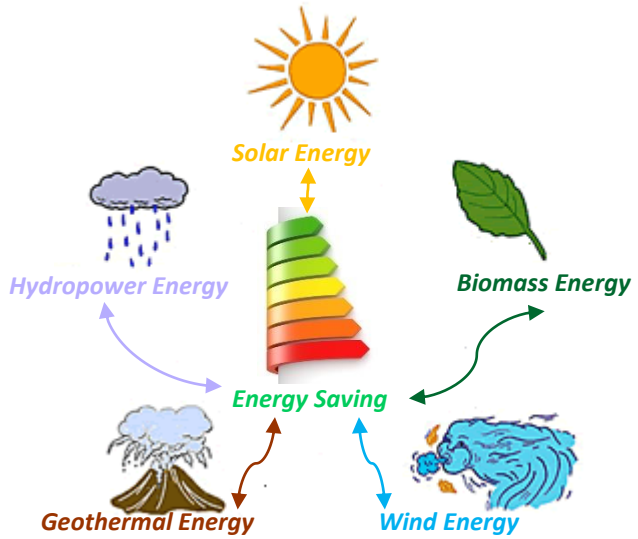
Energy Transition of the EU Building Stock

Unleashing the 4th Industrial Revolution in Europe



www.openexp.eu

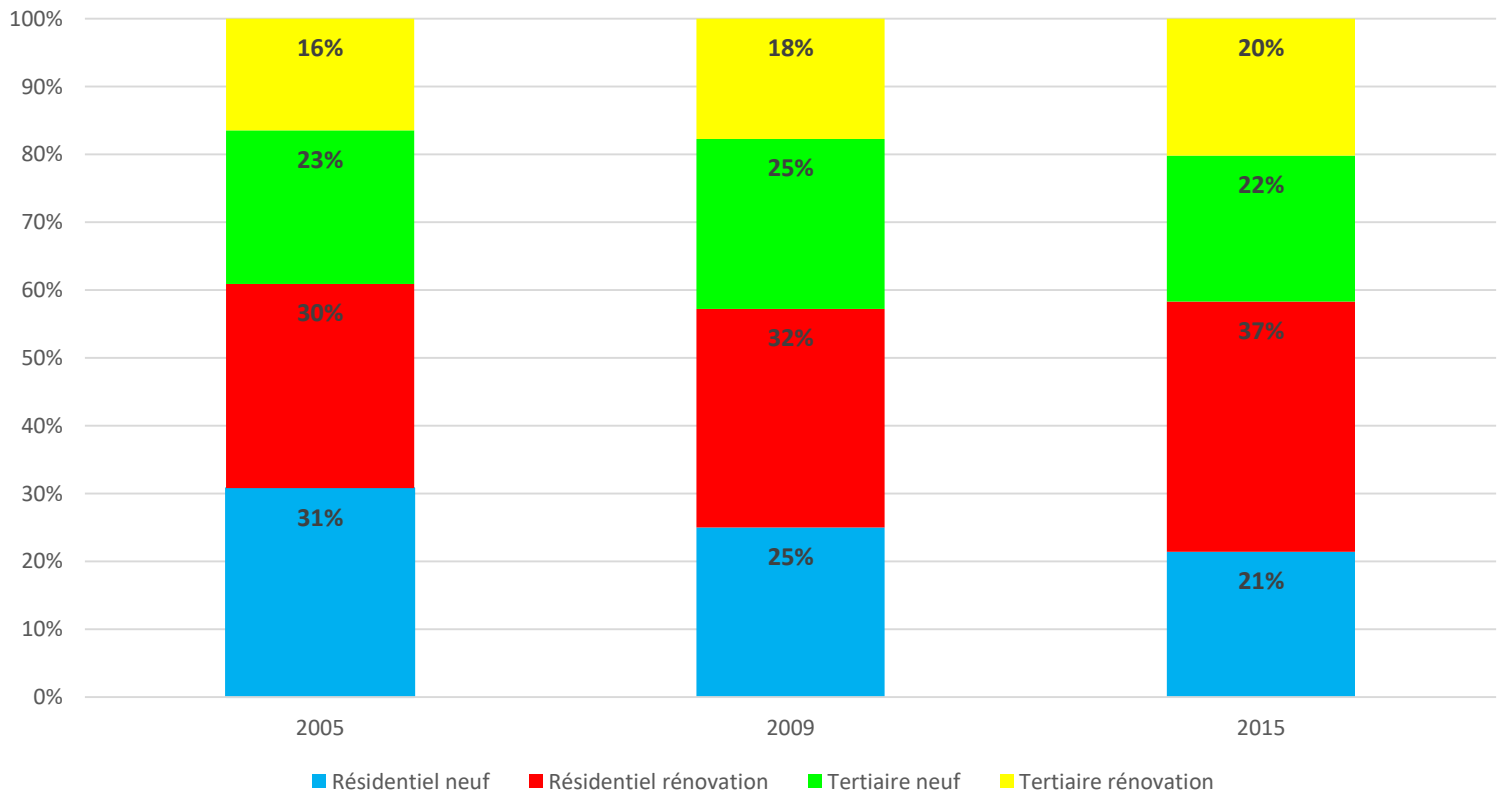
Dr Yamina SAHEB
Yamina.saheb@openexp.eu

Making the Negawatt dream a global reality

@OpenexpEnergy

Policy intervention has led to the emergence of an EU energy renovation market

Market share of activities in the building sector



The EU Energy Renovation Market is estimated at €109 billion and 882,900 jobs in 2015

At least 14 EU instruments include provisions aiming at energy renovation

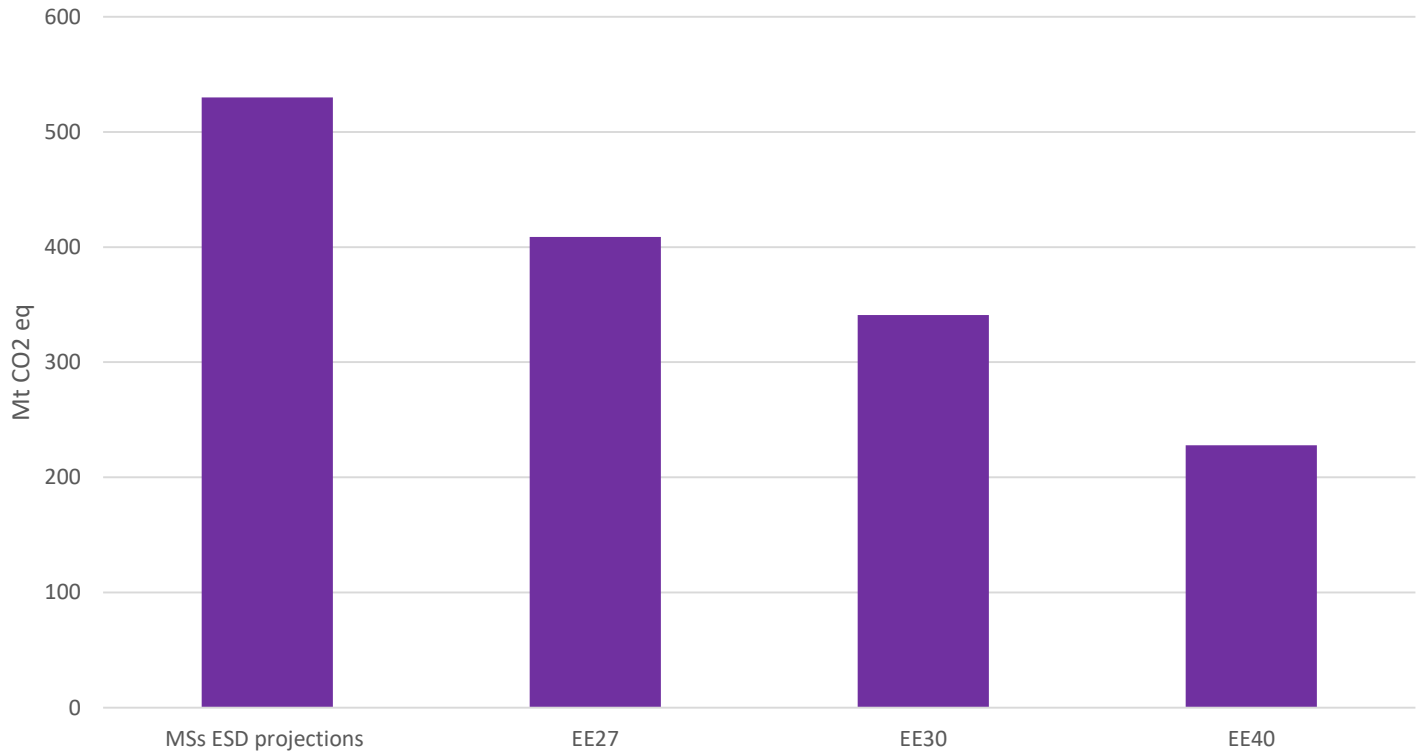
1. *Energy Performance Building Directive (EPBD)*
2. *Cost-optimum methodology regulation*
3. *Energy Efficiency Directive (EED)*
4. *Renewable Energy Directive (RED)*
5. *Ecodesign Directive*
6. *Labelling Directive*
7. *Emission Trading Scheme Directive (ETS)*
8. *Effort Sharing Decision (ESD)*
9. *Mechanism for Monitoring and Reporting (MMR)*
10. *Directive on Internal Market in Electricity (IME)*
11. *Directive on Internal Market in Gas (IMG)*
12. *State Aid Regulation*
13. *Multiannual Financial Framework (MMF)*
14. *Accounting rules (ESA)*

The fragmented policy "Diamond"

The fragmentation of provisions aiming at energy renovation hinders the increase of the ambition level

The binding ESD target, if aligned with the Paris Climate Agreement, would increase the ambition level

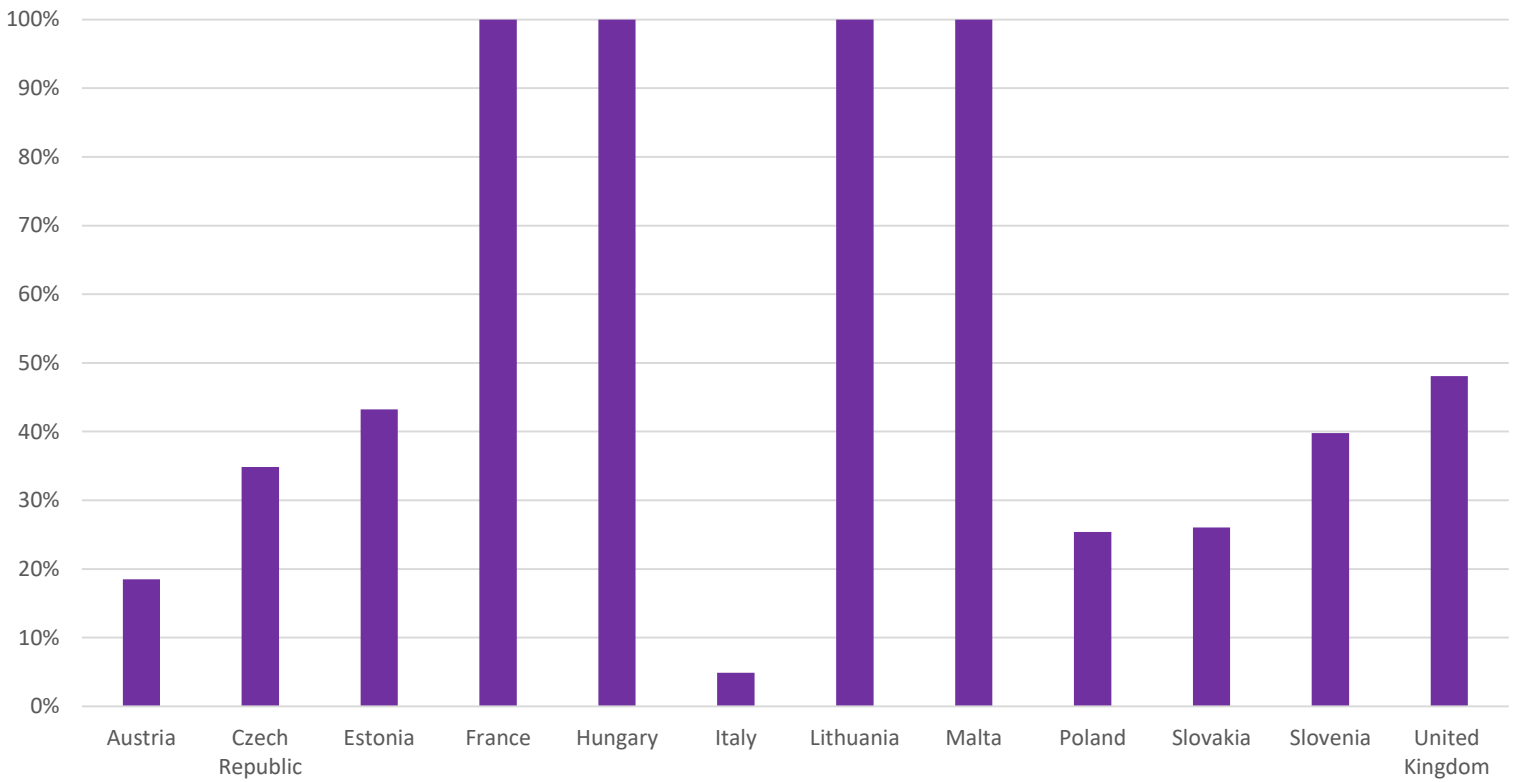
2030 GHG emissions projections for buildings by MSs and EC modelling



MSs projections of buildings GHG emissions need to be aligned with those of the EC

Energy renovation is not prioritised in the use of ETS revenues by all MSs

Share of ETS revenues used for energy renovation in 2014



More transparency in the use of ETS revenues is needed

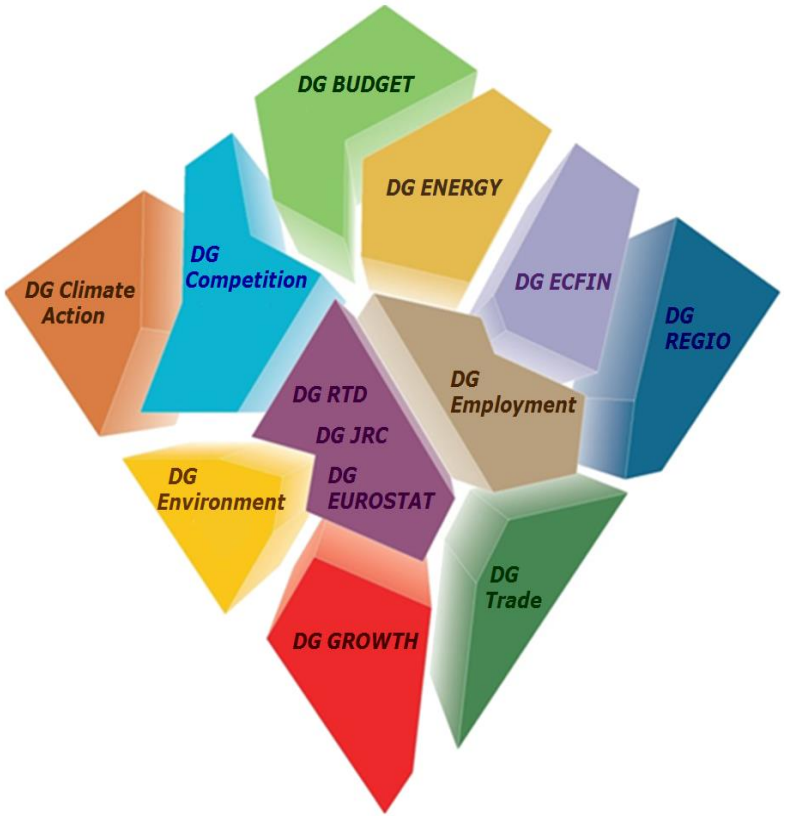
Electricity and gas taxes make more vulnerable citizens in risk of ending-up in energy poverty

	Electricity taxes per consumption bands					Gas taxes per consumption bands		
€/kWh	<1000 kWh	1000<C<2500	2500<C<5000	5000<C<15000	>15000 kWh	<20GJ	20GJ<C<200GJ	>200GJ
Belgium	0,0632	0,0537	0,0510	0,0474	0,0439	0,0205	0,025	0,0208
Bulgaria	0,0163	0,0160	0,0160	0,0160	0,0160	0,0072	0,013	0,0130
Czech Republic	0,0510	0,0358	0,0236	0,0203	0,0181	0,0158	0,0202	0,0190
Denmark	0,2159	0,2159	0,2102	0,1449	0,1449	0,0438	0,0591	0,0591
Germany	0,1749	0,1565	0,1519	0,1494	0,1426	0,0253	0,0276	0,0260
Estonia	0,0350	0,0340	0,0340	0,0340	0,0340	0,0093	0,0161	0,0139
Ireland	0,1311	0,0695	0,0463	0,0345	0,0246	0,0143	0,0209	0,0191
Greece	0,0584	0,0537	0,0544	0,0681	0,0816	0,0194	0,0231	0,0189
Spain	0,1132	0,0610	0,0507	0,0446	0,0428	0,0231	0,0347	0,0252
France	0,0638	0,0578	0,0568	0,0559	0,0560	0,0276	0,0255	0,0213
Croatia	0,0455	0,0329	0,0309	0,0298	0,0290	0,0110	0,0182	0,0174
Italy	0,0923	0,0741	0,0949	0,1224	0,1324	0,0326	0,0473	0,0452
Cyprus	0,0473	0,0376	0,0375	0,0374	0,0370	0,0148	0,0186	0,0185
Latvia	0,0554	0,0555	0,0554	0,0553	0,0550	0,0129	0,0152	0,0152
Lithuania	0,0385	0,0383	0,0380	0,0373	0,0362	0,0073	0,0108	0,0113
Luxembourg	0,0482	0,0447	0,0436	0,0425	0,0417	0,0079	0,015	0,0148
Hungary	0,0274	0,0252	0,0243	0,0237	0,0252	0,0417	0,047	0,0442
Malta	0,0154	0,0067	0,0060	0,0073	0,0178	0,0215	0,0307	0,0276
Netherlands			0,0605	0,1148	0,0697	0,0112	0,0186	0,0184
Austria	0,1485	0,0951	0,0744	0,0643	0,0537	0,0267	0,0408	0,0375
Poland	0,0382	0,0328	0,0312	0,0303	0,0299	0,0163	0,0227	0,0209
Portugal	0,2104	0,1247	0,1132	0,1063	0,0986	0,0189	0,0284	0,0275
Romania	0,0388	0,0385	0,0381	0,0378	0,0372	0,0174	0,0166	0,0174
Slovenia	0,1065	0,0686	0,0505	0,0394	0,0318	0,0668	0,0763	0,0713
Slovakia	0,0451	0,0323	0,0285	0,0252	0,0225	0,0046	0,0062	0,0056
Finland	0,0809	0,0613	0,0521	0,0483	0,0446	0,0205	0,025	0,0208
Sweden	0,0986	0,0715	0,0672	0,0606	0,0565	0,0072	0,013	0,0130
United Kingdom	0,0128	0,0117	0,0104	0,0096	0,0089	0,0158	0,0202	0,0190

@OpenexpEnergy

The fragmentation of policy instruments matches well with the fragmentation of policy services and industry

The three levels of fragmentation (policy instruments, policy services and industry)



A paradigm shift is needed in policy design, governance of energy renovation and the organisation of the industry and stakeholders to increase the ambition level

The way forward

1. **Efficiency First Framework for buildings: One single, streamlined investment framework which would include climate and energy requirements for buildings**
   - **Clear target to transform EU buildings from being energy wasters to being highly energy efficient and energy producers each time a building is renovated**
   - **Carbon and energy savings targets for the overall stock by 2050 aligned with the Paris Climate Agreement**
2. **New governance structure:**
   - **EU Energy Renovation Facilitator**
   - **EU Risk Sharing Facility**
   - **EU energy renovation industry (aggregators of components' industry)**
3. **Industrialisation of energy renovation:**
   - **Moving from component-based energy renovation to Net Zero Energy Renovation Kits**
   - **Integration of buildings in the EU energy system**
   - **Digitalisation and use of new technologies**

Industrialisation of energy renovation is needed to reduce renovation costs and accelerate the renovation pace

Airbus A380 company

A380 financial operations

A380 Engineering

A380 Aircraft structure

Energy Renovation Facilitator

Risk sharing pool

Engineering & architecture firms

Cluster of energy renovation industries

Thank you for your attention

Efficiency First Framework combining investments-climate-energy provisions for buildings

To download the report click here

To access the executive summary in national languages, click here