

An aerial view of a tropical cyclone, showing a dark, circular eye surrounded by a dense, swirling ring of white clouds. The surrounding ocean is a deep blue, and the sky is a lighter blue with some wispy clouds. The cyclone is the central focus of the image, with its eye clearly visible in the lower-middle part of the frame.

# Siemens' Blockchain Strategy

## The role of blockchain in Siemens' digital business

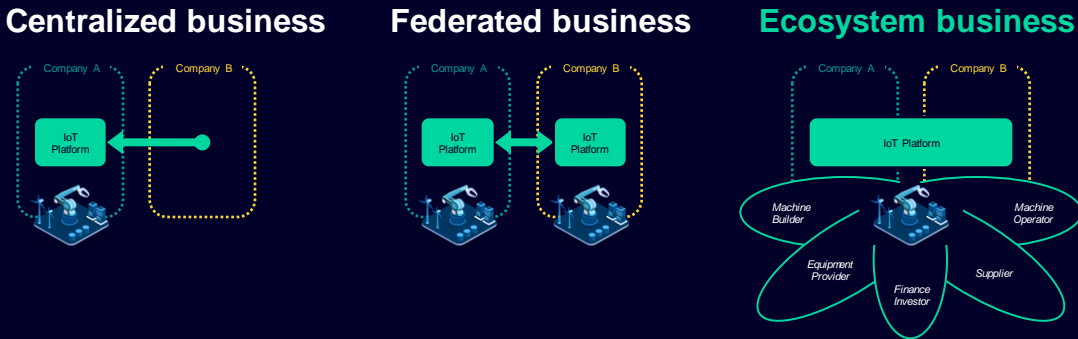
Dr. Andreas Kind, VP Cybersecurity & Trust, Siemens

Not long ago, it was deeply fashionable to rave about blockchain, crypto and NFTs  
 Now, everybody is only talking about ChatGPT... 🙄

25 of 396 relevant results for chatgpt

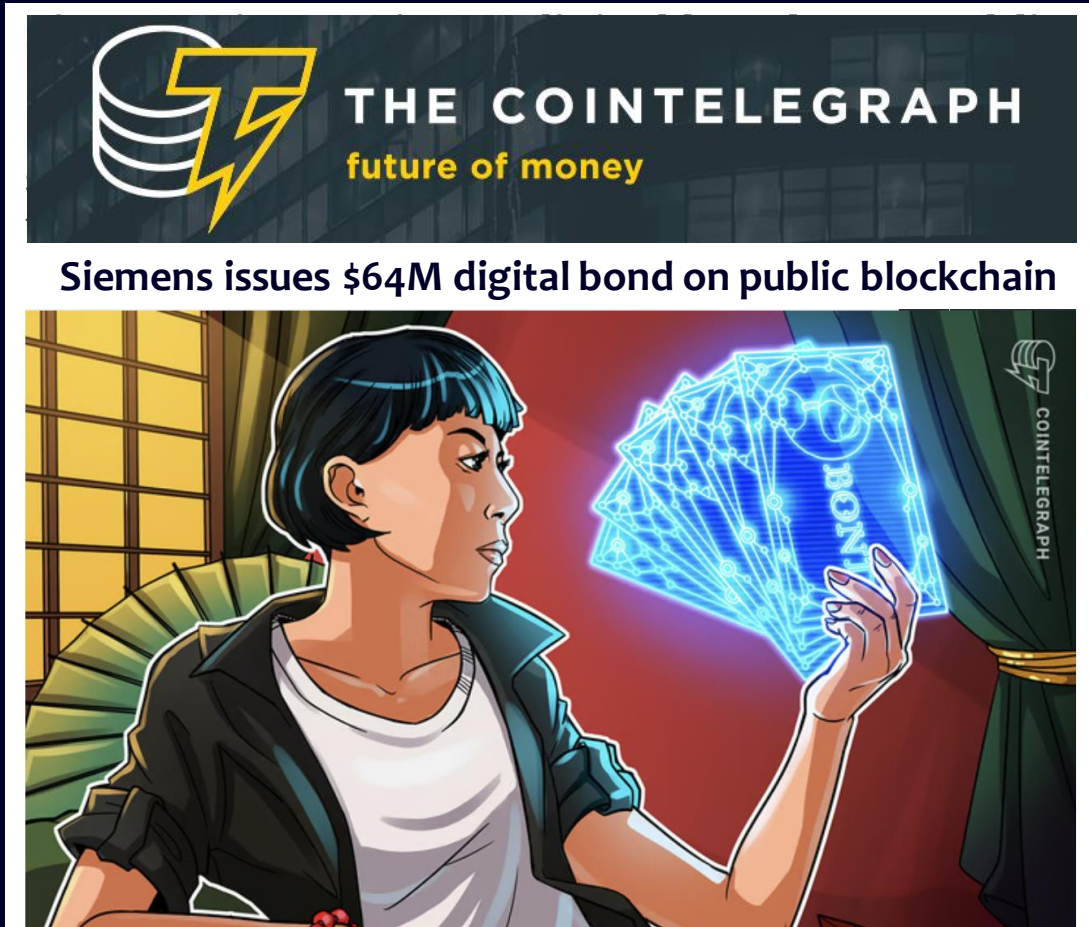
Chain	Token Name	Price	Liquidity	Vol.	Age	Score
BNB Chain (292)	ChatGPT / USDT Chat Generative Pre-0x89f...9999	\$0.0,3166 ▲ 12.6% 24h	Liq. 266.74K	Vol. 14.59K 24h	22 days ago	72
Ethereum (47)	CHATGPT / WBNB CHATGPT COIN 0x4cf...82b4	\$0.0,3825 ▲ 7.6% 24h	Liq. 47.58K	Vol. 1.15K 24h	2 months ago	30
Core Dao (24)	AI / WETH ChatGPT 0x27e...6584	\$0.0003115	Liq. 23.85K		4 months ago	68
Arbitrum (20)	ChatGPT / USDT ChatGPT 0x12a...9c3f	\$0.00009675 ▲ 10.0% 24h	Liq. 3.54K	Vol. 117.26 24h	4 months ago	31
Polygon (3)	ChatGPT / USDT ChatGPT 0x383...8888	\$0.0,3579 ▲ 0.6% 24h	Liq. 17.24K	Vol. 288.07 24h	1 month ago	22
EthereumPoW (2)	ChatGPT / WETH ChatGPT 0x099...fe26	\$0.00009231	Liq. 3.53K		4 months ago	31
OKC (2)	ChatGPT / WBNB ChatGPT 0xb7f...0b17	\$0.0001056	Liq. 16.73K		1 month ago	22
Solana (2)	ChatGPT / USDT ChatGPT 0x5c8...2d74	\$0.0,2792	Liq. 361.59		4 months ago	31
Cronos (1)	ChatGPT / WBNB ChatGPT 0xa8d...5027	\$0.0,3694	Liq. 0.3652		4 months ago	31
Goerli (1)	ChatGPT / USDT ChatGPT token 0xa94...89ff	\$0.0001736	Liq. 0.0952		4 months ago	31
Fantom (1)						
Zksync (1)						

- Not even crypto currencies are spared
- DEX lists 396 cryptocurrencies with ChatGPT in the name – what a hype!
- Joking aside: Siemens’ ecosystem-driven digital business calls for trust technologies irrespective if they are hip or not



# Siemens issued €60 million digital bond on blockchain

Pioneering the digital transformation of capital and securities markets



- First non-financial DAX company to issue a digital bond on a public blockchain (Polygon)
- In accordance with Germany's Electronic Securities Act (eWpG, 2021)

## Business value

- No paper-based global certificates and central clearing needed
- Bond can be sold directly to investors without intermediary bank
- Settlement time reduced from T+7 to T+1



# Distributing companies are accountable for ESG compliance

Transparency of the whole value chain is required



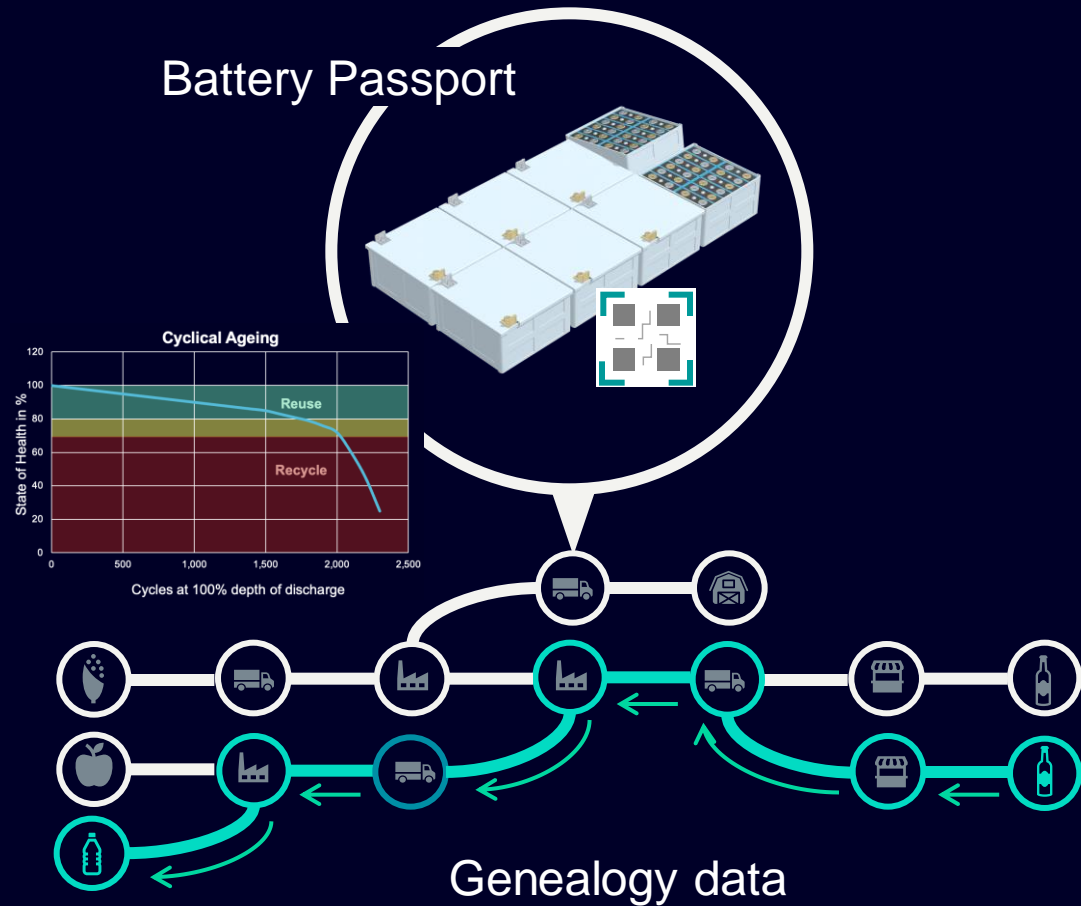
## Contractual safeguarding

ESG compliance with your tier 1 will **not be sufficient** in the near future because

- Of the demand of customers and society
- Of upcoming legislation
- The availability of technology to provide a proof for whole value chains (blockchain)

# Battery passport stores historical data of battery usage

Lead to better decisions regarding reuse, repair or recycling



- Digital traceability of entire battery life cycle, from production to recycling, will be regulated
- In EU, batteries exceeding 2kWh must have a digital passport containing technical information and environmental performance
- The aim is to ensure batteries use a minimum percentage of recycled materials (16% cobalt, 6% lithium, 6% nickel)
- Siemens Trusted Traceability solution enriches the battery passport with trusted genealogy data and, thus, helps in recycling decisions



# Moving from carbon footprint reporting to active PCF management

How dynamic PCFs turn carbon footprints into a management tool

## From static PCF reporting...

Conventional data base approach



- With up to 90% supply chain emissions, most of the PCF is based on **static database averages**
- (Sub-) supplier **improvements are disconnected** from a manufacturers PCF
- The same (sub-) supplier **material is calculated multiple** times by different manufacturers

## ...to dynamic PCF management

SiGREEN PCF chaining approach



- Efficient communication allows for **frequent and proactive updates** that create dynamic PCF
- (Sub-) suppliers' improvements quantify in PCFs, making them a **management tool**
- Dynamic PCF enable **precise target setting** and **efficient reduction measures** with **quantifiable impact**



*Blockchain can track production information and help making supply chains transparent.*

**Really?! How? Put all production information into a shared ledger?**

Suppliers are reluctant to provide any production or supplier related information, which is needed for product-level PCF or ESG transparency.

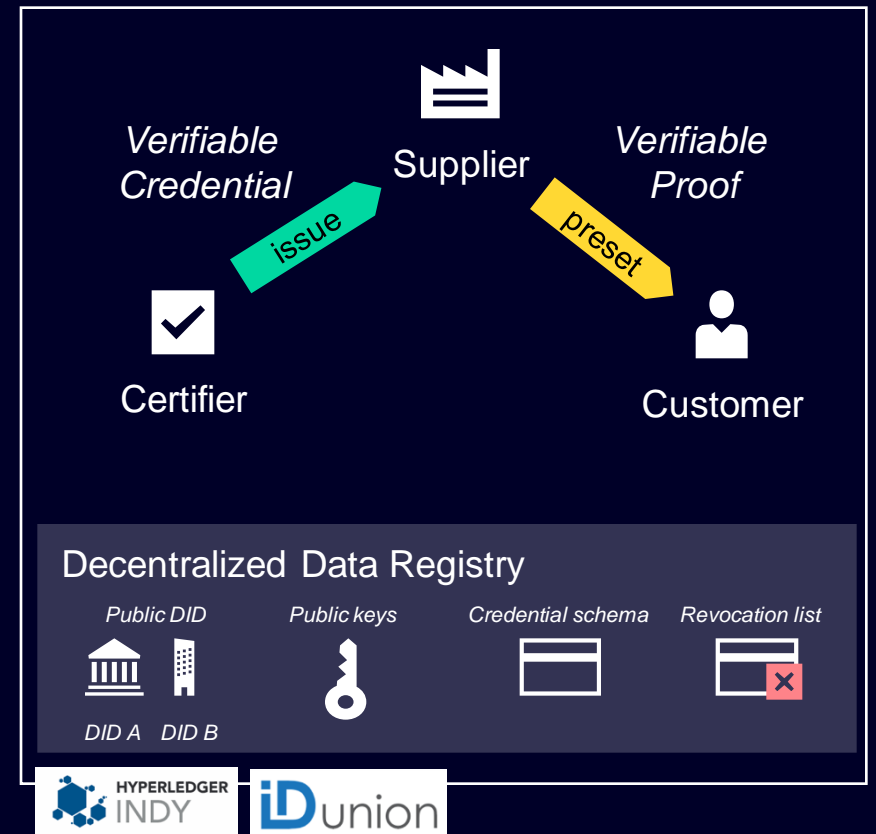
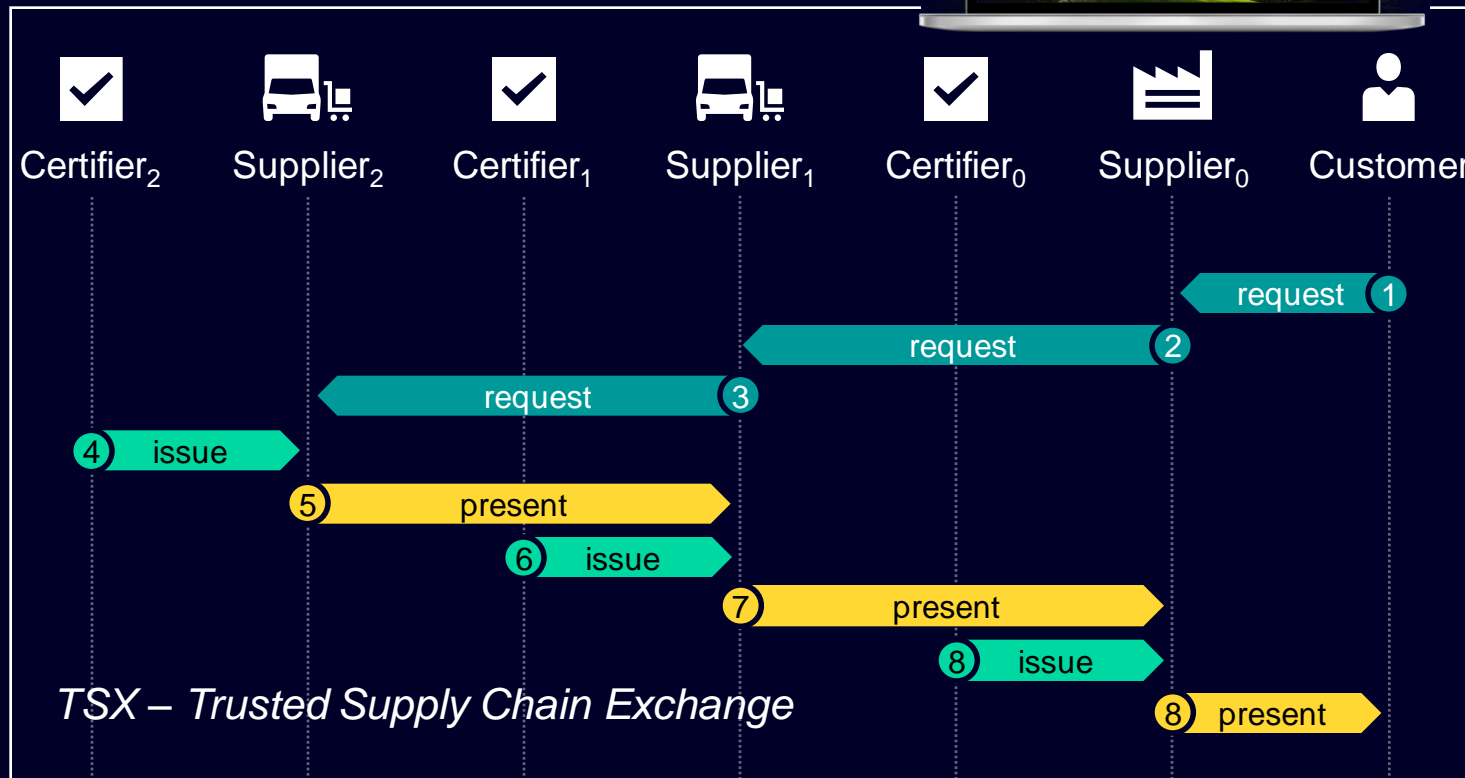
# Blockchain *can* address the need for supply chain transparency *and* confidentiality

But not the way you might think...

Product information is shared peer-to-peer along the value chain

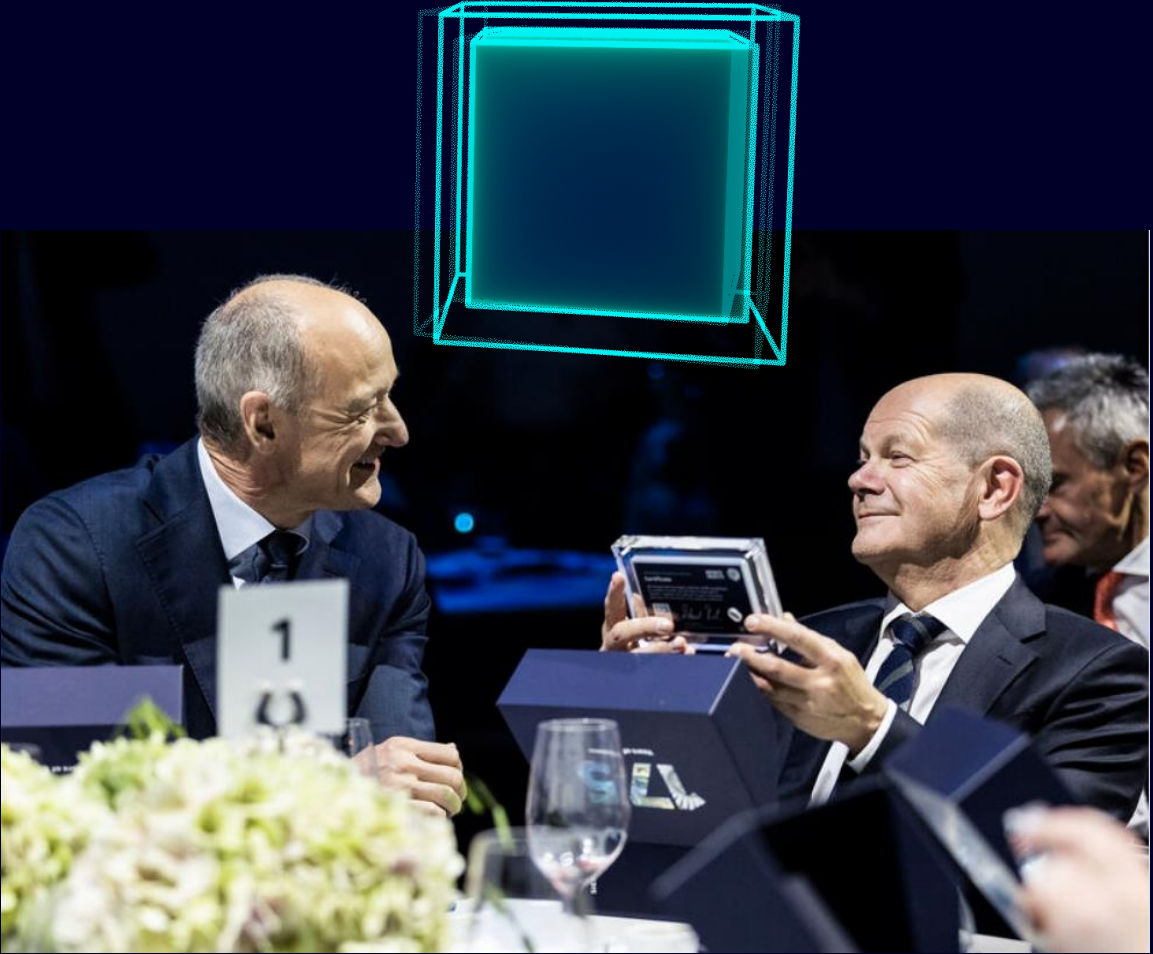
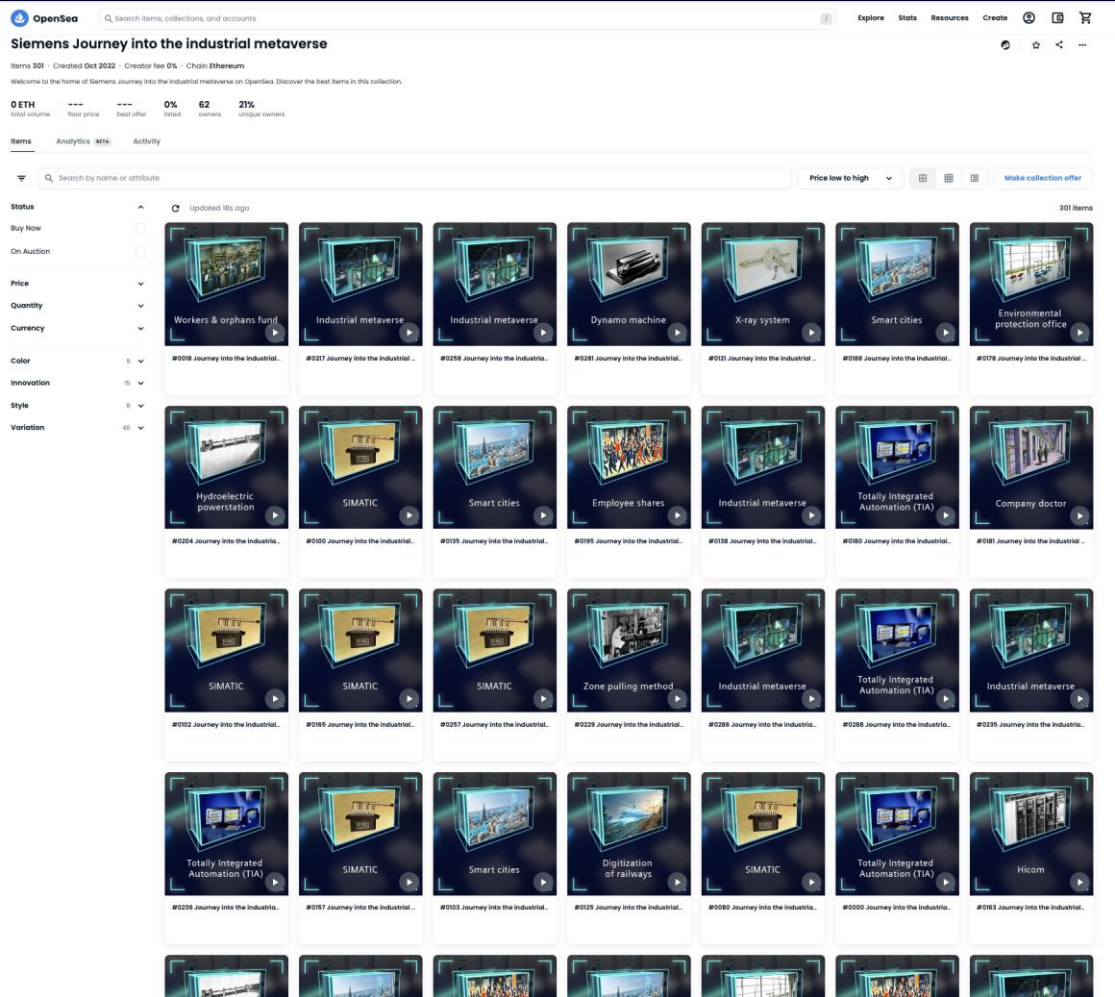


Blockchain stores data needed for verification of product information that is exchanged peer-to-peer





# The Siemens Journey into the Industrial Metaverse

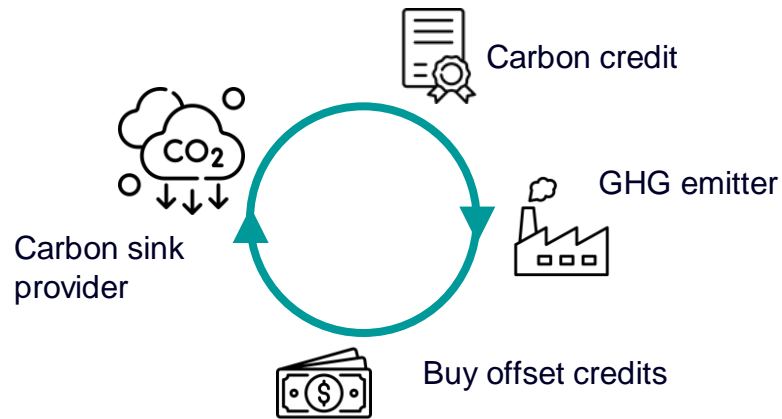


<https://opensea.io/assets/ethereum/0xe22ef3bbc4869ca7367a23fd80d397b9ba4e8cfd/246>

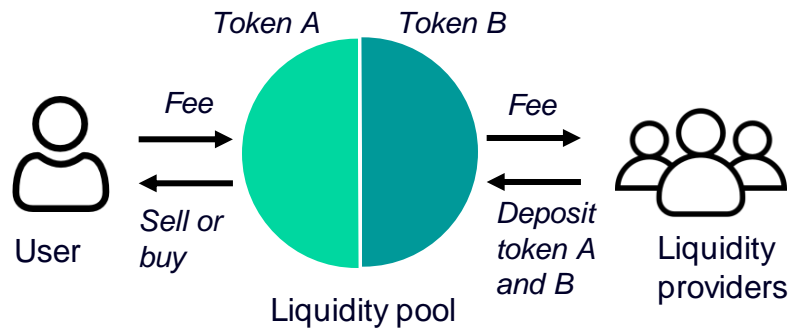
# The ESTAINIUM Association investigates decentralized voluntary carbon markets

The market for carbon credits worth \$50 billion in 2030 (McKinsey 2021)

## Voluntary Carbon Market (VCM)



## Automated Market Making



- A carbon credit is a transferrable instrument certified by governments or independent certification bodies to represent an emission reduction
- Today, VCMs are fragmented and complex with questionable practices and limited pricing transparency
- A decentralized VCM based on automated market making (AMM) can lead to efficient, transparent and trustworthy marketplaces
- Siemens investigates in the ESTAINIUM Association a token-based decentralized VCM that can be leveraged by SiGREEN



# Key take away: Blockchain is wisely used in some Siemens' products and solutions... ... and is an established technology in our Cybersecurity & Trust strategy.

## Confidentiality

Preserving authorized restrictions on information access and disclosure, including means for protecting personal privacy and proprietary information.

## Integrity

Guarding against improper information modification or destruction and ensuring information non-repudiation and authenticity.

## Availability

Ensuring timely and reliable access to and use of information.



## Enterprise

Office infrastructure (IT)

Communication via intranet and internet, management of data in local and decentralized (cloud) systems.

## Production

Plant infrastructure (IT/OT)

Data traffic and communication within production systems in IT/OT networks and in networked devices.

## Products & Solutions

Hardware and software

Created using products and systems, components and subsystems manufactured by suppliers and delivered to customers.

## Ecosystems

Data sharing and process automation across corporate trust borders

Characterized by decentralized, cross-organization architectures.

**Thanks!**

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