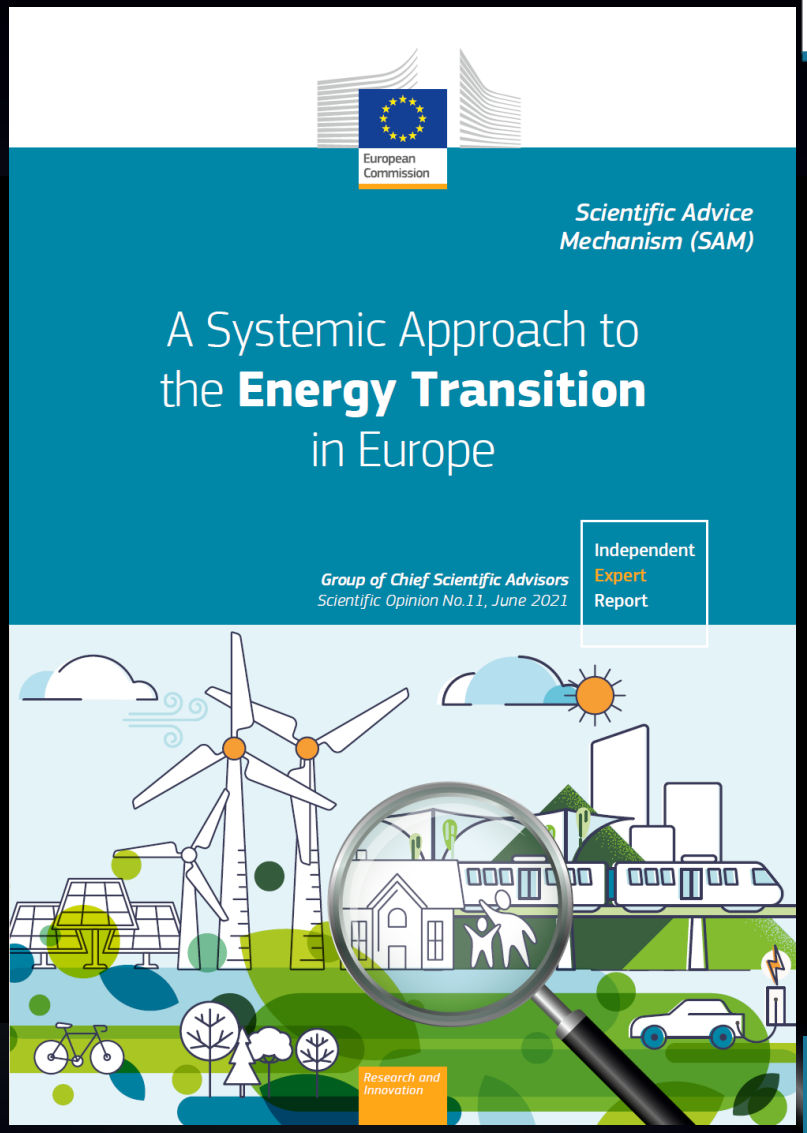
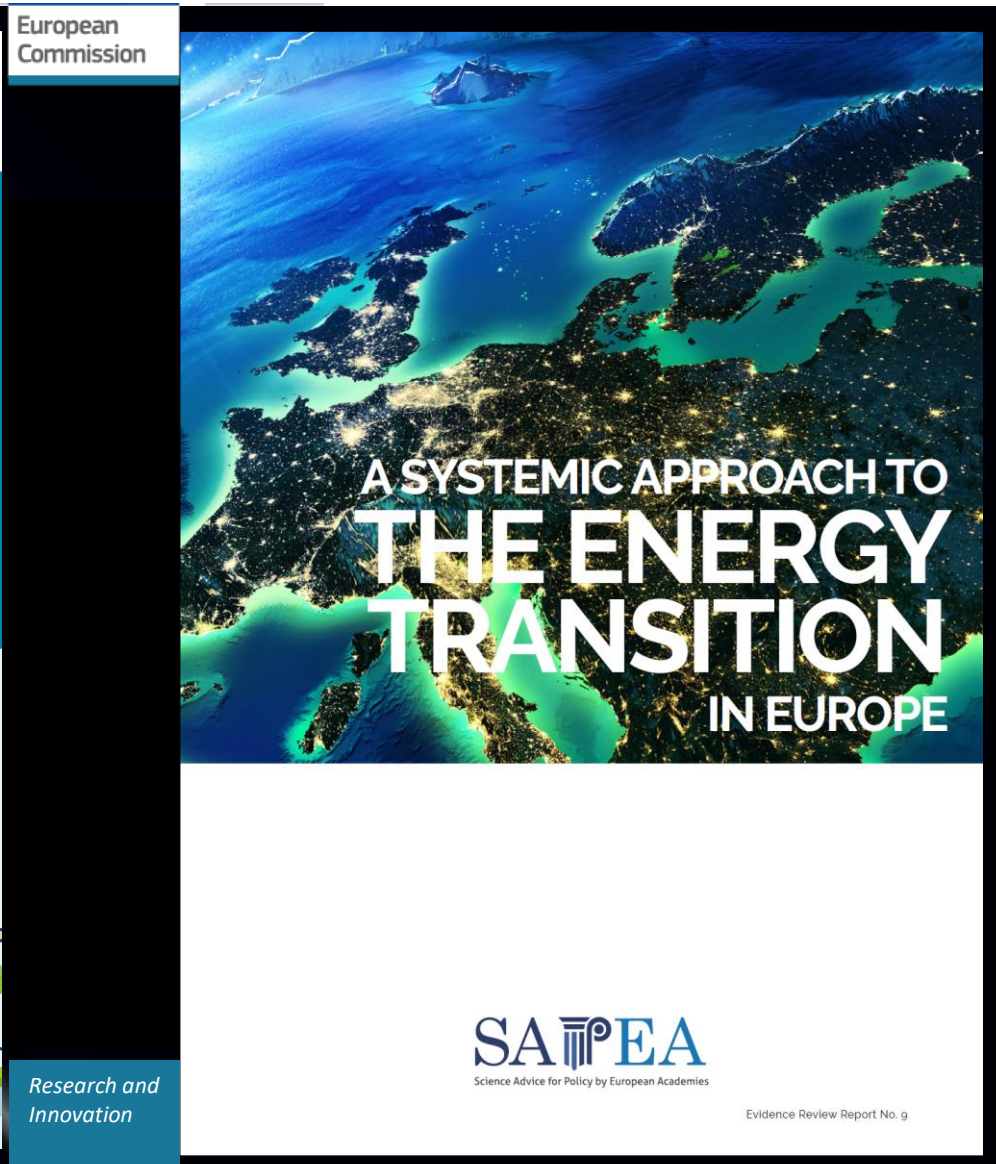
Putting people in centre of the Energy Transition in Europe

Science advise to support the implementation of the European Green Deal





How the **Group of Chief Scientific Advisors** works

The Group of Chief Scientific Advisors (GCSA)

SAPEA
Science Advice for Policy by European Academies

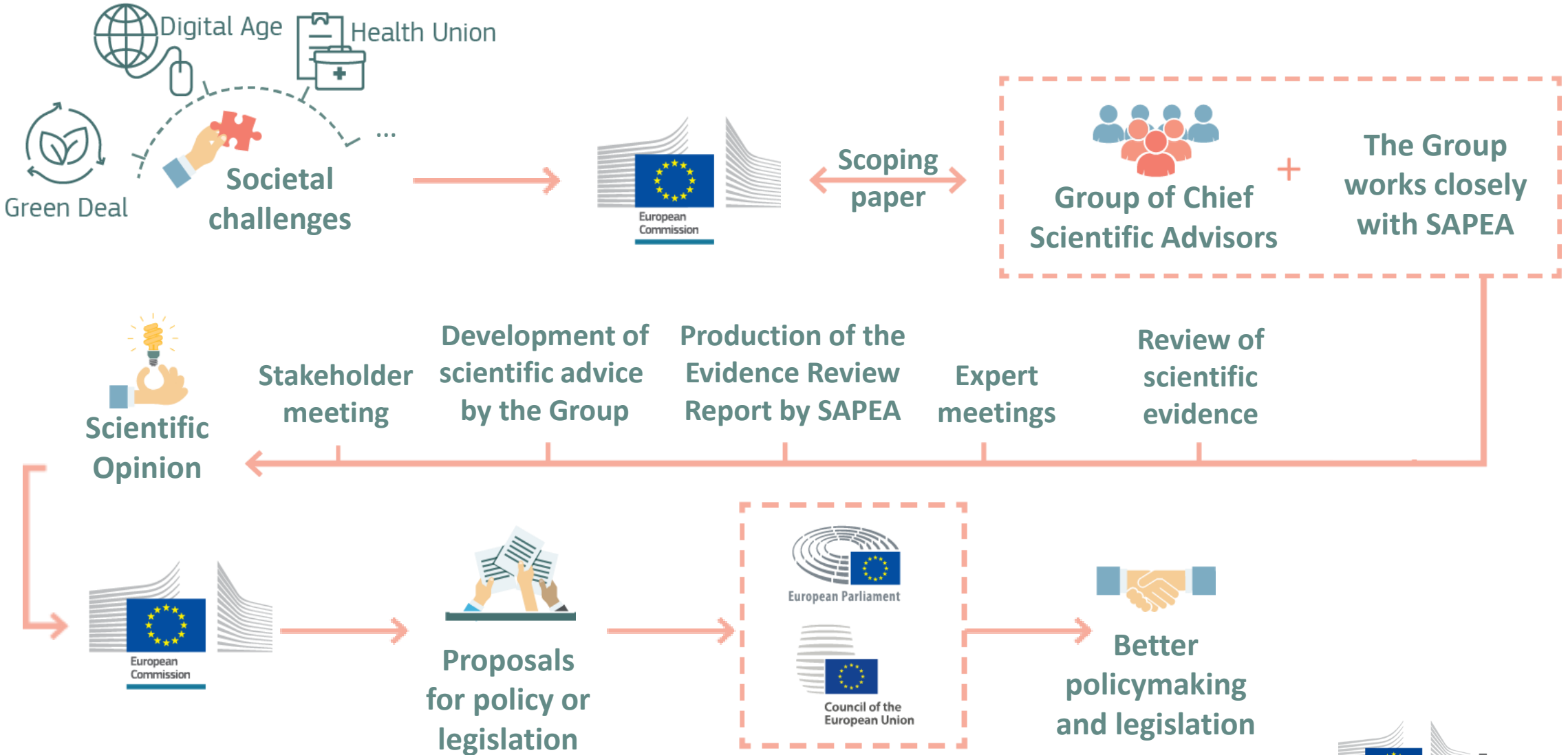
Science Advice for Policy by European Academies consortium (SAPEA)

A secretariat in the European Commission

SCIENTIFIC ADVICE MECHANISM (SAM)

https://ec.europa.eu/info/files/scientific-opinion-systemic-approach-energy-transition-europe_en

How the **Group of Chief Scientific Advisors** works



The **Group of Chief Scientific Advisors** as of June 2021

Nicole Grobert
Chemistry (Germany)

Eva Zažímalová
Biochemistry (Czech Republic)

Éva Kondorosi
Biology (Hungary)

Maarja Kruusmaa
Biorobotics (Estonia)

Alberto Melloni
History (Italy)

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Carina Keskitalo
Former Member (Sweden)

Rolf–Dieter Heuer
Former Chair (Germany)

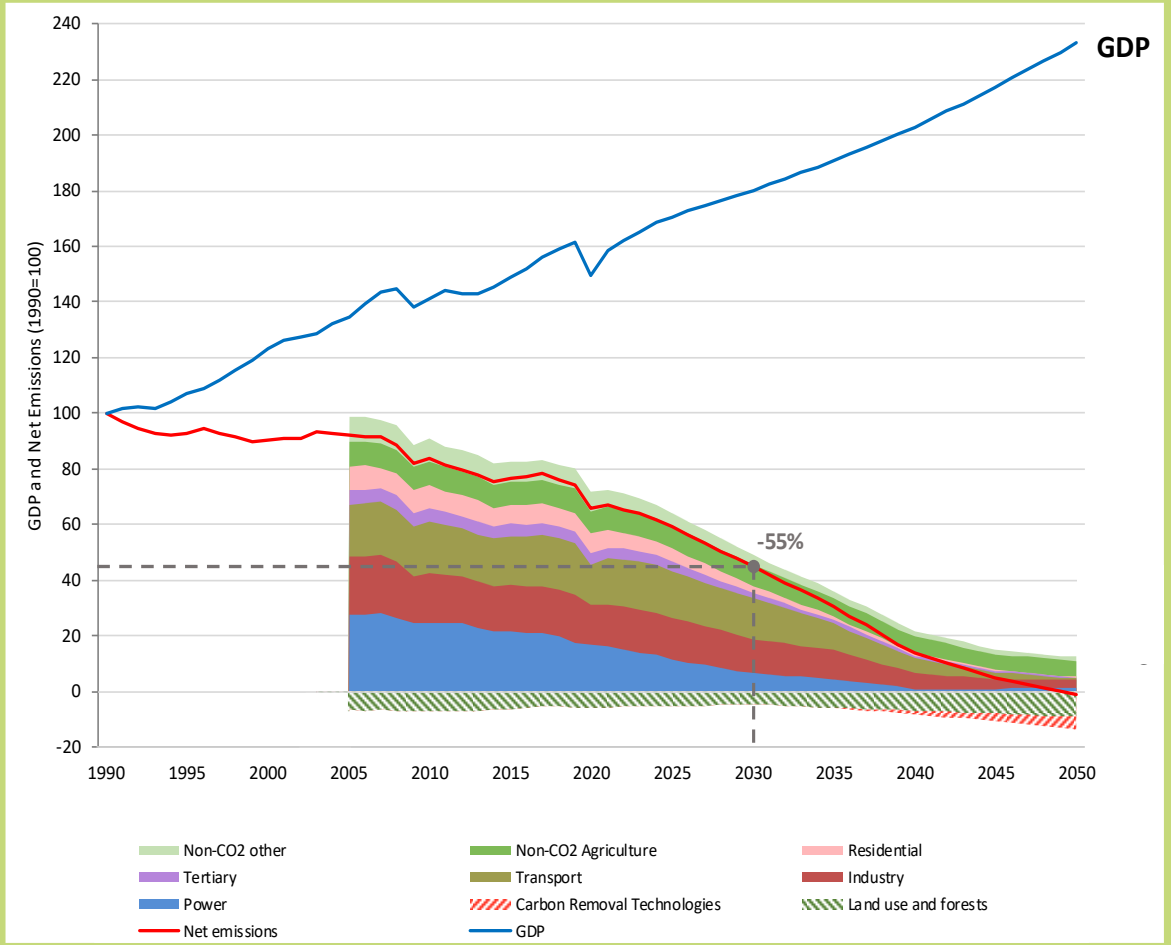
Recommendation 0

Design EU energy policy clearly aimed towards achieving climate neutrality and sustainability, leaving no one behind.

Use a holistic approach to maximise synergies and avoid trade-offs and barriers across technologies, regulatory and market measures, and social and behavioural changes.

EU pathway to prosperity & climate neutrality

Fit for 55 package under EGD



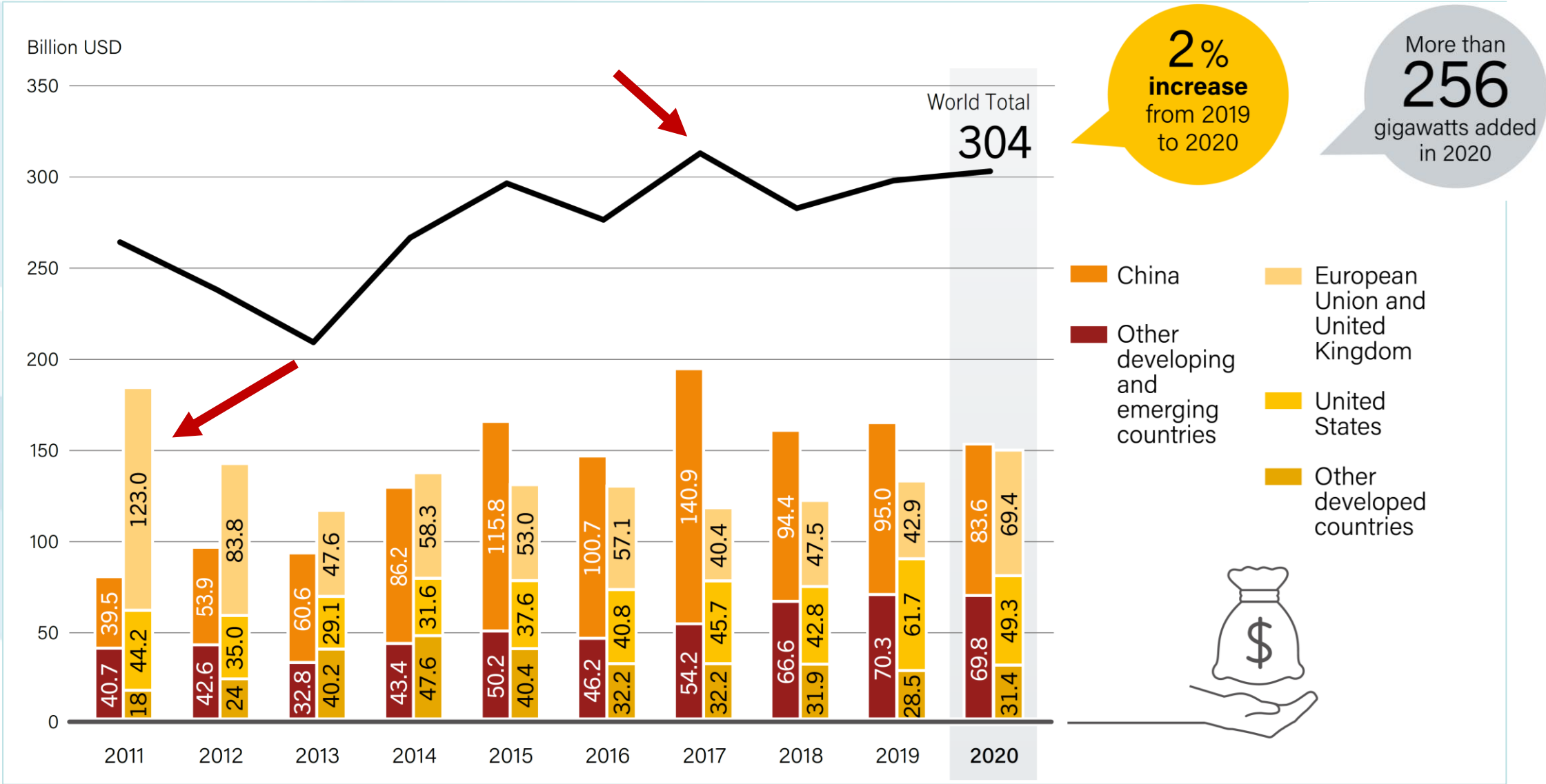
Recommendation 1

Develop flexible, efficient, and resilient EU energy systems for delivering clean, accessible, and affordable energy services by integrating decarbonised energy sources, electrification and the use of blue and green hydrogen.

- ***Develop flexible energy systems** in terms of pathways, different technologies, and scales of implementation;*
- ***Support investments** in integration of infrastructures and general-purpose technologies, including energy generation, transmission, storage, and end-use systems;*
- ***Support European research and innovation** as a world leader in new technologies and smart systems.*

European Commission

Global Investments in Renewables



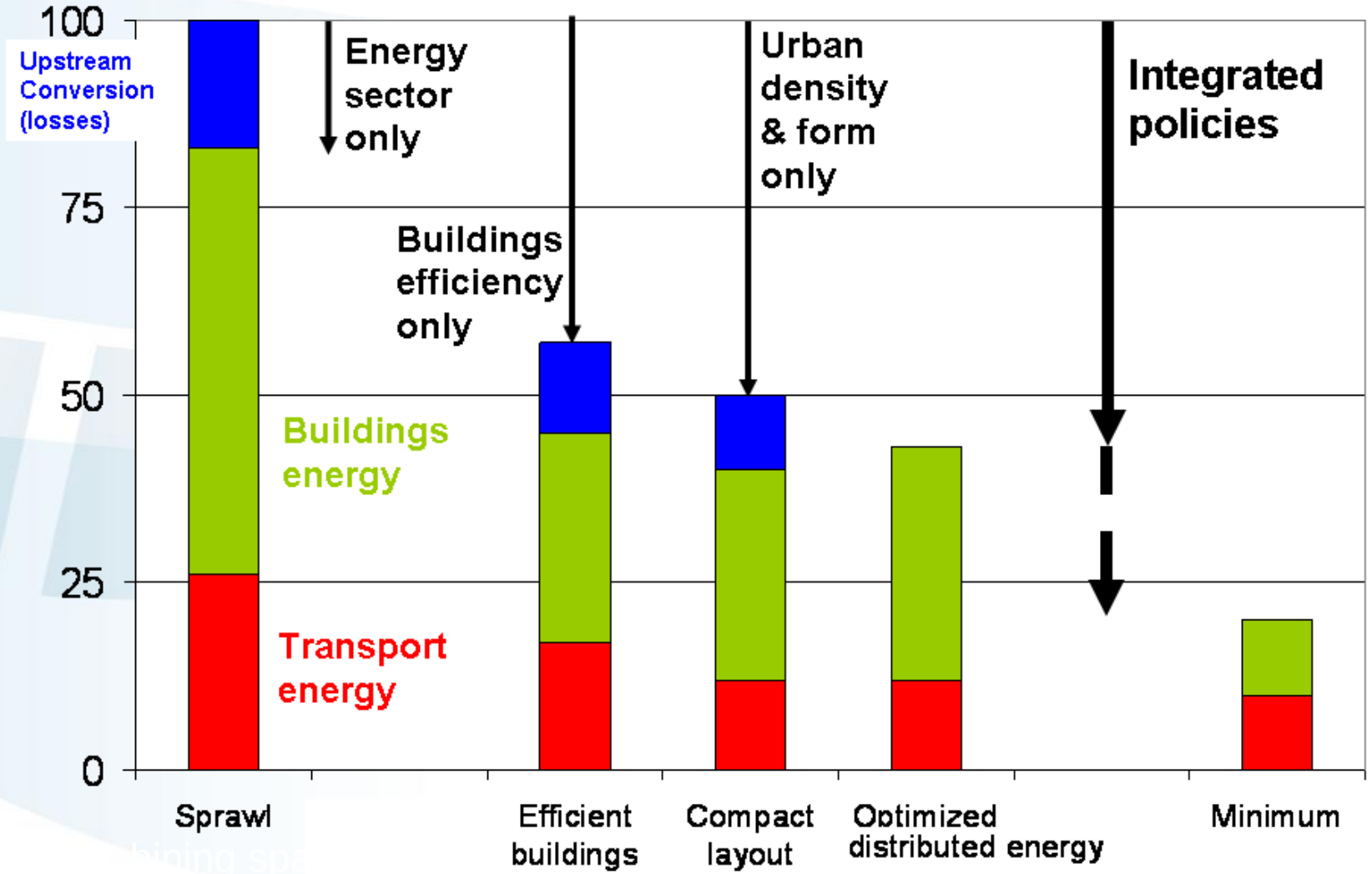
Recommendation 2

Recognise the roles of all actors and stakeholders in creating an inclusive and participatory environment that incentivises and supports low-carbon energy choices.

- ***Incentivise energy efficiency*** *and reduce of energy use while ensuring sufficient services for all;*
- ***Support direct participation and innovation*** *among all actors and stakeholders from the public and private sectors to individuals and households, at local, national, European and international levels;*
- ***Redistribute the additional revenue*** *created by energy taxation and carbon pricing to support low-income groups and promote sustainable energy systems.*

Transforming Urban Energy Requirements

Simulated energy use, urban settlement of 20,000, using the SimCity Model



Source: Grubler et al, 2012

Recommendation 3

Support a coordinated combination of policies, measures and instruments, including carbon pricing as a driving force, to shape an effective, consistent and just regulatory system.

- ***Use a coordinated combination of regulatory measures** and incentives to drive the European energy transition;*
- ***Make a clear political commitment** and undertake supporting actions to steadily move towards very high carbon (and other greenhouse gas) prices to cover all social and environmental costs;*
- ***Insist on reciprocal climate commitments** by other countries to form 'decarbonisation clubs' and introduce a World Trade Organization-compatible border adjustment mechanism for carbon.*

European Commission

Example of Savings by Re-Construction

Before reconstruction

over 150 kWh/(m²a)

Reconstruction according to the passive

15 kWh/(m²a)

-90%

Source: Jan Barta, Center for Passive Buildings, www.pasivnidomy.cz, EEBW2006

Decarbonisation and the building sector

Better, more efficient buildings do not only reduce energy demand and GHG emissions; they improve the quality of life and benefit both society and economy.

- ***There is large scope for integration of different energy technologies in the sector**, but requires considering buildings as complete systems;*
- ***Building regulations can however be a challenge if only centered on energy efficiency**, e.g. for the construction of off-grid autonomous climate-neutral and energy-plus buildings;*
- ***Beyond buildings, cities and urban planning are powerful levers for the energy transition, but only a few European countries have integration between energy and spatial planning policies at local government level.***

Thank you

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