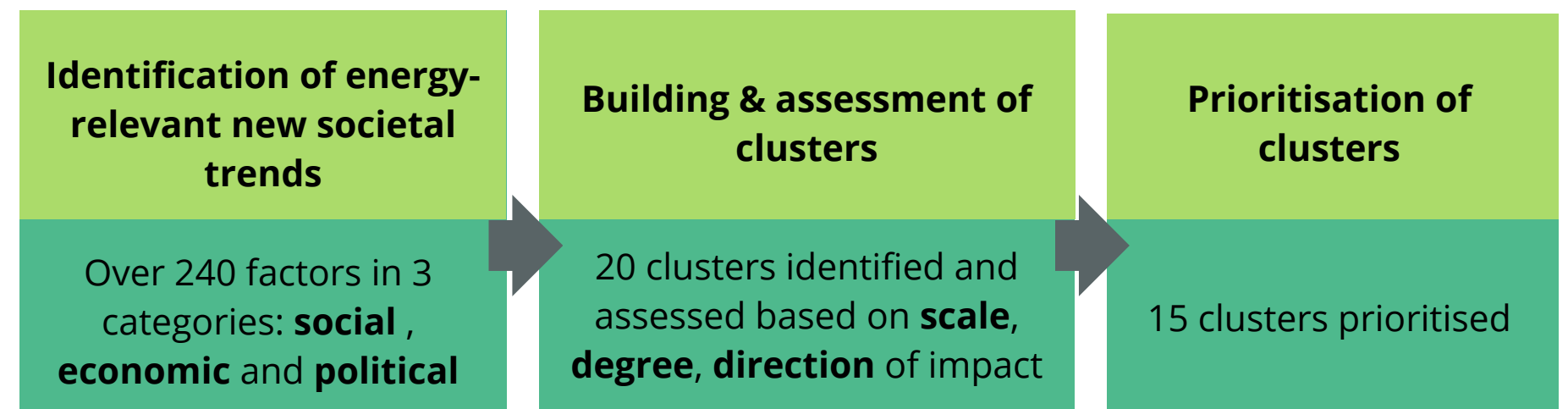




What are the new societal trends that will shape our future energy demand and how?

What are new societal trends and why do we need to understand them?

New societal trends can be understood as **emerging aspects of our dynamic, interrelated societies— unpredictable in both their individual and collective impact. They can be economic, political, environmental, cultural and social in nature, and can have a significant influence on the European future energy consumption as well as the cross-sectoral demand shifts.**



Selection process for new societal trend clusters

Prioritised clusters and their descriptions

- Decentralised work:** Impacts energy demand in the transport and residential sectors. Working from home and moving away from city centres increases commuting time but reduces the frequency of work-related travel.
- Water issues:** Water is interconnected with all aspects of human life, magnifying the impact of disruptions. Changes in water availability increase the need for energy to extract and transport water, and water scarcity can lead to migration, further impacting energy demand.
- Sustainable cities:** Focuses on overcoming the future challenges of urban environments. Relevant topics include food and water supply, transport, land use, etc.
- Climate change and behaviour:** Individual actions have a significant impact on future energy demand, driven by national policies and regional governance, including extraction, production, transport and domestic use.
- From owning to sharing:** It covers a wide range of areas, from cars and appliances to publications and living spaces, and changes the energy required to extract, manufacture and transport materials.
- New labour:** It mainly focuses on acquiring new work skills and their energy implications, linked to trends in digitalization and remote work. It also includes macro-level factors such as labour market fluctuations, unemployment rates, and skills shortages that affect energy demand, influenced by evolving policy agendas.
- Digitalisation:** Summarizes various digitalization trends: growing digital data storage and traffic, leading to increased energy use in data centres and networks, rising digital hardware production, and shifts in sectoral energy demand due to digitalization (e.g., virtual work in transport and Industry 4.0 in industry).

- Green transition:** The EU green transition requires intense initial energy requirements to build new systems, infrastructure, and capacities. Rebound effects of these efforts should be monitored and necessary policies and financial instruments should be considered.
- Green finance:** Green finance can drive among others the efficiency improvement and electrification process, and at the same time, trigger behavioural change of actors (individuals and private sector).
- Geopolitics and global forces:** Global population growth, the rise of the BRICS middle-class growth and potential economic growth in Africa, are expected to increase energy demand. Rising inequalities and North-South relations, as well as the US-China technological rivalry, may also alter energy demand across sectors or regions.
- Evolving democratic system:** Regulatory shifts and evolving democracies can impact energy demand in regions, while the rise of right-wing populism and nationalism may also influence energy demand.
- Great Depression II:** Depending on the impact of the depression on the global economy, total energy demand may initially fall. In the longer term, the energy demand could increase as nations and regions attempt to restart economies with inefficient experiments and large infrastructure build outs.
- Socio-economic dynamics:** Deep inequalities (e.g. varying capabilities of healthcare systems across the EU) can redirect investment and development, initially increasing the energy demand for infrastructure, operational and services. Over time, addressing these inequalities can reduce energy demand by promoting healthy and energy-efficient lifestyles.
- Demographic change:** In regions with a 'youth bulge', energy consumption is expected to increase or to shift to other regions as the population migrates. In ageing regions, energy demand depends on the activities of older people and their physical health.
- Circular economy:** The transition to a circular economy requires significant changes in socio-economic structures and industrial processes. Transforming the EU economy, in particular the production and consumption of CO2-intensive materials, into a material-efficient circular economy could contribute significantly to a CO2-neutral economy.

Key messages

Policy implication:

- Consider all aspects of the impact of new societal trends on future energy demand (controversial impacts, disruptiveness, and interlinkages) in policy making, to design effective policies that contribute to achieving the climate goals of the Paris Agreement.
- Interlinkages between the new societal trends lead to overlapping policy fields, requiring a new style of policy making fully accounting for the interdependencies of the trends.

Disruptive trends:

- Trends may influence many sectors and create whole new markets and even displacing others soon. It would be particularly important to analyse how such disruptive clusters and trends may influence the other trends in different sectors.
- Exploring the links between disruptive new societal trends seems to be very useful to better understand their joint contribution to energy demand and the energy transition.



Controversial impact: The direction of impact of a particular trend is not always obvious, so the controversial implications of the trends for future energy demand should be analysed in more detail.



Interrelationships and trend-connectors:

- Individual trends in each trend cluster and the clusters themselves are interconnected.
- Cross-sectoral analysis can answer the question of how the clusters and trends actually influence future energy demand in different sectors and identify the "trend-connectors" between the sectors.



Policy relevance - draw conclusions about:

- Which parameters of the new societal trends are particularly important for energy policy.
- What still needs to be regulated or managed to avoid the negative impacts of specific trends.