EMIRI
Bridging the Innovation Gap

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Nanotechnologies and Advanced Materials for a Carbon-neutral Society by 2050

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EMIRI works for the future of Advanced Materials for a decarbonised economy in Europe

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Bridging the Innovation Gap

EMIRI is an Industry Community coming together …

AGC GLASS UNLIMITED · ArcelorMittal · DOW · ENGIE Laborelec · Danish Power Systems · H.C.Starck · Leclanché Energy Storage Solutions · SAFT · SIEMENS · SOLVAY · umicore

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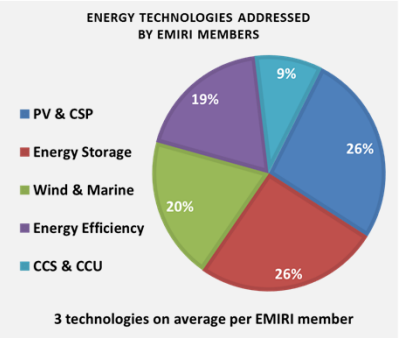
With key Associations bringing in their expertise

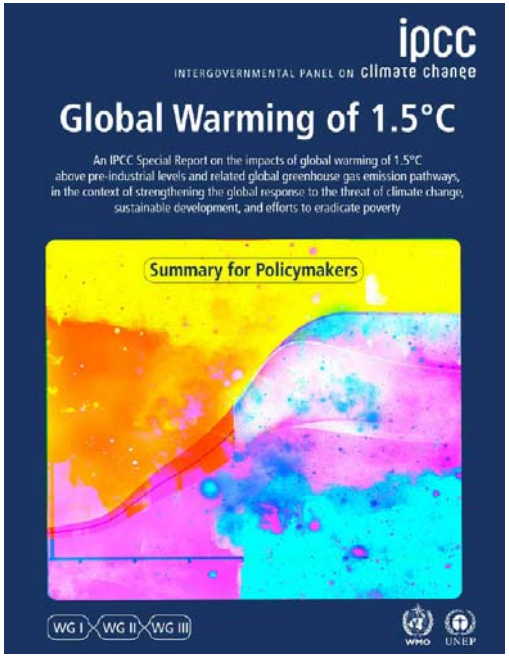
E-MRS · ECTP INNOVATIVE BUILT ENVIRONMENT · ENERGYIN · ESTEP · EUMAT · EUREC The Association of European Renewable Energy Research Centres · FEMS FEDERATION OF EUROPEAN MATERIALS SOCIETIES · IOM3 The Institute of Materials, Minerals and Mining · KMM-VIN · JERNKONTORET THE SWEDISH STEEL PRODUCERS' ASSOCIATION · NANOfutures · SusChem European Technology Platform For SUSTAINABLE CHEMISTRY · MANUFUTURE-EU · cefic

Spanning Innovation & Manufacturing



- Presence in 19 EU countries
- Over 80 innovation centers
- Over 50 manufacturing sites

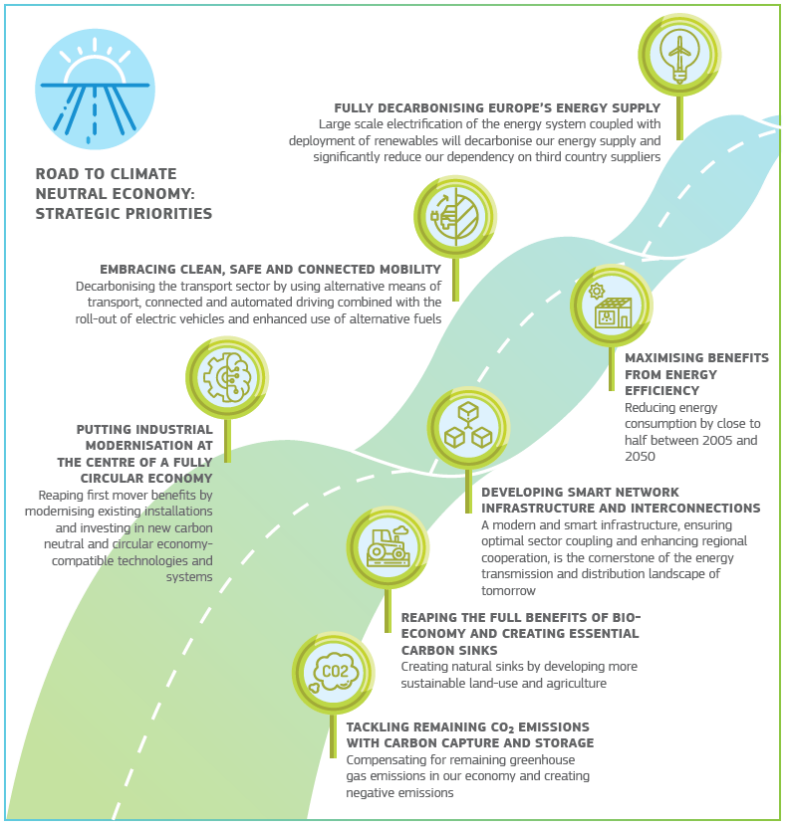
Global Warming! Business as usual is not an option…



- still devastating impacts of a 2° C pathway
- limiting the global warming to 1.5° C only possible **through ambitious and urgent** climate action

http://ipcc.ch/report/sr15/

A clean Planet for all : EU ambition of net-zero greenhouse gas emissions (climate neutrality) to reach the objectives of the Paris Agreement

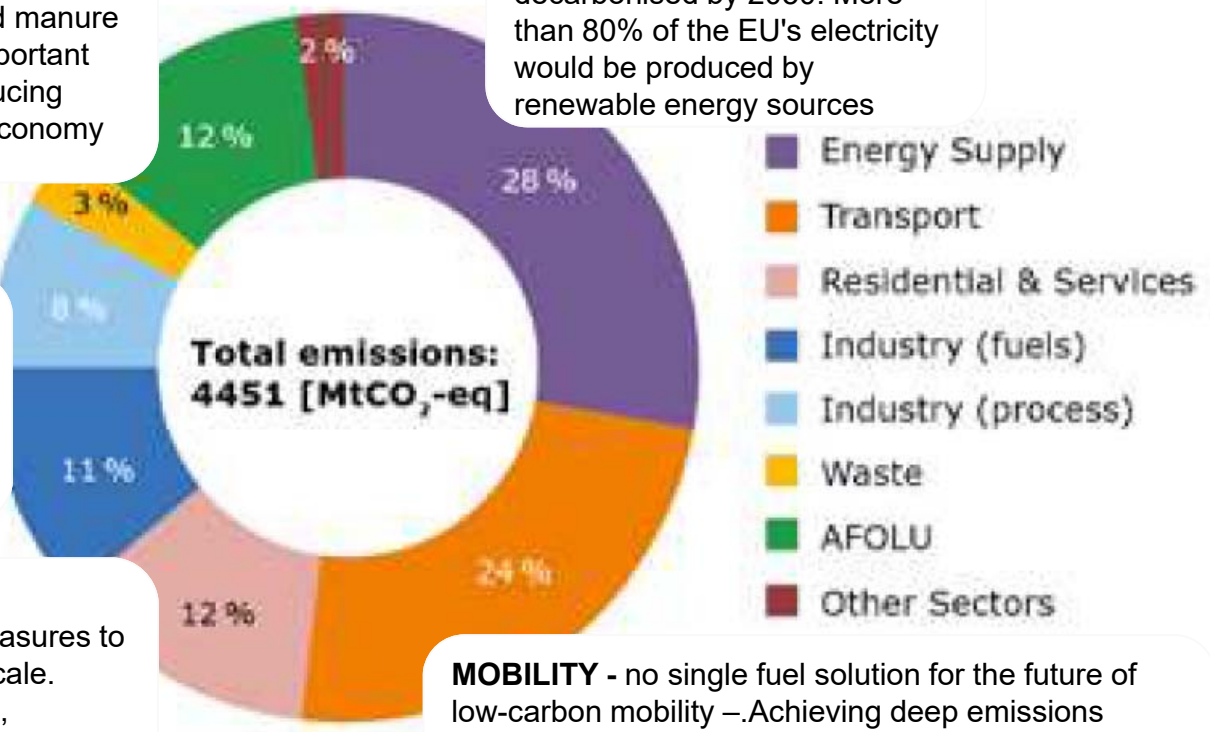


All sectors of the economy will have their role to play in the transition towards climate neutrality

AGRICULTURE - emissions can be reduced through a range of practices and technologies such as improved livestock, fertiliser and manure management. Furthermore, it has an important role to play as carbon sinks and in producing sustainable biomass for use in the bio-economy and the energy sector

POWER SECTOR - power generation should be fully decarbonised by 2050. More than 80% of the EU's electricity would be produced by renewable energy sources

INDUSTRY - Significant innovation efforts are needed to deploy the economically competitive technologies needed to contribute to a low-carbon and circular industrial transformation



greenhouse gas emissi
Report of the High-Level Panel of
Pathways Initiative -

BUILDINGS –

- Better building insulation and other measures to improve the housing stock on a high scale.
- More efficient products and appliances, deployment of “smart” buildings/appliances management systems and consumer behaviour.
- fuel switching

MOBILITY - no single fuel solution for the future of low-carbon mobility –.Achieving deep emissions reductions will require an integrated system approach, promoting overall vehicle efficiency, low- and zero emission vehicles and infrastructure and a long-term switch to alternative and net-zero carbon fuels

Not just R&I matters…

- The transition will require much stronger awareness, empowerment and encouragement of citizens and consumers to **change behaviors**
  - Citizen awareness through better labelling and information on their environmental footprint to take informed decisions on the impacts of mobility and consumption choices (how they travel, how they produce and consume energy and how they build and renovate their houses.
- Stimulate change in the **finance** industry to support a movement towards green investment
- **Skills development** will be important. It is essential to address the changes that will occur on the job market due to the low carbon transition
- **Socially**, to ensure a fair and inclusive transition
  - continue to provide support for the development of new opportunities in regions and communities affected by these transformational challenges
  - fair environmental taxation and carbon pricing systems

Moving towards a net zero greenhouse gas economy can only be successful when citizens embrace change and experience it as beneficial for their lives and those of their children

How can research and innovation accelerate the different pathways towards climate neutrality?

- **A massive research and innovation effort** built around a coherent strategic research and innovation and investment agenda EMIRI develops a technology roadmap for Horizon Europe focused on advanced materials at TRL 4-7
  - for storage of electrical energy (batteries), energy efficiency in transportation (lightweight), insulation of buildings and storage of thermal energy
  - for renewable energy generation (PV, BIPV, CSP, wind,…)
  - enabling Carbon Capture and Use; and Power-to-X technologies enabling the storage of renewable energy under chemical form and for manufacture of fuels and chemical products
- **A balanced R&I portfolio between**
  - fundamental research (better understanding, new concepts)
  - applied research (bringing concepts from the lab to building prototypes)
  - industrial innovation and deployment (continuously improving technologies and their usage)
  - socio-economic research and social innovation needed to engage citizens and consumers in the transition to a climate neutral economy.
- **Advanced Materials are the backbone of innovations for clean energy and mobility Technologies**
  Along with other KETs (advanced process technologies, Digital technologies,…), Advanced Materials must be firmly embraced by Horizon Europe as drivers of technology development
- The EU should encourage developing a **strong industrial basis in Europe**
  in support of clean energy transition and support European industry in becoming the global leader in the field