December 2019

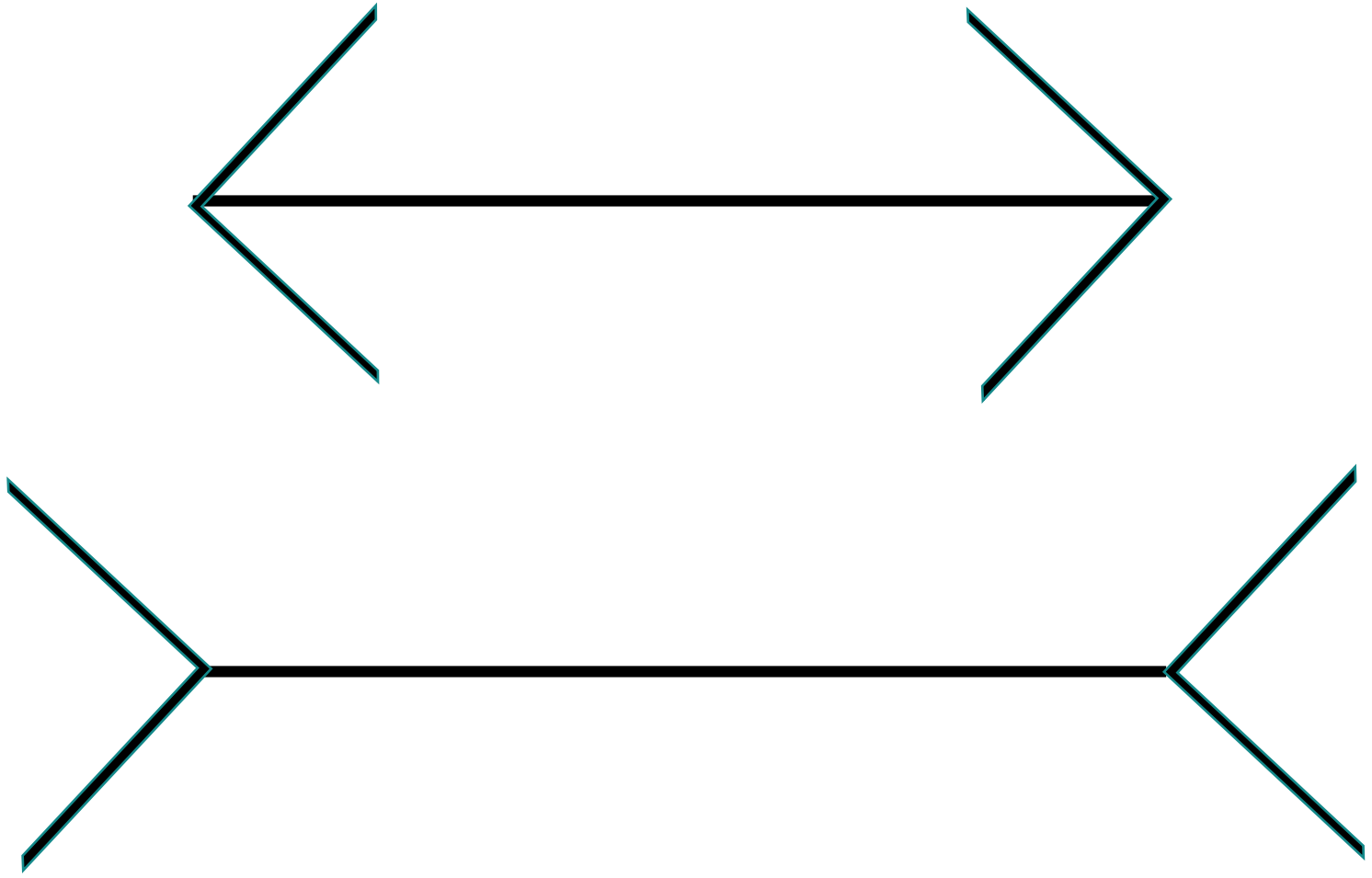
Best practices on EEOs: Testing the robustness of existing guidance

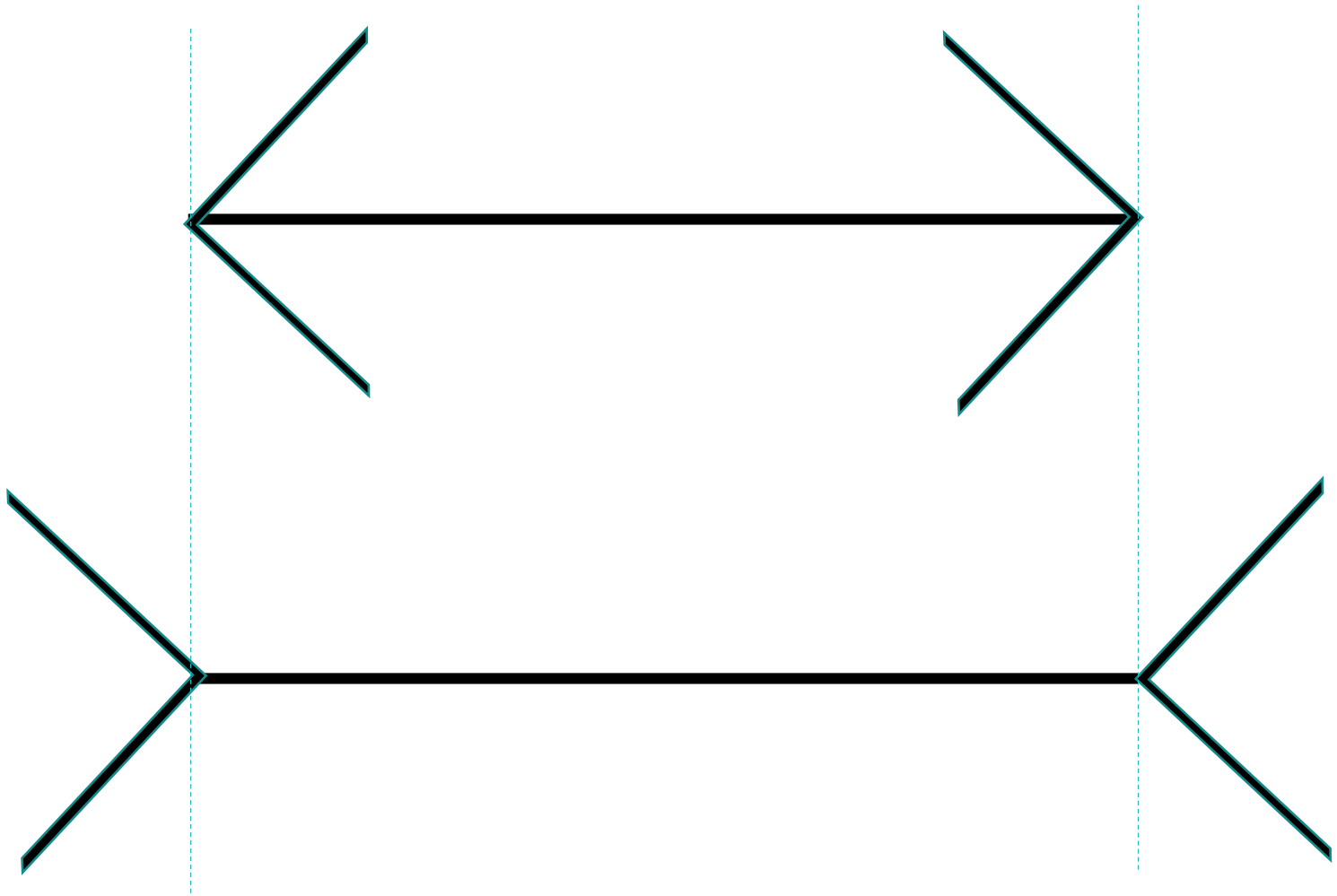
IEA/RAP workshop, Paris, 10 December 2019

Dr Jan Rosenow
Director of European Programmes
The Regulatory Assistance Project (RAP)®

Rue de la Science 23
B-1040 Brussels
Belgium

+44 7722 343137
jrosenow@raponline.org
raponline.org





1 EEOs in a changing context

INTERNATIONAL ENERGY AGENCY

INSIGHTS SERIES 2017

Market-based Instruments for Energy Efficiency

Policy Choice and Design

RAP Energy solutions for a changing world

Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes

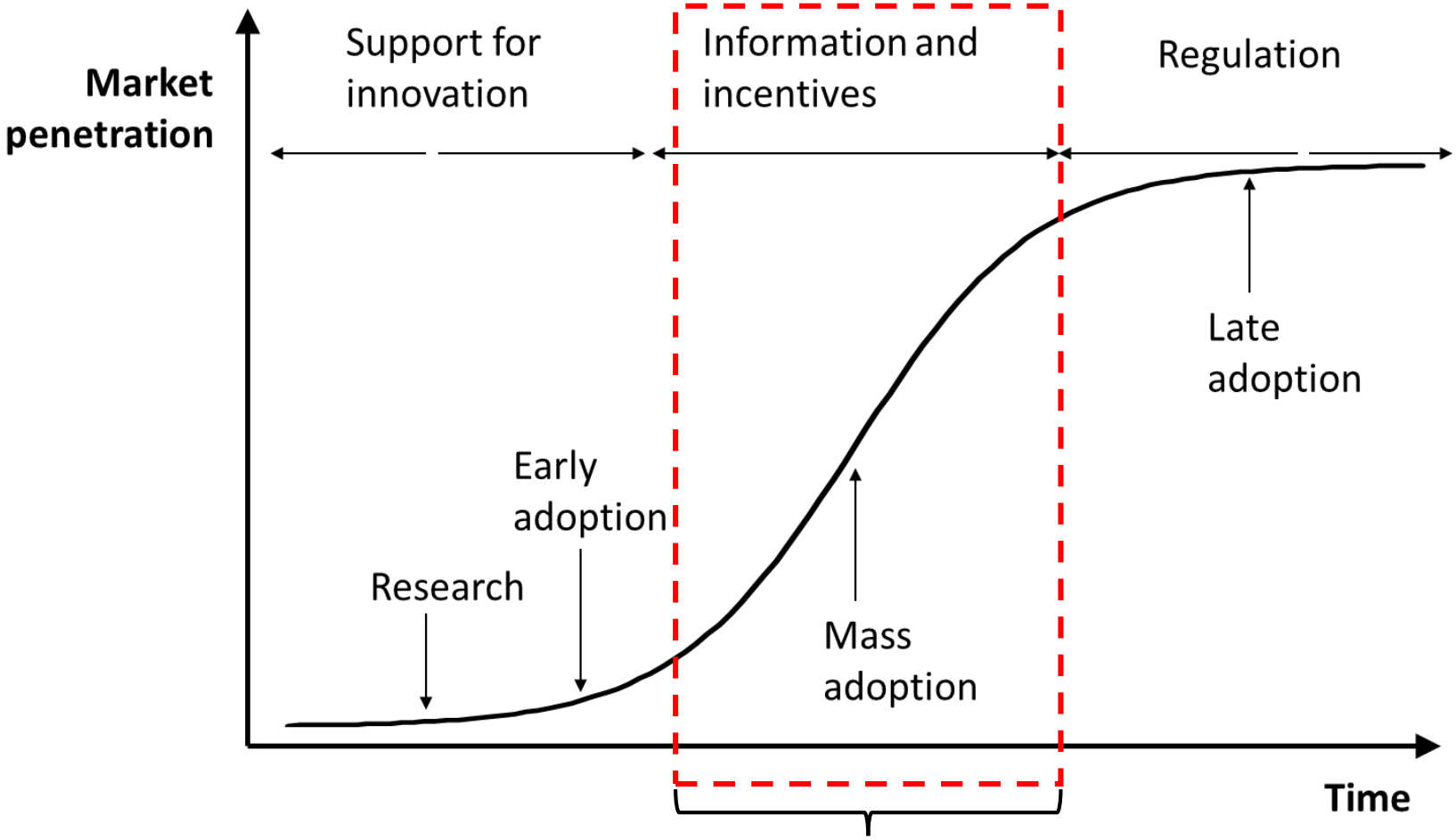
Research Report
Task XXII of the International Energy Agency
Demand Side Management Programme

Report prepared by:
The Regulatory Assistance Project

ieadsm energy efficiency

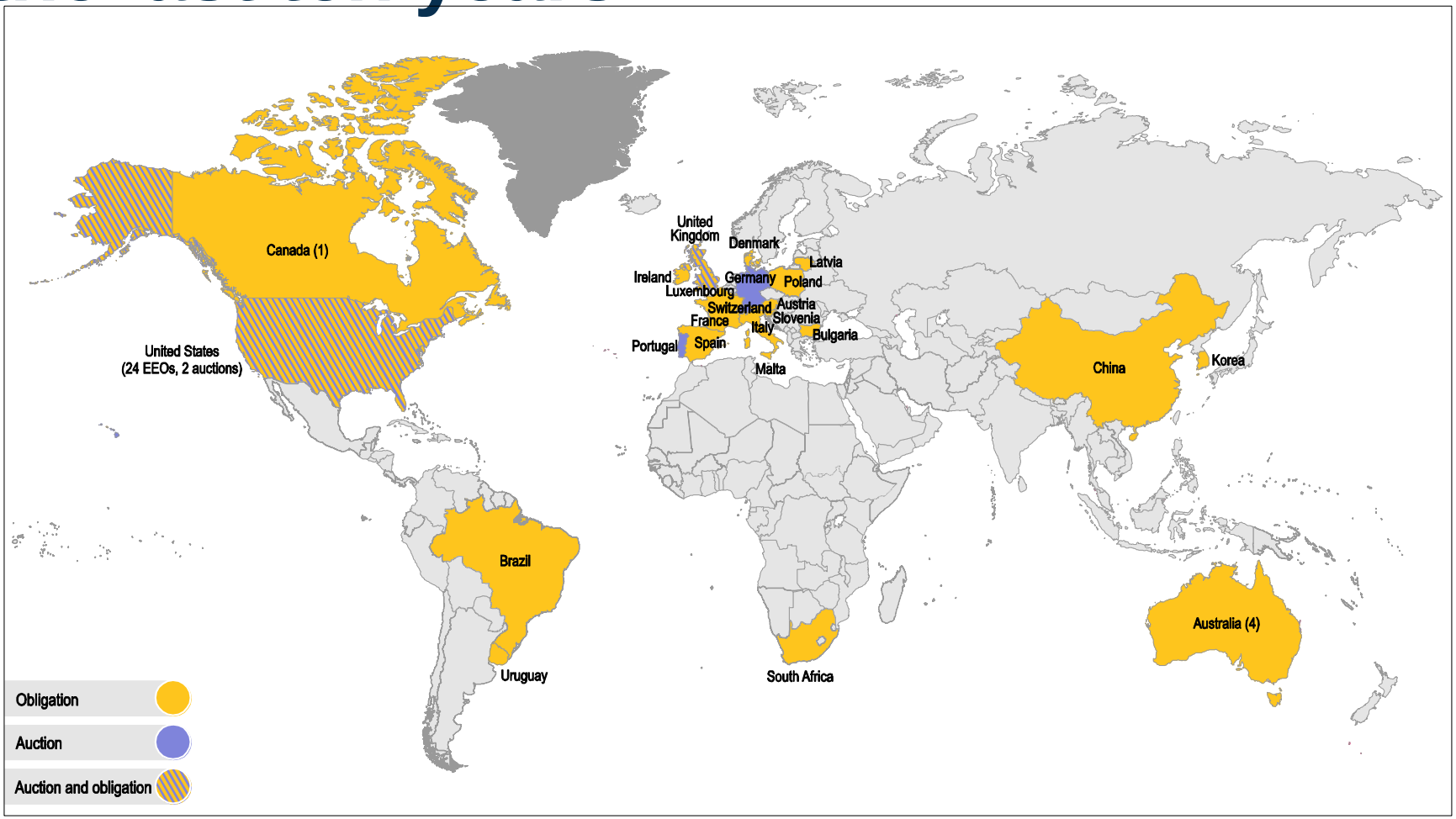
June 2012

Market transformation and EEOs



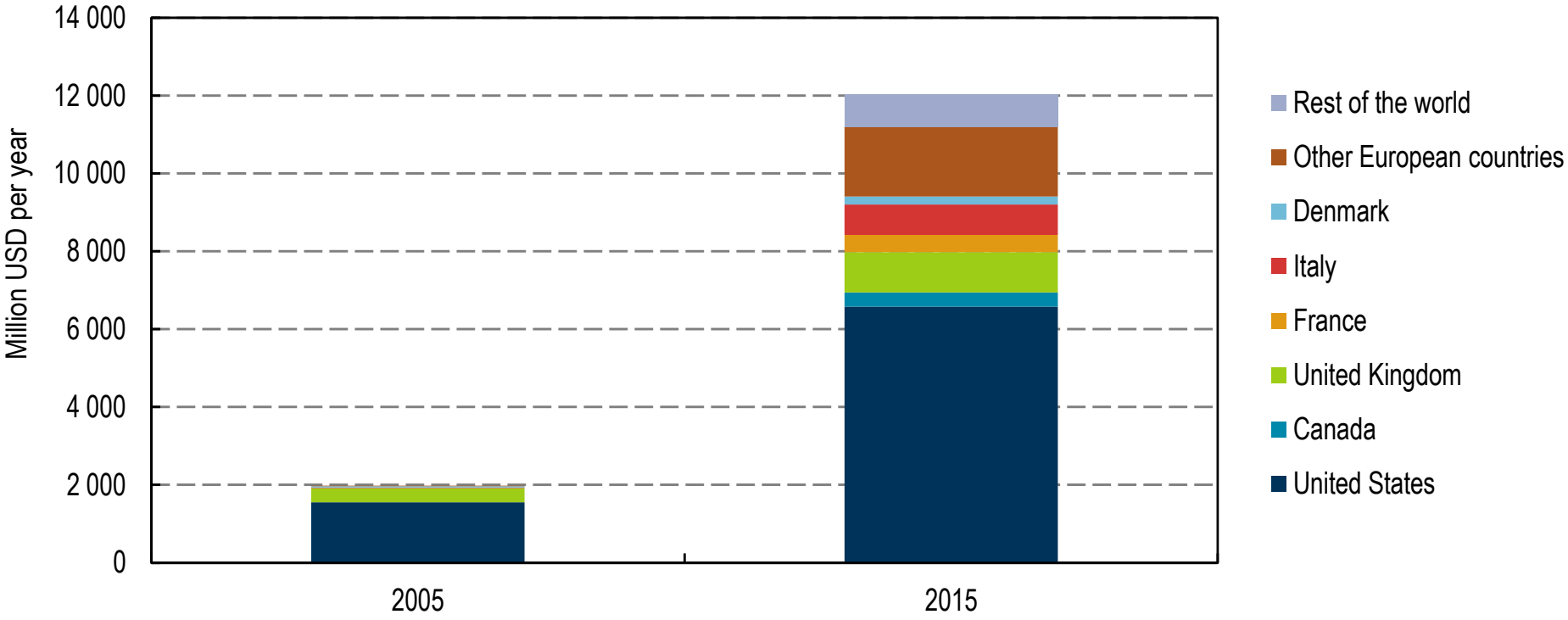
Source: Rosenow et al. 2015

Number of EEOs has quadrupled over the last ten years



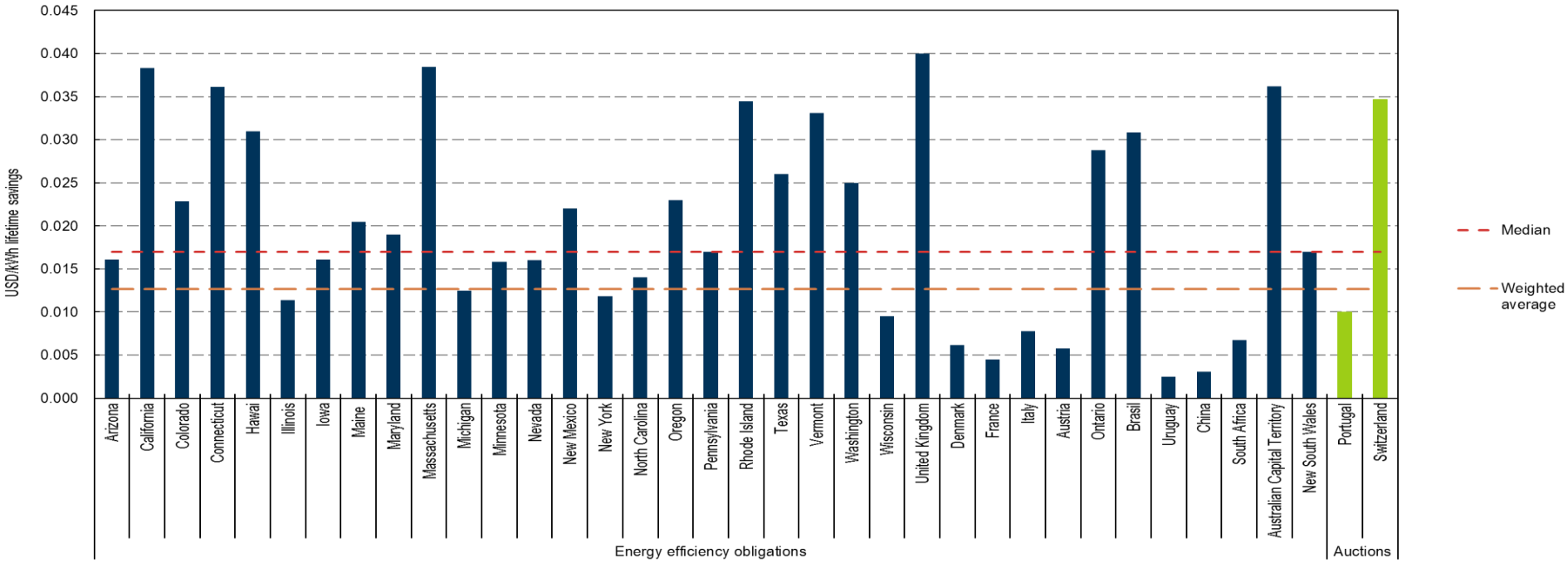
This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

Rise of public investment through EEOs



Available data indicates that EEOs are cost-effective

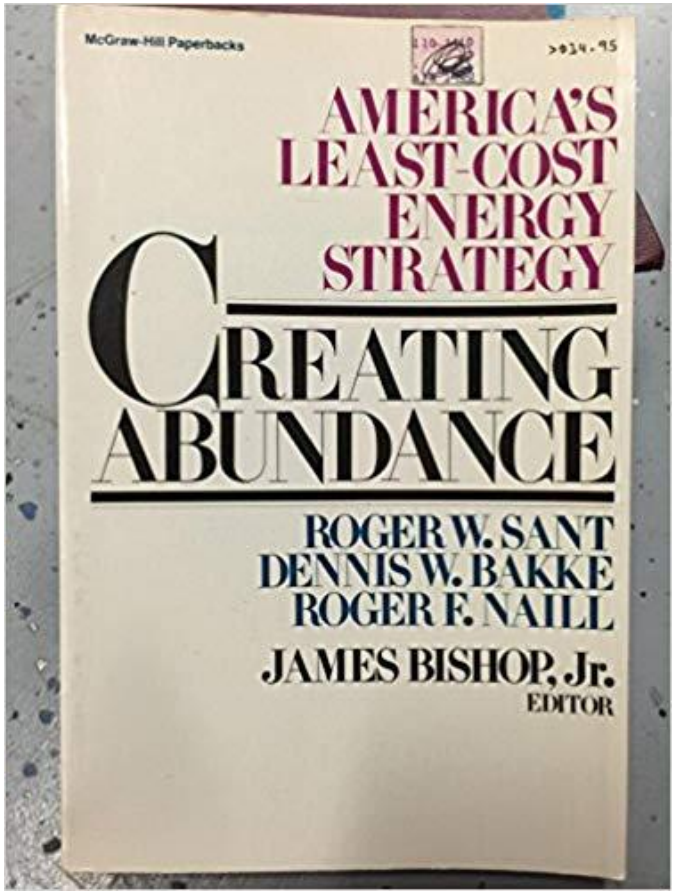
Expenditure by obligated parties and payments to auction winners per unit of energy saved



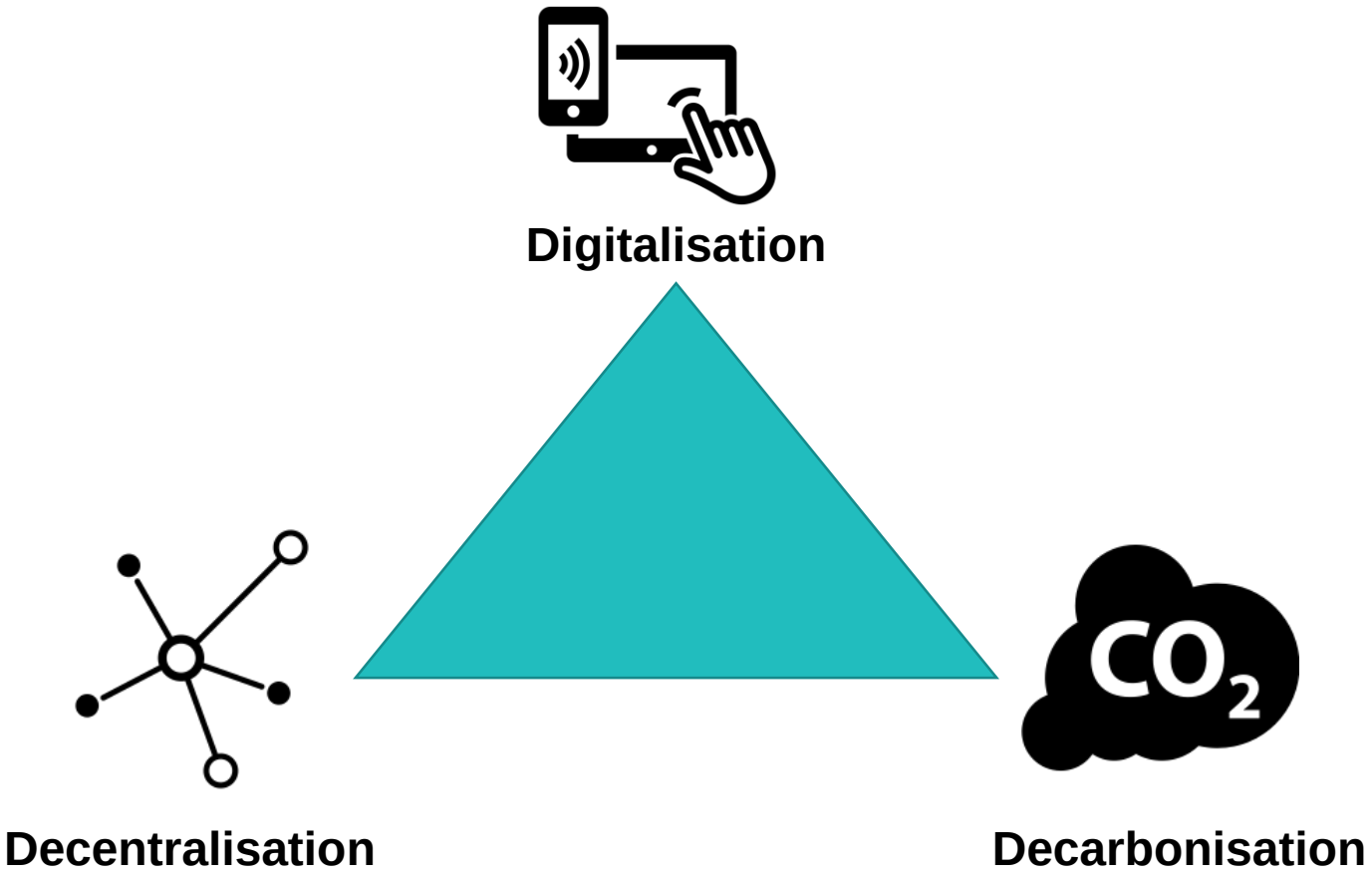
Regul

Origin of EEOs: Least Cost Planning

- **Process:** electric utilities evaluate the costs, benefits, and risks of different resources for meeting electric power demand
- **Goal**: arrive at the mix of resources that will meet future demand at the lowest cost while still providing reliable electric service

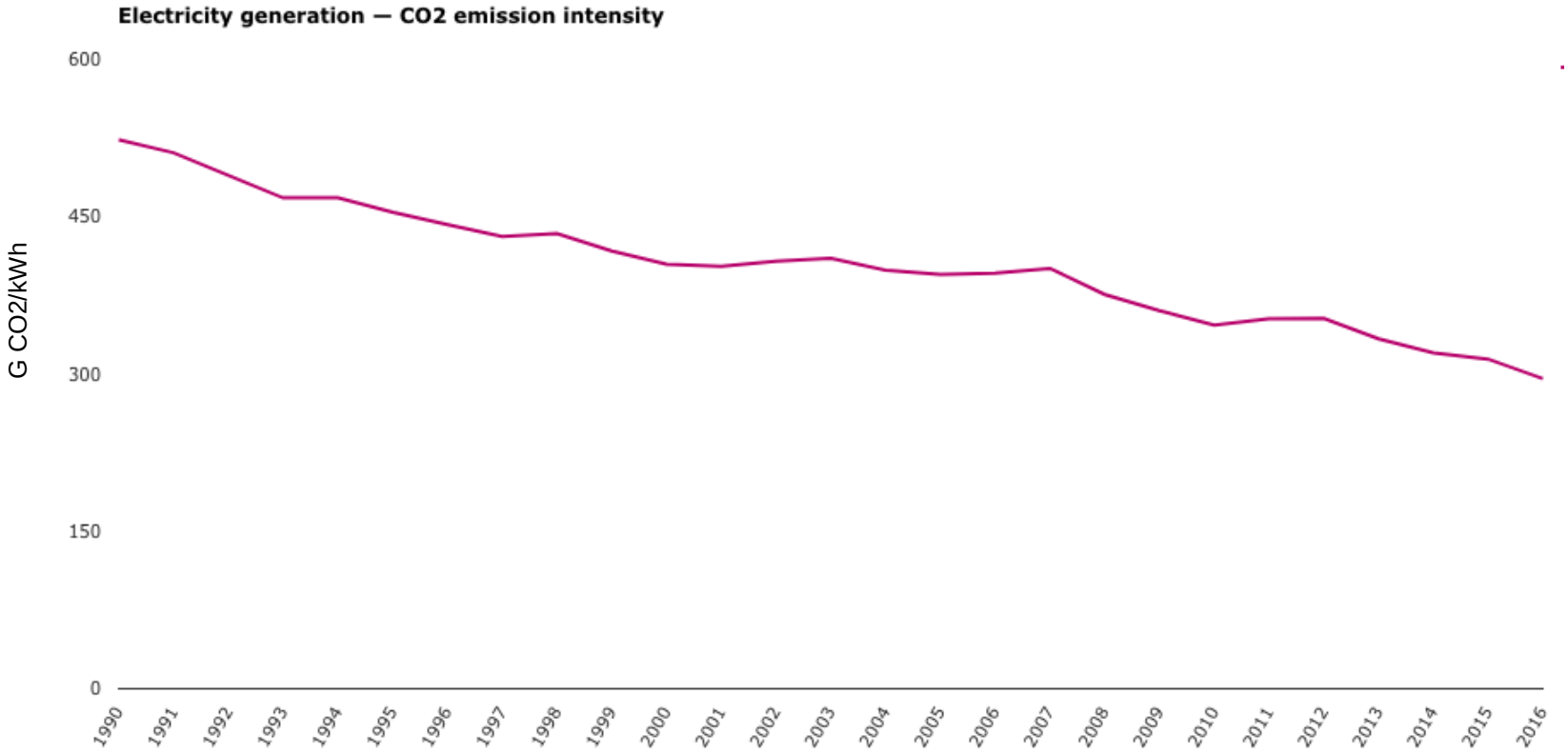


Changing context - the 3 Ds



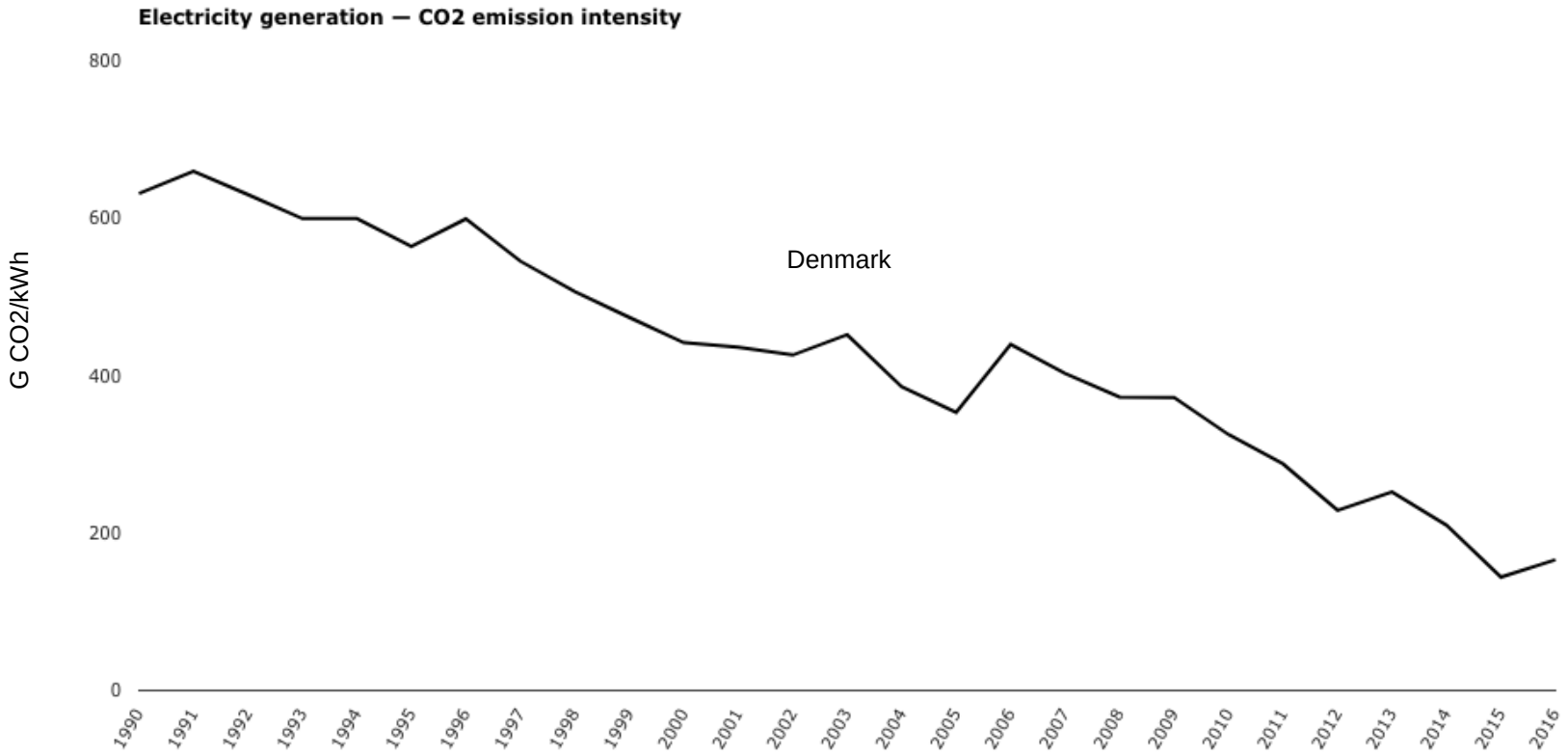
2 Decarbonisation

Electricity is getting cleaner – example EU-28 average



Source: EEA 2018

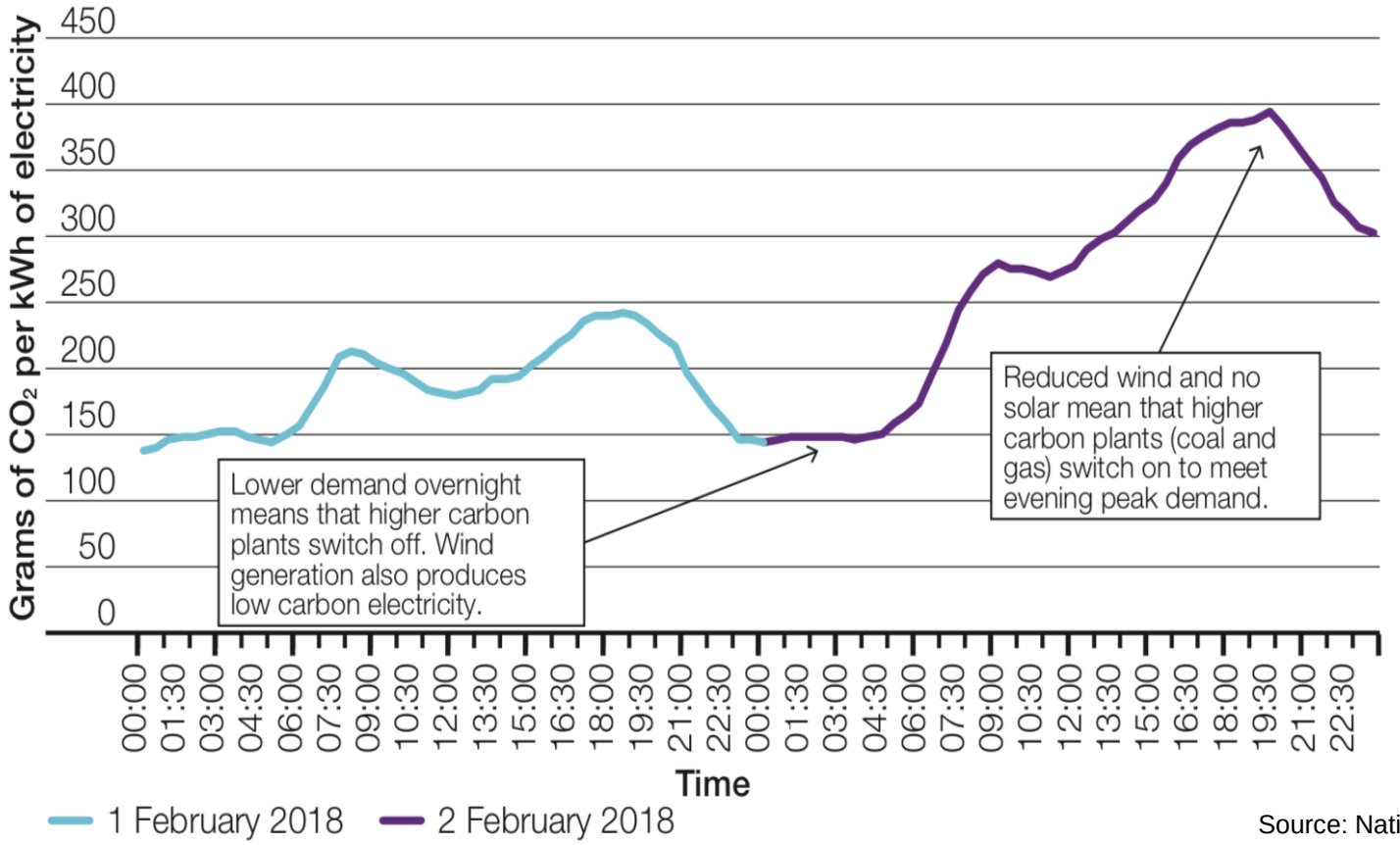
...and in some countries now cleaner than natural gas



Source: EEA 2018


30

Emissions vary across the day – example from the UK



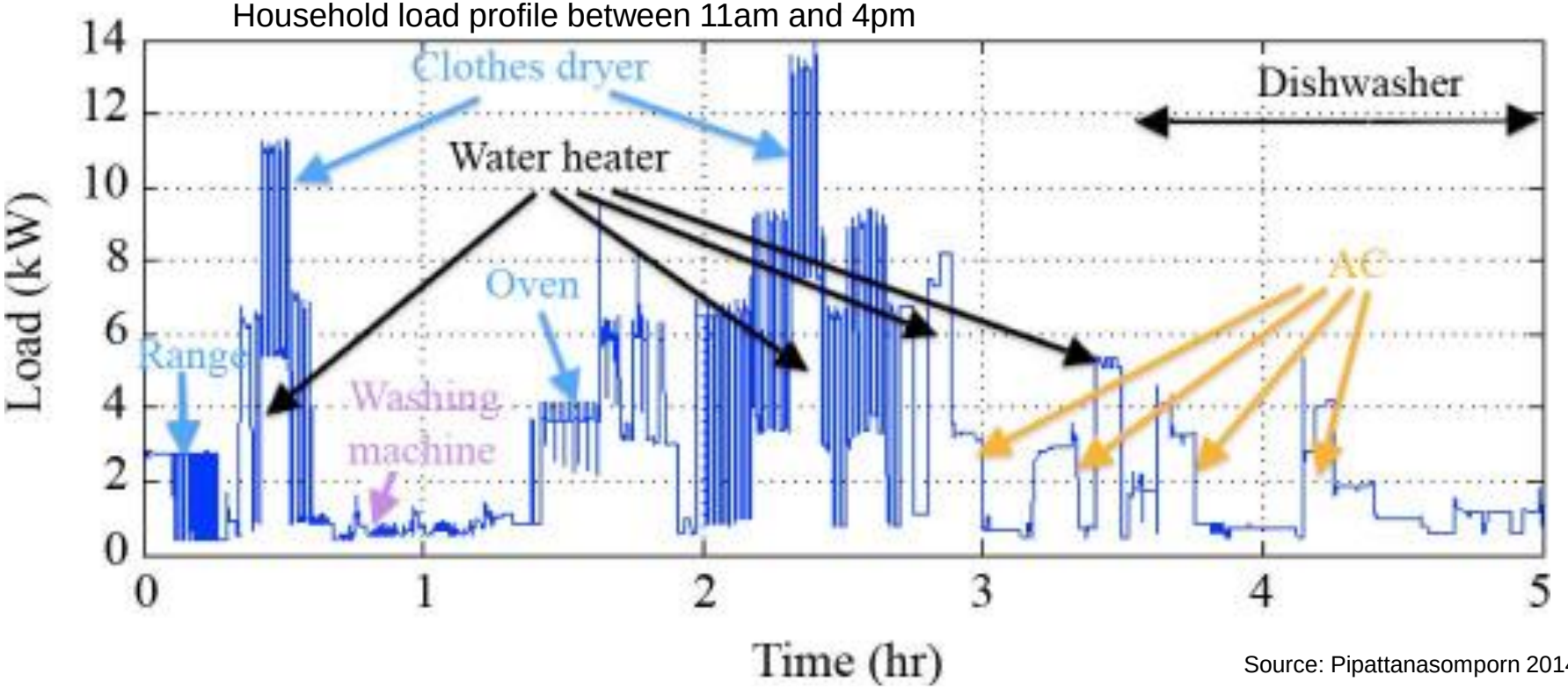
Source: National Grid 2018

3 Digitalisation


kWh

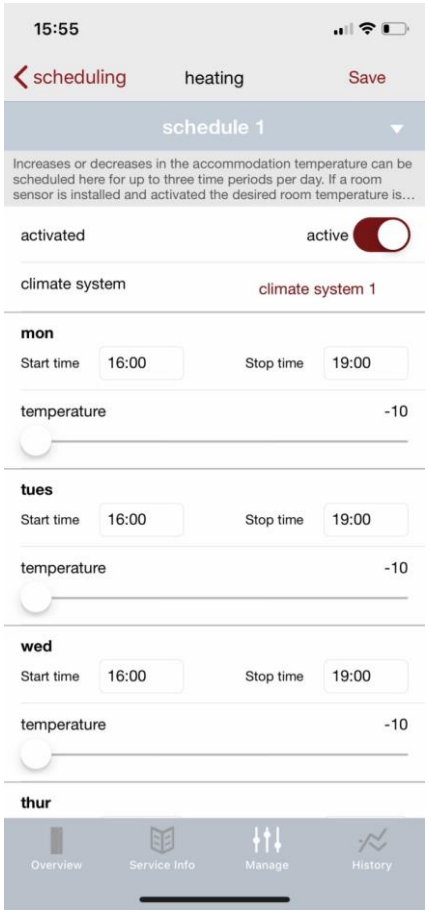
Digitalisation demonstrates the time-specific nature of EE

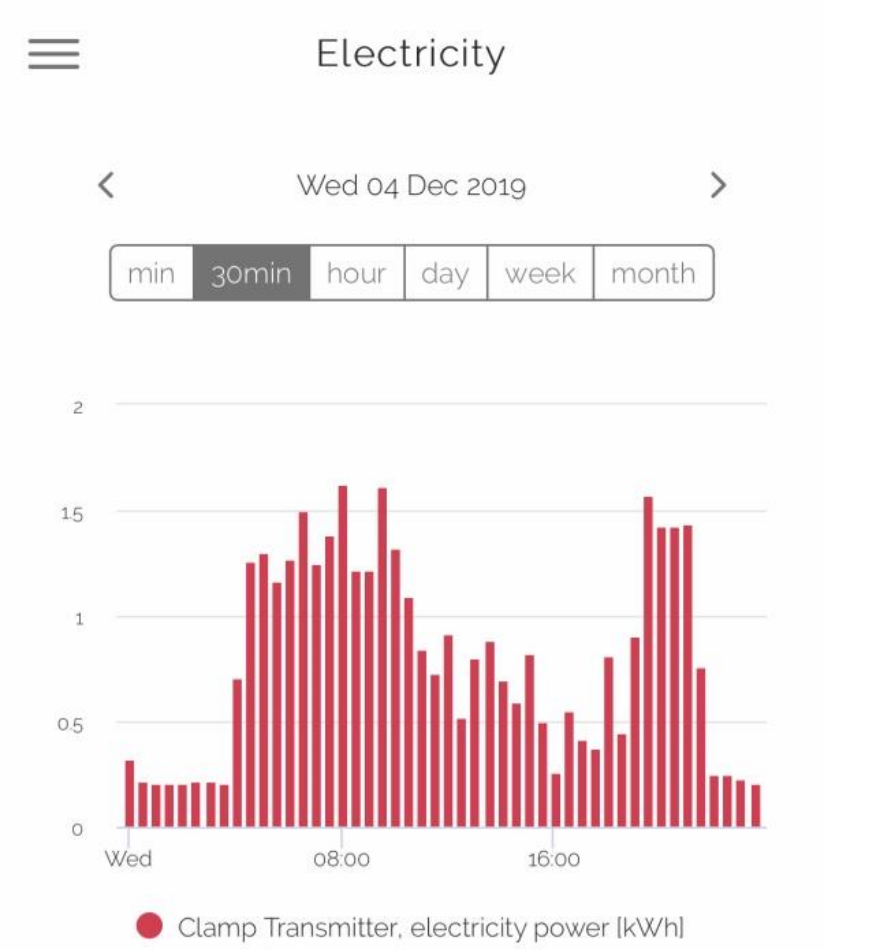
Household load profile between 11am and 4pm



Source: Pipattanasomporn 2014

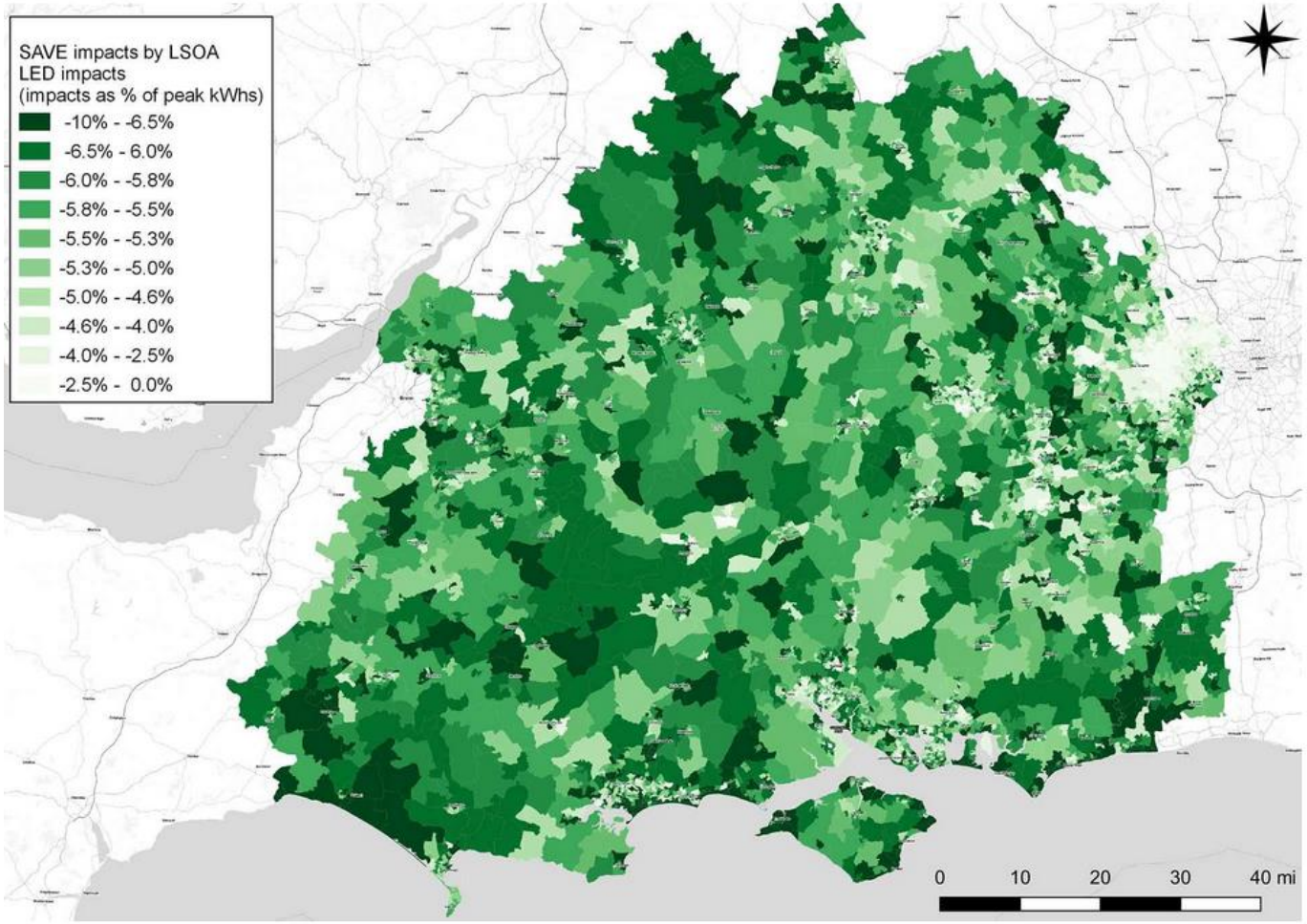
Digitalisation allows to target EE measures in time






nationalgrid
GENERATION MIX
SYSTEM STATUS
ACTIVE
STANDBY
ONLINE
ONLINE
Up
Up
Good
HH (Summer)

SSEN SAVE Project



Source: SSEN 2019

4 Decentralisation

Questions

- Are these important factors that will (or should) shape EEOs in the future?
- What is missing?

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

Dr Jan Rosenow
Director of European Programmes
The Regulatory Assistance Project (RAP)®

Rue de la Science 23
B-1040 Brussels
Belgium

+44 7722 343137
jrosenow@raponline.org
raponline.org I janrosenow.com

10 DECEMBER 2019

Best practice guidance for Energy Efficiency Obligations

IEA/RAP Energy Efficiency 2.0 Workshop

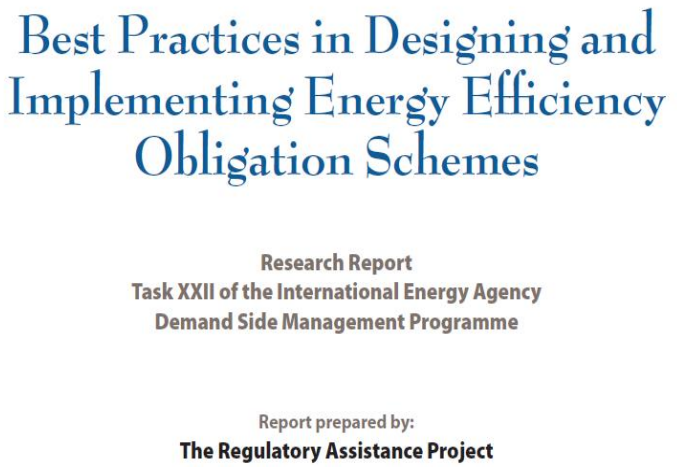
Samuel Thomas
Senior Advisor
The Regulatory Assistance Project (RAP)®

+33 613 91 93 95
Paris, France

sthomas@raponline.org
raponline.org

Testing existing guidance

- Is the existing guidance fit for purpose?
- How should it be updated?



Best Practices for EEO Schemes

1. Policy Objectives

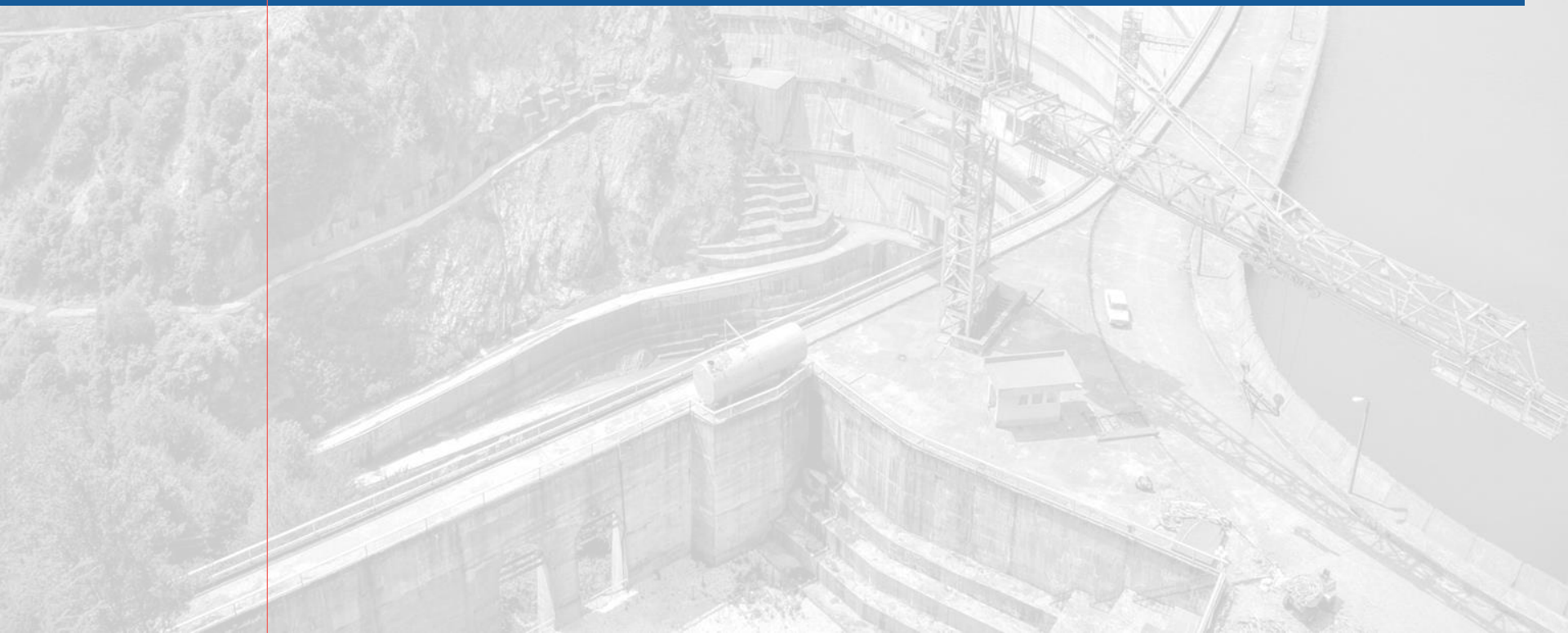
3. Fuel Coverage

5. Energy Saving Target
6. Obligated Parties

10. Eligible Energy Efficiency Activities

12. Trading of Energy Savings

1 Policy objectives

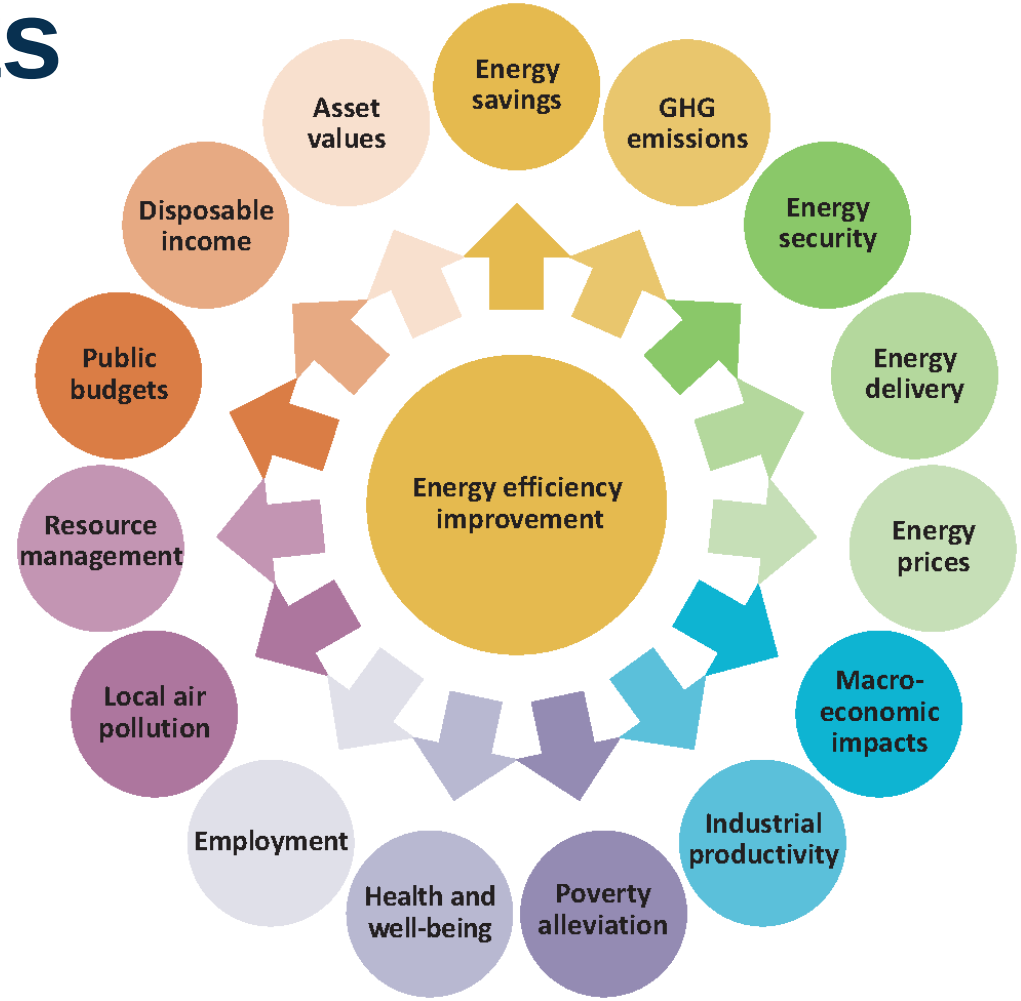


“Keep the policy objectives simple and clear, and focused on achieving energy savings.”

“If the scheme has multiple objectives, ensure that the achievement of any non-energy-related objectives does not hinder pursuit of the primary objective to achieve energy savings.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

Energy efficiency has multiple benefits



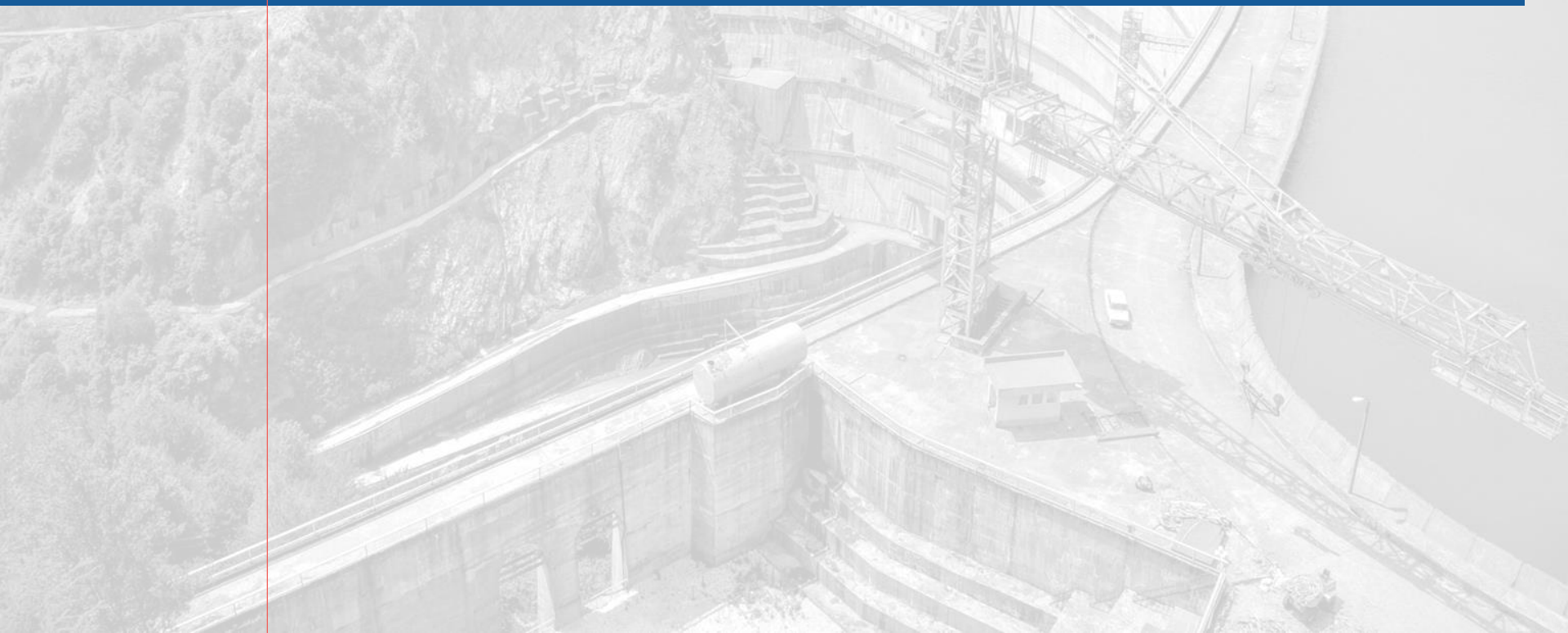
Source: IEA (2014). Capturing the Multiple Benefits of Energy Efficiency

Many possible objectives

- to acquire cost-effective ee as an energy resource;
- to reduce energy bills for end-use customers;
- to assist low income households with energy bills;
- to stimulate the energy services industry;
- to improve environmental outcomes;
- to enhance energy security and reliability.

Question: should programmes be technology neutral in meeting objectives?

2 Fuel coverage



“Decide the fuel coverage according to the policy objectives and estimates of energy efficiency potentials.”

“Start by covering one or two fuels and then expand the scheme to other fuels as experience is gained.”

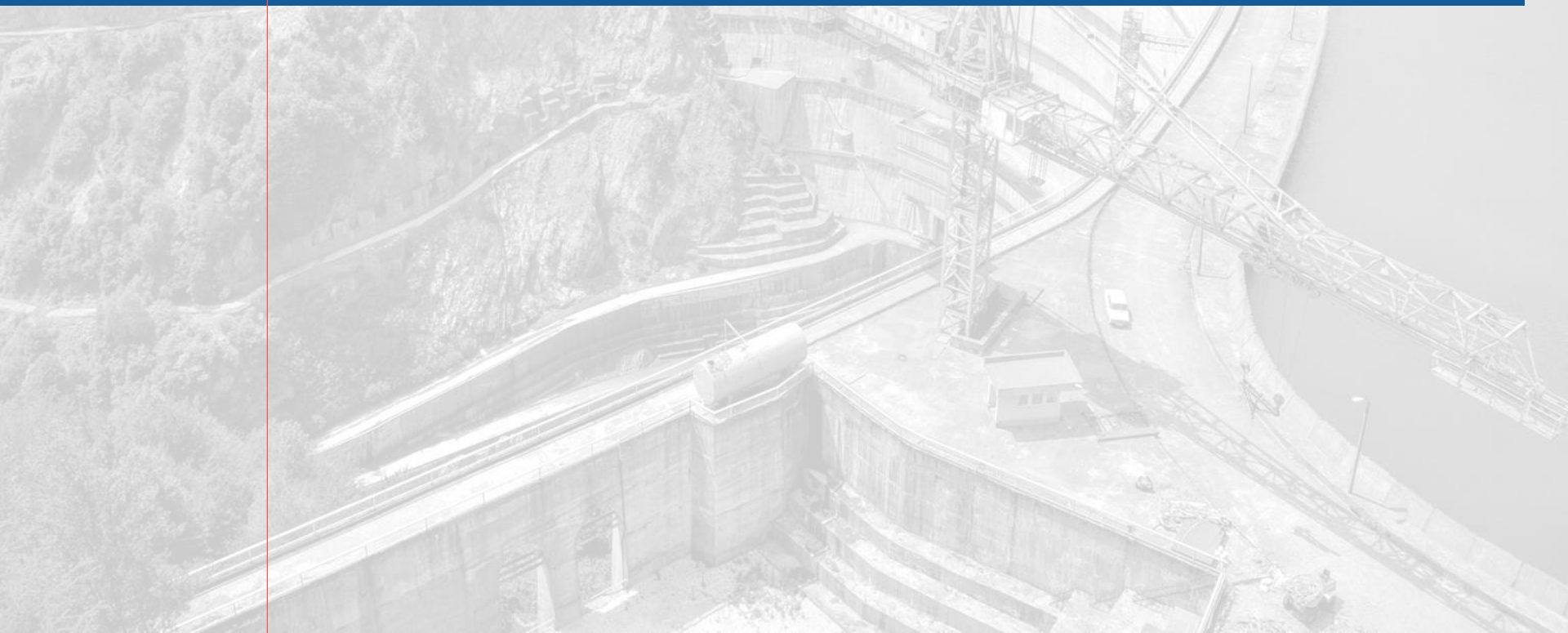
Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

Fuel coverage

Question

With decarbonisation implying the electrification of many end-uses, does it make sense to begin by only covering one or two fuels?

3 Energy saving target



“Set the target in terms of final energy unless the scheme covers different fuels in which case use primary energy.”

“Denominate the target in energy units unless the scheme has a policy objective that relates to GHG emissions reductions in which case consider using CO2-equivalent units.”

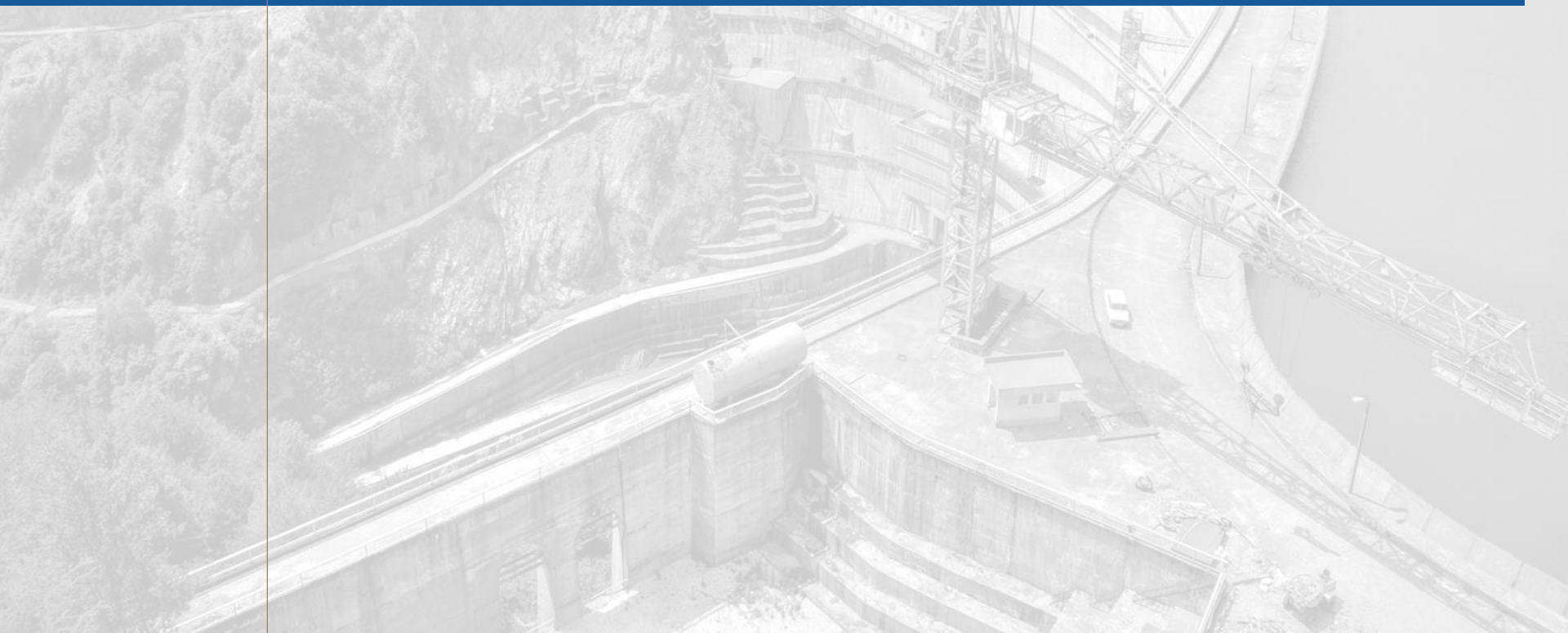
Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

Target setting

Question

Is it right to denominate targets in primary energy terms when more than one fuel is covered, given expected improvements in the primary energy intensity of electricity grids?

4 Obligated parties



“Determine the obligated parties according to the fuel coverage of the scheme and focus on those parties that provide or use large proportions of the covered fuels.”

“Where the obligated parties are energy providers, focus on providers that have the capability to manage the delivery or procurement of eligible energy savings.”

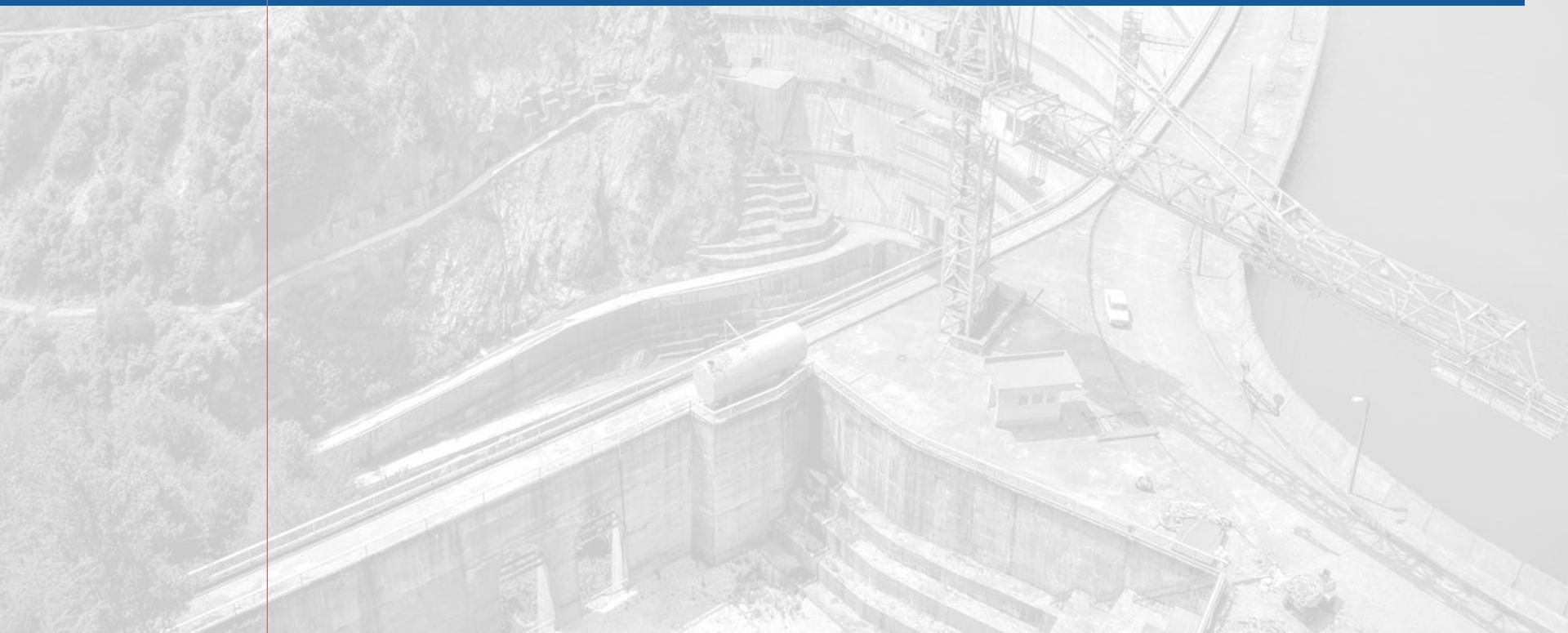
Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

Obligated parties

Question

With increasing electrification of end uses and more intermittent renewable supply, does it make sense to obligate distribution system operators instead of, or in addition to energy suppliers?

5 Eligible energy efficiency activities



“Consider establishing a list of pre-approved energy efficiency measures with deemed energy saving values, but do not limit the measures that can be implemented to only those on the list.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

Pay for performance

Arguments for

- Aligns incentives
- Reduces EM&V costs
- Technology neutral

Challenges

- Requires smart meters
- Requires the development of robust system for calculating the counterfactual

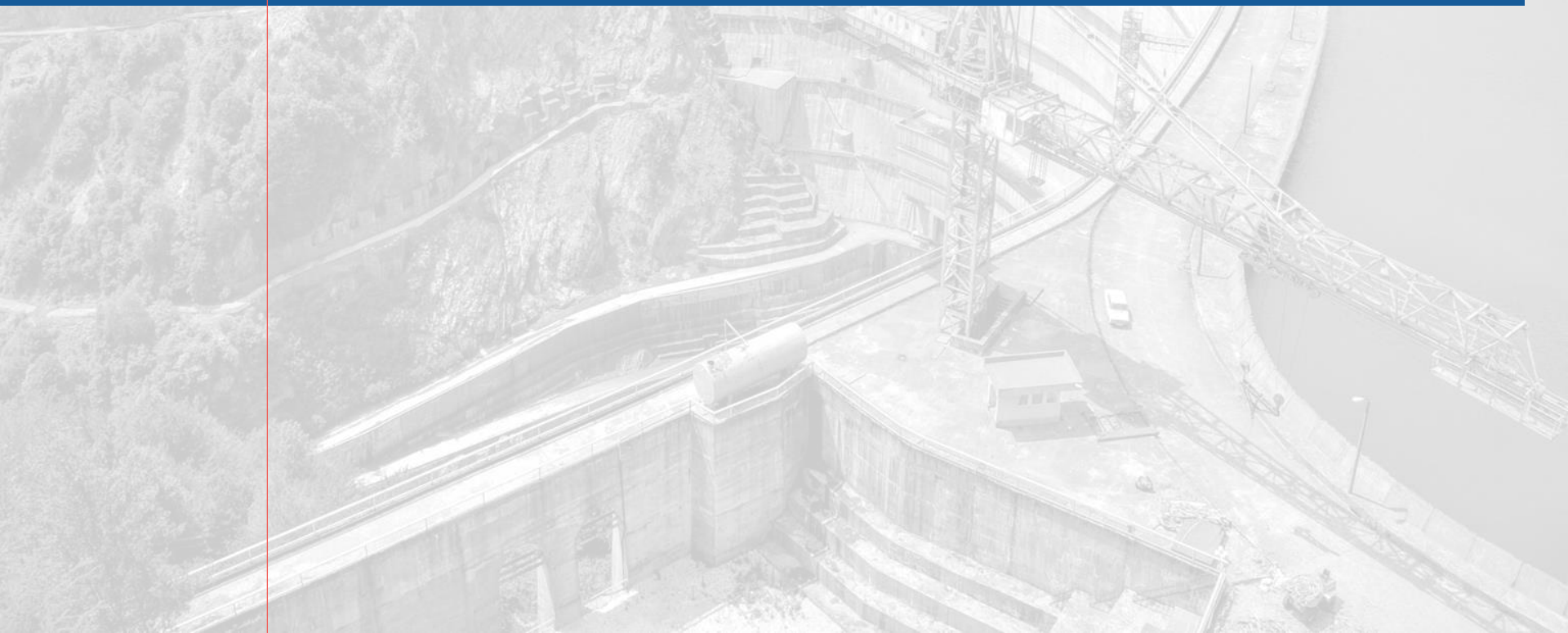
Eligible energy efficiency activities

Question

Should deemed savings be consigned to history?

Should deemed savings be considered as a last resort while pay-for-performance programmes are established?

6 Trading of energy savings



“Consider enabling trading of energy savings among both obligated parties and third parties.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

Trading of energy savings

Question

Is it right to be agnostic about trading?

Does it not encourage an energy efficiency industry and open up new opportunities?

Does it make programmes more open to fraud?

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org

Samuel Thomas
Senior Advisor
The Regulatory Assistance Project (RAP)®

+33 613 91 93 95
Paris, France

sthomas@raponline.org
raponline.org

“Consider whether to implement performance incentives to be awarded to obligated parties that exceed their energy saving targets.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Allocate individual energy saving targets on the basis of that party’s market share of energy sales or energy use.”

“Consider whether to implement carve-outs for energy-intensive, trade exposed industries and/or other specified groups of end-users.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Set the level of the target according to the policy objectives, striking a balance among making progress, the cost to consumers, and what is practically possible based on estimates of efficiency potential.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Establish a procedure for obligated parties to report savings to an appropriate authority and a process for checking and verifying these savings.”

“Establish a penalty regime for those that fail to meet their energy saving targets; set the penalty level high enough to mobilise parties to meet their targets.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Set a long timeframe for the target (10 - 20 years) and calculate eligible savings over set periods related to the lifetimes of each energy efficiency measure.”

“Consider setting sub-targets and portfolio requirements where the scheme has policy objectives that are not solely related to achieving energy savings.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Use a carefully selected combination of legislation, regulation, and Ministerial and administrative processes to establish and operate the EEO scheme.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Decide the end-use sector and facility coverage according to the policy objectives and estimates of energy efficiency potentials.”

“If it is intended to tightly restrict sector and facility coverage, consider whether assessing compliance will be too onerous.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Provided that the energy savings can be verified, do not place restrictions on the projects or measures that can be implemented.”

“If the scheme includes trading, enable non-obligated parties to implement projects and measures.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Establish a robust system for measuring, verifying and reporting energy savings and other activities that contribute to scheme targets.”

“Consider whether to also establish procedures to verify whether energy savings are additional to what would have happened in the scheme’s absence.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013

“Establish an appropriate mechanism to enable recovery of the costs incurred by obligated parties in meeting their individual energy saving targets.”

Source: RAP report *Best Practices in Designing and Implementing Energy Efficiency Obligation Schemes* 2013