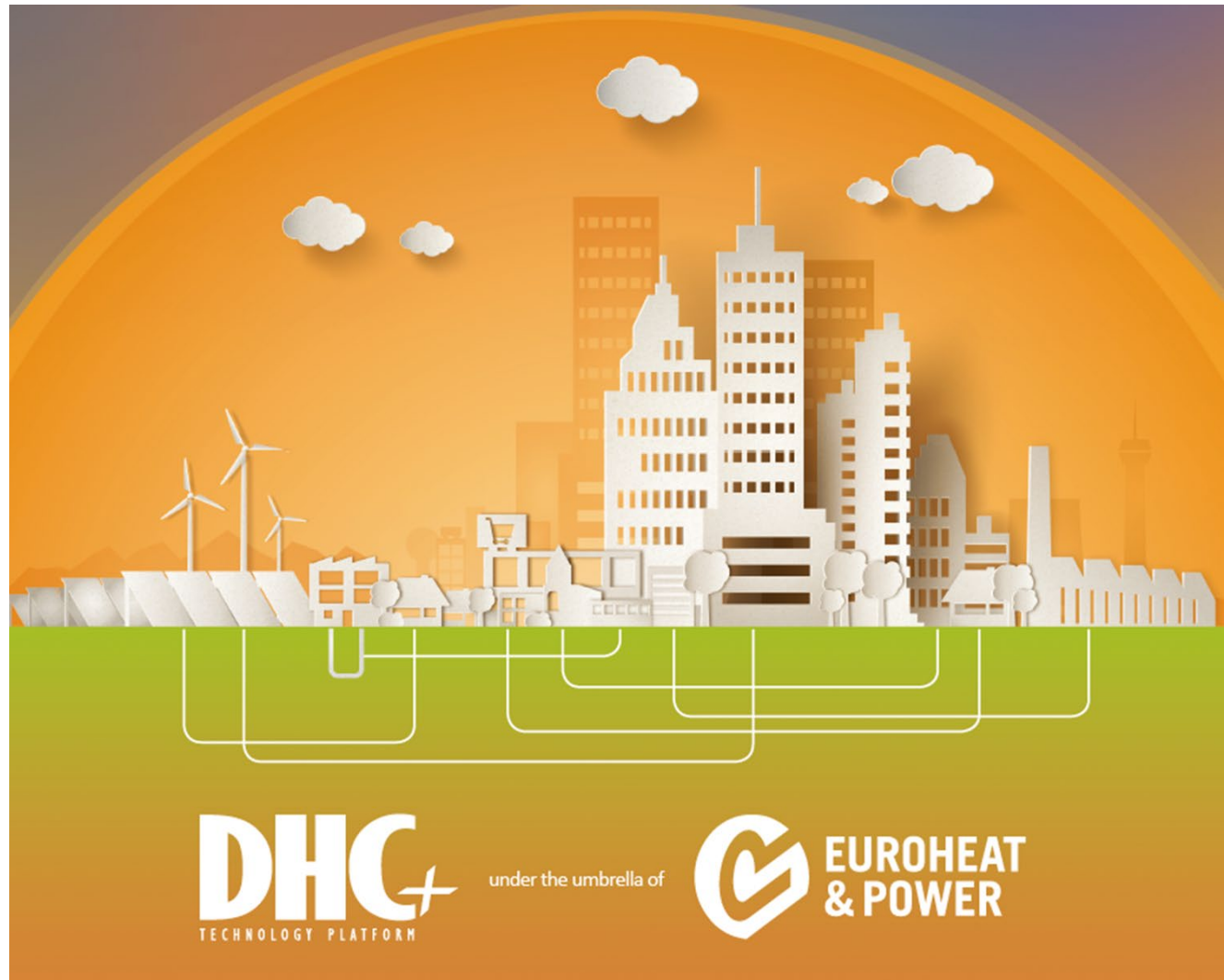


Smart Energy Systems

What are the next priorities for innovation in Europe?

Alessandro Provaggi

*Head of the DHC+
Technology Platform c/o
Euroheat & Power*



DHC+
TECHNOLOGY PLATFORM

under the umbrella of

**EUROHEAT
& POWER**

CONTEXT: EU ENERGY & CLIMATE TARGETS

Clean energy package



Greenhouse Gas Emissions

2020	2030
-20%	≥-40%



Renewable Energy

2020	2030
20%	≥32%



Energy Efficiency

2020	2030
20%	≥32.5%

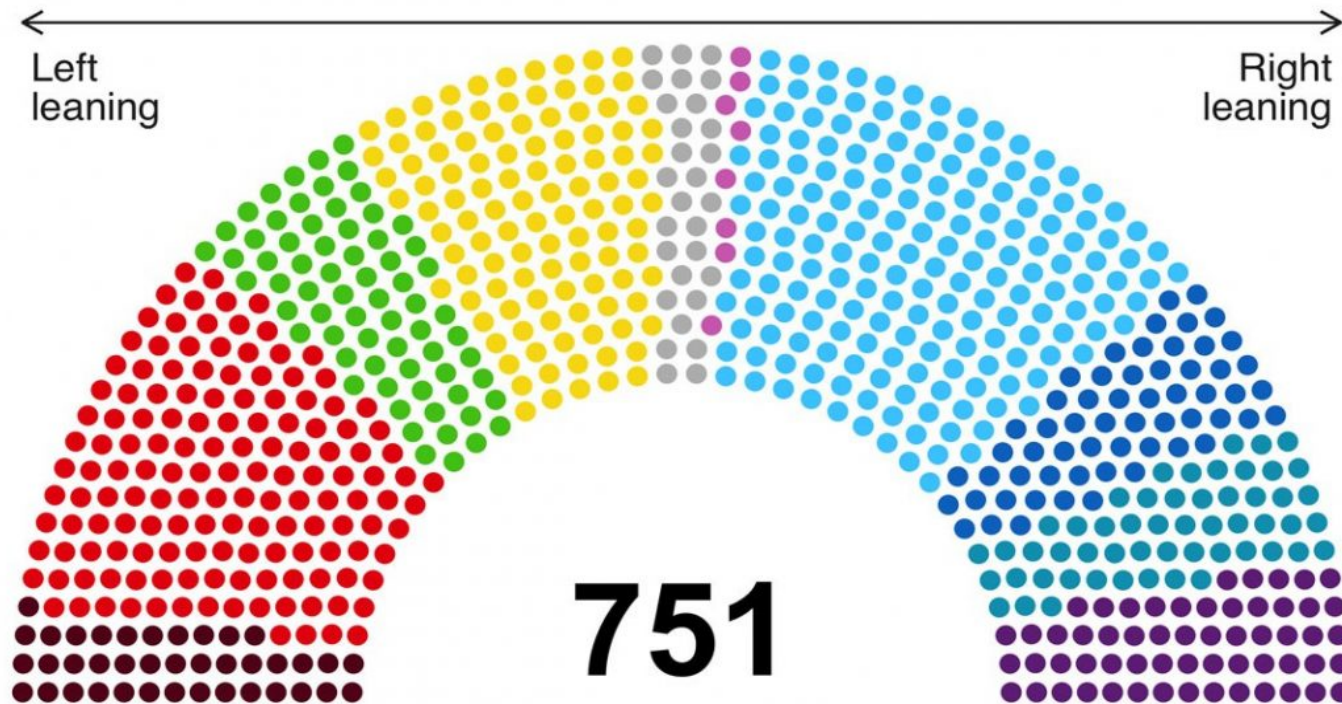
European Green Deal?!

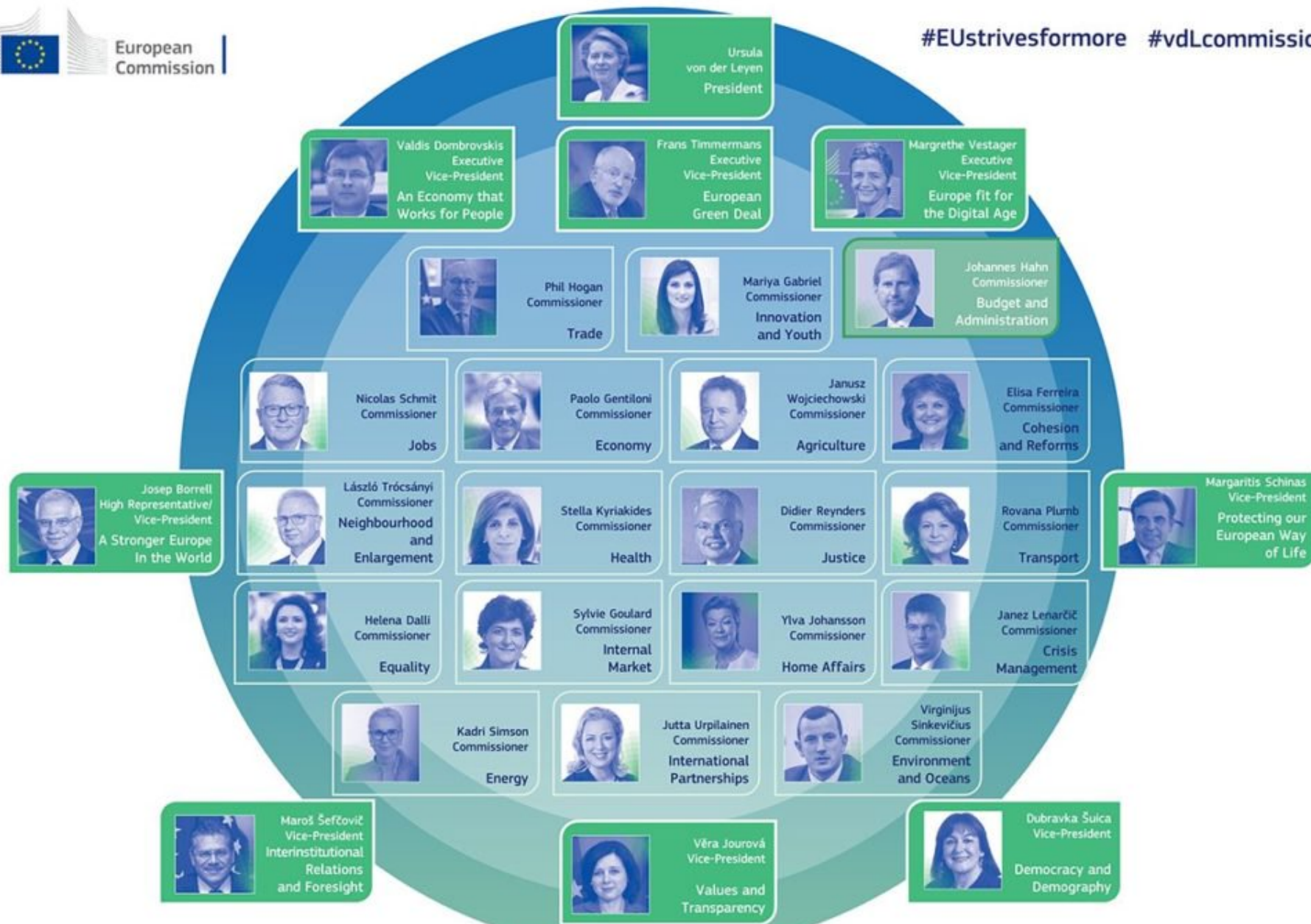


EU elections

Seats by party group

- Left (GUE/NGL): 39
- Socialists and Democrats (S&D): 146
- Greens (G/EFA): 69
- Liberals (ALDE): 109
- Others: 29
- Independent MEPs: 8
- Centre-right (EPP): 180
- Conservatives (ECR): 59
- Populists (EFD): 54
- Right-wing nationalists (ENF): 58





A New Push for European Democracy

What she promised:

- European **#GreenDeal**;
- European **#ClimateLaw** to enshrine 2050 **#climateneutrality**;
- **#carbonpricing**, with every sector and person contributing;
- extend the **#EUETS** with maritime, sector traffic, construction;
- Carbon Border Tax;
- review the **#EnergyTaxation** Directive;
- a new **#industrialstrategy**;
- a new **#JustTransition** Fund;
- a European Climate Pact, bringing together regions, local communities, civil society, industry and schools;
- a strategy for **#greenfinancing** and a Sustainable Europe Investment Plan (€1 trillion over the next decade);
- turn parts of the European Investment Bank (EIB) into Europe's climate bank; by 2025, at least 50% of EIB total financing dedicated to **#climateinvestment**;
- reduce emissions by at least 50% by 2030; by 2021, a plan to increase the EU target for 2030 towards 55%;
- a New **#CircularEconomy** Action Plan.

Merkel speaks in favour of increasing EU's 2030 climate target to 55%

Der Tagesspiegel with dpa | translated by Daniel Eck

📅 Aug 23, 2019 (updated: 📅 Aug 26, 2019)

Advertisement



Meanwhile this happened in 2018 / 2019



- So, which innovation trends can you expect in terms of policy and funding?



Integrated solutions

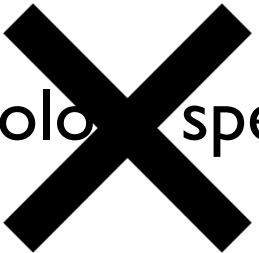


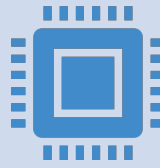
Foster digitalization
for sustainability



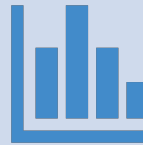
Fair climate policies

Energy integration + digitalisation

Technology  specific



Solutions for the integration of energy systems and coupling of different energy vectors, networks and infrastructures, in the context of a digitalised and cyber-secure energy system

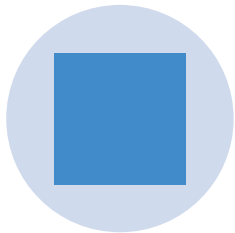


Analysis and evaluation of multi-carrier markets design

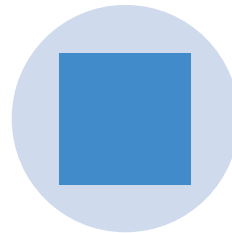


Integrated local energy systems, microgrids, demand response

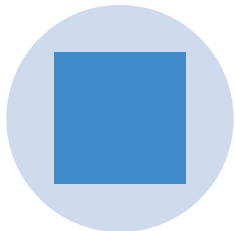
Cities



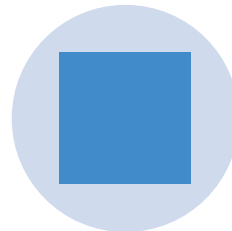
City/district energy systems and mobility towards the EU-wide deployment of lowcarbon



Energy Communities



Urban land use and integrated planning



Improving air quality and life quality

Citizens



New approaches and tools to empower market players, consumers and local energy communities (beyond smart meters);



Develop and enhance methods of citizen's engagement in long-term energy investment planning and energy transition policies.



Socio-economic and interdisciplinary research on re-qualification of workers currently in carbon-intensive sectors and building new employment opportunities targeted towards the needs of the clean energy transition.



Train and engage more with architects, engineering consultants, energy planners

Finance



Ability of cities to generate revenue and access financing at lower cost



From “heat as a commodity” to “heat as a service”



How to attract more private funds (e.g. how to use green bonds)

Industry

Develop and demonstrate technologies, planning and modelling tools and infrastructure for optimising the energy flows (e.g. electricity, heat, hydrogen) between industrial plants/hubs and the energy grids,

Develop and improve technologies to use industrial waste energy (heat, cold ...), including its conversion to other energy vectors, so that it can be re-commercialised in the energy system;



Horizon Europe

Evolution of investment in research and innovation

throughout the
EU framework programmes



#HorizonEU #InvestEUresearch #EUBudget



European
Commission





R&I Missions

R&I Missions

Relating EU's research and innovation better to society and citizens' needs; with strong visibility and impact

A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and 5 missions areas.

Specific missions will be programmed within the Global Challenges and European Industrial Competitiveness pillar (drawing on inputs from other pillars)

Adaptation to climate
change, including societal
transformation



Healthy
oceans,
seas,
coastal
and inland
waters



**Mission
areas**



Cancer

Climate-neutral
and smart cities



Soil health
and food



WASTE HEAT

RENEWABLES

FINANCIAL UPSCALE

New: REWARDHeat

DIGITALISATION

SECTOR COUPLING



Magnitude

LOW TEMPERATURE



2050



HEAT PLANNING

RESEARCH TO POLICY



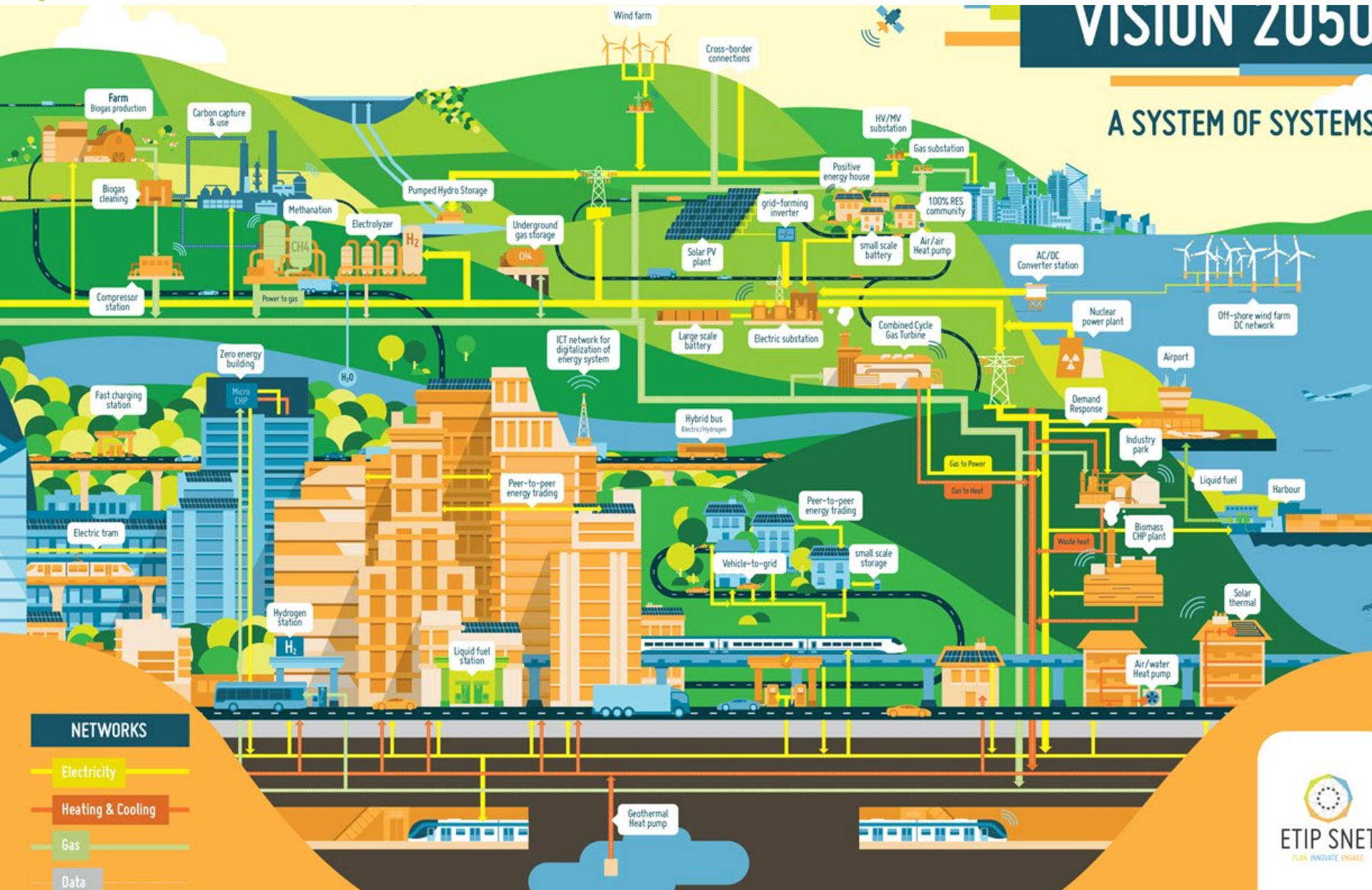
RETROFITTING

CITIZENS & PROSUMERS



CITIES







- To offer insights on how digitalization impacts the industry
- State-of-art
- Objectives, targets and recommendations
- Topics:
 - Production level
 - Distribution level
 - Buildings level
 - Consumption level
 - Asset Management
 - Design & planning
 - Sector Coupling & integration of multiple sources