Carbon revenues for a renovation revolution
Goal: save carbon

€200bn

Projected 2021-2030

Ecologic Institute and WWF (2016)
EU ETS allowance price 2017-2019

Source: Sandbag Carbon Price Viewer, accessed 30 September 2019
How is it spent?

- 56% Strategically invested for climate-related purposes (€2.87bn)
- 44% Not strategically invested (€2.22bn)

Source: Wiesse et al. (2019) Auction revenues to foster energy efficiency, presented at ecee Summer Study 3-7 June 2019
How should it be spent?
Where investment is most needed

Average annual investment needs 2021-2030

EU28, 2021-2030, billion euros


Regulatory Assistance Project (RAP)®
To offset regressive impact on low-income consumers

Figure 7: Average electricity taxes (21 OECD countries) as a percentage of net income or pre-tax expenditure

Deliver more carbon for consumer investment

Carbon pricing alone is an expensive way to save carbon. At a carbon price of €20, each power sector tonne costs consumers up to €248.

Source: RAP, 2015 based on modelling by ECN, 2008
Efficiency delivers more carbon for consumer investment

Cumulative carbon dioxide emissions saved with 3% rise in rates to fund energy efficiency (Mtons)

Cumulative carbon dioxide emissions saved with 3% rise in rates only (Mtons)

Cumulative CO₂ emissions avoided from raising rates 3% and funding EE, 2006-2020: **59.8 million tons**

Cumulative CO₂ emissions avoided from raising rates 3%, 2006-2020: **6.8 million tons**
ETS revenues invested for renovation
nová → zelená → úsporám
Czech Republic New Green Savings Programme

**Oblast podpory A**
Zateplení rodinných domů...

**Oblast podpory B**
Výstavba v pasivním standardu...

**Oblast podpory C**
Obnovitelné zdroje energie...

---

**Vystavba zelených střech**
(oblasti A a B)

**Solární systémy**

**Zateplení střechy**

**Zateplení stropu a ostatních konstrukcí**

**Stinici technika**

**Výměna okén a dveří**

**Zateplení obvodových stěn**

**Výměna zdroje tepla**

---

**Odborný posudek**
(oblasti A, B a C)

---

**Instalace nuceného větraní se zpětováním tepla**

**Bonus za použití materiálu s vydaným environmentálním prohlášením typu III (EPD)**

(oblasti A, B a C)

---

**Využití tepla z odpadní vody**

(oblasti A, B a C)

---

**Zateplení podlahy na teréně**

---

**Single-family houses:**
Measure structure (subsidy demand)

**Multi-family houses:**
Measure structure (subsidy demand)

**Reduction energy demand thermal insulation, windows and door replacement:**
61%

**Others (e.g., technical drawings, energy calculations):**
8%

**Others (e.g., technical drawings, energy calculations):**
8%

---

---

---
Evaluation

- amongst the most cost-effective energy saving programmes across all sectors
- largest energy saving of any programme 2014 - 2018
- investment fully returned to Treasury in tax and benefit; creates GDP growth

€350 million 2014-2018
€96 million 2018
Potential of ETS revenues 2021-2030

Projected ETS revenues
€4-7 bn

Residential sector investment need
€18.3 bn

1:3 leverage

Effective renovation programmes

Funding and Finance  Demand
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

Louise Sunderland
Senior Advisor
Regulatory Assistance Project (RAP)®

Rue de la Science 23
B-1040 Brussels
Belgium

+44 7989 356644
lsunderland@raponline.org
raponline.org
Extra slides
High cost of abatement in power market

Wholesale market

Short term marginal cost (€/MWh)

Capacity MW

Market price with carbon price

Sets market price

Renewables

Nuclear

Lignite

Coal

Natural gas

Regulatory Assistance Project (RAP)®
Low abatement at current prices

Demand response

Elasticity of demand
1 : -0.2

Dispatch
## Cost of abatement in power market

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Carbon price 20 Euros</th>
<th>Carbon price 40 Euros</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Event/Result</strong></td>
<td>No demand response</td>
<td>Price-elasticity -.2</td>
</tr>
<tr>
<td>(a) Power price increase</td>
<td>€ 10.9 /MWh</td>
<td>€ 23.2 /MHz</td>
</tr>
<tr>
<td>(b) Total sales</td>
<td>3016 TWh</td>
<td>2881 TWh</td>
</tr>
<tr>
<td>(c) Total Cost increase</td>
<td>€ 33 Billion</td>
<td>€ 66.8 Billion</td>
</tr>
<tr>
<td>(d) Emission reduction</td>
<td>133 Mt</td>
<td>363 Mt</td>
</tr>
<tr>
<td></td>
<td>(all due to redispatch)</td>
<td>(165 Mt from dispatch,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>198 Mt from demand response)</td>
</tr>
<tr>
<td>(e) Consumer cost per tonne reduced</td>
<td>€ 248 per tonne</td>
<td>€ 184 per tonne</td>
</tr>
</tbody>
</table>

Source: Sijm, et al, The Impact of the EU ETS on Electricity Prices, Final Report to DG Environment, December 2008 (ECN-E-08-007)  
[Row (e) is a RAP calculation based on Tables in the report, as shown.]