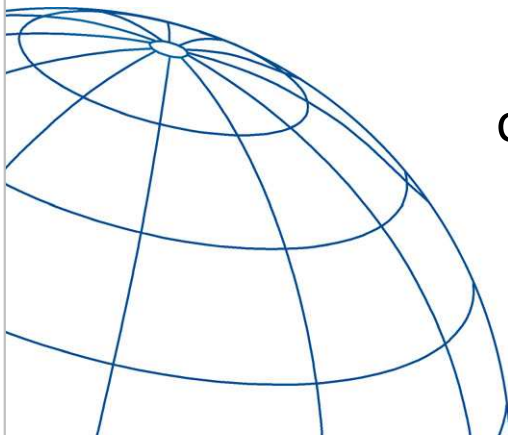


European Experience and Lessons on RE Quota System

Dr. Ole Langniss
ole.langniss@fichtner.de
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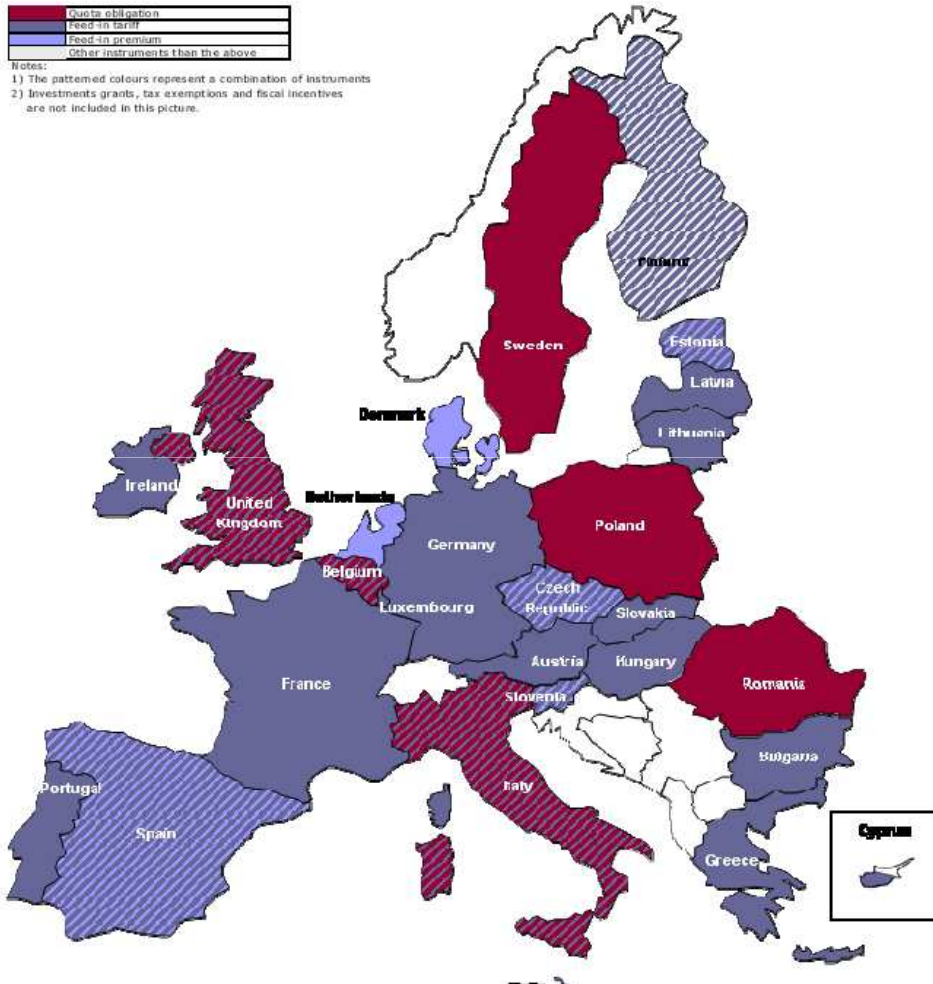
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Dominating support schemes for RE-Electricity in the EU

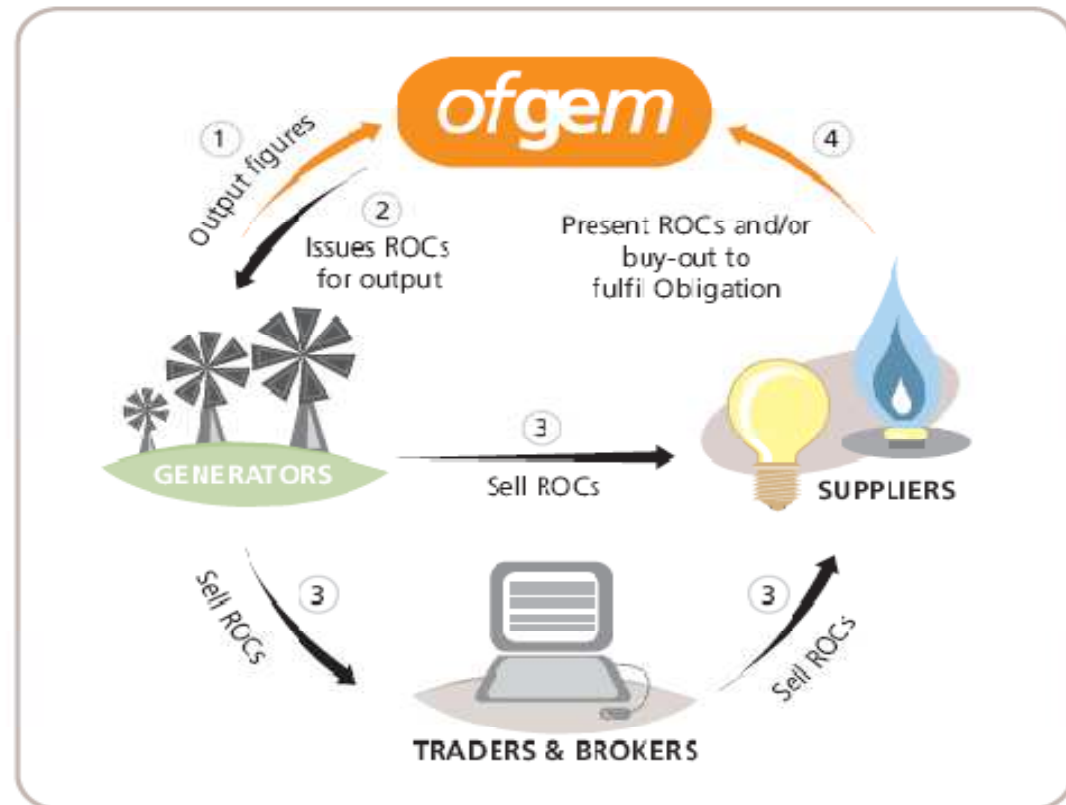


- Minimum Price Standards/FIT
- RPS/ Quota / TGC
- MPS and RPS/Quota / TGC
- Tax incentives / Investment grants
- Other system

A clear majority of EU countries uses feed-in tariffs as main instrument
 6 countries have implemented a quota obligation with TGCs

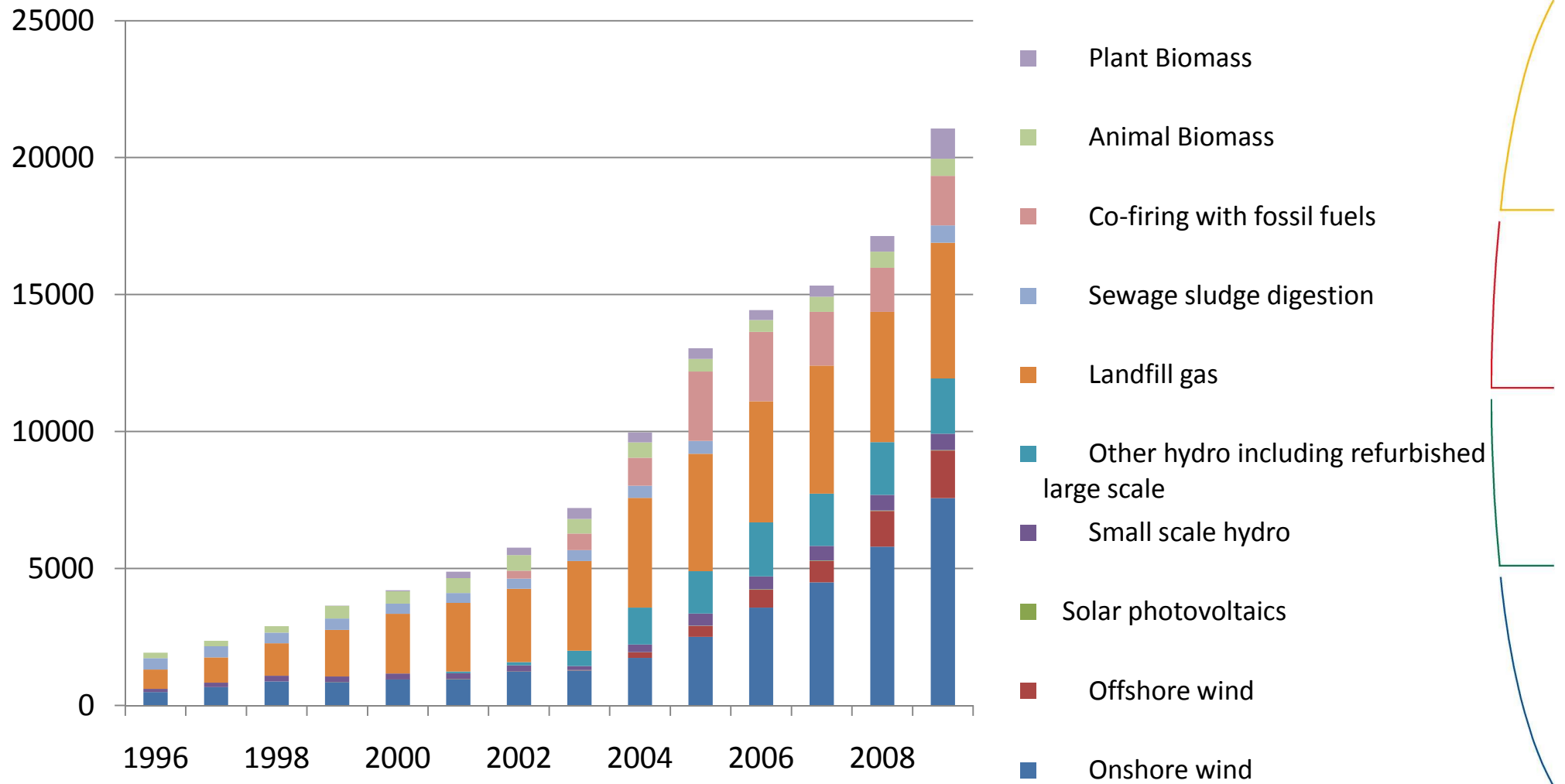
The English Renewable Obligation – Set-up

- Electricity suppliers are obliged to fulfil a certain quota
- Each MWh of renewable electricity rewarded by a Renewable Obligation Certificate (ROC)*
- The ROC can be traded with the electricity or separately
- The ROC's value is that suppliers use it to show compliance with the Renewable Obligation
- Alternative a supplier can “buy-out” (= pay a penalty)
- Penalty @ £36.99 (380 RMB) for 2010-11 (increases annually in line with Inflation)
- Buyout funds accumulated over the year and redistributed to all suppliers in proportion to the extent to which they have met the RO



* Until April 2009

The English Renewable Obligation – Results



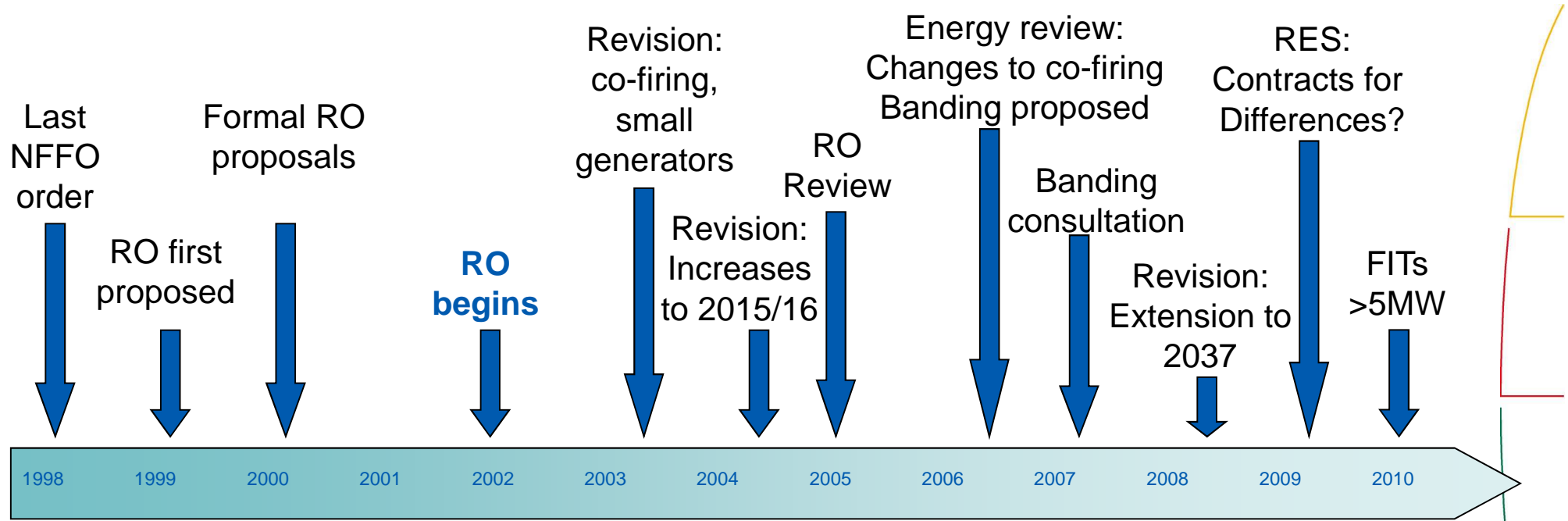
The English Renewable Obligation – Results

- Annual targets for RES shares on total power supply are missed
- Main development in onshore wind
- Few new entrants
- Further problems:
 - **Planning**
 - **Market arrangements**
 - **Grid access problems**

	Target (%)	Achieved (%)	% of target achieved
2002	3.0	1.8	60
2003	4.3	2.2	51
2004	4.9	3.1	63
2005	5.5	4.0	73
2006	6.7	4.4	66
2007	7.9	4.8	62
2008	9.1	5.4	59
2009	10.1	6.7	66

Source: Bridget Woodman 2010

The English Renewable Obligation – Evolution I



Changes increasingly challenge the intentions and fundamental design of the RO
Will they work?

http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/policy/renew_obs/key_stages/key_stages.aspx

The English Renewable Obligation – Evolution II

Measure	Start date	Purpose
Headroom	April 2009	The RO for a period is set at a level based on expected renewable generation plus a further proportion (an additional 8%) of the ROCs expected to be issued in the relevant period. The guarantee of the RO requiring more ROCs than probable generation is designed to avoid the risk of ROC prices crashing as the gap between generation and the RO target is narrowed, with a consequent decline in the recycling of the Buyout Fund
Banding	April 2009	Awards different numbers of ROCS to different technologies, providing an incentive to invest in less developed technologies (new projects only)
FITs	April 2010	To provide small projects (up to 5MW) with investment certainty and remove RO transaction costs
Contracts for differences	ASAP (2013?)	To stabilise revenue streams for renewable projects by setting a value for wholesale renewable power

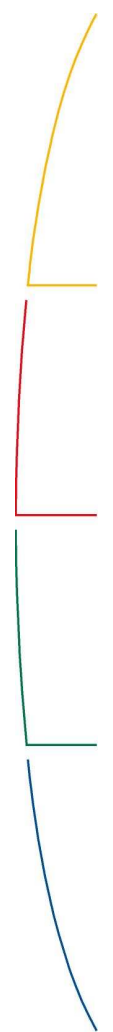
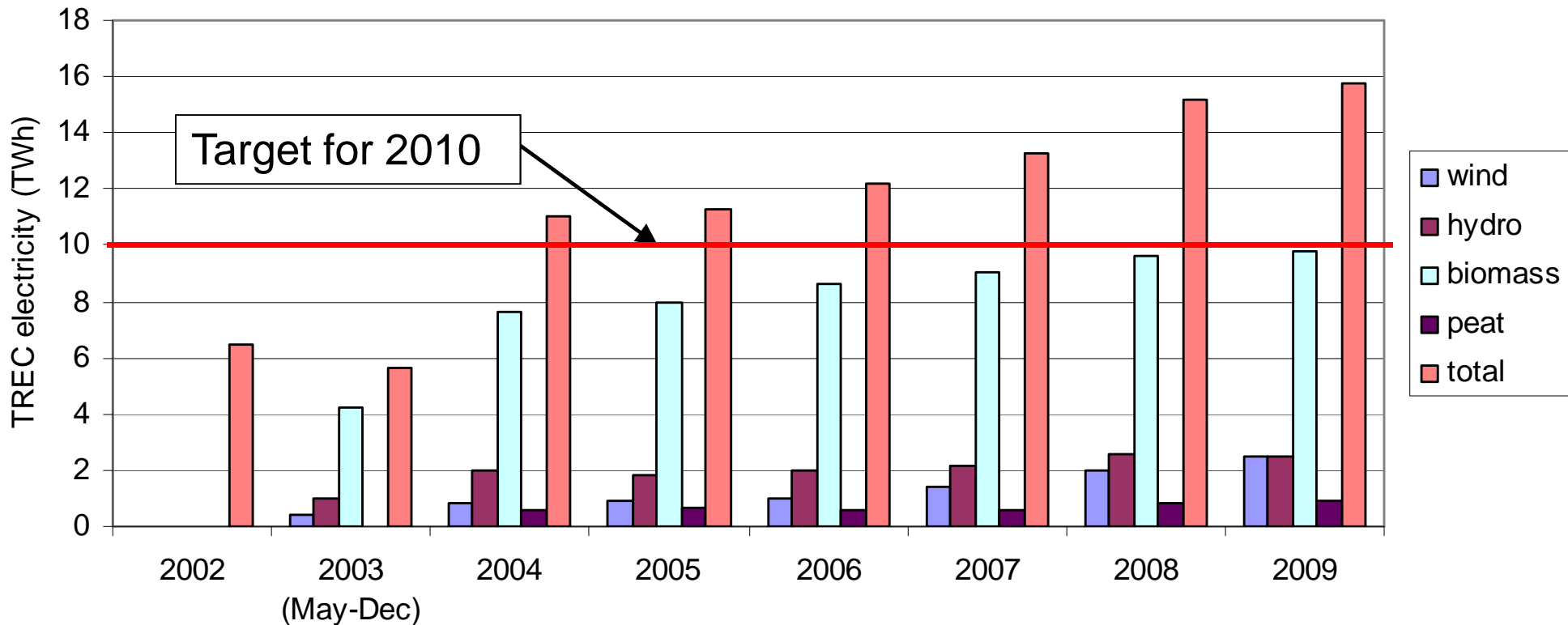
The Swedish Elcertificat – Set-up

- **Established 2003**
- **Original target additional 10 TWh/a by 2010, now additional 25 TWh by 2020**
- **Obligation on suppliers, electricity intense industry excluded**
- **Includes all RE technologies including peat when burnt in CHP plants**
- **Also existing plants that were commissioned before introduction of the policy are entitled to certificates through 2012, while others can receive certificates for 15 years, or until the end of 2035, whichever is earlier**
- **Penalty 150% of the average market price**



The Swedish Elcertificat – Results

- Targets reached
- Biomass in existing plants dominates, wind power increases after eligibility period was increased
- In 2009 the scheme generated RMB 5300/MWh in income for RE electricity producers, while it increased the average cost of electricity to consumers by RMB 61 /MWh



Trade within the European Union – Common Target

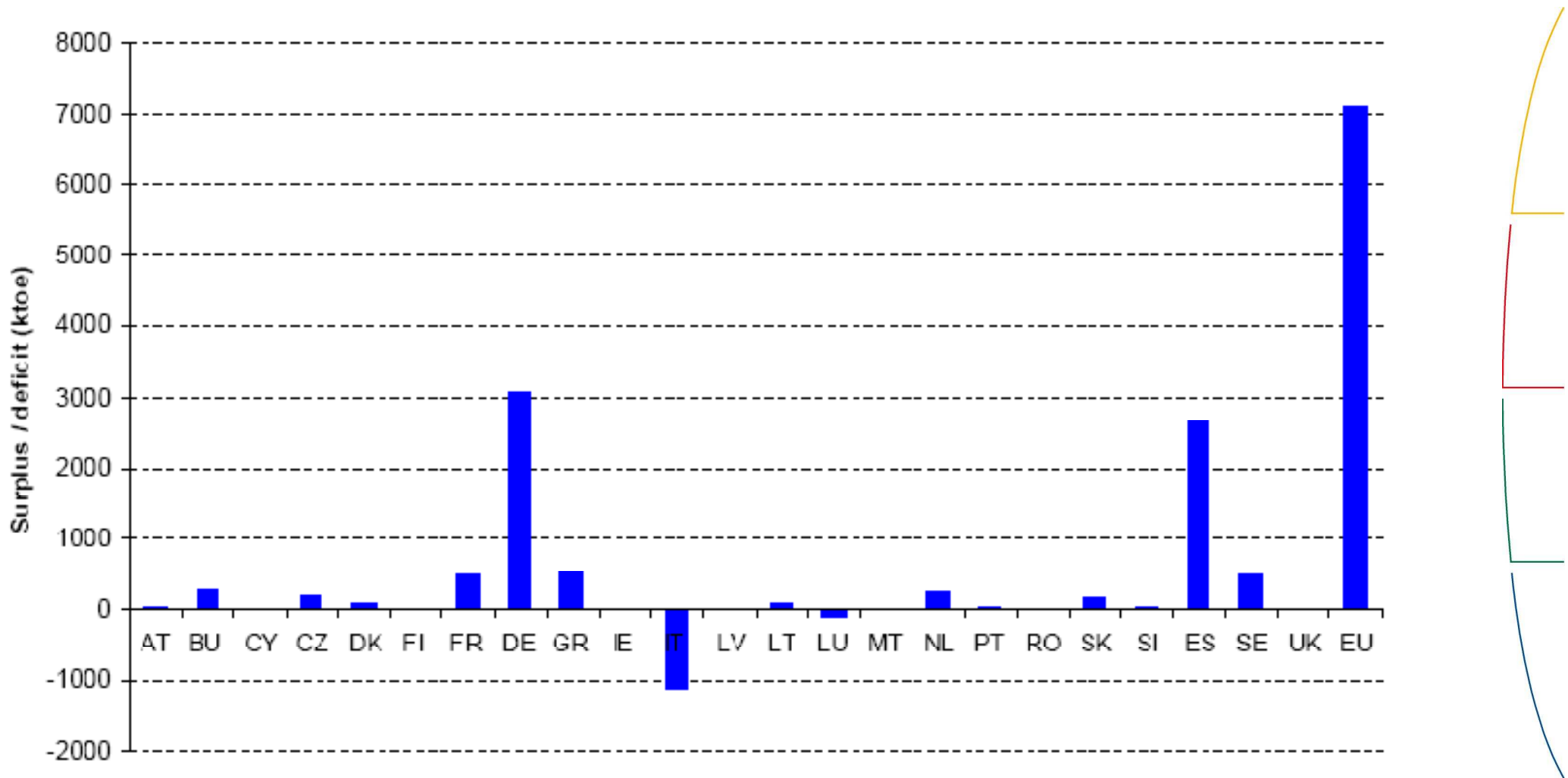
Common Target 20% of gross final consumption of energy

	2005	2020
Belgium	2,2 %	13 %
Bulgaria	9,4 %	16 %
Czech Republic	6,1 %	13 %
Denmark	17,0 %	30 %
Germany	5,8 %	18 %
Estonia	18,0 %	25 %
Ireland	3,1 %	16 %
Greece	6,9 %	18 %
Spain	8,7 %	20 %
France	10,3 %	23 %
Italy	5,2 %	17 %
Cyprus	2,9 %	13 %
Latvia	32,6 %	40 %
Lithuania	15,0 %	23 %

	2005	2020
Luxembourg	0,9 %	11 %
Hungary	4,3 %	13 %
Malta	0,0 %	10 %
Netherlands	2,4 %	14 %
Austria	23,3 %	34 %
Poland	7,2 %	15 %
Portugal	20,5 %	31 %
Romania	17,8 %	24 %
Slovenia	16,0 %	25 %
Slovak Republic	6,7 %	14 %
Finland	28,5 %	38 %
Sweden	39,8 %	49 %
United Kingdom	1,3 %	15 %



Trade within the European Union – RES surpluses and deficits



Trade within the European Union - Directive 2009/28/EC

Cooperation Mechanisms

Motivation: Target flexibility. Allow Member States with low and/or expensive RES potential to partly fulfil their RES target in other countries

Cost savings: reduce overall costs for achieving European Union 2020 RES target

Cooperation Mechanisms defined in Directive 2009/28/EC

Statistical transfers between Member States

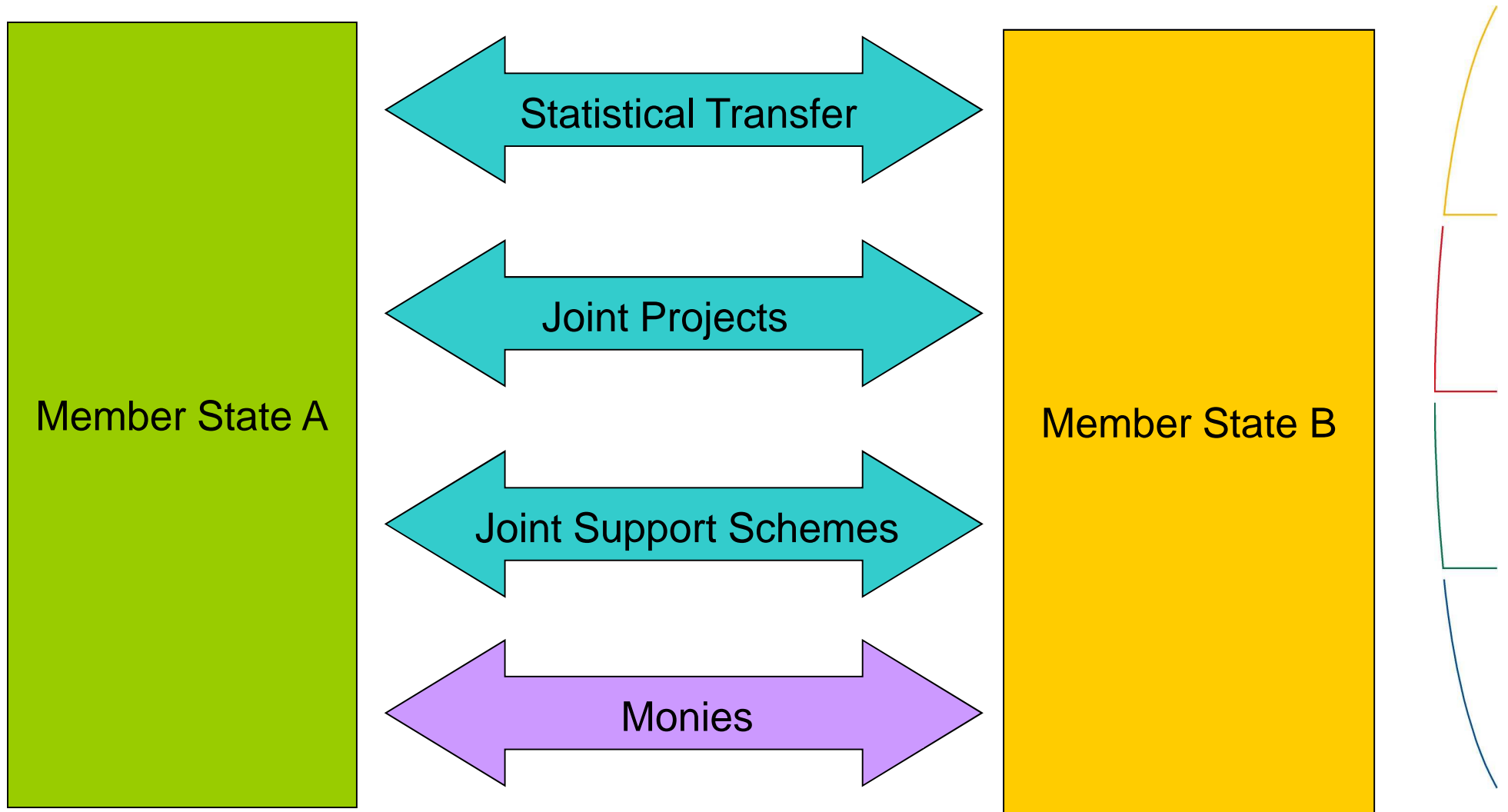
Joint projects between Member States

Joint projects between Member States and third countries, under the condition that RES is imported to the European Union

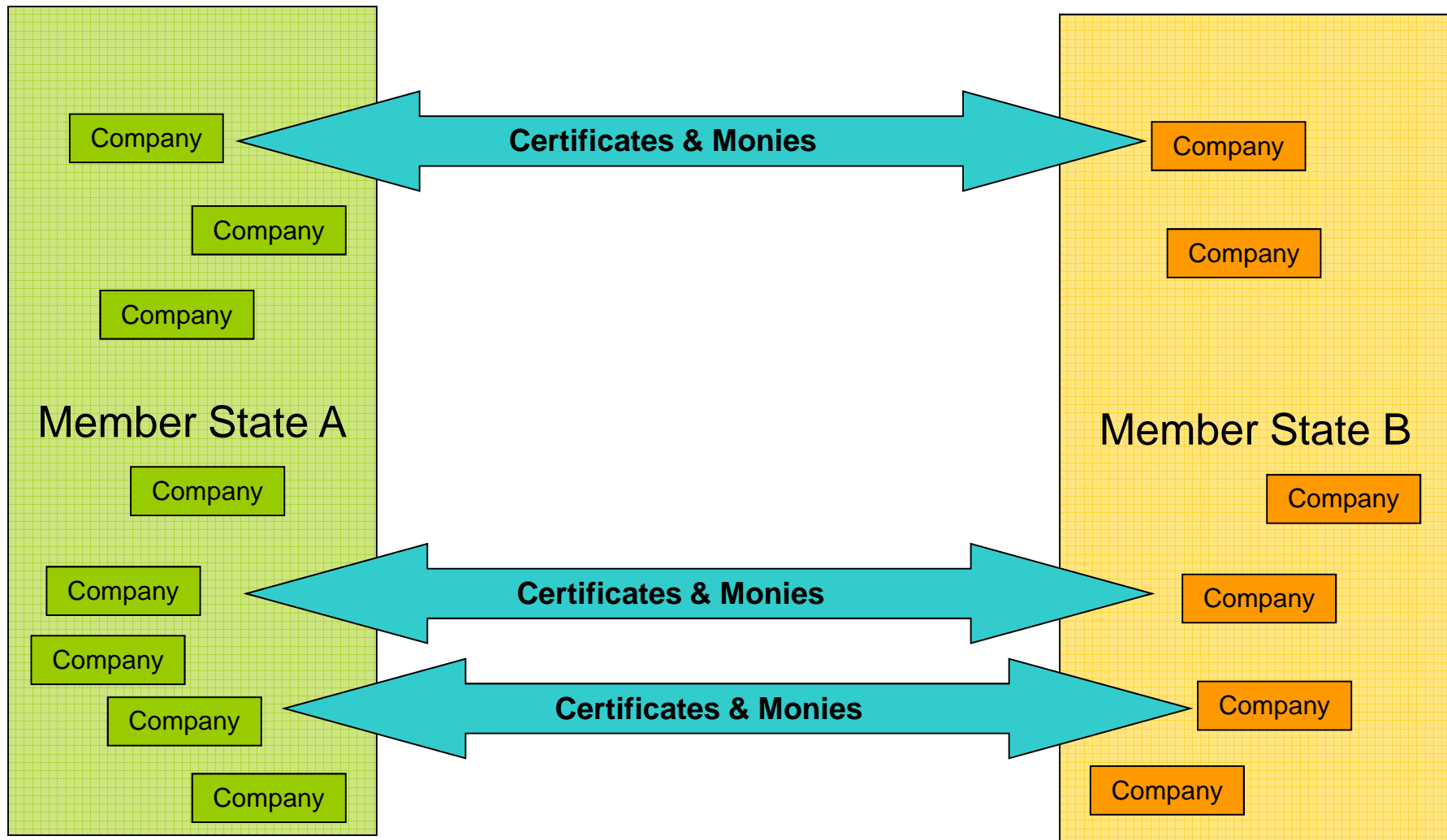
Joint support schemes



Trade within the European Union - Approaches



Difference to certificate trade (Depicted here)



Trade within the European Union – Status

- Most EU Member States plan to fulfil their national targets domestically because they recognise the benefits of domestic RES deployment
- Still, several EU Member States show interest in the Cooperation Mechanisms; first discussions between Member States
- EU Member States still need to define the framework conditions for the use of Cooperation Mechanisms



Summary

- Mixed experiences with quota schemes in Europe
- Additional mechanisms needed e.g. planning procedures, grants for innovative technologies etc
- Cross border trade of certificates for fulfilling national quota regulations does not play any significant role
- European Union introduced cooperation mechanisms for balancing national obligation and burdens

