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through the app



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Thank you!



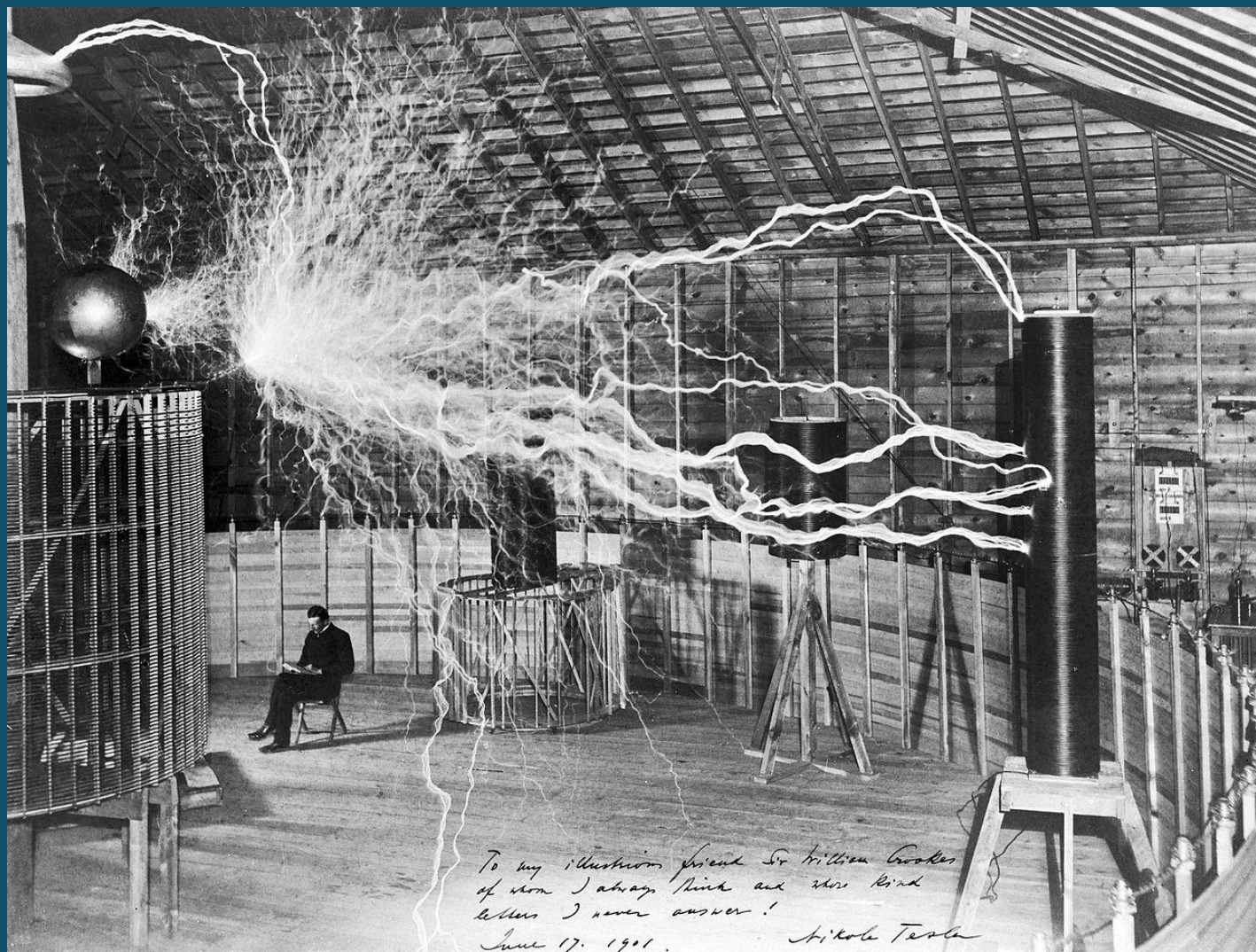


# SharEnergy.

**Enabling P2P Energy**

A look at the challenges and how to solve them  
or: Reprogramming the energy sector





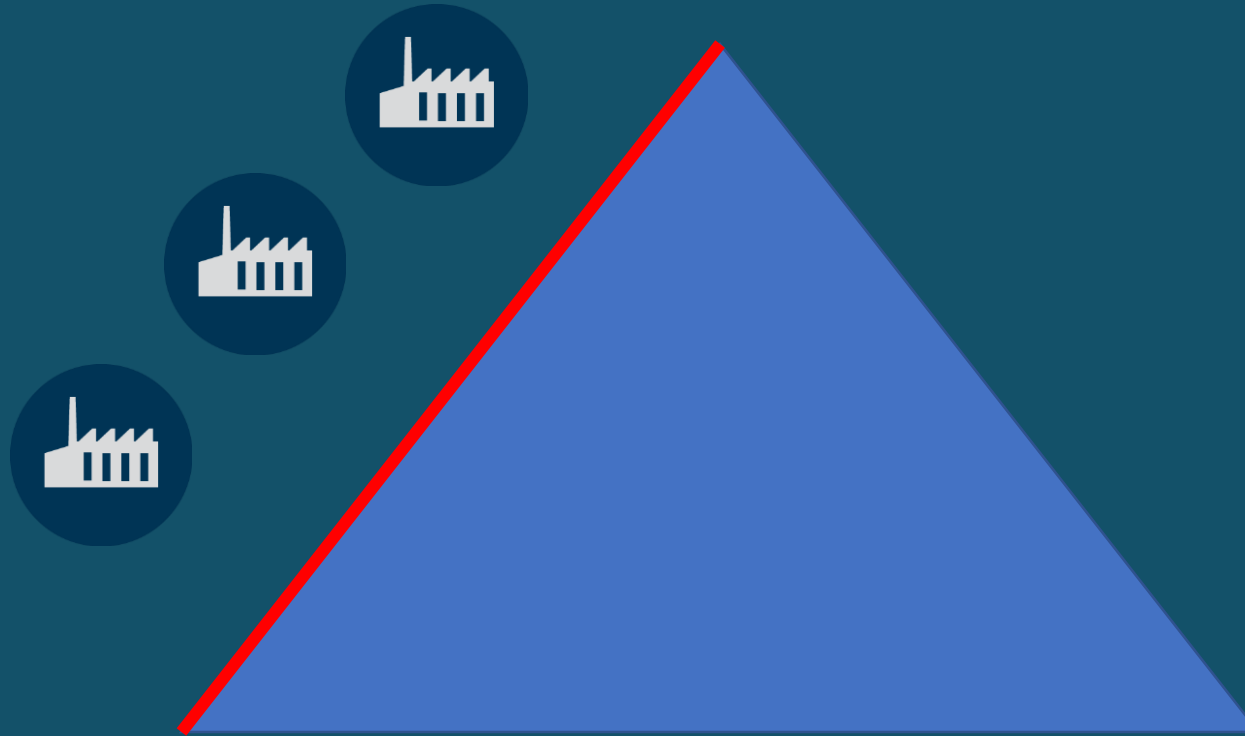
**good grades**

**sleep**

**social life**

# TRIANGLE OF ENERGY-POLICY

security of supply



economic viability

ecological viability

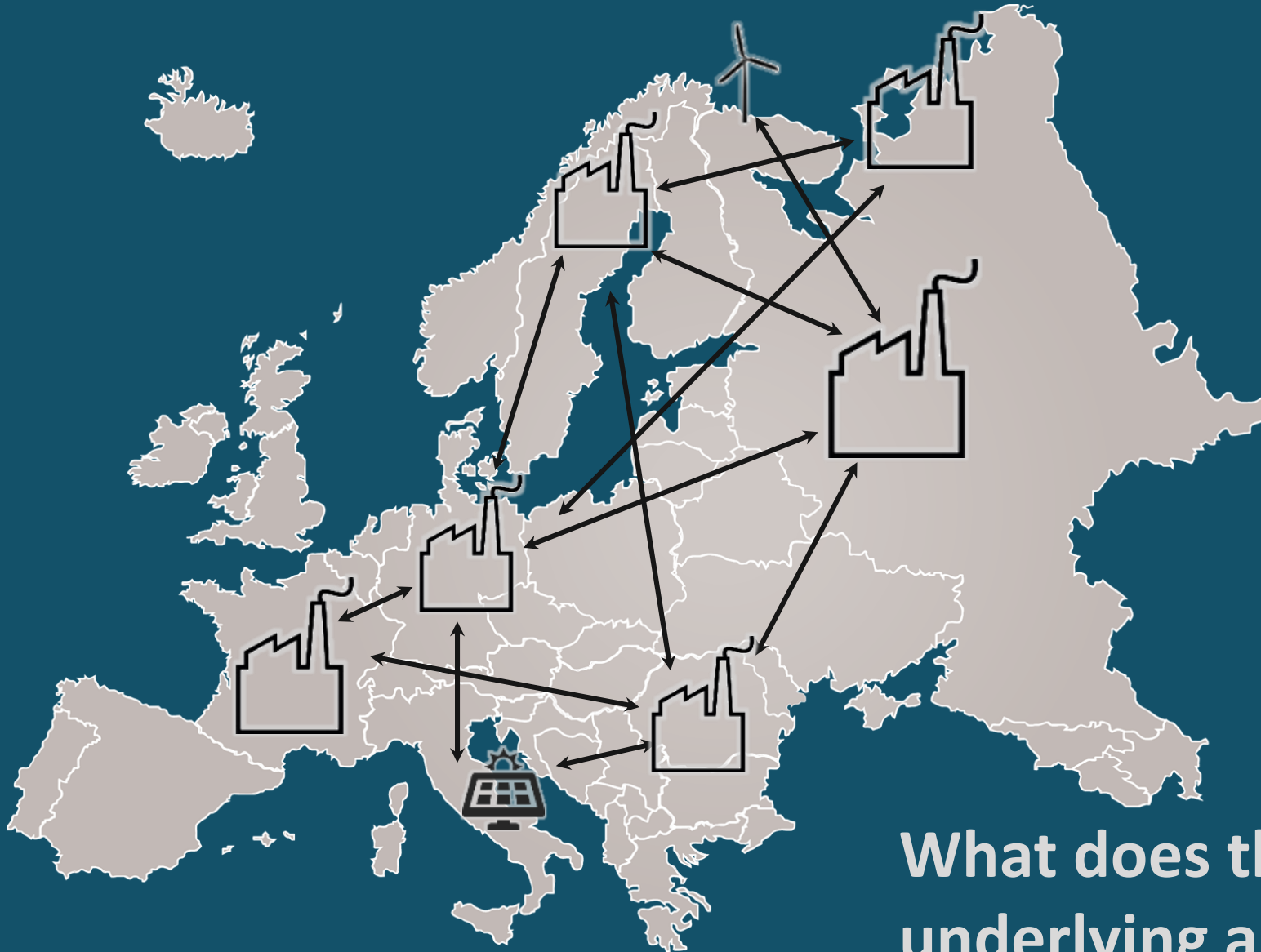
# Re-thinking energy transition

## Who we are: OLI Systems

- Established 2016 in Stuttgart, Germany
- Deployed pilots for several customers (including Allgäuer Überlandwerk (AÜW), Technische Werke Ludwigshafen (TWL), TU München & PV developer WIRCON)
- Partner of the SINTEG project „C/sells“
- Affiliate of the Energy Web Foundation







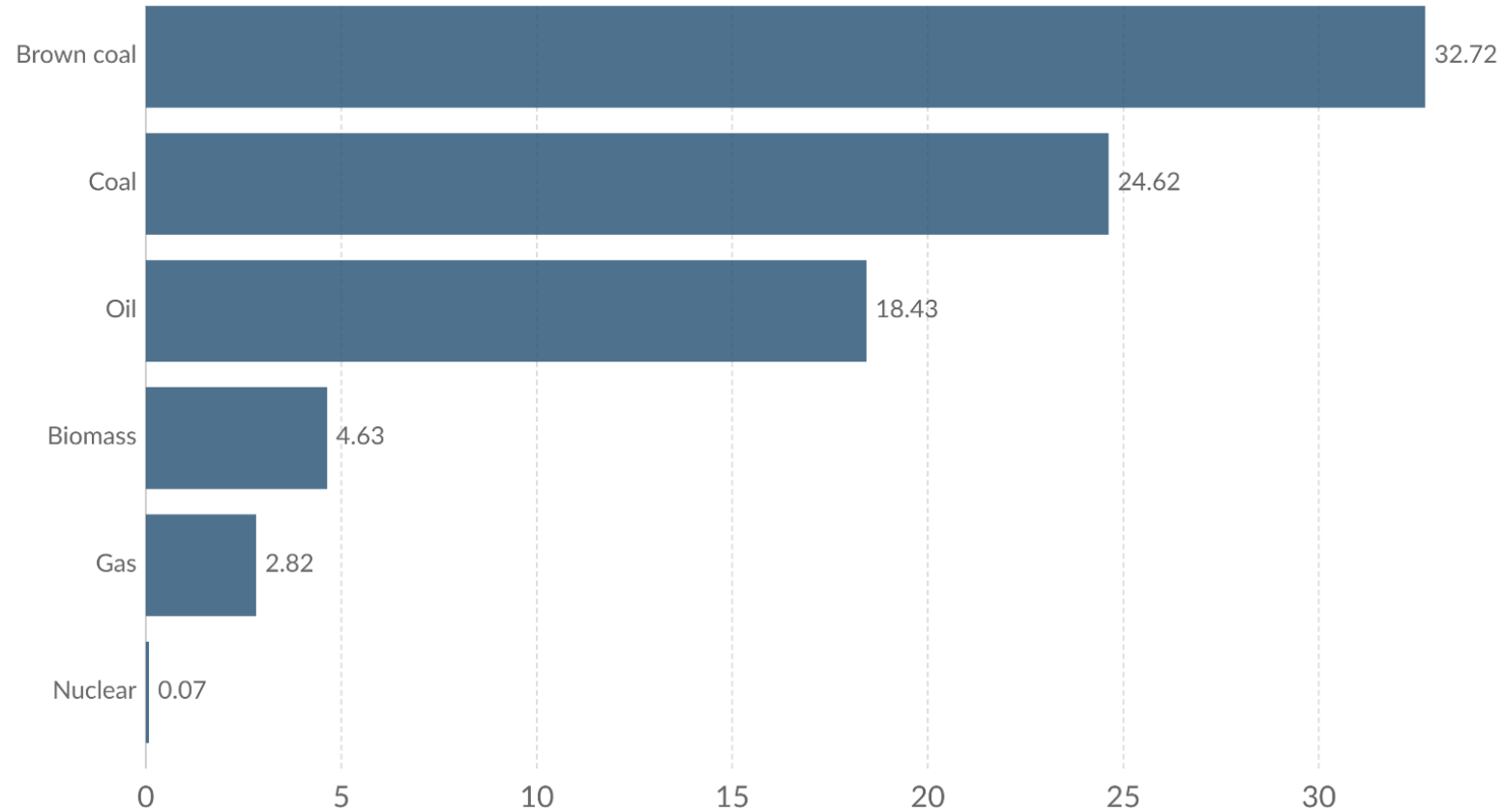
**What does this mean for the  
underlying architecture?**

# Risks of centralized, fossil fuel based electricity production

## Death rates from energy production per TWh

Death rates from air pollution and accidents related to energy production, measured in deaths per terawatt hours (TWh)

Our World  
in Data



Source: Markandya and Wilkinson (2007)

[OurWorldInData.org/energy-production-and-changing-energy-sources/](https://OurWorldInData.org/energy-production-and-changing-energy-sources/) • CC BY

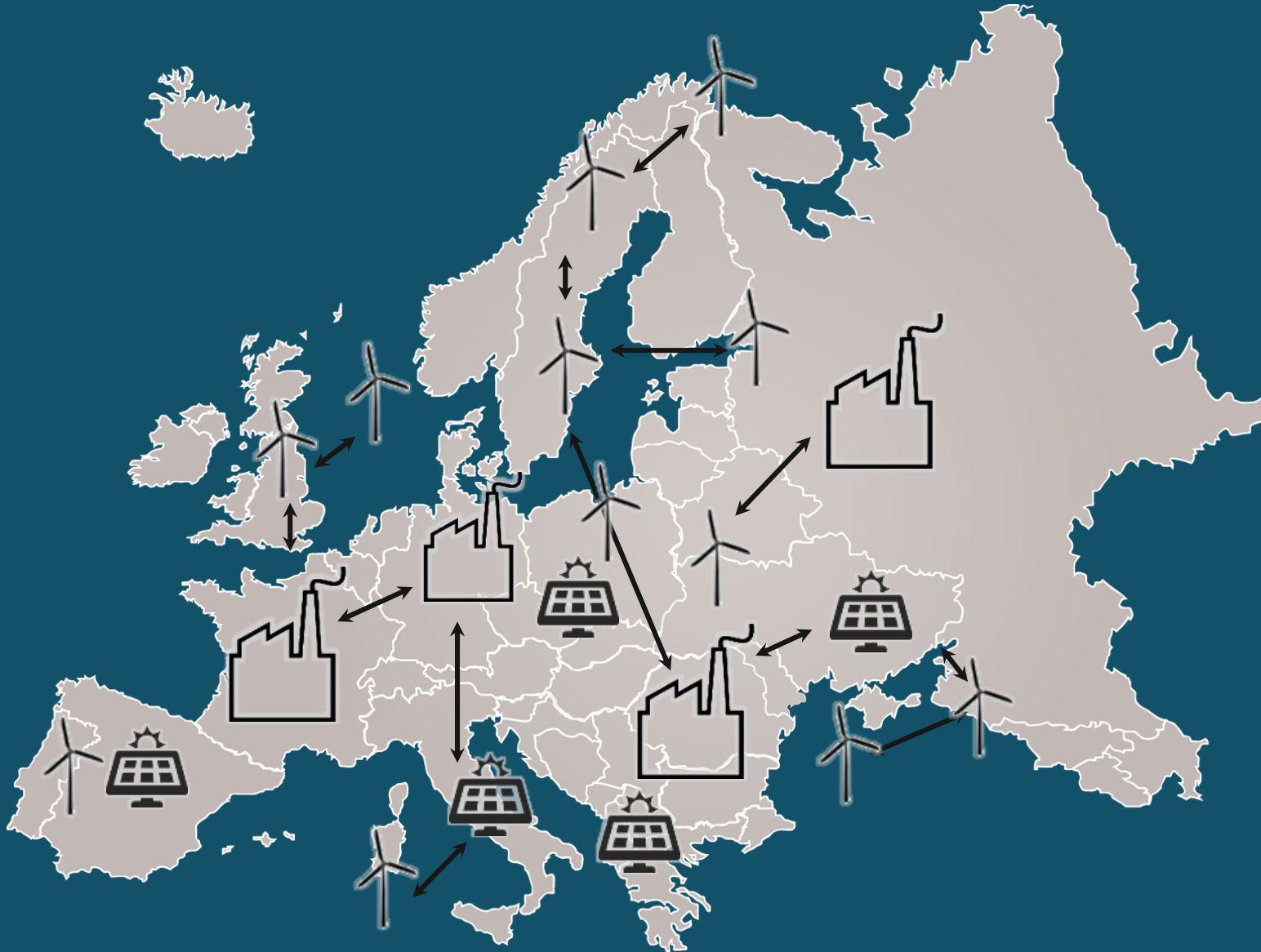
Note: Figures include deaths resulting from accidents in energy production and deaths related to air pollution impacts. Deaths related to air pollution are dominant, typically accounting for greater than 99% of the total.



## Risks of centralized, fossil fuel based electricity production

- **Climate Change poses a huge risk**
- **centralization of production = centralization of power**
- **Finite amount available**
- **single-point(s)-of-failure(s)**

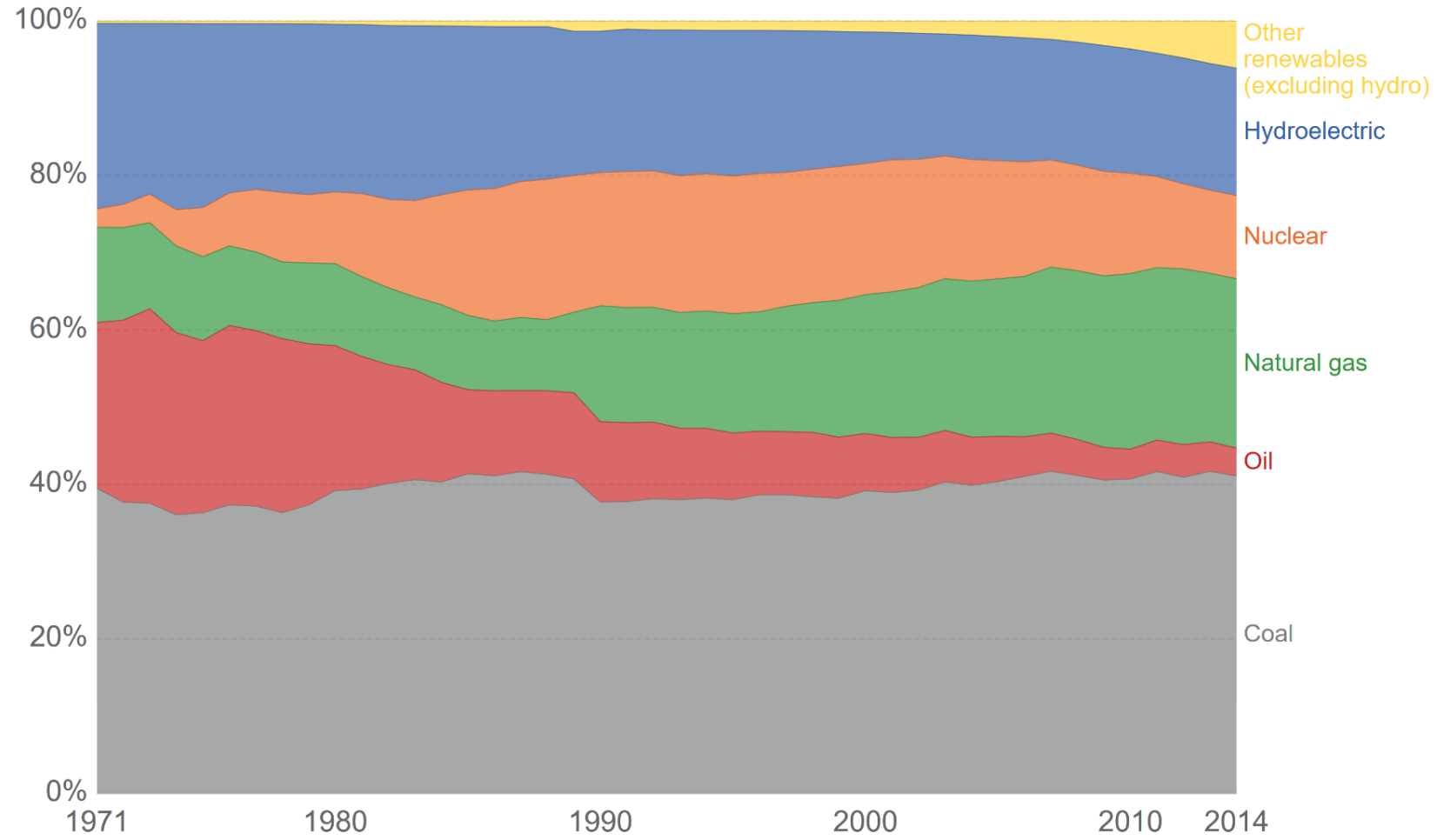
...is getting more and more distributed



# Electricity share by fuel source, World

Our World  
in Data

Electricity production (measured as the percentage of total electricity production) by source (coal, oil, gas, nuclear, hydroelectric power and other renewables). Other renewables in this definition includes biomass, wind, solar, geothermal, and marine power.

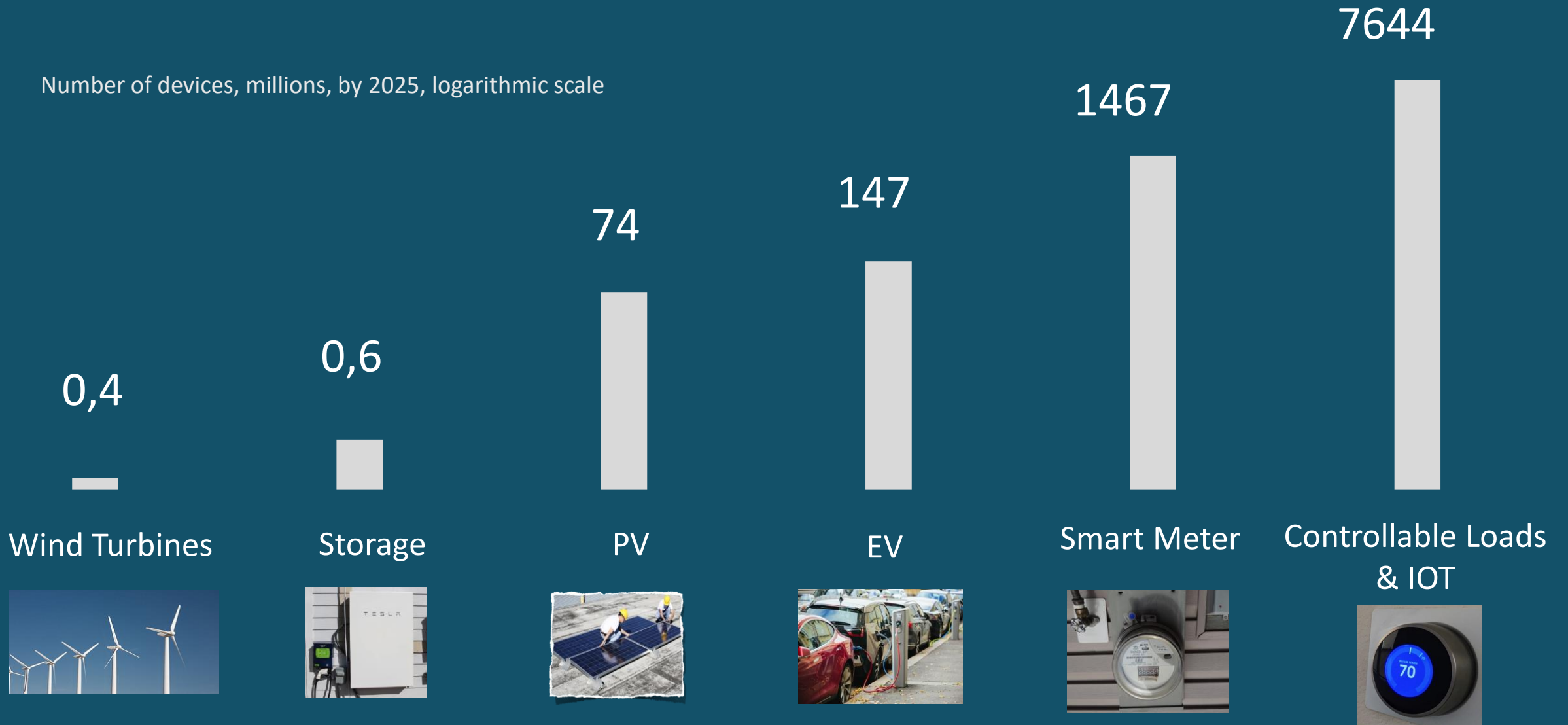


Source: International Energy Agency (IEA) via The World Bank

OurWorldInData.org • CC BY

# 9 billion devices are forecast to become internet connected by 2025

Number of devices, millions, by 2025, logarithmic scale



# Who is investing into grid assets?

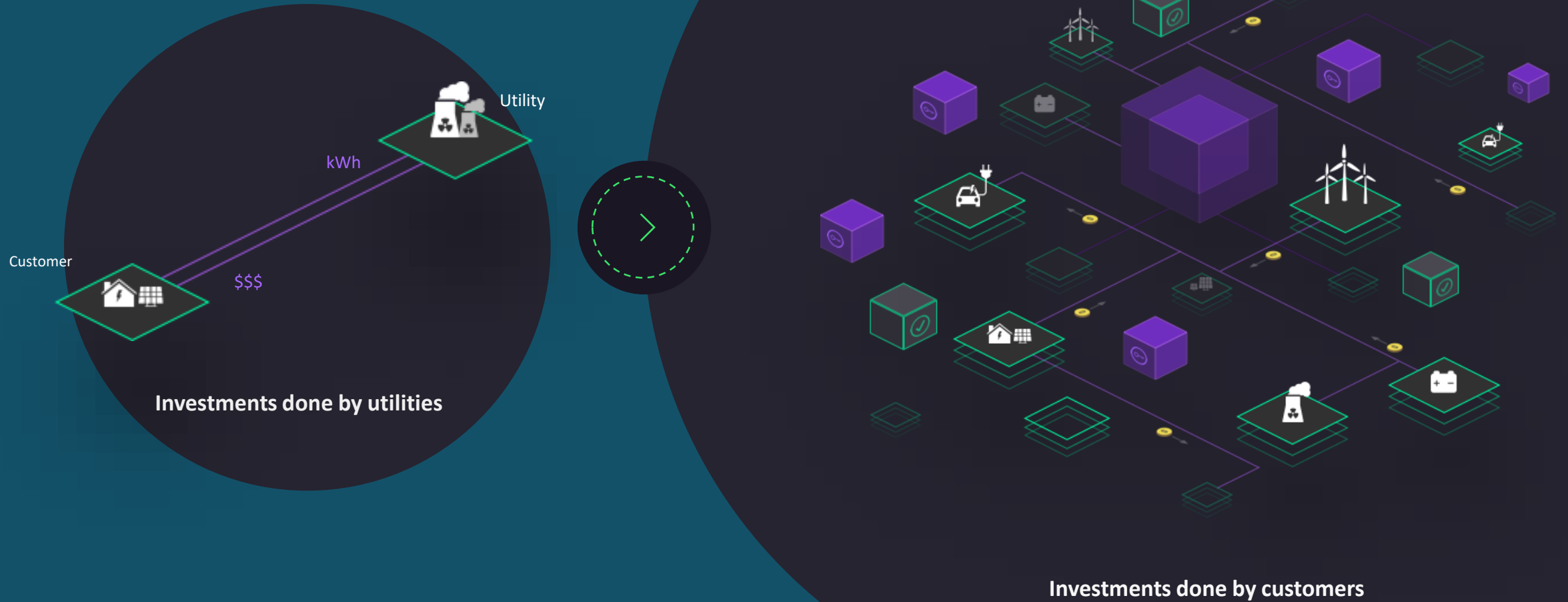
USD billions



Source: IEA; BNEF New Energy Outlook 2018 & RMI Analysis 2018 – generation + grid for utilities; PV+EV+batteries+smart meters+smart thermostats+other residential appliances for customers



# Exponential rise in complexity



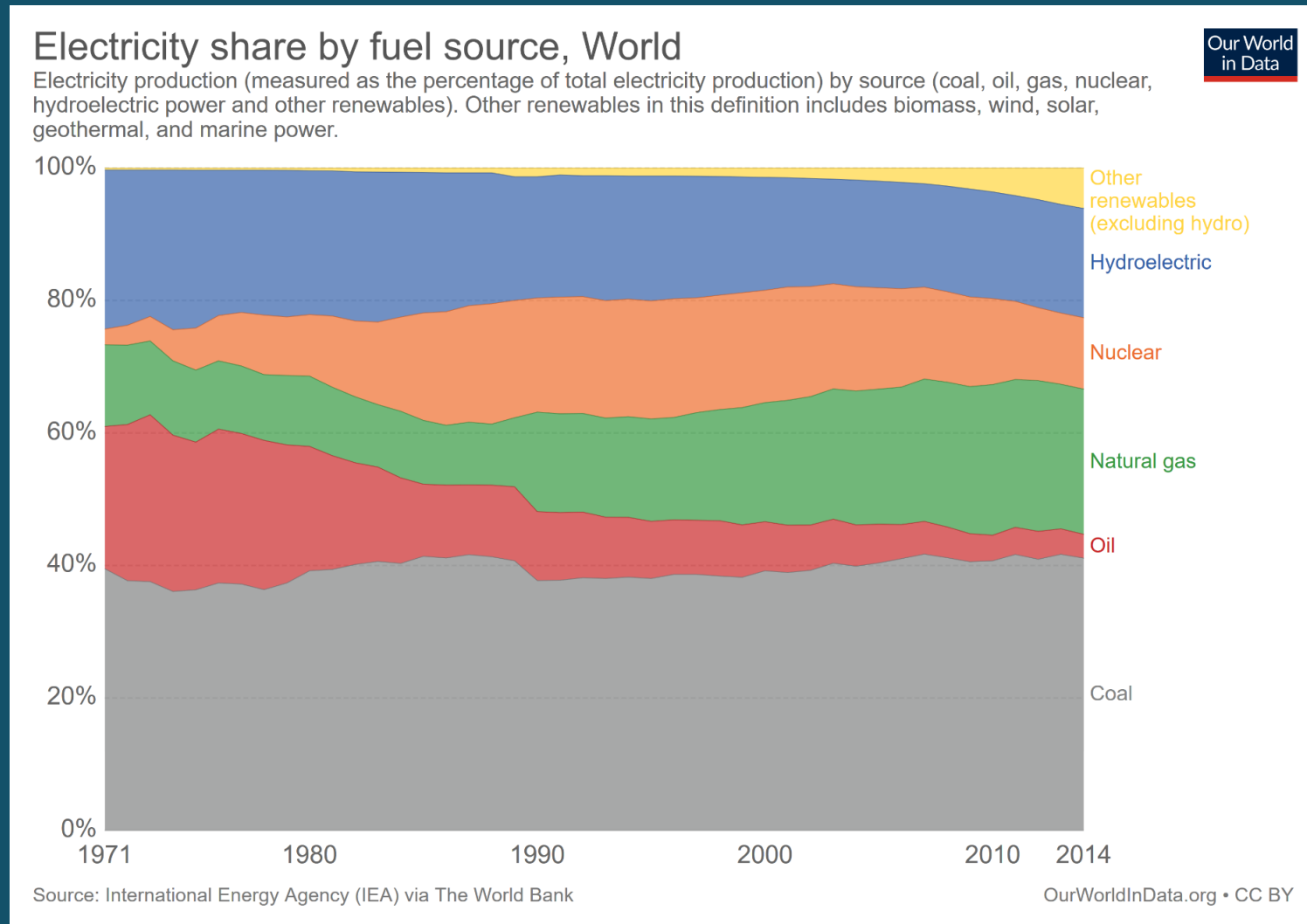
- **Prequalification & Registration**
- **Offering and activation**
- **Measurement and settlement**

**... for billions of energy assets & devices**

**... for millions of market participants**

**... for dozens of local and interconnected markets**

So far, feed-in tariffs have been the go-to solution in order to increase the share of renewable generation in the system.



**But feed-in tariffs don't incentivize what we actually need:**

- **balancing production and consumption close to real-time**
- **enabling (small to medium sized) energy storage solutions**

**...in order to deal with volatile, intermittent generation:  
Think about the Night/Day and Summer/Winter**



## A LOOK AT SOME ISSUES



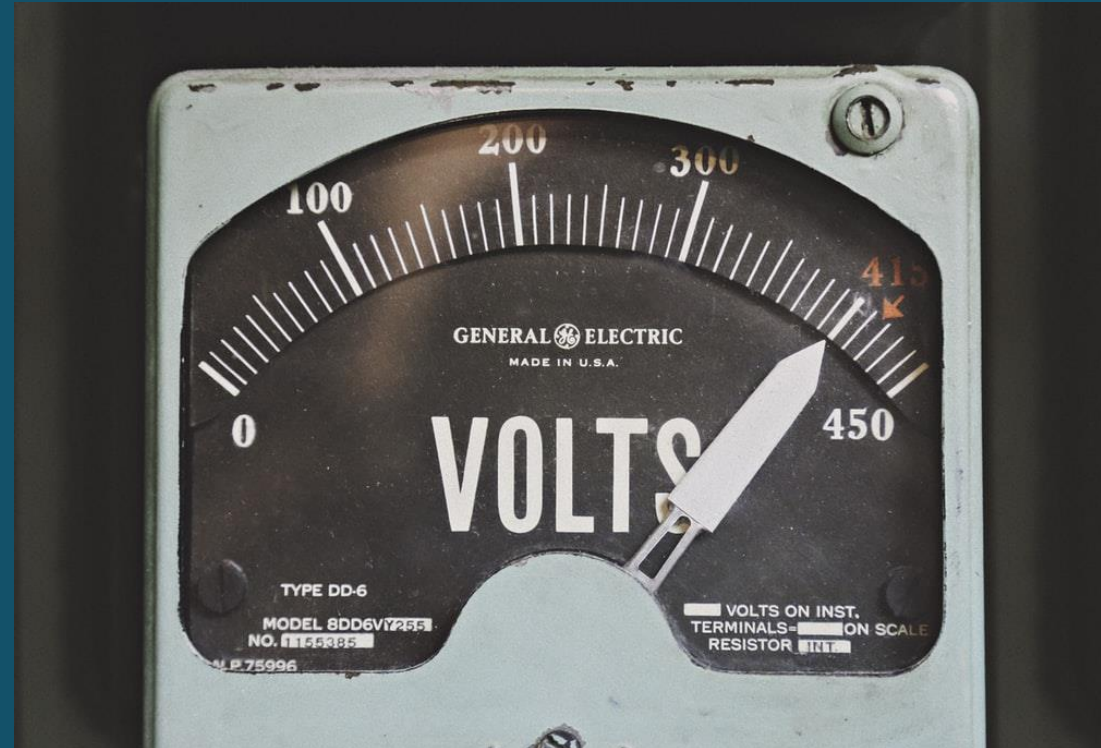
# Power Outage?

## Call your Grid Operator!



# Operational Grid Metering?

Drag indicators.



# Green electricity tariffs?

Greenwashing is rampant.



# B2B Communication?

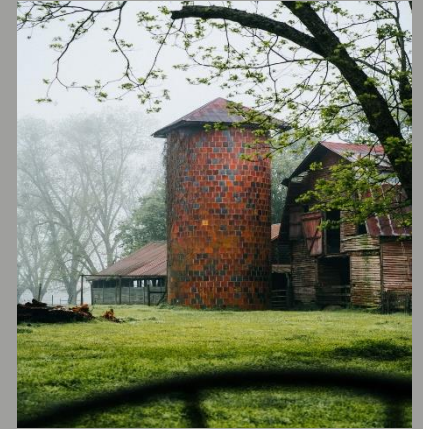
Grid Operator



Metering Office & Data



Grid Planning  
Department



Grid Operations  
Department

Supplier 1



CRM

Billing

Supplier 2



CRM

Billing

Communication via email, telephone, fax machine...

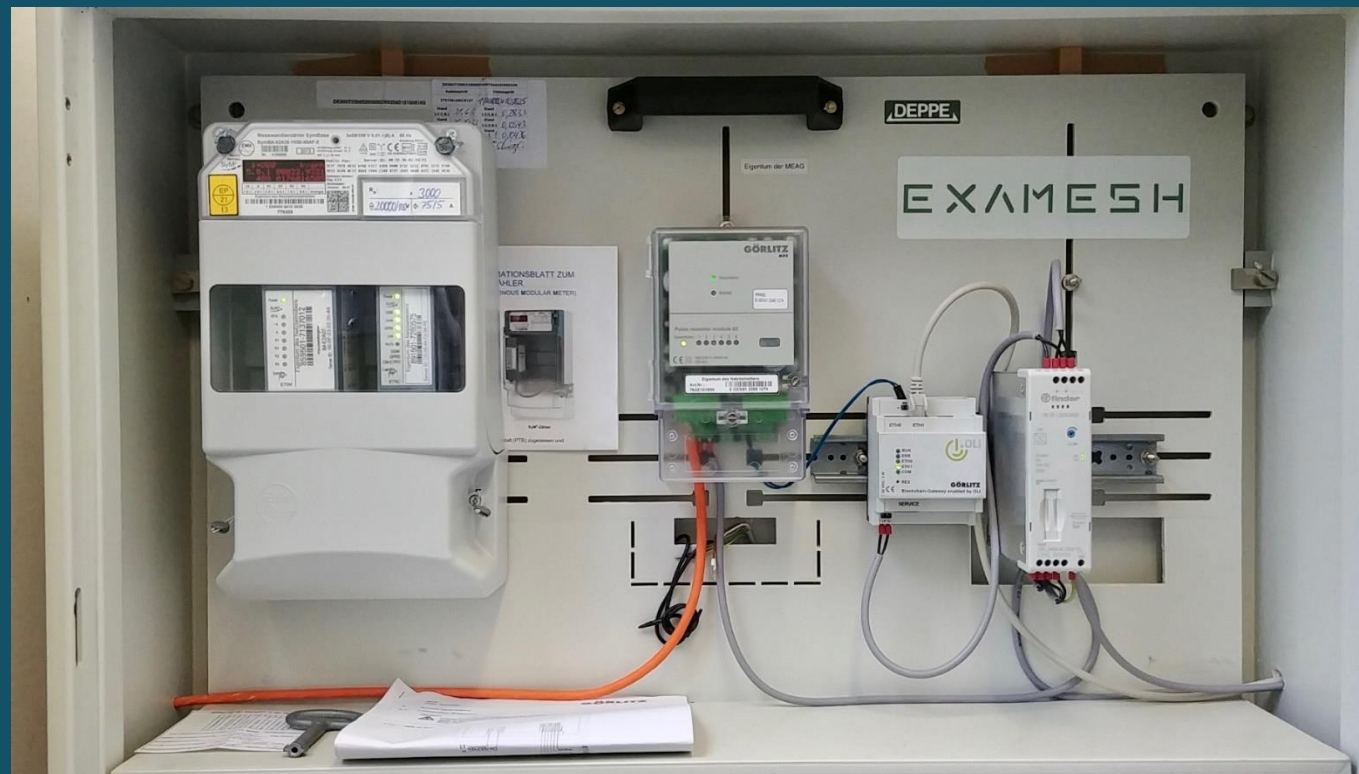
**We need to trace the flow of electricity from source to consumption  
for every quarter-hour  
24/7/365**

**...in order to make/break the energy triangle**

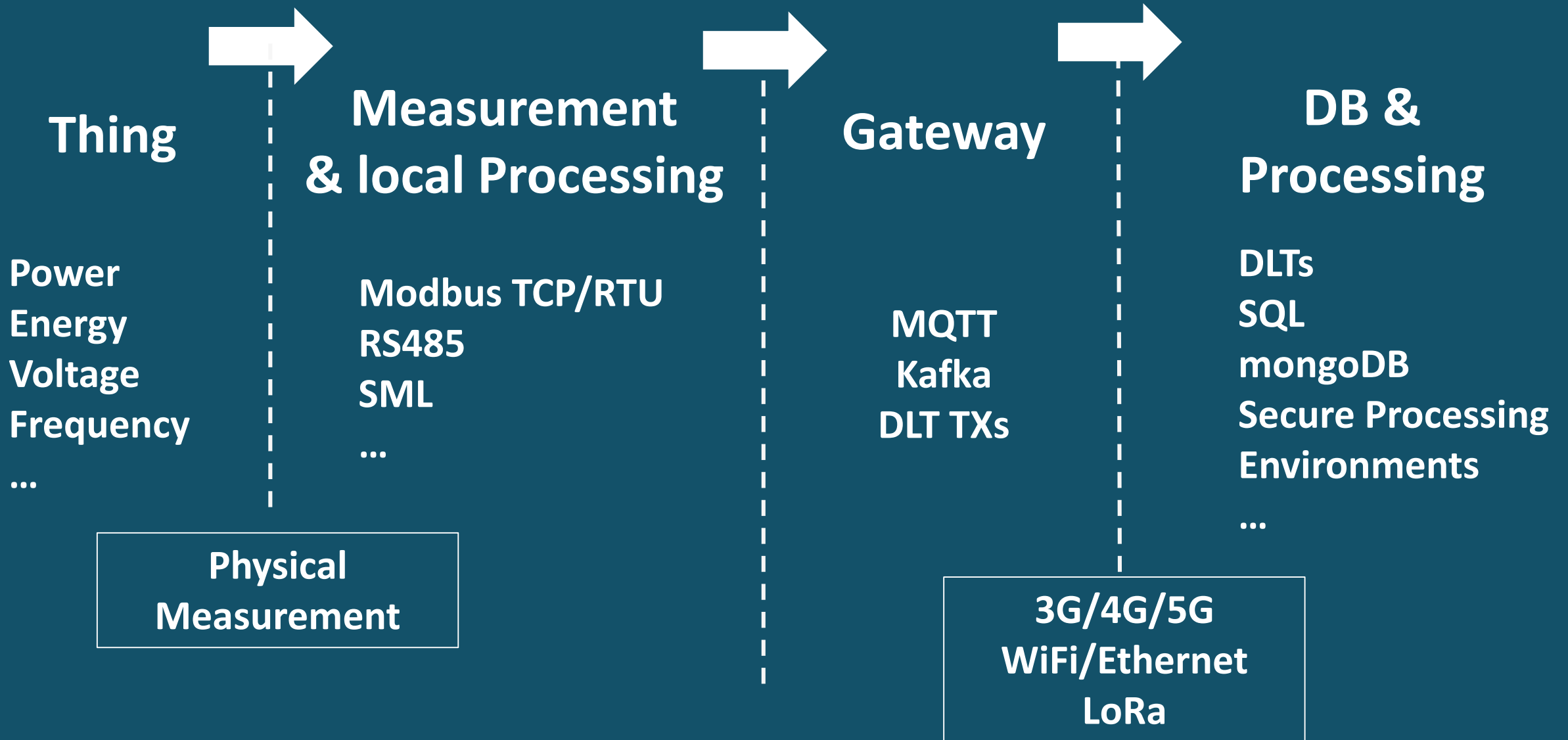


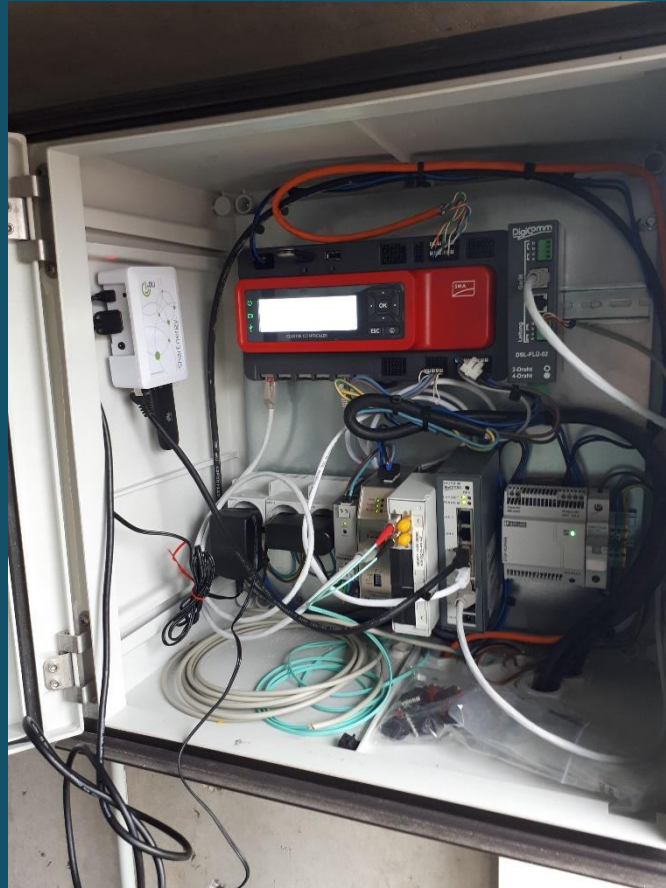
# NEW APPLICATIONS

# Connecting people & things

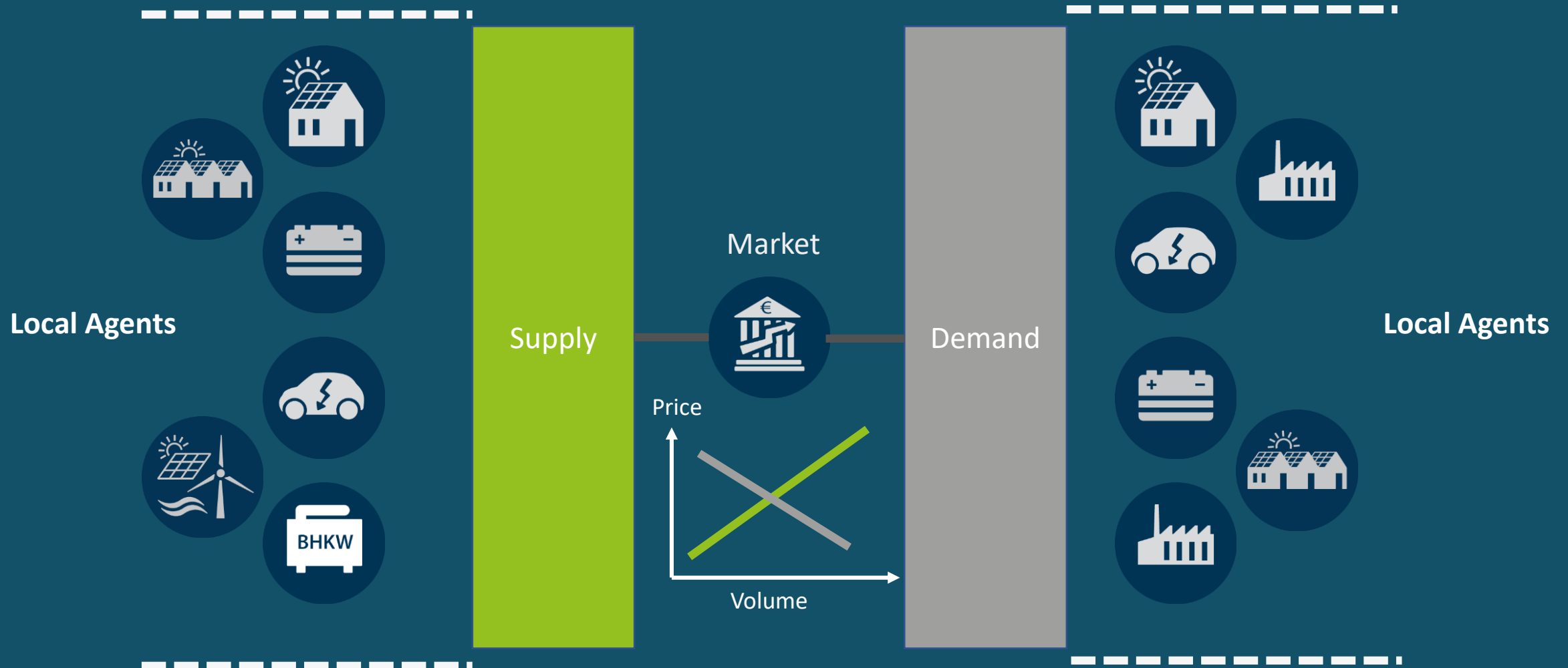


# Measurement Journey

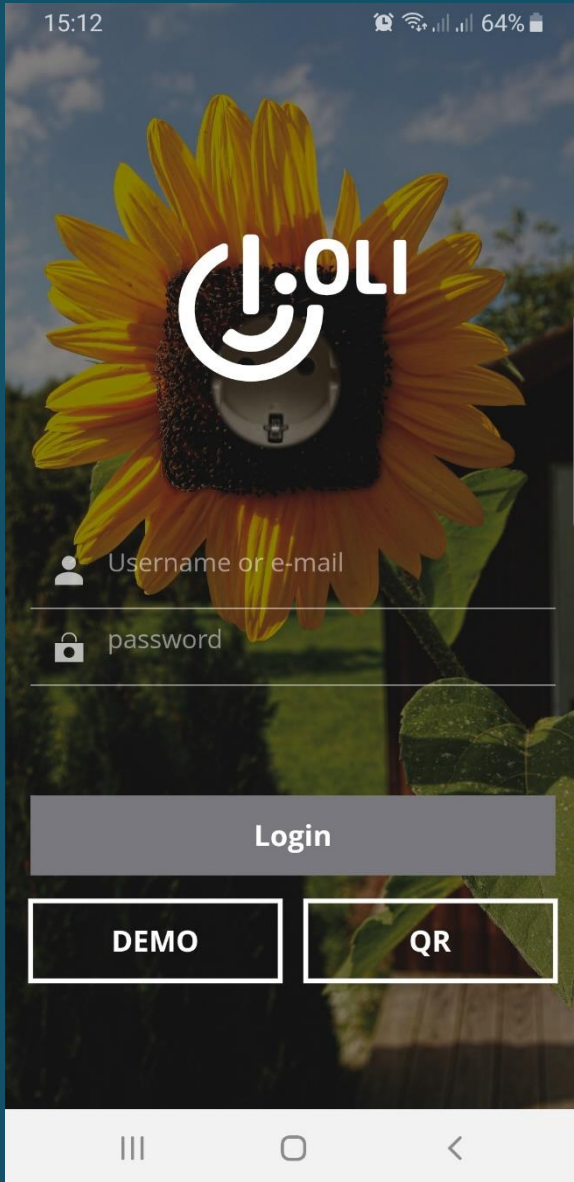




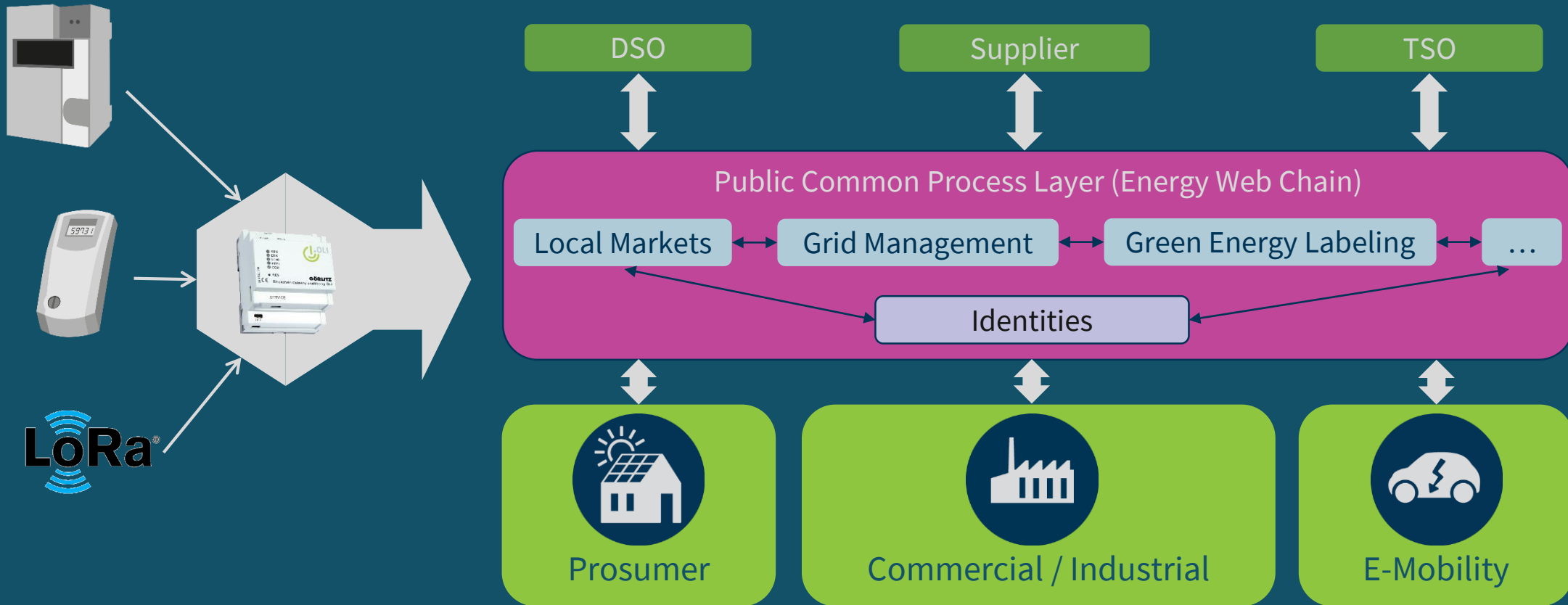
# Local P2P energy markets







# Keep it decentralized!



open-source, public

# What have we done so far: EW Community

## Corporates



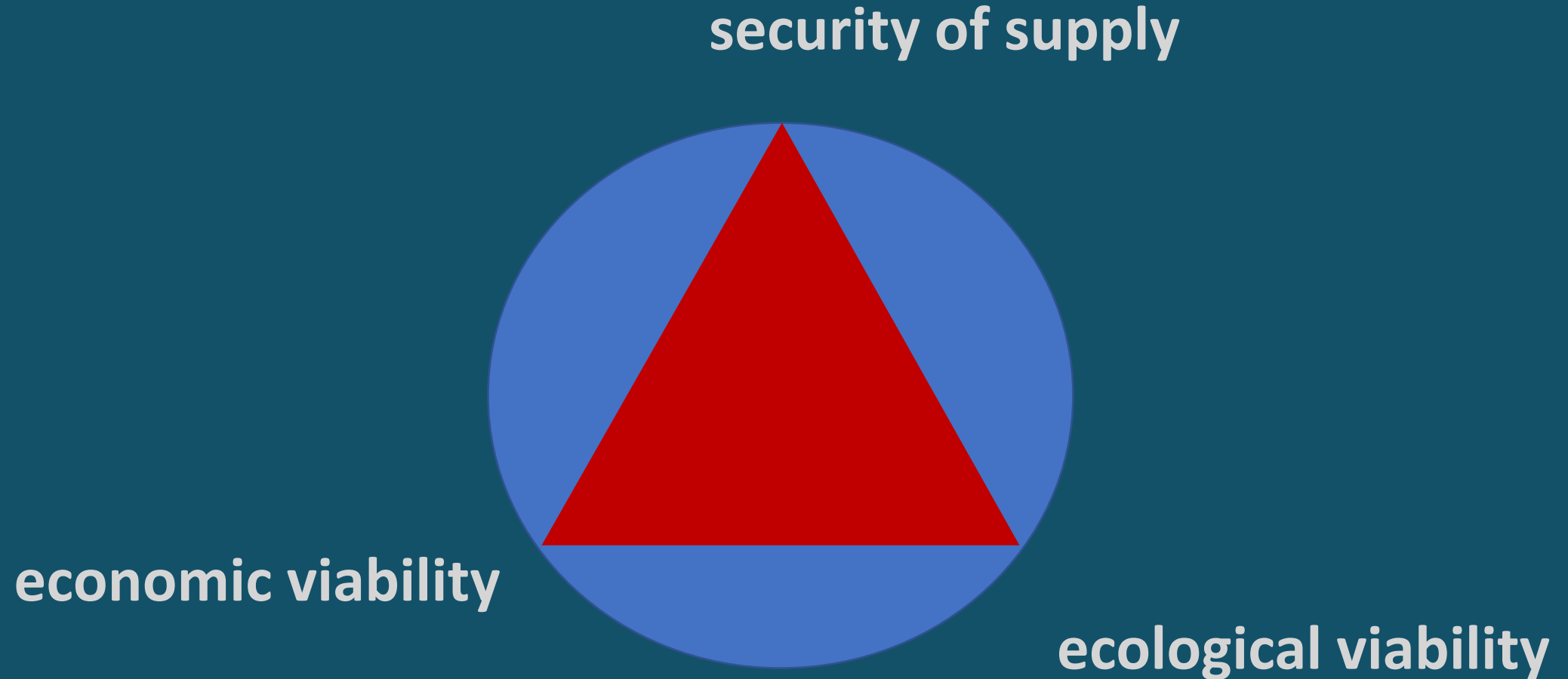
## Startups & Vendors



## Financial Organizations



# TRIANGLE OF ENERGY-POLICY 2050 reprogrammed





[www.my-oli.com](http://www.my-oli.com)



[github.com/olisystems](https://github.com/olisystems)



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*Please*

**Remember to  
rate this session**

*Thank you!*

