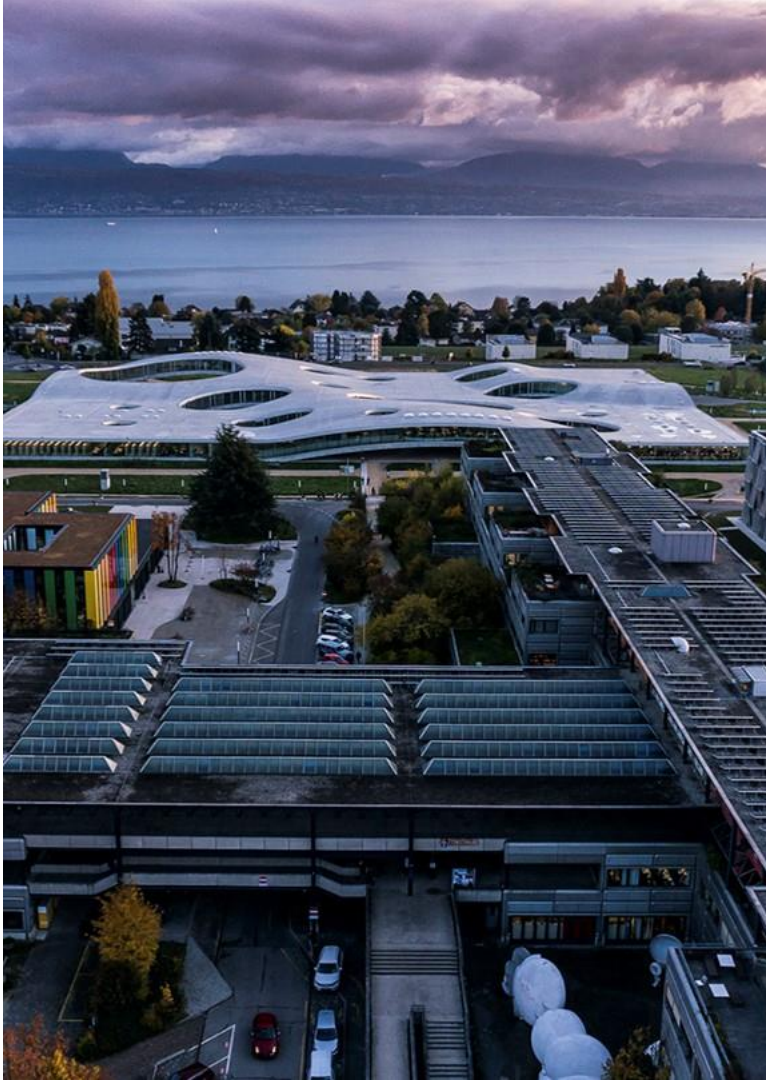




Assessing the 2012 European Union Energy Efficiency Directive

ENV-274: Climate Economics for
Engineers

Michel Zimmermann

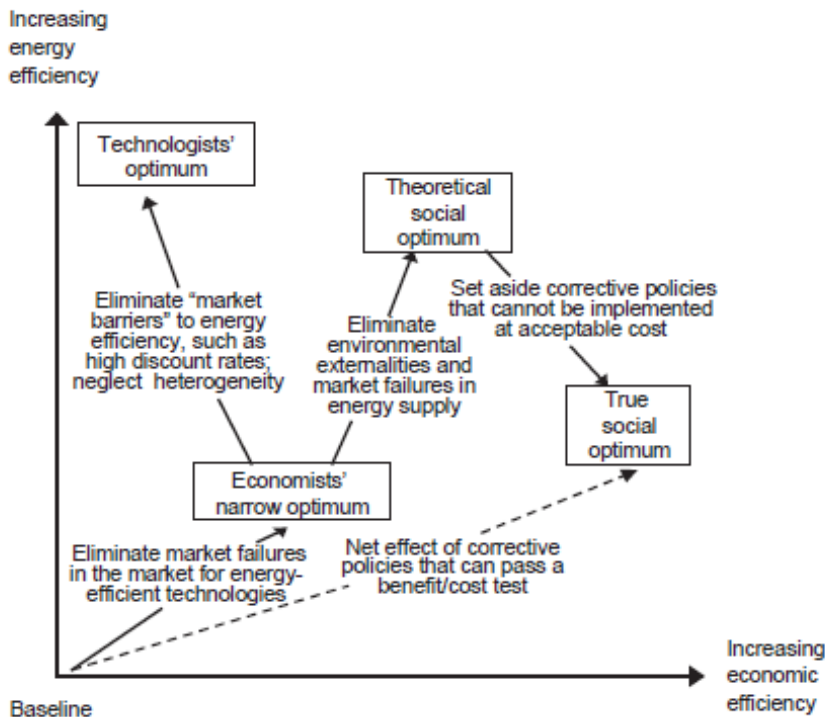
December 2nd, 2020

Energy Efficiency

- (Energy) Efficiency is an important economic driver
- The rebound effect
- Energy efficiency gap

Market failures

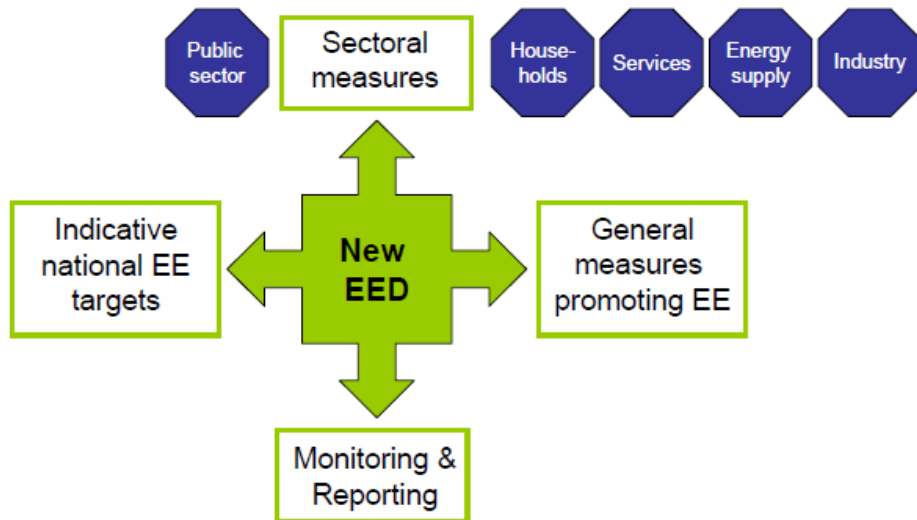
- Information asymmetry
- Liquidity constraints
- Environmental externalities
- Market barriers



Source: Jaffe, Newell and Stavins, 2004

The European Union Energy Efficiency Directive

This Directive establishes a common framework of measures for the promotion of energy efficiency within the Union in order to ensure the achievement of the Union's 2020 20 % headline target on energy efficiency and to pave the way for further energy efficiency improvements beyond that date.



Source: European council for an energy efficient economy, 2013

The European Union Energy Efficiency Directive

i

Energy efficiency obligation scheme for each Member State to achieve at least **1.5% annual energy savings (Art. 7)**

ii

Requirement for establishment of a **National Energy Efficiency Action Plan (NEEAP)** for each Member State, every 3 years

iii

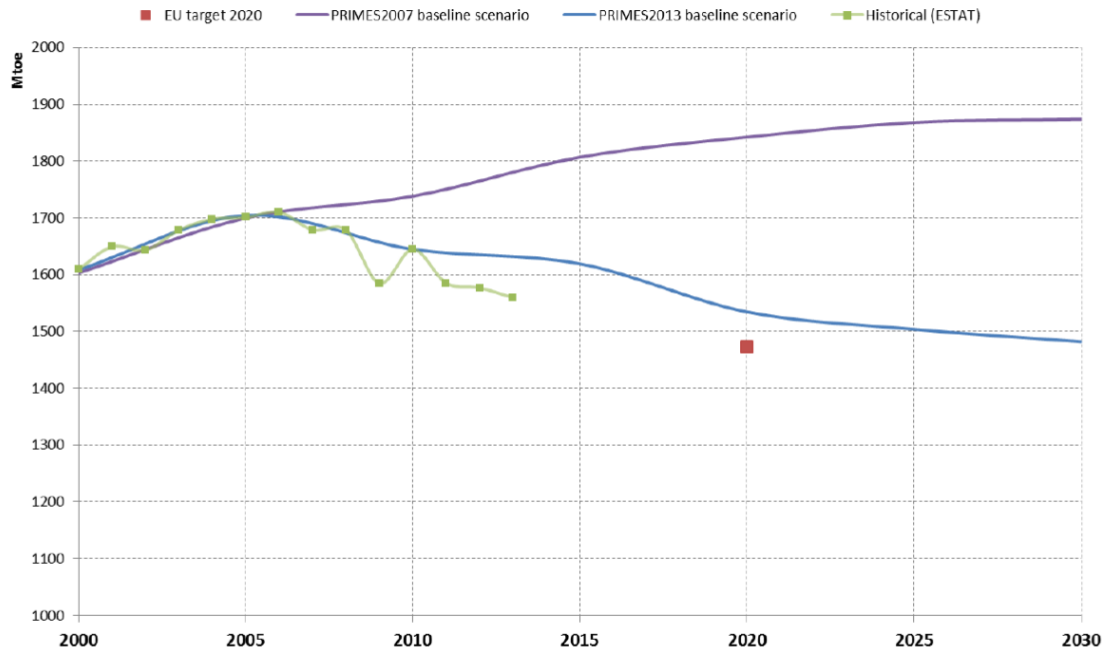
A long-term renovation strategy for **public** and **private** buildings

iv

A range of measures to overcome **information asymmetry**:
Energy audits, energy management systems, metering and billing information

v

Increasing efficiency of **energy supply**

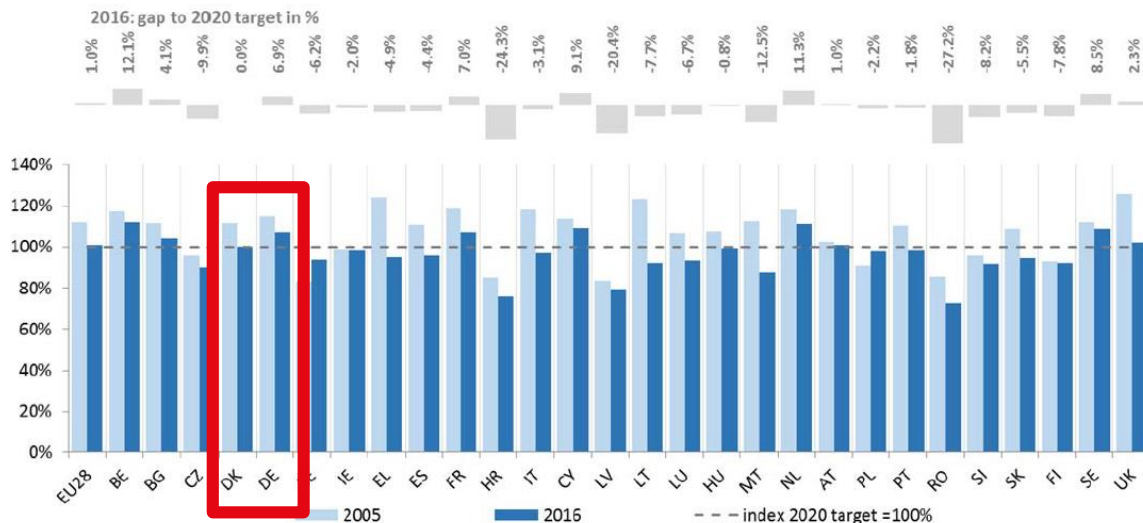


Source: Economidou et al., 2016

- In 2013, the EED was expected to fail the 20% target
- Big **differences** between Member States, both in terms of chosen measures and impacts thereof
- **Market-based approaches** and **financial and fiscal measures** were the most important contributors
- Residential and service sectors contributed most

Second National Energy Efficiency Action Plans

- In 2016, the Member States collectively were **missing** the primary energy savings goal **by 3.5%**, while the final energy savings target was **in reach**
- Financial support and fiscal measures still remained among the most important measures, even though the range of different measures was very wide



Source: Economidou et al., 2018

Comparison: Germany vs. Denmark

Germany:

Goals

- Primary energy consumption decrease of **20% w.r.t to 2008**

Most important measures

- Energy and electricity tax
- Renewable Energy act
- Network usage charges

Denmark:

Goals

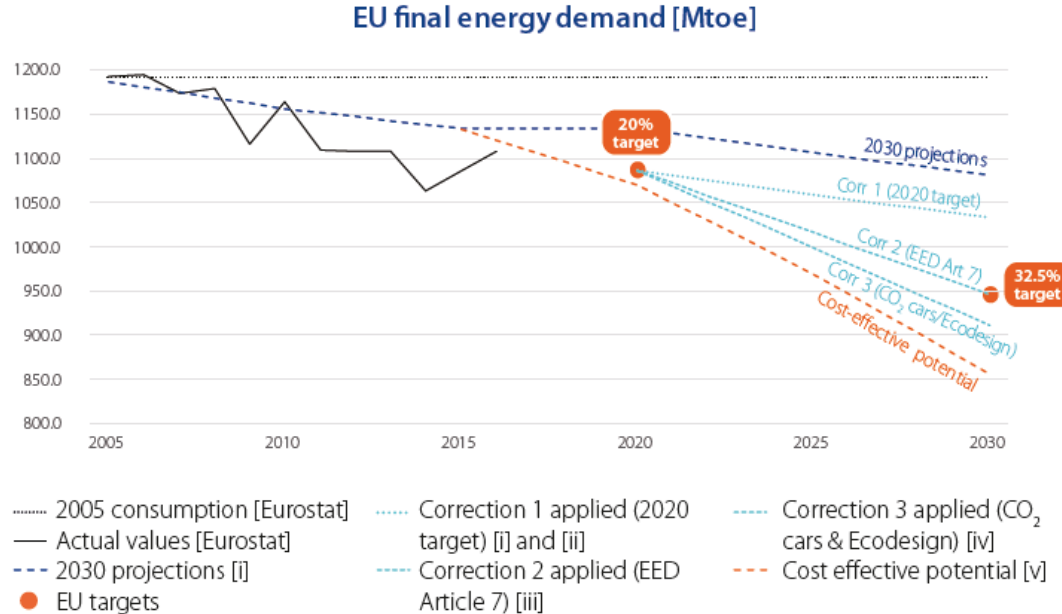
- **12.6% w.r.t to 2006** for primary energy consumption

Most important measures

- Energy efficiency obligation scheme
- Building renovations, including upgrade of energy performance requirement

Amendment to the Energy Efficiency Directive (2018)

- Designed to ensure the continuation of energy efficiency improvements beyond 2020
- Increased target to **32.5% reduction by 2030**



Source: The Coalition for Energy Savings, 2018

Will the EED be seen as a success story?

Conclusion

- The final impact of the EED on EU energy use remains to be seen
- However, the majority of the Member States appear to be missing their target
- Nonetheless, energy efficiency will remain an important factor in the European Green Deal

How do energy efficiency policies compare to alternative policies (e.g. a CO2 tax)?

- From an economic and environmental point of view, a CO2 tax is to be preferred, as it is more efficient
- However, from a political point of view, energy efficiency is a popular approach, as it drives economic growth, while reducing energy use and emissions

Thank you for your attention!