



CHANGING ALTERNATIVE ENERGY MARKET RELYING ON CAPTIVES

Written By Caroline McDonald |

A resurgence of interest in alternative energy sources has led to increased formations of captives. One significant project involves using alternative energy sources – sustainable aviation fuel, or SAF – as fuel for aircraft.

“Captive insurance is a game-changer for alternative energy companies,” said Randy Sadler, Principal at CIC Services LLC. “These companies often use new technologies and face high operational risks, making it challenging for traditional insurers to accurately price coverage.”

In addition, “Frequent regulatory changes, market volatility, and natural hazards add to the complexity,” he said. “Captive insurance, however, offers a solution with cost savings through controlled premiums and customized coverage tailored to these unique risks.”

Captive insurance, he added, also leads to financial stability, better cash flow, and improved risk management, “all while letting companies keep underwriting profits and access reinsurance markets.”

SHIFTS IN THE ALTERNATIVE ENERGY INDUSTRY

Kevin Kaminski, executive vice president, underwriting at eMaxx, which provides insurance-backed captive solutions to cover product and performance shortfalls, notes that he is also seeing steady growth in the alternative energy industry, although the markets have changed.

For example, he said, “12 years ago, solar energy had a significant need for performance warranty insurance. That need is pretty much gone now.”

The reason, he said, is that solar and wind energy “have become so mainstream and accepted.” Emerging opportunities now, he said, are predominantly in waste energy operations, “where they are taking some waste stream, whether it be municipal solvent waste or some type of agricultural waste, or it could be plastics.”

Conversion of waste to energy through incineration has been going on for 100 years, Kaminski explained, “but the idea of doing it in a cleaner fashion, where you can produce some kind of synthetic gas that can be converted into energy in a significantly cleaner way is a big opportunity.” This is the case, he said, “because our country and the world are plagued with the waste that’s generated. Much of it has significant energy content that can be used.”

Alongside that, he added, is agricultural waste, “which is also an opportunity and is effectively clean energy. There is a lot of opportunity in those marketplaces. Just disposing of waste has become very expensive,” Kaminski said.

ATTRACTIVENESS OF CAPTIVES

More and more, captives are sought out, not as much because of terms or pricing rates, but capacity, said Michael Leonard, chief economist and data scientist at the Insurance Information Institute.

“What happens is that traditional energy underwriters find it challenging to understand the risk profile, often from a lack of data specific to alternative energy projects,” he said. “For example,

they may find it challenging to understand the revenue model. A lot of those projects also have different ways of financing. The ratios are different.”

Some of the challenges, “certainly on the data side, are receding,” Leonard added. And as there are “more and more alternative energy products, capacity on standard or favorable terms becomes the issue.”

In the past, “a lot of the questions being asked didn’t yet have a benchmark reference,” Leonard said.

When insuring assets, he said, because the regulatory risks for alternative energy projects often fluctuate, “you may want to look at political risk insurance and government breach of contract, especially if you have a project in another country and you are concerned the government may change the rules.”



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This can also be the case with offshore wind in the U.S., “where a state may ban the presence of offshore windmills,” Leonard said. “The wind turbines are gigantic, and they make noise and destroy birds.” This can create uncertainty, he said, “and the insurance industry is not comfortable with uncertainty.”

FILLING THE GAPS

Sadler noted that commercial insurance provides alternative energy companies with essential policies like general liability, errors & omissions, directors & officers, business interruption, product liability, and workers’ compensation.

“These coverages are crucial but can come with higher premiums due to the industry’s unique risks,” he noted. “Insurers often set higher deductibles and lower coverage limits to manage their own risk, impacting overall insurance costs.”

Captives step in where traditional policies fall short, Sadler said. “They cover risks linked to research & development activities, often excluded, and handle compliance costs for environmental and safety regulations.”

Unlike traditional insurance, “captives don’t leave alternative energy firms hanging during extended downtimes or unique operational issues—they’re tailored for these interruptions,” he noted.

Captives also address supply chain risks specific to energy projects “and can cushion revenue shortfalls from production dips or market fluctuations,” Sadler said. “They offer specialized coverage that meets the industry’s digital demands. Plus, they’re there for the long haul, covering post-project liabilities and safeguarding reputations from public relations nightmares.”

Creating a captive insurance company lets alternative energy companies secure tailored coverage, he said, “ensuring robust protection and financial stability in a fast-evolving sector.”

WHO IS FORMING CAPTIVES?

Sadler observed that alternative energy companies are increasingly turning to captive insurance as a strategic tool for managing risks specific to their sectors. For instance, solar energy firms are using captives to safeguard against equipment failures and weather-related disruptions in solar farms.

“Wind energy companies find captives beneficial for mitigating risks during turbine installation and maintenance, as well as fluctuations in wind patterns,” Sadler said. “Bioenergy and biomass firms use captives to navigate supply chain challenges and regulatory uncertainties affecting feedstock availability.”

Similarly, he said that hydropower companies rely on captives to manage operational risks associated with dam operations and environmental impacts. “Captive insurance also supports companies in emerging sectors like energy storage and battery technology, where risks include technological advancements and supply chain disruptions,” Sadler said.

Whether it’s in electric vehicle infrastructure, carbon capture technologies, or renewable energy project development, “captives offer tailored solutions for mitigating risks across various stages of operations, from construction to long-term environmental liabilities,” Sadler said. “By forming captives, these companies gain greater control over their insurance costs and enhance their ability to innovate and grow in a dynamic industry landscape.”

Leonard concluded, “it really takes an ecosystem for this to happen. You’ll have captive capacity that will come from traditional investors and from traditional carriers,” he said. “It could be cash bonds – the brokers often have expertise in managing those. And the willingness of all the individuals.”

It also comes down to “faith on the part of everyone to be willing to sit down and understand the uniqueness of these risks so that they become more common,” Leonard said.

WHAT IS SAF?

Sustainable aviation fuel, or SAF, is a biofuel used to power aircraft, which has properties similar to conventional jet fuel but with a smaller carbon footprint. Depending on the feedstock and technologies used to produce it, SAF can reduce life cycle GHG emissions dramatically compared to conventional jet fuel. Some emerging SAF pathways even have a net-negative greenhouse gas, or GHG, footprint.

According to the Office of Energy Efficiency & Renewable Energy, an office of the U.S. Department of Energy:

SAF, made from renewable biomass and waste resources, has the potential to deliver the performance of petroleum-based jet fuel but with a fraction of its carbon footprint, giving airlines solid footing for decoupling greenhouse gas emissions from flight.

A report from the Bioenergy Technologies Office states that the U.S. Department of Energy is working with the U.S. Department of Transportation, the U.S. Department of Agriculture, and other federal government agencies to develop a comprehensive strategy for scaling up new technologies to produce SAF on a commercial scale.

An estimated 1 billion dry tons of biomass can be collected sustainably each year in the United States, enough to produce 50–60 billion gallons of low-carbon biofuels. These resources include:

- Corn grain
- Oil seeds
- Algae
- Other fats, oils, and greases
- Agricultural residues
- Forestry residues
- Wood mill waste
- Municipal solid waste streams
- Wet wastes (manures, wastewater treatment sludge)
- Dedicated energy crops.

Caroline McDonald is an award-winning journalist who has reported on a wide variety of insurance topics. Her beat includes in-depth coverage of risk management and captives. ■