

Bundling the Forces – but how?

Background Paper: Stocktaking

By

Henning Matthiesen, LL.M., Hamburg/Berlin

This paper was commissioned in November 2003 by
IUCN – The World Conservation Union. It does not necessarily represent
IUCN's position or views.

ABBREVIATIONS	IV
1 INTRODUCTION: MAKING THE PACE.....	1
2 THE INTERNATIONAL SCOREBOARD: INSTITUTIONS, POLICIES, AND STAKEHOLDERS.....	4
2.1 GLOBAL ENVIRONMENT FACILITY: HOW TO POOL THE RIGHT AGENTS FOR CHANGE.....	4
2.2 UNITED NATIONS FRAMEWORK: MARGINALIZED BY GEF ?.....	6
2.2.1 <i>WSSD-Process: Decoding “CSD-9, UNDESA, e7, JREC, type ii”</i>	6
2.2.1.1 UNDESA & e7.....	7
2.2.1.2 CSD-9 and The Business Community: World Energy Council / ICC / WBCSD.....	8
2.2.1.3 The Science & Technological Communities	8
2.2.1.4 Other Stakeholders in CSD-9.....	9
2.2.1.5 The Rise of Brussels: Johannesburg Renewable Energies Coalition	9
2.2.1.6 “Type II Initiatives”: Re-Branding Public Private Partnership on the international Level.....	9
2.2.1.7 UN Regional Economic Commissions.....	10
2.2.1.8 Niche Players: UNIDO / UNESCO / WHO / WMO.....	11
2.2.2 <i>Food and Agricultural Organisation</i>	12
2.2.3 <i>UNDP</i>	13
2.2.4 <i>UNEP</i>	14
2.3 IBRD – TRACING OUT THE (NON) GEF PERSPECTIVE	15
2.4 OECD, IEA & IAEA: UP TO THE EYES IN WORK WITH RES ?	17
2.5 REGIONAL INTERNATIONAL ORGANISATIONS	18
2.5.1 <i>European Union under the Aegis of the Draft Constitutional Treaty</i>	18
2.5.1.1 Promotion of Renewable Energies by virtue of EC Legislation.....	18
2.5.1.2 South East Europe: SEERECON & Athens Process to be seriously greened	20
2.5.1.3 International Energy and Development Cooperation: EU Energy Initiative	20
2.5.1.4 European Environment Agency seizes Green Power	21
2.5.1.5 Two Public Private Partnerships: LAMNET & AGORES.....	22
2.5.1.6 EIB - an innovative Approach to increasing its modest RES and Environmental Lending and to fishing for Financial Backers	23
2.5.2 <i>Energy Charter Treaty</i>	25
2.5.3 <i>APEC</i>	26
2.5.4 <i>ASEAN</i>	27
2.5.5 <i>NAFTA (REILP)</i>	28
2.6 REGIONAL DEVELOPMENTS BANKS	28
2.7 NGOS	29
2.7.1 <i>WCRE and WWEA - Promoting RES with a view to addressing Global Change</i>	29
2.7.2 <i>INFORSE</i>	29
3 KEY-FUNCTIONS FOR FUTURE INTERNATIONAL INSTITUTIONAL MECHANISMS	30
3.1 RES POLICIES	31
3.2 INTERNATIONAL RES COOPERATION & DOMESTIC RES LEGISLATION	32

3.3	ADMINISTRATION & REGULATION OF RES	33
3.4	RES TAXATION & FISCAL REGIMES (SUBSIDIES)	33
3.5	FINANCIAL MECHANISMS FOR RES	33
3.6	RES ORIENTED RTD	34
3.7	DEMAND SIDE MEASURES FOR RES (INVESTORS & USERS).....	34
3.8	RES MONITORING & RES PROJECT MANAGEMENT	34
4	INSTITUTIONAL RESPONSES AND OPTIONS AT INTERNATIONAL LEVEL.....	35
5	ANNEXES	38
5.1	GEF: SOME FAILURES AND OPPORTUNITIES FOR CHANGE	38
5.1.1	<i>Co-Finance Risk</i>	38
5.1.2	<i>Demand Risk</i>	38
5.1.3	<i>Plant Design Risks</i>	38
5.1.4	<i>Public Undertakings and Energy Sector Reform Risks</i>	38
5.2	CSD'S INSTITUTIONAL ROLE FROM UNCED TO WSSD AND BEYOND	39
5.3	EU - PROCEEDING FROM RENEWABLE TREATIES TO RENEWABLE ENERGIES	40
5.4	TYPE II INITIATIVES FOR RES (11/2003).....	43
	BIBLIOGRAPHY	VII

Abbreviations

AfDB	African Development Bank
AsDB	Asian Development Bank
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
ASTAE	Asia Alternative Energy Programme (IBRD)
CDM	Clean Development Mechanism (Kyoto Protocol)
CFI	Court of First Instance (EU)
CCGT	Combined Cycle Gas Turbine
CHP	Combined Heat and Power
CSD	Commission on Sustainable Development
CURES	Citizens United for Renewable Energy and Sustainability (NGO network for ICRE)
DG	Directorate General (within the European Commission)
DG TREN	Directorate General Transport & Energy (European Commission)
EBRD	European Bank for Reconstruction and Development
EC	European Community/-ies
ECJ	European Court of Justice
EC Treaty	Treaty Establishing the European Community, as amended by the Treaty of Amsterdam (and Nice)
ECOSOC	Economic & Social Committee (UN, but also a setting under the EC Treaty)
ECT	Energy Charter Treaty
ED 2003	Electricity Directive 2003/54/EC
EEA	Agreement on the European Economic Area / European Environment Agency
EIB	European Investment Bank
EP	European Parliament
ESMAP	Energy Sector Management Assistance Programme (by IBRD)
EU	European Union
FAO	UN Food and Agricultural Organization
GATT	General Agreement on Tariffs and Trade (1994)
GEF	Global Environment Facility
GHG	Green House Gas(es)
IADB	Inter American Development Bank
IAEA	International Atomic Energy Agency
IBRD	International Bank for Reconstruction and Development
ICC	International Chamber of Commerce
ICRE	International Conference for Renewable Energies, Bonn 2004
ICSU	International Council for Science
IDA	International Development Agency (IBRD)
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation (co-operates with IBRD regarding REEF)

IMF	International Monetary Fund
INFORSE	International Network for Sustainable Energy (NGO network)
IUCN	International Union for the Conservation of Nature and Natural Resources – World Conservation Union
JI	Joint Implementation (Kyoto Protocol)
JPOI	Johannesburg Plan of Implementation (WSSD)
JREC	Johannesburg Renewable Energies Coalition
MERCOSUR	Mercado Commune del Sur
NAFTA	North American Free Trade Association
NGO	Non Governmental Organisation
NIEO	New International Economic Order
NPT	Non Proliferation Treaty
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
PSO	Public Service Obligation (q.v. Art. 16, 86 EC Treaty)
REEF	Renewable Energy & Energy Efficiency Fund (by IFC / IBRD)
RES	Renewable Energy Sources
RTD	Research, Technological Development, and Demonstration
SCM	11 th GATT Side Agreement on Subsidies & Countervailing Measures
SD	Sustainable Development
SEERECON	South-East Europe Economic Reconstruction & Development (incl. European Commission & IBRD, Switzerland)
SIDS	Small Islands Developing States (Barbados Programme for Action)
TA	Technical Assistance
TPA	Third Party Access
TU	Treaty on Union (Maastricht Treaty as amended by Treaties of Amsterdam and Nice)
UN	United Nations
UNCED	UN Conference on Environment and Development, Rio de Janeiro 1992, “Earth Summit”)
UNCHE	UN Conference on Human Environment, Stockholm, 5-16 June 1972.
UNCTAD	United Nations Conference on Trade and Development (NIEO)
UNDESA	UN Department of Economic & Social Affairs: supports CSD for implementation of projects.
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UNECE	United Nations Economic Commission for Europe
UNECLAC	United Nations Economic Commission for Latin America and the Caribbean
UNEP	United Nations Environment Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCWA	United Nations Economic and Social Commission for Western Asia

UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organisation
World Bank (Group)	International Bank for Reconstruction and Development (IBRD), IDA, ESMAP, ASTAE, contributes to GEF
WBCSD	World Business Council for Sustainable Development
WCRE	World Council for Renewable Energy (NGO)
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWEA	World Wind Energy Association

1 Introduction: Making the Pace¹

For most parts of the world, “International Institutional Arrangements”² for the promotion of renewable energies are not just measures, being merely complementary to satisfactory domestic action, but actually indispensable in the ongoing effort to implement efficient policies of “Sustainable Development” (SD) under the aegis of either regional economic groupings or international development co-operation.

Notwithstanding hypotrophic academic debate, SD shall be defined as an *integrated* effort to boost both economic development, social rights [employment, social cohesion, and responsiveness], environmental protection, the responsible use of natural resources, and good governance [human rights, democracy, the rule of law, subsidiarity, guarantee of legal process and transparency].³ Contrary to traditional approaches, it will address inter-linkages and monitor cross-sectoral progress and deficits.

SD sprung into life by virtue of the deficits of traditional mono-sector specific approaches towards economic development and environment as established by the UN World Commission on Environment and Development’s Report “Our Common Future” in 1987.⁴ Its agenda has been clarified and strengthened by the “Rio Declaration on Environment and Development”, the Agenda 21 Action Programme, and the adoption of the UNFCCC in 1992.⁵ The concept was first applied to the energy sector as a whole by a 1997 UN General Assembly Resolution of 1997, which

- set the agenda for the 9th session of the Commission on SD (CSD-9, 2001),
- inaugurated an open-ended intergovernmental group of experts on energy and SD, and
- called for sustainable energy services, technology transfer and commercialisation, (inter)national RTD, rural energy programmes for poverty eradication, and the promotion of internalisation of externalities relating to environment and public health to energy pricing and the phasing out of fossil-fuel / broad subsidies⁷.

¹ This Paper on Renewable Energy Activities by international organisations was carried out, due to severe time and budget constraints, by way of an internet survey between November 08/11/2003 – 15/11/2003. It does not pretend to be fully comprehensive. The author and the project sponsor, IUCN, invite every interested organisation to suggest amendments and corrections. Contact: ✉ htmatthiesen@compuserve.de; ☎ +49-(0)177-2 87 81 90 (cellular); 📠 +49-(0)40-75 11 03 43 42. The paper has been prepared under supervision and guidance of Prof. Dr. Wälde, Dundee, in November 2003, and the author is indebted to Prof. Adrian Bradbrook, Adelaide, and Dr. Sally Jeanrenaud, IUCN for their valuable comments.

² The term is derived from s.38 of the “Agenda 21” Action Programme, adopted at UN Conference on Environment & Development (UNCED) Rio de Janeiro, 3-14/06/92, the so-called “Earth Summit”.

³ q.v. Johannesburg Declaration at 31; and: www.europa.eu.int/comm/sustainable/index_en.htm.

⁴ UN, “World Commission on Environment and Development”, *Our common Future*, 1987 (Oxford, UK, OUP, 1987). see also UNCHE and F. Vester, *Ballungsgebiete in der Krise* (Stuttgart, Germany, DVA, 1976), a study on cybernetics sponsored by UNESCO.

⁵ UNCED: Agenda Policies include: Agriculture, Atmosphere, Capacity Building, Patterns of Production and Consumption, Energy, Finance, Forests, Industry, Information for Decision making and participation, Integrated decision making, International Law and Cooperation, Science, Technology, Trade & Environment, Transport, Waste. q.v. www.un.org/esa/sustdev/sdissues/ (11/2003); and CSD-9 (infra 2.2.1).

⁷ UN General Assembly, 19th Special Session New York, 23-27 June 1997, Resolution Adopted By The General Assembly for the Programme for the Further Implementation of Agenda 21, Energy (at 42-46): Para. 42 calls for sustainable production, distribution, and supply of energy by “enhanced international cooperation, notably in the provision of concessional finance for capacity development and transfer of the relevant technology, and through appropriate national action”. To that end, “international cooperation for .. the use of renewable energy and research, and the development and dissemination of innovative energy-related technology” are deemed necessary (45; “Earth Summit +5”).

Unfortunately, this resolution is only implicitly backed by the UN Millennium Development goals.⁸ Recently, it has been elaborated by the 2002 WSSD: It focused on rural energy and RES in general, transport, waste, and climate change policies and gave rise to both a number of new field initiatives and fresh impetus to existing international institutional settings.⁹ First, it is worthwhile to recall why one should promote the consumption of energies produced from Renewables.¹⁰ Renewable Energy Sources (RES) are abundant.¹¹ As both worldwide energy and electricity consumption are soaring¹² – albeit no longer proportionate to increases in GDP – energy efficiency and conservation remain objectives second to none. If, however, growing demand can not be averted by those prime measures alone, one has to exploit any reasonable potential for the promotion of energy consumption by means of new and RES, if global change is to be reversed or at least limited. Moreover, renewables will contribute to long term security of supply in those areas of the world not enjoying vast deposits of fossil fuels.¹³ Finally, most IC are legally obliged under the UNFCCC and – once it has entered into force – the Kyoto Protocol to pursue SD by researching on, promoting and increasing use of RES.¹⁴ Such use will contribute to achieve domestic obligations to limit and reduce GHG emissions in the first commitment period from 2008-2012 by at least 5%, compared to 1990 levels.¹⁵ Market Imperfections in all greenhouse gas emitting sectors like energy, transport, landfills are to be progressively reduced.¹⁶ IC shall co-operate with each other & DC and may share their burdens.¹⁷ DC, having signed the UNFCCC, are subject to certain obligations and shall cooperate on climate change matters.¹⁸ Hence, rural off-grid RES energy systems offer the potential to free the poor from wasting valuable time by collecting precious fuel-wood or dung, the latter being valuable fertilisers.¹⁹

⁸ UN GA Resolution 55/2: The 7th goal obliges the international community to “ensure environmental sustainability. Sample implementation: Medium-Term Strategy 2002-2007 (31 C/4 Approved); www.unesco.org. It does not explicit address access to energy, which is seen as an omission.

⁹ UN Report of the World Summit on Sustainable Development, Johannesburg, 26 August – 4 September 2002 (A/CONF.1999/20), includes Political Declaration and Johannesburg Plan of Implementation: www.johannesburgsummit.org/index.htm (no longer updated) WSSD, Johannesburg Declaration on Sustainable Development (2002, rural energy at 18), Plan of Implementation (2002, at 9, 20-22, 38, 41).

¹⁰ For this paper, Renewable fuel sources will be defined in terms of both Art. 2 lit. a) of Directive 2001/77/EC (RES for power generation), Art. 2 XXX ED 2003 and Art 2 I lit a-b) of Directive 2003/30/EC (liquid or gaseous biomass fuels). Such fuels must not to compromise quality and emissions (at 7). For definitions of RES: IEA & OECD, Renewables Information (Paris, France, IEA Statistics, 2003) p 5.

¹¹ RES flows exceed actual energy consumption by many times: Turkenburg, W. et alii, *Renewable Energy Technologies*, in: World Energy Assessment, (UNDP, New York, UNDP, 2000) Ch 7, pp. 220, 267; UN, Economic and Social Council, CSD-9, Multi-stakeholder dialogue on sustainable energy & transport, Discussion Paper, jointly contributed by ICC, World Business Council for Sustainable Development, and the World energy Council (26/01/01), at 20.

¹² e.g. IEA, Key World Energy Statistics (Paris, France, IEA, 2002) p 28; WSSD, Facts about Energy (2002), p1. Growing use of fossil fuels in (European) transportation, a trend to be exacerbated by the 2004 accessions: Recital 4 of Dir. 2003/30/EC; Commission, European Transport Policy for 2010: time to decide, OJ C 210, 06/07/1998, p 215; CO₂ emissions to grow by 50%; European Environment Agency, Energy & Environment in the European Union (Issue report 31, 2002) p16, 47 et seq.; for a global perspective: WSSD, op.cit.

¹³ Art. 1 Directive 2003/30/EC and Rec. 22.

¹⁴ Art. 4 I lit. b)-c), II a), V UNFCCC, Annex I, and Arts 1 VII, 2 I chapeau/lit. a.(iv) of the Protocol: State of ratification: UNDESA, SD-Division, Energy & Transport Branch, Energy & Transport Newsletter (07/2003), p. 5.

¹⁵ Arts 2 I, 3 I Kyoto Protocol.

¹⁶ Art. 2 I lit. a. (v) Kyoto Protocol, e.g. fiscal incentives for fossil fuels and subsidies. Measures limiting GHG in transport (vii) and methane recovery (viii).

¹⁷ Arts 2 I lit. b and 4 Kyoto Protocol, 4 II UNFCCC (IC) and I (DC).

¹⁸ Art. 4 I UNFCCC.

After having explored the current scoreboard of the international measures promoting energy consumption from RES (**Section 2**), it will be elaborated that international support is all the more vital. Since most RES technologies are still infant, gradually evolving, complex, costly per unit,²⁰ face competitive restraints, and require usually small scale and long-term investments (managerial diseconomies of scale), some sort of limited subsidisation is vital. So, RES projects are heavily exposed to regularity uncertainties and may easily become “stranded investments” (thus at least attractive for tax evasion). Therefore, it is cumbersome to get adequate finance and particularly difficult for DC to leapfrog the massive use of fossil fuels in their transitional stages of economic development. Consequently, international co-operation - with due regard to subsidiarity – shall pool scarce resources, avoid both the adoption of inconsistent standards and any duplication of well-known single track roads or dead-end-streets (**Section 3**). Finally, as there is no single effective measure at hand, this paper undertakes to highlight which caveats have to be taken into account if international promotional packages are to be defined and advanced successfully (**Section 4**). Pursuant to the present state of SD-Debate,²¹ any international arrangement for the promotion of RES should, therefore, address:

1. *Policies: PRAE-, and POST- but also PRAETER – Legislation (i.e. Good Governance / Capacity Building and Impact Assessment, Setting of mandatory or indicative, qualitative or quantitative national RES Targets / Private Sector Development / Conciliation with Environmental Policies),*
2. *International Co-operation²², compliance with international obligations, namely Climate Change, international trade law (WTO-Law, ²³ multilateral regional economic integrations, and bilateral agreements), and domestic legislation, i.e. Energy & Transport Sector Reforms),*
3. *Administration (due implementation of reforms / streamlining of approval procedures),*
4. *Taxation (e.g. Energy levies; abolition of fossil fuel or broad energy & transport subsidies),*
5. *Finance of Programmes & Projects (Co- & Concessional Finance / Feasibility Study Finance),*
6. *RTD,*
7. *Demand Side (Information to investors and users),*
8. *Monitoring and Project Management (Risk Management).*

¹⁹ q.v. IBRD, Rural Energy and Development for Two Billion People, p.5. Traditional biofuels are both inefficient and hardly healthy if burned inside dwellings; World Energy Outlook (2002) Chapter 13: *Energy and Poverty*, p 5.

²⁰ IBRD, Rural Energy and Development for Two Billion People, p.9: PV Household Power Units cost between \$ 500-1,000.-

²¹ UN General Assembly, 19th Special Session New York, 23-27 June 1997, Resolution Adopted By The General Assembly for the Programme for the Further Implementation of Agenda 21, Energy (at 46); WSSD, Facts about Energy (2002), p. 2; European Environment Agency, Renewable Energies: Success Stories (2001), Ch. 4.2 pp. 27-30, idem: Europe's Environment: the third assessment (2003) Ch. 2.1 Energy, p. 27.

²² most notably the ratification of the Kyoto-Protocol.

²³ Most favoured nation treatment (Art I), tariff schedules (Art II), national treatment in terms of taxation and regulation (Art III), anti-dumping and countervailing duties (Art. VI), marks of origin (Art. IX), abolition of quantitative restrictions (Art. XI), Subsidies under Art. XVI GATT and its 11th Side Agreement on Subsidies and Countervailing Measures; State Trading Enterprises (Art. XVII) and eventual exemptions (Arts. XVIII, XX, XXVI).

2 The International Scoreboard: Institutions, Policies, and Stakeholders

This section will give a brief account of the current state of international institutional arrangements. For the sake of underlining a rather excellent approach towards the promotion of RES and clarifying institutional links – which some prestigious international stakeholders sometimes tend to omit rather than making them explicit when they celebrate their achievements - we decide to discard the UN and their subsidiaries for a while: Let us talk about the Global Environment Facility (GEF) first (2.1). This does, however, neither exclude those UN agencies playing a major role in implementing GEF programmes nor the World Bank Group. Secondly, we will turn to the UN network in general (2.2) and discuss global agencies whose RES activities extend beyond their participation in GEF or CSD/WSSD. Bearing this approach in mind, the World Bank Group will be scrutinised (2.3), before we shall briefly turn to the prestigious floors of “closed shops” like IEA and OECD (2.4). The quarter-final is staged by regional economic integrations with a(n internet wise) commitment to promoting RES (2.5), followed by both Regional Development Banks (2.6) and NGOs (2.7).

2.1 Global Environment Facility: How to pool the right agents for Change

After a decade of growing disappointment towards traditional international institutional settings, felt by both IC and DC, GEF was founded in 1991.²⁴ GEF is an innovative and self-reflecting financial organisation that defines, adopts and frequently monitors environmental programmes of either global, regional, or domestic reach.²⁵ Additionally, it acts as financial mechanism for an increasing number of international conventions, including the UNFCCC. For preparation and implementation of each of its programmes, GEF relies on one or more “implementing agencies”. Agents, deemed to be most suitable to carry out a specific programme in a given region, are chosen. In other words, GEF applies a principle which could be called the “*agency-competition paradigm*”. Any implementing agency liaises with local executors and collaborating organisations being private investors, sponsors. Since 1999, regional development banks and certain UN organisations are eligible for funding, too.²⁶ NGOs act as regional “focal points” and have a role in developing and execution of programmes. Schemes are basically categorised into full (typically US-\$ 3-8 m), medium scale (up to US-\$ 1m) and small grants projects (up to US-\$ 50k). The former two may be eligible for project development grants. Proposals are not supported, unless recipients are admissible to either lending from IBRD (DC) or IDA (LDC), or to Technical Assistance (IBRD/UNDP/UNEP). The World Bank focuses on finance and TA, UNDP on TA, and UNEP on scientific input.²⁷ The total volume of GEF grants amounts to US-\$ 4.5bn (11/2003) acting as a lever for co-financing that is worth \$ 14.5 billion. In November 2003, GEF operates 119 programmes for

²⁴ Documents on Foundation and Restructuring of GEF: Sjöberg, H., *From Idea to Reality* (1994) and *Restructuring the GEF* (1999), q.v. www.gefweb.org.

²⁵ GEF’s monitoring and evaluation unit is of particular interest. Reviews: Project Status Report December 2000; review of individual programmes tackling Climate Change (UNFCCC) by promotion of RES: www.gefweb.org; www.undp.org/gef.

²⁶ e.g. AfDB, AsDB, EBRD, IDB; UN agencies: FAO, UNIDO, IFAD: GEF, *Annual Report 2002*, p 5.

²⁷ UNDP: www.undp.org/gef; UNEP operates GEF’s “STAP” the Scientific and Technical Advisory Panel”: www.stapgef.unep.org; IBRD: www.inweb18.worldbank.org/essd/envext.nsf/45byDocName/WorldBank-GlobalEnvironmentFacility.

the promotion of energy production and consumption from RES, which are embedded into its Climate Change Section. Most of them are of domestic scope (104); some of them cover regions (9) or the globe (4).²⁸ The individual projects sponsored, though, are likely to be of domestic reach.

Now it is due to apply the matrix of sustainable promotion of RES, which was set out in the introduction, and get the gist of approximately 119 present and various past programmes promoting RES so as to tackle Global Change.²⁹ The following pattern emerges:

In collaboration with its implementing and executing agencies, GEF promotes policies – usually backed by private sector development (demand side) and sometimes by energy sector reform - and offers financial and technical assistance to sustainable energy installations and infrastructure, i.e.:

- Production of power, heat, or hot water from BIOMASS, including agricultural/municipal/industrial biodegradable Waste and Landfill Gases,
- Ambient capacity building for the rapid commercialisation of RES, especially “Private Sector Development” so as to create SMEs for producing RES, RES-equipment, and for services,³⁰
- Development of Geothermal Resources,
- Development of rural energy & renewable energies (off-grid generation / small and micro-hydro-power / RES in agricultural production systems),
- Solar energy, i.e. photovoltaics and/or solar thermal systems incl. resource assessments,
- TA for RES- and hybrid power systems,
- Wind Power Development (resource assessments / demonstration Sites),
- Energy and water sector reforms (thus covering legislation and regulation as well).³¹

GEF monitors the status of its programmes, publishes results and is ready to explain when, how, and why a project is delayed or disbanded. Such – fairly rare incidents - relate to the crystallisation of

- Co-finance risks,
- Demand risks,
- Project design risks (plant design),
- Implementation risks being of legal / regulatory / technical or administrative nature,
- “Energy Sector Reform Risks” – The case of stranded investments.

²⁸ Global Programmes: RES Energy & Energy Efficiency Fund; Solar Development Group; Promotion of Youth-led Enterprises in off-grid RES; Solar & Wind Energy Assessment; Photovoltaic Market Transformation Initiative, RES Energy Development. Regional Programmes: Caribbean Renewable Energies Development Programme, Asia – Reducing GHG emissions by Promoting Bioenergy Technologies for Heat; Capacity building for RES Development in Central America; Pacific Islands RES Programme (PIREP); Geothermal Development in Europe and Central Asia; Baltic Wind Power; African Rift Geothermal Development Facility (ARGeo); RES Promotion through Information and Communication Technology Introduction off-grid rural Communities: www.gefweb.org. n.b.: New Partnership for Africa’s Development (NEPAD 2002) that includes Climate Change (Meeting in Rabat in February 2003); may be copied in Central Asia.

²⁹ Projects that were adopted in the period from 1991 to 2000 were reviewed in GEF’s published review (“Project Status Report December 2000”).

³⁰ e.g. the Renewable Energies & Energy Efficiency Fund (REEF) and industrial sector Energy Service Companies (ESCOs).

³¹ e.g. Burkina Faso: GEF, Annual Report 2002, p 16; Cap Verde, Mozambique, Zambia (project Database, Research in 11/2003).

For a detailed discussion, see **Annex 5.1**. GEF does, however, neither address taxation nor compliance with (regional) international trade law. In most cases, it ignores subsidies for fossil fuels, energy sector reform, and state trading enterprises enjoying commercial monopolies or special rights. A GEF recent roundtable set concrete targets for the expansion of RES, to be achieved by 2015, that was presented to and endorsed by the WSSD.³²

2.2 United Nations Framework: Marginalized by GEF ?

As indicated earlier, we will now formally address the global activities of UN from a perspective that shall exclude any activities undertaken in the Framework of GEF. Although UNEP's executive Director recently highlighted the GEF's contribution to the WSSD and endorsed how successfully it entered its 3rd phase of replenishment³³ it would, nevertheless, be wrong to conclude that independent UN activities were marginalized. CSD and non-binding UN Resolutions are still most influential intellectual pacemakers that have a significant input on the documents of agencies implementing GEF and other mechanisms. CSD's general standing is described in **Annex 5.2**.

2.2.1 WSSD-Process: Decoding "CSD-9, UNDESA, e7, JREC, type ii"

Having benefited from the input of GEF initiatives and proposals, the WSSD adopted a new declaration on SD and the comprehensive Johannesburg plan of implementation (JPOI), which backed both Agenda 21 and the findings of CSD-9 (2001)³⁴ with a view to reconciling the growing demand for energy with the protection of

- Public health,
- Environment, and the
- Mitigation of climate change

by virtue of the promotion of new and renewable energy sources, i.e. the

- Development,
- Implementation, and
- Transfer of new technologies to and their
- Rapid commercialisation in both IC and DC.

In doing this, the JPOI explicitly concentrates on:

- Rural Energy (especially from RES),

and RES as a contributor to sustainable

- Energy,
- Transport,
- Waste,
- Climate,
- Desertification,

³² GEF, Roundtable on Sustainable Energy, 2002; idem, Annual Report 2002, p 11. WSSD, Plan of Implementation (2002), Johannesburg Declaration on Sustainable Development (2002).

³³ DGEF, UNEP in GEF- UNEP's Action in the Framework of the Global Environment Facility (Nairobi, Kenya, DGEF, 2002) p.3; q.v. GEF, Annual Report 2002, p 11. GEF, The Challenge of Sustainability, 2002; idem, Roundtable on Sustainable Energy, 2002; UNDESA, SD-Division, Energy & Transport Branch, Energy & Transport Newsletter (07/2003), p. 4.

³⁴ a detailed overview on CSD-9 (energy & transport): www.un.org/esa/sustdev/sdissues/energy/intergov/intergov.htm. And the Ad Hoc Open-Ended Intergovernmental Group of Experts on Energy and Sustainable Development.

- Forest,
- Public health,
- Water,
- Regional (SIDS³⁵, Africa, Latin America, Asia-Pacific), and
- Institutional

policies in general.³⁶ Hence, a detailed discussion of the energy-related aspects of the JPOI, so as to half poverty by 2015, is provided by UNDESA's Energy & Transport Branch.³⁷ Moreover, existing settings ended or gained new momentum, and new ones emerged. For instance, it was agreed to terminate the ECOSOC's Commission on Energy & Natural Resources for Development. Its competences were shifted to CSD, so to end double competences, pool scarce resources and increase transparency. Complementary to "traditional" technical & financial assistance in terms of the leading approach to SD in the 1990s, the JPOI acknowledges that **public private partnerships** are to contribute to meeting the agenda – the so-called Johannesburg "*Type II Initiatives*".³⁸ Overall Progress is acknowledged by GEF (Report 2002). Remarkable groupings are discussed in the following sub-sections, whereas the most influential intergovernmental players will be addressed separately (2.2.2-4).

2.2.1.1 UNDESA & e7

CSD is supported by UNDESA, which develops and advances RES projects in the context of Agenda 21 and is a recipient of transnational funding.³⁹ UNDESA focuses on

- Commercialisation of RES,
- Related private sector development,
- Local management of decentralised energy systems, and it
- Explores innovative mechanisms for RES-project finance and
- Disseminates state of the art RES-standards and best practice guidelines.

It is worth while noting that - with a view to assisting in putting such demanding evolving agendas into reality - the industry and business communities had, as early as 2001, conditionally approved to play a leading role in establishing investment programmes *once* stable long term (inter-)national investment regimes are provided, energy markets are liberalised, and political risks are largely eliminated⁴⁰. During WSSD, UNDESA and e7 signed a cooperation agreement on the promotion of RES inter alia by joint CDM-activities. e7, founded by global electricity players in 1992, undertakes to develop rural energy. It has a track record of ~100

³⁵ For specific information on SIDS, the 1994 Barbados Programme of Action, its implementation, and reviews by CSD-4, 6, 11, and the decennial one due in Mauritius for 2004: www.un.org/esa/sustdev/sids/sids.htm.

³⁶ UN Report of the World Summit on Sustainable Development, Johannesburg, 26 August – 4 September 2002 (A/CONF.1999/20 re-issued*), includes Political Declaration and Johannesburg Plan of Implementation: www.johannesburgsummit.org/index.htm (no longer updated); UN, [Johannesburg Plan of Implementation](#) (2002), at 20-22, 38, 41, 45, 57, 59, 61, 66, 73, 76, 154.

³⁷ UNDESA, SD-Division, Energy & Transport Branch, [Energy & Transport Newsletter](#) (07/2003), p. 1

³⁸ q.v. op cit. p. 1, 10.

³⁹ Donors include: UNDP, GEF, UNFIP, IBRD. Details about UNDESA: UN Ad-Hoc Inter-Agency Task Force on Energy, [Briefing Paper on Energy Activities of the UN](#), prepared for the 2nd Session of Ad hoc Open-Ended Intergovernmental Group of Experts on Energy and SD (26/02/01). The task force coordinated CSD-9.

⁴⁰ UN, Economic and Social Council, CSD-9, [Multi-stakeholder dialogue on sustainable energy & transport](#), Discussion Paper, jointly contributed by International Chamber of Commerce, World Business Council for Sustainable Development, and the World energy Council (26/01/01), at 7, 14+. View Shared by IBRD: [Rural Energy and Development for Two Billion People](#), p 7.

projects and, since 1998, it is backed by e7-fund.⁴¹ The fund sponsors feasibility studies for RES projects. Such studies often amount to > US-\$ 1 m and are pre-requisite for attracting private sector investors and (public/private) lenders.⁴²

2.2.1.2 CSD-9 and The Business Community: World Energy Council / ICC / WBCSD

The World Energy Council is a well established supporter of RES, which authored influential studies. It submits discussion papers to CSD in part jointly with ICC and the World Business Council for Sustainable Development.⁴³

2.2.1.3 The Science & Technological Communities

Both ISCU and IUCN participate in CSD's multi-stakeholder dialogue on sustainable energy and transport.⁴⁴ They argue since long that impediments to the successful promotion of RES do relate to a lesser extent to limited natural scientific evidence rather than to **limited**

- Political initiatives,
- Fiscal, financial, and economic incentives to implement new and renewable energy systems.

Both acknowledge that

- Social sciences and
- Extended scientific capacities in DC

are key-factors in the development of smooth transitions to RES-societies. They point out, that

- Growing limits on RTD funding

cut back the scope for efficient knowledge and technology transfer and training. As a **remedy**, it is therefore suggested, that the

- Efficacy of present international institutional public and private research on energy and transport needs to be reviewed.

The situation can, they argue, be best addressed by setting up an

- International Energy Bank

with own resources, that is to set up funds backing capacity building in DC.⁴⁵ Moreover, the paper makes the case for

- Resource data monitoring

of which results shall be published. Benefits of RES are identified – most notably the increasing competitiveness of PV - and it is argued that efforts to develop Hydrogen fuels need to

⁴¹ including EdF, Scottish Power, and RWE; q.v. www.johannesburgsummit.org/html/whats_new/otherstories_e7.html and UNDESA, SD-Division, Energy & Transport Branch, *Energy & Transport Newsletter* (07/2003), p. 11;

⁴² This deficit is recognised by EIB in its 2002 Environmental Management Regime, *infra* at 2.5.

⁴³ e.g. World Energy Council, *Energy for Tomorrow's World and New Renewable Energy Resources* (London, UK, Kogan Page, 1994); *idem*, *Global Transport & Energy Development*; It was involved in UNEP's *World Energy Assessment*. WBCSD started off a "Sustainable Mobility Project"; UN, Economic and Social Council, CSD-9, Multi-stakeholder dialogue on sustainable energy & transport, Discussion Paper, jointly contributed by International Chamber of Commerce, World Business Council for Sustainable Development, and the World energy Council (26/01/01): www.worldenergy.org ; www.iccwbo.org ; www.wbcsd.org .

⁴⁴ UN, Economic and Social Council, CSD-9, Multi-stakeholder dialogue on sustainable energy & transport, Discussion Paper, jointly contributed by ICSU and IUCN (12/01/01).

⁴⁵ *ibid*, at 10.

proceed.⁴⁶ IUCN is leading partner in the (somehow ironic) *Johannesburg Climate Change Legacy* type ii-initiative: It undertakes to offset the convention's own contribution to global change (*infra* 2.2.1.6 and 5.4).

2.2.1.4 Other Stakeholders in CSD-9

Additionally, representatives of workers & trade unions, local authorities, and NGOs actively participate in the CSD.⁴⁷ A detailed discussion, though, would be beyond the scope of this paper.

2.2.1.5 The Rise of Brussels: Johannesburg Renewable Energies Coalition

The Johannesburg Renewable Energies Coalition (JREC) was founded by EU, accession countries and applicants, Iceland, New Zealand, Norway, Switzerland, and the Alliance of Small Island States. JREC adopted a Joint Declaration "The Way forward on Renewable Energy" and received explicit support from Argentina, Brazil, Chile, Croatia, Egypt, Uganda, and type II vehicles REEEP & MEDREP. The Parties strongly backed the JPOI and committed themselves to increasing sustainable supplies of energy from RES. JREC organised a WSSD follow-up conference; its secretariat is hosted by the European Commission in Brussels.⁴⁸

2.2.1.6 "Type II Initiatives": Re-Branding Public Private Partnership on the international Level

Both the Johannesburg Declaration and the JPOI introduced a new Feature of "partnership" between international organizations and /or states, and - if private partners are involved - "public-private partnership" into the context of SD. This landmark concept broadened the traditional rationale of SD in terms of "Agenda 21" and the "Earth Summit +5" in the 1990s. The concept was first acknowledged as the 8th Millennium development goal:

"Develop global partnerships for development".⁴⁹

Such partnerships allow the private sector (civil society, companies, business associations, unions, NGOs) to participate actively in achieving the ends of the UN Charter.⁵⁰ Pooling of resources and exchange of knowledge and picking the right agent for change are the main driving forces. This concept is acknowledged by the "Monterrey Consensus" on Finance for development and is at the heart of the Johannesburg Declaration; it is unfolded many times in the framework of the JPOI⁵¹. Against the backgrounds of poverty eradication, supply and demand patterns, and natural resource base management, partnerships shall promote sustainable RES policies, especially in terms of:

⁴⁶ *ibid*, at 29+. PV capital costs per kW to fall from \$6k to 3k. Results are in line with UNDP's World Energy Assessment.

⁴⁷ UN, Economic and Social Council, CSD-9, Multi-stakeholder dialogue on sustainable energy & transport: Joint Discussion Paper by NGOs Climate Change CAUCUS and Transport Caucus (19/01/01); Local Authorities Paper (09/01/01). Workers & Trade Unions (10/01/01).

⁴⁸ Brussels International Coalition Conference (04/06/2003), www.forum.europa.eu.int/Public/irc/env/ctf/library.

⁴⁹ United Nations, General Assembly Resolution 55/2 (Millennium Development Goals).

⁵⁰ Recitals of United Nations General Assembly, 56th Session, Agenda Item 39, Resolution adopted by the General Assembly (A/56/L.33 and Add.1) 55/76. Towards Global Partnership.

⁵¹ International Conference for Financing for Development, Monterrey (March 2002); Johannesburg Declaration, *op. cit.*, at 10, 16, 18 (access to energy), 28. JPOI at 3, 7 (i), 9 (g), 20 (t), 26 (g), 49 (c), 50, 54, 56, 86 (e), 96, 99.

- Access to (RES) energy,
- Capacity building,
- Technology transfer at all levels,
- Energy services,
- Corporate responsibility,
- Enabling DC to encourage others to provide access to information relevant for stakeholders
- Support to the evolution of innovative and transparent financing mechanisms,
- Encouraging Trade Liberalisation.

The “Bali Guiding Principles” specify how such “partnerships” are to be understood: They are meant to be

- Voluntary vehicles,
- *Complementary* to existing international arrangements and agreements.⁵²

CSD-11 adopted guidelines for admitting partnerships including organisation and registration and offered a “learning-centre”.⁵³ The echo at the summit was overwhelming, as more than 200 partnerships were inaugurated. As of November 2003, around 20 partnerships for RES are of interest. Who they are, what they do, and who the leading and minor partners are, is addressed in **Annex 5.4**.

2.2.1.7 UN Regional Economic Commissions

Moreover, UN Regional Economic Commissions are in part involved in both, type ii initiatives and GEF, and carry out independent RES activities. Any of these five commissions is a subsidiary to UN’s ECOSOC (UNECA, UNECE, UNECLAC, UNESCAP, UNESCWA): Within the “Industrial Restructuring, Energy and Enterprise Development Division” (IREEDD), UNECE maintains a “Committee on Sustainable Energy” including a working party on energy efficiency. The Committee’s activities cover

- Workshops,
- Capacity building in the energy sector (energy efficiency 21 project, with sub-projects on climate change mitigation and a related sub-project on CDM,⁵⁴
- Energy sector reform, and
- Co-operation with Regional economic groupings and special UN bodies.⁵⁵

Recently, the commission organised the “Environment for Europe Ministerial Conference in Kiev”. Participants endorsed the promotion of RES with a view to the International Conference for Renewable Energies, and reassured the urgent need to carry out the JPOI.⁵⁶

UNECLAC advocates indicative RES targets and a Caribbean Initiative on SD.⁵⁷

⁵² WSSD, Guiding Principles for Partnerships for SD (“type 2 outcomes”) to be Elaborated by Interested Parties in the Context of the World Summit on Sustainable Development (7/06/2002).

⁵³ CSD-11 decision (14/05/2003); www.un.org/esa/sustdev/csd/csd11/CSD11.htm

⁵⁴ Energy Efficiency 21 Project (EE21); co-funded by GEF; Energy Efficiency Investment Project Development for Climate Change Mitigation; Rational Network for Efficient Use of Energy Resources (RENEUER).

⁵⁵ UNECE: www.unece.org; www.unece.org/oes/about/energy.htm; For an overview: UN Ad-Hoc Inter-Agency Task Force on Energy, Briefing Paper on Energy Activities of the UN, prepared for the 2nd Session of Ad hoc Open-Ended Intergovernmental Group of Experts on Energy and SD (26/02/01).

Third, UNESCAP does considerable RES work in the ASIA Pacific Region; this includes but is not limited to joint workshops with ASEAN.⁵⁹ The commission's "Committee on Environment and Sustainable Development" operates a section on energy resources, which inter alia addresses RES from different perspectives:

- Capacity Building (RES training workshops / Rural Energy / Advisory Services on Energy Efficiency, Policies, and RES),
- RTD-activities (technology transfer),
- Development of a renewable Energy Database,⁶⁰
- Host to the November 2000 "High Level Regional Meeting on Energy for SD", a multi stakeholder conference in Bali involving governments, business communities, NGOs, that endorsed both the "Bali Declaration on Asia-Pacific Perspectives on Energy and SD" and the "Sustainable Energy Action Programme 2001-2005", which were submitted to CSD-9; its multi-polar agenda addresses RES and includes
 - Policies /
 - Environmental management /
 - Governance /
 - Institution & capacity building /
 - Legislation & fiscal regimes /
 - RTD /
 - Poverty eradication /
 - Regional cooperation & energy trade.⁶¹

Finally, UNESCWA pursues integrated RES policies including energy sector reforms.⁶² Recent activities include workshops and studies for capacity building.⁶³

2.2.1.8 Niche Players: UNIDO / UNESCO / WHO / WMO

Within the UN Framework, a considerable amount of specialised niche actors engage in the development of sustainable energy. Backgrounds include science, climate change, industrial development, meteorology, food and agriculture and public health:⁶⁴

- Technical Cooperation Programme from industrial consumers' point of view [Auditing, Capacity Building, Mitigating Energy Intensity of Industrial Processes – UNIDO]
- World Solar Programme 1996-2005 for PV and Solar thermal [UNESCO]

⁵⁶ UNECE, 5th Ministerial Conference Environment for Europe, 21-23 May 2003, Declaration, at 47.

⁵⁷ q.v. JREC, Information Note No. 3 (25/06/03) p. 3.

⁵⁹ For details: www.unescap.org.

⁶⁰ Links: Capacity-building on Renewable Energy Training in the Pacific; Promotion of Renewable Energy Technologies; Renewable Energy Database Development.

⁶¹ UNESCAP, Bali Declaration on Asia-Pacific Perspectives on Energy and Sustainable Development and Sustainable Energy Action Programme 2001-2005 (11/2000). <http://www.unescap.org/esd/energy/publications/HLR/images/Cover25.jpg>.

⁶² for details: www.escwa.org.lb and the CSD-9 briefing paper (supra).

⁶³ Expert Group Meeting on "Promoting Awareness and Participation in Developing Sustainable Energy Policies and Systems" & Energy and Environment 2003; Second Training Workshop on Wind Energy Assessment and Capacity Building (Cairo, Egypt, 2002).

⁶⁴ For Details: UN Ad-Hoc Inter-Agency Task Force on Energy, Briefing Paper on Energy Activities of the UN, prepared for the 2nd Session of Ad hoc Open-Ended Intergovernmental Group of Experts on Energy and SD (26/02/01).

- Limiting the Health impact of Biomass Household Energies [WHO]⁶⁵
- Scientific Assessments as to Climate Change and its Mitigation by energy conservation and RES [World Meteorological Organisation, UNFCCC, and UNEP].

2.2.2 Food and Agricultural Organisation

FAO undertakes a great deal of RES activities:

- TA incl. studies for the Replacement of traditional Fuel wood by sustainable forms and modern BIOMASS,⁶⁶
- RES from and for Agriculture incl. Water lifting (energization of the food chain),⁶⁷
- RES for rural development, i.e. Solar, Wind, and Bio Fuels tying food security to secure energy supplies⁶⁸, especially through the “Latin American and Caribbean Group for Rural Energization” (GLAERS),
- Domestic Wood Fuel Database on production and trade since 1961,
- Information exchange [chairs “Forest Energy Forum”, distributes “Bulletin of the Latin American Working Group on Energization for Sustainable Rural Development”, newsletters,
- Workshops with a focus on priority application, stakeholder interaction and replication,⁶⁹
- Regional Wood Energy Development Programme for Asia (RWEDP) incl. its transfer to other regions (1996-2001),⁷⁰
- AEEMTRC-COGEN-RWEDP Institutional Cooperation for Biomass in South East Asia⁷¹
- Lobbying for higher prioritisation of RES and Rural energy,
- Co-operation with RES agro-industries,
- Co-operation with UNDP, WEC, IEA, UNESCO, UNEP, AfDB, SIDA, SEI, and OLADE inter alia in the context of the Nairobi Programme of Action on new and renewable energy sources,⁷²
- European Sustainable Rural Environment and Energy Network (RTD with a working group on Biomass and prospective bio fuel activities).⁷³

⁶⁵ e.g. in the context of curtailing emissions and improving energy efficiency from stoves.

⁶⁶ FAO, Bioenergy (1999).

⁶⁷ FAO, Energy for and from agriculture (2001); idem, FAO's energy activities (2000).

⁶⁸ FAO:www.fao.org/sd/EN2_en.htm; idem, FAO and bioenergy; idem, Power & Food Security. Case Studies (Honduras, Nicaragua, Niger)

⁶⁹ GEF/FAO, Report & Summary Report on Workshop on Productive Uses of Renewable Energy: Experience, Strategies, and Project Development (Rome, 2002), www.fao.org/sd/2003/EN10023_en.htm; FAO participates in Solar World Congress (Korea, 1997), organized frequently by International Solar Energy Society (ISES). Solar Case Study (Syria, 1998).

⁷⁰ www.fao.org/sd/EGdirect/EGre0001.htm.

⁷¹ Memorandum of Understanding (1997) under the auspices of EC and ASEAN:

<http://www.fao.org/sd/egdirect/egre0029.htm>.

⁷² FAO, FAO's energy activities (2000).

⁷³ “SREN” is a RTD cooperation scheme organised by FAO's Regional Office for Europe and embedded in the European System of Cooperative Research Networks in Agriculture (SCORENA) with a view to promoting RES since 1983: www.fao.org/sd/EGdirect/EGre0002.htm; Newsletters; workshops.

2.2.3 UNDP

Apart from UNDP's role as implementing agency in GEF and its participation in numerous *WSSD type ii initiatives* (supra), it has various stand alone or coordinated engagements:

- UN Initiative for Sustainable Energy (UNISE); from a climate change perspective it disseminated information on, and strategies for capacity building for the promotion of RES (organisational tools, governance, networks). The initiative was carried out by the "Energy and Atmosphere Program" (EAP) within the "Sustainable Energy and Environment Division" (SEED) of UNEP's Bureau for Development Policy (BDP). Documents were to guide UNDP and indigenous stakeholders on "cross-sectoral approaches" to energy (e.g. Rural Energy), as – despite a track record of ~ 1000 energy projects – **no common strategy towards energy ever existed**. Workshops were to be held to strengthen the competences of its national offices. It addresses eligibility of activities under the Kyoto Protocol's CDM mechanism. The promotion of RES is discussed in terms of
 - Technologies (biomass⁷⁴, solar, wind, small hydro),
 - Applications,
 - Sustainable implementation,
 - Institutional change (barriers & solutions to sector reform and stakeholder participation), and
 - Financing of RES, rural RES funding, micro-credits (local financing / public private partnerships / formation of associations so to generate economies of scale);⁷⁵
- Research and Information Exchange through the **World Energy Assessment of 2000**, undertaken in co-operation with UNDESA and the World Energy Council; the assessment evaluates social, economic, environmental, and security issues linked to energy and examines the compatibility of energy options with regional objectives for SD; it addresses RES, new technologies, rural energy and future sustainable energy policies (Ch. 7-8, 10-12),⁷⁶
- Energy for SD, a 2002 Follow-up report to the World Energy Assessment 2000; it elaborates
 - Market development,
 - Rural energy technologies,
 - Implementing of innovations,
 - Capacity building;⁷⁷

⁷⁴ e.g. UNDP & Jilin Province, Partnership for modern biomass based energy development in China (2000).

⁷⁵ q.v. UNDP, Sustainable Energy Strategies: Materials for Decision-Makers (2000):

http://www.undp.org/seed/eap/html/publications/2000/SE_Strategies.ZIP ; Ch. 3-6 (CDM, RES, Institutions, Finance).

⁷⁶ UNDESA, UNDP, World Energy Council, World Energy Assessment, (New York, US, UNDP, 2000). Ch. 7 on RES: <http://stone.undp.org/undpweb/seed/wea/pdfs/chapter7.pdf>; for World Energy Council: CSD-9: 2.2.1.2. A detailed evaluation is beyond the scope of this paper.

⁷⁷ UNDP, IIIIEE, IEI (Johansson, T.B. and J. Goldemberg, eds.), Energy for Sustainable Development - A Policy Agenda (UNDP, 2002); also: UNDP & Energy for SD (http://www.undp.org/seed/eap/html/docs/UNDP_energy_brochure.pdf).

- The Brussels SD Roundtable highlighting the relevance of sound regulatory and fiscal environments in DC if the promotion of sustainable energy (incl. RES) is to be successful,⁷⁸
- A CDM Roundtable stressing the need to tie CDM to SD in general and address the difficulties how small scale RES-CDM projects with high transaction costs per ton of CO₂ abatement may obtain micro-finance and overcome barriers to private sector lending by virtue of
 - Public-private-partnerships,
 - Investment facilitators, who address capacity building, undertake feasibility Studies etc.,
 - Pooled financing programmes,
 - Creating pools of premium RES-CDM projects so as to compete more easily for private capital,
 - Creating **financial type ii partnerships**,
 - Creation of a knowledge network on CDM (by UNDP and eventually UNCTAD & UNIDO) ,
 - Co-operation between UNDP and the IBRD's **(prototype) Carbon Fund** (see 2.3)⁷⁹
- n.b. the **UNFCCC guidelines for accrediting CDM projects**, which were agreed on at COP-7 in Marrakech in 2001.⁸⁰

2.2.4 UNEP

Since we have already witnessed UNEP's stakes as implementing agency of GEF and have dealt with *WSSD type ii initiatives* in general, we can be quite brief at this stage. In short, UNEP is it the leading partner within the following partnerships:

- Clean Fuels & Vehicles
- GNESD
- Market Facilitation Partnership for Concentrating Solar Power Technologies (UNEP-GEF);

and it is *minor* partner in

- APFED (Asia Pacific Forum for Environment & Development Initiatives for knowledge network & Capacity Building)
- ICCS (International Centre for Carbon Sequestration), and
- MEDREP (Mediterranean Renewable Energy Partnership; euei).

The Environment Programme did once operate a stand-alone

- "Collaborating Centre for Energy & the Environment" (UCCEE).

Based in Denmark, its mission was to incorporate environmental aspects into global energy planning and policies. It published a study on opportunities for and barriers to the commer-

⁷⁸ UNDP, Global Round Table on Energy for Sustainable Development, Brussels, Belgium, April 2002.

⁷⁹ UNDP, Meeting Summary – CDM Roundtable (Amsterdam, April 2002). Another Energy for SD Roundtable took place in Brussels in April 2002.

⁸⁰ UNFCCC, Caring For Climate (2003), p 21 (Marrakech Accords: CDM Project Cycle), www.int/resource/convkp.html.

cialisation of RES technologies in Ghana and addressed competing models of RES promoting legislation.⁸¹ The remnants are still visible on the internet.⁸²

For now, the UN stage is completed, and one should at least look forward to understanding future findings of the ad hoc open-ended intergovernmental group of experts on energy and sustainable development.

2.3 IBRD – tracing out the (non) GEF Perspective

The World Bank Group with its sub-sections IBRD (Lending to DC), IDA (Lending & Grants to LDC) and TA programmes (ESMAP/ASTAE) belongs to the most influential players with regard to international RES promotion since it is an implementing agency in many GEF projects. Such projects depend on both its financing and TA capabilities, and its ability to attract private sector co-financing sometimes in close cooperation with IFC. IBRD is thus *the* global lever for project co-finance. Moreover, it is engaged in various regional settings of which a description would be beyond the scope of this background paper (e.g. SEERECON). To sum up:

- ASTAE (Asia Alternative Energy Program); set up 1992 with a view to doing TA and commercialising alternative energies, it supports related projects and activities; funding both from IBRD, GEF and/or other public and private donors; it evaluates its activities and issues best practice guidelines⁸³
 - Report on Financial Mechanisms for supporting RES,⁸⁴
 - 9th ASTAE Status Report (2001),⁸⁵
 - Passive Solar Evaluation Report (China) including best practices and market development and case studies,⁸⁶
 - Sector Report (China),⁸⁷
 - Market Assessment for RES in Northwestern China,⁸⁸
 - China-Renewable Energy Development Project (up to 5 wind park farms and PV, funding with GEF, later re-structured and critically assessed in **Annex 5.1**),⁸⁹

⁸¹ UCCEE & Komasi Institute of Technology and Environment, Implementation of Renewable Energy Technologies – Opportunities & Barriers (Roskilde, Denmark, UCCEE, 2001).

⁸² It was co-sponsored by DANIDA and Risø Lab (DK): <http://www.uccee.org/>.

⁸³ <http://www.worldbank.org/astae/reports.htm>; IBRD, Financing Decentralised Renewable Energy: New Approaches (Energy Issues No. 15, Oct. 1998); idem (Finance & Private Sector Development – Industry & Energy Department), Rural Energy and Development for 2 billion people.

⁸⁴ IBRD (ASTAE) Financial Incentives for Renewable Energy Development (Discussion Paper No. 391, 1998).

⁸⁵ IBRD (ASTAE), World Bank Asia Alternative Energy Program Status Report (2001). idem, The Asia Alternative Energy Program: Partnership for Innovation (2000).

⁸⁶ <http://www.worldbank.org/astae/pdf/cn-evaluation.pdf> + Annexes; IBRD (GEF), Solar home systems projects: Experiences and lessons learned (1993-2000); idem Accelerating Sustainable PV Market Development; idem, Best Practices for Photo-voltaic Household Electrification Programs: Lessons from Experiences in Selected Countries (1996).

⁸⁷ IBRD (ASTAE), China Renewable Energy for Electric Power; idem (China & Mongolia Department & ASTAE), China-A Strategy for international Assistance to Accelerate Renewable Energy Development.

⁸⁸ IBRD (ASTAE), Assessing Markets for Renewable Energy in Rural Areas of Northwestern China.

⁸⁹ <http://www4.worldbank.org/sprojects/Project.asp?pid=P046829>, and: <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,menuPK:41389~pagePK:95863~piPK:95983~targetDetMenuPK:228424~targetProjDetPK:73230~targetProjResPK:95917~targetResMenuPK:232168~theSitePK:40941,00.html>

- Wind Energy Resource Atlas of South Asia and analyses of Wind Farm costs under given policy regimes,⁹⁰
- Assessment of options for RES in Vietnam,⁹¹
- Indian Rural Energy Strategy (including RES),⁹²
- Indian Urban Energy,
- India Renewable Resources Development Project (wind, small hydro, PV and including micro-credit schemes involving financial intermediaries and village-cooperatives with an eye to tackling transactions costs),⁹³
- CRESP (China Renewables Scale-UP Programme since 2001 owing to re-structuring of former wind farm projects, see **Annex 5.1**),⁹⁴
- ESMAP (Energy Sector Management Assistance Programme); it provides TA towards poverty reduction,⁹⁵
 - Power Sector Reform in Zambia,⁹⁶
 - Review of RES activities by UNDP and IBRD through ESMAP covering India, China, Indonesia, Argentina, and Africa;⁹⁷
 - Study on RES development opportunities in Central Asia,⁹⁸
 - Background paper on financing Mechanisms for PV equipment in Kenya,⁹⁹
- **Prototype Carbon Fund**; inaugurated as a trust fund in 1999 with an eye to earning emission reduction units by virtue of realising GHG-mitigating JI and CDM projects until 2012. Having sold those credits, it will re-invest the means in prospective projects,¹⁰⁰
- **Renewable Energy & Energy Efficiency Fund (REEF)**¹⁰¹; the fund is set up by IFC and co-finances IBRD and/or GEF projects with a view to lending or equity participation.¹⁰² Eligible projects will be between US-\$ 1m to 100 m. On top of its ordinary returns, it will sell any emission reduction units earned through JI/CDM. IFC's portfolio includes
 - Hydro projects all over the globe (11-450 MW),
 - A biomass cogeneration plant in Guatemala,
 - Geothermal plants (1 + many projections),

⁹⁰ IBRD (ASTAE), Wind Energy Resource Atlas of South Asia; idem, Statistical Analysis of Wind Farm Costs and Policy Regimes.

⁹¹ IBRD (ASTAE & ESMAP), Options for Renewable Energy in Vietnam (1999, Report on a workshop & ESMAP technical paper).

⁹² IBRD (ESMAP), Energy strategy for rural India : evidence from six states (2002).

⁹³ IBRD (South Asia Energy Sector Unit & ASTAE), India Renewable Resource Development Project (2000).

⁹⁴ IBRD (ASTAE & CRESP), The China Renewable Energy Scale Up Programme (2001).

⁹⁵ www.esmap.org.

⁹⁶ Zambia: Power Sector Restructuring Program Technical Assistance to ZESCO. ESMAP Technical Paper 032-03.

⁹⁷ IBRD (ESMAP) A review of the renewable energy activities of the UNDP/World Bank Energy sector Management Assistance Programme 1993-1998 (Technical Advisory Group, 1999).

⁹⁸ IBRD (ESMAP), Kazakhstan and Kyrgyzstan - Opportunities for renewable energy development (1997).

⁹⁹ IBRD (ESMAP), Kenya implementation manual : financing mechanisms for solar electric equipment (2000).

¹⁰⁰ <http://www.prototypecarbonfund.org/>; for details and other funds like REEF: Jansen, J., *Kyoto flexible mechanisms: opportunities and barriers for industry and financial institutions*, in: *Firms, Governments and Climate Policy* (C. Carraro and C. Egenhofer, eds, Cheltenham, Edward Elgar, 2001) p 201; n.b. UNFCCC guidelines for accrediting CDM projects (supra 2.2.3).

¹⁰¹ www2.ifc.org/enviro/EPU/Renewable/renewable.htm.

¹⁰² www2.ifc.org/enviro/EFG/Renewable/renewable.htm.

- Wind power in India (and many prospective activities),
- Biomass or PV (under consideration),
- PV manufacturing in China,
- Special financial vehicles, so as to address micro-projects (Photovoltaic Market Transformation Initiative since 1998 (PVMTI with GEF),¹⁰³ the GEF Small Grants Programme,¹⁰⁴ and the Solar development Group Project¹⁰⁵),
- Europe & Central Asia RES activities,¹⁰⁶
- Renewable Energy for Rural Economic Development Project; joint IBRD and IDA loan for Sri Lanka so as to increase on- and off-grid energy services (mini-hydro, PV, micro-grids, cross-sectoral TA); includes environmental assessments and safeguards (2002),¹⁰⁷
- Co-operation with IEA on solar power,¹⁰⁸
- organisation
 - Finance, Private Sector & Infrastructure Network,
 - Infrastructure Group (Energy Unit),¹⁰⁹
 - Energy Mining & Telecommunications Department (Energy & Poverty, RES, Rural Energy, Household Energy).

2.4 OECD, IEA & IAEA: Up to the Eyes in work with RES ?

For long, the International Energy Agency and OECD are actively supporting RES by virtue of in-depth studies and workshops,¹¹⁰ and since 2002, IEA has extended its regular energy outlooks and statistics towards the RES sector and recognises a *limited* connection between energy and poverty.¹¹¹ It is, however, rather sceptical about the economic potential of RES for on-grid power supplies. Owing to changing supply-demand patterns, it has been recently suggested to expand the IEA's mandate on energy matters and to encourage membership of Non-OECD partners.¹¹² Therefore, both OECD and IEA seem to be no longer in an Eye for an Eye relationship with OPEC.

¹⁰³ www2.ifc.org/enviro/EFG/Renewable/Photovoltaics/PVMTI/pvmti.htm; www.pvmti.com.

¹⁰⁴ www2.ifc.org/enviro/EFG/GEF-SME-Program/gef-sme-program.htm.

¹⁰⁵ www2.ifc.org/enviro/EFG/Renewable/Photovoltaics/SDG/sdg.htm; <http://www.solardevelopment.org>.

¹⁰⁶ <http://lnweb18.worldbank.org/ECA/ECSIE.nsf/ExtECADocByUnid/205990B7CCD83EFA85256B10005B0D8A?OpenDocument&Start=1&Count=5>

¹⁰⁷ web.worldbank.org/external/projects/main?pagePK=104231&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P076702;

q.v. IBRD's Rural & Renewable Energy Thematic Group.

¹⁰⁸ IBRD & IEA, *Renewable Energy Briefing* (Energy Note No. 10).

¹⁰⁹ IBRD (Infrastructure Group & ESMAP), *Energy and Development Report 2000 – Energy Services for the World's Poor* (2000).

¹¹⁰ e.g. IEA/OECD Workshop on National Programmes on Renewable Energy and 29th Meeting of the IEA/OECD Working Party on Renewable Energy Technologies (Rome, May 1996) in collaboration with FAO Networks.

¹¹¹ e.g. IEA & OECD, *Renewables Information* (Paris, France, IEA Statistics, 2003); idem, *Biofuels* (Energy & Environment Policy Analysis Series, 1994); idem, *Key Issues in Developing Renewables* (1997); IEA, *Key World Energy Statistics* (Paris, France, IEA, 2002); idem *World Energy Outlook* (2002) Chapter 13: *Energy and Poverty* (released at the IEA Forum in Osaka, 21/09/02), p 3; idem, *Renewable Energy into the Mainstream* (2002); idem, *Proceedings of the Conference on Bio-mass Energy* (March 1998, Paris); idem, *Trends in PV Power Applications in Selected IEA Member Countries* (Paris, 1998).

¹¹² Wälde, T.W., *Comments on the Role of (Selected) International Agencies in the Formation of International Energy Law and Policy towards Sustainable Development* (Gland, Switzerland, IUCN, 2002), p 38.

Lastly, the IAEA, engages in the promotion of geothermal energy supplies, and both IEA & IAEA participate in a “type ii – initiative”. This venture will establish reliable indicators for sustainable energy development (**Annex 5.4**):

- RES – indicators so as to boost the
- Reliability of IEA’s RES energy outlooks.

2.5 Regional International Organisations

Having presented the global institutional arrangements, it is now time to consider RES promotion activities of regional economic integrations in terms of Art. XXIV (5) GATT 1994.

2.5.1 European Union under the Aegis of the Draft Constitutional Treaty

The rationale starting points for addressing the EU’s climate change RES activities are both the Treaty on Union (TU), the EC Treaty, and new commitments under the Draft Constitutional Treaty. By the time of writing, these topics are still in the pipeline. Therefore, **Annex 5.2** undertakes a provisional evaluation.

2.5.1.1 Promotion of Renewable Energies by virtue of EC Legislation

All the relevant secondary EC Law in the environment and energy sectors is based on the broad foundations of “harmonisation provisions” rather than taking advantage of narrow authorisations under either Arts 86 III or Art. 174 et seq. of the Treaty, so that the Commission could address cross-sectoral issues in their legislative proposals. Most notable are

- Directives 1996/92/EC and 1998/30/EC obliging Member States to open up (parts of) their relevant electricity and gas product markets and enabled them to impose public service obligations to energy undertakings relating to security of supply and environmental protection and give priority to RES and CHP electricity,¹¹⁴ as amended by Directives 2003/54-55/EC, leading to complete market openings and obliging Member States to transpose provisions concerning the disclosure of fuel mixes and environmental impact information,¹¹⁵
- Directives 2001/77/EC and 2003/30/EC setting indicative targets for the promotion of electricity and bio fuels consumption to be produced from RES, obliging Member States to report which support schemes they set up to these ends, arrange certificates of origin for RES and secure grid access for RES-power,¹¹⁶

¹¹⁴ Recital 28 Dir. 1996/92/EC; for PSO: Art. 3 II and Art. 86 II EC Treaty; q.v. Arts 3 I-II, 11 III, 14 IV, 23 I (f) Dir. 2003/54/EC. Markets for Exploration, Development and production of Hydrocarbons were liberalised by virtue of Directive 1994/22/EC.

¹¹⁵ Art. 3 VI of Dir. 2003/54/EC.

¹¹⁶ RES Electricity Consumption to rise to 22% of power demand by 2010 (Art. 2 I-II, Annex II; 5, 7). Overall energy RES-energy consumption to rise to 12% (Recital 7). Biofuels: to rise to 2% and 5.75% of fuel consumption in road transport by 2005 and 2010 respectively (Art. 3 I (b)) and to 20% by 2020 (Recital 17). A weaker approach is taken by the Draft CHP-Directive obliging Member States to promote co-generation, which is tied to reasonable geographic heat demands and differentiates between different types of co-generation energy efficiency. q.v. Commission, White Paper on Renewables (1997) 599 final; Commission, Amended Proposal for a Directive to Promote Co- Generation as an environment-friendly and energy-efficient method of power generation of 22/07/02, COM 2002 (416 final), 22/07/02 2002/0185/COD.

- Directive 2003/87/EC on GHG emissions allowance trading, that stimulates RES-power production as generators may sell superfluous “grand fathered” allowances no longer required as a result of switching to green fuels,
- Rules on voluntary schemes for eco-management and audit,¹¹⁷
- Framework Programmes on RTD¹¹⁸, Development¹¹⁹, and Energy & Environment¹²⁰ (q.v. AGORES at **2.5.1.5**)
- Council Directive 2003/96/EC harmonising taxes for energy products in the EU, having survived five years of tense negotiations; it broadens the present regime that is limited to oil excise taxes; as it lays down minimum tariffs for specified energy products and allows “preferential treatment” for energy products from
 - RES,
 - CHP (included energies used for CHP production),
 - Biofuels.

it tackles existing distortions within the internal energy market. Since it includes preferential treatment for natural gas on infant markets, allows Member States to maintain tax exemptions for aviation fuels, discriminates between (non) commercial users, and grants long term transitional periods, it is hardly an ideal example of climate change taxation but a reasonable start,¹²²

- Rules on the Expansion of trans-European energy networks with a view to forwarding sustainable energy agendas, making integration and grid access of power from RES a priority, especially for small or isolated systems,¹²³
- Proposed Directive concerning measures to safeguard security of electricity supply and infrastructure investment; in advancing it, Member States shall take RES into “utmost” account; this entails that
 - System operators shall invest in grids with an eye to allowing a greater number of producers to feed in power from RES
 - TSO submit investment plans that address the expansion of interconnector capacities, thus removing obstacles against cross-border trade in “green” (but also “grey”) power”.¹²⁴

¹¹⁷ Regulation 2001/761/EC of 19 March 2001 allowing voluntary participation in a Community eco-management & audit scheme.

¹¹⁸ Decisions 2002/1513/EC; 2002/834/EC: Integrating the European Research Area, Dec. 2002/835/EC: Structuring the European Research Area, and Dec. 2002/836/EC: Joint Research Centre, which target RES as well. Predecessors were criticised by the Court of Auditors as the technological achievements and monitoring were not assured.

¹¹⁹ Regulation 2000/99/EC (TACIS IV).

¹²⁰ 6th Framework Programme: Dec. 2003/1230/EC ALTENER IV, STEER (transport), and COOPENER (international co-operation: Ex Synergy).

¹²² Recitals 2, 3, 7, 25, 26 and Arts 15 I b-d, g Council Directive 2003/96/EC of 27/10/03 restructuring the Community framework for the taxation of energy products, OJ L 283, 31/10/03, p. 51 (enters into force on 01/01/2004).

¹²³ Art. 3 (a), 4 I (b), II (a), Annex II EP & Council Decision 2003/1229/EC laying down a series of guidelines for trans-European energy networks, OJ L 176, 15/07/2003, p 11; due to be replaced, soon: q.v. Commission, Proposal for an EP & Council Decision laying down guidelines for trans-European energy networks and repealing Dec. 2003/1229/EC, COM (2003) x final (10/12/2003).

¹²⁴ Arts 3 II (e) (g), 6 II (a) (d) Commission, Proposal for an EP & Council Directive concerning measures to safeguard security of electricity supply and infrastructure investment, COM (2003) x final (10/12/2003).

2.5.1.2 South East Europe: SEERECON & Athens Process to be seriously greened

The Athens Process is set up under the umbrella of the Stability Pact for South East Europe and SEERECON (South East Europe RECONstruction), a joint venture of IBRD and the Commission, with a view to extending the scope of the internal electricity market to the Balkan¹²⁵; the Athens Forum is to copy the famous Florence Electricity Regulatory Forum and should include RES, as otherwise the markets would face distortions that may be contrary to international trade law (bi- or multilateral obligations under ECT/WTO). Right from the start, it addressed

- Energy efficiency and
- Despatching & pricing of hydro-power,

and a recent memorandum pays

- Lip-service to sustainable energy without discussing how and when.¹²⁶

In the absence of Arts 16 and 86 II EC, one has to wait for a common understanding of environmental public service obligations (PSO) in the Balkans. IBRD provides

- TA through ESMAP, notably infrastructure studies. It is party to the
- “Prague Group of donors”: SEETEC, SECI, USAID, KfW, EBRD, EIB, Italy, Switzerland, Commission and some EC Member States.¹²⁷

The concepts involved might be seen as latest “sample energy sector reforms”.

2.5.1.3 International Energy and Development Cooperation: EU Energy Initiative

As it would be beyond the scope of this paper to address all facets of the International Energy and Development Cooperation of the EU against the background of RES promotion, one should stress that additional findings may be derived from the European Economic Area Agreement, the Cotonou Agreement,¹²⁸ Accession Agreements, Association & Co-operation Agreements, Europe Agreements, the EU – Russia Energy Dialogue, UNECE, and EC - ASEAN ENERGY FACILITY (infra 2.5.4).¹²⁹

For now, we will focus on the “European Energy Initiative” (euei). Hosted by DG Development, the venture is the leading partner in a WSSD “type II” initiative on Rural Energy and took over a French one (see **Annex 5.4**). The average annual spending is US \$ 795m and is spent by 14.7 % on RES with an additional 0.8% on Biomass / Wood / Charcoal, and an additional 16.5 % on hydro:¹³⁰

- Basic funding through Official Development Assistance (ODA),
- Additional Funding through co-financing (IFC).

¹²⁵ Athens Memorandum 2002; Athens Forum, Post Athens Schedule (11/2002) p.1-3. www.europa.eu.int/comm/energy/electricity/south_east/index_en.htm;

¹²⁶ Commission (host), DG TREN, Energy Policy in South East Europe (10/2003) at 1.

¹²⁷ Athens Forum, Post Athens Schedule (11/2002) p. 3; idem, Strategy Paper on the regional Electricity Market in South East Europe and its integration into the EU internal electricity Market (11/2002), p 3. www.seerecon.org (infrastructure group; energy)

¹²⁸ e.g. European Commission & UNDP, Energy as a Tool for SD for ACP Countries (NY, US, UN Publications, 1999).

¹²⁹ e.g. Commission, A sustainable Europe for a better world – A European Strategy for a better world (2001), endorsed by the Gothenburg Council in 2001; idem, Towards a global Partnership for sustainable Development (2002), endorsed by the Barcelona Council in 2002.

¹³⁰ EU, euei – the European Energy Initiative for poverty eradication and sustainable development (2003), p 10; q.v. www.europa.eu.int/comm/development/body/theme/energy/initiative/index_en.htm; http://europa.eu.int/comm/development/body/publications/docs/brochure_EUEI_en.pdf

The initiative's agenda includes:

- Energy Policy Development, i.e. setting of national priorities for sector regulation
- Energy Sector Reform (Legislation),
- Institutional Capacity Building, i.e.
 - Transfer of knowledge & skills through training & education
 - Enabling incumbent managers to take sound RES investment decisions
- TA (Technical expertise for RES – TERNA),
- RTD,
- Cross-Sectoral Planning (Security of Supply, Food Security etc.)
- Co-operation with Financing Institutions for increased infrastructure funding
 - Rural electrification projects¹³¹
 - RES heating & RES in buildings,
- Market Development (Demand Side)
 - Strengthening private sectors in DCs so they can offer both technologies, capital and expertise for RES energy services,
 - Public-private partnerships so as to compete for private institutional investments (e.g. in LAC),
- Mediterranean RES initiative (with UNEP funds) to serve 100m people with RES by 2013,
- Solar Power South Pacific Programme,¹³²
- Bio fuels Programmes.¹³³

With the exemptions of tackling indigenous taxation, fiscal regimes and international trade law, it addresses the milestones of Sustainable promotion of RES.

2.5.1.4 European Environment Agency seizes Green Power

The European Environment Agency, based in Copenhagen and sponsored by the Commission, is an (independent) watchdog. It

- identifies indicators for monitoring of SD strategies,
- carries out integrated assessments of the environment,
- provides information on “Best Available Information” (BAI),
- operates TERM (the “Transport and Energy Reporting Mechanism”).

Not beyond criticism, it extended its reach from environment and transport into the RES energy sector in the aftermath of the Gothenburg Council in 2001. The agency monitors if and how Member States live up to their indicative national targets, as to which proportion of the total energy or electricity consumption is produced from RES. It operates the TACIS IV website and its studies include:

¹³¹ Mini-Hydro in Nepal; SAHEL-PREDAS (RES instead of traditional fuel wood against deforestation); PV and Mini-Hydro in China. Case studies (op. cit. Annex).

¹³² 250 solar home systems to be funded, grant of € 4 m to install 1500 household & 133 community systems on outer islands.

¹³³ Cow dung fuel in Nepal; Wood Fuels programmes with UNDP, FAO, Danida (DK).

- Best Practices for RES-policies and project implementation including lists of key-factors,¹³⁴
- The role of RES in enhancing European security of supply, competitiveness, environmental protection and inter-linkages,¹³⁵
- The need to relentlessly internalise the costs of energy production from fossil fuels - costing, it argues, ~ 1-2% of GDP -,
- identifies growing energy and electricity demand so that attainment of indicative RES targets will be harder to achieve than expected (RES growth to be doubled !),
- reveals inconsistencies in environmental and RES energy statistics¹³⁶,
- monitors RES promoting systems: feed-in tariffs, long term RES-tendering, green certificates fuelled by either voluntary demand or mandatory RES-quotas,
- commissions studies for UNECE.

Sadly, it fails to address which mechanism is most sensitive to the internal market. This deficit, however, is offset by the findings of REMAC, a project co-funded by the EU.¹³⁷

2.5.1.5 Two Public Private Partnerships: LAMNET & AGORES

The Latin American Thematic Network on Bio energy (LAMNET) is a Commission funded project linked to the RTD Programme “Confirming the International Role of Community Research”.¹³⁸ Designed as a public-private-partnership, operating from Munich, Brazil, and Mexico, it has established a network of

- Bio energy knowledge centres
- SMEs from LAC.

It identifies technological objectives and develops policy options to increase decentralised biomass production and its use for energy generation. To that end, it:

- analyses the Energy Policy Framework,
- assesses demand, resources, available technologies and equipment,
- invents policy options in accordance with its findings,
- will implement the former options through training, JVs, and design of demonstration plants,
- establishes JI and CDM projects.¹³⁹

AGORES is a platform offering RES related information of European origin since 1999. Established as a follow-up and campaign for-take-off vehicle under a European White Paper, which calls for doubling of energy consumption produced from RES by 2010, AGORES operates a website.¹⁴⁰ It lists national agencies for

¹³⁴ EEA, Renewable energies: success stories (Environmental issue report No 27, 2001).

¹³⁵ EEA, Energy & Environment in the European Union (Environment Issue Report No. 31, 2002).

¹³⁶ *ibid.*, at 17, regarding biomass power as to the renewable character of some fuels (waste).

¹³⁷ Renewable Energy Policies and Market Developments (REMAC 2000), Report (2003), pp 15+; *idem*, Impact of Technology Developments & Cost Reductions on Market Growth (2003).

¹³⁸ <http://www.bioenergy-lamnet.org/>; WIP-Renewable Energies (Munich). For Details: LAMNET-News 2nd Issue (12/2002), LAMNET, Biomass, Rural Energy and the Environment (Joint Position paper with CARENSA & SPARKNET for WSSD, 2002).

¹³⁹ n.b. UNFCCC guidelines for accrediting CDM projects (*supra* 2.2.3).

¹⁴⁰ <http://www.agores.org/>.

- Energy & RES,
- RES finance, and
- RES projects.

The site may, however, be in the process of falling into oblivion, as the projected lifetime of the take-off campaign spans to the end of 2003. Some data is outdated and links are broken.

Campaign targets are as follows:

- 1,000,000 PV systems
- 15 Million m² of solar collectors
- 10,000 MW of wind turbine generators
- 10,000 MWth of combined heat and power biomass installations
- 1,000,000 dwellings heated by biomass
- 1,000 MW of biogas installations
- 5 Million tonnes of liquid biofuels
- 100 communities aimed at 100% RES supply
- 350,000 PV systems in third countries.¹⁴¹

Multiple public and private sector stakeholders are to co-operate, which is expressed by virtue of the “*Renewable Energy Partnership*” (and thus a sort of prototype WSSD type ii initiative). The programme was once supported by ALTENER II – which is now ALTENER IV and an integral part of the 6th Framework Programme Energy & Environment (supra). It includes

- RTD and TA for RES (“Cleaner Energy Systems”),
- Revisions of Structural Funds with a view to promoting RES (Regional Development Funds & European Agricultural Guidance and Guarantee Fund),
- RTD Funding for supporting RES-investment (THERMIE Programme),
- Development of European RES standards (ALTENER III+),
- Promotion for RES in third countries through international cooperation funds, stressing the need for financial support by both IBRD and EIB:
 - European Development Fund (EDF),
 - PHARE,
 - TACIS,
 - MEDA.

2.5.1.6 EIB - an innovative Approach to increasing its modest RES and Environmental Lending and to fishing for Financial Backers

The “European Investment Bank Group”, as such created in 2000 following the Lisbon European Council conclusions, provides for the latest two players completing the EC team of international RES promotion. First, the long established EIB (Arts 266-7 EC Treaty), and second the EIF (European Investment Fund¹⁴²). As the latter’s track record seems to exclude equity and venture capital participation in RES project developers, the paper restricts itself to

¹⁴¹ For Details: Commission, COM (1997) 599 final (26/11/1997) Energy for the Future, Renewable Sources of Energy White Paper for a Community Strategy and Action Plan; For Details: idem DG TREN, SEC (1999) 504, Community Strategy and action Plan: Campaign for Take-Off, p 4.

¹⁴² share-ownership structure: EIB (60.5%), European Commission (30%), European banks and financial institutions (9.5%); www.eif.org.

the EIB. The bank is to contribute to the balanced and steady development of the common market and economic & social cohesion by

- accessing the capital market, i.e.
 - Taking up money / using own resources,
 - Granting long term loans or financial guarantees for project finance in all sectors of the economy, with a view to developing less advanced regions and modernising undertakings,¹⁴³ providing local and domestic funds are insufficient for these ends,
 - Financial support to accession countries with an eye to the environmental acquis communautaire (+ MEDA, and “Northern Dimension Environmental Partnership”¹⁴⁴),
- acting as agent to implement financial components of international agreements between the EU and DC.

In liaison with other stakeholders in SD and Climate Change matters, EIB

- develops and implements JI/CDM projects especially in order to test and demonstrate modalities, regulatory environments and practices.¹⁴⁵

With effect from 2002, EIB follows paths - explored by IBRD - and reformed its environmental management:¹⁴⁶ Now, it

- carries out its own **environment impact assessment** concerning project proposals; this includes measuring GHG balances and adhering to principles of environmental law¹⁴⁷,
- promotes good governance; it encourages participation of regional and local, public and private stakeholders,
- operates three **environmental bodies**; first, the “Environmental Assessment Group” (ENVAG), consisting of a permanent group of experts with sector specific knowledge (including energy / waste / infrastructure / health), which shall assign one member to each project team to review the environment impact assessment; second, the environmental unit (ENVU) that both defines environmental guidelines and oversees their implementation, and third, the Environmental Steering group for strategic matters.

It is committed to financing CHP & RES projects. In doing this, it is to

- take regulatory risks into account (as most RES need a save market position over long periods of time if the original capital outlay is to be amortised).
- promote investments in abatement of industrial GHG (Hydro fluorocarbons & Per fluorocarbons),
- promote landfill GHG recovery systems for CHP,
- take a cross-sectoral approach (spill over effects of RES investments in other sectors like environment & innovation, employment, growth, and RTD),

¹⁴³q.v. “Innovation 2001 Initiative” including RTD, SME development, information and telecommunications technologies regarding RES.

¹⁴⁴A EUR 100m financial facility has been launched at the Stockholm Council in 2001.

¹⁴⁵EIB, Climate Change (2002), p. 2, 5; idem, Renewable Energy (2002), p 7; e.g. DG TREN, Member States, MNC; Venture Capital Firms, Banks and financial Institutions. n.b. UNFCCC guidelines for accrediting CDM projects (supra 2.2.3).

¹⁴⁶It replaced the first Declaration on environmental protection adopted by the Board of Governors in 1984.

¹⁴⁷notably: prevention, precautionary, and polluter pays principle,

- commit 25-33% of EU wide (energy) lending for RES projects – which is rather impressive compared with its meagre traditional engagement in RES finance (mainly medium scale hydro since the 1970s, wind & geothermal, amounting to EUR 220 m RES lending p.a. on average, i.e. 6,5% of energy lending).¹⁴⁸

EIB observes, however, the principle of primacy of energy efficiency as long as conservation and efficiency are cheaper than RES investments. Therefore, it applies selective criteria for picking RES projects:¹⁴⁹

- Which alternative fossil / RES fuels are available ?
- Quality, reliability and pricing of such fuels per source,
- Compatibility of fuels with common & domestic rules for generation and transmission of power,
- Potential for demonstration effects,
- Attractive lifecycle energy balances,
- Environmental impact (supra),
- Sound economic and financial returns,
- Capability to assess relevant externalities.

Most recent, EIB organised a workshop in Ireland on innovative energy and water sector investment guidelines for SD.¹⁵⁰

2.5.2 Energy Charter Treaty

Having completed the team of EC players, we shall move on to the ECT, which was founded in the aftermath of the collapse of the Warsaw Pact with a view to fulfilling mainly European dreams of long term security of energy primarily by virtue of cheap and reliable oil & gas supplies from Eastern Europe and Central Asia.

The Energy Charter Treaty not only promotes energy efficiency – which is sometimes counted as a “sustainable energy source” - but also encourages Member States to introduce trade friendly measures for the promotion of RES.¹⁵¹ Art. 19 of said Treaty obliges Contracting Parties to align national energy policies towards environmental considerations, the latter being the:

- Precautionary Principle,
- (Transnational) Polluter Pays Principle (without distorting energy trade),
- Internalisation of Externalities,
- Expansion of RES and Energy Efficiency,
- Knowledge Exchange concerning sustainable Energy Policies and Energy Efficiency,
- Promotion of related RTD,

¹⁴⁸ EIB, Environmental Statement (2002), p. 5; idem, Renewable Energy (2002), p. 8-9; e.g. Biomass Lending (EUR 61m in 2001); 7 wind farms in the UK; Refurbishment of 24 hydro power stations (EUR 590m); Reinforcement of 2 Hydroelectric Italian plants (EUR 60m); EUR 45m investments in a Biomass CHP-unit in Poland; EUR 500m in a wind energy programme in Spain; 2 offshore wind farms in DK funded (EUR 440m); EUR 175m in a UK offshore wind farm; a hydro power plant financed in Alentejo (Portugal)

¹⁴⁹ EIB, Renewable Energy (2002), p. 6.

¹⁵⁰ EIB Workshop, Visions of Environmental Sustainability: Europe's Long Term Energy and Water Policies 23-24/10/2003; q.v. www.euractiv.com/cgi-bin/cgint.exe/1374297-256?714&1015=8&1014=WWWEIBORGFORUM.

¹⁵¹ especially, Arts 19 ECT and 7 ENERGY CHARTER PROTOCOL ON ENERGY EFFICIENCY AND RELATED ENVIRONMENTAL ASPECTS.

- Environmental Impact Assessments,
- Participation in appropriate Environmental Programmes.

These matters are elaborated in greater detail by the Energy Charter Protocol on Energy Efficiency and Related Environmental Aspects, whose approach may well serve as a sample for developing and agreeing (soft law) guidelines on international standards for the promotion of RES.¹⁵² Moreover, the Energy Charter Treaty Secretariat commissions and publishes studies addressing the intransigent relation between both international trade law (WTO/ECT/EC/NAFTA etc.) and RES energy policies.¹⁵³ Notwithstanding GATT/SCM exemptions for DC, this includes balancing free trade, non discrimination, and (proportionate, limited) subsidies in favour of RES with a view to addressing global change.

2.5.3 APEC

Dating from 1989, the Asia-Pacific Economic Cooperation (APEC), has 21 Member Economies, and promotes liberalisation of trade and investment throughout the region.¹⁵⁴ As a result of an “Economic Vision Statement” and its environmental successor for SD in 1994 and further political backing in 1997, it unfolds some RES activities of limited reach at least if compared with the policy matrix identified in the introduction. Action taken may be summarised as follows:

- The 21st Century Renewable Energy Development Initiative (REDI); carried out by “egnret”, the Expert Group of new and renewable energy technologies” within the Australian led Energy Working Group (EWG);¹⁵⁵ APEC organises:
 - Workshops for a common understanding of RES technologies,
 - Workshops for electricity storage in support of distributed RES generation,
 - Rural energy workshops,
 - Knowledge exchange by creating the “APEC Renewable Energy Collaboratives Project Integrator”,¹⁵⁶
 - Development of a strategy and action plan how local city services can achieve zero net GHG emissions by 2020 (Melbourne),
 - Micro-Enterprise projects and studies for SME development,
 - Resource assessments,
 - Commercialisation of RES,
 - Development of service infrastructures,¹⁵⁷
- Demonstration of a RES service company (RESCO),

¹⁵² OJ L 380, 31/12/1994, p 91.

¹⁵³ Energy Charter Treaty Secretariat, Regional Electricity Markets in the ECT Area (October 2003), at 7.12, 7.2; 8.1.; 8.63 (promotion of RES); idem, Note on Best Practices Guidelines for the Trade-Friendly Promotion of Renewable Energy Sources (15/04/03, study by Prof. L. Hancher).

¹⁵⁴ For an overview on its structure: APEC, APEC at a glance (2003).

www.apecsec.org.sg/apec/publications/free_downloads/2003.html.

¹⁵⁵ q.v. APEC, Update of Activities (10/2003), pp 35-36. EWG is supported by 4 other expert groups (including energy efficiency; energy data and analysis, clean fossil fuels); egnret: www.apecnetwork.org.

¹⁵⁶ www.apecenergy.org.au/welcome/links/bussoplins.html.

¹⁵⁷ Bloyd, C., New and renewable Energy: An Apec Perspective for SD (10/2003), sponsored by US. Department of Energy.

- Technology Cooperation Projects
 - workshops (technology transfer, solar training, end-use application analyses, etc.)
 - Guidebook for Financing New and Renewable Energy,
- Monitors and assesses the design of an Ocean Thermal Energy Conversion project (“OTEC”).¹⁵⁸

2.5.4 ASEAN

The Association of Southeast Asian Nations (ASEAN) was established on 8 August 1967. With support from the EC-ASEAN initiative, the ASEAN EC Management Training & Research Center was founded in 1999 (AEMTRC). This Centre evolved into an intergovernmental organisation, called ASEAN Center for Energy (ACE).¹⁵⁹ Sponsored by the “Energy Endowment Fund it shall catalyse economic and sustainable growth by initiating, coordinating and facilitating regional as well as joint and collective activities on energy. To this end, ACE adopted the

- ASEAN Plan of Action for Energy Cooperation 1999-2004; the plan is to be implemented by 6 special bodies, of which three are of interest for RES:
 - **Energy Efficiency and Conservation Sub-sector Network (EE&C-SSN)**; it addresses Biomass (PROMEEC - Reference Standard Design for Small-Scale Biomass (MSW) Energy Conversion System),¹⁶⁰
 - **New and Renewable Sources of Energy Subsector Network (NRSE-SSN)**; it runs three programmes, i.e. *PRESSEA* – the Promotion of Renewable Energy Systems in Southeast Asia-, *JAMP* - the Joint ASEAN Mini-hydro Programme-,¹⁶¹ and *ASEM* - the Green Independent Power Producer Network-,
 - **Energy Policy Analysis & Regional Energy Planning**; it implemented two projects; i.e. energy policy and systems analysis, and Security of Supply Planning for ASEAN.
- carries out environmental analysis and mitigation activities, namely:
 - Technology Transfer on the Design and Manufacture of Solar Water Heaters (in collaboration with UNIDO),
 - **ASREP** (the ASEAN Renewable Energy and Environment Programme Formulation (based on TA and financial assistance from UNDP and GEF),
- cooperates since April 2002 with the EC under the aegis of EC - ASEAN ENERGY FACILITY (**EAEF**); EAEF comes to the rescue of the Plan of Action for Energy Cooperation 1999-2004: its implementation shall be backed.¹⁶²

¹⁵⁸ For details: *ibid*, p 3.

¹⁵⁹ Members: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore and Vietnam.

¹⁶⁰ For details: <http://www.aseanenergy.org/>.

¹⁶¹ Project proposals: www.aseanenergy.org/energy_sector/renewable_energy/jamp/jam_phil.htm

¹⁶² Funding: EUR 31,510 m. including the individual project partner contributions of EUR 13 million. Contribution of the European Commission is EUR 18 million as grant and that of the ASEAN Centre for Energy (ACE) equals EUR 510,000.

2.5.5 NAFTA (REILP)

Although the NAFTA Secretariat's website is rather secretive with regard to policies promoting RES and its relation to free trade associations,¹⁶³ its CEC Environment, Economy & Trade is, nevertheless, one of the partners of the "Renewable Energy & International Law Project" (REILP), which is a public-private-partnership hosted by Yale University.¹⁶⁴ Additional Partners are

- Australian Sustainable Energy Authority,
- UNEP,
- European Wind Energy Association,
- European Commission, DG Trade & DG TREN,
- University College London.

REILP intends to

- Identify, assess and address international agreements insofar as these may create obligations (unconsciously) erecting (undue) barriers to RES,
- Sustain policies and legislations which create business opportunities for RES.

2.6 Regional Developments Banks

Functions of both, EBRD, AfDB, IADB, AsDB are best summarised in an UNDESA publication highlighting that regional banks became now eligible executing agencies for GEF projects thanks to the outcome of the 2nd council and assembly of GEF in 2002.¹⁶⁵ Inevitably, their stake in RES project finance and related TA is to increase.

The European Bank for Reconstruction and Development ("East Europe Bank") has a strong bias towards RES, at least in analytical terms, when it considers proposals for co-financing of certain FDI.¹⁶⁶ De facto, its number of RES projects is fairly limited:

- Financial Assistance in favour of ten RES projects nine of which are committed to hydro,
- Fourteen equity investments, 13 of which deal with energy efficiency.¹⁶⁷

In 2001, the bank approved a new set of guidelines called "energy operations policy", which shall expand its exposure to a broader range of RES investments:

- Small hydro,
- Biomass,
- Wind,
- Geothermal,
- Solar heating,
- CDM financing (n.b. UNFCCC guidelines for accrediting CDM projects, 2.2.3).

EBRD acknowledges the need that RES projects cannot take-off until

¹⁶³ http://www.nafta-sec-alena.org/DefaultSite/home/index_e.aspx.

¹⁶⁴ Leading Partners are Baker & McKenzie and REEF (see IBRD).

¹⁶⁵ UNDESA, SD-Division, Energy & Transport Branch, *Energy & Transport Newsletter* (07/2003), p. 4.

¹⁶⁶ EBRD, *Environmental Policy* (2003) pp. 4, 12; <http://www.ebrd.org/about/strategy/index.htm>.

¹⁶⁷ EBRD, *Energy Operations Policy* (2001) pp. 2, 14, 15, 17; Annex (including monitoring and lessons learned as to energy sector reform).

- Advanced domestic capacities are in place (good governance),
- Energy sectors are reformed (including TPA and stable regulatory environments thus getting rid of the old energy industry paradigms),
- Innovative finance mechanisms are needed (concessional finance),
- Economies of scale are generated by virtue of project financing companies, pooling arrangements and standardisation of relevant contracts,

With an eye to meeting these ends, the bank will interact with national governments. Finally, EBRD lists a precise network of country files, which assess the scope for future RES investments in its target region; caveat: it is based on external sources beyond its control.¹⁶⁸

2.7 NGOs

Having closed the descriptive survey of intergovernmental organisations for the promotion of RES, we shall move on to collaborative networks of NGOs and international NGOs. Pars pro toto, this paper will address WCRE, WWEA, and INFORSE:

2.7.1 WCRE and WWEA - Promoting RES with a view to addressing Global Change

The RES promoting scene of NGOs is spearheaded by the "World Council for Renewable Energies" (WCRE). Founded in 2001 at the "International Impulse Conference for the Creation of an International Renewable Energy Agency (IRENA)", held from 8 -10 June 2001 in Berlin, WCRE is based in the premises of "Eurosolar e.V." in Bonn. WCRE's most notable activities include:

- Naturally, the take-off of "IRENA" itself, as an agency (or even intergovernmental organisation),
- A strategy for the conversion of economies, depending on exports of fossil fuels, towards RES and decreasing demand for fossil fuels, and
- An initiative for a "Renewable Proliferation Treaty"; the mandate of IAEA is to be broadened by virtue of such a treaty, being a supplementary protocol to the Nuclear Non-Proliferation Treaty (NPT); such a protocol should be adopted by 2005; the idea is that countries having nuclear weapons shall be obliged not only to improve access to peaceful nuclear energy by any non-nuclear nation (Art. IV of NPT) but also to improve the latter's access to RES technologies.¹⁶⁹

Of similar token are arguments tabled by the World Wind Energy Association (WWEA).¹⁷⁰

2.7.2 INFORSE

The "International Network for Sustainable Energy" (INFORSE) is an association of NGOs, which was founded on occasion of the Earth Summit in Rio in 1992. INFORSE is based in Denmark and focuses on

- Capacity building,

¹⁶⁸ <http://projects.bv.com/ebird/profiles/>. (composed by Black & Veatch International - BVI).

¹⁶⁹ www.wcre.org; WCRE, *Actionplan 2002*, p 6-10; idem, *Summary Description*.

¹⁷⁰ www.wwea.org; WWEA, *A global Strategy for Wind Energy* (07/2002).

- Knowledge transfer including its frequent newsletters (Sustainable Energy News), and
- RTD.¹⁷¹

In May 2003, it joined the WCRE; INFORSE supports

- REEEP, a type ii initiative, and participates in
- CURES (Citizens United for Renewable Energy and Sustainability), a vehicle set up by NGOs with a view to coordinating NGO activities at the ICRE in Bonn

INFORSE supports the NGO declaration for the Renewables 2004 conference - adopted on occasion of a workshop in Bonn in October 2003, the latter being hosted by Böll foundation.

3 Key-Functions for Future International Institutional Mechanisms

Having presented a highly diverse and compartmentalised scene of international activities for RES promotion, it is now due to develop which kind of international strategy for the promotion of RES is most likely to start off the age of RES (and later Hydrogen from RES?).

Any international institutional arrangement for the promotion of renewable energies should address the following issues if it wants to overcome numerous barriers to successful commercialisation of RES (relevant to a larger or lesser degree) in any given environment. The issues at stake may be divided into eight different but linked categories, which are addressed separately below:

1. Policies: PRAE-, and POST- but also PRAETER – Legislation (i.e. Good Governance / Capacity Building and Impact Assessment, Setting of mandatory or indicative, qualitative or quantitative national RES Targets / Private Sector Development / **Conciliation with Environmental Policies**),
2. International Co-operation, compliance with international obligations, namely Climate Change, international trade law (WTO-Law, multilateral regional economic integrations, and bilateral Agreements), and Domestic Legislation, i.e. Energy & Transport Sector Reforms,
3. Administration (q.v. due implementation of reforms / streamlining of approval procedures),
4. Taxation (Fossil Fuel and broad energy & transport subsidies to be abolished, subsidies for RES for fixed periods),
5. Finance of Programmes & Projects (Co- & Concessional Finance / Feasibility Study Finance; this involves making provision for sound financial safety margins so as to avoid that projects get easily stranded in shallow waters of national energy legislation, regulation, administration and taxation.)
6. RTD,
7. Demand Side (Information to investors and users),
8. Monitoring and Project Management (Risk Management).

¹⁷¹ www.inforse.org .

3.1 RES Policies

Successful RES policies should address at least the following areas of interest:

- Energy Sector Reform
 - Getting rid of the old energy economy paradigm where necessary,
 - Introduction of competition to energy production, (network bound) transportation, and supply,
 - Abolition of state trading enterprises or public undertakings enjoying exclusive or special rights unless these are truly necessary to carry out services in the general economic interest on a viable basis (strict proportionality test; q.v. Art. XVII GATT).
 - Advise stakeholders not to promise uneconomic grid extension prior to elections so as to protect both utilities' balance sheets and the viability of off-grid RES equipment investments (Rural Energy).
 - End power theft by wealthy consumers - if need be using considerable remedies.
 - Use of objective, transparent and verifiable criteria, especially the principle of anti-discrimination, with regard to public service obligations, declaration procedures and licensing criteria,
 - Addressing RURAL & Household Energy in terms of poverty eradication & Health,
 - Stable regulatory environments (so to allow earning long term stable revenues needed to amortise relatively high up-front investments in RES); transitional periods for reforms protecting existing investments (no stranded investments),
 - Obligation to take connect RES producers to suitable grids (delivery of power at fixed prices v RES quotas & green certificates),
 - Implement due subsidies (see taxation),
 - End low priority of RES and biofuels (knowledge transfer).
- Good Governance (public sector reform)
- Capacity Building / TA in line with sector reforms and finance,
- Environmental Impact Assessment as a pre-requisite for project funding (q.v. UNFCCC, EIB) and a general need for balancing energy and environmental policies.
- Setting of domestic mandatory or indicative, qualitative or quantitative RES Targets,
- Private Sector Development and RES commercialisation policies,
- Internalisation of externalities relating to environment and public health to energy pricing and the phasing-out of fossil-fuel or broad subsidies (by virtue of taxation / GHG-trading / etc.)
- Stable investment regimes with affordable, rapid judicial review,
- Adapt statistics to national definitions of RES so as to allow precise monitoring of results.

3.2 International RES Cooperation & Domestic RES Legislation

Any RES policy should, where international cooperation is affected, or domestic legislation is required, be accompanied by:

- Energy Sector Reform Legislation in general terms (supra) but also with regard to specific renewable sources:
 - Solar energy Legislation: Legislation guaranteeing access to sunlight for solar collector panels)
 - Wind energy: Legislation ensuring that wind generators are not classified as normal buildings for the purpose of building and planning legislation; legislation guaranteeing access to the wind for wind farms; legislation balancing the rights of wind farm developers with other stakeholders and adjoining landowners.
 - Geothermal energy: Legislation establishing a legal management regime for the resource, in order to facilitate investment and investor confidence.
 - Bio energy: Legislation establishing a legal management regime for ethanol manufacturers and other stakeholders in this field.
- Compliance of domestic Legislation and Regulation with international obligations, being it
 - UNFCCC / Kyoto Protocol including UNFCCC guidelines for accrediting RES related CDM projects (supra 2.2.3),
 - WTO-Law, especially the GATT and its 11th Side Agreement on Subsidies & Countervailing Measures; i.e.
 - Most Favoured Nation Treatment Art. I GATT,
 - National Treatment, Art. III GATT,
 - Antidumping & Countervailing Duties, Art. VI GATT,
 - Rules of origin regarding RES, Art. IX GATT,
 - General elimination of quantitative restrictions, Art. XI GATT,
 - Obligation of members to notify subsidies and discuss amendments with other interested members, Art. XVI (1) GATT plus remedies under the 11th Side Agreements (Arts 7, 10, 27 including exemptions regarding DC).
 - Albeit there might be room for exemptions which could be successfully invoked, if applicants duly rely on exemptions relating to human, animal or plant life or health, or the conservation of scarce resources (Art. XX GATT), since an SD friendly interpretation of this norm is backed by the WTO-Charter's preamble,
 - Early stages of development and preferential treatment (e.g. Arts XVIII & XXXVI GATT).
 - ECT,
 - Regional economic integrations (APEC / ASEAN / EC / European Economic Area / MERCOSUR / NAFTA),
 - Bilateral Agreements.

- Operate a principle of international Multi-Stakeholder support mechanisms and allow agency-competition to take place,
- development of one or more further international soft-law documents following on from and embellishing the terms of the Johannesburg Plan of Implementation,
- Make sponsors of international financial mechanism live up to their commitments, i.e. to pay any contribution promised on time (e.g. to GEF).¹⁷²

3.3 Administration & Regulation of RES

Reforms should focus on:

- Regulation implementing energy sector reform legislation and policy (supra),
- Speedy, transparent and equitable administrative proceedings (especially siting and planning permissions),
- Provide for transparent regulation of grid access,
- Abstain from promising non viable expansion of power grids.

3.4 RES Taxation & Fiscal Regimes (Subsidies)

Policies should take into account:

- End subsidies for fossil fuels,
- End broad subsidies for cheap energy supply tariffs; rather give support to weak consumers, since tariff subsidies serve rich residential users most as they consume the most,
- Proportionate subsidies of specific life-span may be indispensable to assure sound returns within project life time; this is all the more vital as infant RES technologies are both costly and gradually evolving; today's state of the art equipment may be forced out of the market (sometimes even before cash-flows generated amortise initial investments; early "REPOWERING" may be indispensable or at least advisable to take advantage of existing sites).

3.5 Financial Mechanisms for RES

Financial support shall be designed on the basis of:

- Standardised financial arrangements so as to decrease high transaction costs,
- Contingent financing (concessional finance) instead of loans or grants,
- Private-co-financing,
- Micro-finance for RES producers (overcome by pooling, special project finance companies addressing lots of projects dispersed over great areas),
- Addressing weak credit profiles of RES-operators (pay-back periods),
- Increasing the stake of private venture capital by defining groups of premium RES investments (thus without great public participation),
- Micro-finance for RES users (connection fees),
- Addressing high transaction costs of small scale finance projects for RES,

¹⁷² As of June 2002, the US and Italy barely had paid half the amount, they had promised, to GEF-2 (GEF, Annual Report 2002, p 20).

- Environmental assessments to be carried out by financial institutions before deciding on proposals, combined with specific assessment grants,
- Bottom up approaches,
- Relevant training of bank staff (IBRD, EIB),
- Environment management standards,
- On lending to NGOs (IBRD provides TA and gives funds to NGO for on lending,
- Addressing of co-finance risks (lack of partners, termination by partners) and
- Project design risks (technical design etc.).

3.6 RES oriented RTD

- International RTD and technology transfer,
- Standardisation of RES technologies and methodologies (q.v. EC RTC, IEA&IAEA),
- Monitor quality of RTD programmes and implementation,
- End focuses on fossil fuel research / nuclear (EC).

3.7 Demand Side Measures for RES (Investors & Users)

RES promotion shall address the following measures, with an eye to maximising private sector follow-up projects:

- Increase private & institutional investor awareness of RES,
- Increase private sector awareness of economically viable options for marketing of RES equipment and energy from RES.,
- Training of business consultants.

3.8 RES Monitoring & RES Project Management

Both deciding and implementing agencies shall provide for institutional arrangements so to assure independent reviews of its projects:

- Frequent monitoring of any agency's programmes and projects,
- Reporting to stakeholders, and publication (q.v. GEF; European Environment Agency).
- Addressing of demand risk by means of sound economic project assessments (size and structure of demand),
- Multi stake holder dialogues to be carried out with legally viable commitments so as to assure acquisition of premises, grid-connection etc.

4 Institutional Responses and Options at International Level

Complementary to the findings in the preceding section, several institutions adopted good practise guidelines with resemble the lessons those agencies learned in the course of defining, adopting and implementing projects for the promotion of RES. Taking this into account, it is beneficial to undertake to pinpoint essentials of trade and environmentally sound guidelines for the future promotion of RES.¹⁷³

- Give support to price and market based solutions,
- Avoid over-compensation
 - aids to be phased out: support periods to start with 1st commercial production of each project,
 - state aids must not exceed what is necessary, regular review of support tools for new projects,
- Comply with international trade rules (WTO / EC / ECT / NAFTA / etc.), i.e. Most favoured Nation Treatment / Full National Treatment / abolition of tariffs and equal levies / abolition of quantitative restrictions and measures having equivalent effect / reciprocity regarding the free trade in green fuels and energy produced from green sources,
- Find common definitions of RES, which may vary regionally according to benefits / drawbacks / costs of each source,
- Define common rules of origin [and issuance of green certificates for energy produced from RES],
- Apply advanced procurement rules in case of calls for competition (e.g. WTO-GPA to be expanded to a multilateral agreement),
- Trade in traditional fuel sources & energies v trade in green fuels and green energy: Reconcile the needs of both free trade in goods and services, i.e. fossil fuels / traditional energy, with those in green fuels and energy generated from RES, i.e. duly justify distortions and other interferences of non-discriminative effect resulting from the support of RES; justification to be based upon its benefits relating to economic development and society (social rights / cohesion / responsiveness / good-governance / environment / general economic interest including security of supply).
- Legislation and implementation to be transparent and based on objective, verifiable, non-discriminatory criteria,
- Good governance standards to be defined and implemented according to said needs of RES.
- Finance to be biased toward projects reaping the benefits and addressing remaining drawbacks of RES,
- Integrate the views of WTO/NAFTA/MERCOSUR/ECT secretariats into SD,
- Accept the need to further develop the IBRD'S "Post Washington consensus",
- Bottom-up approaches (IBRD, Rural Energy, p. 10),

¹⁷³ in part based on ECT materials (cited above).

- Bias towards direct action against environmental degradation rather than a focus on restrictions from free trade especially since races to the bottom in capital intensive industries like RES are all the more unlikely; compliance costs with environmental standards usually do not go beyond 1-2% of original capital outlay for investments in such industries; moreover, barriers against international trade usually ignore the significant impact domestic trade has on global change.¹⁷⁴
- Spend due regard to environmental factors.¹⁷⁵

Energy sector reform schedules benefit from consistent policy packages, knowing precisely the situation of national energy markets (past – present – future). This includes:¹⁷⁶

1. Review of energy efficiency, hydro pricing and grid connection,
2. Audits,
3. Benchmarking exercises,
4. Demand review, Capacity review,
5. Regional trade review,
6. Appreciation of gains,
7. Business councils to form,
8. Assure Political commitments to liberalisation,
9. Market design to be carried out,
10. Investment prioritisation,
11. Establishment of regulators,
12. Tariff reforms,
13. Adoption & implementation of technical norms,
14. Infrastructure planning,
15. Plant modernisation,
16. Grid codes, technical standards for TPA, trading rules, dispute settlement rules defined and implemented,
17. Cross-border trade arrangements and harmonisation of network access charges by virtue of integrated costs for interconnectors based on Long Run Average Incremental Costs [q.v. Regulation 2003/1228/EC so as to avoid pancaking of grid access fees],
18. Training of stakeholders.

The following passage of additional guidelines for international project managers is quoted from UNDP-GEF's annual project implementation review:¹⁷⁷

- *Establish technical committees to help steer the project and compile a list of relevant NGOs and experts.*
- *Keep project decision-making structures transparent.*
- *Do not underestimate the time or resources required for meeting project goals.*

¹⁷⁴ WTO, Trade and the Environment (1999).

¹⁷⁵ Bradbrook, A. and R. Wahnschafft, *The Contribution of International Law to Achieving Global Sustainable Energy Production and Consumption*, in: Energy Law and Sustainable Development (Bradbrook, A. and R. Ottinger, eds, Gland, IUCN, 2003).

¹⁷⁶ q.v. Athens Process.

¹⁷⁷ UNDP-GEF Group, GUIDEBOOK UNDP-GEF, p 10. www.undp.org/gef/. It does also offer guidance to applicants.

- *Limit the number of main objectives and consider dividing the project into phases with specific goals for each phase.*
- *Identify and secure realistic co-financing and counterpart contributions and specify timetables for their delivery.*
- *Identify easily verifiable indicators for project monitoring and evaluation during the initial stages of project formulation.*
- *Capacity development begins with initial consultations as stakeholders begin to share experiences, create coalitions, and understand global environmental challenges and the GEF.*
- *Identify capacity needs during project design and the early stages of implementation.*
- *Stakeholder involvement is a process that needs time, dedication and resources. It is an ongoing task during the whole project cycle. A phased approach would allow projects to start slowly, build trust amongst the major stakeholders and lay a solid ground for a successful intervention.*

Moreover, applicants should address the following list of do's and if they want to assure sound international support for their proposals:¹⁷⁸

- Project shall reduce barriers to the adoption of renewable or energy saving technologies,
- shall be consistent with international Law,
- shall be country driven, based on national priorities, and endorsed by an eligible host government (to be GEF eligible, a country must be a signatory to the relevant Convention, and be eligible for assistance from regular UNDP programmes),
- shall produce measurable increases of RES consumption (providing that energy efficiency measures are not superior),
- must engage the broad participation of affected groups and stakeholders in project decision-making,
- shall be cost-effective, replicable, and include an incentive-based design to ensure financial sustainability after the conclusion of GEF support,
- is to possess a firm scientific and technical foundation, and include plans for monitoring and the evaluation of results, and
- has to provide full disclosure of information.

It has to offer

- Linkage to National Priorities: make sure the project idea is linked to a national priority, action plan, or program,
- Expected Outcomes: briefly describe the expected outcomes of the project in terms of measurable results.
- Planned Activities: describe what basic measures will be taken,
- Stakeholders: describe who the stakeholders are and how they have already been involved in developing the concept,
- Estimated budget including co-financing.

¹⁷⁸ in part based on UNDP-GEF guidebook, p 30.

5 Annexes

5.1 GEF: Some Failures and Opportunities for Change

For the sake of developing best available good practise guidelines, one should turn to those GEF projects which either were delayed, amended, cut back or ended in outright disaster. From 1991 to 1999, GEF allocated \$884 million to 227 climate change projects and enabling activities, which was matched by more than \$4.7 billion in co-financing. Based on GEF's December 2000 "Project Status Report", Approximately 75 projects related to the promotion of RES, and involved about 20 failures. This methodology is, nevertheless, not meant to discount failures in IC, especially as the European Court of Auditors made reservations in 1998 towards the implementation of certain EU RTD framework programmes.

5.1.1 Co-Finance Risk

Once, a waste gas project in Syria was abandoned owing to IBRD's failure to find Co-Finance Partners.¹⁷⁹ Similarly, the Indonesian government cancelled both the "Eastern Indonesia Renewable Energy Development" and "Renewable Energy Small Private Power" projects as co-finance partners were no longer willing and able to contribute in the aftermath of the Asian Crisis in July 1998.¹⁸⁰ The Klaipeda Geothermal Project was delayed in part as the EU failed to provide promised PHARE grants in time.¹⁸¹

5.1.2 Demand Risk

The inherent complexity of RES projects may provoke that demand patterns are misunderstood. Recession stopped Indonesian Demand for Household Energy PV systems to take off. Instead of 200,000, a mere 1,000 systems were sold.¹⁸² The Government cancelled the programme, since the banking sector had cash in abundance due to collapsing credit lines. A programme in Tunisia was amended, as demand proved to be stronger for smaller rather than for medium size PV systems.¹⁸³

5.1.3 Plant Design Risks

Sometimes, the projects are delayed owing to mis-design of facilities. Again, Klaipeda, is to cite, where a second geothermal well had to be drilled. Last but not least, its technical control-system did not work at the initial stages of the project.

5.1.4 Public Undertakings and Energy Sector Reform Risks

Another risk category relates to public utilities that do give rather lukewarm support to RES power stations, feeding into its grids and thus limiting the earnings from its written-off, cheap fossil or nuclear power stations. One utility delayed interconnections of two islands – the interconnection was vital for the delivery of RES power to large numbers of consumers.¹⁸⁴

¹⁷⁹ GEF, Project Status Report (December 2000) p. 364.

¹⁸⁰ *ibid*, p 229 (Implementation by IBRD, in part executed by National Power Utility PLN).

¹⁸¹ *ibid*, p. 261.

¹⁸² *ibid*, p. 230.

¹⁸³ *ibid*, p. 371.

¹⁸⁴ *ibid*, p. 317.

Sometimes, an envisaged plant is simply not built.¹⁸⁵ It may happen, that methane gas recovery near a landfill is abandoned since it was simply not feasible to acquire the envisaged premises for the plant; or such a project is abolished owing to rather general difficulties.¹⁸⁶ Provided it is planned to install 5 wind parks, one may sometimes be happy if 3 of them are actually built as public power companies (owing to the break-up of regional grid companies into provincial ones) fail to accept agreements for grid connections without being prompted to implement RES promoting regulatory government policies (Old Energy Paradigm + Reform Risk).¹⁸⁷ This outcome can be avoided, if wind energy benefits from higher power prices as a result of internalising the environmental drawbacks of power generated from fossil and nuclear fuels. Energy sector liberalisation may attribute to implementation risks as well, if it leads to legal battles between co-investors and distribution system operators, causing investors to shy away so that a municipality withdraws from a biomass project (stranded investments).¹⁸⁸

5.2 CSD's Institutional Role from UNCED to WSSD and beyond

The CSD's functions derive from Section 38 of the Action Programme "Agenda 21" (International Institutional Arrangements) and a related General Assembly Resolution.¹⁸⁹ It is a functional Commission of the UN's "Economic and Social Committee" (Arts 7 I, 61 et seq., 68 UN Charter). Its role and functions are best described by the UN.¹⁹⁰ The UN's overview includes historic milestones like the "Earth Summit +5", which adopted a multi-annual work programme for CSD, including CSD-9 on Energy and transport (2001), and called for CSD 10, that prepared the ten year comprehensive review today known as "WSSD".¹⁹¹ This resulted in the Johannesburg Political Declaration and the JPOI. Both strengthened CSD-9 and were discussed above.¹⁹²

In 2003, CSD-11 agreed on its future work programmes to be implemented by seven biannual periods. In 2016-2017, CSD will undertake an overall assessment of the implementation of Agenda 21 and JPOI. It was also agreed, to promote co-operation between established international stakeholders and bottom-up initiatives (regional and local levels). Future Issues are covered as well. CSD-12 is to review the Barbados Programme of Actions, that addressed SD with special relevance to Small Island Developing States (SIDS).

¹⁸⁵ *ibid.*, p. 275. There was, however, a potential for another similar plant.

¹⁸⁶ *ibid.*, pp. 304 and 365.

¹⁸⁷ *ibid.*, p. 365; see also IBRD's earlier enthusiastic Report: <http://www4.worldbank.org/sprojects/Project.asp?pid=P046829>; q.v. IBRD (ASTAE & CRESP), *The China Renewable Energy Scale Up Programme* (2001).

¹⁸⁸ *ibid.*, p. 221.

¹⁸⁹ Agenda 21: www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm; Section 38 www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter38.htm; General Assembly, Forty-seventh session, Agenda item 79, RESOLUTION ADOPTED BY THE GENERAL ASSEMBLY [on the report of the second Committee (A/47/719)] 47/191. Institutional arrangements to follow up the United Nations Conference on Environment and Development.

¹⁹⁰ www.un.org/esa/sustdev/index.html.

¹⁹¹ Special Session of the General Assembly to Review and Appraise the Implementation of Agenda 21, NY, 23-27 June 1997 (Earth Summit +5), www.un.org/esa/earthsummit/; The 1998-2002 Multi-Year Programme of Work: www.un.org/esa/sustdev/csd/csd9802.htm.

¹⁹² *supra* at 2.2.

5.3 EU - Proceeding from Renewable Treaties to Renewable Energies

Looking for RES either in the present Treaties on Union or establishing the European Community is a frustrating exercise. Basically, there are only two highlights: First, some terms in office may be “renewable”¹⁹³ and second, the treaties themselves prove truly renewable as they undergo frequent reforms since the Single European Act was adopted in 1986. A closer look to the Draft Constitutional Treaty, however, reveals interesting patterns: The future EU will pursue to

“work for a Europe of sustainable development based on balanced economic growth, a social market economy, highly competitive and aiming at full employment and social progress, and with a high level of protection and improvement of the quality of the environment.”

and shall promote research and technological development.¹⁹⁴ Moreover, it shall market its values in international relations, so as to contribute to inter alia

- peace, security, and sustainable development of the earth,
- free and fair trade,
- eradication of poverty,
- observance and development of international law,

without going beyond what it is necessary.¹⁹⁵ The Union’s “Shared Competences” will include the internal market, transport, trans-European-Networks, energy, environment, consumer protection, and framework programmes for research. In these matters, the competences of Member States will – in general - be limited to aspects not addressed by EU legislation in force.¹⁹⁶ Moreover, energy will be addressed by the new sections on environment (Art. III 130 II (c) and Energy. Linked to the internal market, Art. III-157 I (c) will oblige the Union to engage in common policies with a view to promoting

“energy efficiency and saving and the development of new and renewable forms of energy”

and to enact necessary “European Laws” (Council Regulation) or “Framework Laws” (Directives).

Similar to WTO Law, existing primary EC law puts significant constraints to the eligibility of domestic measures designed to promote RES. As both fuel sources and energies from Re-

¹⁹³ Arts 214 I (Members of the Commission), 263 I (Members of ECOSOC), and 247 (Members of the Court of Auditors) as opposed to members of the Executive Board of the ECB (Art. 214 I).

¹⁹⁴ Arts 3 III, 6 and 9 Draft Constitutional Treaty; q.v. Art. 2 para.1 TU, Art. 2 EC Treaty.

¹⁹⁵ Art 3 IV-V Draft Constitutional Treaty and the Protocol on the Application of the Principles of Subsidiarity and Proportionality. Free Movement of persons, goods, services, capital, and freedom of establishment are specifically addressed by Art. 4. The Union is to guarantee fundamental rights pursuant to Part II of the Treaty; whereas Art. 2 II TU is vague: The EU shall “assert its identity on the international scene”. Art. 6 II TU merely refers to the European Convention for the Protection of Human Rights (Council of Europe).

¹⁹⁶ Arts 11 II, 13 II. Member States, however, retain the competence to set up own research programmes (Art. 13 III). There is also a “flexibility clause” which enables the Council to extend the competences of the Union (q.v. Art. 308 of the EC Treaty). q.v. existing competences of the EC include common policies under Art. 3 I lit. b (commerce – Art 131-4), c. (internal market – Art. 23-31, 39-60), f. (transport – Arts 70-80), g. (competition Arts 81-93), h. (approximation – Art. 95), l. (environment – Arts 174-6), n. (RTD – Arts 163-173), o. (TEN – Arts 154-6), r-s (development cooperation – Art 177-188), t. (consumer protection – Art. 153), u. (energy).

newables are goods in terms of primary EC law,¹⁹⁷ any support mechanisms must neither amount to

- a tariff or
- levy having equivalent effect to the former (Art. 23 EC Treaty), to
- quantitative restrictions from the trade in goods, nor to
- measures having equivalent effect to those (Arts 28/29 EC Treaty).

Therefore, any discrimination between domestic fuel sources or energies, and those originating from other Member States is hardly admissible. According to the Case Law and in the absence of specific secondary legislation, measures inconsistent with the Treaty include not only

- discriminatory treatment, but also any conduct
- (in)directly, actually / potentially hindering trade – even without discriminating as to the origin of goods, *unless* domestic rules address “essential public interests” in a proportionate manner or “merely consist of sales arrangements”.¹⁹⁸

Another Derogation relate to

- considerations of public health, life and health of humans, animals, and plants under Art. 30 of the Treaty, unless measures in question constitute arbitrary discrimination or disguised restrictions, or to
- undertakings entrusted with services in the general economic interest to which trade in goods belongs (Art. 86 II).¹⁹⁹

Even if one established that the promotion of RES / Energies from RES attributes to security of supply and environmental protection under either Arts 16/30/86 II, it would, as a matter of fact, not be very likely to invoke any such derogation without giving in: The Member State who relies on a derogation has, at least in general, the burden of prove for showing that there is no other effective means at hand that would not or not as much compromise the free trade in goods. Moreover, it is reasonable to conclude from the case law that it would be inconsistent with EC law to grant exclusive or special rights to undertakings responsible for the promotion of RES / Energies from RES (Art. 31 / 86 I-II).²⁰⁰ This leads to two further considerations: Anyone designing promotional measures must be aware that schemes are likely to amount to state aids under Art. 87 I of the Treaty, which must be notified to the Commission with a view to achieving a negative clearance under para. III lit. c: Aid to facilitate the development of certain economic activities (i.e. the RES industries). Rather Surprisingly, it was recently established, that domestic laws obliging distribution system operators to connect pro-

¹⁹⁷ Electricity: ECJ Case 6/64, *Costa v. Enel* [1964] ECR 1251; ECJ Case C-157/94 *Commission v Netherlands* [1997] ECR I-5699. ECJ Case C-158/94 *Commission v Italy* [1997] ECR I-5789. ECJ Case C-159/94 *Commission v France* [1997] ECR I-5815. ECJ Case C-160/94 *Commission v Spain* [1997] ECR I-5851.

¹⁹⁸ *Dassonville* test, as narrowed down by both, the *Cassis-de-Dijon* and *Keck*-reasoning: ECJ *Procureur due Roi v Dassonville* 8/74 [1974] ECR 837 Rec. 1; ECJ Case C-120/78 *REWE v Bundesmonopolverwaltung für Branntwein* [1979] ECR 649 (*Cassis de Dijon*); ECJ *Joined Cases C-267-268/91, Keck & Mithouard*, [1993] ECR I 6097. Permissible “Sales Arrangements” include restrictions of office hours. Similar principles apply to the freedom of services, of establishment and the free circulation of capital. Free Trade is also promoted by Regulation 2003/1228/EC on cross-border exchanges in electricity.

¹⁹⁹ q.v. ECJ Case 82/71 *Pubblico Ministero v SAIL* [1972] ECR 119.

²⁰⁰ q.v. ECJ Case C-157/94 *Commission v Netherlands* [1997] ECR I-5699. ECJ Case C-158/94 *Commission v Italy* [1997] ECR I-5789. ECJ Case C-159/94 *Commission v France* [1997] ECR I-5815. ECJ Case C-160/94 *Commission v Spain* [1997] ECR I-5851; ECJ Case C-320/91 *Corbeau* [1993] ECR I – 2533; other approach to trade or service monopolies: ECJ Case C-189/95 *Franzén* [1997] ECR I-5909; ECJ Case 155/1973 *Sacchi* [1974] ECR 409.

ducers of renewable energies, to take delivery of power fed-into the grid, and to award minimum rates to the former, do not constitute state aids in terms of European Competition Law, even if the system provides for a complex compensation mechanism at the (final) expense of consumers.²⁰¹ Everyone, who drafts legislation will also want to discuss whether any measure proposed might create undue incentives for producers or users of renewables to enter into cartel-agreements or concerted practices so as to escape (price) competition and whether such action is justifiable (Art. 81 I, III EC Treaty).

²⁰¹ ECJ Case C-379/98 *Preussen Elektra v Schleswig* [2001] ECR I 2099 Rec. 2.

5.4 Type II Initiatives for RES (11/2003)²⁰²

Partnership	Leading Partner(s)	Minor Partners	Scope
Asia Pacific Forum for Environment & Development (APFED) Partnership Initiatives for Knowledge Network & Capacity Building	Japan, Ministry of the Environment	ADB UNEP UNESCAP	<ul style="list-style-type: none"> develops a network of researchers, inventory of Asian capacity building programs collects best policy practices,
Business Alliance for Solar Water Heaters	Jacques Giordano Industries (SME)	SOFTEN TECSOL Solar Heat Exchange	<ul style="list-style-type: none"> grassroots approach production / installation / training / newsletters
Clean Fuels and Vehicles	US EPA, ENDESA, UNEP	governments / intergovernmental organisation / NGOs / industries	<ul style="list-style-type: none"> clean fuels, perhaps (once) even bio ones ?
Development Strategies to promote Rural Energy Systems	UNIDO	Austria / Mali	<ul style="list-style-type: none"> strategy planning, workshops, search for partners provision of (RES) energy services
Energy for Poverty Eradication & Sustainable Development	European Commission, EU Energy initiative	Governments (DC, EC) Enel Green Power NGOs	<ul style="list-style-type: none"> to halve poverty by 2015, access to energy to be widened through "Energy Access Partnerships" (from identification of energy needs to implementation) private sector development financing
Energy & Environment Partnership with Central America	Finland	Governments in LAC Energy Undertakings Academic	<ul style="list-style-type: none"> promotes sustainable use of RES in terms of economic, environmental, social considerations rural household energy
Fostering Regional Energy Cooperation in APEC: Energy for SD	APEC, i.e. Australia & Mexico on behalf of the Energy Working Group	Working Groups of APEC including private sector representatives	<ul style="list-style-type: none"> implementation of APEC's 21st Century Renewable Energy Development Initiative
Global Network on Energy for SD (GNESD)	UNEP	Governments (IC & DC) Intergovernmental organisations (UNDP, UNDESA, IBRD, ESMAP) Energy Companies Business associations, NGOs etc.	<ul style="list-style-type: none"> to allow its national partners to implement energy policies consistent with the environment knowledge exchange through "Centres of Excellence" studies capacity building with a focus on energy and other sectors of development Energy Access theme www.gnesd.org²⁰³
Global Village Energy Partnership (GVEP)	UNDP	IBRD (incl. ESMAP) 90 partners open to DC	<ul style="list-style-type: none"> 10 action programme to reduce poverty inter alia through RES Establishes links between energy & poverty Capacity Building: infrastructure for extension of energy services in public & private sectors) Finance Facilitation: bringing investors in, lenders to, and operators of RES installations together incl. consumers offers finance and searches public & private

²⁰² Lists on sustainable energy is maintained and updated at www.un.org/esa/sustdev/partnerships/Energy.htm.

²⁰³ e.g. GNESD, Newsletter (April 2003) with a list of centres of excellence; Mission Statement; bibliography on rural energies, etc.

			<ul style="list-style-type: none"> co-finance partners support to financial and institutional mechanisms GVEP website for knowledge exchange www.gvep.org newsletters organises workshops cooperates closely with national partners and other type ii settings frequent monitoring
International Centre for Carbon Sequestration and Biomass Energy (ICCS)	Pro Natura International	UNEP ADIE IBRD Prototype Carbon Fund Businesses incl. Total Fina Elf Academic Institutions	<ul style="list-style-type: none"> RTD
Johannesburg Climate Legacy	IUCN-South Africa	SA UNDP GEF IUCN WBSCD, BASD Development Bank of SA, etc.	<ul style="list-style-type: none"> measured the emissions caused by the SUMMIT itself to offset them by financing of 15 climate change mitigating projects in Africa implicit call for video conferences / smaller venues
Market Facilitation Partnership for Concentrating Solar Power technologies	UNEP-GEF	Concentration-Solar-Power Initiative (Declaration in Berlin, 2002) & utilities BMU/BMZ (Germany) KfW California Energy Commission	<ul style="list-style-type: none"> to remove investment obstacles and commercialisation
Mechanism for the Development of renewable energy & energy efficiency in DC	French Development Agency		<ul style="list-style-type: none"> to be integrated in EU Energy Initiative
Mediterranean Renewable Energy Partnership MEDREP	Italy	France IEA UNEP etc.	<ul style="list-style-type: none"> share of RES in fuel mixes to be increased to serve 100 m people with RES market development: free trade zone for RES / commercialisation financial assistance policy building private sector development
Modern Biomass Technology for Rural Energy Needs	Madagascar, France		(DELAYED)
North South Initiative	German NGO Tanzanian NGOs (SUDERATA)		<ul style="list-style-type: none"> Capacity Building for Solar & Waste grassroots approach
Renewable Energy & Energy Efficiency Partnership (REEEP)	UK Government	Indonesia UNIDO ASEAN Businesses including Shell, Business Associations, INFORSE, ...	<ul style="list-style-type: none"> capacity building (s. 19 JPOI) commercialisation of RES on-grid part of EU Energy Initiative
100% Renewable Energy Islands	S. Hermanson (Samø, DK)	SIDS	<ul style="list-style-type: none"> grassroots approach

Bibliography

1 Primary Sources

1.1 Treaties

1.1.1 UN

United Nations Framework Convention on Climate Change of 09/05/1992 (entered into force on 21/03/1994), www.unfccc.int/resource/conv/convkp.html.²⁰⁴

Kyoto Protocol to the United Nations Framework Convention on Climate Change of 11/12/1997 (has not yet entered into force) www.unfccc.int/resource/convkp.html.²⁰⁵

1.1.2 Treaties Establishing the European Communities / EU

Treaty Establishing the European Community of 25/03/1957, as last amended by the Treaty of Nice, OJ C 325, 24/12/2002, p. 1.

Treaty on European Union of 7/02/1992 (entered into force November 1, 1993) as amended by the Treaty of Amsterdam (entered into force on 01/05/1999) and by the Treaty of Nice, OJ C 325, 24/12/ 2002, p. 1 (has no yet entered into force).

Draft Treaty establishing a Constitution for Europe, adopted by Consensus by the European Convention on 13/06/03 and 10/07/03, and submitted to the European Council Meeting in Thessaloniki on 20/06/03 and to the President of the European Council in Rome on 18/07/03, The European Convention, 27/06/2003, CONV 850/03 (hereinafter: Draft Constitutional Treaty).

1.1.3 Energy Co-Operation

Energy Charter Treaty, OJ L 380, 31/12/1994, p. 24.

Energy Charter Protocol Protocol on Energy Efficiency and Related Environmental Aspects (Annex 3 to Final Act of ECT), OJ L 380, 31/12/1994, p 91.

1.2 UN (Resolutions and Policy Papers)

FAO, Bioenergy (1999), www.fao.org/mfcal/pdf/bp_2_bio.pdf.

idem, FAO and bioenergy (2000), www.fao.org/sd/EGdirect/EGre0055.htm.

idem, Energy for and from Agriculture (2001), www.fao.org/sd/2001/EN0301_en.htm.

idem, FAO's energy activities (2000), www.fao.org/sd/EGdirect/EGre0056.htm.

²⁰⁴ Internet Resources checked in November 2003. Usual Disclaimer applies.

²⁰⁵ n.b. Art. 25 and the Kyoto Protocol Ratification thermometer at: www.unfccc.int/resource/kpthermo.html. 119 ratifications already and emissions from Annex I countries represent 44.2 % of their 1990 GHG emissions (November 2003), whereas the protocol requires 55 submissions including as many Annex I partners, that related emissions account for at least 55% of that group's GHG emissions for 1990.

idem, Power & Food Security, www.fao.org/sd/EGdirect/EGan0006.htm.

Global Conference on Sustainable Development of Small Island Developing States, Barbados Programme of Action (BPoA, 1994), www.un.org/esa/sustdev/sids/sids.htm.

UN, Report of the United Nations Conference on Human Environment, Stockholm, 5-16 June 1972.

UNCED, Agenda 21 (1992): www.un.org/esa/sustdev/documents/agenda21/english/agenda21toc.htm; Section 38 on International Institutional Arrangements (Creation of CSD): www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter38.htm.

United Nations General Assembly, Forty-seventh session, Agenda item 79, RESOLUTION ADOPTED BY THE GENERAL ASSEMBLY [on the report of the second Committee (A/47/719)] 47/191. Institutional arrangements to follow up the United Nations Conference on Environment and Development (Creation of CSD).

United Nations General Assembly, Nineteenth Special Session New York, 23-27 June 1997, Resolution Adopted By The General Assembly for the Programme for the Further Implementation of Agenda 21, Energy (at 42-46), “Earth Summit + 5”

www.un.org/esa/earthsummit/ . Multi-Year Programme of Work – 1998-2002:

<http://www.un.org/esa/sustdev/csd/csd9802.htm>

United Nations, General Assembly Resolution 55/2 (Millennium Development Goals).

UN, Economic and Social Council, CSD-9, Multi-stakeholder dialogue on sustainable energy & transport, Discussion Paper by business/industry, jointly contributed by International Chamber of Commerce, World Business Council for Sustainable Development, and the World Energy Council (26/01/01).

idem, Discussion Paper by the scientific and technological communities, jointly contributed by ICSU and IUCN (12/01/01).

idem, Joint Discussion Paper by NGOs: Climate Change CAUCUS and Transport Caucus (19/01/01).

idem, Discussion Paper by Local Authorities (09/01/01).

idem, Discussion Paper by Workers & Trade Unions (10/01/01).

UN Ad-Hoc Inter-Agency Task Force on Energy, Briefing Paper on Energy Activities of the UN, prepared for the 2nd Session of Ad hoc Open-Ended Intergovernmental Group of Experts on Energy and SD (26/02/01).

United Nations General Assembly, 56th Session, Agenda Item 39, Resolution adopted by the General Assembly (A/56/L.33 and Add.1) 55/76. Towards Global Partnership.

UN Report of the World Summit on Sustainable Development, Johannesburg, 26 August – 4 September 2002 (A/CONF.1999/20 re-issued*), includes Political Declaration and Johannesburg Plan of Implementation: www.johannesburgsummit.org/index.htm (no longer updated).

UNDESA, SD-Division, Energy & Transport Branch, Energy & Transport Newsletter (07/2003).

WSSD, Guiding Principles for Partnerships for Sustainable Development (“type 2 outcomes”) to be Elaborated by Interested Parties in the Context of the World Summit on Sustainable Development (7/06/2002).

United Nations, Commission for Sustainable Development, Draft Resolution recommended by the Commission for adoption by the Council (14/05/2003), The Implementation Track for Agenda 21 and the Johannesburg Plan of Implementation: www.un.org/esa/sustdev/csd/csd11/csd11res.pdf.

UNECE, 5th Ministerial Conference Environment for Europe, 21-23 May 2003, Declaration, at 47.

UNESCAP, Bali Declaration on Asia-Pacific Perspectives on Energy and Sustainable Development and Sustainable Energy Action Programme 2001-2005 (11/2000), www.unescap.org/esd/energy/publications/HLR/images/Cover25.jpg.

UNFCCC, Caring For Climate (2003), www.int/resource/convkp.html.

1.3 EC Secondary Legislation / Drafts / Communications

1.3.1 General Development, Energy, and Environment Policy

Commission, A sustainable Europe for a better world – A European Strategy for a better world (2001).

Regulation 2001/761/EC of 19 March 2001 allowing voluntary participation in a Community eco-management & audit scheme.

Commission, Towards a global Partnership for sustainable Development (2002).

1.3.2 Solid Fuels / Oil (Security of Supply / Bio Fuels / Energy Taxation)

Commission, European Transport Policy for 2010: time to decide, OJ C 210, 06/07/1998, p 215.

EP & Council Directive 2003/30/EC of 8 May 2003 on the promotion of the use of Bio Fuels or other renewable fuels for transport, OJ L 127, 17/05/2003, p. 42.

Council Directive 2003/96/EC of 27/10/03 restructuring the Community framework for the taxation of energy products, OJ L 283, 31/10/03, p. 51.

1.3.3 Natural Gas

EP & Council Directive 1994/22/EC of 30 May 1994 on the conditions for granting & using authorisations for the prospection exploration and production of hydrocarbons [Hydro Carbons Licensing Directive] OJ L 164, 30/06/1994, p. 3.

EP & Council Directive 1998/30/EC of 22 June 1998 concerning common rules for the internal market in natural gas, OJ L 204, 21/07/1998, p. 1; repealed with effect from 01/07/04 by Art. 32 II GD 2003.

EP & Council Directive 2003/55/EC Concerning common Rules for the Internal Market in Natural Gas and Repealing Directive 98/30/EC, OJ L 176, 15/07/2003 p. 57.

1.3.4 Electricity (incl. RES and Security of Supply)

Directive 1996/92/EC of the European Parliament and of the Council of 19 December 1996 concerning common rules for the internal market in electricity OJ L 27, 30/01/ 1997, p. 20 (repealed with effect from 01/07/2004 on account of Art. 29 II ED 2003).

Commission, COM (1997) 599 final (26/11/1997) Energy for the Future, Renewable Sources of Energy White Paper for a Community Strategy and Action Plan.

idem, DG TREN SEC (1999) 504, Community Strategy and action Plan: Campaign for Take-Off (05/04/1999).

EP & Council Directive 2001/77/EC of 27/09/01 on the promotion of electricity produced from renewable energy sources in the internal energy market, OJ L 283 27/10/2001, p.33.

EP & Council Regulation 2003/1228/EC of 26 June 2003 on conditions for access to the network for cross-border exchanges in electricity, OJ L 176 15/07/2003, p. 1.

EP & Council Directive 2003/54/EC of 26 June 2003 concerning common rules for the internal market in electricity and repealing Directive 96/92/EC - Statements made with regard to decommissioning and waste management activities, OJ L 176, 15/07/2003, p. 37.

Amended proposal for a Directive of the European Parliament and of the Council on the promotion of cogeneration based on a useful heat demand in the internal energy market, COM/2003/0416 final - COD 2002/0185.

Commission, Proposal for an EP & Council Directive concerning measures to safeguard security of electricity supply and infrastructure investment, COM (2003) x final (10/12/2003).

1.3.5 Trans-European Energy Networks

EP & Council Decision 2003/1229/EC laying down a series of guidelines for trans European energy networks, OJ L 176, 15/07/2003, p 11;

Commission, Proposal for an EP & Council Decision laying down guidelines for trans-European energy networks and repealing Dec. 2003/1229/EC, COM (2003) x final (10/12/2003).

1.3.6 Climate Change

EP & Council Directive 2003/87/EC Establishing a scheme for greenhouse gas emission allowance trading within the Community and Amending Directive 1996/61/EC (IPPC), OJ L 275, 25/10/03, p. 32.

Framework Programmes

Council Regulation 2000/99/EC/Euratom of 29/12/1999 concerning the provision of assistance to the partner States in Eastern Europe and Central Asia, OJ L 12, 18/01/00, p 1 (TACIS IV).

EP & Council Decision 2002/1513/EC of 27 June 2002 concerning the Sixth Framework Programme of the European Community for research, technological development and demonstration activities, contributing to the creation of the European Research Area and to innovation (2002 to 2006), OJ L 232, 29/08/2002, p.1.

Council Decision 2002/834/EC of 30 September 2002 adopting a specific programme for research, technological development and demonstration: "Integrating and strengthening the European Research Area" (2002-2006), OJ L 294, 29/10/02, p 1.

Council Decision 2002/835/EC of 30 September 2002 adopting a specific programme for research, technological development and demonstration: "structuring the European Research Area" (2002-2006).

Council Decision 2002/836/EC of 30 September 2002 adopting a specific programme of research, technological development and demonstration to be carried out by means of direct actions by the Joint Research Centre (2002-2006); OJ L 294, 29/10/02, p. 60.

EP & Council Decision 2003/1230/EC of 26 June 2003 adopting a multi-annual programme for action in the field of energy: "Intelligent Energy – Europe" 2003-2006, OJ L 176, 15/07/2003, p. 29.

1.4 Case Law EC (ECJ & CFI)

ECJ Case 6/64, Costa v. Enel [1964] ECR 1251.

ECJ Case 82/71 Pubblico Ministero v SAIL [1972] ECR 119.

ECJ Case 155/1973 Sacchi [1974] ECR 409.

ECJ Procureur du Roi v Dassonville 8/74 [1974] ECR 837.

ECJ Case C-120/78 REWE v Bundesmonopolverwaltung für Branntwein [1979] ECR 649 (Cassis de Dijon).

ECJ Joined Cases C-267-268/91, Keck & Mithouard [1993] ECR I 6097.

ECJ Case C-320/91 Corbeau [1993] ECR I – 2533.

ECJ Case C-157/94 Commission v Netherlands [1997] ECR I-5699.

ECJ Case C-158/94 Commission v Italy [1997] ECR I-5789.

ECJ Case C-159/94 Commission v France [1997] ECR I-5815.

ECJ Case C-160/94 Commission v Spain [1997] ECR I-5851.

ECJ Case C-189/95 Franzén [1997] ECR I-5909

ECJ Case C-379/98 Preussen Elektra v Schleswig [2001] ECR I 2099.

1.4.1 Athens Process (SEERECON)

Memorandum of Understanding on the Regional Electricity Market in South-East Europe and its Integration into the European Union Internal Electricity Market (Athens Memorandum of 15/11/2002): www.europa.eu.int/comm/energy/electricity/south_east/index_en.htm

Athens Forum, Strategy Paper on the regional Electricity Market in South East Europe and its integration into the EU internal electricity Market (11/2002).

idem, Post Athens Schedule (11/2002).

European Commission (host), DG TREN, Energy Policy in South East Europe (10/2003).

1.5 JREC

The Johannesburg Renewable Energies Coalition (JREC), Joint Declaration “The Way forward on Renewable Energy”, adopted by the EU, its countries of accession (2004) and applicants, Iceland, New Zealand, Norway, Switzerland, and the Alliance of Small Island States with additional support from Argentina, Brazil, Chile, Egypt, and Uganda (September 2002).

JREC, Information Note No. 3 (25/06/03); www.forum.europa.eu.int/Public/irc/env/ctf/library.

1.6 Energy Charter Treaty Secretariat

Energy Charter Treaty Secretariat, Regional Electricity Markets in the ECT Area (October 2003).

idem, Note on Best Practices Guidelines for the Trade-Friendly Promotion of Renewable Energy Sources (15/04/03, Study by Prof. L. Hancher).

Secondary Sources

2.1 Books

Bradbrook, A.J. and R. L. Ottinger (eds), Energy Law and Sustainable Development (Gland, Switzerland, IUCN-Environmental Policy and Law Paper Series, 2003).

Bradney Chambers, W. (ed.), Inter-linkages – The Kyoto Protocol and the International Trade and Investment Regimes (Tokyo, Japan, United Nations University Press, 2001).

Cameron, P.D. and D. Zillmann (eds.), Kyoto: from Principles to Practice (London, UK, Kluwer Law International, 2001).

Carraro, C. and C. Egenhofer (eds.), Firms, Governments and Climate Policy (Cheltenham, UK, Edward Elgar, 2001).

European Commission & UNDP, Energy as a Tool for Sustainable Development for African, Caribbean and Pacific Countries (New York, US, UN Publications, 1999).

EU, euei – the European Energy Initiative for poverty eradication and sustainable development (2003): http://europa.eu.int/comm/development/body/publications/docs/brochure_EUEI_en.pdf.

IEA & OECD, Renewables Information (Paris, France, IEA Statistics, 2003).

IEA, Key World Energy Statistics (Paris, France, IEA, 2002).

idem, World Energy Outlook (Paris, France, IEA, 2002).

UCCEE (UNEP) & Komasi Institute of Technology and Environment, Implementation of Renewable Energy Technologies – Opportunities & Barriers (Roskilde, Denmark, UCCEE, 2001).

UNDESA, UNDP, World Energy Council, World Energy Assessment, (New York, US, UNDP, 2000) www.undp.org/seed/eap/activities/wea .

UNDP (EAP: UNISE), Sustainable Energy Strategies: Materials for Decision-Makers (2000): www.undp.org/seed/eap/html/publications/2000/SE_Strategies.ZIP.

UNDP, Meeting Summary – CDM Roundtable (Amsterdam, April 2002): <http://www.undp.org/seed/eap/html/cdm.htm#recent>.

UNDP, IIIIE & IEI, (Johansson, T.B. and J. Goldemberg, eds) Energy for sustainable Development – A Policy Agenda (2002), www.undp.org/seed/eap/html/publications/2002/2002a.htm ; www.undp.org/seed/eap/html/publications/2002/20013108FNRapport.pdf .

UNDP-GEF Group, GUIDEBOOK UNDP-GEF, www.undp.org/gef/.

Vester, F., Ballungsgebiete in der Krise (Stuttgart, Germany, DVA, 1976).

Wälde, T.W., Comments on the Role of (Selected) International Agencies in the Formation of International Energy Law and Policy towards Sustainable Development (Gland, Switzerland, IUCN, 2002).

World Energy Council, Energy for Tomorrow's World (London, UK, Kogan Page, 1994), New Renewable Energy Resources and Global Transport & Energy Development.

2.2 Articles

Bradbrook, A.J. and R. Wahnschafft, *The Contribution of International Law to Achieving Global Sustainable Energy Production and Consumption*, in: Energy Law and Sustainable Development (Bradbrook, A.J. and R.L. Ottinger, eds, Gland, IUCN-Environmental Policy and Law Paper Series, 2003).

Jansen, J., *Kyoto flexible mechanisms: opportunities and barriers for industry and financial institutions*, in: Firms, Governments and Climate Policy (C. Carraro and C. Egenhofer, eds, Cheltenham, Edward Elgar, 2001).

Turkenburg, W. et alii, *Renewable Energy Technologies*, in: World Energy Assessment, (UNDP, New York, UNDP, 2000): <http://stone.undp.org/undpweb/seed/wea/pdfs/chapter7.pdf>

2.3 Other (Reports)

APEC, APEC at a glance (2003), www.apecsec.org.sg/apec/publications/free_downloads/2003.html.

APEC, Update of Activities (10/2003).

Bloyd, C., New and renewable Energy: An Apec Perspective for Sustainable Development (10/2003).

DGEF (UNEP), UNEP in GEF- UNEP's Action in the Framework of the Global Environment Facility (Nairobi, Kenya, DGEF, 2002).

EBRD, Environmental Policy (2003).

EBRD, Energy Operations Policy (2001).

European Environment Agency, Renewable Energies: Success Stories (Environment Issue Report No. 27, 2001); http://reports.eea.eu.int/environmental_issue_report_2001_27/en.

idem, Energy & Environment in the European Union (Environment Issue Report No. 31, 2002).

idem, Europe's Environment: the third assessment (2003), Ch. 2.1 *Energy*; prepared for the 'Environment for Europe' Ministerial Conference held under the auspices of the UNECE in Kiev, Ukraine in May 2003;

http://reports.eea.eu.int/environmental_assessment_report_2003_10/Chapter21.

EIB, Climate Change (2002).

idem, Environmental Statement (2002).

idem, Renewable Energy (2002).

GEF, Project Status Report (December 2000).

idem, Annual Report 2002.

idem, The Challenge of Sustainability, 2002.

idem, Roundtable on Sustainable Energy, 2002.

GEF/FAO, Report & Summary Report on Workshop on Productive Uses of Renewable Energy: Experience, Strategies, and Project Development (Rome, 2002),

www.fao.org/sd/2003/EN10023_en.htm.

GNESD (UNEP), Newsletter (April 2003); www.gnesd.org.

IBRD (Finance & Private Sector Development – Industry and Energy Department, Rural and Renewable Energy Thematic Group), Rural Energy and Development for Two Billion People.

IBRD, Financing Decentralised Renewable Energy: New Approaches (Energy Issues No. 15, Oct. 1998).

idem, Assessing Markets for Renewable Energy in Rural Areas of Northwestern China, www.worldbank.org/astae/chinamarket.pdf.

IBRD (ASTAE), Financial Incentives for Renewable Energy Development (Discussion Paper No. 391, 1998, relating to a 1997 workshop in Amsterdam),

www.worldbank.org/astae/391wbdp.htm.

idem, The Asia Alternative Energy Program: Partnership for Innovation (2000),

<http://www.worldbank.org/astae/a02132.pdf>.

idem, World Bank Asia Alternative Energy Program Status Report (2001),

www.worldbank.org/astae/pdf/astaestatusreport9.pdf.

idem, Accelerating Sustainable PV Market Development,

<http://www.worldbank.org/astae/pvmarket.pdf>.

idem, Best Practices for Photovoltaic Household Electrification Programs: Lessons from Experiences in Selected Countries (1996), <http://www.worldbank.org/astae/pvpdf/cover.htm>.

idem, China Renewable Energy for Electric Power,

www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000009265_3961214185459.

idem, Wind Energy Resource Atlas of South Asia, www.worldbank.org/astae/werasa/windenergy.htm.

idem, Statistical Analysis of Wind Farm Costs and Policy Regimes,

www.worldbank.org/astae/windfarmcosts.pdf .

idem, Review: India Renewable Resources Development Project (2000),

<http://www.worldbank.org/astae/india.pdf> .

idem (ASTAE & CRESP), The China Renewable Energy Scale Up Programme (2001).

idem (ASTAE & ESMAP), Options for Renewable Energy in Vietnam (1999; backed by ESMAP technical Paper),

www.worldbank.org/astae/options_for_renewable_energy_in_vietnam.pdf.

idem (China & Mongolia Department & ASTAE), China-A Strategy for international Assistance to Accelerate Renewable Energy Development (Discussion Paper No. 388).

IBRD (ESMAP), A review of the renewable energy activities of the UNDP/World Bank Energy Sector Management Assistance Programme 1993-1998 (Technical Advisory Group, 1999), www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2000/10/07/000094946_00092205342249/Rendered/PDF/multi_page.pdf .

idem, Kazakhstan and Kyrgyzstan - Opportunities for renewable energy development (1997), www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/1999/08/15/000009265_3980429110426/Rendered/PDF/multi_page.pdf.

idem, Kenya implementation manual: financing mechanisms for solar electric equipment (2000).

idem, Energy Strategy for rural India: evidence from six states (2002), http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/03/07/000094946_03012304_145641/Rendered/PDF/multi0page.pdf .

IBRD (GEF), Solar home systems projects: Experiences and lessons learned (1993-2000), http://www.worldbank.org/astae/RSER_Martinot_et_al.pdf.

idem (Infrastructure Group & ESMAP), Energy and Development Report 2000 (2000); www.worldbank.org/html/fpd/esmap/energy_report2000/cover.pdf .

idem (South Asia Energy Sector Unit & ASTAE), India Renewable Resource Development Project (2000).

IBRD & IEA, Renewable Energy Briefing (Energy Note No. 10).

IEA & OECD, Biofuels (Energy & Environment Policy Analysis Series, 1994).

IEA & OECD, Key Issues in Developing Renewables (1997).

IEA, Proceedings of the Conference on Biomass Energy (March 1998, Paris).

idem, Trends in PV Power Applications in Selected IEA Member Countries (Paris, 1998).

idem, Renewable Energy into the Mainstream (Renewable Energy Working Party, 2002).

LAMNET, CARENSA & SPARKNET, Biomass, Rural Energy and the Environment (Joint Position Paper for WSSD, 2002).

Renewable Energy Policies and Market Developments (REMAC 2000), Report (2003); <http://www.renewable-energy-policy.info/remac/document.html>

idem, Impact of Technology Developments & Cost Reductions on Market Growth (2003).

Sjöberg, H., From Idea to Reality – The Creation of the Global Environment Facility (1994).

idem, Restructuring the Global Environment Facility (1999).

WCRE, Actionplan (2002); www.wcre.org.

idem, Summary Description; www.wcre.org.

WSSD, Facts about Energy (2002).

idem, Johannesburg Declaration on Sustainable Development (2002).

idem, Plan of Implementation (2002).

WTO, Trade and the Environment (1999).

2.4 Press

The Economist, The end of the Oil Age (October 25th 2003) p. 11.