



For ambitious and evidence-based climate and energy policies

LESSONS AND OPEN ISSUES FROM THE FIRST PERIOD OF EEO'S AND ALTERNATIVE MEASURES IN THE EU

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5 years!

5 years ago we took Schumacher's seminal "Small is Beautiful: A Study of Economics as if People Mattered" approach and established a small entity to target big issues. Now we are a knowledge hub of 16 interdisciplinary experts from all over EU.

A non-for-profit, independent research foundation working on science-based climate change mitigation, energy efficiency and renewable energy policy. Sharing pragmatic results & innovative ideas providing policymakers, and all private and public decision-makers, with independent expertise and science-based research to support their work towards the energy transition and a sustainable future.

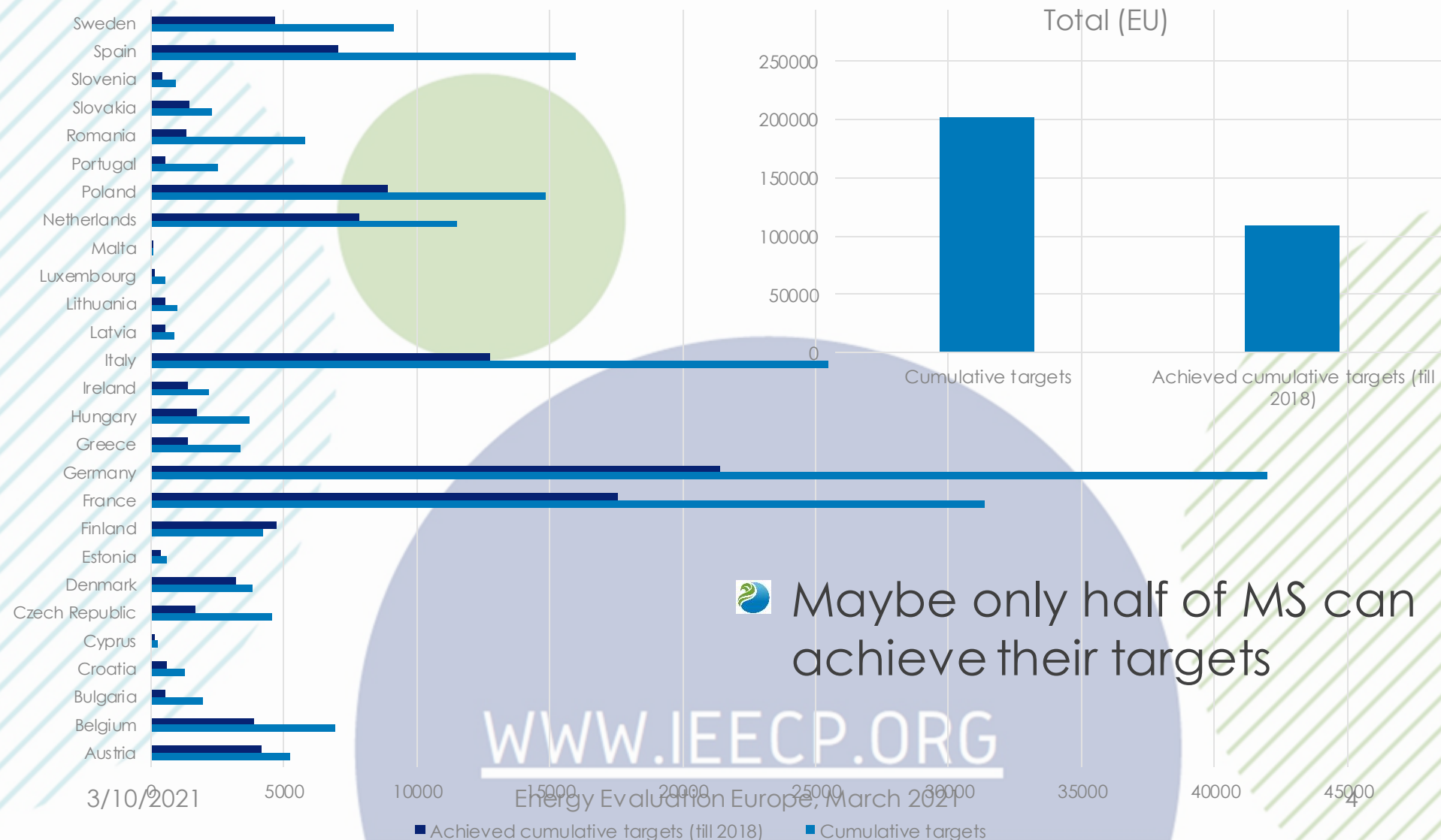
About 20 projects in 5 years

In
2019...



Status of Art7 EED implementation

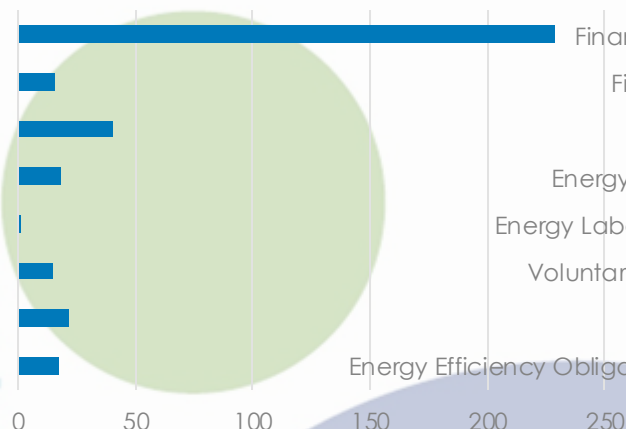
Achieved vs Cumulative targets



Types of policies

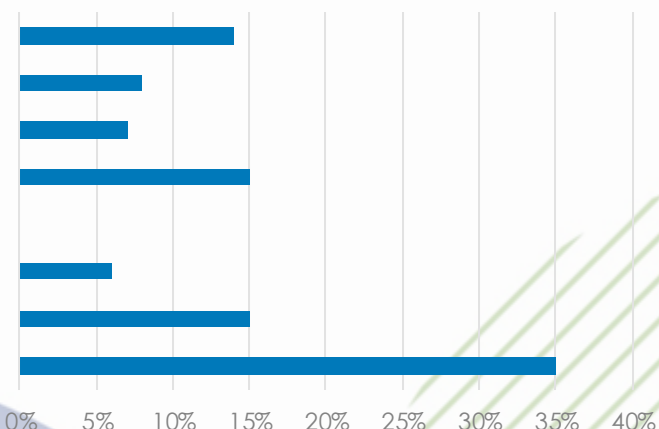
Number of policies under Art7 EED

Financing scheme
Fiscal Incentive
Other
Energy and CO2 tax
Energy Labelling Scheme
Voluntary Agreements
Standards
Energy Efficiency Obligation Schemes



% of savings from the Art7 EED policies

Financing scheme
Fiscal Incentive
Other
Energy and CO2 tax
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Energy Efficiency Obligation Schemes



- Energy Efficiency Obligations are a key instrument and can continue to deliver
- Financing Schemes – always accompanying the “difficult” sectors and investments
- Taxes are important but they should not be used to close the gaps...

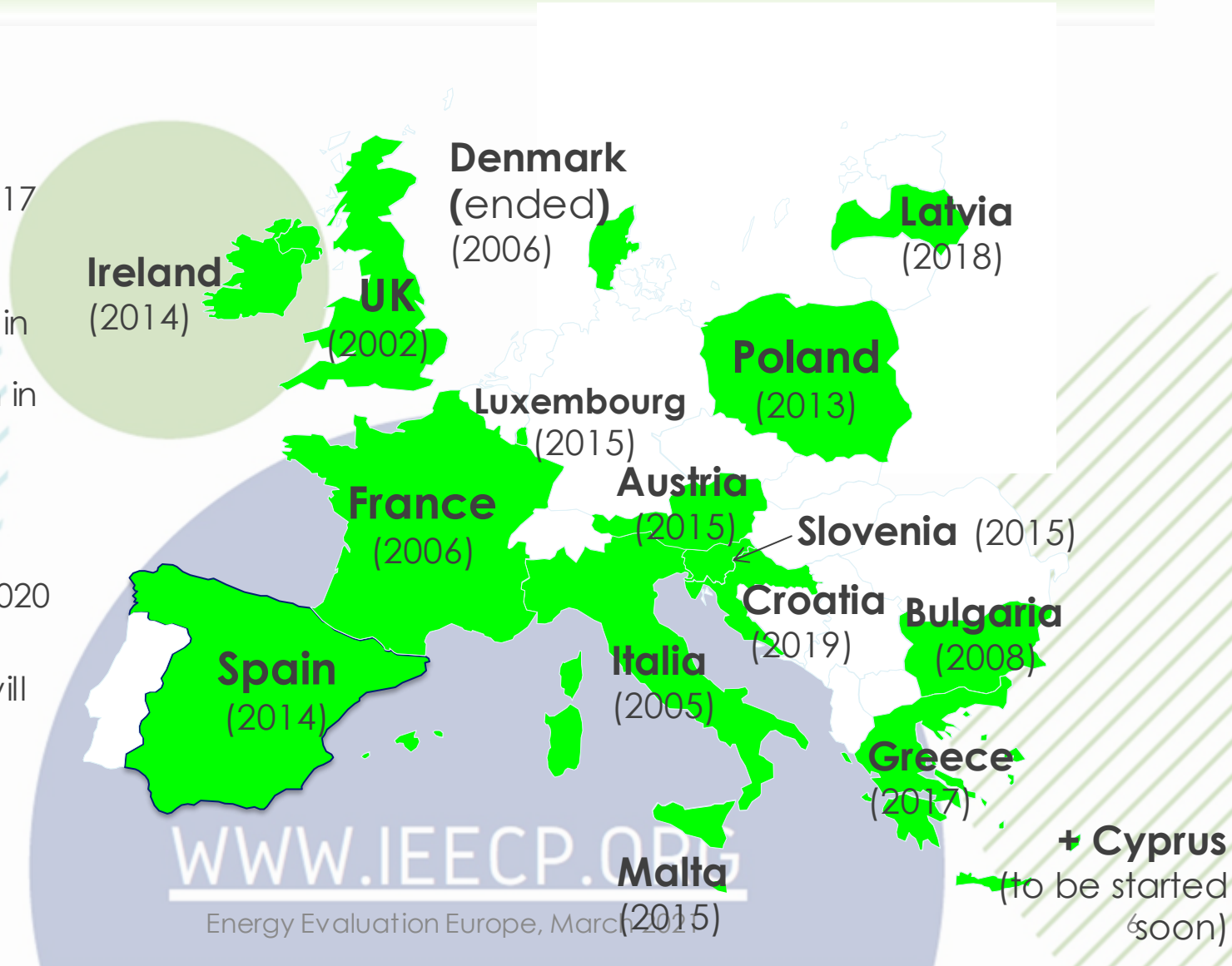
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Energy Efficiency Obligations

16 MS

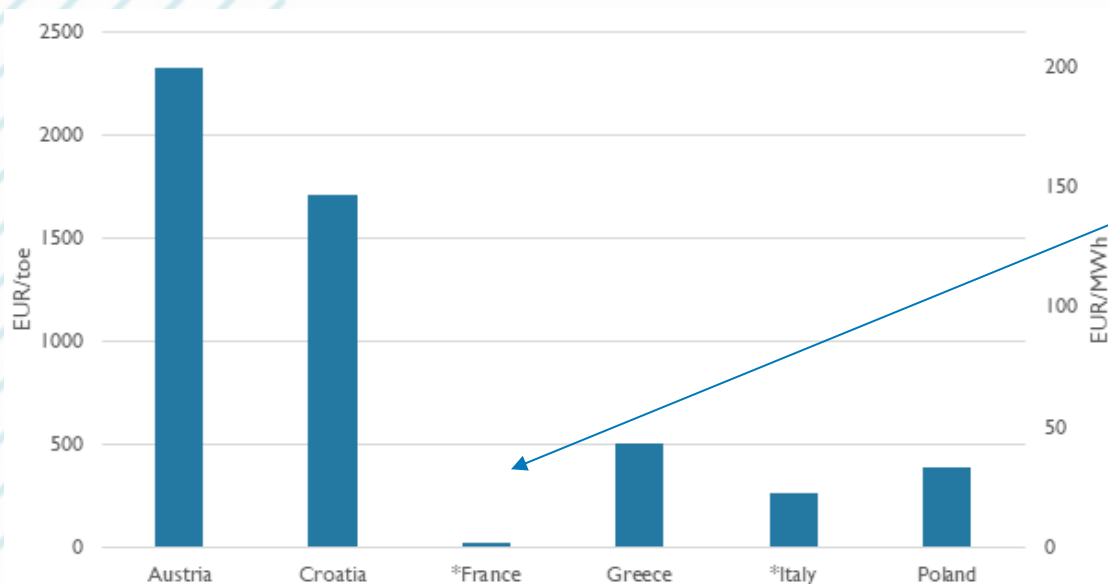
58% of the EU28 final energy consumption (2017 data)

- ✓ EEOS started in **Croatia** and **Latvia** + soon in **Cyprus**
- ✓ **Danish EEOS estimated to end** by December 2020
- ✓ Most of the other EEOS will likely be continued



Cost parameters of EEOs

Buy-out mechanism



This could be the outcome of the lifetime cumac savings

Buy-out or pay-to-save costs (for first-year savings *for Italy the value is in yearly energy savings and for France in cumulative yearly energy savings). (Source: survey conducted by KAPE)

 Multiplication factors that impact the obligation in EEOs

 Stringency of MRV requirements

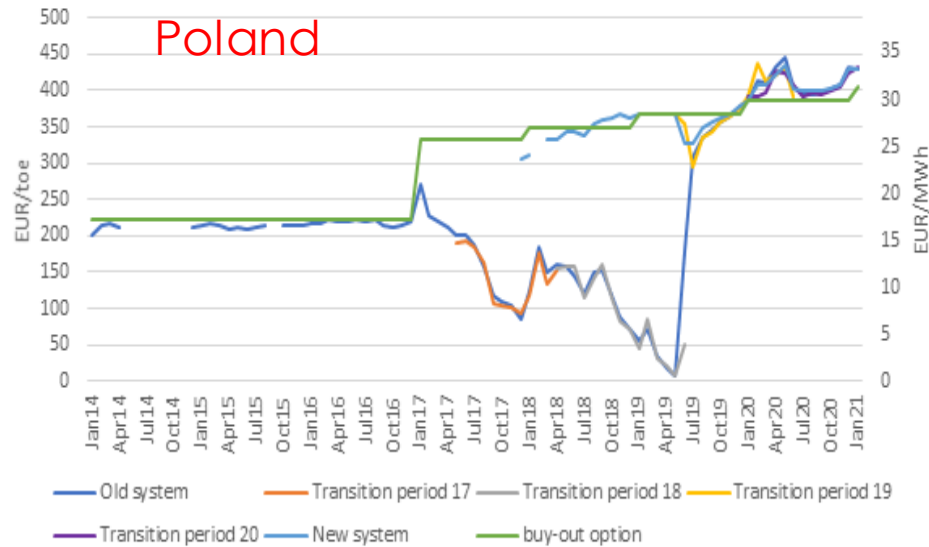
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Average costs of EEOs

MS	Investment Cost	Admin cost	Penalty
BG	519 €/MWh buildings, 297 €/MWh industry	N/A	Fine 510-2550€
PL	367.5 €/toe (avg cost of buy-out 2019)		<2m € (max 10% of income)
F	3-4 mrd € and cost 7-9.2 €/MWh cumac		1.5c € cumac
GR	N/A (ranging from 10k€/ktoe – main measure (50% of target) - for behavioural to 5m€/ktoe for renovation)	N/A	0.5m€ /ktoe
UK	754mGBP	70.7	Up to 10% of turnover
A	230 €/toe (based on buy-out)	800K€/y	50-100k €
IE	5.6€cents/kWh		X1.25 buyout price
IT		14m€ (2016)	Not defined ex-ante
ES	0.79M€/ktoe (based on contribution fee)		N/A
LV	70 €/MWh (contribution to Fund)		10.5c€ / kWh

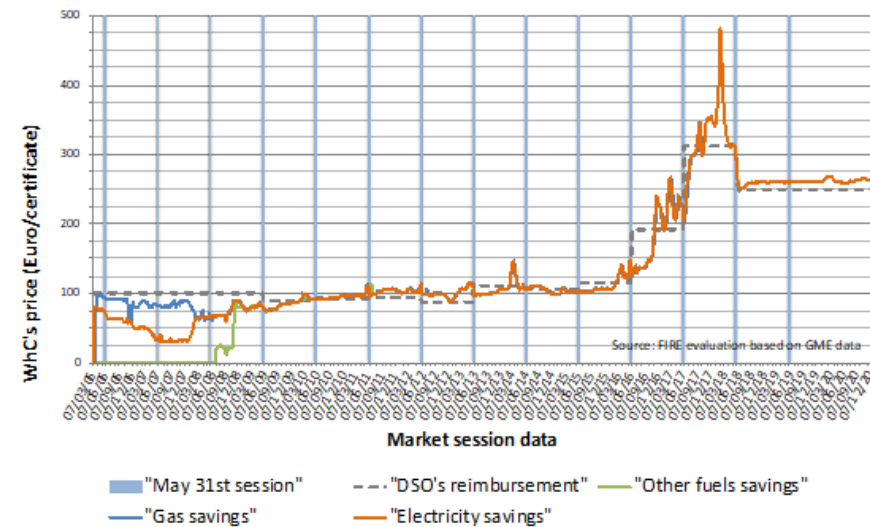
Certificate markets (shadow prices?)

Poland



Italy

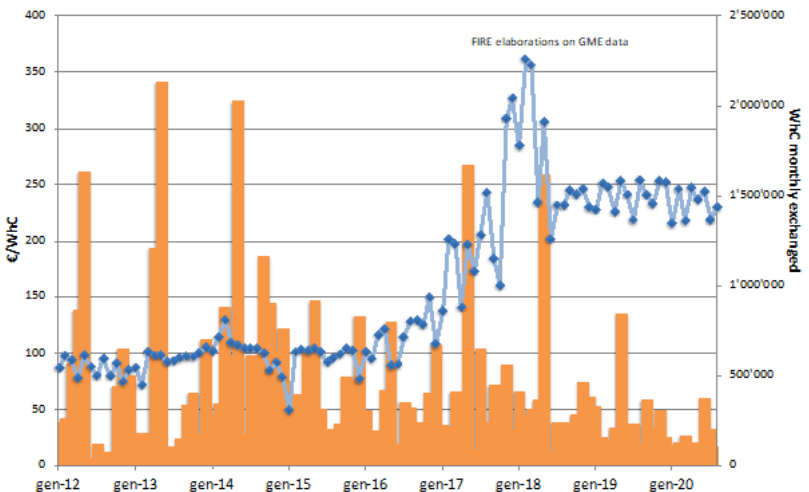
WhC market price trend



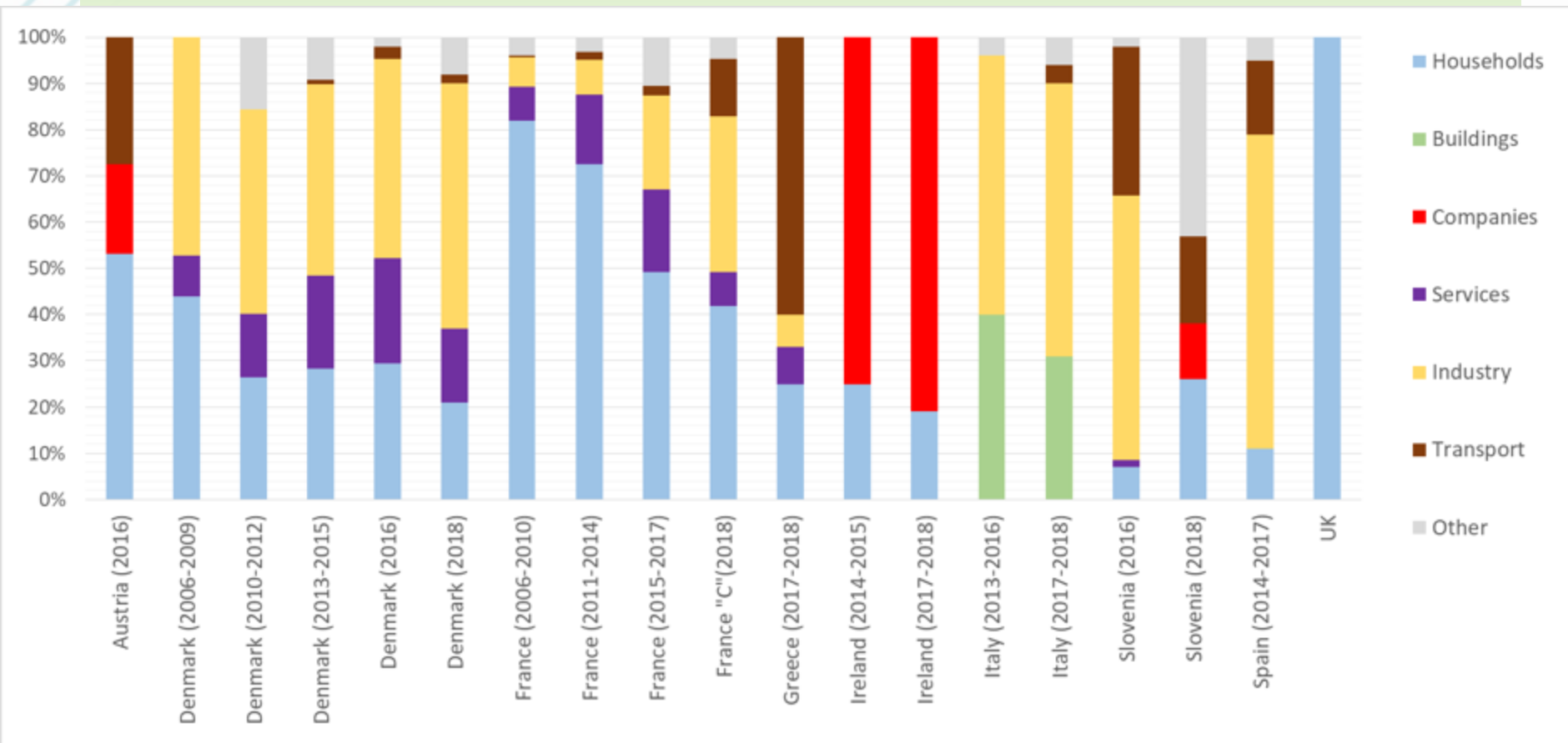
France



Price trend for bilateral agreements



Quality of measures



- Very different distributions from one country to the other
- Calculation methods / M&V rules might have an important influence

Lessons learned on EEOs

- Don't wait to start: no scheme can be perfect from its launch (cf. learning by doing), and it is not possible to come back in time to achieve savings!
- EEOs cannot do everything alone: synergies or complementarities with other policy measures are essential for a comprehensive EE strategy
- Don't underestimate the need in resources on the public authorities' side
- Be aware of possible distributional effects (between and within sectors)
- High targets = high needs in controls (+ taking into account the whole chain of contractors)
- Verifying the achievements is important. Knowing the costs as well. And identifying the impacts should even engage in a broader view.
- Learning effects on all sides (public authorities, obligated parties and third parties) □ improved processes, increased quality
- Whatever the calculation methods, provide clear guidelines
- Numerous small projects = need for standardized procedures
- Need of quick feedback loops and to be very reactive to correct unforeseen flaws
- Involving small energy companies can be time-consuming (vs. small share of savings) □ optimizing the scope of obligation

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Taxation measures

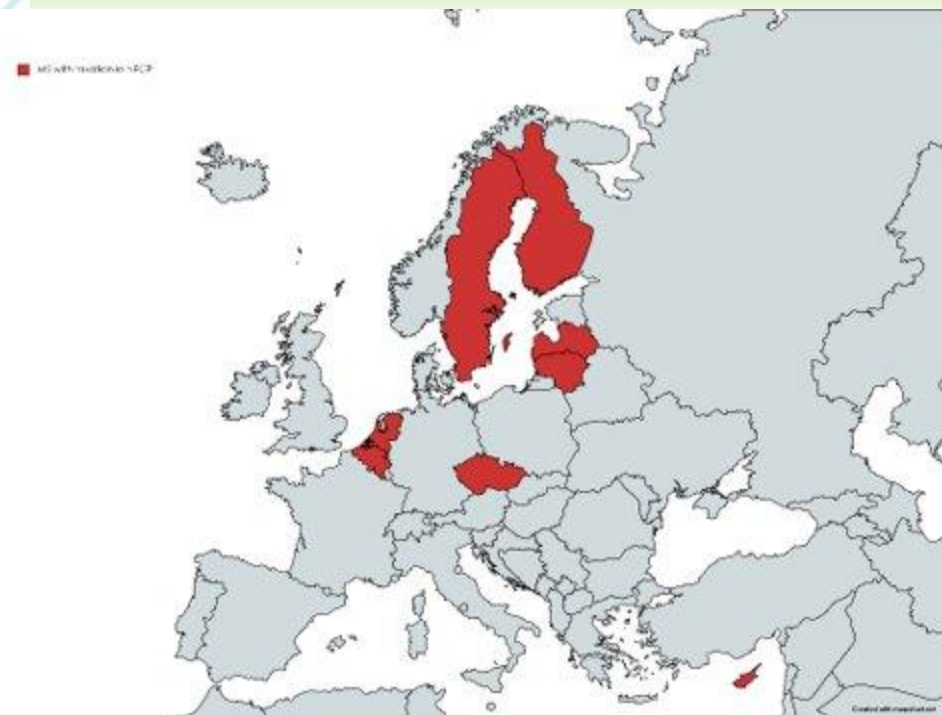


Types of taxation

- General energy taxation covering all sectors
A, BE, CY, CZ, DE, EE, GR, ES, H, LV, NL, SE, (UK)
- Taxation on transport fuels
FI, LT, MT

- Contribution of taxation measures differs substantially from 75% in cumulative savings (CY, ES, SE) to <20% in most MS
- Energy taxes were reported in their majority early enough as taxes with clear objectives (energy/energy efficiency) with only few exceptions
- Energy and CO2 taxes in some cases introduced recently as an alternative measure to close the gap in energy savings from incumbent measures
- Interactions with other policies under Art7 exist, mainly with grants and subsidies in related sectors and fewer with Energy Efficiency Obligations (EEOs)

Taxation measures (NECP)



Member State	Cumulative savings 2021–2030
Belgium	677
Cyprus	4.07 / 93.3 / 199.6
Czech Republic	0.5 / 20
Finland	55.26
Lithuania	21.6
Latvia	540
Netherlands	N/A
Sweden	172.2

- Fewer MS make use of taxation measures (up to now)
- The longer term horizon of the target allows more possibilities for using more measures or for strengthening the existing ones (such as EEOs?)

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Elasticities in taxation measures

How to calculate elasticities?

- 🌐 Direct estimation: Study for short (1-2 years) and long term (15-20 years) estimates/ modelling scenarios/ national verified databases/ inclusion of parameters (income, prices, other measures, seasonal effects, autonomous efficiency improvements, etc)
- 🌐 Indirect estimation: Regressions from academic literature results, particular sector in another (similar) country/ justifications are required

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Elasticities

Member State	Short run elasticities	Long run elasticities
Austria	X (WIFO-DYNC model)	-
Belgium	0.18 (cost of km travelled and distance – no price)	-
Cyprus	-0.1 (cement), -0.1 (rest of industry), -0.1 (residential), -0.05 (services)	N/A
Czech Republic	-	Time series 2001–2017
Germany	-0.2 (gas), -0.2 (electricity), -0.2 (heating oil), -0.25 (diesel and gasoline)	N/A
Estonia	-0.26 (gas), -0.18 (electricity), -0.2 (district heating), -0.26 (petrol), -0.26 (diesel)	-
Greece	-0.51 (heating oil), -0.31 (diesel), -0.41 (gasoline), -0.31 (LPG)	-
Spain	-0.236 (res electricity), -0.055 (services electricity), -0.073 (industrial electricity), -0.2 (residential gas), -0.203 (services gas and industrial gas)	
Finland	-0.12 (petrol), -0.11 (diesel)	-
Hungary	Not available	
Lithuania	-0.58 (petrol), -0.26 (LPG) – source provides other values	-
Latvia	Not available	
Malta	-0.16 (petrol transport), -0.21 (diesel transport), -0.2 (gasoil heating), -0.44 (LPG heating)	(unclear if only short-term elasticities would be used)
Netherlands	-0.15 (Residential electricity), -0.1 (gas)	-
Sweden	-0.58 (Gasoline), -0.17 (diesel), -0.07 (electricity)	-1.09 (gasoline), -0.4 (diesel), -0.5 (electricity)
United Kingdom	-0.2 (industry)	-0.47 (industry), -0.3 (services)

Calculation of savings in taxation

- 🌐 Elasticities should account for “net” effects of the change in prices
- 🌐 Counterfactual scenarios
 1. Bottom-up: estimation of granular estimates of energy use or energy savings and on the multiplication of these granular estimates up to the total level of the affected population
 2. Extrapolation of trends observed before the intervention: Past trend to evaluate the changes over time
 3. Comparison with similar (regional or national) markets where the policy measure is not introduced
- 🌐 Important: counterfactual should ensure that the energy savings that are estimated are directly attributable to the adopted taxation measure, taking into account energy savings from accompanying taxation policy instruments and beyond the EU minimum
- 🌐 ALTERNATIVE: Decomposition analysis (disentangling of the effects of individual policies in sub sectors and end uses)

Upcoming challenges

- Learning effects on all sides (public authorities, obligated parties and third parties) □ improved processes, increased quality
- Whatever the calculation methods, provide clear guidelines
- Numerous small projects = need for standardized procedures
- Need of quick feedback loops and to be very reactive to correct unforeseen flaws
- Involving small energy companies can be time-consuming (vs. small share of savings) □ optimizing the scope of obligation
- Link with ETS review – role of Art7 EED in the EED review and future period (issues on energy poverty, cost-effectiveness, MRV schemes, transport sector?)

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H2020 ENSMOV and STREAMSAVE projects

- Comprehensive needs assessment and gap analysis
- Resources related to policy implementation and MRV
- Proceedings of conferences, workshops and webinars
- Policy reports at national level
- Policy recommendations on the implementation of EED art. 7
- Guidelines for policy makers and stakeholders involved in policy design and implementation

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Thank you!