

Facesheet

(Tick ✓ one) **Project seeking APEC funding** **Progress Report**
Evaluation Report
 (Tick ✓ one) **Operational Account** **TILF Special Account**
 Self-funded Project

Project number: <i>(To be filled in by Secretariat)</i>		Date received by Secretariat:	Late / Not late <input type="checkbox"/> <input type="checkbox"/>
Name of Committee/Working Group: Expert Group on Clean Fossil Energy/Energy Working Group			
Title of Project: Assessment of Geological Storage Potential of Carbon Dioxide in the APEC Region			
Proposing APEC Member: Canada			
Co-sponsoring APEC Member(s): USA, Australia, Japan			
Project Overseer: Name, Title and Organization (M) Dr. Frank Mourits Senior Coal Specialist Natural Resources Canada			
Postal address: 580 Booth St., 10 th Floor Ottawa, Ontario Canada K1A0E4		Tel No.: +1-613-996-7856 Fax No.: +1-613-943-079 e-mail : fmourits@nrca.gc.ca	
Financial Information	Total cost of proposal (US\$): \$50,000	Amount being sought from APEC Central Fund (US\$): \$50,000	
Type of Project: () seminar/symposium () short-term training course (X) survey or analysis and research () database/website () others (Please specify)			
Project start date: April 2002		Project end date: March 2003	
Project Purpose: The latest report by the Intergovernmental Panel on Climate Change, which was released in February 2001, states that there is new and stronger evidence that most of the global warming observed is attributable to anthropogenic greenhouse gas emissions. The report also states that the projected rise in average worldwide temperatures is sharply higher than the 1.4 to 3.0°C previously thought. Models now predict that global temperatures could rise by almost 6°C over the next century, triggering droughts, floods and other disasters caused by shifts in weather patterns. These findings are bound to lend new urgency to governments to formulate new energy policies and start addressing the climate change issue with greater commitment. Small, incremental reductions in greenhouse gas emissions will not be sufficient. Ultimately, very large reductions will be needed in order for the atmosphere to stabilize and bring down these temperature rises. Among the greenhouse gases that cause global warming, carbon dioxide (CO ₂) contributes over 82% to the total and nearly all of this comes from the energy sector or more specifically, from fossil fuel combustion. The APEC economies together account for 65% of the world's total CO ₂ emissions. Based on current business-as-usual trends, APEC emissions are projected to increase by more than 60% over the next 20 years, with emissions in some economies set to more than double. Given the urgent need to reduce these emissions, new emission reduction technologies must be developed and implemented through international collaborative efforts. In 2000, the APEC Experts Group on Clean Fossil Fuels (EGCFE) began work on "A Study of CO ₂ Reduction Options in the APEC Region (Phase I)." The focus in this study is on near- to medium-term activities and			

approaches being taken by APEC economies to reduce CO₂ emissions (by comparatively modest amounts), including upgrading of existing technologies and placing heavy emphasis on energy efficiency gains. More detailed case studies of these shorter-term options will be performed in a follow-up Phase II study. The CO₂ capture and storage (sequestration) approach will not be examined in the Phase I and II studies.

While the latter study has not yet commenced, experience gleaned from assessments and modelling studies in Canada, the United States and the European Union indicates that capture and storage is currently the only medium- to long-term term approach with the greatest potential to achieve very large emission reductions. Capture and storage of CO₂ is increasingly seen as one of the most promising approaches for the abatement of coal-related emissions and the production of energy from coal in a sustainable fashion. Furthermore, capture and storage technologies generally not only reduce CO₂ emissions, but at the same time also remove SO_x, NO_x, mercury, particulates, etc.

Capture technologies are being developed elsewhere in the world and can be transferred to APEC economies when they are mature. However, the possibility of CO₂ storage depends on the availability of suitable local geological storage reservoirs. This is the focus of this proposal. **It is the objective of this project is to conduct an inventory and assessment study of potential geological sites for the storage of CO₂ in the APEC region.**

Specifically, this study will:

- 1) Review available studies on the storage CO₂ of in oil and gas reservoirs, deep coal seams, deep aquifers and others sites, and review information on the location of large CO₂ point source emitters in the APEC region.
- 2) Conduct surveys to determine the occurrence of potentially suitable storage basins/reservoirs and to supplement the information on large point source CO₂ emitters.
- 3) Using available screening information, perform a preliminary assessment of selected reservoirs and rank them according to their storage potential.
- 4) Select one or two of the most promising basins/reservoirs for further detailed analysis and semi-quantitative storage assessment, as well as preliminary cost analysis.
- 5) Present the results in APEC seminars and/or in one or more specialized workshops.

Participation in the project will be sought from governments, non-government organizations and the private sectors of all member economies. Governmental and non-governmental organizations will primarily deal with issues regarding policies options and technology assessments. The private sector will look into the technical and economic issues regarding the development and commercialization of CO₂ storage technologies in APEC economies. Collaboration from all member economies will be sought to share information and know-how. The goal is to ensure mutual benefits between members of developed economies, where most of the technologies are being developed, and developing economies which will also benefit from implementing these technologies.

Signature of Project Overseer:

(Separate written confirmation acceptable for email submission)

Date:

Signature of Committee Chair/WG Lead Shepherd:

(Separate written confirmation acceptable for email submission)

Date:

ECOTECH Weightings Matrix

[Assessment of Geological Storage Potential of Carbon Dioxide in the APEC Region]

Criteria	Supporting Information (indicate paragraph number if details are in the project proposal)	Linkage - 1 point for each
Responds to a <u>specific</u> instruction from Leaders/Ministers ¹	<u>Bogor Declaration, Item #8:</u> Our objective to intensify development cooperation among the community of Asia-Pacific economies will enable us to <i>develop more effectively</i> the human and <i>natural resources of the Asia-Pacific region so as to attain sustainable growth</i> and equitable development of APEC economies, while reducing economic disparities among them, and improving the economic and social well-being of our people...	1
Meets a core ECOTECH theme under the <i>Manila Declaration</i> ¹	<u>Manila Declaration:</u> I. Goals, bullet 1: <ul style="list-style-type: none"> • <i>To attain sustainable growth and equitable development in the Asia-Pacific region;</i> IV. Themes and priorities: Item 1, bullet 4: <ul style="list-style-type: none"> • <i>Harness technologies for the future to ensure that APEC joint activities promote the flow and expand the capacities of its members to absorb existing industrial science and technology as well as develop new technologies for the future, thus promoting a free flow of information and technology.</i> 	1
Responds to the Common Policy Concepts, Activities and Dialogues identified in Part II of the <i>Osaka Action Agenda</i> ¹	<u>Osaka Action Agenda, Part II, Section B, Item 5 - Energy:</u> Common Policy Concepts, Item c: <ul style="list-style-type: none"> • <i>reducing the environmental impact of the energy sector;</i> Joint Activities/Dialogue, Item e: <ul style="list-style-type: none"> • <i>improve environmental performance through expanded programs in the fields of clean coal technology, renewable energy sources and end-use energy conservation measures, leading to exploration of cooperative multilateral programs to reduce climate change concerns such as demonstration projects which lead to joint implementation;</i> 	1
Responds to a <u>specific</u> ECOTECH Initiative ²	<ul style="list-style-type: none"> • Cleaner Production Strategy (production of energy) • Manila Declaration on Ecotech (see above) • Osaka Action Agenda – Part II (see above) 	1
Improves skills, including in new technologies	<ul style="list-style-type: none"> • This project marks just the very beginning of the development of a range of CO₂ storage technologies, which will lead to the establishment of new industries and the employment of highly-skilled workers. 	1
Builds capacity and strengthens institutions	<ul style="list-style-type: none"> • Recognizing the need for more fossil-fuel based electricity in APEC economies, while at the same time CO₂ emissions need to be reduced, this project will initiate the building up of capacity in terms of technical expertise, plant facilities and infrastructure in member economies to dispose of the increasing quantities of CO₂. 	1
<u>Measurably</u> improves economic efficiency/performance ³	<ul style="list-style-type: none"> • In terms of economic performance, injection of CO₂ in oil/gas reservoirs and deep coal seams can significantly enhance the economic recovery of oil, gas and coalbed methane from these reservoirs. • In terms of environmental performance, the technologies that form the foundation of this proposal go beyond simple efficiency improvements and concomitant relatively small CO₂ emission reductions. The proposed technologies can reduce CO₂ emissions to near-zero, and at the same time reduce conventional pollutant emissions (SO_x, NO_x, particulates, etc.) from power plants to near-zero as well. 	1

Is of <u>practical</u> benefit to the private/business sector; has private/business sector <u>participation</u> ; and/or <u>funding</u> ⁴	<ul style="list-style-type: none"> Injection of CO₂ in oil/gas reservoirs and deep coal seams can be very profitable depending on the reservoir and economic conditions. The private/business sector is already involved in such ventures in some APEC economies. This project will identify similar opportunities in other APEC economies. 	2
Assists economies attain sustainable growth and equitable development, while reducing economic disparities among APEC economies and improving economic and social well-being	<ul style="list-style-type: none"> The technologies at the heart of this proposal will allow the continuation and expansion of fossil fuel-fired power generation without the emission of conventional pollutants and CO₂. Hence, these technologies will directly help economies attain sustainable growth and improve the economic/social well-being of APEC economies. These technologies will allow the continued and environmentally-responsible use of <u>coal</u>, a low-cost fossil fuel which is widely available throughout APEC. Reduced dependence on high-cost imported fuels will help reduce disparities. 	1
Supports a TILF objective, as laid down in Part I of the <i>Osaka Action Agenda</i> ¹	Not applicable	0
Disseminates information including through seminars/websites/ databases ⁵	<ul style="list-style-type: none"> This study will result in a report that will be widely circulated throughout all APEC economies. The results will be summarized in papers, which will be presented in various APEC seminars and other fora. A condensed version of the report will also be posted on the EWCFE website. 	0
Outline the <u>outcome</u> and how members will benefit ⁵	<ul style="list-style-type: none"> The outcome of this study will be a report on opportunities for the geological storage of CO₂ in the APEC region. By being alerted of these possibilities and knowing what/where they are, APEC governments can start to consider these options in their power development policy plans. Likewise, the private sector will have information to initiate exploiting the more profitable reservoirs. 	0
	Net Score	10

Footnote

- ¹ Identify which instruction/ECOTECH theme/OAA element.
² See <http://www.apecsec.org.sg/ecotech/index.html>
³ Policy outcomes that include development of energy efficiency guidelines, food safety standards etc
⁴ One point for each element up to a maximum of 3 points.
⁵ Not scored

Remarks (Please indicate if not applicable e.g., for TILF projects. Additional information in support of projects which do not score highly may also be provided here by the Lead Shepherd/Chair).

FORMAT FOR PROJECTS SEEKING APEC FUNDING

This format should be completed with reference to the Guidebook on APEC Projects. It is recommended that the “Guide to Strengthening Project Management and Performance” would be a useful reference. Both Guides are available on the APEC Secretariat website at www.apecsec.org.sg

Please note that items followed by an asterisk (*) fall within the category of criteria which relate to “APEC values” in the Criteria of Assessment of APEC Projects set out in Annex B.

Please provide your answers in point form or as succinctly as possible below each paragraph heading.

A. Project Design**Project****1. Name of project.**

Assessment of Geological Storage Potential of Carbon Dioxide in the APEC Region.

2. Name of the working group or committee taking responsibility for the project and the dissemination of its results.

APEC Energy Working Group / Expert Group on Clean Fossil Energy

Objectives**3. Describe briefly how you will measure your results (in the short and longer term) to know if your project has been successful. (You must provide detailed assessment measures in paragraph 19.)**

The scope of the assessment in this study will, because of the large number of member economies to be included, the many geological variables involved and budget limitations, by necessity be limited in nature. Potentially suitable basins and/or reservoirs will be identified based on existing geological information, and storage capacities will then be assessed based on information obtained from comparable, well-studied reservoirs elsewhere. In follow-up studies, more in-depth analyses, most likely in conjunction with exploratory drilling, laboratory testing and computer modeling will need to be performed on each specific reservoir to establish its true storage potential.

The success of this project in the short term (1-10 years) can be measured by the uptake of the information by APEC governments, the incorporation of the CO₂ storage option in their long-term greenhouse gas mitigation policies and strategies, and the initiation of site-specific studies.

The long-term success (10-15 years) of this project may be measured by the degree to which the CO₂ storage option is being implemented by governments and industry.

4. How, briefly, this project responds to the priorities set by APEC Leaders and Ministers, as evidenced by parts of the APEC Action Agenda including Action Program, work plan, vision statement, and policy statement that relate to this project.

Flowing from the Bogor Declaration (1994), which among other objectives called for more effective development of the human and natural resources of the Asia-Pacific region in order to attain sustainable growth and equitable development, the Economic and Technical Cooperation (ECOTECH) part of the Osaka Action Agenda (1995), drafted to implement the Bogor Declaration, sets out more specific policies regarding energy issues.

Incorporating measures to give effect to the 3Es Initiative of APEC Leaders (economic growth, energy security and environmental protection), the Energy Working Group's action program will give priority to reducing the environmental impact of the energy production, delivery and consumption through improving access to technology, training, services and investment opportunities. Specific activities will include programs to increase the cost-effective application of new and more efficient environmentally sound energy technologies (e.g. clean coal technology and cooperative programs to reduce climate change concerns) and accelerating the flow and exchange of technological information among member economies.

Addressing the issue of climate change, APEC leaders, at their 1997 Vancouver meeting, declared (item #18) that they recognized the importance of accelerating action on a global level to deal with greenhouse gases, affirmed that this issue is of vital significance and noted that all APEC members can make important contributions to reducing greenhouse gas emissions, including promoting the development and diffusion of beneficial technologies.

5. **For applications under the TILF Special Account: How briefly this project contributes to APEC Trade and Investment Liberalisation and Facilitation (e.g. relevance to specific parts of the Osaka Action Agenda).**

Not applicable.

Linkages

6. **The kinds of institutions in member economies intended to benefit from the results of the project. Highlight the direct benefits to the institutions, the types of business in member economies which will benefit from the results of the project and what the direct benefits are.**

The ultimate results of this project will be a contribution to the worldwide effort to reduce CO₂ emissions. As climate change is a worldwide phenomenon that does not recognize borders, these emission cuts will benefit the whole world. It is known that the impact of climate change will be felt differently in different parts of the world; hence, it is not possible to generalize these long-term benefits for the entire APEC region. Some economies may greatly benefit, for others the benefits may be minor.

However, there are also more immediate and tangible benefits. The direct benefit to government and non-government institutions will be a clearer understanding of the potential and implications of CO₂ storage, when the time comes to consider technology and policy options for the reduction of CO₂. Recommendations from the study will help government institutions identify areas in which more collaboration will be needed and to formulate long-term strategic plans to bring the storage approach to fruition.

Implementation of CO₂ storage technologies will also have a highly significant side-benefit, which will be immediately felt. A prerequisite of any CO₂ storage scheme is, of course, the removal of the CO₂ from the flue gases produced by fossil fuel-based power plants or other fossil fuel processing plants. While the capture or removal technologies are not the subject of this study, the processes that remove CO₂ typically also remove or greatly reduce the emissions of SO₂, NO₂, particulates and mercury. The latter emissions are well-known environmental pollutants associated with fossil fuel power plant. Their removal will have important and instant health benefits to the public in the effected areas surrounding the plants. This linkage means that governments will be better able to gain public support for actions to reduce CO₂, when they can demonstrate both short- and longer-term health benefits of such actions.

The private oil and gas sectors will also benefit as in the initial stages the CO₂ is likely to be used for the enhanced recovery of oil, gas or coalbed methane, whenever such deposits are available. Depending on the cost of the CO₂ supply, such operations could be very profitable and thus give rise to the development of new industrial activities. Private sectors in both developed and developing APEC economies are expected to play complimentary roles in the development, transfer, implementation and use of the CO₂ injection and product hydrocarbon recovery technologies.

The historical model of new technologies being transferred from developed to developing economies does not accurately reflect technology developments within APEC. Increasingly, both developed and developing economies are active partners in the commercialization of new technologies, with parts of the manufacturing process in both developed and developing economies. Therefore, added benefits through employment and export sales can be expected among all major APEC economies.

- 7. How the participation of the business/private sector and non-governmental institutions has been sought or will be sought. Illustrate how the business/private sector has been involved in the planning and delivery of the project and whether any other APEC fora have been consulted. (*)**

Business/private sector institutions/companies will be invited to participate throughout the study and through all workshops where research results are discussed. The survey questionnaire, to be mailed out to all member economies, will help identify information and data on suitable geological reservoirs in all APEC member economies.

Results of the survey and the country visits will help the team determine the suitability and scope of potential CO₂ storage sites among members, which in turn will be an incentive for private/business sector develop appropriate CO₂ storage schemes.

The non-governmental institutions will be asked to contribute their insights on issues surrounding the concept of CO₂ storage in their economies and help the team identify approaches that would facilitate implementation of this technology.

- 8. How this project will add “APEC value” (as to the potential benefits of implementing projects) in the context of other work that might have been done elsewhere in the same field. (*)**

The APEC value added in the study is best illustrated by the fact that about 60 percent of the world’s greenhouse gas emissions come from APEC economies. Therefore, successful APEC cooperation can be a powerful force in addressing the global climate change issue. The framework of cooperation and almost a decade of cooperation through the APEC Experts Group involved with clean fossil energy have established working relationships and region-wide networks important to achieving superior results from the proposed project on the reduction of CO₂ emissions.

- 9. An indication of how the project might contribute to related projects or activities in APEC or elsewhere.**

The project is expected to provide important information on a clean, sustainable energy option, which will contribute to and enhance the effectiveness of the overall Experts Group activities to promote clean energy systems within APEC. Exchanging the information obtained from this project with similar projects in Canada, the United States, China and Australia, as well as the European Union, will contribute to a better understanding of the underlying principles of geological storage by all project participants.

- 10. Describe the deliverables of the project and demonstrate how they will meet the needs of the targeted beneficiaries.**

The project will produce a final bound report, which will be available as hard copy and as a downloadable file, as well as a summary report for the EGCFE web site.

Methodology

11. A concise description of the project's methodology.

A brief description of the methodology to be used in the study is discussed below.

1. Review available studies on the storage (sequestration) of CO₂, including studies performed by the International Energy Agency (IEA), the United States, Canada, countries of the European Union and Australia. Include in the review storage in oil and gas reservoirs (ranging from active to depleted), deep coal seams, deep aquifers, and others possible sites (e.g., salt caverns). Exclude deep ocean disposal.
2. Review available information from previous APEC studies, IEA, World Bank and other agencies on the location of large CO₂ point source emitters, such as coal-fired power plants, refineries, gas plants and other large industrial sources.
3. Conduct a survey by means of a carefully designed questionnaire to a target audience of experts (national geological surveys, government agencies holding drilling and/or core information as well as geologists in oil, gas and coal companies) to determine the presence, extent and characteristics of potentially suitable storage basins/reservoirs among APEC members, and supplement this survey by field visits to selected members economies with promising basins/reservoirs.
4. Conduct a parallel survey by means of a carefully designed questionnaire to a target audience of appropriate government agencies to supplement and verify the information obtained under (2) on large point source CO₂ emitters.
5. Screen the basins/reservoirs identified in the survey by carrying forward only those, which are located in relative close proximity to large point sources (distance to be agreed upon by the steering committee).
6. Using available storage information on comparable reservoirs with known storage capacity (likely located in the United States, Canada and the EU), perform a preliminary assessment of the reservoirs identified under (5) and rank them according to their storage potential.
7. In consultation with the steering committee, select one or two of the most promising basins/reservoirs (which have sufficient geological information) for further detailed analysis and assessment.
8. Using available cost information from projects in the United States, Canada and the EU, assess the cost of storing CO₂ in the selected reservoirs, recognizing that such storage may be profitable in the case of CO₂-enhanced recovery of oil and coalbed methane. Parameters involved are injectivity, storage capacity, drilling and facility costs, and capital and operating costs.
9. Present the results of the analyses and conclusions at regular APEC seminars and, budget permitting, one or more specialized workshops.
10. Distribute the report to senior policy makers and industry in all APEC economies.

12. A timeline for circulation and submission of this project proposal with drafts circulated well in advance to fora to allow careful consideration.

Following internal EGCFE member approval, this proposal will be submitted to the APEC Secretariat by 22 March 2001, which will distribute it to the Energy Working Group and other fora for consideration.

13. A timetable for the accomplishment of each component in (12).

The project will be completed in 12 months from the start of the project:

- 1) Data collection and field trip - 4 months
- 2) Data analysis, interpretation and capacity modeling – 5 months
- 3) Report preparation - 2 months
- 4) Final report distribution and workshop – 1 month

14. The number of APEC member economies that will participate in this project. Please indicate the names of member economies participating in each component of the project as set out in (12). (*)

Every APEC economy will be included in the survey. It is anticipated that a team of four or more economies will oversee the project. Republic of Korea, Canada, Japan and PR China are expected to volunteer to participate in the oversight team.

Budget

15. An itemized budget for the project, including provision for any publication and dissemination of project results, in the prescribed format. Applications under the Operational Account should use the format at Annex A1. Applications under the TILF Special Account should use the format at Annex A2. The budget should illustrate the assumptions adopted (e.g. unit costs) for the computations.

Please see Enclosure 1

16. A timetable for the drawdown of APEC funding requested for the project, including details of any advance payment or instalment payment requested and justifications for such requests.

Forty percent of the funding will be paid when the project is initiated and forty percent will be paid the completion of draft report. The remaining twenty percent will be paid upon satisfactory completion of the project.

17. Details of any request for waiver or exception from the normal APEC financial rules with justifications.

N/A

Dissemination of Project Output

18. A plan for the publication and dissemination of the results of the project, including:

- a. the nature of the target audience, and, based on that audience,
 - i. Key policy decision makers of member economies involved in clean energy and climate change programs, specifically those focusing on the mitigation of greenhouse gas and conventional pollutant emissions;
 - ii. Private and business sectors focusing on developing technologies for clean energy options and greenhouse gas reduction technologies;
 - iii. Financial institutions;

- iv. Research institutes.
- b. the form and content;
 - i. The study will produce a final report, meeting accepted standards for technical reports, and comply with the APEC style and nomenclature guidelines.
 - ii. A summary of the final report will be posted on the EGCFE web site for immediate viewing [a full version will be downloadable, see item (c) below].
 - iii. Based on the study results, one or more papers will be written, which will be presented at appropriate APEC or similar conferences.
 - iv. Based on the study results, one or more papers will be written and submitted for publication in appropriate leading journals.
- c. format (e.g. hard copies, floppy discs, internet downloading);
 - i. The final report will be professionally printed and bound.
 - ii. An electronic version of the complete final study report (in PDF format) will be posted on the EGCFE website and be available for viewing or downloading.
- d. **number of copies for the publication:**

Final technical report: 200 copies.
- e. **accessibility of results for the targeted audience;**

The study report will be distributed to the targeted audience by mail. Other audiences, not listed as the main target group, may request a copy of the report from the publisher. The report will also be available from the EGCFE web site.
- f. **a publicity plan for:**
 - i) **briefing the general or specialist media about key components of the project;**

Appropriate media releases and articles will be prepared and submitted to energy (both coal and other fossil fuels), environment and trade journals. These materials will also be available on the EGCFE web page.
 - ii) **the promotion of sales or other dissemination of the final product; and**

Promotion will be through the dissemination plan listed above. Announcements of the report release will be made through various media, including print media and the Internet. Extra copies of the reports will be available from the EGCFE Secretariat and an appropriate agency in the host economy.
- g. **a budget for publication and dissemination, to form part of the itemized budget.**

\$4,000

Assessment of Project

15. **With reference to your objectives stated in paragraph 3, provide detailed criteria (quantitative and qualitative) for how you will measure your results in the short and long term to know if your project has been successful. State your current benchmarks for measurement, your target results from the project for each measurement criterion and the range of acceptable results both in numerical and percentage terms, where possible.**

Preparation of the project will be made in conjunction with the criteria set in the Guidebook for APEC projects. Evaluation reports will be prepared by the evaluation committee in

consultation with the EGCFE and submitted to the APEC Secretariat for consideration. The evaluation will examine the effectiveness in achieving objectives for the study and the financial and administrative efficiency in achieving these objectives.

Gender Criteria for Formulation and Evaluation of Projects

Objectives

1. Show how the objectives of the project provide benefits for women, where appropriate. APEC Ministers have indicated (*Framework for the Integration of Women in APEC*) that benefits might include: increased involvement of women; taking account of the differences in women's and men's lives (gender analysis); and collection/use of sex-disaggregated data.

The ultimate objective of this project is the economically and environmentally sustainable development of the energy/electricity sector in APEC. Specifically, this means the development and implementation of affordable technologies which will allow the fossil fuel-based (in particular, coal-based) energy/electricity sectors in APEC economies to grow without constraint as their economies expand, while at the same time addressing the issue of greenhouse gas emissions and climate change as well as the emission of 'conventional' pollutants associated with fossil fuels.

Providing a plentiful and affordable supply of electricity without pollution will boost economic development, raise incomes and lower the cost of household energy use, all of which will increase disposable household incomes for women and, indirectly, help create increased work/career opportunities for women. Reduced pollutant emissions in areas surrounding power stations will also improve local community standards of living and health, of which women will be the immediate beneficiaries as they tend to be more home-bound in many developing economies.

Linkages

2. Show how the participation of women has been/will be sought. Show how women are involved in the planning, management, allocation of resources, and implementation of the project.

The EGCFE has always encouraged the participation of women from all its members in all its committees, projects and activities. This project will be managed by the Coal Technology Management Subcommittee, in which Korea, Japan, China and Canada jointly participate. While each economy is responsible for designating its own representatives, the Subcommittee encourages women to participate. The project itself will be carried out by a yet-to-be-selected consultant. In its evaluation of submitted bids, the Coal Technology Management Subcommittee will ensure that the winning submission will adhere to the priorities of the Framework for the Integration of Women in APEC ("Accelerate the progress of integrating women in the mainstream of APEC processes and activities" and "Promote and encourage the involvement of women in all APEC fora")

Methodology

3. Provide a brief description of the way women will be able to participate equitably in the development and implementation of the project.

As stated under (2), participation of women in the EGCFE and the Coal Technology Management Subcommittee is encouraged. Each participating economy is, however, individually responsible for designating its representatives. The submitted project proposals will be evaluated, amongst other criteria, against the priorities of the Framework for the Integration of Women in APEC (see item (2)).

4. Provide a brief description to show that the project will collect and use sex-disaggregated data (if available) to measure the project's effects on women.

The information and data to be gathered by the project and the ensuing analyses will be gender-neutral, i.e. they will have no gender implication and, therefore, cannot be sex-disaggregated.

Dissemination of project output

5. Does the plan for the publication and dissemination of the project's results include communication methods that are appropriate for women?
 - Questions that may be relevant include: Are women one of the target audiences? Does the plan take account of women with low literacy and women with low access to electronic media? Will the results be disseminated to women's organizations?

The primary vehicles for communicating the results of this study will be the report, which will be widely distributed to both men and women in governments, the energy/electricity sectors and environmental organizations, as well as EGCFE seminars and workshops, in which women are already present and active as organizers, speakers and audience. The target audience for the report and seminars will typically have electronic access to the website, where the report will be posted.

Budget

6. Are women involved in making decisions on the allocation of resources?

The Coal Technology Management Subcommittee will initially decide on the allocation of resources, which will then be amended or approved by the full EGCFE. The role of women in both bodies has been discussed in items (2) and (3) above.

7. Where appropriate, provide details of the project's budget that are allocated to activities that address the specific needs of women.

The project, by its nature, is gender neutral, and does not include any activities specific to women.

Assessment of project

8. Provide details of how the project proponent will assess whether he/she has met the gender criteria for APEC projects and how he/she will measure the impact of the project on women.

The substantive purpose of this project - the assessment of the CO₂ storage capacity of geological reservoirs - is by its very nature a gender-neutral technical issue with only technical results, which will have no direct impact on either gender. However, the management and execution of the project as well as the dissemination of the results will involve women wherever possible. This is in accordance with the priorities of the Framework for the Integration of Women in APEC (see item (2) above). The degree of women involvement, in terms of responsibility and numbers, can be evaluated objectively at the conclusion of the project.

* * * * *

APEC Operational Account
Itemized Budget for Financial Year 2002-2003¹

Items			APEC Funding (USD)	Self Financing (USD)
<i>Direct Labour</i>	No. of Hours	Rate		
- Speaker's Honorarium				
- Consultant (including Researcher) Fees	350	\$100/hr	35,000	
- Consultant's Secretary Cost	75	\$40/hr	3,000	
<i>Travel</i>				
- Per Diem (including accommodation and "additional payment")		5 days	1,000	
- Airfare		1 trip	5,000	
- Inter-city transport			1,000	
	No. of Copies	Unit cost		
<i>Publication of report</i> (including distribution)	200	\$20/ea	4,000	
<i>Photocopying</i>			1,000	
<i>Communications</i> (Phone/Fax/Mail/Courier)			1,000	
Total			50,000	

¹ If project straddles more than one year, please indicate only the amount of funds required for the financial year in question.