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EU Energy Efficiency Policies for the Decarbonisation of the Building Sector

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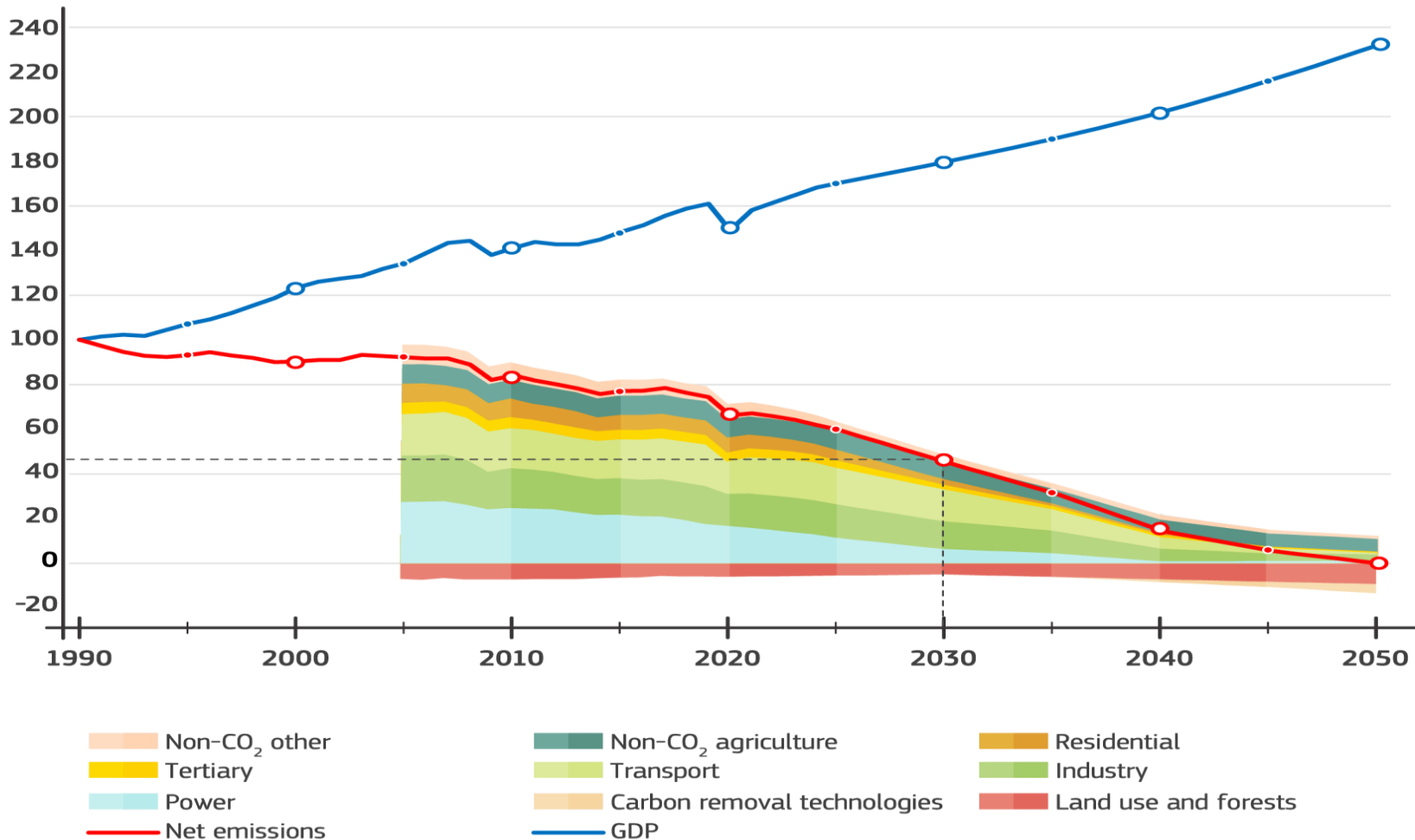
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EU Climate Targets

- The EU submitted its long term strategy to the UNFCCC in March 2020, committing to **climate neutrality by 2050**.
- Climate neutrality by 2050 is in line with the Paris Agreement goals to keep climate change below 2°C while pursuing efforts to keep it below 1.5°C
- Commission proposed on 4 March 2020 a Climate Law, to enshrine this EU target legally. It established a climate trajectory to climate neutrality by 2050.
- Commission proposes recently to increase the GHG emission reduction target for **2030 from 40% to 55%** (compared to 1990).

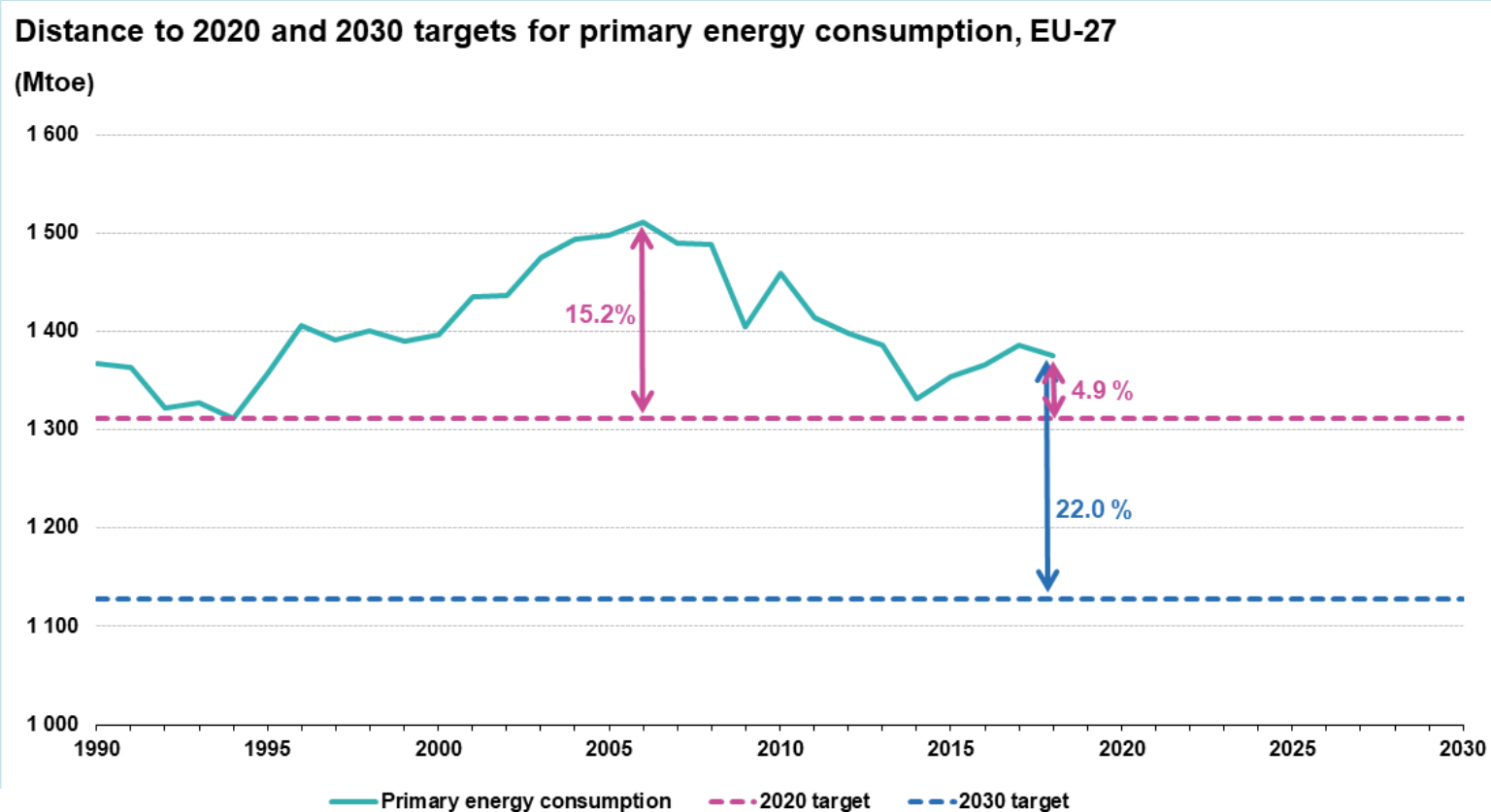
EU 2050 Climate Target



- Decarbonisation of the energy system is a priority (75% of EU greenhouse gas emissions).
- 60% emission reductions by 2030 compared to 2015 in buildings penetration of renewable energy, use of the energy efficiency first principle, electrification and energy system integration.
- buildings can subsequently decarbonise, with heating and cooling reaching a 40% renewable share by 2030.
- Renovation rate for buildings would need to double to 2% by 2030

EU 2030 Energy Efficiency Targets

- **Energy Efficiency target for 2030 set at 32.5% compared to the BaU scenario**

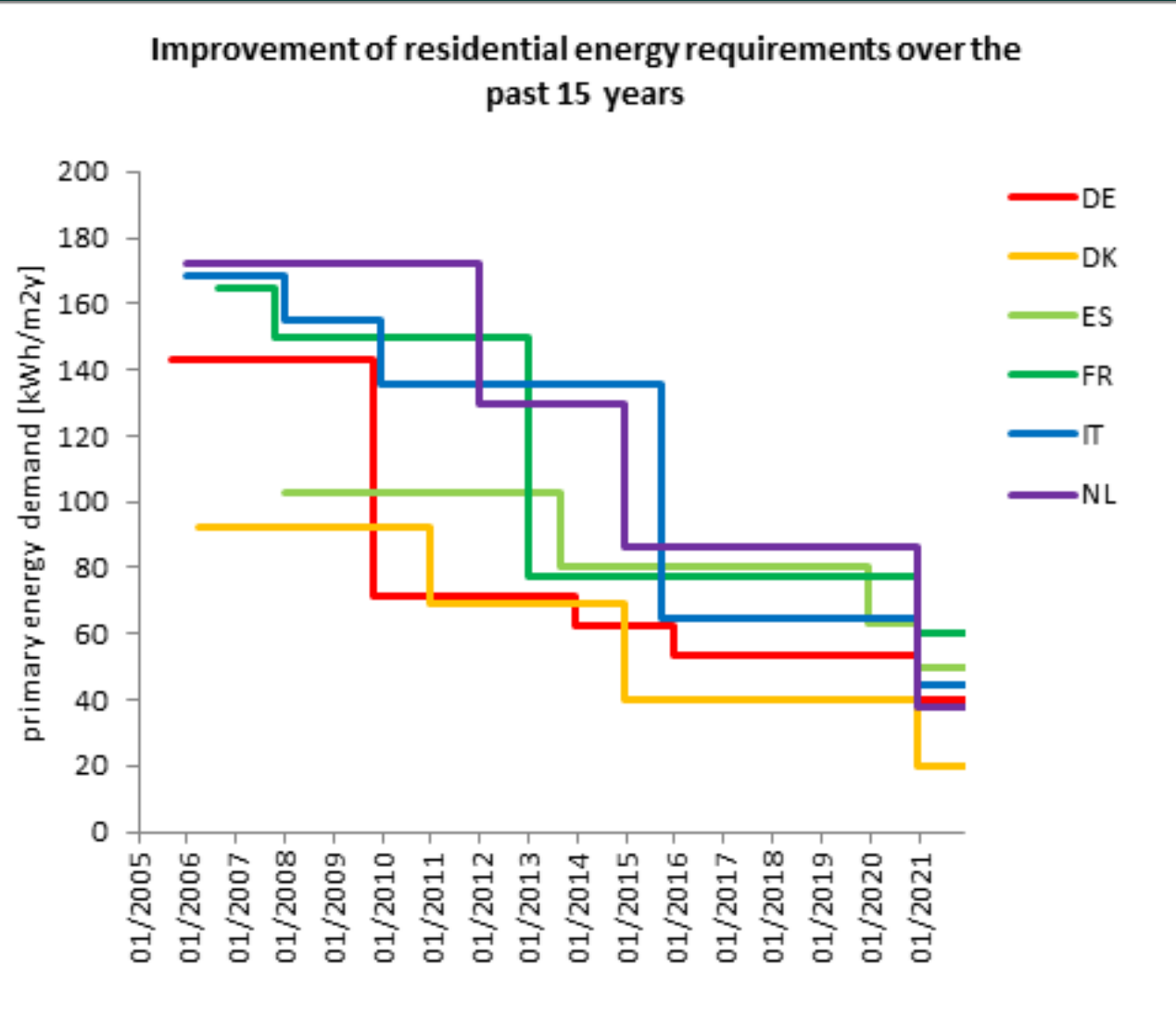


- Buildings are responsible for around **40% of energy consumption** and **36% of greenhouse gas emissions in the EU.**
- 75% of existing buildings are energy-inefficient..

Main EU policies for Energy Efficiency in Buildings

- Energy Performance of Buildings Directive (started in 2002, last amended in 2018)
 - Building standards for new and existing buildings, from 2021 all new buildings must be nZEBs; Energy Performance Certificates; national Long Term Renovation Strategies; Smart buildings; Financing
- Energy Efficiency Directive (started in 2012, last amended in 2018)
 - National Energy Companies Obligations; renovation of Central Gov. Buildings; Audits; Smart Metering; Energy Performance Contracting; Financing
- Ecodesign Directive (started in 2005, last amended in 2009)
 - Most of building technical equipment and appliances are now covered
- Governance Regulation (2018)
 - National Energy and Climate Plans (before NEEAPs under EED)

Impact of the EPBD



Building Renovation Wave - 1

- **Existing buildings** are the major part of the building stock, many built before any building code or performance standard was in place, hence poor energy performances. Many of these building will be still in place by 2050.
- **Energy renovation** is around 1% per year of the existing building stock, it will take about 100 years to renovate these buildings.
- There is the urgent need to **increase the renovation wave >2%** per year and the depth of the renovation, towards NZEBs.
- The **EU Green Deal** has proposed the **Building Renovation Wave**. Key issue is removal of barriers and financing.

Building Renovation Wave - 2

- Major initiative by the European Commission in the framework of the European Green Deal
- Strategic communication to be published in autumn 2020, containing an action plan for the years to come
- Concerted action at all levels, from the local to the regional, national and European

Building Renovation Wave – Barriers

1. Lack of transparent information and “hassle” for consumers
2. Hurdles to access financing
3. Insufficient technical expertise (in local and regional authorities and financial institutions)
4. Shortage of skilled workforce
5. Too many “shallow” renovations

Building Renovation Wave – Solutions

1. Through regulatory and financial support
2. Better information tools and technical assistance
3. Reinforced and more accessible EU funding
4. Creating green jobs, upskilling workers and attracting new talent
5. High quality renovations: smart and resource efficient buildings that integrate renewables better
6. Financing: facilitate access to appropriate mechanisms (effective use of public funding; aggregation of projects; de-risking)

Building Renovation Wave – Priority Areas

1. Tackling worst-performing buildings and energy poverty
2. Public buildings showing the way: focus on schools, hospitals and care facilities
3. Decarbonising heating and cooling
4. Mobilising neighbourhood approaches

Co-benefits of Energy Efficiency

- Building renovations will increase the value of the property and will also improve the indoor climate and air quality.
- Reduction of heating demand will also improve outdoor air quality in cities (big problem in some regions in Europe)
- Energy efficiency will reduce energy poverty, i.e. household not able to pay for the energy bill. It is estimated that more than 50 million households in the European Union are experiencing energy poverty.
- Energy efficiency will result in creation of local jobs in particular related to the renovation of the buildings.

Conclusions

- Energy Efficiency in buildings is key for the de-carbonisation of the EU economy. In particular in the building sector.
- MSs Energy Efficiency measures and policy complement the EU ones and are reported in the 2020 NECPs.
- Measures for buildings in place and planned are reported in the 2017 LTRs, and will also feature in the new 2020 LTRs.
- There are many co-benefits due to Energy Efficiency.
- Renewable energies plays an important role.

Thanks



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Key Policies Instruments

Regulatory	Building codes; <u>Minimum energy performance standards (MEPS) for new and existing buildings</u> ; <u>Energy efficiency standards for appliances & equipment</u> ; Refurbishment obligations; Procurement regulations; Phase-out of inefficient equipment. Mandatory energy labelling
Financial and fiscal	Grants/subsidies; Preferential loans; Tax incentives; Energy taxation.
Information awareness and	General Information; Information campaigns; Information Centres; Energy Audits; Energy labelling schemes; Governing by Example; Information exchange; Awareness campaigns; Demonstration programmes; Energy consumption feedback; Smart meters and smart billing
Qualification, training and quality assurance	Professional training; Training courses; Vocational education, Quality standards.
Market-based	Incentives facilitating Third Party Financing / ESCOs; Energy Efficiency Obligation Schemes (EEOSs); White certificates; Incentives for the producers of innovative technologies; Technology deployment schemes.
Voluntary action	Voluntary certification and labelling programs; Voluntary and negotiated agreements.
Infrastructure investments	Investments in transportation infrastructure (e.g. railways, road networks), energy infrastructures (e.g. generation plants, electrical grid, substations, and local distribution); Smart meter roll-out.
Other	Other measures that do not fall under one of the above categories.

Policies Considerations

- Some policy instruments may be better suited than other for the building renovation, but there is no single policy that alone will be enough. Examples are:
 - Energy Company Obligations
 - Targeted subsidies for energy poor households for insulation, efficient boilers and appliances. Better use of public money for investing in EE than subsidizing energy.
 - Tax deduction schemes and zero interest loans.
 - Energy tax, but could also be difficult to implement, as may have an heavy impact.
- Attention to distributional impact of current EE policies and the rebound effect after the EE measure has been implemented (EE measure increasing energy consumption).
- Energy refurbishment of rented apartments may lead to gentrification if rent is substantially increased.