



Solve with VIA

Improved Grid Flexibility
through AI



VIA Mission

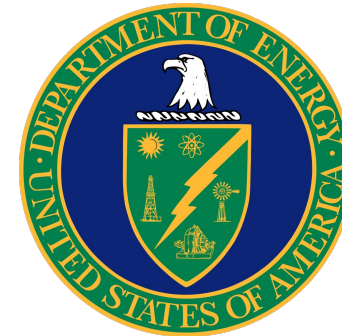


VIA's mission is to make communities cleaner, safer, more equitable. We work closely with the most selective and security conscious organizations.

Department of Defense



Department of Energy



Collective Good from Collective Action



Communities are cleaner, safer, more equitable when we work together.



National Security



Health

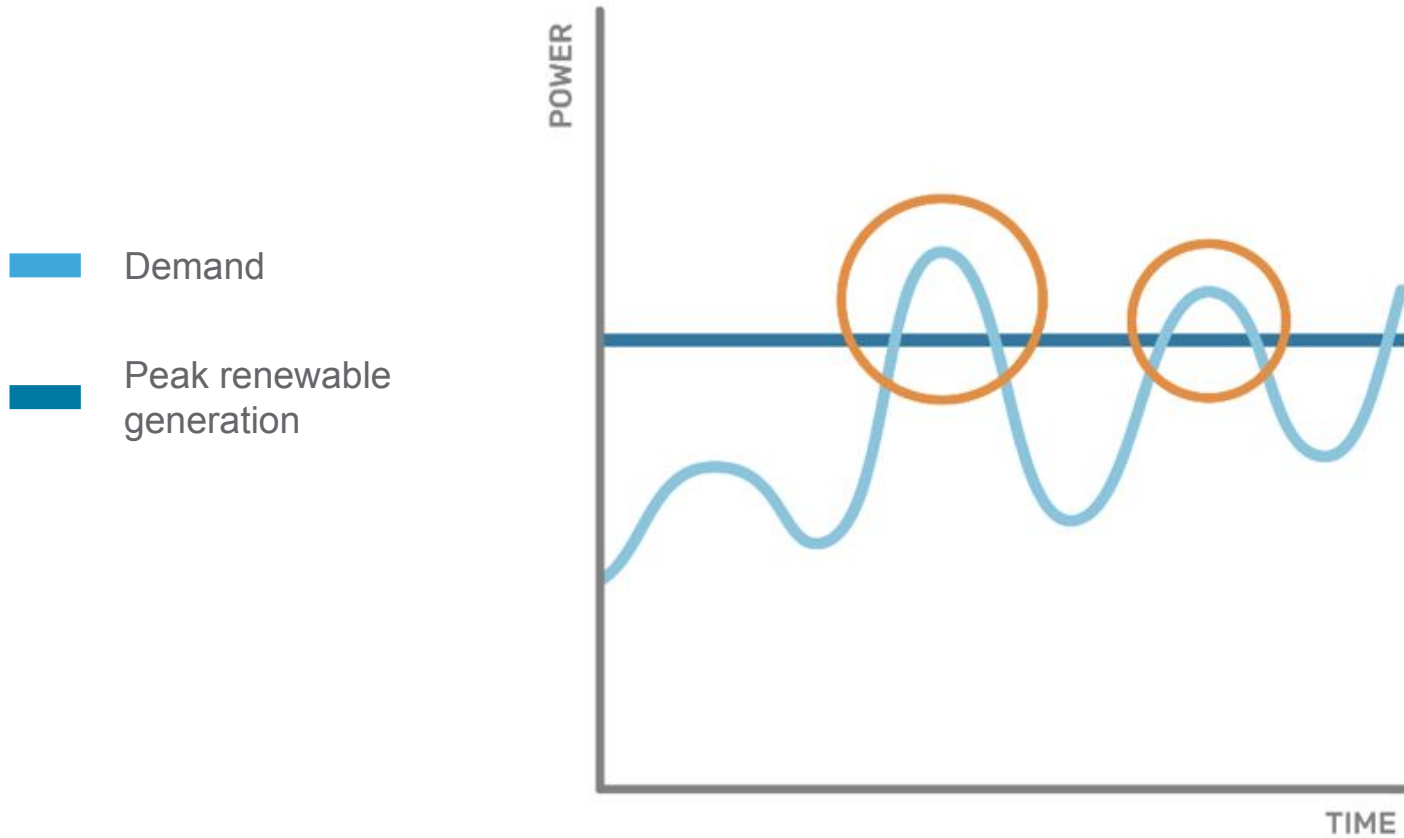


Climate

Collective Good: Carbon Reduction



Intermittent generation by renewable energy sources makes matching demand a challenge.



Collective Action: Carbon Reduction



An ideal solution would be to coordinate demand to match supply.

- Request reduction or a time shift in energy consumption
- Remotely control a reduction or a time shift in energy consumption
- Request DER production (e.g., rooftop solar, V2G)
- ...

Collective Action: Carbon Reduction



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Any **collective action** solution
requires **verification**.

How Can I Know Who Did What?

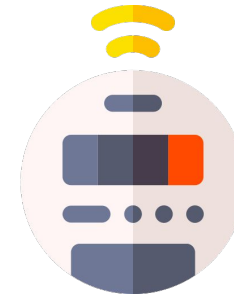


Verification, a basic requirement for collective action, requires matching identity to action. Verification enables incentives and accountability.

Individual Identity



Activity Data

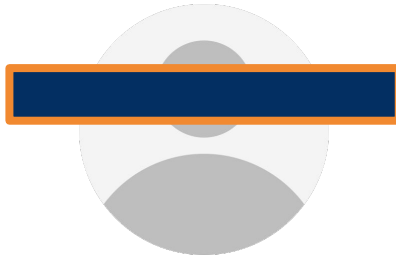


How Can I **Anonymously** Know Who Did What?

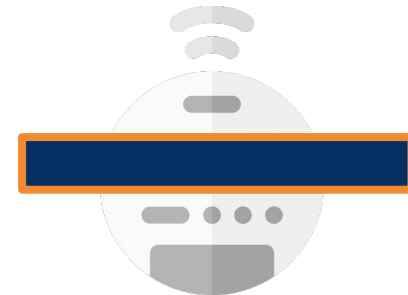


Protecting identities and activity data prevents theft, corruption, and intimidation.

Individual Identity



Activity Data



Option 1: Prioritize Privacy



Traditional approaches to data protection are often binary and result in compromises to security, or to analysts.

Too Restrictive



The most common approach to data security is denial of access, making it hard to find and use data.

Option 2: Provide the Data



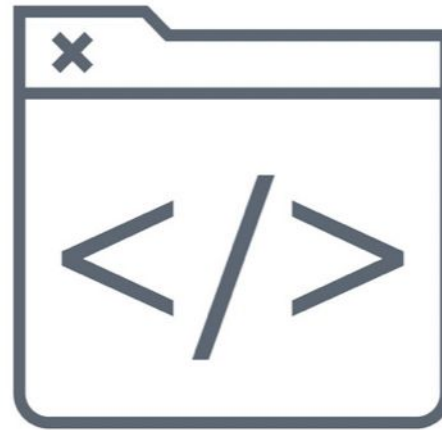
Traditional approaches to data protection are often binary and result in compromises to security, or to analysts.

Too Restrictive



The most common approach to data security is denial of access, making it hard to find and use data.

Too Risky



When organizations do provide access to data, it's often a file transfer that is unrestricted, and unauditable.

VIA's "Goldilocks" Solution to Verification



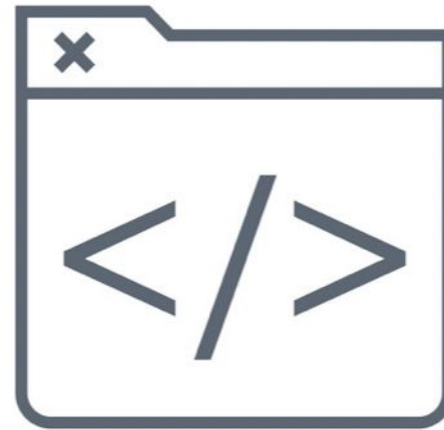
Traditional approaches to data protection are often binary and result in compromises to security, or to analysts. VIA's Web3 platform delivers a scalable, no-trade off solution.

Too Restrictive



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Too Risky



When organizations do provide access to data, it's often a file transfer that is unrestricted, and unauditible.

Just Right



VIA's platform enables auditable, data-level, use-case specific permissions with a mathematical guarantee of privacy and accuracy.

About Zero Knowledge Proofs (ZKPs)



solvewithvia.com

What I want to do is prove to you that I know this combination...

...without giving away any information.

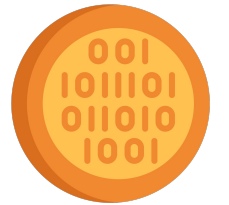
Computer Scientist Explains One Concept in 5 Levels of Difficulty | WIRED

How to prove you know a secret, without revealing what it is

[Mastery Monday: Why You Should Care About Zero-Knowledge Proofs](#)
[Computer Scientist Explains One Concept in 5 Levels of Difficulty | WIRED](#)
[How to prove you know a secret, without revealing what it is](#)

Meet Mary and José*

Mary agrees to sell José an NFT.

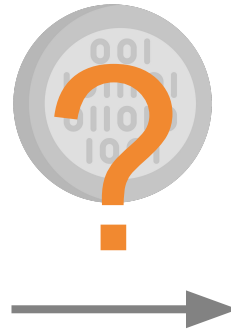


* Not their real names

José claims that he didn't receive his NFT



How do Mary and José settle their disagreement?



VIA's Skylight Now in U.S. DOE Testing



VIA's solution is being evaluated by Idaho National Laboratory (INL). INL is the DOE lab chosen to oversee battery storage and EVs technologies nationally.



- INL selected VIA to demonstrate its Zero-Knowledge Proofs (ZKPs) to verify fuel mix (i.e., kg CO₂ / kWh of electric vehicles (EVs)).
- The main advantage of VIA's approach is that it both **publicly verifies the fuel mix while maintaining the privacy** of the EV user / owner, charge and discharge details, and EV location, time, and date of charging.

Improved Incentives for Collective Action



Real-time verification enables real-time settlement. Shortening the feedback loop to participants increases collective action.



NILM = AI ... But not that AI ...



Generative AI has made “more progress in the past two months than the past two years.”

- Mar 3 - LLaMA leak
- Mar 13 - Alpaca release
- Mar 18 - LLaMA on Macbook
- Mar 19 - Vicuna release (\$300 to train)
- Mar 25 - GPT-4All launch (\$100 to train)
- Mar 28 - GPT-3 open source
- Apr 3 - Koala launch
- Apr 15 - Open Assistant launch



Text is Just the Beginning



Models are improving rapidly for areas beyond text.

	TEXT	CODE	IMAGE	SPEECH	VIDEO	3D	OTHER
MODEL LAYER	OpenAI GPT-3	OpenAI GPT-3	OpenAI Dall-E 2	OpenAI	Microsoft X-CLIP	DreamFusion	TBD
	DeepMind Gopher	Tabnine	Stable Diffusion		Meta Make-A-Video	NVIDIA GET3D	
	Facebook OPT	Stability.ai	Craiyon			MDM	
	Hugging Face Bloom						
	Cohere						
	Anthropic						
	AI2						
	Alibaba, Yandex, etc.						

[Generative AI: A Creative New World | Sequoia Capital US/Europe](#)

Text is Just the Beginning



Models are improving rapidly for areas beyond text. But what about NILM?

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**The best AI creates a virtuous circle
between labeled data and model
performance**



Improved Data for Improved AI

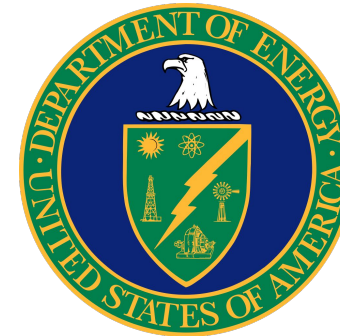


The largest organizations in the world testing anonymized, verified data to improve AI.

Department of Defense



Department of Energy



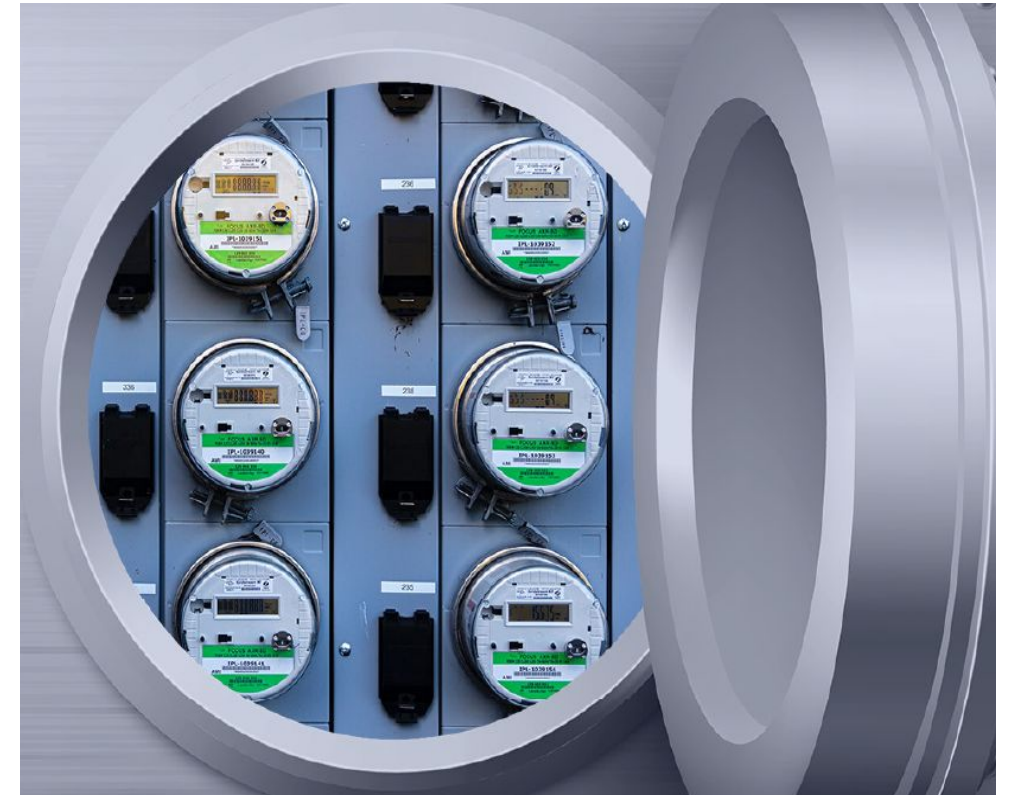
The Big Picture



Communities will be cleaner, safer, and more equitable through secure analysis of private energy and environmental data.

Collective **action** results in **collective good**:

- Carbon reduction (collective good) by matching renewable supply to demand (collective action)
- NILM can exponentially improve matching demand exponentially
- Exponential increases require ongoing, verifiable labeled data
- Labeled data reveals personally identifiable information (PII)
- Advances in Web3, particularly ZKPs, are keeping PII safe and making labels verifiable



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