TGC in Flanders Performance 2002-05

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Flemish TGC system

- **Started Jan. 1, 2002**
- **All RES-E technologies in 1 basket [old& new; special status for PV]. Municipal Solid Waste excluded till June 2004**
- **Quota decided year by year 0.8% (2002), 1.2% (2003), 2% (2004) … 6% (2010)**
- **Fine set at €/MWh 75 (2002), 100 (2003), 125 (2004)**

Figure 1: Number of Assigned certificates Jan.2002 - May 2005

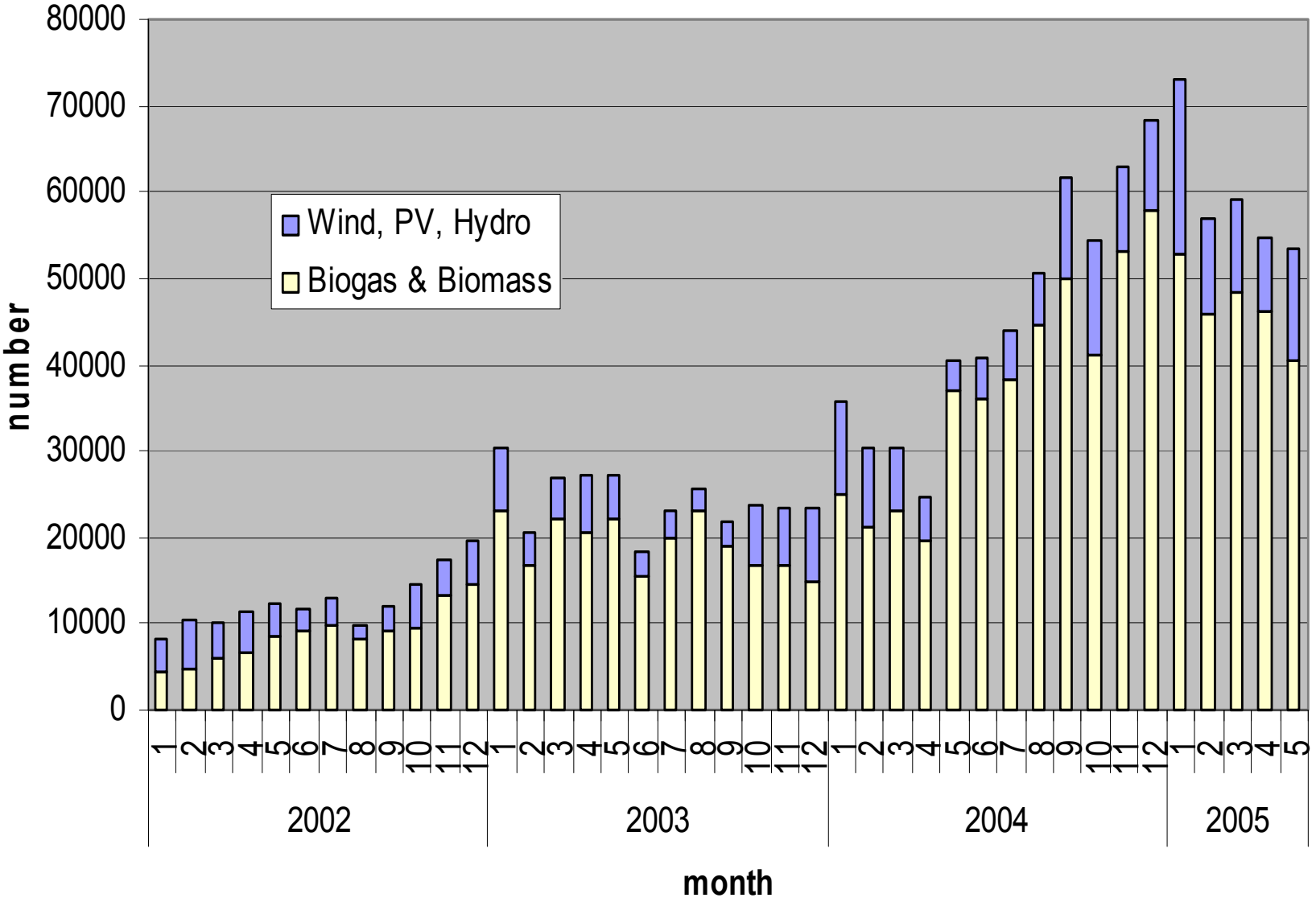
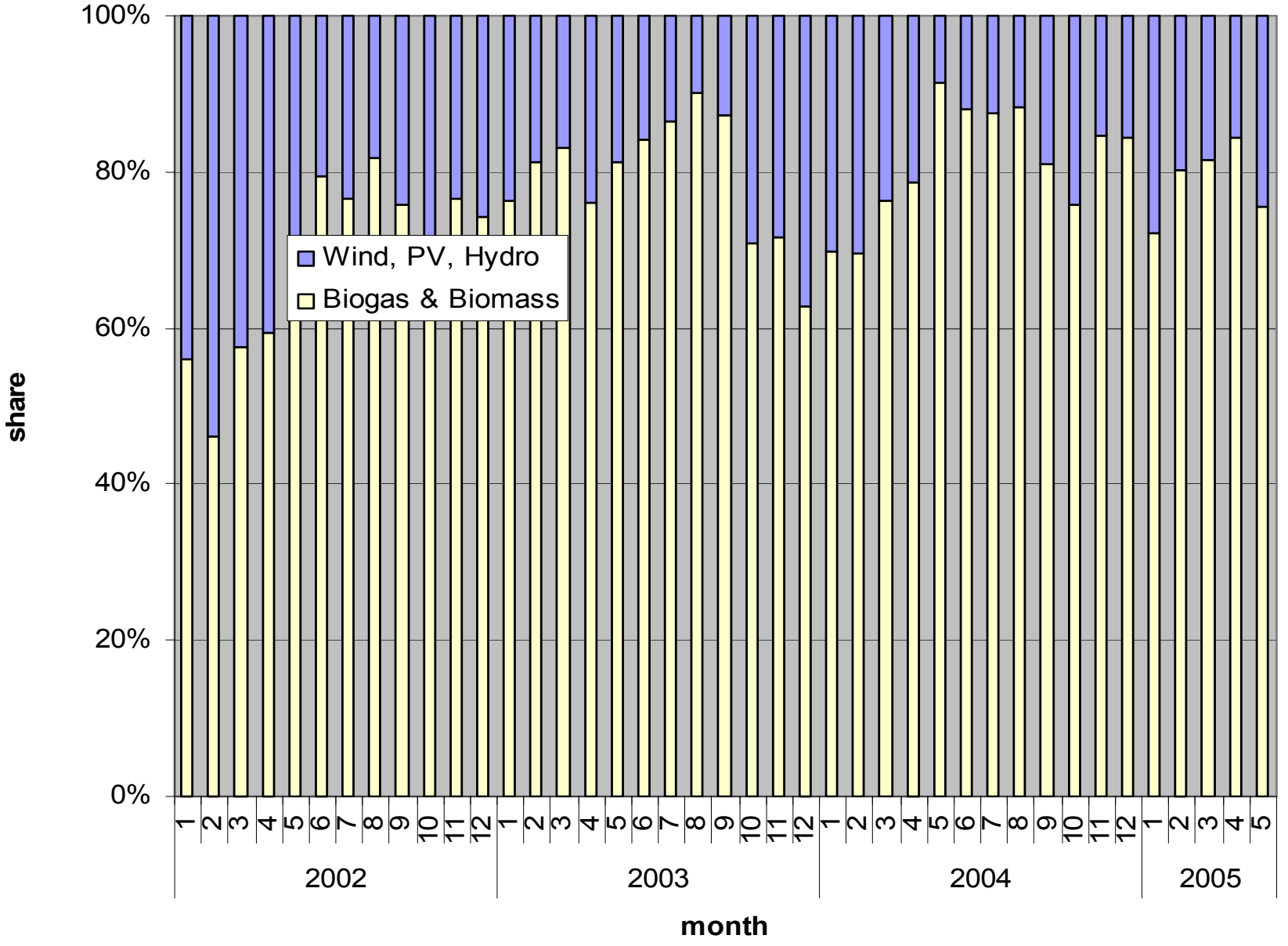


Figure 2: Shares of the technology classes in Assigned certificates Jan.2002 - May 2005



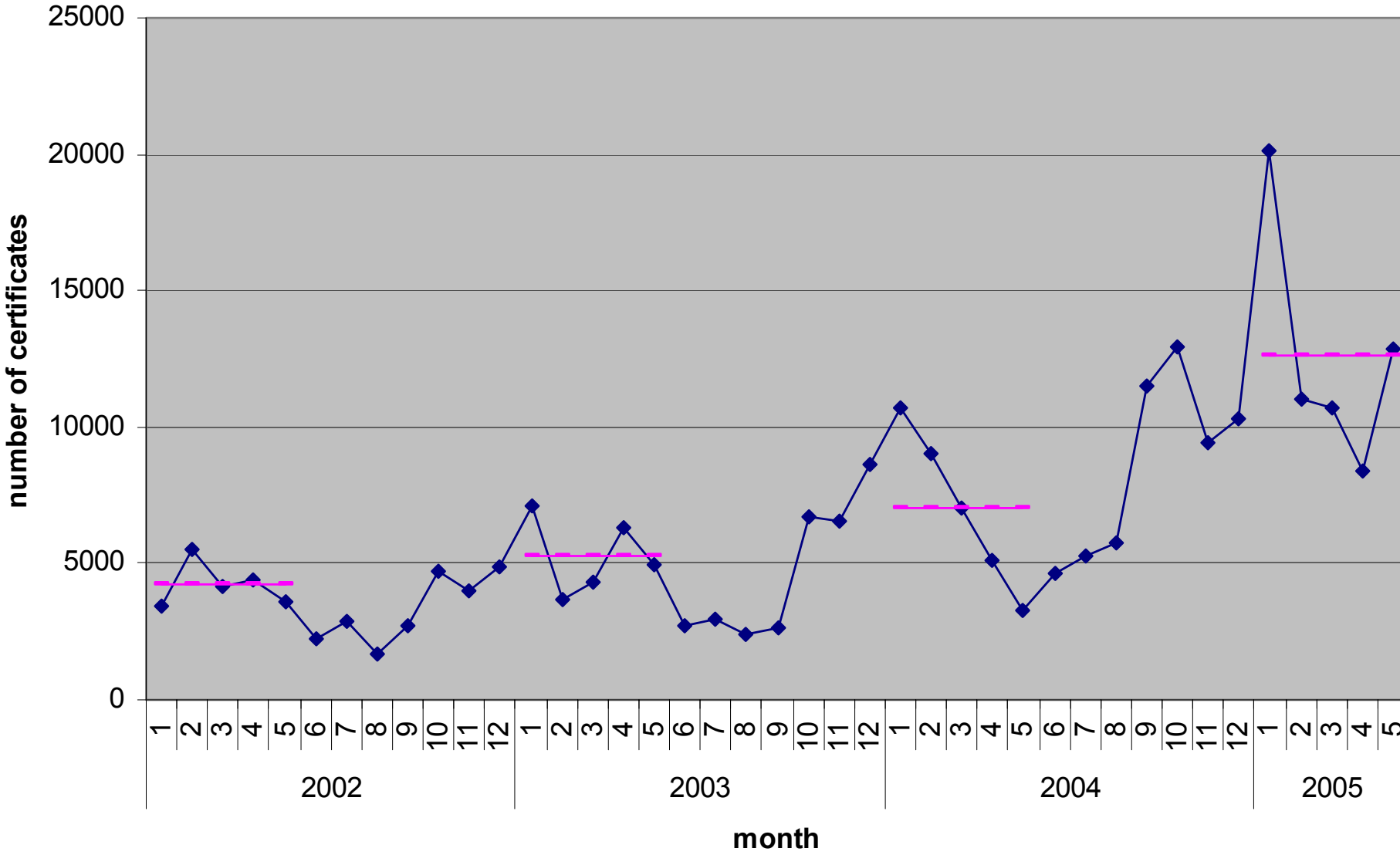
Effectiveness

Obvious growth in TGC assigment / RES-E ***but:***

- OLD capacities earn about ½ of TGC (with co-firings in old plants considered as new) [stimulus of new RES-E sources?]
- 4/5th of TGC to bio-waste conversion [PPP?]
- New bio-waste imports [Flemish origin?]
- Competition with Recycling e.g.wood waste

\+ **WIND power development!**

Figure 4: Windpower in Flanders: monthly assignment of certificates (Jan.2002-May2005)



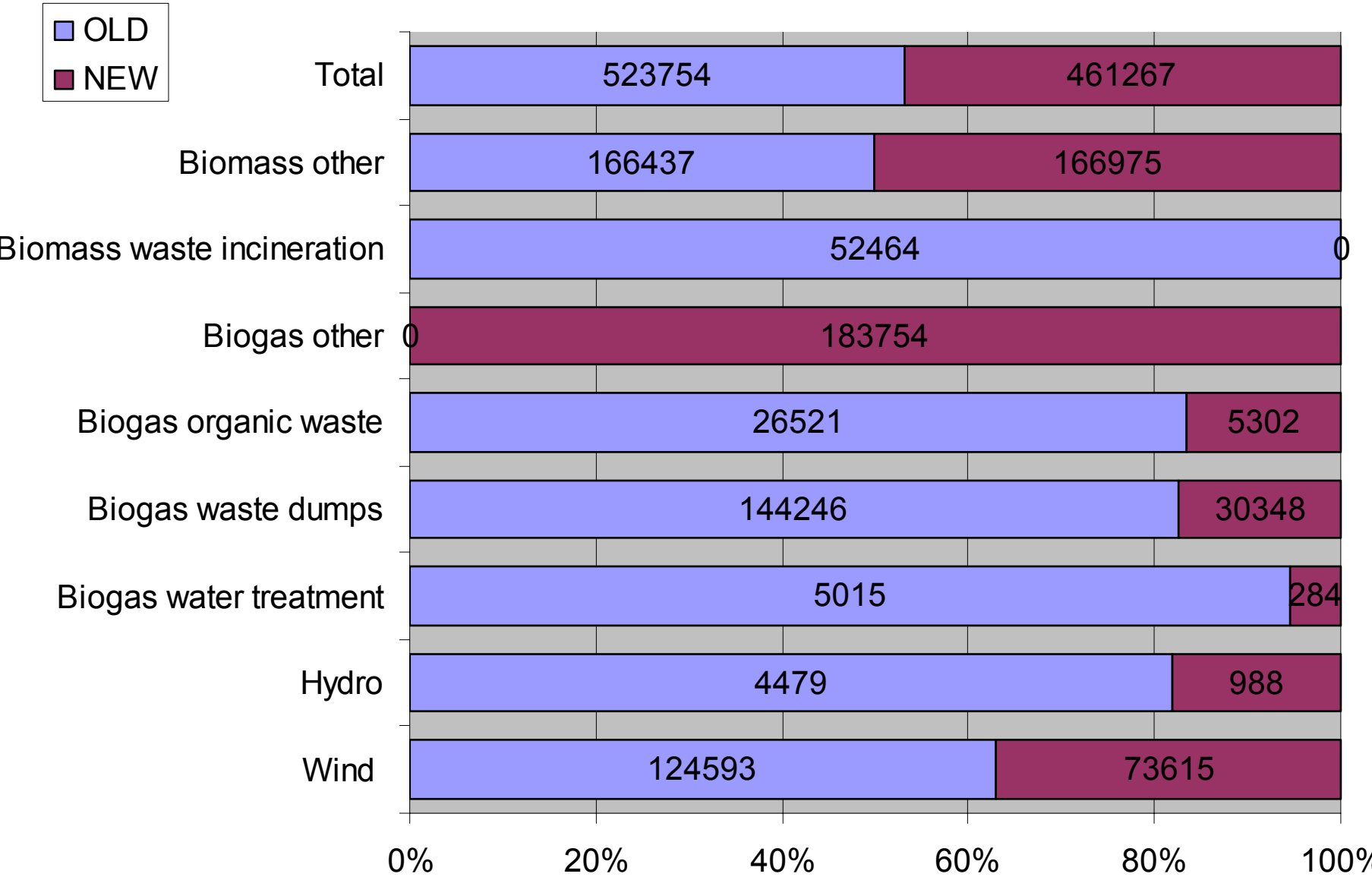
OLD versus NEW

TGC system succesful in ***Registering*** all RES-E capacities

June 2005: 30.3% of RES-E capacities is pre-2002 / 48.5% when new co-firing in old plants is included

OLD capacities earned 53.2% of TGC (with co-firings in old plants considered as new)

Figure 5: Approximate split of assigned certificates in the years 2002-2004 over OLD and NEW capacities



Performance Indicators

	2002	2003	2004
% quota met by certificate deposit	36.76	63.21	76.46
% of shortage available in certif.	58.9	108.5	74.9
€/MWh average price of ***quota certificates***	74.58	94.67	112.77
€/MWh average ***price*** of RES-E ***generated***	102.54	125.13	150.65
€/MWh average ***cost***+ of RES-E ***generated***	37.33	76.50	111.34

Efficiency

= COST in relation to effect

- Quota fullfilment improves
- Large % of certificates retired from trade

System Prices (incl.fines) and System Costs+ (excl.fines), are:

- Increasing from 2002 to 2005
- At a high level in 2005

Market is illiquid – dominated by incumbents (owning 80% of the capacities)

Figure 6: Traded volumes and prices (Jan.2004-May 2005)

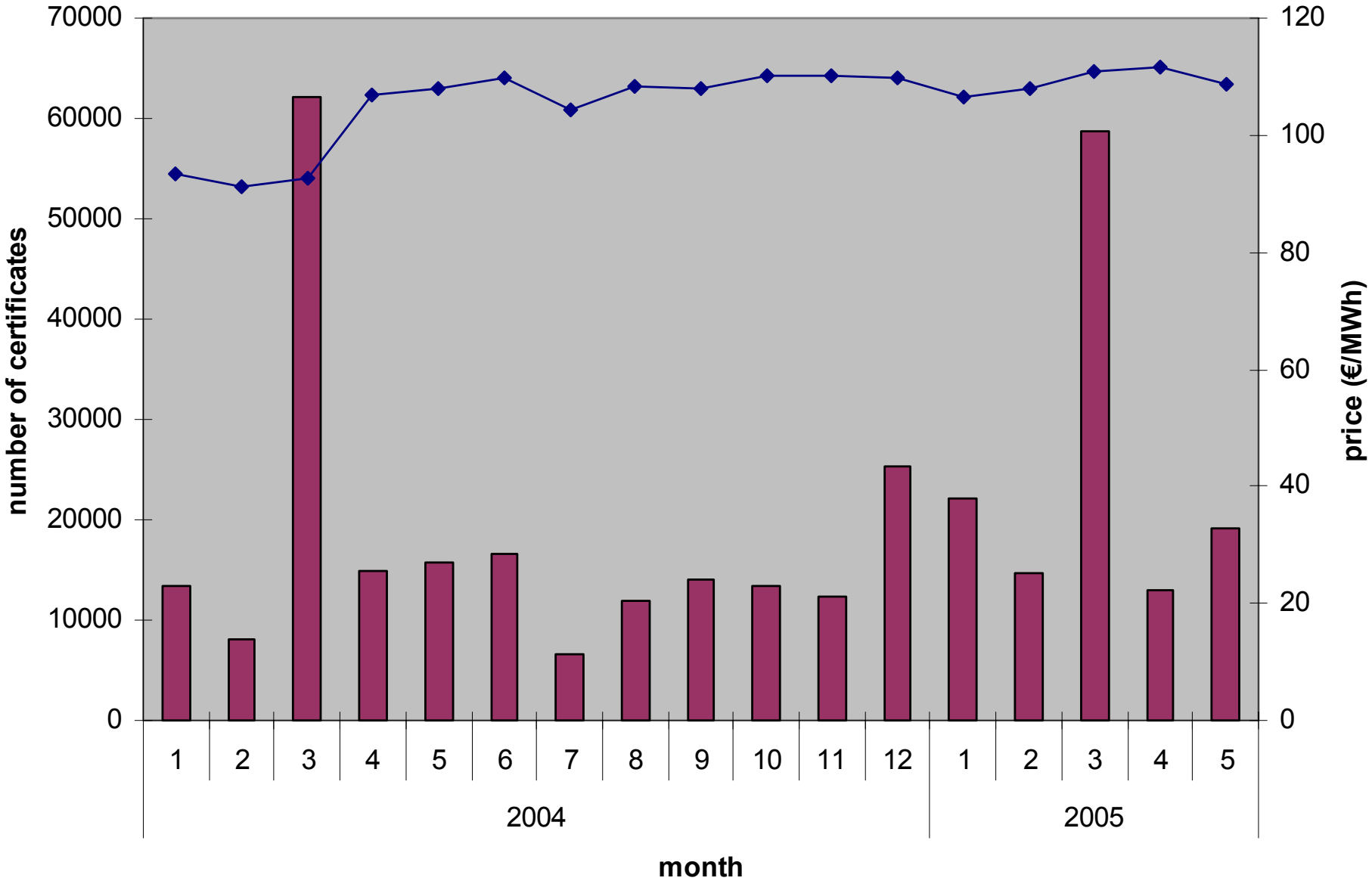
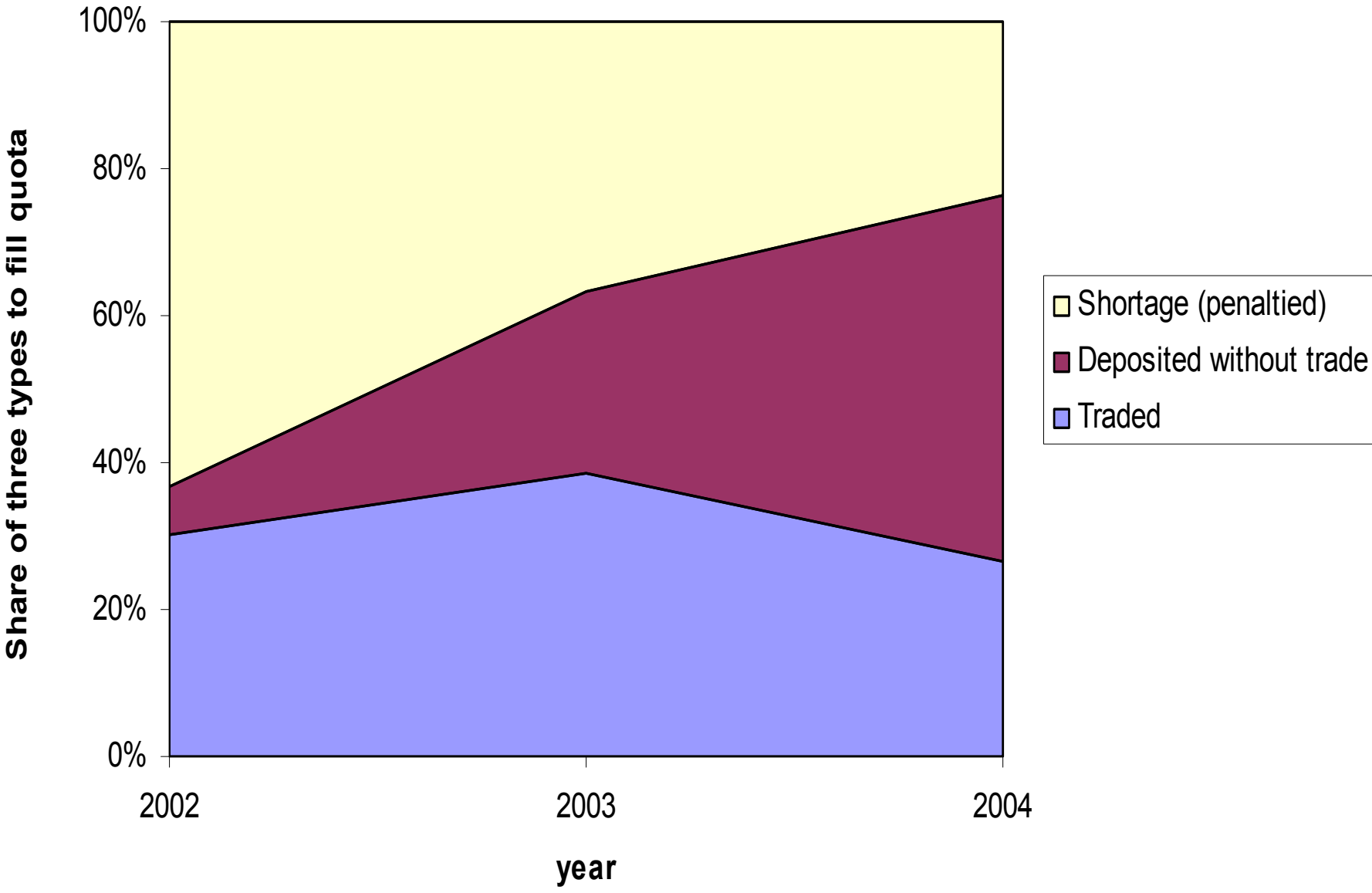


Figure 7 :How liquid is the trade?

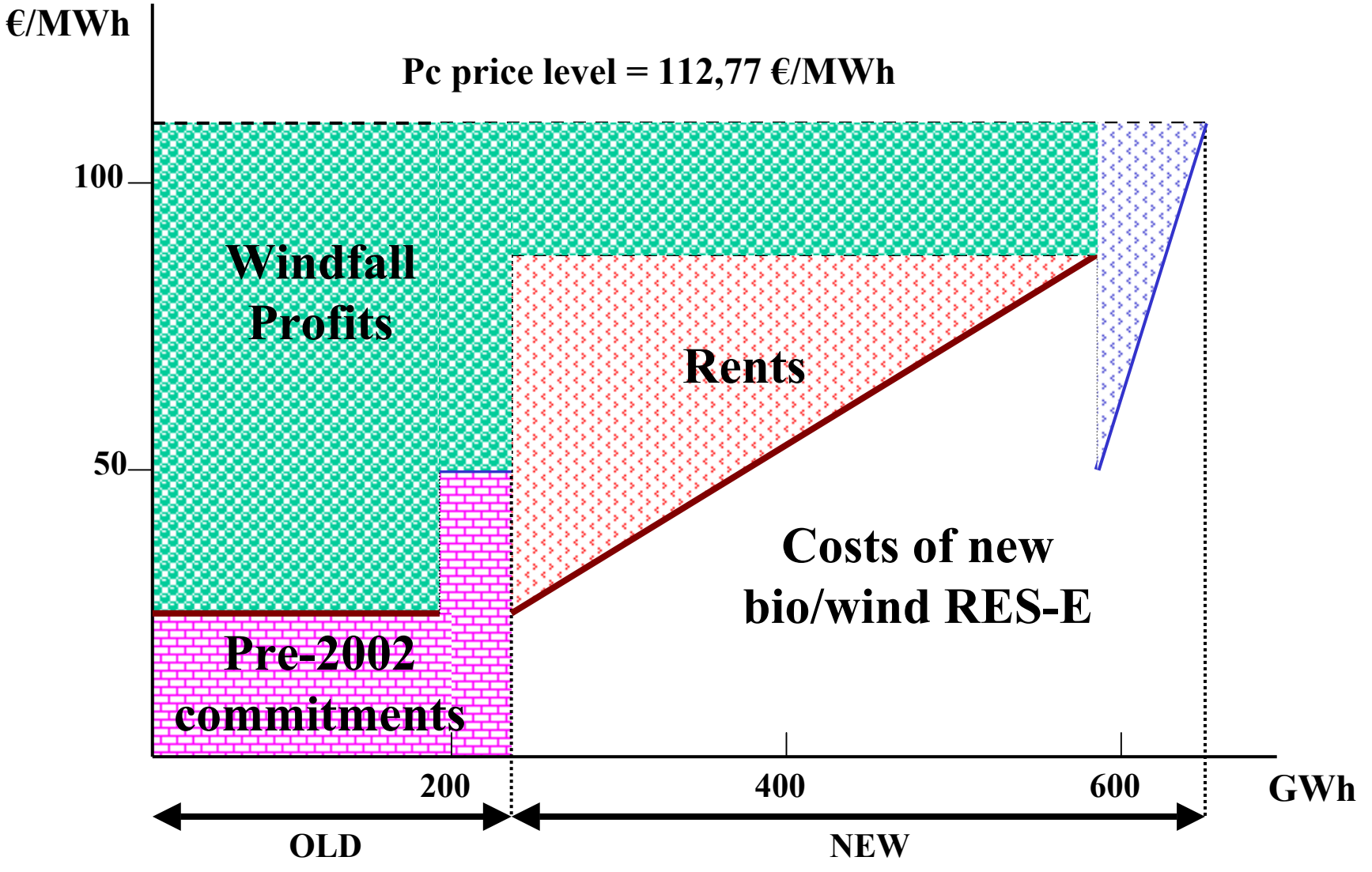


Who Pays?

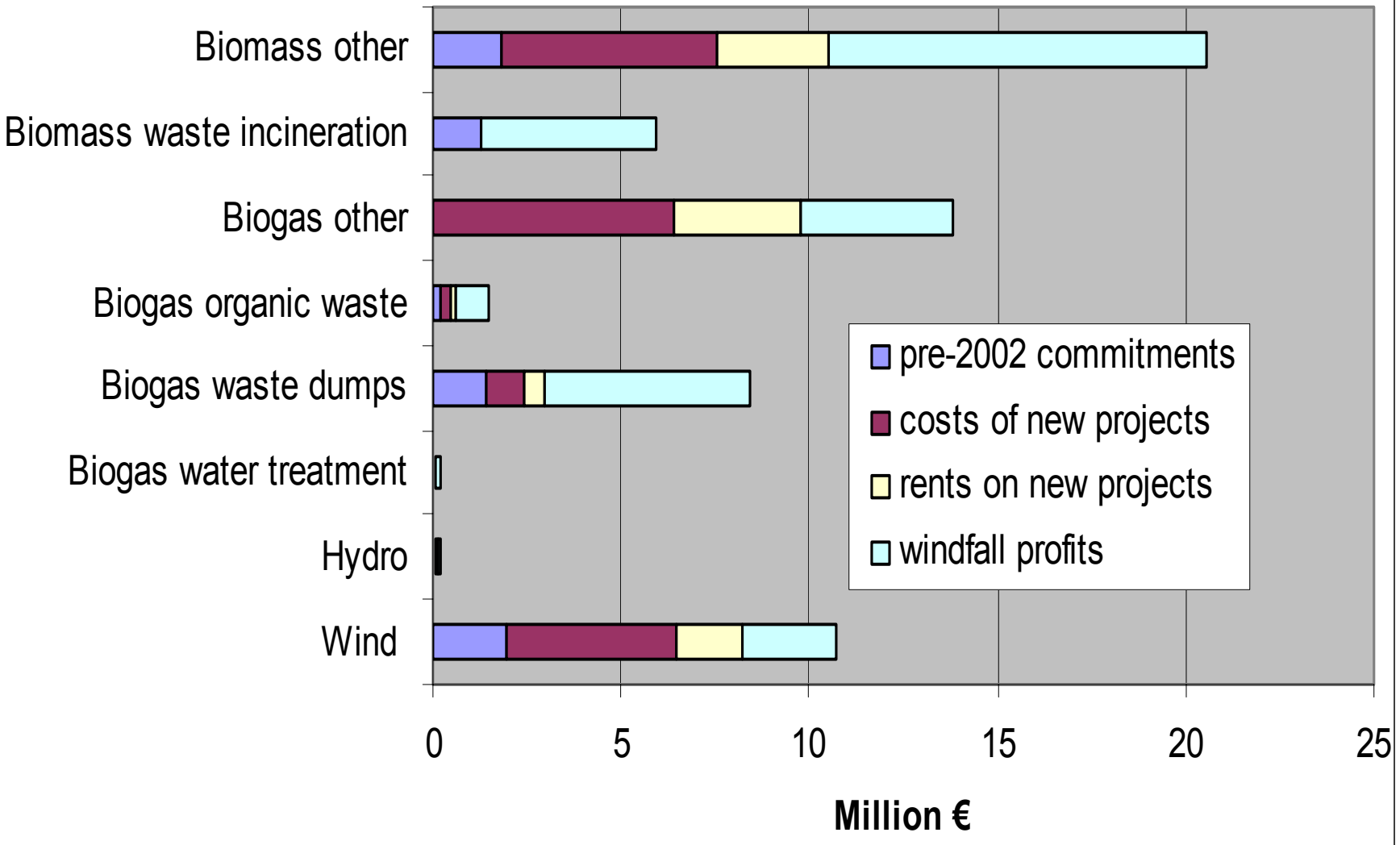
- **Feed-in tariffs discussion faded**
- **Uniform levy on Electricity end-use, but >20 GWh customers are progressively freed from the full levy**

  2003: + 0.085 ; 2004: + 2.5 ; 2005: + 3.134 €/MWh consumed … 2010: + 7.5
- **Large windfall profits (old/amalgamation of technologies] and rents**
  + 4/5 of capacities owned by power companies

Market simulation (2004)



Money flows by technology in 2004



General aspects of TGC

- Flexible market-based mechanism
- Effectively forcing RES-E (when Pc < Fine)
- Compatible (closing) with other instruments
- Reduction in electricity end-use (depends on price elasticity, quota, certificate price Pc)
- EU efficiency: either EU wide markets, or fixing optimal quota by country / by technology
- Information on Costs & Subsidies by country / by technology needed

Conclusion: Flemish experience

- A simplistic implementation occasions huge windfall profits + rents
- Effective in registering all capacities and in adding new plants, but *imported* bio-*waste co-firings* in *old* coal plants, etc... (partly due to the quota fetisj)
- Cost efficiency probably good because profit driven, but *public finance efficiency* doubtful (more RES-E per € can be get)
- What Added Value has a TGC system?