
exponential energy
FORTUNES

Exponential Energy Opportunity:

My #1 Energy Stock for 2019



IMPORTANT RISK WARNINGS

General – Your capital is at risk when you invest. You can lose some or all of your money, so never risk more than you can afford to lose. Past performance and forecasts are not reliable indicators of future results. Commissions, fees and other charges can reduce returns from investments.

Small cap shares - Shares recommended may be small company shares. These can be relatively illiquid meaning they are hard to trade and can have a large bid/offer spread. If you need to sell soon after you bought, you might get back less than you paid. This makes them riskier than other investments.

Overseas investments - Some shares may be denominated in a currency other than sterling. The return from these may increase or decrease as a result of currency fluctuations. Any dividends will be taxed at source in the country of issue.

Cryptocurrencies – Some recommendations may be cryptocurrencies. Cryptocurrency investing and investing in Initial Coin Offerings (ICOs) is a highly speculative investment. The cryptocurrency market can be extremely volatile. Digital currency coins are encrypted to keep them secure. The encryption identifies the currency itself, but not its owner. This means that if a coin is stolen, you have very little recourse in getting it back. The Financial Conduct Authority (FCA) does not regulate the Cryptocurrency market. This means that you will not have the protection of the Financial Ombudsman Service or the Financial Services Compensation Scheme.

Taxation – Profits from share dealing are a form of income and subject to taxation. Profits from converting cryptocurrency back into fiat currency is subject to capital gains tax. Tax treatment depends on individual circumstances and may be subject to change.

Managing Editors: James Allen and Sam Volkering. Editors or contributors may have an interest in recommendations. Information and opinions expressed do not necessarily reflect the views of other editors/contributors of Southbank Investment Research Ltd.

Full details of our complaints procedure and terms and conditions can be found at www.southbankresearch.com.

Exponential Energy Fortunes is issued by Southbank Investment Research Limited. Registered in England and Wales No 9539630. VAT No GB629 7287 94. Registered Office: 2nd Floor, Crowne House, 56-58 Southwark Street, London, SE1 1UN.

Southbank Investment Research Limited is authorised and regulated by the Financial Conduct Authority. FCA No 706697. <https://register.fca.org.uk/>.

© 2019 Southbank Investment Research Ltd.

...continued on next page...

The tiny pioneer set to make global off-grid power a \$40 billion reality

By James Allen
Publisher and editor, *Exponential Energy Fortunes*

Hands up if you own a landline.

I know I don't, having ditched mine a few years ago.

I got rid of my home phone for the simple reason that I was spending money on the line rental unnecessarily.

No one seemed to call me on it, apart from nuisance telemarketers, and it was almost always cheaper to make a call with my mobile phone instead. So when I found out I could get broadband at home without a physical landline I said goodbye to my home phone once and for all.

I'm not alone.

Now, nearly a third of the world's population owns a smartphone, and among millennials aged 25 to 29 in the US, two-thirds live in a house without a landline.

But here's the thing.

Just as the entire telecoms industry has moved from a wired system to wireless, a lot of the power infrastructure systems in place today are moving from wired power to the grid to off-grid power.

In the UK alone, the National Grid expects that by 2030 50% of all electricity generation will be connected at the local distribution level, away from the centralised grid.

Much of this will be from solar panels connected on the roofs of homes, factories and offices.

Over 1m homes in the UK already have solar PV electricity panels or solar thermal hot water heating panels.

But the UK is only one tiny part of this huge global trend.

Indeed, off-grid power is similar to telecoms in another way too. In telecoms, mobiles leap-frogged landline networks in many undeveloped or developing places in the world such as sub-Saharan Africa.

Today, no one would think about putting telecom wires to individual homes and communities in those places.

...continued on next page...

Likewise, mini-grids or solar systems are a far better solution to the vast areas of the developing world that continue to remain in the dark. In fact, around two billion people – a quarter of the world’s population – have no access to reliable electricity at all.

For utilities operating from centrally-located generation facilities, meeting the needs of the disconnected last two billion with 20th-century technology is by no means straightforward.

In these places, tethering street lights, telecommunications systems, security monitoring and other critical infrastructure devices to the electrical grid is inefficient, expensive, unreliable or non-existent. Cabling and distribution can represent 50% of the cost of electricity alone.

No wonder a \$40-billion dollar industry for off-grid power in the developing world has been spawned over the last few years, allowing for a fast-growing alternative to electric grid power for critical infrastructure.

Indeed, by 2020, the sales of off-grid solar products in emerging markets alone are expected to reach \$3.1 billion, according to the World Bank Group and Bloomberg New Energy Finance (BNEF).

Annual investments into the industry rose to \$276 million in 2015, a fifteen-fold increase since 2012.

By getting rid of cables, and installing off-grid solar and battery products, all of a sudden you can bring light, power and telecoms to every community everywhere.

Where the traditional grid is non-existent, inadequate, expensive or too distant for connection, such advances in distributed technologies at the frontiers of the energy system can deliver not just power but also economic opportunities to the two billion people not reliably served by the energy industry today.

The truths that hold off-grid power back

That’s all well and good but, up to now, the rise in off-grid solar power has been hindered by two simple, related truths... truths that provide our latest Exponential Energy Fortunes recommendation with a huge, billion-dollar opportunity...

Truth #1: the sun doesn’t always shine!

Truth #2: today’s off-grid systems are still very dumb!

You see, until now, off-grid systems have been notoriously unreliable. In fact, unless you’re connected to the grid, you generally can’t get *reliable* off-grid power at all.

Take an off-grid solar-powered streetlight, for example. It has a pole, a light, a solar panel, a battery and a controller that manages the power into and out of the battery. If

...continued on next page...

there is bad weather – as in no sun – for more than a few days, the battery will drain, and eventually the light would go out.

There is nothing you can do but wait for the sun to return to charge the battery enough to power the lights. That might take many days to occur.

There is simply no way to predict how long the battery might last, or to change the settings to preserve power.

As an analogy, it's very much like driving a car with no warning light on the dashboard to indicate when you're low on petrol.

And because off-grid systems have traditionally been very dumb, or at least very passive, they typically require a trained professional to install and maintain the systems via on-site visits. However, with no data on how the off-grid systems are functioning and whether there is a failure, parts might be replaced unnecessarily or not at all.

Such visits might be practical when you have a few systems or when you're using it in places where it's maybe not mission critical, but less so when you scale it to tens of thousands of systems or if the system itself is located in a really remote place.

Widespread outages at any complex utility infrastructure – tens or hundreds of street lights, a telecoms tower or a security system, for example – can cause serious damage to communities and businesses. In fact, outages of any length of time in these types of facilities are unacceptable.

What all this means is that it's no longer viable for these off-grid devices to be unmonitored and unmanaged, or to fail after a few days with no sun or wind.

Just as you can turn down your home's heating thermostat with just a few swipes of your smartphone, no matter where you are, imagine if it was possible to factor in a prolonged period of bad weather with renewable-powered systems to tune how the energy is being generated and consumed.

Imagine if you could remotely maintain, control, troubleshoot the system, to actually manage that site to near enough 100% uptime.

Now you can.

That's where **Clear Blue Technologies (TSX: CBLU)** comes in. Based in Toronto, Canada, Clear Blue Technologies is the first company in the world to make off-grid power systems truly *smart*.

The company's secret sauce

What Clear Blue Technologies has realised is this: with the world moving towards off-grid power, the systems need to be managed and operated.

As I said, the normal problems with off-grid systems are that they are unreliable and

expensive to maintain.

Although off-grid power has the potential to bring renewable energy to devices from street lamps to phone towers and Wi-Fi hot-spots, making equipment run properly on solar and wind energy is critical.

Clear Blue has worked out that the way to make off-grid power reliable is to be able to remotely manage, operate and control it, so that it can get the same level of uptime and reliability to that off-grid solar powered cellphone tower, for example, as it could to any grid-powered system.

The company has developed a built-in, low-cost wireless communications technology that's paired with a smart controller that acts as the brains of every system. It transmits critical data, enabling remote control of the systems, via the cloud, making off-grid technologies a viable, reliable, low-cost and simple alternative to the electricity grid.

The technology provides a wealth of data points on all aspects of a solar-powered system, including battery charge and voltage readings, the status of all components, and more, all via the internet.

In-built weather management

But what I like most about the technology is it also provides predictive weather analysis, which estimates energy generation for the next week or so based on current load and weather forecasts.

So, just like when you drive your car, you know ahead of time when you're going to run out of gas.

For instance, if there is a storm taking place in the next six days that will affect the sunlight available to power a solar panel, Clear Blue's systems will send a notification to both the company and the client.

Clear Blue or the client can then log into the cloud-based management system on their laptop or smartphone and turn down the luminosity of the lights to preserve battery power during the storm. This reduces the risk of system outages while still ensuring the lights come on, making critical off-grid infrastructure more reliable, even during bad weather.

Likewise, if cloudy weather or rain is forecast, Clear Blue or the operator could schedule a downtime between, say, 2am and 3am a few nights in a row, so that there is power available throughout the inclement weather.

All this can be done remotely.

And, as said above, not just by the client.

Ongoing service

You see, a big piece of the company's business plan – on top of selling the technology, the

...continued on next page...

hardware such as solar and wind-powered outdoor lighting systems, and giving operators access to a cloud management system – is that it will remotely operate and manages every system it ships, 24/7.

If that system's not working, or it's not going to have enough power, or if there's a technical problem, then the company can identify and fix the problem remotely.

The client or network operator can still manage the system, of course, but Clear Blue will act as the primary or secondary operator as well.

As an example, Clear Blue can tell from thousands of miles away if there's an issue with a solar panel in a remote part of Nigeria, say. The company's weather technology shows whether it's sunny at that site, meaning it can tell what type of performance the solar panel should be providing.

If there is degrading, or shading on the panel, the company can immediately inform the operator of the issue and help with the fix. If they need to reboot the system, they can do it remotely rather than going to the site itself. Likewise, if the batteries get stressed, the company can do remote maintenance on those batteries from its hub in Toronto.

If an outage occurs, Clear Blue and the system owner will receive an immediate notification. As the company stores all the data history, it is often easy to pinpoint the issue and take corrective action.

The company calls this offering *Illumience*.

Illumience is available via the cloud on a web browser, or on-the-go via the company's mobile app.

The company also sells solar off-grid streetlights under its *Illumient* offering, as well as security cameras and Wi-Fi hotspots, bringing an entire package to the infrastructure.

The smart off-grid technology it sells includes a solar/solar-hybrid controller, which operates and controls the system, a built-in communications network and its proprietary cloud software.

What's more, its smart off-grid technology works not only on its own solar-powered systems, but on any systems and batteries designed by all the major manufactures.

Clear Blue has two patents – one centred on its smart off-grid technology and the other based on its predictive performance analytics algorithm integrated with a weather forecast – that are sealed and stamped. Three more patents are pending.

Benefits

This all has many benefits.

By remotely managing and controlling solar, wind and hybrid-powered systems, the company's smart off-grid technology reduces installation and ongoing maintenance costs

...continued on next page...

by up to 80%.

After all, there is less infrastructure – ie, cables and power infrastructure – to maintain, and the real-time monitoring ensures higher uptime and reliability of the off-grid systems.

In fact, as Clear Blue can remotely control and operate every system, if an on-site repair or checks do need to be done, the operator doesn't need any specialised training or specialised technicians. Any local person who's contracted to go and do maintenance and operations can perform the fixes that need to happen on the site because Clear Blue will tell him or her exactly what to do.

What this means is Clear Blue's smart off-grid solar systems allow operators to reduce costs compared to grid power by about 30-40%... making smart, off-grid solar the cheapest form of power in many places, with the added advantage that these systems can be installed anywhere.

Operators can now get payback within two to three months, which is much faster than traditional diesel generators where operators not only have to spend money on the diesel infrastructure, but then have to constantly top it up with gas. Diesel-based systems also need always need replacement filters and they have a very limited life. You have to replace them after a few years.

Instead, operators can invest in a solar panel, which has a 20-year life, and batteries that, if managed properly with Clear Blue's technologies, have about seven years of life. That means that if you install that system, there's a good chance you never have to go back to that site for seven whole years.

Opportunities

Cutting that last cable means an explosive opportunity for Clear Blue: that is, to get it to everywhere in the market.

Despite only running for six years, Clear Blue has grown at 300% a year and now has well over 3,000 systems installed in 34 countries around the world, including in 20 US states and eight Canadian provinces.

Today, Clear Blue is controlling and monitoring cell towers in Rwanda, Nigeria and Puerto Rico, streetlights in Saudi Arabia, Morocco and Egypt, and Wi-Fi towers in Dubai, to name a few.

But it's just getting going.

As the market for off-grid power expands, opportunities are opening up everywhere, not least in the developing world.

Consider these facts:

- In 2016, renewable energy investments in poorer countries eclipsed investments in

...continued on next page...

wealthier countries for the first time ever. Since then, the upward trajectories of their growth have held steady or increased.

- In Latin America, Mexico increased renewable energy investments by 810%, Argentina by 777%, Chile by 55%, Peru by 66% and Costa Rica by 31%.
- According to the International Energy Agency (IEA), less than 40% of African households are connected to national networks.
- The number of Africans without grid access actually increased by nearly 14% between 2000 and 2016 to 588 million people. By 2030, the IEA estimates that some 80% of the global off-grid population will be in sub-Saharan Africa.
- Nigeria, sub-Saharan Africa's biggest economy and most populous nation, is alone home to roughly 90 million people with no grid access.

Clear Blue has looked for customers in markets with an appetite for off-grid power, starting with Africa, where it has sales in seven countries, including in Nigeria, and has plans to soon expand to six more.

As an example, it recently signed a deal with IDSUD Energies to supply its technology to 800 solar and wind-powered street lights in Morocco, the first phase in a multi-phase project expected to total almost 5,000 smart off-grid lights. That deal alone is worth a minimum \$5.5 million.

On top of Africa, the company is also targeting countries in South America and the Middle East.

However, Clear Blue also has a strong sales funnel in more developed regions, which currently comprise around 40% of its sales. You see, even in developed countries such as Canada and the US, smart off-grid systems provide an alternative to replace the crumbling electric grid, or powering infrastructure in difficult-to-reach areas.

As an example, Clear Blue installed 40 smart solar street lights in the city of Hamilton, Ontario, at a fraction of the cost of tunnelling through 2,000 metres of solid rock near the Niagara Escarpment to connect to the electric grid.

In fact, the company has won 12 new solar lighting projects in Ontario in 2018, meaning its revenues from the Canadian province are already up 515% on last year.

Indeed, street lighting alone provides a huge global opportunity. The solar street lighting market in the Americas is growing at a growing at 19% per year, while the market in Asia-Pacific region is expected to be valued at over \$3 billion in 2020.

To meet this growing demand, across all the markets it is targeting, Clear Blue has recently beefed up its sales team.

Partnership with Facebook

I've already said that no one else is doing what Clear Blue is doing. It's the first company

...continued on next page...

in the world to provide smart off-grid remote management and control.

Facebook, the social media giant of the internet, agrees.

As part of a major initiative of the company to improve internet connectivity in rural areas worldwide, Facebook selected Clear Blue Technologies in November to be its solutions provider, to develop and install its smart systems to people in remote areas.

Alongside partners such as Intel, Nokia, SK Telecom and Deutsche Telekom through its Telecom Infra Project's (TIP's) OpenCellular programme, Facebook hopes this will help in its aim to add another billion people to the internet.

The social media company identified Clear Blue as the *only* company today capable of making it possible to deploy and remotely manage thousands of small sites using off-grid energy sources to power up the technology being deployed to connect these remote communities to the internet.

Here's what Facebook bigwig Dr Kashif Ali, who is chair of TIP's OpenCellular project group, said:

“Clear Blue’s experience managing smart off-grid devices around the world has given them first-hand knowledge about what is needed to deploy highly-reliable and low maintenance power systems, such as OpenCellular-Power. The result of this collaboration will help to extend OpenCellular-Power’s reach and give more people access to the many benefits of connectivity.”

Clear Blue is delivering a protocol interface based on its Smart Controller Management application programming interface (API) to the project's open source community, to allow anyone to build their own cloud-managed power service. It is also offering a commercial version of OpenCellular-Power to the market – based on the same open source technologies.

This is absolutely massive.

The partnership is already adding considerable devices to Clear Blue's control systems and provides it with significant potential for huge growth opportunities.

TIP sales channels

In fact, already the programme has seen Clear Blue roll out its technology to projects in Africa and South America, with subsequent follow-on deployments very much on the cards and new sales channels springing up from the project opening all the time.

For instance, in September 2018 the company announced it had fulfilled an initial contract worth approximately CAD\$850,000 for a new street light project in Nigeria, as part of a collaboration with Raeanna Nigeria Limited, a Nigerian infrastructure company.

Later in the year, Clear Blue was selected as the power service provider for BRCK, a Kenyan technology provider working to connect frontier markets to the internet. Clear

...continued on next page...

Blue will provide BRCK with its smart off-grid technology and service for a multi-year rollout of thousands of WiFi hotspots across Africa, set to begin in 2019 and running through 2024.

Also springing from its membership of TIP, Clear Blue has also partnered up Telefonica's "Internet para todos" program to connect 100 million rural Latin Americans to the internet. This is hugely exciting. Clear Blue's first order was installed in the Amazon jungle in Peru in October, with hundreds more systems set to be deployed in 2019 and potentially thousands after that. The project is also set to expand to Argentina and Colombia next year, bringing in total what Clear Blue describes as "material revenue" to the company.

What all this means is that Clear Blue has a sales funnel absolutely bursting with revenue. In fact, it estimates its sales funnel to be in the order of around \$500 million – around 125 times the size of the company right now.

Financials

The company generates product revenue through the sale of its smart off-grid controllers and systems, Illumient solar-powered street lighting systems, and recurring revenue from its Illumience cloud-based remote power management services.

The company's revenue is growing exponentially, having risen 300% year on year since launching in 2013. The company recently posted trailing four quarters revenues of CAD\$4.5 million, a year-on-year increase of 283%.

In the year up to end-September 2018, the company's revenues rose 411% to CAD\$2.7 million.

What's more, the size of its deals are also getting bigger, rising to CAD\$44,324 over the last four quarters compared to CAD\$15,292 over the same period a year ago.

However, it made a net loss of CAD\$4.4 million over the last four quarters. In line with its business plan, the company saw a 55% growth in expenses to over CAD\$5 million as a result of expanding sales activity, as well as the addition of sales and technical resources focused on the Facebook-founded Telecom Infra Project, and its expansion to greater international markets.

As of 30 September 2018, Clear Blue has 3,344 units under management, including its smart off-grid controllers for solar, wind and hybrid-powered systems such as street lights, security systems, telecommunications systems, Smart City and Internet of Things (IoT) devices.

In Q3 2018, 47.5% of its total revenue came from Africa, 43.3% from Canada and the US. In terms of distribution by industry vertical, 88% of its Q3 2018 revenue came from lighting installations and 10% from telecommunications, a figure that will undoubtedly grow as the TIP project rolls out.

The figures show that Clear Blue is investing in sales and technical resources for its

collaboration with the Telecom Infra Project, the initiative co-founded by Facebook to bring a billion people online, and to support expansion in the US and international markets.

This year it has already closed and shipped the largest customer order in its history, and is winning follow-on projects from existing customers and partners. It is also making important inroads into the African solar off-grid lighting marketplace, and is seeing strong demand for its smart off-grid power systems in the telecommunications vertical.

Risks

There are risks, of course.

Although Clear Blue installations in off-grid infrastructure renewal projects in Canada, exports are key. They currently represent 65% of Clear Blue revenues.

With so much of the company's sales generated overseas, the sheer complexity of the logistics of doing business in 33 countries outside of its own represents an enormous challenge.

Clear Blue's success will hinge on how fast it can move in today's market. The company needs to demonstrate how it will capture territories wide and fast.

And although the company's sales are so far nicely balanced between developed and developing markets, it wouldn't want to put all its eggs in one particular basket in case any unforeseen economic events take place.

If it can't, its stock performance could suffer over the long term.

What's more, it's far from the only company operating in the IoT space, some of whom have the financial clout to enter the off-grid market, eying the bounty on offer.

Although Clear Blue has patents on its core technology, that might not be enough to deter names such as s2e Technologies, Braingrid, Internet of Things Inc, BeWhere Holdings, HealthSpace Data Systems, Photon Control or Patient Home Monitoring Corp from developing their own product lines.

Saying that, Clear Blue has a huge first-mover advantage. It gets data from every system it ships and operates at least every ten seconds, so it is accumulating a treasure trove of data – allowing it to become smarter and smarter, and putting further and further space between it and any potential rival.

On a related note, technology risk is prevalent, too. There is always a chance that Clear Blue's tech becomes outdated or becomes redundant and needs upgrading. I don't think this is likely, but with the speed at which technology moves, there's a risk they'd need major costly overhauls to upgrade or replace if another company enters the market with another way to manage and operate off-grid systems that catches on.

Both the competition and technology risks could also push down Clear Blue's stock price.

...continued on next page...

Not all is rosy in the financials, either. The company is loss-making after all, which is typical of companies at this stage of development, but something that it can't sustain forever.

In the latest Q3 results, the company made a point of noting that it has had limited available working capital, which is a measure of both a company's operational efficiency and its short-term financial health.

Working capital is a measure of both a company's operational efficiency and its short-term financial health.

The limited working capital available has restricted its ability to manage input costs through supply chain management and higher volume purchasing.

This does represent a liquidity risk – ie, the company will not be able to meet its financial obligations as they become due – if that cannot be corrected.

As at 30 June 2018, the company had a working capital deficiency of CAD\$1,081,476, compared to a positive working capital of CAD\$841,340 at the end of 2017. However, it was pleasing to note the company reporting positive working capital of \$3,728,364 by the end of September.

Lastly, don't forget, too, that Clear Blue, with a market cap of under CAD\$20 million, is a tiny company right now. Trading in the shares could be extremely volatile.

The time to invest is now

That said, the market opportunity is huge and the time is now. The company is just at the start line.

Despite its small size, Clear Blue really could help revolutionise energy delivery around the world, by making off-grid power – for the first time – truly smart and reliable.

It has first-mover's advantage in a high-entry barrier market.

It is the leader in the space.

And with deals emanating from its membership of the TIP project in place, it also has a huge sales funnel in a high-growth market.

Over the next few years, the world – both in developed and emerging markets – is going to see the same changes to power as we've already had with the telecom industry, moving from wired to wireless.

We're already seeing infrastructure like street lighting and security systems being powered ably by renewable power, without the need for lengthy and expensive cables.

But now demand is growing worldwide for smart off-grid powered systems, as governments, municipalities, utility companies and communities seek clean, cost-effective and reliable alternatives to grid infrastructure.

Wireless communications and cloud technology are the key to powering reliable, off-grid systems, helping to improve the lives of millions of people, including the one-quarter of the world's population who currently live without access to reliable electricity via the grid.

ACTION TO TAKE: BUY TSXV:CBLU

Name: Clear Blue Technologies International
Ticker: TSX:CBLU
Current price: as of 03/07/2019: CAD:\$0.17
Market cap: CAD\$5.75 million
52-week high/low: CAD\$0.86/0.16
Buy up to: CAD\$0.65



Clear Blue Technologies trades on the Venture board of the Toronto Stock Exchange with the ticker symbol TSXV:CBLU.

clearbluetechologies.com/en

It is available for UK investors to purchase on broker Interactive Investor (iii.co.uk or 0345 607 6001).

Until next time,

James Allen
Editor, *Exponential Energy Fortunes*