

**Guidance for Proposal Submission for
Stationary Fuel Cells**

By

International Finance Corporation

World Bank Group

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Guidance for Proposal Submission for Stationary Fuel Cells

1 INTRODUCTION

1.1 Background

International Finance Corporation (IFC) is the private sector affiliate of the World Bank Group¹. Its mission is to promote sustainable private sector investment in developing countries. In order to accomplish this, IFC finances private sector investments in the developing world, mobilizes capital in the international financial markets, and provides technical assistance and advice to governments and businesses.

IFC is taking the lead in introducing fuel cells as a preferred technology for privately-financed, distributed, stationary power applications in developing countries. Fuel cells utilize fuels with low or neutral carbon content at high electrical efficiencies, and thus have the potential for significant GHG emissions reductions. While present costs of fuel cells for power generation are not competitive with conventional power generation technologies, it is expected that further technology development prompted by assisted market growth and a scale up in manufacturing will achieve cost reductions that should in the future be able to attract finance on commercial or near commercial terms. This in turn, will result in a large base of fuel cell installations for power generation, thereby reducing GHG emissions.

The Global Environment Facility (GEF)², is a multilateral finance program which is administratively housed in the World Bank. It serves as the official financial mechanism for the United Nations Framework Convention on Climate Change (UNFCCC) and has identified fuel cells as a promising technology to be supported under the GEF's Operational Program #7: "Reducing the Long-Term Costs of Low Green House Gas (GHG) Emitting Technologies." Information about this Operating Program and others, can be found on the GEF website, under Operational Programs.

IFC acts as an executing agency for the GEF, and will use funds from the GEF to assist in the achievement of GEF defined objectives. The Sustainability Business Innovator (formerly the Environmental Finance Group) within the IFC is the unit which manages this program.³ In May 2002, the GEF Secretariat agreed to allocate up to US\$54 million in two stages for the fuel cells initiative, based upon IFC's Concept Paper. This paper drew upon the analysis of previously prepared reports, and proposed a two stage approach to accelerate the adoption of fuel cell technologies for stationary power applications in suitable GEF-eligible countries. Stage 1 of this initiative was approved by the GEF Secretariat in November 2003.⁴ Individual proposals under Stage 1 of the initiative are required to be submitted to the GEF CEO once they have been selected by the IFC. The GEF will release funds to IFC to fund selected proposals submitted on behalf of specific projects by IFC.

The first stage of this initiative will use up to US\$ 9 Million of GEF funding, and consist of up to three (3) individual pilot projects that will demonstrate the value of stationary fuel cell technology in economic

¹ To learn more about the International Finance Corporation, please see: <http://ifcln1.ifc.org/ifcext/about.nsf>

² To learn more about the Global Environmental Facility, please see: <http://www.gefweb.org/>

³ To learn more about the Sustainability Business Innovator, please see:
<http://ideskintraprod.ifc.org/ifcint/cesweb.nsf/Content/SBI>

⁴ http://www.gefweb.org/Outreach/Media/Press_Releases/2003-11WPPressRelease.pdf

and environmental terms in developing countries. These initial demonstration projects will inform the design and structuring of a larger second stage initiative, for which up to US\$ 45 Million of GEF funding is to be made available. The second stage will provide financing on terms that are closer to commercial, to accelerate the market penetration of fuel cells for distributed electricity generation in selected GEF-eligible developing countries.

In Stage 1 of the initiative, up to three commercial demonstration projects using fuel cells for distributed power generation will be promoted in at least two (2) GEF-eligible countries. These projects may involve various stakeholders and are expected to result in a total installation of 4-7 MW of fuel cells by 2010. The goal of 4-7 MW of cumulative installed capacity should not necessarily be construed as a preference for higher kW capacity units. For example, a proposed project of six (6) 250 kW units would have equal consideration to a project with a hundred-and-fifty (150) 10 kW units.

The first stage demonstration projects will have concessional funding *up to* 50% of the project costs, but not to exceed \$2000/kW for the installed cost of the fuel cells employed. There is also a cap of US\$3 million per project. Preference will be given to those respondents that maximize the kW installed and minimize the grant funding required.

IFC and the GEF desire to foster initial commercial-scale fuel cell use in various stationary applications in developing country markets which help increase fuel cell manufacturing capacity. Specific uses for these funds may include, but are not limited to capital cost buy-downs, sub-commercial loans, guarantees for specified project risks, and/or funding for technical assistance and implementation. The emphasis should be on facilitating access to commercial financing for the balance of capital requirements. The proposed projects are restricted to GEF-eligible countries and local participation and understanding of in-country regulations, market conditions and commercial resources is strongly encouraged. Projects that minimize the grant portion of the desired funding, and maximize the leverage of GEF funds, will be favored.

The financing initiative in the second stage (Stage 2) is expected to finance a number of projects resulting in about 50 MW of fuel cells installed by 2012 or later in three to five (3-5) countries in two to three (2-3) geographic regions if project sponsors are able to meet the technical, cost and business criteria, and demonstrate the capacity to produce and deliver fuel cells on this scale. It is anticipated that there will be US\$45M available for funding in Stage 2. Participants in Stage 1 are urged to keep this larger context in mind when preparing their proposals for Stage 1.

1.2 Request for Proposals

IFC's Sustainability Business Innovator, within the Environment and Social Development Department, hereby wishes to receive expressions of interest for consideration by IFC staff and consultants for providing GEF funding to consortia of fuel cell vendors and project developers based on their companies' qualifications, successful field installations, and installed product prices projected over specified time periods. It seeks turnkey fuel cell installations by project sponsors who establish that their projects are eligible. Specific projects or groups of projects will be selected for funding, based on their proposals.

Respondents will be evaluated based on the overall quality of their proposals. IFC reserves the right, at its sole discretion, to not accept a response that does not satisfy or sufficiently demonstrate the ability to produce, deliver, design, permit, and install a substantial volume of fuel cell projects, even though it satisfies the major requirements of the initiative. IFC reserves the right to interview any or all respondents or to ask for additional information or clarifications.

This RFP will be conducted on a “rolling basis”, meaning the IFC will evaluate proposals beginning June 30, 2007 as and when they are received for a period of 18 months. IFC expects to complete its initial pre-qualification evaluation within three months of receiving a proposal. If a proposal is promising, the IFC will notify the respondent that the project will enter into the “technical due diligence” phase. Technical due diligence will be conducted for a maximum period of six (6) months. If the respondent does not meet the technical criteria of the due diligence team within this period the proposal will be disqualified. Should a proposal meet the technical criteria within the six month technical due diligence period, the project will then proceed to final due diligence (including due diligence on commercial issues, structure of the project, relationships between/among partners, and risk sharing among the partners). We anticipate notifying respondents within a one year period if they win an award under the program.

The term ‘fuel cell’ means integrated power plant systems containing a stack, tubular array, or other functionally similar configuration used to chemically convert fuel to electrical energy; an inverter and fuel processing section where necessary; and other balance of plant equipment (including heat recovery equipment) needed to support the plant’s operation and/or its energy conversion. The term includes hybrid systems that produce additional power by utilizing waste heat from the conversion process, and/or thermal or mechanical energy from other system components, or regenerative systems that produce hydrogen for later use.

1.3 Objective

IFC intends to issue GEF funds as an incentive for the development of a number of fuel cell projects from 2004 through 2010. Through this “learning-by-doing” approach IFC hopes to do the ground-work for the more extensive second stage of the initiative. IFC expects to entertain orders of as much as 4-7 MW of fuel cell capacity by 2010 under Stage 1 of the initiative. Stage 2 of the Fuel Cells Financing Initiative for Distributed Generation Applications looks to install substantially more capacity provided that emerging fuel cell companies are able to meet IFC’s technical, cost and business criteria, and demonstrate the capacity to produce and deliver larger numbers of fuel cells on a decreasing cost trajectory. The overall objective is to help accelerate the path towards the commercial adoption of low greenhouse gas emitting stationary fuel cell technologies in developing countries.

1.4 Proposal Review Process

IFC seeks proposals for the installation of fuel cells in GEF-eligible countries, in keeping with GEF’s objective of supporting long-term cost reductions in low greenhouse gas emitting technologies. The phased approach of this initiative is predicated on the fuel cell manufacturing industry achieving specific price points along a declining cost curve. IFC will ask for separate cost projections for installations in successive time periods. It will be important that potential sponsors demonstrate their forecasted volume/price goals to achieve commercialization after the second stage with the least amount of concessional financing. In addition, the evaluation process will focus on, but not be limited to, the following key characteristics of the proposals:

- demonstration of a well thought through business plan with significant potential for replication;
- exploitation of new and practical market niches, with significant long term potential;
- development of innovative ways to leverage GEF funding to overcome market barriers and manage project risks; and
- acceleration of the adoption of fuel cell technologies on a commercial scale.

IFC will consider all vendors and project developers, hereinafter referred to as project “Sponsors” offering any fuel cell technologies that meet the requirements stated in this document. IFC intends to

provide GEF funding to selected project sponsors who commit to establishing the financing modalities that will place significant quantities of fuel cells in developing countries. It seeks turnkey fuel cell installations by project sponsors who can establish that their projects are eligible through this process, and who may be funded for specific projects or groups of projects based on their responses to this invitation. Each respondent must demonstrate that it satisfies the minimum qualifications set forth in this guidance document and must adequately address all points set forth in this document.

All proposals selected through the due diligence process are required to be presented to the GEF Chief Executive Officer (CEO) for final funding approval. Once the review process is complete, IFC plans to submit the screened proposals from project sponsors to the GEF CEO for final funding approval. It is anticipated that this will happen within two to three months of completion of the proposal review process.

Once proposals have been approved for funding by the GEF CEO, project Sponsors will enter into an agreement with the IFC which governs the use of the funds supplied. Once this agreement is complete, funds will be disbursed. Sponsors should estimate two to three months from the time of GEF CEO approval to fund disbursement.

Potential project Sponsors should plan on having the first portion of their MW capacity installed by the¹ Quarter of 2009, and all capacity installed by the fourth quarter of 2010.

For Step 1, IFC will be open for submissions beginning June 30, 2007. Sponsors should submit ten (10) copies and one electronic copy of the Responses to this process must be submitted in writing, signed by an authorized officer or agent of the respondent. All responses should have “Stationary Fuel Cell Qualifications” marked clearly and prominently on the envelope.

Responses shall be submitted to:

Mr. Sandeep Kohli

Program Manager
IFC/GEF Stationary Fuel Cell Initiative
Sustainability Business Innovator
Environment and Social Development Department
International Finance Corporation
2121 Pennsylvania Avenue, N.W.
Washington, D.C. 20433
USA.

All questions related to this announcement can be sent via e-mail to sswann@ifc.org. Telephone inquiries can be directed to either to Mr. Sandeep Kohli at +1 202 473 5317, Ms. Stacy Swann at +1 202 473 7139, or Ms. Angelita Coloma at +1 202 458 7329.

2 MINIMUM QUALIFICATIONS AND REQUIREMENTS

2.1 Location

Projects can be located in any of the countries eligible for GEF financing which satisfy a two part criterion. First, projects must be located in an IFC eligible country. IFC’s website (www.ifc.org/about/members/alphabet/alphabet.html) lists IFC eligible recipient countries. Please note that this first list also identifies the alphabetical listing of Donor Countries, and, with the exception of

India, Mexico and South Africa, that a **Donor Country is not eligible** to be a site host of the projects. Second, each of IFC eligible countries needs to be a ratified signatory of the United Nations Framework Convention on Climate Change (UN FCCC). The countries that are ratified signatories of the UNFCCC can be verified at <http://unfccc.int/resource/conv/ratlist.pdf>. If a country which is not a donor country, appears on both of these lists, then that country is eligible to be a site host for the proposed stationary fuel cell projects.

In addition to country eligibility, the Fuel Cells Financing Initiative for Distributed Generation Applications program has identified a set of criteria used to select projects. Project Sponsors are encouraged to address these criteria in their submissions. The following is a list of general criteria identified to the GEF Council as significant for proposals entertained under this initiative:

- Potential widespread penetration of the market, replicability and sustainability of the program
- Quality of lead sponsors and partners
- Financial details and risk sharing identified in the proposal
- Sustainability and improvement of incremental costs for the project over time
- Potential value of transactional experience obtained through the project's implementation
- Overall potential for CO₂ emissions reductions with widespread penetration of the market
- Timetable envisaged for project preparation and completion

Other information requested in the proposal include: information on current market conditions and current policy, legal and regulatory frameworks in place in the location of the project. On the market side, proposals should include information about access to the hydrogen fuel source, electricity supply/growth equilibrium in the area or location, un-served population of the location and relevant costs of alternative sources of energy. On the regulatory side, proposals should include the extent of local sector restructuring, the level of competition, information on private participation in the sector, information about a third party access/wholesale spot market if relevant, and clean energy incentives employed or supported by the country. Project sponsors are strongly encouraged to consider these criteria when selecting the GEF eligible country for project siting.

2.2 Sponsorship

Project Sponsors should be majority owned by a private sector company with appropriate experience in the sector. The business venture may be undertaken through a new company, a consortium, a joint venture or partnership, or as a new and distinct unit within an existing company. It is expected that project sponsors will commit to the project a significant amount of funding, and will undertake managerial responsibility for the duration of the project. Furthermore, project sponsors that can demonstrate a dedication and sound financial and commercialization strategy to expand the market for fuel cells in the country proposed will be preferred.

2.3 Stakeholders partnerships

The financing initiative aims to bring together various stakeholders of the fuel cell industry that are interested in expanding the markets for fuel cell technologies in the developing world. Such stakeholders may include manufacturers and component suppliers of fuel cells, equipment distributors and vendors, energy service companies, electric utilities, fuel suppliers and financial institutions. Proposals presenting active involvement by a variety of stakeholders will be preferred.

2.4 Greenhouse gas emissions reduction

Projects will be expected to reduce greenhouse gas emissions through increased energy efficiency and/or fuel switching for electricity generation applications. Proposals involving a good potential for such emissions reductions will have an advantage in the selection process. All proposals should indicate how they will account and/or calculate the GHG emissions reduced as a result of the project.

2.5 Technology

This initiative has no preference for a particular type of fuel cell technology. However, projects utilizing fuel cells which are close to becoming commercially competitive, or are already commercially competitive, and which have a good potential for significant cost-reductions in the short and medium term will be preferred. The IFC will particularly favor proposals that include technologies with a commensurate amount of field testing (of the technology) which supports launching the commercial application outlined in the proposal.

2.6 Project costs and co-financing commitment

While it is expected that the initial fuel cell demonstration projects cannot yet be competitive with conventional power technologies, the IFC initiative will only support projects to the limits of 50% of the project costs, but not to exceed US\$2000/kW of installed capacity. The maximum award under Stage 1 of this initiative is US\$3 million per project. These funds will be available as grants, contingent financing (in proportions appropriate for each project), as well as other innovative means employed to overcome barriers and address risks of selected projects. IFC wishes in Stage 1 to optimize the grant funding available while simultaneously establishing financing modalities for commercialization in later years. IFC expects that most investment proposals in Stage 1, will contain a component of grant funding for capital cost buy-down or other uses. However, project sponsors are encouraged to consider other structures such as sub-commercial loans, equity and even credit guarantees, if these help them increase the leverage of GEF funding, and/or overcome specific project risks. Project sponsors are expected to demonstrate the potential economic value of the project through their own financial participation, and through the mobilization of co-financing. Projects with higher co-financing components from sponsors and stakeholders or lower grant requests will be treated more favorably.

Please refer below to some examples of how leveraging and co-financing is likely to be viewed by those evaluating the project. The numbers used below are meant only as an illustration, and have no bearing on the actual terms of financing or project costs.

Example 1 - Understanding Leverage:

Potential sponsor has installed capital cost of US\$ 4000/kW, and proposes to get the maximum GEF funding. If selected, the Sponsor will get no more than US\$ 2000/kW, and since there is a cap of US\$ 3 Million per project, the Sponsor will need to install a minimum of 1.5 MW in order to get the maximum GEF grant. In this case, the Sponsor's total installed project cost is US\$ 6 Million, and hence the GEF grant has a 1:1 leverage.

If the same sponsor wishes to increase leverage of GEF funds, one way to do it would be to increase the capacity installed. If the Sponsor were to propose a 2 MW project, if selected, it would still get US\$ 3 Million in GEF funding, but in this case the Sponsor would have a project cost of US\$ 8 Million (US\$4000x2000 kW). Leverage in this case would be 1:1.7. Hence leverage of GEF funds has increased, and co-financing of US\$ 5 Million would now have to be arranged by the sponsor.

Example 2 – Role of Capital Cost:

In this example, let us assume that the installed capital cost is US\$ 3000/kW. In this case, the project will not receive more than 50% of the installed capital cost, or US\$ 1500/kW. Hence, in order to get the maximum GEF funding of US\$ 3 Million, the minimum project size will have to be 2 MW. Leverage in this case will be 1:1.

It should be clear from Examples 1 and 2, that the minimum leverage required is 1:1.

Example 3 – Using Sub-Commercial Debt:

In this case, let us assume that installed capital costs are US\$ 3000/kW, and that the sponsor proposes to use only US\$ 1000/kW as a grant, and the remaining US\$ 500/kW are proposed to be used in the form of sub-commercial debt. Further, let us assume that the market interest rate is 10%, the GEF loan is at 5%, and the loan is to be repaid in 120 equal monthly installments. The maximum funding usable is still US\$ 3 Million/project, however, all else being equal, this project would be favored over one where all the funding is being used as a grant.

The sponsor's ability to use a part of the funding as a sub-commercial debt stems from the project's ability to re-pay the loan through the sale of the off-take (power and heat). Hence projects that have lower installed capital costs, or higher project revenues will, we believe, have a greater ability to lower the grant amount needed to sustain the project.

2.7 Team Qualifications

Each project sponsor must identify the entities it expects to participate in the investment for any fuel cell installation, and the key personnel it expects to be involved. The sponsor must also identify the officer who has the authority to negotiate with IFC and enter binding agreements on behalf of the project sponsor.

2.8 Experience

To be selected, a project sponsor's team must, by the date it submits its proposal, have placed (or hold firm contractual commitments to place) in field applications, a minimum of three (3) fuel cell installations of 1kW or larger of each technology type (phosphoric acid, molten carbonate, solid oxide, PEM, alkaline, etc.) for which it seeks financial assistance.

These field applications must be either commercial installations or demonstrations in which the power produced has been put to practical use by the host site and should include at least one turnkey installation completed by the respondent or by an energy service provider or installation contractor with which it has an established and ongoing business relationship. Respondents must provide information describing their experience.

2.9 References

For each fuel cell installation listed, respondents must provide references by owners and site hosts. These references may be checked to determine that respondent's performance substantially met project goals and contract requirements.

3 MANUFACTURING CAPACITY, INDICATIVE PRICING AND TURNKEY GUIDELINES

3.1 Manufacturing Capacity.

A project sponsor must complete the attached Appendix 1 detailing its production and installation capacity and the components of its price, as well the warranty and O&M information identified there.

3.2 Indicative Pricing.

All responses must:

- assume turnkey installations;
- include on-site training for routine operations and maintenance;
- include minimum five-year warranties⁵ on commercially reasonable terms, standard or better than industry and equal to or exceeding the standards below; and
- include all of these costs in the indicative prices furnished on Appendix 1.
- include all in-country expenses

3.3 Turnkey Guidelines

Guidelines for turnkey installations include the following assumptions. The project sponsor, its engineering or installation contractor, will be responsible to integrate the fuel cell with electrical, natural gas, water and other utility systems serving each installation site. Prices to be provided in Appendix 1 must include a reasonable range of design and implementation costs, identified by category, for such integration on typical installations which recognize the site-specific factors that will impact actual costs.

For the purposes of producing indicative prices for a response to this program, please use the following assumptions:

- There is an existing concrete pad at the site.
- Gas, electricity, water, and sewer connections are nearby and require no core boring.
- Meters will be required for all relevant material and energy flows into or out of the host site.
- There is an exterior concrete pad already present.
- There are no structural issues that need to be considered unless directly related to the installation of the generation and associated equipment (including heat recovery equipment).

⁵ In lieu of a five-year warranty, a respondent may substitute a service agreement with a guaranteed maximum price and a five-year term, an insurance policy, or a bond. Any such alternative instrument shall have the same effect on the buyer of mitigating performance risk for five years, and shall be included in the indicative price.

- The nearest point of interconnection with a natural gas distribution system is 50 feet (across unfettered open terrain for the purpose of interconnecting).
- Bid respondent will be responsible for installing utility grade gas meter and associated equipment to meter gas usage by combined heat and power (CHP) system.
- The nearest point of interconnection with the facility's heating and cooling system is 50 feet. Bid respondents can assume that the interconnection occurs in the facility's central plant or mechanical room (ignore any wall penetrations – direct and unfettered connectivity).
- The electrical interconnection facility is to be constructed 50 feet from the CHP equipment.
- Location of the interconnection facility is inside the building (e.g. utility vault, power panel room).
- Interconnection facility includes typical interconnection equipment as required for a simple metered interconnection that provides for safe and reliable parallel operations with the local utility grid.

Fuel cell systems capable of CHP applications are strongly preferred, but not required for eligibility. Indicative pricing requested in Appendix 1 should include the costs of any heat recovery equipment provided as a standard part of the project sponsor's fuel cell package. It should separately identify the costs of any optional heat recovery equipment that the project sponsor normally provides for specific applications that require it, but it should not include site-specific costs associated with thermal usage.

Respondents must also demonstrate bonding capacity and financial strength sufficient to support the offerings.

3.4 Technical and Installation Requirements

All fuel cells offered are expected to meet the minimum specifications described in Appendix 2. Project sponsors must indicate in their submittals either that (i) they will comply with all the provisions listed in Appendix 2 or (ii) they cannot comply with certain of the provisions, identifying specific provisions with which they cannot comply.

3.5 Warranties and Service Contract

As detailed below, project sponsors seeking eligibility are expected to offer, directly or through an affiliate, contractor, energy service provider or other business arrangement:

- Five-year performance, breakdown and degradation warranties on commercially reasonable terms, or equivalent risk management mechanism, for complete turnkey system including but not limited to reformers, stacks, compressors, HRSGs, inverters, and switchgear.
- Following the five-year warranty period, an annual service contract on commercially reasonable terms guaranteeing 95% availability.
- Comprehensive onsite training in fuel cell operation, safety, and maintenance.

Respondents are expected to offer a minimum five-year performance warranty or its equivalent for each installation. The warranty should guarantee that the system as-built will produce within 5% of rated kW AC at the output of the inverter (to be demonstrated initially by a successful acceptance test within 60 days following completion of the installation). If system output is expected to degrade over time, the warranty should also include and warrant a degradation schedule. If a service contract is required during the warranty term as a condition of the warranty, respondents should so state to IFC. Beyond these minimums, respondents may propose and provide cost information for any commercially available extended warranties for their systems.

At each installation site, respondents will be expected to provide training in the operation, maintenance, and safety of their systems and, following the five-year warranty periods described above, to provide an annual service contract on commercially reasonable terms as described above.

If any of the preceding warranty and service requirements are not acceptable to them, respondents must indicate which ones, and explain the scope of any exceptions or exclusions they propose to make.

3.6 Project Milestones

Respondents must submit a milestone schedule for development and installation of a simple fuel cell module of the size and technology proposed. This information will be used to assist IFC in its planning and budget process, and will not be grounds for disqualification under this program unless IFC believes the schedule is unacceptable or unresponsive to its goals.

4 SUBMITTAL REQUIREMENTS

Section 2 above generally describes minimum qualifications and requirements for this program. This Section 4 identifies specific topics and issues that each project sponsor must address, and outlines the organization that each project sponsor must follow in its written response to enable IFC to compare and fairly evaluate the responses. The number of pages indicated for each topic is advisory only, but brevity is appreciated.

4.1 Transmittal Letter (2 PAGES)

Each respondent shall include a transmittal letter signed by a party authorized to sign binding agreements for projects of the nature contemplated by this program. The letter shall clearly indicate that the respondent has carefully read all the provisions in this guidance document and that by submitting a response agrees to be bound by them.

4.2 Executive Summary (2 PAGES)

Submittals shall include an Executive Summary of no more than two (2) pages.

4.3 Location (2 PAGES)

Projects can be located in any of the countries eligible for GEF financing (a full list is described above). Countries and/or regions with favorable regulatory framework and policies for the growth of clean distributed power generation will be favored.

4.4 Sponsorship (1 PAGE)

Projects should be majority owned by a private sector company with appropriate experience in the sector. It is expected that project sponsors will commit to the project a significant amount of funding, and will undertake managerial responsibility for the duration of the project. Furthermore, sponsors that can demonstrate a dedication to expand the market for fuel cells in the country proposed will be preferred.

4.5 Strategy and potential for market expansion (2 PAGES)

Projects presenting a sound strategy for market expansion for fuel cell applications for distributed power generation beyond the initial demonstration phase will be preferred.

4.6 Stakeholders partnerships (1 PAGE)

The financing initiative aims to bring together various stakeholders of the fuel cell industry that are interested in expanding the markets for fuel cell technologies in the developing world. Such stakeholders

may include manufacturers and component suppliers of fuel cells, equipment distributors and vendors, energy service companies, electric utilities, fuel suppliers and financial institutions. Proposals presenting active involvement by a variety of stakeholders will be preferred.

4.7 Greenhouse gas emissions reduction (1 PAGE)

Projects will be expected to reduce greenhouse gas emissions through increased energy efficiency and/or fuel switching for electricity generation applications. Proposals involving a good potential for such emissions reductions will have an advantage in the selection process.

4.8 Technology (2-3 PAGES)

This initiative has no preference for particular types of fuel cell technology. However, projects utilizing fuel cells which are close to becoming commercially competitive and have a good potential for significant cost-reductions in the short and medium term will be preferred.

4.9 Project costs and co-financing commitment (2 PAGES)

While it is expected that the initial fuel cell demonstration projects cannot yet be competitive with conventional power technologies, the initiative will not provide financing above 50% of costs, or US\$2000/kW. Moreover, projects with higher co-financing components will be treated more favorably.

Table 1 Project Costs and Sponsorship

| Line # | Activity | Cost (US\$) | Percent Total Costs (%) |
|--------|---|-------------|-------------------------|
| 1 | Fuel Cell Units (number of units) | | |
| 2 | Fuel Cell Unit costs (US\$/unit) | | |
| 3 | Total Fuel Cell Plant Costs (Line 1 x Line 2) (US\$) | | |
| 4 | Installation Costs for the Fuel Cell Component Including Reformer etc. | | |
| 5 | Installed Cost of Fuel Cells (Lines 3+4) (US\$) | | |
| 6 | <i>First year fuel costs with fuel price and volume of fuel assumptions⁶</i> | | |
| 7 | <i>First year maintenance costs</i> | | |
| 8 | Total costs (sum of Lines 5 through 7) | | |
| 9 | List of Funding Sources | | |
| 9a | Corporate Co-sponsorship | | |
| 9b | In-Country co-sponsorship | | |
| 9c | End User/Site Host | | |
| 9d | Other | | |
| 9e | Other | | |
| 9f | IFC (not to exceed \$2000/kW or 50% of installed fuel cell costs) | | |
| 10 | Total Funding (sum of 9a through 9f) | | |
| 11 | Delta (line 10 minus 8)(should be zero for non-hybrid projects ⁷) | | |

⁶ Sponsors must state hours of usage per year, fuel type, quantity consumed, and price per unit of the fuel.

⁷ For hybrid projects, the delta should reflect cost of installation and equipment for the non-fuel cell component.

4.10 Qualifications Of Team (2 PAGES PLUS RESUMES)

Each respondent shall provide the following information regarding the company and its team:

- Names of team member(s), major subcontractor(s) and supplier(s)
- Roles and relationships of the team members
- Name of the team member who will be the lead negotiator and will sign the contract with IFC for the development of the selected project
- Resumes for key employees likely to work on the projects

4.11 Track Record And Experience (3 PAGES)

For the lead developer (and for the installation and/or construction firm, if different) indicate:

- total kW of fuel cells placed in commercial operation or practical demonstration
- total number of fuel cell installations to date, showing both turnkey installations and installations in which fuel cells were merely provided to the contractor
- all turnkey projects placed in commercial operation or practical demonstration
- whether the company and/or its officers or principals are party to any lawsuit involving the performance of any equipment it has installed; if so, please include a summary of the issues and status.

4.12 References (2 PAGES)

- References including name, title and contact information of the individual to contact, the company name, project capacity and cost, and date installed for all fuel cell projects completed since January 1, 1999 (such references may be checked for performance, quality of service and satisfaction of contract obligations).

4.13 In Country Presence (1 PAGE)

- Indicate the address of respondent's principal office
- Indicate the address of any in country location(s), the scope of work conducted and the number of employees at that location

4.14 Contract and Financial Capacity (2 PAGES PLUS FINANCIAL STATEMENTS)

- Indicate in the attached Appendix 1 the volume of fuel cell installations that respondent could complete for IFC in 2007 through 2010
- Describe respondent's bonding capacity and any relevant sureties or insurance companies
- Provide audited financial statements (or un-audited, if audited statements are not available) for respondent's two most recent years of operations

4.15 System Technical Description (6 PAGES)

Respondents shall either (i) indicate that their systems will comply with all the requirements of Appendix 2 of this guidance document or (ii) list the items that would not comply and explain why. Respondents shall also complete Appendix 1.

- Please describe each fuel cell technology respondent plans to offer for commercial installation during the multi-year period covered by this proposal, and as to each model provide the following information:
 - Type of fuel cell array (stacked, tubular, etc.)
 - Materials composition of fuel cell array
 - Type and manufacturer of each major balance of plant component (reformer, inverter, blowers, control systems, etc.).
 - Nameplate electrical rating (net of any parasitic losses)
 - Recovered heat output (water temperature, steam temperature and pressure, flow rate)
 - On-site space and clearance requirements
 - Hazardous material information
 - Venting requirements
 - Foundation requirements
 - Electric only efficiency
 - Fuel capability
 - Fuel use
- Describe the annual operating and maintenance requirements and costs (including personnel, labor hours, supplies, equipment, etc.) of each fuel cell system respondent plan to offer.
- Include expected periodic investments (such as stack replacements) required to keep the unit functioning to specifications for 20 years. (Refer to Appendix 1).
- Indicate the expected economic life of the unit(s) and critical subcomponents.
- Show typical and warranted degradation rates of stacks, tubular or other conversion configurations, which respondent's systems have experienced in field installations. If empirical evidence is not available, please project the degradation rates for the useful life (up to 30 years) of the fuel cell systems respondent plans to offer.
- Describe any other benefits respondent's system provides that other systems could not provide, but only include benefits that can be readily measured and agreed to by independent analysis.
- Describe any significant product enhancements that respondent expects to be available for installation within the multi-year horizon of this program.

4.16 Warranty And Service Contract (2 PAGES PLUS ATTACHMENTS)

- State whether respondent can comply with the minimum warranty requirements set forth in this guidance document.
- If respondent cannot comply with the minimum warranty requirements, indicate the areas of shortcoming including exceptions to scope and exclusions. Please note that in any event IFC must be protected from risk of product failure for at least 5 years from IFC's final acceptance of an installation.
- Explain whether any other warranties from suppliers are available to IFC and if so, indicate who provides the warranty and its key terms.

- If respondent has a standard warranty agreement, please provide a copy.
- If respondent requires a service agreement during the warranty period as a condition of the warranty, please indicate its annual cost and provide a copy of the agreement.
- If respondent offers a standard extended (post-warranty) service agreement, please indicate its annual cost and provide a copy of the agreement.

4.17 Typical Project Schedule And Timing (1 PAGE)

Submit a schedule for a fuel cell installation indicating the expected milestones, each referenced to receipt of a Notice to Proceed. The following schedule items illustrate the kind of information sought, but respondents may substitute milestones that they customarily use in scheduling similar projects or that they believe would be appropriate for projects requested by IFC.

- Notice to Proceed Week 0
- Permit application materials, including design schematics
- Pre-construction meeting
- Preparation of site
- Delivery of skid-mounted system components
- Delivery of other balance of plant equipment
- Installation start date
- Completion date
- Testing of installation
- Turnkey delivery for operation
- Completion of punch list
- Delivery of two (2) sets of As-Built plans for each system and all operating manuals

5 EVALUATION PROCESS

Respondents will be evaluated based on the overall quality of their response to this guidance document and on whether they satisfy its minimum requirements. IFC reserves the right, at its sole discretion, to accept a response that may not satisfy all requirements but which, in IFC's sole judgment, satisfies the major requirements of this guidance document and sufficiently demonstrates the ability to produce, deliver, design, permit, and install a substantial volume of fuel cell projects. IFC reserves the right to interview any or all respondents to this program or to ask for additional information or clarifications. IFC expects to complete its evaluation process within three weeks of receiving the responses, although this schedule will depend on the number, length, completeness and complexity of responses received. IFC reserves the right to make all decisions and evaluations in connection herewith in its sole judgment.

6 CHECKLIST

Please find below a check-list of items that should be included in all submissions. Proposals that are unresponsive or do not meet the standards under the different categories listed below may be disqualified.

- Signed transmittal letter indicating acceptance of terms and conditions including designation of an officer or other representative authorized to negotiate and enter into agreements on behalf of the sponsor/project entity
- Information on:
 - Project location
 - Sponsorship
 - Stakeholders and Partnerships
 - Financial Statements, Bonding Capacity, and any Other Information
 - Technology to be Employed and Technical Information including:
 - Compliance with or exceptions with respect to requirements of Appendix 2
 - Warranty and Service Contract Information
 - Milestones and Project Schedule
 - Experience with Fuel Cells and Track Record of Installations
 - Team and Qualifications of Members
- Estimate of Greenhouse Gas Emissions Reductions
- Completion of Information Requested in Appendix 1

7 GENERAL RULES

1. **Clarifications.** A potential respondent may request clarification of any provision in this guidance document. Unless IFC deems such clarification to be trivial in nature, any such clarifying questions and IFC's response thereto will be addressed as an Addendum to this guidance document. In no event can oral representations be relied on by a project sponsor if such representation conflicts with this guidance document, including any Addenda.
2. **Addenda.** IFC may modify any part of this guidance document prior to the date indicated for submission of responses. Any addendum will be in writing and will be issued to all project sponsors who have received this guidance document. Addenda will be consecutively numbered.
3. **No Obligation; Cancellation and Re-issuance of this guidance document.** This guidance document does not obligate IFC to establish eligibility for any respondents or enter into any agreements. IFC reserves the right to cancel or re-issue this guidance document at any time, and to solicit qualifications through any other appropriate method.
4. **Rejection of Proposals.** IFC may reject any submittal it deems to be incomplete, unresponsive, significantly inaccurate or not credible in its representations, or which is unacceptable to IFC in its sole discretion in the context of this guidance document or for any other reason.
5. **One Proposal Per Project Sponsor.** A respondent may submit only one response to this program. However, a respondent may be a subcontractor to any number of other respondents that may submit responses to this program.
6. **Substitutions.** Respondents may substitute or alter their proposals subsequent to the submission date only if such changes are approved in writing by IFC.
7. **Duration of Submittals.** The production and installation capacities and indicative prices submitted in responses to this guidance document shall be deemed to continue in effect for the time periods indicated in the responses unless IFC agrees in writing to a change.
8. **Cost of Proposal and Non-Compensation.** Each respondent is solely responsible for all costs associated with responding to this program, and in no event will IFC reimburse any such costs. IFC reserves the right to make use of any information or ideas contained in the proposals without compensation or liability to the project sponsor.
9. **Delivery of Proposals.** Each project sponsor is solely responsible for assuring a timely submittal of its proposal. Late proposals will not be accepted unless IFC, in its sole discretion, finds compelling reasons of equity to do so, and IFC states those reasons in a signed letter waiving the submittal deadline for a respondent.
10. **Withdrawal of Proposals.** Responses to this program may be withdrawn after submission by written request of the project sponsor's authorized representative prior to the date and time specified for proposal submissions. Proposals may be withdrawn and resubmitted in the same manner if done prior to the submission deadline.

11. **Disposition of Proposals; Confidential Information.** All submittals and the information therein become the property of IFC upon submittal. Proposals shall be returned only at IFC's sole discretion and at the project sponsor's expense. All proposals submitted to the Fuel Cells Financing Initiative for Distributed Generation Applications (the "Initiative") will be treated in accordance with IFC's principles for nondisclosure as set forth in Annex 1 to IFC's Disclosure Policy (please see <http://ifcln1.ifc.org/ifcext/enviro.nsf/Content/Disclosure#annex>). However, all respondents to the Initiative must understand that any information required to obtain approval for funding by the Global Environmental Facility ("GEF") is subject to public disclosure.
12. **Endorsements and Press Releases.** Respondents to this initiative shall not issue any news releases or other statements pertaining to the initiative by IFC or imply IFC's endorsement of its services or products without IFC's written agreement.
13. **"kW".** Unless the context clearly requires otherwise, the term 'kW' when used in this document, means kilowatts of AC capacity measured as output from the inverter.

8 APPENDICES

Appendix 1 Capacity and Price Bids

| Year ended December 31, | Capacity and Pricing | | | |
|---|----------------------|------|------|------|
| | 2008 | 2009 | 2010 | 2011 |
| <i>Installation capacity</i> | | | | |
| Maximum aggregate capacity that could be installed (kW) | | | | |
| Maximum number of projects that could be completed | | | | |
| Percentage of fuel cell systems manufactured in Developing Countries | | | | |
| Percentage of fuel cell systems assembled in OECD Countries | | | | |
| <i>Price for a fuel cell system (specify kW output)</i> | | | | |
| Design, engineering, permitting | | | | |
| Skid-mounted equipment assembled & delivered to site, including sales tax | | | | |
| Other equipment delivered to site | | | | |
| Construction | | | | |
| Installation | | | | |
| Electrical interconnection | | | | |
| On-site training | | | | |
| Transaction & other costs | | | | |
| Indicative turnkey price (sum of above) | | | | |
| <i>Warranty</i> | | | | |
| Number of years all-in system warranty is provided (must be at least 5 years) | | | | |
| <i>Average long-term operating and maintenance costs</i> | | | | |
| Routine maintenance yearly | | | | |
| Stack Replacements (annualized cost ⁸) | | | | |
| Other average annual costs ⁹ | | | | |

⁸ Costs shall be annualized by assuming a replacement reserve account is established to pay for this item. Account must have positive and equal payments each year, and balance must be sufficient to cover expense in year incurred. Assume no inflation, no discounting.

⁹ This can include a sinking fund for periodic costs not included in the two items above. If so, please calculate as in the previous footnote. Please specify what this item covers.

Appendix 2 Minimum Technical and Installation Requirements

Site-specific technical requirements will be established for the installation of fuel cells at various sites. However, the conditions listed in this Appendix should be considered as generally applicable to all sites.

The general technical requirements are:

All fuel cells offered by project sponsors must meet the following minimum requirements:

- Electric output at the local grid specifications, and otherwise suitable for use in typical commercial applications.
- If operating on natural gas, capability of operation on natural gas delivered at the designated pressures including all equipment needed to process the gas for conversion to electricity by the fuel cell.
- Capability of operation as grid-connected, plants with switchgear configured such that operation will continue during grid outages.
- Compliance with all applicable distributed generation emissions certification standards adopted by the regulatory jurisdictions.
- All systems must be installed in accordance with all applicable requirements of local electrical codes and the National Electrical Code (NEC). Systems must be designed and installed using UL or ETL listed components.
- A description of compliance with applicable codes shall include, but not be limited to,
 - ASME PTC 50 (fuel cell performance)
 - ANSI Z21.83 (fuel cell performance and safety)
 - NFPA 853 (fuel cells near buildings)
 - NFPA 70 (electrical components)
 - UL 1741 (inverters and controllers)
 - IEEE 1547 (interconnections)

Project sponsors must either be able to demonstrate that the equipment and components of the proposed fuel cell system meet the requirements of applicable UL or ETL listings and/or standards, or submit information for evaluation and consideration that either states when certification in accordance with UL or ETL requirements will be achieved, or testing information from either a Nationally Recognized Testing Laboratory or comparable testing facility that clearly indicates compliance with applicable codes stated above, or other nationally or internationally recognized authoritative agencies that sets or develops standards for equipment and components utilized in the installation of fuel cell systems as envisioned by this program.

The project sponsor will provide meters and meter housings for each system. The project sponsor shall provide a Data Acquisition System (DAS) at the sites. Respondents will be required to demonstrate that the installed system meets the output performance standards.