



# AUSTRIAN COUNTRY REPORT

IEA Task 37 Meeting  
Cork 14-16 Sept. 2011

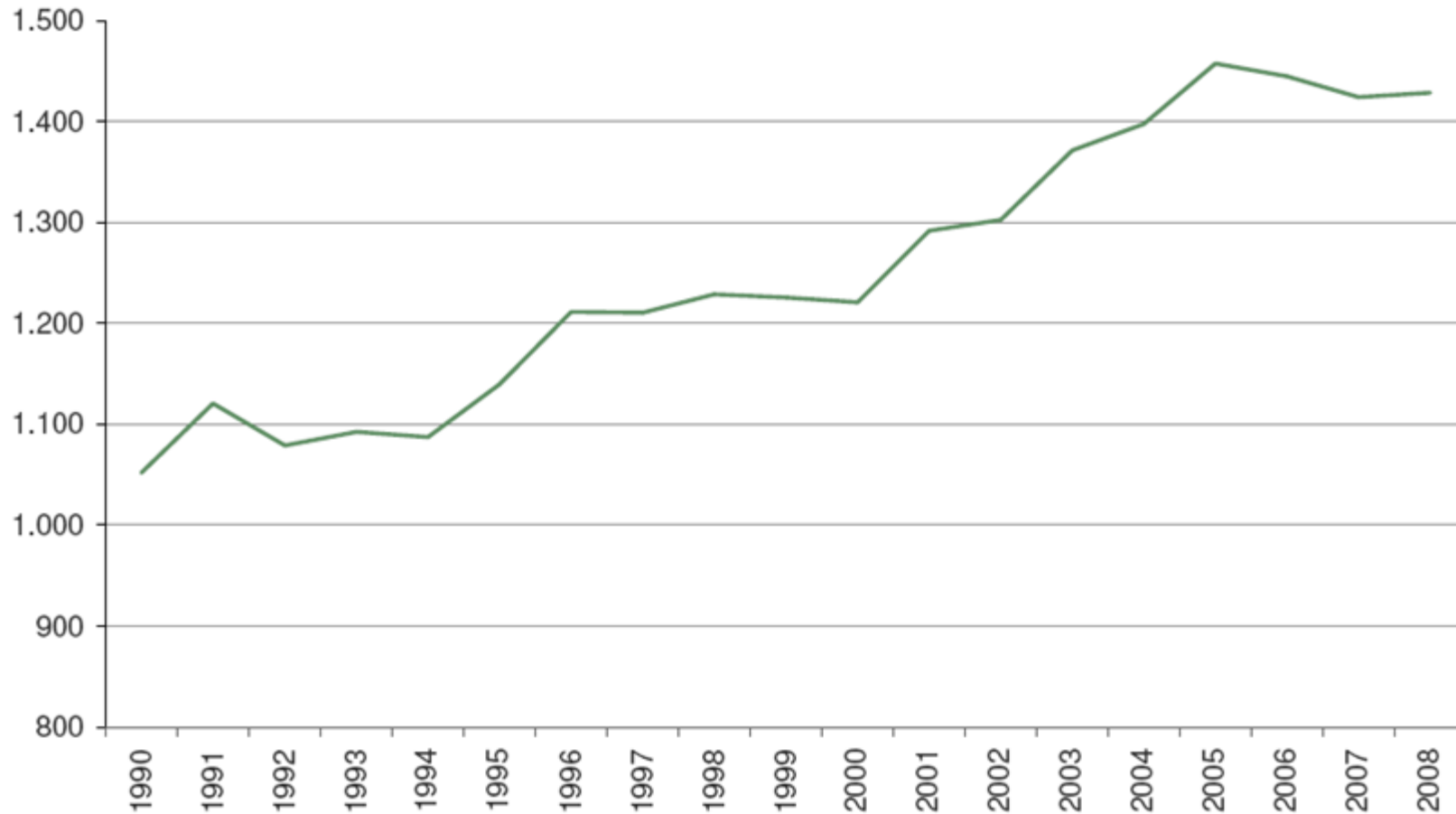
Bernhard Drosig



# Total Energy Demand in Austria (1990 - 2008)

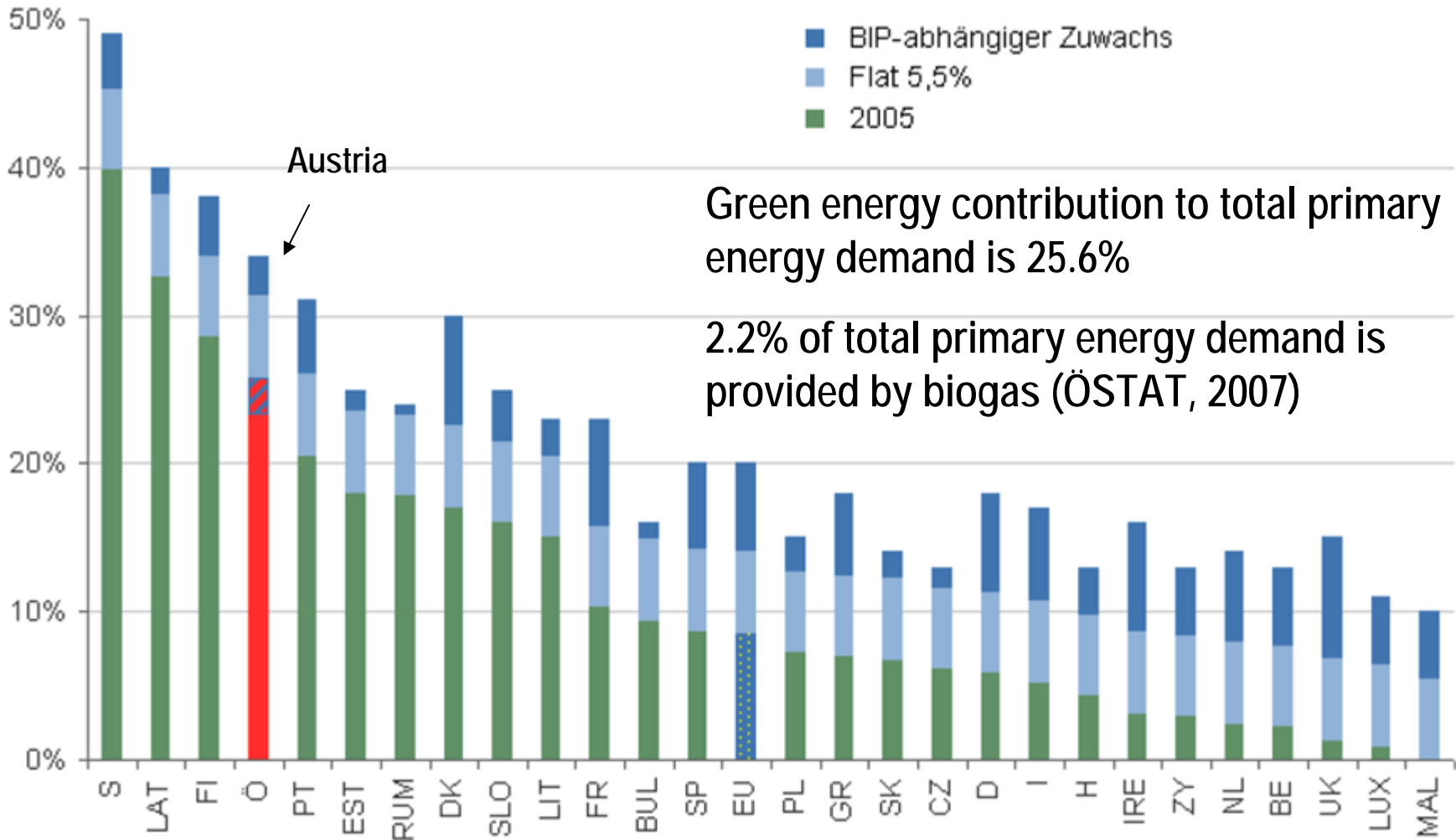


BIV in PJ

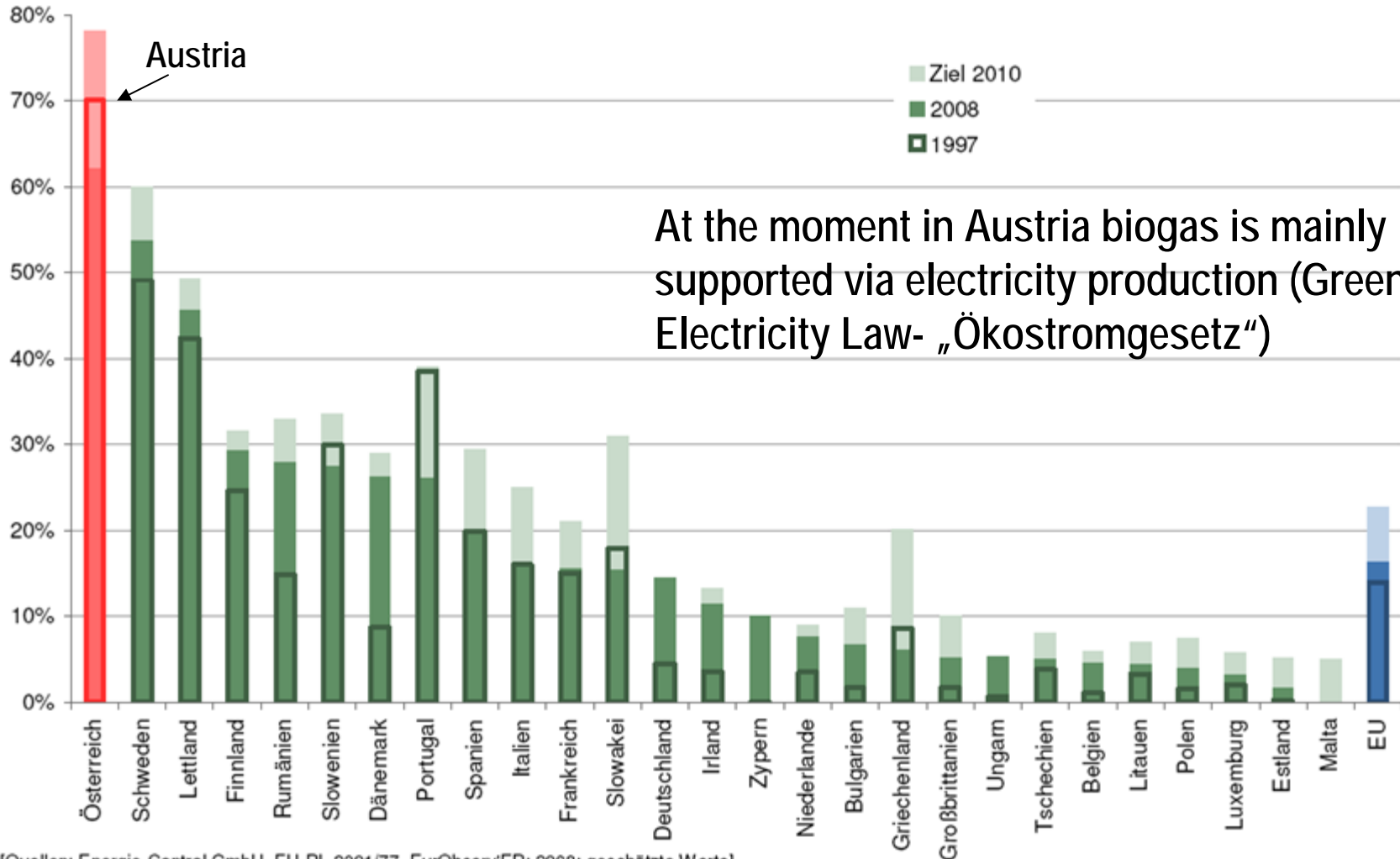


[Quelle: Statistik Austria]

# Total Green Energy Contribution to Total Energy Demand in EU Countries



# Total Green Energy Contribution to the Electricity Sector in EU Countries



[Quellen: Energie-Control GmbH, EU-RL 2001/77, EurObserv'ER; 2008: geschätzte Werte]

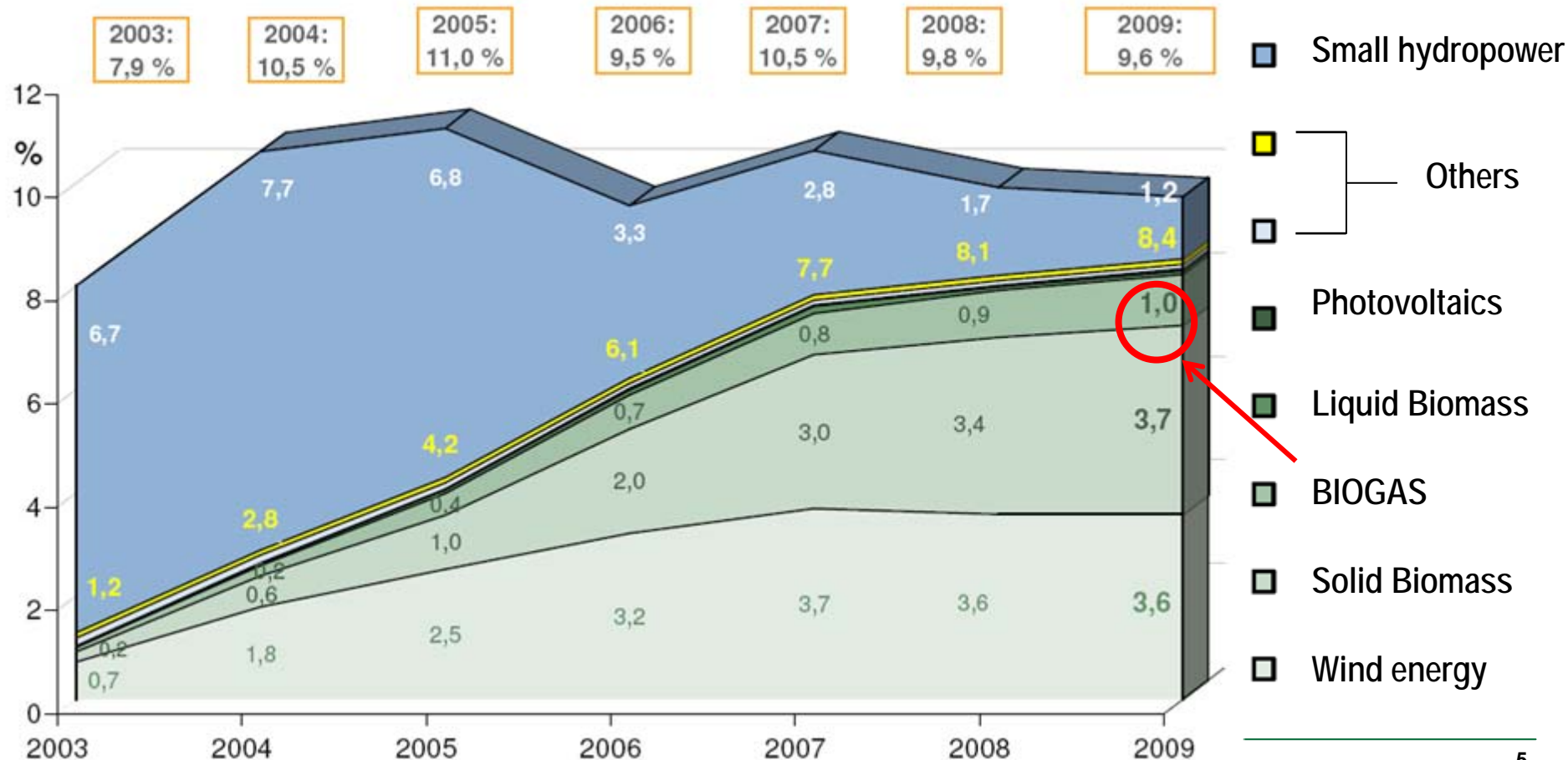
# "Ökostrom" - Subsidised Green Electricity



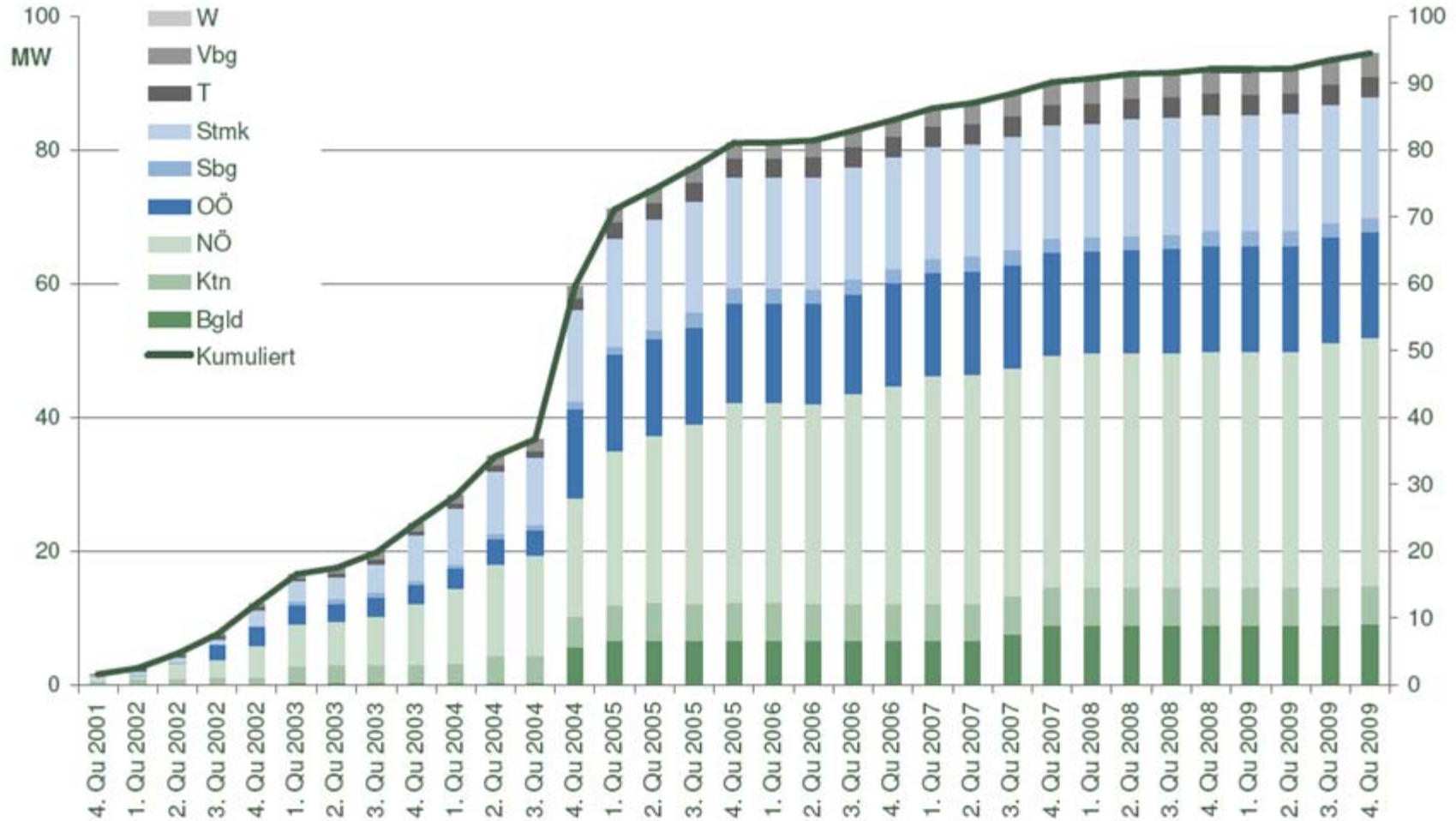
~70% of total electricity is green electricity (mainly hydro power)

~10% of total electricity is subsidised green electricity

In 2009 biogas produced 525 GWh<sub>el</sub> (1% of total electrical energy demand)



# Development of Biogas Plants Registered at the Austrian Green Electricity Company (2001 - 2009)



[Quelle: Energie-Control GmbH]

# Plant Size Distribution of Austrian Plants Registered at Austrian Green Electricity Company

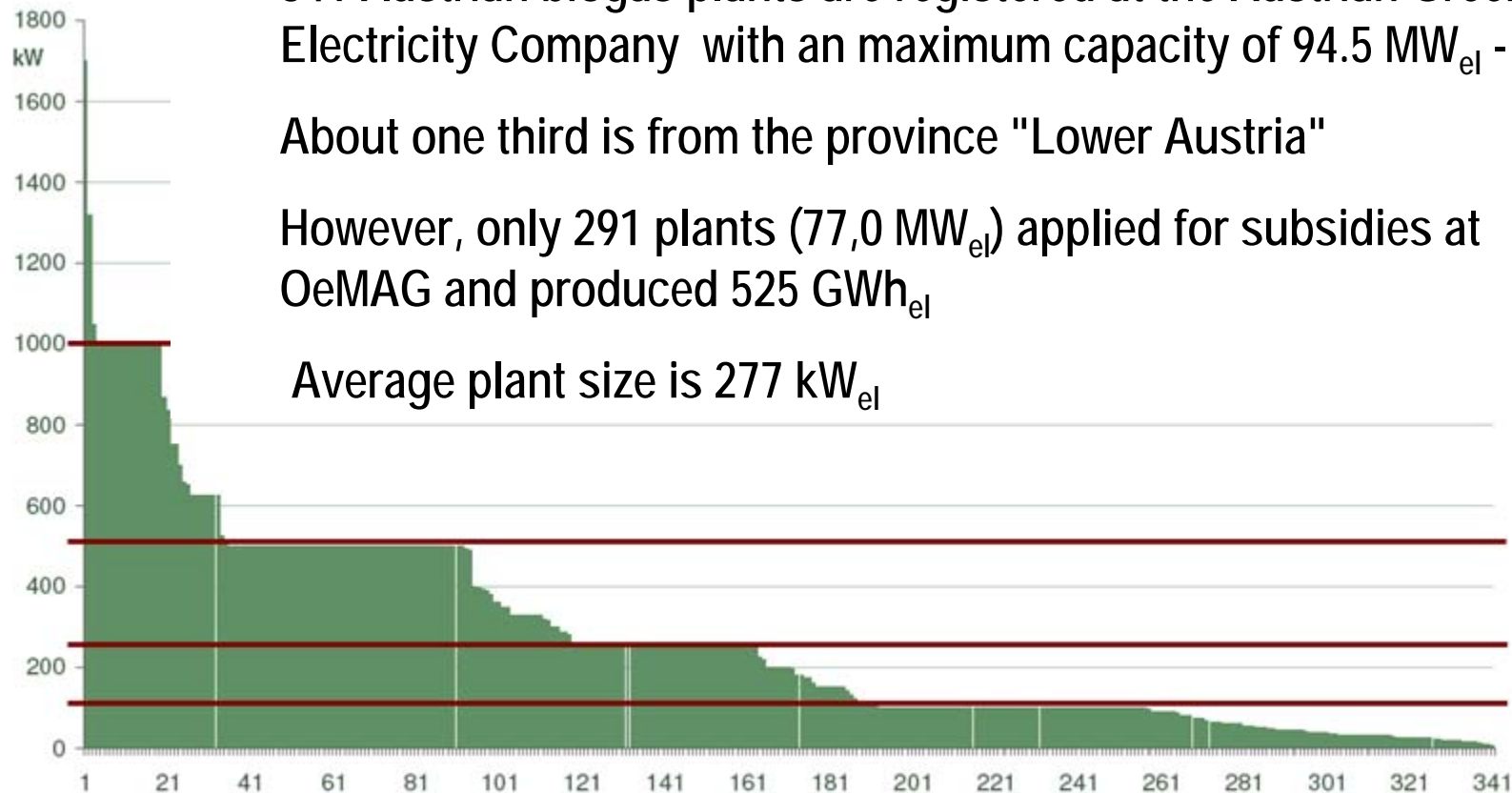


341 Austrian biogas plants are registered at the Austrian Green Electricity Company with an maximum capacity of 94.5 MW<sub>el</sub> -

About one third is from the province "Lower Austria"

However, only 291 plants (77,0 MW<sub>el</sub>) applied for subsidies at OeMAG and produced 525 GWh<sub>el</sub>

Average plant size is 277 kW<sub>el</sub>



[Quelle: Energie-Control GmbH]

# Status of Biogas in Austria

(R. Braun, 2008)



Substrate / Plant type	Number of plants	Mio. Nm <sup>3</sup> biogas per year	% Percentage
Landfill	62	45 - 100	21
Sewage sludge	134	75 - 100	26
Agricultural plants (including co-digestion)	350	121 - 182	45
Industry (including anaerobic wastewater pre-treatment)	25	9 - 14	3
Plants from municipalities and waste associations	15	15 - 18	5
<b>TOTAL</b>	<b>586</b>	<b>265 - 414</b>	<b>100</b>

# Current Biogas Feed-In Tariffs in Austria



Economic Support Data:

## - Feed-in tariffs in Austria

From 2010 onwards just 3 instead of formerly 5 categories

18.5 Cent / kWh up to 250 kW<sub>el</sub>

16.5 Cent / kWh from 250 - 500 kW<sub>el</sub>

13 Cent / kWh above 500 kW<sub>el</sub>

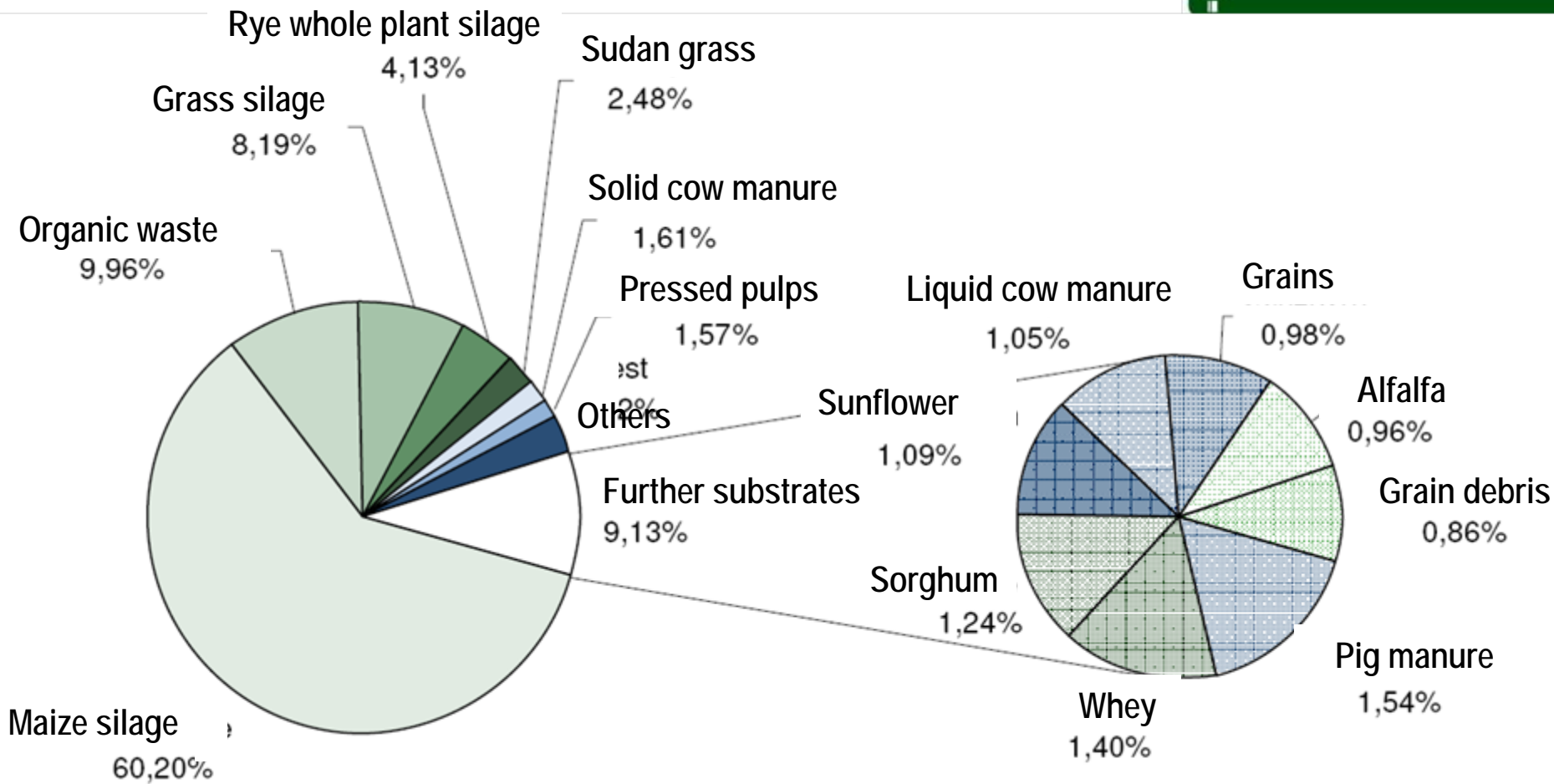
+ 2 Cent / kWh if biogas is upgraded

+ 2 Cent / kWh if heat is used properly

## - Investment grants in Austria

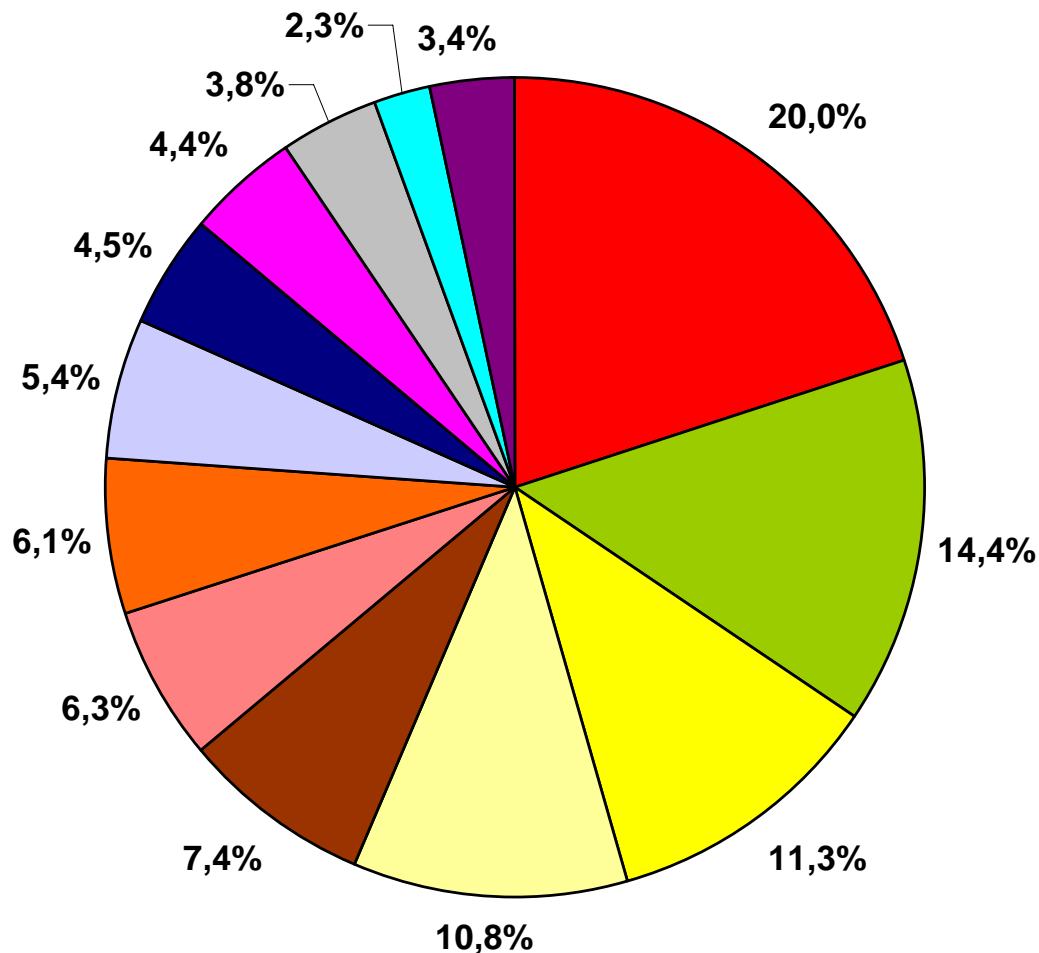
Depend on local conditions

# Composition of the Substrates in 200 Biogas Plants Based on Energy Content (E-Control GmbH)

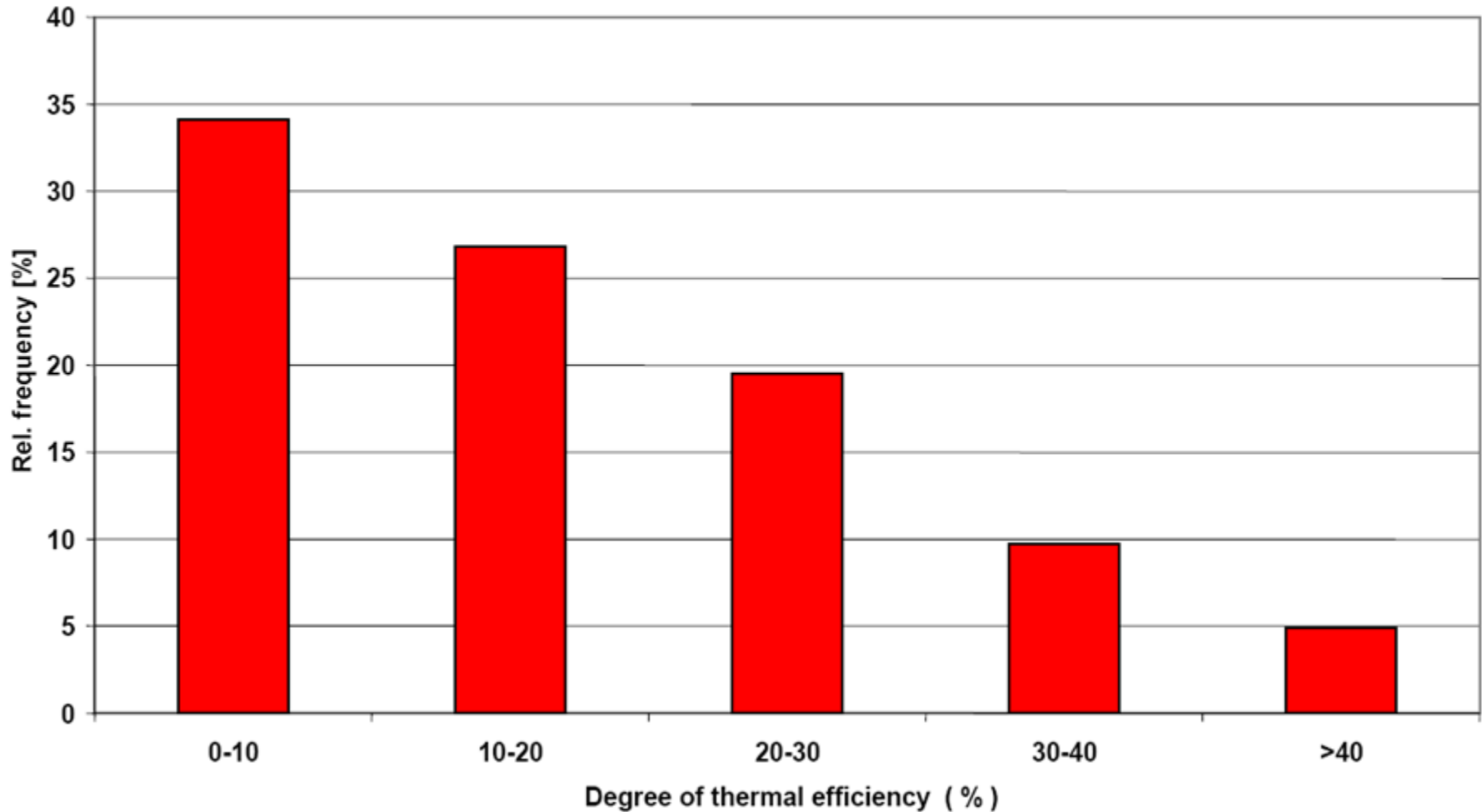


# Composition of the Organic Waste in 40 Austrian Biogas Plants Based on VS Content (Laaber et al. 2007)

- Kitchen leftovers and waste
- Grain debris
- Lecithin
- Sugar beet pulps
- Potato waste
- Milling residues
- Wheat bran
- Fruit and vegetable waste
- Separated Fats
- Glycerin
- Brewery waste
- Slaughter house waste
- Others



# Degree of thermal efficiency



Average electric process energy demand in Austrian biogas plants is 9 %  
Average electric efficiency is 36 % ... and **thermal efficiency ?**

# Biogas-Upgrading Plant Inventory



## Summary of Up-grading Plants in Austria:

Plant / Location	In operation	Technique	Capacity (raw biogas)
Bruck / Leitha	Since 2007	Gas permeation	180 Nm <sup>3</sup> / hr
Pucking	Since 2005	PSA	10 Nm <sup>3</sup> / hr
Leoben	Since 2009	Amine	140 Nm <sup>3</sup> / hr
Linz	planning		
St. Margarethen am Moos	Since 2007	Membrane	25 kg CH <sub>4</sub> / hr (300 bar)
Eugendorf	Since 2008	Blend of Biomethane by PSA (20%) and Natural Gas (80%)	22 Nm <sup>3</sup> / hr
New plants: Güssing (gas station), Wiener Neustadt (gas grid)			

Note: a full up-grading plant list for the country will be needed in order to up-date the plant list on the website

# Political aims „Austrian Energy Strategy“ by Austrian Ministries of Economy and Environment



- In general: to limit Austrian energy demand to the value of 2005: 1.118 PJ
- By 2015: increase energy from biomass by 100 MW<sub>el</sub> (also no dependence on nuclear energy imports is planned)

## Main issues concerning BIOGAS:

- Focus on bio-methane production from biogas
- Use of biomethane as transportation fuel (Bio-CNG)
- Biomethane shall replace **10% of natural gas consumption (800 Mn. Nm<sup>3</sup>/yr)**
- Increasing focus on total energy efficiency
- Keep up the strategy to support efficient electricity and heat production
- Biomethane → pushed by stimulating market demand and investment incentives
- Clear and comprehensible regulatory framework will be established

# ADSW&EC Conference 2011, Vienna



# ADSW&EC Conference 2011, Vienna



# ADSW&EC Conference 2011, Vienna - Social Events





# Thank you for your attention!

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