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Oplossingen voor
milieu, economie
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The Natural Gas Chain

Toward a global life cycle assessment

June 06 2006, Maartje Sevenster

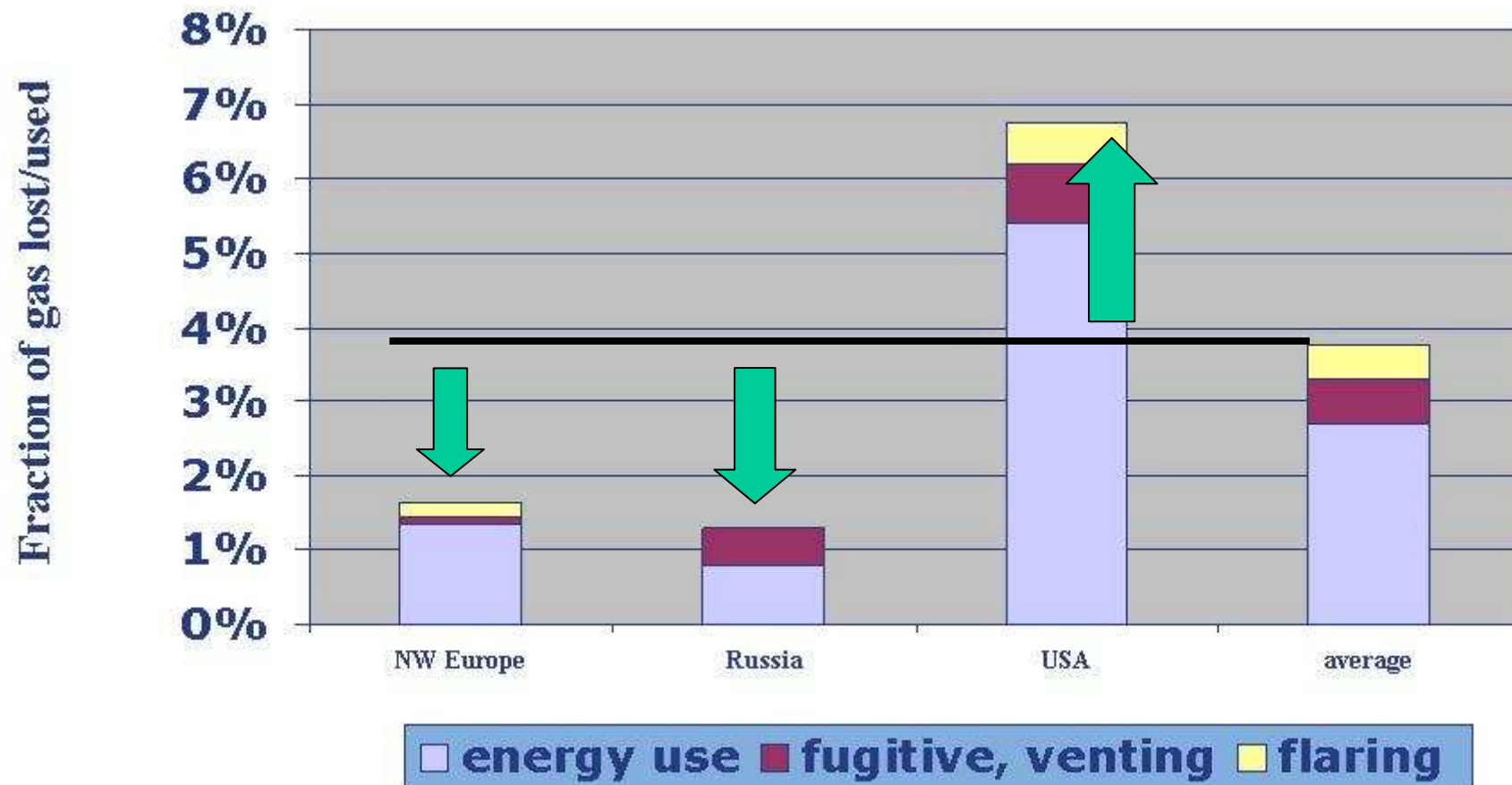


Overview

Methodology issues
Variations in the results
Changing markets
Outlook



Global average ?

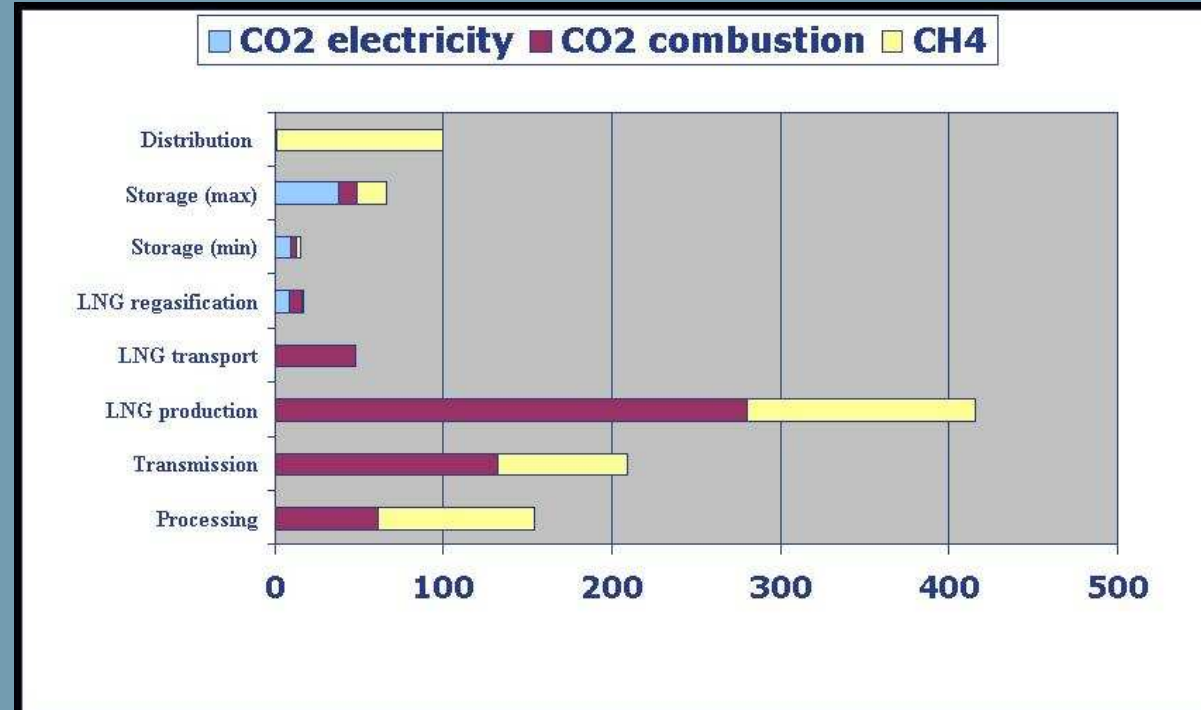


Source: IGU study



Causes of spread

- Production : composition of raw gas
- LNG : more efficient technology
- Transport : distance, upkeep
- Storage : available reservoir type

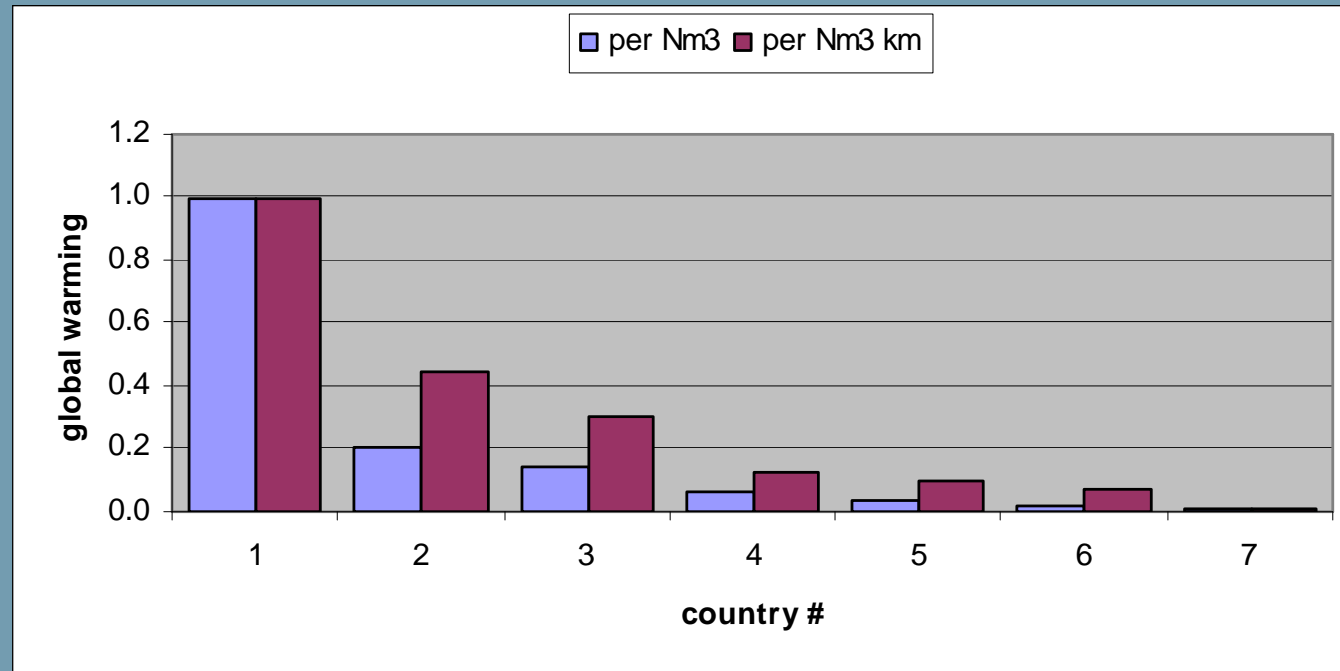


Source:
IGU study



Transmission

- Comparison corrected for distance shows somewhat different picture

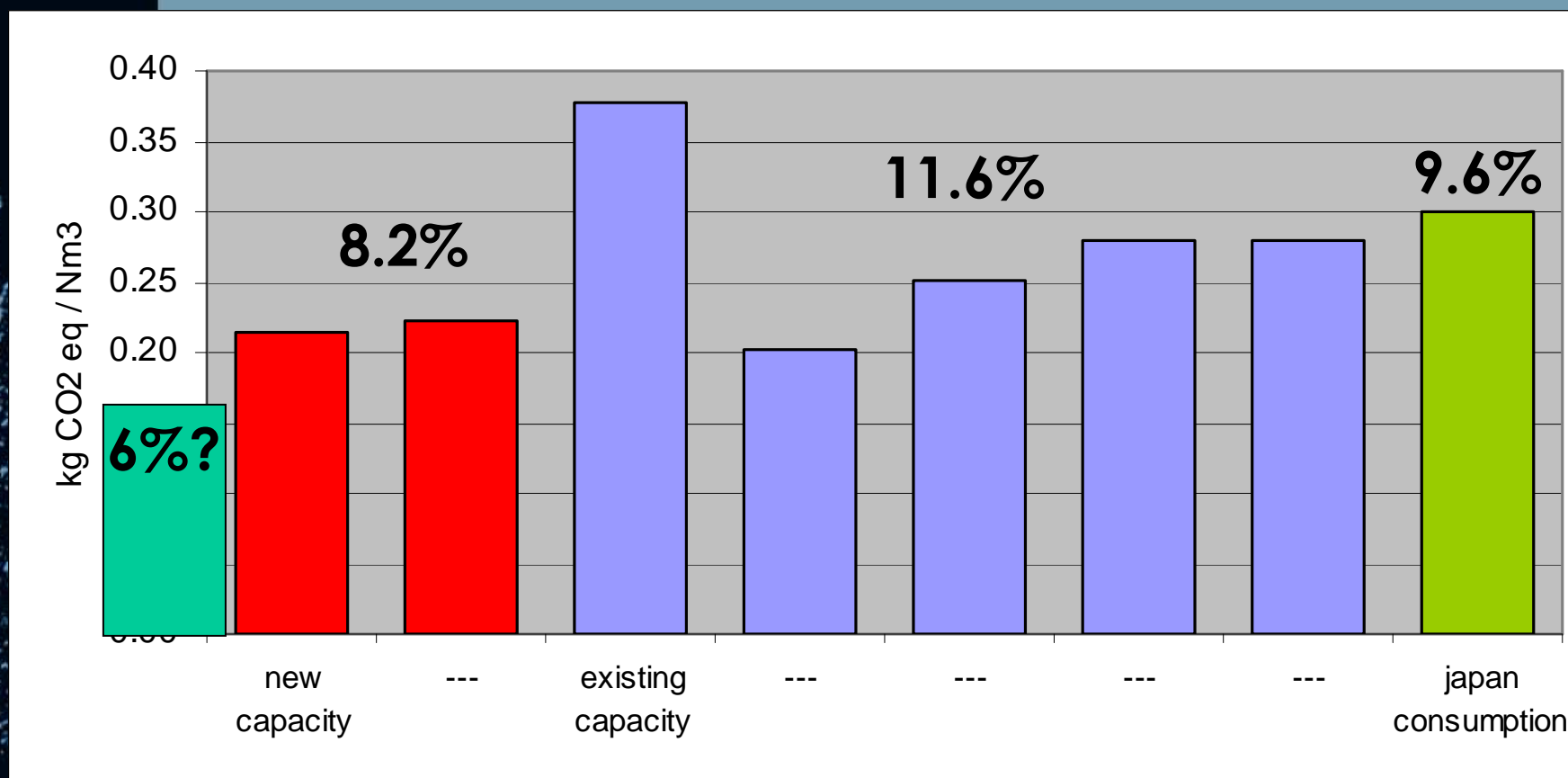


Source: IGU study



LNG production

- New capacity increasingly efficient

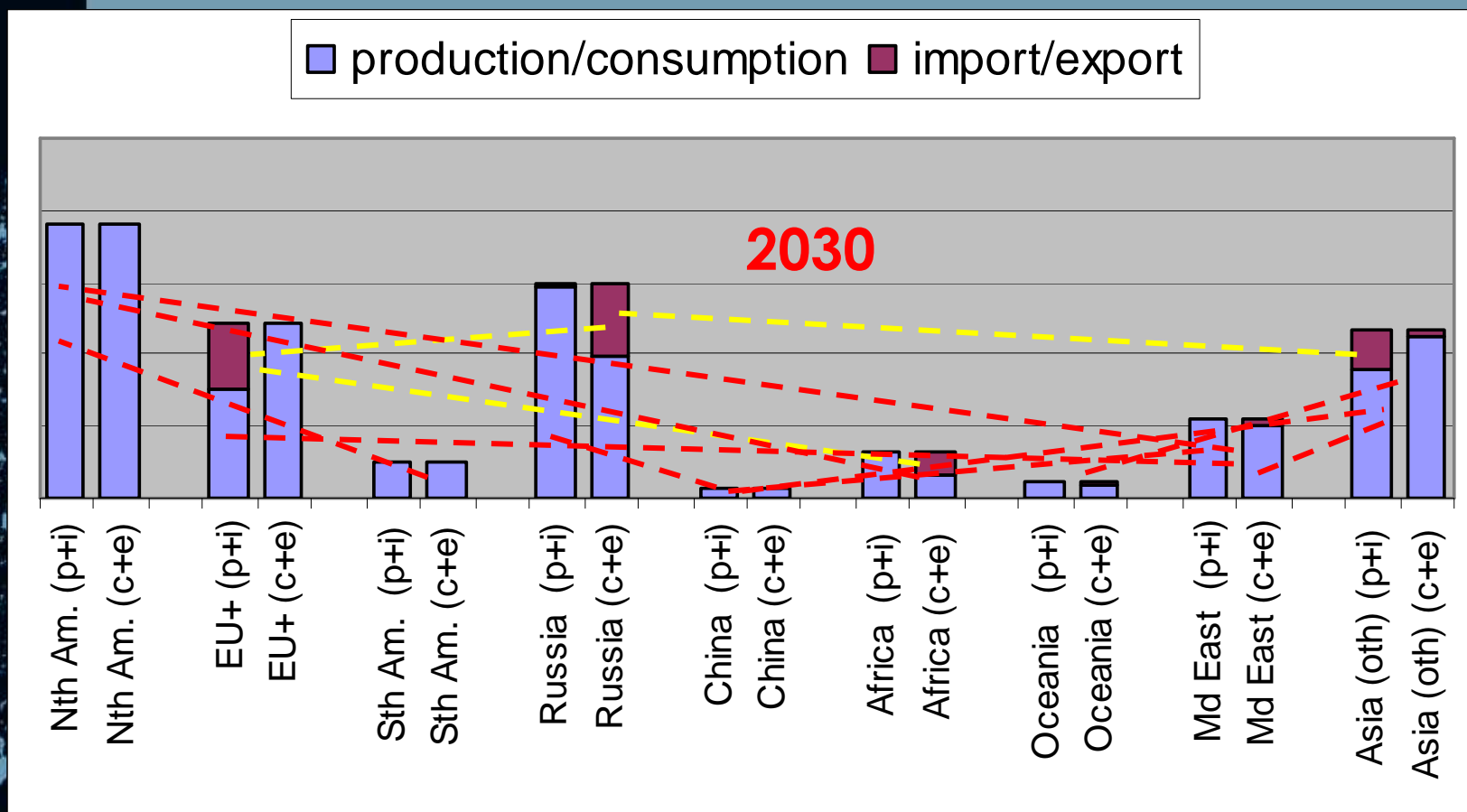


Source: IGU study



Changing markets

Coherent regions → global market



Source: World Energy Outlook 2004



Changing markets

- More LNG
- More storage
- Larger transport distances

→ Less chain control & efficiency ?

→ Opportunities for improvement !



Recommendations

- Natural gas has good environmental profile, but continuous improvement necessary in production chain:
 - Best available technology for new LNG?
 - Reduction program fugitive emissions?
 - Waste heat utilization?
- Opportunities only identified if data are available and consistent
- Environmental gain = product gain

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