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***Seeking a competitive advantage
for Central America in selling
and marketing greenhouse gas reductions:
“Recommendations Based
on a Survey of Potential Investors”***

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Prepared for
PROARCA/CAPAS/AID

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PROARCA/CAPAS wishes to acknowledge the important contributions done by several organizations and individuals to the successful completion of the present study, considered very important for the Central American Region

Special mention is deserved for the following persons and organizations, which in an unselfish and professional spirit have provided both information and feedback to the process presented in this document

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PRESENTATION

CAPAS is a component within the Central American Regional Environmental Program (**PROARCA**) that responds to a need to support the regional agenda for the Central American Commission on Environment and Development (**CCAD**). This program is financed entirely by the United States Agency for International Development (**USAID**).

CAPAS means Central American Protected Area System. The program is based out of Guatemala City, however its coverage is at the Central American level (Belize, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica and Panama). **PROARCA/CAPAS** works in the following fields: protected areas, forests and climate change, natural resources policy building and strengthening, marketing of environmentally friendly products (coffee and tourism), training and a small grants program that supports all the fields mentioned above.

Within the natural resources policy component, a topic that has called a lot of attention from the Central American governments, society and people, is everything related to the United Nations Convention on Climate Change (UNCCC). In this topic, the Central American region has demonstrated leadership and creativity in the generation of projects for mitigation of the effects of the Green House Gases (GHG), namely within the pilot phase of the Joint Implementation (JI) mechanism. Within this mechanism, which focuses mainly on Carbon Dioxide (CO₂) both in emissions reductions and mitigation projects, Central America has been able to come up with an estimated 50% of the projects around the world. Even though projects have been developed, financed and implemented, there has still been a big question on how large or what form the market is going to develop.

In terms of Climate Change projects, Central America has been able to place projects at the field activities (reforestation, conservation, etc.) and at the financial level (Carbon Offsets, Tradable Certificates, etc.). Notwithstanding the above, the question has still remained about the location, size and expectations of the market. This study is a first approximation to answering some of these questions in an orderly and systematic way.

PROARCA/CAPAS wishes to thank all the organizations and individuals that helped in the development of this study and hopes this small contribution helps the Central American region achieve further successes in the global topic of Climate Change.

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ACERCA DE ESTA PUBLICACION

Este trabajo representa los compromisos entre los Estados Unidos y Centroamerica bajo CONCAUSA la declaracion Conjunta Centroamerica Estados Unidos (Miami octubre de 1994) sobre la conservacion del ambiente en Centroamerica.

Esta publicacion y el trabajo descrito en ella fueron financiados por la Agencia de Estados Unidos para el Desarrollo Internacional (USAID) Sin embargo, las opiniones e ideas presentadas aqui no son necesariamente respaldadas por USAID, ni representan sus politicas oficiales

ABOUT THIS PUBLICATION

This work represents commitments by the USA and Central America under CONCAUSA the Joint Central America – USA declaration (Miami October 1994) on conservation of the environment in Central America.

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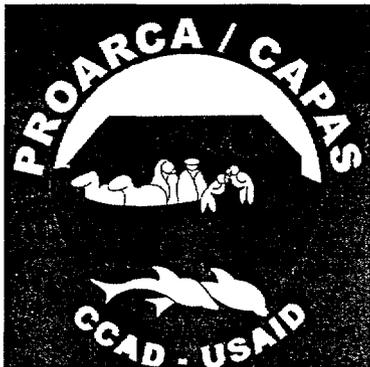
Seeking a Competitive Advantage for Central America in Selling and Marketing Greenhouse Gas Reductions:

Recommendations Based on a Survey of Potential Investors

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CENTER FOR SUSTAINABLE
DEVELOPMENT IN THE AMERICAS

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I EXECUTIVE SUMMARY

A Summary of Results

The Central American countries are interested in positioning themselves to take advantage of the emerging market for greenhouse gas (GHG) emission reductions, often called "carbon offsets". Demand for carbon offsets is increasing due to the recently adopted Kyoto Protocol (KP), which limits GHGs in thirty-eight developed and transitional countries. While the KP has not yet entered into force, some companies are already buying emissions reductions. A survey of fourteen organizations including private sector emitting companies and GHG offset buying consortia / institutions from the U.S., Canada and Europe provided insight into how Central American countries can take advantage of growing opportunities to sell reductions of GHG emissions.

- **Central American emissions reductions are regarded as attractive but not premium** Central America's political stability and enabling environmental policy framework makes investment in the region's offsets interesting. However, some factors that would make emissions reductions from Central America more attractive include low cost reductions, good partners, credible projects, the potential for doing business in the region, strong and cooperative national CDM offices with clear criteria on eligible projects, other environmental benefits, and more concrete multilateral CDM policies.
- **Projects in the energy sector were overwhelmingly favored over carbon sequestration projects.** Respondents attributed this to more familiarity with power projects and a perceived higher risk for forestry projects. Risks cited include regulatory, baseline/methodological, political and credibility/reputation. It is possible that some of these perceived risks may be ameliorated by the IPCC report on land use change and forestry which is due May, 2000 and by the decision on the topic which may be taken by the Parties at COP6. However, it is important to note that at this point in time, investors are more likely to invest in energy than in forestry sector projects.
- Most companies surveyed are currently investing in emissions reductions or planning their strategy to respond to future policies and/or regulations expected to be in place by 2005-2010. While actions to date are primarily voluntary, **many companies have reduction targets and are hoping to receive credit for "early action"**. This interest in early action would justify the time and effort which Central America is putting into the process of project identification at this early stage.
- Expectations are that future reductions will be sought primarily through a combination of **international offsets** and domestic offsets. This eagerness to acquire international offsets also justifies the current Central American investment in preparing for the international carbon market.
- **Compliance with regulatory obligations is the main driver for offset investment decisions**, although new business development is also quite important. This underscores the critical importance of keeping engaged in the international negotiation process, exerting pressure for the Kyoto Protocol to be implemented as soon as possible, in order to create the necessary international regulatory obligations. There are of course parallel national regulatory obligations which may be assumed by industrialized countries, but Central America has no influence over these.

Figure 1 Illustrative Questions and Responses

Question	Percent of Respondents
Have Internal Target for Reducing Emissions	42%
Intend to invest in International Projects	80%
Intend to Invest in Reducing Emissions in Current Operations	80%
Plan to reduce Emissions via New Business-Related Investments	70%
Will Consider Emission Reductions Unrelated to Core Business	35%
Credit for Early Action is Important Motivator	75%
Preference for Energy Sector Projects	85%
Important Feature of Investments Price / Cost	75%
Important feature of Investments Credibility (policy, partner, reductions)	50%
Will consider buying Emission Reductions in Central America	70%

B Summary of Recommendations

Central American GHG offset sellers can take several steps to position themselves better in the evolving market for GHG reductions

- Emphasis must be placed on providing **reductions at a reasonable price**, or timing the sale of reductions to take advantage of possible future “spikes” in price. Transaction costs should be internalized as much as possible, and reduced through economies of scale. Alternatively, a differentiated product that meets the needs or preferences of buyers may be able to justify a higher price.
- **Enhancing the credibility of GHG emission reductions should be a priority.** Credibility is affected not only by project design, but also by the partner organizations involved in project implementation, and the domestic policy framework and government approval process for projects.
- The **appeal of energy sector** projects should be considered in identifying potential emission reduction opportunities and projects. Survey respondents expressed an overwhelming preference for projects in this sector because most emitters are either in the energy business or energy production or consumption is integral to their business. The potential for using GHG emission reduction capital, as a source of co-financing for renewable energy should be actively explored.
- Buyers perceive that forestry sector reductions are more risky than energy sector reductions. Therefore, **sellers of forestry-related emission reductions should carefully evaluate the range of risks their projects face**, and develop risk mitigation plans and strategies for each risk. As in project finance, it may be possible to find someone or some institution to take on each risk or provide adequate coverage (e.g., insurance, guarantee).

The seller should expect to incur some costs to manage risks but – if reasonable - these can be factored into the price of reductions

- **Mechanisms for reducing risk** include selling only part of the emissions reductions (carbon sequestered) and retaining the remainder to cover unexpected losses purchasing insurance to sell with the reductions, paying a third-party to guarantee reductions, syndicating the sale of reductions to several buyers (to reduce their respective exposures to risk), or pooling reductions from several different types of projects for sale to one or more investors
- The forestry sector produces **biomass**, which is likely to play an increasingly important role in power generation sector Forest / plantation managers and biomass power project developers should collaborate to explore the development of projects with both forestry and energy components
- Central American countries could take on a leadership role in the COP and subsidiary bodies to apply pressure to get the CDM “up and running” so that **uncertainty about international rules is reduced**

II BACKGROUND AND INTRODUCTION

In December 1997, 159 Parties to the UN Framework Convention on Climate Change adopted the Kyoto Protocol (KP). The KP sets limits on emissions of carbon dioxide and five other greenhouse gases (GHGs) from 39 countries, including the OECD countries and countries with economies in transition (EITs). These countries (collectively called “Annex B” countries) have agreed to reduce their GHG emissions by an average of 5.2% from 1990 levels during the period from 2008 - 2012. Reduction commitments vary among Annex B countries. There are no limits on emissions from developing countries. The KP was open for signature for one year from March 1998 to March, 1999. After that date countries must adhere to it. It will enter into force when at least 55 countries representing at least 55% of the 1990 GHG emissions of Annex B countries ratify it. As of July 1999 only 12 countries have ratified.

The Protocol includes three mechanisms which, when further articulated and implemented, will provide Annex B countries with flexibility for reducing emissions. Article 17 of the KP provides for international emissions trading among Annex B countries of “assigned amounts” (i.e., surplus GHG emission reductions which are not linked to a particular project) in a manner similar to how sulfur dioxide allowances are currently traded among electric utilities within the US. The mechanisms for undertaking and regulating allowance trading will be elaborated over time.

The second mechanism among Annex B countries is the outlined in Article 6 of the KP. Under “Joint Implementation” or JI an entity in one Annex B country can finance a project which results in GHG emissions reductions in another Annex B country. JI will allow companies or governments from OECD countries to finance GHG reductions in EITs, where marginal costs of abatement are lower. In return for financing reductions, the investor would obtain credit against their home-country KP obligations. The KP allows crediting of GHG reductions only for that part of a project which is “additional” to what market forces would normally dictate under a “baseline” or business-as-usual scenario. Crediting of reductions during the AII pilot phase was

forbidden by international agreement in 1995. The rules for JI crediting among Annex B countries from 2000 forward will be developed over the next few years.

Finally, Article 12 of the KP establishes a “Clean Development Mechanism” (CDM) which would allow for project-based JI transactions between Annex B countries and developing countries. This is the mechanism of most interest to Central American countries. The CDM includes a provision allowing credits for transactions from 2000 to 2007 to be applied toward obligations in the commitment period of 2008-2012. Significant work is needed to articulate several key provisions of the CDM before it can become operational. The design and functions of the CDM will influence the extent to which investors are interested in buying GHG reductions from developing countries.

Adoption of the KP suggests OECD companies and governments will likely reduce GHG emissions in the next 10-15 years. Some will want to purchase emissions reduction credits from other countries to fulfill part of their KP obligations. However, until the KP enters into force and the measures specifying how it will be implemented are put in place, the market for emissions reduction credits will be subject to considerable uncertainty, with the views of individual potential investors remaining largely unknown. Nonetheless, a market for emissions reductions has been evolving over the last ten years as companies (faced with the threat of future regulations to limit emissions), governments and NGOs have identified potential opportunities for cross-border GHG emissions reduction transactions.

To date, this market has consisted primarily of demonstration activities sponsored by OECD governments as well as deals between private parties. In addition, private parties have been trading GHG reduction credits (and options on credits) for the year 2000 and beyond in the hope that such transactions will be acceptable under a future KP regime. The significant uncertainties surrounding such transactions have led to a wide range of prices for GHG reductions, from \$0.40 per ton of carbon (tC) up to \$10 per tC. Factors that influence price include, among others, marginal abatement costs, price preferences on the part of sellers, transaction costs, opportunity costs on the part of the buyer, and the “price sensitivity” of buyers (governments tend to pay more for the learning experience while companies tend to want to focus on actual emission reductions).

Many Central American countries see great potential trade opportunities in the evolving market for GHG reductions. However, it is clear that other developing countries may have a wider array of potential project-based reductions to choose from, including in sectors where potential investors see market-entry and growth opportunities. Thus, Central American countries should position themselves within the larger evolving market for GHG reductions in a manner that emphasizes their comparative advantages and gives them an edge relative to other sellers of GHG reductions. Positioning requires a good understanding of the views and preferences of buyers, particularly with respect to preferred sectors, business development and growth opportunities, amounts of reductions needed, institutional arrangements, risk mitigation, and timing. These and other factors will influence where they will put their limited resources for reducing their future GHG emissions liabilities.

III METHODOLOGY

The primary method for data collection for this study was a survey of potential buyers of GHG emissions reductions and/or investors in projects that aim to reduce GHG emissions. CSDA, INCAE and CCI agreed that respondents should be mainly from North America, with some from

Europe and Japan. A breakdown of 5 from Canada, 16 from the U S , 6 from Europe and 3 from Japan was agreed upon as a target. Potential respondents were identified by CSDA and CCI according to the varying degrees of interest in GHG issues expressed by companies in various forums (e.g., participation in meetings on GHG trading, conferences, workshops, papers, presentations, etc.)

The survey was sent to thirty two private and public companies in the U S , Europe, Canada, Japan, and three European governments (Switzerland, Norway and the Netherlands), as well as two industry trade associations, and a U S state government offset trust. This group of private and government interviewees was contacted by telephone and then sent background information on Central America (Annex II) along with a survey of 27 questions (Annex I). Participants were then offered a choice of telephone interviews or responding in writing.

A total of fourteen respondents completed the survey. Only a few non-respondents indicated they were not interested. The remaining non-respondents appeared to have been unable to find time to complete the survey. All three national Governments (Switzerland, Netherlands and Norway) were reluctant to respond, although they have all been active in investing in pilot phase offset projects, as well as in the climate negotiations on the Clean Development Mechanism. The three invited Japanese companies chose not to respond. The fourteen participants who did respond, however, represent a broad range of emitting industries (electric utilities, independent power producers, coal & oil companies, manufacturing companies and automotive, as well as two industry trade groups) in the U S , Canada and Europe.

Respondents were selected to provide a range of views. Rather than interview only those companies that are very active, the survey aimed to obtain views and preferences from those actively engaged in pilot projects and CDM policy-making, as well as from those who are less involved or have not focused attention on reductions. Of the potential participants in offset activities, the energy industry, particularly the electric utilities and independent power producer have been the most active to date. This survey also sought to obtain the opinions of potential investors in Central American carbon offsets that have been less active than electric utilities, including the coal, oil and gas and automotive industries.

As differences of awareness on carbon offset issues within companies vary widely, the interview team chose a combination of environmental managers (six of total), who are more familiar with meeting regulatory requirements but may be removed from the decision making process for new investments, and Business Development managers (five of total respondents) who are intimately familiar with criteria for making business investment decisions, but not as familiar with meeting regulatory requirements. The remaining respondents are in positions responsible for compliance and business development. As the results of the survey show, companies tend to view investing in offsets as primarily a compliance issue rather than a business development issue.

It should be noted that the information and observations in all sections are based upon the information provided by the survey respondents and interviewees of the study and do not reflect the opinions of the authors, except where expressly noted.

IV SURVEY RESPONSES

The survey of potential buyers / investors was undertaken to identify current GHG reduction needs and preferences and gauge willingness to invest in carbon offsets in general, as well as

Central American offsets specifically. The objective is to inform Central American governments' efforts to market and sell GHG reductions from their respective countries.

1 Home government GHG reduction policies or regulations, expectations for regulation by 2005, means to implement GHG reductions

Out of the fourteen, nine respondents indicated that their home government has reduction policies, although these were voluntary programs such as the U.S. Climate Challenge program. Not all respondents from the U.S. and Canada agreed as to whether their governments actually have such policies or regulations. The State of Oregon, in the U.S., has actual legislation requiring that an efficiency standard of 15% improvement must be met in the power sector and that both international and domestic offsets may be used to meet the target. The state has set up a trust to purchase and resell offsets for this purpose. Offsets may be purchased from a wide "basket" of options, including international CDM renewable energy, energy efficiency and carbon sequestration offset projects. Of the European respondents, only did one in Norway indicate their government has commitments (e.g., carbon tax).

About half of the respondents expect that their governments will introduce policies or regulations to limit GHG emissions by 2005, while the balance expect such policies to be in place by 2010. Six respondents indicated they expect their governments to introduce hard targets, and most indicated they expect their governments to introduce incentives as a means to limit emissions.

2 Company reduction targets

Of fourteen respondents, six (42%) indicated that they have adopted internal targets, including several that intend to reduce emissions by more than 20 million tons by 2000, 2005 or 2008-2012. Examples of these targets include:

- 24 million tons by 2000
- 10-20 million tons by 2010
- 26 million tons by 2000, with additional 10% reduction by 2005
- 56 million tons by 2012

Emissions similar to what their governments are assigned under the Kyoto Protocol (e.g., -7% of 1990 levels by the first commitment period). The third commitment listed above represents a commitment beyond what would be required under the Kyoto Protocol. Although respondents did not indicate their total emissions, the company targets noted above represent a limitation. While the amounts may be representative of future requirements to limit emissions if Kyoto Protocol targets are translated into regulations, such voluntary commitments are an exception rather than a rule among companies throughout developed countries.

3 Emissions reductions achieved as of February 1999

Eight respondents (57%) have already achieved some emissions reductions. Of these, the majority of reductions have been via changes in operations (although not for each company) which ranges from 1,300-32 million tons. The second highest target area for investments has been domestic (offsets within home country), ranging from 8,000 – 1,176 million tons, while the lowest appears to be overseas with reductions of 65,000 – 816 million tons. One consortium has

achieved reductions of 170 million metric tons CO₂, although it is unclear how this is broken down between individual members

4 Types of planned purchases/investments

The majority of respondents (80%) expect to put resources into emissions reductions in international projects and through investing in changes in current operations. However, domestic offsets (65%) and new investment related to the core business (70%) are expected to be almost as important. Investments related to non-core business are the least attractive but will be considered by 35% of the respondents (one utility, one oil and gas company and one entity established to purchase emission reductions). Several interviewees said that it is too early to tell what type of investments they would consider, as they would need established rules or a market before they begin trading.

International Projects	80%
Invest in Current Operations	80%
Domestic Offsets	65%
New Investments – Core Business	70%
Investments Related to Non-Core Business	35%

5 Anticipated timing for investing in additional reductions

Five of the participants indicated that they were unsure “when” they would (further) invest in emissions reductions and noted the importance of the timing of policy decisions. Nevertheless, a few survey participants (25%) have started to purchase offsets or make investments and a few more (15%) will begin in the next twelve months. One company plans to search ‘intensively in the Fall of 1999’, while another plans to buy reductions of 6M tons in 2000. Yet another will start “as soon as the international /national framework allows the purchasing of credits”.

As soon as government policies are put into place, several companies could move quickly to make additional purchases (that is, they are preparing for purchases that they will make once rules are in place). One company expects to invest in / purchase emissions reductions in the order of 3 – 6 M tons / CO₂ per year for the years 2002 to 2012. Another company stated that future investment is likely within 5 years. Would consider risk mitigating actions – such as considering CO₂ in business decisions and future deals with contract options, etc. prior to this time’.

The variation in timing of expected purchases is due primarily to differences in strategy at the company level, although policy / regulatory decisions by governments are important factors. Variation is not a function of industry.

6 Relative importance of environmental policy/regulation compliance and business development in existing and/or planned GHG emissions reduction purchases/investments

On average, companies ascribed greater importance to policy/compliance as the driving objective for their existing or planned GHG emissions reduction purchases/investments relative to business development (policy / compliance received 91 points out of a potential 140, while business

development received 73 points out of a potential 140) Four participants accorded greater priority to business development, and one gave equal importance to policy/compliance and business development. This distribution reflects only partly whether the respondent is responsible for compliance or business development. Compliance specialists are generally aware of business development priorities within their companies.

7 Policy driver(s) influencing decisions to invest in further reductions

Asked what will be the main drivers for a decision to invest in or buy further reductions, 75% of the respondents indicated that government policies are a main driver. Economics, return on investment and offset price were noted by 38% respondents, as were demands or interests of customers. One company indicated that stakeholder and "good will" issues in countries where they have holdings are the main drivers for international offset investments.

8 Importance of national policies and incentives in your home country/state in influencing choice of how to reduce emissions

Emission reduction policies in investor countries have a strong influence on "how" companies achieve offsets and reductions.

Selected respondent comments included

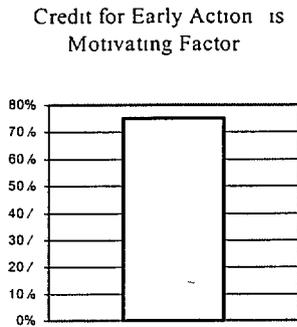
- "Policies are important – we are not likely to make a significant new investment without some confidence that we [can use] offsets against possible future requirements"
- "Policies are critical – international reductions need to count against domestic obligations"
- National policies are 'very important – there is a high risk that investments expended early will be nullified"
- "Very [important] – state law requires reductions from new power plants"
- "National policies are the key issue. They define the feasibility of the GHG reducing investments and the competitiveness of the different power production technologies"
- "Government policies are critical before we would participate"

However, some respondents felt that host country policies are very important. Credibility appears to be a key issue (as noted either explicitly or implicitly – e.g., expropriation). One respondent noted that there is a need for confidence in the multilateral mechanism.

9 "Credit for early action" as motivator to invest in offsets in advance of regulatory requirements

Three quarters of the respondents felt that incentives for early action are critical for motivating them to buy emissions reductions or invest in projects in advance of regulatory requirements (e.g., which some expect by 2005 and most expect by 2010). 20% were not as confident that they would invest early, even if credit for early action were established, due to high costs for developing baselines and uncertainties around the companies' rights to use the credits for domestic compliance.

Figure 2 Importance of Credit for Early Action



10 Position on “early action”

More than 80% of the respondents are active supporters of “credit for early action” legislation now under consideration in the U S Senate and also in Canada. This is not that surprising, since some respondents were selected – in part – because they have participated in meetings/initiatives related to GHG emissions reductions and trading. A more representative sample of US industry would not show as much support for early action. One respondent is developing a policy on this subject and another will not buy offsets without an established market even if credit for early action is granted. One respondent noted its opposition to Credit for Early Action because it is a problematic policy, while another claimed support for the concept but not the current draft legislation proposed by several U S senators.

11 Preference for emissions reductions in certain sectors

Of the responses, an overwhelming majority expressed a preference for projects in the energy sector, or for projects that use municipal waste to generate electricity (methane, landfill conversion, etc). Two reasons were cited: more familiarity with power projects and, a perceived higher risk for forestry projects. One respondent expressed interest in forestry projects with biodiversity benefits, while three participants indicated “no preference” for energy or forestry projects, with one of the three emphasizing that the “single most important criteria is cost”. One participant noted the importance of hybrid projects such

as plantations for biomass in the production of energy.

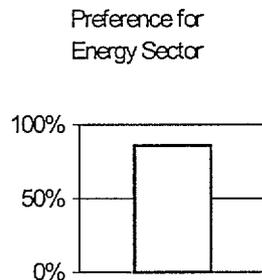


Figure 3 Preference for Energy Sector

12 Investment risks and/or transaction costs higher for energy or forestry

Several respondents felt that energy projects have lower risks, although there was some shared sentiment that transaction costs may be higher for energy projects than for projects in the forestry sector. One respondent indicated that the two sectors are hard to compare because they have different risks and transactions associated with them.

While some respondents indicated that they believe forestry projects have great potential or important “co-benefits”, all respondents (100%) agreed that risks related to forestry projects are higher than for energy projects. Risks include regulatory, baseline / methodological, political and credibility/reputation. There was disagreement regarding transaction costs, with one respondent indicating transaction costs are lower for forestry while others indicating that transaction costs are higher.

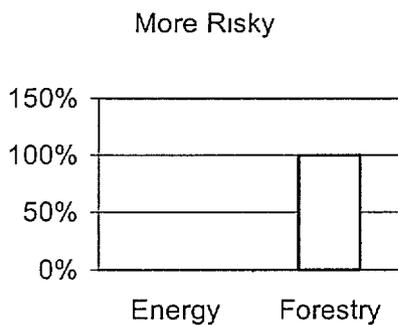


Figure 4 Perception Forestry More Risky

13 Preference for energy or forestry

All but three respondents (85%) expressed a preference for energy projects over forestry projects. Considering that most respondents' core business is energy, it is not surprising that they pointed out reasons such as:

- “in-house technical competencies,
- familiarity with the sector,
- better able to evaluate risk,
- easier to quantify and verify emissions reductions,
- greater certainty

Two respondents were ambivalent, preferring to use cost as a measure of preference. Finally, one respondent indicated that they prefer forestry sector projects because they are not directly involved in power generation, and consequently it does not represent their area of expertise. In this case it was argued that the cost efficiency of sequestration projects overseas (in tropical countries) is lower than domestically (in temperate climates).

14 Preference for international emissions reductions in certain countries/regions

Not all respondents expressed a preference for projects in certain countries or regions. Nine indicated they would invest outside of their home countries, including in Latin America Central America, Venezuela, and Peru), Indonesia, Asia, Australia, transitional countries and elsewhere in North America. Two respondents noted that they preferred to concentrate investments in North America for the time being.

Several respondents indicated a preference for overseas investments in countries where they already have assets or are already operating since transaction / start-up costs are lower if the firm

has a familiarity with the region. Finally, some respondents indicated that they do not have a preference for certain countries or regions, but that stability and risk are important considerations in evaluating locations. One respondent mentioned credibility as important – also noting that “Central America is credible” (see discussion on “credibility” under the recommendations of this paper). Preference was also expressed for countries with stable political and economic systems, as well as those with low in-country business risk – including receptivity to offset credits, ease of doing business, transparency of the legal system.

15 Clean Development Mechanism (CDM) contributes to, or hinders investments

Respondents were polled on their views regarding whether the CDM will promote or hinder investments in GHG reductions in developing countries. While there was a general feeling that the CDM could promote reductions in developing countries, most respondents expressed concerns regarding the potential design and operations of the CDM. They cited various CDM-related policy and design factors that – depending on future decisions to reduce the potential for investments in reductions including

- High “overhead costs” for CDM administration and fees for ‘vulnerable developing countries’ (as called for by Article 12 of the Kyoto Protocol),
- Bureaucracy and high transaction costs,
- An undefined system of approval for international credits, and
- Strict definitions of additionality (the greenhouse gas benefit of the project which is recognized to be above that which would have been obtained without the project). Excessively stringent rules on additionality would eliminate an important number of potential projects.
- Restriction on international offsets. The European Union is calling for a minimum of 50% of the reduction under the Kyoto Protocol to be achieved domestically. Industry representatives argue that enforcing a high percentage of domestic reductions will limit the market for CDM projects.

The CDM, however, was also felt to provide the potential for credibility and a pedigree (minimum standard) for market reductions, as long as the rules are kept practical and simple. One respondent suggested that host countries must clearly identify priority sectors and project types where they prefer investment.

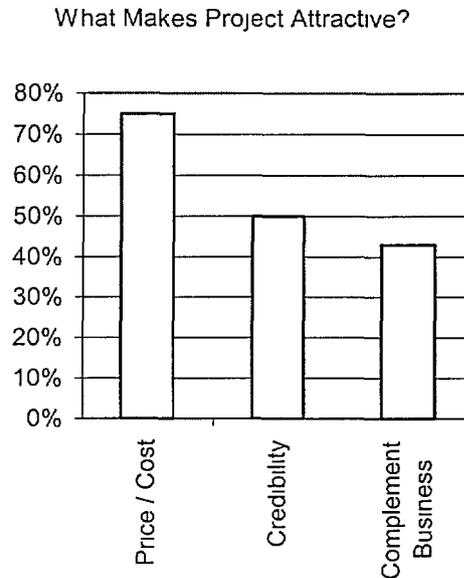
16 Preference for buying emissions reductions with certain types of partners

With respect to “type” of “partner” preferred, the over-riding concern is credibility, rather than a specific type. Three respondents expressed a preference for buying reductions from private companies because they “share the goals of profit maximization and this keeps the motives clean”, while three explicitly indicated that NGOs and universities are (also) preferred partners because of the environmental and technical credibility they bring. One noted the importance of ties to the government at the technical level to facilitate approvals, while another noted that a government partner is preferred. A partner that can manage political risk is important.

17 & 18 Attractive elements of investment/most important features

Regarding what makes a project attractive, 75% of respondents indicated that offset price or cost is the most important factor. All of the respondents mentioned it as an important factor. Credibility was the next most important consideration mentioned by about 50% of respondents. The third most important factor relates to how the project complements or contributes to the respondent's core business. Additional considerations included size of potential reduction "pool", "other" societal and Sustainable Development benefits, low risk, and other factors such as home country recognition, location, positive public relations, ability to provide lessons for future investments, host country policies, type of project, good partners, stability of country, low transaction costs, ability to replicate the activity, credit rating of country, type of agreement, and a guarantee. One respondent noted that having a national CDM program is an important criterion in choosing a country for investing in offsets.

Figure 5 Features of Attractive Projects



19 “Ideal” emissions reduction investment opportunity, easily “sold” internally

When asked to describe their “ideal” emissions reduction investment opportunity that could easily be supported and approved by colleagues, management and Board, more than half (57%) indicated that price is the determining factor. The next most important attributes were credibility and verifiability / certifiability of reductions (50%) and a positive relationship with their core business (42%). Other appealing considerations would be “other benefits”, partners, government support, and wider societal or public relations benefits. In general the consensus was that an ideal project would have, according to one of the respondents, “low cost, high credibility and good partners”.

Two respondents noted that they are waiting for regulations / policies to be developed before they form an opinion of an “ideal” project.

20 Less attractive emissions reduction investment opportunity

Attributes of less than ideal projects that were frequently cited by the respondents included higher costs, high transaction costs, high risk (e.g. political, commercial), an unknown or unreliable partner, no other benefits, higher uncertainty surrounding the potential to use reductions against a compliance target, reductions that are difficult to verify, questions surrounding ownership of reductions, projects that are far from core business in terms of focus or

location, and arbitrarily priced reductions. One respondent noted the current price differentials as a major deterrent.

21 Choice of where to buy emission reductions

Respondents were asked how important are national policies and incentives in your home country in influencing their choice of where to buy emissions reductions. Most indicated that home country policies do not directly offset purchases toward any specific country or region. Rather, what seems to preoccupy respondents more is whether there are policies to allow for crediting of foreign emissions reductions, both at the national level in their home countries as well as internationally (e.g., framework for Clean Development Mechanism). Bilateral country agreements were noted by one respondent as a factor they would consider. Domestic tax benefits or other incentives that provide substantial financial incentives might also be an influencing factor.

Only a few respondents identified potential host country policies or incentives as influencing their decisions. Preference was noted for clear rules, national priorities, types of preferred projects, and potential opportunities.

22 Investment that involves more than one country

Respondents were asked whether they might have interest in, or concerns about an investment that includes emissions reductions from more than one country. The objective of this question was to explore whether “pooling” of reductions by two or more Central American countries could be appealing to buyers. Six respondents expressed some concerns, such as the need to obtain host country approval in more than one country which would complicate the process (more time needed to develop government relationships, reliability of credits, verification issues added complexity, and the need for selling countries to agree and collaborate). However, these respondents indicated that they might consider such offerings, if based on a phased process that would begin with simple project concepts gradually developing standardized procedures. Six respondents indicated they would have no problem, as long as the countries agree and reductions are credible, with one noting that they already have multiple country investments. Two respondents felt that a portfolio approach could reduce risks for buyers.

23 Importance of brokering or inter-mediation services

Brokers were not felt to be critical to most potential buyers/investors, although there was some agreement that brokers could be helpful for matching buyers and sellers, or a range of potential projects to the attention of buyers, as well as saving time and costs – particularly for structuring multiple partners and finding good value offset deals, etc. According to one respondent, “brokering will probably give a better overview of supply and make transactions easier, but it is difficult to specify needs and preferences of service at this stage.” One “buyer” indicated they prefer to deal directly with the project developers, while another noted that a broker could provide other valuable services such as handling administrative tasks, correspondence, currency exchange, etc.

Two respondents noted that verification services would be important, and one mentioned assurance of credits.

24 Consider buying emissions reductions in Central America

70% of respondents indicated that they would consider buying emissions reductions in Central America, although many of the “yes” answers were qualified. Many cited the need for more certainty of the rules around the Kyoto Protocol, and domestically. One respondent indicated that they would like to see specific project proposals. Other conditions noted by some respondents included non-forestry projects, projects that meet the company’s criteria, and sound project economics or other benefits.

Two respondents have already invested in Central America AIJ Pilot Phase projects and intend to continue in the region, while three noted that Central America is a “reliable and proven source”, or that “there is relative political stability, it is nearby, there is an extensive network of NGO’s to facilitate secondary benefits, monitor projects, etc.” and that the region has a “favorable business environment.”

Three respondents indicated they may buy reductions in the region, while two indicated that they would not because they do not have any current business in the region or because “uncertainty about the rules governing carbon sequestration make this a risky venture at this time.”

One respondent, Oregon Climate Trust, specifically invited proposals from Central America in response to a Request for Proposal that it plans to release this Summer.

Consider Buying in Central America

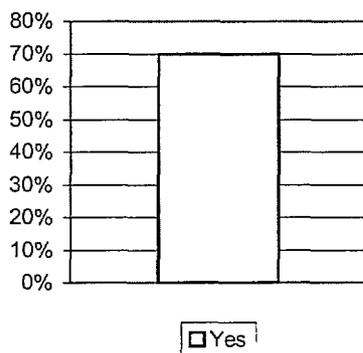


Figure 6 Buying in Central America

25 What would make Central America an attractive source of reductions

Respondents cited several, diverse factors that make, or would make, emissions reductions from Central America attractive, including more concrete multilateral CDM policies, strong and cooperative national CDM offices with clear criteria on eligible projects, political stability, other environmental benefits, credible projects, low cost reductions - “cost is key”, good partners, and the potential for doing business in the region.

According to one respondent, “Central America will become more attractive for CDM investment when policies to support CDM are more concrete. During AIJ, support for projects shifted in reaction to government changes. Political instability, which allows frequent changes in Government, must also be reduced.”

26 Central American reduction as Premium, Acceptable, or Undesirable

Most respondents indicated that they view Central American emissions reductions as acceptable (70%) and one (an oil and gas company that has already purchased “low cost” emission

reductions in Central America) considered them ‘ premium’ Two respondents believed they would not be desirable

27 What year, and what conditions, will consider investing in Central America

Two respondents indicated they have already invested in Central American emissions reduction projects, and both would consider additional investments One of these respondents noted the importance of clarity of policies regarding the CDM A few respondents indicated they would consider buying reductions in the next year or two Some companies are always reviewing proposals, while one indicated they will issue an RFP in late 1999 A few noted the importance of the international CDM framework / rules being in place, and suggested they would consider Central American emissions reductions in the period 1999 to 2001 Another noted that “we are a couple of years away from solid rules” One respondent that has already bought reductions in Central America indicated they might consider buying further reductions within 5 to 20 years

V RECOMMENDATIONS BASED ON DATA ANALYSIS

HOW CENTRAL AMERICAN COUNTRIES SHOULD TARGET THEIR MARKETING EFFORTS TO SELL GHG REDUCTIONS TO POTENTIAL INVESTORS

Several themes emerged from the survey results Of these, we will focus on the preferences expressed by potential buyers / investors The aim is not to prioritize them, but rather to explore how these preferences could be met by Central American GHG emissions reductions We found the following to be the most frequently cited issues or concerns

- A Price,
- B Credibility (covering reductions, partner, government rules/framework),
- C “Other” benefits, including wider societal or public relations benefits
- D Preference for the energy sector,
- E Risks in forestry sector,
- F Transaction costs, and
- G Importance of international rules and timing of such rules

In this section, we explore to what extent and how Central American countries can address these preferences and concerns In some cases, governments have a role to play while, in other cases, they can encourage other actors to respond to buyer preferences

A Price

Of the criteria mentioned by potential buyers / investors, price was most frequently cited

How can Central American countries provide low price emissions reductions? In any competitive market, sellers will **seek ways to reduce the price of their product relative to other competing products** Or, they may not compete on price, preferring to “differentiate” themselves from competitors because they are providing an actual or perceived “added value” that is desirable to buyers

To determine whether prices can be reduced, costs incurred to produce a product must be broken down into various components. Costs to “produce” GHG reductions may include any of the following: inputs / materials (e.g., seedlings, fuels), technologies, labor, services (e.g., accounting, verification), monitoring, reporting, etc. The number and type of inputs may vary from project to project and particularly between project types (e.g., forestry, energy).

Sellers are encouraged to estimate costs to “produce” various types of emissions reductions, and to construct “cost curves” to identify which could or should be marketed depending on prices being paid for reductions at any certain time (for example, it would be futile to try to sell reductions that cost \$40.00 / tonne to produce at a time when the “going rate” being paid by buyers is \$2.00). Sellers should also consider whether they could reduce the costs of specific inputs, such as services and technologies, to produce reductions. Common means for reducing costs include economies of scale (mass production to spread costs over larger numbers of units produced), experience (avoid re-inventing the wheel), and substituting certain inputs with other, lower-cost inputs.

A 1 Price and Timing to Enter Market

Currently, the GHG reduction market is a “buyer’s market.” This means that buyers have many reduction options to choose from, which also keeps the price low. However, the price for GHG reductions is likely to increase over time, as low-cost reductions are exhausted. Therefore, timing may be an important consideration in deciding “**when**” to put reductions on the market. In the future, buyers will be required to consider higher priced reductions. For sellers whose highest priority is to obtain a high price, it may be worthwhile to wait until the time when buyers are willing to, or must, pay a higher price.

Sellers could consider “speculating” that the price of reductions will “spike” when future policies and regulations become clearer and/or are put into place. As noted in the survey results, some buyers / investors will not become active until rules are put in place. If low-cost reductions have been exhausted, then they will have to pay a higher price.

A 2 Differentiation of Central American Reductions

If sellers cannot compete on a cost basis, then they should consider **differentiating their “product”** (emissions reductions). In their responses, buyers / investors identified several **valuable project attributes**. Perhaps these attributes could be **made more distinctive** and used as **marketing tools** to attract interest in higher priced reductions. Important attributes cited by respondents included “credible” reductions, partner and government policy, and “other” benefits. “Other” benefits will tend to vary on a project-by-project basis, and could be advertised as a special component or feature of reductions.

Relying exclusively on differentiation to market GHG reductions should only be considered after careful study. Over time, GHG reductions are expected to become standardized, perhaps even commodity-like. GHG reductions in Article 17 will be commodity trading. Project-based reductions will have higher transaction cost, but will still have to compete with emissions trading. Ultimately, differentiation will become less important than price.

B Enhancing Credibility

After cost / price, the next most important attribute of emissions reductions sought by buyers is “credibility” Credibility covers several issues and concerns, including the actual emissions reductions being purchased, the partner involved in the project, and the host government rules / policy framework for offset projects Each of these will be addressed separately

B 1 Credible Emissions Reductions

Buyers / investors expressed concerns regarding the credibility of emissions reductions While credibility is a subjective term, experience with potential buyers suggests that for a project’s reductions to be considered credible, **buyers need to be able to convince others** with a potential interest in the project - e g , peers, policy makers, regulators, and special interest groups – that reductions are real, measurable and verifiable For CDM projects that must meet the “additionality” criterion, this convincing must be done **in advance of project implementation** and, therefore, in advance of any verification or certification To help convince a potential buyer and others that emissions reductions are credible, sellers can provide

- thorough documentation,
- testimonials from highly regarded experts / third-parties,
- straight-forward, easy-to-understand project concepts,
- examples of precedents, and
- certification of reductions through an independent entity

B 2 Partner

The “partner” involved in the project can also enhance credibility Based on experience in working with buyers / investors, buyers have shown a preference for partners with a good “track record” A **good partner** would have relevant experience in the business of the proposed emissions reduction project and managing finances, a legal standing (e g , an entity established according to regulations for profit or non-profit institutions), and positive relationships with the government and local and national “stakeholders” Some buyers also like to engage reputable NGOs to provide a “good-housekeeping seal of approval” for their own security and also to preempt potential criticism

B 3 Host Government Rules and Policy Framework

Finally, the host government rules / policy framework for approval and international transfer of emissions reductions can lend credibility to reductions Rules that are *laissez-faire* (loose, or open to interpretation), or that are too complicated or not transparent tend to increase uncertainty and therefore risk regarding the outcome of the approval process and/or the possibility of future changes to rules Uncertainty surrounding the application of rules or procedures will tend to increase regulatory risk, one of the many risks considered by foreign investors in international

project financing¹ **Rules and procedures must be straightforward, with (public) transparent application**

Similarly, unusual practices can scare off potential investors. One company that did not participate in this survey lost interest in pursuing a project due to local demands for “gifts” to ensure a project would be approved. Selling countries should be prepared to nominate a national focal point, establish a clear, transparent process for project review and approval, and set clear rules for project eligibility.

C “Other” benefits, including wider societal or public relations benefits

Another means for “differentiating” emissions reductions may be through ensuring projects will have “other benefits”. Providing other benefits (e.g., biodiversity protection, employment, income generation opportunities, etc.) may increase project costs, but **buyers may be willing to pay for reductions that provide desirable, local benefits**. Buyers / investors are not blind to the public relations benefits of satisfied stakeholders within a community where they do business. Benefits that occur locally, on a regular / continuous basis, tend to build support among local stakeholders and can, therefore, enhance the sustainability of a project over the longer term.

Again, however, care must be taken to not over-emphasize differentiation to justify higher costs. If GHG reductions evolve to become a commodity in the future, a small premium may not be acceptable to some or all buyers.

D Preference for the energy sector

Many respondents noted their preference for projects in the energy sector. This is not surprising since most emitters are either in the energy business, or energy production or consumption is integral to their business. Central American countries obviously have a great advantage in developing forestry sector projects, but should consider the appeal of energy sector projects when identifying prospective emission reduction opportunities.

Trends in the region are currently toward the construction of more thermal power generating plants, even though the region is endowed with plentiful renewable energy resources (e.g., biomass, wind, solar, tidal power). These renewable energy sources may require “additional” finance to become competitive with thermal generation, and therefore are good candidates for credible emissions reduction investment. Costa Rica has already begun to seriously explore business opportunities in this sector, as have other countries.

Central American countries should seek to work with energy companies that are active in Latin America to explore their interest in either buying emission reductions and / or co-financing the creation of reductions for sale to third parties.

¹ It would be worthwhile for sellers of emissions reductions to familiarize themselves with the many risks that foreign investors evaluate when considering international project financings. An excellent reference is PK Nevitt and F Fabozzi, Project Financing, Sixth Edition, Euromoney Books, UK, 1995.

E ***Risks in forestry sector***

Buyers perceive that forestry sector reductions are more risky than energy sector reductions. This perception cannot be ignored. **Sellers of forestry-related emission reductions (carbon sequestration) should carefully consider the range of risks their projects face, and develop risk mitigation plans and strategies for each risk.** As in project finance, it may be possible to find someone or some institution to take on each risk or provide adequate coverage (e.g., insurance, guarantee). The seller should expect to incur some costs to manage risks.

Mechanisms for reducing risk could include

- selling only part of the emissions reductions (carbon sequestered) and retaining the remainder to cover unexpected losses,
- purchasing insurance to sell with the reductions,
- paying a third-party to guarantee reductions, or
- syndicating the sale of reductions to several buyers (to reduce their respective exposures to risk)

Other options may also be available, such as **pooling reductions** from several different types of projects for sale to one or more investors.

It may well be that, with forestry projects, the perception of risk is much higher than in actual risk, that is, buyers may be uninformed or misinformed about the risks of investing in the forestry sector, or they may have no experience with forestry projects. Sellers can address such perceptions by **providing quality information and generally working to improve methodologies for estimating, monitoring and verifying carbon sequestration**.

Finally, the forestry sector does produce biomass that is likely to play an increasingly important role in the power generation sector over time. Emissions reduction project developers in the forestry sector could explore with biomass power project developers the feasibility of collaborating to develop **projects with both forestry and energy components**.

F ***Transaction costs***

Buyers / sellers repeatedly expressed distaste for high transaction costs related to purchasing emissions reductions. Potential buyers take several steps when they review and then proceed to buy / invest in emissions reductions. It may be possible **for sellers to reduce or eliminate some of these steps** – at least in some cases. Consider the steps undertaken by a buyer for a typical transaction.

- review proposals
- select preferred option(s), and consult internally with colleagues
- initiate discussions with potential seller, or broker, to follow up
- undertake due diligence (often requires hiring an expert to assess credibility of reductions, partner, regulatory environment / local laws, price / cost, etc.)
- review results internally
- obtain internal approval for purchase
- proceed to discuss purchase with seller
- initiate negotiations with seller
- application for approval with host country government

- ❑ agree with seller on price, terms, etc
- ❑ develop contract and negotiate details
- ❑ agree on contract
- ❑ begin implementation of project
- ❑ certify reductions on regular basis

Only one respondent noted that they believe transaction costs are lower for forestry sector projects than for energy sector projects. This view may be held because the buyer has less knowledge of the forestry business, and is therefore less likely to be concerned about details of the business. **Presented with a fully developed project proposal, with all credibility issues addressed, the buyer only has to pay for the reductions.** All costs are included, and the seller is responsible for project development and implementation.

On the other hand, the less buyers know, the more they are likely to have questions regarding a potential project. In the forestry sector, it may be possible for sellers to take the project design development and implementation burden from buyers (e.g., basically, using their inexperience in the forestry sector), and **offer a whole package that capitalizes transactions (costs) that buyers face when negotiating and implementing energy sector projects.**

G Importance of finalizing international rules

Many respondents noted the importance of having international rules in place before they could proceed to purchase emissions reductions from Central American countries. While some did not feel that international rules are necessary to proceed, others thought that international rules would at least provide greater certainty that emissions reductions purchased in developing countries could be credited toward (future) home country obligations. Obviously, Central American countries will be unable, on their own, to design and set up the Clean Development Mechanism (CDM). Therefore, they will be limited by the speed at which negotiations proceed in the COP and the subsidiary bodies on rules, modalities and procedures for the CDM. Sellers may also be limited by the timing of entry into force of the Kyoto Protocol (if the COP adopts no “interim arrangements” for the CDM).

Nevertheless, there is nothing to stop sellers from playing a **leadership role in the COP and subsidiary bodies to apply pressure to get the CDM “up and running”** – even if only on an interim basis (as proposed by Brazil and Nicaragua). Selling countries can contribute to the development of interim rules and procedures for consideration and adoption by the COP. In addition, sellers can take a leadership role by “demonstrating” how they would behave in a “CDM World” and adapt current rules and policies to reflect their “vision” of the CDM.

**SEEKING A COMPETITIVE ADVANTAGE FOR
CENTRAL AMERICA IN SELLING AND
MARKETING GREENHOUSE GAS
REDUCTIONS:**

**“Recommendations based on a Survey of Potential
Investors.”**

ANNEX I

“SURVEY TEXT”

Questions	Yes	No
<p>1 Does your home government have any GHG reduction policies or regulations? Currently, are you obligated by policy or regulation to reduce GHG emissions? Do you expect that your government will regulate your GHG emissions by 2005? By 2010? If so, how, or in what way Specific limits on your organization's emissions? Incentives to reduce emissions? If you are a government, are you limiting emissions from sources in your country?</p>		
<p>2 Does your company or government have a target for reducing GHG emissions? If so, please specify _____ tonnes CO2 equivalent total or _____ tonnes CO2 eq / yr for _____ yrs By Year 20_____</p>		
<p>3 Have you achieved any emissions reductions as of February 1999? If so, how much through each of the following</p> <p><input type="checkbox"/> Domestic (in country) Offsets _____ tonnes or _____ %</p> <p><input type="checkbox"/> International Offsets _____ tonnes or _____ %</p> <p><input type="checkbox"/> Changes to internal operations/policy (organization/unit) _____ tonnes or _____ %</p> <p><input type="checkbox"/> Investing in less GHG intensive business(es) _____ tonnes or _____ %</p>		

	Yes	No
<p>4 What kind of purchases/investments do you plan in order to reduce additional emissions in the future?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Domestic (in country) Offsets <input type="checkbox"/> International Offsets <input type="checkbox"/> Reduce emissions from operations and/or policy changes (organization/unit) <input type="checkbox"/> Invest in less GHG intensive businesses related to your core business? <input type="checkbox"/> Invest in less GHG intensive businesses not related to your core business (new business development) 		
<p>5 What is your anticipated timing for investing in additional reductions? (specify years, frequency, proportion of total purchase anticipated, etc)</p>		
<p>6 On a scale of 1 to 10, with 10 being the most important, please rate the objective of your existing and/or planned GHG emissions reduction purchases/investments</p> <p>_____ environmental policy/regulation compliance</p> <p>_____ business development</p>		
<p>7 What will be the main policy driver(s) influencing your decision to invest in further reductions? Please explain</p>		

	Yes	No
<p>8 How important are national policies and incentives in your home country/state in influencing your choice of how to reduce emissions? Please explain</p> <p>What about in the country(ies) where you plan to buy / invest in emissions reductions?</p>		
<p>9 Would the possibility of "credit for early action" motivate you to buy offsets or invest in projects in advance of regulatory requirements?</p>		
<p>10 Does your organization have a position on "early action"? Please explain</p>		
<p>11 Do you have a preference for emissions reductions in certain sectors? Please specify</p>		
<p>12 Do you think that investment risks and/or transaction costs are higher for</p> <p>Energy project – related emissions reductions?</p> <p>Forestry project – related emissions reductions?</p>		

	Yes	No
13 Do you prefer either energy or forestry projects to the other? If so, which type and please explain why		
14 Do you have a preference for international emissions reductions in certain countries or regions? Please specify		
15 Do you think the proposed Clean Development Mechanism (CDM) will contribute to or hinder investments in GHG emissions reductions in developing countries? Please identify relevant elements of the proposed CDM		
16 Do you have a preference for buying emissions reductions with certain types of partner organizations (e g , governments, businesses, NGOs)? Please specify		
17 What makes an emissions reduction project particularly attractive to/for you?		

	Yes	No
18 What are the most important criteria that you consider when evaluating potential GHG emissions reduction projects? Please specify and elaborate (e.g., own assets in country, country credit rating, political/economic stability, tax benefits, host country government policies, existence of national CDM program/office, credibility of emissions reduction credits, price of credits, size of potential emissions reduction credit pool, project partner, timing, type of purchase agreement, location, type of project, guarantee available)		
a)		
b)		
c)		
d)		
e)		
f)		
g)		
h)		
i)		

	Yes	No
<p>19 Describe the "ideal" emissions reduction investment opportunity, one that you can easily "sell" internally to your colleagues, management and Board</p>		
<p>20 Describe the factors that make an emissions reduction investment opportunity less attractive than your "ideal" opportunity</p>		
<p>21 How important are national policies and incentives in your home country/state in influencing your choice of where to buy emissions reductions? Please explain</p> <p>What about in the country(ies) where you plan to buy / invest in emissions reductions?</p>		

	Yes	No
22 If you were presented with a potential investment that involves emissions reductions in more than one country, would you have any concerns regarding such a project? If so, please explain and describe any potential remedies		
23 How important are brokering or intermediation services in your decision making and purchase activities? What are the most important services? Please describe		
24 Central American countries could produce between 200 – 300 MM tonnes in the forestry and energy sectors by 2015. Would you consider buying emissions reductions in Central America? Please state your reasons?		
25 Please describe what would make Central America an attractive source of emissions reductions for you?		

	Yes	No
26 Do you view emissions reductions from Central America as		
Premium? _____		
Acceptable? _____		
Undesirable? _____		
27 In what year, and under what conditions, will you consider investing in emissions reductions in Central America? Please elaborate		

**SEEKING A COMPETITIVE ADVANTAGE FOR
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ANNEX II

**“Background Information on Central
America.”**

Central American Background Information for Carbon Offset Investors

**PROARCA/CAPAS
CCAD/USAID**

Prepared by:
Center for Sustainable Development
in the Americas



April 1999

The following background information on investment conditions and carbon offset potential for Central America was derived from a variety of sources and is intended as indicative rather than definitive

While every effort was made to include relevant and current data, differences in years cited or investment and other policies between countries will naturally occur. The countries of Central America are quite diverse and legal and institutional requirements for foreign investment vary. For more detailed information on environmental requirements, legal registrations and other investment policies than is presented here, it is best to contact the investment promotion offices for individual countries. In some cases (e.g. Costa Rica and Guatemala), these offices are working closely with the national AIJ/CDM office. In all cases, the national AIJ/CDM office will be able to provide information more specific to investing in carbon offsets

The following is a contact list for national investment promotion offices in Central America

Belize

Trade and Investment
Promotion Service
3 Unity Boulevard
BEL-MOPAN
Tel (501) 823-737
Fax (501) 820-595

El Salvador

Corporacion de Exportadores
de El Salvador
Lic Silvia Mantza Cuellar
Tel (503) 243-1329
Fax (503) 243-3159

Ministerio de Economia
Paseo General Escalon 4122
San Salvador
Tel (503) 224-3536
Fax (503) 298-6356

Honduras

FIDE
Lic Luis Cosenza
Tel (504) 232-9345
Fax (504) 231-1808

Ministerio de Economia y Comercio
Direccion General de Inversiones
Edificio Salame Piso 4
Tegucigalpa MDC
Tel (504) 382-025
Fax (504) 372-836

Guatemala

Ministerio de Economia
Lic Maura Pineda
Tel (502) 238-3331
Fax (502)238-0646

Nicaragua

Centro de Exportaciones e
Inversiones de Nicaragua
Lic Maria Hurtado de Virgil
Tel (505) 268-1063
Fax (505)266-4476

Costa Rica

Costa Rican Investment & Trade
Development Board (CINDE)
Tel (506) 220-4755
Fax (506) 220-4754

Promotora de Comercio Exterior
Sr Marvin Salas Jimenez
Tel (506) 256-7111
Fax (506) 233-9272

Panama

Instituto Panameno de Comercio Exterior
Avda Balboa, Edif Bco Exterior
Apartado 55-2359, Patilla
Panama
Tel (507) 225-2171
Fax (507) 225-2193

COUNTRY BELIZE

1 GHG OFFSET AVAILABILITY

Offset potential

Belize has the potential to generate 22.42 million tons of carbon by 2015 in the forestry sector

80 MW of potential renewable electricity can be added via hydroelectricity with additional offsets obtainable via other renewables, particularly bagasse biomass energy

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

Belize has a small economy based primarily on agricultural exports. At present, agriculture accounts for about 15% of its GDP (Belize's GDP for 1997 was estimated at \$1,045,513,000 BZD with a per capita GDP of \$4,546 BZD) with an estimated 30% of Belize's total commodity exports derived from sugar. The rest of the agriculture sector comprises citrus and banana production mainly for the export market, while corn, beans and livestock production target domestic consumption. Together the agricultural sector accounted for 73% of total domestic exports in 1997, with agriculture and fishing accounting for 21% of GDP and 30% of employment in 1993-1997. Despite diversification efforts, Belize is still dependent upon three commodities: sugar, citrus and banana, all subject to preferential trade agreements such as the Lome Convention and Caribbean Basin Initiative.

Other important sectors of the economy include agribusiness services (such as sugar and citrus juice processing), fishing (primarily lobsters and shrimp exports which are expected to surpass bananas in the next few years) and tourism. In order to develop the agri-business sector, successive governments have offered attractive tax concessions for foreign investors. The government's focus regarding tourism development is strongly oriented towards ecotourism. This industry is rapidly growing and promises to continue that trend provided that Belize continues to maintain its environmental resources at a healthy level. Tourism is now the leading foreign exchange earner, contributing 15% of the GDP.

Political stability

Belize is the only English-speaking commonwealth country in mainland Central America with a peaceful history of democratic elections since self-governance in 1950. Britain maintained a Garrison in Honduras which was withdrawn in 1994.

Economic growth

Real economic growth has been recovering since a deceleration to 2.75% a year during 1993-95 because of a decline in construction and slowdown in services that has been associated with the withdrawal in 1994 of most of a U.K. military contingent that had been stationed in Belize. The presence of the British Garrison was estimated to have contributed 15%-20% of the country's GDP in the late 1980s and early 1990s.

The 1997-1998 period showed a GDP growth of 3.8% on the strength of agriculture, agriculture-related manufacturing, and a recovery in fishing and tourism. With continued recovery, the annual average growth rate to the year 2000 is estimated at 4%.

Currency

Belize's currency has remained fairly stable, with the Belizean dollar having a fixed exchange rate value of two BZD for one USD since 1976. Inflation in Belize has remained in line with international trends, reflecting the exchange rate peg to the U.S. dollar and the openness of the economy. Inflation over the short- to medium-term will remain manageable between 2 and 4% given implementation of fiscal policy instruments such as reduction in custom duties, removal of stamp duties and the introduction of sales taxes.

Foreign investment policies & incentives

Given the natural resource base and strategic geographic proximity to export markets in North, Central and South America, Belize offers excellent diverse investment potentials. The Government of Belize is actively promoting private sector initiatives, which seek to increase overall production, introduce state of the art technology, promote greater efficiency through competition, diversify the economic base and facilitate access to international markets.

New laws that affect CDM/AIJ investment

At present, the Government offers fiscal incentive packages to investors under such programs as the Development Concession and the Export Processing Zone. The Government also continues to maintain alliances in order to ensure support for its programs, which help to minimize investors' risks and create a level of confidence for further investments. In 1992, as an effort to encourage non-thermal energy, the Government of Belize removed all duties on solar and wind-power generation equipment.

With the new change of administration, several pieces of legislation are slated for amendments. However, it is anticipated that legislative changes in the Environmental Protection Act, the Forest Act, The National Parks Systems Act and laws governing the energy sector will all include provisions that would facilitate Government's programs and commitments with respect to the Clean Development Mechanism.

3 ENERGY SECTOR

Energy Demand

During 1993-1997, efforts were made to upgrade Belize's infrastructure in electricity, water and sewerage. Electricity connection rose at an annual average rate of more than 8%. The growth rate in 1997-98 was 9.1% with total demand exceeding 189,728,000kWh. This rate is expected to continue due to the Belize Electricity Limited's emphasis on an electrification program for urban and rural development, which includes expansion of a large hydropower plant by constructing a reservoir dam. In 1995, the Caribbean Development Bank approved a loan for a project to construct a power line that would connect Belize to Mexico's power grid.

4 FORESTRY SECTOR

Deforestation Rates

At present, the forest cover in Belize is fairly extensive (57%) and, due to selective logging practices, relatively intact.

Deforestation rates

1989-1994 4,899 ha/yr on Southern Belize

1990-1994 6,708 ha/yr on Central Belize

1992-1994 13,374 ha/yr on Northern Belize

Total loss nationally 1989-1994= 78,000 ha

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

Belize does not have a national AIJ/CDM office. However, AIJ projects have been submitted to the Ministry of the Environment to receive host country acceptance. Belize currently hosts a land use carbon sequestration AIJ project, the Rio Bravo, which was developed by the Nature Conservancy and the Program for Belize, a local NGO.

National CDM/AIJ Contact Information

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COUNTRY: COSTA RICA

1 GHG OFFSET AVAILABILITY

Offset potential

Costa Rica has been a leader in creating carbon offsets for use in international offset markets. It is host to nine AII pilot projects (five renewable energy and four carbon sequestration) representing 25 million tons of carbon. The Government has also created a third party verified 'certified tradeable offset' (CTO) program that allows 1 ton denominations of government-guaranteed carbon offsets to be traded. National investment priorities are directed towards the integrated development of hydroelectric projects and the management of forestry activities in upper river basins.

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

Costa Rica's primary economic sector in terms of contribution to GDP, employment and export earnings has traditionally been agriculture with a particular emphasis on bananas, coffee and beef for export, as well as other non-traditional agricultural products. In recent years, tourism, particularly nature based "ecotourism," has grown as the main source of hard currency.

The past thirty years have seen economic swings, high growth rates in the 1970s were followed by declines in the 1980s reflecting poor commodity prices and a general world recession. In the early 1980s inflation rates of 120% and large public sector and current account deficits led to a series of austerity measures throughout several administrations. By the early 1990s Costa Rica had undergone several structural adjustment programs with the assistance of the International Monetary Fund, which reduced public expenditures and created political difficulties for a country with a strong commitment to social welfare and equity.

Despite a recession in 1996, the performance of non-traditional exports and tourism continued to strengthen and large flows of foreign direct investment reached levels of 4.4% of GDP. Net Capital inflows were ten times larger in 1997 than 1996 and public sector flows turned positive for the first time since 1990. The sharp increase in private capital inflows was the result of bullish expectations by foreign investors after INTEL's decision to build a \$500 million plant in Costa Rica. Costa Rica received a Ba2 rating from Moody's in April 1997.

Political stability

Costa Rica has been one of the most politically stable countries in the region for decades. The 1947 decision to abolish the military allowed the country to invest additional resources in social services. Costa Rica has the highest literacy rate in Central America at 95% and is working toward positioning itself in a way that can fully utilize its potential for skilled labor in the services sector.

Economic growth

Growth rates in the 1980s averaged 4%. The economy went into a recession in 1996 with real GDP growth slowing from an average of 5.4 in 1993-94 to 2.4% in 1995, turning negative in 1996. The growth rate in 1997 was 3.2%.

Currency

Costa Rica has followed a real exchange rule since the mid 1980s, without adhering to any pre-announced formula. The devaluation rate has followed closely the inflation differential between Costa Rica and the U.S. with the Central Bank intervening in the exchange market by buying or selling at the set rate.

Foreign investment policies & incentives

Costa Rica encourages direct foreign investment and has set up the Costa Rican Investment and Trade board (CINDE) in order to advise investors interested in the country. CINDE has offices in Costa Rica and New York. Incentives include a free zone system, export contract, tax exemptions and limits on restrictions of foreign ownership. In addition, Costa Rica has market access through the Caribbean Basin Initiative and a Free Trade agreement with Mexico.

New laws that affect CDM/AIJ investment

In 1994 Costa Rica ratified legislation (CMCC, Law 7414) that integrates atmospheric considerations into its legal framework. New forestry incentives have been approved (Law 7575) which introduce compensation for small and medium-size landholders for environmental services provided by forests and forest plantations. These services include mitigation of greenhouse gases, protection of water sources for consumption and the generation of electricity, the protection of biodiversity for conservation and sustainable scientific and pharmaceutical use, the protection of ecosystems, wildlife and scenic beauty for tourism.

3 ENERGY SECTOR

Energy Demand

Over 75% of Costa Rica's population is connected to the electricity grid and the electricity produced in the country derives principally from hydroelectric sources and, to a lesser extent, from thermoelectric plants which utilize fossil fuels. Since 1984 other energy-generating sources have included geothermal, private hydroelectric, private wind, bagasse and private solar. Figures from 1996 show the following distributions: State hydroelectric, 76% (down from 90% in 1993), thermoelectric 8.5%, geothermal, 10.4%, private thermic, 0.15%, private hydroelectric, 4.3% and solar, 0.5%. Between 1994 and 1996, geothermal and private hydroelectric rates increased 49.2% and 495.6% respectively, resulting in a drop in thermoelectric generation.

Energy market trends

Plans to privatize the state electric utility Instituto Costarricense de Electricidad (ICE) were promoted several times in the 1990s. However, these plans were met with widespread protest from labor unions. Privatization was suspended in 1996 in favor of a restructuring plan. The new government has restarted this process. Congress has been presented with four new laws which would separate the communication from the electricity activities of ICE, privatizing communication and unbundling generation, transmission and distribution.

The Private Power law allows 30% of installed capacity to be in private hands. All of this power must be renewable energy. The availability of electrical generation has shown a more or less constant growth rate between 1990 and 1996. Variations in sales have been due principally to climatic factors. Energy sales can be broken down by residential (46%), general (22%) and industrial (29%).

4 FORESTRY SECTOR

Deforestation Rates

Deforestation rates among the highest in Latin America at the beginning of the decade, have shown reductions over the past several years. From 1990 through 1994 the deforestation rate averaged 15,000 hectares per annum. By 1996 thanks to some strong policy incentives to both slow deforestation and promote reforestation, it had lowered to 7,000 hectares and in 1997 to 4,000 hectares per annum.

Reforestation programs and incentives

In 1994, 13,451 hectares were reforested. In 1995 the number lowered to 10,576 hectares although almost 26,000 had been approved for reforestation. However, reforestation increased to 21,739 in 1996. Since 1979 Costa Rica has had an incentive system to promote reforestation. The system has required a series of adjustments that includes fiscal incentives for tax deductions (1979) and more recently Payment for Environmental Services (1996) to small and medium landowners for their forestry efforts in conservation, forest management and reforestation.

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

A cooperative agreement was signed in July 1995 between the government, non-government and private sector to create the Costa Rican Office for Joint Implementation (OCIC). The OCIC has been elevated to the level of a "decentralized maximum technical-administrative" office of the Ministry of Environment and Energy via Executive Decree 25066 thereby ensuring that its policies are linked to government and private institutions.

Costa Rica's acceptance criteria is modeled on that of the UNFCCC and the U.S. Initiative on Joint Implementation.

Costa Rica has reported nine AIJ projects to the UNFCCC Secretariat. These include five renewable energy projects (wind and hydroelectric) and four land use change and forestry carbon sequestration projects.

National CDM/AIJ Contact Information

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COUNTRY EL SALVADOR

1 GHG OFFSET AVAILABILITY

Offset potential

El Salvador has the potential to sequester an additional 27.24 million tons of carbon in the forestry sector by 2015. In addition, renewable energy, particularly hydro geothermal and dispersed solar hold potential for generating offsets particularly since the trend is toward carbon-intensive thermal electricity generation.

Unexploited hydropower resources (from Rio Lempa) are in the order of 1,012 MW. Seven projects are being considered including rehabilitation, expansion and four new dams: Zapotillo (120MW), Paso del Oso (40MW), El Tigre (540 MW) and San Marcos (52 MW). In the 60s, 28 areas of potential interest for geothermal production were identified. Studies indicate a potential generation of 331-1000 MW. Several studies have been conducted on solar and wind energy in El Salvador however, there is no official policy related to these unexploited resources.

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

Since the election of the Christian Government in 1989, El Salvador's policy makers have accomplished three remarkable achievements: 1) end the civil war, 2) implement a coherent economic strategy leading to the stabilization of the economy and the reactivation of growth, and, 3) initiate a systematic attack on poverty. As the structural adjustment policies were implemented and peace prospects improved, the economy stabilized and began to recover. Major changes were introduced which emphasized the role of the private sector and market mechanism. State-owned enterprises such as sugar refineries, distilleries, textile mills, fish processing plants as well as banks and financial institutions were returned to private ownership. Privatization in the energy and telecommunications sectors are underway. GDP continues to grow at rates ranging from 4%-7% during the 1990s, inflation was halved from a high of 20% in 1992 to single digit levels, public savings and investment have increased and the fiscal deficit was reduced sharply. The country's economic performance during the past ten years is a remarkable success story.

Agriculture has remained the principal economic activity in El Salvador, employing 35.8% of the population and contributing an estimated 9.3% of GDP. Commerce, manufacturing and service industries are rapidly growing. Forest cover has decreased dramatically due to both agricultural demand and the use of fuelwood and charcoal, which accounts for a significant part of the total non-commercial energy consumption.

Political stability

During the past decade, El Salvador has made considerable progress towards democracy and political stability. June 1, 1989, when President Alfredo Cristiani took office, marks the first peaceful transition from one political party to another in the history of El Salvador. Peace accords were signed on January 1992. At no time in history has there been a more stable political environment in El Salvador.

Economic growth

During the 1990s, El Salvador has registered among the highest growth rates in the hemisphere. GDP and GDP per capita growth have been on a steady rise since 1989, reaching decade-high rates of between 6% and 7%.

Currency

Since 1991, the Central Bank has pursued an intervention policy to limit fluctuations of the "colon" with respect to the US dollar. This has resulted in a very stable nominal exchange rate (a de facto fixed exchange rate of US \$ 1.00 = 8.75 colones). The real exchange rate, however, continued to appreciate during the end of the decade (at a low rate) as a result of the continued high level of inflows and inflationary pressures.

Foreign investment policies & incentives

Continued economic reforms will be a key factor in accelerating investment, exports and growth. In an effort to consolidate peace and attract foreign investors, the Peace Accords are continuing toward full implementation.

New laws that affect CDM/AIJ investment

- 1 National Environmental Law, approved by Congress on May 4, 1998
- 2 Draft Forestry Incentives Law, drafted with USAID support, has not been presented to the Assembly
- 3 A package of energy legislation establishing planning and regulatory agencies, a framework for power tariffs and a Corporatized CEL (state monopoly) has been submitted to the Assembly
- 4 Creation of Superintendency for Electricity and Telecommunications, which deregulates the energy sector

3 ENERGY SECTOR

Energy Demand

Beginning with the construction of its first Dam on the Rio Lempa in the 1950s, El Salvador has actively developed its hydropower potential to reduce dependence on imported petroleum (the country has no meaningful resources of oil, gas or coal and oil for electricity generation must be imported) as the primary source of power for commercial use. El Salvador's hydroelectric potential is about 1,600 MW. In 1965, hydroelectric energy accounted for 96% of total generation in El Salvador (310 GWh) with the remaining 4% supplied by thermal (13.0 GWh). In 1997, hydroelectric energy accounted for 39.5% of total production, thermal energy 47.0% and geothermal 13.5%. The potential capacity of El Salvador's geothermal sources has been estimated at 300 - 1,000 MW. However, by 1985, only the Ahuachapan field, which has a capacity of 85 MW, had been developed.

Funding from the Inter American Development Bank and from the Japanese Overseas Economic Co-operation Fund helped to spur investment in the sector in the mid-1990s. Nevertheless, demand for electricity, which grew at a rate in excess of 8.6% per year from 1992-1997, exceeded the increases in generation as well as the rates of economic growth during the same period. Net electricity consumption in 1997 was 3,184.5 GWh.

Based on estimations made by CEL (Executive Hydropower Commission of the Rio Lempa, the national utility), electricity demand will grow at an average annual rate of 4% to 7.35% until the year 2015. All of El Salvador's new capacity will be available on a competitive basis and open to the private sector. The country may double its demand for electricity over the next 10 years, translating into a need for about 900 MW by 2010. In addition, at least 269 MW of capacity now owned by the government will transfer to the private sector.

The trend in El Salvador is towards the increase of thermal energy production and GHGs.

Energy market trends

El Salvador's installed capacity is about 845 MW, of which "Comision Ejecutiva Hidroelectrica del Rio Lempa (CEL) a state monopoly, supplies 705 MW and Nejapa Power, a private company supplies 140 MW

In accordance with the 1996 Electricity Law, the electricity sector is being substantially restructured and CEL is divesting itself of assets. The law provides for free competition in generation, transmission and distribution, and the commercialization of CEL. The first major activity in this restructuring process was the privatization of the four principal distribution companies which took place in January 1998. Separate legislation enabling the sale of CEL's distribution assets was passed in April 1997, and these assets were sold in June 1998. CEL also decided in 1998 to sell off its thermal and geothermal assets but retain control of its hydro facilities.

The General Law of Electricity transfers regulatory authority from CEL to the Superintendency of Electricity & Telecommunications (SIGET), which will grant concessions for exploration and utilization of geothermal and hydro resources. Concessions for geothermal and hydro projects are open to any party foreign or domestic.

4 FORESTRY SECTOR

Deforestation Rates

The deforestation rate is 14,000 hectares per year

Reforestation programs and incentives

Many reforestation programs have been implemented by NGOs, municipalities, schools and government agencies. A new forestry incentives law has been drafted in collaboration with the Ministries of Agriculture and Environment, with support from USAID.

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

A Clean Development office was created in 1998 and is based in the Ministry of Environment and Natural Resources.

National CDM/AIJ Contact Information

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COUNTRY:GUATEMALA

1 GHG OFFSET AVAILABILITY

Offset Potential

Renewable energy	
Hydro	11,000 MW
Geothermal	200 MW
Sugar mill cogeneration	129 MW
Land use forestry capacity to	20,153,138 million carbon tons
Priority area for carbon sequestration projects is the natural forest area of Peten	
Per capita emissions of CO ₂ in 1995	0.18 metric tons

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

The signing of the Peace Accords in 1996 marked a new phase in the political life of Guatemala. Within a three-phase plan, the democratization process has been strengthened, providing for a more inclusive political system. While Guatemala has experienced a period of political instability, primarily during the late 1980s and early 1990s, the country is now working on political reform based on the Peace Accords. Popular consultations on constitutional reforms are anticipated during the upcoming year, with elections planned for the end of the year.

Guatemala is the largest economy in Central America, accounting for 40% of the region's GDP, 26% of its area, and 35% of its population. The Guatemalan economy is dominated by agriculture, which contributes about 25% of the GDP and more than 60% of export earnings. A large percentage of this is non-traditional exports. Guatemala also has one of the largest and most developed of all the manufacturing sectors in Central America, accounting for around 15% of GDP and employment and 40% of exports. Despite this, high poverty levels (75% of the population live below the poverty line) and inequitable income distribution remain constraints on economic development. While levels of investment were adversely affected by political turmoil during the 1980s and early 1990s, the modernization of the State, decentralization of Government functions, and peace accords have stimulated economic growth and investment.

Political stability

Guatemala's political stability has markedly improved since the democratic openings and the signing of the Peace Accords. Many government institutions are being reformed, and new institutions created. A greater respect for human rights exists, and paramilitary groups and extra-legal executions have decreased.

Economic growth

The Nineties have been favorable in terms of economic stabilization with reductions in the inflation rates which had reached 60% annually in 1990. However, a series of macro-economic limitations such as a low rate of tax collection, affect the direction of this growth. In the fiscal arena, the Superintendency of Tributary Administration (SAT) has been formed, with the objective of improving tax collection rates via the reduction in the evasion of taxes and duties. On the recommendation of CEPAL, a fiscal "pact" between the public and private sectors is being promoted. This pact commits the private sector to pay its taxes, and commits the public sector to maintain its tributary dispositions and not increase taxes in an unforeseen manner.

Currency

In 1989, the exchange rate was liberalized and since then a floating exchange has been maintained. The Bank of Guatemala intervenes only to counteract speculative or seasonal pressures on the value of the quetzal and to avoid pronounced fluctuations. The Ministry of Finance and the Bank of Guatemala collaborate to amend dates relative to the internal debt. The current rate of exchange is Q6 99 to the U S dollar. The inflation rates from 1995 to 1998 were 8.1 (95), 10.81 (96), 7.13 (97), 7.48 (98).

Foreign investment policies & incentives

A free trade agreement and investment accords with different countries and a Law of Foreign Investment, Decree 9-98, seeks to harmonize investment requirements and decentralize the process.

New Laws that affect investment in AIJ/CDM

In December 1996 a new Forestry Law was approved with incentives for reforestation that favors investments related to AIJ/CDM. The modification of the Law on Procurement and Contracts in 1996 provided legal authority for sales of public sector assets and the granting of concessions. The new law, together with the General Electricity Law is helping to facilitate divestment in the power sector. In February 1998, the Foreign Investment Law was passed. This law opens most economic sectors to foreign investment and limits government expropriation rights. A policy that promotes renewable energy is currently being formulated.

3 ENERGY SECTOR

Energy Demand

Guatemala's utilities sector is dominated by the production and distribution of electricity which account for 90% of the sector's added value. Production and distribution have traditionally been controlled by the public sector until the November 1996 General Electricity Law which provides a legal framework for private sector participation in all areas of the sector. The law calls for the unbundling of state-owned electrical assets into separate commercial entities for generation, distribution and transmission. It also creates a wholesale electricity exchange or Mercado Mayorista.

Guatemala has significant unmet power needs and faces strong demand growth in the future. While urban areas are connected to the grid, 64% of the rural population is without power. The installed capacity is 950 MW with a demand of approximately 3,500 GWh. The average per capita consumption is 281 KWh. Approximately 500 MW of new generation will be needed over the next ten years, all of which will be available to the private sector through competitive solicitations. In December 1998, the Government sold its 688 MW national utility INDE to a Spanish utility. Demand growth ranges from 8-10% annually. Guatemala estimates that it must add about 1400 MW of new and replacement capacity by 2012.

4 FORESTRY SECTOR

Deforestation Rates

Deforestation rates in 1998 were 82,000 ha/yr. Reforestation in 1997 was 1,500 ha/yr. The national incentive program promoted 8,500 ha of reforestation in 1998. This rate should go up to 12,000 ha/yr for 1999 and 2000.

Reforestation programs and incentives

In December 1996, the INAB (National Forestry Institute) approved the new Forestry law, this law includes not only a decentralization system, but also reforestation incentive packages.

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

The Guatemalan Office for Activities Implemented Jointly (OGIC) has been created to actively promote investment opportunities in environmental projects. OGIC is a technical and executive office with the faculty to propose policies, criteria, formulate mechanisms to evaluate and approve, to certify the reduction or sequestering of greenhouse gases and to promote market projects.

OGIC was created by government decree number 474-97, and is composed of representatives from the country's different sectors: Government (Ministry of Energy, Agriculture and Environment), Academic (Universidad del Valle), NGOs (ASOREMA), and private (Guatemala Development Foundation - FUNDESA).

Projects must meet the following criteria in order to obtain host country acceptance:

1. Demonstrate capacity for CO₂ reduction or fixation on straight line basis
2. Fixed or avoided carbon is verifiable
3. Project incorporates an additional component that benefits national development
4. Project is technically and financially feasible
5. Project follows national development policies
6. Financing originated from sources other than official development assistance and government backing

OGIC has developed a procedural manual for project evaluation. The office does not generate projects per se, but is in charge of promoting the process as well as providing guidance and facilities for those interested in developing projects. Three AIJ projects, two renewable energy and one carbon sequestration, have been approved by OGIC.

National CDM/AIJ Contact Information

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COUNTRY· HONDURAS

1 GHG OFFSET AVAILABILITY

Offset potential

In carbon equivalent units, Honduras presents the highest potential for carbon sequestration of all countries in Central America, about half of the country is still covered with forest vegetation, which represent more than 4 billion tons of carbon already sequestered

The government has identified additional hydro generating potential of as much as 360 MW and geothermal potential of 120 MW

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

Honduras economy, dependent on the agricultural sector for export, employing 43% of the economically active population and accounting for 25% of GDP was set back by the effects of Hurricane Mitch in 1998. In the industrial sector the maquila sector has been the most active in the region, employing more than 100 000 Honduran workers in the last 10 years. Currently, the economic institutions and incentives are under a strong structural adjustment reform program in reaction to economic difficulties in the 1980s and early 1990s, that will allow for the expansion of international markets for Honduran non-traditional goods. This program has resulted in lowering of inflation rates from 24% in 1995 to 16% in 1998 and a steady rate of economic growth of 4%.

Despite a relatively low population density land shortages are a problem. Prior to Hurricane Mitch, an estimated 500 000 peasant farmers were estimated to be landless. This figure has increased in the aftermath of the storm. In the early 1980s timber was the third largest export. However, the timber industry encountered a series of financial problems, including forest fires in the early 1980s. More than 30% of the country's forests were lost after 1970 at a rate of some 88 000 ha per year. Efforts to revive hardwood production in the late 1980s were abandoned after fierce opposition and an estimated 2.5 m ha were believed to be in need of reforestation by the mid-1990s.

Political stability

President Carlos Flores is the fifth democratically elected president in two decades. The military is now under civilian authority and has recently re-organized into the public safety (*police*) and the defense ministries. Political advances since the early eighties place Honduras in a relatively better position than other countries that have suffered from domestic conflict.

Economic Growth

GNP's growth rate 1998 3.9 %
Rate of growth exports 1998 10.0 %
Private investment/GNP 1998 15 %
Inflation rate 1998 16 %

Currency

The lempira (US\$1=Lps 13.95 as of 01-25-99) during the last 2 years has maintained a declining rate of currency depreciation in a structural adjustment environment

Foreign investment policies & incentives

Export promotion incentives include the following laws and regulations

- Temporary import law (used by maquilas, crops exporters)
- Industrial processing zones (used by maquilas)
- Re-export procedures (used by maquilas)
- Active perfection law (used by maquilas)
- Generalized system of preferences (used by coffee growers-exporters furniture makers sugar minerals and fruits)

The 1992 Investment Law provides incentives to capital investment

New laws that affect CDM/AIJ investment

In recent years, Congress passed two laws related to forestry and energy that positively affect AIJ/CDM offsets: the *Incentives law for forestation and reforestation* and the *Incentives law for renewable energy*. Additionally, in November 1997 an Executive Decree resulted in the creation of the *Honduran Joint Implementation Office (OICH)* which is the national authority on the AIJ/CDM activities

3 ENERGY SECTOR

Energy Demand

Although pre-Hurricane Mitch estimates range from 43%-50% of Hondurans that have electricity, electricity services reach only 15% of Honduras rural population. Annual per capita electricity consumption is only about 350 kWh per person. Despite this low level, expenditures on electricity account for about 3.8% of the country's GDP. The country's ability to meet demand will therefore depend upon future economic growth. Installed capacity is about 560 MW, which includes 423 MW of Hydro and 137 MW of diesel and fuel oil fired generation. Hurricane Mitch damaged an estimated 20%-50% of the power infrastructure.

Electricity demand grew about 15% a year from 1995 to 1998, bringing total demand to 650 MW. Honduras needs to add 80MW to 100MW a year of installed capacity for the foreseeable future, about 500 MW by 2003, all of which is open to the private sector. There are plans to privatize the 560 MW utility, National Electric Energy Company, though the generation assets will likely be the last sold.

Energy market trends

Honduras has no meaningful reserves of oil, gas or coal, and the oil used in electricity generation is imported. The country has estimated hydro potential of about 3,600 MW of which 437 MW has been developed, and undeveloped geothermal resources of about 120 MW. Biomass generating potential from the sugar and wood processing industries also exists.

The electric sector of Honduras is made up of the National Electric Energy Company (ENEE) a state owned company and five other private generating companies. A process for private participation in the energy markets was begun in 1994. An Under Secretary of Energy with a Renewal Energy Unit, was recently created within the National Commission on Energy and a private organization, the National Association of Renewable Energy Generators, also exists. Under a plan now being considered by Energy Commission, Honduras would reform and privatize the assets of ENEE, with ENEE retaining ownership of transmission and dispatch assets.

Under Honduran law hydro resources must remain with the government. Therefore any new hydro projects must be built on a build-operate-transfer basis. ENEE has identified about 10 hydroelectric projects that could be developed on a BOT basis. The sites support between 200-700MW. Private firms are free to propose power plants, but they must sell power at less than the marginal cost of ENEE, which is about 6cents/kWh.

4 FORESTRY SECTOR

Deforestation Rates

In 1996, the deforestation rate for Honduras was 108,000 ha /yr

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

Honduras is in the process of setting up a national AIJ/CDM office. Two AIJ pilot projects, a biomass electricity generation project and a rural solar electrification project are located in Honduras.

National CDM/AIJ Contact Information

Currently SERNA (under Secretary of the Environment)

COUNTRY NICARAGUA

1 GHG OFFSET AVAILABILITY

Offset potential

Nicaragua has potential for an estimated additional 5,050 MW of hydroelectric generation, and 2,200 MW of geothermal electricity. An estimated additional 43.08 million tons of carbon could be sequestered by 2015 in the land-use change and forestry sector. National priority areas for carbon sequestration offsets are conserving forests under threat in protected areas, private forests, and the Atlantic Biologic Corridor.

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

By the mid-1990s Nicaragua was in a state of economic recovery after having undergone an economic crisis for more than a decade as a result of a prolonged civil war, economic sanctions against the country, and government mismanagement. All of these factors served to accentuate a traditional dependence on imports and external financing. Economic performance relied on a narrow range of commodity exports, the most important of which were bananas, coffee, cotton, meat, and sugar. In 1990, GNP was \$330, making Nicaragua the second poorest (after Haiti) country in the hemisphere.

In 1997 Nicaragua's economy underwent an evolution that was characterized by a growth in production, lower rates of inflation, job creation and advances in such structural reforms as taxes and commerce legislation on public enterprises and legislation on private property, as well as an increasing financial and commercial freedom.

Political stability

With the 1990 elections and the lifting of economic sanctions, Nicaragua began to experiment with a series of changes geared toward improving economic policy and opening the economy. The Government is working to establish relations between different sectors in the country in a democratic environment. Differences between the government and the Sandinista Movement are being resolved.

Economic growth

The economic growth rates have continued to rise compared to negative growth during the 1980s. Growth in 1998 was 5% the highest in this decade.

Currency

The exchange rate is fixed, with slight changes announced each month that serve to control inflationary trends and promote price stability. Consequently, fiscal policies are directed towards improving savings and investment and strengthening the balance of payments. Interest rates remain free. Inflation rates continue to drop, 7.2% in 1997, down from 12.1% in 1996, mostly reflecting rising salaries. Compared to inflation rates during the 1980s when hyperinflation topped at 36,000% in 1988, the currency has stabilized remarkably.

Foreign investment policies & incentives

The Nicaraguan Government is promoting exports through a number of bilateral and multilateral agreements. These include agreements with Mexico, the European Union for shrimp, bananas and coffee, and Venezuela and Colombia on the regional level as a member of the Mercado Comun Centroamericano.

New laws that affect CDM/AIJ investment

New Energy and Forestry laws have recently been approved. In April 1998, the government approved Law 272, the electric industry law, that permits the participation of the private sector in the generation and distribution of electricity. Also in 1998, Law 271 was passed, under which the national electric utility, INE (National Institute of Electricity) will be reformed.

3 ENERGY SECTOR

Energy Demand

Nicaragua's relative poverty and lack of meaningful fossil resources has hampered development of the power sector. Currently, about 48% of Nicaraguans have access to electricity. 1995 demand for electricity was estimated at 340 MW, slightly lower than the 1995 generation capacity of 383 MW. Residential and public sectors dominate energy consumption, accounting for 63% of total consumption, followed by transportation and industry.

The Nicaraguan Government estimates that energy demand will grow approximately 6% per year for the next twenty years. To meet this demand, the country will need to add 1,179 MW to its current installed capacity. The IADB estimates that Nicaragua needs to install an additional 90 MW of capacity within the next two years in order to avoid serious electricity rationing.

Nicaragua has potential for an estimated 5,050 MW of hydroelectric generation and 2,200 MW of geothermal.

Energy market trends

The electricity system in Nicaragua is operated by the Nicaraguan Institute of Energy (INE). Maximum demand in 1997 reached 360 MW while effective available capacity was, at best, 350 MW. Damage from Hurricane Mitch in October of 1998 has further decreased generation capacity. This has resulted in rationing at peak demand. Interconnections to neighboring countries have allowed power to be purchased from Costa Rica and Panama.

Published electricity tariffs have increased since 1993, to an average of over \$0.11/kWh in 1996, among the highest power prices in the region. Prices for petroleum products are also high compared to other Central American countries.

In 1998, the Nicaraguan Government passed an Electric Industry Law that permits participation of the private sector in the generation and distribution of electricity. Nicaragua's liberalization of its energy infrastructure was motivated by a host of problems in the power sector, including high system losses, poor infrastructure, and a lack of capital to finance expansion. The main objectives for liberalization include separate regulatory and operating functions, tariff reform, and improved operating efficiency. The target date for privatization is late 1999 or early 2000.

4 FORESTRY SECTOR

Deforestation Rates

Deforestation has been high and exacerbated by the opening of roads for forest concessions to the industry sector. The estimated rate of deforestation is about 100,000 ha per year. In 1998 the forest surface area affected by fires was 531,800 ha.

Reforestation programs and incentives

Two reforestation incentive programs exist in Nicaragua. FONDOSILVA supports producers with 50% of their plantations investments. PASOLAC is a regional programme working with projects like Pkin Guerrero in Matagalpa, Campesino to Campesino Programme in Masaya, and the cooperatives union in San Ramon.

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

The legal framework for a national climate change commission and a CDM office is ready. Both will be implemented in the near future. A Geothermal AIJ Project, Hoyo Monte-Galan, has been approved by the U.S. Initiative on Joint Implementation.

National CDM/AIJ Contact Information

Maria Stradthagen
CONADES

COUNTRY PANAMA

1 GHG OFFSET AVAILABILITY

Offset potential

Panama has the potential to generate 6,645 MW with the hydroelectric resources and 3 600 MW through geothermal energy. An additional 28 48 million metric tons of carbon can be sequestered via land use change and forest activities. A high priority is improved management of the canal watershed area particularly after Panama takes possession of the canal in 2000.

2 GENERAL INVESTMENT BACKGROUND

Political and economic overview

Panama's location and famous asset the 82 km Panama Canal, has allowed it to develop as one of the most important shipping crossroads and entrepots in the world. For a small country, Panama also possesses abundant natural resources including fishing grounds, forests, mineral deposits and a climate and topography ideal for developing hydroelectricity. However many of these resources particularly reserves of gold and copper have not been exploited because of Panama's strong service economy and reliance on revenues from the canal and offshore banking activities. In 1995 services accounted for 70% of GDP, with the largest sectors being transport, storage, communications and the financial sector.

Efforts were made to diversify the services oriented model in the 1980s because revenues from the canal were under threat and the banking sector's credibility was damaged by its association with drug traffickers. The implementation of these policies led to political instability and the resignation of President Barletta in 1985 and the ousting of his successor Eric Delvalle by General Manuel Noriega in 1988. The economic situation, worsened with the U.S. economic boycott of 1988-1989 played a role in the downfall of Noriega who was in turn, ousted by U.S. troops in an invasion of the country in December 1989.

The economy rebounded in the early 1990s with growth rates from 4% - 9%. Panama had one of the highest debt per capita rates in the world, in the early 1990s, debt service annual payments accounted for more than 40% of public sector revenues. In 1995, a debt restructuring deal was struck with the IMF, IDB and World Bank, which covered \$3 500m in principal and interest arrears and opened new credits.

Economic growth

The economic growth rate in Panama in 1997 was 4.4%. The major growth sectors were exports services tourism mining and fishing. Ninety-ninety eight saw the beginning of the economic political program commercial openings the privatization of the state enterprises and a large program for infrastructure investment.

Panama's shipping registry, which had suffered under the sanctions against the Noriega regime has grown about 5%/year since the late 1980s. By 1995, Panama's open registry fleet included 13,259 vessels making Panama's the largest shipping registry in the world. Tourism also grew in this period with receipts of \$270 million in 1995. The Canal, which will accede to Panamanian control in 1990 generated receipts of \$365.7m in 1992.

Currency

Panama's currency has historically been fairly stable, with the Balboa pegged to the U.S. Dollar at an exchange rate value of 1 Balboa for 1 U.S. dollar

Foreign investment policies & incentives

Panama has encouraged foreign investment, particularly since 1990. Many restrictions were ended and a 1991 foreign investment protection law has added to the relative attraction of Panama. New policies based on free market competition include a privatization program which Panama hopes will help modernize the education system as well as the public administration.

New laws that affect CDM/AIJ investment

The recent General Law for the Environment created The National Authority of the Environment elevating it to the highest status in the public sector.

3 ENERGY SECTOR

Energy Demand

Panama's potential for hydroelectricity is quite high, in 1995 hydroelectricity accounted for more than two-thirds of energy generation. However, lower rainfall related to the destruction of the forests in watershed areas can negatively affect hydroelectric generation (and the passage of ships through the Panama Canal).

Installed capacity is approximately 1000 MW, with a demand of 3900 MW. Per capita consumption is 1064 KWh/person. Ninety percent of the population has access to electricity. Energy needs in 2005 will be for an additional 470 MW. Panama has recently initiated a program to improve the security and efficiency of the public services in the energy, telecommunications and water sectors.

Energy market trends

The electricity public service was privatized with the Law No. 6, February 3, 1997.

4 FORESTRY SECTOR

Deforestation Rates

Deforestation rates in Panama are 51,000 ha/year 123,500 ha of forest cover was affected by fire in 1998

Reforestation programs and incentives

Law 24 23 was passed in November 1992 to promote reforestation

5 AIJ/CDM INFRASTRUCTURE

National CDM policy or office

The Panamanian Foundation of Environmental Services (FUPASA) is currently being formed as a private entity It will evaluate, approve and promote CDM investment in Panama

Panama currently uses the same criteria as the U S Initiative on Joint Implementation.

Panama has an AIJ pilot carbon sequestration reforestation project The country is also working with investors to develop another carbon sequestration project in the canal watershed.

National CDM/AIJ Contact Information

At present the Ministry of Foreign Affairs is the political focal point for AIJ/CDM activities, and ANAM (National Environmental Authority) is the technical focal point

Contact Lic Mirei Endara Director, ANAM

Tel 507-232-5939

Fax 507-232-6612

Mendara@ns.infenare.stri.si.edu

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- Rodriguez, Jorge, ed *State of Environmental and Natural Resources in Central America 1998* San Jose, Costa Rica Central American Commission on Environment and Development 1998
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**SEEKING A COMPETITIVE ADVANTAGE FOR
CENTRAL AMERICA IN SELLING AND
MARKETING GREENHOUSE GAS
REDUCTIONS:**

**“Recommendations based on a Survey of Potential
Investors.”**

ANNEX III

“Potential Interviewees”

POTENTIAL INTERVIEWEES
To Select Maximum of 30

BD = Business Development
ENV – Environment / Compliance

CANADA (5)

Greenhouse Gas Emissions Management Consortium

Aldyen Donnelly, President BD

President 1965 W 4th Ave #101

Vancouver, BC V6J 1M8

Canada

Tel (604) 731 4666

Fax (604) 731 4664

- interested, but no time to respond

2 utilities

TransAlta Energy

Kelly Gunsch ENV

Tel (403) 267-2586

Fax (403) 267 7372

Box 1900, Station M

110 – 12th Avenue SW

Calgary, Alberta T2P 2M1

interested, but ultimately did not respond

Ontario Hydro

Brian Jantzi ENV

Manager Emissions Trading

Ontario Hydro

700 University Avenue, H15 G27

Toronto Ontario M5G 1X6

Tel 416 592 5417

Fax 416 592 7646

- sent in completed response

2 oil & gas

Suncor Energy

Gord Lambert ENV (& some BD)

Corporate Director

Environment Health & Safety

PO Box 38

112 – 4th Ave SW

Calgary, Alberta T2P 2V5

Tel (403) 269 8720

Fax (403) 269-6271

- sent in completed response

Leah Lawrence

Senior Technology Advisor (ENV and some BD)

TransCanada Pipelines Ltd

Tel (403) 267 8934

- response sent in

USA (16)

San Francisco, CA 94177
Tel (415) 973 5042
Fax (415) 973 7891
- interested, but response never received

US Generating Co
Tom Romero
Environmental Engineer
Suite 1300
7500 Old Goergetown Rd
Bethesda MD 20814-6161
Tel (301) 718-6758
Fax (301) 913 5850
- no response to messages

Leo Sicuranza
Environmental Engineer
(617) 788 3686
- interested but no time to complete

Tennessee Valley Authority
Jerry Golden
Director Environmental Affairs ENV (and some BD)
1101 Market St
Chattanooga TN 37402
Tel (423) 751 6779
- completed survey submitted

Virginia Electric Power Co
Jennifer Snare
Environmental Affairs
Innsbrook Technical Center – 1NE
5000 Dominion Blvd
Glen Allen, VA 23060-6711
Tel (804) 273 2890
Fax (804) 273 3614
- unable to complete – no time / resources

Duke Power
Roy Hamme
Director, Environmental Affairs ENV
Duke Energy Group
EC 12ZA 526 S Church St
PO Box 10006
Charlotte NC 28201
Tel (704) 373 6848
Fax (284) 373-6410
- response received

2 car manufacturers

DaimlerChrysler
Anne Schlenker

(248) 576 5456

- indicated interest, but survey was not completed

GM

John Williams
Director, Global Climate Issues Team
General Motors Corp
MailCode 482-115-255
3044 W Grand Blvd
Detroit, MI 48202
Tel (313) 556 7769
Fax (313) 556 9003
- not interested

3 Oil & Gas

Mobil

Susan Sonnenberg, Manager
Corporate Environmental Health and Safety Issues
Mobil Corporation
3225 Gallows Road
Fairfax, VA 22037-0001
Tel (703) 846 3530
Fax (703) 846 2972
- no response received

Chevron

John Shinn
Chevron Global Change Network
Chevron Research and Technology Company
100 Chevron Way
PO Box 1627
Richmond CA 94802-0627
Tel (510) 242 4808
Fax (510) 242 1376
- no response received

ENRON

Scott Kushnick
Emissions Trading

Enron Capital & Trade Resources
PO Box 1188
Houston, TX 77251
Tel (713) 853 4839
Fax (713) 646 2492
- completed survey sent

ENV & BD (their environmental and commodities trading
businesses are combined)

1 coal company

Arch Coal Inc

65

Andy D Blumenfeld
Environmental Officer ENV
Suite 350 City Place One
St Louis, MO 63141
Tel (314) 994 2876
Fax (314) 994 2719
- completed survey sent in

EUROPE (6)
3 governments

Government of Switzerland

Anne Arquit-Niederberger, Ministry of Environment
Tel 41 31 323 0885
- survey is not appropriate for government

Government of the Netherlands

Ministry of Housing, Spatial Planning and the Environment
Yvo de Boer
31 70 339 4386
31 70 339 4446
- not interested

Government of Norway

Knut Thonstad, Ministry of Finance
Deputy Director General Ministry of Finance and Customs
Box 8008 Dep N – 0030
Oslo, Norway
Tel 47 22 24 44 38
Fax 47 22 24 27 07
- not suitable for government

1 utility

Electrabel SA

Boulevard Du Regent 8
Brussels, Belgium
Jean-Claude Steffens
Environmental Affairs
Tel (322) 518 6231
Fax (322) 518-6534
- very interested, no time

IVO Group

Heikki Pikkariainen
Director, Business Development BD
IMATRAN VOIMA OY
IVO Power Generation
Rajatorpantie 8, Vantaa
01019 IOV
Finland
Tel 358 9 8561 4274
Fax 358 9 8561 4291
- completed survey sent in

1 oil

Statol

Frede Cappelen,
Corporate Advisor, Business and Environment
N – 4035 Stavanger
Norway
Tel 011 47 51 99 7138
- completed survey submitted

ENV & BD

JAPAN (3)

Mitsubishi

Gordon Epstein, Manager
Government Affairs, North America
Washington, DC

Hidezane Torige,
Assistant General Manager, Environmental and Social Responsibility Dept

Toyota Motor Corporation

Tooru Nishizutsumi
Project Manager, Environmental Affairs Division
1, TOYOTA-CHO, TOYOTA AICHI 471-8571
Japan
Tel 0565 23 1566
Fax 0565 23 1589
Takujı Yatagaı
Project General Manager
Environmental Affairs Division
4-18, KORAKU, 1-CHOME, Bunkyo-Ku
Tokyo 112-8701
Japan
- no response received

Tokyo Electric Power

Yasuo Hosoya, Director
Deputy General Manager of Plant Siting & Environment Division &
Engineering Research & Development Division
1-3 Uchisarwai-Cho 1-Chome Chiyoda-Ku
Tokyo 100 Japan

counterpart in Washington
Yasushi Hieda, Manager Washington Office
Tel (202) 457 0790
Fax (202) 457 0810
- no response received