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Looking to 2021 from a very unusual 2020

In this, our annual look back review and look forward preview of the major events and trends in the energy sector, we note the extremely unusual year that 2020 has been. Of course, Covid-19 has dominated the year and caused much pain and anxiety for many – our thoughts are with those who have suffered and our hopes are also for all of us as we head into 2021.

The impacts of Covid-19 shone a spotlight on key issues in our societies, economies, work and so much more. In the energy sector we saw many things change or even slow but also many aspects of the clean energy transition that robustly continued at pace.

At this time last year we highlighted (as many others did also) 2020 as a year of transition into a new decade with a variety of hopes and expectations for the energy system. We were looking at the prospects of building on a past decade of supportive policy, regulation, investment and innovation in the clean energy transition. This year, there is still that same hope but a dawning reality of both the seriousness of the developing climate effects and the scale of the challenge to transform energy and other climate impacting sectors. The focus needs to be sharpened further on turning words into action, investment and implementation in this climate decade.

Below, we provide some views on what we are seeing in key parts of the energy transition generally but also where the clean, decentralised, customer-flexible energy market is heading. Nothing that we have seen suggests any lessening of the 3D trends (decarbonisation, decentralisation, digitalisation), and in fact there is much that suggests that the 3D trends are still accelerating.

Policy & Regulation

- We entered 2020 expecting policy and regulatory action on climate change and a net zero energy system. Through the year we have seen significant commitments from China, the climate plan from the incoming Biden administration in the US, the Clean Energy Package in the EU and a new Energy White Paper in the UK. With focus turning to COP26 in Glasgow in 2021, we expect the political world to draw further attention to zero-carbon energy with shortened pathway to implementation.

We expect regulators to speed up the process of implementing investment, incentive, stimulus, market and system change orders that reflect the growing climate change urgency. In the world of distributed energy, we expect that to take the form of market opening to much more customer and Distributed Energy Resources (DER) flexibility, recognising the need for cost effective DER integration solutions that properly value and harness DER contribution to an efficient, clean, reliable energy system.

We expect attention to turn to the speed and quality of clean and smart energy execution as the evidence base grows for the best ways to deliver renewable energy into an optimal 'whole system'.

Technologies & Solutions

Some of the expected innovative deployments of technology and new solutions in smart energy were delayed by Covid-19 but we do not think this has materially changed the overall trends in new low carbon technologies and the systems that integrate and manage them. Analyst reporting throughout the year showed continued strong progress with clean energy capacity additions but with some headwinds on installation access and funding at the smaller scale.

There were plenty of firsts in this last year in EV grid integration with new charge infrastructure build-out and new business models. The more clearly looming Internal Combustion Engine (ICE) bans and accompanying infrastructure investment and stimulus packages will push charge infrastructure deployment forward in 2021 and beyond, with much of this heading towards smart, controllable and flexible capabilities for charge equipment.

We did not see as much progress in electric heating (and cooling) in 2020 but this is, arguably, the biggest and most challenging area of energy decarbonisation and is likely to take time to really get scale deployment underway. We expect steady progress in the coming year and with increased attention on the enormous opportunity for smart, flexible grid integration of heating.

- We did see a lot more interest in Hydrogen in 2020 as both a clean energy vector and a fuel with the potential to resolve bulk transport, process heat, long duration storage, domestic heat and other needs. Many questions remain on production locations, scale, green hydrogen grid integration, storage management and the all-important flexibility value stack – we might see more answers to these questions in 2021.
- We also saw a real uplift in opportunities for Microgrids as deployments pushed forward for resiliency, rural community development and energy access. There seemed to be a growing recognition of enabling the microgrid energy assets to earn their own way in grid connected modes while always being ready for outage events.

- Data services innovation still seems to be held up by data availability as well as value creating services (the ‘killer app’ challenge) and we expect DER players to continue to keep pushing the bounds as regulators keep pushing for greater transparency.
- Each of these developments bring a set of new participants to the energy system and market. 2020 saw new business models and actors emerge and it will be interesting to see the progress of Virtual Power Plant (VPPs with diverse renewables, heat, EV charging as well as conventional demand response), Energy as a Service (EaaS) and other new models of financing, building and operating DER.

Flexibility Markets

- Policies and market developments were evident in all progressive energy economies on embedding the value of DER and customer flexibility into the operation of a cleaner, smarter, more efficient grid.
- In Flexibility Services, new markets have been implemented and volumes of contracted services from customers for grid management have been increasing. Market participant understanding of the opportunities is also improving. We expect increasing confidence in the ability to use flexibility services from DER to secure the system and resolve the conflicts in on-site, market, wires and system services delivery.
- In Flexible (Inter)Connections, pressure from the success of Flexibility Services will drive distribution utilities to enhance the Flexible (Inter)Connections offerings including further innovation on network pricing, market mechanisms, data flows and forecasts.
- It will be interesting to observe the progress of FERC Orders 841 and 2222 in the US as the canaries for all things DER, flexibility, Non-Wires Alternative (NWA) and Demand Response (DR) across other regions. There are significant challenges to coordinating grid management with markets and the growth of DER, and

many countries are now seeking to resolve those issues and unlock customer choice paired with DER value.

Corporate Developments

We expected 2020 to deliver a step-up in investment in clean tech and clean energy assets and even with the constraining effects of Covid, this was the case. Most areas of the clean energy sector continued to drive investment closure and deployment forward.

- We expect even more businesses to set carbon neutral goals with carbon performance becoming as important for some Companies as P&L performance. Transparency to the investment and audit community will become increasingly important, with fossil investments and operations being categorised more negatively through time. This will likely drive much more on-site low carbon asset investments as well as more corporate PPAs and Energy as a Service provision.
- We saw a lot of consolidation and investment in smart, flexible energy in 2020 including battery storage, EV charging, market platforms, demand response aggregation, the 'home energy' domain or microgrid consortia. This highlights the perceived value in flexible distributed energy and we expect more developments in 2021.
- We expect business to exploit the available stimuli for Covid-19 recovery, the climate agenda and clean energy divestment/reinvestment pressures and opportunities in 2021.

Smarter Grid Solutions in 2021

At Smarter Grid Solutions we enjoyed a good year of delivering DER Management Systems (DERMS) to our customers in North-America and Europe and won our first system delivery in India.

Our customer base expanded further and now spans distribution utilities, microgrid operators, battery fleet operators, aggregators, energy service companies, local authorities, community energy groups and renewable

generation developers. Our customers are implementing highly innovative business models spanning battery value stacking, DER flexibility services, off-supply resiliency and black start, flexible interconnections and multiple energy vector net zero carbon roadmap deployments. We expect the diversity of DER technologies and business models to grow in 2021 and our aim is to continue to develop our products to serve these increasingly diverse customers, with equally diverse energy assets and objectives, to help them meet their goals.

Is all of the above enough to give a greater sense of optimism in 2021? Many aspects of the coming year remain clouded in various ways but what we can say is that the goal of a clean energy system that works for all customers (and in our case, especially those that develop and manage DER) is a worthy mission. We will be entering 2021 with the same energy, enthusiasm and commitment to provide our customers with the tools they need to fulfill their ambitions.

The Smarter Grid Solutions Executive Team

About SGS

Smarter Grid Solutions (SGS) is a leading provider of distributed energy resource management system (DERMS) software with the company about to exceed 1.3GW of renewable generation, energy storage and flexible load under control through 2019. With offices in New York, Glasgow, and California, SGS is a global solutions provider to distribution utilities and distributed energy resource operators.

About ANM Strata

ANM Strata is Smarter Grid Solutions' world-leading enterprise solution for utilities and renewable generation operators. With its unique real-time control platform it delivers sub-second, precise control of renewable and other energy assets across a wide area from a centralized location.

About ANM Element

ANM Element is Smarter Grid Solutions' local control solution managing a smaller number of low carbon technologies in a local area in both local grid connection management and behind-the-meter operating modes. ANM Element can also integrate seamlessly into an ANM Strata system for wider asset control.

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