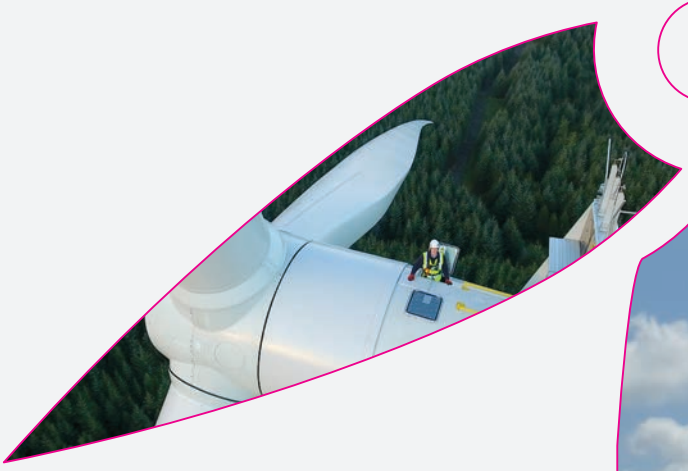
IRISHWIND

Spring **2018**



IWEA
Irish Wind Energy Association

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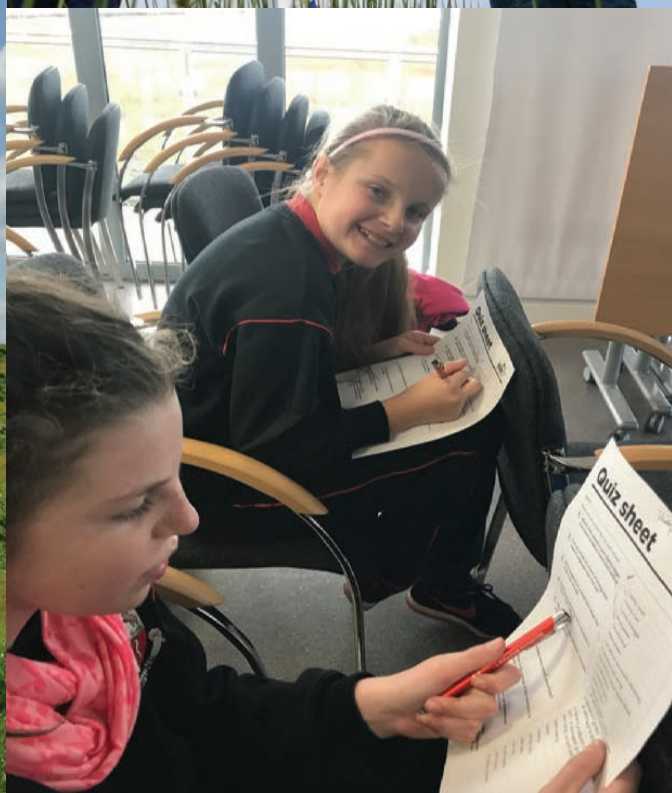
Quiz sheet

Irish Wind Energy Association

WELCOME TO THE SPRING 2018 EDITION OF IRISH WIND

IWEA is the national association for the wind industry in Ireland. This newsletter provides updates on news and events in the wind industry in Ireland and is a resource for IWEA members in the interests of the promotion of wind energy.

Please contact Lisa-Anne Crookes with comments / suggestions for future editions on lisa-anne@iwea.com

The images in our collage come from member's windfarms, Global Wind Day entries, school tours to wind farms and those taken by photographer Kenneth Gallery Smyth.

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Peter Harte, **Foreword**
Chairman, IWEA

This year's IWEA spring conference sees the launch of our new 2030 Strategy document. This is the culmination of over 12 month's work by both IWEA staff and members. At its heart is an ambitious but rigorously tested view of what the renewables industry could look like a decade from now. Looking out to 2030 is not simply a case of choosing a number somewhat higher than the 40% 2020 target. If Ireland is to set itself on a path of full decarbonisation, then any view of 2030 must look at the full energy system and not just electricity. Heat and transport have lagged behind electricity to date, but recent advances in technology will revolutionise how we travel and heat our homes and businesses.

There are over 150 models of electric vehicles available to purchase today, and are already cheaper to own and run than their fossil fuel predecessors. Heat pumps are already well proven in countries such as Sweden, and Ireland's climate is much more favourable. Both electric vehicles and heat pumps are ideally matched to a power system which has a high wind penetration, because they can both shift their demand around to a certain extent, and properly configured, they also have inherent storage. IWEA's aim is to be at the heart of the shaping of this revolution, through detailed technical and economic modelling conducted by the new IWEA Energy Systems Committee. On the basis of this modelling, IWEA is setting out a target of having 70% of our electricity coming from renewable sources, mainly wind, by 2030. Crucially, our modelling shows that this can be achieved at a net saving compared to the "do nothing" scenario.

Using this low cost, indigenous source of energy is then the foundation that allows Ireland to electrify and hence decarbonise its heat and electricity sector. We propose that up to 14% and 19% of our homes and cars could be electrified by 2030 (in line with EirGrid), essentially making these wind powered, saving homes and drivers money while also drastically reducing our reliance on imported fossil fuels and slashing carbon emissions.

For the last 15 years or so, the industry has had a clear overarching goal of reaching 40% RES-E by 2020. While we are now within shouting distance of achieving this target, back in 2008, when the All Island Grid Study first set such a scenario, it was far from obvious that it could be achieved. Planning policies such as the 2006 Guidelines and county development plans were rolled out. Grid allocation in the form of the Gate system was conceived. The SEM market went live and REFIT was adjusted accordingly. EirGrid studied the integration issues and

changed the way they operate the power system under the DS3 programme, to allow up to 75% of generation to come from non-synchronous sources such as wind at times. As we look forward to 2030, both the wind industry and IWEA will require a significant step up in capability in all these areas and more.

One key change will be how the industry approaches the question of community involvement and social acceptance, both of wind and its associated grid infrastructure. The industry enjoys a high level of support amongst the public in general, with a recent IWEA poll indicating 84% of Irish people were in favour of wind energy with as little as 4% strongly against. However stiff resistance is seen by some projects or certain regions, usually at the early development stage of a project. As part of the 2030 Strategy, IWEA has set out a set of principles and new ways of working with the communities whose support is so vital to our success. Building on the Department's vision of an "Energy Citizen", IWEA's 2030 Strategy sets out a detailed approach to how wind farms and the industry interact with their neighbours from project inception, development, construction, operation and through to decommissioning. IWEA is bringing forward plans to allow communities to own a share of projects should they so wish. Community benefit schemes will be substantially increased in value and offer a wider range of benefits such as home renovation schemes and discounted electricity for homes near wind farms.

Another key change will be a renewed focus on the cost of energy. The new RESS auction system will replace REFIT for projects connecting from 2020 onwards. Competitive pressure will drive innovation and price reductions to the benefit of consumers. Investors will price in their future expectations for a wide range of factors to auction bid prices. Thus policy successes and failures will be immediately apparent. Policy failures such as the increase in business rates applied to wind farms, any inefficiencies that cause higher curtailment and market structure issues that affect the wind balancing price or capture price will appear in prices. Development risk could become a much more significant share of the levelised cost of energy. Planning guidelines that restrict the use of taller tip heights will directly increase the cost of energy. IWEA believes that both onshore and offshore wind energy prices will fall substantially over the next decade. A long term contract will still be needed and appropriate to reflect the up-front capital intensive nature of the technology, but they will likely be essentially subsidy free. By optimising the policy and regulatory ecosystem in which wind exists, IWEAs Strategy for 2030 has cost reduction at its centre.

Finally, the IWEA 2030 Strategy recognises that the industry will have matured and grown substantially. Over the coming decade, the development process is likely to represent a smaller share of the total activity in the industry. Asset management and operations will make up a growing share, and IWEA aims to reposition itself to support the investors and owners of operational assets, by pooling expertise in areas as diverse as grid code compliance, noise and environmental monitoring, tax, business rates, O&M and market policies that individual wind farm owners, particularly international investors, may not have sufficient resources in-house. Our training and health and safety focus will change to match.

In order to deliver this strategy, we will need strong leadership and an expert team. I would like to recognise Gary Healy's contribution, and we were sorry to see him recruited back to telecoms after such a short stay in renewables. During the last year, we've also said good-bye to Adam and Irene, who both gave a lot to wind over their tenure at IWEA. We have nearly concluded a process to find a new CEO, and I hope to be able to introduce them at the conference. With a clear strategy available, he or she will be able to build a strong team with the skills and experience to take us on the journey to 2030.

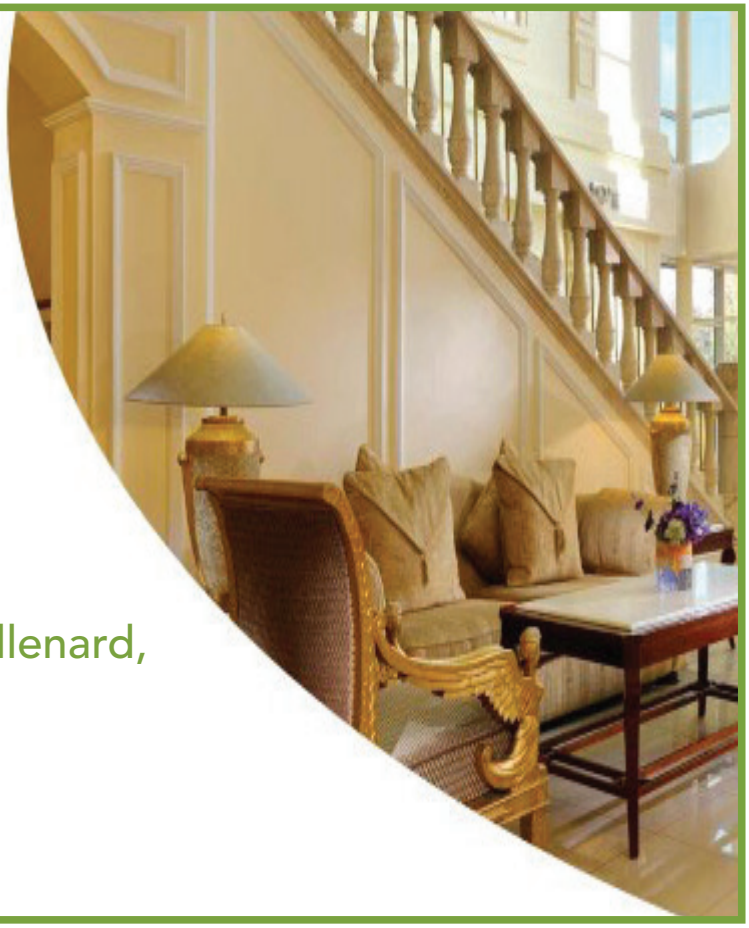
UPCOMING EVENTS 2018

IWEA
Irish Wind Energy Association

SAVE THE DATE

IWEA Health & Safety Conference 2018

30th May 2018
The Heritage Killenard, Killenard, County Laois



Other sponsorship opportunities now available
Contact Lorraine Killick at lorraine@iwea.ie or 087 282 3640

IWEA
Irish Wind Energy Association

SAVE THE DATE

IWEA Autumn Conference 2018

10th & 11th October
Galway Bay Hotel, Salthill, Galway

Main Sponsor

ONE GW
ENERCON
ENERGY FOR THE WORLD

Other sponsorship opportunities now available
Contact Lorraine Killick at lorraine@iwea.ie or 087 282 3640

MEMBERSHIP NEWS

IWEA WELCOMES NEW MEMBERS

Statkraft is a leading company in hydropower internationally and Europe's largest generator of renewable energy. The Group produces hydropower, wind power, solar power, gas-fired power and supplies district heating. Statkraft is a global company in energy market operations. Statkraft has 3600 employees in 16 countries and has operated in the UK since 2006.

We develop, own and operate renewable production facilities and are also involved in the trading and origination of power from our own projects and those of third parties. As a state owned utility, Statkraft is a solid, dependable partner, committed to playing a leading role in the energy market.

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Baringa is an award-winning management consultancy specialising in energy, financial services, utilities, telecoms and media – in the UK, Ireland and Continental Europe. We currently have around 650 consultants, of which approximately 250 are specialists in the energy sector.

We work extensively in Ireland with energy companies, investors, new entrants, IWEA, EirGrid, and the Regulatory Authorities – and are heavily involved in the regulatory and operational aspects of the transition to I-SEM and DS3. We advise on asset investments, hedging and trading strategies, routes to market, imbalance costs, retail strategies, regulatory issues, market design, modelling capabilities, and I-SEM business and IT preparation.

We are market leaders in understanding the economics of power sector assets in Ireland under SEM and I-SEM and have advised on renewables, storage assets, small scale flexible generation (distributed generation), large scale thermal and demand-side flexibility. We provide regular market analysis and scenario-based forecasts to a range of institutional investors, developers and infrastructure funds – equally, lenders frequently rely upon our analysis to make debt-finance decisions.

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Curraghderrig Wind Farm

Rengen Power is a renewable energy company specialising in windfarm, solar and waste-to-energy development initiatives. Based in Ennis, Co. Clare, it provides fully-integrated project management services, delivering tailored solutions across a range of sustainable energy sectors. Its diverse and experienced team of professionals works not only to deliver for its clients but to exceed their expectations.
Its areas of speciality include windfarm development, solar photovoltaic (PV) energy farms, commercial rooftop solar projects and waste-to-energy conversion projects. Its work involves partnership building, front-end studies, design concepts, planning, engineering, procurement, financial monitoring, due diligence, certification, risk assessment through to commissioning, delivery and asset management.

Rengen Power's latest project has been the construction of a 4.6MW wind farm at Curraghderrig, Asdee, Listowel, Co. Kerry. It has two Enercon 2.3MW, E-70 / E4 turbines, each with a hub height of 64 metres, an on-site 20kV substation and a 2.3km overhead electricity line, which connects to the national grid at the ESB's Ballybunion substation. The wind farm was energised and commissioned in December 2017 and is currently operated by Rengen Power on behalf of Curraghderrig Wind Limited.

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Erova Energy is a dynamic energy trading company currently active in the Irish, UK and Netherlands power markets. Erova Energy has been active in European power markets since 2015. The team has over 50 years of combined experience with backgrounds including ESB, SSE Airtricity, Centrica, and Delta. Erova has recently been joined by a large international corporate partner - Mitsui & Co. We have extensive experience in:

- Forward and spot trading both on a proprietary basis and on behalf of generation, supply and I&C customers;
- Optimisation of more than 2GW of thermal and renewable assets in the UK and SEM;
- Market analysis, meteorology and Energy Trading & Risk Management Systems
- Bespoke active and passive Power Purchase Agreements including thermal, route to market structures, corporate agreements, Supplier Lite services, and renewable PPAs

Contact: Michael Donnelly
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Web: www.erovaenergy.com

A forward thinking engineering, environment and design consultancy, Sweco combines a multi-disciplinary approach with access to international expertise to deliver robust and sustainable solutions. We promise to be our client's most approachable and committed partner and make every effort to understand their needs better than anyone else. With 14,500 employees across Northern Europe, we are Europe's leading consultancy planning and designing the communities and cities of the future.

Over the past decade, we have worked with developers and contractors to develop, design and provide technical advisory, environmental and construction quality assurance services on several major onshore wind facilities in Ireland, including the Galway Wind Park and the Oweninny Wind Farm. In the UK, Sweco has helped to design more than half of all onshore wind assets built in the last decade as well as provide services across the offshore wind and transmission sector.

We have centres of wind engineering excellence in Cork, Edinburgh and Glasgow, providing Wind Feasibility, Consenting, Geotechnical Services, Infrastructure Design/Engineering, Construction Support, Onshore Wind Foundation Design, Project Management, Owners Engineer and Lenders Advisory Services, Grid Engineering Services, Asset Management and Strategic Advice.

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Everoze is an employee-owned renewables and energy storage consultancy. Our unique strength is bridging the gap between the technical and the commercial. We work closely with our clients to make projects, companies and technologies futureproof and financeable.

We offer:

- Due Diligence on Demand: Working smarter to rapidly evaluate risk and opportunity.
- Project Support: Applying experienced eyes to improve asset performance and add value to project development.
- Strategic Support: Deploying effective people with the right industry know-how to address technical, commercial and strategic challenges.

The renewables and electricity sectors are going through a period of fundamental technical, economic and regulatory change. Everoze exists to be a trusted partner to businesses affected by these changes by identifying, understanding and acting on the opportunities and risks inherent in change. Most importantly, the results we produce are accurate, insightful, timely and well communicated so that our clients can act with confidence whether they are seeking to minimise risk, identify opportunities or maximise asset performance.

Contact: Simon Bryars
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Web: everoze.com

Established over 60 years ago and now one of the most recognised names in the industry, Murphy has a proud history of delivering major infrastructure programmes in its home markets of Ireland and the UK, as well as several international markets.

Murphy has built an enviable reputation with clients for the safety, quality and reliability of its services largely delivered in-house, particularly in its core sectors of water, power, rail, natural resources.

We work closely with our partners and clients to make sure Murphy deliver the best possible service and have a reputation for excellence across a range of capabilities and specialist businesses. Building on our decades of experience, we offer our clients the support, expertise and plant to make the most challenging of projects a success.

As an infrastructure specialist, Murphy is able to respond to the challenges of any project while making sure we provide our clients with a consistently high quality service.

Our self-delivery model gives our clients the assurance that we can provide a safe, reliable and cost-effective service. We make significant investments in our plant and our people, so that we can offer a highly-skilled, experienced workforce who use modern and well-maintained equipment. This means we effectively offer a 'one stop shop' service for clients on their most complex of projects across a diverse range of specialist capabilities including:

ENGINEERING:
Based on our extensive experience as a contractor, we apply a pragmatic outlook to developing real world engineering.

PILING:
Murphy has a long track record of successfully delivering both major and minor works and have some of the largest piling machines in the industry.

UTILITY CONNECTION:
Murphy provides utility connections services from installation of mains and service utility networks on residential and commercial developments, to their alteration and/or disconnection.

BRIDGES:
Murphy has dedicated bridge demolition on reconstruction teams who can provide a high quality efficient service, using modern construction methods.

HIGHWAYS AND STREETWORKS:
Murphy has been building, maintaining and improving the nation's highways since the 1950's. Our experienced team offers a complete highways and street works service.

POWER SYSTEMS ENGINEERING:
Our multi-disciplined team can design, contract and manage electrical projects in a wide and growing variety of sectors.

PLANT AND TRANSPORT:
Murphy owns, manages and maintains plant and transport equipment worth in excess of £100 million.

GROUND ENGINEERING:
We have successfully worked in some of the most demanding ground conditions in Europe.

Contact: Bernard Finn
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Web: murphygroup.ie

Knights Brown is a privately owned Civil Engineering Contractor whose specialist Energy Division is based in South Wales. We have an established reputation for the successful delivery of Regional Civil, Energy and On-shore Wind schemes throughout the United Kingdom and Ireland.

Knights Brown's reputation coupled with our enhanced knowledge of specialist energy sectors, such as Short Term Operating Reserve (STOR) and Wind Energy has enabled us to deliver in excess of 750MW of new generation capacity to the areas in which we operate.

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Eamon Ryan, talks to IWEA

Leader of the Green Party

If we are serious about climate change then we will have to switch to a 100% zero carbon energy system by the middle of this century at the latest. The agricultural and transport systems will also face massive changes but because they take longer to adjust and are only at the start of their own technological revolutions, it will be up to the energy industry to lead the way.

The scale of the challenge and the short time frame we have to meet it, is beyond any similar challenge in the past. We must assess every policy decision on the basis of where we know we need to get to and then work together in a collective way, learning from our mistakes and quickly rolling out solutions that work. Making this historic leap will fill us with pride and change the nature of our whole economy. The future can be of our own making and will be a bright one if we are willing to be brave.

No one knows for certain how the unfolding digital, clean energy and transport revolutions will evolve but it seems clear they are now aligning in a way which we can make work. Using the internet of things to monitor and manage greater energy efficiency has to be the first priority. We can use the same digital communications networks to help balance renewable power supplies. As a country we are perfectly poised to match our abundant wind and solar power with varying demand for electricity in the heat and transport sectors. Heat pumps and electric vehicles are the partners with PV panels and wind turbines that can make this dance work.

The sooner we start moving the more successful we will be. But first we have to stop the oil, gas and coal industries in their tracks. That is why the environment movement is so keen on the various pieces of legislation going through Dáil Eireann at the moment to end our exploration and investment in oil and gas reserves. We have learnt a lesson over the last fifty years.

Rather than putting all the pressure on the householder to make the switch, we need to shut off the supply of fossil fuels at source. We do so confident in the fact that electric alternatives are available to us which will cost less, create more jobs and improve the very air we breath.

We must begin by ending the installation of any fossil fuel heating systems in new Irish homes. Those 67% of new houses currently being built with oil and gas boilers are going to have to be retrofitted in future years. It's better if we avoided that future cost. We could then set about converting the one million Irish homes with old oil fired central heating systems, at the same time as we properly insulate them and put solar panels on every roof.

Similarly, I can see no case for building new fossil fuelled power stations and we should shut Moneypoint and the peat fired power stations right away, while providing support, guidance, retraining and alternative good jobs for the community and any workers in fear of losing their jobs. With increasing interconnection with our neighbours and large volumes of offshore wind power which is now becoming economic, we will be able to meet our needs.

The hardest challenge will be how to make the transmission and distribution grid systems work in this new renewable powered world. In Eirgrid and the ESB we have two state companies with real engineering expertise and growing experience about how to make this happen.

One of the reasons this will be a brighter future is because wind and solar power can be owned by the whole community. Whether through pension funds, state investment or co-operative and community shares, the financial world is starting to realise that green financing and greater corporate responsibility is the way to go.

Householders will also become producers and those who fear this might weaken the local grid are missing the fact that the grid is going to have to be doing so much more, powering our transport systems, heating our homes and running the big data networks that hold the whole thing together.

The biggest risk we face is the political inertia that comes with a fear of change. To jump start the whole political process we need greater public support. This is not an issue which should divide left and right and it can and should belong to every political party.

We do need to involve the trade unions to make sure this is a just transition where workers are re-skilled in a timely fashion and well rewarded in the new economy we are creating.

If this all sounds a bit aspirational then I will leave you with this question. What is your alternative? Do we ignore climate change or do we just go about addressing it in a half-hearted way? Should we not go for this revolution? It is based on science, and demands real enterprise and engineering ingenuity. It gives us a new story of hope and inspiration.

We will not fail.

NIRIG NORTHERN IRELAND UPDATE

The end of the affair?

Another year, another series of political talks that ground to a halt. This year at least newspaper headline writers were gifted a talks breakdown on Valentine's Day, although this is only a small crumb of comfort to those who are being impacted by the political impasse. As Northern Ireland passes its 400th day without an Executive, business leaders were united in their concerns that the on-going uncertainty is causing real challenges for the economy, especially as Brexit negotiations still do not provide any clarity about regulatory alignment after March 2019 or the transition period.

The absence of an Executive is continuing to have a detrimental impact on strategic policy development. Yet despite the vacuum in long-term vision and strategy since the start of 2018 we have seen decisions from the Planning Appeals Commission (PAC) and the SEM-O that will have significant long-term repercussions for the energy sector. PAC approval of the northern section North-South Interconnector was a very welcome development in January, and the successful construction of this project will do much to increase the competitiveness of the market and improve security of supply.

This was closely followed by the announcement that Kilroot power station and part of Ballylumford had been unsuccessful in the capacity auctions for May 2018- September 2019. The outcome of the capacity auction is expected to be a £200million saving to the consumer across the island, with £50million for the NI consumer, but will likely lead to closure of Kilroot. The business community and politicians have raised concerns about security of supply, as well as job losses.

Partly in response to this capacity auction announcement, the Northern Ireland Affairs Committee at Westminster has reopened its electricity inquiry, to which NIRIG will be making written submissions. The Committee seeks to understand the impacts of the SEM, potential benefits of the implementation of the I-SEM and intends to assess whether the closure of Kilroot and part-closure of Ballylumford could have any effect on security of supply.

NIRIG has raised concerns about the lack of an energy strategy post-2020 during meetings with the Electricity Stakeholder Group, an initiative set up by the Department for the Economy that seeks to coordinate electricity strategy with SONI, NIE, the Consumer Council, NIAUR, Department of Agriculture, Environment and Rural Affairs. We met with this group to discuss the work being commissioned jointly by NIRIG and IWEA on 2030 targets, which they were very keen to hear more about. We subsequently met with the Department separately to discuss the modelling assumptions of these targets.

NIRIG has also agreed a Brexit position paper, which is now being shared with key policy-makers and which we will be using to discuss common business positions with trade bodies and other industry associations. Among our key asks are:

- Maintain the Single Electricity Market (SEM) and fully implement the I-SEM across the island of Ireland
- Northern Ireland and Ireland to act in a consistent, coherent and co-ordinated manner in setting relevant energy and environmental policy frameworks, objectives and targets
- Ensure that the trading agreement only includes those policy issues that relate directly to the free and fair trading of energy
- Retain mutually supportive security of supply arrangements and progress appropriate electricity infrastructure to ensure an efficient market across the island.

Smart Energy Conference

NIRIG is excited to be finalising its programme for our first ever Smart Energy conference on 24 April 2018. The NIRIG Conference has been the key renewables event in Northern Ireland for seven years and building on our dedication to bringing the best energy industry insights to Northern Ireland we are now launching the 'Smart Energy' programme of events to respond to the new challenges facing the industry.

The first NIRIG Smart Energy event in Northern Ireland will be held on Tuesday 24 April 2018 at the MAC Belfast from 9am – 1pm. Follow NIRIG on Twitter @NIRIGRenewables for updates on programmes, speakers, schedules and more!

Sponsorship opportunities are available: please contact ni-rig@ni-rig.org for further information.

Grid unlocked?

NIE and SONI are consulting on approaches to new generation connections and has asked NIRIG to provide specific input through industry working groups. The consultation closes on 9th March and can be found here: http://www.nienetworks.co.uk/generation-consultation

Engineers: the next generation

NIRIG had the pleasure of providing the first guest lecture of 2018 to the MSc Environmental Engineering and MEng Civil Engineers classes at Queen's University Belfast. This was an opportunity to engage future engineers in discussions around some of the broader policy issues that might impact their careers, and also provided NIRIG Manager Meabh Cormacain with the chance to stand in front of a class in the Geography building 20 years after last being in a class in that same building!

WIND SKILLNET

Wind Skillnet – Topical, bespoke training for our members

Last year saw another successful year for the network, helping to address the appetite for lifelong learning within the wind industry. Some of the highlights included Trading in ISEM, preparing members for ISEM go live and Social Acceptance and Community Engagement for Wind Energy Project Professionals, responding to the Code of Practice and one of the central pillars of the RESS.

With green technologies, environmental services and marine and maritime sectors projected to grow by approximately 14% out to 2025, according to the Department of Education & Skills, there will be a continued need for new job creation, upskilling of the current workforce, and the development of cross-sectoral skills. The network will continue to support the associated skills development and knowledge sharing required for enterprise success in the energy transition and the continued success of the network has been rewarded with a significant increase in funding for 2018.

Leadership and implementation

With a build out of approximately 0.5GW projected for 2018, Q1 has seen high demand for GWO training continue inclusive of Working at Height, Hub Rescue, Fire Awareness and First Aid. As always, this build out is supported by the exceptional Health & Safety standards driven by industry there was excellent uptake of the IOSH Managing Safely for Wind Power certificate course delivered by ARMSA Consulting at the end of February. The upcoming Crane Works training being delivered by Declan Corrigan of WTE Ltd in April, will provide site managers, construction workers, EHS professionals and crane operators with the requisite knowledge and protocol for when a crane arrives on site.

The network will again be involved as a part sponsor for the IWEA Annual Health & Safety Conference. April also sees the delivery of a training course in Earthing Studies & Standards by NeoDyne. The course will highlight the importance of electrical safety, the need for earthing, and relevant standards alongside of demonstrating CDEGS software. There will also be an opportunity at the end of the training course for delegates to take part in a Q&A with ESBI on behalf of ESB Networks in relation to earthing standards.

The importance of energy leadership and the implementation of the Paris agreement moving forward sees the network delivering a training course on the EU Clean Energy package in April. The package puts forward regulatory processes and facilitating actions covering energy efficiency, renewable energy, the design of the electricity market, security of supply and governance rules for the Energy Union. The course is anticipated to be a big draw for members.
With the go-live date encroaching fast, the need for the clarity around ISEM is becoming ever more important. Baringa Partners will again deliver an updated version of the Trading in ISEM training course for IWEA members in the coming months.

Rebranding

The network is currently undertaking a rebranding project. The announcement of which will dovetail with our funding partner Skillnets own rebranding project due to be formally launched on the 17th April 2018. Having spent the latter half of 2017 analysing member needs, the network has redefined its strategic purpose and broadened its offering to include emerging renewable energy and supporting technologies. 55% of IWEA member companies involved in the needs analysis stated they are working with other renewable technologies. With the overarching responsibility to EU targets and the mitigation of climate change, the network will look to support the optimisation of renewables on the Irish grid in the short, medium and long term. This reflects the diversification of wider energy policy. With onshore wind having shown great leadership over the past 25 years there are numerous learnings, and a wealth of experience that can be transposed to other emergent areas.

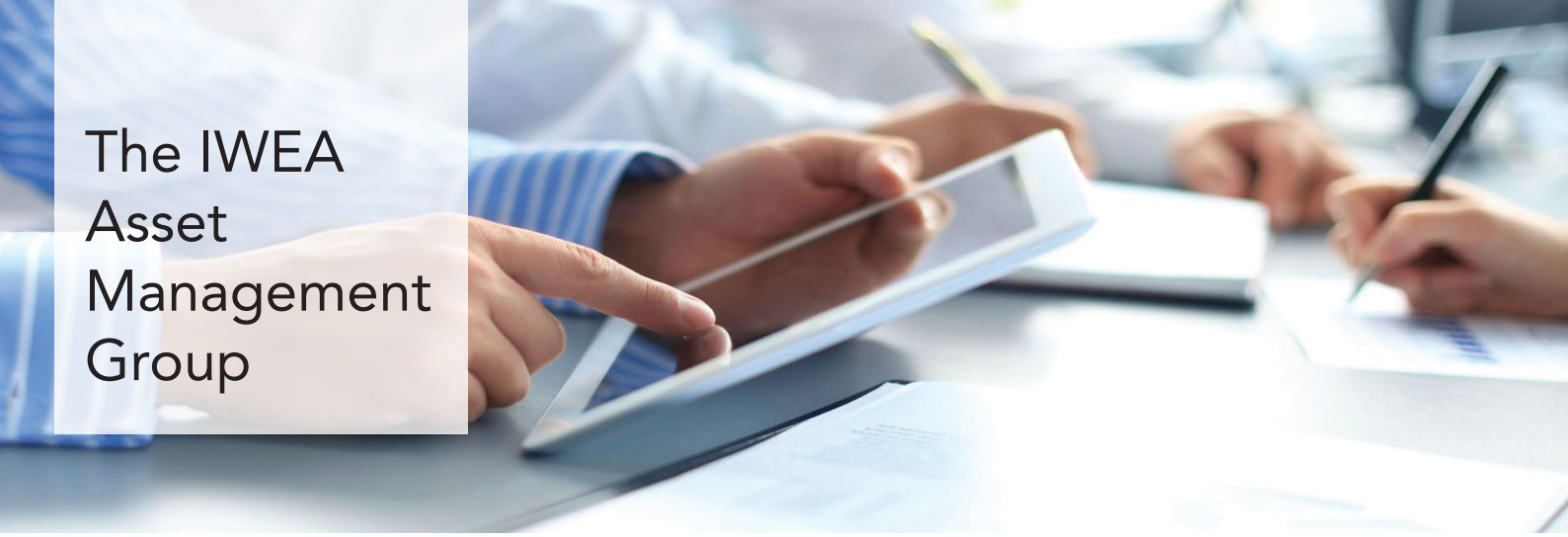
In this regard, energy storage will be key in facilitating greater penetration of wind energy and other emerging technologies onto the grid. In 2017, the network delivered a successful training course in Energy Storage delivered by TNEI and Mullan Grid. Demand for this training was very high and with IWEA recently setting up a storage group, the appetite for similar activities throughout 2018 is apparent. An example of such, will see a training course in DS3 System Services which will allow for new ways of generating revenue through an ability to respond to the grids needs in relation to demand, frequency, voltage etc.

Similarly, the scale of Irelands offshore wind resource is difficult to ignore. Some of the current challenges to large scale deployment include the Marine Planning Consultation, the MAFA bill transferring foreshore licensing powers from the DHPLG to the DCCAE, a decision on the new RES-E support scheme alongside of developing further data and knowledge on the marine environment. As this space continues to develop the network will look to support these challenges through the delivery of timely activities throughout 2018.

The electrification of heat and transport alongside of co-location opportunities are also extremely relevant. The importance of collaborations in tackling climate change will be key with numerous opportunities available to the network for the development of cross sectoral skills ensuring enterprise wide success alongside a successful energy transition.

The network is, as always, committed to the continued support of our members workforce learning and development ambitions and extremely excited about the year in store.
We look forward to seeing many of you at upcoming network activities in the coming months.

For information on any upcoming training courses or to discuss your organisations training needs, please contact Ross on 0872360697 or ross@iwea.com.



The IWEA Asset Management Group

The IWEA Asset Management Group has now gained Committee Status and we are in the process of establishing a working group to prioritise and address challenges facing asset managers and owners/operators. There have been great discussions within the group and impressive output as a working group and we are excited about our potential under this new structure.

We will have progress reports in subsequent member publications.
Current members of the Asset Management Committee;

Sheila Layden (Chair)	EnergyPro
Robert Spicer	Abo Wind
Rob Farrell	ESB
Joe Dalton (Working Group Chair)	NTR
Alan Edwards	Element Power
Marc Mcloughlin	Coillte
Brendan Heneghan	Ionic Consulting
Ben Brooks	DNVGL
Eoin O'Donovan	Brookfield Renewable
John Lynch	Bord na Mona
Ciaran Maguire (Working Group Chair)	SSE
Julie Brett	Ecopower
Conor Burns	SSE
Brian Mullan	Energia
John Kinsella	Enerco Energy Ltd
Lisa Anne Crookes	IWEA
Johanna Cafferkey	IWEA
Ross McNally	IWEA

Full bios of the committee members and group objectives will be on our website shortly.

We hope you enjoy the Asset Management session at our conference. Also, please keep an eye on our website for our upcoming online Asset Management performance optimisation offering.

We are currently recruiting members for the Asset Management Committee and the working groups. If you feel you could add value to any of the groups please contact johanna@iwea.com

Also if you have any suggestions for the group to prioritise, please do not hesitate to contact us at johanna@iwea.com

SWECO

ENSURING ONSHORE WIND DELIVERS IRELAND'S RENEWABLE FUTURE

MIKE TAVERN, TECHNICAL DIRECTOR AT ENGINEERING, ENVIRONMENT AND DESIGN CONSULTANCY, SWECO, ARGUES THAT IRELAND MUST PROVIDE DEVELOPERS AND INVESTORS WITH ASSURANCES ON FUTURE INCENTIVE SCHEMES IF ITS ONSHORE WIND MARKET IS TO ACHIEVE ITS VAST POTENTIAL.

Now is the time for Ireland's wind energy industry time to look at what more can be done to achieve the decarbonisation goals set by the EU. According to the Sustainable Energy Authority of Ireland (SEAI), the country still has some way to go to hit the 16 per cent target set for 2020. On top of this, Ireland is currently generating 28.4 per cent of its electricity from renewable sources, which is well behind the 40 per cent goal set for two years' time.

PUSHING ONSHORE WIND TO THE FORE

Onshore wind power will play a central role in helping the country push towards these targets and while it currently accounts for 80 per cent of the renewable energy generated across Ireland, there is still huge potential for growth.

There are also significant economic benefits. The SEAI's 2050 Wind Energy Roadmap, released in 2011, stated that the number of available sites, coupled with the country's geography, meant that 20,000 direct, installation and operation and maintenance jobs could be created in the sector by 2040. It also forecasted the potential economic value of wind generated electricity could reach €15bn by the midpoint of the century.

Significant progress has been made towards achieving this potential in recent years. Just over 850MW of capacity came online in 2017 alone, which increased the overall onshore wind capacity by a third in just a single year. Galway Wind Farm, Ireland's largest onshore wind farm, was one of these projects and has the capacity to generate enough green energy to power 90,000 homes, equivalent to approximately 90 per cent of Galway's population.

Sweco provided a range of consultancy services which were integral to the project's successful completion, and the windfarm was awarded "Green project of the year" in 2017 and the "prize for excellence in sustainability" the year before at the Irish construction Industry Awards. It has also supported the largest windfarm community fund in Ireland, responsible for funding a range of community organisations and secondary schools close to the park.

With Galway included, Sweco has contributed to 3.7GW of installed capacity in the UK and Ireland over the last ten years, with another 0.5GW in detailed design, representing savings of more than 10 million tonnes of carbon per year.

MEETING THE CHALLENGES AHEAD

Ensuring this progress continues will depend partly what incentives there are for developers and investors post 2019. The recent surge in new capacity coming online was a direct result of the current mechanism – Refit 2 – which required schemes to be finished by the end of 2017 to qualify. This deadline has since been extended to December next year - a big relief to several projects across the country that were struggling to hit the original cut-off date.

As for the future, there are others in development, including the 50km^2 Oweninny Wind Farm located in Bellacorick, County Mayo, which will generate enough electricity for around 185,000 homes. But if the schemes needed to help the country reach its renewable generation and decarbonisation targets are to be built, investors will need clarity from the government on what the replacement model for Refit 2 will look like.

The current favourite is an auction-based system called RESS (Renewable Energy Support Scheme), which will enable suppliers to bid for capacity every two years in the same way Contracts for Difference (CFD) works in the UK. This would provide developers with the benefits of design and price flexibility, and will likely favour onshore wind as it has one of the lowest levelised cost of energy (LCOE) values of all renewable generation types.

The potential for significant growth in onshore wind capacity is undoubtedly there. But the government will need to act quickly on the outcome of this year's consultation to give the assurance developers and investors are seeking.

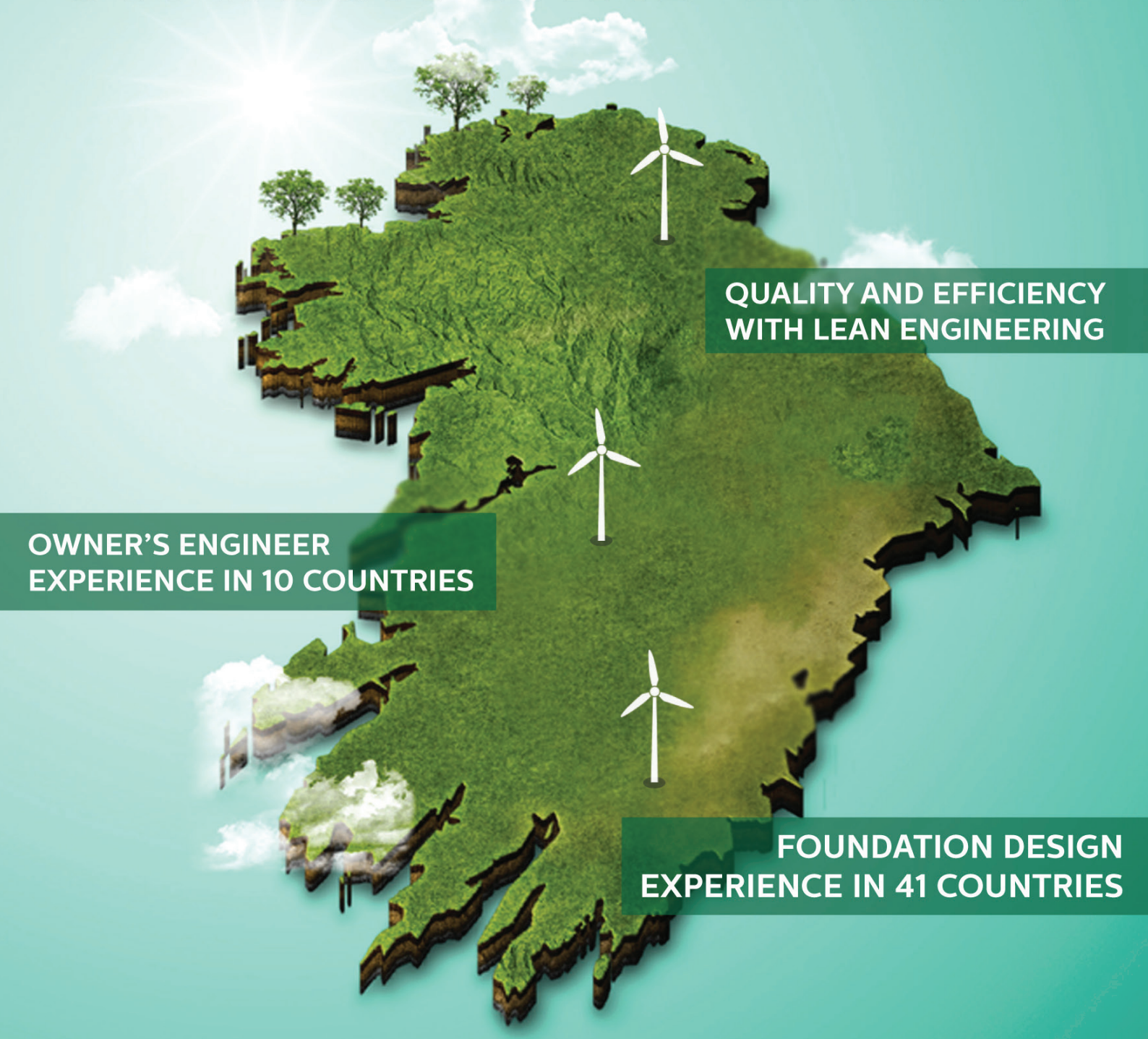
BOX-OUT – DELIVERING EXCELLENCE IN ONSHORE WIND

Informed by our heritage in the renewables-rich Nordics, Sweco has earned a place at the forefront of onshore wind energy. Our engineers have partnered with a long list of developers to design, plan, build, connect and maintain more than half of all wind farms built in the UK over the last eight years.

Sweco is also playing a leading role in Ireland. The 169MW-generating Galway Wind Farm will save over 400,000 tonnes of carbon per year, and the business provided a range of consultancy services which were integral to the project's successful completion. Meeting the challenge of delivering the structural design of five different types of wind turbine foundation – necessary to cope with difficult ground conditions – was integral to this, while producing the most economical and practical solution.

Our ability to provide specialist advice at every stage of development - from planning, and securing grid connections, to detailed design, construction support and asset management – has made us a trusted partner to developers of onshore wind.

A NEW PERSPECTIVE ON IRISH WIND ENERGY



forte+
CTE WIND

Detailed Design | Owner's Engineering | Due Diligence

The Rubicon Centre, Bishopstown, Cork , Ireland

forte+
CTE WIND

Detailed Design - Owner's Engineering - Due Diligence

Forte+CTE Wind is a Design and Project Management joint venture which opened its Irish office in Cork in July 2016. Since then we have been involved in Due Diligence and Owners/Contractors Engineers roles across Ireland. With a strong emphasis on Civil Engineering related services we have also to date provided full BOP and WTG roles to cater to our clients needs.

Our team combines 2 specialist companies led in Ireland by Forte Renewables which is a dedicated wind energy consultancy, comprising a team of industry experts with development, OEM and consultancy backgrounds. It was founded in 2012 and has successfully completed projects in 10 countries in Europe and Asia. It is supported by CTE Wind who are wind turbine foundation experts with experience dating back to 2003. To date they have worked on projects in 40+ countries on 8200+ foundation.

Time to try a fresh approach for your wind farm!

"The work of Forte and CTE Wind for our wind energy portfolio of 1000MW in 5 countries has been a major factor in our development success, ensuring that at all times we had smart technical partners fully committed to executing our strategy and protecting our investments from technical risks"

Yoshi Mitsuhashi
Managing Director
Wind Development Fund Management BV

"Forte + CTE Wind has provided us with the local presence and technical expertise to help us through the challenges of two of our projects in Northern Ireland and France. Throughout my dealings with Forte they have reacted quickly to our requests and demonstrated an extensive technical knowledge across Civil, Electrical and WTG Technology Issues"

Emanuele Alberoni
Project Manager
ERG Renew

With experience of up to 15 years the following expertise is offered to clients:

Foundation Design	- Front end option evaluation, CAT 3 checks and detailed design
Civil Design Optimisation	- Expertise in WTG logistics optimises site requirements
Owners Engineering	- Engineering, Procurement and Construction management
Due Diligence	- Full scope offering in partnership with TNEI

VISIT US
ROOM 14
MARCH 23-24

IWEA
Irish Wind Energy Association

‘Ireland first country to genuinely decarbonize the energy sector – Why not?’

HENRIK STIESDAL, IS AN ASSOCIATE PROFESSOR AT DTU WIND ENERGY AND AT UNIVERSITY OF MAINE.
HE IS ONE OF THE PIONEERS OF THE MODERN WIND INDUSTRY. HE BUILT HIS FIRST WIND TURBINE IN 1976 AND IN 1978 DESIGNED ONE OF THE FIRST COMMERCIAL WIND TURBINES, LICENSED BY VESTAS IN 1979. STIESDAL WORKED WITH VESTAS UNTIL 1986 AND JOINED BONUS ENERGY, LATER SIEMENS WIND POWER IN 1987. IN 1988 HE WAS APPOINTED TECHNICAL MANAGER, AND IN 2000 CHIEF TECHNOLOGY OFFICER. HE RETIRED AT THE END OF 2014.

Wind power continues to set new records. In 2017, wind power accounted for 55% of total power capacity installations in Europe, and it now represents 18% of the EU’s total installed power generation capacity, only surpassed by natural gas. And over the last two years we have seen unprecedented cost reductions, particularly in offshore wind where zero-subsidy auction bids are now the new norm.

Over the last 25 years Ireland has set an excellent example in the transition towards low-carbon electricity production based on wind power. The Republic of Ireland now has more than 250 wind farms with an aggregate installed capacity of 3450 MW, and in 2016 wind accounted for more than 22% of all electrical generation. As late as 2014 the figure was “only” 17%.

The rapid growth of wind power in Ireland is perhaps not so surprising, given the quality of the wind resource. In 2015, the average capacity factor of all wind projects was 32.3%, significantly above the average level in Europe’s leading wind power country, Denmark.

Furthermore, the public acceptance level in Ireland remains at an impressively high level. A 2017 study showed that a total of 84% of adults in Ireland are in favour of wind power, with almost half stating that they are strongly in favour. And 70% would prefer to power their home with renewable energy over fossil fuels.

All in all, with a solid track record, excellent wind resources and high levels of public acceptance, Ireland seems ideally positioned for much larger penetration of wind power. Taking this to the logic extreme, why not an Ireland powered exclusively by renewables? We all know that over the coming decades the power sector across the world needs to be decarbonized in order to maintain global warming at a (hopefully) manageable level. Could Ireland be the first country to complete the transition from a largely fossil generation mix to an all-renewables mix?

Well – there is the well-known snag.

Studies have shown that it will be difficult to bring wind penetration in Ireland to today’s level in Denmark, 44% of demand. Unlike Denmark, Ireland is not blessed with a string of interconnectors to neighbouring countries, and 6-7000 MW of wind power now appears to be a likely maximum with regards to grid stability. Even at that level there may be frequent events of curtailment and low prices.
It doesn’t have to be this way, however. All it takes to solve the problem is cost-effective energy storage.

Unfortunately, until now no storage technologies have been available that could realistically mitigate the problem of day-to-day variability in energy output from renewables, let alone week-to-week variations or seasonal variations. The technologies available either do not have sufficient capacity or cannot be widely deployed due to severe topographical, geological and/or cost constraints.

Globally, the leading storage technology is pumped hydro storage. This technology has low expansion potential, however, due to topographical limitations and environmental issues with new dam projects.

Hydrogen storage has for decades been considered a viable alternative to pumped hydro storage, but despite the fact that hydrogen production by electrolysis is a very well-established technology, hydrogen storage has largely been unable to overcome the challenges of cost-efficient production and use, including the issues related to gas handling and storage.

Electrochemical batteries, such as Li-ion batteries have no topographical requirements. However, due to the high cost of energy capacity (typically hundreds of EUR per kWh) electrochemical batteries are only really suitable for short term storage applications, preferably with several charge/discharge cycles per day. For storage capacities measured in days with only a fraction of a charge/discharge cycle per day the capacity costs are prohibitive, and will remain so for decades.

Fortunately, this picture is about to change. Two new storage technologies that are both in the development stage could provide the solution and facilitate an all-renewable electricity generation system, even for islands such as Ireland.

For short- to medium-term, thermal storage systems seem likely to provide the solution. In a thermal storage system excess electrical energy is stored as heat and is regenerated as electrical energy when needed. During charging, air is heated through adiabatic compression or simply with a resistive electric heater. The air flows through a hot reservoir, an insulated stone bed, transferring the heat to the stones. During discharging, the flow direction is reversed. Air is heated by passage through the hot reservoir, and the hot air is either used directly in a hot-air turbine, or is used to generate steam for a conventional power plant.

Compared with battery systems, the huge benefit of such thermal storage systems is that the energy capacity investment is only a small fraction, typically less than 10 EUR/kWh compared with the hundreds of EUR/kWh for batteries. As a consequence, the LCOE of regenerated electricity from thermal storage is only a fraction of that for batteries.

At the present time thermal storage system prototypes are being developed by several players, including Siemens with a pilot plant in Hamburg.

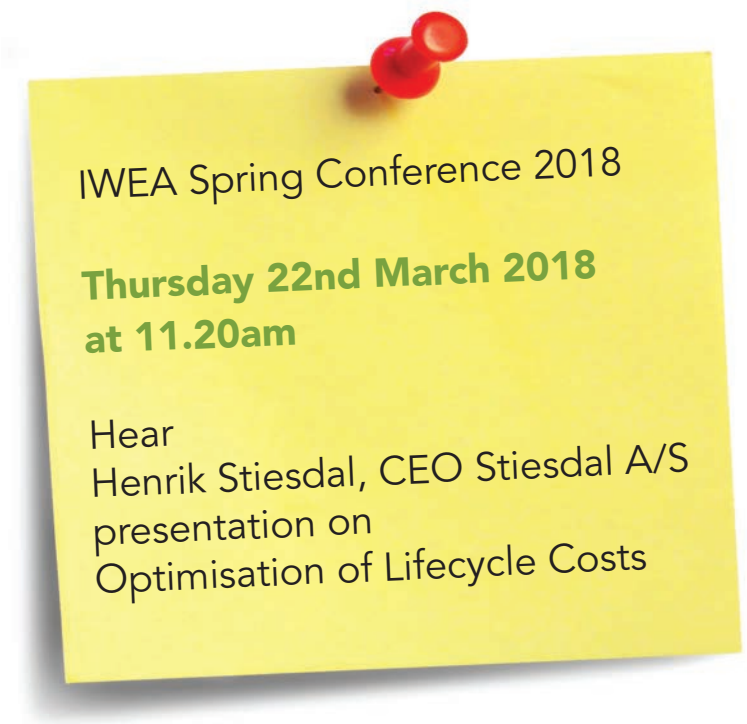
For true seasonal storage we need to turn to chemical storage. Here, ammonia is the most likely future candidate for large-scale storage. Most of us mainly know ammonia as a fertilizer, perhaps also as a cleaning agent, but it can actually also serve as a fuel, both for transportation, in thermal power plants, and in fuel cells. It doesn't have the same energy content per weight as fossil fuels, such as natural gas or diesel oil, but it is entirely carbon-free and can be produced from the most abundant resources of all – water and air. All it takes is electricity and well-known processes within electrolysis, air liquefication, and ammonia synthesis. The ammonia transportation infrastructure already exists, due to the widespread use of ammonia as a fertilizer, and storage is straightforward and extremely cheap.

Ammonia is still largely produced from natural gas, but a range of players are engaged in the development of cost-effective "Green Ammonia". Hopefully, we will see pilot plants in Europe within the next few years.

Electric energy storage is coming of age. It will play a crucial role in enabling the next phase of the energy transition. Along with increasing solar and wind power generation, it will allow rapid decarbonization of the electricity supply system.

Ireland could be the ideal testing ground for large-scale energy storage. A considerable effort would be involved, but the outcome would be a hugely expanded market for wind power, and thousands and thousands of jobs. And on top of that, It would be kind of cool to be the first country to genuinely decarbonize the energy sector!

SO – WHY NOT?



GLOBAL WIND DAY 2018 – ANSWER IRELAND'S CALL

Global Wind Day is a worldwide event that takes place each year on 15th June. It is an opportunity to discover wind, its power and the possibilities it holds to change our world.

We want you to get involved and help us mark the 2018 event with the Irish public. Last year hundreds of people visited windfarms across the country marking the date with fun runs, walks, school tours and family days.

"Thousands of individuals are involved in the production of energy from the wind, but for many people, wind energy is a mystery. Global Wind Day is the day when you can visit wind farms, meet experts, attend events and find out everything you want to know about wind energy", described The Global Wind Energy Council.

Last year IWEA held a photo competition and received a mailbox full of entries, showing windfarm views across the country. Here are some of my top picks.

Please contact us with details of your Global Wind Day Event – lisa-anne@iwea.com

In more than 80 countries around the world, wind farms are in operation, generating energy from a clean and renewable source.

Policy Update

The policy team currently manages four committees – Markets, Grid, Environment & Planning and Energy Systems, as well as IWEA's Storage Group which represents the electricity storage industry. Each committee contains several working groups in which cross-committee subject matter experts participate in and actively contribute to a range of industry-related issues. These range from responding to public consultations, to commissioning economic analyses and reports, to investigating hybrid plants and multiple technologies behind connection points. The working groups provide IWEA members with an opportunity to influence key stakeholders and policy decision-makers, via the IWEA platform, and therefore help to shape the direction of energy policy in Ireland. Described below, are several key workstreams currently active across various IWEA Policy working groups and Committees. Any member of IWEA can apply to join a Committee by emailing office@iwea.com.

Renewable Energy Support Scheme

IWEA submitted a response to the DCCAE's Renewable Energy Support Scheme (RESS) consultation in November last year. The DCCAE has received approximately 1250 submissions on the RESS scheme which are currently under review. It is unlikely that there will be additional public consultation on RESS. IWEA is highlighting the importance of RESS starting as soon as possible to avoid a shortfall in Ireland's renewable electricity targets and/or a development gap when REFIT concludes at the end of 2019. Other key issues addressed by IWEA include Technology neutral auctions, Renewable Electricity Target for 2030, Electricity market price and Community benefit.

I-SEM

IWEA's Markets Committee is creating a working group focusing on I-SEM as the 'Go Live' date approaches in the coming months. The working group will follow the progress of I-SEM and deal with key issues as they arise. IWEA attended a SEM Committee Senior Stakeholders Meeting on the 15th February, hosted by the Utility Regulator, in which a series of updates on the I-SEM programme were delivered. It was noted that we are now inside the final 100 days prior to go live date of May 23rd, 2018. While there is still a large amount of uncertainty associated with Brexit and I-SEM, the Market trials are progressing well and the first successful capacity auction took place on 15th December 2017.

REFIT in I-SEM Options Paper

IWEA submitted a response to the DCCAE's "Electricity Support Schemes: Transitioning to I-SEM Arrangements: Proposed Decision Paper" consultation in January. It outlines three Options that were considered by the DCCAE in relation to how REFIT will be accommodated in I-SEM. Out of these three Options, the DCCAE's preferred approach is Option B, the Blended Deemed Market Price. IWEA's response acknowledged that the current electricity market in Ireland is changing and supported the principle that electricity generators, including renewable electricity generators, should be balance responsible. However, IWEA emphasised that it is essential that these changes should not be detrimental to the arrangements put in place under REFIT, under which investment has been made since 2006, and which has been upheld and supported consistently since. IWEA outlined concerns with Option B, the Blended Market Price, including that it does not relate to Balancing Costs and so results in an arbitrary REFIT top-up, it risks unintended consequence and it includes uncertainty about how the REFIT top-up will compensate for balancing costs. IWEA's response outlined how Option C, the 'Dutch Option' is less onerous than the other Options, particularly Option A, since it provides more certainty about how REFIT will compensate for balancing costs which would lead to more investor confidence. It has sharper market incentives and will result in lower system imbalance costs. Finally, it is a similar administrative procedure as the blended approach and is better placed to receive State Aid approval.

Furthermore, the supporting EirGrid modelling to the REFIT in I-SEM consultation indicates that the costs for both the Blended Approach and the Dutch Option are similar in the DAM 100% and DAM 80% trading scenarios which is very likely to be the range that occurs in I-SEM. Given the comparable costs between the Blended Approach and the Dutch Option, IWEA recommended that the DCCAE choose Option C since due to the significant other factors mentioned previously such as market incentives, investor confidence and risks of over-compensation.

Enduring Grid Access

IWEA submitted a response to the CRU's Electricity Connection Policy Consultation on the 15th December 2017 via the ECP-1 Working Group. The ECP-1 Working Group is chaired by Donal Smith and is part of the IWEA Grid Committee. The CRU published a proposed decision on the Enduring Connection Policy – Stage 1 (ECP-1) on the 2nd November 2017, further to the CER/15/284 consultation, setting out the CRU's detailed policy proposals for connection to the electricity system. The IWEA response highlighted that Ireland is likely to fall short of the 2020 RES-E target of 40%, while at the same time IWEA's members have more than sufficient projects in place to meet and exceed this target. Access to the electricity grid is crucial for these projects, therefore it is essential that the ECP is implemented at the earliest opportunity, to enable windfarms with planning to access the grid. The response outlines important considerations and recommendations for the implementation of ECP.

DS3

IWEA made an 'industry presentation' at the first DS3 Advisory Council meeting of 2018, which was held on 24th January. The presentation outlined a range of questions that IWEA's Storage Group and Grid Committee have in relation to DS3 (available here). There is concern over small generators in Northern Ireland (~1000), as they are showing little interest in changing protection settings, which is required to go beyond a 65% SNSP. ESB Networks are nearly finished but highlighted that this took a significant effort over many years. Urgent action is required by the System Operator and Regulator in Northern Ireland, as the 65% SNSP will not be surpassed until this is addressed. Similarly, large conventional plant have work to do which is yet another bottleneck to exceeding 65% SNSP.

IWEA Storage Group

The recently formed IWEA Storage group held its first meeting at EirGrid, Dublin on December 13th, 2017. Issues discussed included the interaction of ECP-1 with DS3 Volume Capped procurement and the likelihood of delaying volume-capped procurement until post grid processing or delaying grid contracts until post DS3 contract award. EirGrid confirmed the first volume-capped auction volume will be less than 400 MW but have not yet decided on the volume. IWEA requested clarity on network charging and highlighted key concerns relating to bidding in a volume-capped auction, such as grid connection costs and timing. Also highlighted was the importance of the successful DS3 bids being "shovel ready" so they can be delivered in time to facilitate higher SNSPs before 2020. EirGrid have confirmed that a consultation will be launched in Q1 to address competitive procurement pre-qualification criteria. The need to extend the date for the volume procurement cap was highlighted.

Met Masts

IWEA submitted a response to EirGrid's consultation on Draft Guidelines for Met Signals on January 19th, 2018. IWEA believes EirGrid are issuing the guidelines prematurely in advance of concluding the review of met signal requirements.

Hybrid Plants

The working group are looking for a solution to allow multiple legal entities to connect to one point. EirGrid are open to this proposal but at present they will have legal recourse over the original entity. The Hybrid group (chaired by Mark Coleman) had a call with A&L Goodbody on January 11th, who highlighted the potential difficulties in financing such projects due to increased risk to the financer. A legally binding agreement would be necessary with regards proportioning system charges and negotiation prior to energisation.

North-South Interconnector

It was recently announced that the north-south interconnector, linking Northern Ireland and the Republic of Ireland, has been awarded planning permission by the Department for Infrastructure. This large-scale electricity project, will secure the energy needs for households and businesses. Work is expected to commence before the end of this year.

The Network Code Requirements for Generators

IWEA submitted a response to EirGrid's Network Code Requirements for Generators Consultation, which are one of three Connection Codes which form part of the European Network Codes. This consultation seeks to provide a legal framework for grid connections and facilitate electricity trading whilst ensuring system security, facilitating the integration of renewable energy and ensuring a more efficient use of the network.

IWEA 2030 Energy Strategy

IWEA has engaged with Baringa to develop a 2030 Energy Vision which is due to launch at the IWEA Spring Conference. The scenarios included in the modelling are currently being finalised and initial results are likely by the end of February. While developing these scenarios, IWEA's Energy System Committee has engaged with several key stakeholders including DCCAE, EirGrid, SEAI, UCC, and UCD. Some key assumptions defined during these discussions were:

- Electricity demand is likely to grow in the future, due to new data centres, with a 29% growth likely between now and 2030.
- Ireland can achieve a System Non-Synchronous Penetration (SNSP) of 85% by 2030 and a minimum conventional generation capacity across the island of 800 MW
- Electric vehicles could account for 19% of cars in 2030, equating to 426,000 vehicles
- Heat pumps could be used in 14% of homes by 2030, equating to 279,000 units
- The roll out of smart metres was recently approved so it is likely that electric vehicles and heat pumps in Ireland can be charged in a 'smart' way in 2030 i.e. at times of high wind production.
- Interconnection is expected to grow rapidly in Ireland over the next decade, with an extra 1450 MW potentially added: for example, two new projects are currently under development - Greenlink (IE-GB) and the Celtic Interconnector (IE-France).

IWEA's Energy Vision is analysing how much additional renewable electricity is feasible in Ireland by 2030 if these measures are implemented.

Irish Energy Policy

DCCAE published Ireland's first statutory National Adaptation Framework (NAF) on the 19th January 2018. The NAF sets out the national strategy to reduce the vulnerability of the country to the negative effects of climate change and to avail of positive impacts. The NAF was developed under the Climate Action and Low Carbon Development Act 2015. More information is available on DCCAE's website.

EU Energy Policy

Negotiations are ongoing in relation to the Clean Energy Package and over the last month, while the EU Parliament has been defining its position. There is progress on several renewable energy issues: the parliament is seeking a more ambitious renewable energy target of 35% by 2030; milestones have been defined for the national energy plans targets; and priority dispatch for existing renewable electricity has been retained. More details are available on the Wind Europe website.

Power Summit

IWEA's Head of Policy, Dr. David Connolly and IWEA's Market's Committee Chair, John McNamara, were both speakers at this year's Power Summit which took place on the 30th January in Croke Park. Key issues topics discussed included I-SEM's recent capacity auctions; The achievements of wind to date: EirGrid highlighted a new All-Island wind record of 3618 MW on the 12th January 2018; The potential to electrify of heat and transport in the future (ESB Networks are planning to trial Vehicle-to-Grid (V2G) technology in the coming year); Growth in electricity demand; Developments in renewable electricity auctions; and use of biomass for electricity generation and controlling the quality of biomass.

Community Engagement & Social Acceptance

IWEA is developing an updated Community Engagement strategy which will be launched at IWEA's Spring Conference in March 2018. IWEA is also participating in a research project with NUIG which is investigating what types of Community Engagement are most effective in Ireland.

Wind Energy Guidelines

IWEA's Planning Committee is evaluating the impact of the potential new Wind Energy Guidelines (WEGs), particularly in relation to a reduction in land area and an increase in curtailment that are likely to occur under the new criteria.

CRU Updates to Licencing

The Commission for Regulation of Utilities (CRU) has notified IWEA of several recent improvements to their licencing processes. CRU has updated their application forms and associated application guidance notes for their Authorisations to Construct or Reconstruct a Generating Station, and Licences to Generate. As part of the updated process, CRU is encouraging applicants to request pre-submission meetings ahead of their application submissions to assist in developing valid applications. These requests, and all future communications with the team should be sent to licensing@cru.ie.

Joint Committee on Communications, Climate Action & Environment, Oireachtas

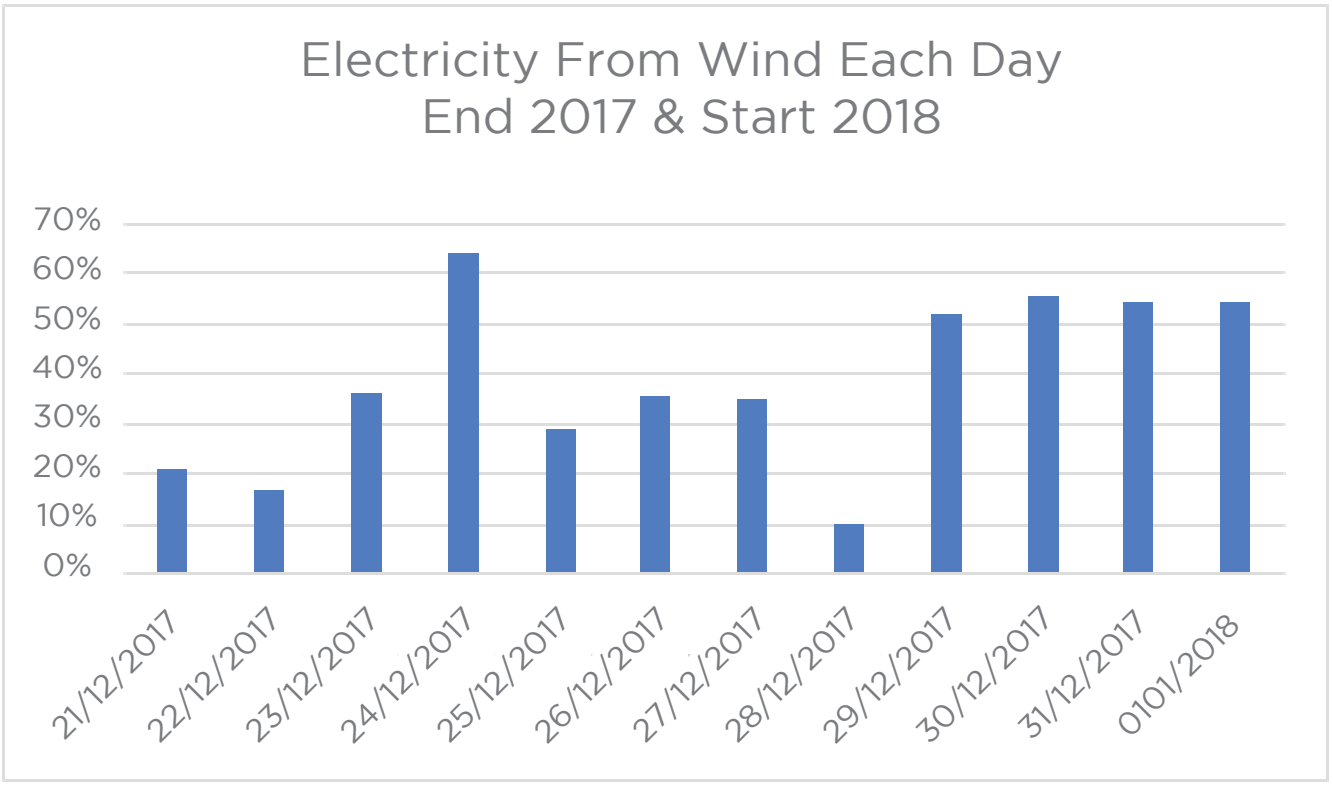
IWEA's Chairperson, Peter Harte, and Head of Policy, David Connolly participated in the Joint Committee on Communications, Climate Action and Environment on 16th January. It was a session dedicated to "Meeting Ireland's targets under the 2020 Climate & Energy Package". IWEA outlined the large contribution of wind already towards Ireland 2020 energy targets and emphasised the benefits for communities as well as the potential for the industry to develop more projects. A full recording of the event is available on the Oireachtas website, with IWEA speaking at 1 hour 11 mins, 1 hour 49 mins, and 2 hours 38 mins.

NIRIG Updates

NIE and SONI will imminently issuing a consultation on a new connection policy. This is expected to contain specific proposals for new connections, although NIE has already indicated that it will be unable to include planning permission as a requisite for grid connection application. SONI has also recently issued grid connection guidance, which does include planning permission as a milestone. NIRIG met with the Electricity Stakeholder Group on 30th January to present perspectives on the NI energy strategy and 2030 targets. In terms of Small scale ROCOF generation, approximately 300MW of small scale renewables in NI require ROCOF changes, representing 1000 generators. There is ongoing NIE consultation on implementation of these changes, as without them there is a major risk to both ROCOF and DS3 implementation. The ROCOF curtailment group has reported that testing of 800MW of a total of 952MW affected generators is complete and NIE is hoping to finalise the remainder by end-January (as of 19/1/18 the new ROCOF settings have implemented on 48 of 59 LSG windfarm sites). SONI noted that they expect future events to be very infrequent. They have a draft report on the procedure for defining such groups in future, which will be sent to NIAUR before publication this month.

Data Updates

IWEA's regularly collects data from our members and from a range of external databases to monitor developments in the industry. For example, the System Non-Synchronous Penetration (SNSP) is an indication of the level of generation of energy from non-synchronous sources such as wind and solar within an energy system. IWEA monitors this to keep track of how much additional wind is being accommodated on the Irish grid over time. From January to September, the SNSP limit in Ireland was set at 60%, but this has recently been increased to 65%. The benefits of this were evident over the Christmas period which is traditionally a time of high domestic energy consumption. During this period a few months ago, wind generation was comparatively high to the rest of 2017. For example, almost 65% of electricity demand was met by wind power generation on Christmas Eve. Wind generation dipped somewhat on Christmas day, but there was a consistent high level of wind generation from December 29th right through to the New Year. During this four-day period each day exceeded 50% with Saturday December 30th averaging 56%.



Christmas is traditionally a time of high domestic energy consumption. Thankfully wind generation was comparatively high to the rest of 2017 during this period. Almost 65% of electricity demand was met by wind power generation on Christmas Eve. Wind generation dipped somewhat on Christmas day however there was a consistent high level of wind generation from December 29th right through to the New Year. During this four-day period each day exceeded 50% with Saturday December 30th averaging 56%.

BORD NA MÓNA & LOCAL COMMUNITIES

BORD NA MÓNA SAYS IT IS DEDICATED TO SUPPORTING LOCAL COMMUNITIES IN WHICH ITS WIND FARMS ARE SITED BY CONTINUING TO IMPROVE AND EXPAND ITS COMMUNITY BENEFIT PACKAGE.

Near Neighbour Scheme

In December 2017, Bord na Móna expanded its Community Benefit Package by introducing a Near Neighbour Scheme for both Mountlucas Wind Farm located in Co. Offaly and Bruckana Wind Farm located on the border of Counties Tipperary and Kilkenny. Bord na Móna introduced the Scheme based on various research carried out in recent years and also through engaging with local communities which indicated that the provision of direct benefit to residents who lived in close proximity to a wind farm should be considered. The Scheme is part of the company's extensive community benefits package (which already includes an Annual Community Gain Scheme and Recreational Facilities) and will offer electricity bill payers living within a prescribed distance of a wind turbine an annual contribution towards their electricity usage.

Community Gain Scheme

Bord na Móna's Community Gain Scheme Funds provide financial assistance to local community and not-for-profit organisations around both Mountlucas and Bruckana Wind Farms. In order to be eligible for funding projects must fall within the thematic areas of: Amenities, Community Facilities, Culture/Heritage, Education and Recreation/ Health. A key criterion is that the projects and initiatives will benefit the communities surrounding the wind farms. Since 2014, Bord na Móna has committed to investing over seven hundred thousand euros to over 150 local, community based projects through the community gain schemes and additional support for flagship projects. Groups supported to date include local schools, sports and athletics clubs, development associations, text alert schemes, first responder schemes, CCTV provision and community facilities. Bord na Móna administers each scheme and an awards committee is drawn from the local communities. This committee reviews and marks each application against the Scheme's criteria in order to decide which projects are granted financial support.

Amenity Facilities

Mountlucas Wind Farm walkway-cycleway has proven to be quite a success story. In 2017, there were over 32,000 visits were recorded at the amenity facility. It is being used for cycling, walking and running by both local people and schools, sports and athletics clubs and societies on a frequent basis. They are currently expanding its walkway routes around the wind farm to cater for the growing number of visitors to the site and have a number of projects in the pipeline to enhance the amenity facilities on the wind farm.

Mountlucas Wind Farm Community Events

Parkrun

In mid-2017, Mountlucas Wind Farm was chosen as Offaly's first parkrun venue. The parkrun event is a free, weekly, 5km timed run, which takes place in different venues around the world. Currently there are 100 parkrun venues in Ireland. This event takes place at 9:30am every Saturday morning at Mountlucas Wind Farm. It is open to everyone, it is free and safe and easy to take part in. People of all abilities are encouraged to take part - from those taking their first steps in running to seasoned athletes. There is a great community atmosphere at these events, and they can become an important and very fulfilling part of a weekend. Every Saturday there are now over approx. 80 people taking part in the parkrun on the wind farm.

Santa Visits Mountlucas Wind Farm

Santa made a special visit to Mountlucas Wind Farm on the 3rd December 2017 in aid of St. Vincent de Paul Daingean. The event was a huge success with over 800 visitors. The event raised €4,000 for St. Vincent de Paul. Santa also left some extra toys at the wind farm which were also donated to St. Vincent de Paul.

Operation Transformation
The Operation Transformation Walk for Co Offaly took place at Mountlucas Wind Farm on Saturday 13th January 2018. The walk started at 11am with a super turn out of over 100 people.

MCI Marathon and Half Marathon
On Saturday 3rd February Mountlucas Wind Farm hosted the MCI Marathon and Half Marathon. Over 60 competitors took part in the event, with the winning times recorded as 1 hour 32 minutes 14 seconds for the half marathon and 3 hours 7 minutes and 21 seconds for the marathon.

Engineers Week – Careers Day
As part of Engineers week 2018, Mountlucas Wind Farm hosted a Careers Day for local senior cycle secondary school students who are considering pursuing a career in Engineering. Students were given the opportunity talk to with Bord na Móna and Siemens employees and learn about the day to day activity of Engineers and related technical areas, particularly in the renewable energy sector in Ireland.

On-going Community Engagement
Over the past year, Bord na Móna's Communication Team has focused on the implementation of the **Code of Practice for Wind Energy Development** in Ireland. The Company has appointed a dedicated Community Liaison Officer (CLO) for each of its Wind Energy Projects. The CLO's main responsibility is to engage with residents and community groups around our operational, consented and planned wind farm developments in line with the guidelines set out
The company has also developed and launched project specific websites in line with the requirements of the Code of Practice. Websites are now available for the proposed Derryadd and Cloncreen Wind Farms. Both websites contain a dedicated communications page which contain details of communications Bord na Móna has made and received with local communities regarding the specific projects. The Company also intends to launch websites for its current operational wind farms - Mountlucas and Bruckana in 2018.

Visit the Learning Hub at Mountlucas Wind Farm Centre
In September 2017, Bord na Móna completed the design of its Learning Hub Facility at the Mountlucas Centre. The Company has developed a comprehensive tour programme to educate and inform students, teachers, community groups and special interest groups about renewable energy, with a particular focus on wind energy. The Hub is a hands on, fun, educational area where visitors can explore and learn more about renewable energy. Visitors can discover how quickly they can generate electricity, design the most efficient wind turbine and label all the parts of the turbine correctly. As part of the Learning Hub experience, Bord na Móna also offers people the opportunity to visit the inside of a turbine! Although they can't give people access into a real turbine the company has created a virtual reality tour of the inside of a turbine which is proving to be a big success with kids and adults alike.

Think you are brave enough to see the world from the top of a turbine? Why not book a tour of Mountlucas Wind Farm.
All tours of the wind farm are free and group bookings are accepted. Booking is essential through: mountlucaswindfarm@bnm.ie

In 2017, over 4,000 people visited the Mountlucas Wind Farm Centre to learn more about wind energy.

SPRING 2018 GENERATION TABLE:

IWEA have again carried out a survey to update members on the latest level of energised wind on the island of Ireland. As of February 2018 IWEAs, database indicates that there is a total wind generation capacity of 4,600MW broken down into 3,450 in the Republic of Ireland and 1,150 in Northern Ireland.

The table below gives further detail around where the increased capacity stems from. As with the previous generation table issued in the most recent winter newsletter all information displayed has been gathered through contacting both developers and consultants within the industry. Connection dates are based on available information and may be subject to change. IWEA have also used the ESB and Eirgrid connections and contracted lists as a reference point.

It is evident that the previously reported figure for 2017 has increased therefore in 2017 a total of 590 MW was energised in ROI across 33 separate projects. So far ROI has seen 55 MW connected in 2018 across four separate projects. Projected energisation for the remainder of 2018 in ROI is approximately 238 MW this will bring the overall total up to almost 3700 MW.

For Northern Ireland there has been three farms energised since the last edition of the generation table bringing the total up to 1,167 MW, projected build out for 2018 in NI is 88 MW.

2017 Connected ROI (Since last publication)

Farm Name	MEC	County	Owner/Developer
Leanamore Wind Farm	18.00	Kerry	Kate Wind Farm Ltd.
Scartaglen Wind Farm	35.45	Kerry	Scart Energy DAC
Scartaglen 2 Wind Farm	3.80	Kerry	Scart Energy DAC
Meenwaun WF	10.00	Offaly	Element Power
CurraghDerrig	4.50	Kerry	Curraghderrig wind Farm
Cordal (1)	35.85	Kerry	Cordals Wind Farm Ltd
Cordal (2)	54.00	Kerry	Cordals Wind Farm Ltd
Tullynamoyle Wind Farm 3	13.58	Leitrim	Enlight
Tullynamoyle 2 Wind Farm	10.23	Sligo	Tim Boland
Liffey Autoproduction Project	3.02	Cavan	Liffey Meats
Meenaward Wind Farm	6.90	Donegal	Meenaward Wind Ltd
Castlepook (1)	33.10	Cork	ESB and Coillte
Teevurcher Wind Farm	9.00	Meath	NTR
Ballyhoura Wind Farm	18.30	Cork	Brookfield

2018 ROI Connected

Farm Name	MEC	County	Owner/Developer
Glanaruddery 2	12.00	Kerry	Glanaruddery Wind Farm Ltd
Glanaruddery Wind Farm Ltd	20.00	Kerry	Glanaruddery Wind Farm Ltd
Coollegrean Wind Farm	18.50	Kerry	NTR
Gortnacloghy Wind Farm	4.40	Limerick	Highfield Energy

2018 ROI to be Connected

Farm Name	MEC	County	Owner/Developer
Carrowleagh Wind Farm (2)	2.65	Mayo	Loftus bros.
Derrysallagh Wind Farm	34.00	Roscommon	Kilronan Wind Farm Ltd.
Derreenacrinnig West	5.82	Cork	Kilvinane Wind Farm Ltd.
Bunnahowen Wind Farm (Temp)	2.55	Mayo	Alpha Wind Energy Ltd.
Raheen Bar Extension	6.80	Mayo	Ecopower
Rathnacally Wind Farm (Freemount)	4.45	Cork	NTR
Clahane (2)	13.80	Kerry	Pallas Windfarm Ltd
Glantaunyalkeen Windfarm	10.00	Kerry	Innogy
Cloghanaleskirt Wind Farm	12.55	Kerry	Peter O'Brien
Kilbranish Wind Farm (Greenoge (2))	2.50	Carlow	Greenogue Wind Farm Ltd
Knockalough (1) (prev. Clochar na Lara)	24.00	Galway	Knockalough Wind Farm Ltd. / McCarthy Keville O'Sullivan Ltd
Rossaveel Wind Farm (Clifden)	3.00	Galway	Lir Environmental Research
Carrickallen Wind Farm	20.50	Cavan	Galetech Energy Developments
Enros - Sorne Hill Single Turbine (3)	2.30	Donegal	Inish Wind
Corvin Wind Turbine	2.10	Donegal	Corvin Wind Limited
Ballincurry Wind Farm Ltd	4.70	Tipperary	Thomas Cooke
Grady Joinery	2.50	Mayo	Grady Joinery
Knockwarriga 2	6.60	Limerick	Brookfield
Keelderry (1) Slieve Callan	26.88	Clare	Brookfield
Ballagh Wind Farm	4.60	Limerick	Gaelectric
Slieve Callan	45.00	Clare	WCRE Windfarm Ltd

2018 NI Connected

Farm Name	MEC	County	Owner/Developer
Rathsherry Wind Farm	21.15	Antrim	Energia Renewables Power

2018 NI to be Connected

Farm Name	MEC	County	Owner/Developer
Pollnalaght (Cornavarrow) Wind Farm	36.00	Tyrone	Energia Renewables Power
Slieveglass Wind Farm	6.90	Antrim	Energia Renewables Power
Tieges Mountain Wind Farm	11.00	Fermanagh	Energia Renewables Power
Slieve Kirk Wind Farm (Increased MEC)	9.20	Derry	SSE Renewables Development Uk Ltd
Castlecraig	25.00	Tyrone	NTR

2017 Connected NI (Since last publication)

Farm Name	MEC	County	Owner/Developer
Tievenameenta	34.50	Tyrone	SSE Renewables Development Uk Ltd
Slieve Divena 2	18.80	Tyrone	SSE

ÉABHLÓID FUINNEAMH GAOITHE MAR BHUNCHLOCH NA GREILLE

By Bernice Doyle, Grid Manager – Ireland (Element Power Ireland)

Tharla rud éigin mór san earnáil fuinneamh gaoithe le déanaí. Shroicheamar garsprioc eile ar an gcosán go dtí greille ina bfhuil fuinneamh inathnuaite mar bhunchloch de - agus gan mórán buailean sciath maidir déanta air. Taispeánadh gur féidir le fuinneamh gaoithe ceann de na fadhbanna a chruthaíonn sé, nuair a bhíonn sé in úsáid go forleathan ar an ngreille, a réiteach.

I Mí na Samhna, d'fhoilsigh EirGrid an tuarascáil ón 'Qualification Trial Process' (QTP) a bhaineann le Seirbhísí DS3 . Is clár oibre é DS3 a bhunaigh EirGrid agus é mar sprioc aige "to address the challenge of integrating world-leading levels of renewable generation onto our power system". Go dtí seo, chuir torthaí na hoibre ar chumas EirGrid an céatadán fuinneamh inathnuaite ar an greille a ardú ó 50% go 60%, agus faoi láthair tá 65% á thriail acu. Is é sprioc DS3 an céadatán a ardú go 75% sar i bhfád.

Rinneadh na tástálacha seo ar 12 suíomh agus ar 15 teicneolaíocht dhifriúla idir Mí an Mhárta agus Mí Lúnasa 2017. Ag Element Power, bhíomar i mbun tástála ar dhá shuíomh, Barranafaddock agus Acres, feirmeacha gaoithe ar a bhfuilimid ag feidhmiú mar bhainisteoir ar son an úinéara. Bhíomar ag obair i gcomhphairtaíocht leis an déantóir tuirbíní GE.

Tá sé cinntithe sa tuarascáil seo go bfhuil teicneolaíocht darb ainm 'emulated inertia from wind turbines' cáilithe ó thaobh na teicneolaíochta de chun seirbhisí DS3 áirithe a chur ar fáil - Fast Frequency Response (FFR) agus Primary Operating Reserve (POR) .
Chuir EirGrid an clár oibre seo i mbun in 2011 agus tá réimse leathan de réitigh cheannróidaíocha bainte amach acu go dtí seo, a bhfuil aitheantas tugtha dóibh ar fud na cruinne. Ar na spriocanna deireanacha, tá seirbhisí DS3 a íocfaidh as seirbhisí greille taobh amuigh den fhuinneamh féin - mar shampla íocfaidh said le soláthróirí a bhfuil sé ar a gcumas acu dul i ngleic le teagmhais mhinicíochta chun cothromaíocht na greille a chosaint.

D'fhéadfadh teagmhais mhinicíochta a bheith ina bhfadhb mhór do ghreille nuair a bhíonn líon mór gineadóirí mí-sioncranacha ceangailte leis. Tarlaíonn siad, mar shampla, nuair a theipeann ar ghineadóir mór, nó ar líne ardvoltas. Má thiteann an mhinicíocht ró-fhada, nó ró-thapaigh, tarlaíonn tuislí cascáideacha agus ansin bíonn an ghreille féin i dtrioblóid. Mar sin, déanann ár n-oibritheoirí greille grinn-bhainistiú ar an minicíocht seo chun na soilse a choimeád ar lasadh.

Cabhraíonn gineadóirí traidisiúnta le réiteach na fadhbe seo le móiminteam uilleach - móiminteam atá sioncranach leis an ngreille, agus a chuireann cosc ar an laghdú minicíochta. Tugtar táimhe air seo. Toisc nach bfhuil tuirbíní gaoithe cengailte go sioncranach leis an ngreille, ní féidir leo cabhrú le táimhe traidisiúnta sioncranach a chur i bhfeidhm sa chás seo.

Isteach chugainn an táimhse shintéiseach! Tá táirge táimhe shintéiseach ag GE darb ainm WindINERTIA. Is táirge bogearrai é, a shuiteáiletar sa rialaitheoir tuirbín, agus a ligeann don tuirbín cumhacht breise a chur amach mar fhreagra do theagmhas íseal-mhinicíochta.

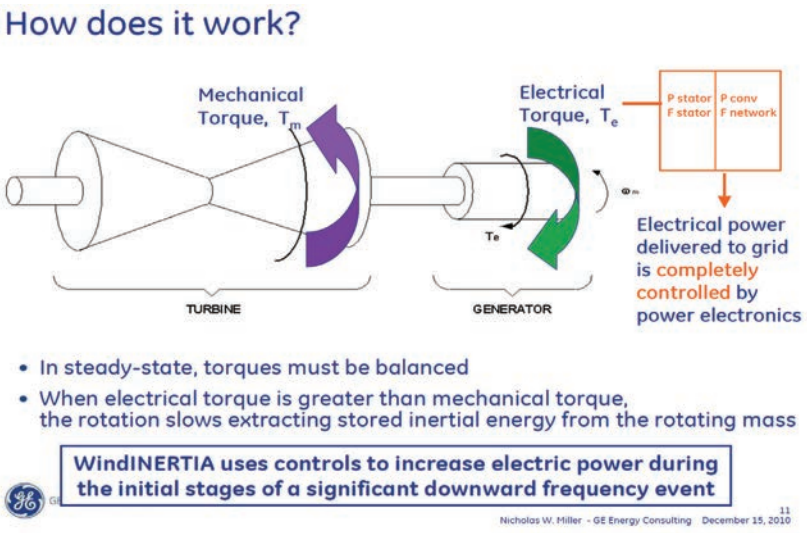


Figure 1: GE WindINERTIA- conas a oibrionn sé?

Táimid tar éis a thaispeáint, le linn an QTP, go bhfuil WindINERTIA in ann freagra iontaofa a thabhairt (nuair a bhíonn an tuirbín ag feidhmiú os cionn 1100RPM, nó timpeall 25% dá chumhacht rátaithe) trí 6% cumhacht breise a chur ar an line, 2 - 15 soicind tar éis teagmhas íseal-mhiniciochta a tharlú.

Seo sampla ón QTP: Ba é an leibhéal truiceartha a bhí tugtha dúinn ná 49.8Hz. Taispeáineann an rian san íomhá seo an chumhacht, a ardaíonn go 2MW os cionn an Available Active Power (AAP) (a bhraitheann ar an luas gaoithe ag an am) laistigh de 2 shoicind tar éis an teagmhais, agus a choimeádann an freagra sin go dtí 15 soicind tar éis an teagmhais. Tar éis 15 soicind, faigheann an tuirbín a chuid fuinnimh ar ais de réir shonraíocht na seirbhíse féin.

Cad é tionchar na hoibre seo ar fad? Taispeánann an QTP táimhe shintéiseach ar an ngreille náisiúnta in Éirinn don chéad uair. Cuireann sé deis ioncaim go h-iomlán nua ar fáil d'úinéirí na bhfeirmeacha gaoithe in Éirinn, i dtréimhse a bhfuil níos mó béime ag teacht ar ioncam nach mbaineann leis an bhfuinneamh féin. Tá próiseas soláthair idir lámha ag EirGrid faoi láthair, agus beidh na chéad íocaíochtaí DS3 ag dul go húinéirí i mbliana.
Má éiríonn le fiú leath den 3GW de thuirbíní gaoithe freagra 6% a thabhairt, bheadh 90MW de chumhacht bhreise ar fáil nuair a thiteann teagmhas miniciochta amach. Chuirfeadh sé seo go mór le réiteach fhadhb an easpa táimhe sioncranach ar an ngreille, easpa atá cruthaithe ag laghdú an líon gineadóirí traidisiúnta ar an ngreille chéanna. Agus aithneofar an earnáil ghaoithe mar shaoránach freagrach de choras leictreachais atá bunaithe ar fhuinneamh inathnuaite.

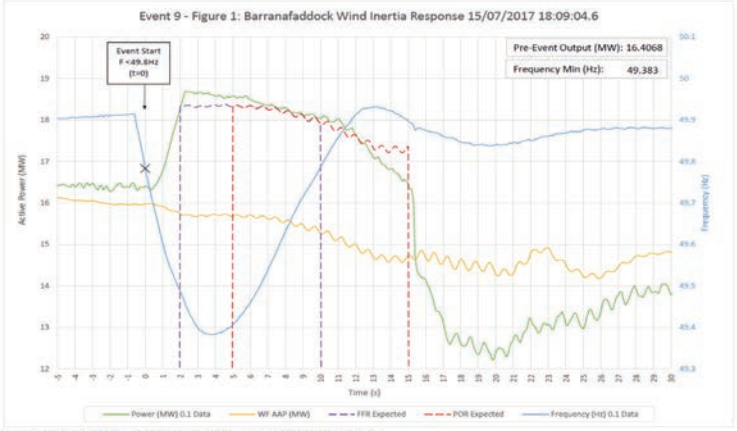


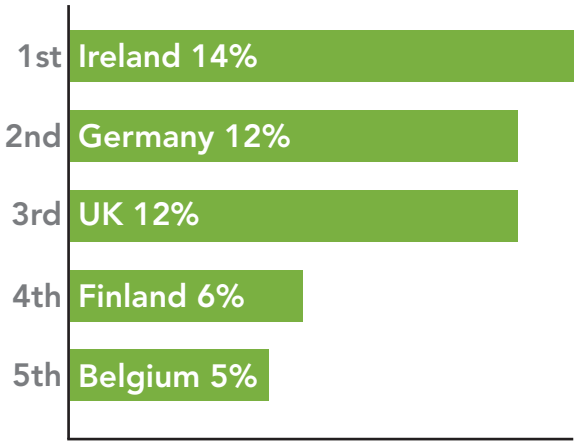
Figure 2: Feirm Ghaoithe Barranafaddock- Sampla den fhreagra

Christmas Connect Event

Pictures from No.22 South Anne Street, 6th December 2017

WIND STATS

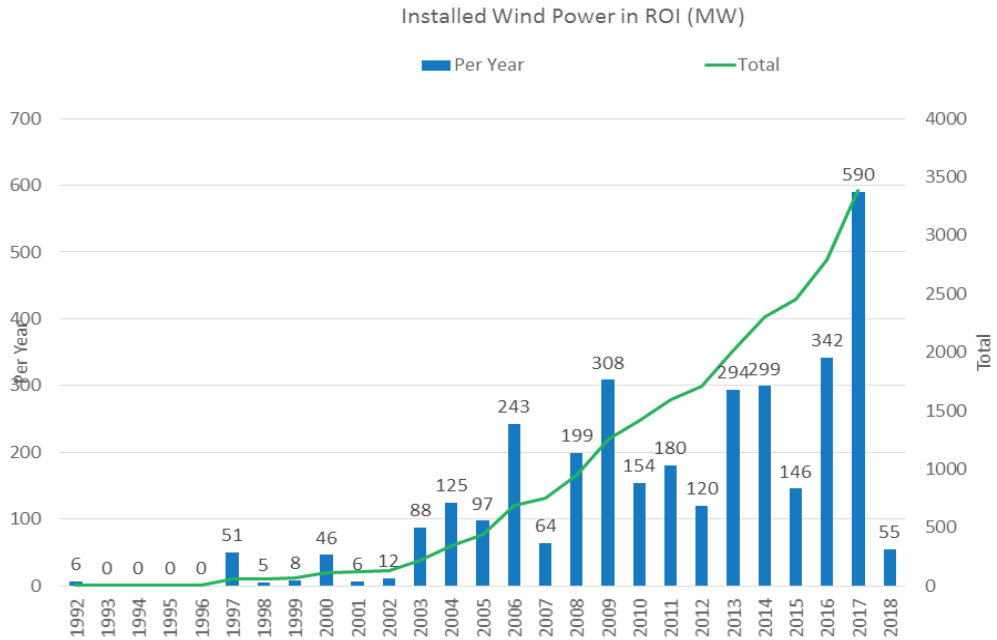
- Installed capacity in ROI: 3,500 MW
- Installed capacity in NI:, 1,160 MW
- 2017 was a record year for wind installation in ROI with 590 MW being energised
- This was the 3rd highest installed wind capacity in Europe
- Ireland is the country with the most new wind capacity relative to its total consumption



Did **you** know?

- Ireland has the 11th highest installed wind power capacity in Europe.
  Our population is ranked 26th in Europe
- Ireland had the 3rd highest penetration rate in 2017 at 24% behind Denmark and Portugal
- County with the highest amount of installed wind power in ROI Co Cork: 579 MW
- County with the highest amount of installed wind power in NI Co Tyrone: 387 MW

- A wind record was set last on Friday 2th of January 2018 in the Republic of Ireland.
  Wind power reached 2,826 MW, up from the previous record of 2,628 MW.
- Installed capacity per year for ROI



IWEA'S COMMITTEES

WHAT ARE THEY, WHAT DO THEY DO AND HOW CAN YOU JOIN?

What are they?

IWEA operates several committees which look at the various issues affecting the development of wind energy in Ireland and work on ways to meet the many challenges to the industry.

At present, the IWEA runs the following committees: Markets, Planning, Grid, Energy Systems, Asset Management and Health & Safety. In addition, the newly formed Storage Group was established late last year as part of the Energy Systems Committee.

Each committee deals with a vast range of issues such as I-SEM, the Renewable Energy Support Scheme, DS3 Connections, Community Engagement, Storage and EU Policy, through several working groups.

IWEA Company members are welcome to join the IWEA committees, with a maximum of one company member per committee and one alternate member. If you would like to find out more about joining a IWEA committee please contact office@iwea.com

Advantages?

The benefits of joining an IWEA committee include:

- Opportunity to influence policymakers and make a positive contribution to the wind industry
- Opportunity to engage with key stakeholders such as EirGrid, ESBN, CRU, An Bord Pleanála etc. via input to consultations, and attendance of internal and external meetings.
- Chance to act as the voice for the industry
- A chance to actively engage in the work of the working groups

The Committees

The IWEA Committees are listed below, along with the contact details and current working groups (these are subject to change).

Markets Committee

- The Markets Committee looks at a range of energy market issues and risks to the wind industry and develops solutions to a range of issues through the working groups.
- Chair: John MacNamara (Bord Na Móna). Email: john@macnamara.ie
- Working Groups include: RESS, REFIT in I-SEM, I-SEM, Brexit

Grid Committee

- The Grid Committee examines a range of issues affecting project delivery and the Grid.
- Chair: Donal Smith (Switched Consulting). Email: Donal switchedinconsulting.ie
- Working Groups include: Enduring Connection Policy (On Hold), Grid Delivery, Build Out Survey, Contestable Cable Works, Hybrid Plants, DS3/Curtailment, Grid Code, DMOL (On Hold) and Met Masts

Energy System Committee

- The Energy systems committee was established as a forum for the wind energy and storage industries to meet and work on areas of common interest to the members.
- Chair: Paul Blount (ABO Wind). Email: Paul.Blount@abo-wind.com
- Working Groups include: 2030 Targets, IWEA Storage Group.
- Bernice Doyle of Element Power is the Chair of the Storage group. The Storage Group acts as a meeting place for the storage industry to work on areas of common interest to the members. For further information contact Bernice at: bernice.doyle@elpower.com

Planning Committee

- The Planning Committee looks at the many planning issues affecting the deployment of wind farms in Ireland.
- Chair: Brian Keville (McCarthy Keville O'Sulivan) Email: bkeville mccarthykos.ie
- Working Groups include: WEGs (Noise), Kilronan/Section 5's, Community Engagement (EE) (director level)

Asset Management Committee

This committee works on the premise that that effective Asset Management drives the optimisation of asset base lifecycle in terms of performance, cost and risk. The Asset Management Committee will focus on:

- Continuous improvement, establishment and promotion of high standards with regards to technology, systems, community, policy and commercial return.
- Chair: Sheila Layden (Energy Pro). Email: sheila.layden@energypro.ie
- Working Groups include: Operational including Rates, Standard Setting, Engagement

Health & Safety Committee

The aim of the Health & Safety Committee is to: Protect people, Continue to maintain and develop stakeholder relationships to ensure that we have access to all information and policy development processes which will allow us to serve the industries needs.

- Benchmark international practices.
- Knowledge sharing, dissemination of information to the whole industry, beyond our membership base is key to securing the safety of the industry.
- Peer support -IWEA strives to provide fora which allow industry peers an opportunity to openly seek opinion, guidance, information and support.
- Chair: Mick O'Grady (ESB) Email: michael.ogrady@esb.ie
- Working Groups Include: Operations, Logistics & Construction

How to join?

Please email office@iwea for more info, or contact the Committee chair directly. One Member per organisation may join each committee, where one alternate is also allowed. The standard process for joining a committee includes submitting a short bio and details of your relevant experience to the chair.

HEALTH AND SAFETY – THE WORK CONTINUES

Michael O'Grady, Health & Safety Manager, Asset Development, ESB Generation & Wholesale and Chair of Health and Safety Committee.

2017 ended on a high for the Safety group in IWEA as it was formally raised to the level of committee status with a seat at council within the organisation. Indeed the Safety Committee approach is now being adopted by all the other committees in IWEA as the best way for committees to operate. This elevation is the result of five years of consistent work by the safety strategy group which has delivered on its original objectives set back in 2012.

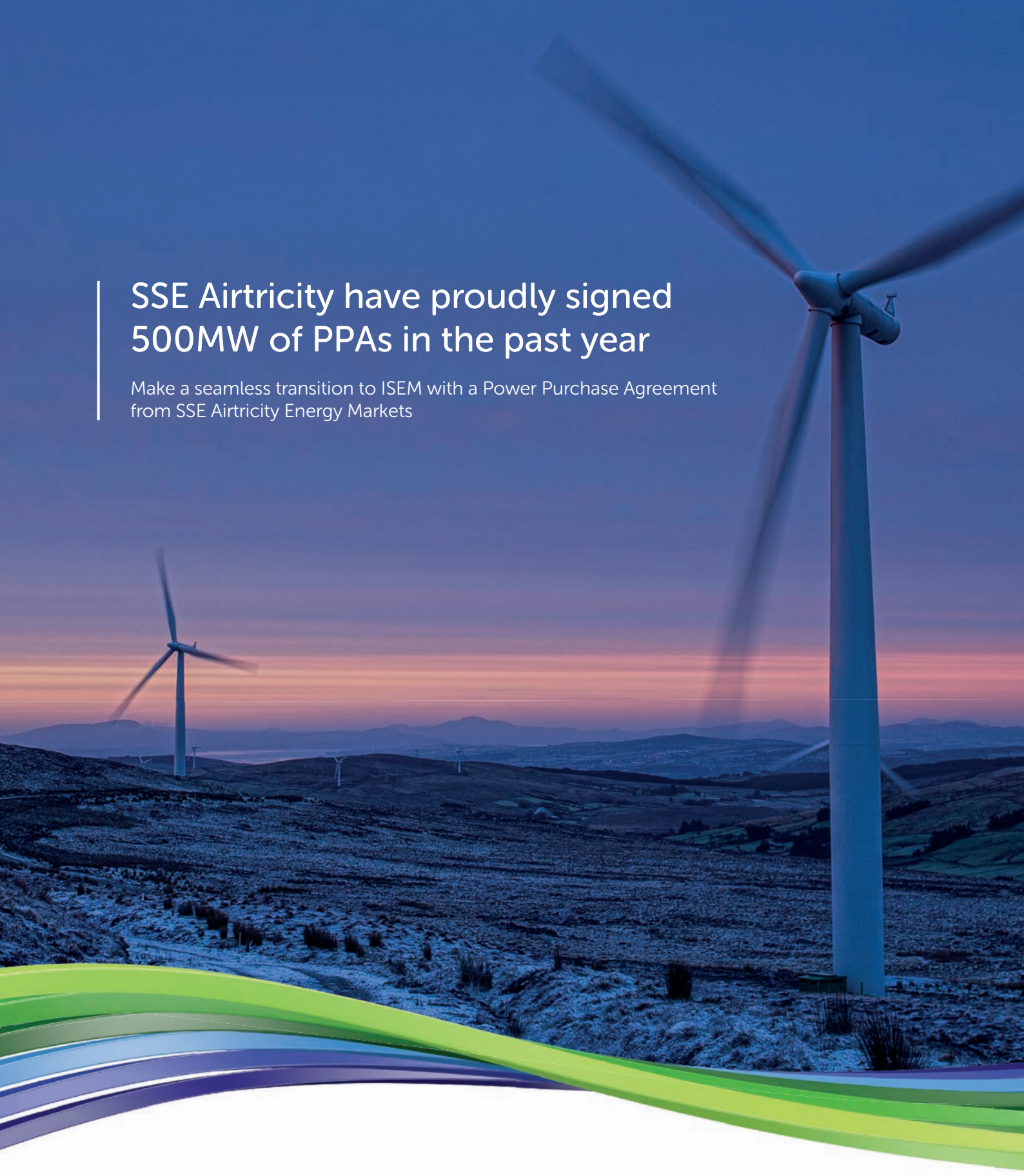
The Safety committee responded to all the queries raised in the HSA communication on the machinery directive with a full and detailed reply and on behalf of the members restated our commitment to Health and Safety in the Wind industry. The ability of IWEA to respond comprehensively and quickly in this case was a testimony to the high regard and trust that our OEMs have in the safety committee. In 2018 we will follow up with the regulator to further understand the issues raised and provide an opportunity for them to visit our windfarms to see how manufacturers strive to comply with all the requirements on the machinery directive.

In the same vain the work of the Operations Sub-group in providing guidance and templates for Emergency Response plans for our members has been brought into sharp focus. But IWEA cannot do Emergency Response plans for its members. Each member has a responsibility for the safety of their workers and those affected by their operations. They must take ownership of safety and make sure that Lone Working procedures and Emergency Plans are in place and suitable for their windfarms.

IWEA recognises that training of workers is key to maintaining a safe wind industry. The safety committee are working to identify Standardised Training Requirements to give clarity to our members and potential entrants into the industry on the training requirements for working on wind farms at both construction and operations phases.

The construction of windfarms continues across the country in 2018 and the Construction Sub-group will continue to bring relevant Health and Safety information on a range of topics to our sites. 2017 saw the H&S regulators in the UK take a close look at the standards of compliance across the onshore windfarm project lifecycle bringing critical lifting and management of safety on site into sharp focus. The IWEA Safety Committee will keep abreast of changes and improvements that are happening in the sector in the UK and work with our members to ensure we are in line with best practice.

Planning is already well underway for the IWEA Safety Conference which will take place this year on 30th of May. The program is nearly decided and will see us cover a range of topical issues including Machinery Directive compliance, use of drones and wellbeing of workers in the industry. All are welcome but numbers are limited so book early to avoid disappointment.



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DE-RISKING YOUR ASSETS IN I-SEM

by Dan Quinn

Head of Energy Markets, SSE Airtricity

As the clock ticks down to May for the imminent go-live of I-SEM, energy industry players are wracked by the I-SEM 'fear factor' that dominates every waking moment of our working days. Will 'imbalance cost' narrative continue to dominate route-to-market negotiations? Will it still be necessary to incur higher start-up costs, annual transaction fees and the additional administration burden associated with 'Supplier Lite'? Or will we all revert to the long-term security of Power Purchase Agreements with an imbalance cost embedded, just as happened in Great Britain?

'Supplier Lite' was originally designed as a creative response to a couple of rather unique challenges in Ireland's energy market.
Firstly, wind development was happening at a faster pace than supply market liberalisation. This meant that the market for PPAs wasn't very well developed and access to the market could be difficult to negotiate.

Just how difficult can be illustrated through the origins of the SSE Airtricity supply business. This was primarily set up over 15 years ago to facilitate market access at the time for our emerging renewable generation fleet. While this was a resource-intensive and complex way to sell renewable energy it was better than some of the alternatives available at the time – and it was a notable success, as it led to the creation of what is now Ireland's largest provider of 100% green energy to home and business customers.

Secondly, the relatively 'benign' gross pool structure of the new Single Electricity Market meant renewable generators faced only a limited range of risk compared to other market designs. Absolute wholesale power price risk wasn't a worry if you had a REFIT contract and any forecast errors in the scheduling and dispatch of your units were the responsibility of the TSO. 'Supplier Lite' took advantage of the simple gross pool structure to fix the lack of the 'route-to-market' problem. This 'Supplier Lite' mechanism resulted in a couple of trade-offs however in terms of higher administration and additional working capital costs, but five years-ago these seemed a small price to pay for reliable market access.

However, as we move into I-SEM, the industry landscape is very different. And with established utilities now providing a secure long-term route to market, are the trade-offs associated with 'Supplier Lite' still required?

One key concern for industry players under the new I-SEM arrangements has been the cost of balancing. Industry focus has been on who takes the imbalance risk, what the cost will be, and whether it will be fixed-price or market-tracked.

Balancing has been touted as the most concerning aspect of I-SEM and has been a key aspect of off-take agreement negotiations. We will all be familiar with the scare stories from the GB market. On May 17 last year, the GB supply margin was unusually tight for the time of year – renewables generation was low, the BritNed interconnector was on a planned outage, and a number of gas plants were also forced off. As a result the imbalance price hit £1,500/MWh.

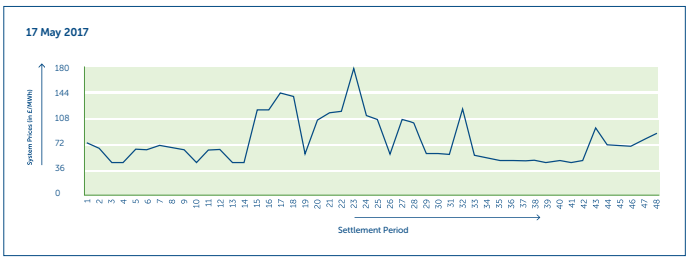
Events outside the power market can also end up feeding into the imbalance price. On the morning of December 12 last, a hairline crack in a pipe caused the shutdown of Britain's largest oil pipeline system, the Forties, causing rapid gains in the NBP gas price. This disruption fed through into the GB power market, driving the GB balancing market to a peak of £160/MWh.

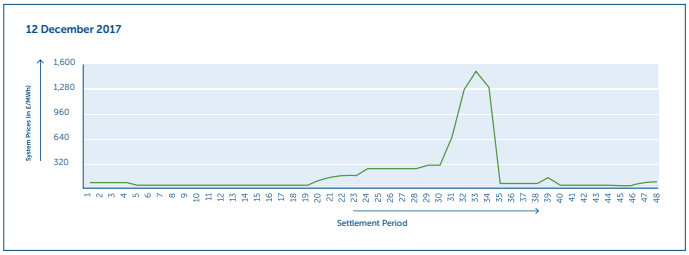
While these market scare stories provide insight into the functioning of the market and the challenges for energy market traders, they should not cause concern to project developers and financiers. The risk should be managed so that the developer and financier is protected and assets can perform unaffected, regardless of thrilling market-disrupting events – and that can be the case under I-SEM.

Once the balancing costs of the initial period of I-SEM have been analysed the cost of imbalance will merely be embedded in the cost of managing the off-take agreement. It will be for the PPA provider to take the imbalance risk and therefore to react and optimise the portfolio under their management during market-disrupting events. Fast forwarding a year into I-SEM, PPA counter-parties will be protected from these effects with the PPA provider taking the imbalance risk.

At SSE, we've been through a lot of market change. We've seen the England and Wales Electricity Pool morph into NETA and subsequently BETTA. Under the comparable GB BETTA market, we already operate 24/7 electricity trading and renewables operations desks to maximise revenues. So, for the Energy Markets team at SSE Airtricity, it makes simple sense to expand SSE's established trading experience and operations desks to manage third party assets alongside the assets in our own generation portfolio. In doing so, we can optimise and de-risk your assets as we optimise and de-risk our own.

By May 2019, the I-SEM project will have been well-completed, the I-SEM 'fear factor' will be a thing of the past, and it will be business as normal once again in the SEM. And based on GB experience the PPA market will similarly return to a steady and familiar arrangement.
The risk will sit where it is best managed – with the experienced and well-equipped trading teams of large scale portfolio managers. And market scare stories can be consigned to intriguing light reads for market enthusiasts.





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The Heritage, Killenard, Laois

10TH & 11TH OCTOBER 2018
IWEA Autumn Conference
The Galway Bay Hotel, Galway

IWEA
Irish Wind Energy Association

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TBC

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