

Facesheet

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

Project number: (To be filled in by Secretariat)		Date received by Secretariat:	Late / Not late () ()
Name of Committee/Working Group: Expert Group on Clean Fossil Energy/Energy Working Group			
Title of Project: Costs and Effectiveness of Upgrading and Refurbishment of Older Coal-Fired Power Plants in Developing APEC Economies			
Proposing APEC Member: USA			
Co-sponsoring APEC Member(s): Australia, China, Japan			
Project Overseer: Name, Title and Organisation (M) Scott M. Smouse, Chair APEC Expert Group on Clean Fossil Energy			
Postal address: U.S. Department of Energy National Energy Technology Laboratory P.O. Box 10940 Pittsburgh, PA 15236-0940 USA		Tel No: 412-386-5725 Fax No: 412-386-4561 Email: scott.smouse@hq.doe.gov	
Financial Information	Total cost of proposal (US\$): 50,000	Amount being sought from APEC Central Fund (US\$): 50,000	
Type of Project: <input type="checkbox"/> seminar/symposium <input type="checkbox"/> short-term training course <input checked="" type="checkbox"/> survey or analysis and research <input type="checkbox"/> database/website <input type="checkbox"/> others (Please specify)			
Project start date: January 2003		Project end date: December 2003	
<p>Project Purpose:</p> <p>Current generating capacity in APEC economies totals 1957 gigawatts (GW), of which 34% is coal fired. Of the coal-fired capacity, 240 GW are between 16 and 30 years of age, and 160 GW are older than 30 years. While some of the older and smaller plants are candidates for retirement, such as is occurring in China, it is likely that most will continue to generate up to and beyond a 40-year lifetime. There is an urgent need to optimize the performance of these older plants through cost-effective upgrading, refurbishment, and operations & maintenance (O&M) improvements. Developing economies can't afford to replace existing capacity just because it is old but rather need to find an economic balance between maintaining older facilities and constructing new facilities to meet new demand for electricity. However, to gain the maximum economic benefit, older plants, which often have not been properly maintained, must be refurbished. Developing APEC economies do not have the knowledge or experience base upon which to determine, on technical or economic bases, which plants should be refurbished and kept in production. Considering that more than 20% of the existing coal-fired generating capacity in APEC economies is already aged, and thus should be looked at for refurbishment and upgrading opportunities, this project is of vital importance to the continued reliable, cost-effective operation of the electricity infrastructure of many APEC economies. Moreover, refurbished power plants usually produce less carbon dioxide (CO₂) emissions through efficiency improvement, which adds to the economic reasons for upgrading existing plants.</p> <p>This project would assess and rank the costs and effectiveness of a range of refurbishment measures (short of repowering) and O&M improvements that would upgrade the performance and reliability of older coal-fired power plants, specifically plant efficiency. Examples of such measures are combustion controls, burner retrofit, air preheater improvements, fan upgrades, pulverizer and sootblower upgrades, steam cycle improvements, instrumentation and controls, and improved training for O&M staff.</p> <p>The project would:</p> <ul style="list-style-type: none"> ▪ Assess the impact of the specific measures on plant generating efficiency, air emissions (including CO₂), and cost of electricity generated ▪ Indicate the cost-effectiveness of various combinations of refurbishment measures applied to different existing plant circumstances, and illustrate this choosing one or two real plants as a case study. ▪ Estimate the total costs and potential CO₂ emission reductions from application of a range of refurbishment combinations to the existing inventory of coal-fired power plants in APEC developing countries. <p>This project will complement an ongoing EGCFE Study on CO₂ Emission Reduction Options for the Electric</p>			

Power Generation Sector in APEC Economies. Information on the most cost-effective ways to reduce emissions of gases that contribute now or are likely to contribute in the future to global climate change will be of increasing importance to policymakers in APEC member economies. CO₂ is the most important of these gases and the electric power sector is a major source of CO₂ emissions. Phase I of the completed EGCFE Study assessed what options are available to reduce CO₂ emissions from the electric power generation in APEC economies. Most of these options were applied to existing generating capacity, and involved upgrading, repowering, or fuel-switching. The scenario analysis of that project concluded in particular that a reduction of annual CO₂ emissions of 171 million tons would be possible through a range of combustion, steam cycle and O&M improvements. This would represent some 9% of the emissions of the plants affected by the improvements.

The project will particularly benefit developing economies by providing a better understanding of the costs, risks and other issues associated with upgrading and refurbishing older coal-fired plants. Upgrading and refurbishing suitable plants will yield improved efficiency, lowered generating costs, and better reliability. Developing economies need to make informed decisions on whether to maintain existing facilities or to erect new facilities; this project is designed to provide guidelines for utility management to follow to make such decisions. This project will also help facilitate foreign investment in the electric power generation sector of developing APEC economies by identifying opportunities for Joint Implementation (JI) projects in existing coal facilities that result in improved efficiency, and thus reduced CO₂ emissions.

Signature of Project Overseer:

(Separate written confirmation acceptable for e-mail submission)

Date:

Signature of Committee Chair/WG Lead Shepherd:

(Separate written confirmation acceptable for e-mail submission)

Date:

ECOTECH Weightings Matrix

[Costs and Effectiveness of Upgrading and Refurbishment of Older Coal-Fired Power Plants in Developing APEC Economies/

Criteria	Supporting Information (indicate paragraph number if details are in the project proposal)	Linkage ⁶
Responds to a specific instruction from Leaders/Ministers ¹	<p>MANILA DECLARATION</p> <ul style="list-style-type: none"> • Strengthen economic infrastructure • Develop stable, safe and efficient capital markets • Harness technologies for the future • Safeguard the quality of life through environmentally sound growth <p>THE OSAKA ACTION AGENDA Implementation of the Bogor Declaration Part Two: Economic and Technical Cooperation</p> <ul style="list-style-type: none"> • improving the flows of technological information and technology; • improving the transparency of regulatory frameworks; • contributing to sustainable development <p>THIRTEENTH APEC MINISTERIAL MEETING JOINT STATEMENT Shanghai, People's Republic of China</p> <p><i>"Energy security stands as an important issue for economic development and regional prosperity. They called for further energy technology development, exchange, application and deployment, and for the facilitation of a diverse and efficient supply mix to avoid the risks posed to the economy by volatility in the international oil market."</i></p> <p>Expansion and improved operations of coal-power sector in APEC economies will improve further diversify fuel supplies at the lowest cost, by reducing global oil demand and better utilization of local and regional resources; thereby, promoting economic development and regional prosperity.</p>	1
Meets a core ECOTECH theme under the Manila Declaration ¹	<p>IV. Organizing Themes and Priorities</p> <p>Strengthen economic infrastructure to eliminate bottlenecks to economic growth, especially in such areas as telecommunications, transportation, and energy, in order to further integrate members into the regional economy, and the region into the global economy.</p> <p>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</p>	1
Responds to the Common Policy Concepts, Activities and Dialogues identified in Part II of the Osaka Action Agenda ¹	<p>Section B, Item 5 - Energy: Common Policy Concepts</p> <p>APEC economies will set priority on the following:</p> <ul style="list-style-type: none"> - fostering a common understanding on regional energy issues; - facilitating investment in the energy sector where appropriate; - reducing the environmental impact of the energy sector; and - accepting equivalence in accreditation and increasing harmonization of energy standards <p>Joint Activities/Dialogue</p> <ul style="list-style-type: none"> - 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, e.g. demonstration projects leading to Joint Implementation <p>APEC Cleaner Production Strategy</p> <ul style="list-style-type: none"> - Facilitate cleaner production demonstration projects with wide application in member economies 	1
Responds to a <u>specific</u> ECOTECH initiative ²	<p>APEC Cleaner Production Strategy</p> <ul style="list-style-type: none"> - Facilitate cleaner production demonstration projects with wide application in member economies 	1

Improves skills, including in new technologies	Increases understanding of operation, maintenance and refurbishment of coal-fired power generating plants. Facilitates Joint Implementation projects that will result in transfer of technology and skills.	1
Builds capacity and strengthens institutions	Will result in more efficient existing coal-fired power plant capacity, lowering generating cost, improving electricity availability, and facilitating economic development.	1
Measurably improves economic efficiency/performance ³	Can lead to substantial improvements in existing coal-fired power plant efficiency (10% or greater) at reasonable cost, resulting in equivalent reductions in CO ₂ emissions and other pollutants from these plants, as well as lowering their generating costs. Consistent with the call by Energy Ministers at their San Diego meeting in 2000 for implementation of priority energy initiatives, including strategies to enhance energy efficiency	1
Is of <u>practical</u> benefit to the private sector; has private sector <u>participation</u> ; and/or <u>funding</u> ⁴	Will benefit the private sector through better understanding of issues relating to the performance and efficiency of existing coal-fired power plants in developing countries, and through opportunities for investment in the power sector of these countries. The power engineering and technology supply sectors will be major sources of the information used in the study.	3
Assists economies attain sustainable growth and equitable development, while reducing economic disparities among APEC economies and improving economic and social well-being	Likely to lead to significant reduction of emissions from older coal-fired power generation in developing economies, and reduce economic disparity by facilitating inward investment in upgrading these plants, thereby improving economic and social well-being via more secure and reliable electricity supply.	1
Supports a TILF objective, as laid down in Part I of the Osaka Action Agenda ¹	Facilitates inward investment in electric power generation in developing APEC economies through identifying opportunities for Joint Implementation projects in upgrading and refurbishment of existing coal-fired electricity generation that result in improved efficiency and performance.	1
Disseminates information including through seminars/websites/databases ⁵	The final report will be circulated to key decision-makers in the private sector as well as public and government officials; to technical experts; to electric utility and related industry sector representatives; and to research institutes. A summary of the final report will be posted on the EGCFE web site for immediate viewing. A full version will be available for downloading. The results will be presented at an EGCFE technical seminar. Based on the results, one or more additional papers and/or conference presentations may be written.	0
Outline the outcome and how members will benefit ⁶	Builds on substantial work done in this field in industrialized countries, and adds value by facilitating application to developing economies and identifying issues needing attention. More efficient power plants will produce economic and environmental benefits for members. Joint Implementation projects could provide assistance from developed economies.	0
	Net Score	12

Footnotes

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 scored for each element up to a maximum of 3 points
5. Not scored.
6. Yes = 1 point, No = 0 points

Remarks (Please indicate if not applicable eg 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.*

Costs and Effectiveness of Upgrading and Refurbishment of Older Coal-Fired Power Plants in Developing APEC Economies

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 (APEC EGCFE)

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).*

In circulating the final report of the project, a survey will be included for recipients to complete giving their views on the content and utility of the report and on the benefits that recipients derive from it. Further measures of success will be any Joint Implementation projects that the project may stimulate, and the extent to which existing coal-fired power plant upgrading and refurbishment projects are implemented in APEC developing economies.

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.*

The ECOTECH Weightings Matrix above provides elements of the response to this item. The proposed project is fully supportive and furthers the goals of energy aspects of the APEC Action Agenda, specifically by fostering a common understanding of regional energy issues. The project addresses the elements embraced in the 3Es initiative by providing basic information aimed at reducing the environmental impact of the energy sector, and facilitating inward investment in electricity generation in developing economies.

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).*

The results of this assessment are likely to (1) demonstrate the need for significant quantities of equipment and instrumentation & controls that are not currently being manufactured locally. Thus, opportunities exist to develop licensing and manufacturing arrangements for key foreign components that otherwise would have to be imported at higher costs. (2) facilitate inward investment in the electric power generation sector of developing APEC economies by identifying opportunities for Joint Implementation projects in upgrading and refurbishment of existing coal-fired electricity generation that result in improved efficiency and performance together with

reduction in CO₂ emissions. Power plant refurbishment and upgrading projects have constituted the majority of JI projects in the electricity sector around the world, particularly in Eastern and Central Europe. Such opportunities have not been explored to a great extent in APEC developing economies owing to (1) the lack of information of about the operational status of many power plants in the APEC region, and (2) these markets have not been open competitively to foreign companies that may be interested in investment or business opportunities related to power plant refurbishment, including JI projects.

This proposal addresses a number of recommendations in the Osaka Action Agenda. Specifically, in Part One: Liberalization and Facilitation, Section C: Actions in Specific Areas, Section 3: Services, Energy, the following Collective Action was recommended: “*APEC economies will facilitate investment in the energy sector by identifying institutional, regulatory, and procedural impediments that affect investment in electricity infrastructure.*” The biggest impediment affecting investment decisions for power plant refurbishment projects in developing APEC economies is the lack of information by power plant owners and operators on the comparative technical and economic merits of various plant refurbishment options. This stems largely from a lack of skilled plant engineering staff and, in some cases, centrally controlled economies that do not understand the full-life cycle costs of power plant construction and operation. This situation is created in great part by the nature of the centrally controlled governmental structures in many economies, which often make investment decisions based on initial capital costs and other one-time factors but neglect the long-term costs of operating and maintaining power plants and other infrastructure facilities. While this project cannot eliminate this impediment to sound economic decisions, it can create a succinct report that highlights what opportunities exist through real world case studies of power plants that have been refurbished to increase availability, improved operating performance, and reduced electricity generation costs.

In Part Two: Economic and Technical Cooperation, Section B: Economic and Technical Cooperation in Specific Areas, Section 2. Industrial Science and Technology, Common Policy Concepts, two recommendations are relevant: (b) *improving flow of technological information and technology, and (e) contributing to sustainable development.* This project will provide significant information on both the technical and economic merits of various refurbishment options based on a select number of actual plants in a few developing APEC economies. Exchange of this information should (1) allow central government and private utilities in APEC developing economies to make more rational decisions about their limited resources, and (2) increase the interest of foreign investors in pursuing power plant refurbishment projects in APEC developing economies. Decisions on power plant refurbishment and upgrading are among the many investment decisions that all developing APEC economies must make that affect their overall sustainable development.

Also in Part Two: Economic and Technical Cooperation, Section B: Economic and Technical Cooperation in Specific Areas, Section 5. Energy, Common Policy Concepts, three recommendations are relevant: (a) *fostering a common understanding on regional energy issues; (b) facilitating investment in the energy sector where appropriate; (c) reducing the environmental impact of the energy sector.* Specifically, it is recommended that APEC economies “*improve environmental performance through expanded programs in the fields of clean coal technologies, renewable energy sources and end-use energy conservation measures, leading to exploration of cooperative multilateral programs to reduce climate change, such as demonstration projects which lead to joint implementation.*” Refurbishment and upgrading of existing coal power plants will require use of many clean coal technologies that have been commercialized and widely deployed in developing countries around the world. A number of examples of these technologies are cited in the proposal Facesheet. These technologies reduce the environmental impact of the energy sector in two ways: (1) installation of cleaner technologies, such as state-of-the-art burners, and particulate control devices, on existing power plants will directly reduce pollution and (2) use of less coal and other fossil fuels through power plant efficiency improvement measures will indirectly reduce pollution. Refurbished power plants will emit significantly lower levels of pollutants, such as nitrogen oxides, sulfur dioxide, and particulate, but also carbon dioxide. As mentioned in the first paragraph to this question, power plant refurbishment and upgrading projects have constituted the majority of JI projects in the electricity sector around the world. This project will generate practical information of about the operational status of power plants in the APEC region, which should be of interest to foreign companies interested in pursuing investment or business opportunities in the region, including JI projects. Sharing of this information will create a common understanding (1)

among developing APEC economies of the relative technical and economic merits of various power plant refurbishment and upgrading options, and (2) between developing and developed economies of the actions taken to date, perceived technical and market barriers, and government plans with regard to refurbishment and upgrading existing coal-fired power plants in each economy.

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.*

Each of the member economies will benefit in a number of ways. Developing economies will understand better the costs, risks and other issues associated with upgrading and refurbishing older coal-fired plants, and will be able to identify projects suitable for Joint Implementation. Developed economies and private sector companies will be better placed to identify opportunities for involvement in such projects. The power generation sector will benefit from improved knowledge and access to information on upgrading and refurbishment. It will also benefit by evolving more knowledgeable O&M staff. The power engineering and technology supply sectors will be better placed to identify opportunities in developing APEC countries.

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. (*)*

Industrial and private sector experts in all aspects of clean fuels technology and electric power generation, its implementation, costs, economics and transfer issues have responded enthusiastically to the invitation to participate in past projects. The private sector is the source of much of the information that will be used in the project.

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. (*)*

This project will draw on some results of the project on CO₂ Emission Reduction Options for the Electric Power Generation Sector in APEC Economies. It will build on substantial work done in this field in industrialized countries, and add value by facilitating application to developing economies and identifying issues needing attention.

The results of the project will be shared outside the APEC EGCFE through the publication of a report, which will be disseminated to all APEC members. Additional copies will be published and directly distributed to key government and industry officials and will be available through the APEC, EWG, and EGCFE web sites.

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

The project has a high potential to lead to future Joint Implementation projects in the power generation sector in APEC developing economies. The information to be developed will also interface with that of other project proposals related to CO₂ emission reduction submitted to the March 2002 Session of the EGCFE for consideration, if the latter are implemented.

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

The major deliverable of the project will be the final report, which will assess the impact of specific upgrading and refurbishment measures, as well as O&M improvements, on plant generating efficiency, CO₂ emissions, and cost of electricity generated in APEC developing countries. It will also indicate the cost-effectiveness of various combinations of refurbishment measures applied to different existing plant circumstances, and illustrate this choosing one or two real plants as a case study. And it will estimate the total costs and potential CO₂ emission reductions from application of a range of refurbishment combinations to the existing park of coal-fired power plants in APEC

developing countries. This will provide a sound basis for decisions on the most effective refurbishment measures in terms of cost and reduction of CO₂ emissions in APEC economies. It will also facilitate identification of opportunities for inward investment in Joint Implementation projects in this sector.

Methodology

11. *A concise description of the project by component, with its associated outputs clearly specified..*

The project will be carried out by a consultant with knowledge and expertise in O&M, upgrading, and refurbishment of coal-fired power generating plants. Building on the results of Phase I of the project on CO₂ Emission Reduction Options for the Electric Power Generation Sector in APEC Economies, he/she will review the work already done in this area in OECD countries, identify the relevant data for the power generation sector of the selected APEC developing economies designated by the EGCFE, carry out the assessment and write the report.

A project steering team from the EGCFE will provide guidance at appropriate stages of the project. The consultant will be responsible for publication of the report on the project after approval from the EGCFE.

The project components will be the following:

- Building on the results of Phase I of the project on CO₂ Emission Reduction Options for the Electric Power Generation Sector in APEC Economies, assess the impact of specific upgrading and refurbishment measures (including O&M improvements) on plant generating efficiency, CO₂ emissions, and cost of electricity generated.
- In cooperation with appropriate experts from the APEC developing economies selected by the EGCFE, assess the cost-effectiveness of various combinations of measures applied to different existing plant circumstances, and propose one or two real plants as case studies.
- Carry out the case studies, and highlight their implications for the choice of measures to apply to different existing plant circumstances
- Assess the benefits and risks associated with refurbishment and upgrading of existing coal-fired power plants for the selected APEC developing economies.
- Estimate the total costs and potential CO₂ emission reductions from application of a range of refurbishment combinations to the existing park of coal-fired power plants in APEC developing countries.
- Prepare the final report, including conclusions and recommendations, for approval by the EGCFE and publication.

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

This proposal was circulated to the EGCFE in early February 2002, for discussion at its meeting in Kuala Lumpur on March 5, 2002. There it was approved for submission to the APEC Secretariat by March 15, which will then distribute it to the Energy Working Group and other fora for consideration.

13. *A timetable for the accomplishment of each component in (11).*

The first two bullets in (11) should be completed by end-February 2003 and the results and proposals for case studies presented to the project steering team for approval. Results of the assessment (including costs, benefits, risks, issues etc.) should be provided to the team for review and comment by end-April. Based on comments received, the consultant will complete the draft report and circulate it to the team and the EGCFE for comments and approval by end-May. The report will be finalized and published by the end of June 2003.

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 (11). (*)*

To be decided

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.*

The cost of this project as estimated (US\$50,000) in the following budget is justified based on the anticipated amount of review, research, analysis (including case studies), and discussion with experts from the public and private sector in a number of APEC economies, and the work required to assemble the results into a final report.

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.*

25% to be paid following the end-February submission to the project steering team, and 50% on submission of the results and assessment at the end of April 2003. The remainder is to be paid upon completion and publication of the final report.

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

None

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;*

- Key decision-makers in the private sector as well as public and government officials;
- Technical experts;
- Electric utility and related industry sector representatives;
- Research institutes.

- b. *the form and content;*

The final report will meet accepted standards for technical reports, and comply with the APEC style and nomenclature guidelines. A summary of the final report will be posted on the EGCFE web site for immediate viewing. A full version will be available for downloading (see below). Based on the results, one or more papers and/or conference presentations may be written.

- c. *format (e.g. hard copies, floppy discs, internet uploading);*

Bound report for circulation by mail, plus electronic version in PDF format posted on the EGCFE website, available for viewing or downloading.

- d. *number of copies for the publication;*

200 copies with the possibility of re-publication as determined by demand.

- e. *accessibility of results for the targeted audience;*

The final report will be distributed to the targeted audience by mail. A more general audience may obtain the report from APERC, libraries, and interested energy or resource-oriented organizations. It will also be available from the EGCFE website (see above).

f. *a publicity plan for:*

i) *briefing the general or specialist media about key components of the project;*

Appropriate media releases will be prepared, and articles published in energy, environment or trade journals or conference proceedings will be available on the EGCFE web site.

ii) *the promotion of sales or other dissemination of the final product; and*

Journal articles, excerpts on APEC's internet sites. Extra copies of the report will be available from the EGCFE Secretariat.

g. *a budget for publication and dissemination, to form part of the itemized budget.*

US\$4,000

Assessment of Project

19. *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.*

In circulating the final report of the project, a survey should be included for recipients to complete giving their views on the content and utility of the report and on the benefits that recipients derive from it. The survey will ask recipients to judge:

- Appropriateness of the methodology used
- Clarity of presentation
- Applicability of the results to coal-fired generation in APEC economies
- Accuracy of data used for the assessment, in the context of APEC developing economies
- Degree to which the report provides new and relevant insights
- Degree to which the results are persuasive in supporting decisions to upgrade/refurbish appropriate existing coal-fired plants.
-

These items will be rated on a scale of 1 (poor) to 5 (excellent), plus "Not known". The target will be an average of 4 or greater, and acceptability will be 3 or greater.

A further measure of success will be the amount of implementation of refurbishment and upgrading projects in APEC developing economies, including any Joint Implementation projects that the project may stimulate.

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 primary objective of the project is information transfer and environmentally sustainable energy development in the APEC region. Having an adequate, dependable, efficient and environmentally safe supply of energy in the APEC Region benefits men and women equally. Women can be uplifted by provision of electricity to replace domestic fuels, such as wood or coal, for cooking and space heating, and freed from the daily time-consuming efforts to secure and use these fuels, as well as from the harmful health impacts of uncontrolled combustion at the household level.

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.*

Women are encouraged to participate as equal partners in all phases of EGCFE projects. While the official representative of each economy to the EGCFE changes occasionally, at least one economy (P.R. of China) has been represented by a woman for a number of years. Women will be sought in organizing the workshop, and strong participation from women will be encouraged in all facets of the workshop, including as speakers and session chairs.

Methodology

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

The selection of the consultant will follow APEC guidelines.

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.*

N/A – the project is gender neutral.

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 project report will be distributed widely within APEC and will also be posted on various APEC web pages. Men and women will have an equal opportunity to receive a copy.

Budget

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

Yes, women are part of the EGCFE and the Project Steering Committee where budget considerations are made.

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

N/A – the project is gender neutral.

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.*

N/A – the project is gender neutral.

Annex A2
(1 of 1)

APEC TILF Special Account
Itemized Budget for Financial Year 2003

(Please tick ✓)

This project is:

- a seminar, symposium or short-term training course
 a survey or analysis and research project
 neither the above but involves the provision of equipment

Items			APEC Funding (USD)	Self Financing (USD)
<i>Direct Labour</i>	No. of Hours	Rate		
- Speaker's Honorarium				
- Translator's Fees				
- Short-term clerical and secretarial staff remuneration				
- Consultant (including Researcher) Fees	340	\$100/hr	34,000	
- Consultant's Secretary Cost	75	\$40/hr	3,000	
<i>Travel</i>				
- Per Diem (incl. accommodation and "additional payment")	10 days	\$200/day	2,000	
- Airfare (+local transport)	1 trip		5,000	
	No. of Copies	Unit cost		
<i>Publication of report</i> (including distribution)			4,000	
<i>Equipment / Materials</i> (pl. describe briefly what is required and why)				
<i>Photocopying</i>			1,000	
<i>Communications</i> (Phone/ Fax/ Mail/ Courier)				
<i>Hosting</i> (pls describe, eg, conference room rental, stationery)			1,000	
Total			50,000	

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