



KAIHAN'S ENERGY

INSIGHTS AND PERSPECTIVE

CONTEXT

- Disruptions caused by the global pandemic in 2020 did not spare the energy industry, and they are expected to continue. Lockdowns, the speed of economic recovery, government stimulus plans, shifts in travel and trade, changes in energy imports/exports, production trends for oil and gas, and fuel prices continue to affect the industry as it faces an uncertain future. The renewables industry also encountered challenges with projects, production, and installations put on hold ([Source](#)).
- Global energy demands are rising. In developing countries, growing populations, greater access to energy sources, and higher standards of living contribute to increased energy usage. Global energy demand is expected to rise 20 percent by 2040. China and India are expected to be the source of half of this growth ([Source](#)).
- Natural gas, solar, and wind are the fastest-growing energy sources helping to meet the growing global demand for energy and electricity. Natural gas is the number one source of electricity in the US ([Source](#)).

TRENDS

1. Heightened Focus on Renewables

- As of this writing, renewable resources are expected to turn around quickly amidst the pandemic recovery. In 2020, despite widespread economic hardships, \$303.5B was invested in renewable energy, up 2 percent from 2019 ([Source](#)).
- Renewable energy projects, like solar and wind, that faced a 10 percent decline in growth in 2020 are expected to rebound in 2021 ([Source](#)).
- The commissioning of two large hydropower projects in China in 2021 is driving the rebound in renewables ([Source](#)).
- Green hydrogen, key to reducing global CO2 emissions, is expected to become cost-competitive ([Source](#)).

2. Green Regulation and Incentivization

- In the US, a new administration under a new party in 2021 brings attention back to environmental sustainability. The US has re-entered the Paris Agreement. President Joe Biden announced plans for nearly \$2T in green infrastructure and clean energy investment ([Source](#)).
- Post-pandemic US economic stimulus packages aim to free up state budgets so clean energy packages can be pursued ([Source](#)).
- The US is reported to be exploring a carbon price at the social cost of carbon, which is around \$50 at the time of writing. The UK government has laid out extensive plans for reaching climate targets. The EU has also committed to the green economy ([Source](#)).
- We may see scenarios where stimulus packages are tied to companies providing evidence that

their investment portfolio is environmentally sound ([Source](#)).

- Suppliers should be ready to transition to sustainable business practices or fall behind. They must be ready to meet a higher standard of transparency and climate action. “Companies who commit to best practices in energy, emissions and resource usage will see new opportunity as corporations increasingly look to cut emissions from their entire value chain.” ([Source](#))
- “The exciting trend to watch...will be how we shift from large, centralized, technology-focused energy solutions to smart, local energy systems. This will be a bit like the mainframe to PC transition in computing, or how cloud computing now makes it easier to go digital anywhere, anytime... In many places where loads are distributed (for example, in archipelago nations like Indonesia and [the] Philippines), or where power grids or incentives are weak, rooftop solar could make a huge difference. The costs of such technology are rapidly declining and companies are investigating ways to overcome the high transactional costs.” ([Source](#))

3. Decline in Fossil Fuels

- Prior to the COVID-19 pandemic, the oil industry was already struggling due to pressure to shift towards renewable resources. The pandemic has made the situation dire ([Source](#)).
- Investor concerns about physical, policy, and liability risks are making markets challenging for major oil companies. BP, Total, and Shell have announced strategic shifts towards renewables ([Source](#)).
- Electric generation from coal has decreased 32 percent in the past four years. The international demand for coal is expected to continue declining. Several US coal producers have



closed their mines permanently (Source).

- In 2020, Blackrock, the largest asset manager in the world, announced that it would exit investing in coal production (Source).
- The expected global path is to get to net-zero emissions by 2050.
- Coal demand has already peaked and demand for oil and gas is expected to peak in 2029 and 2037, respectively (Source).

8PS

Leverage Point	"8Ps" of Strategy	Opportunity for Disruption	Recommended Leverage Points
<u>Position</u>	The core customer you serve, what need you meet with what brand attributes	8	<ul style="list-style-type: none"> • Which of your brand attributes are most important to your customers (sustainability, price, quality, etc.)? • How are you collecting data to understand and improve the customer experience? • Have you moved to address clients in remote areas?
<u>Product</u>	The offerings and packages you deliver, where you outperform and where you underperform	9	<ul style="list-style-type: none"> • To what extent have you shifted towards green and renewable resources? • Do you have a plan to achieve carbon neutrality?
<u>Promotion</u>	How you communicate with customers (including your marketing, sales, and PR teams)	5	<ul style="list-style-type: none"> • How are you making your stakeholders aware of the changes you've made and your sustainability priorities?

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<u>Price</u>	How much you charge for services, how you monetize	7	<ul style="list-style-type: none"> How are you neutralizing your company's impact on the environment? Have you adjusted pricing to meet increased energy demands while continuing to provide value to customers? What price incentives can you provide to enable customers' transition to renewable energy?
<u>Placement</u>	How you deliver on your value proposition, through what channels	7	<ul style="list-style-type: none"> Which partnerships would best enable you to transition to clean energy?
<u>Physical Experience</u>	The customer experience, what they see, smell, feel, taste, or hear	6	<ul style="list-style-type: none"> Have you made shifts to let users self-manage energy resources? How do the changes you've made translate to improving the end-user experience (fresher air, more comfortable temperatures, etc.)?
<u>Processes</u>	Our operations and processes	9	<ul style="list-style-type: none"> What changes have you made to future-fit your business model? To what extent have you transitioned to digital to manage resources?
<u>People</u>	The choices you make regarding hiring, organizing, and incentivizing your people. Your values.	7	<ul style="list-style-type: none"> How have you incentivized your employees to practice sustainability? What commitments have you made to reduce your environmental impact? How have you communicated these goals throughout your organization?



ClimateView

- Started in Sweden in 2018 with plans to launch in the US in 2021.
- ClimateView's business model appears to apply the Coordinate the Uncoordinated stratagem to the energy industry. Hundreds of cities have set goals to reach net-zero carbon emissions. ClimateView offers tools to help them break down their goals into measurable, small steps and then instructs how each step should be implemented.
- Cities receive an estimate of sources of emissions and recommendations for policies to make changes. Data visualization shows planners overall emissions, specific sources, and the potential impact of laws and programs ([Source](#)).



- Recipient of the 2021 bronze Edison Award for innovation with their SMARTPWR360[®]™ energy efficiency package for customers' homes ([Source](#)).
- POWERHOME has increased awareness of solar energy resources throughout the US.
- In 2018, the company partnered with four National Football League franchises to install solar power at their facilities and stadiums. They added three other franchises in 2019. This reduces the franchises' dependency on grid

Sealed

- Sealed upgrades and modernizes homes with HVAC, weatherproofing, and smart home technology to allow them to become up to 3X more energy efficient ([Source](#)).
- Sealed's Climate Control plan is being promoted to homeowners by Con Edison and other major utilities companies. The company covers up-front costs in exchange for a cut of customers' energy savings. Customers save up to \$30,000 on installation costs ([Source](#)).

energy and decreases their carbon footprints. POWERHOME leverages these partnerships by creating television and web-based commercials to showcase affiliations with each franchise, which increased visibility and awareness among potential customers ([Solar](#)).