and producer of large format lithium-ion energy storage and energy management systems.

Chairman of Solel Solar Systems Ltd., a private equity backed solar company.

A board member of Airtricity Plc., a private equity backed wind developer.

Other current appointments

None.

Graeme Lewis

Executive Director
Year appointed: 2020

Relevant skills and experience

A Chartered Accountant with over 20 years of operational experience in distribution of construction and power equipment.

Previous appointments

Divisional CFO Barloworld global Caterpillar operations.

CFO of Finanzauto, S.A. – Listed Caterpillar distributor for Spain and Portugal.

Other current appointments

None.

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Directors' interests and their remuneration

Introduction

The Company is committed to maintaining high standards of corporate governance and has taken steps to comply with the principles of best practice in so far as it can be applied practically given the size of the Company and the nature of its operations.

Since it is not a requirement for companies which have securities listed on the AIM market of the London Stock Exchange to comply with the disclosure requirements of the Directors' Remuneration Report Regulations 2013 or to comply with the UKLA Listing Rules and the disclosure provisions under schedule 8 to SI 2008/410 of the large and medium-sized companies and groups (accounts and reports) regulations 2008, certain disclosures are not included.

Directors and their interests

The Directors who served during the year and during the period up until the signing of these financial statements were:

John Rennocks	Non-Executive Chairman
Adam Bond	Chief Executive Officer
Jim Gibson	Chief Operating Officer
Graeme Lewis	Chief Financial Officer (appointed 27 February 2020)
Joe Mangion	Non-Executive Director
Gerry Agnew	Non-Executive Director

In accordance with the Company's Articles of Association, a Director appointed during or after the year must stand for re-appointment at the first Annual General Meeting after such appointment. Further, any Director who was not elected or re-elected at either of the two preceding Annual General Meetings must stand for re-appointment at the Annual General Meeting. John Rennocks and Joe Mangion were not elected or re-elected at either of the two preceding Annual General Meetings. Joe Mangion offers himself for re-election whilst John Rennocks, who has decided to retire, will not seek re-election.

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On 31 October 2020 the beneficial interests of Directors and their families in the equity share capital of the Company were:

	Number of Ordinary shares of 0.1p 2020	Number of Ordinary shares of 0.1p 2019
John Rennocks	114,044	-
Adam Bond	3,000,000	3,000,000
Jim Gibson	90,000	90,000

On 31 October 2020 the Directors' interests over options or warrants were:

	1 November 2019	Options/ Warrants granted in year	Options/ Warrants exercised/ lapsed in year	31 October 2020	Exercise price	Date from which exercisable	Expiry date	Type
Adam Bond	6,000,000	-	-	6,000,000	£0.510	17/07/2015	17/07/2025	Unapproved Option
Jim Gibson	2,500,000	-	-	2,500,000	£0.088	14/08/2019	14/08/2028	Unapproved Option
Gerry Agnew	900,000	900,000	-	900,000	£0.049	09/09/2020	09/09/2030	Warrants
Graeme Lewis	-	1,510,000	-	1,510,000	£0.1635	31/12/2020	31/12/2027	EMI Option
Graeme Lewis	-	1,240,000	-	1,240,000	£0.1635	31/12/2020	31/12/2027	Unapproved Option

Adam Bond's include 6,000,000 options granted in 2015. These options have performance conditions attached to them; 3,000,000 of these options will only vest if specific operational targets for energy output are met. The remaining options vest in equal portions if the share price achieves and sustains market quotation of £1.00, £1.50 and £2.00. The vesting conditions for the options have not been reached and cannot be exercised at this time. After the reporting date the vesting conditions were reviewed and amended by the Remuneration committee.

- The target prices were adjusted to 42.5p, 64p and 85p (respectively) to take into account the change in the share capital since July 2015.
- A retention clause was added to these options such that a specified number of shares should not be sold between the date of exercise and the first anniversary of these revisions. This holding requirement is reduced by the number of shares necessary to meet the tax liability arising from the exercise of the options.
- The operational performance conditions for all but one of the original targets have either been achieved, or a comparable measure achieved. The exercise price of these options has been adjusted from 51p to 22p, in line with changes in the share capital since July 2015.

None of the other directors had a direct interest over share capital during the reporting period.

DocuSign Envelope ID: 31EFB4C0-6256-4C9A-A900-112DCA0741FF

Directors' remuneration

The remuneration policy has been designed to ensure that Executive Directors receive appropriate incentive and reward given their performance, responsibility and experience. When assessing this, the Remuneration Committee seeks to ensure that the policy aligns the interests of the Executive Directors with those of shareholders. The remuneration policy for Executive Directors is to:

- Consider the individual's experience and the nature, complexity and responsibilities of their work to set a competitive salary that attracts and retains management of the highest quality;
- Link individual remuneration packages to the Company's long-term performance through long-term share-based plans;
- Provide post-retirement benefits through payment into defined contribution pension schemes; and
- Provide employment-related benefits including company car and medical insurance.

The remuneration of the Non-Executive Directors is determined by the Executive members of the Board in consultation with the Chairman, based on a review of current practices in other equivalent companies. The Non-Executive Directors do not receive any pension payments, nor do they participate in any of the bonus schemes. Remuneration is based on a fixed fee, plus a separate fee for any additional consulting services.

Name	Salary £	Bonus £	Other £	Total Compensation £	Share-based Payment Expense £	Company pension contribution £	Total 2020 £	Total 2019 £
John Rennocks	50,000	-	-	50,000	-	-	50,000	50,000
Adam Bond	300,000	120,000	56,210	476,210	-	12,000	488,210	357,472
Jim Gibson	234,600	80,000	11,507	326,107	-	9,000	335,107	250,132
Graeme Lewis (appointed 27 February 2020)	98,959	40,000	-	138,959	-	15,433	154,392	-
Joe Mangion	25,000	-	-	25,000	-	-	25,000	25,000
Gerry Agnew (appointed 6 September 2020)	15,000	-	-	15,000	-	-	15,000	2,173
Lisa Jordan (resigned 6 September 2020)	-	-	-		-	-	-	17,051
Percy Hayball (resigned 6 September 2020)	-	-	-		-	-	-	17,051
	723,559	**240,000**	**67,717**	**1,031,276**	**-**	**36,433**	1,067,709	**719,059**

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The share-based payment included in the table above is the gain on the share options when exercised in accordance with the requirements set out in Company Law.

Directors' service contracts

John Rennocks' services as Chairman and Non-Executive Director are provided under a service agreement dated 7 June 2017 for an indefinite term, subject to a minimum of three months' notice. Under this agreement, John is entitled to a director's fee of £50,000 per annum.

Adam Bond's services as Chief Executive Officer and Director are provided under a service agreement dated 1 January 2016. Under this agreement, Adam is entitled to a salary of £300,000 per annum plus payment or receipt of other benefits including a housing allowance, private medical insurance, pension and a company car.

Jim Gibson's services as Chief Operating Officer and Director are under an employment contract for an indefinite term, subject to a minimum notice period of three months and is entitled to a salary of £225,000 per annum plus accommodation allowance and reimbursement of commuting costs.

Graeme Lewis' services as Chief Financial Officer and Director are provided under an employment contract dated 31 December 2019 for an indefinite term, subject to a minimum of six months' notice. Graeme is entitled to a salary of £155,000 per annum plus participation in the defined contribution pension scheme.

Gerry Agnew services as a Non-Executive Director are provided under a service agreement dated 9 September 2019 for an indefinite term, subject to a minimum of three months' notice. Gerry is entitled to a director's fee of £15,000 per annum.

Lisa Jordan's services as a Non-Executive Director were provided under a service agreement dated 7 June 2017 for an indefinite term, subject to a minimum of three months' notice. Under this agreement, Lisa was entitled to a director's fee of £20,000 per annum.

Percy Hayball's services as a Non-Executive Director were provided under a service agreement dated 2 May 2018 for an indefinite term, subject to a minimum of three months' notice. Under this agreement, Percy was entitled to a director's fee of £20,000 per annum.

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Directors' report

The Directors present their report together with the audited financial statements for the year ended 31 October 2020.

Principal activity and review of business developments

The principal activity of AFC Energy plc (or "the Company") is the development of alkaline fuel cell technology which will deliver emissions-free solutions to the world's energy challenges across multiple industries to support global decarbonisation.

Reviews of operations, business developments and current projects are included in the Chairman's Statement and Operational Review.

Results and dividend

The results for the year are set out in the Statement of Comprehensive Income.

No dividends were paid in the year. The Directors do not intend to declare a dividend in respect of the year.

Board changes

Details of changes to the membership of the Board are disclosed within the Directors' Interests and their Remuneration.

Capital structure

Details of the Company's share capital are disclosed in the financial statements.

Shareholder funds have been used for the development and testing of fuel cell systems that can compete with conventional electricity generation technologies.

On 15 January 2021, the Company was aware of the following holdings of 3% or more in the Company's issued share capital:

	Number of shares	Approximate percentage of the Company's issued share capital
Schroder Investment Management	32,425,000	4.79%
AXA Investment Managers	26,100,946	3.86%

Financial instruments

Financial instruments are disclosed in the notes to the financial statements.

Political and charitable donations

Charitable donations in the year amounted to £nil (2019: £nil).

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Information disclosed in the strategic report

The following matters required to be disclosed in this Report under the Large and Medium-sized Companies and Groups (Accounts and Reports) Regulations 2008 are covered in the Strategic Report: the key performance indicators and the principal risks.

Payments to creditors

The Company's policy is to settle the terms of payment with its suppliers when agreeing the terms of each transaction, either by accepting the suppliers' terms or by making the suppliers aware of alternative terms, and to abide by the agreed terms. Trade creditors of the Company at 31 October 2020 represented 61 days (2019: 65 days) of annual purchases.

Liability insurance for company officers

The Company maintains Directors' and Officers' liability insurance cover for its Directors and officers to the extent permitted under the Companies Act 2006.

Research and development

The Company invests substantially in research and development and makes claims under the Government's R&D tax credit scheme. In the year to 31 October 2020, relevant qualifying expenditure was £1.6 million (2019: £1.8 million).

Companies Act 2006, Section 172(1) Directors Statement - Promoting the Success of the Company

(to be read in conjunction with the rest of the Annual Report and with the Corporate Governance section).

The Board acknowledges that there is a legal requirement for the Company to report on how the Board and its Committees have considered the requirements of s.172 of the Companies Act 2006 in their decision making. A director of a company must act in the way he considers, in good faith, would be most likely to promote the success of the company for the benefit of its members and, in doing so, have regard (amongst other matters) to the following factors:

- The likely consequences of any decision on the long-term;
- The interests of the company's employees;
- The need to foster the company's business relationships with suppliers, customers and others;
- The impact of the company's operations on the community and the environment;
- The desirability of the company maintaining a reputation for high standards of business conduct, and
- The need to act fairly as between members of the company.

The Board is ultimately responsible for the direction, management, performance and long-term sustainable success of the Company. It sets the Group's strategy and objectives, considering the interests of all its stakeholders. A good understanding of the Company's stakeholders enables the Board to factor the potential impact of strategic decisions on each stakeholder group into boardroom discussions. By considering the Company's purpose, vision and values together with its strategic priorities the Board aims to make sure that its decisions are fair. The Board has always, both collectively and individually, taken decisions for the long term and consistently aim to uphold the highest standards of business conduct. Board resolutions are always determined with reference to the interests of the Company's employees, its business relationships with suppliers and customers, and the impact of its operations on communities and the environment.

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This statement serves as an overview of how the Directors have performed this duty in the financial period and engaged with the Company's key stakeholders to help to inform the Board's decision-making.

Going concern

The Company had unrestricted cash of £31.3 million at 31 October 2020 (2019: £1.3 million).

The Company currently consumes cash resources and will continue to do so until sales revenues are sufficiently high to generate net cash inflows. Management have prepared and reviewed foreseeable risks and have put in place five-year financial projections aligned with ongoing technological, operational and commercial strategies whose progress the Board reviews regularly. During the initial period of commercialisation there will be negative cash flows the size of which will be dependent upon the speed at which revenue grows. At 31 October 2020 unrestricted cash resources were £31.3 million. Based upon the available cash resources and commercial agreements reached the Directors have reasonable expectation that sufficient funding exists to meet payment obligations as and when they fall due.

Specifically, the Board have evaluated the impact of Covid-19 on prospective customers, suppliers and our own operations and to date no staff have been furloughed nor supply chain disrupted which given the nature of our work we do not envisage will change significantly in the foreseeable future.

Events after the reporting period

After the reporting date:

- the financing facility was terminated by mutual agreement. No drawdowns had been made on the facility, and
- the vesting conditions of Adam Bond's share options were reviewed and amended by the Remuneration committee.
  - The target prices were adjusted to 42.5p, 64p and 85p (respectively) to take into account the change in the share capital since July 2015.
  - A retention clause was added to these options such that a specified number of shares should not be sold between the date of exercise and the first anniversary of these revisions. This holding requirement is reduced by the number of shares necessary to meet the tax liability arising from the exercise of the options.
  - The operational performance conditions for all but one of the original targets have either been achieved, or a comparable measure achieved. The exercise price of these options has been adjusted from 51p to 22p, in line with changes in the share capital since July 2015.

Auditor

A resolution to reappoint the Auditor of the Company, Grant Thornton UK LLP, will be proposed at the forthcoming Annual General Meeting. Grant Thornton UK LLP have expressed their willingness to continue as Auditor of the Company.

This report was approved by the Board on 26 February 2021 and signed on its behalf by

ADAM BOND
Chief Executive Officer
26 February 2021

Adam Bond

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Statement of directors' responsibilities

The Directors are responsible for preparing the Annual Report and financial statements in accordance with applicable law and International Financial Reporting Standards.

Company law requires the Directors to prepare financial statements for each financial period. Under that law the Directors have elected to prepare the financial statements in accordance with International Financial Reporting Standards as adopted for use in the European Union. The financial statements are required by law to give a true and fair view of the state of affairs of the Company and of the profit or loss of the Company for that period. In preparing those financial statements, the Directors are required to:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and estimates that are reasonable and prudent;
- State whether applicable accounting standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- Prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The Directors confirm that they have complied with the above in preparing the financial statements.

The Directors are responsible for keeping adequate accounting records which disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors are responsible for the maintenance and integrity of the Company's website (*www.afcenergy.com*) and *legislation in the United Kingdom governing the preparation and* dissemination of financial statements may differ from legislation in other jurisdictions.

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Statement of disclosure to auditor

So far as the Directors are aware, there is no relevant audit information (as defined by section 418 of the Companies Act 2006) of which the Company's Auditor is unaware, and each Director has taken all the steps that he ought to have taken as a Director in order to make himself aware of any relevant audit information and to establish that the Company's Auditor is aware of that information. This confirmation is given and should be interpreted in accordance with section 418 of the Companies Act 2006.

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Independent Auditor's Report
to the shareholders of AFC Energy plc

Opinion

Our opinion on the financial statements is unmodified

We have audited the financial statements of AFC Energy Plc (the 'company') for the year ended 31 October 2020, which comprise Statement of Comprehensive Income, Statement of Financial Position, Statement of Changes in Equity, Cash Flow Statement and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union.

In our opinion, the financial statements:

- give a true and fair view of the state of the company's affairs as at 31 October 2020 and of its loss for the year then ended;
- have been properly prepared in accordance with IFRSs as adopted by the European Union; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the 'Auditor's responsibilities for the audit of the financial statements' section of our report. We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

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The impact of macro-economic uncertainties on our audit

Our audit of the financial statements requires us to obtain an understanding of all relevant uncertainties, including those arising as a consequence of the effects of macro-economic uncertainties such as Covid-19 and Brexit. All audits assess and challenge the reasonableness of estimates made by the directors and the related disclosures and the appropriateness of the going concern basis of preparation of the financial statements. All of these depend on assessments of the future economic environment and the company's future prospects and performance.

Covid-19 and Brexit are amongst the most significant economic events currently faced by the UK, and at the date of this report their effects are subject to unprecedented levels of uncertainty, with the full range of possible outcomes and their impacts unknown. We applied a standardised firm-wide approach in response to these uncertainties when assessing the company's future prospects and performance. However, no audit should be expected to predict the unknowable factors or all possible future implications for a company associated with these particular events.

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

In our evaluation of the directors' conclusions, we considered the risks associated with the company's business, including effects arising from macro-economic uncertainties such as Covid-19 and Brexit, and analysed how those risks might affect the company's financial resources or ability to continue operations over the period of at least twelve months from the date when the financial statements are authorised for issue. In accordance with the above, we have nothing to report in these respects.

However, as we cannot predict all future events or conditions and as subsequent events may result in outcomes that are inconsistent with judgements that were reasonable at the time they were made, the absence of reference to a material uncertainty in this auditor's report is not a guarantee that the company will continue in operation.

Overview of our audit approach

Grant Thornton

- Overall materiality: £230,000, which represents approximately 5% of the company's loss before taxation;
- Key audit matter was identified as accounting for contracts entered with customers.

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Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those that had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key Audit Matters	How the matter was addressed in the audit
ACCOUNTING FOR CONTRACTS ENTERED WITH CUSTOMERS. During the year ended 31 October 2020, the company entered into the contracts with customers for the first time. Although there was no revenue recognised in the year, there was a risk that the contracts may not have been accounted for appropriately. The company applied IFRS 15 Revenue from Contracts with Customers for the first time. Under IFRS 15 revenue is recognised when a performance obligation is satisfied by transferring control over a promised good or service. During order fulfilment, contractual obligations need to be assessed. Total estimated project costs may exceed total contract revenues and therefore require write-offs of contract assets, receivables and the immediate recognition of the expected loss as a provision. We therefore identified accounting for contracts entered with customers as a significant risk, which was one of the most significant assessed risks of material misstatement.	Our audit work included, but was not restricted to: • Understanding of the revenue recognition processes and relevant controls relating to the accounting for contracts entered with customers in accordance with IFRS 15 Revenue from Contracts; • Obtaining and analysing whether management's consideration of revenue recognition principles for each contract is in accordance with IFRS 15 Revenue from Contracts; • Inspecting contracts to understand the terms and conditions, identifying performance conditions and their impact on revenue recognition and recognition of warranty provision, if any; • Challenging the validity and completeness of calculations of estimated project costs, testing mathematical accuracy of calculations, testing a sample of incurred expenses to supporting documentation and underlying calculations for accuracy; • Discussing with management and technical team to understand the status of performance obligations and whether the revenues should be recognised at a point in time or over time; and • Assessing the adequacy of related disclosures within the financial statements. The company's accounting policy on accounting for contracts entered with customers is shown in note 2 to the financial statements. **Key observations** Our testing did not identify any material misstatement in respect of accounting for contracts entered with customers.

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Our application of materiality

We define materiality as the magnitude of misstatement in the financial statements that makes it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced. We use materiality in determining the nature, timing and extent of our work and in evaluating the results of that work.

Materiality measure	Determination
Materiality for the audit of the financial statements as a whole	£230,000, which is approximately 5% of loss before taxation. This benchmark is considered the most appropriate because a commercially and technically viable product has been developed. The majority of costs are expensed, with only a portion of development costs being capitalised and we consider users of the financial statements to be most interested in how the company expended its funding. Materiality for the current year is higher than the level that we determined for the year ended 31 October 2019 to reflect the revision of the measurement percentage.
Performance materiality used to drive the extent of our testing	70% of financial statement materiality for the audit of the financial statements.
Threshold at which we will communicate misstatements to the audit committee	£11,500. In addition we will communicate misstatements below that threshold that, in our view, warrant reporting on qualitative grounds.

An overview of the scope of our audit

We performed a full scope audit of the Company. Our audit approach was a risk-based approach founded on a thorough understanding of the company's business, its environment and risk profile and in particular included:

- Evaluating the company's internal controls environment, including its IT systems and controls as part of addressing significant risk of material misstatement from accounting for contracts entered with customers;
- Addressing the risk of material misstatement from accounting for development costs, which was identified as key audit matter in prior year audit, because capitalisation was performed by the management for the first time during year ended 31 October 2019;
- Planning meetings with management to gain an update on the business during the year, as well as leveraging our knowledge of the business from past audits;
- Responding to other key significant risks identified.

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Other information

The directors are responsible for the other information. The other information comprises the information included in the Annual Report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Our opinion on other matters prescribed by the Companies Act 2006 is unmodified

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

Matter on which we are required to report under the Companies Act 2006

In the light of the knowledge and understanding of the company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the directors' report.

Matters on which we are required to report by exception

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of directors' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

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Responsibilities of directors for the financial statements

As explained more fully in the directors' responsibilities statement, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Christopher Raab, ACA
Senior Statutory Auditor
for and on behalf of Grant Thornton UK LLP
Statutory Auditor, Chartered Accountants
London
26 February 2021

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Statement of Comprehensive Income

For the year ended 31 October 2020

	Note	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Revenue from customer contracts		-	-
Cost of sales		-	(26)
Gross loss		-	**(26)**
Other income		32,892	39,729
Administrative expenses		(4,639,104)	(3,606,266)
Operating loss	5	(4,606,212)	**(3,566,563)**
Finance cost	8	(178,407)	(52,805)
Loss before tax		(4,784,619)	**(3,619,368)**
Taxation	9	559,627	768,528
Loss for the financial year and total comprehensive loss attributable to owners of the Company		(4,224,992)	**(2,850,840)**
Basic loss per share	10	(0.80)p	(0.68)p
Diluted loss per share	10	(0.80)p	(0.68)p

All amounts relate to continuing operations.

The notes on pages 72 to 99 form part of these financial statements.

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Statement of Financial Position

As at 31 October 2020

	Note	31 October 2020 £	31 October 2019 £
ASSETS			
NON-CURRENT ASSETS			
Intangible assets	11	769,269	606,041
Right of use assets	12	247,505	361,738
Tangible fixed assets	13	940,218	396,935
		1,956,992	**1,364,714**
CURRENT ASSETS			
Inventory	15	249,370	95,423
Receivables	16	1,043,880	1,151,998
Cash and cash equivalents	17	31,301,467	1,327,935
Restricted cash	17	270,027	259,072
		32,864,744	**2,834,428**
Total assets		34,821,736	**4,199,142**
CAPITAL AND RESERVES ATTRIBUTABLE TO OWNERS OF THE COMPANY			
Share capital	18	676,006	447,988
Share premium	18	81,417,845	47,389,424
Other reserve		1,512,974	2,204,774
Retained deficit		(50,582,856)	(47,185,257)
Total equity attributable to Shareholders		33,023,969	**2,856,929**
CURRENT LIABILITIES			
Payables	20	1,236,796	667,811
Lease liabilities	21	113,431	113,431
		1,350,227	**781,242**
NON-CURRENT LIABILITIES			
Lease liabilities	21	146,368	259,799
Provisions	22	301,172	301,172
		447,540	**560,971**
Total liabilities		1,797,767	**1,342,213**
Total equity and liabilities		34,821,736	**4,199,142**

The notes on pages 72 to 99 form part of these financial statements.

These financial statements were approved and authorised for issue by the Board on 26 February 2021.

Adam Bond
Chief Executive Officer

Graeme Lewis
Chief Financial Officer

AFC Energy plc
Registered number: 05668788

Adam Bond

Graeme Lewis

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Statement of Changes in Equity

For the year ended 31 October 2020

	Note	Share Capital £	Share Premium £	Other Reserve £	Retained Deficit £	Total Equity £
31 October 2018		**391,698**	**45,506,524**	**2,908,021**	**(44,487,129)**	**4,319,114**
Adjustment from the adoption of IFRS 16		-	-	-	(6,794)	(6,794)
Adjusted balance at 31 October 2018		**391,698**	**45,506,524**	**2,908,021**	**(44,493,923)**	**4,312,320**
Comprehensive loss for the year		-	-	-	(2,850,840)	(2,850,840)
Issue of equity shares		56,290	1,882,900	-	-	1,939,190
Equity-settled share-based payments		-	-	(703,247)	159,506	(543,741)
Transactions with owners		56,290	1,882,900	(703,247)	159,506	1,395,449
31 October 2019		**447,988**	**47,389,424**	**2,204,774**	**(47,185,257)**	**2,856,929**
Comprehensive loss for the year		-	-	-	(4,224,992)	(4,224,992)
Issue of equity shares	18	226,873	33,798,289	-	-	34,025,162
Exercise of share options		1,145	230,132			231,277
Equity-settled share-based payments	19	-	-	(691,800)	827,393	135,593
Transactions with owners		228,018	34,028,421	(691,800)	827,393	34,392,032
31 October 2020		**676,006**	**81,417,845**	**1,512,974**	**(50,582,856)**	**33,023,969**

Share capital is the amount subscribed for shares at nominal value.

Share premium represents the excess of the amount subscribed for share capital over the nominal value of these shares net of share issue expenses.

Other reserve represents the charge to equity in respect of unexercised equity-settled share-based payments.

Retained deficit represents the cumulative loss of the Company attributable to equity Shareholders.

The notes on pages 72 to 99 form part of these financial statements.

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Cash Flow Statement

For the year ended 31 October 2020

	Note	31 October 2020 £	31 October 2019 £
CASH FLOWS FROM OPERATING ACTIVITIES			
Loss before tax for the year		(4,784,619)	(3,619,368)
Adjustments for:			
Amortisation of intangible assets	11	108,014	35,388
Depreciation of right of use asset	12	114,233	114,233
Depreciation of property and equipment	13	143,758	88,950
Depreciation of decommissioning asset	13	31,365	31,364
Equity-settled share-based payment expenses	19	135,593	(543,741)
Interest received	8	(6,168)	(4,173)
Gain on disposal of investment	14	(80,000)	(20,000)
CASH FLOWS FROM OPERATING ACTIVITIES BEFORE CHANGES IN WORKING CAPITAL AND PROVISIONS		**(4,337,824)**	**(3,917,347)**
R&D tax credits received		644,523	1,299,360
(Increase)/Decrease in restricted cash		(10,955)	6,702
(Increase)/Decrease in inventory		(153,947)	68,297
Decrease in receivables		23,222	76,910
Increase in payables		568,985	26,264
CASH ABSORBED BY OPERATING ACTIVITIES		(3,265,996)	**(2,439,814)**
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of plant and equipment	13	(718,406)	(224,253)
Additions to intangible assets	11	(171,242)	(198,743)
Interest received	8	6,168	4,173
Proceeds from disposal of investment	14	80,000	20,000
Net cash absorbed by investing activities		(803,480)	**(398,823)**
CASH FLOWS FROM FINANCING ACTIVITIES			
Proceeds from the issue of share capital		35,558,667	1,888,940
Costs of issue of share capital		(1,633,505)	(149,750)
Proceeds from the exercise of options		231,277	-
Lease payments		(113,431)	(124,686)
Net cash from financing activities		34,043,008	**1,614,504**
Net increase/(decrease) in cash and cash equivalents		29,973,532	(1,224,133)
Cash and cash equivalents at start of year		1,327,935	2,552,068
Cash and cash equivalents at end of year	**17**	31,301,467	**1,327,935**

The notes on pages 72 to 99 form part of these financial statements.

DocuSign Envelope ID: 31EFB4C0-6256-4C9A-A900-112DCA0741FF

Notes forming part of the financial statements

1 Corporate information

AFC Energy plc ("the Company") is a public limited company incorporated in England & Wales and quoted on the Alternative Investment Market of the London Stock Exchange.

The address of its registered office is Unit 71.4 Dunsfold Park, Stovolds Hill, Cranleigh, Surrey GU6 8TB.

2 Basis of preparation and accounting policies

The financial statements of AFC Energy plc have been prepared in accordance with International Financial Reporting Standards ("IFRSs"), International Accounting Standards ("IASs") and International Financial Reporting Interpretations Committee ("IFRIC") interpretations (collectively "IFRSs") as adopted for use in the European Union and with those parts of the Companies Act 2006 applicable to companies reporting under IFRS.

The financial statements have been prepared on a going concern basis notwithstanding the trading losses being carried forward and the expectation that the trading losses will continue for the near future as the Company transitions from research and development to commercial operations.

The Company currently consumes cash resources and will continue to do so until sales revenues are sufficiently high to generate net cash inflows. Management have prepared and reviewed five-year financial projections aligned with ongoing technological, operational and commercial strategies. During the initial period of commercialisation there will be negative cash flows the size of which will be dependent upon the speed at which revenue grows. At 31 October 2020 unrestricted cash resources were £31.3 million. The Directors have reasonable expectation that sufficient funding exists to meet payment obligations as and when they fall due. The directors' having taken into account current cash resources, identified risks including the impact of Covid 19 and financial forecasts the Company has adequate resources to continue in operational existence for the foreseeable future (being a period of at least twelve months from the date of this report). Thus, the Directors believe that it is reasonable to continue to adopt the going concern basis in preparing the Annual Report and financial statements.

The accounting policies set out below have, unless otherwise stated, been applied consistently in these financial statements.

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Judgements made by the Directors in the application of these accounting policies that have significant effect on the financial statements and estimates with a significant risk of material adjustment in the next year are discussed in note 3.

A Standards, Amendments and Interpretations to Published Standards not yet Effective

At the date of authorisation of these financial statements, all the IASB and IFRIC standards and interpretations, which are effective for annual accounting periods beginning on or after the stated effective date, have been adopted.

B Capital Policy

The Company manages its equity as capital. Equity comprises the items detailed within the principal accounting policy for equity and financial details can be found in the statement of financial position. The Company adheres to the capital maintenance requirements as set out in the Companies Act.

C Revenue recognition

To determine whether to recognise revenue, a 5-step process is followed:

- Identifying the contract with a customer
- Identifying the performance obligations
- Determining the transaction price
- Allocating the transaction price to the performance obligations
- Recognising revenue as the performance obligations are satisfied.

Revenue is generated from complex contracts covering the

- Sale of goods and parts,
- Sale of services and maintenance, and
- Lease contracts.

and may be either a single or multiple contracts. Multiple contracts are accounted for as a single contract where one or more of the following criteria are met

- The contracts were negotiated as a single commercial package,
- Consideration of one contract depends upon the other contract, and
- Some or all of the goods and services comprise a single performance obligation.

Performance obligations of the contracts are analysed between either physical goods and services delivered or service level agreements. The transaction price of the performance obligations are based upon the contract terms taking in to account both cash and non-cash consideration. Non- cash consideration is valued at fair value taking in to consideration contract terms and known arms length pricing where available.

Revenue is recognised either at a point in time or over time, as the performance obligations are satisfied by transferring the promised goods or services to its customers. Contract liabilities are recognised for consideration received in respect of unsatisfied performance obligation and reports these amounts as other Contract and other liabilities in the statement of financial position. Similarly, if a performance obligation is satisfied before it receives the

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consideration, a contract asset or a receivable is recognised in the statement of financial position, depending on whether something other than the passage of time is required before the consideration is due.

Sale (standard products) contracts - Revenue from standard products will be recognised at a point of time only when the performance obligation has been fulfilled and ownership of the goods has transferred, which is typically at site or factory acceptance, which is the official handover of control of the goods to the customer.

- During the product build, deposits and progress payments will be reflected in the balance sheet as either accrued or deferred income.
- Costs incurred on projects to date will not be included in the statement of comprehensive income but will be accumulated on the balance sheet as work in progress (as they are considered recoverable) and transferred to cost of sales once the revenue applicable to those costs can be recognised in the accounts. Should costs exceed anticipated revenues, a provision will be recognised and the surplus costs expensed with immediate effect.

Sale (customised products) contracts - Revenues for customised contracts will be recognised over time according to how much of the performance obligation has been satisfied. This is measured using the input method, comparing the extent of inputs towards satisfying the performance obligation with the expected total inputs required. Any changes in expectation are reflected in the total inputs figure as they become known. The progress percentage obtained is then applied to the revenue associated with that performance obligation.

Lease and long-term service contracts - Revenue is recognised over time based on outputs provided to the customer, because this is the most accurate measurement of the satisfaction of the performance obligation. Revenue can comprise a fixed rental charge and a variable charge related to the usage of assets or other services (including pass-through fuel).

D Other Income

Other income represents sales by the Company of waste materials.

E Development Costs

Identifiable non-recurring engineering and design costs and other prototype costs incurred to develop a technically and commercially feasible product are capitalised.

F Foreign Currency

The financial statements of the Company are presented in the currency of the primary economic environment in which it operates (the functional currency) which is pounds sterling. In accordance with IAS 21, transactions entered into by the Company in a currency other than the functional currency are recorded at the rates ruling when the transactions occur. At each Statement of Financial Position date, monetary items denominated in foreign currencies are retranslated at the rates prevailing at the Statement of Financial Position date.

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G Inventory

Inventory is recorded at the lower of cost and net realisable value.

H Other Receivables

These assets are initially recognised at fair value and are subsequently measured at amortized cost less any provision for impairment.

Tangible fixed assets

Property and equipment are stated at cost less any subsequent accumulated depreciation and impairment losses.

Right-of-use assets are measured at either:

- Their carrying amount as if IFRS 16 has been applied since commencement, discounted using the *lessee's incremental borrowing rate at the date of initial application*
- An amount equal to the lease liability, adjusted for any prepaid or accrued lease payments

Where parts of an item of property and equipment have different useful lives, they are accounted for as separate items of property and equipment.

Depreciation is charged to the statement of comprehensive income within cost of sales and administrative expenses on a straight-line basis over the estimated useful lives of each part of an item of property, plant and equipment. The estimated useful lives are as follows:

Right of use asset - building	life of the lease
Leasehold improvements	1 to 3 years
Decommissioning asset	life of the lease
Fixtures, fittings and equipment	1 to 3 years
Motor vehicles	3 to 4 years
Demonstration equipment	5 years
Rental fleet	5 years

Expenses incurred in respect of the maintenance and repair of property and equipment are charged against income when incurred. Refurbishment and improvement expenditure, where the benefit is expected to be long lasting, is capitalised as part of the appropriate asset.

The useful economic lives of property, plant and equipment and the carrying value of tangible fixed assets are assessed annually and any impairment is charged to the statement of comprehensive income.

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J Intangible Assets

Expenditure in establishing a patent is capitalised and written off over its useful life.

Other intangible assets that are acquired by the Company are stated at cost less accumulated amortisation and impairment losses.

Amortisation of intangible assets is charged using the straight-line method to administrative expenses over the following period:

Development costs	5 years
Patents	20 years

Useful lives are based on the management's estimates of the period that the assets will generate revenue, which are periodically reviewed for continued appropriateness and any impairment is charged to the statement of comprehensive income.

K Impairment testing of intangible assets and property, plant and equipment

At each statement of financial position date, the carrying amounts of the assets are reviewed to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). In assessing whether an impairment is required, the carrying value of the asset is compared with its recoverable amount. The recoverable amount is the higher of the fair value less costs of disposal (FVLCD) and value in use (VIU).

L Lease liabilities

Measurement and recognition of leases as lessee

At lease commencement date, a right of use and lease liability are recognised on the Statement of Financial Position. The right of use asset is measured at cost, which comprises the initial measurement of the lease liability, any initial direct costs incurred, an estimate of costs to dismantle and remove the asset at the end of the lease term and any lease payments made in advance of the lease commencement date.

Lease payments included in the measurement of the lease liability are made up of fixed payments (including in substance fixed), variable payments based on an index or rate, amounts expected to be payable under a residual value guarantee and payments arising from options reasonably certain to be exercised.

Subsequent to initial measurement, the liability will be reduced for payments made and increased for interest. It is remeasured to reflect any reassessment or modification, or if there are changes in in-substance payments.

When the lease liability is remeasured, the corresponding adjustment is reflected in the right of use asset, or profit and loss if the right of use asset is already reduced to zero.

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Short term leases and low value assets have been accounted for using the practical expedients set out in IFRS 16 and the payments are recognised as an expense in profit or loss on a straight-line basis over the lease term.

Financial Instruments

Financial instruments are measured on initial recognition at fair value, plus, in the case of financial instruments other than those classified as fair value through profit or loss ("FVPL"), directly attributable transaction costs. Financial instruments are recognized when the Company becomes a party to the contracts that give rise to them and are classified as amortized cost, fair value through profit or loss or fair value through other comprehensive income, as appropriate. The Company considers whether a contract contains an embedded derivative when the entity first becomes a party to it. The embedded derivatives are separated from the host contract if the host contract is not measured at fair value through profit or loss and when the economic characteristics and risks are not closely related to those of the host contract. Reassessment only occurs if there is a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required.

In the periods presented the Group does not have any financial assets categorised as FVPL or FVOCI.

Financial assets at amortized cost

A financial asset is measured at amortized cost if it is held within a business model whose objective is to hold assets to collect contractual cash flows and its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding, and is not designated as FVPL. Financial assets classified as amortized cost are measured subsequent to initial recognition at amortized cost using the effective interest method. Cash, restricted cash, trade receivables and certain other assets are classified as and measured at amortized cost.

Financial liabilities

Financial liabilities are classified as measured at amortized cost or FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. Financial liabilities at FVTPL are measured at fair value and net gains and losses, including any interest expense, are recognized in profit or loss. Other financial liabilities are subsequently measured at amortized cost using the effective interest method. Gains and losses are recognized in net earnings when the liabilities are derecognized as well as through the amortization process. Borrowing liabilities are classified as current liabilities unless the Company has an unconditional right to defer settlement of the liability for at least 12 months after the statement of financial position date. Accounts payable and accrued liabilities and finance leases are classified as and measured at amortized cost.

Impairment of financial assets

A loss allowance for expected credit losses is recognized in OCI for financial assets measured at amortized cost. At each balance sheet date, on a forward-looking basis, the Company assesses the expected credit losses associated with its financial assets carried at amortized cost. The impairment methodology applied depends on whether there has been a significant increase in credit risk. The expected credit losses are required to be measured through a loss allowance at an amount equal to the 12-month expected credit losses (expected credit losses that result from those default events on the financial instrument

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that are possible within 12 months after the reporting date) or full lifetime expected credit losses (expected credit losses that result from all possible default events over the life of the financial instrument). A loss allowance for full lifetime expected credit losses is required for a financial instrument if the credit risk of that financial instrument has increased significantly since initial recognition.

Derecognition of financial assets and liabilities

A financial asset is derecognized when either the rights to receive cash flows from the asset have expired or the Company has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party. If neither the rights to receive cash flows from the asset have expired nor the Company has transferred its rights to receive cash flows from the asset, the Company will assess whether it has relinquished control of the asset or not. If the Company does not control the asset then derecognition is appropriate. A financial liability is derecognized when the associated obligation is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognized in net earnings.

N Share-Based Payment Transactions

The fair value of options and warrants granted is recognised as an employee expense with a corresponding increase in Other Reserve. The fair value of the expense is estimated at grant date using either the Black-Scholes option valuation model considering the terms and conditions upon which they were granted or a Log normal Monte Carlo stochastic model for market conditions. The expense accrues from the grant date until the options and warrants have unconditionally vested. Where vesting is dependent upon market or non-market performance criteria the vesting period is estimated at the grant date and, in the case of non-market performance criteria, is revised annually. When an option or warrant is exercised the balance is transferred to share capital with excess value going to the premium account whereas those that lapse are transferred to retained earnings. Where options or warrants are amended by the introduction of new schemes and the absorption of earlier schemes by agreement between the Company and the beneficiary the net difference in valuation is charged to earnings in the appropriate period.

O Provisions

Provisions are recognised when the Company has a present obligation as a result of a past event and it is probable that the Company will be required to settle the obligation. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the Statement of Financial Position date and are discounted to present value where the effect is material.

P Taxation

Tax on the profit or loss for the year comprises current and deferred tax. Tax is recognised in the statement of comprehensive income except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

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Current tax is the expected tax payable or recoverable on the taxable income for the year, using tax rates enacted or substantively enacted at the Statement of Financial Position date together with any adjustment to tax payable in respect of previous years.

Deferred tax assets are not recognised due to the uncertainty of their recovery.

Q R&D Tax Credits

The Company's research and development activities allow it to claim R&D tax credits from HMRC in respect of qualifying expenditure; these credits are reflected in the statement of comprehensive income in the taxation line depending on the nature of the credit.

R Pension Contributions

The Company operates a defined contribution pension scheme which is open to all employees and makes monthly employer contributions to the scheme in respect of employees who join the scheme. These employer contributions are currently capped at 4% of the employee's salary and are reflected in the statement of comprehensive income in the period for which they are made.

3 CRITICAL ACCOUNTING JUDGEMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

In the preparation of the financial statements, management makes certain judgements and estimates that impact the financial statements. While these judgements are continually reviewed, the facts and circumstances underlying these judgements may change, resulting in a change to the estimates that could impact the results of the Company. In particular:

Significant management judgements:

The following are the judgements made by management in applying the accounting policies of the Company that have the most significant effect on the financial statements:

Customer contracts and revenue recognition
Customer contracts typically include the provision of

- engineering, manufacturing, installation, commissioning, and maintenance of standard and customised alkaline fuel cell systems and integrated auxiliary equipment, and
- access to or sale of technology.

These performance obligations are provided for as either

- Lease contract, or
- Sale contract

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In accordance with IFRS 16 management defines a lease as "A contract, or part of a contract, that conveys the right to use an identified asset for a period of time in exchange for consideration". For such a contract to exist the user of the asset needs to have the right to:

- Obtain substantially all the economic benefits from the use of the asset.
- The right to direct the use of the asset.

All other contracts, or part of a contract, are treated as sale contracts.

Sales contracts are analysed in accordance with the 5-step principle laid out by IFRS 15 and management distinguish between

- Standard products,
- Customised products, and
- Services.

The distinction between standard and customised products arises from whether the products and auxiliary components up to the point of customer handover have alternative uses. Customised contracts by their nature do not create an asset with an alternative use as they are customised to the customers' requirements which cannot be easily converted for use on another project.

Customer agreements can be complex, involve multiple legal documents and have a duration covering multiple accounting periods including different performance obligations and payment terms designed to manage cash flow rather than the underlying arm's length transaction price. Management use judgement to identify the specific performance obligations and allocate the total expected revenue to the identified performance obligations. These judgements are made based on the interpretation of key clauses and conditions within each customer contract. Revenue is recognised when the performance obligation has been met. For standard products the performance obligations are assumed to be met when the customer takes delivery usually evidenced by either a factory or site acceptance test depending upon the agreed delivery terms. For customised products management consider that revenue can be recognised over time due to their status as custom builds. In accounting for their revenue under this method, management must take a view of the total costs required for each performance obligation together with the actual spend already recognised in cost of sales to be able to recognise an equivalent proportion of the revenue for that performance obligation. As this relates to expense not yet incurred, the projections are largely based on budgeted costs or quotes for costs. Management view this as a much more reliable measure of progress towards completion of the performance obligation than the output method as, despite contracting with milestone payments, these are not reliable measures of progress or value to the customer but instead have been designed to aid cash flow.

Project reviews covering cost forecasts and technical progress are monitored periodically to ensure that any potential losses are recognised immediately in the accounts in accordance with IAS 37.

DocuSign Envelope ID: 31EFB4C0-6256-4C9A-A900-112DCA0741FF

Income Taxes and Withholding Taxes
The Company believes that its receivables for tax recoverable are adequate for all open audit years based on its assessment of many factors, including experience and interpretations of tax law. This assessment relies on estimates and assumptions and may involve a series of complex judgements about future events. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will impact income tax expense in the period in which such determination is made.

Capitalisation of Development Expenditure
The Company uses the criteria of IAS 38 to determine whether development expenditure should be capitalised. Management identify separately non-recurring engineering, design costs and prototype costs incurred to develop demonstration units used in marketing activities and customer trials. Management believe that the Development Expenditure will continue to support marketing and customer trials for the foreseeable future. This assessment relies upon judgements about future customer behaviour taking in to account the feedback received from prospective customers and future product improvements which influence the economic useful life and residual value of said assets. To the extent that customer demand or competing products enter the market the economic useful life and residual value of the Development Expenditure may change which will impact depreciation and amortisation expenses for the period in which such determination is made.

Estimates uncertainty:

Information about estimates and assumptions that may have the most significant effect on recognition and measurement on assets, liabilities and expenses is provided below.

Share-Based Payments
Certain employees (including Directors and senior Executives) of the Company receive remuneration in the form of share-based payment transactions, whereby employees render services as consideration for equity instruments ("equity-settled transactions").

The fair value is determined using either the Black-Scholes valuation model or a Log-normal Monte Carlo stochastic model for market conditions. Both are appropriate considering the effects of the vesting conditions, expected exercise period and the dividend policy of the Company.

The cost of equity-settled transactions is accrued, together with a corresponding increase in equity over the period the directors expect the performance criteria will be fulfilled. For market performance criteria this estimate is made at the time of grant considering historic share price performance and volatility. For non-market performance criteria an estimate is made at the time of grant and reviewed annually thereafter considering progress on the operational objectives set, plans and budgets.

Expected volatility has been based on the 3.5-year historical volatility of share price. Vesting requirements are three years for the exercise of warrants and options, except for 500,000 options granted which vest in two years. Certain options granted to Directors are also subject to performance conditions described in note 18.

Decommissioning Provision
The Company has set-up a decommissioning provision for the removal of the plant and equipment installed at the Stade site in Germany, the cost of which is based on estimates. Various scenarios have been considered which estimate the range of costs to be from £35,000 to £301,000 dependent upon agreements reached with lessor.

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4 SEGMENTAL ANALYSIS

Operating segments are determined by the chief operating decision maker based on information used to allocate the Company's resources. The information as presented to internal management is consistent with the statement of comprehensive income. It has been determined that there is one operating segment, the development of fuel cells. In the year to 31 October 2020, the Company operated mainly in the United Kingdom and in Germany. All non-current assets are located in the United Kingdom.

5 Operating loss

This has been stated after:

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Amortisation/Impairment of intangible assets	108,014	35,338
Depreciation of right of use asset	114,233	114,233
Depreciation of property and equipment	143,758	88,950
Depreciation of decommissioning asset	31,365	31,364
R&D expenditure	1,553,519	1,808,080
Equity-settled share-based payment expense	135,593	(543,741)
Foreign exchange differences	(23,046)	27,068
Auditor's remuneration – audit	49,172	56,500
Auditor's remuneration – corporation tax services	7,450	6,700
Auditor's remuneration – R&D tax credit services	25,000	25,000

6 Staff numbers and costs, including directors

The average numbers of employees in the year were

	Year ended 31 October 2020 Number	Year ended 31 October 2019 Number
Support, operations and technical	24	20
Administration	6	6
	30	26

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The aggregate payroll costs for these persons were

	£	£
Wages and salaries (including Directors' emoluments)	1,901,966	1,628,330
Social security	192,706	183,353
Employer's pension contributions	72,084	40,606
Equity-settled share-based payment expense	135,593	(543,741)
	2,302,349	**1,308,548**

7 Directors' remuneration

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Wages and salaries	963,559	645,876
Social security	104,667	81,177
Equity-settled share-based payment expense	89,943	19,663
Other compensation	67,717	61,066
Company pension contributions	36,433	11,938
	1,262,319	**819,720**

The remuneration, details of share options and interests in the Company's shares of each Director are shown in the Directors' Report.

8 Net Finance cost

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Lease Interest	12,072	16,955
Bank charges	172,503	40,023
Finance cost	184,575	56,978
Bank interest receivable	(6,168)	(4,173)
	178,407	**52,805**

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9 Taxation

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Recognised in the statement of comprehensive income		
R&D tax credit – current year	(518,099)	(602,995)
R&D tax credit – prior year	(41,528)	(165,533)
Total tax credit	(559,627)	**(768,528)**
RECONCILIATION OF EFFECTIVE TAX RATES		
Loss before tax	(4,775,519)	(3,619,368)
Tax using the domestic rate of corporation tax of 19% (2019: 19%)	(907,349)	**(687,680)**
EFFECT OF:		
R&D tax credit – prior year	(41,528)	(165,533)
Expenses not deductible for tax purposes	29,792	(14,929)
R&D allowance	(383,719)	(446,596)
Tax credit on losses surrendered	(518,099)	(602,995)
Depreciation in excess of capital allowances	27,314	16,957
Losses surrendered for research and development	678,888	790,131
Unutilised losses carried forward	555,074	342,117
Total tax credit	(559,627)	**(768,528)**

Potential deferred tax assets have not been recognised but are set out below

	Year ended 31 October 2020 £000s	Year ended 31 October 2019 £000s
Share based payments	30	-
Losses carried forward	5,879	4,747
Potential deferred tax asset	5,909	4,747

The deferred tax assets have not been recognised as the Directors consider that it is unlikely that they will be realised in the foreseeable future. The potential deferred tax asset are calculated using the estimated UK tax rate of 19% (2019: 17%).

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10 Loss per share

The calculation of the basic loss per share is based upon the net loss after tax attributable to ordinary Shareholders of £4,224,992 (2019: loss of £2,850,840) and a weighted average number of shares in issue for the year.

	Year ended 31 October 2020	Year ended 31 October 2019
Basic loss per share (pence)	(0.80)p	(0.68)p
Diluted loss per share (pence)	(0.80)p	(0.68)p
Loss attributable to equity Shareholders	£4,224,992	£2,850,840
Weighted average number of shares in issue	528,865,765	**418,024,570**

Diluted earnings per share

As set out in note 18, there are share options and warrants outstanding as at 31 October 2020 which, if exercised, would increase the number of shares in issue. Given the losses for the year, there is no dilution of losses per share in the year ended 31 October 2020 nor the previous year.

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11 Intangible assets

	Development costs £	Patents £	Commercial rights £	Intangible assets £
COST				
1 November 2018	**-**	**680,113**	**-**	**680,113**
Retirements	-	-	-	-
Additions	149,460	49,283	-	198,743
31 October 2019	**149,460**	**729,396**	**-**	**878,856**
Retirements	-	-	-	-
Additions	79,583	70,309	121,350	271,242
31 October 2020	**229,043**	**799,705**	**121,350**	**1,150,098**
AMORTISATION				
1 November 2018	**-**	**237,427**	**-**	**237,427**
Retirements	-	-	-	-
Charge for the year	-	35,388	-	35,388
31 October 2019	**-**	**272,815**	**-**	**272,815**
Retirements	-	-	-	
Charge for the year	28,138	70,775	9,101	108,014
31 October 2020	**28,138**	**343,590**	**9,101**	**380,829**
NET BOOK VALUE				
31 October 2019	**149,460**	**456,581**	**-**	**606,041**
31 October 2020	**200,905**	**456,115**	**112,249**	**769,269**

The commercial rights include the global preferential rights to integrate the HiiRoc plasma-based technology which were acquired by an initial payment in shares of £100,000 and future payments in kind through the provision of technical support.

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12 Right of use assets

	Buildings £
1 November 2018	**-**
Adoption of IFRS 16	475,971
Additions	-
Disposals	-
1 November 2019	***475,971***
Additions	-
Disposals	-
31 October 2020	**475,971**
DEPRECIATION	
1 November 2018	**-**
Charge for the year	114,233
Disposals	-
1 November 2019	**114,233**
Charge for the year	114,233
Disposals	-
31 October 2020	**228,466**
NET BOOK VALUE	
31 October 2019	**361,738**
31 October 2020	**247,505**

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13 Tangible fixed assets

	Leasehold improvements £	Decom-missioning Asset £	Fixtures, fittings and equipment £	Motor vehicles £	Dem-onstration equipment £	Rental asset £	Total £
COST							
1 November 2018	**337,462**	**301,172**	**1,297,742**	**17,994**	**-**	**-**	**1,954,370**
Additions	-	-	30,849	-	193,404	-	224,253
Disposals	(115,950)	-	(3,800)	-	-	-	(119,750)
1 November 2019	**221,512**	**301,172**	**1,324,791**	**17,994**	**193,404**	**-**	**2,058,873**
Additions	-	-	161,697	-	133,571	423,138	718,406
Disposals	-	-	-	-	-	-	-
31 October 2020	**221,512**	**301,172**	**1,486,488**	**17,994**	**326,975**	**423,138**	**2,777,279**
DEPRECIATION							
1 November 2018	**337,462**	**170,486**	**1,135,432**	**17,994**	**-**	**-**	**1,661,374**
Charge for the year	-	31,364	88,950	-	-	-	120,314
Disposals	(115,950)	-	(3,800)	-	-	-	(119,750)
1 November 2019	**221,512**	**201,850**	**1,220,582**	**17,994**	**-**	**-**	**1,661,938**
Charge for the year	-	31,365	89,801	-	53,957	-	175,123
Disposals	-	-	-	-	-	-	-
31 October 2020	**221,512**	**233,215**	**1,310,383**	**17,994**	**53,957**	**-**	**1,837,061**
NET BOOK VALUE							
1 November 2019	**-**	**99,322**	**104,209**	**-**	**193,404**	**-**	**396,935**
31 October 2020	**-**	**67,957**	**176,105**	**-**	**273,018**	**423,138**	**940,218**

The Company has set-up a decommissioning asset for the removal of the plant and equipment installed at the Stade site in Germany and for dilapidations associated with the leasehold premises at Dunsfold in the UK, the cost of which is based on estimates. No decision has been taken about the date when the plant will be decommissioned.

Minimum lease payments receivable on rental assets are £200,000 (2019: £nil) of which £150,000 mature within twelve months and £50,000 between one and two years.

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14 Investment

The previously held investment in the unlisted share capital of Waste2Tricity Ltd (a registered company in England & Wales) was sold on 12 March 2019 for £20,000. Simultaneously, the licence agreements with Waste2Tricity Limited and Waste2Tricity International (Thailand) Limited were terminated and £80,000 compensation was received in the current period. The investment in Waste2Tricity was fully provided and due to the lack of overwhelming evidence that the financial position had improved the recovery of the provision has been recognized when proceeds were received.

15 Inventory

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Inventory	249,370	**95,423**

16 Receivables

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
CURRENT		
Accounts receivable	60,000	13,941
R&D tax credits receivable	518,099	602,995
EU grants receivable	106,642	106,642
Other receivables	204,367	136,068
Prepayments	154,772	292,352
	1,043,880	**1,151,998**

There is no significant difference between the fair value of the receivables and the values stated above.

DocuSign Envelope ID: 31EFB4C0-6256-4C9A-A900-112DCA0741FF

17 Cash and cash equivalents

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Cash at bank	286,578	718,057
Bank deposits	31,014,889	609,878
	31,301,467	**1,327,935**

Cash at bank and bank deposits consist of cash. There is no material foreign exchange movement in respect of cash and cash equivalents.

Restricted cash, not included in cash and cash equivalents, is €300,000 held in escrow to support a bank guarantee in favour of Air Products GmbH relating to contractual obligations by the Company in relation to the Stade site in Germany.

DocuSign Envelope ID: 31EFB4C0-6256-4C9A-A900-112DCA0741FF

18 Issued share capital

	Number	Ordinary shares £	Share premium £	Total £
Issue of shares 18 November 2019	2,600,000	2,600	517,400	520,000
Issue of shares 20 January 2020	5,882,353	5,882	994,118	1,000,000
Issue of shares 22 January 2020	5,882,353	5,882	994,118	1,000,000
Issue of shares 31 January 2020	526,316	526	99,474	100,000
Issue of shares 13 March 2020	483,332	483	38,184	38,667
Issue of shares 23 March 2020	14,000,000	14,000	1,386,000	1,400,000
Exercise of options 9 June 2020	550,000	550	113,575	114,125
Exercise of options 9 June 2020	37,500	38	5,737	5,775
Exercise of options 11 June 2020	40,000	40	6,120	6,160
Exercise of options 25 June 2020	500,000	500	103,250	103,750
Issue of shares 3 July 2020	24,364,875	24,365	3,874,015	3,898,380
Issue of shares 6 July 2020	71,107,125	71,107	11,306,033	11,377,140
Issue of shares 15 July 2020	625,000	625	99,375	100,000
Issue of shares 20 July 2020	101,403,000	101,403	16,123,077	16,224,480
Exercise of options 29 September 2020	16,666	17	1,450	1,467
Cost of shares issued			(1,633,505)	(1,633,505)
Issued share capital	228,018,520	228,018	34,028,421	34,256,439
31 October 2019	**447,987,790**	**447,988**	**47,389,424**	**47,837,412**
31 October 2020	**676,006,310**	**676,006**	**81,417,845**	**82,093,851**

The issue of shares on 31 January 2020 were part payment for certain commercial rights received in exchange for funding the HiiRoc scaling up programme. The total consideration was £100,000 in shares plus future technical support up to £300,000.

All issued shares are fully paid. The Company considers its capital and reserves attributable to equity Shareholders to be the Company's capital. In managing its capital, the Company's primary long-term objective is to provide a return for its equity Shareholders through capital growth. Going forward the Company will seek to maintain a gearing ratio that balances risks and returns at an acceptable level and to maintain a sufficient funding base to enable the Company to meet its working capital needs. The Company's commercial activities are at an early stage and management considers that no useful target debt to equity gearing ratio can be identified at this time.

Details of the Company's capital are disclosed in the statement of changes in equity.

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There have been no other significant changes to the Company's management objectives, policies and processes in the year nor has there been any change in what the Company considers to be capital.

19 Share based payments

A Employee Share Option Plan

The establishment of the Employee Share Option Plan was approved by the Board on 1 August 2018 and amended on 10 October 2018. The Plan is designed to attract, retain and motivate employees. Under the Plan, participants can be granted options which vest unconditionally or conditioned upon achieving certain performance targets. Participation in the Plan is solely at the Board's discretion and no employee has a contractual right to participate in the Plan or to receive any guaranteed benefits.

Options are granted under the Plan for no consideration and carry no dividend nor voting rights.

When exercisable, each option is convertible into one ordinary share.

Set out below are summaries of options granted under the Plan

	Average exercise price per share option (£) 2020	Number of options 2020	Average exercise price per share option (£) 2019	Number of options 2019
1 November 2019	**0.33**	**11,745,000**	**0.31**	**13,330,000**
Granted during the year	0.16	4,885,000		-
Exercised during the year	0.17	(1,627,498)	0.03	(300,000)
Lapsed during the year	0.30	(581,667)	0.24	(1,285,000)
31 October 2020	**0.30**	**14,420,835**	**0.33**	**11,745,000**
Vested and exercisable at 31 October 2020		**3,386,666**		

Share options outstanding at the end of the year have the following expiry dates and exercise prices.

DocuSign Envelope ID: 31EFB4C0-6256-4C9A-A900-112DCA0741FF

Grant date	Expiry date	Exercise price (£)	Share options 2020	Share options 2019
17 April 2009	17 April 2019	0.0313	-	90,000
13 April 2010	13 April 2020	0.24	-	75,000
7 July 2010	6 July 2020	0.2075	-	1,050,000
7 November 2012	7 November 2022	0.3575	170,000	170,000
2 December 2013	1 December 2023	0.34	135,000	135,000
14 April 2015	13 April 2025	0.41	150,000	150,000
17 July 2015	17 July 2025	0.51	6,000,000	6,000,000
10 September 2018	1 August 2024	0.088	658,335	1,575,000
15 October 2018	15 October 2024	0.16	2,500,000	2,500,000
31 December 2019	20 April 2030	0.1635	2,750,000	0
20 April 2020	20 April 2030	0.154	2,057,500	0
			14,420,835	**11,745,000**

The assessed fair value at grant date of options granted during the year ended 31 October 2020 was

Option price (pence)	Average grant date share price (pence)	Average expected volatility (per annum)	Average risk-free interest rate (per annum)	Average dividend yield (per annum)	Average implied option life (years)	Average fair value per option (pence)	Amount expensed in 2020 (£)
8.8	6.58	81.2%	0.80%	0%	1	2.2	15,500
15.4	14.9	99.6%	0.11%	0%	1.5	6.9	45,649
16.35	16.35	95.5%	0.54%	0%	2.0	8.1	74,443
Total charge for the year (2019: £(549,227))							**135,593**

B Warrants

The Board has the discretion to award warrants from time to time to third parties. Typically, warrants are granted and vest upon certain performance targets. Grant of warrants is solely at the Board's discretion.

Warrants are granted for no consideration and carry no dividend nor voting rights.

When exercisable, each warrant is convertible into one ordinary share.

Set out below are summaries of warrants granted under the Plan.

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	Average exercise price per warrant (£) 2020	Number of warrants 2020	Average exercise price per warrant (£) 2019	Number of warrants 2019
1 November 2019	0.14	5,793,800	**0.15**	**4,643,800**
Granted during the year	0.20	4,500,000	0.05	3,000,000
Exercised during the year				
Lapsed during the year	0.14	(5,793,800)	0.03	(1,450,000)
31 October 2020	0.20	4,500,000	**0.14**	**5,793,800**
Vested and exercisable at 31 October 2020		-		

Warrants outstanding at the end of the year have the following expiry dates and exercise prices.

Grant date	Expiry date	Exercise price (£)	Warrants 2020	Warrants 2019
13 April 2010	13 April 2020	0.24	-	2,793,800
24 June 2019	24 June 2021	0.048	-	3,000,000
19 October 2020	31 January 2021	0.185	1,500,000	-
19 October 2020	13 October 2021	0.195	1,000,000	-
19 October 2020	13 April 2022	0.21	1,000,000	-
19 October 2020	13 October 2022	0.23	1,000,000	-
			4,500,000	**5,793,800**

The assessed fair value at grant date of warrants for the year ended 31 October 2020 was nil (2019: £5,486).

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C SAYE

No SAYE were granted and the scheme ended during the period. The movements were

	Average exercise price per SAYE (£) 2020	Number of SAYE 2020	*Average exercise price per SAYE (£) 2019*	Number of SAYE 2019
1 November 2019	0.12	207,736	**0.12**	**207,736**
Granted during the year		-		-
Exercised during the year		-		-
Lapsed during the year	0.12	(207,736)		-
31 October 2020			**0.12**	**207,736**
Vested and exercisable at 31 October 2020		-		

SAYE outstanding at the end of the year have the following expiry dates and exercise prices.

Grant date	Expiry date	Exercise price (£)	SAYE 2020	SAYE 2019
28 April 2016	28 April 2019	0.122	-	207,736
			-	207,736

Share based payment charge.

	2020	2019
Employee Share Option Plan	135,593	(549,227)
Warrants	-	-
SAYE	-	5,486
	135,593	**(543,741)**

20 Payables

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
CURRENT LIABILITIES		
Trade payables	347,167	298,590
Advance payments	150,000	28,187
Other payables	199,261	182,096
Accruals	540,368	158,938
	1,236,796	**667,811**

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21 Lease liabilities

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Lease liabilities less than 12 months	113,431	113,431
Lease liabilities more than 12 months	146,368	259,799
	259,799	**373,230**

22 Provisions

	2020 Decommissioning provision £	2019 Decommissioning provision £
NON-CURRENT LIABILITIES		
1 November	301,172	**301,172**
Addition	-	-
Utilisation	-	-
31 October	301,172	**301,172**

The Company has set-up a decommissioning provision associated with a commitment to remove the plant and equipment installed at the Stade site in Germany at a future date.

23 Financial Instruments

In common with other businesses, the Company is exposed to risks that arise from its use of financial instruments. This note describes the Company's objectives, policies and processes for managing those risks and the methods used to measure them. Further quantitative information in respect of these risks is presented throughout these financial statements.

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Principal Financial Instruments

The principal financial instruments used by the Company, from which financial instrument risk arises, are as follows:

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
FINANCIAL INSTRUMENTS HELD AT AMORTIZED COST:		
Cash and cash equivalents	31,014,889	1,327,935
Receivables	1,043,880	1,151,998
Total financial assets held at amortized cost	32,058,769	**2,479,933**
Other payables	1,496,595	1,041,041
Total financial liabilities held at amortized cost	1,496,595	**1,041,041**

Financial instruments that are measured subsequent to initial recognition at fair value are grouped into three levels based on the degree to which the fair value is observable as defined by IFRS 7:

- Level 1 fair value measurements are those derived from unadjusted quoted prices in active markets for identical assets and liabilities.
- Level 2 fair value measurements are those derived from inputs, other than quoted prices included within Level 1, that are observable either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data.

All financial instruments are Level 1 and none have been transferred between Levels during the year.

General Objectives, Policies and Processes

The Board has overall responsibility for the determination of the Company's risk management objectives and policies and, while retaining ultimate responsibility for them, it has delegated part of the authority for designing and operating processes that ensure the effective implementation of the objectives and policies to the Company's finance team. The Board receives reports from the financial team through which it reviews the effectiveness of the processes put in place and the appropriateness of the objectives and policies it sets.

The overall objective of the Board is to set policies that seek to reduce ongoing risk as far as possible without unduly affecting the Company's competitiveness and flexibility. Further details regarding these policies are set out below.

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Credit Risk

Credit risk arises principally from the Company's other receivables and cash and cash equivalents. It is the risk that the counterparty fails to discharge its obligation in respect of the instrument. The maximum exposure to credit risk equals the carrying value of these items in the financial statements as shown below:

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Receivables	1,043,880	1,151,998
Cash and cash equivalents	31,014,889	1,327,935

The Company's principal other receivables arose from: a) VAT receivable from UK and German tax authorities b) an R&D tax credit c) grant funding receivable from the EU. Credit risk with cash and cash equivalents is reduced by placing funds with banks with acceptable credit ratings and government support where applicable and on term deposits with a range of maturity dates. At the year end, most cash were temporarily held on short-term deposit.

Liquidity Risk

Liquidity risk arises from the Company's management of working capital and the amount of funding required for the development programme. It is the risk that the Company will encounter difficulty in meeting its financial obligations as they fall due. The Company's policy is to ensure that it will always have sufficient cash to allow it to meet its liabilities when they become due.

The principal liabilities of the Company are trade and other payables in respect of the ongoing product development programme. Trade payables are all payable within two months. The Board receives cash flow projections on a regular basis as well as information on cash balances.

Interest Rate Risk

The Company is exposed to interest rate risk in respect of surplus funds held on deposit and, where appropriate, uses fixed interest term deposits to mitigate this risk.

Fair Value of Financial Liabilities

	Year ended 31 October 2020 £	Year ended 31 October 2019 £
Trade and other payables	1,236,796	667,811
Lease liabilities less than one year	113,431	113,431
Lease liabilities more than one year	146,368	259,799
	1,496,595	**1,041,041**

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There is no difference between the fair value and book value of trade and other payables and provisions.

The Company does not enter into forward exchange contracts or otherwise hedge its potential foreign exchange exposure. The Board monitors and reviews its policies in respect of currency risk on a regular basis.

24 Capital commitments

The Company had no capital commitments outstanding at 31 October 2020 (2019: £nil).

The aggregate amount of the transaction price allocated to contracts that are fully unsatisfied as at 31 October 2020 was £354,000 (2019: £nil). The Company expects to recognise these revenues within the next twelve months.

25 Financing facilities

On 11 April 2019, a £4 million equity financing facility was signed for a period of 36 months from the signing date with a further six-month period, post the expiry date of the facility, to repay any outstanding amounts.

26 Events after the reporting period

After the reporting date

- the financing facility was terminated by mutual agreement. No drawdowns had been made on the facility, and
- the vesting conditions of Adam Bond's share options were reviewed and amended by the Remuneration committee.
    - The target prices were adjusted to 42.5p, 64p and 85p (respectively) to take into account the change in the share capital since July 2015.
    - A retention clause was added to these options such that a specified number of shares should not be sold between the date of exercise and the first anniversary of these revisions. This holding requirement is reduced by the number of shares necessary to meet the tax liability arising from the exercise of the options.
    - The operational performance conditions for all but one of the original targets have either been achieved, or a comparable measure achieved. The exercise price of these options has been adjusted from 51p to 22p, in line with changes in the share capital since July 2015.

27 Ultimate controlling party

There is no ultimate controlling party.

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Company information

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Jim Gibson
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Joe Mangion
Gerry Agnew

Company Secretary
Graeme Lewis

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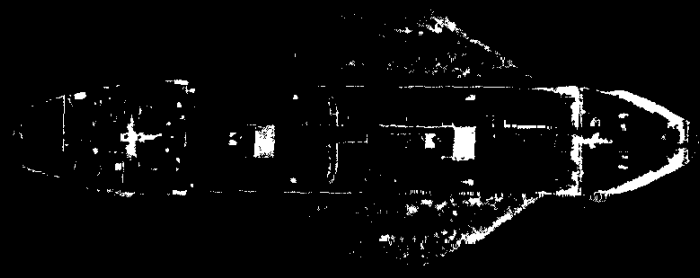

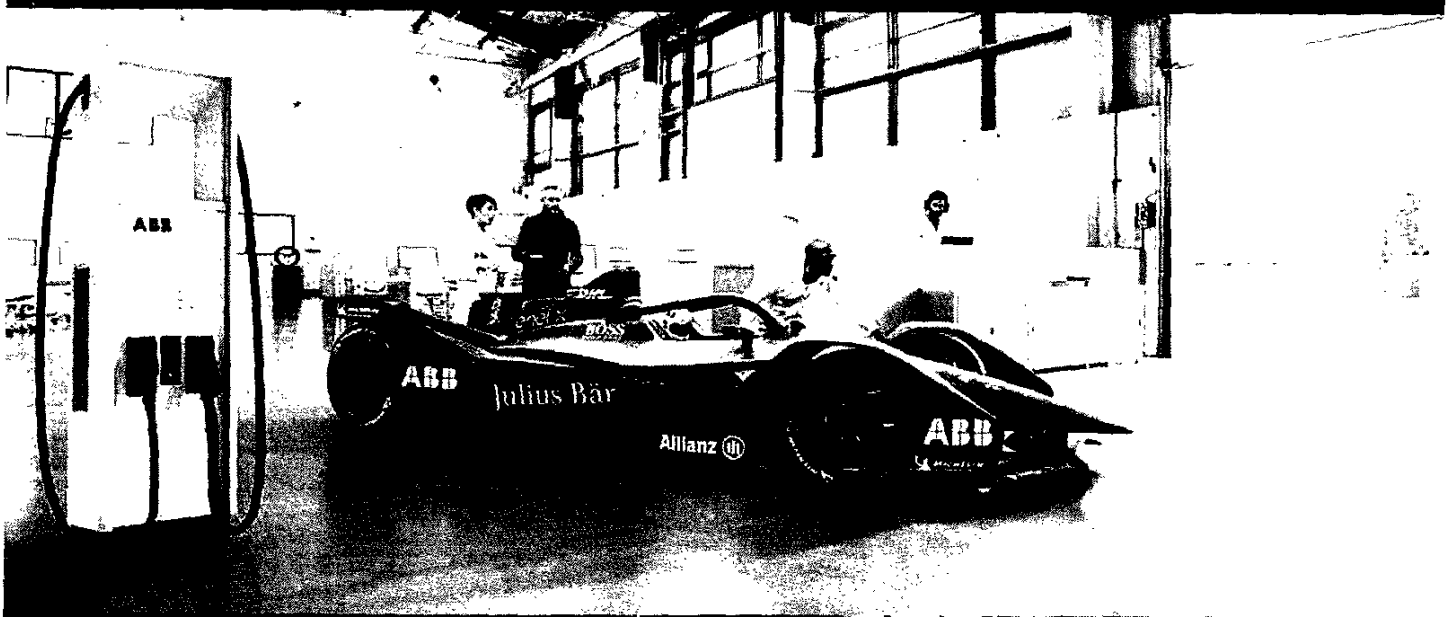

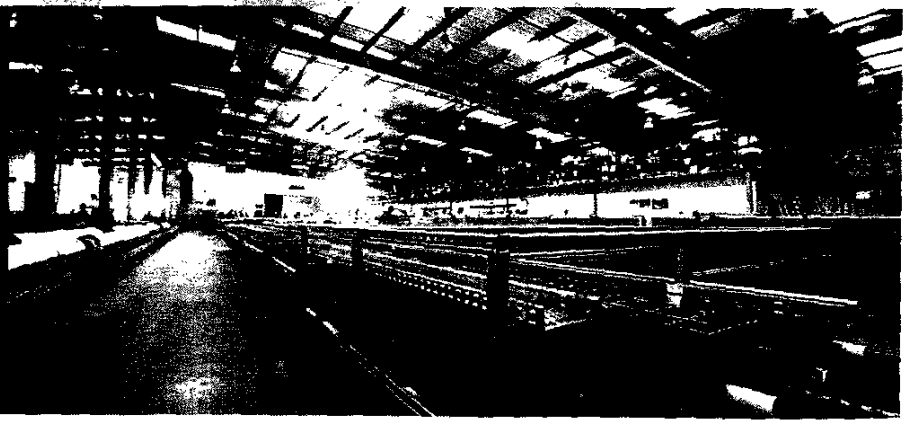

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