



Electrification of energy  
consumptions: opportunities  
and barriers

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There are many reasons to improve our energy uses:

- ▶ to reduce GHG emissions and pollution
- ▶ to decrease our dependency from extra-EU sources and the risk of high energy prices and/or energy availability
- ▶ to increase the resiliency of our energy system
- ▶ to improve our lives
- ▶ to increase sustainability

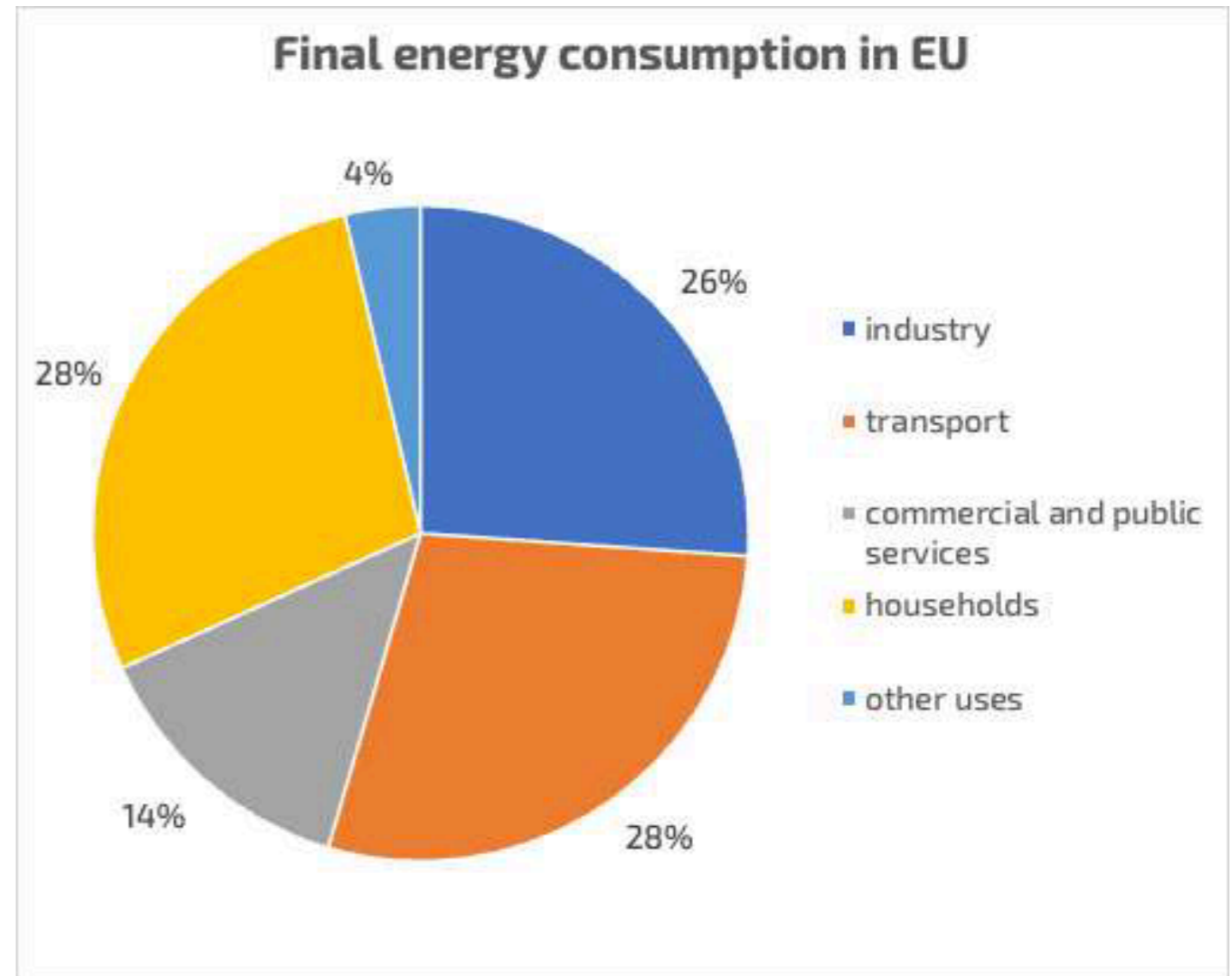
# Electrification of energy consumption



Over time, the share of electricity consumption on total consumption has increased.

In all sectors there are electrical technologies that can reduce primary and final energy consumption compared to alternatives.

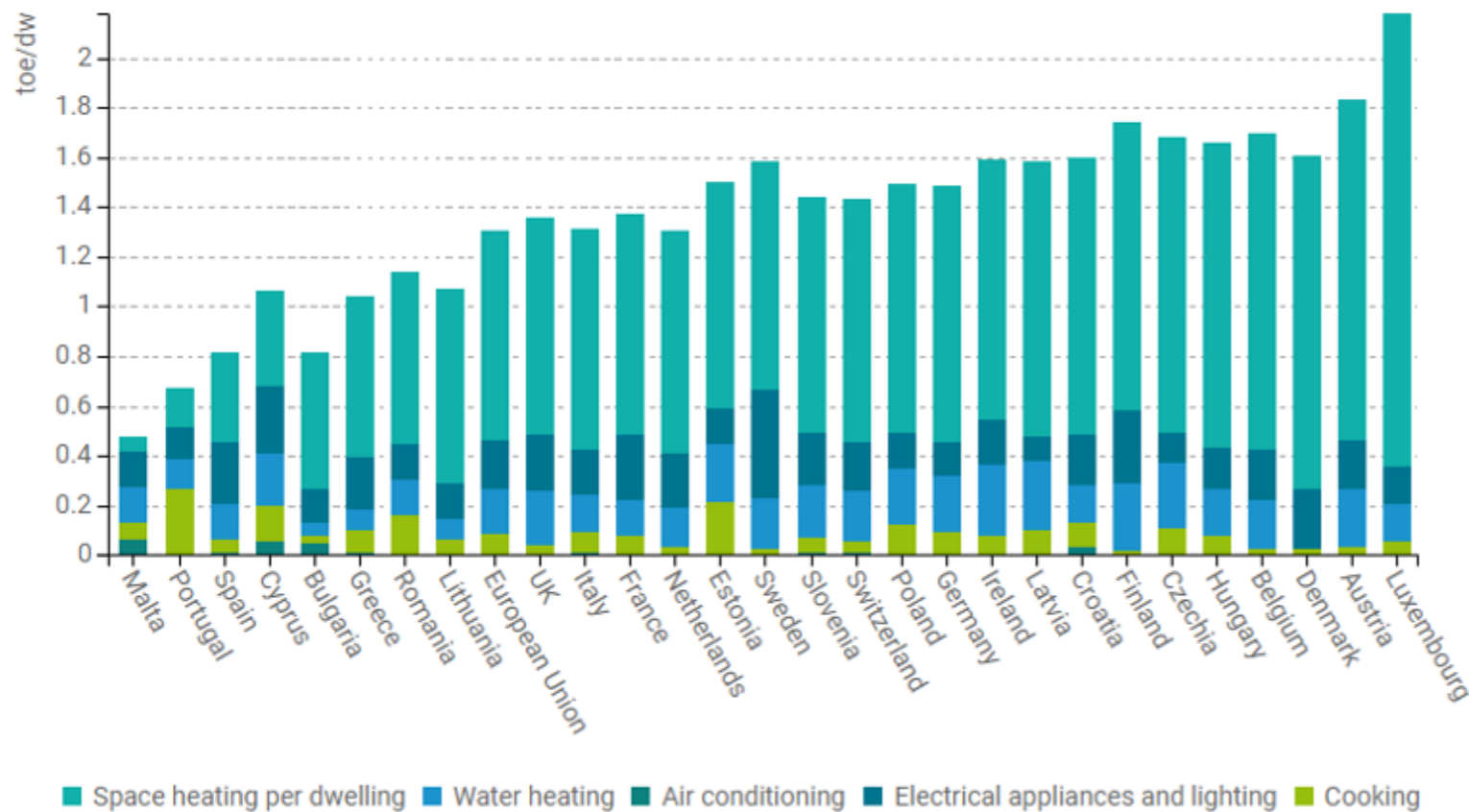
The benefits affect many non-energy dimensions.



# Contribution of different energy savings



Specific consumption of households by end-use (2019)



Electrotechnologies allow to improve energy efficiency for different services::

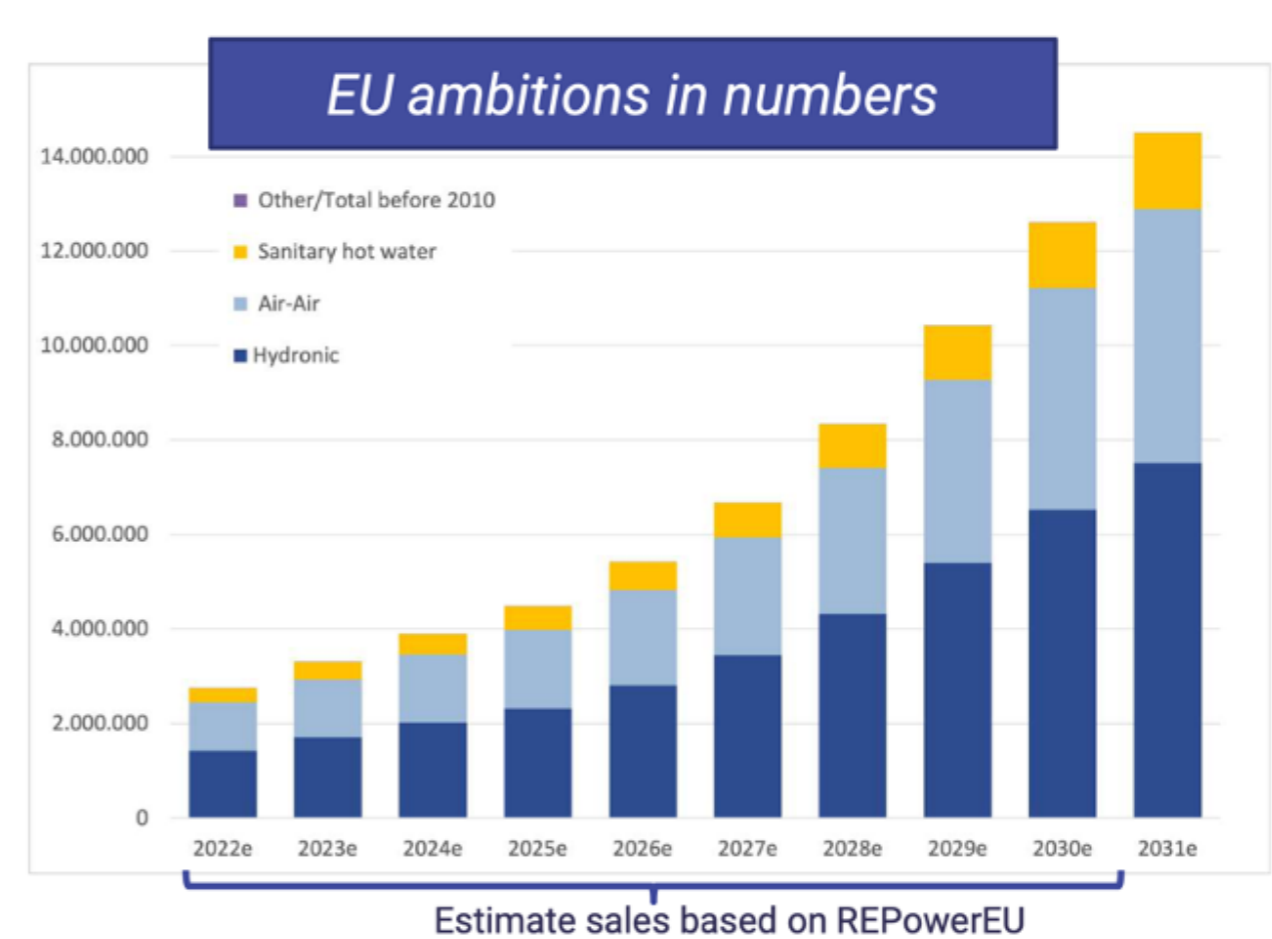
- ▶ heating, DHW and cooling (heat pumps)
- ▶ cooking (induction hobs)
- ▶ smart building (BACS)

# Targets



The targets on energy efficiency and renewables are very ambitious. This is also necessary in the context of mitigating the effects of climate change.

The figure, which shows the effort required by the REPowerEU program for heat pumps, allows to appreciate the expected growth factors.



# Barriers

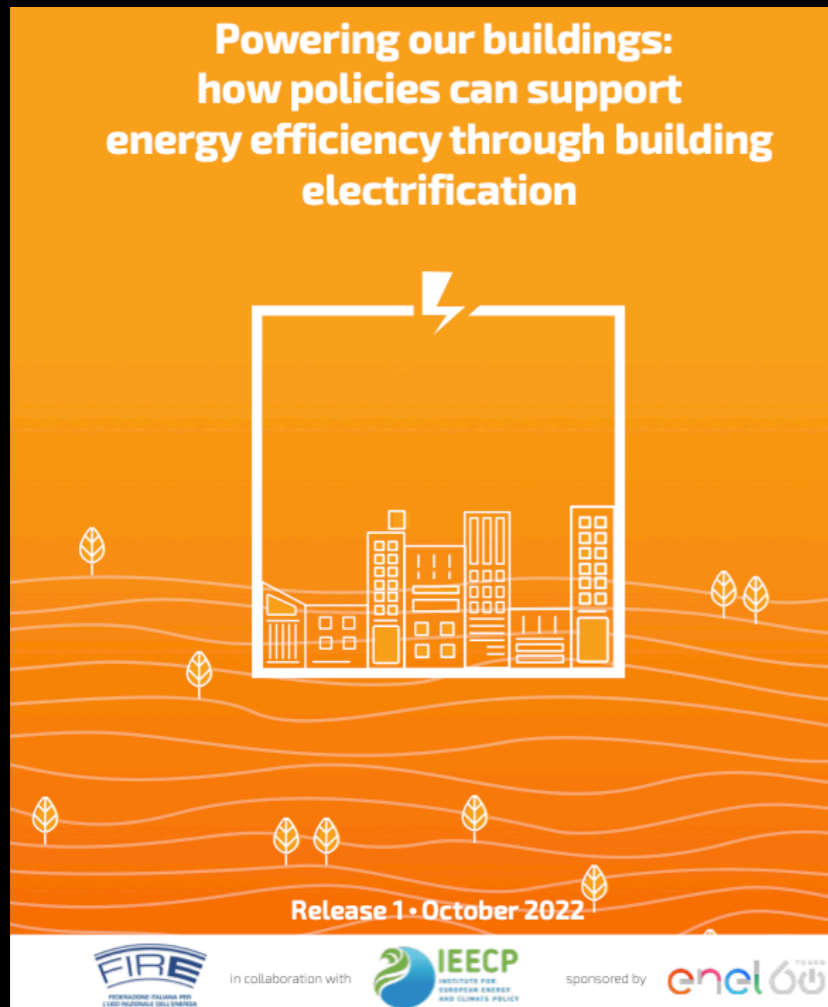


Source: FIRE	Tariffs' barrier	Heavy bureaucracy on RES installation	Lack of awareness in public sector	Challenges in integration and complexity	Operators' skills	Users' attitudes and habits	Lack of users' expertise	Need to improve the grid	Split incentives dilemma	Lack of access to finance	Poor economic indicators
Heat pumps	...	...	..	...	...	...	...	...	..	..	..
Induction hobs	...	-	.	.	.	...	...	.	.	..	..
Building infrastructure for EV charging	..	-	..	..	.	..	..	...	.	..	...
BACS	.	-	...	..	..	.	...	.	...	..	.
Cooling	..	...	.	.	.	.	.	...	..	.	...
Tumble driers	.	-	-	.	.	..	..	.	.	.	..

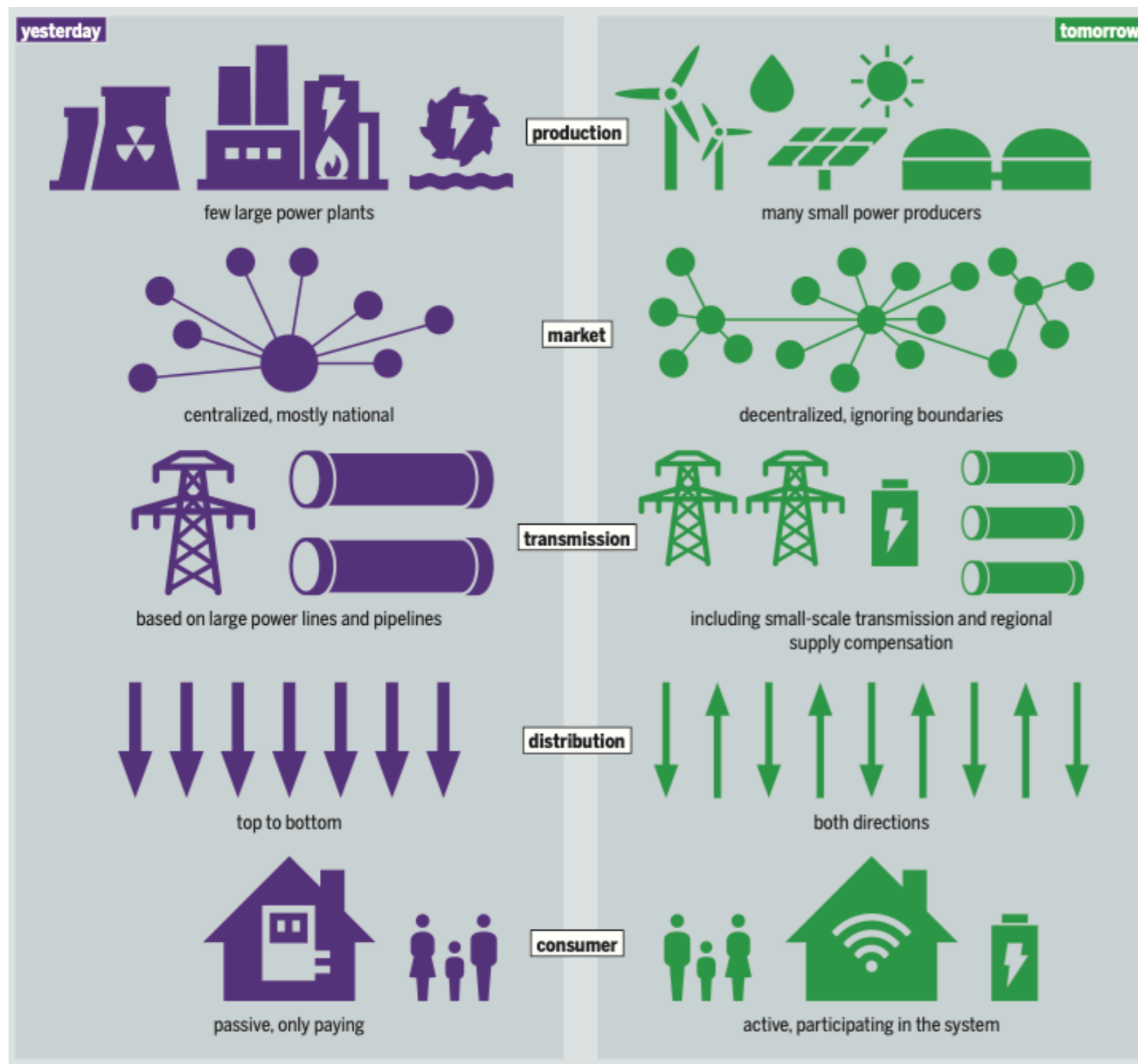
To ensure the diffusion of electrical technologies, it is necessary to overcome a series of barriers, some in common with other solutions related to energy efficiency, other more specific.

In order to achieve the desired results, existing policies need to be improved in order to:

- ▶ developing the supply chain of electrification technologies
- ▶ give clear indications on the path for replacement of fossil fuels
- ▶ making the switch to electrification solutions attractive and reliable for end users
- ▶ remove market distortions through appropriate taxes and carbon prices
- ▶ promote and accelerate the development and digitisation of electricity networks



# The role of energy industry



Beyond the two-way network and the widening role of the consumer, distributed generation brings a significant conceptual transformation.

In the past, the energy industry was made up of a few big players, now these are joined by many producers of medium, small and very small size.

But it is clear that families and businesses, except perhaps the largest, can hardly think and act as "industry" of energy.

There is therefore the need to develop dedicated services for these people.

# What can we do together?



FIRE can be a partner for many activities:

- ▶ carrying out surveys among energy managers, ESCO, EGE, companies with ISO 50001, etc .;
- ▶ implementation of surveys and market and sectoral studies;
- ▶ guides and analysis on incentive tools and policies;
- ▶ information campaigns and behavioral change;
- ▶ dissemination campaigns;
- ▶ energy audits and feasibility studies;
- ▶ training courses on energy management and its tools (ISO 50001, energy audits, EPC, IPMVP, LCCA, feasibility studies, etc.), policies and incentives, solutions for energy efficiency, cogeneration, etc;
- ▶ European projects (e.g. Horizon Europe, Life), international cooperation and tenders, and much more...

**Get in touch!**

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