

# **GREENHOUSE GAS OFFSET STRATEGY AND PLAN**

## **Chehalis Generation Facility**

**Approved by**

**State of Washington  
Energy Facility Site Evaluation Council**

**Submitted by**

**Chehalis Power Generating Limited Partnership**

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## **INTRODUCTION**

### **Requirement in SCA**

The Energy Facility Site Evaluation Council (EFSEC) first approved a site certification agreement for Chehalis Power Generating, L. P.'s (Chehalis Power's) Chehalis Generation Facility (CGF) in 1997. In 2001, EFSEC approved certain amendments to the site certification agreement ("SCA") for the CGF. These included using state-of-the-art generation equipment, which in turn led to an increase in capacity from 460 MW to 520 MW. As amended, the SCA requires Chehalis Power to submit a plan and strategy for offsetting the incremental increase in greenhouse gas emissions from the CGF attributable to the changed design of the powerplant. *See* Article VI.D of the Amended SCA (Amendment No.1; approved March 6, 2001).

This document responds to the SCA requirement through two elements.<sup>1</sup> First, it sets forth Chehalis Power's plan for an annual determination of offset amounts. Second, it provides for acquisition of any carbon offsets in two ways: (1) on a ton-for-ton basis through the purchase of credits or through participation in greenhouse gas mitigation projects at any location, and (2) subject to EFSEC approval on a case-by-case basis, through participation in local projects that have greenhouse gas mitigation as one element of a broader project, with the crediting of such projects on a fixed-price basis.

### **What the plan contains**

On an ongoing basis, Chehalis Power will calculate actual carbon dioxide (CO<sub>2</sub>) emissions annually, and compare these emissions to a baseline calculated on the basis of the original generation capacity of the CGF to determine required offsets. Chehalis Power could acquire offsets on a ton-for-ton basis in one of two ways. First, it could acquire offsets from a recognized supplier, such as the Climate Trust. Second, it could participate directly in greenhouse gas mitigation projects. Chehalis Power would submit these projects for limited review by EFSEC to confirm that the offset purchase or other participation adequately provided for additionality and non-leakage. Chehalis Power's acquisition of such offsets would be credited on a ton-for-ton basis regardless of cost.

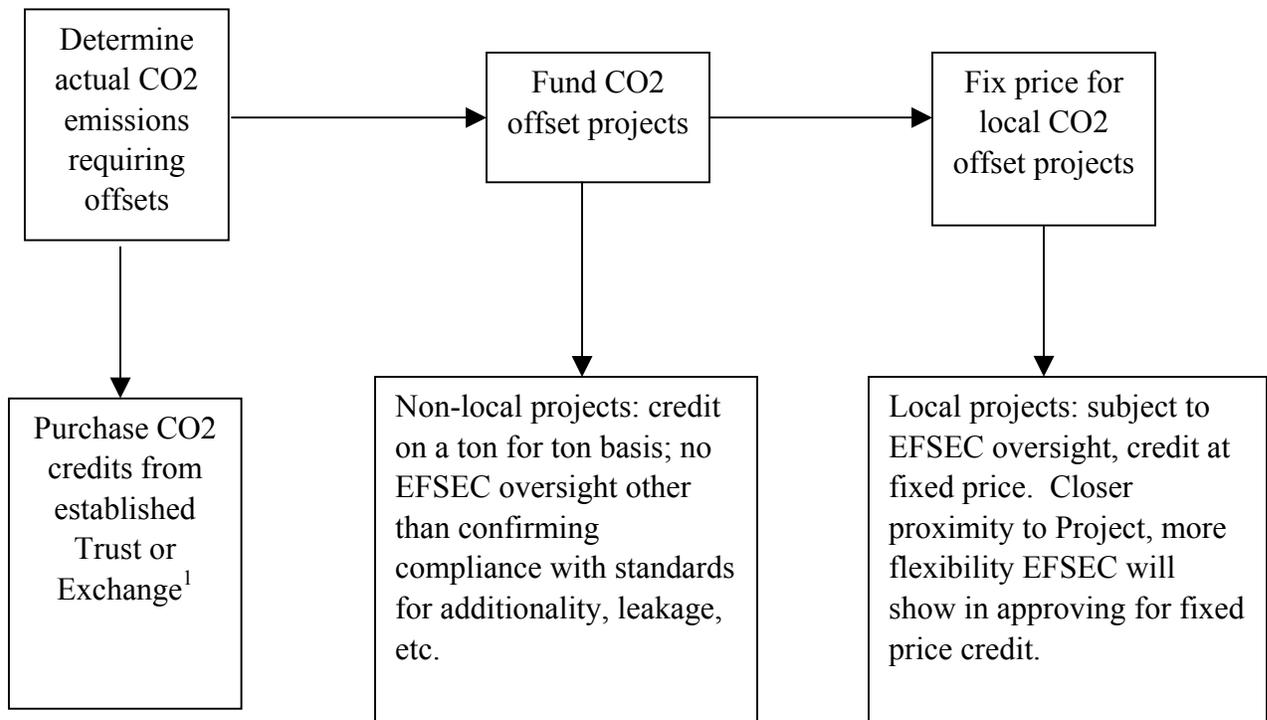
If Chehalis Power proposed to satisfy its carbon offset obligation through participation in a local project, it would present detailed information to EFSEC, and ask EFSEC to make a determination of whether, in light of the project as a whole, Chehalis Power should be credited at a predetermined price per ton. For purposes of this Plan, "local" means within Lewis County or within 50 miles of the Chehalis Generation Facility site. For each year in which Chehalis Power intended to seek EFSEC approval for a local project, it would set and submit to EFSEC a proxy

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<sup>1</sup>This plan was prepared by Charles River Associates, Inc., 1201 F Street, N.W., Suite 700, Washington, D.C. 20004.

price based on market information. This price would govern the rate at which Chehalis Power would be credited for any EFSEC-approved participation in local projects that have a significant greenhouse gas mitigation element. For example, assume that Chehalis Power identified an opportunity for a \$17,500 participation in a project that the Council approved based on CO2 mitigation and other environmental benefits, and that \$1.75 per ton was the current market price for CO2 offsets. If the Council approved the project, Chehalis Power would be credited for 10,000 tons of offsets, regardless of the actual offsets associated with the project. Chehalis Power may seek to satisfy no more than 15% of its annual CO2 mitigation obligation, through participation in local projects.

The following figure illustrates Chehalis Power’s proposed approach.



NOTES: 1 – Trusts or Exchanges to be approved by EFSEC in advance

Any local projects will be selected in consultation with the CGF’s existing community advisory committee, and approved by EFSEC. An annual report will be submitted to EFSEC on actual CO2 emissions, and on projects completed and underway. The report will also contain a calculation of the price per ton to be used for crediting local projects (if necessary) and other elements identified under the portion of this Plan titled “Reporting Frequency and Proxy Price Approval Process” (page 7 below). Chehalis Power may, from time to time, seek EFSEC

approval for accumulation of offset obligations from one year to the next so that larger and more effective projects can be supported.

### **Benefits of the Chehalis Power Plan**

The proposed plan is somewhat similar to the approach adopted in Oregon in that it involves either acquisition of CO<sub>2</sub> offsets on a ton-for-ton basis, or crediting investment in local greenhouse gas mitigation projects at a fixed price per ton of actual excess emissions. The Chehalis Power plan, however, provides a significant improvement over Oregon's approach by converting an upfront payment that only serves to discourage construction of new, clean energy facilities into a continuing incentive to reduce CO<sub>2</sub> emissions from the CGF. It involves the local community in activities to protect against climate change and it reflects actual costs for CO<sub>2</sub> offsets at the time offsets are required.

### **Nature of offsets that might be considered**

There are several ways to reduce greenhouse gases in the atmosphere and prevent or reduce future emissions. The most common carbon emission reduction and avoidance strategies that have been adopted in the industry or identified as potentially acceptable carbon offsets by government, regulators, and environmental organizations include:

- 1) Carbon capture and utilization.
- 2) Increased energy efficiency and conservation.
- 3) Adoption of lower emission products and processes.

Some local candidate projects will have environmental or socio-economic benefits in addition to providing greenhouse gas mitigation. The Chehalis Power plan provides the Council with flexibility to approve such projects on a case-by-case basis. This flexibility allows for a pragmatic approach to the difficult issue of quantifying the extent of greenhouse gas reduction, displacement or sequestration over the life of a project.

### **CALCULATION OF EMISSIONS SUBJECT TO OFFSET**

#### **Offsets will be provided for actual emissions above those authorized in prior SCA**

In the Site Certification Agreement (SCA) dated March 4, 1997, Chehalis Power was authorized to construct a 460 MW combined cycle combustion turbine powerplant near Chehalis. The

primary fuel was natural gas, but operation on diesel fuel was permitted for up to 30 days per year. On January 10, 2000, Chehalis Power applied for an amendment to the SCA to allow construction of a 520 MW unit, in order to utilize the most modern and efficient technology available, which was only offered by the manufacturer in a somewhat larger package. In granting Chehalis Power's amendment application, EFSEC determined that this change in design would cause greenhouse gas emissions to increase, based on testimony that the combination of increased capacity and greater efficiency would produce 8% higher emissions at 100% utilization, compared to the previously approved design. In the current SCA, Chehalis Power is required to offset the net increase in greenhouse gas emissions due to the amendment.

Chehalis Power will calculate the amount of emissions that must be offset annually. The amount to be offset will be based on the difference between actual emissions and the emissions baseline. This baseline will be set equal to the emissions level that was projected for the earlier approved design.

### **Emissions baseline**

The emissions baseline will be 1.8 million tons of CO<sub>2</sub> per year, the quantity of carbon dioxide emissions that was projected for the CGF, based on the capacity and efficiency specified in the original SCA. The Council stated in Order 753, which added the greenhouse gas offset requirement to the original SCA:

“The evidence is undisputed that the facility as originally certificated would emit 1.8 million tons of CO<sub>2</sub> per year and that the proposed amendments will result in an increase of 8 percent.”

### **Actual Emissions**

On an annual basis, Chehalis Power will calculate actual carbon dioxide emissions at the CGF based on records of fuel inputs to generation, using the following equations:

For Natural Gas:

$$\text{Mcf Natural Gas} \times \text{Mmbtu/Mcf} \times \text{Tons CO}_2/\text{Mmbtu} = \text{Tons CO}_2 \text{ emitted}$$

For Diesel Fuel:

$$\text{Gallons Diesel Fuel} \times \text{Mmbtu/Gallon} \times \text{Tons CO}_2/\text{Mmbtu} = \text{Tons CO}_2 \text{ emitted}$$

The calculated carbon dioxide emissions from natural gas and diesel will be summed to yield total annual carbon dioxide emissions for the CGF.

When available, analytical data (e.g. – vendor supplied analyses) will be used in the above equations. Where analytical data is not available, published emission factors and engineering calculations will be used.

Chehalis Power will credit any reduction in net greenhouse gas emissions due to actions inside the boundaries of the powerplant (the “bubble” concept),<sup>2</sup> such as cogeneration or carbon scrubbing. EFSEC may audit any proposed credit for such internal offsets.

### **Offset requirement**

The difference between actual greenhouse gas emissions (after internal offsets) and the 460 MW baseline of 1.8 million tons per year will be subject to offset. This calculation will be made as soon as practical after January 1, for the entire previous year. Calculations of emissions subject to offset will be subject to audit of fuel input data and calculations but no other retrospective review.

### **REPORTING FREQUENCY AND PROXY PRICE APPROVAL PROCESS**

Chehalis Power will provide an annual report to EFSEC containing the following information:

- a. Calculation of previous year’s emissions subject to offset
- b. Financial report on offset expenditures and obligations
- c. Progress of past and current projects
- d. For any year in which Chehalis Power may seek EFSEC approval of a local project, calculation of current price per ton, based on market information, crediting local project participation

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<sup>2</sup> In 1979, the U.S. EPA introduced the bubble policy to allow businesses greater flexibility in meeting emission limits in a cost-effective fashion. According to EPA’s announcement of the policy, "Environmental rules now regulate each of the different processes in a plant. With this new policy we will draw an imaginary bubble around the whole plant and tell the company that it can find the most efficient way of controlling the plant's emissions as a whole. ...Under the bubble approach, plant managers can propose their own emission standards--tightening them in places where it is least costly, and relaxing or even eliminating them where pollution control costs are high." [EPA press release - December 3, 1979] Under the bubble concept, all emissions from a facility are combined rather than regulated separately from each defined source, so that the manager can choose the least costly set of emission controls across all sources under the bubble, as long as total emissions remain under the limit. The bubble policy is described by EPA as “one element of a broader EPA program, called "controlled trading," that includes EPA's offset and banking policies. The offset policy allows plants to locate in areas where they would have previously been prohibited, while the banking policy permits firms to obtain credits for installing controls that go beyond federal and state pollution control standards.”

Chehalis Power's calculation of the proxy market price for local projects is subject to EFSEC review and approval at a public meeting. Based on the analysis set forth in the letter dated July 19, 2002 that transmits this Plan to the Council, Chehalis Power is proposing that the Council credit Chehalis Power for any approved local projects undertaken before or during the first year of operation of the CGF at \$1.75 per ton of CO<sub>2</sub>. Chehalis Power and EFSEC will identify candidates for the position of independent expert for purposes of preparing the annual report, calculating the proxy price, and providing reports (including calculation of offsets) on local and non-local projects in which Chehalis Power proposes to participate directly. EFSEC would then rely on the same consultant. These candidates will be interviewed by Chehalis Power and EFSEC and a final selection will be made. In the event that Chehalis Power and EFSEC cannot agree on a single expert, EFSEC shall make the final selection.

## **ACQUISITION OF CREDITS ON A TON-FOR-TON BASIS**

Chehalis Power will develop specific proposals for expenditure on any local projects with input from the community advisory committee and will submit such proposals to EFSEC for approval as they are completed. Absent EFSEC approval of Chehalis Power's participation in a particular local offset project, Chehalis Power must acquire any necessary carbon offset credits on a ton-for-ton basis. Chehalis Power may acquire these ton-for-ton credits in one of two ways.

Under the first approach, Chehalis Power would acquire offsets from a recognized supplier, such as the Climate Trust or an organized exchange for offsets such as the proposed Climate Exchange. Chehalis Power would seek Council pre-approval of such suppliers, and would not return to the Council for any particular transaction with a pre-approved supplier. Once a supplier is pre-approved, Chehalis Power would not be required to provide the detailed estimates or verification for a purchase of offsets from that supplier. EFSEC would credit Chehalis Power for the number of tons provided by the supplier without regard to the price paid by Chehalis Power.

Under the second approach, Chehalis Power would participate directly in greenhouse gas mitigation projects. There is no geographic limitation on the location of such projects. Chehalis Power would submit these projects for limited review by EFSEC to confirm additionality and non-leakage. To assure quality of offsets and avoid double counting, Chehalis Power will obtain clear title to the emission offsets claimed and ensure that appropriate contractual commitments or covenants (including where appropriate deed restrictions) are in force for the life of the offset project. Chehalis Power will have each proposed project and its estimated offsets reviewed and validated by an independent expert who has been pre-qualified by EFSEC, and include the independent expert's report with its submission to EFSEC. Chehalis Power would propose a measurement and verification plan for implementation during the life of the offset project, to provide information on actual sequestration achieved. Results of the measurement and verification, however, will not be used by EFSEC to make any retrospective adjustment in the amount of offsets recognized from the project for purposes of satisfying the offset requirement in

the SCA. Chehalis Power's acquisition of such offsets would be credited on a ton-for-ton basis regardless of cost.

## **SELECTION OF LOCAL OFFSET PROJECTS**

Chehalis Power will research potential local greenhouse gas mitigation projects in consultation with its community advisory committee, which may identify projects for Chehalis Power to consider. If there are no sufficiently attractive candidate projects, Chehalis Power may determine that no local project should be proposed at a particular time. In any year where Chehalis Power does not select a local project their full greenhouse gas offset requirement will be satisfied on a ton-for-ton basis.

Chehalis Power may, with community advisory committee consultation, select an alternative from among projects, and request approval from EFSEC for the selected project. The approval package will include a description of the project, how the total project is to be funded and managed, what the Chehalis Power contribution will be, a discussion of the selection criteria and a discussion of the expected benefits of the project in terms of greenhouse gas avoidance, displacement or sequestration, sustainable development, and other socio-economic and environmental benefits. As with non-local offset projects, Chehalis Power will obtain clear title to the offsets, will include an independent expert's report, and will propose a measurement and verification plan. Appendix A serves as a template for a project approval package.

If EFSEC denies approval to the first project proposed, Chehalis Power may select another alternative, with community advisory committee consultation, and may submit that alternative to EFSEC with a request for approval. Alternately, if no suitable project is identified or approved, Chehalis Power will acquire offsets on a ton-for-ton basis as described above. Chehalis Power may at any time propose multi-year local project(s) that exceed the 15 percent local project cap if accumulating a larger obligation would be a more effective proposal with a significant greenhouse gas component. Any amounts in excess of the annual local cap of 15 percent may be used or credited toward future obligations. If Chehalis Power selected a project(s) totaling less than the 15% cap, the remaining balance must be satisfied on ton-for-ton basis.

## **GENERAL CRITERIA AND CONSIDERATIONS FOR LOCAL PROJECT SELECTION**

Chehalis Power will choose local projects based on their overall environmental and socio-economic benefits. They will be required as a threshold condition to have a significant component of greenhouse gas reduction, displacement or sequestration. The nature of the benefits from the projects, including quantification of those benefits where possible, will be discussed in the approval package to be sent to EFSEC.

## Significant greenhouse gas component

The local projects eligible for CO<sub>2</sub> offset credit must contain a significant greenhouse gas reduction, displacement or sequestration component. This requirement can be met in either of two ways:

1. This requirement will be automatically satisfied by projects from the following list:

Land management including tree-planting and other forest creation or preservation activities

Carbon capture

Energy conservation

Energy efficiency improvement

Renewable energy

Transportation improvements or trip reduction programs

Replacement of equipment with high greenhouse gas emissions

Reduction in specific greenhouse gas emitting activities

Switching processes to lower greenhouse gas emitting fuels.

These types of activities are recognized by the Climate Trust, as well as in the implementation of the Clean Development Mechanism under the Kyoto Protocol.<sup>3</sup>

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<sup>3</sup> The project selection criteria of the Oregon Climate Trust are discussed in “Oregon’s Innovative CO<sub>2</sub> Standard and The Climate Trust,” USEPA State and Local Climate Change Program Millennium Partners' Conference, Washington, DC, presented by Mike Burnett, Executive Director of the Climate Trust, November 2, 2000. The Climate Trust includes:

- Renewable energy: Wind, solar, biomass, and geothermal energy
- Energy efficiency: Homes, businesses, and transportation
- Supply side energy: Power plant efficiency upgrades and changing from burning coal to natural gas
- Sequestration: Forest protection, reforestation, sustainable forestry

The negotiating text on implementation of the Kyoto Protocol adopted at COP 6 Part II contained a proposal for a list of projects that would be eligible for support under the Clean Development Mechanism. It states that project types will be eligible for credit under the Clean Development Mechanism if they fall in one of the following categories:

- (a) Renewable energy: solar energy, wind energy, sustainable biomass, geothermal heat and power, small-scale hydropower, wave and tidal power, ambient heat, ocean thermal energy conversion, activities to promote anaerobic respiration, and energy recovery from biogas, including landfill gas;
- (b) Energy efficiency: advanced technologies for combined heat and power installations and gas-fired power plants; [significant] improvements in existing energy production; advanced technologies for, and/or [significant] improvements in, industrial processes, buildings, energy transmission, transportation and distribution; more efficient and less polluting modes of mass and public transport (passengers and goods) and improvement or substitution of existing vehicles, and existing fuel sources; fugitive gas capture; and
- (c) Demand side management; improvements in residential, commercial, transport and industrial energy consumption.

2. Chehalis Power may propose other types of projects if analysis of their direct and indirect effects establishes that greenhouse gas reductions are a significant component of their benefits.

### **Other socio-economic and environmental benefits**

Many locally based projects combine greenhouse gas mitigation or sequestration benefits with other environmental or socio-economic benefits that fall generally under the category of sustainable development. In selecting projects, such environmental or socio-economic benefits will be considered in determining which projects provide the greatest overall benefits.

Consideration of these benefits provides additional flexibility to select projects with benefits for the local community, and avoids the necessity of funding projects outside the local area that satisfy the more rigid requirement that their sole purpose be greenhouse gas reduction.

### **Preference for local projects**

In selecting local projects for proposed approval by EFSEC, Chehalis Power will give preference to funding projects closest to the CGF. It will also give a preference to proposals for contributing partial funding to local projects that have solid project management in order to leverage the CGF contribution into larger impacts on greenhouse gas emissions and greater local benefit. These preferences will also reduce administrative and project management costs.

## **RETROACTIVITY AND PRE-EMPTION**

### **Retroactive review**

There will be no retroactive review of projects, except to ensure that expenditures were in fact made as approved by EFSEC.<sup>4</sup> For local projects, EFSEC's approval will be conditioned upon

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<sup>4</sup> This approach is based on the following provisions in the Oregon implementing regulations (*see* OAR 345-024-0560 and -0600):

“(2) Implementing offset projects directly or through a third party. The Council may adopt site certificate conditions ensuring that the proposed offset projects are implemented but shall not require that predicted levels of avoidance, displacement or sequestration of carbon dioxide emissions be achieved;

“(3) Providing offset funds, directly or through a third party, in an amount deemed sufficient to produce the reduction in carbon dioxide emissions necessary to meet the applicable carbon dioxide emissions standard. The applicant or third party shall use the funds as specified in OAR 345-024-0710. The Council shall deem the payment of the monetary offset rate, pursuant to OAR 345-024-0580, to result in a reduction of one ton of carbon dioxide emissions. The Council shall determine the offset funds using the monetary offset rate and the level of emissions

provisions to ensure that the project was completed as required and that there is an appropriate mechanism in place to protect the project’s anticipated greenhouse gas benefits over the long term.

### **Pre-emption and sunset**

If a new state or federal law imposes requirements on the CGF to limit or offset greenhouse gas emissions, EFSEC will support Chehalis Power in obtaining credit under any such new laws, regardless of preemption, for early action for offsets already funded under this Plan.<sup>5</sup> If that law pre-empts this Plan, to the extent that any carbon offset obligation under this Plan has not been met at the time of such change in law, Chehalis Power may meet such obligation through compliance with the new program, and further obligations under this Plan will end.

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reduction required to meet the applicable standard. If the Council issues a site certificate based on this section, the Council may not adjust the amount of the offset funds based on the actual performance of offsets[.]”

<sup>5</sup> This is consistent with the Council’s condition in the Amended SCA that: “2. If a comprehensive federal or state mitigation program is implemented, the Council reserves the right to exercise its authority under that program, considering and appropriately crediting, if permitted by law, any measures that Chehalis Power has accomplished under the Amended SCA.”

## **APPENDIX A: TEMPLATE FOR PACKAGE SEEKING EFSEC APPROVAL OF LOCAL PROJECT**

### **Short Description of Project**

This section will describe the project – its location, its prime sponsor, its cost, its schedule, etc. This section will include an explanation of the general purposes. It will also include a general description of the potential greenhouse gas mitigation element that Chehalis Power has an opportunity to provide, such as to enhance riparian habitat, etc.

### **Nature of Greenhouse Gas Reduction**

This section will provide detailed information about Chehalis Power's proposed participation, including a calculation of carbon offsets or sequestration, and measures designed to ensure additionality and prevent leakage over the life of the mitigation project. Chehalis Power anticipates that local projects may involve tree planting associated other activities to provide high quality greenhouse gas reductions.<sup>6</sup>

### **Project Management**

This section will contain provisions for performance of project-related administrative work, contracts, and inspections necessary to complete the project. It will include an estimate of administrative expense.

### **Funding Requirements and Chehalis Power Share**

This section will discuss the total project cost, both with and without Chehalis Power participation. It will discuss sources of funds other than Chehalis Power. It will explain the relationship of Chehalis Power's funding to viability of the project as a whole, and to the greenhouse gas element in particular.

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<sup>6</sup> Forest management and tree planting are widely recognized as valid methods of greenhouse gas sequestration. *See, e.g.*, Intergovernmental Panel on Climate Change, Third Assessment Report, "Climate Change 2001: Mitigation," Summary for Policymakers, p. 8; Technical Summary, Section 4; and Chapter 4, Section 4.3.2 "Opportunities Forests". Available at the following link: [www.ipcc.ch](http://www.ipcc.ch)

## **Sustainable Development Benefits**

This section will discuss the role of the project overall in local efforts to maintain sustainable development. It will discuss anticipated environmental benefits. It will identify any socio-economic benefits, such as local employment, and educational and recreational values.