

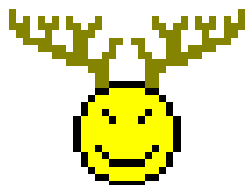


# The European market of wood pellets for heating and power production

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EU project 2007-2009, called **pellets@las**

*[www.pelletsatlas.info](http://www.pelletsatlas.info)*



Workshop “Woody biomass for energy”

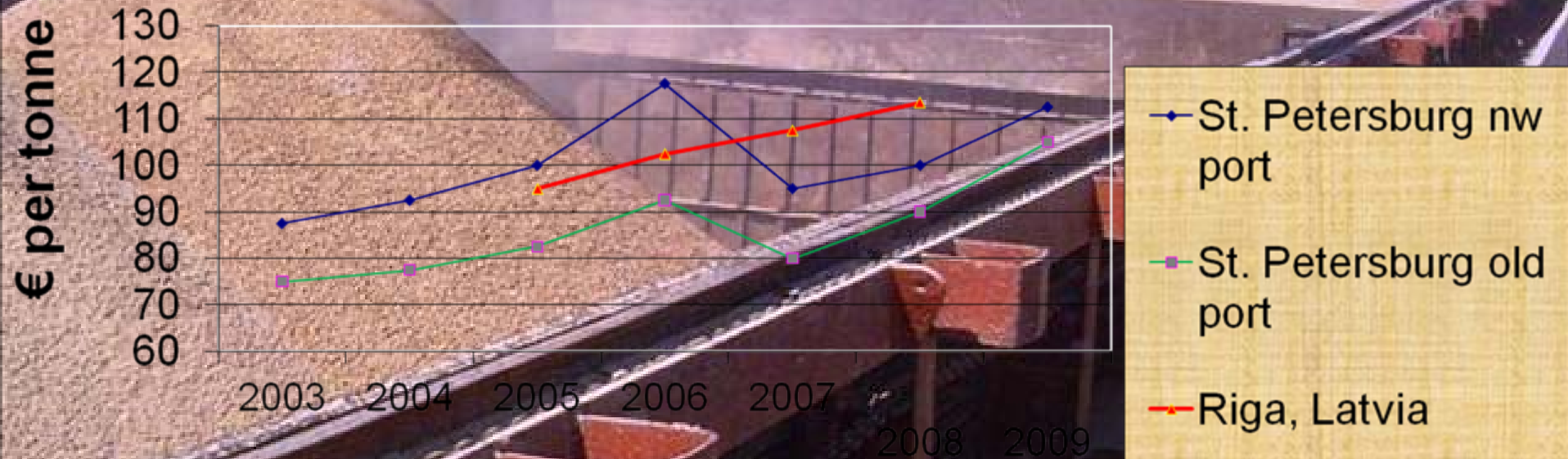
Riga (Latvija), Wednesday 16<sup>th</sup> of September 2009



# Riga harbor, Latvia


Major hub for pellet export

Export prices of bulk pellets (FOB excl VAT)  
Graph derived from Pellets@las





# Contents of presentation

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# 1. Introduction wood pellets

Growing international trade, next to domestic supply

Official trade statistics, since 1st of Jan 2009

- 44.01.3010 Sawdust & woodscrap
- 44.01.3020 Wood pellets

Transport is important economic factor

- Sawdust, shavings: short distance
- Wood pellets: long distances
- Torrefied pellet: future option (power plants)

Pellet production is growing worldwide (2008)

- Europe: actual production about 8 million
- USA & Canada: about 4 million



## 2. Methodology Pellets@las





- Countries analysed: EU27, Switzerland, & Norway,  
Expert market information: Belarus, Ukrain & Russia
- Consumption 2009 = Production + import – export  
+/- stockchanges
- Different markets defined per country, depending on:
  - scale (large to small consumers)
  - end-use (heating; power production; CHP)
- Since 2007: average weighted, monthly pellet prices

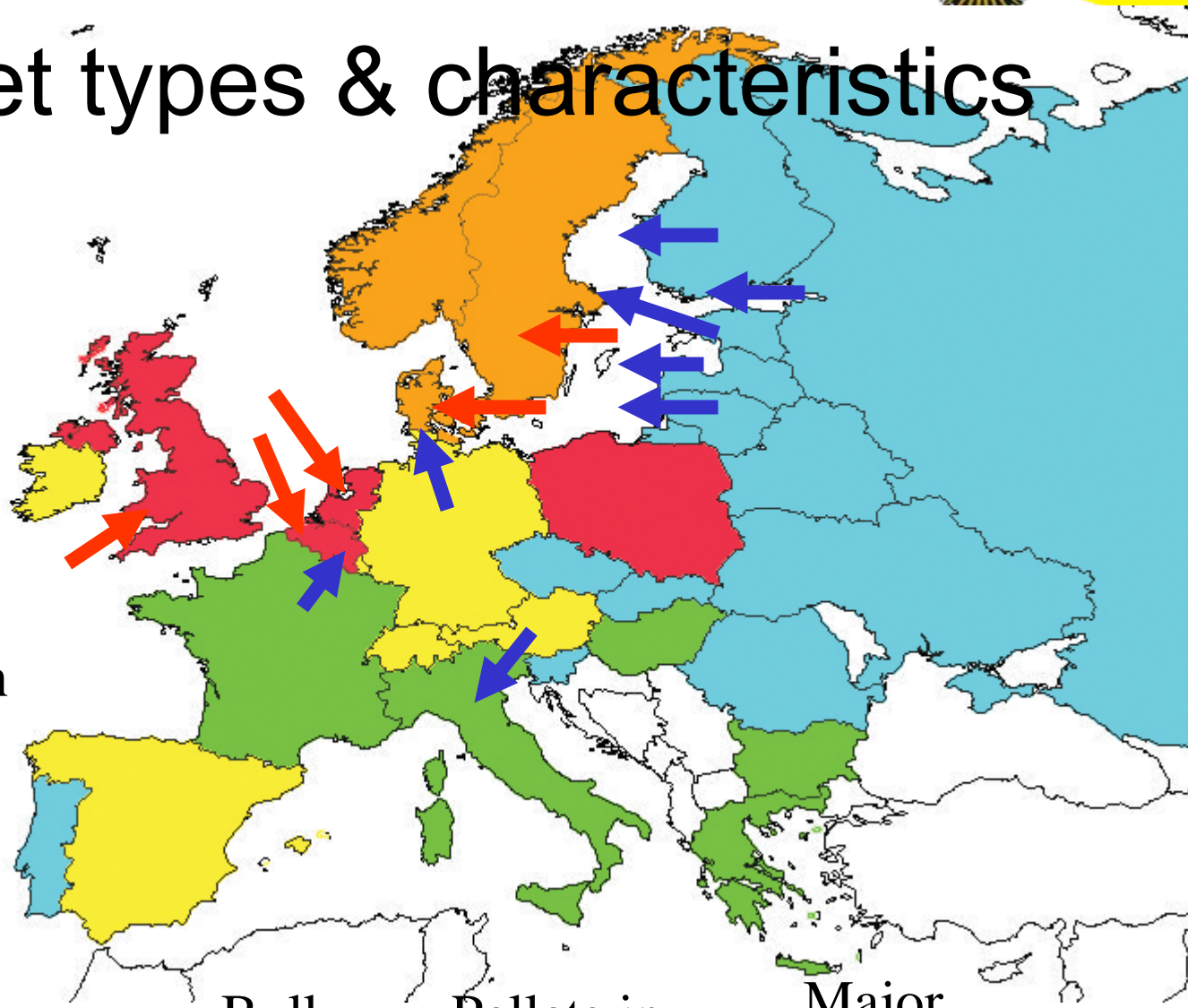




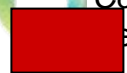
# 3. Market types & characteristics

 Import  
> 100 Kton

 Export  
> 100 Kton



Bulk power      Bulk DH      Bulk RH      Pellets in bags RH      Major exporters



# 3. Market types & char. (cont)



	Pellets in bulk		Pellets in bags	
End users	Power plants	Medium scale DH	Small users (Residential heating)	
Country specific #	NL: 2-4 power plants	Sweden: 10 to 20 plants	Austria: 63,000 boilers & stoves	Italy: 700,000 stoves
Storage end users	Harbor silo or on site: 200 Kton 10 Kton	On site: Up to 500 tonnes	Residential stoves & commercial boilers: Ca. 1 to 40 tonnes (bulk); 15-25 kg (bagged pellets)	
Intermediate Actors	International traders	Intern. & domestic traders	Bulk via domestic trader	Bags via retailer's shops

# 3. Market types & char. (cont)



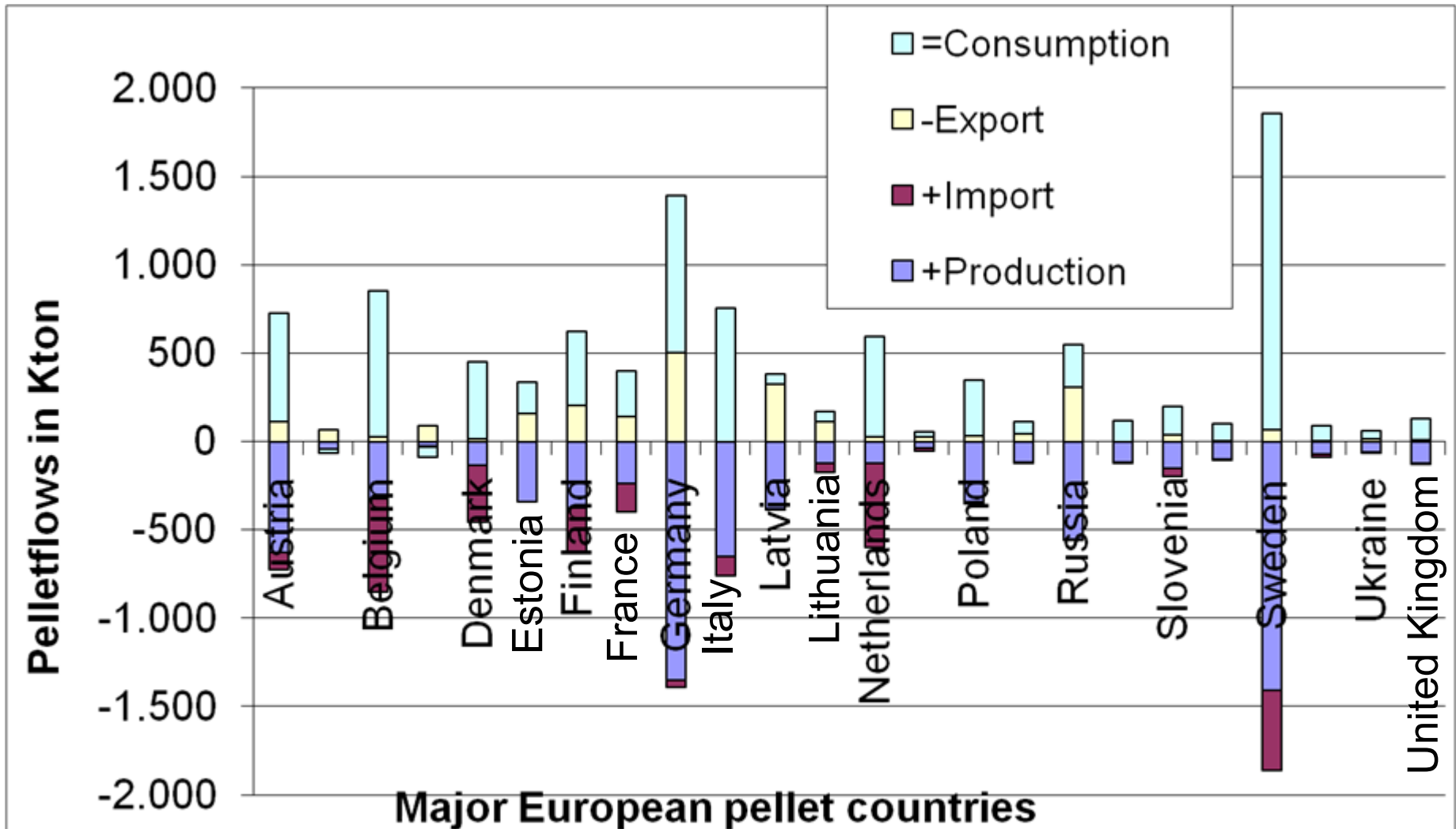
	Bulk power	Bulk distr heating	Residential heating (bulk & bags)	
Supply of pellets	International pellet plants	European pellet plants	Domestic production plants	
Storage pellet plant	Average: 2,500 to 5,000 tonnes per plant		Average: 2,500 to 5,000 tonnes per plant	
Way of transport	Ocean shipping, etc	Sea coasters	Lorry transport	Lorry & pr cars
Contracts	Longterm contracts (up to 2 yr) and additional purchase spotmarkets		Annual deliveries (1-5 tonne)	Incidental Purchase (15-25 kg)
Quality standard	General criteria Company specific		Detailed strict criteria; country specific standard (Ö-norm, SS187-, DIN+, UZ)	



# 4. Market volumes



## Demand & Supply in 2009 (preliminary data)



# 4. Estimated trade volumes



source: Eurostat (Jan-Apr)

– extrapolated for 2009 (in Kton)

Exporter	Importer	Recorded by Exp	Recorded by Imp
Total EU extra trade		54	1,609
USA	NL	No records	359
Canada	NL	“”	313
Russia	Sweden	“”	268
USA	Belgium	“”	173
Canada	Belgium	“”	92





## 4. Estimated trade (cont)

Exporter	Importer	Recorded by Exp	Recorded by Imp
Total EU intra trade		2,690	1,779
Estonia	Denmark	162	158
Finland	Sweden	158	51
France	Belgium	138	95
Austria	Italy	134	53
Latvia	Sweden	131	57
Germany	Sweden	131	74
Latvia	Denmark	128	29





# 5. Future EU demand prospects (EJ = $10^{18}$ J)

	Gross Energy Cons.	RES (EJ)	In % of GEC	Wood pellets (mln ton)	In % of GEC
<b>Actual use (2006)</b>	<b>75 EJ</b>	<b>5.4</b>	<b>7.1%</b>		<b>0.1%</b>
- Co-firing				2	
- Heating				4	
<b>Future use (2020)</b>	<b>(75 EJ)</b>	<b>15</b>	<b>20%</b>		<b>3 %</b>
- 15% cofiring	PhD (Hansson, 2009)			50	
- 50% heating oil	Use in 2004 (Eurofuel)			100	
- transport fuel	REFUEL (Londo, 2009)			p.m.	

# 6. Discussion



## Conclusions

- Drivers & barriers: EU RES policy, larger distances, ..
  - Historical pellet trade (until 2008): rough estimations
  - New trade statistics Eurostat: intra EU export  $\neq$  import
  - Pellet stock changes: power production considerable
- 

- Pellet markets are getting more & more mature:

## Recommendations c.q. actual developments

- Feedstock of pellets will be diversified (logs)
- Strategic pellet stocks for heating as well
- One European quality standard CEN/TS, ISO
- Set up of price indexes for all pellet markets



# 6. Discussion (continued)



## **Big bottleneck:**

Theoretical EU demand 2020 vs available (global) feedstocks

E.g.: 150 million pellets means 2.7 EJ primary of energy)

## **Feedstock availability studies:**

- Finland & NW Russia: 0.5 EJ forest residues available
- Baltic countries: 0.15 EJ (=outcome of Riga workshop)
- Other European countries: ... EJ (Joint Wood Enquiry)
- Outside Europe: ...EJ (pm.)





# More information?

## PhD traject at University of Utrecht

### Pelletsatlas Europe (2 articles)

- European pellet market for heating & power production production, trade & pellet demand in 2009
- International logistics of wood pellets in Europe; marginal costs & GHG balances of 3 pellet supply chains

### TEKES Project Finland & NW Russia (1 article)

- Sustainable bioenergy from boreal forests in Finland & Russia with different forest management regimes; Utilized forest residues, like branches, tops, trunks & small trees from higher harvest levels





# Thank you for your attention!

# Paldies par Jūsu uzmanību!



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