

SkyMining: interview with Carbon Wealth co-founder Carl Pendragon

"Climate Action" spoke with Carl Pendragon, the co-founder of innovative cleantech firm *Carbon Wealth*, to find out more about SkyMining - the process of converting atmospheric CO2 into a clean and profitable renewable fuel.



Can you tell us about the origin and mission of Carbon Wealth?

Carbon Wealth was founded in 2013 with a mission to turn CO2 into energy in a way that is unprecedentedly profitable, sustainable and benevolent. What started our journey was the simple realisation that society will only kick its fossil fuel addiction if a renewable alternative is genuinely cheaper and more convenient. With SkyMining, we aim to make such a transition so compelling that it feels obvious to do so.

SkyMining, which is the patented process of converting atmospheric CO2 into a clean and profitable renewable fuel, is made possible by a technological breakthrough achieved by our co-founders. After years of research and development, we are now successfully operating our first commercial pilot-plant in Austria. Our next step is to complete our first full-scale SkyMining operation in Senegal.

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Carbon Wealth is based in Stockholm, Sweden, with office branches in Oslo, London, Vienna and Nice. Our founders' backgrounds span energy, engineering, sales, and marketing.

Carbon Wealth has brought SkyMining to the climate action effort – can you tell us more about this invention and how it will help to combat climate change?

SkyMining is based on Carbon Wealth's new patented technology that removes CO2 from the atmosphere, and transforms it into a cheap, clean-burning copy of coal and charcoal. The whole process goes like this: Businesses are invited to invest in a SkyMining contract to offset their carbon emissions. For each tonne of CO2 that is offset a company gets a return taken from our fuel sale profits. We use their investment to plant specialised grass on marginal land; atmospheric carbon is extracted through hyper-efficient CO2-pumps found in the grass. A large proportion of the CO2 pulled down by our grass is sequestered in the soil on which it is grown. The grass can grow 4 meters in 100 days, exclusively on marginal land that can't be used for any other kind of agriculture.

Our own patented process of thermal carbonization turns harvested grass, saturated with carbon, into a clean copy of coal. Thermal carbonization effectively replicates a 30 million-year natural process in under 30 minutes. The main element that SkyMining brings to the climate change arena is that it is the world's first scalable and profitable carbon-negative energy solution. Furthermore, SkyMining safely sequesters large amounts of carbon in the ground as an automatic consequence of doing business; achieving the same as large-scale carbon capture and storage (CCS) projects without the billion-dollar price tag.

How do Carbon Wealth's solutions compare to existing clean energy sources like wind and solar power?

SkyMining is the perfect back-up power solution for wind and solar, and brings some new advantages to the renewable energy sector. For one, SkyMining produces a burnable fuel that can replace coal. This fuel not only directly offsets fossil fuels when it takes their place in an oven, but it also allows us to capitalise on the world-spanning fossil fuel infrastructure built up since the industrial revolution, vastly reducing our costs. In fact, much of the reason why wind and solar only produce 1–2% of global energy, despite 2 trillion dollars in investment in the last decade, is because of the lack of available infrastructure. Secondly, SkyMining is carbon negative, meaning that our fuel's production and combustion results in a net-reduction of CO₂ in the atmosphere. Reducing the amount of atmospheric CO₂ is crucial if we are to limit global warming, but this is something wind and solar simply cannot do alone. Finally, SkyMining avoids the problem of intermittency, since it does not rely on an irregular source of energy such as wind or sunlight. This makes SkyMining a viable source of backup power for modern renewables like wind and solar. Our carbon negative energy can ensure that wind and solar power is always beneficial for the environment, unlike when their backup power comes from dirty coal.

Bill Gates, Richard Branson and Mark Zuckerberg launched a major clean energy research initiative at COP21. How could Carbon Wealth participate in this and how vital is private sector innovation like this?

Carbon Wealth is very excited about the Breakthrough Energy Coalition, and the support it has gotten from industry and governments alike. We believe that our new unique energy solution could make Carbon Wealth a welcome participant in the initiative. SkyMining is an innovative technological process that involves clean fuel production, electricity generation, carbon sequestration, and sustainable agriculture — all of which are key factors for reaching our zero-carbon future. Carbon Wealth is a privately funded, early-stage energy company with a new solution for fighting climate change, which fits the initiative's bill.

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Furthermore, we believe that SkyMining is the only renewable energy solution that can be profitably scaled up fast enough to reverse global warming. Support and funding from the private sector is vastly helpful in speeding up this process, which makes initiatives such as the Breakthrough Energy Coalition all the more important.

Carbon Wealth will be a key partner of the Climate Action Sustainable Innovation Expo at the UN Environment Assembly in Nairobi in May, where the world's ministers will gather to shape global policy. How important is engaging with governments for Carbon Wealth?

At COP21, the governments of the world showed an unequivocal will to act on climate change. For Carbon Wealth, engaging with governments at the UN Environment Assembly following COP21 is important because we wish to present ourselves as a potential complement to already embraced solutions such as wind and solar — and one that may in fact have a far higher potential for climate mitigation per dollar invested. With such a tight timeline for reaching emission-reduction targets, we believe that SkyMining will be very warmly received. That being said, SkyMining was designed from the ground up to be a profitable source of carbon negative energy, one that can operate and grow organically in the global markets without any kind of subsidy or legislation. In other words, while UN assemblies like in Nairobi have the potential to speed up the energy revolution that SkyMining offers, our success does not depend on specific policy being adopted.