

## **Agri-Eco Smart Chain "Agent Economy"**

Issuing Institution: BLUEPINE TECH FOUNDATION Strategic Research Institute

Report Date: November 2025

The "Agent Economy" is an emerging future economic paradigm catalyzed by the convergence of IoT and blockchain technology.

In simple terms, it refers to an economic model where machines autonomously conduct value exchange and business collaboration with other machines, without requiring direct human intervention.

In traditional models, machines are merely tools that execute human commands. Within the "Agent Economy," machines are endowed with the identity of economic agents. They can own resources, hold assets (or digital claims to assets), and base on predefined rules or AI-driven decisions, automatically transact with other machines.

### **Core Elements of the "Agent Economy"**

For machines to engage in autonomous economic activities, several key technological elements are required, which is precisely what Agri-Eco Smart Chain aims to build:

1. **Digital Identity:** Every device (e.g., sensor, drone, irrigation valve) possesses a unique, verifiable decentralized identity on the blockchain. This establishes trust in the identities of transacting parties.
2. **Digital Assets & Payment Capability:** Machines need to possess or control some form of value carrier (e.g., cryptocurrency, tokens) to pay for services. Within the AESC ecosystem, this is the AESC token.
3. **Executable Smart Contracts:** These are the brains of the "Agent Economy." Smart contracts are code-based rules pre-deployed on the chain, defining which transactions to execute under specific conditions.
4. **Trusted Data Feeds (Oracles):** The data upon which machines base their decisions (e.g., weather, soil moisture, energy prices) must be authentic and reliable. This is typically achieved through oracles that securely transmit real-world data onto the blockchain.

### **Concrete Example in an Agricultural Scenario**

Imagine within the AESC public chain ecosystem, there is an intelligent irrigation system and a meteorological data service provider (also composed of IoT devices).

#### **Participants:**

Smart Irrigation Valve: Has its own on-chain identity and a small wallet of AESC tokens.

Meteorological Data Service Node: Provides accurate short-term rainfall probability forecasts, charging 0.1 AESC per query.

Trigger Condition: A soil moisture sensor detects dry soil, reaching the threshold requiring irrigation.

#### **"Agent Economy" Workflow:**

1. **Request Initiation:** The smart irrigation valve's controller automatically triggers an on-chain transaction, paying the meteorological data node 0.1 AESC to query the "probability of rainfall in this area within the next 2 hours."

2. Service Provision & Payment: After the meteorological node verifies the payment on-chain, it returns the query result (e.g., "80% probability of rain") to the irrigation valve via an oracle.

3. Autonomous Decision & Execution: The smart contract embedded in the irrigation valve evaluates based on its rules:

Rule: IF soil is dry AND rain probability < 30% THEN initiate irrigation; IF rain probability > 70% THEN delay irrigation.

Execution: Given the 80% rain probability, the irrigation valve autonomously decides not to activate, saving the farm owner water and electricity costs.

4. Value Transfer: In this process, one machine (the irrigation valve) purchased a service from another machine (the meteorological node) and completed the payment. Value flowed seamlessly between machines.

### The Broader Vision of the "Agent Economy" & AESC's Ambition

The above example is just a micro-scenario. AESC public chain aims to realize a far grander collaborative network by building "Agent Economy" infrastructure:

Drone-Harvester Collaboration: A drone scouting a field and identifying mature crops could automatically post a harvesting request with an AESC bounty on a "chain-based task marketplace." Nearby autonomous harvesters could bid for the job and automatically receive the bounty upon completion.

Equipment Rental & Sharing Economy: An idle smart agricultural machine could tokenize itself as an RWA asset and set a rental price. Other farmers' scheduling systems could directly pay AESC to this "Machine NFT" to gain usage rights for a specific period.

Automated Carbon Credit Trading: A field's sensor network could automatically calculate the carbon sequestered in a quarter and generate on-chain carbon credits. When the market price on a carbon exchange reaches a preset value, the system automatically lists them for sale, distributing the proceeds automatically to the farmer and equipment owner.

### Summary

The essence of the "Agent Economy" is refining economic activity to the machine level, achieving ultimate efficiency and automation in resource allocation. It represents a entirely new direction for productivity development.

The ambition of Agri-Eco Smart Chain is precisely to become the infrastructure and rule-setter for the global agricultural "Agent Economy" by creating a high-performance, low-latency, IoT-native public blockchain deeply understanding agricultural business. The ultimate goal is to build a self-driving, self-optimizing, distributed, and autonomous agricultural ecosystem.