

PowerChain

Green Energy Exchange



7.3
Million



73%

15%

2%



How can I start using renewables

Can I trust the big companies?

What is a token?

I want sustainable energy to be more accessible

I wish I had more trust
in my energy company

Im sick of retail energy companies

The industry jargon is overwhelming

I don't want rising network costs

Is it safe?

I don't see energy as relevant to me

Do I need solar panels?

What are smart contracts?

Is it cheaper to self supply?

What is decentralisation?

What is a microgrid?

I want to be part of a community

Its too expensive to start

Can our current infrastructure support us in the
future?

What is decentralisation?



How can I automate my energy bill?

What is the blockchain?

I want a passive income

I wish I had knew about this sooner

Renting stops me from accessing
renewable energy

I don't know enough about renewable energies

How do I sell my energy for more?

What would happen to my power
during a natural disaster?

What is the future of power?

We are peer-to-peer energy trading platform. Our goal is to allow individuals to control the resources they use and empower communities to trade energy in a way that directly benefits them.



The Team



Dennis Kim
Smart Contracts



Yasmin Frost
Business Strategy



Sam Liu
UX / Design



Chris Le
Front-End Dev



Nathaniel Gandhi
Front-End Dev



Aaron Clements
Back-End Dev



Nick Rabey
Back-End Dev



Jess Wu
Mentor



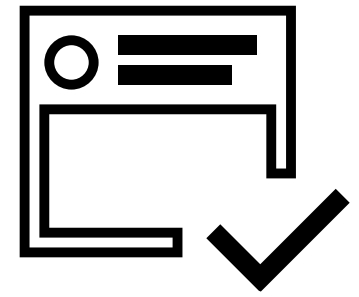
Elly Williams
Mentor



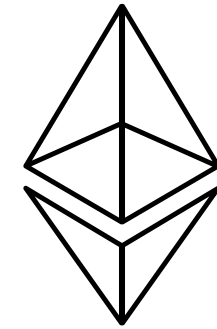
Sing Le
Mentor



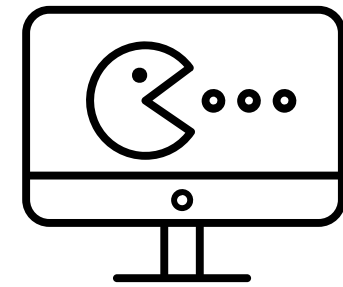
Characteristics



Subscription based service with a progressive fee structure



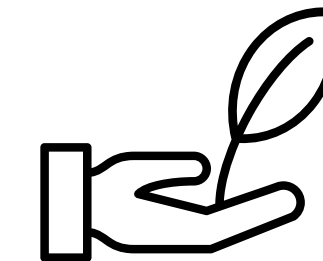
Based on the Ethereum blockchain



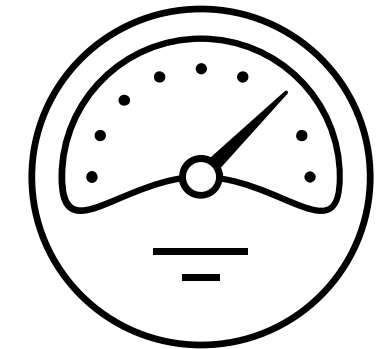
Gamification features to compete with friends and to win awards for going green



Sell your surplus energy for higher rates



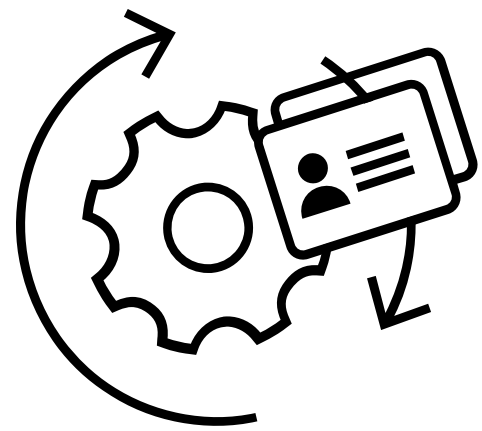
Environmental & altruistic focus



Unique smart meter to accurately monitor your energy usage



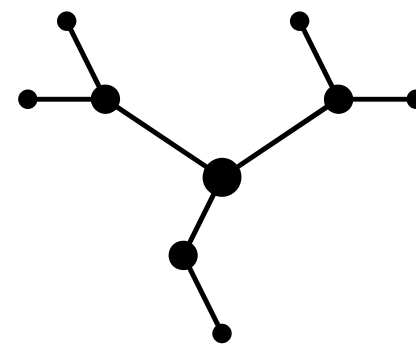
Why Blockchain?



Automation, there is no manual data input.



Transparency and trust, blockchains are shared and you can easily access transaction history



Completely decentralised with no need for retail energy companies or a central authority



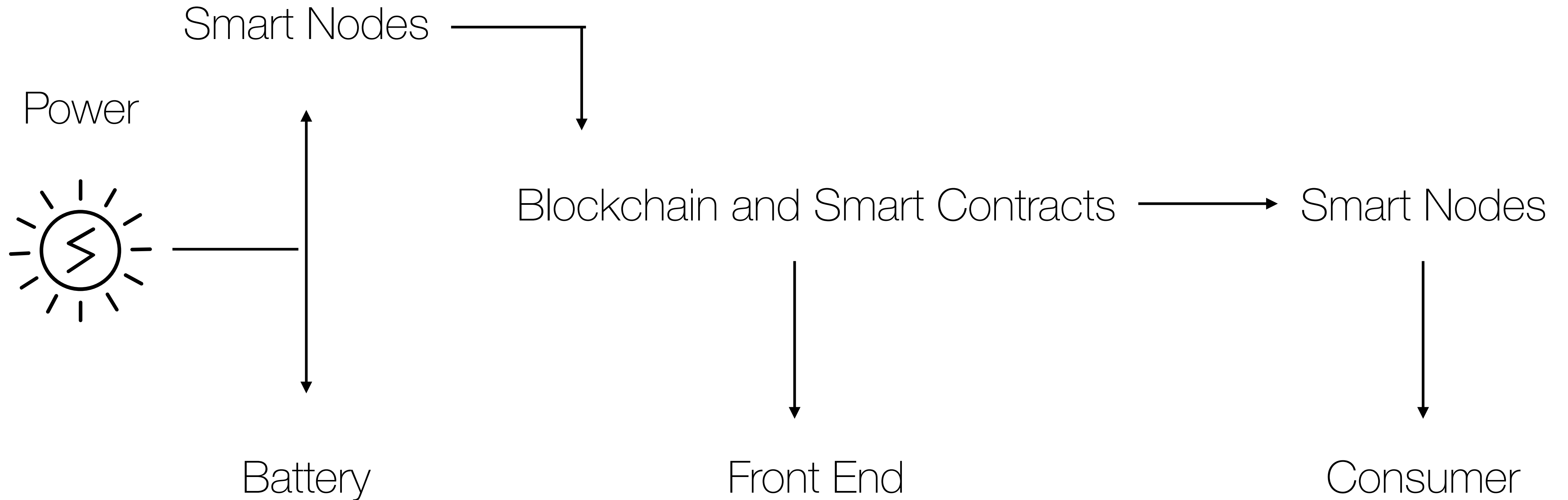
Advanced cryptography with high levels of security to protect user data



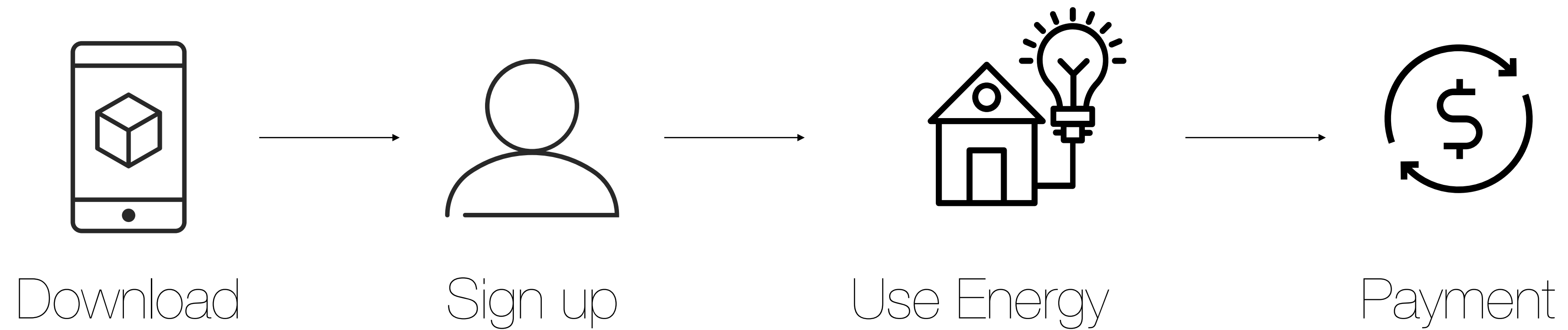
It saves money! No third parties are required and overhead costs are low



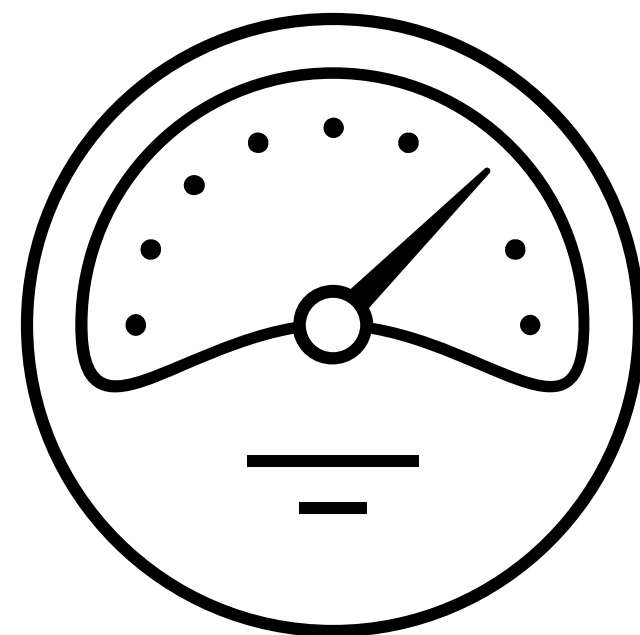
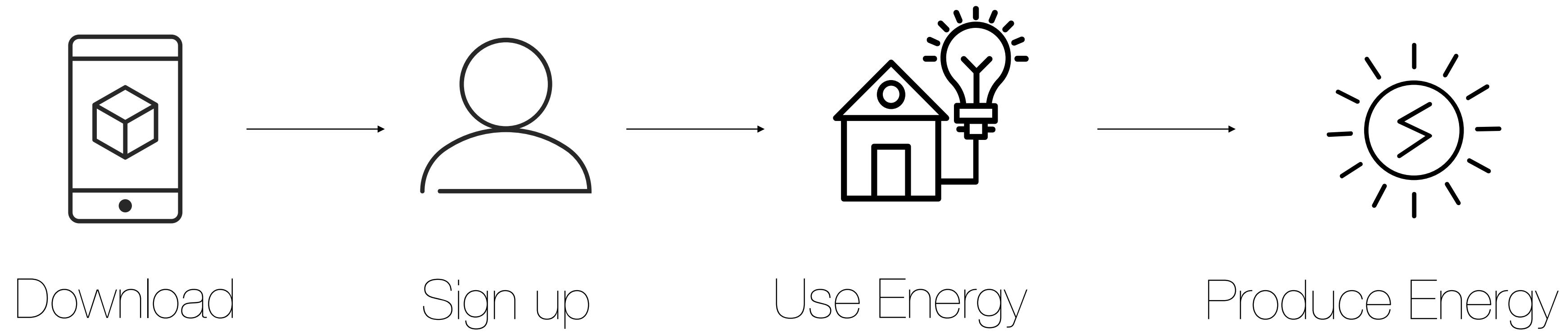
Infrastructure



Consumer Journey



Prosumer Journey

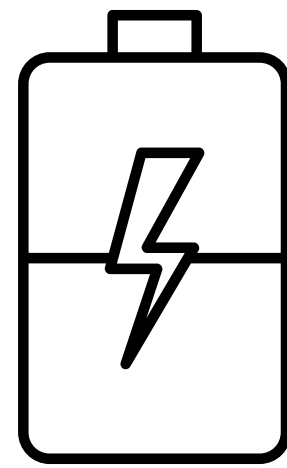


Net Metering

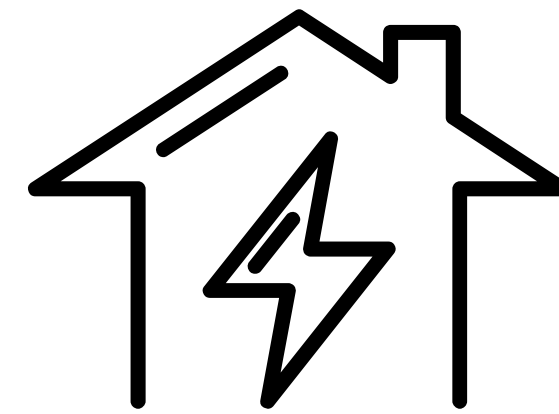


Net Metering

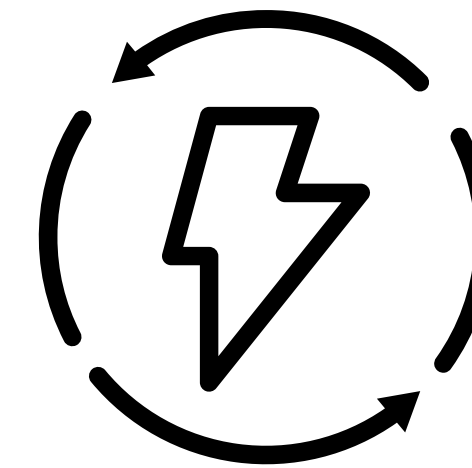
Counting a prosumers surplus energy against their consumption



Sell energy to
store in an off-
site battery



Store energy
on-site



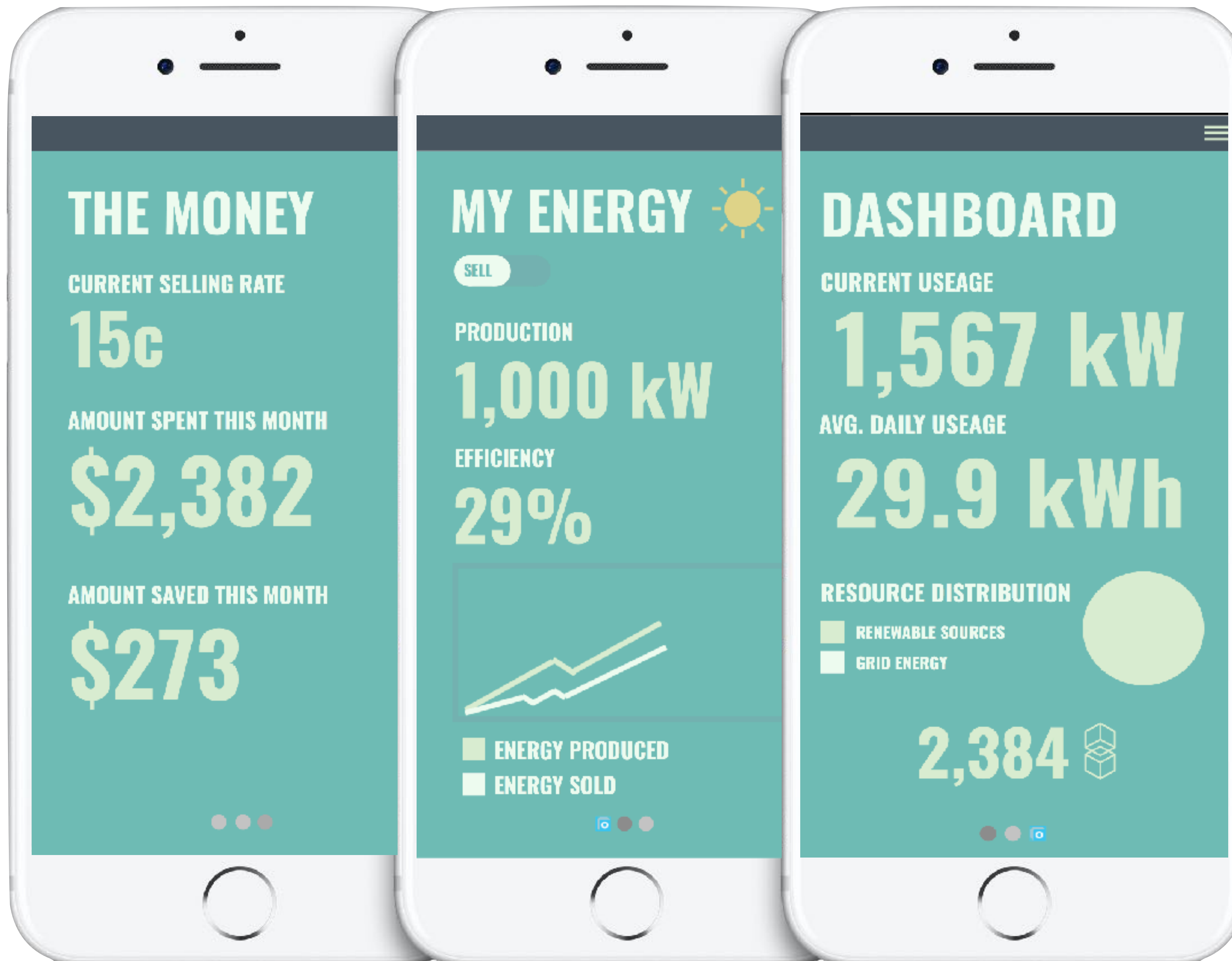
Sell energy
within the P2P
market

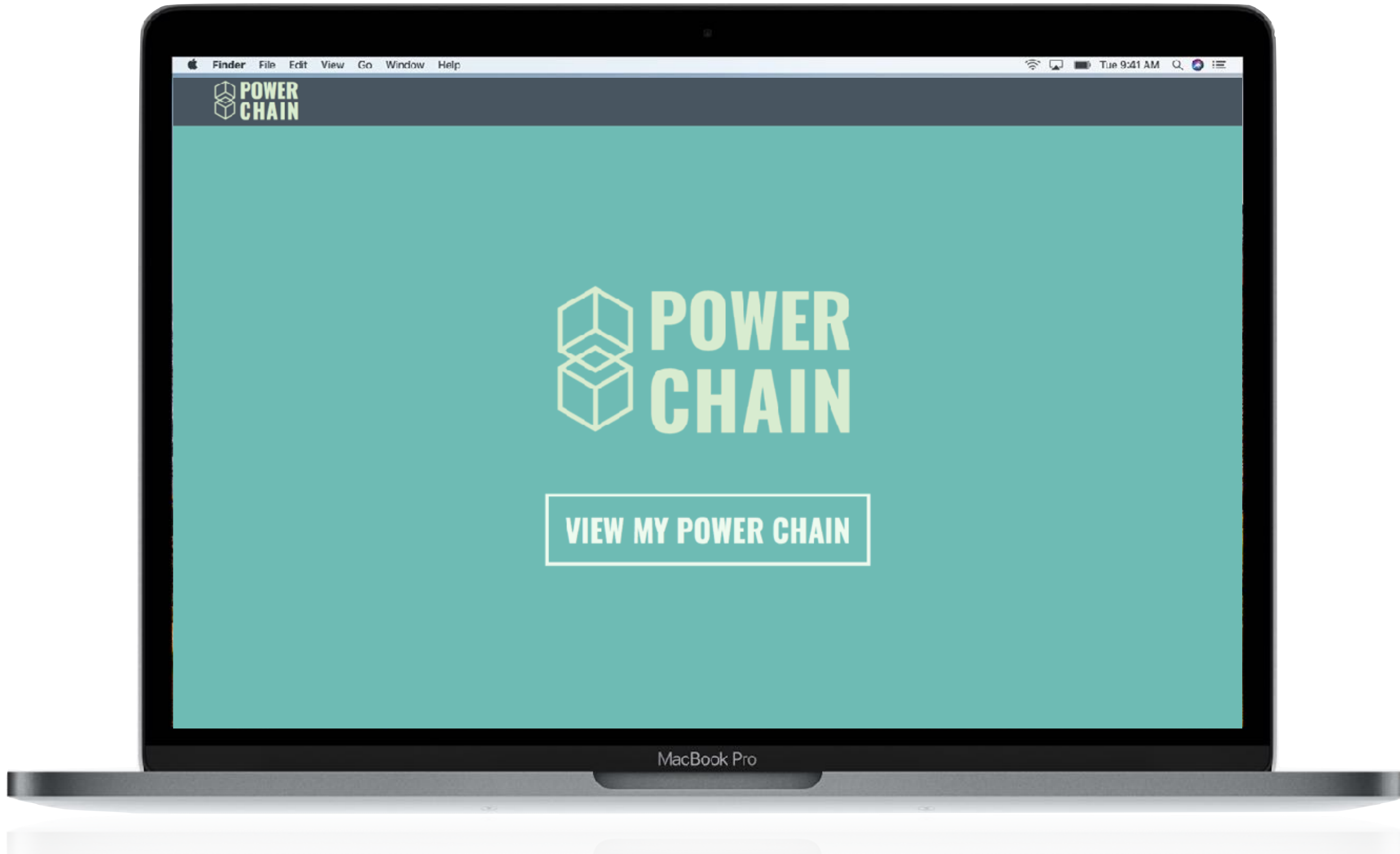


Use Case: Using Our Platform

	BUYER	SELLERS
Application	User Experience	User Experience
Primary Actor	User	User
Description	User requires access to website and/or application which implicitly promotes continued use of the product	User requires an easy to navigate platform to monitor usage and profits
Precondition	At least one platform will have to be available to the user Buyer/Consumer only platform	At least one platform will have to be available to the user Seller/Prosumer only platform
Trigger	Consumer behaviour	Producer behaviour





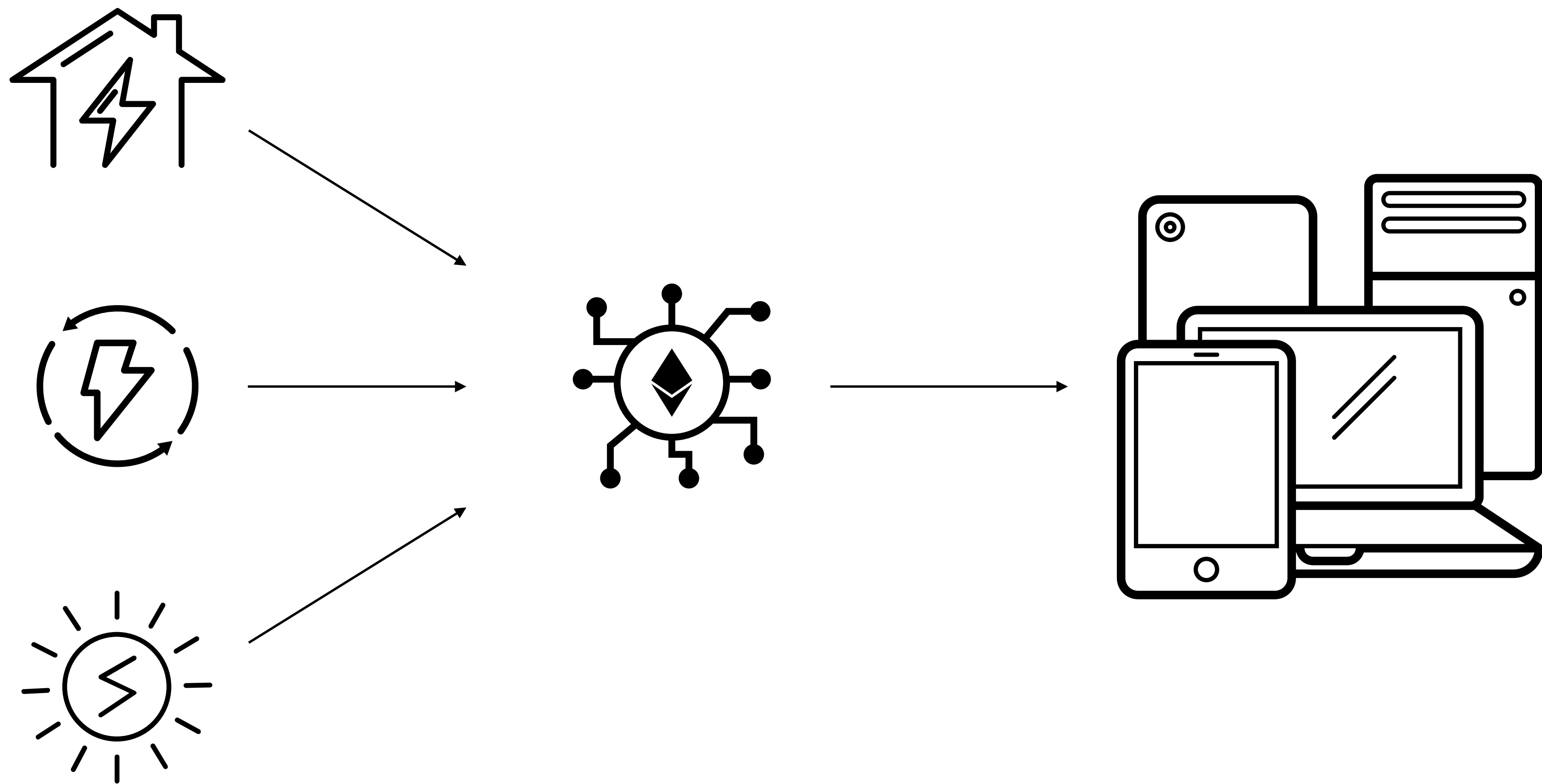


Use Case: Using Our Platform

	BUYER	SELLERS
Application	Front End	Front End
Primary Actor	User (Buyer)	User (Seller)
Description	Updates from the blockchain about energy usage	Updates from the blockchain on energy usage and sales
Precondition	Blockchain integrated into customer facing application	Blockchain integrated into customer facing application
Trigger	Confirmed token transactions	Confirmed token transactions Smart contracts indicating energy distribution



Front End Process



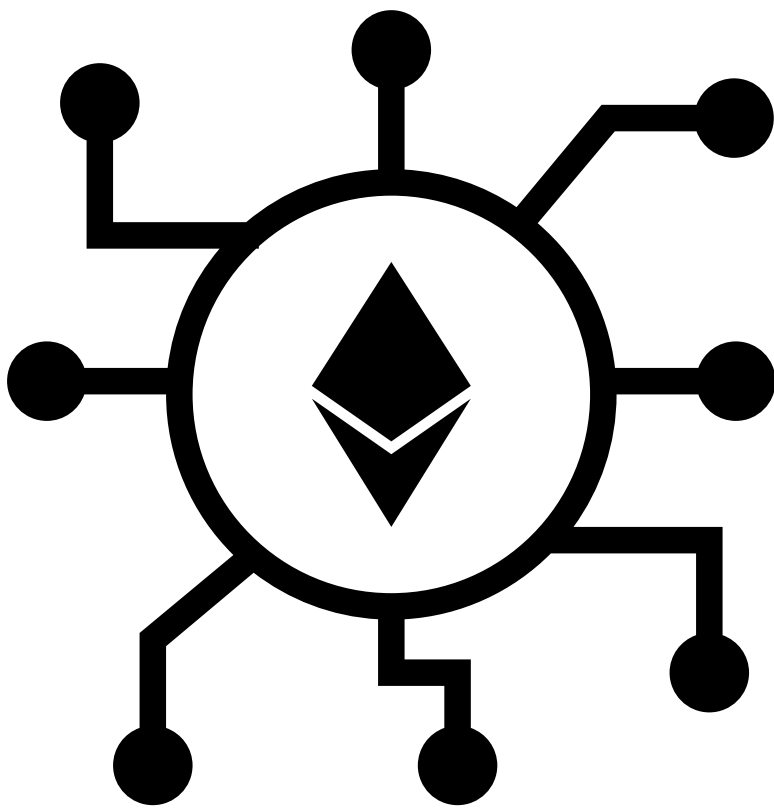
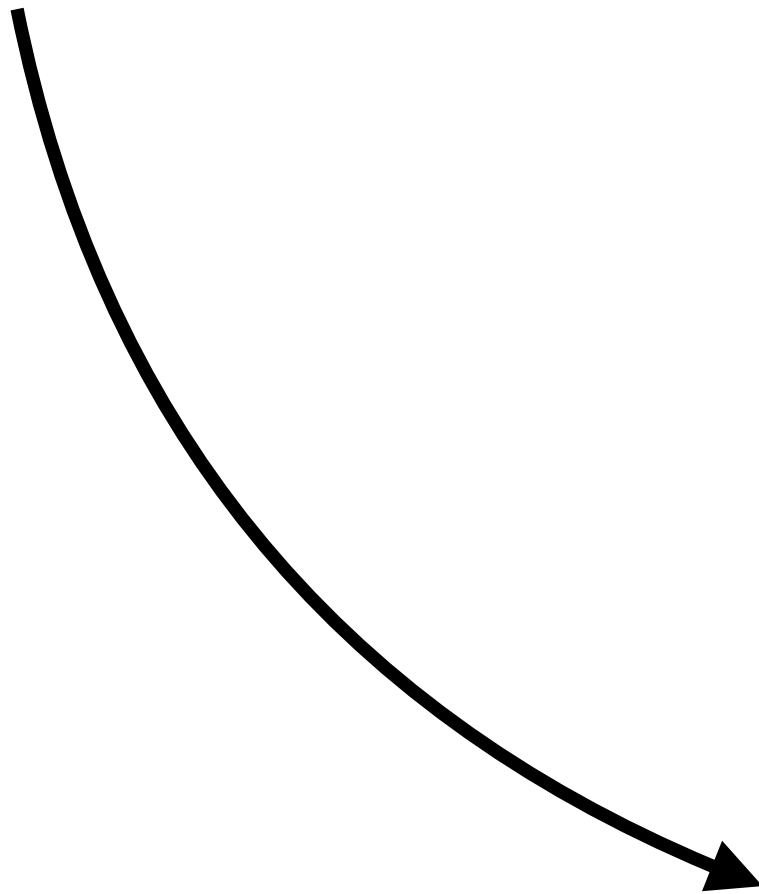
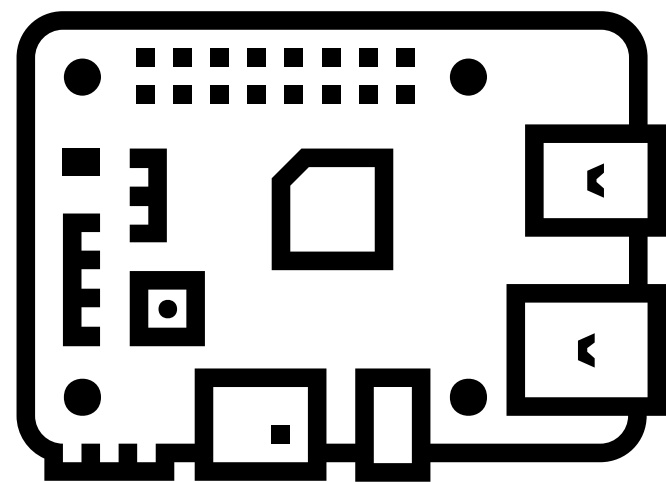
Use Case: Information Transfer

	BUY	SELL
Application	Back End	Back End
Primary Actor	Smart Meter, Blockchain	User, Application
Description	Consumer needs to buy energy	Prosumer will enable option on application to sell surplus energy
Precondition	Energy being used Having enough tokens	Surplus supply of energy Demand for energy
Trigger	Energy being bought	Energy being sold



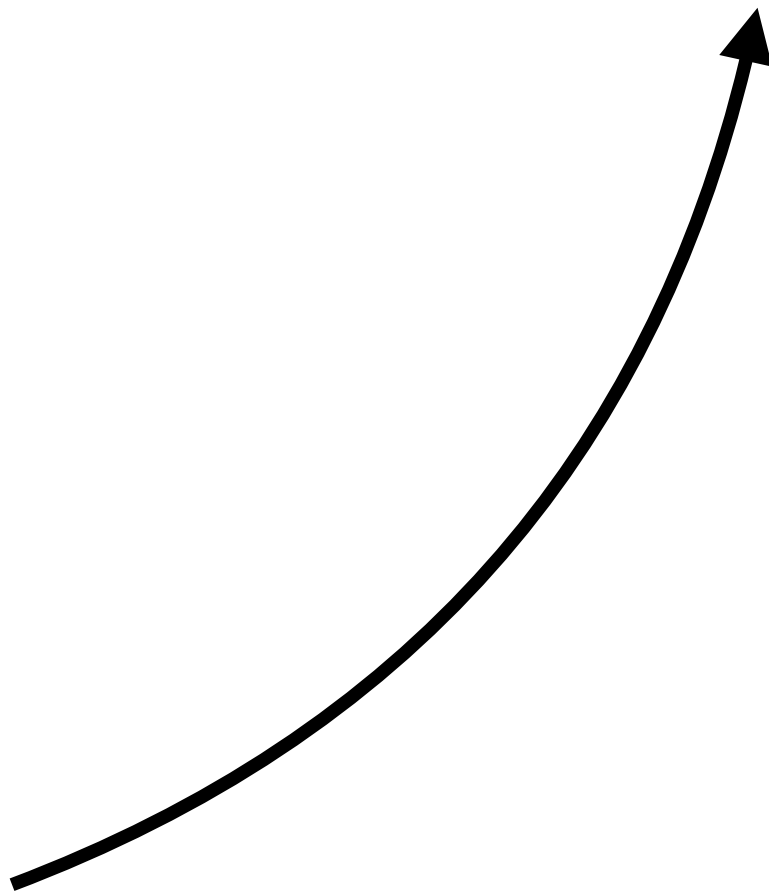
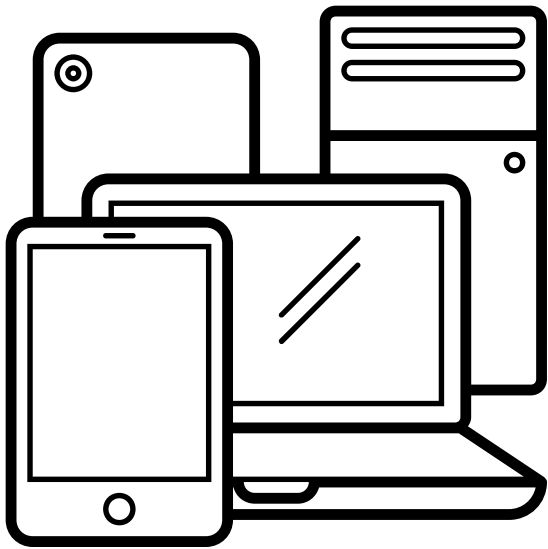
Back End Process

Smart Meter



Ethereum Blockchain

PowerChain Application

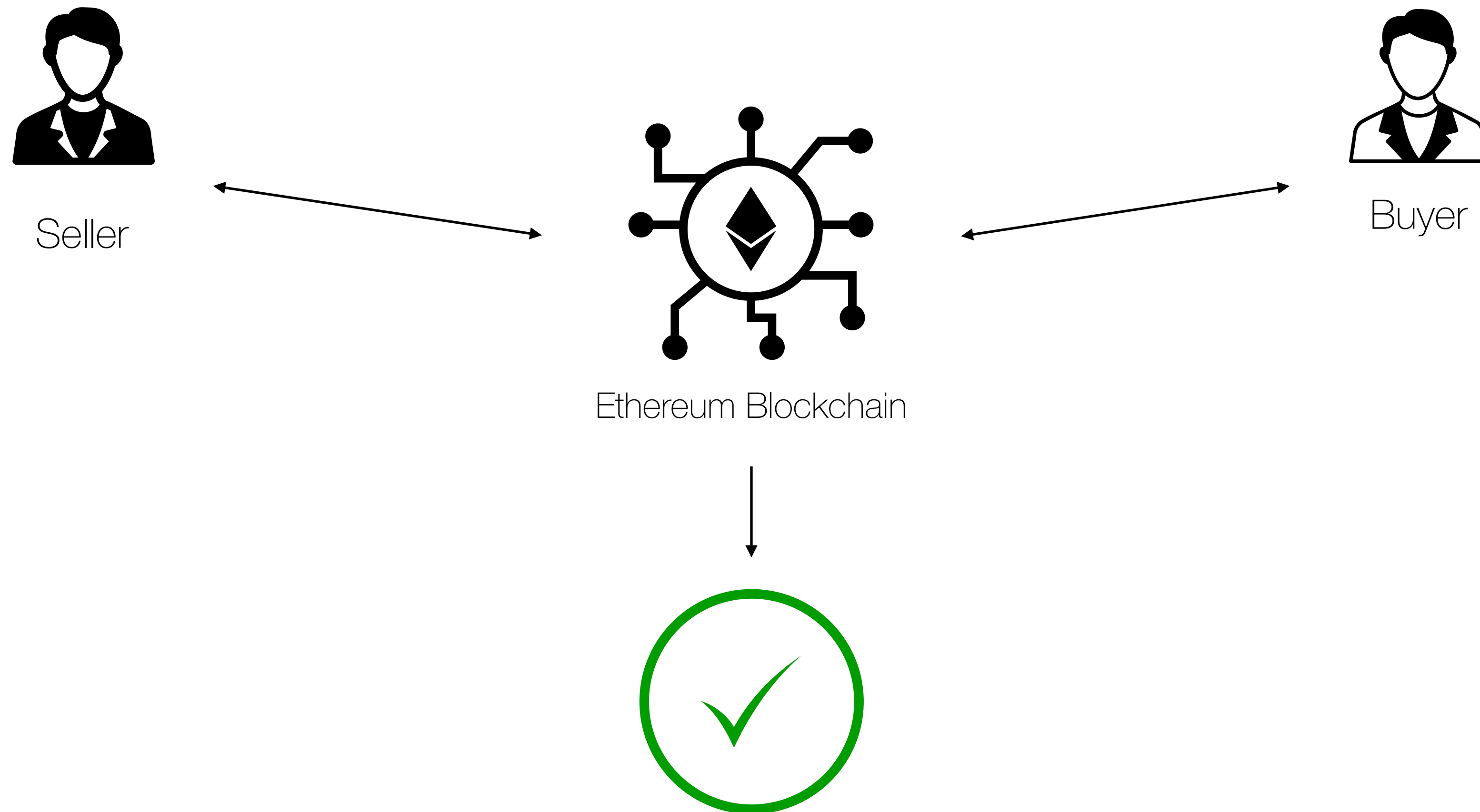


Use Case: Energy Transactions

	BUY	SELL
Application	Smart Contracts	Smart Contracts
Primary Actor	Blockchain	Blockchain
Description	Consumer needs to buy energy	Prosumer has surplus energy
Precondition	Having enough tokens Surplus supply of energy	Surplus supply of energy Demand for energy
Trigger	Needing more energy than produced	Using less energy than they produce



Smart Contracts



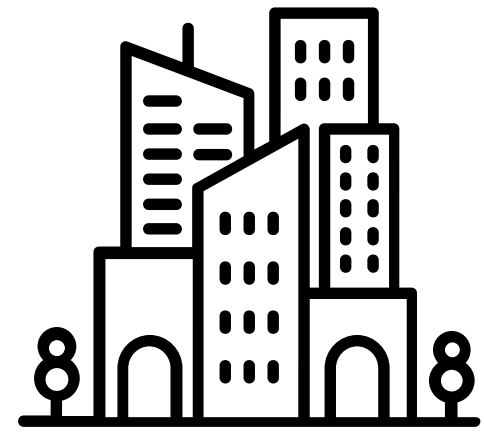
If the transactions conditions are met, the blockchain will execute a smart contract



Demo



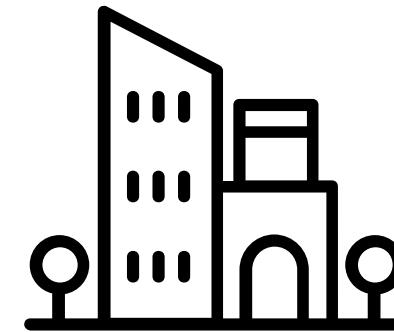
Future Development



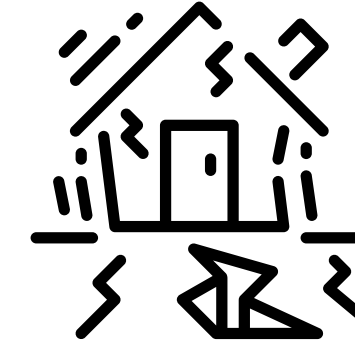
Building Complexes



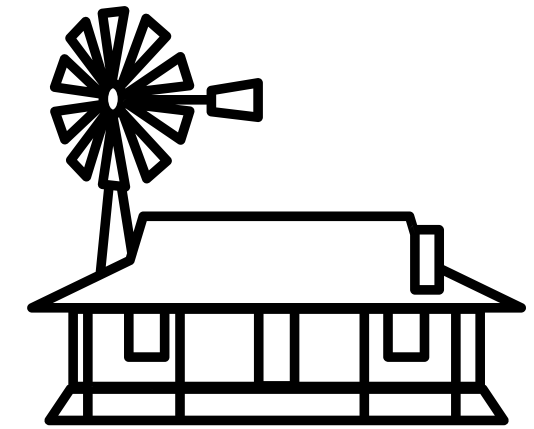
Mobile Operations
(eg military)



Suburban Communities



Temporary Applications
(eg disaster relief)



Rural Communities



What Have We Learnt?

- Shorter feedback loops between teams, communication should be a higher priority.
- Solidity, Truffle, Node.JS, React.JS, Bash, Git, Ganache and Blockchain.
- Proto.io and design principles.
- Project management, understanding the renewable energy market.
- Limitations, challenges and opportunities present when scaling a business.
- Iterative development and agile development.
- How applicable and pivotal Blockchain technologies will be to the future of all service industries.



Any Questions?

