

Simec bringing old hydro back to bloom of youth

Company working to get six new small-scale schemes approved in time for FiT accreditation, writes **Sian Crampsie**

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GFG Alliance subsidiary Simec Energy has kicked off an upgrade programme to boost power output from its Lochaber hydro plant in the Scottish Highlands to 100MW from 65MW.

The project started life in 1929 as a 100MW project but it has been operating for decades at a reduced output due to a lack of investment, according to Simec chief executive Jay Hambro.

"We have been using drones to check the structural integrity of the tunnel and we have identified that the mouth of the tunnel is the one area that is compromising the yield on power generation," he added.

"We are working through a programme to fix that but the turbines and the turbine house are in good order."

The Lochaber refurbishment project is expected to be a longer-

term undertaking than upgrade works at the neighbouring Kinlochleven hydro project, also on the Lochaber Estate near Fort William.

"We are waiting for a full analysis of the works needed," said Hambro.

Simec expects a 40% boost to Kinlochleven to be wrapped in the third quarter.

Kinlochleven was built as a 27MW facility in 1909 but was downgraded in 2002 to 19.5MW to enable it to qualify for the Scottish Renewables Obligation scheme. Simec successfully concluded negotiations with the Scottish government last year to amend regulations and allow it to restore the 27MW output while keeping it RO-qualified.

The output at Kinlochleven has so far reached 23MW as a result of the ongoing upgrade project, which includes work to change the rating of the turbines and improvements to the conduit and tunnel infrastructure.

The programme will have a payback period of two years, said Hambro.

Also on the Lochaber Estate near Fort William, Simec is aiming to get six proposed small-scale hydro schemes consented in time for feed-in tariff accreditation this month.

The six run-of-river projects have a combined capacity of 8.5MW and include a scheme to install a generating unit below the 65MW Lochaber hydro plant, capturing energy from the tailrace before it spills into the loch.

Simec fears it may have to shelve projects unable to gain consent in time for the FIT deadline.

"Some of the schemes might not proceed on that basis," said Hambro.

The Simec chief said GFG's acquisition of Green Highland Renewables from private equity outfit Ancala in 2017 had allowed the schemes to be dusted off.

"We are lucky because we can be the long-term offtaker and we can also reduce the cost of the infrastructure by using our grid connection in Fort William and daisy-chain the projects to that." ■

Small-scale struggling to get past age of consent

Small-scale hydro developers have struggled to get their projects accredited for the feed-in tariff by the end-March deadline.

The looming closure of the price support regime has driven a hive of activity and put planning consultees under a great deal of pressure, according to the British Hydropower Association.

"Planning departments and other authorities have been trying to help get as many schemes across the line as they can by allocating extra resources where needed, but it is a bit of a car crash," said BHA chief executive Simon Hamlyn.

"If developers can pre-accredit by the end of March they have exactly two years to build, but if they miss these deadlines there is nothing to fall back on," he added.

The BHA estimates the Scottish pipeline of small hydro at around 45MW.

London developer Dickins Hydro has seen three of its seven recently-consented hydro projects in Glen

Etive in the Highlands called in by Highland Council.

The council was due to vote on the three projects totalling 6.5MW on 20 March, leaving scant time for pre-accreditation for FITs.

Highland Council has approved 17 schemes with a combined capacity of over 14MW in the last 12 months, according to the BHA. The local authority has yet to issue decisions on eight schemes totalling over 4.5MW, it added.

Other consented small hydro schemes in Scotland include Innogy's 4MW Glasa scheme in Easter Ross, due to start construction by the summer.

Innogy has two other consented small hydro schemes in its portfolio: the 2MW Glen Noe scheme in Argyll & Bute, and 2MW at Allt na Moine in Wester Ross.

The post-subsidy environment for small hydro in Scotland is unclear but Hamlyn believes the industry will be able to find "a way of doing things differently". ■



GREAT HIGHLAND PIPES: Simec Energy is upgrading its Kinlochleven hydro plant on the Lochaber Estate near Fort William to restore power output to its initial 27MW

Photo: Simec Energy

Talks aiming to pump prime storage pipeline

Intelligent Land Investments considers selling majority stakes in projects including proposed 450MW Red John

Pumped storage developer Intelligent Land Investments is mulling the sale of majority stakes in its 1570MW pipeline of Scottish projects to fund their construction.

ILI has received approaches from several "multi-billion" pound companies interested in investing in pumped hydro projects, including the 450MW Red John in the Highlands, according to chief executive Mark Wilson.

One approach is from a company which believes it can build pumped storage in the UK without the help of subsidies or other price support mechanisms, he added.

"They have several gigawatts of onshore and offshore wind and would use the storage capacity to balance their wind farm portfolio," said Wilson. "That is how they would make it work."

ILI will ensure it has consent in place before selling any majority stake in Red John, which is located in Dores on the eastern shore of Loch Ness.

The company submitted a Section 36 application last November to the Scottish government's Energy Consents Unit for the project, estimated to cost around £500m. It expects a decision on the scheme, which involves pumping water

between Loch Ness and a new upper headpond, by the fourth quarter.

Feedback from consultees is coming back quickly and the majority has been positive, according to the ILI chief executive.

Construction of Red John has been pencilled in to start in 2020 with full operations expected by 2025. "We would retain an interest, this



PROPOSED SCOTTISH PUMPED STORAGE PROJECTS

Project, location	MW	Developer
Balliemanoach, Argyll & Bute	520	ILI
Coire Glas, Highlands	1500	SSE
Cruachan 2, Argyll & Bute	600	SPR
Fin Glen, Borders	600	ILI
Glenmuckloch, Dumfries & Galloway	400	Buccleuch
Red John, Highlands	450	ILI
Total:		4070MW

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WAVE ENERGY SCOTLAND

Wave Energy Scotland is now moving into a demonstration phase as its two most promising innovative wave energy converters take to sea in Orkney.

The organisation's support for these sea tests and the preparation for them represent the culmination of a four-year long search for a commercially viable wave energy technology.

Both projects developed from promising concepts into mature, well-developed technologies with excellent performance, and are able to utilise the sub-systems technology developed independently in the Wave Energy Scotland programme.

Mocean's technology 'Blue Horizon' is a floating hinged structure whilst AWS has developed a fully-submerged point absorber named the 'Archimedes Waveswing'.

"These state-of-the art designs represent the most advanced, and innovative devices in the UK today, and our programme is ensuring that Scotland stays front and centre of the global wave energy story."

Tim Hurst, managing Director, WES.

waveenergyscotland.co.uk



25 is the most realistic plan to make the project happen.” Development of other projects in the company's pumped storage portfolio is progressing at “record speed”, said Wilson.

ILI has proposed the 520MW Balliemeanoch pumped storage scheme at Loch Awe in Argyll & Bute, for which it expects to submit a planning application in December. The company hopes to receive consent for the project within 12 months of filing paperwork.

The Hamilton outfit is also developing a 600MW project at Fin Glen in the Borders, scheduled to enter planning in September.

Scotland's pipeline of pumped storage currently stands at over 4GW. Consented projects include SSE's 600MW Coire Glas project in the Highlands and the 400MW Glenmuckloch scheme proposed by Buccleuch Estates in Dumfries & Galloway.

SSE filed an application last year to alter consent at Coire Glas to increase the output of the project to 1500MW. The Perth developer said the proposed revisions will make little change to the project's external dimensions but would maximise the site's potential. ■



KEY TO DORES: Intelligent Land Investments is eyeing 2025 operations for its proposed 450MW Red John pumped storage project in Dores on the eastern shore of Loch Ness
Photo: Visit Scotland

BEIS bending to flexible storage

The Scottish hydro industry is stepping up lobbying efforts to UK energy department BEIS and regulator Ofgem to secure policy support to facilitate the building of new projects.

Pumped storage is excluded from the capacity market but Intelligent Land Investments, the British Hydropower Association and others are hoping that will change soon.

“Feedback from recent talks with BEIS have been positive,” said ILI chief executive Mark Wilson, who

has received a letter from Energy Minister Claire Perry recognising the role pumped storage can play in enhancing flexibility in the UK electricity sector.

“The hydro sector has been working together and with BEIS to find a mechanism that provides certainty for investors, with most of our focus on the capacity market,” said BHA chief executive Simon Hamlyn.

Developers and the BHA argue that new policies are required to

help consumers reduce energy bills, reduce carbon emissions and provide vital grid-balancing services.

“Most pumped storage schemes were built when electricity systems were in public ownership, and none have been built since,” said Hamlyn.

“Pumped storage is used mainly for balancing services on the grid but that does not provide the baseline income level that an investor would see as tangible,” he added. ■

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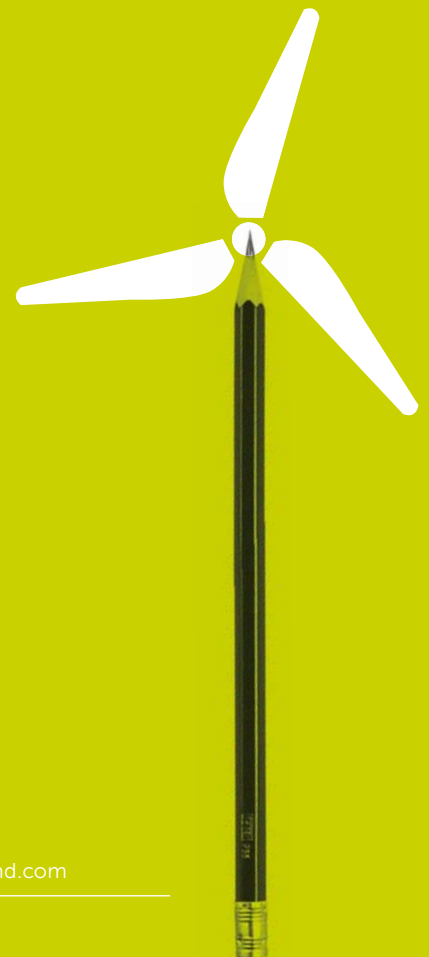
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Solar left out in the cold

Optimism for large-scale projects dashed by key barriers to energy market, writes Sian Crampsie

The pipeline of ready-to-build solar PV is growing in Scotland but construction has slowed to a trickle amid an uncertain price support outlook for the technology.

Figures compiled by reNEWS (see table) show a total of 281MW of consented solar PV from 17 sites across the nation.

The 2019 build-out of Scottish solar projects, however, shows just two projects due online: two 5MW schemes on the Carse Grey Estate in Angus developed by Carsebank Solar that started construction last October.

The shortage of megawatts under construction is a result of key barriers in Scotland's solar market, according to Scottish Renewables senior policy manager Hannah Smith.

"There is a lot of optimism about the future for large-scale solar because costs have fallen a staggering amount, but the lack of a route-to-market mechanism is still holding back projects. We have seen stagnation in construction because solar projects



CONCERNS: Scottish Renewables senior policy manager Hannah Smith
Photo: Scottish Renewables

are blocked from the Contracts for Difference regime and are therefore effectively locked out of participating in the energy market."

Smith added: "It is frustrating because solar is one of the lowest cost forms of new electricity generation and we have some real concerns about the impact of this on consumers."

Scottish Renewables expects solar projects bidding into competitive auctions for renewables support mechanisms would be priced at close to subsidy-free rates, if not completely subsidy-free.

"The important thing about access to a support mechanism is not the subsidy but the certainty long-term contracts give developers, enabling them to reach financial close and start construction."

In the absence of price support, corporate or utility power purchase agreements are an option for developers that are being explored ever more closely.

Smith, however, voiced doubts about the appetite from the investment community to get Scottish solar projects off the ground with such agreements.

"There will be projects that come through, but for very large-scale developments there will be fewer opportunities than we first thought," she said.

"It is important to remember the corporate PPA market will be dependent on the size and scale of our wider economy. We are not a nation with many Google-sized businesses."

Smith added: "Another aspect of that market is that frequently the corporates are global with international capital flows and there is nothing really pulling them to the UK market. The wider market and economic uncertainty is slowing down the PPA sector here."

Scotland's ambitious targets for the electrification of transport could provide large-scale solar projects with a route to market in a subsidy-free environment in the next decade, added the Scottish Renewables policy manager. ■

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ARRAY OF SUNSHINE: Elgin Energy completed the 13MW Errol near Perth, Scotland's largest solar farm, in 2016. The company secured permission last year to build the 50MW Milltown Airfield farm in Moray, which would be the most northerly in Scotland.
Photo: Elgin Energy

SCOTLAND SOLAR RUNNERS & RIDERS

Project, location	MW	Developer
Due online in 2019		
Carsebank Farm, Tayside	5	Carsebank Solar
Howmuir, Tayside	5	Carsebank Solar
Consented		
Balbeggie Avenue, Fife	12	North Gisborne
Ballochy, Angus	19	Borealis
Cameron Reservoir, Fife	5	Green Power Consultants
Carey Farm, Perth & Kinross	10	Elgin Energy
Cordon Farm, Perth & Kinross	10	Elgin Energy
Hunterston, N Ayrshire	5	Hunterston Estate
Jamesfield Farm, Perth & Kinross	5	Green Power Consultants
Kirkton Barns, Fife	5	Green Power Consultants
Lower Polmaise, Stirling	5	Stirling Council
Milltown Airfield, Moray	50	Elgin Energy
Montreatmont Moor Forest, Angus	42	Lightsource BP
Sandyford Farm, Angus	5	Selettra
Shire End Farm, Perth & Kinross	17	Lightsource BP
Speyslaw, Moray	20	Elgin
Tealing Airfield, Angus	31	Green Cat
West Grange, Fife	5	West Strathore Solar
Westfield, Fife	35	Hargreaves
Total	281	
Proposed		
Berryhill Road, Dundee	49.9	Lightsource BP

Poised for takeoff in Moray

Elgin Energy is targeting post-subsidy construction of its consented 50MW Milltown Airfield in Moray in the early 2020s.

The London outfit believes the scale of the project, for which it secured planning permission last May, will enable it to be economically viable.

The project consists of up to 200,000 solar panels on 115 hectares of land on a former RAF airfield owned by the Innes Estate.

The project is the largest in Scotland and was the first solar development to be approved by Scottish ministers via the Energy Consents Unit, which rules on schemes of 50MW and above.

Elgin remains one of the most active solar developers in Scotland. The company holds permits for two 10MW sites near Abernethy in Perth

and a 20MW scheme at Speyslaw in Moray. The latter project is located just 1.25km north-east of its Milltown Airfield scheme.

Lightsource BP took the wraps off plans to build a 49.9MW project in Invergowrie near Dundee last month.

The scheme, at the early stages of consultation, would add to its existing Scottish pipeline which includes the consented 42MW Montreatmont Moor Forest in Angus and 17MW Shire End Farm in Perth and Kinross, originally developed by Archception.

Westfield Energy, a subsidiary of infrastructure group Hargreaves Services, received consent last year for the redevelopment of the Westfield open cast coal mine in Fife, which includes plans to install a 35MW solar farm. ■

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Holyrood inaction gives bioenergy blurred vision

Industry still waiting for Scottish government's action plan which was due last year, writes **Sian Crampsie**

The Scottish bioenergy industry is without a clear view of a future pathway for biomass and other bioenergy projects after Holyrood delayed the publication of its long-awaited Bioenergy Action Plan.

The Anaerobic Digestion and Bioresources Association said the Scottish government should take "urgent action" to support the bioenergy sector as it can make an "immediate contribution" to decarbonising the economy in line with Scotland's ambitious climate goals.

The Scottish government made a commitment in its energy strategy to set out a strategic pathway for developing bioenergy in Scotland, and was due to publish the plan last year.

The action plan is expected to help tap the benefits of the technology to meet climate ambitions for the heat, electricity and transport sectors.

"As well as opportunities for biomass combined heat and power, Scotland's agricultural, food and distilleries sectors are in a position to contribute," said an ADBA spokesman.

Stalling progress on large-scale biomass projects means no schemes are likely to seek Contract for Difference price support in the upcoming auction.

Planning consent for defunct developer Forth Energy's 120MWe Rosyth biomass plant in Fife, approved by Scottish ministers in 2014, expired in January.

Forth Ports said Forth Energy is no longer operating and the project was canned after failing to secure a new investor to take over the development. Forth was also behind plans for an 85MWe biomass plant at Grangemouth that was consented in 2013 and awarded a CfD contract in 2017.

CfD counterparty Low Carbon Contracts Company annulled that contract last October after the developer failed to meet milestone requirements.

Meanwhile construction works are ongoing at the Glenrothes Energy Network in Fife, which will use output from RWE's operational 65MWe Markinch biomass plant for local district heating.

Fife Council put project costs at £23.9m. RWE has committed £13.6m, which was used to secure a £8.5m loan from the Scottish government's Low Carbon Infrastructure Transition Programme.

Vital Energi was awarded the contract for the design and development of the scheme by RWE, with Balfour Beatty the main contractor for the heat network.

Some smaller Scottish biomass projects are making hay, with Northern Energy Developments' 6MWe Acharn project near Killin in Perthshire due online this year.

Construction began in 2018 on the plant, which will use locally-sourced virgin biomass to be chipped and dried on site.

In Perthshire, Dupplin Renewable Energy is in the early stages of developing plans for a mixed-use, low-carbon energy park to combine a biomass facility with solar and heat pumps on the Dupplin Estate.

Keil Green Energy was refused planning permission last month for a 3MWe biomass project at Keihill in Grampian.

Scotland's operational biomass capacity stands at around 230MWe at 14 sites, according to the ADBA.

There are around 60 operational anaerobic digestion sites in Scotland, it added, including the 1.5MW extension by Earnside Energy at Binn Farm in Perth that started operations last year.

Balmenach distillery in Speyside is building a 200kWe/230kWh AD system, due to be commissioned later this year.

Iona Capital confirmed last November it would fund construction of an 8.8 MWh AD plant in Dumfries & Galloway. The £15m project to be built by German contractor Bioconstruct is qualified for Non-Domestic Renewable Heat Incentive price support. ■

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MASS APPEAL: The Glenrothes Energy Network in Fife will use output from RWE's operational 65MWe Markinch biomass plant for local district heating

Photo: RWE

