

Evaluation previous energy saving policies in the Netherlands

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Outline

- Energy saving measures (only buildings: households and commercial sector):
 - Long term agreements
 - Energy performance standard (new buildings)
 - Fiscal measures
 - Energy premiums
 - Environmental action plan Energy Companies
 - Energy tax (households)
- Cost efficiency of policies
- Measurement and verification costs: comparison with green certificates

CO₂ emission caused by buildings

(Mln ton)	CO ₂ emission 1995	CO ₂ emission 2001	Share "indirect" (electricity)
Residential	38	35	35%
Commercial	20	22	55%
Total	58	58	
<i>Share of Dutch emissions</i>	<i>33%</i>	<i>32%</i>	

Policies for the residential sector

Inst.	Segment			Periode								
	Nieuwbouw Aardgas	Bestaande bouw Aardgas	Electriciteit	1995	1996	1997	1998	1999	2000	2001	2002	2003- 2010
MAP												
EPR												
EPA												
REB												
EPN												

Policies for the commercial sector

Inst.	Segment			Periode								
	Nieuwbouw Aardgas	Bestaande bouw Aardgas	Electriciteit	1995	1996	1997	1998	1999	2000	2001	2002	2003-2010
MAP												
EIA/VAMIL												
EINP												
REB												
EPN												
MJA												
Wet Milieubeheer												

Long term agreements

- Evaluation of Long Term Agreements (LTA) on Energy Efficiency in the Netherlands
 - Monitoring of efficiency improvements based on information provided by participants which is checked by the energy agency SenterNovem
 - No information available of achieved energy savings for separate measures on company level
 - No distinction is made between 'autonomous' savings and measures that can be attributed to the introduction of the LTA

Long-term agreements

Sector	Period	Aim	Ach.
Banks (2002)	1995 – 2006	25%	10%
Supermarkets (2001)	1995 - 2006	32%	-3.5%
Schiphol (1999)	1989 - 2000	28%	21%
Universities (2002)	1996 - 2006	14%	-1.9%
Health care (1999)	1989 - 2001	30%	8%

Energy performance standard

- New buildings!
- Updated 1996/1998/2000: 1.4 → 1.2 → 1.0
- Well prepared by government
- Time delay was overlooked in the past
- Virtually no verification by municipalities
- Nevertheless, dwellings are more or less built according to the standards

Fiscal measure

- Evaluation of the Energy Investment Deduction Scheme (EIA) (a fiscal measure) in the Netherlands
 - EIA is executed by the energy agency SenterNovem, which only registers volume of investments and awarded subsidy
 - Achieved energy savings (once measures are implemented) are not monitored
 - Annually reported savings are calculated using default index numbers. These numbers are not frequently checked or verified with actual projects and do not account for 'free riders'

Energy premiums

- Evaluation of the Energy Premium Scheme in the Netherlands (EPR)
 - Within the framework of the EPR only the number of applications, some technical specifications (like m² of applied insulation or installed capacity (Wp) in case of PV) and financial figures were registered
 - Annual savings were calculated using default index numbers. These numbers were not independently checked or verified with measurement from actual project
 - Used default number were not regularly adjusted to account for autonomous efficiency improvements

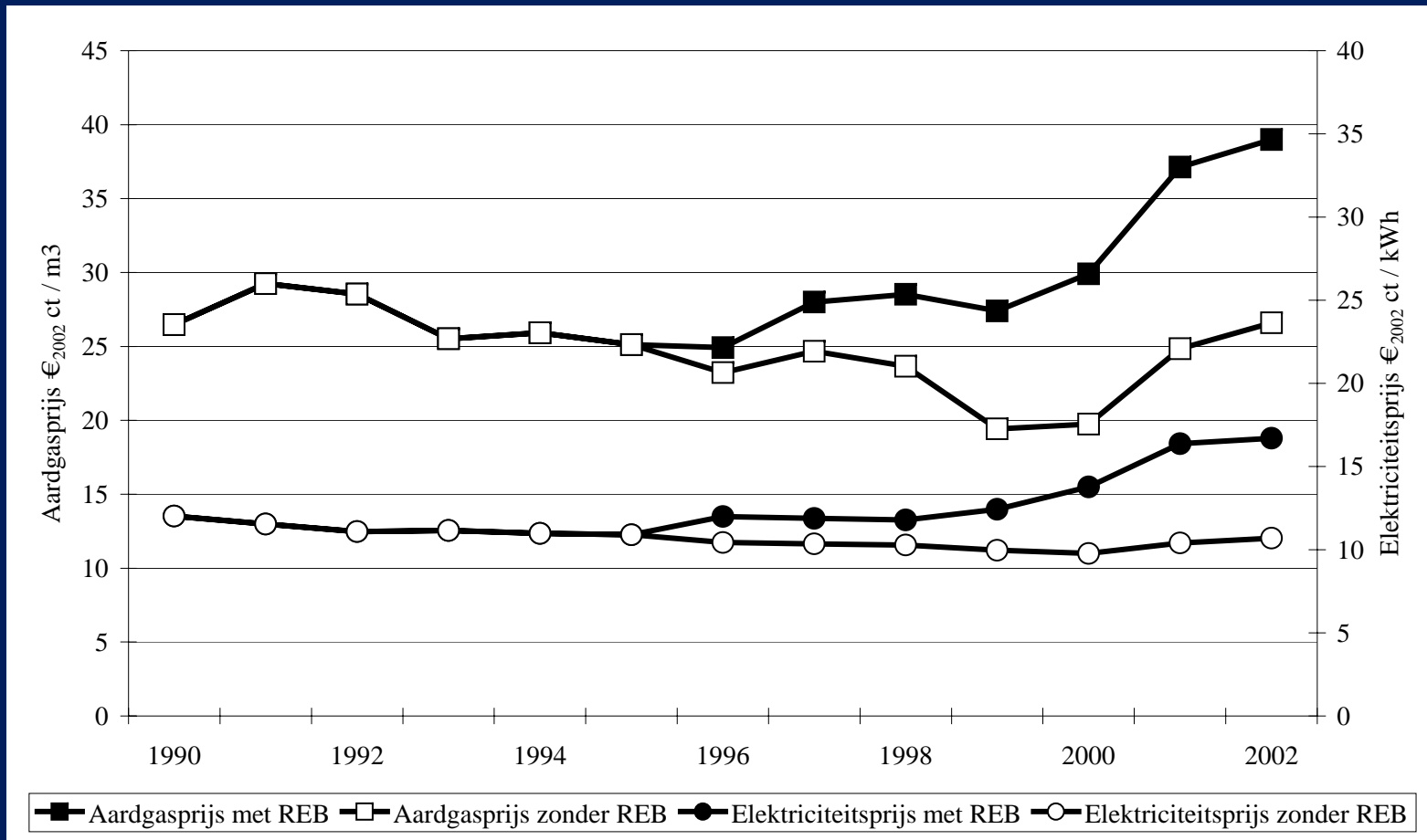
Environmental action plan

- Environmental Actions Plan (MAP): voluntary scheme of the energy companies (1990 – 2000)
- Voluntary agreement with the government
 - Targets for NL and per company (captive costumers)
 - A maximised levy on G and E for financing the program
- Targets in terms of CO2 reduced
- Sub-targets per company and per target group:
 - Households
 - Commercial
 - Industry
 - New technologies (including renewable energy)

Environmental action plan (2)

- Calculations per measure in comparison with the actual situation of 1990:
 - Extra costs were calculated: net value method (including energy savings and costs)
 - Reduction of CO₂ Expected base line of 2000)
- Costs curves were drafted: everything under 50 euro per ton CO₂ was considered as economical
- Costs for managing the program was not monitored

Energy tax households



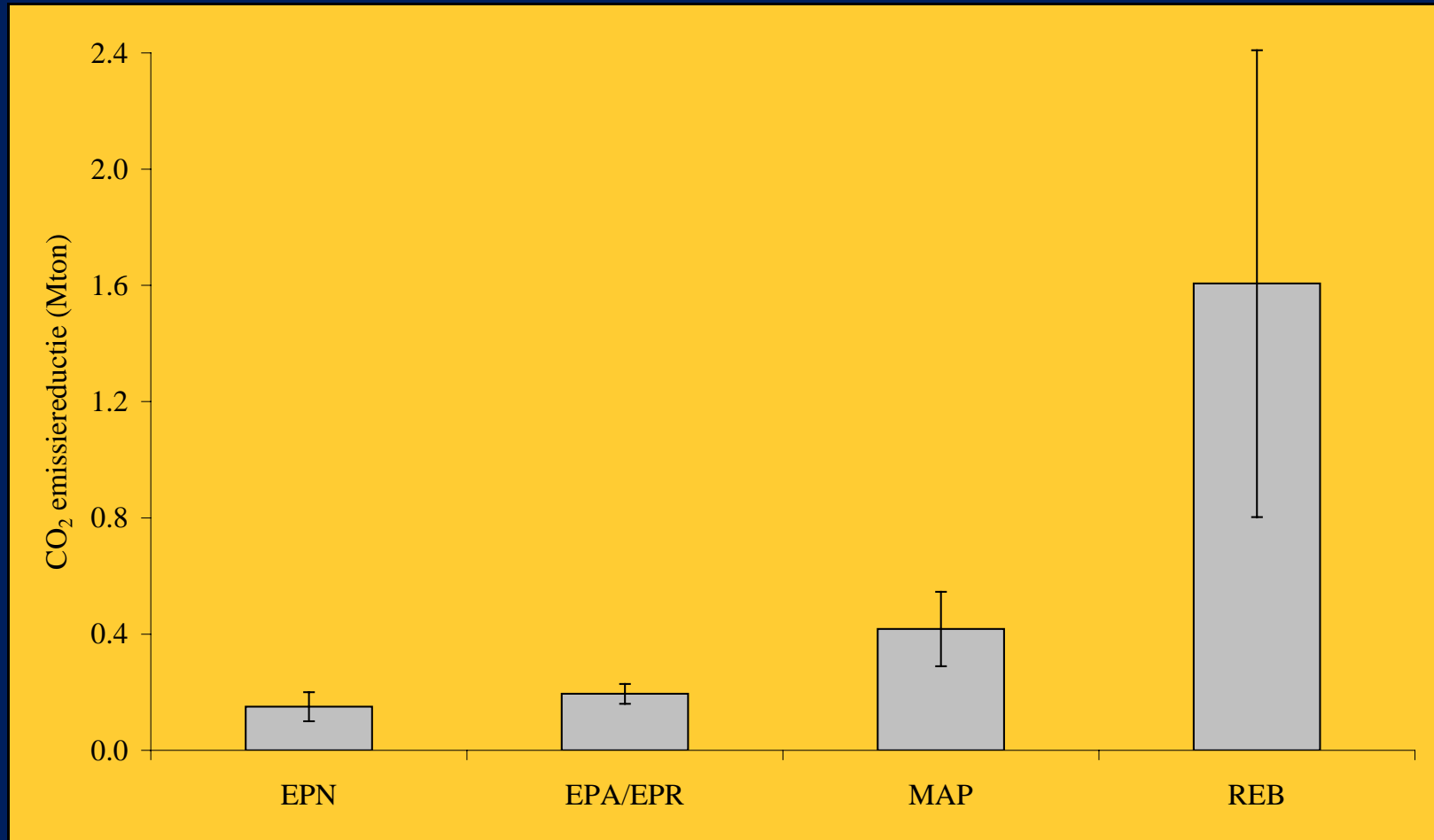
Results Households

€/ton CO2	Government	End users	Society
EnergiePrestatieNormer (EPN)	4 à 14	-210 à -6	51 à 121
EnergiePremieRegeling (EPR)	285 à 322	-154 à -63	65 à 133
Milieu Actie Plan (MAP)	32 à 69	-53 à -5	36 à 69

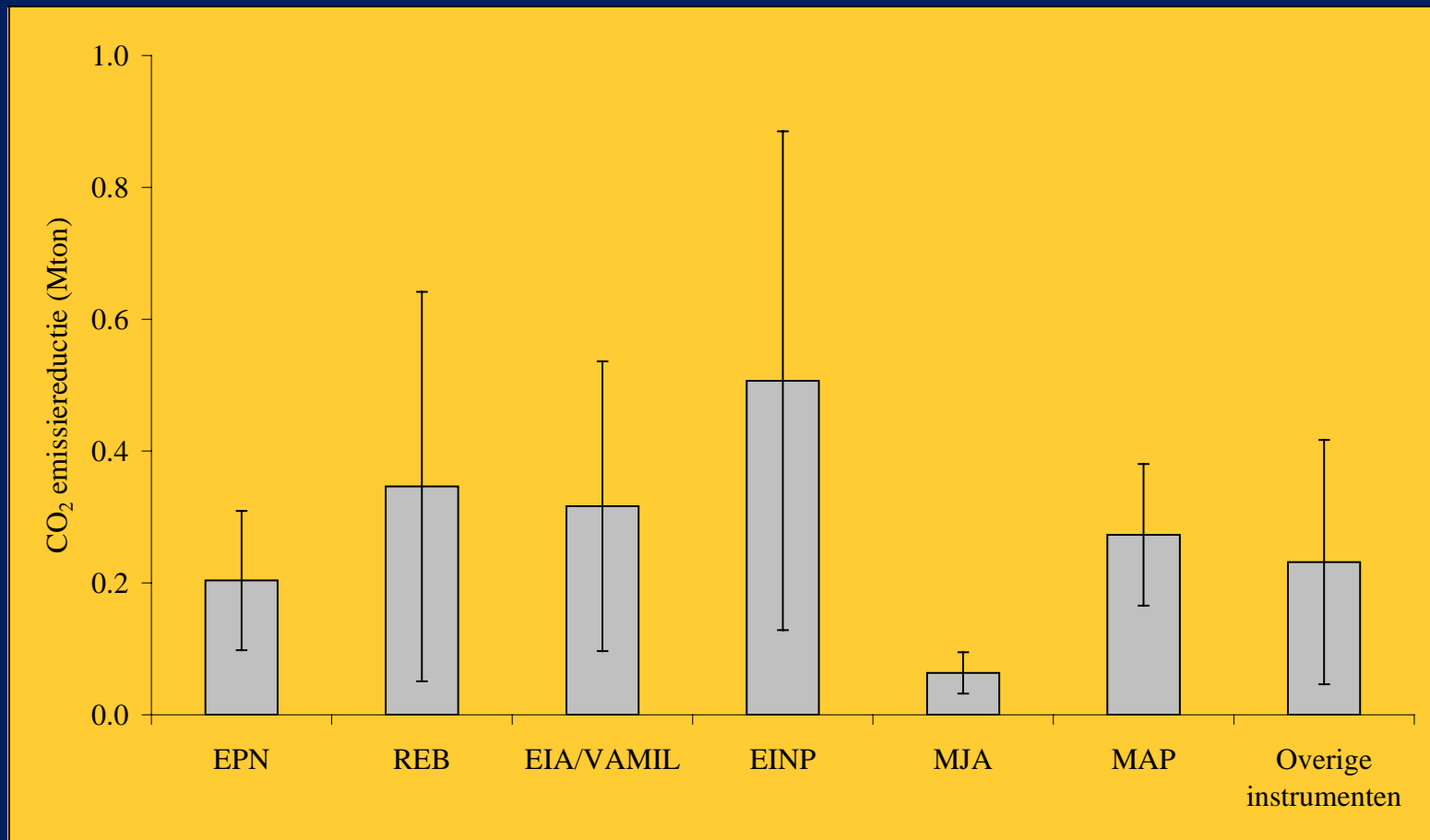
Results Commercial sector

€/ton CO2	Government	End users	Society
EPN	3 à 12	-146 à 18	-51 à 39
EIA/VAMIL	13 à 67	-182 à 25	-60 à 35
EINP	9 à 56	-103 à 22	-30 à 26
MJA	60 à 191	-287 à 66	-106 à 45
MAP	27 à 69	-164 à 110	-34 à 137

Overview results households



Overview results Commercial sector



Conclusions monitoring national policies

- Bottom-up data on monitoring of energy savings are hardly available in the Netherlands
- Apparently there wasn't an urgent need for these data so far: or it was too expensive?
- It is not easy to draw conclusions on monitoring and verification costs in relation with white certificates

Comparison with green certificates

- Prices green certificates
 - Value of green certificates: €24 (Sweden) - €115 (Flanders) per MWh
 - Transaction costs, including measurement and verification costs: 0.10 – 0.20 per MWh
- Reason for low transaction costs:
 - Costs for measurement and verification is not in the certificate
 - Measurement and verification costs are made in order to be connected to the grid (is part of the electricity market)

Thanks for your attention

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