

How to build Smart Energy Regions

4 – 5 July 2016
Karlsruhe, Germany

Drivers and barriers for a zero carbon built environment

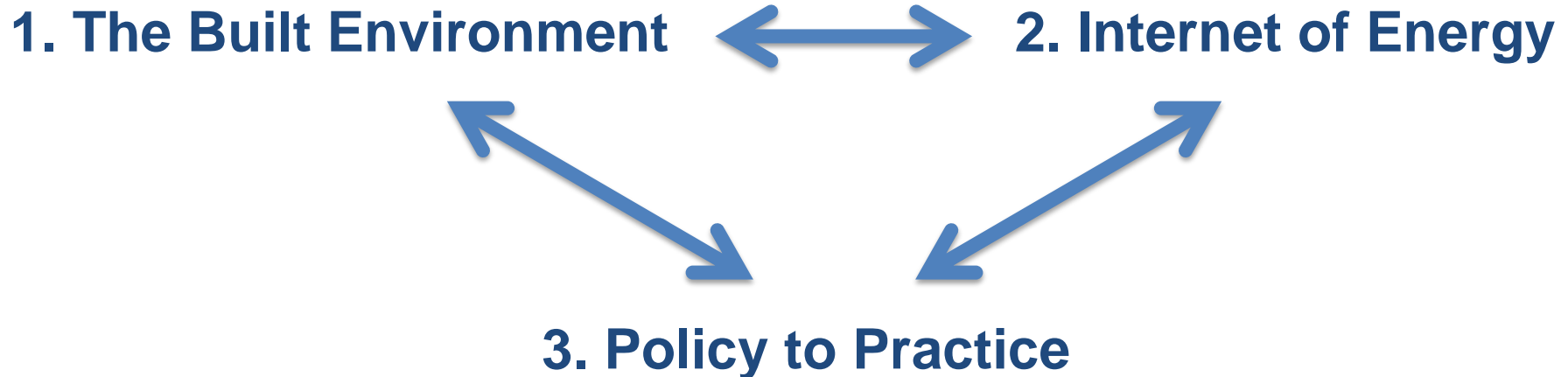
Phil Jones
Welsh School of Architecture



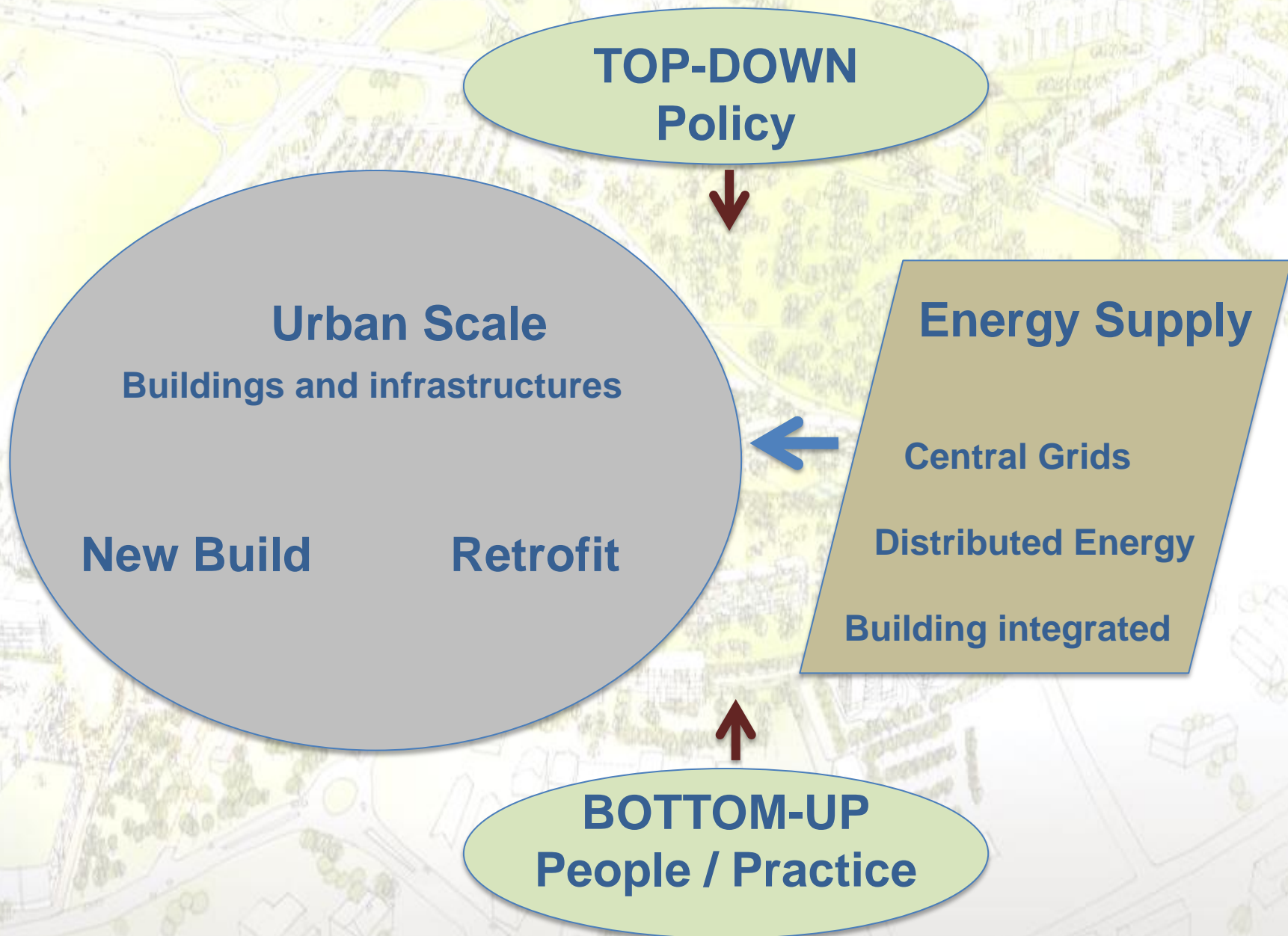
TechnologieRegion
Karlsruhe
Hightech meets the Good Life



Drivers and barriers for a zero carbon built environment



Zero Carbon Built Environment



Range of building performance



New
Build



Low
Carbon

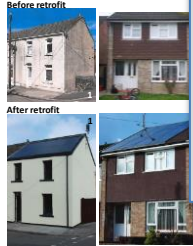
Near-Zero
Carbon

Zero
Carbon

Energy
Positive



Retrofit



SYSTEMS APPROACH

1. REDUCE ENERGY DEMAND
2. RENEWABLE ENERGY SUPPLY
3. ENERGY STORAGE

Urban
Scale



RENEWABLE ENERGY SUPPLY

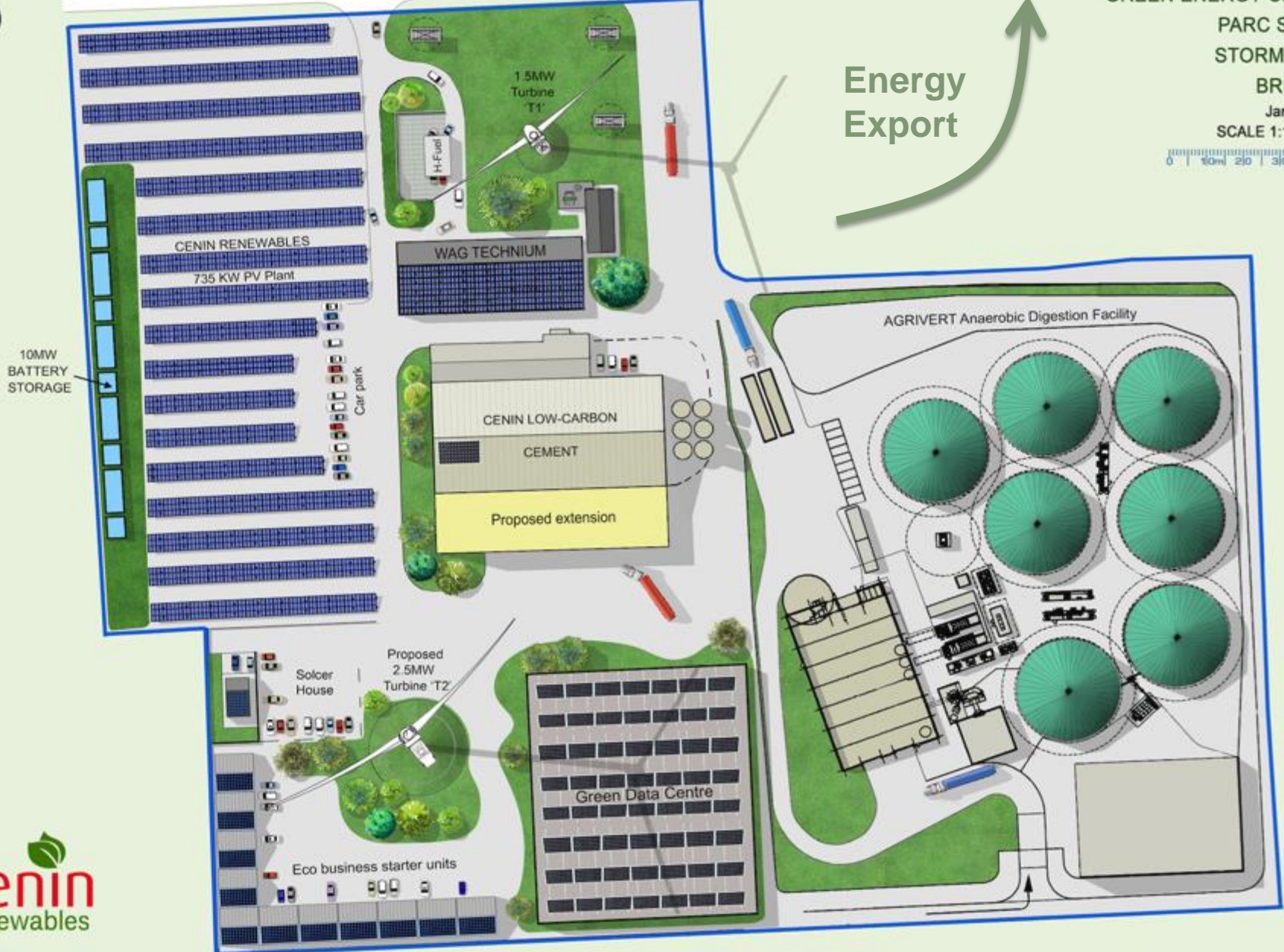
DISTRIBUTED ENERGY CLUSTER: CENIN



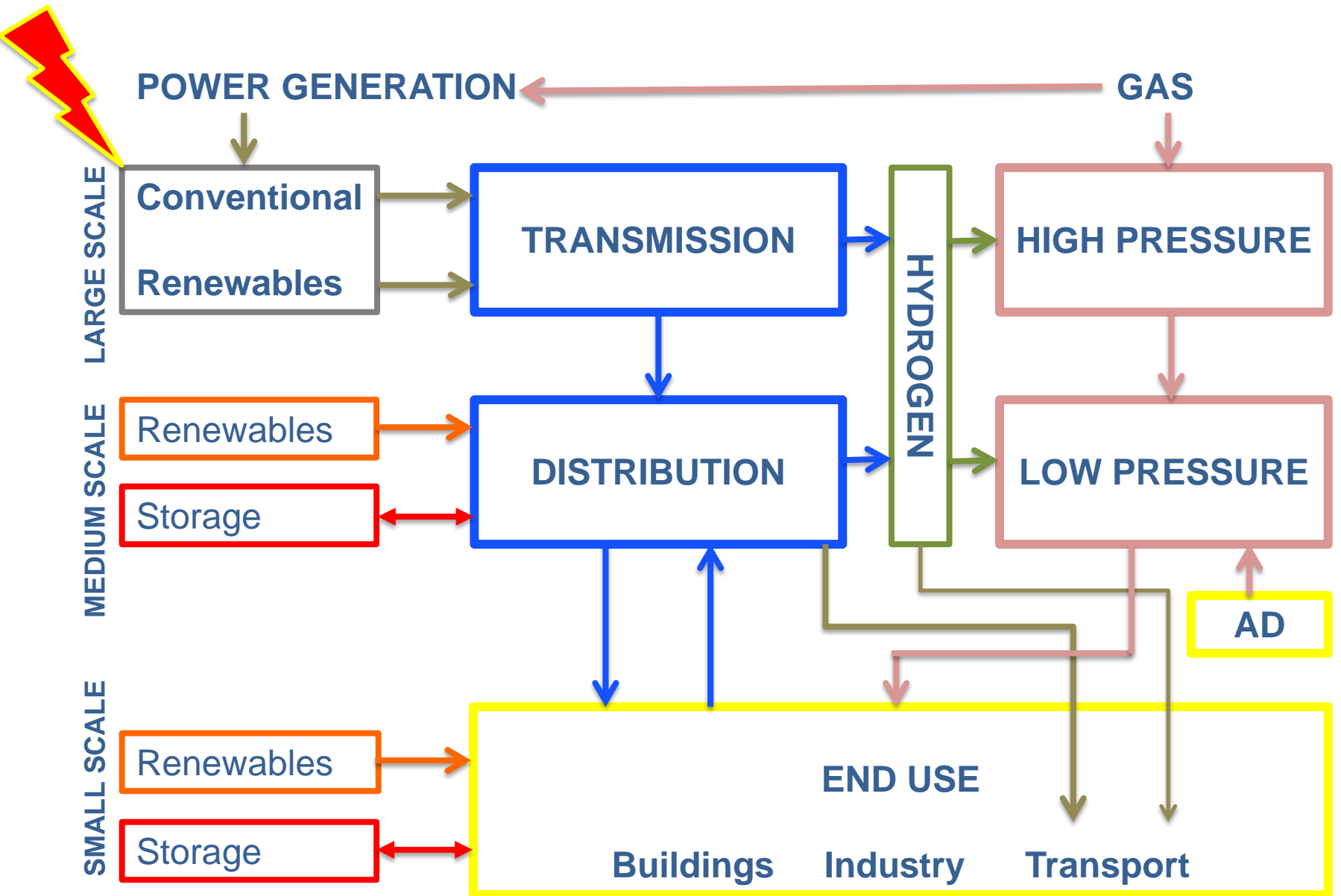
HGV ACCESS

GREEN ENERGY CLUSTER
PARC STORMY
STORMYDOWN
BRIDGEND
January 2016
SCALE 1:1000 @ A3

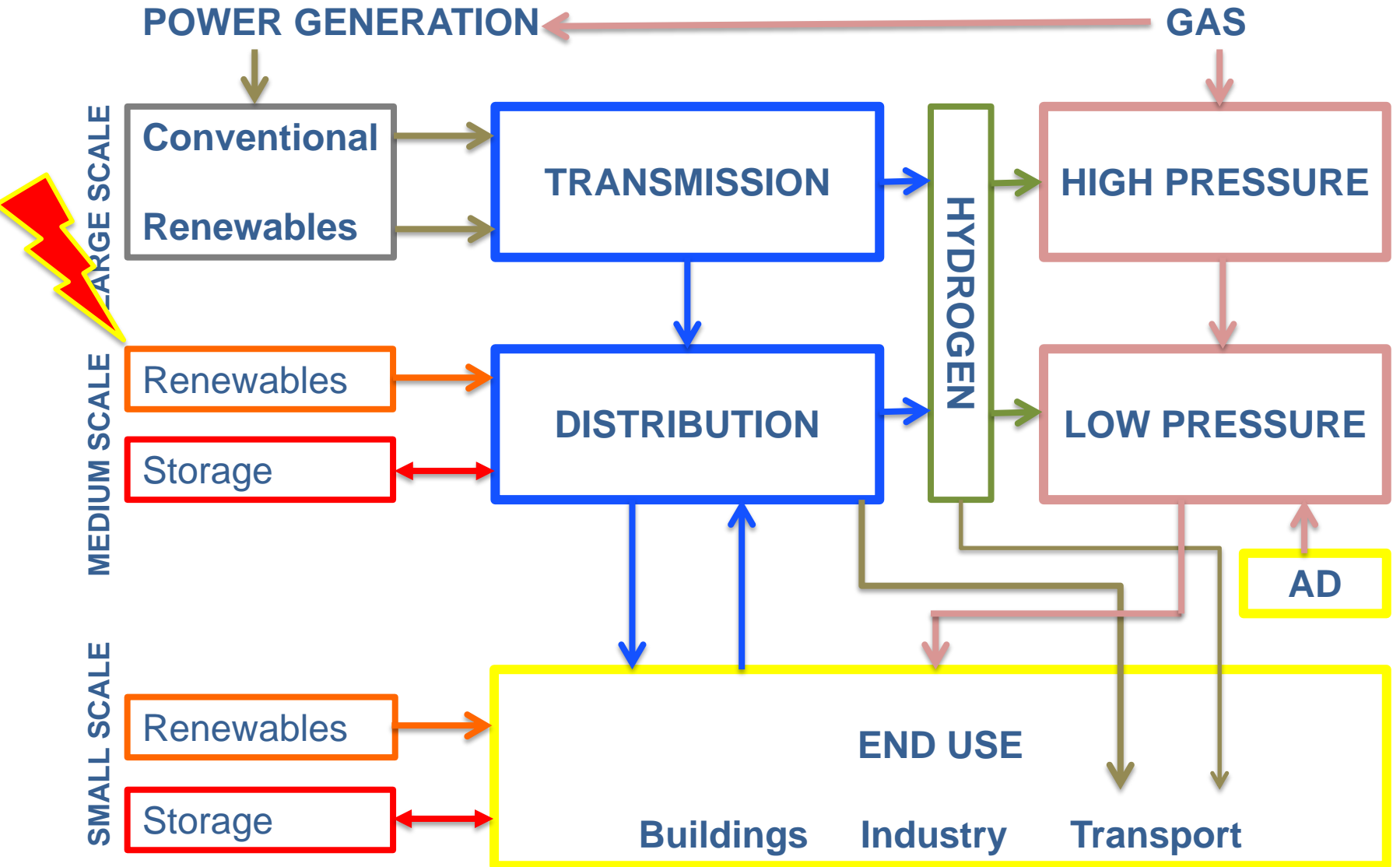
Energy Export



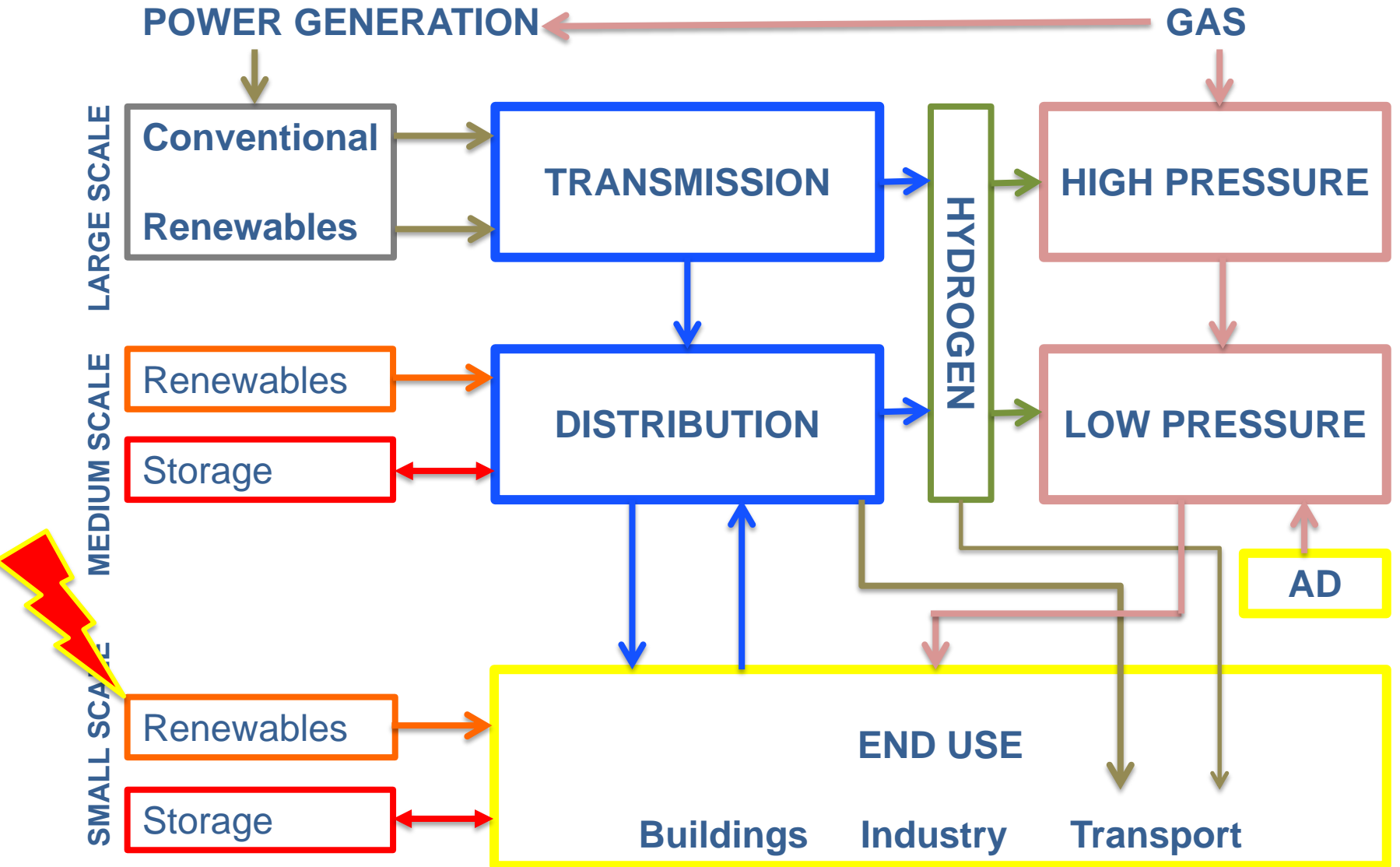
INTERNET OF ENERGY



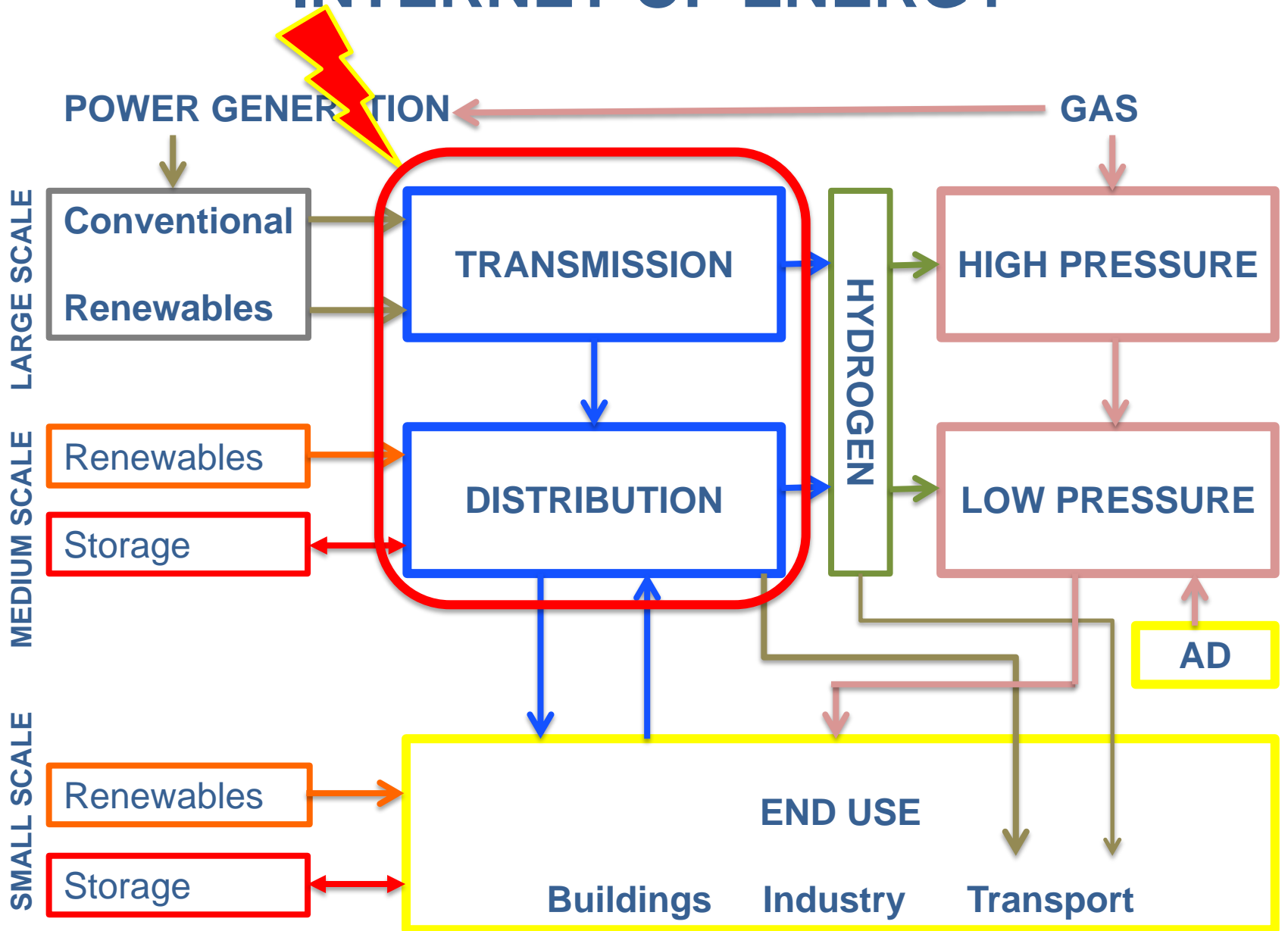
INTERNET OF ENERGY



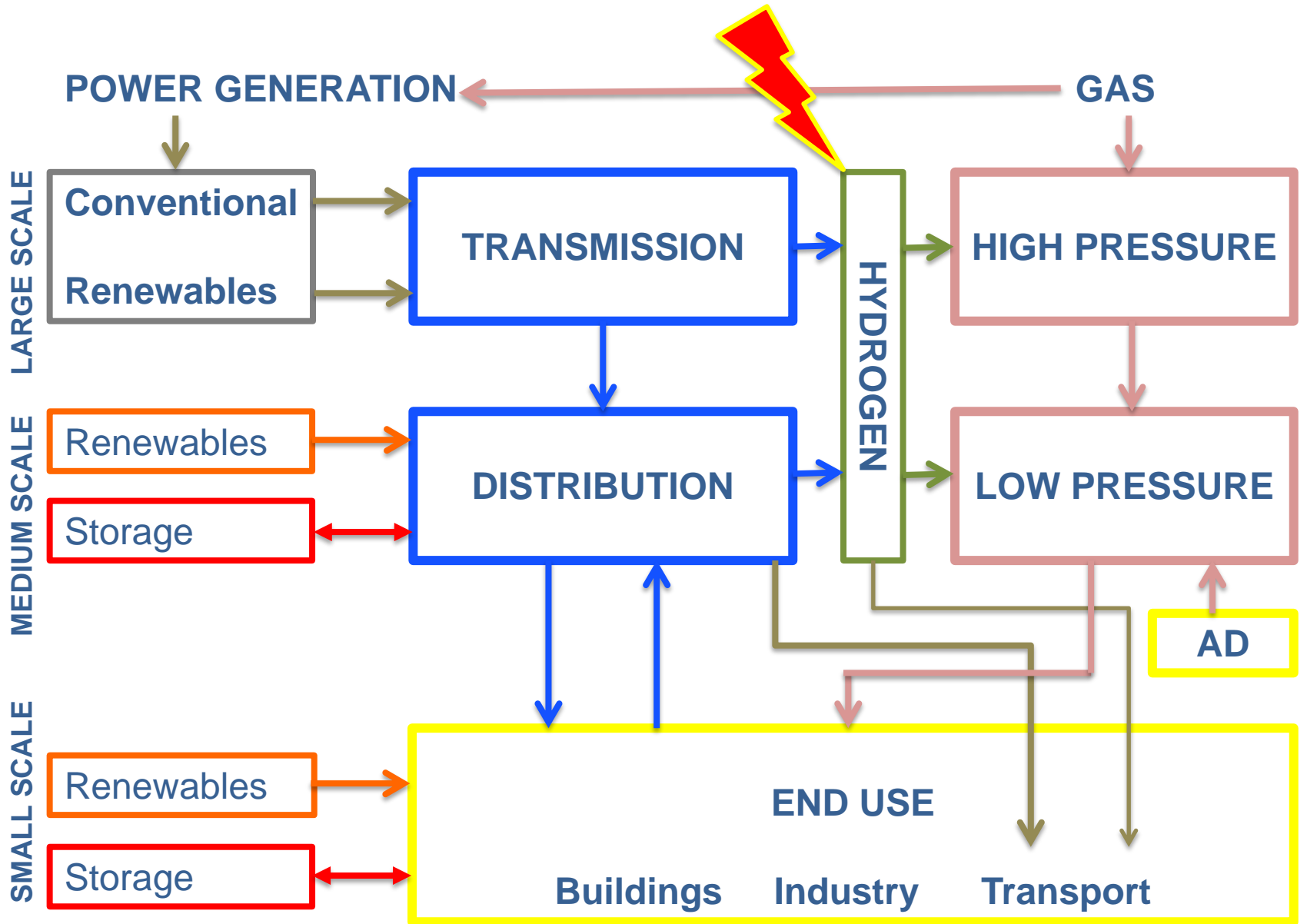
INTERNET OF ENERGY



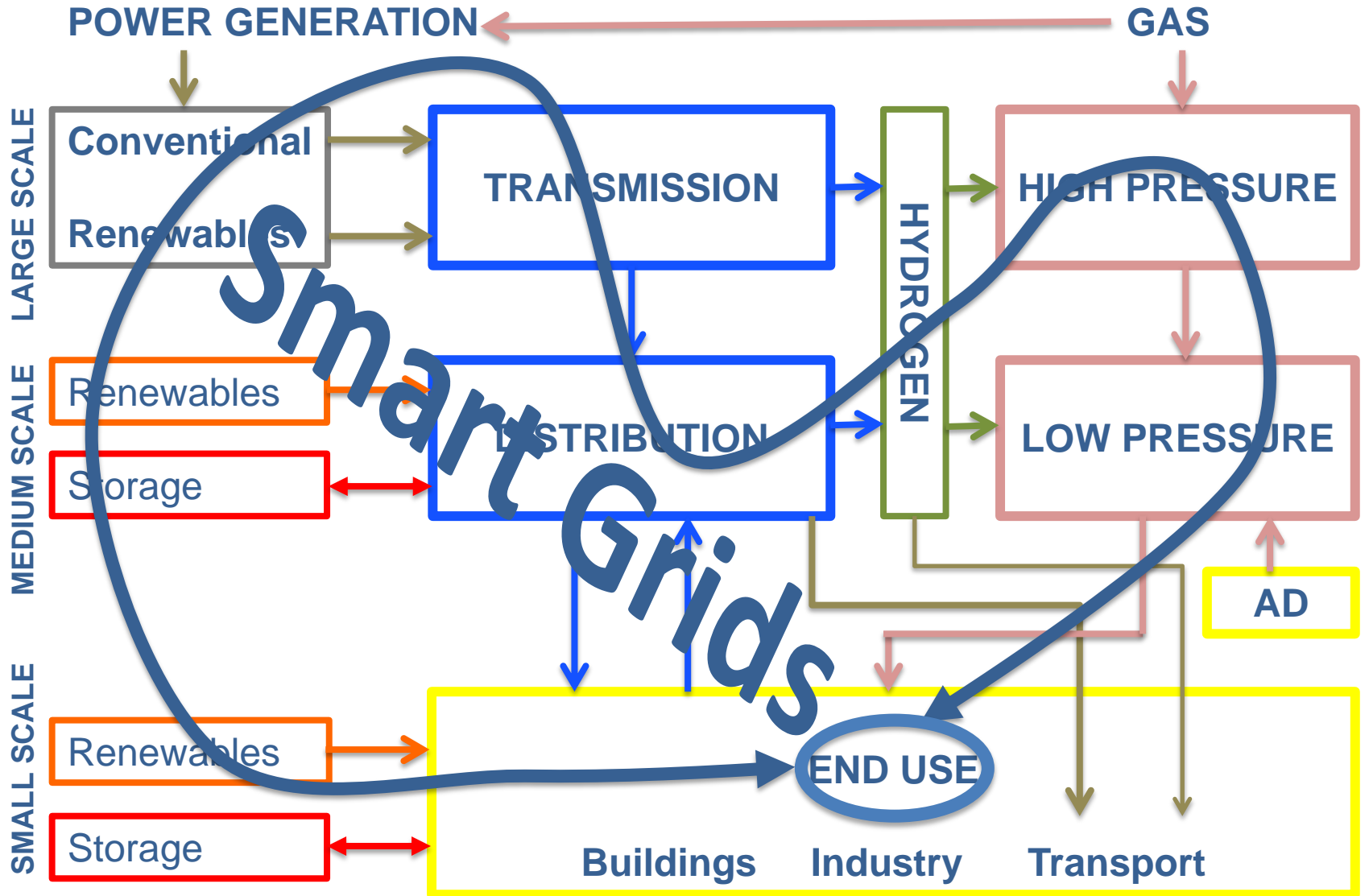
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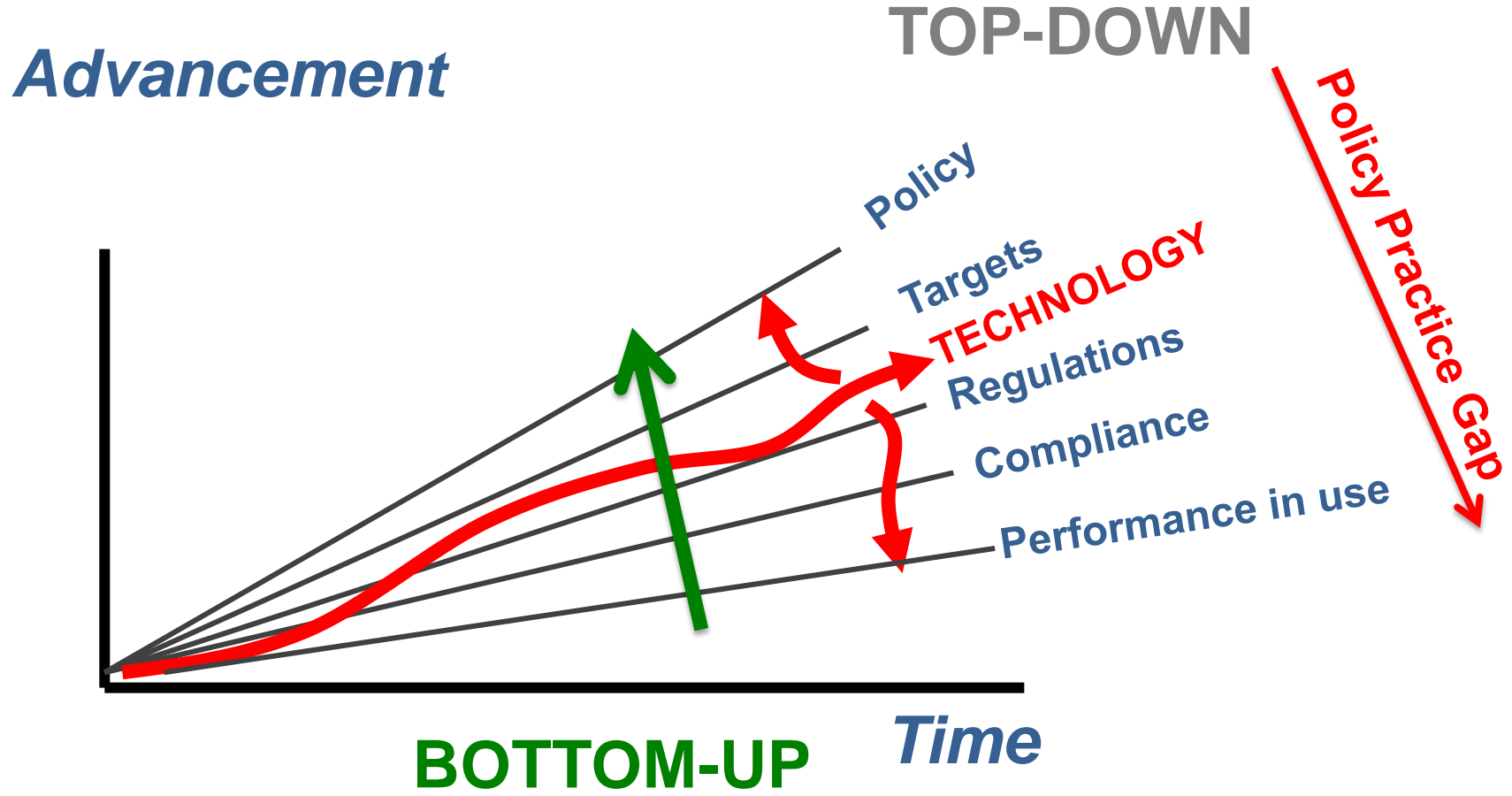
INTERNET OF ENERGY



INTERNET OF ENERGY



IDEAS INTO PRACTICE ?





The Role of City-Regions in the Achievement of a Low-Carbon Economy

A workshop organised by COST and the Directorate General Joint Research Centre of the European Commission

Brussels - 4 February 2016

Report by Prof. Philip John Jones, Dr Mickael Pero, Dr Fabio Taucer



The Role of City-Regions in the Achievement of a Low-Carbon Economy

Policy is slow to permeate into practice

How can the transition of policy into practice be speeded up and how can regulations and incentives help in this process?

- **Connect** between policy goals and their practical implementation
- Strive for **every project to be zero carbon**
- **Reduce conflicts** around policy and lobbying, procurement, regulation and innovation
- Encourage and incentivise **'doing better'** with more aspirational targets rather than the culture of minimum standards
- **Empower consumers** by providing information and an understanding of choice
- Maximise the **impact from research programmes** to provide a greater knowledge and understanding to government policy makers, industry and the public at large on **visioning a future 'zero carbon' built environment.**



**The Role of City-Regions in the
Achievement of a Low-Carbon
Economy**

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Business as usual will not meet the political targets

How can industry and government respond to the change required; what new industries and business models are needed?

- Challenge the status quo to **remove the obstacles** that inhibit the transition to a zero carbon built environment
- Aim for a **systemic change** rather than incremental change, not just in technology, but also in socio-economic processes and governance
- **Review existing frameworks** of procurement, standardization and regulation, which may lock-in to old technologies and processes
- Develop **new integrative finance tools** that encapsulate **multiple benefits** and risk management
- Encourage **co-creation and responsible innovation** across end-users and supply chains, engaging with technical solutions and their implementation to add value and encourage a fast take-up
- Encourage old industries to **adopt change** and new industries that will commit to the zero carbon agenda.



**Achievement of a Low-Carbon
Economy**

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How can industry and government respond to the change required; what new industries and business models are needed?

A new equilibrium between top-down and bottom-up solutions is needed

What is the appropriate balance of top-down and bottom-up and how can this be operationalised?

- Increase the **emphasis on bottom-up** activities in relation to the balance of top-down and bottom-up
- Use **'middle out' agents** to operationalize bottom-up activities in response to top-down policy
- Provide **clear vision and leadership** across all levels, in government, industry, third-sector and communities.



**Achievement of a Low-Carbon
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Differences across Europe should be recognised

Recognise differences across countries and regions, and bring 'up to speed' areas less equipped to deal with the transition?

- Encourage mechanisms for **sharing information** within and across countries and regions.
- Build on and encourage interaction across **existing networks**, such as the Covenant of Mayors, EUROCITIES, and COST Actions.



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<http://www.cost.eu/events/city-regions-low-carbon>



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