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DEVELOPMENT AND TRANSFER OF TECHNOLOGIES

Projects and programmes incorporating cooperative approaches to the transfer of technologies and responses on how the issues and questions listed in the annex to decision 4/CP.4 should be addressed, as well as suggestions for additional issues and questions

Submissions from Parties: Part Two

Note by the secretariat

Addendum

1. In addition to the submissions included in documents FCCC/SBSTA/1999/MISC.5 and Add.1, a separate contribution has been received from Germany (on behalf of the European Community and its member States) and is included in the present addendum.
2. In accordance with the procedure for miscellaneous documents, this contribution* is attached and reproduced in the language in which it was received and without formal editing.

* In order to make this contribution available on electronic systems, including the World Wide Web, it has been reformatted. The secretariat has made every effort to ensure the correct reproduction of the text as submitted.

FCCC/SBSTA/1999/MISC.5/Add.2

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GERMANY

(On behalf of the European Community and its member States)

RESPONSE TO THE QUESTIONS IDENTIFIED IN THE ANNEX OF DECISION 4/CP.4

I. General remarks

In our view, scientific and technological information, access to and transfer of environmentally sound technologies are essential requirements for sustainable development. Given the difficulties of defining broad key concepts of technology transfer (and co-operation), on the one hand, and the importance of understanding how to solve the great number of continuing problems in technology transfer (TT), on the other, the current debate on TT is taking a more practical approach, as the ongoing activities by the FCCC illustrate (see e.g. FCCC/CP/1998/6, FCCC/ TP/1998/1). In this context, the forthcoming EU submission on „co-operative approaches to TT,„ takes stock of the extensive European experience in bilateral and multilateral TT and should provide valuable insights to the points raised by the questions in the annex of decision 4/CP.4, thus also contributing to the Consultative Process on TT as a whole.

As TT is a cross cutting issue to many environmental and developmental themes, this Consultative Process should also draw from the enormous amount of information available, e.g. on the surveys, compilations and proposals on TT done by others, i.e. by the Commission on Sustainable Development (CSD-UNGASS), other UN bodies like UNCTAD and the UNEP Industry and Environment Office (UNEP IE), the International Energy Agency (IEA) and the World Bank.

In these international institutions and fora as much as in the present debate on TT within the FCCC, the EU has always highlighted the central role of the private sector for the transfer and the diffusion of environmentally sound technologies (ESTs). Governments, together with NGOs and with the private sector should focus on the creation of an enabling environment for TT, to stimulate private sector activity and aim at improving the co-operation between private companies and between the private sector and Governments. Capacity building activities – *inter alia* technology needs assessments – are crucial tools to accelerate the development, adoption, and dissemination of environmentally sound technologies. The need for greater assistance on capacity building was recognised in the COP 4 guidance to the Financial Mechanism. Further capacity building activities could also be planned and implemented by the existing institutions and networks on the international, regional, national and local level.

II. Response to the questions in the Annex of Decision 4/CP.4

Issues	Questions	answers (and additional questions)
Practical steps to promote, facilitate and finance, as appropriate, transfer of, and access to, ESTs and know-how		
<p>1. Promote the removal of barriers to technology transfer.</p>	<p>How should Parties promote the removal of barriers to technology transfer? Which barriers are a priority and what practical steps should be taken?</p>	<p>Insufficient local capacity to adequately absorb and manage imported technology, the lack of an adequate policy framework capable of giving incentives for a long-term private sector involvement in environmentally sound technologies (ESTs) and social and cultural barriers are the main obstacles to TT which should be given most attention. Practical steps to be undertaken are:</p> <ul style="list-style-type: none"> • strengthen the local technological capacity of the intervening actors (institutions with supervisory competence, scientific institutions, institutions that provide advice and information to firms, entrepreneurs, NGOs) according to the existing demand. The actor's capacity to identify concrete problems and to elaborate and implement practical solutions should be improved. This can be reached through a great number of activities: designing and implementing training programmes, creating (or stimulating the creation of) informational fora and networks, stimulating the creation of consultancy services and of international partnership arrangements between technology suppliers and users, improving information access for small and medium sized enterprises, etc. • create an enabling environment conducive to support the development and use of environmentally sound technologies. This can be done by designing legal and policy frameworks oriented towards long-term sustainable development objectives, including awareness- raising and poverty alleviation, and towards technology-related private sector investments (e.g. cutting down subsidies for fossil energies, reducing import taxes for ESTs, guaranteeing private investments). Furthermore, the co-operation between governments and the private sector, including financing and education programmes should be strengthened. It may be noted that the enforcement of the existing or upcoming environmental laws and regulations is an essential condition for speeding up the transfer-rate for ESTs in the private as well as in the state sector.

Issues	Questions	Answers (and additional questions)
<p>2. Initiate and promote the transfer of publicly owned technology and those in the public domain.</p>	<p>What publicly owned technologies are available? How could Annex II Parties report upon them? How should Annex II Parties promote the transfer of publicly owned technologies?</p>	<p>As most technologies are privately owned, any framework approach on TT should focus mainly on the private sector. However, a certain proportion of technology is held or owned by Governments and public institutions. The Governments influence over the technological knowledge produced in publicly funded research and development institutions open up the potential for the generation of publicly owned technologies that could be made accessible to developing countries, most successfully if there are specific market requests by those interested. Within development co-operation, priority should be given to</p> <ul style="list-style-type: none"> • better disseminate the broad, publicly available information on the well proven ESTs (see also issue no. 7) and to • the soft skills, i.e. measures that lead to a higher technology and quality awareness at the user, managerial and technical level, measures which stress the importance of quality and ,continuous improvement‘

Issues	Questions	Answers (and additional questions)
<p>3. Promote bilateral and multilateral technology co-operation to facilitate technology transfer.</p>	<p>What additional bilateral and multilateral efforts to promote technology co-operation to facilitate technology transfer should be initiated? What should be the priority?</p>	<p>The answer to this question can only be given after an in-depth analysis of the mid-term trends in technology co-operation, including an analyses of its problems and weaknesses. National reporting (upcoming 3rd national communications by Annex I Parties and initial national communications by non-Annex I Parties) should certainly be the main information sources for such an analysis, although reporting formats on TT (comparability of reports) could be improved, as pointed out by the EU (see document FCCC/SBSTA/1998/Misc. 3.).</p> <p>Requests for technology transfer from developing countries should come as specific and concrete as possible and should be integrated into their national development strategies and also into national communications by Non-Annex-I Parties as pointed out by decision 4/CP.4 (para 5). Technology Partnerships and joint ventures can serve as efficient ‚multipliers‘ that help other firms to identify their technology needs and priorities ensuring that all capacity building activities are concentrated on those areas which are most receptive and which receive local backup.</p> <p>Priority should be given to the activities mentioned in the answer to issue no. 1. It may be noted that the differentiation between ‘environmentally sound technologies’ and other technologies is often artificial. In OECD countries, e.g., more than 80% of the energy efficiency improvement in the industrial sector is done by ‚normal, investment programmes and only up to 20% by special energy efficiency programmes. Therefore, it can be concluded that investment in ESTs depend much more on the appropriate, environmentally sound policy framework than on specialised projects and programmes.</p>

Issues	Questions	Answers (and additional questions)
4. Consider appropriate mechanisms for technology transfer within the UNFCCC.	Are existing multilateral mechanisms sufficient? Are new mechanisms needed for technology transfer? If so, what are appropriate mechanisms for the transfer of technologies among Parties in pursuance of Article 4.5 of the UNFCCC?	Given the great number of existing institutions which deal with technology transfer, the EU believes that there is no need for new institutions or mechanisms. However, the visibility, the quality and the interlinkages of the existing services can be improved. The new guidance given to the GEF by decision 2/CP.4 is an example for such an improvement, since it will expand the relevance of TT in the Financial Mechanisms' work programme. The FCCC secretariat is another actor in this process. The EU proposes to further strengthen its activities in collecting, synthesising and analysing the practical experiences and lessons learned in the promotion and transfer of technology by developed country Parties and developing country Parties nationally, regionally and multilaterally (see FCCC/CP/1998/6). This can be done by the organisation of workshops, collecting information and by the presentation of technical papers. See also issue no. 5.
5. Collaborate with relevant multilateral institutions to promote technology transfer.	What should be the objective of collaboration with relevant multilateral institutions to promote technology transfer and what practical steps should be taken?	The objective should be to avoid duplication of work and to improve and better tailor the existing information to the needs of the users. To achieve this, further progress should be made with the evaluation of the mission and the performance of existing centres and networks on technology and technology information with a view to make concrete proposals to the FCCC. This could build on the work of the existing secretariat papers and other documents. Also, links to existing networks and centres which deal with ESTs (5 th framework programme of the European Union, UNEP, UNIDO, UNDP, national technology centres, etc.) should be analysed with a view to strengthen some of them.
6. Promote and facilitate, in collaboration with the interim financial mechanism, multilateral and bilateral institutions, the arrangement of financing of technology transfer.	What additional guidance should be given to the interim financial mechanism?	The guidance to the financial mechanism, the GEF, is quite extensive and complete. In 1998, the 1 st GEF Assembly in New Delhi formulated a list of recommendations which will serve as a guideline for its further improvement. It should be kept in mind, however, that GEF is only one out of many existing instruments to facilitate the transfer of environmentally sound technologies.

Issues	Questions	Answers (and additional questions)
<p>7. Promote and assist developing country Parties to access technology information.</p>	<p>What sort of information is needed and how can this best be done?</p>	<p>There is broad empirical evidence (see Doc. FCCC/SBSTA1998/INF.2, Doc. FCCC/TP/1998/1, background paper no. 20 for the 6th session of the CSD on the role of information systems in the transfer of ESTs, study of the University of Amsterdam on Transfer ESTs & Practices under the Climate Convention, CTI-Review of existing Technology Information Centres and Networks supporting GHG-mitigation, several UNEP IE publications) that the lack of information on ESTs is a minor issue in TT. While the vast majority of the necessary information exists somewhere, there is, however, a certain disjunction between supply and demand. On one side, some future users of new technologies and know how are reluctant to consider information from vendors and suppliers or to contract information providers. On the other side, it does not always prove easy to get quick and complete access to the specific required information. In consequence, there is a need to</p> <ul style="list-style-type: none"> • strengthen the capacity (knowledge, communication skills) of the relevant actors to look for information and to take best choices as delineated in issue no. 1, • assist the existing local information providers in improving their services („right information at the right time,„) to the relevant actors supporting them to act as honourable information brokers,, (see issue no. 6), • enhance the quality of information disseminated, e.g. by enhancing the connections between the existing networks and by strengthening direct interaction between potential users of technologies and information providers (feedback mechanisms).

Issues	Questions	Answers (and additional questions)
8. Facilitate access to emerging technologies.	How could access to emerging technologies be facilitated?	<p><u>Additional questions before the first question.</u> „How can countries and firms be assisted in selecting ESTs which entail low risks? Which technical, economic, ecological and social criteria should be used for such a selection?</p> <p>Today, a considerable number of developing countries are not passive recipients of technology from the industrialised countries any more. They are not only importing a large number of modern technologies (leapfrogging); experience also illustrates that some emerging technologies such as biomass energy are likely to be developed primarily in developing countries. Access to emerging technologies is an ongoing process within scientific and technological co-operation between North and South but also between South and South which can be further improved.</p> <p>It is important to point out, though, that frequently GHG-reductions will not occur through the introduction of completely new, emerging technological hardware but through the optimisation of the use of the existing machines and resources. This optimisation is generally a very cost effective measure. It often is a necessary step which enables investment in new machinery at a later stage. When selecting new, emerging technologies, decision-makers have to be fully aware of the technical, social and economical risks of their choice. The maintenance services, durability, scales of production or labour intensiveness of some technological options are not always optimised to the needs and capacities of a specific country and require flexible responses by those selecting the respective technologies and those using them.</p>

Issues	Questions	Answers (and additional questions)
<p>9. Facilitate the appropriate role of the private sector.</p>	<p>What role is the private sector playing in technology transfer? What additional role can the private sector play? What barriers prevent their greater participation?</p>	<p>Private business and industry is the primary agent for technology development, transfer and diffusion within and between countries. The fast increase of foreign direct investment/joint ventures and the declining share of public sectors as a percentage of economic activity clearly underlines this trend. Private sector involvement leads best to technology transfer if it does not occur in a hit-and-run manner, but as a long-term partnership. But private entities do not operate in a vacuum. Companies work within a framework of policies set by Governments, including policies developed and applied at the regional and international levels. Therefore, governments can take up successfully activities as delineated in issue no. 1 (see page 2). Joint ventures and co-operation forms between Governments and firms may prove useful not only in channelling concrete private investments into technology and climate relevant sectors but may also contribute to alter other firms' risk perceptions in the medium and in the long run, thus contributing to an increasing and more stable private sector involvement.</p>
<p>Support for the development and enhancement of endogenous capacities and technologies of developing country Parties</p>		
<p>10. Provide technical advice on technology transfer to Parties, particularly developing country Parties.</p>	<p>What technical advice on technology transfer is needed? How should such advice be provided?</p>	<p>Advice on TT for ESTs, where relevant, should be integrated into sector and project specific advice on technology co-operation, where relevant, should be focused primarily on the private sector and concentrate on the so called soft factors:</p> <ul style="list-style-type: none"> • information sharing • managing the national and regional network of change agents • training • encouraging private consultancy • customer-tailored dissemination of information

Issues	Questions	Answers (and additional questions)
<p>11. Promote capacity building in developing country Parties through provision of concrete programmes.</p>	<p>What areas should be the focus of capacity building and how should it be undertaken, e.g. what kinds of activities, programmes and institutional arrangements?</p>	<p>This can not be answered in a general way, but will depend on the problems detected for each single case. Use should be made of existing institutions and arrangements with the objective of building up local capacities and integrating information on ESTs in 'normal' training programmes on technology and management. Governments and donors should always aim at building up sustainable institutions and networks which will have meaningful financial support by the private sector. This implies an active involvement of the private sector in capacity building activities.</p>
<p>12. Assist developing country Parties, on request, to assess required technologies.</p>	<p>How, to whom and in what format should developing country Parties make their request for assistance to assess required technologies?</p>	<p>Without any doubt, the primary role corresponds to commercial mechanisms and to the firm-level. If concessional financing is unavoidable, developing countries should make their requests through the existing bilateral and multilateral (World Bank, UNDP, EEF, GEF, etc.) co-operation channels. However, the selection of technologies should be a matter of concern before a specific technology request to the donor community is launched. A transparent, decentralised and participative decision making process in the host country might often help to secure that best choices are made.</p>
<p>13. Promote and enhance access to relevant technical, legal and economic information at national and regional centres.</p>	<p>What technical, legal and economic information is needed? What practical steps should be taken to promote and enhance access to such information by national and regional centres?</p>	<p>A helpful answer is only possible on a case by case. There could be a need for a better monitoring and evaluation of the existing information centres in order to ensure a customer oriented approach. In the mid and long term provision should be made to help such information centres to involve more private sector support and to become more and more independent from government support. See also issues no. 5 and 7.</p>

Issues	Questions	Answers (and additional questions)
14. Develop a consensus on practical next steps to improve on existing technology centres and networks to accelerate the diffusion of clean technologies in non-Annex I Party markets.	What type of process is needed to develop a consensus on practical next steps to improve on existing technology centres and networks to accelerate the diffusion of clean technologies in non-Annex I Party markets. What type of arrangement is needed to monitor progress?	Non-Annex I countries should specify their technology and technology information needs through their national communications. The secretariat should make a summary of the answers given in this questionnaire. There are also different reports under way, like the IPCC Special Report on Methodological and Technological Issues in Technology Transfer, which deal in great detail with this question and which could serve as a basis for further informal bilateral or multilateral consultations on this issue. The approach and the arrangements will vary for each sector and even within each sector. General approaches do not tackle the problem adequately. The Consultative Process as decided by decision 4/CP.4 should take this into consideration when trying to elaborate recommendations at a later stage.
15. Promote an enabling environment for private sector participation.	What measures, programmes and activities can best help to create an appropriate enabling environment for private sector investment ?	See issues no. 1, 7 and 9.
Assistance in facilitating the transfer of environmentally sound technologies and know-how		
16. Oversee the exchange of information among Parties and other interested organisations on innovative technology co-operation approaches, and the assessment and synthesis of such information.	How should the Convention oversee the exchange of information among Parties and other interested organisations on innovative technology co-operation approaches, and the assessment and synthesis of such information?	<p>The first and very important step is to collect information of best practices in co-operative approaches to technology transfer as was asked for by decision 4/CP.4. The EU intends to submit a compilation on this issue by March, 15th, 1999. This submission and other documents on the same issue (publications by UNEP IE, forthcoming IPCC Special Report on Methodological and Technological Issues in Technology Transfer which will contain many case studies) should be taken up and evaluated by the participants of the Consultative Process' workshops. Nevertheless, experience shows that views are rather different on what really are success-stories and what are failures. Therefore, it might prove helpful not to elaborate an overall synthesis and recommendations for considerations of SBSTA, but to make progress on a sector-specific basis.</p> <p>Further monitoring on the exchange of information should be made through national communications as the established means of communication.</p>

Issues	Questions	Answers (and additional questions)
<p>17. Consider information on innovative technology co-operation approaches and develop recommendations to the Conference of the Parties which could be recognised more formally and widely implemented under the Convention.</p>	<p>How should information be compiled and synthesised on innovative technology co-operation approaches? When should recommendations on such approaches be forwarded to the Conference of the Parties?</p>	<p>The new media is the World Wide Web (WWW), the 'classical' one is the CD ROM. Both contain the vast majority of the needed information on ESTs.</p> <p>Further answers are included in issues no. 7 and 16.</p>
<p>18. Identify projects and programmes on technology co-operation, which can serve as models for improving the diffusion and implementation of clean technologies internationally under the Convention, and to provide information on these projects to the UNFCCC secretariat.</p>	<p>How and when should information on projects and programmes of technology co-operation which Parties believe can serve as models for improving the diffusion and implementation of clean technologies internationally under the Convention be provided to the secretariat? How could information on such model programmes be evaluated?</p>	<p>The EU contributes to this identification by its submission on co-operative approaches to technology transfer (compilation of best practices in the EU) asked for by decision 4/CP.4. The evaluation of such projects and programmes can be done with the usual instruments of monitoring and evaluation, which should include the criteria of economical sustainability, social stability and environmentally soundness.</p> <p>See also issues no. 16 and 17.</p>
<p>Other questions</p>		
<p>19. Can specific technology transfer goals be set? Can we develop indicators and accounting systems to track progress on technology transfer? Are particular institutional arrangements needed to monitor progress?</p>		<p>The setting up of specific technology transfer goals and the elaboration of indicators and accounting systems to track progress on technology transfer, although desirable, will prove extremely difficult due to the complexity of the issues and due to the enormous number of existing/emerging technologies and private actors involved. However, activities in this area could prove helpful in well defined areas (sectoral approach), i.e. in areas where the number of technology options is restricted and where public investments predominate.</p>

III. Views on a framework for meaningful and effective actions to enhance implementation of Article 4.5 of the Convention

(cf. dec. 4/CP.4, para 9)

The answers to the question list in the annex of decision 4/CP.4 indicate the direction into which the EU believes a framework for actions could be elaborated. While it is still too early to draw specific recommendations – these should result from an open dialogue among all Parties during the Consultative Process on technology transfer–, it is the EU’s view that such a framework should neither impose an all-sector, „universal,, approach on technology transfer nor impose reporting obligations on its most important actors, the private firms. It should aim primarily at improving the knowledge of and the communication among all the involved actors and should contribute to more coherent policies in developing countries and in the co-operation between developed and developing countries. For this purpose, capacity building, collection of information and exchange of experience are of the essence. The EU is very open for a discussion of all issues relevant to technology transfer and is looking forward to receive other Parties responses to the questions identified in the annex of decision 4/CP.4.
