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Letter dated 2 February 2001 from the Permanent Representative of Samoa to the United Nations and Chairman of the Alliance of Small Island States addressed to the Secretary-General

On behalf of the Alliance of Small Island States (AOSIS), I have the honour to transmit to you the final report of the AOSIS workshop on climate change, energy and preparations for the ninth session of the Commission on Sustainable Development, which was held in Cyprus from 15 to 19 January 2001 (see annex).

The AOSIS countries would greatly appreciate it if the final report could be circulated as a document of the Commission on Sustainable Development and the AOSIS submission contained in the annex to the report could be brought to the attention of the Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development for consideration.

(*Signed*) Tuiloma Neroni **Slade**
Ambassador
Permanent Representative
Chairman of AOSIS

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Annex to the letter dated 2 February 2001 from the Permanent Representative of Samoa to the United Nations and Chairman of the Alliance of Small Island States addressed to the Secretary-General

REPORT OF THE 3RD ALLIANCE OF SMALL ISLAND STATES (AOSIS) WORKSHOP ON CLIMATE CHANGE, ENERGY AND PREPARATIONS FOR THE 9TH SESSION OF THE COMMISSION ON SUSTAINABLE DEVELOPMENT

1. The third workshop of the Alliance of Small Island States (AOSIS) on climate change negotiations, energy and preparations for the 9th session of the Commission on Sustainable Development was held in Nicosia, Cyprus, from 15 to 19 January, 2001, under the auspices of the Government of the Republic of Cyprus. It was organized by the Alliance of Small Island States (AOSIS) in cooperation with the Division for Sustainable Development of the United Nations Department of Economic and Social Affairs (UNDESA), and Professor Albert Binger of the University of the West Indies. The workshop was generously sponsored by the Governments of New Zealand, Norway and Switzerland. The United Nations and the Global Environment Facility (GEF) provided substantial travel support to a number of participants.

PROCEEDINGS

2. The opening session of the workshop, held on 15 January and chaired by H.E. Mr. Stavros Epaminondas, Chairman of the Organizing Committee, began with a blessing from the Suffragan Bishop of Trimithounda, the Reverend Vassilios. A multi-media presentation entitled "Welcome to Cyprus" was screened. Participants then heard an address by H.E. Mr. Costas Themistocleous, Minister of Agriculture of the Republic of Cyprus. H.E. Ambassador Tuiloma Neroni Slade, Permanent Representative of Samoa to the United Nations, gave his opening remarks and introduction, in his capacity as Chairman of AOSIS. H.E. Dr. Ioannis Kasoulides, Minister of Foreign Affairs of the Republic of Cyprus, delivered the featured address and formally declared the workshop open.

Working session 1

3. H.E. Ambassador Sotirios Zackheos, Permanent Representative of Cyprus to the United Nations, chaired the session. He introduced Mr. J. Gururaja from the United Nations Department of Economic and Social Affairs, who presented a brief overview of the CSD process and the milestones so far. He outlined the process that would take the result from this and other meetings forward to conclusions at CSD9. He explained that before CSD9 there will be a set of case studies prepared, and that 25 have been completed so far. These will go through the lessons learned in the context of policy, and have been analyzed by a number of experts. He also spoke of the areas which the Secretary General's report has been considering. These are the key issues, namely:

a) Accessibility of energy
b) Energy efficiency
c) Renewable energy
d) Advanced fossil-fuel technologies
e) Nuclear energy technologies
f) Rural energy, and
g) Energy and transportation.

4. In addition there are other overarching issues such as capacity building, financing, technology transfer etc. The Secretary General also provides a list of options for regional and international cooperation, and seeks to establish the framework for discussion between consumers and producers. It is important to be innovative and pragmatic, and for these reasons the report is also looking at energy charters and treaties.

5. Professor Thomas Johansson, of the United Nations Development Program, described the efforts of the World Energy Assessment (WEA). The WEA is a joint initiative between UNDP, UN DESA and World Energy Council. They have discussed and prepared the input to the process leading to CSD9. A major report was being prepared, which is now in the outreach phase to get the views of stakeholders. A main issue of focus is the links to other aspects such as socio-economic activities, health, security and so on. Population growth and economic growth often is accompanied by growth in energy use. Electricity use is linked to economic growth more than population. 2 billion people have no access to electricity, while another 2 billion have unreliable electricity. This presents a heavy burden on millions of women and children. There are great demands for change through health reasons alone. Environmental damage is also caused by certain energy usage, thus creating others demands for change. The magnitude of the changes needed is not small, and the challenge is to find balance between the different priorities and factors.

6. Conventional gas and oil could last 50 to 100 years, with other fossil fuels being on line for several hundred years. Renewable energy flows is potentially 1000 times greater than current electricity use.

7. The WEA talks about sustainable energy – usage that supports human development in all aspects. It looks at scenario developments while trying to develop and evaluate different combinations and assumptions. In looking at markets, the WEA has analyzed the motivation chain, and at reform of the energy sector to reflect full cost. One must also look at the innovation chain, getting new technologies on the markets. Need early deployment of technologies, requiring public-private cooperation. Report looks at some of the good ideas from around the world, such as renewable portfolio standards, sunset clauses for subsidies, concessions, green pricing, etc.

8. Trinidad and Tobago, Grenada, Mauritius, Jamaica, Barbados, Samoa, Saint Lucia and SOPAC made statements.

9. The discussion touched on options for energy efficiency and new technologies. The need for the biggest emitters to take action was raised, as the contribution of SIDS to the problem of climate change was acknowledged as miniscule. Behavioral changes in industry and transportation would be required, and SIDS Governments could play a moral role in highlighting the success stories as well as the obstacles, in their own countries and in the developed countries.

10. The technology for carbon sequestration was described as a can of worms, given that the storage may not be permanent. Sequestration can not be guaranteed. It was observed that the global energy question is complex from any point of view, but SIDS will continue to have problems with the changes that are needed. For this reason SIDS needed the BPoA and the 22nd special session, to show how SIDS and the international community implements these programs and move to regionally relevant projects. There is a high dependence on inherited technologies in SIDS. Is the UN doing anything specific for SIDS? Technology transfer slips out very easily, but how can we implement this in practice.

11. Dr. Pauulu Kamarakafego, INSIN, Bermuda, began his presentation by referring back to the NGOs present at the Barbados Conference and their initiatives. He discussed in detail the situation for those SIDS not able to use their own renewable resources, and who are dependent on fossil fuels and the impact of oil markets. The inflation rates in Bermuda rapidly increased as a result of the doubling of oil prices recently. This economic change is extremely disruptive and not sustainable. Renewable energy does require start up costs often outside SIDS capacities. Globalization has not assisted SIDS in achieving energy fairness. Two-way fair trade would assist SIDS greatly. One form of renewable energy could not be enough, but rather a mix of policies and systems. Two areas were highlighted – biomass and fuel cells. Integrated systems, especially for those without rivers for water supply, could be particularly interesting, if such an integrated system will assist us in phasing out fossil fuels.

12. Energy from waste especially from agriculture and combined cycle processing should be pursued so as to find suitable applications for SIDS. Private and public partnership is needed. There are many skills in the SIDS and we need to call on these experts, using existing institutions.

13. Dominica, Grenada, Palau, Barbados, Cook Islands, Marshall Islands, Trinidad and Tobago, Antigua and Barbuda, Samoa and UNEP made statements.

14. The discussion focussed on utilization of existing resources to optimum use, energy efficiency in SIDS, and the need to consider agricultural waste as a resource. A roster of experts was deemed highly necessary, especially if SIDSNet could become involved.

Working session 2

15. H.E. Ambassador Jackeo A. Relang, Permanent Representative of the Republic of the Marshall Islands to the United Nations, chaired the session. He introduced Mr. Espen Ronneberg, Inter-regional Advisor for SIDS, UN DESA, who spoke about the role of the Barbados Program of Action (BPoA) and the work of the SIDS Unit of DESA. The BPoA provides a sustainable development blueprint for SIDS, and has significant coverage on energy and climate issues as they pertain to SIDS. The work of SIDSNet was also discussed, particularly the desirability of having a searchable roster of experts and successful projects for sustainable development in SIDS reported on. CSD9 would be an important opportunity for SIDS to press for their concerns and to discuss options for financing sustainable development projects.

16. Professor Albert Binger of the University of the West Indies presented some of the concerns that he had been studying, and began by stating that there is no universal definition of renewable energy, and when considering sustainable energy we need to match this with the energy needs. There are four main categories for purposes of the discussion:

- lighting, television, communications
- transportation, primarily cars for SIDS
- cooking services
- all the aspects related to industry

17. It is important that we understand the needs in order to get to the services required, and we must look at the gaps between the resource base and the services available. The choice of energy resource to develop determines the dollars left for other investment. The economic costs of developing the resources should not disrupt the wellbeing of the economy. The example was given of sugar cane in Cuba with an energy sector driven by petroleum. For each ton on sugar one was able to purchase 100 barrels 35 years ago, but now it is 10 barrels. If we are paying too much for our energy, then we need to use it more efficiently – mostly at 40-50%. The energy crisis in the 70's saw many countries start up energy sections, but this may have prevented an integrated approach to energy by giving responsibility away from all sectors. Electrical use is a greatly divisive and important socio-economic issue. Costs of kilowatt-hour shows that ability to compete is greatly lessened for SIDS. Costs of financing, costs of labor, high energy costs, etc. The difficulty will be to put all of this together, in a manner that will combine constraints, and achieve sustainability. If climate system continues to impact us then the energy sector will have to become a part of the discussion. SIDS need to consider new energy paths for sustainable islands. Energy requires a new paradigm. We must approach the question from the aspect of energy services not as size of energy supply, then fill the gaps between the needs and the supply. Existing structures of governments must be altered or modified to allow governments to understand the energy path.

18. Saint Kitts and Nevis, Samoa, Barbados, Dominica, Antigua and Barbuda, Fiji, Grenada, Jamaica, Cook Islands, New Zealand, Mauritius and Trinidad and Tobago made statements.

19. The discussion drew attention to a number of concerns over the availability of financial resources for sustainable development projects in SIDS. Privatization has often resulted in a state monopoly being replaced by a private monopoly, as the private sector in most SIDS has been too small to really establish a private competitive market on the scale required for power companies. The addiction of SIDS to petroleum products was such that a move to a new energy agenda for SIDS was needed. Many speakers called for more research into appropriate applications of waste to energy, and other renewable sources of energy to fit the special situation of SIDS.

Working session 3

20. Mr. Spencer Thomas of Grenada chaired the session. He introduced the regional presentations. Mr. Sok Appadu, Mauritius Meteorological Service, has looked at the renewable sources of energy in the Indian Ocean, especially in the case of Mauritius. Mauritius has produced an action plan with climate change as its main focus. Solar energy has been identified as one of their main sources. More than 90% of energy uses in the past was from fossil fuel, constituting a large proportion of foreign exchange. The need to diversify their energy base was clear indication of preference for solar energy, but also for biomass using the sugarcane. The government has developed solar intensity mapping for many parts of the country. The project that developed as a result was able to provide electricity straight to the grid.

21. One of issues that had to be addressed was the need to use certain criteria for site selection and use materials that could withstand the cyclone-strength winds and saline corrosion. An important lesson learned is that this technology can be done in all SIDS, but it is the start-up costs that is the determinant.

22. Statements were made by Suriname, Fiji, Cook Islands, Papua New Guinea, Marshall Islands, Barbados, Tuvalu, Samoa and INSIN.

23. The discussion focussed on getting the right equipment for the local circumstances, and the need to avoid outdated or unsuitable materials and technologies. The numerous bad experiences could be equally important in the sharing of information. While start up costs may be high, and financing difficult, the consensus remained that the overall effects would far outweigh the initial difficulties.

24. Mr. Alf Simpson, Director of the South Pacific Applied Geoscience Commission, based in Suva, Fiji, introduced the submission that the Pacific region would be making to the CSD. It was a joint effort of the region's countries, organizations and producers. The regional specificity has to be borne in mind. In the Pacific there are 6 million peoples spread over several thousands of islands. There are three main types of islands – coral, high limestone, volcanic. The climate is fairly constant, and there is a large variety of land areas, with mostly a high ratio of sea to land. Varying economic bases, but mostly dependent on fisheries and agriculture. Energy imports have high percentage of foreign exchange. The Pacific paper followed the questions from the Secretary General paper. The region has endorsed the paper. Introduction describes the high reliance on fossil fuels and the regional peculiarities. Large start-up costs to be reduced. Many countries have projects, but is concerned over ensuring the reliability of the energy supply is important for stability. National policy development is seen as important to get the accessibility question settled. Rural energy must be made affordable but is difficult without innovations such as rural energy service companies. There is a need for proper databases for getting the right systems. Financing remains key problem. Wants to see true cost of energy reflected in the price. Energy efficiency has been showed to have great potential yet is not always promoted. The need for international cooperation and capacity building, data collection, and appropriate regional cooperation arrangements was imperative.

25. Mauritius, Marshall Islands, Samoa, Cook Islands, Tuvalu, Palau, Antigua and Barbuda, Belize, and INSIN made statements.

26. Public awareness and participation were raised as some of the key prerequisites for a successful project. The need to involve the communities in order to find the right mix of approaches was also seen as important, when considering which types of solar panel for example. Energy efficiency was widely recognized as an immediate course of action for many SIDS, yet there are still obstacles - often of a very localized nature - that prevents implementation. There is clearly a role for regional cooperation and standard setting in order to promote the appropriate technologies. The discussion also raised a number of ancillary problems such as the disposal of batteries, etc.

27. The Chairman then gave the floor to Professor Albert Binger to set the regional context for the Caribbean. This is very much one of dependence on tourism and exploitation of the natural resources. The region is very dependent on energy-intensive industries. And while it has a greater population and is less spread out than the Pacific, there are probably a greater amount of remittances from outside the region. One also need to bear in mind that tourism is not reflected in export earnings. Production varies greatly in the region, and Cuba has highest production. Consumption is also varied. 80% have access to good electricity, but the question is the cost, relates to household income. So while there may be grid, people can not afford complete use and access. Large foreign debt in some countries dictates to the ability to make proper investments in the energy sector. Biomass technology for bagasse is varied and could be greatly increased. Inefficiency of fuel use, almost 40% in some cases, is common. Renewable energy in the Caribbean is really only a serious undertaking in Barbados, which has solar water heaters in almost all households. Energy costs are often associated with high import taxes in some places, and import taxes should be considered for exemption. The result has been a high cost for electricity in most Caribbean countries. Efficiency should be the most important.

28. Transport costs is highest per passenger and freight. Only Cuba has railroad transport. There is a lack of good public transport, and there are too many re-conditioned used cars. Significant work on policy development is required, but also on public attitudes. The example of Chattanooga, Tennessee was raised. This was one of the most polluted cities in the US, and now it has electric buses. This could be a simple solution for SIDS, with very good technology now available. Policies need first a serious review of the current practice and its relationship to sustainable development. There are local employment opportunities for using renewable energy. Fixing efficiencies can also greatly reduce the energy costs. No regional university has a graduate program in energy. SIDS institutions need to cater to our needs.

29. Samoa, Jamaica, INSIN, Marshall Islands, SOPAC, Antigua and Barbuda and Barbados made statements.

30. The discussion focussed on the need to take the most appropriate option, to address renewable energy simultaneously as energy efficiency is improved. The need to have

regional centers of excellence and to utilize existing expertise was also raised. The energy future for SIDS would have to take full account of existing and potential sources in order to assist sustainable development.

31. Three working groups were convened to discuss the presentations, the reports of the Secretary General and ways and means to address the questions posed.

Working session 4

32. Mr. Bishnumarine Tulsie, Saint Lucia, chaired the session. The meeting heard the reports of the working groups, and delegations made statements and comments. The discussion focused on synthesizing the input into recommendations. Particular concepts such as a green tax, the problems of multi-island SIDS versus single islands, rural versus remote, and the need for fully integrated projects were discussed in detail. Special consideration for funding of projects in SIDS was also highlighted. The Secretariat collected all the views and presented a text.

33. The working groups were re-convened to look more closely at the recommendations for an energy agenda for SIDS.

34. The working groups felt that some priority considerations need to be given by AOSIS, so that the group can advocate these positions better at CSD9. It was seen as important that specific mention be given to energy from the ocean – wave, tidal, OTEC. The groups also wished to see financial means for implementation specified, as well as support for public education and awareness. The use of updated means of telecommunications was also encouraged, and in this regard the groups felt that the equation was seen as a means of communication between SIDS, using SIDSNet. Projects are often too small to attract financing, so there is a need for regional approaches. New funding was also seen as unlikely, so it was argued that to continue with GEF was prudent, but with the special needs of SIDS to be given recognition. It was also seen as important to place the proposed energy agenda in the context of sustainable development and globalization, with changes in economic growth and pricing issues to be included. The groups saw the need to give appropriate advice aimed at adapting SIDS economies, especially in addressing the changes that will be caused by climate change. Benefits for an energy agenda for SIDS as a framework was thus becoming clearer. The groups highlighted that SIDS must set their own sustainable development agenda. This will entail more effective mobilization of resources, fostering inter-regional initiatives, especially for those with common circumstances. The groups also saw the need to establish a SIDS energy fund to be run by SIDS as important.

Working session 5

35. The session was chaired by Dr. Faizal Yahya, Singapore. The session was devoted to a line by line reading of the Secretariat paper.

Working session 6

36. The session was chaired by H.E. Dr. John W. Ashe, Antigua and Barbuda. The Chairman introduced a distinguished panel to elaborate on some of the issues relating

to an energy agenda for SIDS. Dr. Mark Griffith, Secretary of the Scientific and Technical Advisory Panel of the GEF, described the opportunities for financing of projects under the GEF, for renewable energy as well as for adaptation. He described the various successes, and pointed out many of the available avenues for financing.

37. Mr. Tom Twining-Ward, Environment Advisor, UNDP Samoa, further elaborated on the need for energy issues to be given greater prominence, and for financing to be improved. Energy services at present only reaches most rural areas only at great risk or cost. All the facilities that are considered as essential must be put in place. Renewable energy should be put into policy and into action in the SIDS. External assistance will be a prerequisite. All future development must build on the lessons in the past, and account for the failures. In addition the regional approach must be promoted.

38. Al Binger elaborated on his goal to promote the well being of all peoples, personally. There is a great deal of cheap labor, yet to improve quality of life we must produce results. He raised the example of sewage in Dominica, and the Government decision to put in a new system for 20,000 people at the costs of 25 million. Sewage to Professor Binger is raw materials, and he could see far better uses for the estimated 500 000 gallons of sewage. He could see it produce a half million cubic feet of methane and 8 tons of organic fertilizer and nutrient rich water for irrigation. His second case was in defense of OTEC, as it is one technology that gives goods and services beyond energy. He briefly explained the system, especially the potential for the desalination combination. Byproduct at the end is nutrient rich water from aquaculture and mariculture. He also raised the issues pertaining to the household sector, and the use of biomass. There are many tropical plants that provide good oil for cooking. Can be pressured as cooking gas, with a by-product to be used for animal feed. Many such biofuel projects can be used in degraded lands.

39. The Chairman then requested the meeting to turn to the revised Energy Agenda for SIDS, which was introduced by the Secretariat. The Chairman went through the text section by section. The paper was the approved, pending some linguistic corrections.

Working session 7

40. The session was chaired by H.E. Dr. John W. Ashe, Antigua and Barbuda. The session was dedicated to the GEF Capacity Development Initiative, and the subject was introduced by Avani Vaish, GEF Secretariat. He explained the basis for the initiative and how the GEF was looking to assist the countries with capacity building. The initiative is a process that would seek to find the ways for capacity building to occur. It first went into a generic needs assessments of capacity needs around the world. SIDS were given its own assessment. Based on these needs assessments, a strategic action plan will be submitted by May 2001 for the GEF Council. It is hoped that the process will result in a responsive tool for the countries. There will have to be some country specific assessments within this framework, in order for it to work. The guidance of the FCCC and CBD is also a governing factor. The conventions both give priority to SIDS, and CDI will also.

41. John Hough introduced the synthesis of the CDI process so far. The analysis has involved convention submissions, discussions, questionnaires, regional workshops, interviews, and has resulted in a lot of material for the experts consideration. The first question that arose was to look at what the priority issues were. These were listed as priorities under the conventions, and under CBD these were found to be reasonably narrow. Similarly under the FCCC there was a rather narrow range of priorities. The global priorities may not necessarily fit in with the SIDS, but will require reassessment in light of national assessments.

42. It was found that the capacity needs at the country levels there was a variation in details and importance between the regions. However the requirements for assistance showed a lot of cross-convention synergy. In addition to the common issues, there are a lot of issues at the systemic levels. The institutional context is also important, in looking at enabling environments and the array of institutions set up by Governments. They had found that awareness and knowledge across institutions, as well as cooperation across institutions needs serious improvement. The involvement of all stakeholders across sectors is important. Within the context of regional cooperation, it was found that the countries usually preferred to stay within region and not to go to the inter-regional level. But for SIDS this may not be the case.

43. He concluded that the first steps must be locally driven participatory, resulting in a detailed capacity self-assessment. Second, there is a need for support mechanisms, such as tools and indicators, skills and institutions to measure the whole process – even if these are undeveloped or non-existent. Third, financial support is needed for capacity building. Fourth, all GEF projects should include goal oriented capacity needs assessments.

44. Al Binger reported on the specific findings relevant to the SIDS. Essentially the key issues are the financial constraints, the policy framework being inappropriate, lack of skilled technical people, and this relates to how the decisions are made. A very big concern is natural disasters and the degree of damages that can be caused. Adaptation to climate change was considered as a major issue. What are the key issues to ensure the capacity building, was a question most often asked. There a lots of these issues raised in the context of national communications. Mitigation strategies were noted as needed to be in place as part of the moral voice. Need to vastly improve the networking capacities.

45. In the discussion that followed the point was made that IPCC have said that the first signs of climate change would be an increase in extreme weather events. The connection between observed events and climate change will have to be recognized by SIDS, and SIDS will have to try and build on what work is underway. The next steps in the FCCC process will have to be of great environmental integrity, while the Kyoto Protocol will only result in around 5%, and is but a small step. This is required to be borne in mind given that the problems will get worse, and as such there is a need for capacity at several relevant levels that looks at disaster management. Need to really start at the bottom of the ladder with some fairly basic issues of capacities. It

was also noted that SIDS needs should not be used as an excuse for agencies to create the capacity development of consultants.

46. Kanta Kumari from the GEF Secretariat, spoke of her work leading a joint team to draft the strategic action plan. The work is still under development, but useful to get the input from the countries. They had been focussing on what are the pathways that the GEF can take to assist under the CDI. The countries have to be in the driving seat. They must involve all stakeholders, and seek to take an holistic approach. Must be coordinating the efforts within countries and among the donors. Not just focus on short lived products but on longer term approaches. To date we have had too much project based capacity building, and this needs to move into a program attempt. Regional centers of excellence were seen as key to the implementation. She then set out some of the tasks that the GEF would like the working groups to consider.

47. The working groups reported back to the plenary.

Working session 8

48. The session was chaired by H.E. Dr. John W. Ashe, Antigua and Barbuda. The working groups reported back on the discussions. A lot of the discussions focussed on the issues relating to current GEF interaction with SIDS. Indicators of impact are needed, so as to enable countries to measure where matters stand. The country team approach is useful for countries with limited resources and provides ownership for projects. Need to keep the country driven nature of capacity building, not just a checklist of GEF priorities. It must state the desired outcome. Clear time frames are needed. Country level funds were discussed, and ways and means to expedite the disbursement. There was also a need to look at clearly defining the roles of the implementing agencies vis-a-vis the executing agencies. The need to look beyond incremental costs for capacity projects was stressed, and it is likely to be full agreed costs for these. Training of the trainers would be useful element, as would support for regional centers. Also consider regional groups or pools of experts.

49. The small grant scheme was discussed, and there was seen as needed to overcome or bypass the bureaucracies. Government and UNDP inter-action could be cumbersome. A national committee should be charged with coordinating stakeholders to benefit from expedited procedures. SPREP was highlighted as an example of regional cooperation that expedites the procedures for disbursement of funds. Regional organizations are in a good position to gauge capacity development needs. These could be the initial focal points for the needs assessments in the start-up phase. Need to also keep open options for future funding for capacity building. Inter-regional exchange and cooperation between the SIDS, e.g. for attachment to organizations, scholarships and other innovative measures.

Closing session

50. H.E. Ambassador Sotirios Zackheos, Permanent Representative of Cyprus to the United Nations, chaired the session. He stated that it was his impression that the meeting was ready to adopt the recommendations, and this was done by acclamation.

51. H.E. Mr. Nicos Rolandis, Minister of Commerce, Industry and Tourism of the Republic of Cyprus was asked to say a few closing remarks. The Minister announced that Cyprus is proceeding with two new programs for renewable energy, especially focussing on photovoltaic and wind energy. The photovoltaic equipment is for self-generation by households, for them to use and to sell their excess to the grid on a two-way basis through the power meter. The windmills are for grid also, but on a larger scale. The Minister anticipated that Cyprus can reach the EU target of 12% of renewable energy by 2010. The Minister was delighted to be here for the closing session of the important work. There is recognition that too much reliance on petroleum is too disruptive to the economies. Oil is a considerable burden at 70% of many countries earnings. The Governments are also sensitive to the environmental criteria, knowing full well that energy plays such a key role. It is imperative that the issues of climate change and energy are considered together. Many noteworthy initiatives like this one that infuse new drive into the process. This was an excellent opportunity for SIDS and experts to discuss. In closing the Minister thanked the speakers, the organizers and AOSIS.

52. The Chairman of AOSIS, H.E. Ambassador Slade, quoted an old Samoan proverb, that when the heart is full, the tongue stumbles. The participants have been overwhelmed by the welcome, and by the highest care and attention. All requests have been given due attention. He asked the Minister to convey to the Government the deepest gratitude of AOSIS. It was a fitting tribute to the officers of the Government to note the very impressive efficiency and the performance of the staff. The quality is an example of capacity achievement that all SIDS would like to take home. The workshop was highly successful because of the quality of the presentations and the discussions. Personal and professional contacts have been established. AOSIS was created to assist SIDS in taking initiatives in areas of concern, and to bring these to the international community. We are as strong or as weak as we wish to make it. Therefore we must take these initiatives. In closing he thanked the donors and the secretariat. He said that the Minister has adequately summed up the issues of the workshop, and thanked the Cyprus Government for offering to ensure that Cyprus would be the link of all SIDS to the EU.

53. H.E. Ambassador Stavros Epaminondas thanked the workshop participants on behalf of the organizing committee. Cyprus was pleased to welcome the participants.

54. The Secretariat and Saint Lucia thanked the Government of Cyprus on behalf of all, and wished to convey the sincere appreciation of all the participants. As Small Island Developing States with big problems, the group was so very graciously accommodated, and will be eternally grateful.

55. The Chairman then declared the meeting officially closed.

CONCLUSIONS AND RECOMMENDATIONS

Development of the AOSIS Submission to CSD9

56. The participants considered the range of energy issues in the context of the specific subject headings proposed by the Secretary General report. The results of these considerations are contained in the text set out in annex 1.

57. The participants agreed to submit that text as the AOSIS contribution to the 9th session of the Commission on Sustainable Development. It was agreed that the submission should form the basis of AOSIS negotiating strategy.

58. The participants considered that the importance of the energy and sustainable development issues confronting SIDS were of such a serious nature. They endorsed the notion of developing a specific energy agenda for sustainable development in SIDS. A conceptual outline was drafted and discussed. Participants were of the view that further in-depth consideration should be given to this draft, for future action and possible discussion at an opportune moment, including at the forthcoming session of the CSD.

The GEF Capacity Development Initiative

59. Participants welcomed the progress reports by the GEF Secretariat. They paid tribute to the work of the SIDS consultant, Professor Albert Binger, and requested the GEF Secretariat to continue to liaise with AOSIS on this very important issue. It was also recommended that the GEF continue to give priority consideration to projects from SIDS in the program areas currently funded, especially for projects that have additional sustainable development benefits for SIDS, or which can be utilized as demonstration projects. Such an approach would also be useful for the implementation of the CDI in the future.

60. Participants were of the view that expedited procedures and clarification of the roles of the implementing agencies vis-à-vis the executing agencies of the GEF system would be beneficial to the overall efforts of the international community to support sustainable development in SIDS. They encouraged the GEF to continue its outreach efforts and to develop closer relationships with AOSIS, its Members and the SIDS regional organizations.

61. Participants noted that for the CDI to be a successful venture, and in order to maintain the country-driven elements of the CDI, it would be important to hold in-depth national and regional consultations with SIDS, to be complemented by an inter-regional approach at the level of AOSIS. Financial and technical support from the GEF would be required in this regard.

62. Participants urged the AOSIS GEF Council Members to keep the CDI under close review, and to provide the GEF Secretariat with further input from AOSIS as appropriate. They also requested the GEF Secretariat to keep AOSIS informed of any new developments in regards to financing and technical cooperation.

Future work and strategy

63. Participants welcomed the working procedures adopted by AOSIS whereby information of relevance to Member Countries would be shared directly with national focal points as well as the Permanent Missions of their countries in New York.

64. Participants also welcomed the presence of the representative of the Secretariat of the International Scientific Council for Island Development (INSULA), which operates under the auspices of UNESCO, and recognized the need to forge stronger links with INSULA. They expressed the hope that INSULA would be able to participate in future workshops of AOSIS, and that closer cooperation will be discussed at an appropriate occasion.

ANNEX
AOSIS Submission to the CSD 9

I. INTRODUCTION

1. Small Island Developing States (SIDS) continue to share a common aspiration for economic development and improved living standards while at the same time remain strongly committed to conserving the natural and cultural heritage upon which their future depends. Participants at the workshop recognized that while there are some differences of situations among them, there are a vast amount of similarities.

2. The context of the discussion was the need to focus international attention on the unique and special constraints and concerns of SIDS. SIDS are vulnerable to economic as well as environmental shocks. In addition to the problems faced by most developing countries such as lack of financial resources, SIDS face a unique combination of challenges in making the transition to sustainable development. Among the many constraints are fragile natural environments, little resilience to natural disasters, growing populations, isolation from markets, a narrow resource base, difficulties arising from economies of scale, and high cost for energy, infrastructure, transportation, communication and access to other services.

3. In recognition of the special situation of the SIDS, the United Nations convened the first Global Conference for the Sustainable Development of SIDS in Bridgetown, Barbados in 1994, that adopted the Barbados Program of Action (BPOA), a non-binding, comprehensive blue print for action for the sustainable development of SIDS. The BPOA translates Agenda 21 into specific policies, actions, and measures to be taken at national, regional, and international levels to enable SIDS to achieve sustainable development. At the Barbados Conference participating Governments also adopted the Barbados Declaration, a political document, meant to promote and uphold the BPOA.

4. To mark the fifth anniversary of the adoption of the BPOA, the United Nations convened its twenty-second Special Session of the General Assembly (UNGASS) in September 1999, to review and appraise the implementation of the BPOA. The Special Session also undertook an analysis of the BPOA with regard to achievements and setbacks, and identified a number of future possibilities for SIDS in their endeavor to achieve sustainable development. The analysis highlighted the impact on SIDS of trade liberalization and globalization, the erosion or loss of preferential treatment in economic relations or both, and the special vulnerabilities of SIDS. It was against this background that the participants considered the vulnerabilities and the sustainable development priorities for SIDS, building on these internationally agreed commitments.

5. One of the most serious environmental threats to SIDS is the continued increase in greenhouse gas emissions, which threaten their very existence. Most SIDS are highly vulnerable to increased sea level rise – the entire territories of ten SIDS are barely one

meter above sea level. All SIDS have highly vulnerable coastal zones where the majority of the population live and work.

6. AOSIS members are the "frontline" states in every sense. They now suffer and expect to suffer in the most direct way the full range of climate impacts – increased cyclones, droughts, hurricanes, typhoons and coral bleaching among them. All are increasing in their frequency, intensity and impacts. It is impossible to cope adequately with these shocks. And it is not just these direct extreme climatic events that confront and will affect SIDS. There are serious economic effects – such as disruptions to food security, to the tourism, fisheries and agriculture sectors, to water supplies, which will be affected by salt-water intrusion, and the diversion of economic resources to reconstruction. The significant challenges facing SIDS have been identified as part of necessary climate change adaptation policies, which will need to consider the following:

- Loss of revenue across productive sectors.
- Loss of agricultural production.
- Shifting of fishing grounds, fish catch and overall impact on total stocks.
- Bleaching and death of coral reefs.
- Damage to infrastructure and accelerated coastal erosion.
- Availability and quality of freshwater resources, contaminated by saltwater intrusion, reduced by drought and changing weather patterns.
- Increased diversification of the economy to improve resilience, in an already difficult international context for SIDS.
- Social and cultural disruption, displacement of populations and adverse effects on traditional systems and human health.

7. While SIDS are thus recognized as the most vulnerable to climate change, they have made the smallest contribution to its causes. It has been estimated that SIDS are responsible for producing approximately one quarter of the per capita CO_2 emissions attributable to the average person world wide. This is miniscule by international comparison. For example the Pacific Island Countries account for some 0.03% of the global emissions of CO_2 from fuel combustion despite having only 0.12% of the world's population. This can be compared to the OECD countries, which, with only 20% of the world's population, are responsible for over 50% of the total global emissions from fuel combustion.

8. In addition to the climate change stress, further stress on the island system is occurring as countries develop. Their reliance on fossil fuels has increased, in particular for producing electricity, and transportation seems to be the fastest growing consumer of petroleum, including sea and aviation transport. It is therefore important to acknowledge that in providing access to energy sources, in particular electricity, there is significant opportunity to utilize renewable energy sources. Although renewable energy technologies such as solar, hydropower, biomass and to a lesser extent wind have already been utilized in a number of SIDS to improve, communication, health, education and some small cottage industry, there remain

significant opportunities and potential to further develop these and other renewable energy resources. At the same time it is quite apparent that there are also major opportunities for improving energy efficiency in SIDS, and that this should be considered in parallel to renewable energy development.

9. There are a number of significant constraints and barriers to the exploitation and integration of these renewable energy technologies into the urban and rural sectors. The SIDS are for the most part heavily dependent on fossil fuel based systems of energy generation. These are frequently environmentally and economically unsustainable and not accessible to many remote communities, raising serious social equity concerns. This dependency makes them vulnerable to increased costs and uncertain supplies which slows the sustainable development of SIDS, particularly in rural areas and remote islands.

10. It is imperative that the SIDS are provided financial and technical resources to assist in development of their strategies and priorities for the exploitation and use of new and alternative forms of energy. International, regional and bilateral cooperation are important to ensure the promotion of energy conservation, improvement of energy efficiency, adoption of renewable energy technologies, and the development and dissemination of innovative energy-related technologies.

11. In recent years the need for and importance of the energy sector in the SIDS regions has increased significantly. The essential role of energy sources for economic and social development and the increasing need to reduce negative environmental impacts is paramount. Furthermore, the need for sustainable patterns of production, distribution and utilization of energy are of critical importance to the above-mentioned objectives, and are among the issues facing the challenge of energy for sustainable development.

12. In terms of energy imports, the Pacific Islands energy imports account for 15-25% of their total imports and over 40% of the gross domestic commodity exports. A Pacific Regional Energy Assessment (PREA) (1992) report showed the tremendous impact of petroleum imports on the economy. The ratio of petroleum imports to total export earnings is very large for most Pacific Island Countries, between 40 - 80%, and alarmingly so for some countries where the figures are as high as 500%. This constitutes a dangerous dependency situation, for in case of major market fluctuations due to global shortages, rising prices, conflicts or other causes, the consequences for SIDS would be dramatic.

13. Energy consumption is often regarded as an important indicator of economic development of a nation. It is feared that excess commercialization and inequities between the urban and rural communities will result if inappropriate mechanisms are used in the development of energy resources in SIDS. SIDS must therefore be assisted in finding more appropriate energy futures. For this reason, SIDS are advocating the development of an energy agenda for SIDS to assist them with

sustainable development. A conceptual framework of such an energy agenda is currently being developed.

II. KEY ISSUES

A. Accessibility of Energy

Situation and Challenges

14. Accessibility of energy varies widely within and between the SIDS regions. It is estimated that in the Pacific Island Countries approximately 70% of the people do not have access to modern energy services, with many of these people living on remote islands or in isolated rural areas. This is a greatly different picture to the global situation where approximately 30% are without access to modern energy services. Meeting the basic energy requirements and sustainable socio-economic development needs of people with subsistence incomes remains a top priority. In other regions there is less of a problem of access, but rather of affordability. Accessibility to energy should be considered together with the reliability of supply and the affordability of prices. Accessibility is also closely linked to the issue of energy security. Storage capacity should also be improved to minimize disruption in countries where it is a frequent occurrence. For SIDS that means one must first consider petroleum, and then look at storage, transport and quality. Some small communities are not well served, and it is recognized that energy efficiency could assist in lowering prices and hence accessibility in these rural areas and remote islands. At the international level regional measures of cooperation is desirable. One example is the San Jose Accord, which could be considered in other regions where such measures are feasible. As far as possible such arrangements should be pursued. Recognizing that the whole issue of accessibility would be improved by greater use of renewable energy, participants stressed the need to look at capacity building, management and financing.

Strategies and Recommendations

15. In considering energy accessibility at the regional and national levels the following main strategies and recommendations have been identified:

(a) Provision of reliable energy markets that can generate a profitable income for producers, while protecting the consumers.

(b) Introduction of sustainable energy supplies in rural areas and remote islands to increase the standard of living of rural dwellers and in generating economic activities.

(c) Establishing greater reliability of the energy supply at an affordable cost.

(d) Utilizing renewable natural resources, such as solar, wind, biomass, hydro including mini-hydro, geothermal, ocean (wave, tidal and ocean thermal energy conversion), and hydrogen from renewable sources to meet energy demands where economically and financially feasible so as to reduce the high dependence on imported petroleum products used for electricity generation.

(e) Adopting national policies, strategies and action plans that ensure the basic energy requirements of low-income rural and urban dwellers are met with modern energy services at an affordable cost.
(f) Seeking increased official development assistance and other grant and concessional financing from international and regional funding cooperation in the development of national sustainable energy service strategies.

B. Rural Energy

Situation and Challenges

16. Issues confronting rural commercial energy are wide ranging. The provision of energy services to rural areas and remote islands remains inadequate due to the often dispersed and isolated nature of the population, as well as the high costs of energy. Access to these rural areas or remote islands can be difficult due to the lack of adequate infrastructure or services. The ability to contribute towards the payment for these services is hindered by low-income levels in these areas. Although, in a number of countries, there has been an integrated approach to rural development (energy, health education, agriculture and environment) the successes and penetration is still relatively limited. It is recognized that such an integrated approach could serve as a platform for sustainable development, resulting also in income generation and empowerment of communities in these areas.

Strategies and Recommendations

17. In considering rural energy at the regional and national levels the following main strategies and recommendations have been identified:

(a) Establishing opportunities for better access to renewable energy technologies (such as stand-alone solar systems and hybrid systems) in rural areas through the removal of barriers and obstacles to sustainable rural energy sector development.
(b) Ensuring that appropriate technologies are adopted to provide the desired level of service, that projects are environmentally sound and opportunities are taken to use clean and efficient technologies so as to reduce the vulnerability of the environment.
(c) Establishing policies and mechanisms relating to funding and financing for projects and programs. including the collection of fees.
(d) Developing human and institutional capacity in management, financing, efficiency and maintenance.
(e) Providing opportunities to and encouraging the development and participation of rural energy service companies, local companies and manufacturers to supply equipment for project implementation, management and maintenance.
(f) Ensuring that the implementation of rural energy systems maximizes the benefits to the environment and livelihood of rural communities.
(g) Establishing detailed information databases on resources available and the assessment of energy requirements, existing systems and projects.
(h) Encouraging improvement in the efficiency of renewable energy systems to improve cost effectiveness of the services.

C. Financing the Energy Sector

Situation and Challenges

18. Generally SIDS continue to face problems in securing funding for development of the energy sector, in particular for their rural and remote island communities. Within individual countries there may also be a lack of financial resources and necessary capacity to support longer-term financing and programs, which therefore restricts development. Due to their circumstances of diseconomies of scale there are few funding opportunities available to SIDS from the international community.

19. Considering the ongoing requirements for capital investment and the need for appropriately skilled human resources (management and technical), there still remain major challenges facing SIDS as a whole and the countries individually as how to mobilize the investments necessary for sustainable energy systems. AOSIS is of the firm view that allowing so-called sinks projects under the Clean Development Mechanism would effectively divert funds away from renewable energy and energy efficiency. This would therefore be contrary to the sustainable development priorities set by developing countries, and would not contribute to financing for the energy sector in rural areas and remote islands, and should not be supported.

20. Projects and programs must be based on sustainable assistance on an ongoing and consistent basis, so as to ensure that both technical and economic viability are demonstrated.

Strategies and Recommendations

21. In considering financing the energy sector at the regional and national levels the following main strategies and recommendations have been identified:

(a) Encouraging the structuring of electricity tariffs so as to provide a basic level of affordable energy service for the rural and urban poor as well as for the promotion of economic development.
(b) Providing institutional strengthening and assist with developing and implementing legislative reforms, and encourage and establish an enabling environment
(c) Assisting in developing pricing mechanisms and reforms based on true costs with consideration for environmental and social costs throughout the life cycle of the energy services.
(d) Introducing tax and customs duties incentives, as well as market transformation initiatives to encourage increased efficiency throughout the energy sector.
(e) Using government procurement programs to achieve scale economies in cooperation with other SIDS.
(f) Engaging development finance institutions and commercial banks in providing loans and grants for small-scale projects, and promote innovative financing arrangements, especially for low-income inhabitants, and the restructuring of loans to assist financing of energy services.

(g) Encouraging the local private sector and local communities to provide energy financing and other energy services, particularly in rural areas and remote islands, and contribute to achieving the intended goals through capacity building at the corporate and community levels.
(h) Providing support and financial resources for renewable energy, and giving special consideration for funding for SIDS.

D. Energy Efficiency

Situation and Challenges

22. Energy efficiency improvement has been identified as the most practical measure that can be taken at this stage, since most SIDS are unable to make radical shifts in their energy mix over the medium term. There is a need to look at the full range of efficiency means, with due consideration to the special situations of SIDS. Improving the efficiency of energy production, distribution and utilization will lead to a reduction of the energy consumption per unit of energy service, but many SIDS have been relatively slow at adopting energy efficiency practices and designs. This stems from lack of appropriate policy, lack of information, awareness and education, and the fact that there has been a reticence of consumers and energy suppliers (power utilities) to make the higher initial investment to achieve future savings. It has been well demonstrated and recognized that making energy systems more efficient contributes to reducing costs, (thereby improving access to energy), reducing the volume and costs of imported fossil fuels, reducing demand, improving local air quality and the reduction of greenhouse gases.

23. The power utilities have for some time suffered from a number of deficiencies. Effectively there has been a lack of human resources skilled in the area of power system analysis, design, and effective operating and maintenance procedures that limited the ability of the utility to address energy efficiencies particularly in the power system. In addition the equipment used in the power system have contributed to the inefficiency in power production and distribution as a result of inadequacies in procurement specification.

24. Many technological options exist for improving energy efficiency in residential and commercial buildings, the tourism sector, industry, transportation, agriculture and forestry. While numerous technologies to improve energy efficiency and manage energy demand more effectively are readily available, new developments can enhance the potential of this option further. A major part of industrial energy is utilized by the light-manufacturing industries. Although the scale is relatively small from an economic basis, for SIDS as a group or by region there does exist opportunities for the improvement and more efficient use of materials. This includes the recycling of materials and management of waste, thus assisting in reducing energy demand and greenhouse gas and other polluting emissions. One of the overarching factors limiting the penetration and development of these opportunities has been the lack of emphasis placed on education and information transfer.

Strategies and Recommendations

25. In the consideration of policies and measures to achieve wider gains in energy efficiency, the issues of main importance can be classified into the following main categories:
(a) Constraints and barriers that need to be addressed and the measures required in overcoming them;
(b) Improving the efficiency of production, transmission and distribution of energy and materials; and
(c) Improving energy efficiency in industrial, public, residential and commercial buildings, tourism and agriculture.

26. In considering energy efficiency by addressing the constraints and barriers, the following main strategies and recommendations have been identified:
(a) Identify clearly the constraints and barriers to take full advantage of energy efficiency measures, particularly in the production and distribution of energy, and the utilization of energy in industrial, commercial and domestic sectors.
(b) Address the lack of skilled human resources, public education and awareness, and develop clear appropriate policies, technology choices, taxes, duties, subsidies and rebate incentives. The resolution of these will contribute to energy efficiency, to reduction in energy demand and greenhouse gas emissions and other pollution.

27. In considering energy efficiency associated with the production and distribution of energy, the following main strategies and recommendations have been identified
(a) Identify and adopt, where economically and financially viable, more efficient power production and distribution technologies, and facilitate their transfer to SIDS.
(b) Carry out power system loss assessments or energy audits in the power utilities in SIDS within an appropriate penalty regime, implement a loss reduction program, and develop appropriate specifications for the procurement of power supply equipment that will not contribute to energy inefficiencies.
(c) Carry out a human resource development needs assessment of the power utilities, and implement an institutional strengthening program in those areas that will increase the ability of the power utility to improve energy efficiency.

28. In considering energy efficiency associated with the utilization of energy, the following main strategies and recommendations have been identified
(a) Creating appropriate energy policies, standards and incentives that act as drivers for the conservation of energy and the acquisition of energy efficient consumer appliances.
(b) Establishing energy audit mechanisms and monitoring systems.
(c) Encouraging the creation of energy service companies.
(d) Supporting research, development and demonstration, as well as education and public awareness programs.
(e) Disseminating technology options for improving end-use energy efficiency in the residential and commercial buildings sector, including wider diffusion of technologies, such as more efficient equipment and appliances; efficient heating and

air-conditioning systems; and more efficient building envelope designs. The introduction and adoption of tariff and customs reform to encourage the wider utilization of energy efficient appliances and equipment through star rating programs and the introduction of minimum energy performance standards (MEPS) for equipment and appliances will assist in meeting these requirements.

(f) Establishing institutional mechanisms that are required for regulatory and legal frameworks for implementing policies on incentives; energy efficiency standards and labeling of equipment; and incentives for the private sector and communities to contribute to achieving the intended goals.

E. Advanced Fossil and Nuclear Fuel Technologies

Situation and Challenges

29. Advanced fossil fuel technologies have matured in some of the industrialized countries. However the greater majority of these are still not suitable for adoption in the smaller developing countries. It is recognized that if equivalent resources were put into the development of renewable and appropriate energy systems for developing countries that this would undoubtedly lead to the reduction of environmental impacts by way of efficiency improvements and reduced pollutant emissions. The emissions from fossil fuel combustion themselves have national, regional and global impacts. As the economies of developing countries expand in association with higher levels of consumption of energy, the resulting increase of emissions could be contained through more appropriate technology.

30. Many concerns were raised in connection with advanced fossil fuel technology. The scale of the technologies makes it unlikely to be applicable to many SIDS in the near term. Participants recognized that countries will have to be exposed to the innovations, so that when they reach maturity they may be applied in SIDS. The Secretary General has proposed a framework for action for the CSD to consider. From the point of view of SIDS, there are special concerns and needs that must be met. These may be markedly different from the larger developing countries.

31. Nuclear energy sources are not considered appropriate nor acceptable for use in SIDS, or anywhere else for that matter, regardless of the individual claims that the utilization of these types of advanced technologies are characterized by very low pollutant emissions and reduced costs in meeting environmental objectives.

Strategies and Recommendations

32. In considering advanced fossil and nuclear fuel technologies at the regional and national levels the following main strategies and recommendations have been identified:

(a) Inappropriate technologies and energy generating technologies not commercially proven including improved nuclear energy technologies should not be introduced.

(b) Identifying suitable acceptable energy sources to meet the higher levels of energy consumption as the economies of developing countries expand, without further exacerbating climate change impact on SIDS.
(c) Improving regional and international cooperation arrangements that assist in facilitating capacity development and the transfer of acceptable and relevant technology to reduce the environmental impact of the development of fossil fuels and to reduce the associated local health hazards and environmental pollution.

F. Renewable Energy

Situation and Challenges

33. Renewable energy in its modern forms is a priority. However, in total, it plays a relatively minor role in the total energy balance at present. The general need is for increased development and utilization of renewable energy sources, implementation of better financial schemes for smoothing initial capital costs, improved system efficiency, and well-structured demonstration and training activities and programs. Such demonstration projects should be a full package of equipment and training and installation. Some past projects in SIDS failed to take a comprehensive approach and were therefore not successful.

34. Although nearly all SIDS have adopted strategies for promoting renewable energy, successes have been limited. The capital cost of renewable energy technologies still remains relatively high in comparison to the traditional fossil fuel systems, mainly due to external factors, along with a number of other distinct barriers and constraints. Policy options and strategies for the wider application of renewable energy need to recognize the diversity of national renewable sources endowment, as well as the need for guidelines for the adoption of appropriate technology options.

Strategies and Recommendations

35. In considering renewable energy policies at the regional and national levels the following main strategies and recommendations have been identified:
(a) Increasing development and utilization of renewable energy sources through national and regional efforts and international cooperation, specifically to increasing technology transfer and investments in mature renewable energy technologies.
(b) Strengthening national capacity in policy development, institutions, technology, financing and commercialization.
(c) Intensifying renewable energy development in view of its potential for the reduction of emissions in the context of the clean development mechanism.
(d) Encouraging regional organizations to continue to provide assistance to the public sectors on policy and regulation, to provide the necessary interface for program promotion, to serve a catalytic role by providing public information, to encourage participatory approaches involving NGOs and community-based organizations; encourage best practices; and facilitate institutional networks through demonstration projects.

(e) Increasing funding for the development of national and regional renewable energy expertise.

36. In considering renewable energy technologies at the regional and national levels the following main strategies and recommendations have been identified:

(a) Establishing regional networks and centers of excellence for the exchange of experience in the development and application of renewable energy, research and development cooperation, including joint development projects, the sharing of testing and training facilities and South-South cooperation for capacity-building.

(b) Disseminating technology options at the national, regional, and international levels for mature solar, wind, biomass, hydro including mini-hydro, geothermal, ocean (wave, tidal and ocean thermal energy conversion), and hydrogen from renewable sources, and other renewable energy technologies

(c) Learning from past experience and establish closer links between research, development, demonstration projects and industry.

(d) Promoting trade in renewable energy devices and systems and facilitate the creation of an enabling environment for rapid market growth

(e) Supporting national efforts to build organizational and manufacturing capacity for the production and diffusion of renewable energy technologies, as well as for education and public awareness.

(f) Strengthening linkages between existing regional and international mechanisms, such as the Global Environment Facility, and renewable energy technology development and utilization in SIDS. In this regard special consideration should be given to creating a "window" within the GEF focal areas for the provision of new and additional funding for renewable energy projects in developing countries, in particular the least developed countries and the SIDS amongst them.

G. Energy-related Issues in Transportation

Situation and Challenges

37. The transportation sector is a predominant consumer of imported energy and this is of growing concern to SIDS. Transportation creates special problems and concerns for SIDS, especially in the multi-island countries and for the more isolated islands. Energy per capita consumption in SIDS could be seen as quite large if marine and aviation bunker fuels are counted. The linkages to the tourism sector are evident. It will continue to be difficult for SIDS to address and improve the situation, since most of the technology is imported. SIDS are still heavily dependent of petroleum, and therefore the options are constrained. The issue is also intimately linked to lifestyle. It is widely recognized that some SIDS have taken very strong measures, such as restricting vehicle sizes to better suit local conditions. These examples along with the impacts need to be shared among SIDS. Targeting the youth to get the public awareness started early was also highlighted as an important measure.

38. The demand for transportation continues to grow, and despite the improvement in the efficiency of vehicles and technological advances, emissions from this sector are also growing. In the past the transport sector has frequently been neglected and therefore needs to be incorporated into long-term plans. National level policies can focus on increasing efficiency, developing markets and technologies for alternative fuels and vehicles and putting in place adequate emission control measures with effective enforcement procedures, as well as practical measures such as improving traffic flows and better land use planning.

39. The environmental impact of petroleum based fuels related to carbon dioxide and other polluting emissions have stimulated research and development on alternative fuels and technologies. The available alternative transportation fuels that have attracted the most interest and for which technology is actively being tested and developed are natural gas, electricity, liquefied petroleum gas, methanol, ethanol, coconut oil, rape seed oil, other plant oils, methyl ester and hydrogen. Passenger vehicles offer the greatest opportunity for improving energy efficiency and reducing environmental impacts using advanced technology and alternative fuels. In the future the possibility will exist to consider these alternate fuels for use in the transport sector. As has been the case with new technologies in other sectors there will be a significant requirement for training, education, public awareness and new infrastructure.

Strategies and Recommendations

40. In considering energy-related issues in transportation at the regional and national levels the following main strategies and recommendations have been identified:

(a) Promoting efforts to manage growth in demand for transportation in the wider context of sustainable development.

(b) Promoting, as appropriate, alternative fuels ensuring that technologies are proven, the costs are affordable, training and public awareness is provided, and the necessary infrastructure to establish these is available.

(c) Improving energy efficiency within each transportation mode, including sea transport.

(d) Ensuring the importation and supply of cleaner and better quality fuels, and the improvement of maintenance systems.

(e) Developing transportation management policies that would improve the effectiveness and availability of public transport systems.

(f) Instituting and enforcing adequate emission control measures, appropriate to the specific conditions of the country, with effective enforcement procedures and adequate public awareness, targeting particularly the youth, with a view to promoting the importation and use of more fuel efficient vehicles into SIDS and the phasing out of inefficient vehicles.

H. International Cooperation

Situation and Challenges

41. The critical situation faced by SIDS underscores the need for intensifying national, regional and international cooperation, in order to move towards sustainable patterns of production, distribution and utilization of energy. Many issues lend themselves to constructive dialogue and genuine partnership based on mutual interests and benefits at the international level, and point to the need for private-public partnerships, both domestically and internationally, and both bilaterally and multilaterally.

42. Official development assistance (ODA), grants and concessional financing, remain significant sources of external funding for many developing countries, but especially for SIDS. Moreover, they play important complementary and catalytic roles in promoting sustainable development. However, there are possibilities to improve the effectiveness and sustainability of support to the energy sector and related programs and a need for the requisite international assistance.

43. SIDS recognize the need to create a favorable climate for increased investment from outside sources including the private sector. It is anticipated that this could be achieved by adopting relevant policies, fiscal incentives and long-term investor security. This will assist in securing donor support for activities in energy and related areas. In addition, it will also assist in the effort to mobilize capital for investment in support of sustainable energy development. SIDS recognize that this must be supported by the international community, through special opportunities and consideration for financing.

44. There is, therefore, a need for an increased commitment from developed countries to achieve the UN target for ODA and for improved financial flows, for the transfer of relevant technology and for promotion efforts in research and development in these areas. It is also of crucial importance that international cooperation also be directed at building human and institutional capacity. All SIDS should be considered eligible for assistance in this regard upon request to the international community. A crucial measure of success in this regard will be the actual delivery of funds and the implementation of projects in SIDS. The United Nations should closely monitor this situation.

Strategies and Recommendations

45. In considering international cooperation at the regional and national levels the following main strategies and recommendations have been identified:

(a) Providing information on the available and appropriate international mechanisms that can be utilized effectively to transfer environmentally sound technologies that are acceptable to SIDS, as well as information regarding technology developments taking place worldwide.

(b) Facilitating the formulation and application of appropriate standards in the production, conversion, distribution and utilization of the various energy services.

(c) Increasing financial support from multilateral financial institutions through concessional mechanisms to SIDS in support of their efforts in implementing sustainable energy development programs and projects.

(d) Assisting in efforts of human and institutional capacity strengthening through training programs and regional centers.

IV. Conclusions

46. Energy plays an important and critical role for SIDS. The very fact of their remoteness from international markets, the very diverse and sparse spread of the countries over a large ocean area and diseconomies of scale causes this group of countries to be unique. These factors make it imperative to have the proper skills and management in order to achieve the goals of sustainable development.

47. Examination of some of the key issues in the debate on energy and sustainable development clearly show that achieving a sustainable future will require the concerted effort at all levels of Government, the private sector, society and the international community.

48. This submission has clearly highlighted the need for strong measures to be taken on a number of over-arching issues, which are of relevance to all of the seven main areas under discussion. There is a need for:

(a) A comprehensive program of public education and awareness raising to be carried out in all SIDS. The early targeting of youth for public awareness needs to be highlighted.
(b) A collective system of quality control and information sharing on application of renewable energy among SIDS.
(c) A comprehensive system of cooperation and development among SIDS and their regions, with support from international community, in respect of energy resources, research and development of new applications of existing technologies for the special situations of SIDS.
(d) A comprehensive approach to capacity building for energy and sustainable development in SIDS, utilizing all available institutions and financing opportunities..
(e) Further development of SIDSNet to allow for the establishment of an expert database to allow for inter-active exchanges, and a searchable roster of expertise and success stories on sustainable development in SIDS, and to assist with the measures referred to above.

49. In order to achieve these goals there is a pressing need for the international community to provide necessary financial and technical support. This support must be comprehensive as well as innovative. It should include traditional sources of assistance, but should also give due consideration to special funding for SIDS. The measure of success will be the establishment of a new paradigm for energy and sustainable development. In this connection the proposed energy agenda for sustainable development in SIDS would be expected to make a significant contribution.
