



**PROSUME**

decentralizing power





Prosume provides utilities, aggregators, TSOs/DSOs and technology providers the blockchain software and support necessary for their product and solution offering to end-users, allowing them to regulate energy data management, trace all data flows and rest assured that all information provided is 100% verifiable and secure.



The perks of using

# Blockchain

## SECURE, INCORRUPTIBLE DATA

The immutable quality of distributed ledger means that consensus amongst all nodes in a network is required for information to be validated, resulting in tamper-proof data storage.

## ENHANCED TRUST IN A TRUSTLESS SYSTEM

A decentralised approach to certifying all energy transactions between validated players in the ecosystem: consumers, prosumers, suppliers (utilities) and grid operators (distribution and transmission) means that power is not concentrated in the hands of a few, but spread out amongst many.

## TRANSPARENCY & RELIABILITY

The universally accessible nature of blockchains means that each and every stakeholder can verify data with the assurance that it is correct and indisputable.



# Our customers

- Utilities
- TSOs/DSOs
- Aggregators
- Energy communities
- ESCOs
- Technology providers



# Our services

6 ways Prosume revolutionises the energy sector:

- i) Smart contracts
- ii) Smart billing & Automated payments
- iii) Peer-to-peer energy exchange
- iv) Grid balancing
- v) Trading processes optimization
- vi) Energy source traceability





# Our services

## **i. Smart contracts**

Automatic regulation and settlement of transparent, on-demand energy flows and transactions.

## **ii. Smart billing & Automated payments**

- Precise and instant monitoring of prosumers' energy consumption, production and energy expenditure.
- Regular, intervalled payment methods, with minimum delays and reduced collection costs.

## **iii. Peer-to-peer energy exchange**

Prosume's solution integrates existing suppliers/aggregators as partners in the platform. Suppliers manage P2P interactions between prosumers through matching bid and ask conditions. All data will be easily retrievable by the supplier, easing internal billing processes.



# Our services

## **iv. Grid balancing**

Algorithmic management for the profiling and scheduling of prosumers' production and consumption by aggregators and in turn, grid operators.

## **v. Trading processes optimization**

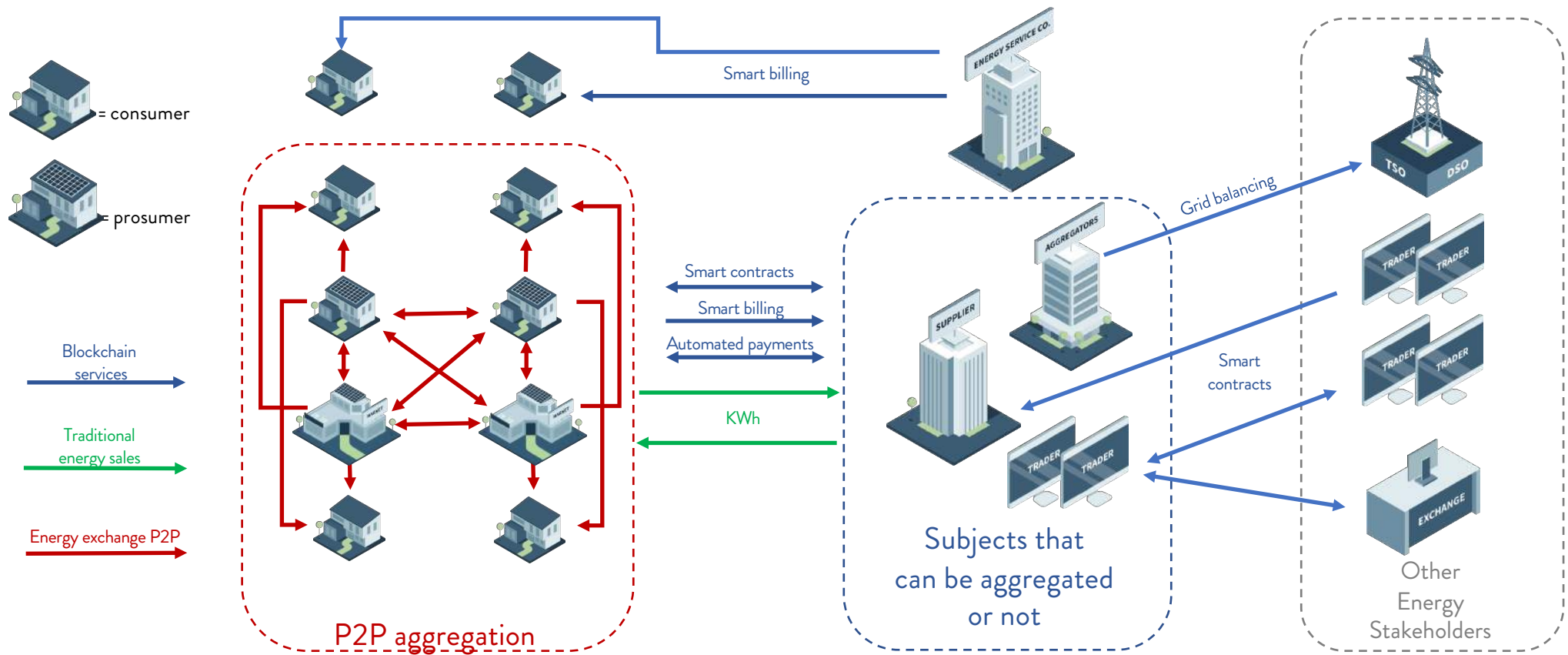
Adopting blockchain technology energy traders and market stakeholders can integrate processes on to a shared platform on which every entity can manage its own data, share such data with regulators and authorities, and execute trades to be imported in their legacy systems.

## **vi. Energy source traceability**

Tracing an energy's source, from production to consumption



# Our model







# ENERGIE STEIERMARK PILOT

In 2017 Prosume (previously Dajie Ltd) developed a pilot for Energie Steiermark (an Austrian utility company) and Next (the company's digital branch) with the goal of demonstrating a feasible peer-to-market use case amongst a utility's customers. The project started in April 2017 and remained active for a year.

Main features included the following:

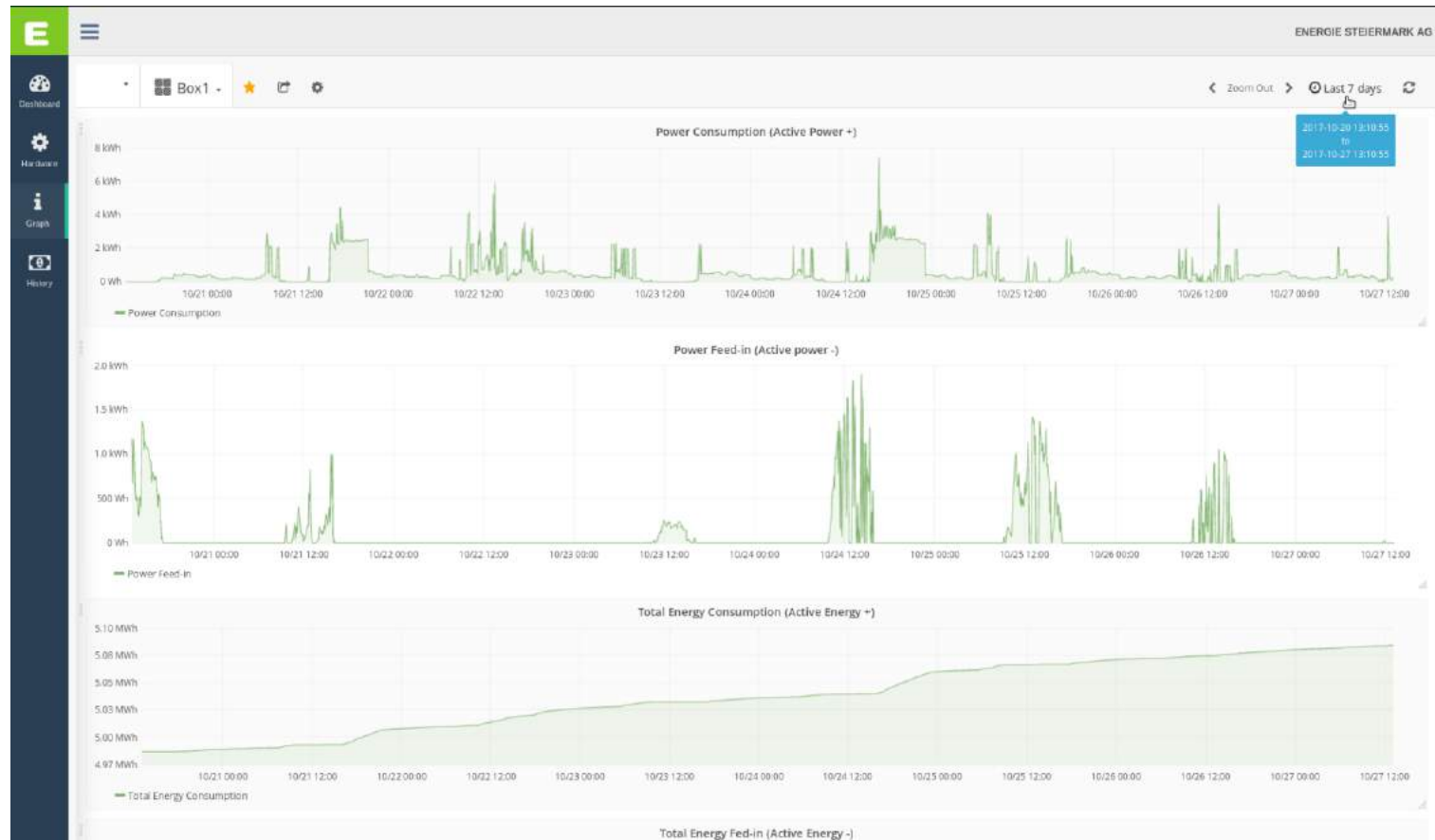
- Multiple assets on a single blockchain.
- Assets, issuable at any time.
- Decentralized asset exchange with bid & ask order book.
- Embedding of memos within transfers (encrypted messages).
- Easy implementation of smart contracts can easily be implemented to match bid & ask orders.
- Use of a permissioned blockchain, where blockchain owners control their account management for private use.
- Triple asset setup: payment token (DEC), transaction token (DAJIE) and kWh log token (KWH).

The project has since been put on hold, awaiting smart meter deployment.

# Energie Steiermark pilot: metered data



# Energie Steiermark pilot: metered data graphs



# Energie Steiermark pilot: transactions on the blockchain

ENERGIE STEIERMARK AG

DAJIE 199,98 DEC 66.384,74

Show 50 entries Search:

Timestamp	Type	From	To	Description	Tx-ID
2017/10/27 12:32	Payment	graz004	steiermark	17,280 [DEC]	b9989bea833eb5d03f2715f2199df69eeac06aac
2017/10/27 12:17	Payment	graz004	steiermark	17,280 [DEC]	01fb9342b6a77b5ad6bbdfede42577ca353a351
2017/10/27 11:47	Payment	graz004	steiermark	16,920 [DEC]	6fd297947d82db3d0d0951ac947b37425ce1ebb
2017/10/27 11:17	Payment	graz004	steiermark	20,160 [DEC]	65903088499727ba634b04035724a39a1a8f0db
2017/10/27 11:02	Payment	graz004	steiermark	37,440 [DEC]	2540ee7793bd7c372d47d87e4ash27nac120be40
2017/10/27 10:32	Payment	graz004	steiermark	28,700 [DEC]	1bdhca7a5e53c8b693a80e361d69e9ba10717ae
2017/10/27 10:02	Payment	graz004	steiermark	29,160 [DEC]	02e614a7cc03e36bb3cbdaad899ac3487eb5c519
2017/10/27 09:32	Payment	graz004	steiermark	24,360 [DEC]	06ba507b3637171089615cfaidd30ec3c3ca258
2017/10/27 09:02	Payment	graz004	steiermark	23,040 [DEC]	0f5a570010d890150cc9e980edd90628913d9
2017/10/27 08:32	Payment	graz004	steiermark	24,000 [DEC]	b0098049b289b1681809d967042a005bf2c2639
2017/10/27 08:02	Payment	graz004	steiermark	24,240 [DEC]	4175c7e210d0080204619c2f9f6d34b1d9e0f25c
2017/10/27 07:32	Payment	graz004	steiermark	23,760 [DEC]	618ca575f3cc17baf16799cd5063a579ba535c3
2017/10/27 07:02	Payment	graz004	steiermark	23,640 [DEC]	96026ca6dd4c8716704963d003f2ca33454bb7a
2017/10/27 06:32	Payment	graz004	steiermark	20,880 [DEC]	2e06910a3d0c96d9d0f9c9bc4b53b40e3c3c586a
2017/10/27 06:02	Payment	graz004	steiermark	17,400 [DEC]	e0091b578b41ac8840fa942f91508bb33444dcaa
2017/10/27 05:32	Payment	graz004	steiermark	17,040 [DEC]	51425d9e1f3d56e9a61bc8b833a82df9b8cc96a4
2017/10/27 05:02	Payment	graz004	steiermark	17,280 [DEC]	063d12a581f6ecc72c8beaf4e299326a6fc741d
2017/10/27 04:32	Payment	graz004	steiermark	17,520 [DEC]	e958e4ef2b358627a42e0b343315a5a9930b6482
2017/10/27 04:02	Payment	graz004	steiermark	17,280 [DEC]	2d3dc5e43c65698a8c170b4bd7d5b7c428604bce
2017/10/27 03:32	Payment	graz004	steiermark	17,520 [DEC]	e2e0fc3a837986ef935d1a0ac2e2a4dffb0e51f2d
2017/10/27 03:02	Payment	graz004	steiermark	17,520 [DEC]	965b83fa2bb6bc03e50d9f108dd13e647a8a29ca



# Barcelona Energy Community

In Q4 2018, Prosume (through its subsidiary branch Prosume Solutions SL) won a grant from the city council of Barcelona to develop a pilot project for its community.

The project, “Barcelona Energy Community”, focuses on the blockchain registration of data related to consumption, production and energy storage of the town buildings.

Due to the latest regulation permitting actual peer-to-peer energy exchange amongst communities (Real Decreto 15/2018), the pilot’s main aim is to simulate energy exchange between city buildings.

The project will install around 20 blockchain light nodes in these buildings, adding to the nodes that will be cloud-hosted by June 2019. The project’s validation will begin in September 2019 and conclude in December 2019.

We’re currently in talks with the city of Barcelona in order to translate this project simulation into a real-life peer-to-peer situation by 2020.



# Barcelona Energy Community

The main features of the service platform are:

- Deployment and validation of blockchain based tools that support smart communities of energy prosumers.
- Integration of power plant, storage systems and consumption sites.
- Peer-to-peer exchange of electricity between prosumers on a distributed micro-grid.
- Micro-grid management tools.
- Integration of the tools developed by the city council through the EU-funded DECODE project (development of the blockchain framework for energy will be based also on the specific requirements provided by the DECODE steering Committee).

# Presenting e-Prosume

## Blockchain technology enters the household

Italian energy aggregator Evolvere has allied with Prosume in an unprecedented partnership between a leader in the distributed generation sector and a blockchain solutions provider.

Managing around 12,000 PV plants, Evolvere's large network is significant: it will be the first time an aggregator has shook on a blockchain development plan, making e-Prosume the first project of its kind and proportions.



# Smart homes: the future

Aimed at bringing the blockchain into smart homes, the joint venture's first plan of action is to integrate Prosume's software with EUGENIO, a smart home gateway manager.

Through an app on a device, e-Prosume allows homeowners to manage various aspects of their everyday lives: energy savings, safety, comfort and smart payments, in a wholesale upgrade of the definition of 'smart living'.







## **Nodes on a blockchain**

Integrated and installed into homes (within a year) would be some of the first 2.000 smart home devices in the world that would represent the nodes on an energy blockchain network.

Through a customised cloud platform, this integration enables production and consumption data collection, progressing the liberalisation of the local energy market and evolving its smart grids. From the real-time collection and analysis of such data, end-clients will also enjoy new services made possible by recent IoT and Big Data technologies. The possibilities don't end there: e-Prosume will also offer Balance of System services to grid operators.

# e-Prosume interface: measures and payments

e-Prosume

History

Payment

HGM

Price

Set Price

Transfer

Users

Logout

## History

e-Prosume > History

HGM:  [Reset](#)

TX ID:  [Search](#) [Reset](#)

Dates range:  [Reset](#)

[Export CSV](#)

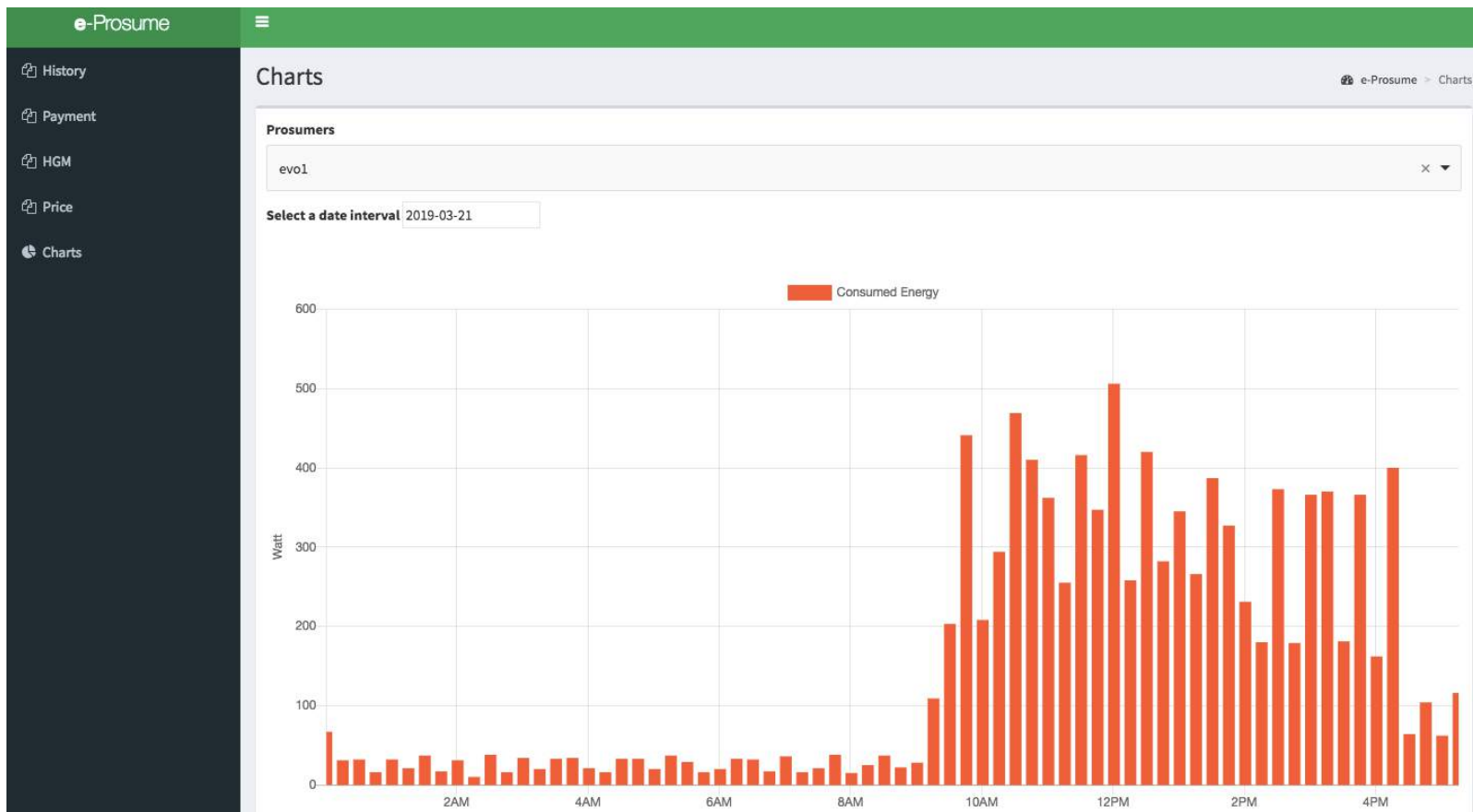
Viewing  records

Timestamp	TX ID	From	To	Asset	Type	Value	Purchased/Sold Energy
2019-04-09 14:31:00	b066e13f34c5b97d898...	evo1	evolvere	TFT	measure	1.00	44.00
2019-04-09 14:16:00	b36419f25fa82d614bd...	evo1	evolvere	PRS	payment	0.42	
2019-04-09 14:16:00	b36419f25fa82d614bd...	evo1	evolvere	TFT	measure	1.00	42.00
2019-04-09 14:01:00	36a9a15e69cb394c4b...	evo1	evolvere	PRS	payment	0.13	
2019-04-09 14:01:00	36a9a15e69cb394c4b...	evo1	evolvere	TFT	measure	1.00	13.00
2019-04-09 13:46:00	7c7b47d0969cc20abef...	evo1	evolvere	PRS	payment	0.81	
2019-04-09 13:46:00	7c7b47d0969cc20abef...	evo1	evolvere	TFT	measure	1.00	81.00
2019-04-09 13:31:00	4c941f808c10d62c0f6...	evo1	evolvere	TFT	measure	1.00	15.00
2019-04-09 13:31:00	4c941f808c10d62c0f6...	evo1	evolvere	PRS	payment	0.15	
2019-04-09 13:15:55	c073f0ae3d53b1ce641...	evo1	evolvere	PRS	payment	0.67	
2019-04-09 13:15:55	c073f0ae3d53b1ce641...	evo1	evolvere	TFT	measure	1.00	67.00
2019-04-09 13:01:00	2af76a36b95bc1cdb67...	evo1	evolvere	PRS	payment	0.82	
2019-04-09 13:00:55	2af76a36b95bc1cdb67...	evo1	evolvere	TFT	measure	1.00	82.00
2019-04-09 12:46:00	d2617e5f70ad3be2cb3...	evo1	evolvere	PRS	payment	0.54	
2019-04-09 12:46:00	d2617e5f70ad3be2cb3...	evo1	evolvere	TFT	measure	1.00	54.00
2019-04-09 12:31:00	4e2efef75dcd498aa0fd...	evo1	evolvere	PRS	payment	1.33	
2019-04-09 12:31:00	4e2efef75dcd498aa0fd...	evo1	evolvere	TFT	measure	1.00	133.00
2019-04-09 12:16:00	f1e39c5e6bb946924f6...	evo1	evolvere	TFT	measure	1.00	253.00

# e-Prosume interface: "blocks"

e-Prosume	
<a href="#">History</a>	<b>Block 3767052</b>
<a href="#">Payment</a>	<a href="#">e-Prosume</a> > <a href="#">block</a> > 10762
<a href="#">HGM</a>	
<a href="#">Price</a>	
<a href="#">Set Price</a>	
<a href="#">Transfer</a>	
<a href="#">Users</a>	
<a href="#">Logout</a>	
<b>Parameter</b>	<b>Value</b>
Block Number	3767052
Wallet Type	OperationTypeTransfer
From	evo1
To	evolvere
Asset	TFT
Amount	1.00000000
purchasedEnergy	24993900
energyDiff	44
txID	b066e13f34c5b97d8982aaff3298a052
purchasedPower	177
reactiveEnergy	4516803
autoConsEnergy	0
consumedEnergy	44
buyPrice	0.01
sellPrice	0.01
subID	20934
Timestamp	2019-04-09 14:31:00

# e-Prosume interface: chart example





**Thank you**



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