



Nederlandse
onderneming
voor
energie en
milieu b.v.

Renewable Energy policy Netherlands

Ir. K.W. Kwant

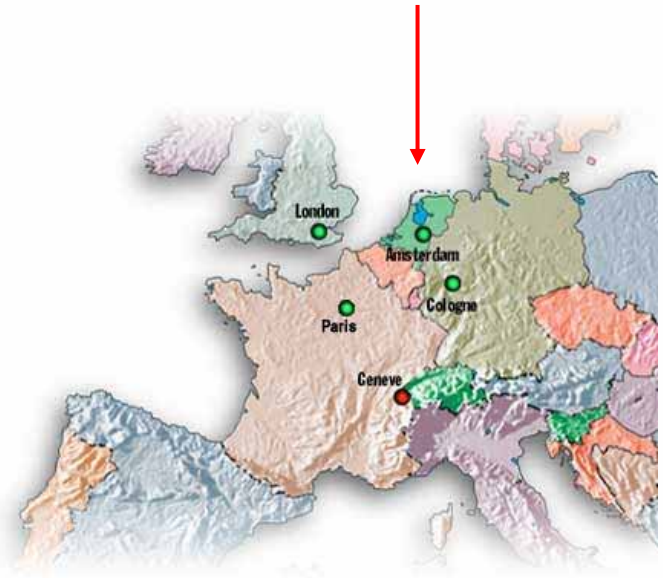
Programme advisor

Novem



Novem: Netherlands Agency for Energy and Environment

- 500 employees
- Management of programmes for governments
- International collaboration: IEA and EU



Netherlands - Korea



- 1653 - first sailor wrote a
- book about Korea





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Contents

- European Policy
- National Policy
- Fiscal support
- Green Energy Market
- Future and Collaboration
- Conclusion





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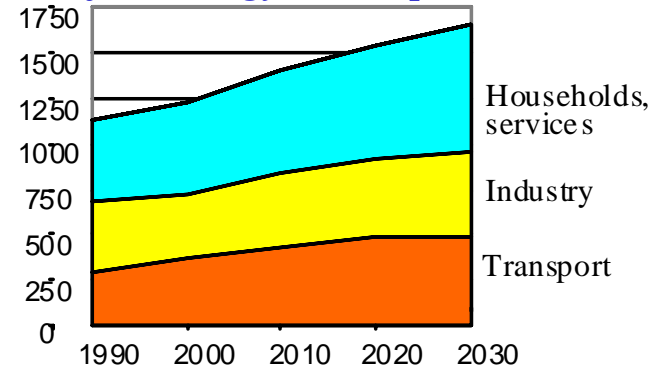
European Energy Policy

European Green Book: basic facts

Energy self sufficiency is impossible to achieve

→ **An energy-intensive economy: consumption + 1 to 2%/year**

Europe-30: final energy consumption (in mtoe)



→ **The EU's resources are limited**

Coal: cost of production is 4 - 5 times the world price

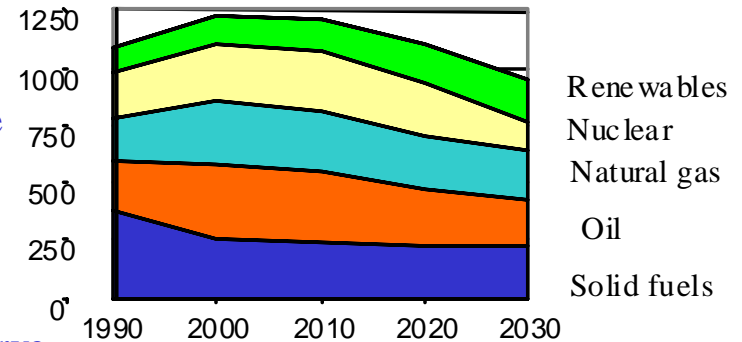
Oil: cost of production 2 - 7 times the world price, 8 years' reserve

Natural gas: 2% of the world's reserves, 20 years' reserve

Uranium: 2% of the world's reserves, 40 years' reserve

Renewables: potential abundance

Europe-30: energy production, reference scenario (in mtoe)

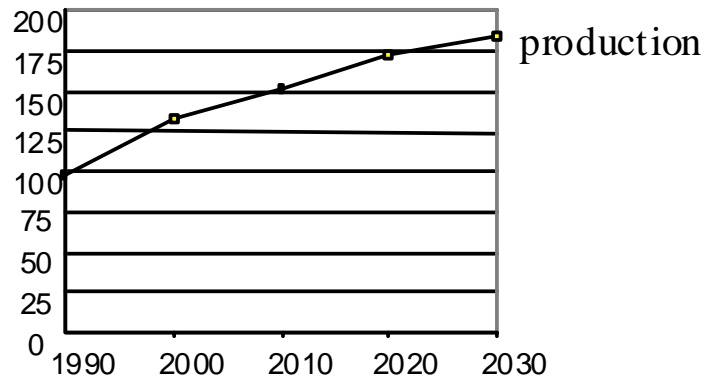


The basic energy situation

Less than perfect energy options

➔ *New and renewable energy sources: a political priority*

*Europe-30: renewables
(reference scenario in mtoe)*



- Renewables offer a potential to be exploited
- EU target: 12% of total energy consumption in 2010
- They have differing growth prospects
- Their takeoff assumes that financial or tax incentives will be provided

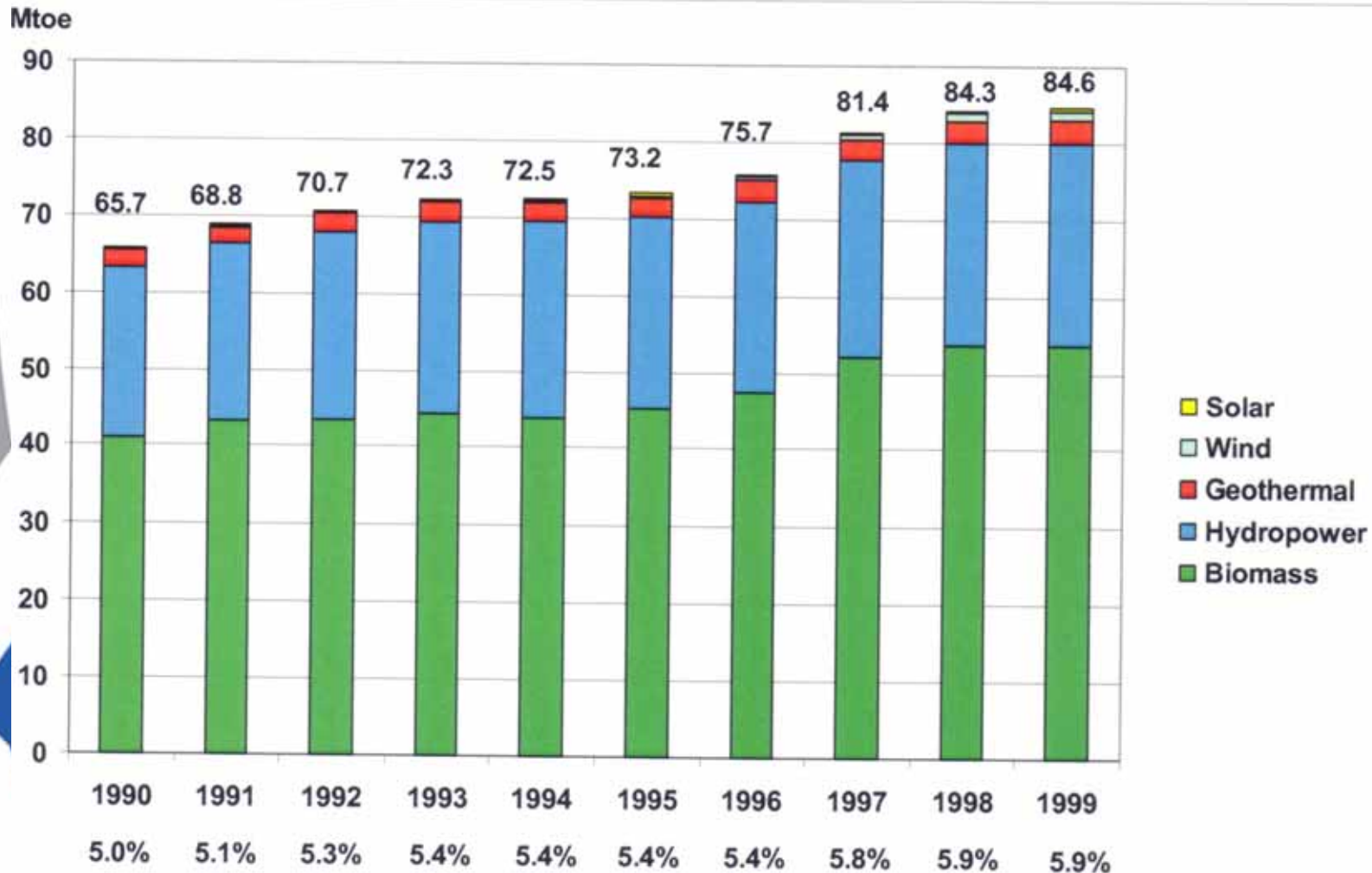
Impact on the European Union

- *No energy option on its own can meet the Union's needs*
- *The Union's room for manoeuvre as regards energy supply is restricted*

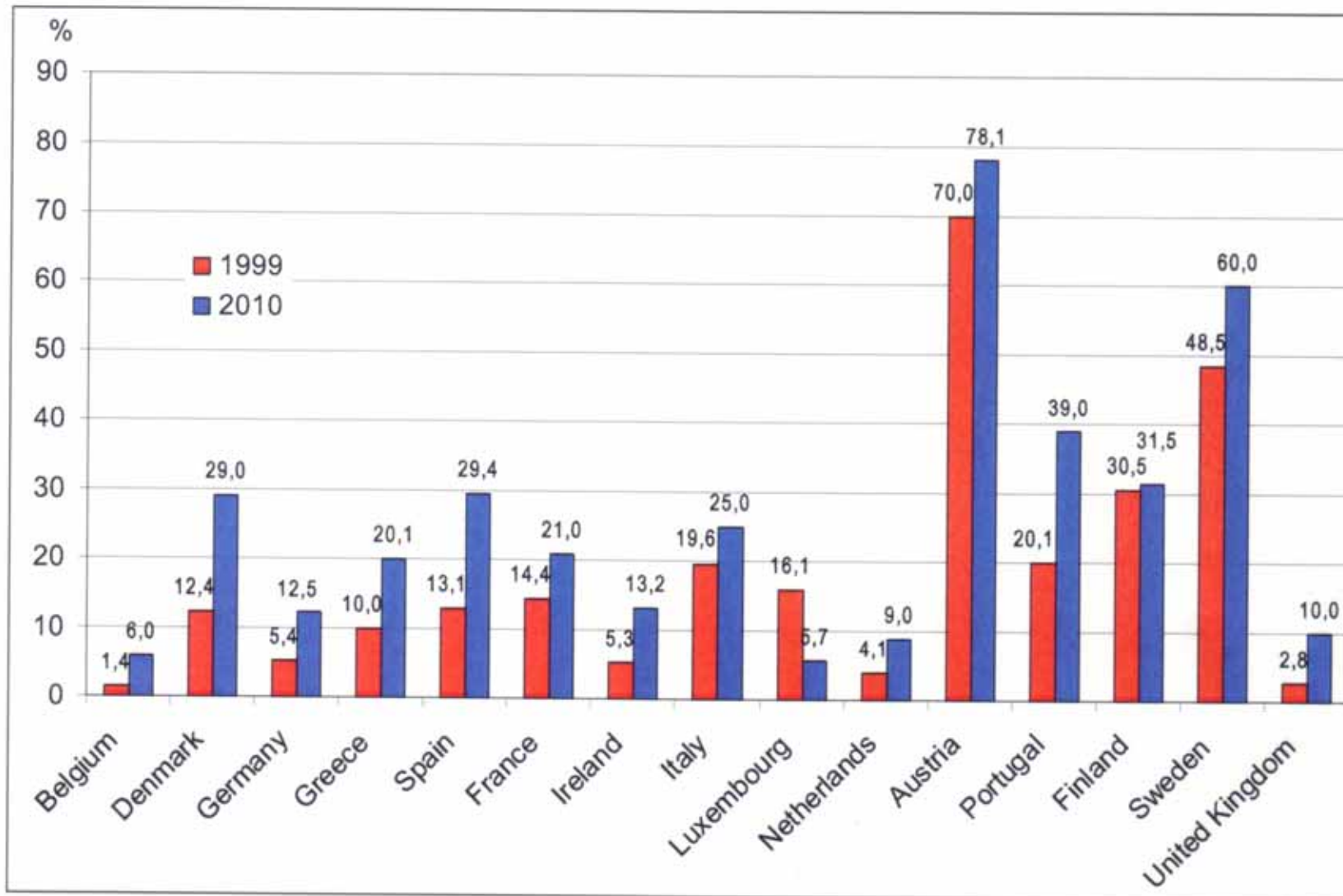
European Targets 2010

- Renewable Energy: 12 %
- Electricity: Each country an additional 5 to 15 %.
- Biofuels for transport:
 - 2005: 2 %
 - 2010: 5.75 %
- Heat: no targets

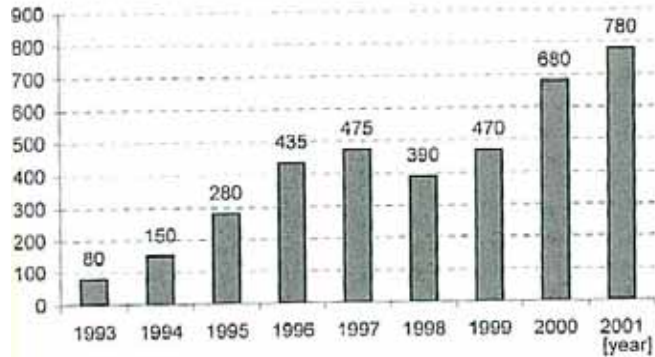
Renewable Energy Consumption



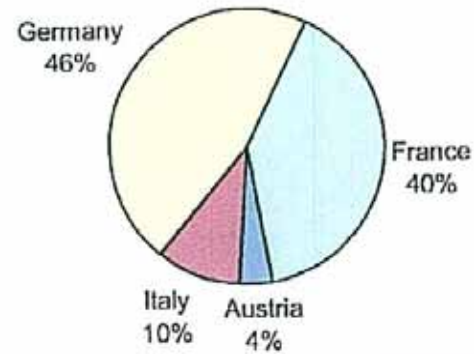
Renewable Electricity Targets 2010



Biofuel market in Europe



3.1 Biodiesel production of the European Union (1993 – 2001; Intern



biodiesel

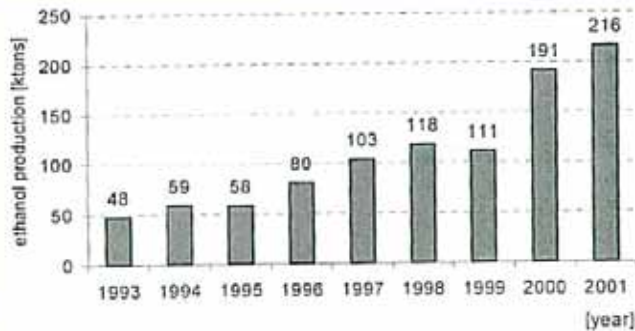
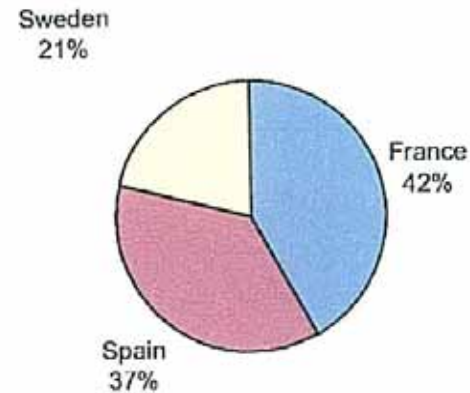


Figure 3.2 Ethanol production of the European Union (1993 – 2001; Internet source 2)



Bio-ethanol

Netherlands

Climate and energy policies

- Climate
 - Kyoto: 6% CO₂ reduction as compared to 1990
 - Reduction of acidification (NO_x)
- Energy:
 - Energy efficiency improvement (30% in 2020)
 - Renewable energy: 5% in 2010 en 10% in 2020
 - Renewable electricity: 9% in 2010 (EU directive)

Strategy in liberalized market

- Agreements with sectors
- Greening of fiscal system
- Consumer driven market
 - since 2001 using green certificates
- After 2003: Production Support
- Research and Development

Fiscal support for renewable

- For Investment equals 30 % subsidy:
 - Green funds, Tax credits, Fast depreciation
- For Production of Electricity from Renewable sources:
 - increased energy tax: 6.02 €cts/kWhe
 - pay back to renewables: 2.0 €cts/kWhe
 - no tax on green electricity since 1-1-1999

Fiscal Regime: Regulatory Energy Tax

Year	1996	1997	1998	1999	2000	2001	2002
ELECTRICITY consumption in Euro cents							
0 – 10.000 kWh	1.34	1.34	1.34	2.25	3.72	5.83	6.02
10.000 – 50.000 kWh (*)	1.34	1.34	1.45	1.47	1.61	1.94	2.00
50.000 – 10.000.000 kWh	–	–	–	0.22	0.22	0.59	0.60
> 10.000.000 kWh	–	–	–	–	–	–	
NATURAL GAS consumption in Euro cents							
0 – 5.000 m³	1.45	2.90	4.32	7.25	9.45	12.03	12.10
5.000 – 170.000 m³ (*)	1.45	2.90	4.32	4.74	5.19	5.62	5.65
170.000 – 1.000.000 m³	–	–	–	0.32	0.70	1.04	1.02
> 1.000.000 m³	–	–	–	–	–	–	

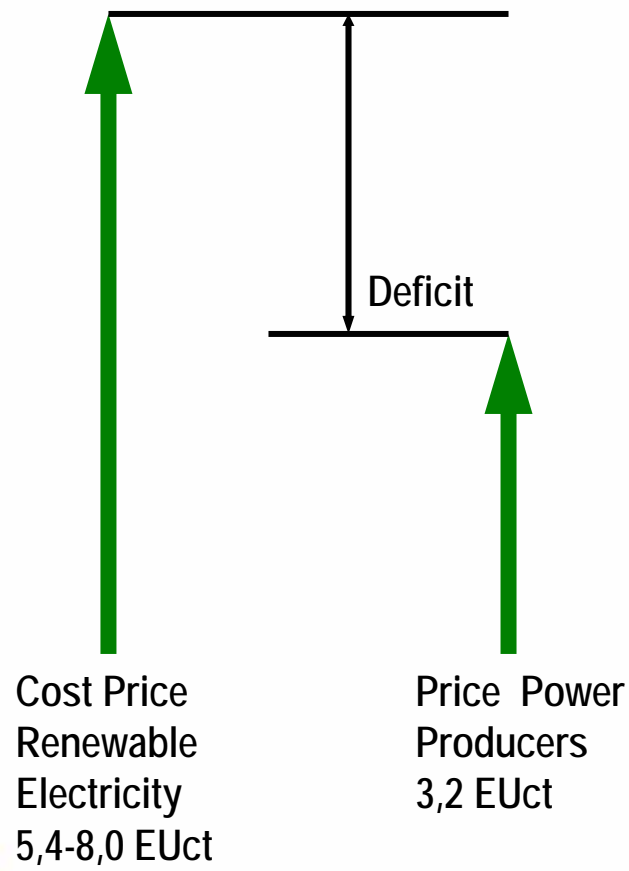
(*) *Producer of green energy gets this amount of money in addition (art 36o) till 2003*

+ *Consumers of Green Energy pay this tax (art 36i) partly*

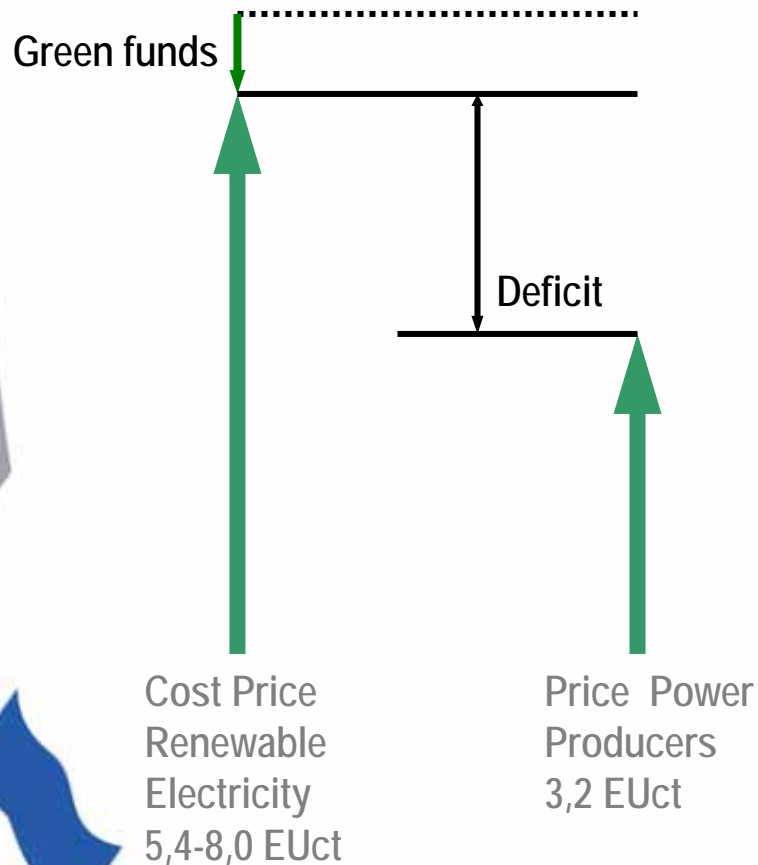
The principle of making renewable interesting for power producers



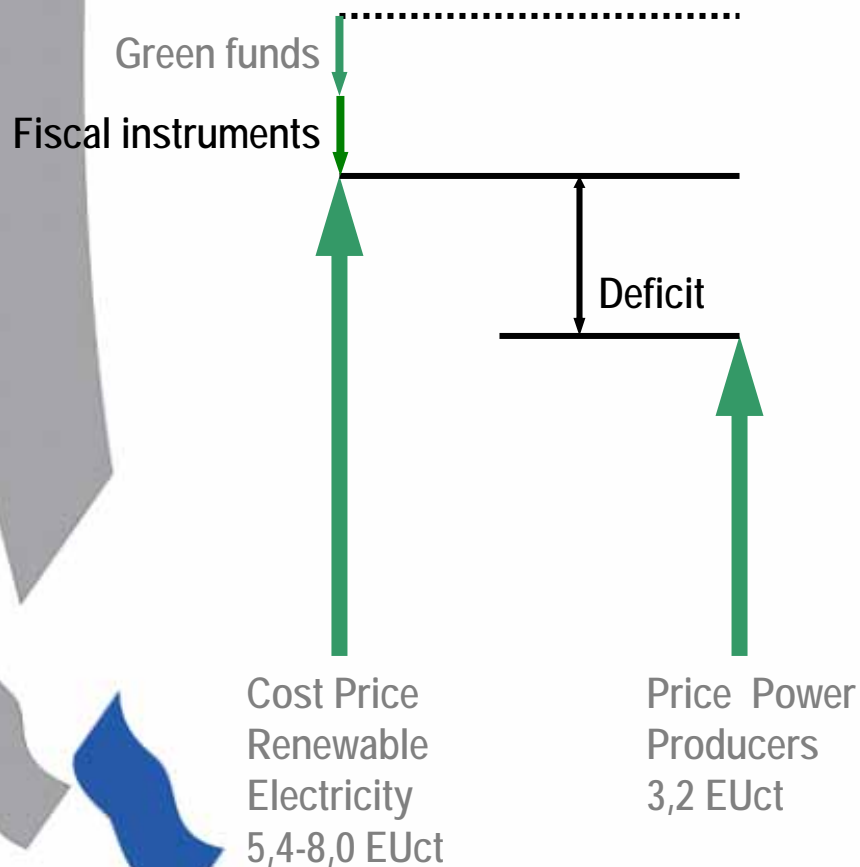
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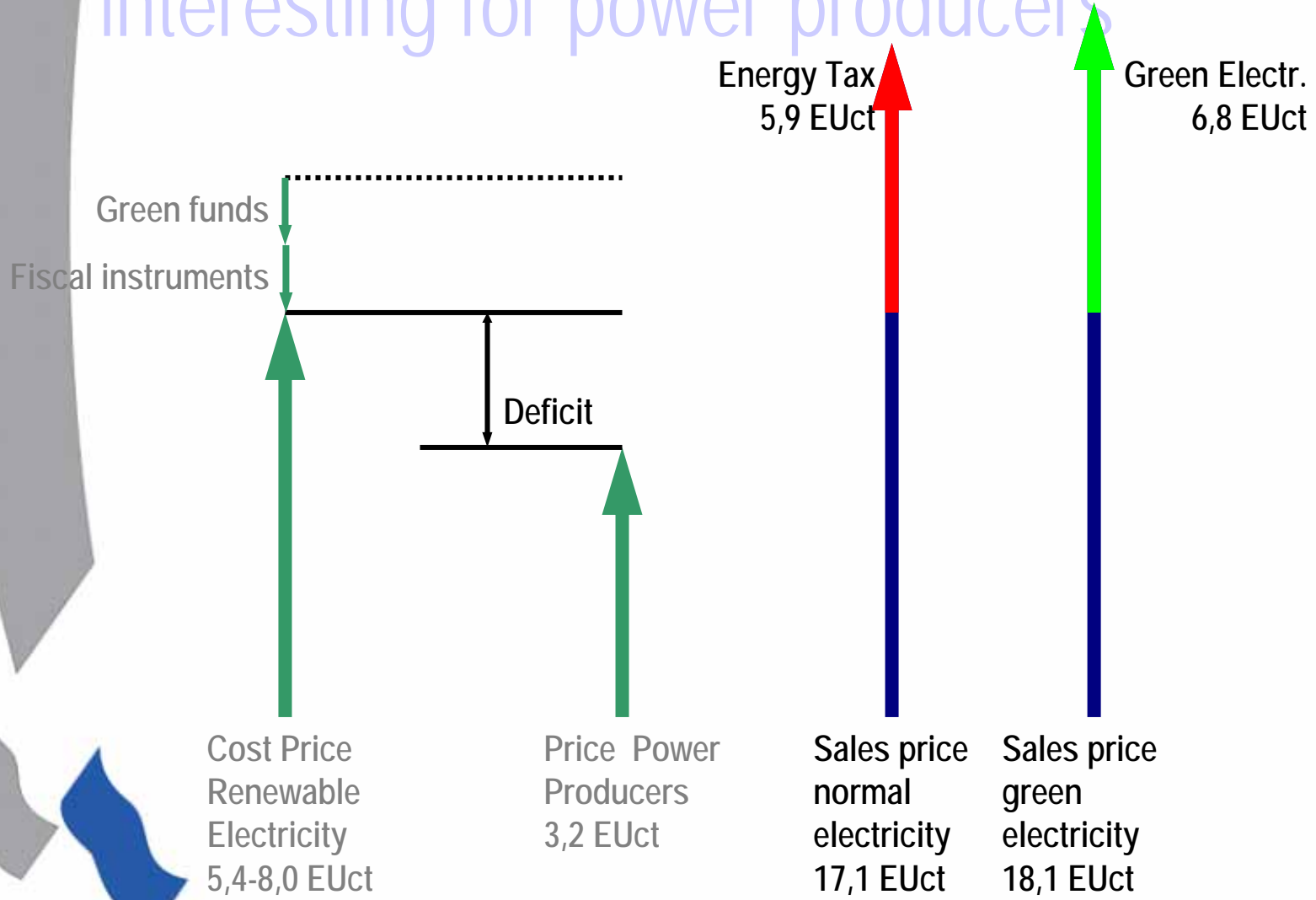
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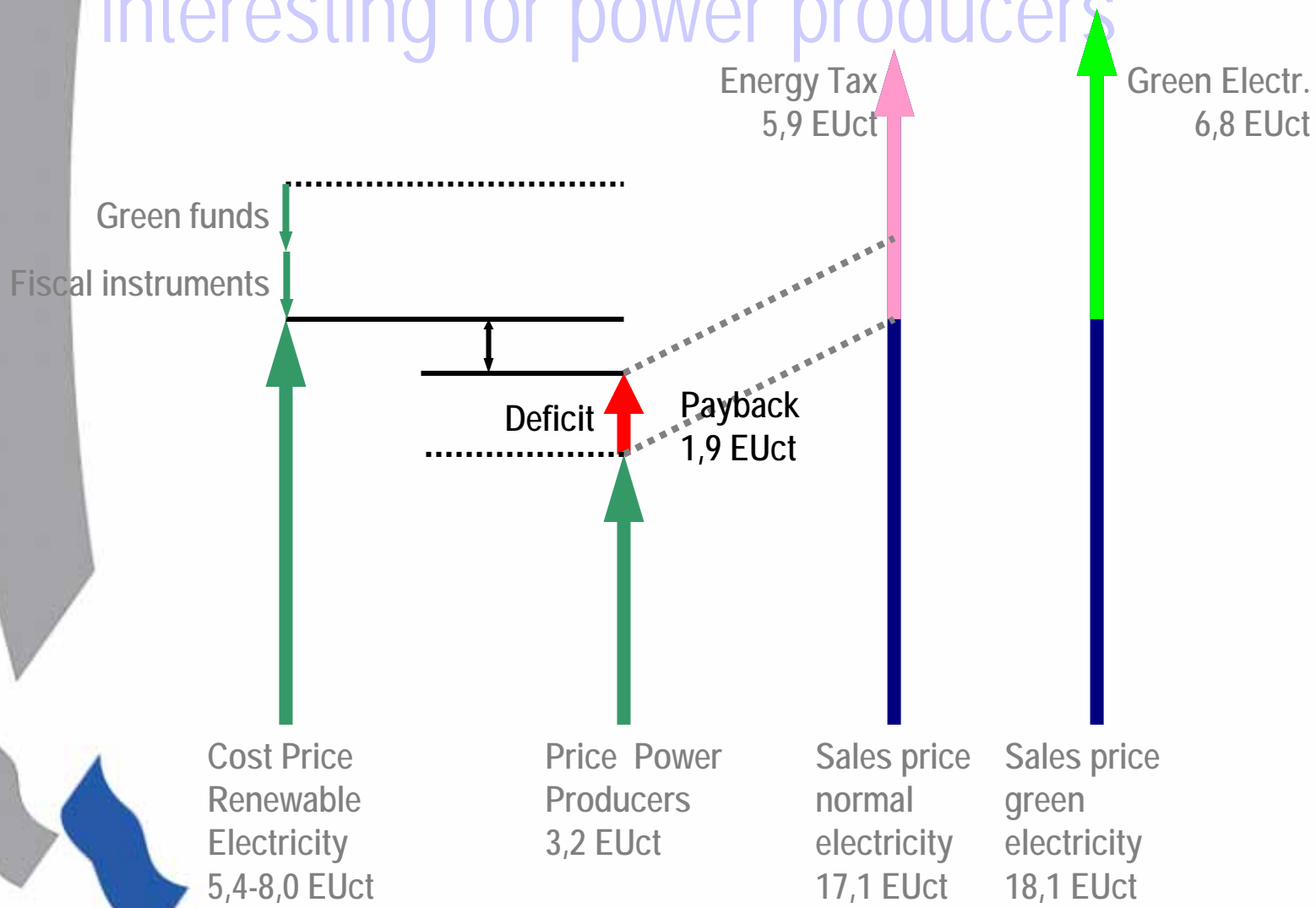
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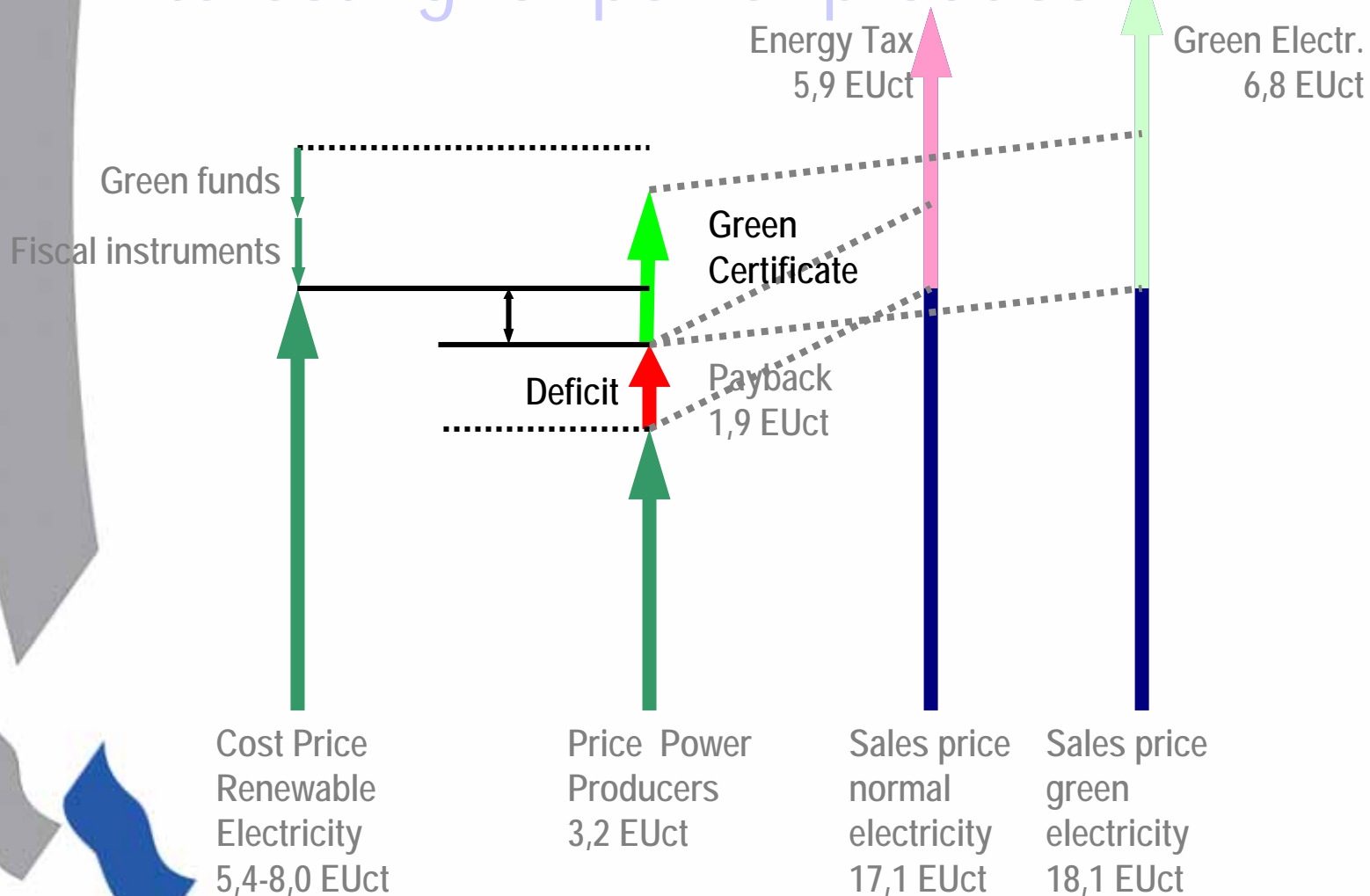
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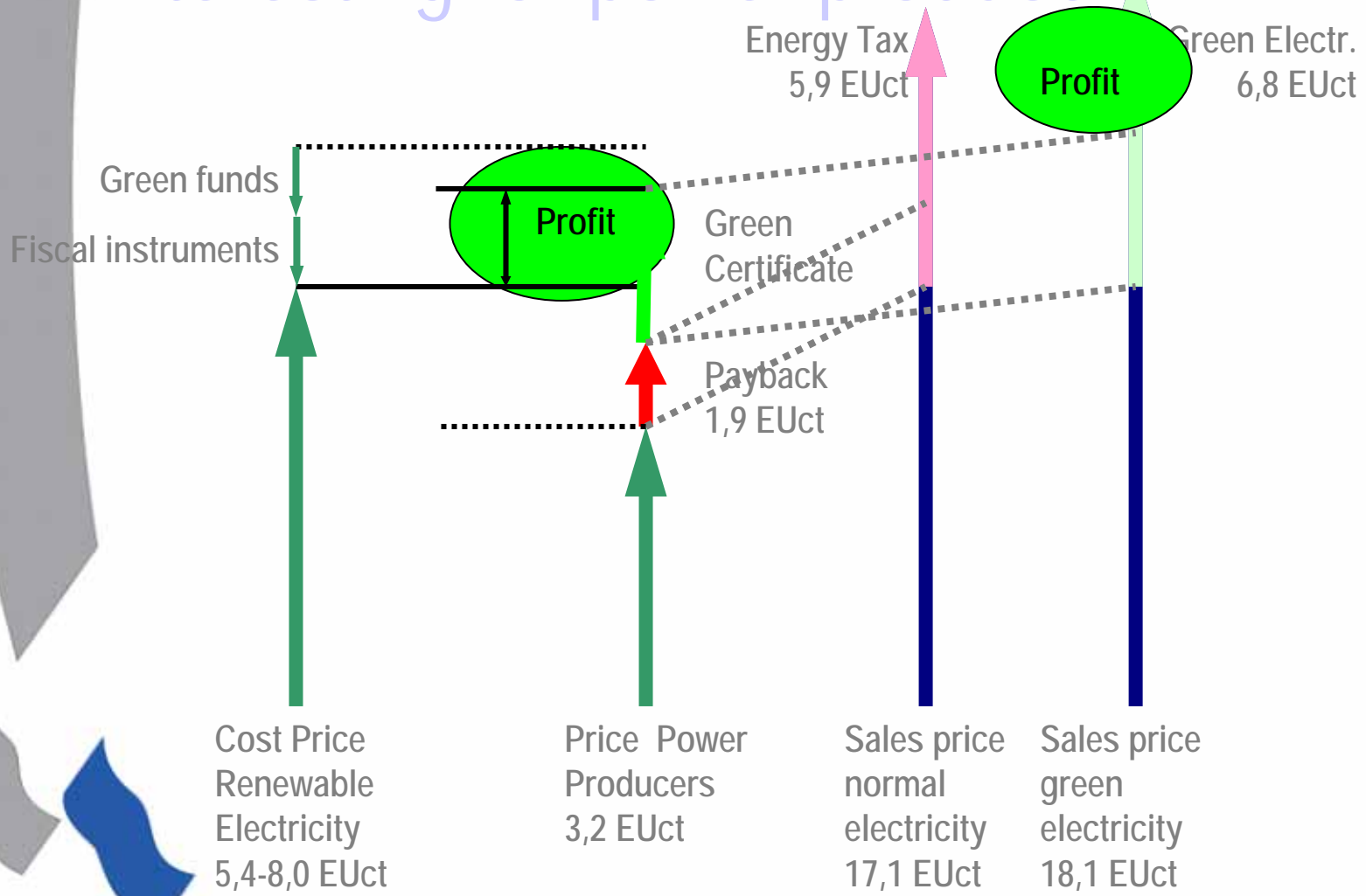
The principle of making renewable interesting for power producers



The principle of making renewable interesting for power producers



The principle of making renewable interesting for power producers



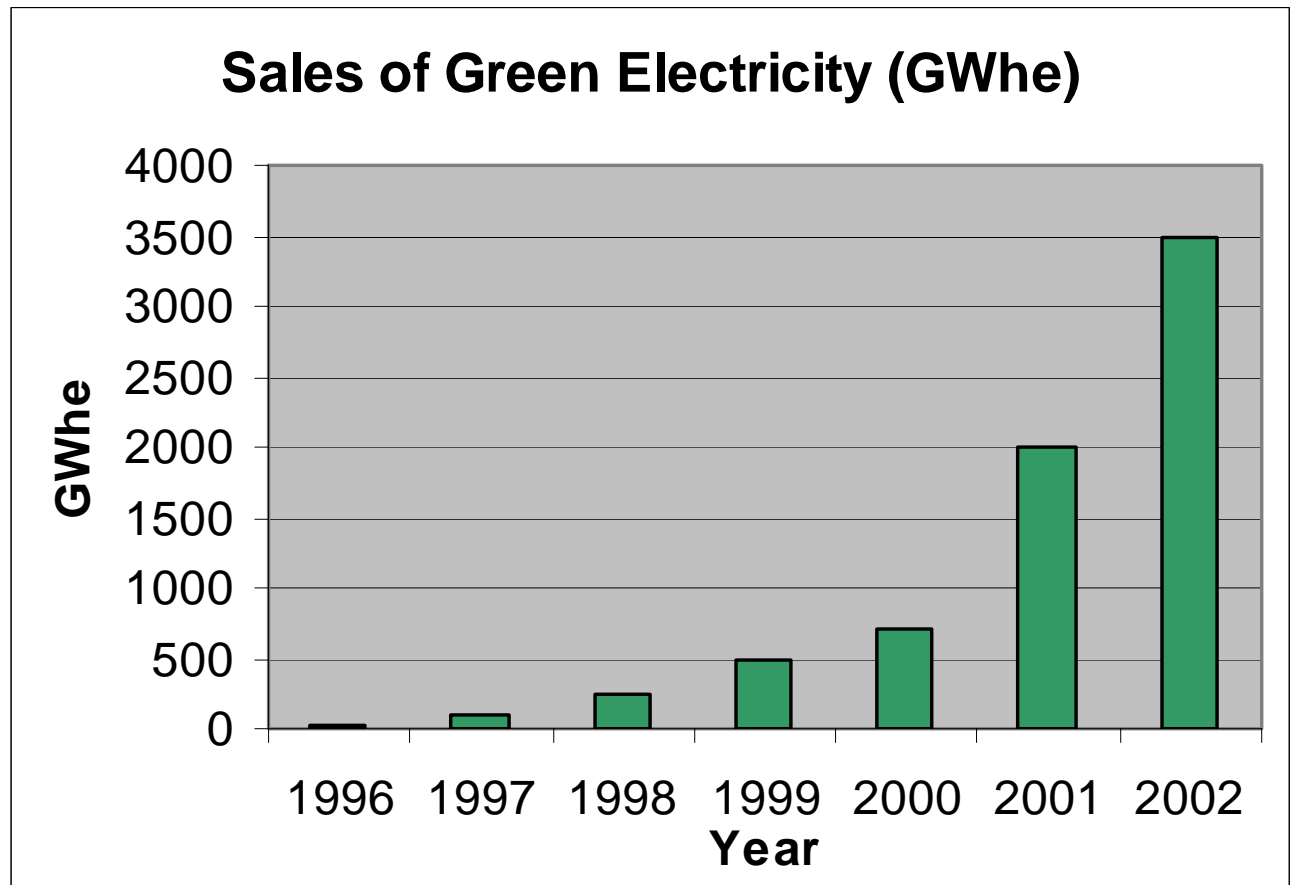


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Marketing of green energy



Green electricity for consumers

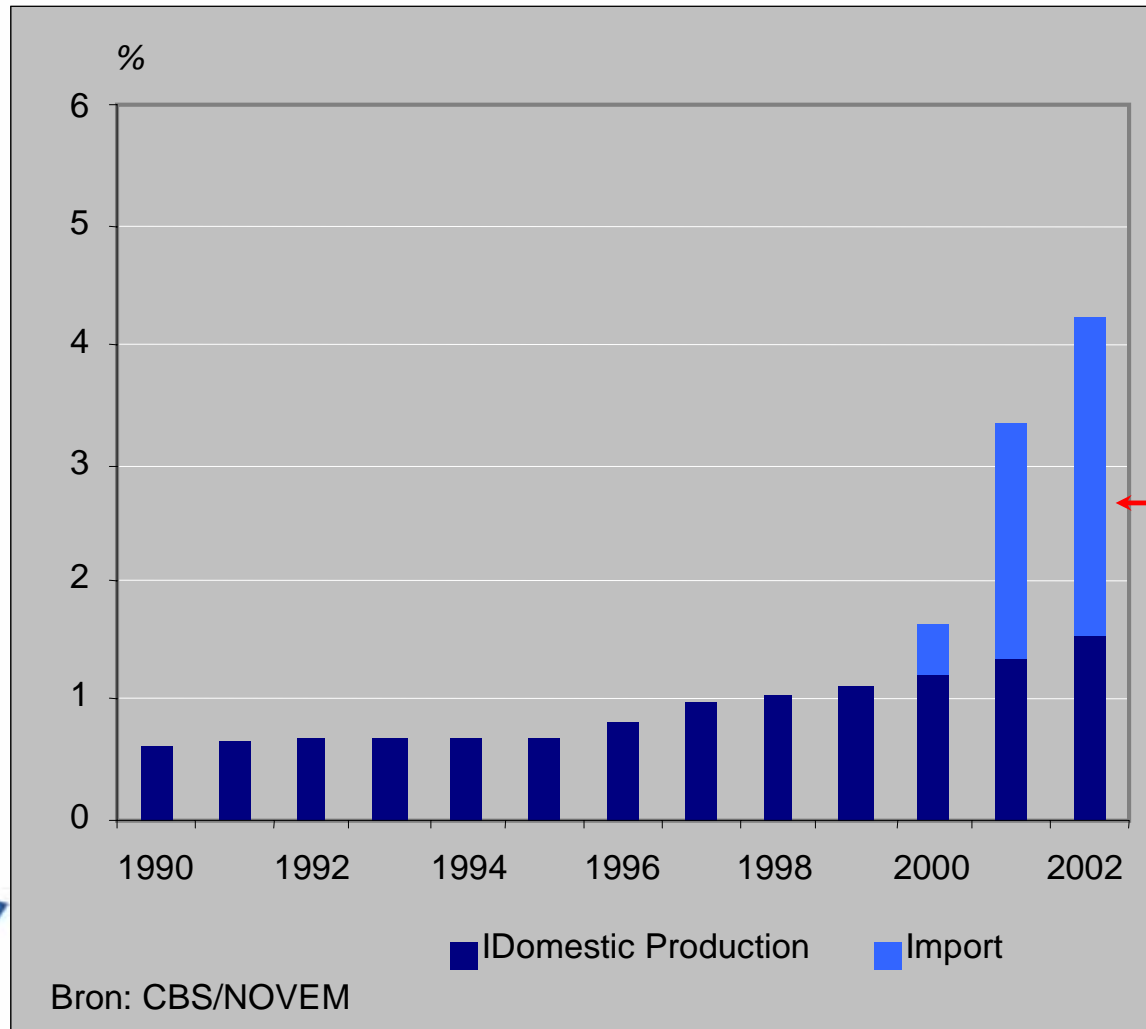


Green electricity Market

- Sharp increase in demand
- Production behind demand
- Since 1 januari 2002: import from other countries
- How to produce more in the Netherlands?

Sales of Green Electricity

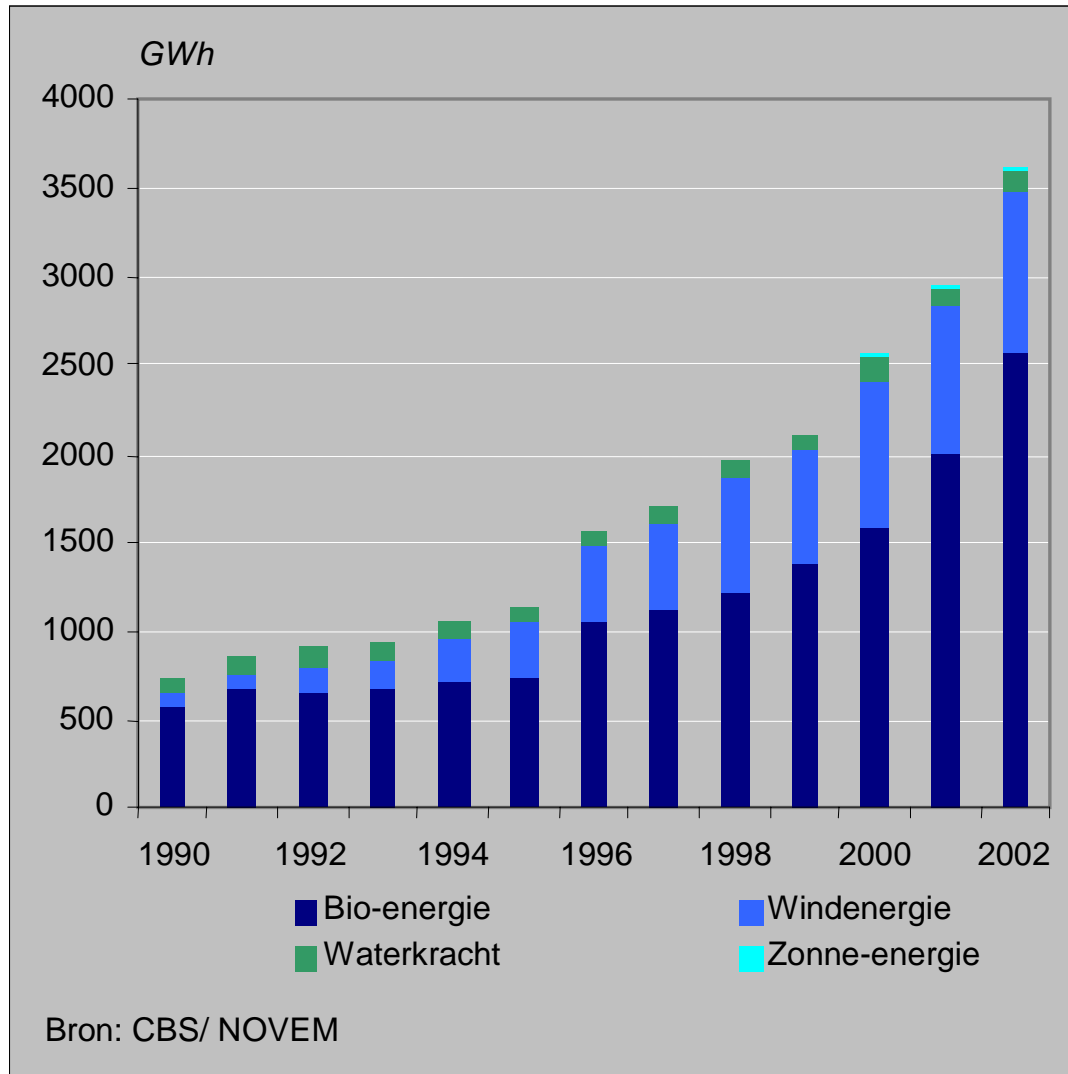
% of total energy consumption



13%
electricity
consump
tion:
15.000
GWh



Domestic Production



From Fiscal Support to Production support

- Before 1/1/2003
 - Tax: 6 €cts/Kwhe
 - Nihil tariff for green electricity
 - Production support 2 €cts/kWhe
- After 1/1/2003
 - green electricity: 2.8 cts/kWhe
- After 1/7/2003: MEP national production of electricity
 - guarantee for 10 yrs
 - wind, bio, solar: 6.8 €cts/kwh
 - cofiring: 4.8 €cts
 - Waste incineration: 2.8, if efficiency > 27 %.

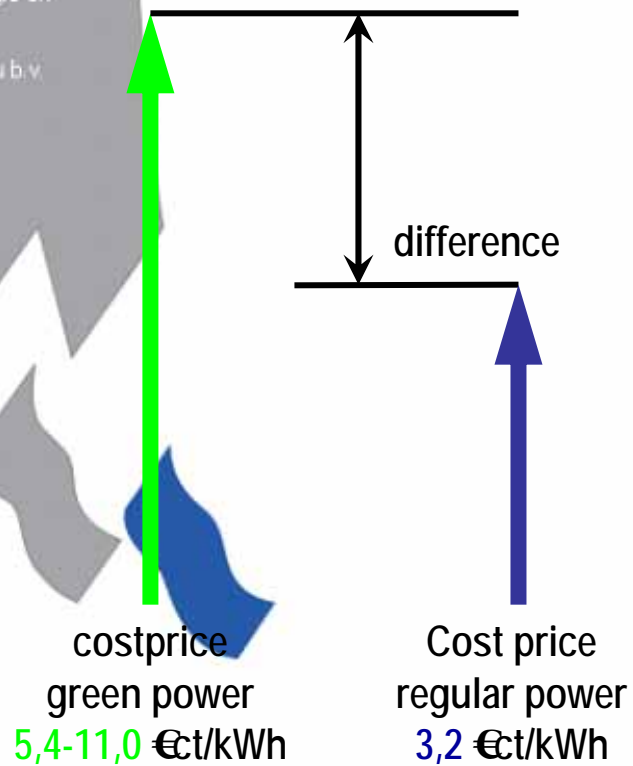
Fixed Feed in MEP support €/kWh

Change after	Jul03	Jan04	Jul04	Jan05
Ecotax reduction green electricity	2.9	2.9	1.5	0
Biomass > 50MW (3yr)	4.8	4.0	5.5	7.0
Mixed waste/biomass	2.9	2.9	2.9	2.9
Biomass <50 MW	6.8	6.7	8.2	9.7
Wind at sea/solar	6.8	6.7	8.2	9.7
Wind at land	4.9	4.9	6.4	7.8



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From 1-7-'03 (REB+MEP)



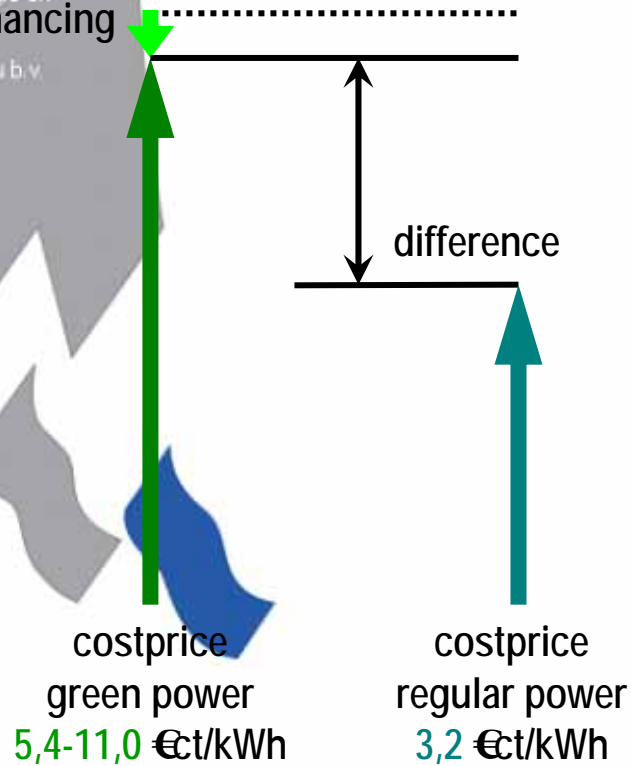


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FROM 1-7-'03 (REB+MEP)





After 1-7-'03 (REB+MEP)

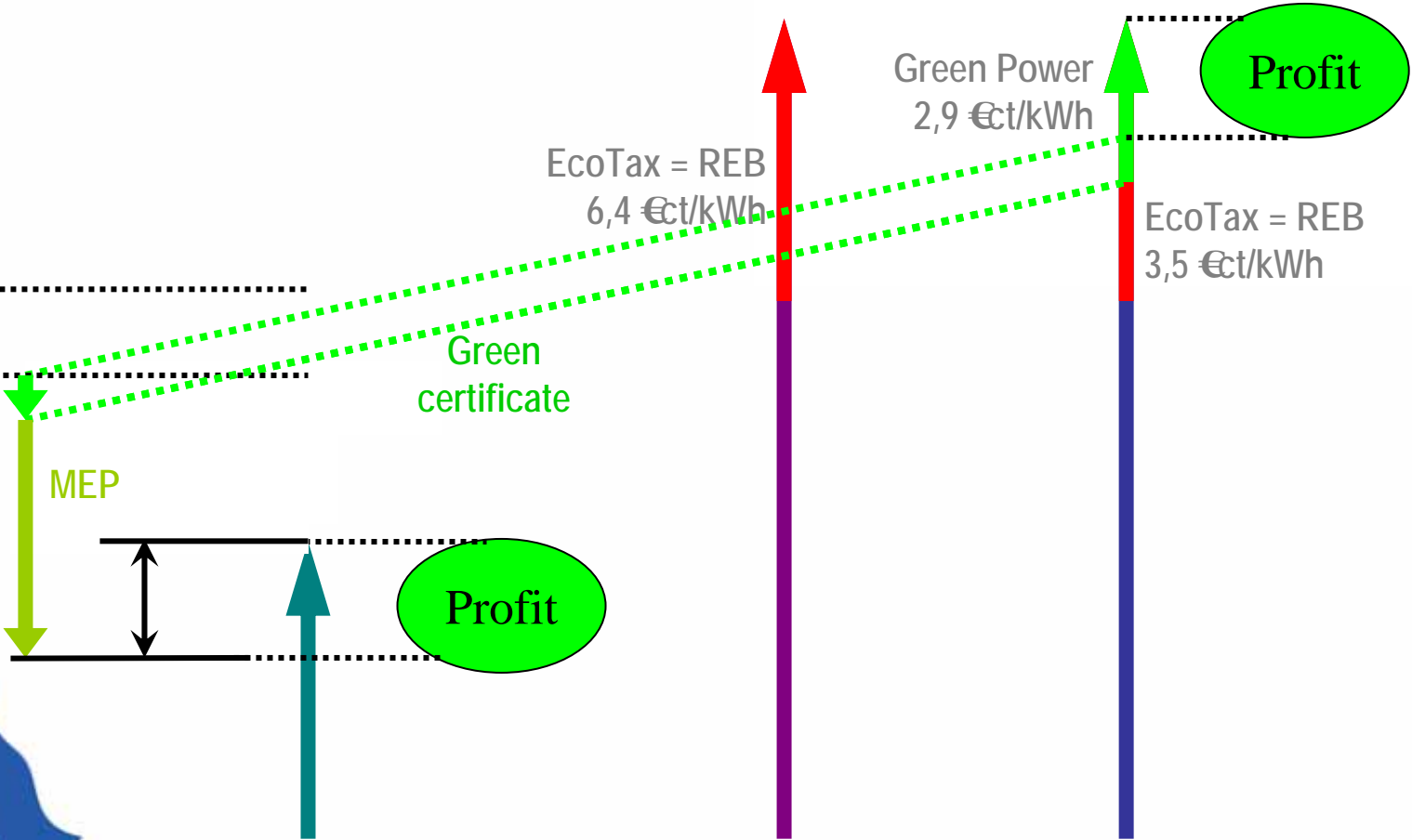
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EIA / VAMIL

Cost price
green power
5,4-11,0 €/kWh

Cost price
regular power
3,2 €/kWh

Sales price
regular power
17,1 €/kWh

Sales price
regular power
17,1 €/kWh





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More Information MEP, sales green certificates

Greencertificates, by Tennet:

www.certiq.nl

MEP subsidy:

www.enerq.nl

Lessons Learned

- Green Certificate as tradable unit
- Green Electricity Market creates public involvement for Sustainability
- Harmonised EU market required for demand support
- Obligation for producers could be the most efficient mean to achieve targets

Future Cooperation

- Implementation:
 - Certificates, Support systems
- Research Programmes
 - Energy Transition: H2, Biomass, fuels
 - Sustainable buildings, transport, production



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Thank you

