

How to accommodate the costs for the electricity intensive industry

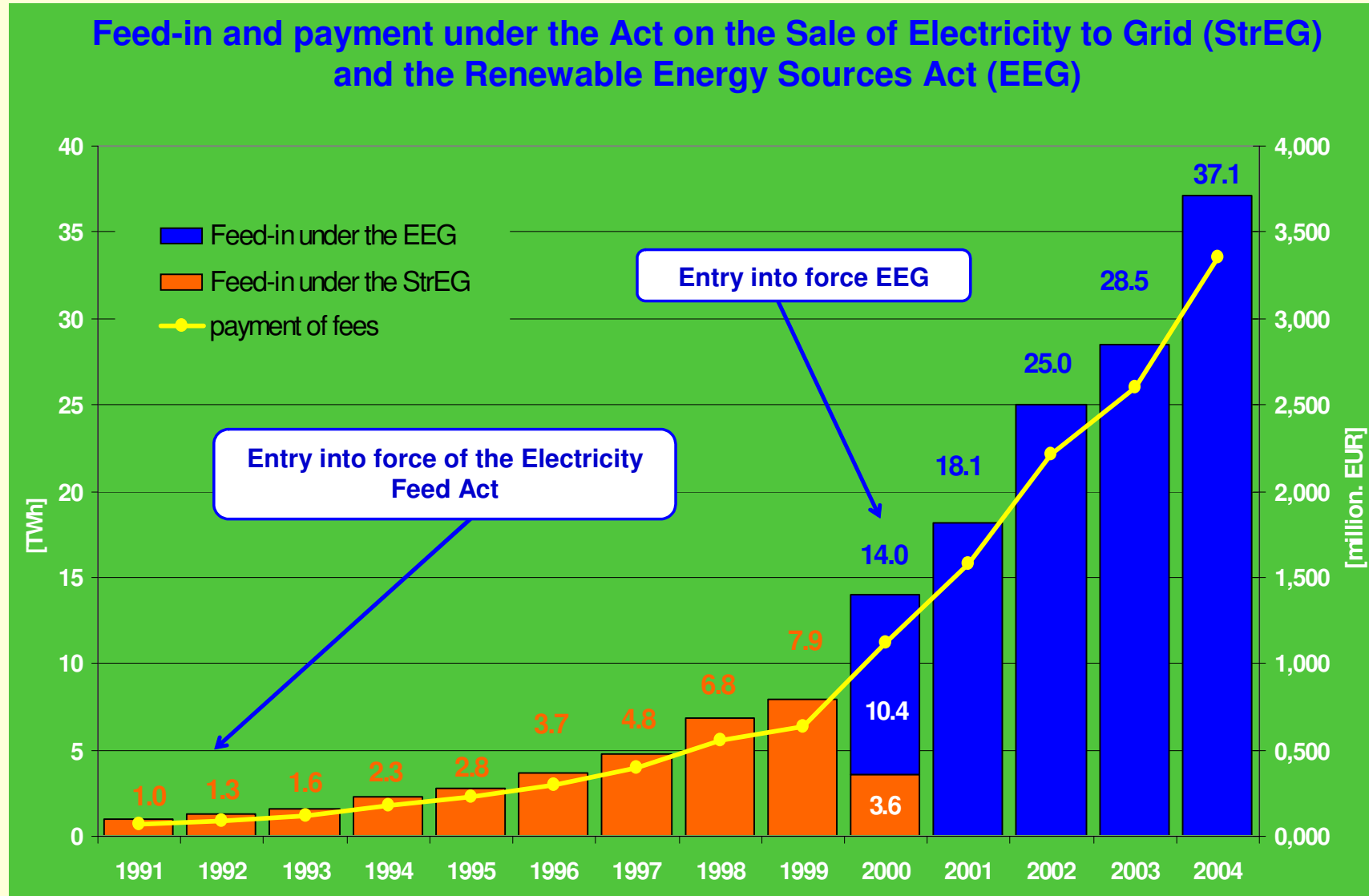
2nd Workshop of the International Feed-in Cooperation

**Prof. Dr. Uwe Leprich
Institute for Future Energy Systems (IZES)
Berlin, December 16, 2005**

- 1. What are “the costs” in Germany ?**
- 2. What means „electricity intensive“ ?**
- 3. What means „competitiveness“ ?**
- 4. The EEG regulation in Germany**
- 5. Present results of the EEG regulation**
- 6. What’s coming up ?**

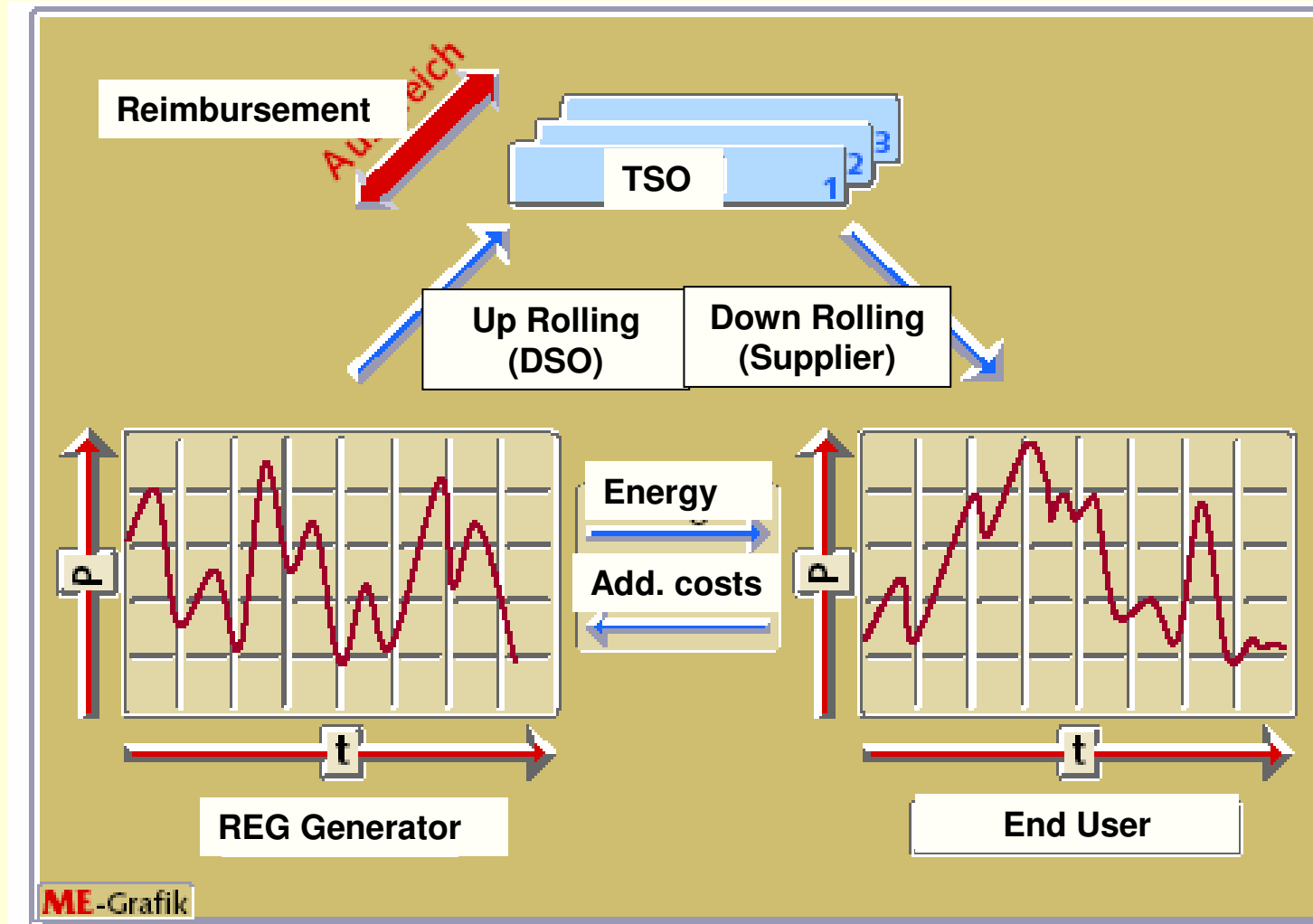
History of REG Payments in Germany

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The Payment Stream

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Total Costs for EEG-supported Electricity, Approach 1



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	2004	2005 (Estimates)	2006 (Estimates)
Volume of EEG-supported electricity	38,5 TWh	45,5 TWh	49,3 TWh
EEG-Quota	8,48 %	10,50 %	11,3 %
Average EEG payment rate	9,29 ct/kWh	9,53 ct/kWh	9,65 ct/kWh
Sum EEG payments	3,6 Billion €	4,3 Billion €	4,8 Billion €
Value of EEG elec. (average base load future year)	2,80 ct/kWh	3,35 ct/kWh	4,00 ct/kWh
Differential Costs	2,50 Billion €	2,81 Billion €	2,79 Billion €

Total Costs for EEG-supported Electricity, Approach 2



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	2004	2005 (Estimates)	2006 (Estimates)
Volume of EEG-supported electricity	38,5 TWh	45,5 TWh	49,3 TWh
EEG-Quota	8,48 %	10,50 %	11,3 %
Average EEG payment rate	9,29 ct/kWh	9,53 ct/kWh	9,65 ct/kWh
Sum EEG payments	3,6 Billion €	4,3 Billion €	4,8 Billion €
Value of EEG elec. (avg. base / peak load future year – 50/50)	3,58 ct/kWh	4,13 ct/kWh	4,62 ct/kWh
Differential Costs	2,20 Billion €	2,46 Billion €	2,48 Billion €

Gross Income

+ % Inventory Alterations

+ Self-produced Plants

Gross Production Value („Bruttoproduktionswert“)

% Materials Consumption

Net Production Value

% Other Payments in Advance

Gross Value Added („Bruttowertschöpfung“)

Possible Indicators for Electricity Intensity



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Indicator \ Criterion	Explanatory Power	Practicability / Data Availability	Manipulability
Electricity Costs to Gross Income	low	high	slightly
Electricity Costs to Total Costs	high	medium	slightly
Electricity Costs to Gross Value Added	medium to high	high	medium
Total electricity consumption	low	very high	impossible

Electricity Intensive Industries in Germany



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Indicators of Electricity Intensive Industries	# Companies	# Employees	Electricity Consumption 1000 kWh	Electricity Share in %	El. Costs to Gross Value Added
<i>Electricity Costs to Gross Value Added > 15 %*</i>					
Production of cement	58	9.723	3 421 079	1,5%	16,7%
Production and first treatment of lead, zinc and tin	33	4.152	1 391 060	0,6%	16,0%
Production and first treatment of aluminium	111	30.284	12 686 065	5,6%	15,5%
Subtotal I	202	44.159	17 498 204	7,7%	
<i>Electricity Costs to Gross Value Added > 10 % and less than 15 %*</i>					
...
Production of pig iron, steel and ferro-alloys	80	80.223	20 122 913	8,8%	13,4%
Production of paper, card- and pasteboard	197	44.729	15 346 973	6,7%	10,8%
Production of bottle glass	82	18.420	1 906 041	0,8%	10,4%
...
Subtotal II	624	169.001	40 692 246	17,9%	
Total (<i>Electricity Costs to Gross Value Added > 10 %</i>)	826	213.160	58 190 450	25,6%	
* Remark: last available data stem from 1998					

What means Competitiveness ?

- An industry can be considered competitive at a specific location as long as there is an “adequate” value added to the input factors (capital, land)
- A possible indicator could be the ratio of value added to capital (equity) and land to the gross production value
- As long as the EEG differential costs cannot be passed through the prices the indicator decreases
- Is the ratio “too small” at the current location (country), the competitiveness might be endangered and the industry might change the location.

Ratio of value added to capital (equity) and land to the gross production value of selected German industries



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Industry #	Industry	Electr. Costs to Gross Added Value 1998 in %	Ratio of Value Added to C+L to the GPV 2001 in %
2651	Production of cement	16,7	6,5
2743	Production and first treatment of lead, zinc and tin	16,0	1,0
2742	Production and first treatment of aluminium	15,5	1,7
2710	Production of pig iron, steel and ferro-alloys	13,4	0,8
2112	Production of paper, card- and pasteboard	10,8	6,7

The EEG Regulation in Germany

A limit should be set only if the manufacturing enterprise proves that

1. the electricity purchased from a utility company and consumed by the enterprise itself exceeded **100 gigawatt-hours** in the last closed financial year
2. the ratio of the enterprise's electricity costs to its gross value added exceeded **20 per cent**
3. the differential costs endanger the international competitiveness of the enterprise substantially.

The limit is fixed to **0,05 ct/kWh** of the total quantity of electricity exceeding 10 per cent of the electricity purchased and consumed in the last closed financial year (“Selbst-behalt”)

Article 16: Special Equalisation Scheme / Criteria



- (2) In the case of manufacturing enterprises, a limit shall be set only where they furnish proof that and to what extent, in the last closed financial year,
1. the electricity purchased from a utility company and consumed by the enterprises themselves exceeded **10 gigawatt-hours** at a certain delivery point,
 2. the ratio of the enterprise's electricity costs to its gross value added as defined by the Federal Statistical Office (*Fachserie 4* , series 4.3 of June 20033), exceeded **15 per cent**,

- (4) To limit the share of the electricity forwarded a certain percentage shall... be fixed for the delivery point in question... in such a way that the differential cost for the share of the quantity of electricity forwarded... amounts to **0.05 cents** per kilowatt-hour.

In the case of enterprises for which the purchased quantity of electricity ... is **below 100 gigawatt-hours** or for which the ratio of electricity costs to gross value added is **below 20 per cent** ... this provision shall only apply to the total quantity of electricity exceeding 10 per cent of the electricity purchased and consumed at that delivery point in the last closed financial year ...
("Selbstbehalt")

The EEG limits the total relief volume, i.e. the extra costs incurred by non-privileged companies due to the equalisation scheme:

- The electricity volumes which are distributed among the non-privileged electricity consumers are limited to a maximum of 10% above the share calculated pursuant to the EEG (Article 16,5 EEG).

Present Results of the EEG Regulation

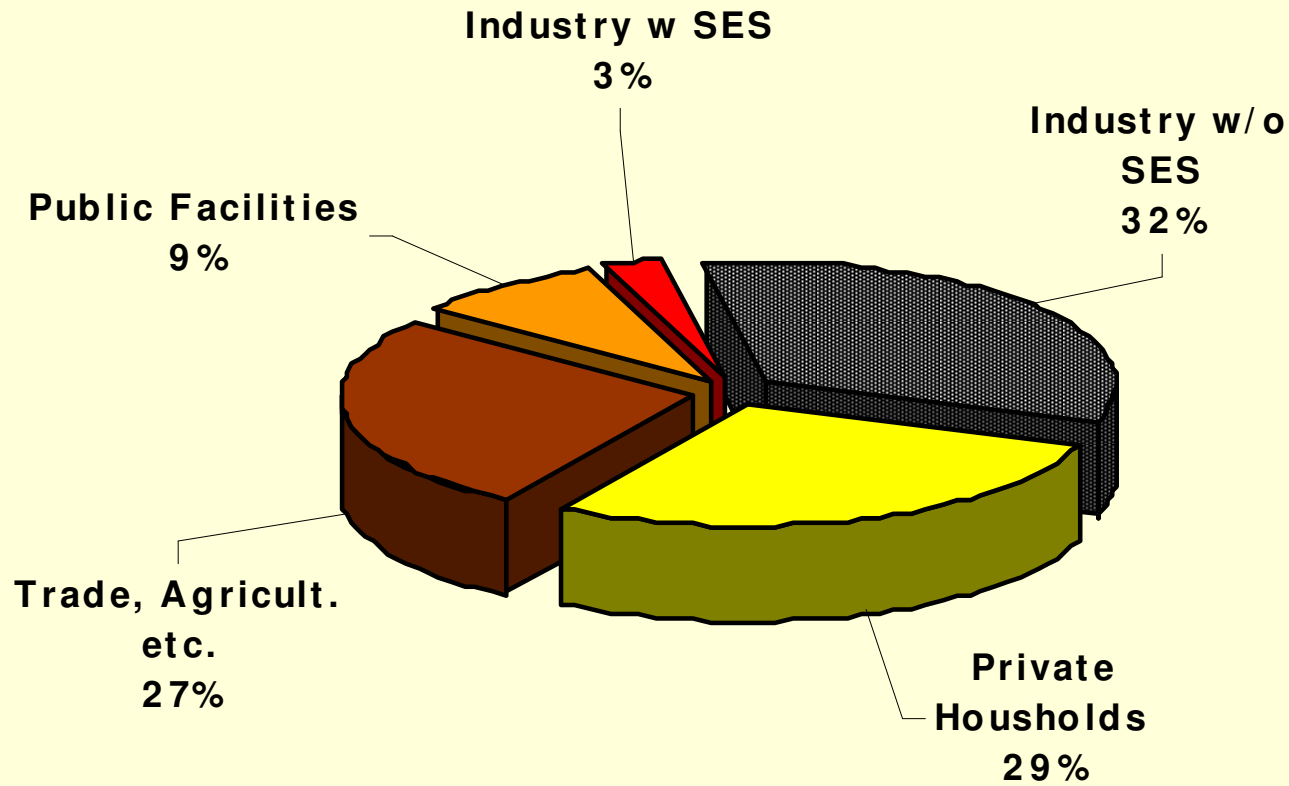
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	# companies (w/o railway operators)	privileged consumed electricity in GWh	privileged consumed electricity in % of total
Chemistry	42	15.164	27,7
Non-ferrous metals	11	13.337	24,3
Steel	21	8.900	16,2
Paper	45	8.469	15,4
	119	45.870	83,6
Total Sum	252	54.817	100

EEG Payments: Burden Sharing (rough estimate)



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Coalition contract from November 11, 2005:

- The differential cost for the electricity intensive companies will be restricted to 0.05 ct/kWh, i.e. the 10%-lid will be abandoned
- Whether the self-keep („Selbstbehalt“) for the first 10% of the delivered electricity will remain in place is an open question

Thank you very much for your attention !

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