Forecasting the 2021 renewable energy landscape

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A general view of an Enviva biomass plant. ENVIVA

2021 kicked off with the official departure of the United Kingdom from the EU, the continued deployment of various COVID-19 vaccines to the world and the further development of the EU Green Deal. During these tumultuous times, one thing has remained the same – the need and demand for renewable energy. Over the last year, we've seen the share in demand for renewable energy rise as the demand for traditional power, based on fossil fuels such as coal, has dropped. In 2021, we expect to see one of the most pressing issues of our time – climate change – finally gets the attention and dedication it deserves. In an effort to provide additional insights into the expected energy trends, markets, and policies of the next year, we offer the below predictions for 2021.

Together renewables will further displace coal and natural gas

As countries take aggressive action on climate change to decarbonize their respective economies by 2050, the direction is clear – all carbon-neutral and carbon-negative renewable technologies will need to work together if we want to achieve carbon neutrality by mid-century. As the global demand for alternative energy increases, 2021 will mark a turning point for the industry as wind, solar, geothermal, woody biomass, hydrogen, and lithium-ion battery providers (among others) make a collective and coordinated effort to combat the global climate crisis.

The aftermath of COVID-19 will push economies into a renewable future

The COVID-19 pandemic has forever changed how societies, businesses, and governments view the world. As various industries saw a decline in the demand for products and/or services throughout the pandemic, the energy industry witnessed the opposite. Energy production and distribution remained essential regardless of the pandemic.

Throughout the pandemic we've seen an increased global interest in reducing carbon emissions. Looking ahead, renewables will play a crucial role in power generation for decades to come. For this reason, we don't foresee a job loss, rather a job transfer – or perhaps a job boom – in renewables in 2021. For those currently working in fossil fuels, this shift will present a great opportunity to transition skills as the energy sector continues to evolve into a clean energy future. For those seeking employment, the renewable energy industry is hiring for a myriad of positions and we expect this to continue as demand continues to increase.

Europe will continue to be the "Poster Child" for renewable energy implementation, but there will be some regulatory uncertainty

Delivering Europe's long-term ambition to become the first climate-neutral continent by 2050 requires an extensive set of urgent measures to scale up action. To start with, the world-leading biomass sustainability criteria established by the Renewable Energy Directive II will need to be fully implemented by all member states, enabling biomass to play its indispensable role in the Green Deal. More broadly, the EU will need to revaluate everything from renewables targets and carbon prices to energy efficiency and hydrogen, if it wants to be fit for its 55% emissions cut.

> "The aftermath of COVID-19 will push economies into a renewable future."

Bioenergy is the largest renewable energy source in the EU and will be critical to increased deployment of wind and solar

The use of bioenergy has more than doubled since 2000 as a result of its end-use as heat, transportation, and electricity. In fact, biomass is the only renewable fuel on the market that is readily available today and can replace fossil fuels for large scale heat generation. In heavy industries such as steel, aluminium, and cement, sustainably sourced wood-based biomass offers a carbon-neutral fuel replacement for coal and gas-fired furnaces (and combined heat and power plants). As a dependable and dispatchable renewable fuel, sustainably-sourced biomass represents a prime solution to complement the intermittency of wind and solar that will reduce carbon emissions by more than 85% on a lifecycle basis.

Biomass to assist the development and deployment of a hydrogen economy

Looking ahead to more future-oriented solutions, such as the development of the hydrogen economy, biomass is projected to play an important role. The most obvious is to use biomass directly to create hydrogen through gasification and thereby avoid carbon emissions that are associated with natural gas. Even further down the road, when surplus solar and wind could potentially be used to create hydrogen at scale, there will be an exciting opportunity to produce aviation and other fuels with carbon capture of biomass that could result in negative greenhouse gas emissions. Likewise, as decarbonization efforts in the steel and cement industry rapidly increase, they too will look to bioenergy solutions for support.

BECCS on the short rise

Bioenergy with carbon capture and storage (BECCS) is one of the very few options on the table that can remove carbon from the atmosphere. Once matured, BECCS could mark the beginning of a new era for low-carbon fuel applications that will enable us to meet and/or exceed international net-zero targets while still enjoying air travel and heavy goods transport, which is difficult and very expensive to decarbonize. We expect 2021 will be the year that we see true progress in climate change mitigation, as a result of new initiatives/policies, new innovations, and new collaborations that are already taking shape.