Distribution connection issues

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RWE npower renewables

An RWE Innogy company

Agenda

- Brief introduction to RWE npower renewables
- Understanding development opportunities
- Connection costs
- Timing issues
- Works issues
- Transmission issues

Brief introduction to RWE power renewables

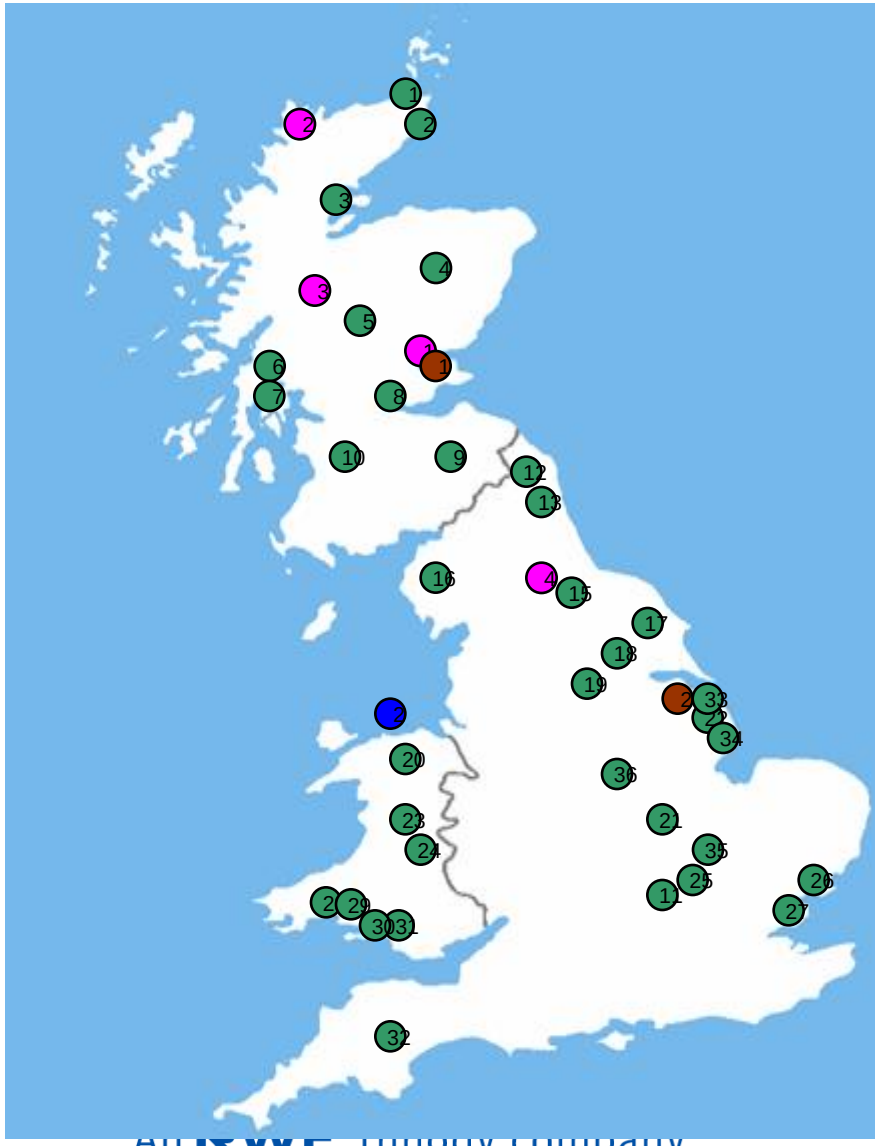
RWE Innogy

Overview

- Diverse portfolio covering Hydro, Biomas, Onshore, Offshore wind.
- All currently distribution connected
- One of the UK's leading renewable energy companies, with a portfolio of onshore, offshore wind farms and hydroelectric power projects capable of generating around 550MW
- Asset portfolio of 2.2 GW in operation and 0.8 GW under construction mainly located in United Kingdom, Germany, Spain, Netherlands, Italy, France and Poland

Business Area	Wind onshore	Wind offshore	Hydro	Biomass	New technologies
					
Focus and Strategy	Key technology for capacity growth Focus on organic growth Focus markets include Germany, UK, Spain, Italy, Netherlands, France and Central- and South-Eastern Europe	Key technology for capacity growth Organic growth strategy leveraging strong position in UK Focus markets include UK, Germany and Netherlands	Run-of-river projects and storage plants Development of hydro power projects Focus areas are Central- and South-Eastern Europe	Development of biomass plants (> 5 MW) Regional focus on RWE core markets and Central- and South-Eastern Europe	Driving innovative renewable technologies to commercial applications through Venture Capital, Demonstration plants and R&D

Sites in development and construction for distribution connection



Onshore wind
1 Stroupster 36MW
2 Burn of Wilk 27MW
3 Novar Extension 32MW
4 Kildrummy 16MW
5 Alt Duine 93MW
6 Raera 45MW
7 An Suidhe 19.3MW
8 Lockelbank 9.6MW
9 Rowantree 69MW
10 Middleton 15MW
11 Orchard Way 15MW

12 Middlemoor 54MW
13 Kirkhale 9MW
15 Kiln Pit Hill 13.8MW
16 Hellrigg 9.2MW
17 East Heslerton 25MW
18 Goole Fields & II 63MW
19 Hampole 10MW
20 Clocaenog 80MW
21 Molesworth 18MW
22 Wainfleet 9MW
23 Carnedd Wen 160MW

24 Neuadd Goch 32MW
25 Nunn Wood 19MW
26 Earls Hall Farm 10MW
27 Bradwell 20MW
28 & 29 Brechfa West and East 95MW
30 Mynydd y Gwair 54MW
31 Fforch Nest 25MW
32 Batsworthy Cross 18MW
33 Saxby Wold 40MW
34 Langham 13.8MW
35 Cotton Farm 16MW
36 Lindhurst 10MW

Biomass
1 Markinch
2 Stallinborough

Hydro
1 Braan 3.5MW
2 Maldie Burn 4.5MW
3 Cia Aig 2.7MW
4 Selset 0.750MW

In construction

Availability of information – understanding development opportunities

- Long term development statements very useful but would welcome further information from DNOs (11 kV data, amount of spare capacity, …)
- Sometimes budgetary quotations and feasibility studies are subject to change or incomplete.
- Timing of feasibility studies
- Application forms are long and complex and it can be difficult to provide some of the required information
- Treatment of auxiliary grid supply applications is not consistent. Sometimes such applications need to be submitted to a different part of the DNO.
  - Further information and improved accessibility of information would be beneficial even with caveats.
  - Connection application form and process could be simplified.

Connection costs

- Connection costs can vary considerably from DNO to DNO.
- No mechanism for challenging costs owing to a lack of transparency.
- Significant sums are often required upfront with no transparency as to why they are required.
- If the costs of components change, these changes are often passed on.
- Sometimes small changes in requirements (adding or reducing a turbine) can result in large changes to the connection cost

Timing issues

- Connection offer validity periods (and terms) vary between DNOs.
- Some stages of the connection process, such as the time for DNOs to issue a connection offer are subject to strict timing constraints whereas the same rigidity is not applied to other aspects.
- DNOs are able to progress construction works with timing flexibility, whereas developers don't have the same flexibility in relation to their milestone payments
- Payment terms can be very rigid and not in line with standard industry practice. Payment is often required in 14 days whereas industry standard is 30 days

Works issues

- In our experience, where works are contestable, DNOs do not seem to use market strength to negotiate the best prices.

- The split between contestable and non-contestable works is useful but would benefit from being amendable. For example, some key development stages such as negotiating land access may be better undertaken by the DNOs.

- User works - Connection agreements sometimes include site specific requirements (over and above Distribution Grid Code requirements such as fault ride through and full reactive range) which may not be currently required

- These technical requirements increase the financial burden to DG both in terms of the additional equipment required and also in terms of ongoing charging (EDCM charges on a kVA basis)

Transmission issues

- Over the last year NGET's Seven Year Statement has lacked updates to the planned transmission works
- It can be complex, slow and time consuming to negotiate simultaneously with a DNO and NGET
- Requirement to provide a statement of works in Scotland is onerous
- NGET contracts can place detailed Grid Code requirements on DG that is deeply embedded in the distribution system
- Some DNOs allow exporting GSPs whilst others require a BEGA to be signed with NGET adding time and cost to the connection process.
- Application fees and securities to NGET can be prohibitive for smaller projects

In summary

> RWE npower renewables have worked with DNOs across the UK to successfully connect a large number of projects but there is still room for improvement.

1. Development opportunities - more transparency of information would be beneficial.

2. Costs – further scope for negotiation based on better transparency of information

3. Timing - improved response times from DNOs in some areas e.g. when responding to offer clarifications. Timing flexibility in one area should correspond to more flexible milestone payments.

4. Works - the connection process needs to remain flexible in order to meet the needs of individual projects. Technical requirements may not be required in all cases. Split between contestable and non-contestable works should be negotiable.

5. Transmission - Improved interaction with the transmission network to facilitate the connection process for large embedded generators.

> We remain committed to working closely with the DNOs to meet 2020 targets