

Bluenote Executive Summary

Creating a zero-emission world may be both the greatest environmental challenge and the greatest financial opportunity of our time. The Bluenote community started with a mission to tackle the largest single largest source of GHG emissions: energy use in buildings, which makes up one-third of global greenhouse gas emissions. Reducing those emissions by smartly reducing energy consumption can create more than \$650 billion a year in value globally.

To achieve this vision, we need to start to break down the barriers to that market:

- Getting trusted energy and building operational data out of silos and useful for solution providers,
- Reducing the risk and uncertainty of the performance and payback of energy-saving investments through data analytics,
- Connecting the operational performance of buildings directly to the real estate asset value it creates.

It's a big challenge, but we know the opportunity is there. So, we got to work.

THE SOLUTION

The **Bluenote protocol** is a unique, distributed data intelligence technology and economy that has a real world application:

- Allows for the easy collection of and secure access to private data.
- Enables a new global protocol of analytics services.
- Simplifies the verification and tracking of energy use and energy savings.
- Creates bright lines between carbon reductions and financial performance of assets.
- Importantly, allows anyone to take part in this new market.

The Bluenote protocol allows for the commercial buildings industry to deploy distributed data nodes, connect them to a blockchain-based data intelligence protocol while maintaining confidentiality, exchange tokens for energy efficiency and building operations analysis and software services, earn tokens for sharing data intelligence that is useful for the broader community, and verify the impact of their energy and carbon reductions on their bottom line.



The protocol also allows for anyone, even those who don't own buildings, to help lower emissions by contributing data, doing analytics, and helping spread the growth of the protocol.

A TRUE UTILITY TOKEN & PROTOCOL

We can change inaction to action. The Bluenote Protocol allows our community to directly tackle the main obstacles that prevent more buildings from investing in energy-saving strategies.

BUILDINGS TODAY		BLUENOTE PROTOCOL
<p><u>Siloed Data</u>. Building data is trapped in different vendors silos or sits unused.</p>	⇒	<p><u>Decentralized Nodes</u>. Buildings can easily connect data to their own nodes, rather than relying on a vendor's 'cloud.'</p>
<p><u>Data privacy</u>. Data owners are concerned about exposing confidential data.</p>	⇒	<p><u>Secure Access</u>. Data owners can allow for secure access for data analytics through the protocol without exposing the raw data.</p>
<p><u>Actionable Intelligence</u>. Building operators don't have the decision-making tools they need.</p>	⇒	<p><u>Global Protocol for Analytics</u>. The Bluenote community will enable a global network of data analytics that can easily connect to data nodes.</p>
<p><u>Capturing Value</u>. Buildings can't calculate the financial benefit for their improvements because they can't track their performance.</p>	⇒	<p><u>Verified Attributes</u>. Solution providers will be able to develop community-approved performance attributes that reliably measure energy savings and value creation.</p>
<p><u>Lack of financial incentive</u>. Energy efficiency and building operational data is not recognized for the value it provides.</p>	⇒	<p><u>Rewards and Data Sharing</u>. Building owners, and non-building owners, get token rewards for connecting and sharing unique and valuable data to the protocol.</p>

THE BLUENOTE TOKEN

The token used to implement the Bluenote Protocol is the Bluenote token. All transactions on the Protocol are made through the Bluenote token. The token itself has value - a price reflective of market demand for services, velocity of money in the market, market cap constraints, and the volume of transactions. You can receive bluenotes through one or all of the following methods:

- **Uploading Data.** By uploading and connecting data to the Bluenote Protocol, you will be rewarded with Bluenote tokens based on the quality, frequency, and demand for the data you upload.
- **Buying on an Exchange.** You can exchange fiat currency for Bluenote tokens on a public exchange.
- **Use of Your Data.** Some types of modules scour raw data on the network to produce analytics for similar building types.

What can you do with the Bluenote token?

The Bluenote token can be used in the Bluenote Protocol's marketplace to purchase services and products from Bluenote. You can also exchange the Bluenote token back into fiat currency on a public exchange.

BLUENOTE'S DISTRIBUTED DATA INTELLIGENCE

A community that is distributed at its core.

Fully decentralized data collection and secure access

The Bluenote Protocol allows for data owners to establish their own protected node, rather than having to share their data with a "platform" or "cloud." Data owners create a distributed node to store their collected real-time or historical data, and connect it to the Bluenote protocol. Data is stored in standard data structures to allow for easy analysis. Importantly, data owners can allow for secure access for data analytics without ever exposing the raw data set.

Distributed protocol

The Bluenote community will enable a global network of data analytics that can easily connect to data nodes. Analytics that can be provided by third parties include data collection, aggregation, objective recommendations for energy savings projects, validation of energy use and savings, and connecting energy savings to building valuation. Analytics must operate through the secure access provisions of the protocol, and don't require data owners to send their full data set to third parties.

Community data sharing has value

Data owners may wish to elect to share some of their data with the Bluenote community as a whole in an anonymized or protected format through the Bluenote Protocol. When data owners elect to share that data, they can receive tokens for the value that data brings to other building owners or analytics providers.

Liquidity

The Bluenote Protocol facilitates a decentralized market for software and data access based on an ERC20 token. This allows for transactions between solution seekers and solution providers across the world with no intermediary. The token leverages distributed exchange infrastructure and solutions to serve protocol users or token traders wherever they are.

Reward structure

A Reward Pool will be established to seed the Bluenote Protocol with quality building data and to facilitate data generation, uploads, and application deployment by 3rd parties, as a kickstart to the Bluenote token economy. Early on, participants can gain tokens if they collect data on nodes and share the data on those nodes with the broader Bluenote community. Early data sharers will earn token rewards based on the data type, quality, frequency, and uniqueness of the data.

ROADMAP

2018



Collect. Collecting real-time and high-resolution energy-related data from buildings through a Bluenote node. Simplifies the tracking and visual presentation of energy data. **[Operational]**

2019



Reward. Kickstart the Bluenote ecosystem by rewarding, through a smart contract, early participants that bring value to the protocol by identifying or recruiting buildings, providing data or developing software.



Analyze. Developers start processing raw time-series on the Bluenote nodes, including historical billing and weather data, to create the first software-based energy efficiency attributes, and to create recommendations for improving energy efficiency.



Network. Structuring of nodes and indexing building features to facilitate discoverability. Building data queries based on location, size, type, etc. will now be functional.

2020



Distribute. Network effect: a critical mass of nodes is reached. Participants will now be able to run private computation queries on other nodes to leverage energy efficiency learnings or benchmark performance against peers.

MARKET BACKGROUND

According to the United Nations Environment Program (UNEP) 33% all of global emissions are caused by buildings and the electricity they consume. While residential and industrial buildings also play a substantial role, commercial real estate is governed by more rational and quantitative decision-making. Buildings are durable assets that have decades of useful lifespan.

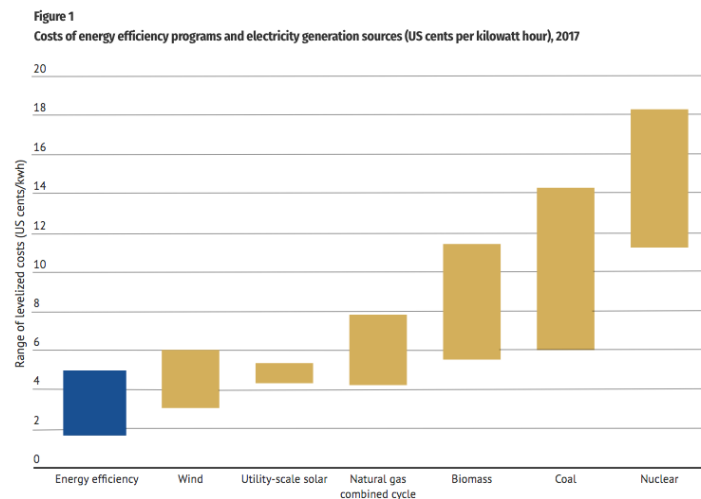
Building owners and the banks that finance the purchase and development of these assets haven't traditionally looked at energy usage as a key metric. They focus more on asset appreciation and cash flow than energy use, which is viewed largely as an expense over which they have little influence. However, giving buildings the tools to uncover the financial impacts and opportunities of changing their energy systems can more clearly illustrate the ROI of each potential upgrade--and more importantly the opportunity to improve the underlying asset valuation.

If we can reduce the friction in the energy efficiency market, prove that efficiency strategies work, and demonstrate the impact of improved energy performance on asset value, we will be able to drive a market-based solution to reducing greenhouse gas emissions.

Building efficiency is the cheapest form of energy

While buildings are responsible for 33% of global emissions, building energy efficiency represents 40% of the greenhouse gas reduction potential that can be achieved cost-effectively.

On a cents/kilowatt-hour basis, comparing the levelized cost of energy over the life of the investments among all energy investments in the power sector, energy efficiency comes in significantly below its fossil-fuel, uranium, and even carbon-free competitors.

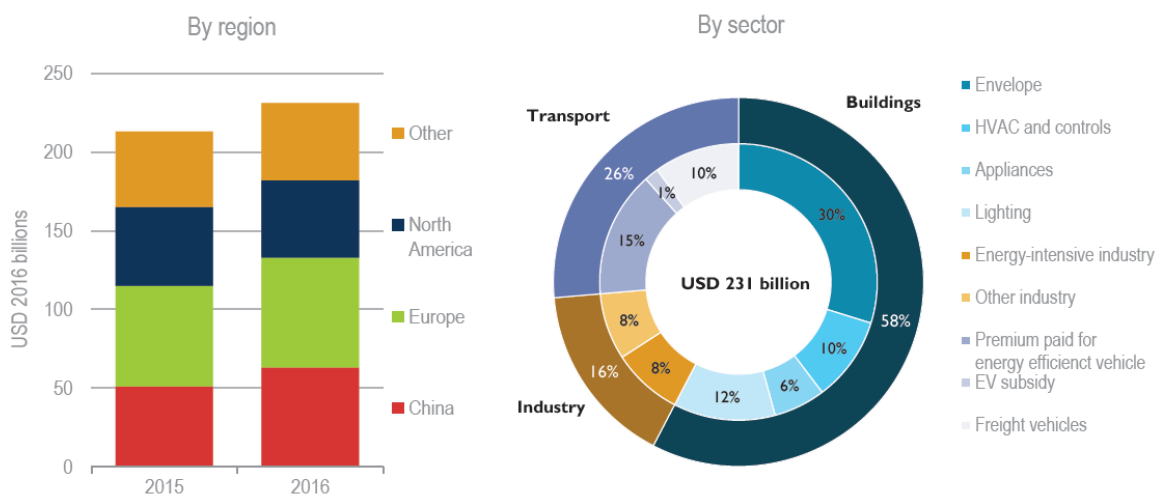


Sources: American Council for an Energy-Efficient Economy, 2014, and Lazard's Levelized Cost of Energy Analysis Version T1.0, 2017.
Note: Energy costs are adjusted for inflation by the GDP implicit price deflator.

Energy efficiency services market exceeds \$118 billion/yr

Global energy efficiency investment in buildings has been increasing, and in 2015 reached USD 118 billion, according to the IEA.⁸ Globally, energy services companies (ESCOs) generated USD 24 billion in revenue in 2016. In the United States, ESCO revenues reached USD 6.3 billion, in the European Union they were USD 2.7 billion, in China, USD 13.3 billion.

Figure 4.2 Energy efficiency investment by region and sector



Sources: IEA Energy Efficiency Investment Database; Navigant Research (2016), *Energy Efficiency Buildings Global Outlook* (database), www.navigantresearch.com; CEE (2016), *CEE Annual Industry Report*; IHS Markit (2016), *Vehicle Registrations and Other Characteristics at Model Level*; Marklines (2017), *Connect to the Global Automotive Industry*; and IEA 4E-TCP² (unpublished), *Phase-out of Inefficient Lighting: A Global Market Move*.

OVERCOMING OBSTACLES

There remain significant barriers at the building level and the system level that have impeded the potential of this market:

Data in buildings is imprisoned in vendor and hardware silos

Today, valuable data on a building's energy, operations, and finances, when it exists, is trapped in a menagerie of silos: with hardware vendors, software as a service, the manager's own spreadsheets. Even the most advanced building energy intelligence platforms are limited to models, proprietary datasets, and assumptions.

Risk and uncertainty

Buildings typically finance energy efficiency investments through an operating budget with an expected payback in reduced utility bills. That often means buildings usually pursue projects with a payback of less than two years.

When a specific energy efficiency strategy is unproven, or has an uncertain impact within the shorter-term lifecycle of a commercial office property, buildings do not take the risk. Their willingness to take a risk on an efficiency strategy decreases as the payback term increases, and they simply don't trust the numbers enough from the vendor selling them the product or solution to overcome that hurdle.

Reducing energy use can improve the IRR of building investments

Investors and lenders are bound by a fiduciary duty to make decisions which lead to greater profitability. In the US alone, the Rockefeller Foundation has estimated that \$100B saved in electricity in buildings each year would translate to roughly \$600B - \$800B in increased asset value, plus an additional estimated \$279B spent on actual efficiency upgrades.

The new efficiency potential that can be unlocked by the Bluenote Protocol creates a new value proposition for building asset owners. Under the traditional methodology called the "Income Capitalization Method," a standard technique used by commercial real estate investors around the world to determine the value of a building asset, reducing energy costs and increasing Net Operating Income creates new value of the underlying asset.

A study done in collaboration between Deutsche Bank and the Rockefeller Foundation calculates the value of those energy expenditures, stating that just 30% of the electricity expenses borne by commercial buildings in the United States is worth \$100 billion annually.

TOKEN SALE SUMMARY

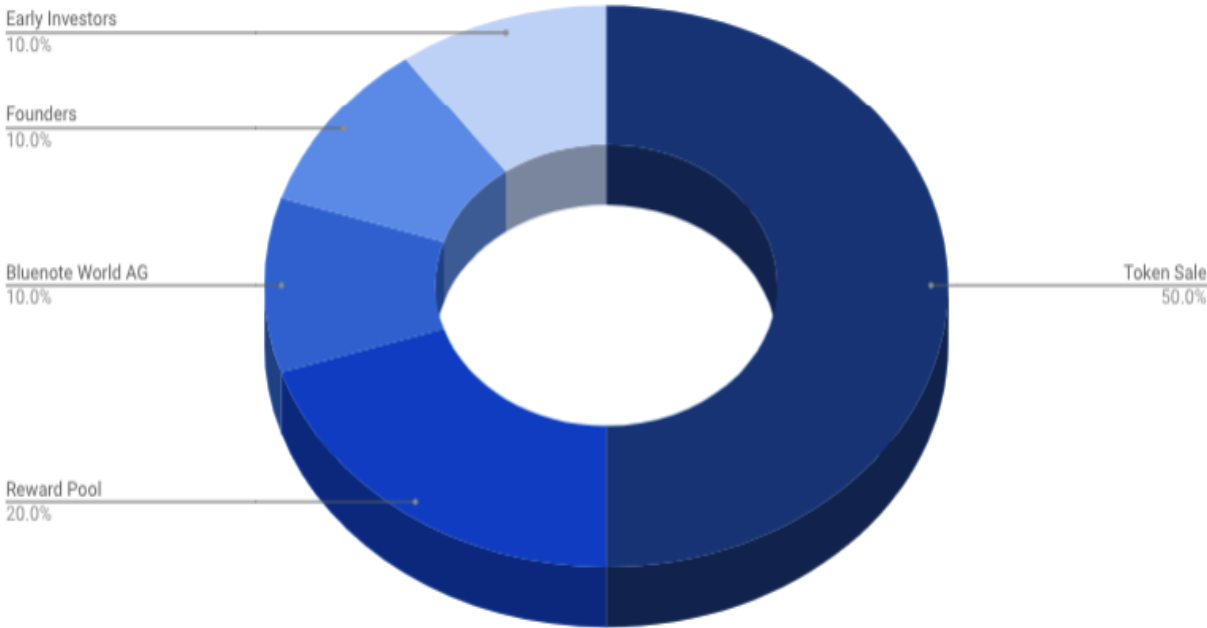
Bluenote will issue an ERC20 standard token to power the Bluenote Protocol and ecosystem.

Token Name	Bluenote	
Token Symbol	BNOW	
Total Number of Tokens - Supply	12,500,000,000	
Total number of tokens for sale	6,250,000,000	50.00%
Unsold tokens	<ul style="list-style-type: none"> Unsold tokens will be allocated to Bluenote World AG (the ability to burn tokens will be retained). 	
Fractions	18 decimals	
Blockchain	Ethereum - ERC20	
Sale Period	Private Sale	From June 2018 until the end of November 2018.
	Public Sale	December 2018 – January 2019
Accepted Currencies	BTC	
Minimum Goal	CHF 2,500,000	
Maximum Goal (Public Sale + Private Sale)	CHF 20,000,000	
Bonus Periods	To be announced prior to sale period	
KYC (know your customer)	Yes	
Token Price	1 Bluenote token = CHF 0.01	
Token Price in ETH Public Sale	To be set at 24 hours prior to Public Sale	
Minimum Buy-in (Private Sale)	CHF 2,500	
Minimum Buy-in (Public Sale)	CHF 100	
Maximum Buy-in	CHF 1,000,000	

*CHF = Swiss Francs (Swiss national currency)

TOKEN DISTRIBUTION

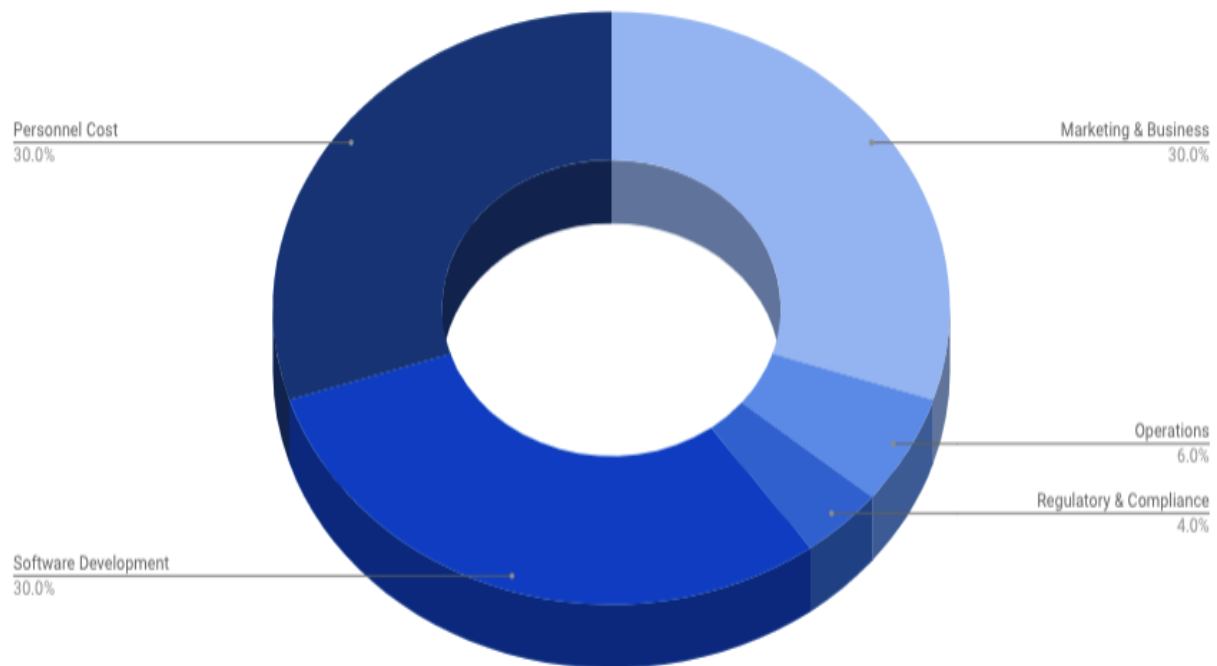
Bluenote World AG will issue a total of 12,500,000,000 Bluenote tokens. These bluenotes will all be issued at the TGE and be distributed according to the illustration below. The process around the Bluenote token distribution will be communicated on the website prior to the TGE.



Category	Allocation	Description
Public Sale	50%	Tokens available in public sale are sold in a private sale, at the conclusion of which the remainder of tokens not sold, will be sold in a public sale, or sold on exchanges by Bluenote World AG.
Reward Pool	20%	The Reward Pool will be established to seed the Bluenote Protocol with quality building data and to facilitate data generation, uploads, and application deployment by third-parties, as a kickstart to the Bluenote token economy.
Founders	20%	Tokens allocated to the founders are subject to a vesting period of 24 months. The vesting schedule will ensure long term goal alignment.
Bluenote World AG	10%	Tokens allocated to Bluenote World AG will be used to fund administration and operational items.

USE OF PROCEEDS

An efficient deployment of the proceeds will be crucial to the success of the protocol and the Bluenote ecosystem. At the minimum target level, the following operating costs will be required to achieve a minimum viable development of the Bluenote Protocol infrastructure and reference software, and to grow the Bluenote community.



Category	Allocation	Description
Software	30%	Building and maintaining the Bluenote Protocol is largely a software development effort and an ongoing exercise in innovation. The success is a function of the efforts and creativity applied, hence the “software” demands the majority of the proceeds from the TGE.
Personnel	30%	<p>A relentless focus on innovation and efficiency requires a dedicated and highly skilled team of experts.</p> <p>Profiles ranging from Engineering to Marketing will help lift the protocol to its full potential and help release the massive value still locked-up in building energy efficiency.</p>
Marketing & Business Development	30%	<p>Communications is of paramount importance when building a community and ensuring a worldwide adoption of a protocol like Bluenote.</p> <p>Continued Marketing, Communications and progressive Business Development is intended to keep ensure the successful execution of the solution as well as being essential to reach critical mass of the ecosystem.</p>
Operations	6%	<p>Security, reliability and availability will be the key drivers of the team operating the Bluenote Protocol.</p> <p>We are striving to combine these objectives with a lean organization, both technical and administrative.</p>
Regulatory/ Compliance	4%	Ensuring a sound regulatory framework for the services will be important for adoption and growth of the network. Bluenote will work with both stakeholder organizations and regulators to allow for the most efficient execution of our vision.

Security

Bluenote World AG will take all measures to ensure a smooth and secure handling of the TGE process. Allowing investors and early adopters to enjoy full trust in the new ecosystem. The Ethereum smart contract used for the TGE will be audited to ensure compliance with best practices.

Governance Mechanism

The Bluenote Protocol is intended to play a key role in efficient real estate management and real estate investments. Future extensions to the protocol, partnerships as well as

token utilization features can be posed for community voting. Voting power would be weighted based on the number of tokens (excluding any unrewarded Reward Pool tokens as well as all non-purchased “Public Sale” tokens).

HOW BUILDINGS PARTICIPATE IN THE REAL WORLD

To understand how the Bluenote Protocol and different modules will work in the real-world, we describe the journey of a building that will participate in the Bluenote Protocol. We will call this building the Johnson Building, a mid-rise office building of 37,000 sq. meters (400,000 sq. ft.) that uses electricity for both cooling and heating.

Uploading Data and Establishing a Node

The Building first engages with the Bluenote Protocol by establishing its own data streams on its own node to connect with the network. In this case, it is being helped by an energy services company that specializes in the Bluenote Protocol. The building first:



1. Creates a node for a distributed software package on its own cloud server or uses the already-established node of its energy services company.



2. Uses a simple web interface product to upload static building information such as size, location, floor plate, building envelope, major mechanicals, and other data.



3. Connects Bluenote-compatible hardware devices with its utility electricity meter and building automation system to provide a direct data upload of its real-time data to a data stream.



4. Chooses to make a further small investment to install sensors to collect temperature, air quality, occupancy, and daylight data throughout its building, and maps the data streams to a 3D building model.

Rewards for Data

Participants gain tokens based on the uploading and connecting certain types of data to the protocol, with different token values based on the data type, quality, and frequency. In this scenario, the building chooses to share all of its data streams to be used by the data community. It receives the most tokens for its real-time data streams.

Confidentiality

The four streams of data that the building has established in the node and connected to the Bluenote Protocol - static data, electric meter data, automation system data, and sensor data - are mapped as separate data streams with their own unique identifier. The decision to combine those data streams together, creating personally identifiable information, can only be made by the building by sharing the data stream keys for each data stream and identifying them as connected.



Marketplace



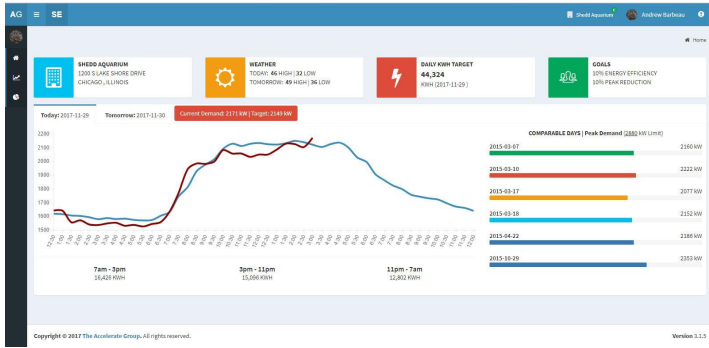
The building connects to the Module Marketplace developed by Bluenote to search and compare for building analytics software providers, review ratings and feedback.

Recommendations Module

The building decides to purchase two Recommendations Modules through the Marketplace.

First, it selects a Recommendations Module that provides the building with an hourly baseline based on its historical electricity usage data, weather patterns, and occupancy patterns. It uses some of its reward tokens for the purchase of this module. The building shares its historical data stream ID, its base building static data stream ID for location data, and its occupancy data stream ID from its sensor data through the smart contract. Once accepted, the third-party module uses those IDs to identify the data locations and run its analysis module, with the output of the module becoming its own data stream with its own unique ID that is shared back with the building.

The building wants to display the hourly baseline data stream from the module provider on a dashboard app, so it can track its performance against the baseline in real time. It adds



the data stream to its Bluenote-partnered dashboard simply by entering the baseline data stream ID into the dashboard interface. The building will use this dashboard to display several pieces of relevant data to its building operators on a real time basis, all pulled from various module outputs.

Now, the building wants to compare its energy intensity against substantially similar buildings. It visits the Marketplace to search for a second Recommendations Module to do just that.

Attributes Module

The building has partnered with its local utility to enroll in a pay-for-performance energy efficiency program, allowing the building to get paid on a cents-per-kilowatt hour basis for verified whole building energy efficiency reductions.



As part of this program, the utility joins the Bluenote community and chooses an Attributes Module to calculate the verified energy efficiency performance of the building. Because the building has real-time data flowing in to the protocol, the utility is able to use an open source real-time measurement and verification Attributes Module that it has reviewed and trusts, that calculates the building’s real time energy performance vs. its modeled baseline to come up with an hourly kilowatt-hour saved metric.

The utility receives as an output a data stream ID of a verified energy efficiency savings metric that is permanently traceable back to the source data of the building, avoiding the need to run a separate, offline, third-party statistical analysis that does not have access to all the building’s data.