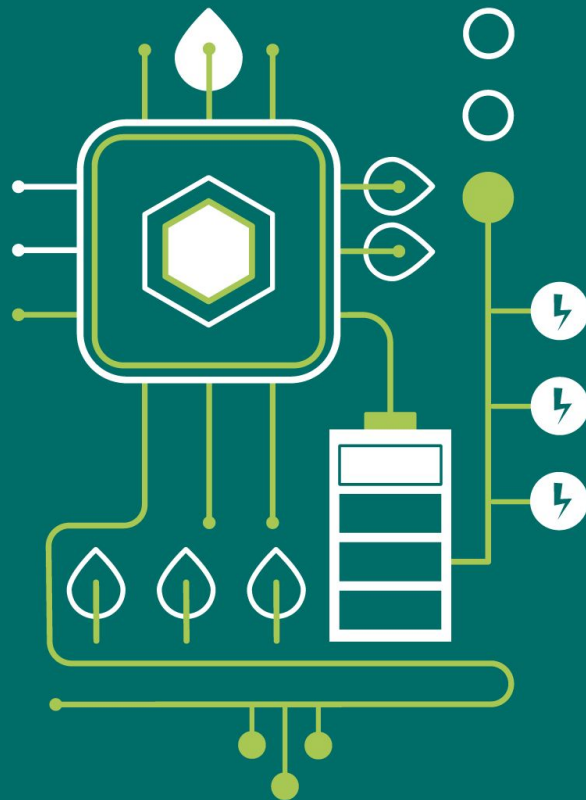




Green  
Software  
Foundation

# Philosophy of Measurement

Asim Hussain, ED @ GSF



# Who am I?

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Asim Hussain

Executive Director

@ Green Software Foundation

<https://asim.dev>

<https://twitter.com/jawache>

<https://linkedin.com/in/jawache>



# Reach



Members across  
**190**  
countries



Members listed as  
**FORTUNE**  
Global 500  
companies



Engaging a global  
workforce of over  
**1.5 million**  
people



Volunteers  
contributing to GSF  
projects.

# Our Steering Members



# Our General Members

accenture



Almaviva

amadeus

AVEVA

AVIVA



CAST  
Software Intelligence for Digital Leaders

CODE  
FROM  
FINLAND

UNIVERSITÄT  
Concordia  
UNIVERSITY



DXC  
TECHNOLOGY

ELECTRICITY MAPS

energy web

envite\*

FUTUREWEI  
Technologies

GESELLSCHAFT  
FÜR INFORMATIK

Globant

Goldman  
Sachs

GOVTECH  
SINGAPORE

HARC

HSBC

IBM

INFOCOMM  
MEDIA  
DEVELOPMENT  
AUTHORITY

indeed

Interfima

LEADERS  
FOR  
CLIMATE  
ACTION



REPLY  
LIQUID



Mercedes-Benz Tech Innovation

Manchester  
Metropolitan  
University



NREL  
Transforming ENERGY

NRI

Open:UK

randstad

AI  
Responsible  
Artificial Intelligence  
Institute  
Advancing Trusted AI



Life Is On

Schneider  
Electric

Scope3

SENTRY  
SOFTWARE



Supercritical

SDIA

TEXAS  
STATE  
UNIVERSITY

THE EXPLORERS

GREEN WEB  
FOUNDATION

thoughtworks

Time for the Planet

trustwise  
AI Trust Simplified.

UCL

UNIVERSITY  
OF AMSTERDAM

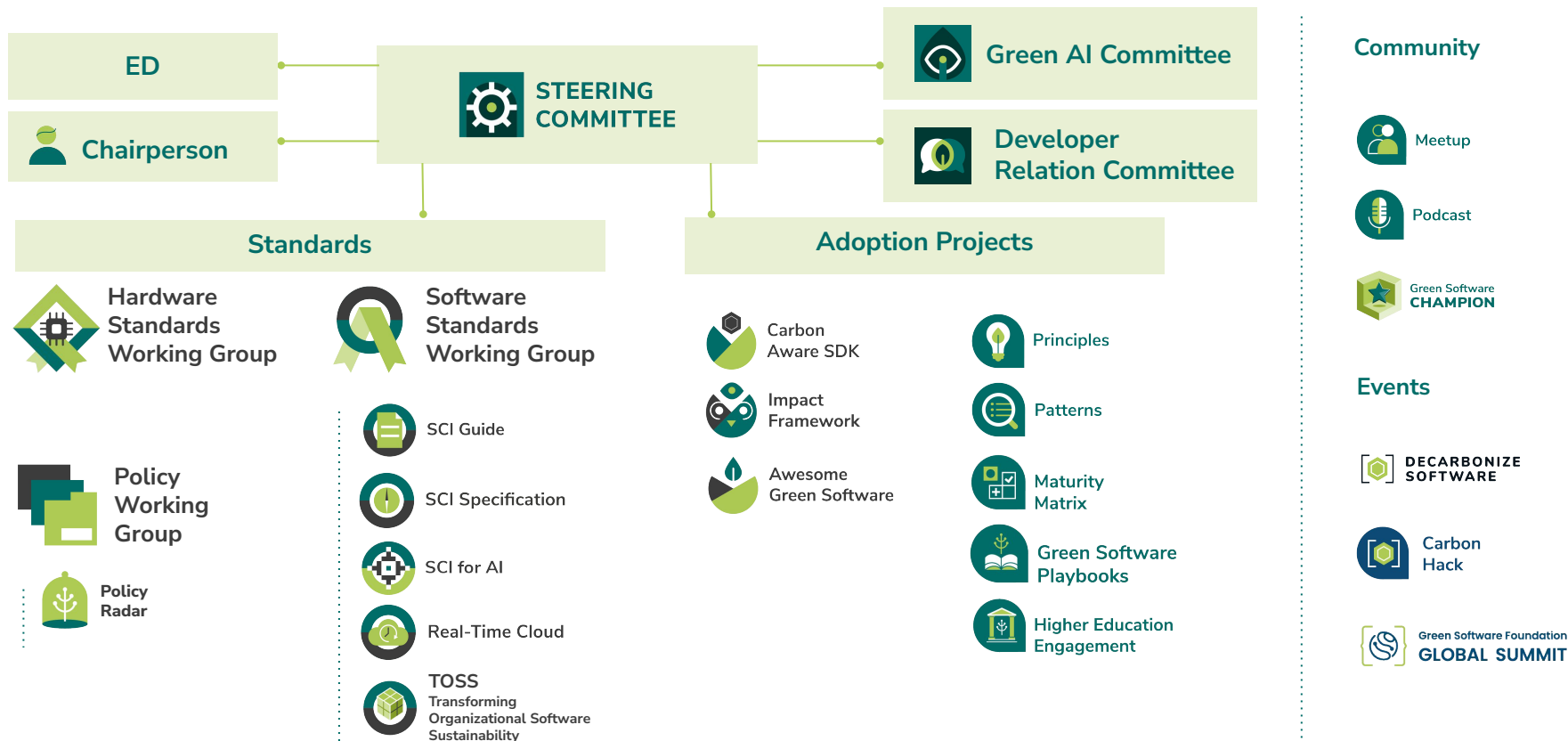
University of  
BRISTOL

UNIVERSITÀ  
DEL SALENTO

virtasant

WallTime

# Structure



Carbon emitted per kWh  
of energy, gCO<sub>2</sub>/kWh

Carbon emitted through  
the hardware that the  
software is running on

$$\text{SCI} = ((\text{E} * \text{I}) + \text{M}) \text{ per R}$$

Energy consumed by  
software in kWh

Functional Unit; this is how  
software scales, for example  
per user or per device

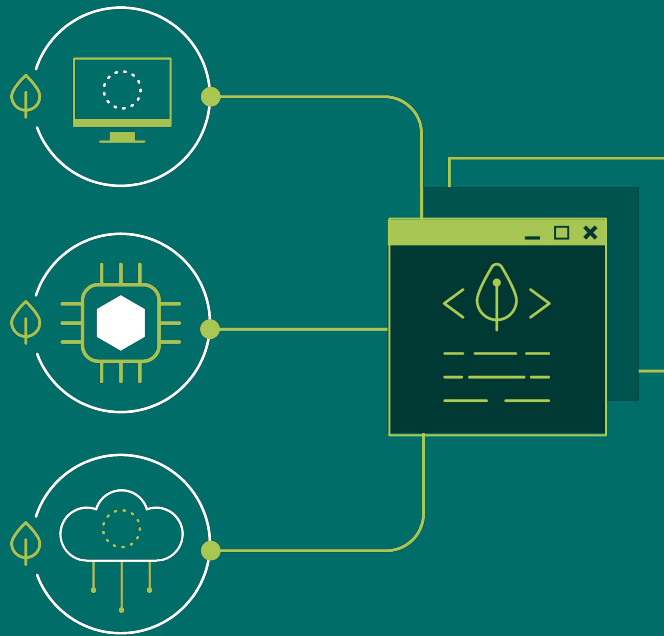
The “per R” is what makes the SCI into a tool that works for every software domain, every use case, and every person.

# Agenda

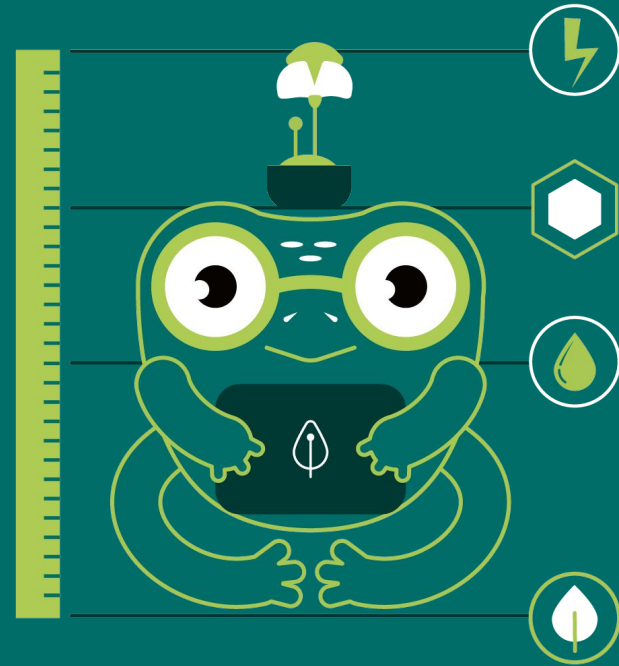
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Totals are poor KPIs & lead to inaction.

How we engineer metrics so they do lead to action



Totals lead to  
inaction

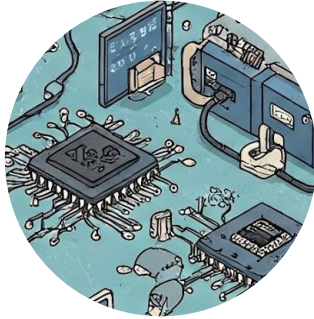




# What is a total metric?

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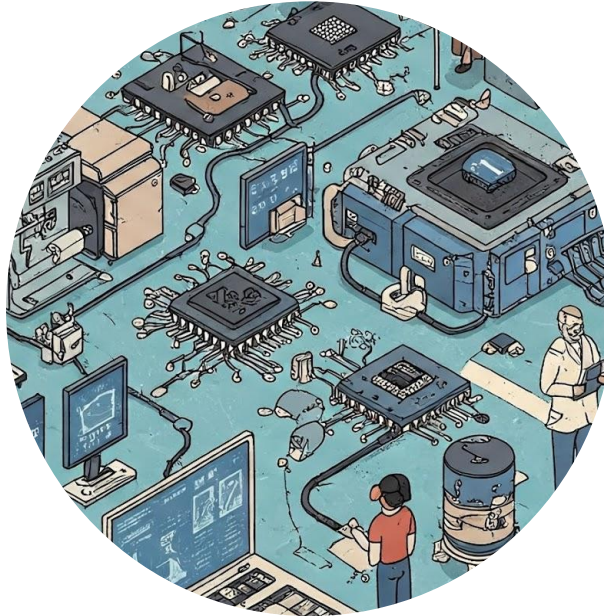
5



# What is a total metric?

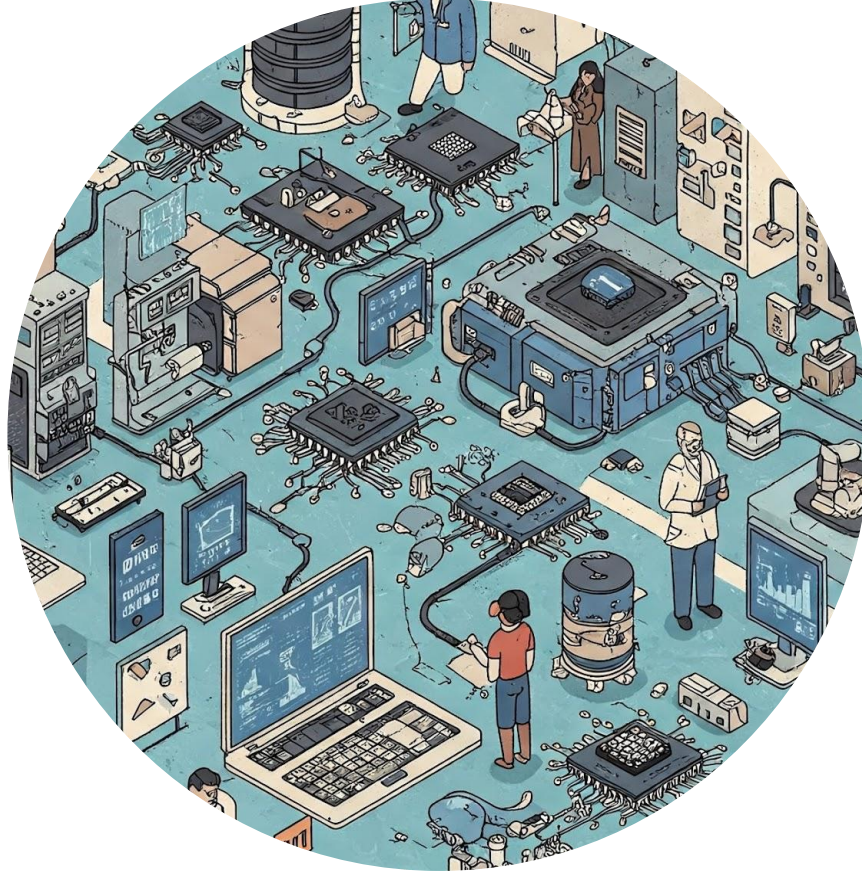
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500



# What is a total metric?

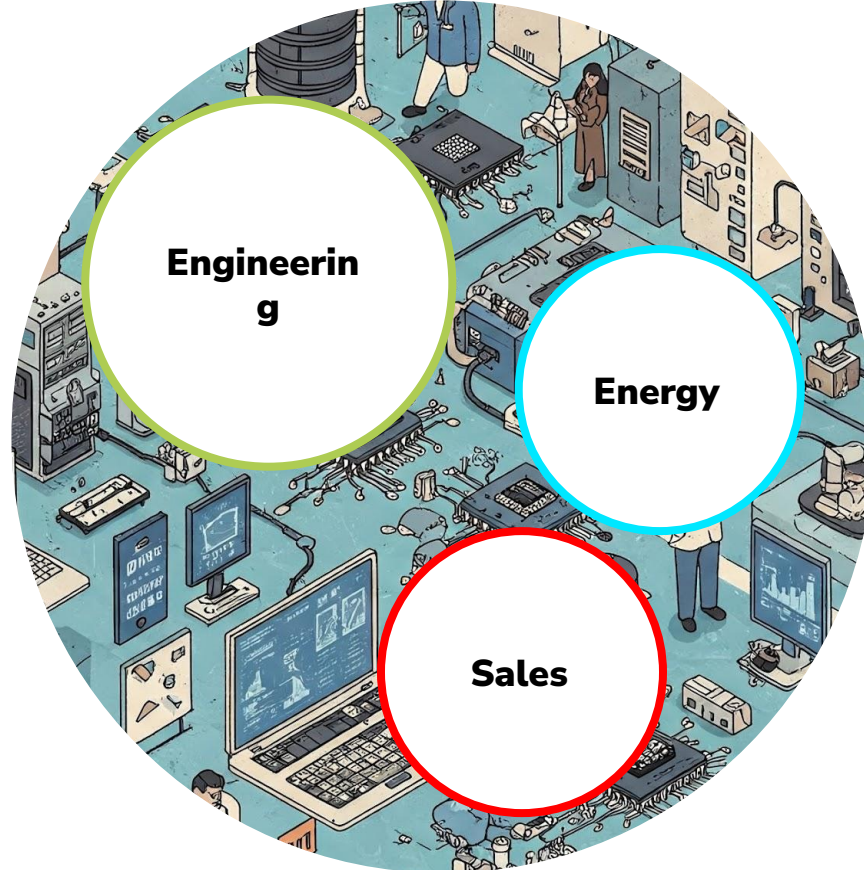
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# When everyone is responsible, no one is responsible

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5000



## Signs of a poor KPI

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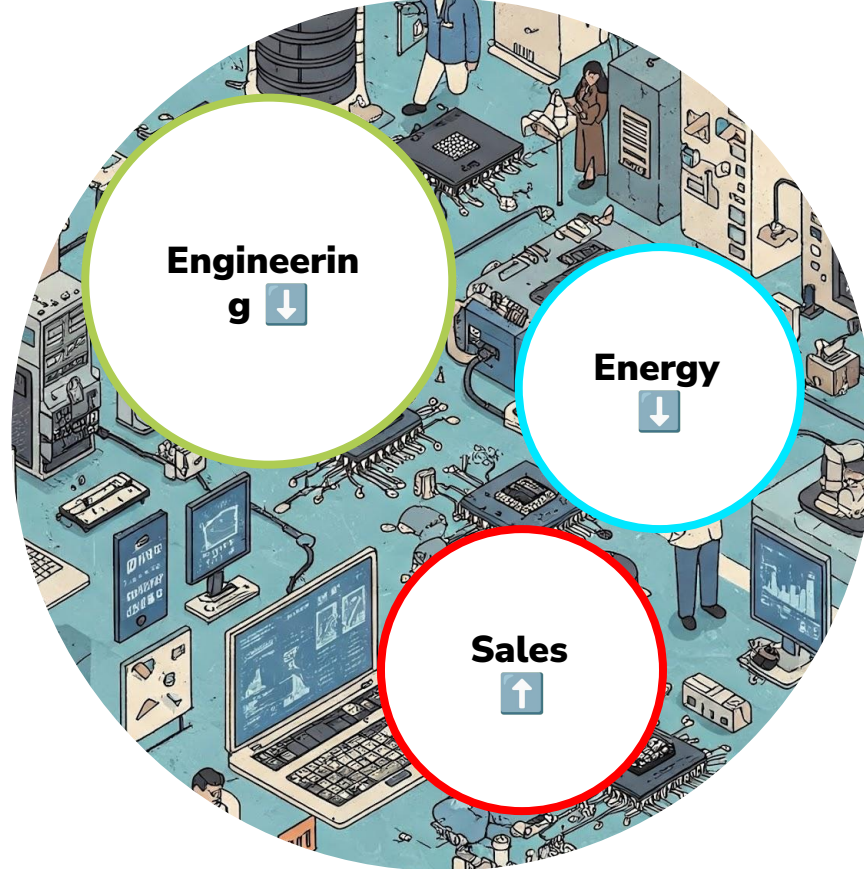
- If you do everything **right** and the KPI moves in the **negative** direction.
- When you do everything **wrong** and the KPI moves in a **positive** direction.
- If you do **nothing** and the KPI changes.



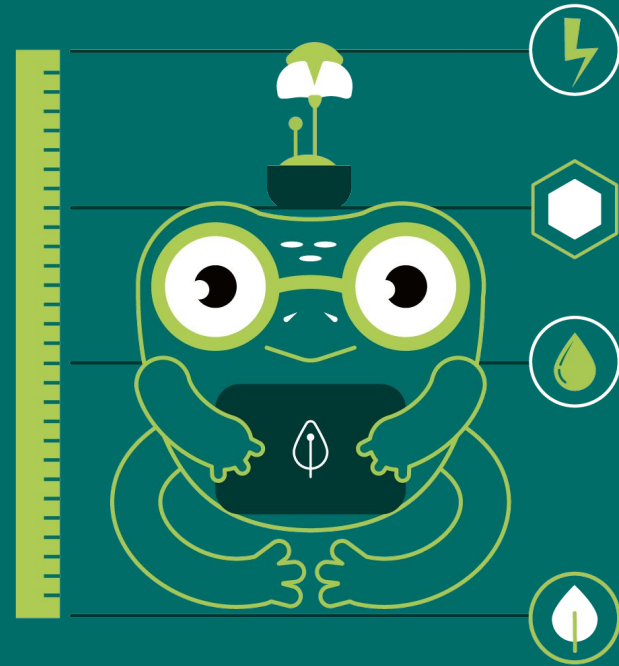


# Total metrics are poor KPIs

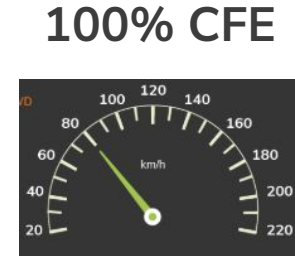
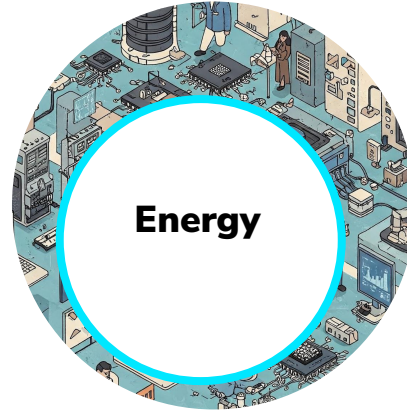
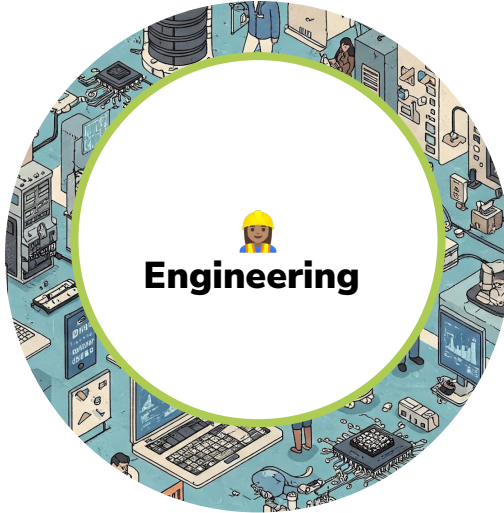
5000  
👉  
10000



Agency leads to  
action



# Align metrics to the agency boundary of teams



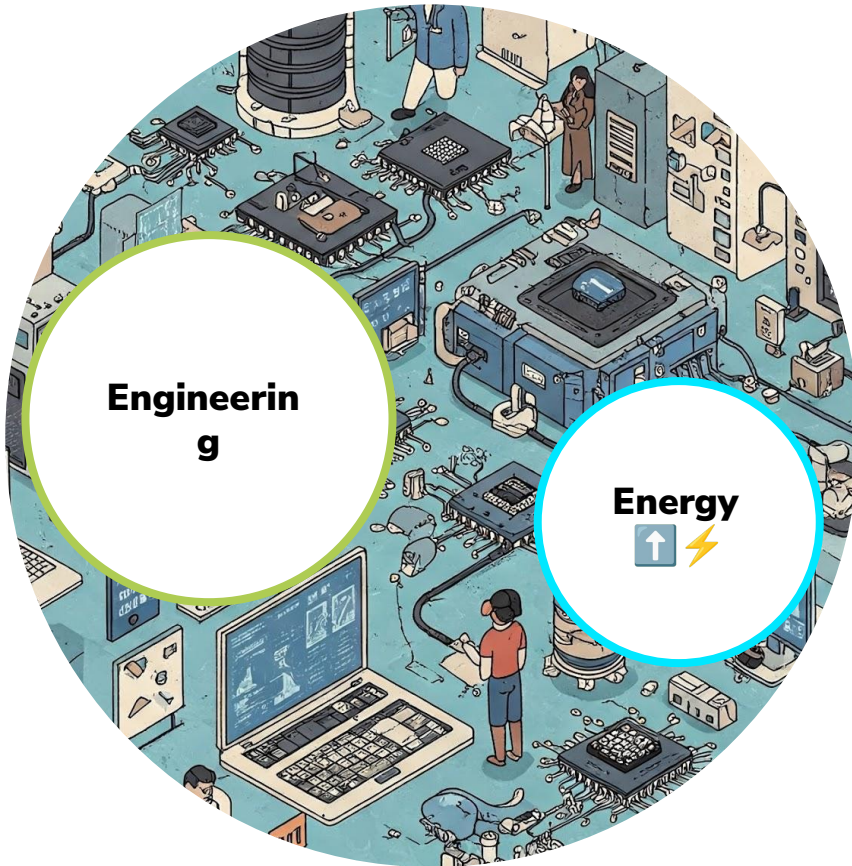


# Why the SCI doesn't allow offsets?

SCI ↓

**Engineering**

**Energy**



# Metrics drive action

- Like a dashboard of a car, you need many different metrics to know what's going on.
- Measuring is not the end goal. It's a tool to signal which direction you should be going and how fast.



# Conclusion

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When everyone is responsible, no one is responsible

Align metrics to the agency of teams

We need 100's of metrics inside orgs to drive meaningful change.