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**REPORT FOR THE CARILEC WORKSHOP ON REGULATORY  
REFORM IN THE ELECTRICITY SECTOR OF THE CARIBBEAN**

**FACILITATED BY THE PUBLIC UTILITY RESEARCH CENTER,  
UNIVERSITY OF FLORIDA**

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On April 22 and 23, 2010, the Caribbean Association of Electric Utilities (CARILEC), in conjunction with the Caribbean Association of Industry and Commerce (CAIC), the Organization of American States (OAS), and LUCELEC hosted the Regional Forum and Workshop on Regulatory Reform in the Electricity Sector of the Caribbean in St. Lucia. The purpose of this forum and workshop was to allow stakeholders to propose and discuss solutions to some of the problems and issues that result from the process of regulatory reform. The first day of the forum consisted of presentations on a wide variety of topics of importance to the understanding of the process of regulatory reform.

The workshop, sponsored by the OAS through the Caribbean Sustainable Energy Program (CSEP), was held on the second day and facilitated by Dr. Mark Jamison and Mr. Ted Kury of the Public Utility Research Center at the University of Florida. Its participants consisted of 55 utility operators, regulators, and ministry personnel from across the Caribbean. The participants were broken out into 5 groups and each presented with a problem to address. The problems consisted of four 'hypothetical' situations that presented challenges to the structure and performance of the electric utility industry in the region. The groups were then asked to analyze these problems. First, the groups were asked to identify any issues that this particular scenario would raise. Second, the groups were asked to identify the rights and responsibilities of the various stakeholder groups, such as the utility, the regulatory agency, the ministry, and the public, in dealing with each of the issues that they identified. The groups then reconvened in a general session to discuss their findings.

An initial problem was presented to each group, and after an hour of discussion, the problem was appended with additional information. The scenarios discussed within each group were:

#### Scenario One

Stage One: Global fossil fuel prices increase. Oil prices jump to \$200/bbl and other fossil fuels follow.

Stage Two: Advances in hydraulic fracturing technology sharply reduce the price of natural gas, while oil prices remain high.

#### Scenario Two

Stage One: A popular candidate for national office campaigns on the promise to reduce electricity prices by 20%.

Stage Two: The candidate is elected without backing off the promise to reduce rates.

#### Scenario Three

Stage One: A global agreement is discussed that requires 20% of electricity generated to come from renewable or clean energy resources by 2025.

Stage Two: The country's leader ratifies this agreement.

#### Scenario Four

Stage One: Your government enters into a long term purchased power agreement with a supplier of renewable energy. This is a fixed price contract for 20 years.

Stage Two: Technological improvements result in a drastic reduction in the costs required to supply power under the agreement.

### SCENARIO ONE

This group addressed the problem of the marked increase in fossil fuel prices. There were two groups that addressed this problem, and while there was some overlap between the two, there were many individual ideas as well.

The main issue that the groups introduced related to the increased costs that the utility would now face, and the likelihood that these costs would be passed through to the customers via the fuel adjustment charge that exists in most countries or as a part of the utility's next rate proceeding. Fuel costs account for a substantial portion of utility costs, and so the price increase caused by these fuel prices were sure to be substantial. These price increases could impact the economy of the islands beyond the energy sector. One group feared that these increases could impact the tourism and travel industries, exacerbating the effect on the country's economy.

The consumers may respond in different ways to any rate increase. These responses included conservation for most consumers. Consumers who were able might be likely to explore self generation options or engage in advocacy or public pressure in an effort to relieve rate increases. The increase in fossil fuel prices might push more of these consumers to alternative sources of energy, not dependent on fossil fuels. It may also increase the demand for energy efficiency improvements. Finally, this rate increase might lead to an increase in payment default or illicit activities in an effort to maintain electricity usage with the increased expense. These latter two are more likely to adversely impact the utility, as the utility is still responsible for producing the electricity but unable to recover its costs.

The utility will likely have to respond in several ways. If the utility's existing rate structure is primarily fixed in nature and does not account for the ability to recover extraordinary costs, then the utility's ability to recover these fuel costs may be limited. One possible response is to implement any possible efficiency improvements, such as any operational efficiency or energy efficiency measures. The utility's ability to implement energy efficiency measures may be limited by its ability to recover the costs associated with those measures. Operational efficiency measures may include utilizing fossil fuels that may be relatively cheaper than existing fuel supplies, or seeking new fuel suppliers. Public education is crucial to make customers aware of the crisis and the possible consequences regarding the long term viability of the utility and the provision of quality service. The utility can also appeal for emergency rate relief or the negotiation of a payment plan with fuel suppliers. The utility is likely to require regulatory or government support when negotiating with fuel suppliers in cases where guarantees beyond what the utility is capable of are required. In the longer term, the utility may find it necessary to ask permission to revise its tariff structure to incorporate fuel adjustment clauses where none currently exist. The utility may also consider the implementation or expansion of fuel hedging programs, although caution must be exercised, as fuel hedging in forward markets does not eliminate price risk, it merely transfers this risk from the spot to the forward markets.

Both groups saw the role of the regulator as balancing the negative effects of the crisis between the rate payer and the utility; the need for the utility to recover costs versus the need to mitigate rate shock and continue the provision of reliable service. The role of the regulator in the public education process is critical, and the government and the regulator can join with the utility to help the public understand the

nature, severity, and likely duration of the emergency. The regulator may also be called upon to help the government with any statutory modification that must be made, as well as work with the utility to modify existing tariff structures, that is, implement or modify any fuel adjustment provision.

The role of the government or ministry would be to control the broader problem. Some solutions might be for the government to implement temporary decreases in taxes, to mitigate the price increase. The government may have to amend existing legislation or implement emergency measures. The government may also be called upon to provide payment guarantees if the utility is able to negotiate payment plans with fuel suppliers. The government may decide that it needs to start providing incentives for independent power producers to enter the generation market to diversify the fuel supply for the electricity production. Finally, the government will be instrumental in implementing energy efficiency or conservation programs and educating the public about the crisis.

The second phase of the scenario asked the groups to consider the impact that a relative decrease in the price of natural gas would have on the price increase of oil products. The groups decided that the government, utility, and regulator would then work towards a study of the feasibility of integrating natural gas, either through direct pipelines or liquefied natural gas terminals or compressed natural gas. The government would then be responsible for securing the necessary infrastructure to bring the natural gas to the country in the most economical manner. The utility and the regulator would also have to study the more technical issues related to integrating natural gas fired generation and amending existing operating agreements. All agreed that the country would see the benefits of cleaner, more diverse generation, but that these benefits would vary depending on whether the price disparity was seen to be a temporary or permanent one. It was also discussed that despite the fact of the reduced price of natural gas there was still the need for the stakeholder groups (utility, regulator and government) to remain focused on the long term goal of energy sustainability and fuel diversification to reduce the regions vulnerability to volatile and increasing fossil fuel prices.

### **Facilitators' Analysis**

Fuel price spikes can cause severe hardship, especially when they occur in a fuel on which the consumer is completely dependent. The important thing to remember about fuel price risk, however, is that while steps can be taken to mitigate the risk, they usually just reallocate the risk, or the costs associated with it. They generally do not eliminate it.

The available short term strategies are few. The groups mentioned most of them. Conservation is a reasonable first step, progressing to rationing if it becomes necessary. However, rationing is generally only used as a last resort, and customers won't tolerate it for very long. While it might be the right thing to do at the time, voters are likely to remember the rationing during the next elections. The utility may also be able to arrange a payment plan with the fuel supplier, but that will likely require significant promises on behalf of the government and results in inter-temporal subsidies. That is, the people of tomorrow pay for the expenses of the people of today, and this is likely to cause bitter feelings.

If the price spikes are seen as a problem that is likely to persist, then various long term strategies may be explored. These strategies, outlined by the groups, are likely to consist of efforts to diversify the resources used to serve electric load. To the extent possible, the costs and benefits of this diversity should be considered. The statement "the cheapest electron is the one you don't generate" is often cited by energy

efficiency advocates to support the position that energy efficiency is the most efficient way of meeting electrical load, but this is not necessarily the case. It is true that many energy efficiency measures can be cost effective, but it is important to weigh the costs and benefits of all of the resources available to meet electric load.

The financial responsibilities associated with the introduction of new generation might be a challenge if the utility has had to defer fuel expenses, so it might be necessary to open the market to independent power producers. This will necessitate amended market rules. The utility may also choose to implement fuel hedging programs. As noted above, hedging does not eliminate price risk; it merely shifts it from the spot to the forward markets. Further, hedging programs require credit and legal arrangements that will likely require cooperation between the utility, regulator, and government to implement. Because fuel price spikes have such a marked effect on the country, it takes everyone to solve the problems created.

## SCENARIO TWO

This group addressed the problem of a candidate for national office promising a 20% rate cut if elected. The group decided to use their time to plan for the eventuality that the candidate would actually win the election based on this promise. This eventuality materialized as the second stage of the problem, so their planning proved fruitful.

The group identified several issues associated with the candidate's promise. These issues fell into two broad categories: the first group of issues related to any impact on the financial health of the utility that these rate cuts might have, while the second group focused more on the impact of the relationship between the regulator and the utility.

The impact on the utility from this rate decrease is potentially severe. The group first determined that the responsibility of the utility began with a study of the feasibility of the rate decrease. Along with this feasibility study, the group suggested a complete operational and financial analysis to determine what steps would have to be taken in response to this decrease. Because the participants listed a substantial portion of utility expenditures as fuel costs, a cost driver subject to international market forces and not under the control of the utility, the utility's response is somewhat limited. Possible consequences included a reduction in the labor force of the utility, reductions in quality of service, or increased fees and interest associated with unpaid customer balances.

The promise is likely to have a marked impact on the relationship between the regulator and the utility as well. The group saw the role of an independent regulator as one who balances the interests of the shareholders and the ratepayers, and thus, is in charge of protecting them both. While the rate decrease holds obvious short term benefits for the ratepayers, the potential long term consequences may outweigh any benefit. Thus, the regulator needs to assess the long term impacts of this policy and work to ensure the viability of the electric system. Further, the pronouncement from outside the regulatory framework that rates should be lowered calls into question the nature of the regulator's role in the system.

This discussion also led to questions of the regulators role, if any, in the political process. That is, the participants shared their views on what role, if any, the regulators should play in supporting either side of a political debate. On one side, the regulator is frequently appointed as a part of a political process, and

can find itself unappointed in a similar manner. Nonetheless, many participants seemed to agree that the regulator should try to stay outside of a public political debate whenever possible.

The utility's responses to this issue are manifold. The participants felt that the utility needed to use the financial and operational analysis to see what needed to be done to achieve the rate decrease. The group felt that if the government were aware of the impact on employment and service quality that this decrease might have, then they could better communicate the long term impacts of such an action. The group felt that the utility might also be served by preparing a counter-proposal. The group also identified the solution of asking the government for a subsidy to support the rate decrease, but the relationship of the government with the political candidate could make such a request awkward.

The regulators response to these issues concerns various stakeholders. With the utility, the group felt that the regulator needs to frankly discuss the financial situation of the utility and the impacts that this decrease will have on long term and short term financial viability and quality of service. The regulator may also have to deal with the possibility that the electric utility rates are high because the electric utility has been subsidizing another program, such as the water utility (if electricity and water production are under one company), or if a state-owned utility has been used to generate an extraordinary source of revenue for the government. With the government, the group felt that there was a fine line between what could be seen as political behavior, and concluded that the regulator's role in relating to the candidate was limited. They did see a role for organizations such as CARILEC and other regional or international agencies (e.g. CARICOM, OECS, the World Bank, IDB, and OAS) in educating or sensitizing the government. The group also saw a significant role for the regulators in educating the public. Naturally, the consumers are going to enthusiastically support any idea for a rate cut, but if consumers can be made to understand the consequences of the cut, their enthusiasm for it may wane.

Finally, the group determined that financiers and shareholders, concerned about the security of their investments, could investigate the legal ramifications of such a promise. Such a promise, or the actions taken to enforce it, might breach the terms of existing legal covenants, or the covenants associated with outstanding debt of the utility. Lastly, they agreed that such an action by the government could harm the investment climate in the country.

While the full consequences of the campaign promise cannot be known, one result of the group discussion provided that education of the candidate might lead to a solution to the problem. That is, if the candidate is associated with the positive results of the promise, such as the lower prices, then the candidate is likely to be associated with the negative results of the promise as well. If the candidate is made aware of the possible consequences if this promise is put into action, then the candidate may modify the promise if elected. Again, the value of education in the tradeoffs between prices, quality of service, and employment is invaluable.

### **Facilitators' Analysis**

An efficient process is one in which everyone is left to perform their own job in the best way that they know how, without outside interference. However, this assumption may not always a realistic one in that outside influences do exist. The goal then is to mitigate the effects of those outside influences. Frequently, this outside influence can occur when the rights and responsibilities of organizations (or people within the organizations) are not clearly defined. Clearly defined standards and practices are necessary for a

regulatory framework. The participants in this framework: the consumers, the utility, the regulator, and the government, are all trying to make complex decisions which have implications for the next 20 or 30 years. It is very difficult to make those decisions when the participants are not sure what the 'rules of the game' are. Once these rules are established, it is important that they are honored and enforced. In the instant problem, if we can assume that it is the regulators job to determine a just and reasonable rate for the utility, the political candidate is infringing on those rights and responsibilities. The candidate is also looking at one side of the issue without contemplating the consequences of the action. Broadly, there may be a fundamental misunderstanding of the costs required to provide electric service. Clearly, the candidate is appealing to voters who feel that their electric rates are 'too high'. But this is a frequent complaint, partly fueled by a fundamental misunderstanding of the process required to provide electric service and partly fueled by consumers' natural reluctance to want to pay for anything. Few, if any, have ever heard a consumer complain that their electric rates are too low, to the point that some might say any price above zero is 'too high'. Jim Rogers of Duke Energy tells an amusing story of a town hall meeting in North Carolina where he was questioned on the company's desire to build a new power plant outside of a small town. Why, he was asked, do you need to build a power plant to generate electricity when the electricity just comes out of the wall?

Faced with situations such as these, it is important that the stakeholders that are familiar with the process do what they can to educate the stakeholders who are not. This likely requires a concerted effort, as an educational message coming from only the utility or only the government, for example, might be dismissed as biased. If everyone involved in the process is saying something similar, the message is more likely to be accepted.

If the candidate is made aware of the consequences of the promise, such as reduction in the quality of electric service or a reduction in the utility's work force, then the promise may be reconsidered. However, if the candidate has been elected on the basis of that promise, then it may be a very difficult thing to do. One possible solution to the problem might be to adjust the scope of the rate decrease so that it applies only to a particular segment of the customer population, such as the lower income customers.

### **SCENARIO THREE**

This group addressed the problem of complying with a global energy portfolio standard. The first phase of the problem addressed the leader of the country contemplating a global renewable energy portfolio standard of 20%. The second part of the problem addressed the aftermath of the leader ratifying such an agreement.

This group chose to describe tasks and then assign responsibility for addressing those tasks to three stakeholders: the government, the regulator, and the utility.

The group isolated the first task as assessing possible energy sources, beginning with sources indigenous to each country or island. The group thought that this task was best addressed by all of the stakeholders, as they would all be involved in later steps of the process. The group believed it was critical to decide what energy sources were available to the country, as compliance with the standard in the least cost manner was a desirable outcome. It is also in this preliminary step that other compliance issues would be

addressed. For example, the country's response to this problem may depend on whether this standard is enforced through a physical generation requirement or a renewable energy credit market. If it is enforced through a physical generation standard, then the country may have little choice but to produce the electricity from renewable sources. If, however, this standard is enforced through a renewable energy credit market, then the country would have the choice of generating the electricity itself or purchasing the credits on the open market. The latter approach might result in lower compliance costs if the country is not particularly well-suited to a cheaper source of renewable energy production. Further, it is worthwhile to consider whether energy efficiency improvements can be used to offset a portion of the renewable energy requirement. This possibility was not strictly mentioned in the scenario, but such programs have been included in similar portfolio standards in other parts of the world. It may be that a portion of the requirement can be met with relatively inexpensive measures.

The second task would be a plan for the integration, timing, costs, reliability, and other system-wide implications for the energy standard. These more technical tasks would fall primarily to the regulator and to the utility. Due to the intermittency of some renewable energy resources, there may be changes that need to be implemented in the transmission and distribution grid, and the utility and regulator need to decide how these changes will be made. In addition, the timing of these additions may have to be coordinated with other projects. The costs of complying with this standard will also be a factor in how the standard is met, and even whether the government ratifies it in the first place. Since most of the participants are from smaller countries, many thought that their countries would have little choice but to ratify the agreement if such an agreement were proposed on the world market.

The group felt that the government would be critical in addressing several tasks that would determine the framework under which compliance with the standard is governed. The government would initially be responsible for supporting and enacting the legislation necessary to comply with the standard as well as providing incentives to encourage investments in appropriate technologies. This legislation would be designed with input from the regulator and the utility. The government would also be responsible for establishing the policy standards, as well as land use or zoning standards. Finally, the government would be primarily responsible for initiating the public awareness campaign. This is especially important if complying with the new standard will lead to an increase in costs and a likely increase in utility rates.

The final set of tasks is more technical and concerned with the integration of these new resources to the grid. The group felt that the utility and the regulator would have to work together to develop tariff design for these new resources. This tariff design might need to incorporate features such as feed-in tariffs, net metering, or net billing arrangements. For the latter two arrangements, the utility would compensate the owners and operators of private renewable resources based on the tariff rate for the utility. If this compensation proves to be inadequate to induce private construction of generation, then the government and regulator may want to consider a feed-in tariff, which represents a guaranteed payment, in excess of market rates, to the developer of renewable energy generation. Because the feed-in tariff represents a subsidy, the regulator and government are going to have to decide on program limits for participation. The utility and regulator will need to decide on the capacity limits (especially for intermittent sources of renewable energy generation) to ensure proper grid stability. There are also likely license conditions and how to deal with potential stranded assets of the incumbent utility to consider.

### Facilitators' Analysis

There are many benefits associated with electric generation from renewable energy sources. First, they do not require the use of finite fossil fuel resources to generate electricity. Second, they do not emit additional carbon dioxide into the atmosphere. Third, they can provide valuable diversity of generating resources to an electric generating portfolio. This diversity can provide additional energy security as long as the renewable fuel source is located within the country. Scandinavian biomass plants that import wood pellets from the United States, for example, do not fully realize this diversity benefit. Finally, in countries in which the electricity distribution grid does not span the entire country, these resources can be used to replace not only investment in generation plant, but in transmission and distribution plant as well. This benefit is not as applicable to most parts of the Caribbean as it is to the rest of the world, however.

The costs (especially capital costs at current prices) associated with electric generation from renewable energy sources, however, are generally greater than the costs associated with the generating sources the utility currently uses. This is not surprising, as the utility and its regulators, as part of the long term planning process, seek out the most cost effective methods of meeting the demand for electricity. In markets where generation from renewable energy sources would be considered the most efficient manner of providing electricity, there would be no need for any external mandate to produce electricity from these sources. The market participants would do it regardless.

However, some people argue that there are additional costs associated with generating electric power through the consumption of fossil fuels that are not reflected in the current prices for those fuels. Economists call those additional costs 'externalities'. Specifically, the proponents of climate change argue that the additional production of carbon dioxide is causing changes in the planet's climate that will one day prove harmful to the inhabitants. They further argue that the costs associated with adapting to these changes should be borne by the consumers in the present day. The opponents of climate change argue either that additional carbon dioxide is not contributing to climate change or that the consumers of today should not be responsible for the costs associated with it. The latter view is more widely reflected in the policies of the world's governments today, as most have not implemented a cost to be associated with the emission of carbon dioxide. However, there is a growing trend toward the former view, as many governments are contemplating such a cost. In markets where such a cost does not already exist, it is the speculation that it may someday exist that provides incentive for the development of the renewable energy market.

So, if a government has decided that these external factors make renewable energy desirable, it may find it necessary to subsidize its production. Incentives to manufacturers and producers have the advantage of being largely complementary at the federal level. However, each type of incentive has its own strengths and weaknesses, and these should be considered when crafting incentive packages. Incentives can take one of two basic forms, direct payments such as capital grants, deferred payments such as tax credits, or production credits such as unit subsidies and feed-in tariffs. Direct payments will have the most utility to firms that are unable to raise capital in the capital markets. However, without investment or employment conditions on the grants, monitoring of those conditions, and the legal recourse to rescind those grants, there is no incentive for the firm receiving the grant to actually use the grant in the manner in which it was intended. Therefore, the costs of monitoring and non-performance may serve to erode any benefit associated with the program. Deferred payments such as tax incentives may not directly help with the

attraction of investment capital, but do represent a known future revenue stream with which an investor may secure financing. However, these credits share many of the same drawbacks as direct payments in that investment and employment conditions may be necessary to ensure that the industrial customer uses the tax credit in the manner in which it was intended.

Finally, there are a wide range of production credits that may be used. The two most popular are unit subsidies and feed-in tariffs. A unit subsidy simply pays a certain amount for unit of output from a production facility. Under this program, the government might offer production credits of \$0.10/kWh for electricity generated by solar photovoltaic systems, as an example. This payment is used by the producer to supplement the value otherwise derived from the electricity. As such, it functions to pay the producer over and above a market value of the electricity. Feed-in tariffs, on the other hand, represent a payment for the entire value of the electrical output, typically above current market rates. Unlike a subsidy, a feed-in tariff represents a long term, guaranteed, revenue stream that a project developer can use in financial analyses to secure financing for a project, where the revenue from a program under subsidy still depends on market conditions. Both programs share similar strengths. Since any benefit to the producer accrues as production increases, any risk of non-performance, or volumetric risk, is borne by the producer of the electricity. Since the producer is more likely to control this risk than the government, most economists would agree that this is an equitable risk allocation. A direct or deferred payment, however, allocates more of the risk of non-performance to the government agency offering the payment. The only types of programs that could not co-exist are feed-in tariffs, as the producer can only sell its output once.

A package that combines direct or indirect payments with production incentives may serve the dual purpose of attracting investment and mitigating the risk to the government agency.

#### **SCENARIO FOUR**

This group addressed the problem of the ramifications of a long term purchased power agreement. The initial scenario was that the government signed a 20 year purchased power agreement with a renewable energy company.

The group identified several issues related to risk management and allocation, depending on the terms of the contract. The risks involved are many, and the allocation of those risks will vary. First, there is the risk of the fixed price of the contract. The structure of the contract determines the magnitude and the allocation of this risk. If the seller is compensated solely through an energy charge, then any risk of non-performance is likely to be allocated primarily to the seller. However, if there is any kind of guaranteed payment, such as that through a capacity charge, then a portion of the performance risk may lie with the utility system. Second is the risk of any technical and structural integration of the resource into the electric grid. If the costs of this infrastructure are to be borne by the incumbent utility, then the utility bears any costs associated with the reliability of the new unit. If the new resource is an intermittent one, then the incumbent will again bear all costs of providing power when the new unit is not producing electricity. Again, if all of these costs are borne by the utility, then the utility is bearing the risks of non-performance. These risks are further shared by the ratepayers of the utility to the extent that these costs are passed on through adjustments in the tariffs. The structure of the purchased power agreement (not given in the exercise) would determine this allocation.

The group also identified potential benefits associated with the new unit. They determined that the new unit could be used to diversify the existing energy supply, providing an insurance benefit against future availability and cost of fuel. In addition, the new unit could provide benefits in the form of reduced carbon dioxide emissions and the possibility that the plant could produce emissions credits in the event that a market for carbon dioxide credits is established.

The group then identified areas where each stakeholder could help to mitigate the process of integration. For the government, they concluded that the government must have seen some value in the energy security, diversity, or environmental benefits that the project provided. They decided that the government should help to quantify those benefits and develop any price incentives that might be desirable, to incentivize this behavior in the future.

The duties of the utility would be to determine any technical implications for the system. This would include the infrastructure improvements necessary to integrate the resource into the grid, and the associated costs of these improvements. This would also include any modifications to existing policies and procedures that the project necessitates. For example, in the event of a take or pay contract, the utility would not have the ability to dispatch the unit, and would simply accept its power when the unit is generating. This might lead to a violation of any procedure requiring economic dispatch of generating units, for example. Such procedures, then, would have to be modified to accommodate this new unit. The utility could also be used to provide insight into where the unit could be integrated into the system. For example, there may be a particular point on the transmission grid where it is better to inject power.

Finally, the duties of the regulator would be to oversee the terms and provisions of the power contract. The regulator would work with the utility to determine the avoided costs of the contract. While the regulator and utility would not use a comparison of these numbers to the contract price to evaluate the government's decision to sign the contract, such an analysis could be useful to provide the government with insight into the price paid for the benefits that the government identified, and to aid in future negotiations. The regulator would also be responsible for enforcing any performance clauses in the contract and assessing the required performance penalties.

The second portion of the scenario related to a decrease in the costs required to provide power under the contract, an eventuality that was foreseen by the group. The group admitted that you probably don't have much recourse in this event, but there may be opportunities to renegotiate the contract if the IPP fails to perform all of the requirements. This would be the responsibility of both the regulator and the utility to make sure that all provisions are being met.

### **Facilitators' Analysis**

As in Scenario Two above, this may be a case of one party in the process of providing reliable electric service infringing upon the rights and responsibilities of another party. A fundamental response not identified by the group is an investigation into established policies and procedures to ascertain why this purchase was allowed to occur. If the purchase is legal, then the existing policies may have to be investigated to determine if this is indeed what the country wants to allow in the procurement process. If the results of the investigation are that this is not what was intended, then the existing policies may have to be revised. If, on the other hand, the purchase is not supported by statute, then the country may have the legal basis to rescind the agreement. This decision, however, would come at the cost of the credibility

of the government and may make it more difficult, or more expensive, to transact with power producers in the future.

If the contract is supported by either the statutes or a decision to honor the agreement of the government, then the problem becomes one similar to Scenario One; that of risk management. As noted above, the process of risk management actually does very little to eliminate risk, and merely reallocates the costs associated with that risk. The most efficient method of allocating risks is that which allocates risk to the parties best able to manage it. In this case, then, any risks involving the physical production of energy from the units associated with this contract should be borne by the producer. To the extent that they are not, the government may find it cost effective to appoint the appropriate technical specialist to monitor the producer and make sure that the producer is doing everything that it can to produce electricity. This function may be performed by the regulator, the utility, or a third party.