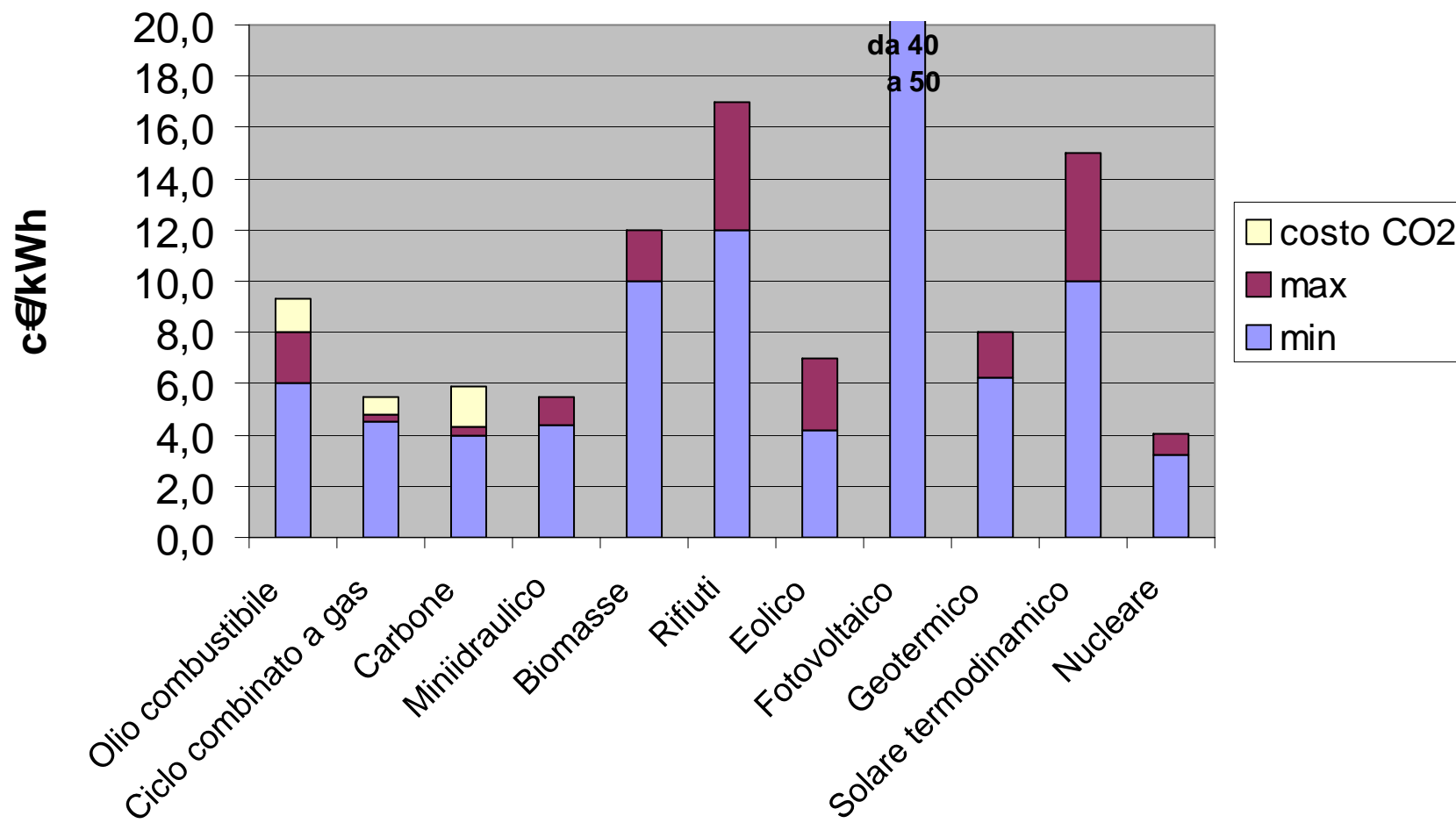
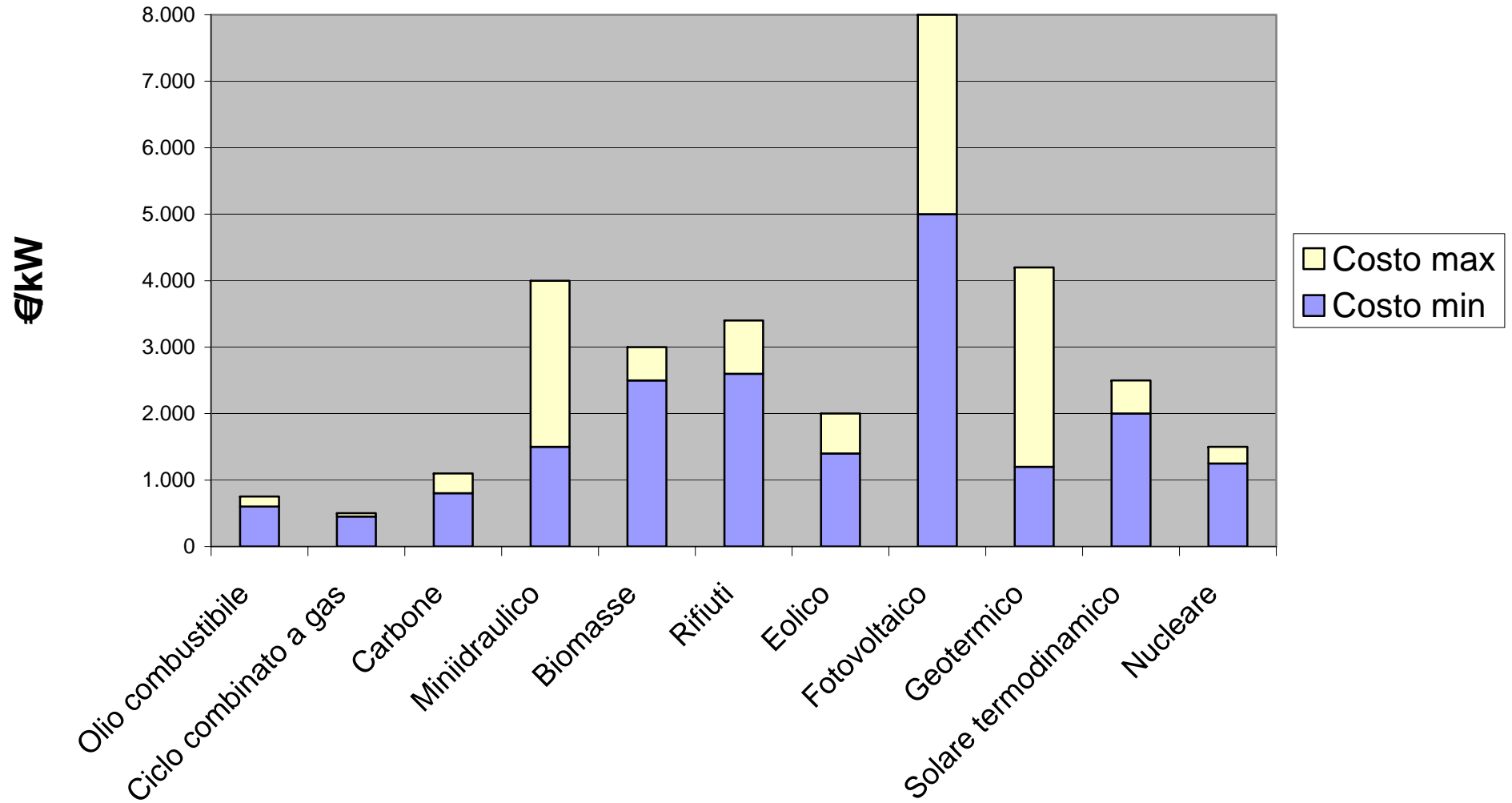


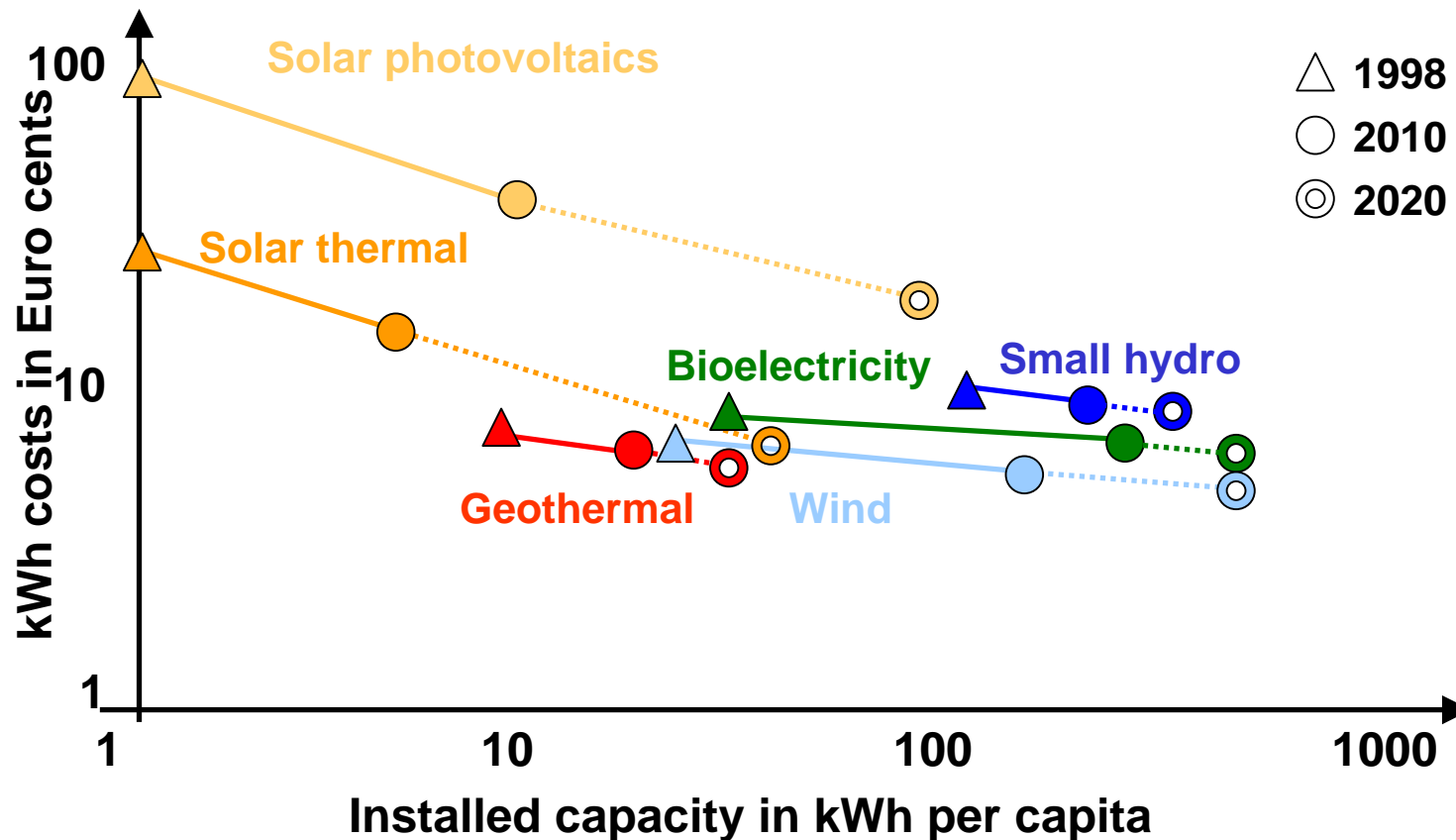
Costo energia elettrica per tipo di impianto



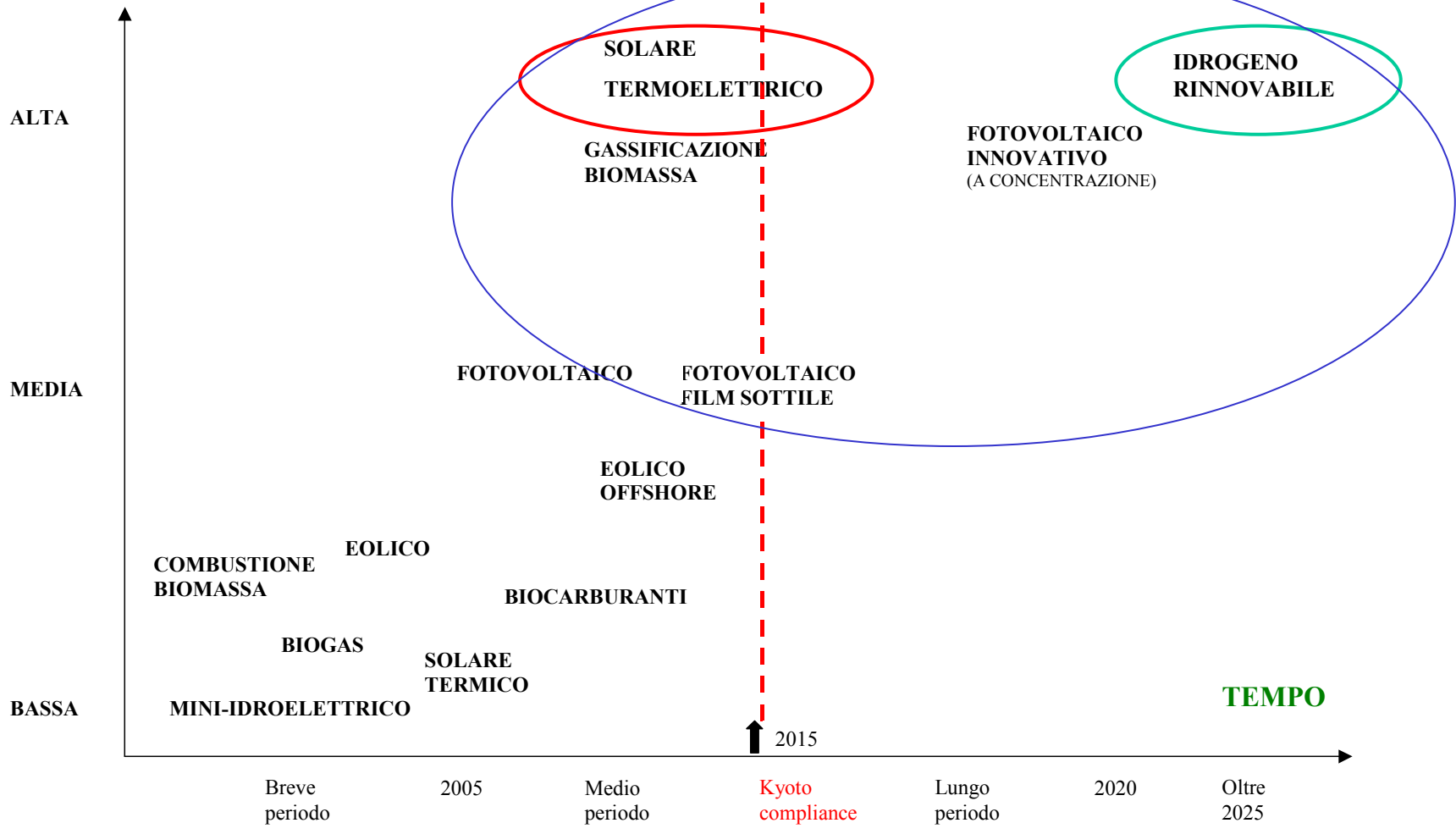
Costo di realizzazione di impianti di produzione per unità di potenza



Curve di apprendimento delle tecnologie & opportunità riduzione costi



INNOVAZIONE



POSIZIONAMENTO TECNOLOGICO SECONDO LO IEFE

Country	Capital subsidy	Feed in	Certificate/obligation (RPS)	Tendering	Fiscal
Austria	H	√	H		√
Belgium	√	√ some regions	√		√
Denmark	√	√			√
Finland	√				√
France	√	√		√	√
Germany	√	√			√
Greece	√	√			√
Ireland	√			√	√
Italy	√	H	√		√
Luxembourg	√	√			
NL	√	√	√		√
Portugal	√	√			√
Spain	√	√			√
Sweden	√		√		√
UK	√		√	H	√
USA	√ (PV) H (wind)		√		√

Table 14 Š Renewables policy mix in EU and USA in mid 2003 (√ denotes existing policy, H denotes historical policy now replaced) (Sources: Bechberger and Reiche 2003 ; EEA, 2001)

Country	Leading technology areas	Policy mix
Austria	High growth in biomass heat and power, solar thermal	Feed in law first on regional basis, now harmonized nationally (2003). Fiscal incentives & capital subsidy appear to have been key to biomass growth
Belgium	Large relative growth in biomass power, from low base	Feed in law started regionally, now complemented by national RPS, fiscal and capital subsidies
Denmark	Wind: largest manufacturer, highest proportion of electricity supply and largest installed offshore capacity in the world. Have also substantially increased biomass CHP. Recent onshore slow down due to site saturation. Continued growth offshore	Feed in laws, strong community investment incentives, joint ventures with former state utility and gov't, fiscal incentives & high energy tax from which RE Ts get rebate. Also historical strong R&D support and capital subsidies. Move to RPS was under discussion but has been abandoned.
Finland	Largest absolute increase in biomass power	Fiscal (tax exemptions on biomass and wind) and capital subsidies (solar thermal)
France	Limited progress in wind development and biomass heat. Leading EU in biofuels growth.	Initially tendering, subsequently move towards feed-in tariffs. History of unfavourable connection terms. Favourable fiscal rates for biofuels earlier than many other states
Germany	Largest installed wind capacity in world. Fastest wind installation rate in world. Largest PV capacity in EU. Recent slowdown in wind development reflects onshore saturation and reduced feed in tariff	Feed in laws rigorously defended and highly differentiated by technology, Both capital subsidy and high feed in rate for PV. Historically, incentive to encourage local ownership and availability of soft loans. Demand for PV grants outstripped available funds
Greece	Modest progress in wind installation	Feed in, fiscal incentives and capital grants.
Ireland	Modest progress in wind installation	Tendering scheme and fiscal incentives
Italy	Modest progress in wind installation	Feed in scheme, later complemented by RPS. Fiscal incentives and cap ex subsidies. History of difficulty in securing power connection for wind parks.
Luxembourg	Limited resources and development	
NL	Strong growth in PV, solar thermal. Modest progress in wind installation	Initially a certificates scheme only. This is now supplementary to a feed-in tariff scheme (2003). Strong fiscal incentives and subsidies for households and SMEs.
Portugal	Modest absolute progress and high relative growth in wind installation	Feed in laws, fiscal advantages.
Spain	Massive growth rate in wind installation, now second only to Germany in EU capacity. Equally strong growth in PV installation, also second to Germany	Feed in laws, regional level capital subsidies and favourable loans for wind
Sweden	Strong growth in biomass district heating and CHP. Some progress in wind installation, including offshore	Historically capital subsidies available for wind and biomass. RPS scheme just implemented. Energy tax exemption
UK	Modest progress in wind installation, consent for onshore recently accelerated, ambitious offshore wind plans under development	Competitive tendering (NFFO) now replaced by RPS scheme & energy tax exemption. Limited capital subsidies available. History of planning obstacles for wind power.
USA	Considerable success in wind installation in many states and notable success with PV in some states	Initial impetus for wind was capital subsidy available in California in late 1980s. Since this was withdrawn the main mechanism for wind has been a federal production tax credit. Stop-start nature of this produced boom and bust. RPS schemes delivering wind capacity now in several states. Capital subsidies available in some states for PV.

Table 15 Technology/policy matrix for EU and USA (Sources:EE A, 2001; Reiche, 2002)

Technology		Austria	Germany	Netherlands	Spain
Wind	Onshore	7.8	6.01 Š 8.87	4.9	6.21
	Offshore	n/a	6.01 Š 8.87	6.8	6.21
PV		47 Š 60	45.7	6.8	21.6 Š 39.6
Hydro (small scale)		3.15 Š 6.25	6.65 - 7.67	6.8	6.49
Biomass	Pure	10.2 Š 16	8.6 Š 10.10	4.8	6.05 Š 6.85
	Mixed	6.63 Š 12	n/a	2.9	n/a

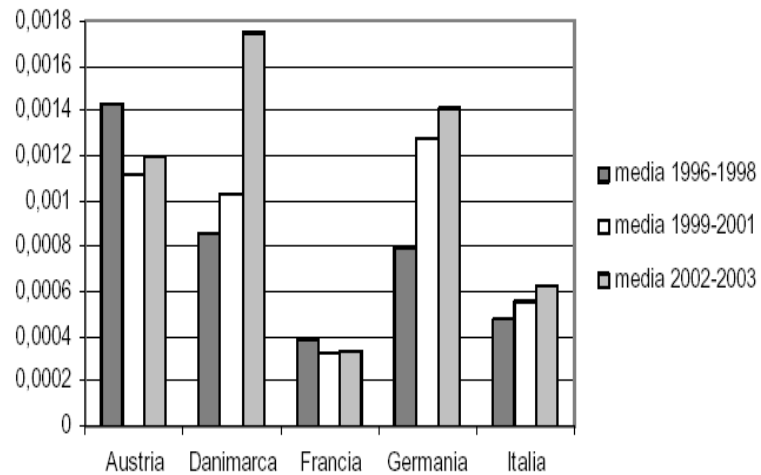
Table 16 Š Feed-in tariffa in selected countries Ū% per kWh

	Capital Grant	Soft Loan
Austria	Financing of biomass installations in district heating by regional or local authorities	ÖKommunkreditÖbank provides low-interest-rate loans for up to 30% of the total investment cost of approved renewable energy projects
Germany	Ö00,000 roof programmeÖ subsidised up to 50% of total investment costs for PV installations	ÖKfWÖand ÖtAÖquasi-governmental banks provide low-interest rate loans on up to 100% of approved renewable energy projects
Netherlands	Energy Premium (EPR) provides grants for between 25% to 50% of total capital investment into approved renewable energy projects; Greenpeace offers, through the project ÖSolarisÖ PV systems for private homes at half the market price	n/a
Spain	Economic ministry provides subsidies for approved small-scale renewable energy projects	ÖDEAÖenergy institute provides low-interest-rate loans for between 70% and 96% of total investment costs of approved renewable energy projects

Table 17 Š Capital Grant and Soft Loan schemes in selected countries

L'analisi delle esportazioni ed importazioni dei prodotti collegati alle Fonti Rinnovabili mette in luce la scarsissima rilevanza dei flussi commerciali sugli scambi con i principali paesi con eccezione della Danimarca, leader mondiale dell'eolico.

Importazioni di prodotti FER su totale importazioni prodotti (%). Anni 1996-2003



- Esportazioni di prodotti FER su totale esportazioni prodotti (%), 1996-2003

