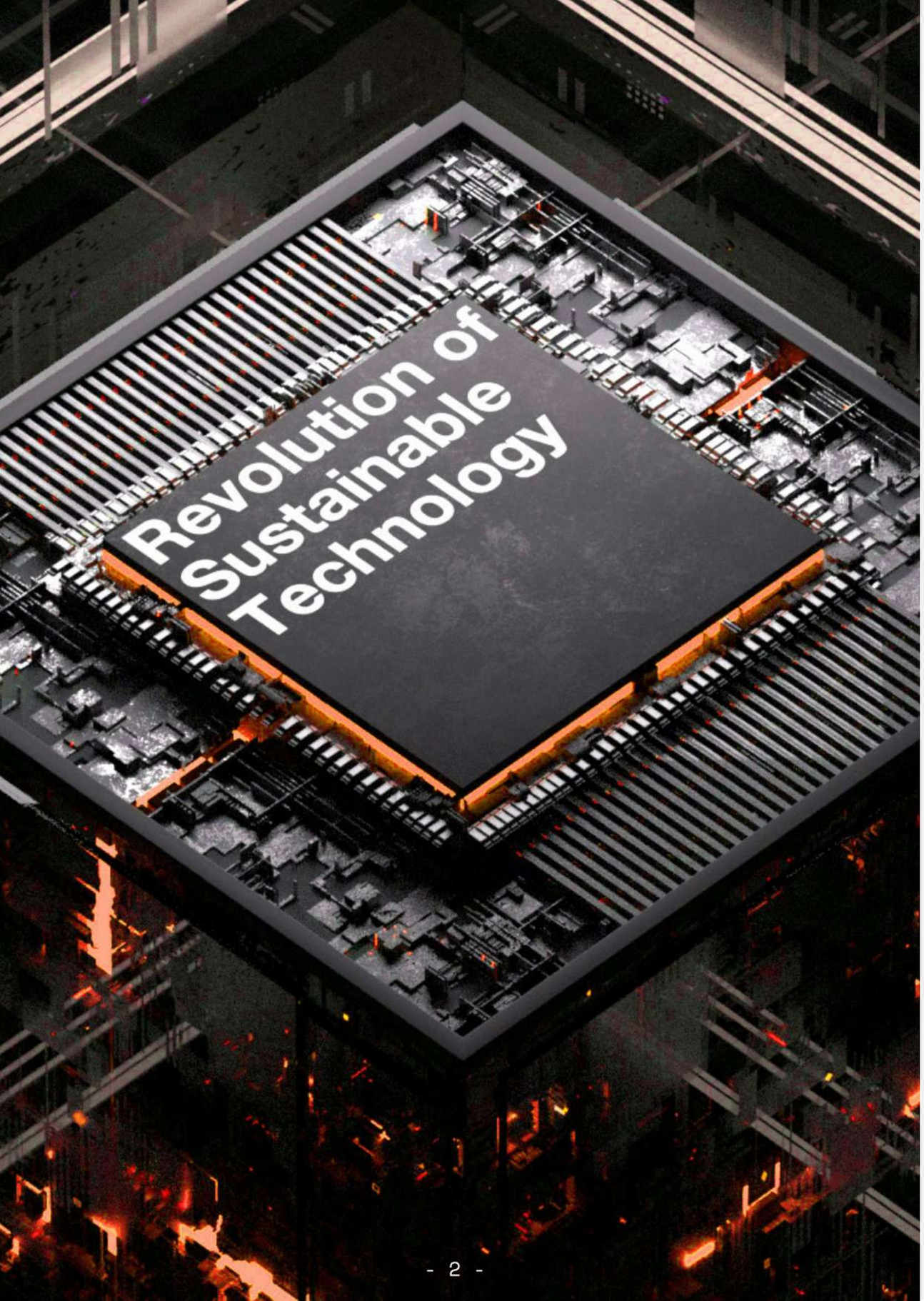
MYPWR COMMUNITY

R&C®



ENERGY COMMUNITIES

The opportunity

Energy communities, prosumers, and active consumers have gained attention from the EU following REDII. Their investments in clean generation capacity and ability to stabilize low grid levels form one of the main pillars of a zero-carbon economy.
For citizens and SMEs, this creates a whole new universe of opportunities to participate in energy markets and reduce exposure to global price turmoils.

The problem

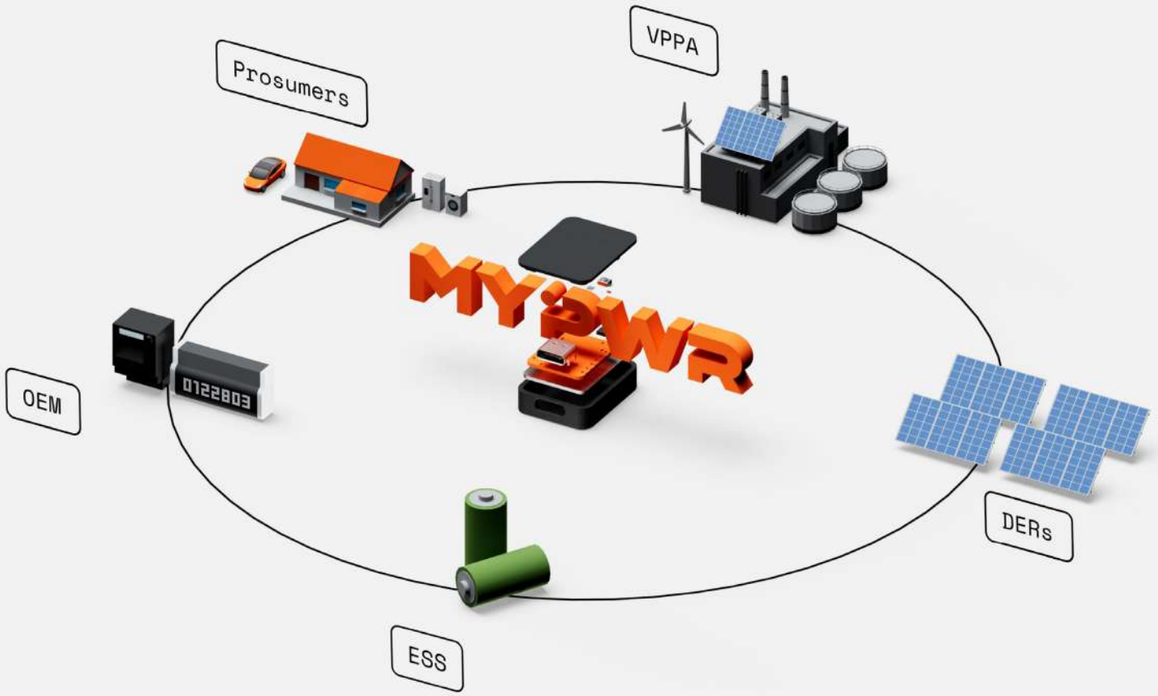
Poor data accessibility in the existing smart meter landscape reduces the value creation capabilities of these so-called 'Energy Citizens'.

- Low availability of intraday data
- Data gaps are a common problem
- Lacking data control impedes data sharing

The solution

An innovative smart-meter extension with real-time data access and simple "Plug and Play" implementation, with full data control for end-customers, forms the basis of maximizing the value potential of any energy community out there.

Technology Infrastructure for Virtual Power Plants



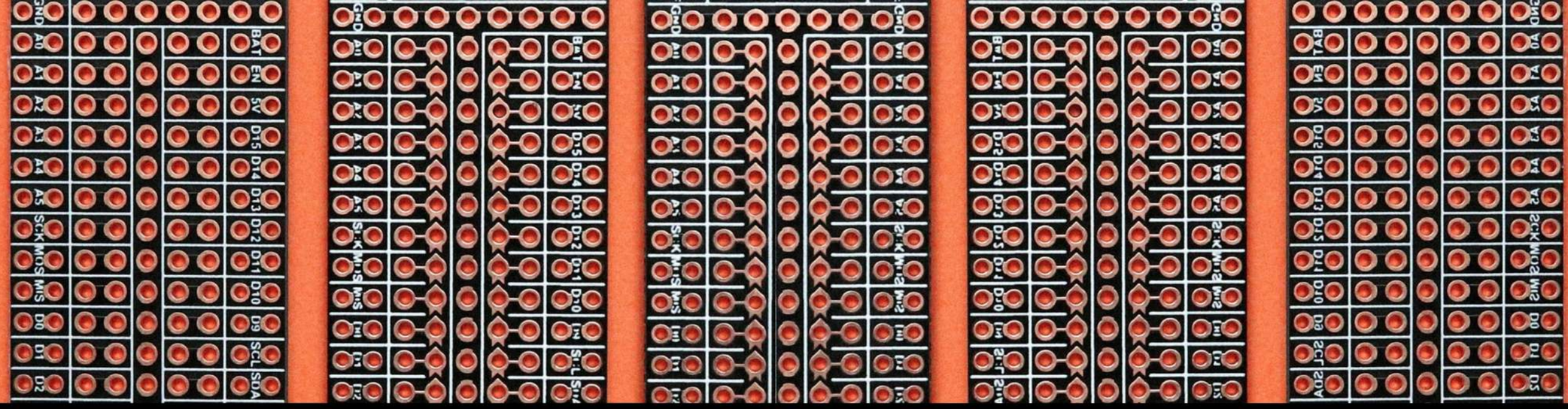
Universal Connectivity for Virtual Power Plants

A Virtual Power Plant (VPP) operates as an intelligent network, harmonizing a diverse array of energy sources to forge a power system that's both robust and efficient.

The MYPWR solution lies at the core of this innovation, acting as a Universal InterConnector that lays the technological foundation for VPPs. It is uniquely crafted to incorporate even the low to medium voltage grid levels into the VPP framework.

At the heart of this system is the Universal InterConnector coupled with specialized software, crafted to facilitate a smooth integration of various elements within the energy landscape.

Furthermore, the RDDL network delivers a Decentralized Physical Infrastructure that offers a solid structure, guaranteeing both stability and dependability for the network.



MAKE THE MOST OF YOUR ENERGY COMMUNITY

Through a smart-meter extension with real-time data access and a simple "Plug and Play" implementation, coupled with full-end customer data control, MYPWR Community forms the technological basis for VPPs and a simpler management of microgrids.

01 A transparent and secure way to track and manage energy usage, data and transactions in real-time.

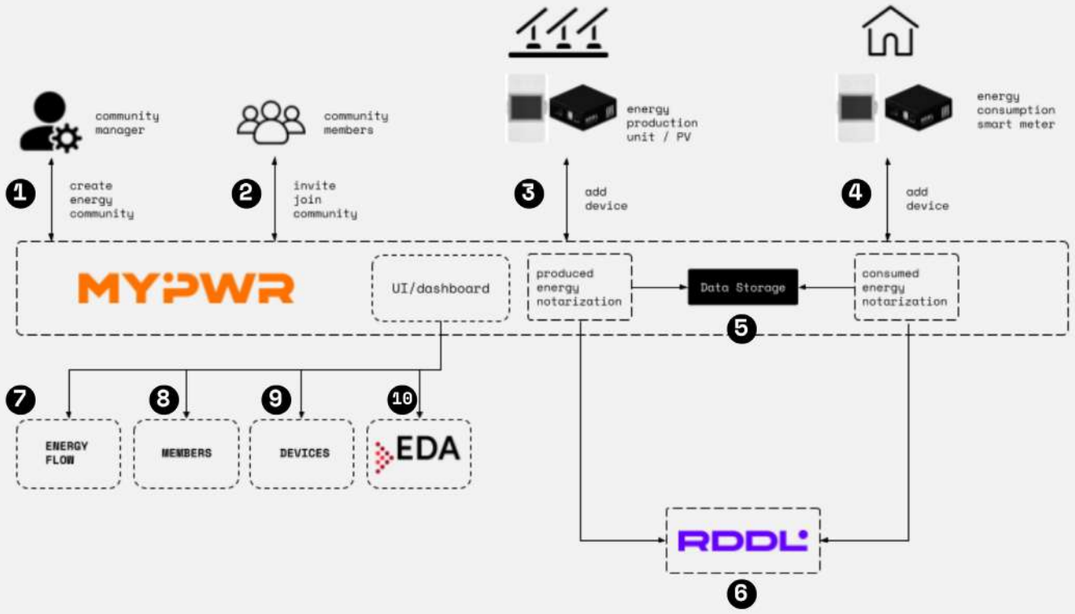
02 Secure and robust blockchain based infrastructure ensures that data is safe and secure at all times.

03 Harmonized energy flows allow communities to share data and resources with greater efficiency.

04 Green energy projects and CO2-friendly solutions, help communities to reduce their carbon footprint and contribute to a more sustainable future.

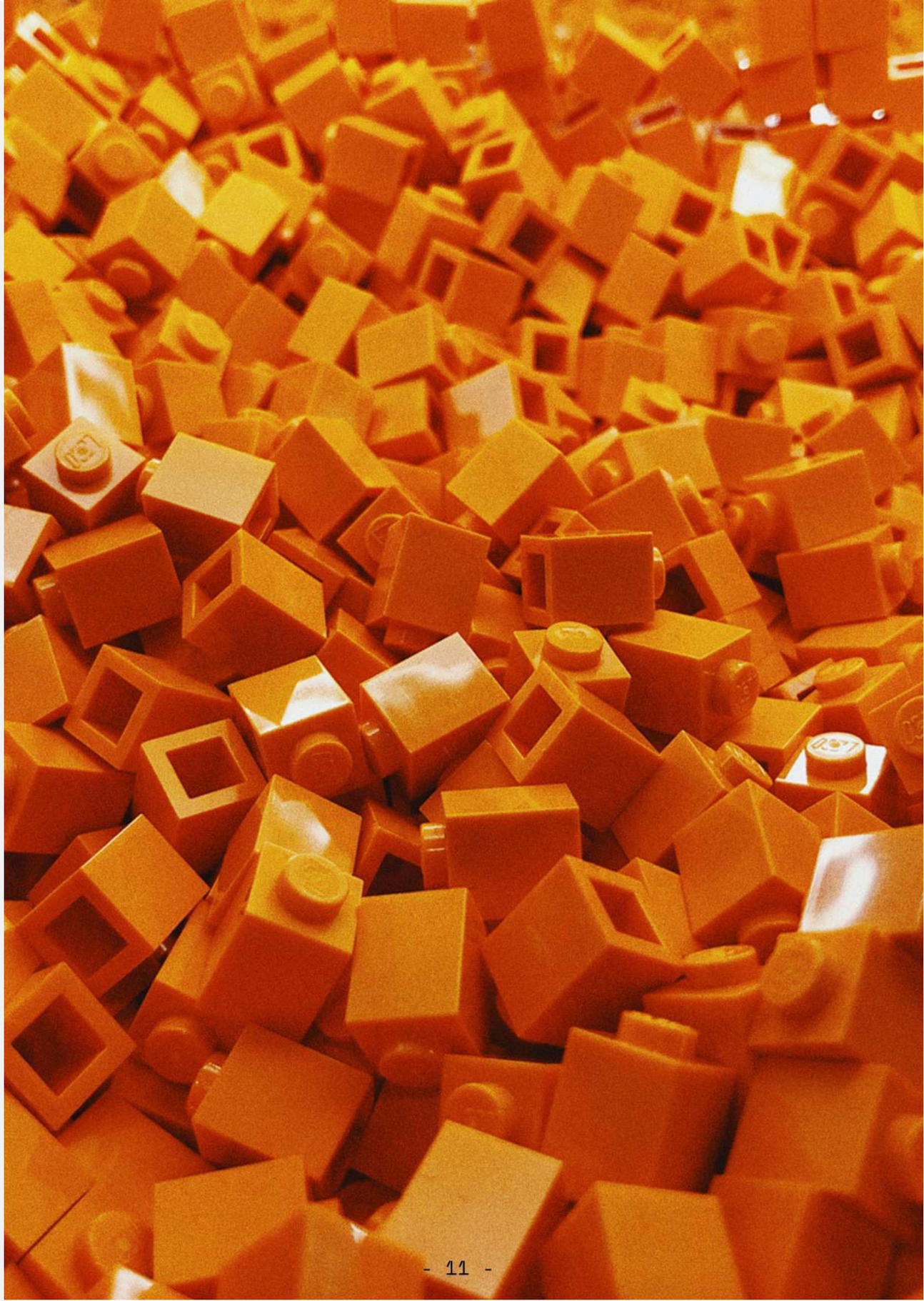
YOUR DATA IS YOUR POWER

MYPWR community architecture



The MYPWR Community functionality:

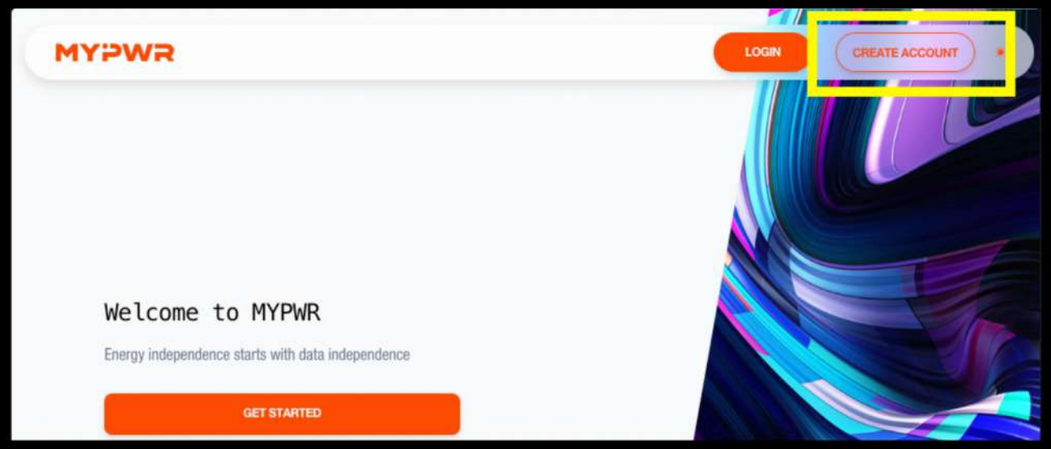
1. Users interested in initiating an energy community can apply via the MYPWR interface to establish a MYPWR Energy Community.
2. Once the MYPWR Energy Community is set up, the community manager extends invitations to potential members.
3. The Energy Meter Connector, a key software component, facilitates seamless interaction with the Smart Meter using designated protocols.
4. The HW-03's intended behavior and majority of its setup is overseen by the Business Logic. This system taps into the Energy Connector to extract data from the Energy Meter and forwards it to a designated Data Storage.
5. Data pertaining to production and consumption is authenticated and saved on the selected storage platform, be it legacy or cloud-based.
6. Verifiable proofs of productivity are securely archived on the RDDL Network.
7. The MYPWR dashboard provides a real-time visualization of energy flow metrics.
8. The community framework allows for the flexible addition or removal of members.
9. Similarly, devices can be integrated into or extracted from the community setting.
10. Armed with EDA credentials, Community Managers have the authority to retrieve and download comprehensive energy data for the community.



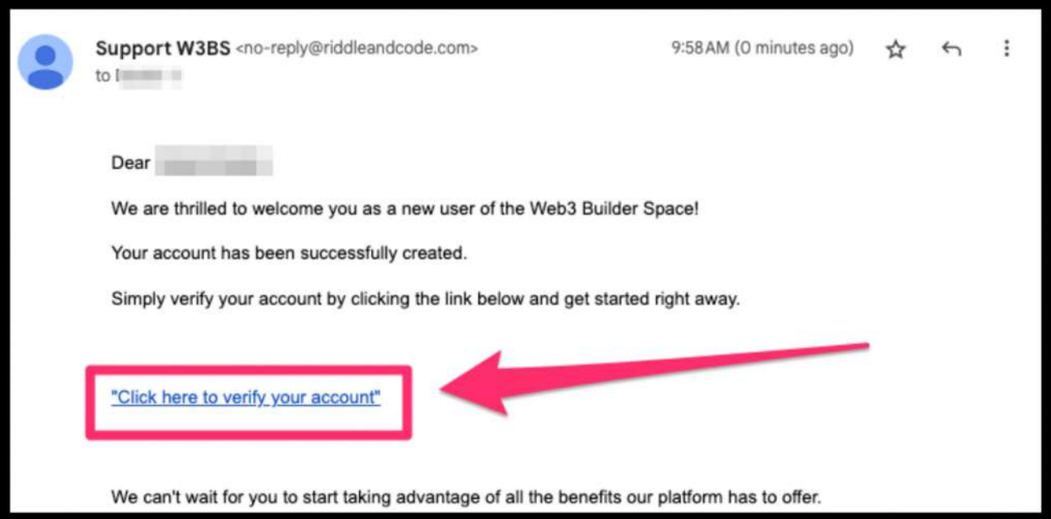
MYPWR community interfaces

Create and manage communities.

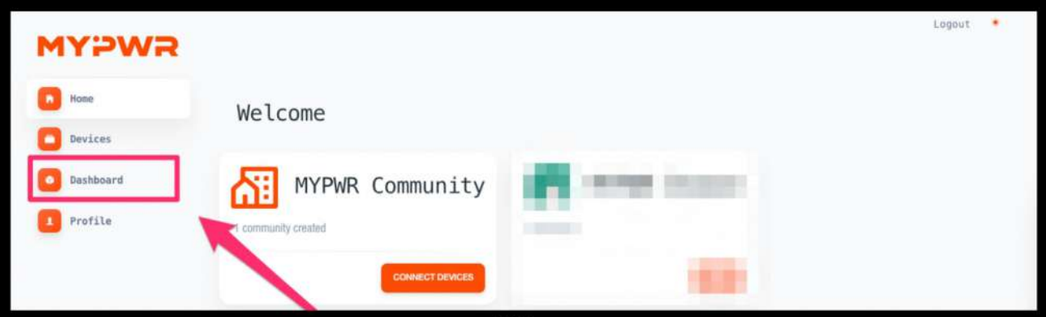
1. create your account



2. verify your account



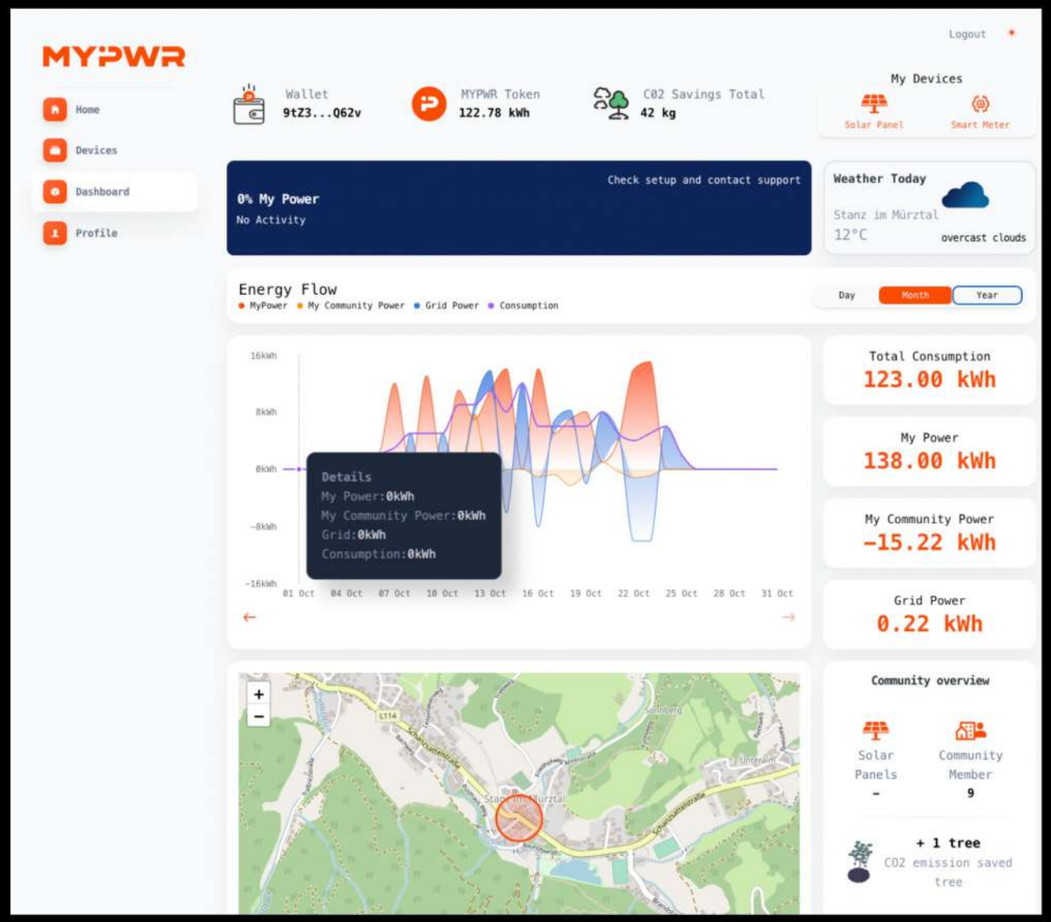
3. track your energy use



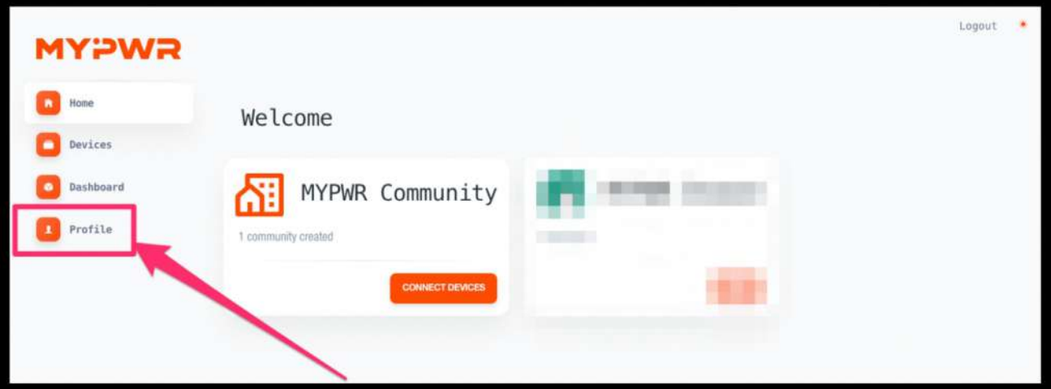
MYPWR community interfaces

Energy production and consumption in one place.

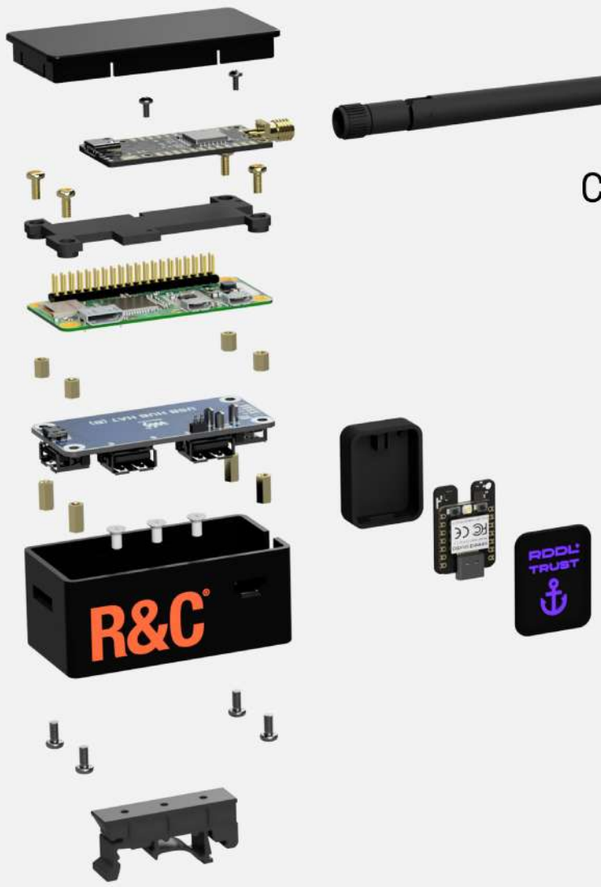
4. dashboard



5. edit your profile



HW-03 Energy



Components:

- Trust Anchor
- Lora
- RPI Zero
- USB HUB

HW-03 Energy: The Optimal Choice for Machines

The HW-03 Energy has been specifically engineered for applications within the energy industry, presenting a range of attributes tailored to this sector:

1. Compact Design: Its streamlined form factor ensures it occupies minimal space.
2. Cost-Efficiency: Economical production processes make it a cost-effective choice.
3. Versatile Connectivity: It boasts a plethora of connection options, both wireless, like LoRa, WiFi, and LTE, and wired variants. The connectivity choice is adaptable, contingent upon the specific application and the smart meter configuration in use, recognizing that different meters might utilize diverse data transmission methodologies.
4. Modularity: Its design facilitates compatibility with a range of smart meters, ensuring integration is straightforward and efficient.
5. Robust Computing Capabilities: Despite its compact size, it doesn't compromise on processing power.

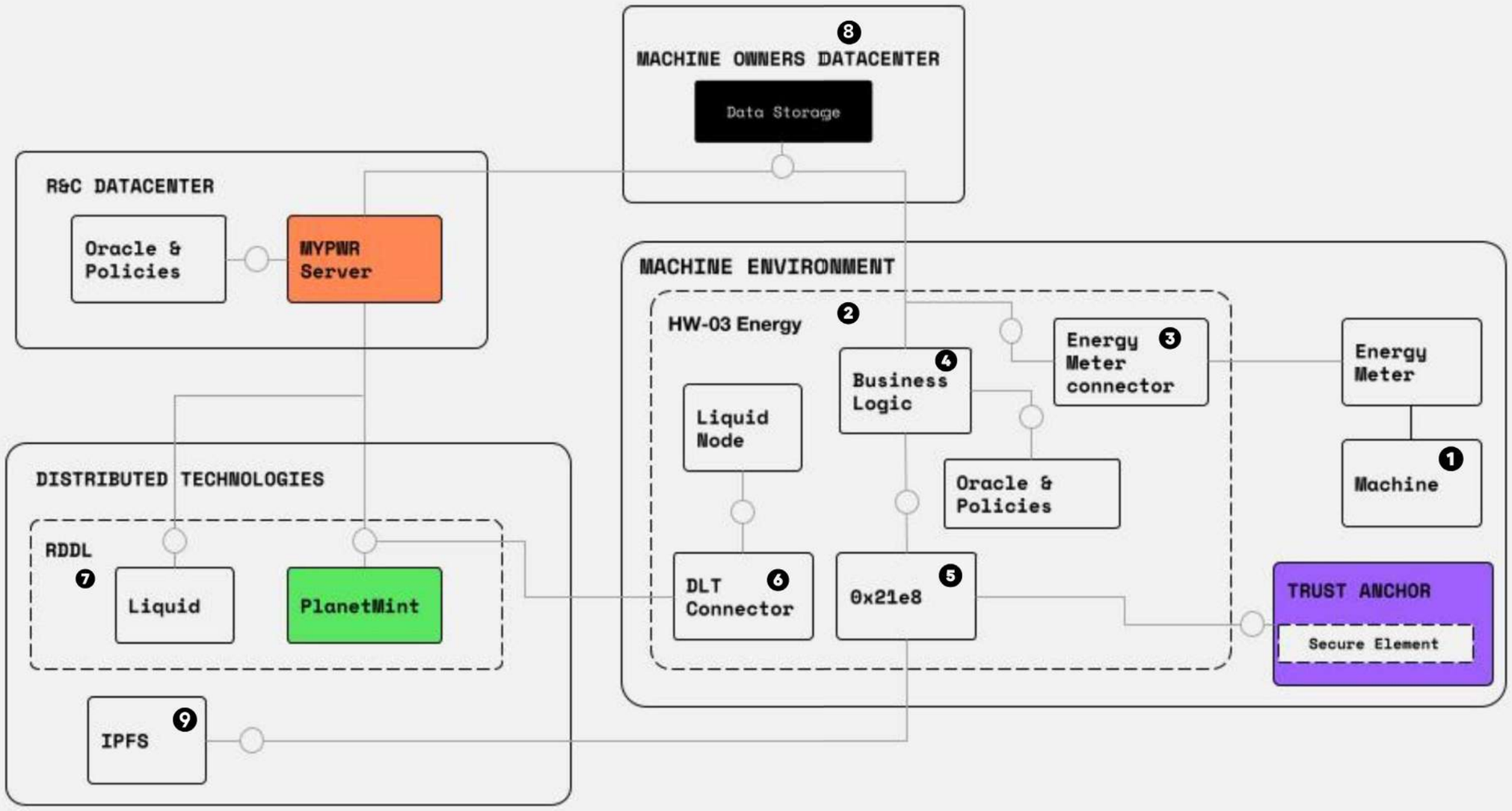
The HW03-Energy stands out as an ideal solution for the majority of the energy sector's needs due to its adaptability, powerful performance, and low energy consumption. It aligns seamlessly with essential peripherals, ensuring it meets industry objectives. Furthermore, the HW-03 serves as the foundational compute unit, allowing for effortless expansion and integration with necessary extensions, solidifying its role as a pivotal component within any system configuration.

HW-03 and Trust Anchor Technical Specifications

	HW-03 Energy	Trust Anchor (C3)
Network Interfaces	Lora, WiFi, LTE-M, PoE	Wifi 2.4GHz IEEE 802.11b/g/n
Interfaces	USB, M-Bus, Modbus, IR, UART, SPI, I2C	USB type C, Wifi, BLE, SPI, I2C, UART
MCU - micro controller unit	Quad-Core 64-Bit Arm Cortex-A53 CPU	ESP32-C3 32-bit RISC-V chip
Main Application	Data Gateway & Edge Computing	Data Oracle, Signing Device
Secure Elements	Trust Anchor	SE050, Optiga Trust X
Size (LxWxH) mm	70 x 36 x 32	30,8 x 22 x 9,3
Material casing	PLA	Resin
Memory	512 Mb LPDDR2	400KB of SRAM
Storage	up to 32GB	4MB on board Flash memory
Storage Type	Micro SD	Flash memory
Operating System	Debian	Embedded/Arduino

*Network interface can be adapted accoring to customer's requirements.

MYPWR architecture



1. Machines utilize energy tracked by an Energy Meter, providing accessible activity data.
2. HW-03 Energy: Essential hardware in machines, linked to Energy Meter's interface, powered by software and hardware components for versatile applications.
3. Energy Meter Connector: Software for seamless interaction with Smart Meter via interface protocols.
4. HW-03 behaviour and setup are controlled by Business Logic, utilizing Energy Connector to fetch Energy Meter data and send it to Storage.
5. The cryptographic identity of HW-03 for data attestation on DLT is ensured by 0x21e8 service via Business Logic, leveraging Trust Anchor to generate and store keys in a Secure Element for signing transactions.

6. DLT Connector manages DLT connections and transaction sending. HW-03 Energy requires a running Liquid Node to access UTXO info for Liquid network transactions.
7. HW-03 Energy employs RDDL Network with Liquid and Planetmint DLTs for machine tokenization and data fingerprinting; IPFS is used for machine metadata attestation.
8. Data Storage stores the machine's time series data, hosted on the owner's premise or preferred cloud.
9. In Riddle&Codes Environment, services utilize IPFS for machine metadata and Data Storage for time series data, empowered by Liquid Network for asset management.

ENERGY COMMUNITY
STANZERTAL

"The system is very simple. Participants use an app to monitor their self-consumption levels and real-time electricity sharing. The project establishes a digital foundation for optimal electricity distribution. Our people in Stanz want to decide for themselves the direction of the green energy journey. Therefore, independence, data sovereignty and active participation are very important to them. In the future, for every kWh that doesn't find a direct buyer within the community, I will receive a virtual token instead of the feed-in tariffs, which are often not very interesting. In turn, I can exchange this token for community energy at another time, for example, or I can buy a case of beer for it in Trixi's village store." - says Friedrich Pichler, mayor of Stanz and co-founder of the energy community.

ENERGY COMMUNITY
STANZERTAL

"Energy communities typically all have the same challenges: They don't get sufficient data. It's often too little, too late. What's the use of getting the info that I could have charged my car and washed clothes cheaply at a particular time four weeks ago? MYPWR provides this data not only accurately but in real-time. And if you want, it will even automatically turn on your washing machine when it's cheap. We are proud that this lighthouse project has chosen MYPWR to develop a system that can now be easily implemented throughout Austria and all over Europe" - Kai Siefert, CPO of Riddle&Code.

About us

Riddle&Code is a Vienna-based software company dedicated to onboarding industries to Web3 with innovative and sustainable solutions. Trust, security, and transparency are at the core of their philosophy, which is why they utilized the power of the Trust Anchor.

Trust Anchor is a solution by RDDL Foundation which serves as a pivotal bridge between physical smart machines and the digital economy. As Riddle&Code enters a new era of Web3, the company evolved into a product-led service company, building on top of the RDDL Network.

Learn more about RDDL.

Schedule a Demo

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