THE WORKING GROUP ON
ENVIRONMENTAL ECONOMICS
Phase One Policy Recommendations, and
Phase Two Proposed Work Programme

PHASE ONE POLICY RECOMMENDATIONS

1. Specific sectional recommendations (for water supply, coal and timber) are contained in the draft report made available at the 1996 meeting and also contained in the revised report 'Natural Resource Pricing in China: Water Supply, Coal and Timber'. Council members can select from among these numerous proposals the ones they think are most important.

2. Develop the capacity within Financial and planning agencies at all government levels to better understand the implications of their policies for the natural environment, and thus their impact upon sustainability of economic development. Specific areas include 'green taxation' and the development of environmental accounting to parallel national income accounts.

3. Develop the capacity within environmental agencies (NEPA and EPBs) to better anticipate the environmental consequences of countrywide economic and other policies for the environment, and thus become more effective in taking the appropriate measures.

4. Ensure that government intervention in markets should take place to avoid major cases of market failure (i.e. where prices of natural resources do not adequately reflect the real costs of resource exploitation, including environmental degradation and depletion).

5. Strengthen the capacity of NEPA to play a lead role in applied environmental economics training for the staffs of EPBs throughout the country.

(Topics to be covered should include valuation methods, cost-effectiveness analysis, and options for pricing, taxation, and cost recovery.)

PHASE TWO PROPOSED WORK PROGRAMME

2. BACKGROUND
Phase II of the work programme of the Environmental Economics Working Group will be a logical extension of the work conducted in Phase I, the main thrust of which was to develop the general principles that should govern the pricing of key natural resources in China, taking into account the economic costs of production, and factoring in depletion and environment costs as well. General theoretical principles were established, and strategies for actual implementation in China – in an economy undergoing rapid transformation to one based upon market principles identified.

Primary emphasis to date has been upon water, coal and forest resources, which between them illustrate most of the key empirical and analytical issues involved in developing optimal pricing (and therefore investment) strategies. The findings of Phase One are summarized in the document issued to the China Council at the 1997 meeting, entitled Natural Resource Pricing in China: Water Supply, Coal and Timber.

2. PHASE TWO PROGRAM
2.1 Phase Two will consist of two elements – Principles and Applications – as outlined in the following paragraphs.

2.2 Principles
2.2.1 The Studies contained under "Principles" will be conducted almost entirely by economists and, as in Phase One, will continue to be addressed in terms of their relevance for specific environmental issues.

2.2.2 The following "Principles" proposals, on 'Green Taxation' and National Income Accounting, received the endorsement of the Council at the September 1996 meeting.

2.2.3 "Green Taxation"
Several members of the Council have suggested that the Working Group address the design of pollution standards and taxes and the issue of 'green taxation' in general. In fact, the group has already spent a considerable amount of effort in defining the analytical framework for assessing the appropriate level of pollution taxes, the concept of Marginal Opportunity Cost pricing being as relevant for the design of pollution taxes as for the design of electricity or water tariffs. This should now be applied to water, air, and possibly solid waste pollution. It is intended to develop the general principles in a highly policy-oriented fashion; in fact, they should be specifically designed to complement the on-going World Bank-financed study of the Chinese pollution levy system, and will also draw upon the Case Study activity referred to in the Applications section below. On this issue to be considered by the Economics Working Group will be how far 'green taxation' should be addressed by partial equilibrium analysis of the kind we have been carrying out so far, or by more ambitious efforts integrate it into general equilibrium
ecometric models. An important aspect of the work will be to assess the role of environmental taxation in overall fiscal policy.

2.2.4 National Income Accounting
(1) The work already started in Phase One on incorporating environment into national income accounts will continue. However, prime attention will continue to be placed on developing the "building blocks" necessary for this to be a practical policy tool.
(2) As the Economics Working Group has previously observed, recommendations for policy reform in this area should continue to be a longer term objective.

2.3 Applications
2.3.1 "Applications" consist of two elements:
(1) The first of these will be more in-depth, essentially multidisciplinary case studies, which will be carried out by the Economics Working Group itself.
(2) The second element will be the involvement of Working Group members in the activities of other working groups, the main objective being to help achieve a consistent framework for the policy recommendations to be made by the China Council. It should also help to avoid duplication of effort, and facilitate interdisciplinary collaboration among the various groups.
(3) Both of these elements, outlined below, received the endorsement of the Council at the September 1996 meeting.

2.3.2 Case Studies
The following set of case studies is proposed. In each case care will be taken to ensure that full advantage is taken of work done by other agencies, while avoiding duplication. Also, while the case studies are self-contained, they are intended to lay the foundation for even more in-depth studies at a subsequent date. In developing and implementing these studies, close contact will continue to be maintained with the World Bank. The emphasis is on empirical analysis and the same time, the studies must be aimed at providing models for more general application throughout China. This approach will be used in the studies of pollution control, biodiversity and sustainable natural resource use as shown below.

**Pollution Control**
(a) As noted above, work has started in Phase One on the preparation for an in-depth study of environmental management in the Chongqing area.
(b) It is proposed that the study will be comprehensive and multidisciplinary, addressing air, water and solid waste pollution, and consisting of the following steps:
   - Collection of data on actual emissions
   - Establishing dose–response relationships
   - Assessment of the economic cost of environmental damage
   - Assessment of costs of alternative pollution control options
   - Control strategy and policy measures
   - Policy recommendations for Chongqing
   - General policy recommendations

**Biodiversity**
(a) Paralleling the approach used in the pollution control, a key biodiversity area in Sichuan Province has been selected for in-depth study.
(b) The study, to be carried out in collaboration with the Biodiversity Working Group, will consist of the following elements:
   - Collection of information on threatened species
   - Establishing sources of threat
   - Assessment of the economic and social cost of such threat
   - Assessment of the costs of alternative protection increases
   - Location–specific policy recommendations
   - General policy recommendations

**Sustainable Natural Resource Use**
(a) It is proposed to carry out a series of studies relating to the role of prices with regard to sustainable agriculture.
(b) One specific study is on the role of pricing and other measures relation to the sustainable development of grasslands. Studies are proposed in areas with low carrying capacity and where overgrazing causes problems of devegetation, soil erosion and desertification.
(c) Other proposed studies would address a variety of environmental issues such as pollution from local industry, overuse of agricultural chemicals, and the problems caused by pollution growth and the policy of food self-sufficiency.
(d) In each case, the impact of changes in macro–level variables on behavior at the farm level will be a major focus of attention. It is expected that areas in Hunan Province (for rice) and Heilongjiang Province (for grasslands) will be
selected for study.
(e) Analytically similar to the work on sustainable agriculture will be a study of the impact of pollution on coastal fisheries. Costs of pollution will be assessed and used as a basis for recommending the level and structure of effluent standards, taxes, other charges or regulatory approaches. Sites for study are still to be determined, but may include areas in Southern Fujian Province, Yantai in Shandong Province, or Dalian.
(f) As noted, the general methodology to be adopted in the studies of sustainable natural resources will parallel the methodology used in the pollution control and biodiversity exercises.
2.3.3 Support to Other Working Groups
(1) Policy recommendations made by other working groups should invariably involve economic considerations. To date this has been unsystematic and, as the Council has note d, a consistent framework of analysis is required for the determination of priority actions, including the use of economic incentives to achieve desired results.
(2) The proposal is that one international and one Chinese member of the Economics Working Group participate in each of the other working group' meetings (one meeting per year is expected).
(3) This participation will be coordinated by the Economics Working Group’s co-chairmen in order to help achieve a consistent approach in the use of economic analysis among the various groups. This process has already started, with participation in a meeting of the Energy Working Group. This type of collaboration should also be used to obtain technical support for the Economics Working Group’s case studies, and to avoid duplication with the work of other groups.

3. OVERALL COHERENCE OF THE PROGRAMME
3.1 As noted above, it is intended that Phase Two will build upon the conceptual foundations and empirical approaches developed in Phase One. The programme will continue to focus on policy-oriented activities. General recommendations about approaches to pricing policies for major sectors, as well as location-specific commendations, should stem from the in-depth studies of industrial pollution, biodiversity, and sustainable natural resource management.
3.2 Moreover, work on the "greening" of taxation policy and of national income accounting should contribute to the development of policy at the macroeconomic level. As in Phase One, wide dissemination of the results of these efforts is proposed.

4. CONCLUSION
It is emphasized that the China Council is in a unique position to influence policy at the highest level. Accordingly, the focus must be upon strategic policy analysis rather than a project-by-project approach which has little policy leverage. In any case, the strategic policy analysis approach has been adopted in most other forms of external development assistance.