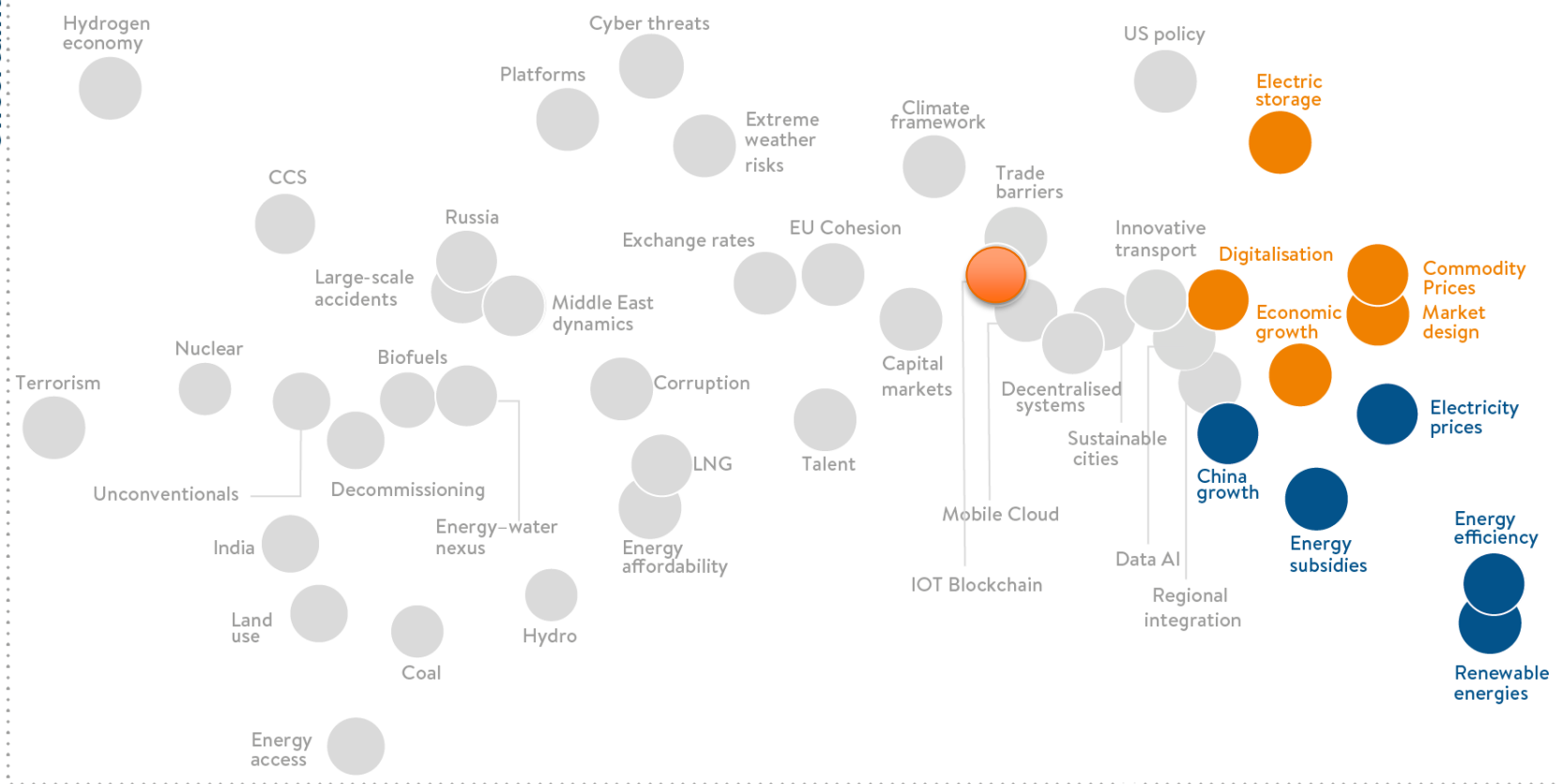


# **Blockchain: the missing link in the energy sector?**

Uncertainty ▲



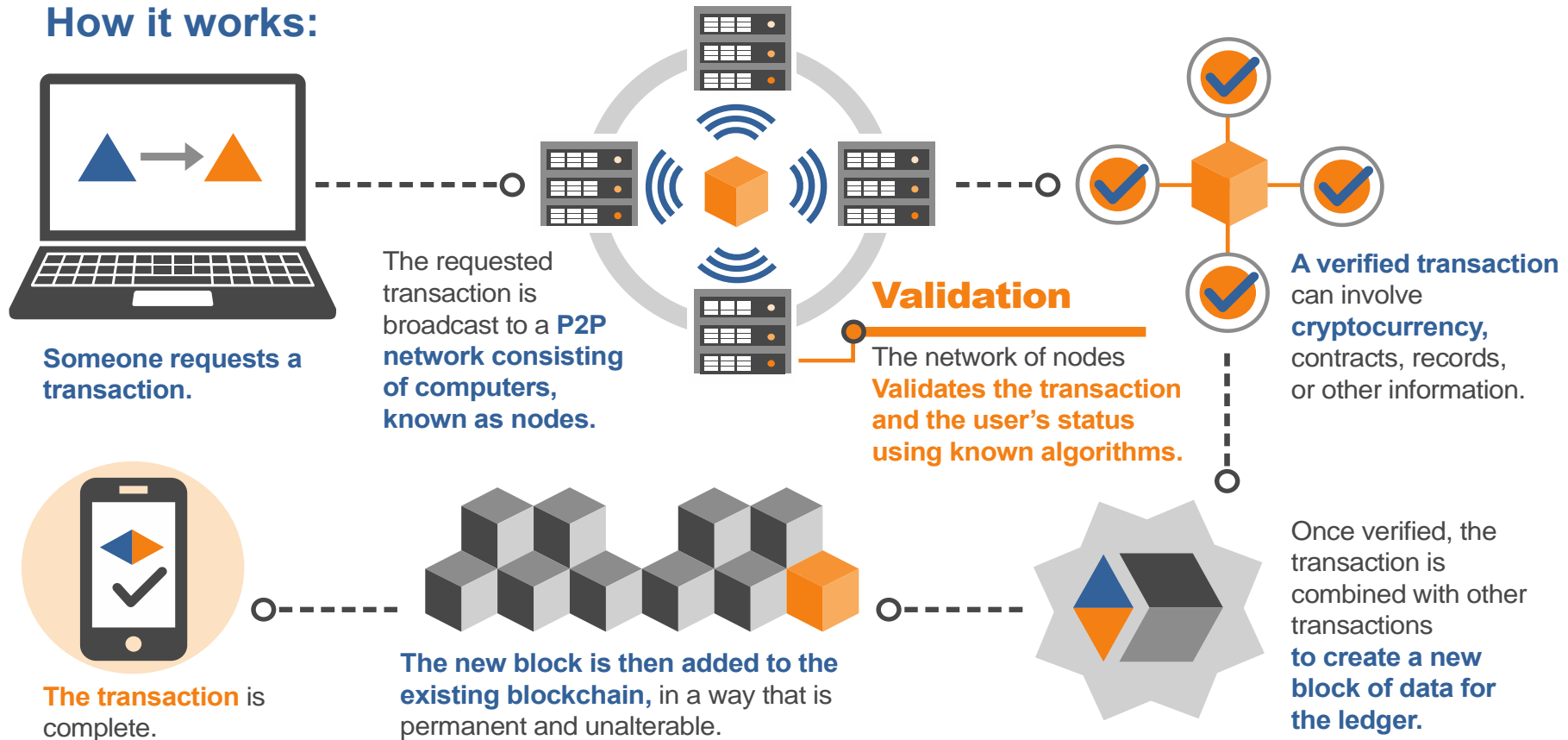
**World Energy Issues Monitor 2019 - Global**

- Critical uncertainties: what keeps energy leaders awake at night
  - Action priorities: what keeps energy leaders busy at work
- Less urgent ○ ○ ○ More urgent

Impact ►

# How Blockchain works

## How it works:

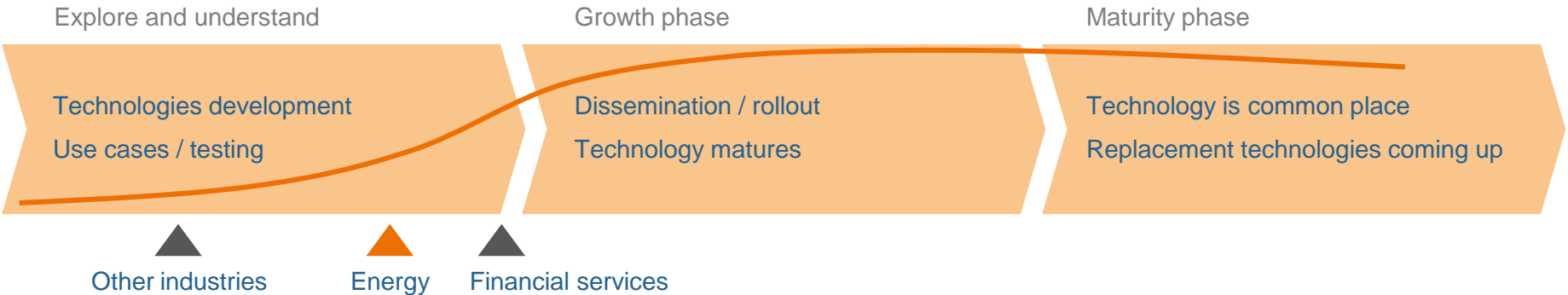


# Several blockchain use cases along the energy value chain are currently investigated



	Generation	Transmission	Distribution	Trading	Sales	Metering	Other areas
<b>B2C energy trading / peer-to-peer systems</b>							
Microgrids (peer-to-peer)	●	●	●		●	●	
Grid management systems	●	●	●			●	
Trading based on BC/Smart Contracts				●			
<b>Mobility</b>							
Charging process mgmt./payment							●
Charging station handling							●
Ride sharing							●
<b>Asset management</b>							
Data collection/integration for individual assets ("provenance")	●						
<b>Other energy use cases</b>							
Certificate handling (e.g. for renewable energy usage)				●	●		
Payment of invoices with crypto-currencies				●	●		
Blockchain-based supplier switching management		●			●	●	

# Blockchain is still at the early stage but energy is ahead of most other industries



# **Innovation – Blockchain in Energy**

## **Summary Learnings**

**Too Early**  
**Too Hyped Up**  
**Too Much Potential**

## Some issues for stakeholders discussions (1)

- Promise versus uncertainty?
  - Would current uncertainties around blockchain be overcome sufficiently for the technology to play a breakthrough role in the future of the sector?
- Accelerating energy transition?
  - Do the characteristics of blockchain fit with organisation's view of the future of energy, and could blockchain projects accelerate transition to that future?
- Business models and strategy
  - Will blockchain disrupt organisation's market and operating environment and, if so, how should companies adjust their business models and strategies?
- Improving internal operations
  - Are there opportunities for blockchain technology to reduce cost or improve customer service?
- Purpose and suitability
  - Is there a clear understanding of potential blockchain business applications and is blockchain the right technology?

## Some issues for stakeholders discussions (2)

- Resilience
  - How can you ensure the technology is resilient, scalable, secure and recoverable?
- Learning
  - Is the energy sector looking sufficiently at the more advanced development of blockchain in financial services and learnings from that?
- Co-operation
  - Is there a need to step up cooperation with others in order to fully realise the benefits that blockchain can bring?
- Governance
  - How will it be governed and administered? Who will control identity, roles and rights?
- **Regulation and industry networks**
  - Are initiatives in place to ensure the regulatory framework evolves in an appropriate way around blockchain, and is dialogue taking place to develop industry-wide critical mass around the use of the technology?



**Thank you**