Context

- On 12 December 2015, 196 countries and territories adopted the Paris Agreement, a legally binding international treaty on climate change. Signatories aim to achieve a climate neutral world by mid-century. China has committed to achieve 'net zero carbon dioxide (CO_2) emissions before 2060, USA has committed for 2050.
- Global net human-caused emissions of CO2 shall fall by:
    - by 2030: 45% from 2010 levels
    - by 2050: reach 'net zero'
- Annual investments in low-carbon energy technologies and energy efficiency shall be upscaled by roughly a factor of six (range of factor of 4 to 10) by 2050 compared to 2015. As of 2020 the annual size of the market is 250bn USD.
- Total annual average energy demand investments are projected to be between 640bn and 910bn USD2010 for the period 2016 to 2050. Annual investments in low-carbon technologies in end-use sectors is projected to rise from USD 530bn currently to USD 1.7tn in 2030.

Problem

- **Global investments in energy efficiency shall be rapidly increased** to meet the targets within the prescribed timeframe.
- **Lack of large-scale unified marketplace**. There is no major marketplace that connects the various parties – project owners, investors, services providers
- **Lack of secondary market**. Currently there are no tools that allow transfer or trading of energy efficiency contracts
- **Market fragmentation excludes institutional investors**. The lack of marketplace makes it challenging for institutional investors to deploy funds into portfolios of projects. The market fragmentation is multifaceted by geographical location, by project owner and by service provider
- **Retail investors are excluded**. Current structure of ESCO projects practically excludes retail investors due to high entry barriers and lack of contact channels with services providers/project owners
- **Technical resources**. Energy efficiency projects require technical capacity for assessment which is not core activity of most investors
- **Communication gap**. There is a communication gap between the investors (with core activities in financial services) and technical team that define projects (with core activities in engineering services)

Opportunity

TAM for EnergyGlare is equal to the annual investments in low-carbon technologies in end-use sectors is projected to rise from USD 530bn currently to USD 1.7tn[1] in 2030 (spending on deep retrofitting of buildings, transformation of industrial processes, purchase of low-emissions vehicles and more efficient appliances). EnergyGlare aims at acquiring 1% of the market by 2030. Annual investments in traditional energy efficiency projects alone are projected to be between 640bn and 910bn USD from 2016 to 2050.

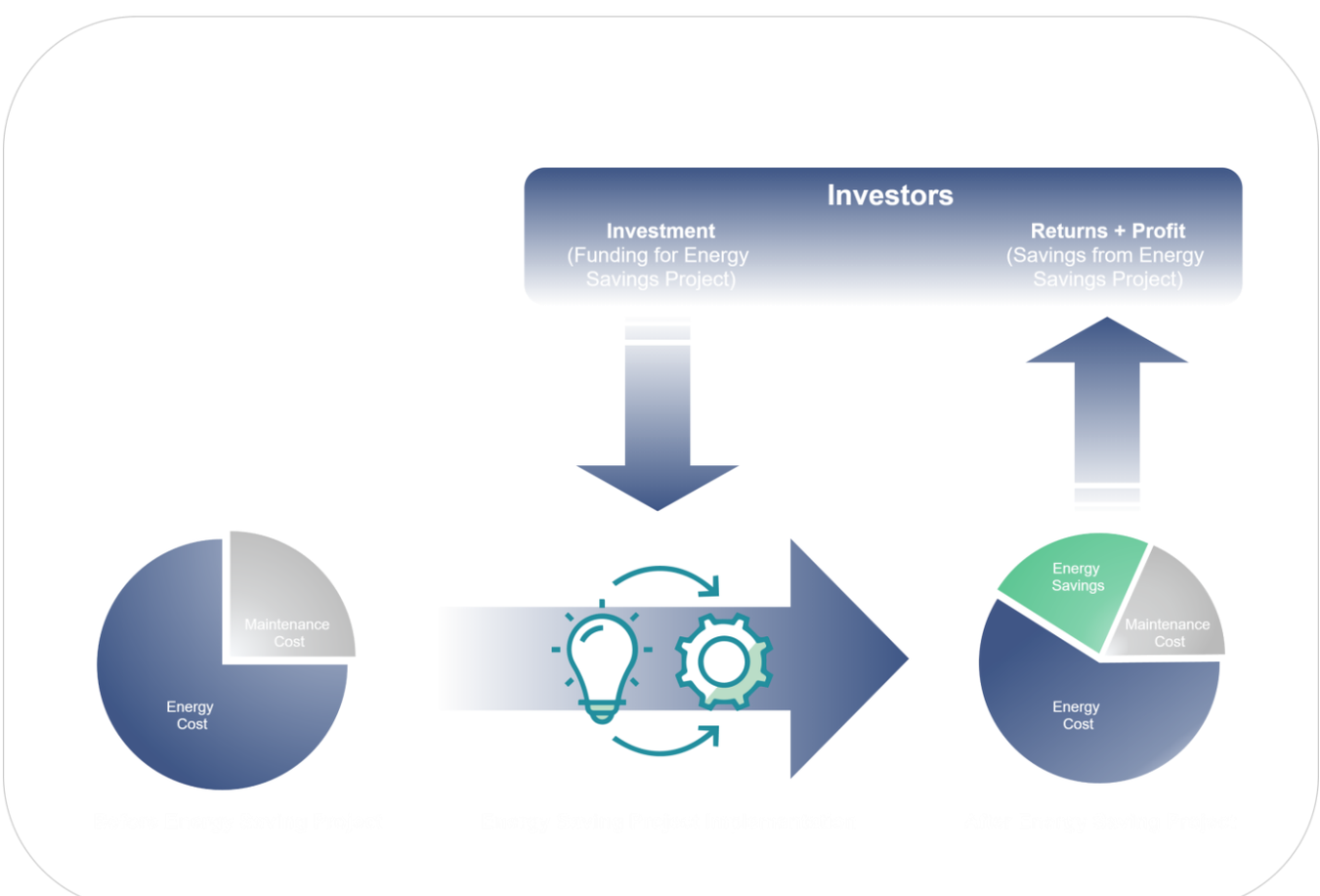
[1] Data by United Nations' (UN) Intergovernmental Panel for Climate Change (IPCC) and the International Energy Agency (IEA). The projections are calculated in net present value of 2010 USD.

What is ESCo

An energy service company (ESCO) is a business that provides a broad range of energy solutions including designs and implementation of energy savings projects, retrofitting, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management. ESCO is a model that is scientifically proven, standardized and in use for more than 50 years

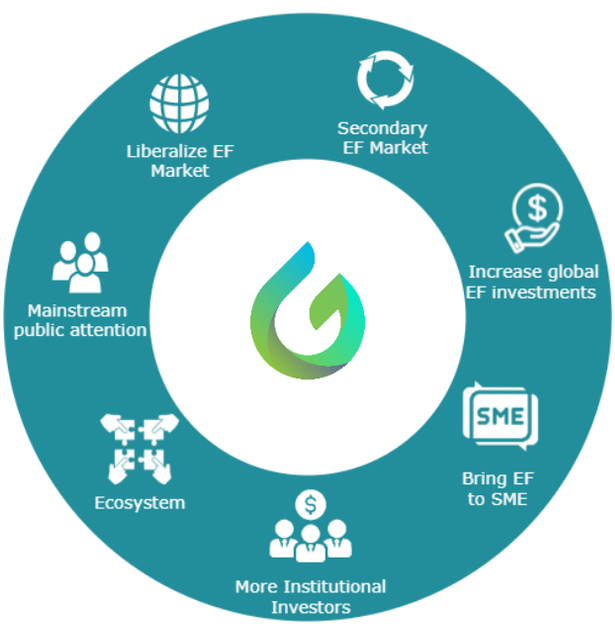
The ESCO starts by performing an analysis of the property, designs an energy efficient solution, installs the required elements, and maintains the system to ensure energy savings during the payback period. The savings in energy costs are often used to pay back the capital investment of the project over a five- to twenty-year period.

After installing the energy conservation measures (ECMs), the savings created from the project must be determined. This process, termed Measurement and Verification (M&V), is frequently performed by the ESCO, but may also be performed by the customer or a third party. The International Performance Measurement and Verification Protocol (IPMVP) is the standard M&V guideline for determining actual savings created by an energy management program. Because savings are the absence of energy use, they cannot be directly measured. IPMVP provides 4 methods for using measurement to reliably determine actual savings. A plan for applying the most appropriate of the 4 general methods to a specific project is typically created and agreed upon by all parties before implementation of the ECMs.



Solution

EnergyGlare is a green finance investment platform that uses blockchain technology and smart contracts to implement a modified and extended form of the ESCO model of investment in energy efficiency projects and distributing energy saving returns to investors. It defragments the market by providing a single platform for the full range of energy efficiency projects. The platform utilizes blockchain and smart contracts to allow for direct interaction between Project Owners and Investors without the need of intermediaries. The ecosystem also includes Services Providers and Contractors.



Mission

To open up energy investment for all parties who are interested to invest or implement energy efficiency projects and achieve the UN targets for carbon neutrality by 2050. To provide everyone with equal access to energy efficiency investment.

Functionality

- EnergyGlare is a decentralized platform that allows for direct engagement between parties without 3rd party financial institutions involved
- Digitalize the proven ESCo model and enable energy efficiency contracts through smart contracts
- Tokenize ongoing energy contracts and create a secondary market for ongoing energy contracts on and off the Platform
- Provide a comprehensive dashboard that standardizes project presentation and overcomes communication gap
- Provide crowdfunding to enable retail investors
- Provide portfolio functionality to enable institutional investors
- Perform all transactions and returns in stable coin at phase 1 and progressively add other crypto currencies in phase 2
- Transform achieved energy savings into digitalized carbon credits and integrate with the markets for carbon credit trading.

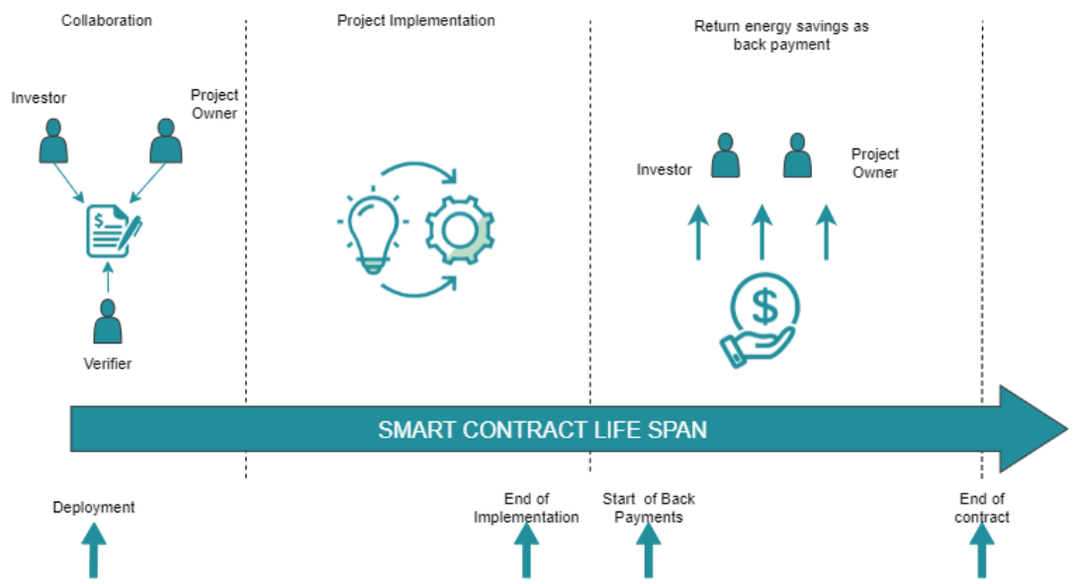
Platform Roles

Project Owners are business entities that own or operate energy consuming facilities (buildings, systems, infrastructure, vehicles or others) and want to improve their energy efficiency. Project owners want to attract investments to implement their energy efficiency projects.

Investors refers to both institutional and retail investors that have capital for investment into energy efficiency projects. Investors can fund entire projects or participate in investment pools. Similarly to standard ESCO model, ESCO companies may be investors as well – they can participate both as investor and verifier.

Service Providers / Verifiers are 3rd party independent ESCO or energy management companies with certain professional qualification and proven experience in energy efficiency projects design and implementation. They are essential part of the collaboration between Investors and Project Owners in the EnergyGlare ecosystem. They bring in technical expertise and capacity to verify the technical feasibility and performance potential, thus, filling the trust gap between the other parties.

Service Providers / Contractors are the construction companies, suppliers and vendors who implement the energy efficiency project funded through the platform. Contractors can be directly requested for proposals and appointed by the Project Owners.



Technology

Governance and Utility Token	ERC-20
ESCo contract implementation	Ethereum smart contract
Secondary market for ESCo contracts	ERC-721
Carbon credits	ERC-20
Means of transaction	USDT (Phase 1), Other cryptocurrencies (Phase 2)