

Next steps in co-firing biomass including transportation

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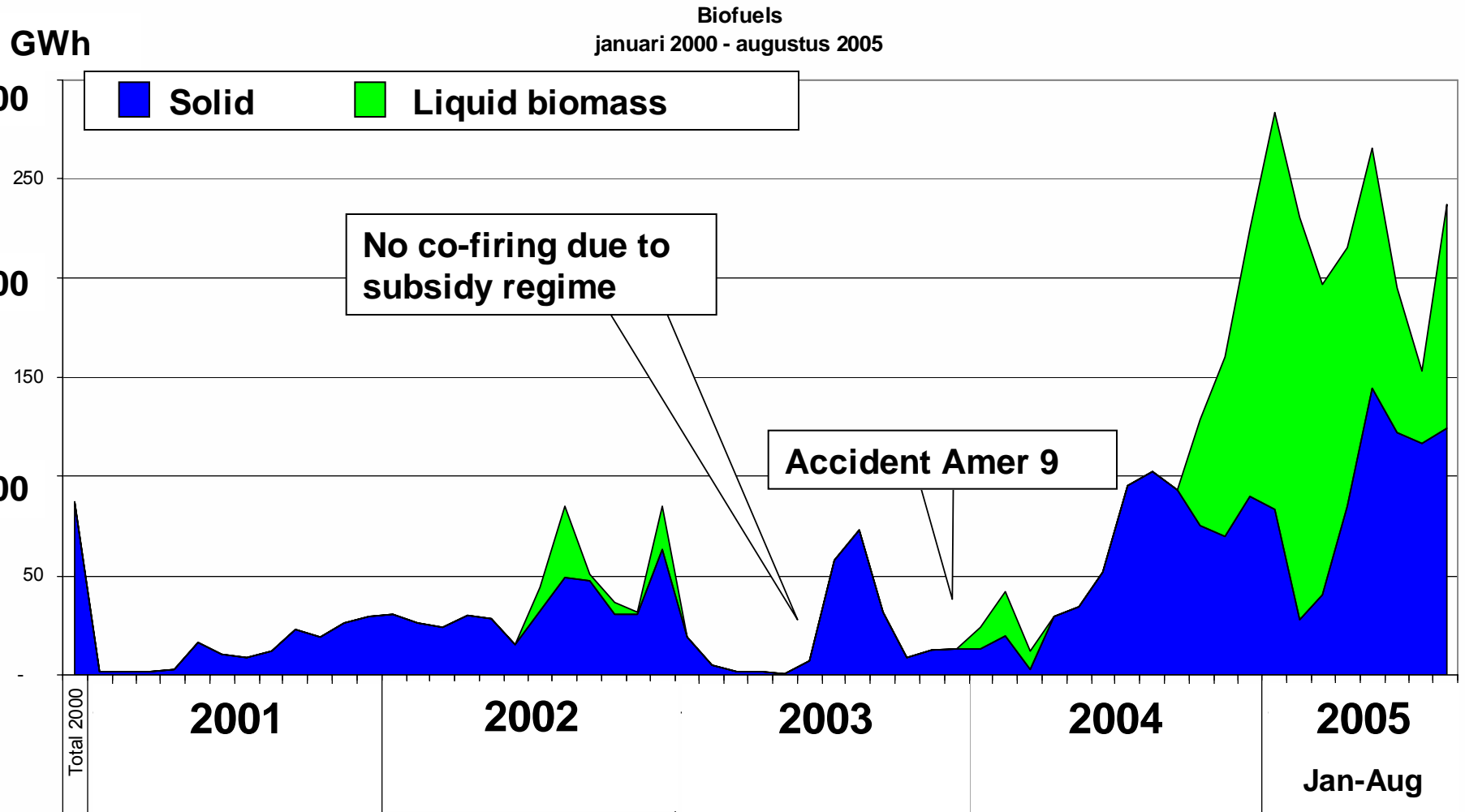
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Essent involvement in Sustainability

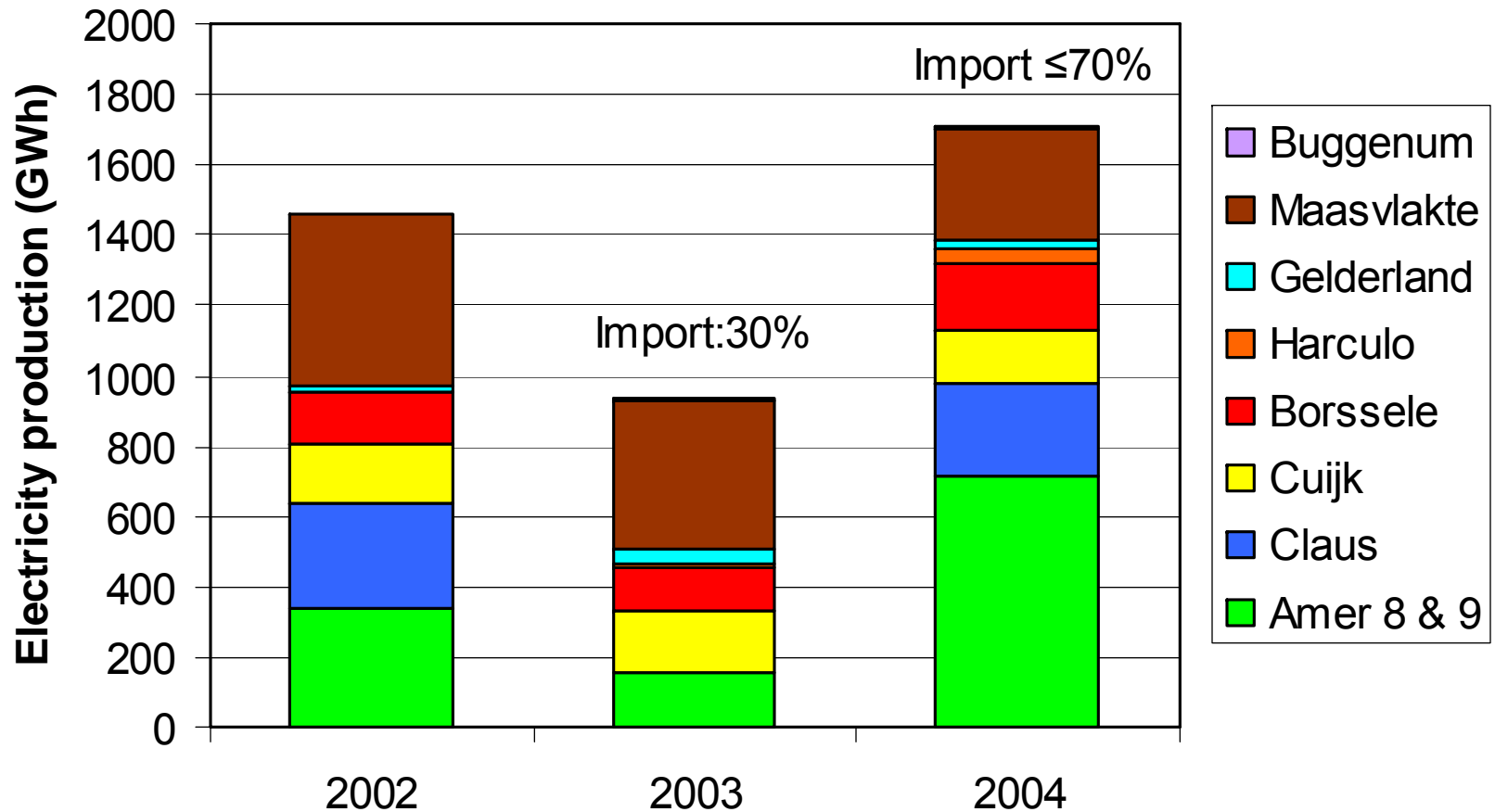


- 'Groene Stroom' product and involvement of stakeholders for more than 10 years
- Development of Track and Trace system to guarantee sustainability from source to customer
- Member of Round table for Palm Oil: producers, stakeholders, traders, users
- Heavily involved in sustainability discussions ('Groene Stroom', WWF, stakeholder meetings, Solidaridad, Fair trade)
 - Stakeholder presentations in 2002 and 2003
 - Fair Trade (Albert Heijn) parallels studied by Solidaridad for palm industry in 2004
 - Fair trade pilot started with Solidaridad
- Fair Trade study with university of Utrecht to develop sustainable criteria for importing Biomass

Co-firing of solid and liquid biomass in Essent power plants



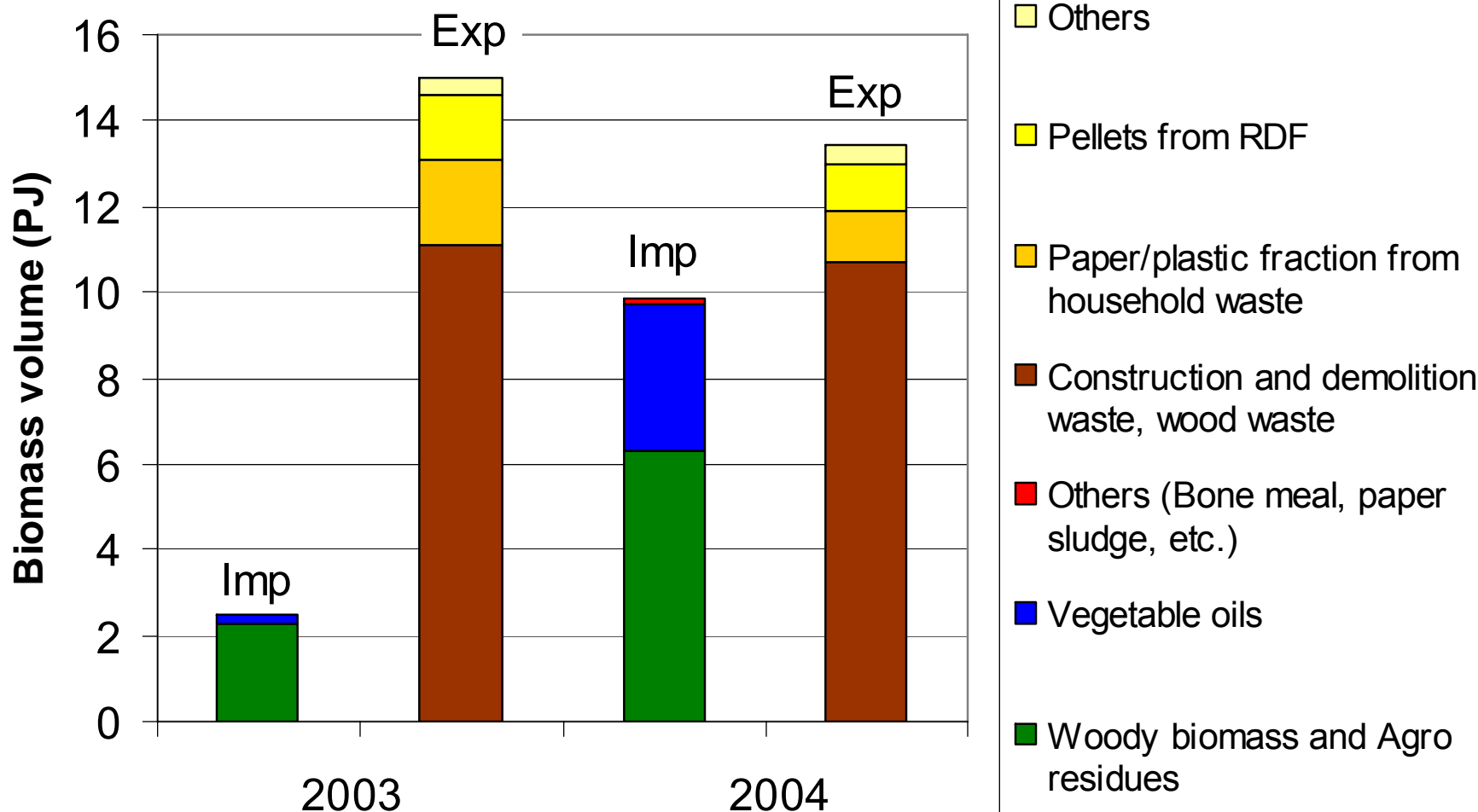
Electricity production from biomass co-firing in power plants



Imported fuels used:

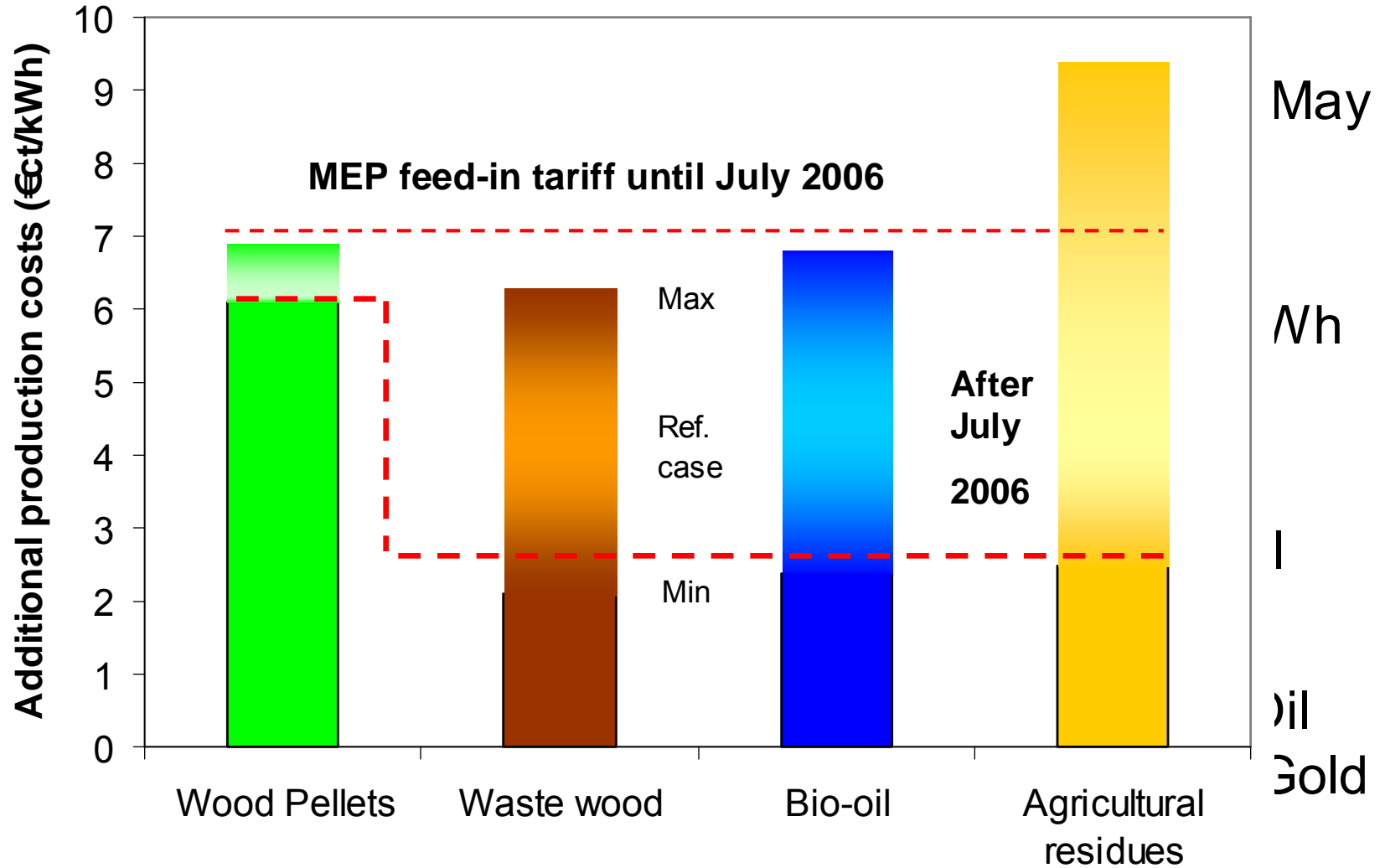
- Wood pellets (mainly from Canada)
- Agro-residues (palm kernel shells, olive nuts, nut shells, cocoa husks, soy and sun flower residues)
- Palm Oil (Malaysia and Indonesia)
- Bone Meal and other waste streams

Import / export of biomass in the Netherlands



Most exports of wood waste to Germany ; **Indirect** import and export not known

Changing governmental policy



Data from de Vries et al., ECN, 2005

Thank you for your attention!
Questions?

Essent Green Gold Standard (EGGS) (1)



Guarantee from sustainable source to customer

- Essent started the development of EGGS in 2002 resulting in a 1st certificate in 2004
- Unique, worldwide promoted system, appreciated by stakeholders and suppliers
- Standard condition in all Essent supply contracts for biofuels
- EGGS is a certification and supply chain monitoring program for the acceptance of sustainable biofuels (sustainable forest and plantation management, fertilizer use, replanting programs, plant mass balance, cleanliness storage and shipping)
- executed by an independent certifying and inspection company (Skal International) and an independent inspection company (Peterson Bulk Logistics)
- Within EGGS two main sources of biofuels, Forestry and Agriculture; main criteria for EGGS are sustainability and traceability

Essent Green Gold Standard EGGS (2)

the route to an independent system



- On behalf of Essent, the Sustainable Trading & Operations department is involved in the Green Gold System; ISO 9001 certified in 2000.
- Skal International, an independent certification and inspection company, and Peterson Bulk Logistics, an independent inspection company, acknowledged by Dutch Council of Acknowledgement.
- The Green Gold System is registered property of the independent Green Gold Standard foundation, responsible for the standard criteria and for communication with participants in the program.
- Other companies (power companies, producers) in Europe and Canada are using / are going to use this system
- The foundation is itself advised by an independent **Advisory Council**, in which the following companies/agencies are represented :
 - Unilever (supplier of consumer goods and chairman of the Round Table of Sustainable Palm Oil),
 - Solidaridad (NGO),
 - Probos (NGO),
 - Cefetra (Agri product supplier),
 - Jongeneel Agencies (biofuel supplier)

Round Table on Sustainable Palm Oil



- **Objective** : promotion of the growth and use of sustainable palm oil through co-operation within the supply chain and open dialogue between its stakeholders
- **Initiated in 2001 by WWF**
- **65 members representing all sectors**
- **Organization, managed by executive board (16 members):**
 - **Oil palm growers (4)**
 - **Palm oil processors and/or traders (2)**
 - **Consumer goods manufacturers (2)**
 - **Retailers (2)**
 - **Banks/investors (2)**
 - **Environmental / nature conservation NGOs (2)**
 - **Social/developmental NGOs (2)**

RSPO objectives into more detail



- Research and develop definitions and criteria for sustainable production and use of Palm Oil
- Undertake practical projects designed to facilitate implementation of sustainable best practices
- Develop solutions to practical problems related to the adoption of best practices for plantation establishment and management, procurement, trade and logistics
- Acquire financial resources from private and public funds to finance projects under the auspices of RSPO
- Communicate RSPO's work to all stakeholders and to the broader public

RSPO sustainability criteria study



- Study Palm Oil supply chain study ongoing
- Members: Golden Hope, Cargill, Unilever, Henkel, Aarhus, Essent, others
- Timing: Q4 2005 preliminary results for presentation to all members
- Project aims tracing palm oil from producer to end user:
- Three options
 - Development of methodology for physically trace oil from plantation to end user
 - RSPO oil (criteria) set up as a specific grade from RSPO plantations
 - Mass balance methodology analog green power; labeling

-> **Use Essent Green Gold because of compliance with all three options**
- Three phases:
 1. Better understanding of options pro's and con's
 2. Development methodology implementing preferred option
 3. Pilot test

Potential concerns of Essent



- Invested > 300 m Euro in sustainable energy in a volatile market environment
- Commitments to more than 800.000 green customers
- Frequent and unpredictable changes in the subsidy system
- Further opportunities to raise share of co-firing go un explored
- Still unforeseen operational risks not accounted for
- Penalizing for its early commitment and developed market leadership

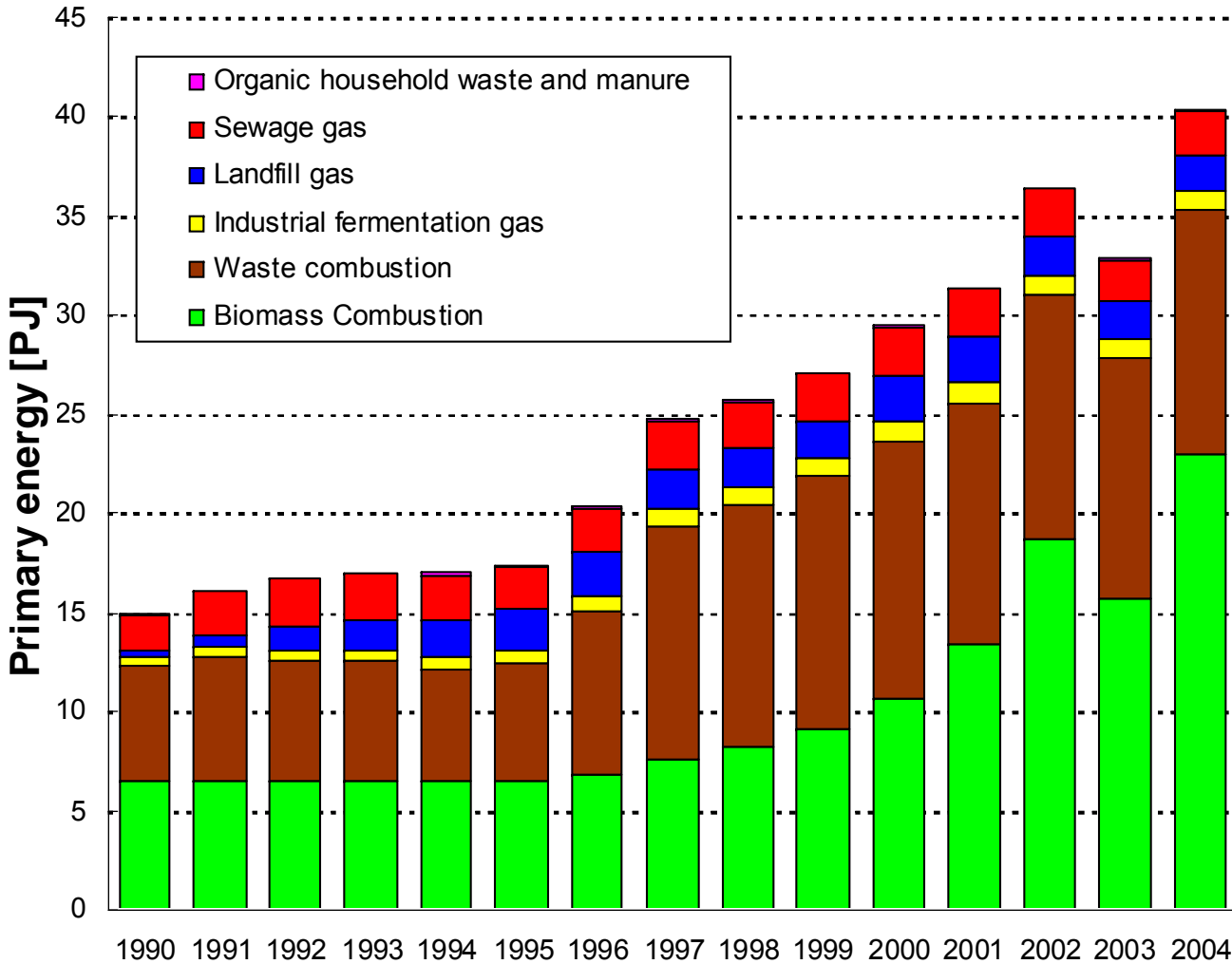
Presentation overview

1. Biomass targets and ambitions in the Netherlands
2. ***The success story***.... Biomass use in NL
3. Overview of biomass trade (import, export and comparison with renewable electricity certificate trade)
4. ***The drivers behind import***... Policy and economics
5. ***And the barriers***... Issues around sustainable biomass import and recent governmental policy changes
6. Involvement in sustainability & concerns of Essent
7. Conclusions

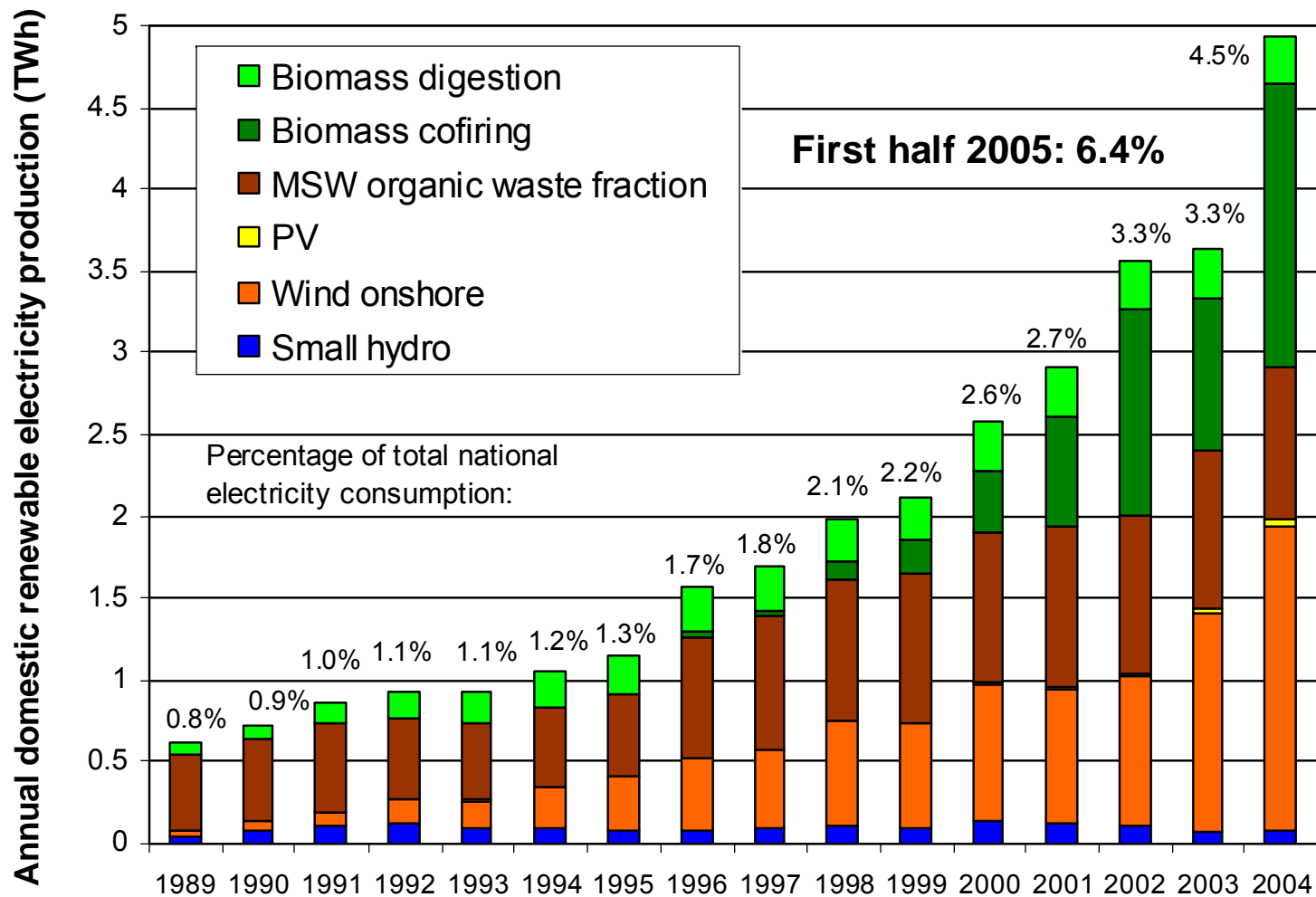
Dutch Biomass targets and ambitions

- Target of 5% renewable *energy* in 2010 and 10% in 2020
- Target of 9% renewable *electricity* in 2010 and 17% in 2020
- European biofuels directive (2% in 2005, 5.75% in 2010)
- Biomass to be the backbone of these targets (together with wind energy)
- Long term *ambition* (energy transition): 30% of all primary energy from biomass in 2040,
- Requires substantial amounts of biomass imports, indigenous resources could only cover about 5%

Domestic biomass use in the Netherlands



Domestic renewable electricity production in the Netherlands

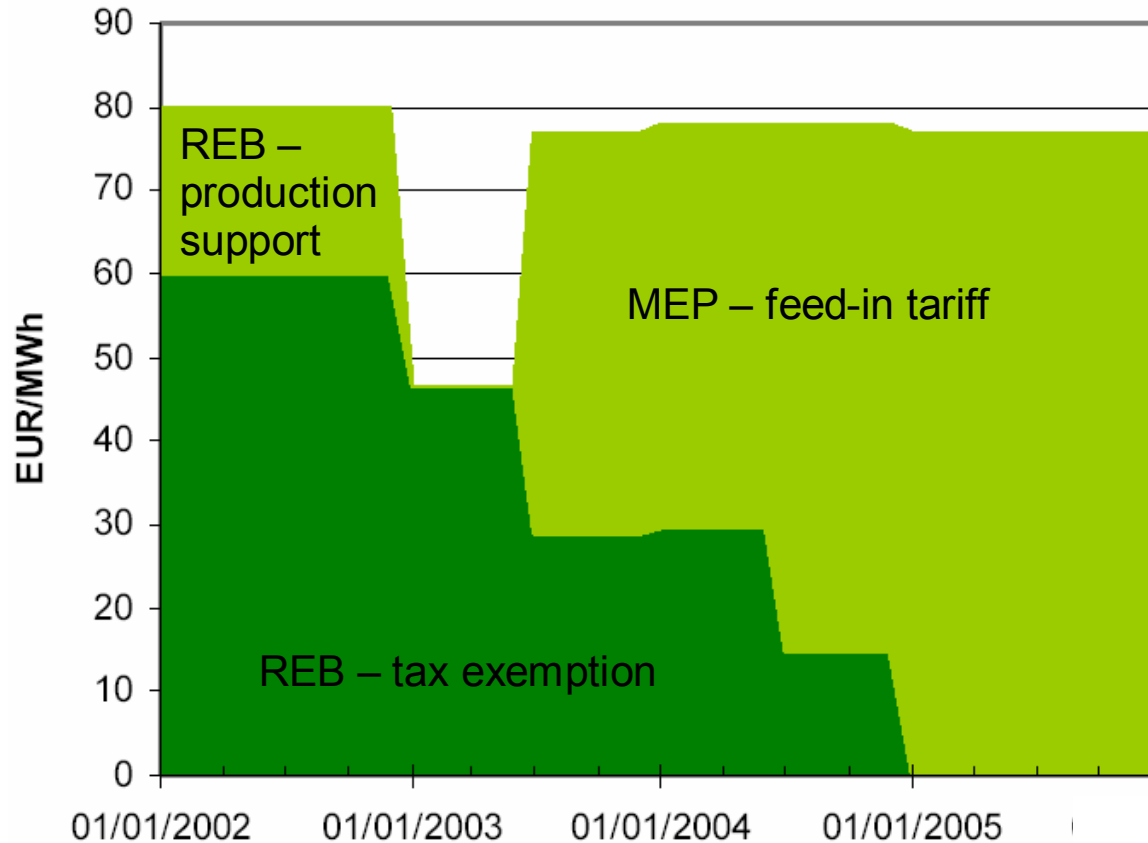


The drivers behind import: Policy to stimulate renewable electricity

- 1999 introduction of demand-side stimulation (REB-tax exemption)
- Result: > 2 million households (out of 7 million) using green electricity in 2002
- However this caused massive import of renewable electricity, and annual tax 'losses' of 100-150 M€/year)
- -> Re-orientation to domestic supply stimulation in 2003



Switch from tax exemption to feed-in tariff system

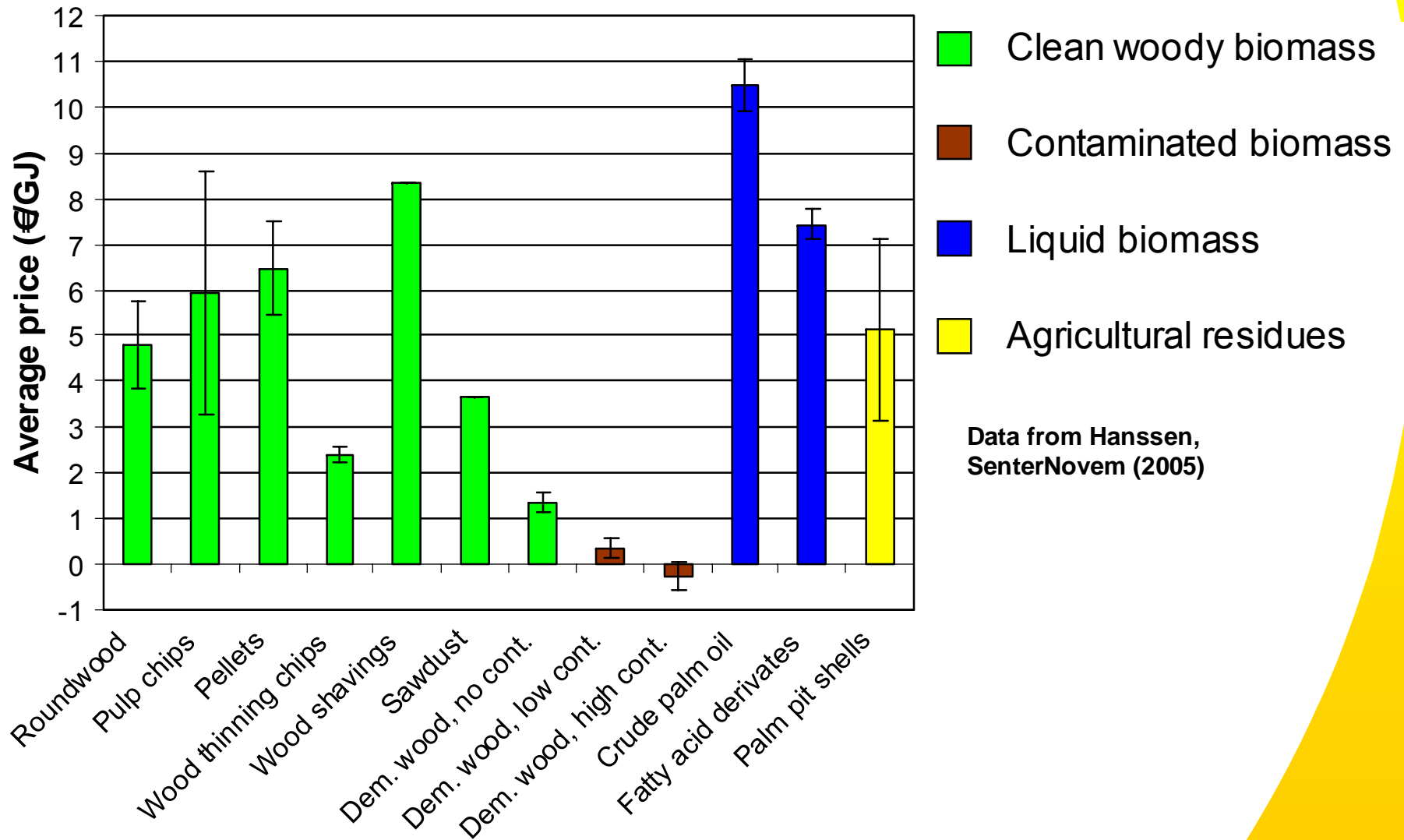


Example for feed-in tariff for biomass co-firing in large plants (>50 MW).

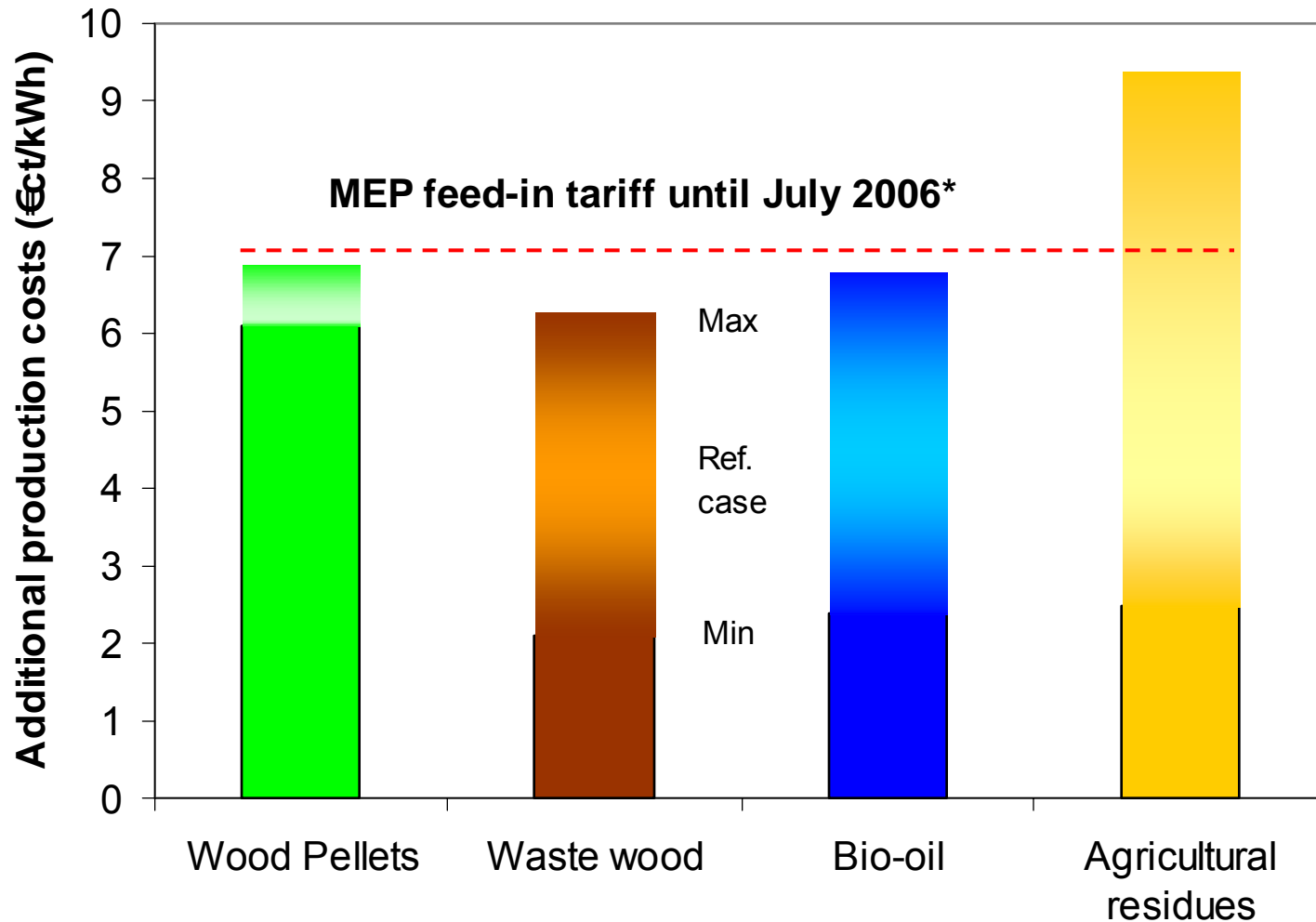
Source: Wagener, Essent, 2005



Biomass fuel prices in the Netherlands in 2004



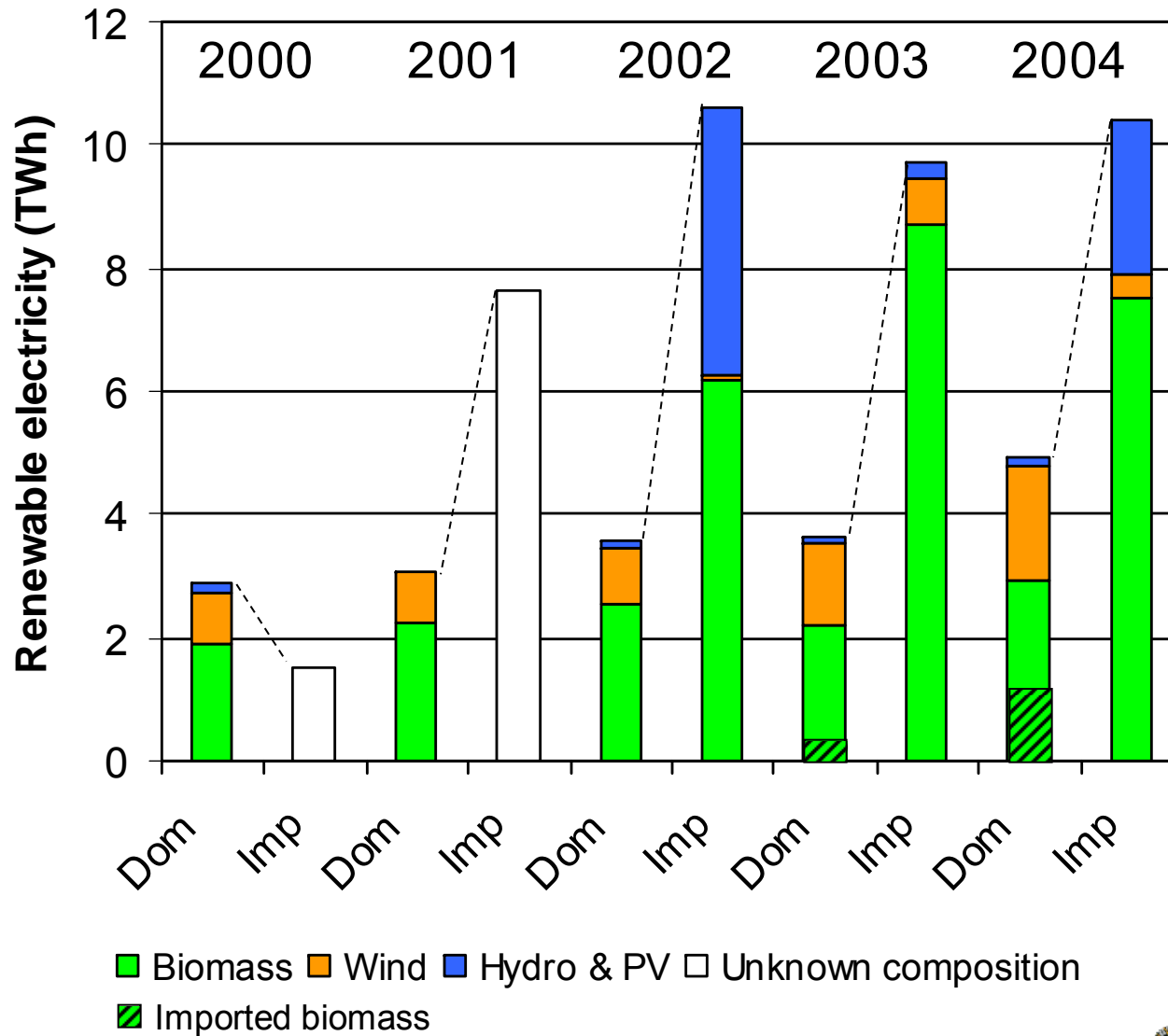
Additional electricity costs for co-firing



* feed-in tariffs for large-scale plants >50 MW, Data from de Vries et al., ECN, 2005



Domestic production compared to import of renewable electricity certificates



Barriers for further import of biomass

- Competition with application as fodder production or food production.
- Increasing international competition.
- Reluctance to use new biomass streams.
- Immature market, lack of significant volumes and associated professional logistics.
- Import restrictions (on ethanol, agricultural residues)
- Few or no statistics!
- Sustainability issues



Controversy around palm oil

- Netherlands largest European importer of palm oil, two thirds from Indonesia and Malaysia, mainly for food applications (e.g. Unilever)
- Comparable to large increase in soy bean plantations in South America
- Several international NGO's strongly against further use of palm oil and soy bean products (e.g. oil for ape report)
- Dutch NGO's Novib, Both Ends, Friends of the Earth (Milieudefensie) demand *sustainability criteria* for use of palm oil and soy bean oil (august 2005)



Changing governmental policy

- Additional issue: yearly budget for MEP feed-in tariff insufficient due to rapid growth of co-firing -> announcement in May 2005 that no new co-firing capacity will get MEP feed-in tariff
- Oktober 2005: Feed-in tariff for large-scale co-firing of solids and liquids reduced from 7 €/ct/kWh to 2.5 €/ct/kWh from July 2006 onwards, exception: clean wood (6.1 €/ct/kWh)
- -> Essent announces to stop using palm oil, Electrabel cancels plans for co-firing palm oil
- Essent partner of Round Table on Sustainable Palm Oil and initiator of a biomass certification system (Green Gold Label)



Conclusions

- Rapid increase of (dedicated) imported biomass over the last 3 years, but “buried under its own success”
- Further import needed for obtaining targets, especially also for the bio-fuel directive, but questionable with recent policy changes
- Both industry and NGOs demand a more sustainable (i.e. reliable) policy and support measures
- *Urgent* need for a better classification of biomass, (basic) sustainability criteria and certification standards

Thank you for your attention

Full Country report available at: www.fairbiotrade.org