



EXERGY TOKEN:

The first energy marketplace for the new energy consumer

From Brooklyn to Bangladesh, the new energy consumer wants comfort, security, a more engaged relationship, and a promising future for energy production. A democratized energy marketplace is the only way to achieve this promise, and the Exergy project team, part of LO3 Energy, has developed a key piece of this paradigm shift. With Exergy, we are reimagining the customer's role in, and access to, increasingly open and competitive electricity markets.



It's no surprise that transformation is coming to electricity systems, just as it has to industries as diverse as music and hospitality. Spotify and Airbnb are platforms that have created new ways to participate in commerce, raising customer expectations for increasingly customized and personalized services.

No industry is exempt from this shift, and it's being accelerated by technology trends that allow for faster and smaller transactions, and new ways of securing trust. Blockchain technologies—simple distributed ledgers with cryptographic security—enable moving beyond single-ownership platforms to even more decentralized marketplaces where the benefits of disruption accrue for everyone involved.

As digital innovation meets energy, we see four emerging trends evolving the status quo.

1

Consumers are the new producers

Today, new technologies such as sophisticated analytics, energy management and control systems, batteries, microgrids, decentralized energy resources (DERs) such as rooftop solar and electric vehicles, smart meters, and smart appliances are being rapidly adopted. These allow a new player in the energy system to emerge: The Prosumer, both a producer and a consumer of energy.

2

Costs of building on the model of the past are economically unviable

Energy in our economies is largely wasted. For instance, the US economy is 86 percent energy inefficient, which means only 14 percent of energy is consumed for “useful work”, what physicists call “exergy”. Conversely, “anergy” is the combined losses from combustion, transmission and distribution, and conversion to work by appliances or other energy consuming assets, i.e. wasted energy.

3

Innovation is locked out

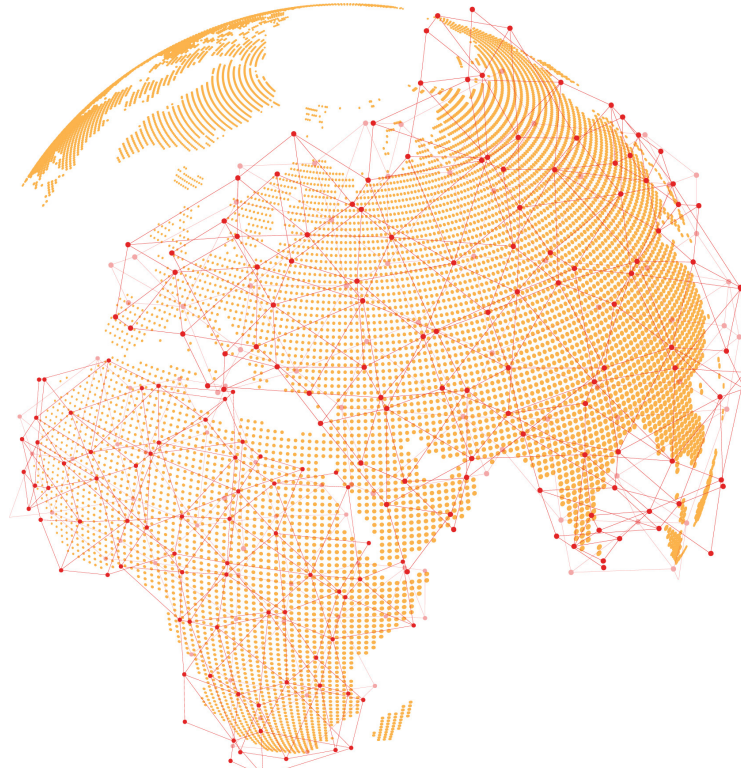
Regulated electricity market players are unable to innovate to respond to this changing landscape. If we expect energy value to move from upstream to downstream, how we buy, sell and regulate electricity needs to change. Wholesale markets kept separate from retail markets insulate the consumer from price signals. While this is meant to protect consumers, it effectively prevents them from generating, storing and dispatching electricity, curtailing consumption, and/or purchasing more from local, renewable sources.

4

The legacy grid model is not completely secure or practically scalable

We often take electricity for granted, but in an era of increasingly severe and frequent floods, storms and cyberattacks, this has become an illusion. In the developing world, energy access for the one billion people without it is no longer morally acceptable—and the status quo is not an option. Using Exergy, these new grid-edge assets can and will work to provide resiliency and security when and where the centralized grid cannot.

The re-imagined energy marketplace



All over the world, communities, cities, states and national governments are aligning and committing to renewables, electric vehicles, and efficiency programs. New energy consumers will play a leading role in meeting these commitments, if they have the tools. The key to achieving these ambitions as well as overcoming the challenges involved is totally rethinking the electricity marketplace.

Empowering global citizens is why the Exergy system is the fast-track solution to today's monopoly business model. In this reality, renewable energy is generated, conserved, and shared within communities. Clean energy is bought and sold autonomously from neighbor to neighbor, but also prioritized to critical facilities during natural disasters and outages. The ultimate outcome will be lower energy prices, vastly reduced carbon emissions and increased resilience and efficiency.

Exergy provides the ability for machines to transact locally, cheaply, securely, and rapidly, making price an indirect means of controlling and integrating the billions of devices at the grid edge, rather than antiquated and expensive command and control technology. Exergy brings the power of markets to individuals, communities, and utilities alike.

Brooklyn Microgrid

A prototype of the Exergy blockchain architecture is already operational in the Brooklyn Microgrid (BMG), a peer-to-peer energy market project supported by LO3 Energy and the community it serves.

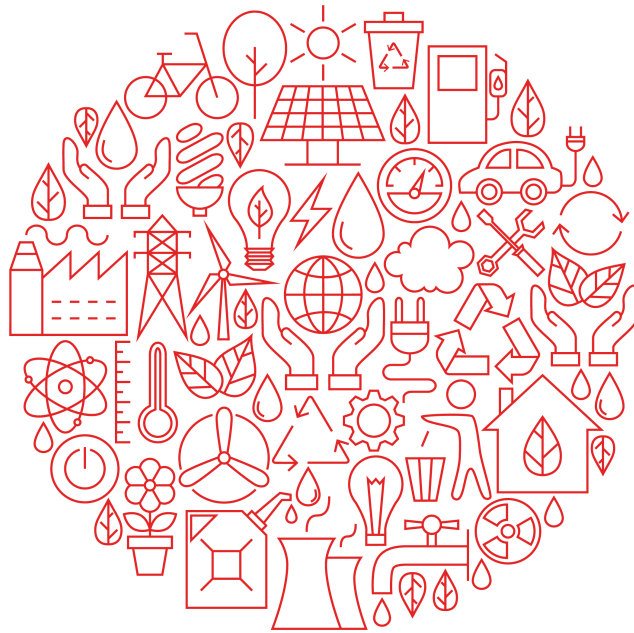
BMG operates over the existing distribution network. Participants take advantage of local energy sources, and can distribute and manage them at the local level. Participants are still connected to the grid and BMG intends to incorporate technology that would allow local power to be available in case of emergency.

The goals of this community network are to:

- Optimize energy distribution and infrastructure upgrades
- Protect local communities and economies during emergencies
- Make clean, renewable electricity cost-effective
- Provide infrastructure to support community involvement
- Maximize circular economy benefits and spur job creation

BMG's infrastructure has been under development since 2015. Over the past two years, the LO3 Energy team has been optimizing blockchain security and latency across their dedicated smart meter technology to ensure robust and stable operations with real world customers. While distributed ledgers today are very simple technologies, the Exergy architecture is designed to benefit from the rapid advances in energy grid infrastructure, distributed computing and evolving blockchain technologies.

The initial BMG community program launched in April 2016 with three residents of Park Slope taking part in the first peer-to-peer energy transactions. Today 60 sites are connected and we are currently in the process of enrolling the next round of prosumers and consumers. Soon, more communities and hundreds more participants will come online as the BMG program expands.



The Exergy system is unique and differentiated from other energy and blockchain tokens because the blockchain architecture is designed from the ground up to align with the physical characteristics of electricity grids at the distribution level, making it possible to secure and transfer the information critical for integration of DERs and operating a truly decentralized grid.

LO3 Energy will use the Exergy system to build its products and applications, and opening parts of the system to other developers to spark innovation and rapid adoption of XRG.

Governance and Acceleration

The Exergy marketplace solution can be technically developed today, but billions of dollars in adjacent investments in cities and communities around the world are required to integrate grid edge projects and meet the challenges highlighted here. To ensure the Exergy System is closing this investment and deployment gap, an independent governance and advisory structure (the “Exergy Foundation”) will be established. The foundation has two main roles.

New ecosystem integration and market design

New stakeholders, such as energy consumers, renewable energy project developers and energy software application developers are emerging and creating nascent and disruptive business ecosystems. Regulators everywhere are watching this space carefully. They want validated use cases and visibility on the progress and implications of blockchain development in the energy sector. Exergy Foundation will engage with these new stakeholders from the outset.

Distribution

The token allocation to the foundation will be used for the distribution, installation and deployment of projects. Supporting these projects in turn accelerates XRG utilization, bolstering the Exergy system overall. A pipeline of projects is already being developed.

Energy Unlocked, an independent not-for-profit, and an expert in this space, is advising on the Foundation strategy.

The XRG Token

The XRG token will be ERC20-compliant. XRG will be used to incent participation in local energy marketplaces, such as microgrids, and promote computational efficiency.

The Team

The LO3 Energy team excels at the ideation, architecture, development, prototyping, and testing of cutting-edge distributed energy, computing, and peer-to-peer distributed consensus networks.



Over the last two years, LO3 Energy has delivered the Brooklyn Microgrid and the world's first ever energy blockchain transaction in April 2016. The team has developed a unique knowledge base of integrating blockchain with physical energy generation and management assets in a regulated environment. The team has been recognized as early market leaders by Utility Week, Fast Company, E.On and Nominet Trust as well as been invited to speak on regulatory energy change in front of the U.S House of Representatives, European Commission, OECD, multiple regulatory bodies and industry conferences.

Join the revolution



The LO3 token generation event is expected late in 2017, visit the XRG Token Offering page, or subscribe to our newsletter at info@lo3energy.com.

For more information:

- LO3Energy.com
- Exergy.energy
- Brooklyn.energy