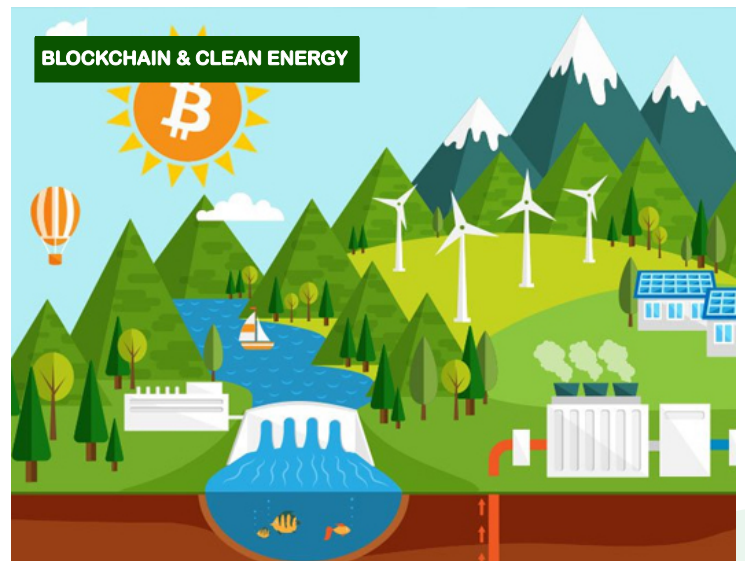


Combating Climate Change: Pairing Clean Energy with Blockchain Technology for India

In today's world, many industries are struggling to catch up with technological innovations that have swiftly reshaped the way business is done. The impact of these changes is far reaching and affects the lives of many. For example, the union taxi driver in the UK whose previously unmatched navigation skills through years of training are simply outdone by google maps. Add to this, the introduction of Uber - an app that allows anyone with a car to ferry passengers commercially – and overnight a whole new system is created – leaving taxi drivers redundant. Recent technological innovations have also affected governance – bringing debate to the relevance of currency itself with the introduction of cryptocurrency. Thanks to automation, skills that were previously considered an asset are now deemed redundant. Even the role of media is now being questioned – with platforms such as Facebook and Instagram that provide localised information in real time directly from the source, the consumption of traditional media has certainly reduced. All of the above trends point toward one missing link, the fact that traditional sectors have been struggling to catch up with technological innovations and have therefore missed being 'first' in the space to leverage technology.

In order to pinpoint the exact trend and to optimally ride the technological tide, it is important to stay on track with what's to come and how it can benefit a particular sector. The energy sector in India too has undergone a massive transformation with a clear shift towards clean/renewable energy. Just like the examples

cited above, the consequences of a lack of preparedness can unhinge an entire industry. It is imperative that we work to build such technological solutions into existing products and services so as to get the best of both worlds while



expanding the relevance of the solution for the entire supply chain in order to deliver the best value to everyone involved.

One of the key ways to build acceptance towards a new service or product is by making the product accessible at the fingertips of the consumer. Blockchain is one of the best ways of introducing renewable or clean energy to consumers.

For the uninitiated, blockchain technology is basically the creation of 'information blocks' pertaining to a particular product, its origins, past transaction information. In case of a service, a blockchain can enable seamless service delivery, contract renewals, price optimisation based on supply and demand. Basically, pairing clean

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energy trading with blockchain technology will create a valuable trail of information and building a greater level of transparency than ever before.

India has one of the highest potential for reducing its greenhouse gas emissions with the adoption of clean energy to its fullest potential. According to a report by the Economic Times, currently 63% of the energy produced in India is still generated from thermal power.

Of course there are policy and regulatory hurdles at the state level which include issues of pricing of clean energy, however, it is imperative to emphasise that with the adoption of Blockchain in this sector, it would enable for a more transparent and seamless trade of clean energy across state lines and provide a win-win situation for local governments, consumers, producers and distributors.

If we look at some of the global case studies, the potential of blockchain usage in the energy sector is just being realised. This is evident from the increasing number of pilots and trials where application of the technology is being tested. This is also because of the nature of renewable energy. Since the output of energy generation in renewables cannot be constant from one source, blockchain solves for the complex, real-time agility required to constantly monitor, shift and assign energy generation towards consumers. In fact, blockchain goes a step further and helps create energy supply as digital assets that can be readily traded online.

However, for a market like India, where energy generation and supply has largely been controlled by government bodies, the

introduction of blockchain must be done in sync with the agencies. Looking at prior implementation examples, blockchain does give autonomy to consumers who can act as traders. It also allows for borderless sale and procurement of energy. Therefore, adequate safety controls must be built into the system to ensure fair trade practices that are in line with regulatory policies.

In terms of benefits, blockchain does help in significant operational cost reductions thereby enabling an ecosystem of private operators and prosumers to set up energy trading firms. While the technological platform exists, it is up to the policy makers to ensure that the environment and the market is ready for the next upgrade.



Keeping in mind the globally agreed climate change goals at the Paris Agreement, the need of the hour is to bring about radical transformation in the energy generation sector. Statistics show that the installed capacity of renewable energy sources is nowhere close to its optimal utilisation. With a large dependence on coal and subsequent shortages leading to imports and price increase of this natural resource, it is time to move away from what is known and convenient.