Guides for
Electric Cooperative Development and Rural Electrification



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Your Touchstone Energy® Partner

Glossary of Abbreviations

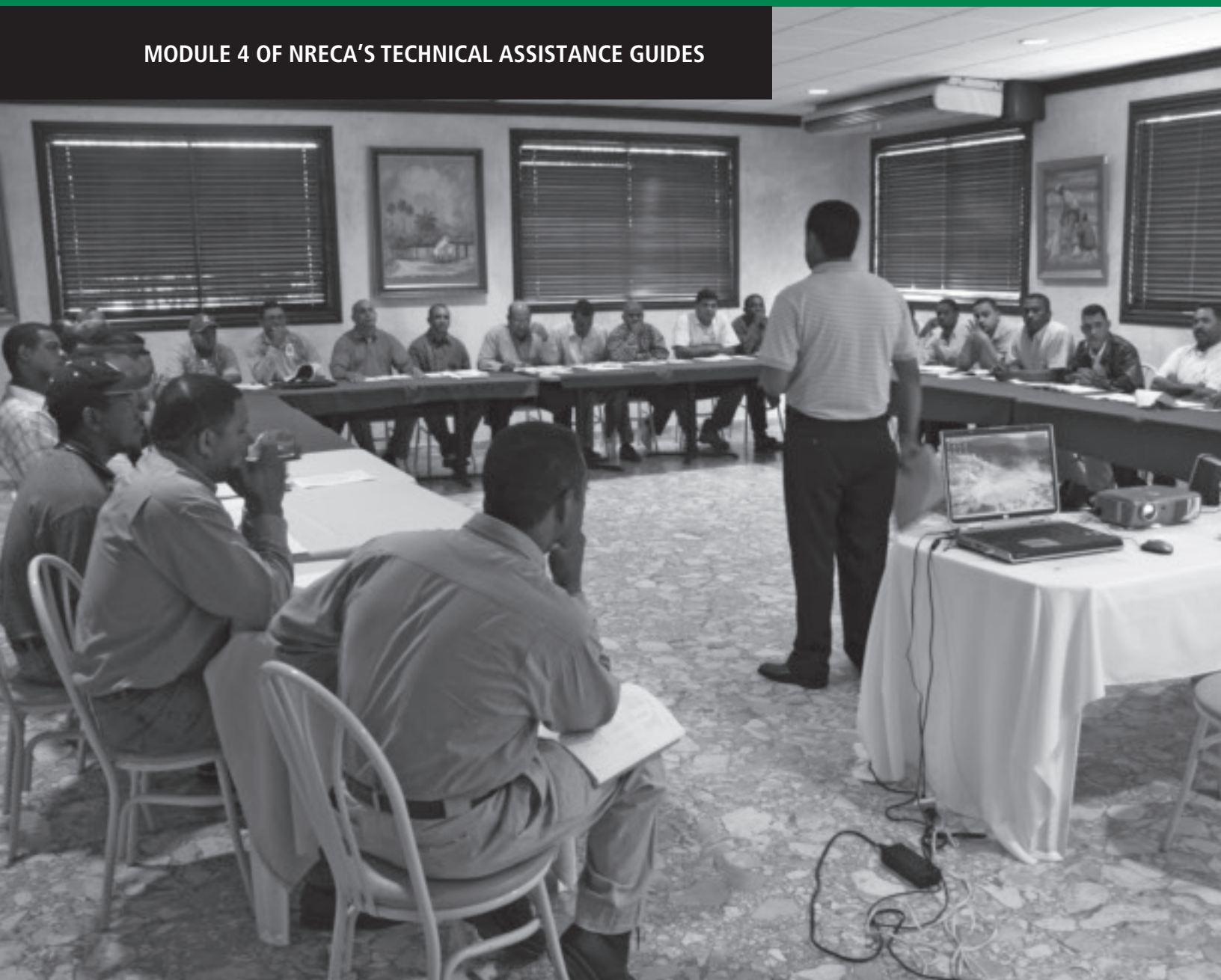
A	Ampere
AH	Amp-hour
AC	Alternating current
ACSR	Aluminum conductor, steel reinforced
A&G	Administrative and general
AWG	American wire gauge
CARES	Central American Rural Electrification Support Program
CCT	Correlated color temperature
CDA	Cooperative Development Authority (Philippines)
CEF	Fronteriza Electric Cooperative (Dominican Republic)*
CFC	National Rural Utilities Cooperative Finance Corporation, also known as NRUCFC (U.S.)
CFL	Compact fluorescent light bulb
CLARITY	Cooperative Law and Regulation Initiative
CONELECTRICAS	National Consortium of Electrification Companies of Costa Rica (Costa Rica)*
DC	Direct current
DISCEL	Electric Distributor of the Hydroelectric Executive Commission of Rio Lempa (El Salvador)*
EBIT	Earnings before interest and taxes
EBITDA	Earnings before interest, taxes, depreciation and amortization.
EEGSA	Electric Company of Guatemala, PLC (Guatemala)*
ESMAP	Energy Sector Management Assistance Program (World Bank)
FUNDAP	Foundation for Economic Development
G&T	Generation and transmission cooperative
GIS	Geographic information system
GPS	Global positioning system
HVD	High voltage disconnection
I	Electrical current, measured in amperes
ICE	Costa Rican Institute of Electricity (Costa Rica)*
IEC	International Electro-technical Commission
INDE	National Institute of Electrification (Guatemala)*
INE	National Institute of Statistics (Bolivia)*
IRR	Internal rate of return
ISPRA	National Institute for Protection and Environmental Research (Italy)
K	Kelvin
klmh	Kilo-lumen hour
kV	Kilovolt
kVA	Kilovolt-ampere
kVAR	Reactive kilovolt-ampere
kW	Kilowatt

kWh	Kilowatt hour
LED	Light-emitting diode
LPG	Liquefied petroleum gas
LVD	Low voltage disconnection
LVR	Low voltage reconnection
MRT	Single wire earth return*
MW	Megawatt
MWh	Megawatt hour
NEA	National Electrification Administration (Philippines)
NESC	National Electrical Safety Code
NGO	Non-governmental organization
NOAA	United States National Oceanic and Atmospheric Administration
NPV	Net present value
NRECA	National Rural Electric Cooperative Association International, Limited
OCDC	Overseas Cooperative Development Council
O&M	Operations and maintenance
PDB	Power development board
PUC	Public utility commission
PUE	Productive use of electricity
PV	Photovoltaic
PWM	Pulse width modulation
R	Electrical resistance
R&D	Research and development
RE	Rural electrification
REA	Rural Electrification Administration, an agency of the Department of Agriculture of the United States, now known as RUS
REB	Rural Electrification Board (Bangladesh)
RFP	Request for proposal
RFQ	Request for quote
ROE	Return on equity
RUS	Rural Utilities Services, an agency of the Department of Agriculture of the United States, previously known as REA
SWER	Single wire earth return
TAG	Technical assistance guide
UL	Underwriters Laboratory
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USTDA	United States Trade and Development Agency
V	Volt
W	Watt
WH	Watt-hour
Wp	Watts peak
WtP	Willingness to pay

*English translation of Spanish abbreviation

Business Plan for Rural Electric Cooperatives

MODULE 4 OF NRECA'S TECHNICAL ASSISTANCE GUIDES



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EXECUTIVE SUMMARY

This module of the Technical Assistance Guides presents an explanation of the role and importance of a business plan in the development and promotion of a new rural electric cooperative, as well as a section-by-section description of the key components that a comprehensive and well-organized business plan should contain.

The business plan not only forces the electric cooperative organizers to make sure their proposal is comprehensive and well structured, it also serves as a vehicle for presenting the project proposal to prospective funding sources. The business plan should provide a road map for the development of the project and fully describe the investment opportunity.

The initial incarnation of the business plan is an important early step in the process of forming, funding, and operating a rural electric cooperative. The business plan first aligns project organizers towards the same goals and secondly promotes the project to both the community and lenders. Once the project is funded and built, the business planning process continues. As time goes by and circumstances change so must the way the electric cooperative responds and takes charge of its future. Project leaders capture the changing strategy of the electric cooperative in regular updates to the business plan. The continual cycle of business planning allows for new ideas and renewed coordination and enthusiasm.

A comprehensive business plan for development of a new rural electric cooperative or a new utility with another institutional form should consider all the institutional, organizational, financial, and regulatory issues and steps required for startup and operation. This includes the organizational structure of the institution, plans for management and staffing, power supply procurement, and engineering solutions for distribution line design and construction, financial analysis based on estimates of operating costs and revenues, and regulatory procedures for registration, licensing, retail power tariffs, etc.

If successful, the initial business plan results in the actual implementation of a new electric cooperative. This module provides a suggested format for the business plan and discussion of each key content component. The suggested format includes an executive summary and 10 major sections. The names and order of the business plan sections can change, but this is the same content required in any complete business plan.

The business plan should provide a road map for the development of the project and fully describe the investment opportunity.

The 10 business plan sections are as follows:

1. Project History and Overview
2. Market Analysis
3. Power Supply
4. System Design
5. Management Plan
6. Operational Plan
7. Marketing Plan
8. Regulatory Approval
9. Financial and Economic Analysis
10. Project Implementation

The section of this module on each business plan component describes the purpose and salient content of that component, along with a summary box reminding the reader of key points and a suggested number of pages to dedicate to the topic. As part of a project financed by the United States Trade and Development Agency (USTDA), NRECA prepared a comprehensive business plan for a rural electric cooperative distribution utility in Yemen that illustrates and provides ample detail on each of the sections of the business plan. The full business plan can serve as an illustrative companion to this module.[1]

Rural electric cooperatives are typically formed in response to a community need for reliable and affordable energy.

Although a major objective of the business plan is to attract investment financing from international development agencies and/or the private sector, experience dictates that a business plan alone rarely accomplishes this goal. Skillful promotion of the project and business plan is also necessary. Project organizers should establish a personal link to the community and the project by hosting site tours, generating community enthusiasm, preparing project summaries and presentations, and seeking local financial support for the project.

PURPOSE OF A BUSINESS PLAN

Rural electric cooperatives are typically formed in response to a community need for reliable and affordable energy. An effective business plan can help meet that need.

A business plan forces the project stakeholders to make sure that the business opportunity is well thought out. It also serves as a vehicle to communicate the proposition to potential lenders and other project supporters. A well-structured project, communicated effectively through a detailed business plan, increases the chances of funding and operational success.

[1] See "Ibb Rural Electric Cooperative Business and Institutional Plan" available from the USTDA Library.

Starting any business requires estimating costs and income and projecting cash and other resource needs. This is equally true for profit and nonprofit ventures, including rural electric cooperatives or utilities. The questions that must be addressed include:

- Who will organize the electric cooperative?
- How will the electric cooperative be staffed and managed?
- Where will the power come from?
- Where will the money to build it come from?
- How much will the electricity cost?
- How much electricity will customers purchase?
- Will income cover the costs of operating the electric cooperative?
- What government laws and regulations apply?
- What steps need to be taken and when?

The business plan answers all these questions and more in a formal document. This module provides a description of each major section typically found in a business plan for a new rural electric cooperative.

In some communities, local individuals may have already stepped forward to organize the effort without any plan at all. Such entrepreneurial leadership has high value. However, electric system infrastructure is expensive and investment is needed to supplement the funding capacity of the local community. At some point, prospective investors will require a business plan for due diligence (the determination of lending risk).

THE BUSINESS PLANNING PROCESS

"*The general who wins the battle makes many calculations in his temple before the battle is fought. The general who loses makes but few calculations beforehand."* – Sun Tzu

This quote from the classic military treatise, The *Art of War,* carries significant business wisdom. Few ventures succeed without careful planning and hard work. Bringing electricity to a rural community is no exception. Drafting a business plan is an early step for any new venture, even when the project organizers have significant business, or perhaps even electric cooperative, expertise. In fact, the more experience the businessperson has, the more likely he or she is to recognize the importance of early and continued planning as an ingredient of success.

The preparation of a good business plan is the responsibility of the project planners. However, they must consult various experts to obtain the analyses upon which they base the plan. The process demands a high degree of focus and a thorough understanding of the proposed venture. Developing a business plan forces the project organizers to answer all the relevant questions of how the business will be formed, funded and operated. Inevitably, this process reveals subtleties, if not significant aspects of organization and implementation, that were overlooked before the formal planning began.

Business planning also aligns project organizers towards the same goals. Verbal communication can allow for multiple interpretations, but a clearly written business plan leaves little room for misunderstanding. The business plan also helps promote the new electric cooperative to the community and is always required by lending agencies.

Each prospective lender is likely to have particular requirements for the business plan format or content. However, the components described here cover the major requirements of most electric system lenders. In promoting the project to lenders, organizers should expect numerous questions. Answering them may require additional analysis or revisions to the business plan. No matter how good the plan, such questions and answers are a normal part of the lender due diligence process.

The business planning process does not end once the project is operating. Like most plans in life, as circumstances change, the plan too must change. The electric cooperative should update its business plan every three to five years, unless major events or opportunities suggest earlier revision. This continual cycle of planning provides an opening to inject new ideas, to adjust strategic direction, to coordinate among employees and stakeholders (those with an interest in the electric cooperative's success), and to keep the business fresh and moving forward in a spirit of service and innovation.

Drafting a business plan is an early step for any new venture, even when the project organizers have significant business, or perhaps even electric cooperative, expertise.

COMPONENTS OF A BUSINESS PLAN

The electric cooperative business plan provides a road map for the successful structuring and funding of the project. While section headings or their ordering can change, a good business plan presents all of this important information in a clear, concise and logical format. A good target size for the document is 25-35 pages (including tables), plus attachments supporting the analyses. Specialized backup information, such as worksheets, detailed assumptions, detailed tables and the like may be gathered into a project file apart from the business plan and made available to interested persons.

Remember that the business plan is not a theoretical exercise but a blueprint for the actual creation of the new electric cooperative. A well-written and practical plan helps to convince stakeholders, including prospective lenders, that the project is viable and that the project sponsors

have adequately evaluated risks, revenues, costs, and return on investment for the project.

After each component of the business plan below, a box shows the target number of pages for that section, along with a summary of key points to remember for that component.

Executive Summary

The business plan must document the justification for the project – its history and the local context that created the need for the project.

As the name indicates, the Executive Summary is for those who may not have time to read the entire plan and require a quick yet comprehensive understanding of the scope of the project, the investment required, projected returns, and project risks. The target audience for this section includes executives from prospective lending institutions, policy makers, and community business leaders. This section of the plan can also be printed separately later for distribution to supporters and local media as a part of a community awareness campaign.

The Executive Summary must succinctly summarize the entire plan in just one or two pages. That is a lot of information to condense, and great care must be taken to use words sparingly and describe only the most salient points of each section in the business plan. There are two keys to making this work. First, write the Executive Summary last. Second, summarize only the highest-level points from each section of the main document. This may mean one brief paragraph or even just a series of bullet points for each of the 10 major sections of the business plan.

For instance, in the body of the business plan, the section on distribution system design contains significant detail describing electrical load analysis, area geography, substation location and sizing, line construction, and costs. In contrast, the paragraph in the Executive Summary on distribution system design need only summarize the most salient points. The following example from a business plan for a rural electrification project in India shows just how simple and concise such a summary can be:

The distribution system will include a single 15 km 33 KV line and substation located near Sonakhali, with 110 km of three phase line and 75 km of single-phase line distributing power throughout the service area. The distribution facilities and capitalized project costs will total just over US$3 million.

Target Length

- 1 to 2 pages maximum

Key Points

- Write the Executive Summary last.
- One paragraph for each major section of the plan.
- Summarize highest level points only.

Project History and Overview

Some of the people who read a business plan will have little or no knowledge of the project background and the community it serves. Therefore, the plan must document the justification for the project – its history and the local context that created the need for the project. The project history and overview section also makes the project intelligible in a broader economic and social perspective. It should include an overview of the project's scope and its current status of development.

Once readers are informed of the project purpose and the characteristics of the communities that will benefit from it, it will be easier to describe the broader goals and objectives. This section of the plan is the first opportunity to explain the path already traveled and the project's goals for the road ahead. Include basic background issues, such as:

- Location of the project and area geography
- Area population and demographics, including socioeconomic data, employment and poverty

- Nature of the economy, industry and natural resources
- Sources of energy currently utilized
- Past attempts to improve or start an electric system
- Why, how, and by whom the current effort is organized
- General scope of the project
- Accomplishments to date and status of the project

This section is also a good place to introduce any major complexities of the project, especially cultural, political, legal, or other factors or issues that may either pose hurdles (e.g. past failures) or facilitate the project (e.g. new laws). Include all topics that are essential to understanding the project and to forming a judgment about it. While a particular issue might be addressed in depth later in the plan, if it is significant, introduce it briefly here. For a significant obstacle or challenge to project implementation, present not only the problem, but also options that might solve it.

The project history and overview serve not only to educate outsiders and prospective lenders, but also to refresh and realign fellow organizers, the community at large, and ultimately, employees of the electric cooperative.

Target Length

- 1 to 3 pages

Key Points

- Establish project background, local conditions and socioeconomic context.
- Describe project scope and current status.
- Introduce any major contextual issues and solutions.

Market Analysis

In this section, the business plan becomes more analytical. Prospective lenders need to know that all aspects of the business have been objectively analyzed and that the project is viable. Analysis begins with the market. The goal of the market analysis is to estimate the demand for electricity – how much electricity the cooperative will sell and at what price.

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For the market analysis section of the business plan, include the projected number of customers, by category (residential, commercial, industrial); the average expected monthly usage per customer (in kWh); and the price per unit of sales, by category (price per kWh).

In areas where the electric cooperative will serve a newly electrified community (or communities) a willingness-to-pay survey and economic benefit analysis is normally a required part of market analysis (for more information please see Module 6 – *Consumer Willingness-to-Pay and Economic Benefit Analysis of Rural Electrification Projects*).

All estimates should be segmented by customer category and based on analysis of likely behavior, energy requirements, and alternative energy sources available. Along with presenting estimates of the initial demand, provide a long-term (usually 10-year) projection of demand based on data concerning population growth trends, industry risk, and other factors. As a general rule, provide enough evidence in the plan to show that the market estimates are sophisticated, but do not provide an overabundance of detail. Present a table summarizing the initial and long-term demand. Supporting documentation can be provided as an attachment or made available in a project file during the due diligence process, if requested.

Target Length

- 2 to 4 pages maximum

Key Points

- Estimate electricity sales using a "ground-up" approach.
- Analyze components and segments of the market, growth and risk.
- Include a table summarizing the initial and projected market.

The project must show the availability, at affordable cost, of sufficient power to meet the initial energy and demand requirements of the system and allow for system growth.

Power Supply

The important question of where the project will obtain electricity is answered in this section of the plan. Power sources include (individually or in combination): grid connection(s), local generation (fossil, renewable, biomass), and excess industrial cogeneration. Whatever the particular situation, the project must show the availability, at affordable cost, of sufficient power to meet the initial energy and demand requirements of the system and allow for system growth.

Project energy requirements are equal to the total kilowatt-hour (kWh) consumption (per unit of time – day, month or year) of all customers connected to the system, plus estimated distribution line losses. The demand requirement is the simultaneous, highest (or peak) demand for power on the system by all customers, as measured in kilowatts (KW), plus a factor for distribution losses. It represents the maximum generation supply that must be available to meet daily and annual peak electricity use. The rural electric cooperative should size its own power generation and/or contract for power purchase accordingly.

As for the power supply, there must be both sufficient capacity of installed power generation to meet peak demand and sufficient transmission capacity to distribute that power to the customers. If restrictions exist, the power supply plan must identify solutions that indicate whether the cost of a new generation plan or transmission line is to be borne by the power supplier or the distribution system.

Grid-connected projects usually employ existing transmission and generation capacity, but it may be necessary to expand capacity if the project under consideration may overburden the power system to which the new project will be interconnected. Alternatively, some or many projects under consideration may require isolated power generation and distribution systems, especially if grid resources are distant and interconnection is not economically viable. Whether expansion of capacity involves expanding the existing generation and transmission system or building new isolated power generation and transmission capacity, project planners should perform an analysis of power generation and transmission capacity that evaluates these resources over a 15 to 20-year time horizon.

The business plan should describe the power generation resources and provide a photograph of the power plant in the case of local generation. It should also include a single-line diagram of the transmission path and delivery point. Also present the cost of power, along with salient details on pricing structure and minimum commitments from the power generation company for energy quality, price, and availability.

If the power supply resources are not owned by the project, then the agreement concerning the delivery of power to the project, including pricing and financial terms, should be referenced in this section of the plan. The business plan is much more persuasive if such agreements (known as power purchase/supply agreements) are already fully negotiated. Lenders want assurances of the reliability (financial as well as technical) of the power supplier. A contingency plan for alternative or additional power sources would be ideal, but is often not an option, especially in rural areas.

Target Length

- 2 to 4 pages

Key Points

- Present power source and transmission supply.
- Identify initial and future power requirements.
- Describe pricing and other financial terms, along with reliability of supplier.

Distribution System Design

This section of the business plan presents the electrical design of the distribution system. Prepared by professional electric distribution design engineers, the electrical load analysis and engineering solution is normally a report in itself, which is referenced in the plan along with a summary of key characteristics of the distribution system design and cost. See Module 7, *Distribution Line Design and Cost Estimation for Rural Electrification Projects*, for information on how to create the engineering report referenced in the business plan.

The distribution system is designed to receive power from the supply source and transmit it via medium or low-voltage distribution lines, to consumers throughout the service area. Often, the distribution system design includes a multi-phase construction plan, as increased capital investment and/or increased electrical load make expansion economically viable.

Inserting a high-level electrical diagram of the proposed system (one page) in the business plan is helpful. It may also be appropriate to insert a more detailed schematic in an appendix. The description in the business plan should include the main system facilities: grid substations, distribution substations, and main feeders, along with the length of extensions and lateral lines to reach the optimal number of initial customers.

Since those who will review the business plan are likely to have seen systems of greatly varying quality, establish the engineering and construction standards used in the project design. These standards set project targets regarding component life, safety, energy loss optimization, regulatory compliance, and reliability. Standards include, but are not limited to, industry standards and best practices for unitized construction, single versus three-phase lines and transformers, delivery point metering, sectionalizing, and voltage regulation. Investors generally understand the trade-off between the level of investment in capital equipment and recurring costs, where more money spent on better equipment leads to lower operation and maintenance expenses.

The business plan should also include a schedule of major system components, the number of units required, and their cost. The cost of these items, together with the estimate for engineering and construction, represent the initial cost of the system. The total cost includes other items, such as working capital, capitalized development costs and interest, and contingencies, which are part of the financial analysis of the project.

The distribution system is designed to receive power from the supply source and transmit it via medium or low-voltage distribution lines, to consumers throughout the service area.

Target Length

- 4 to 6 pages

Key Points

- Present key characteristics of distribution system design, in phases if appropriate.
- Describe main system facilities and include a diagram of the electrical system.
- Include a schedule of major components and costs.

Management Plan

This section of the business plan communicates the organizational and management structure of the project. Typically, the electric cooperative fully

owns the project. However, any joint ownership or lease arrangement must be described.

The electric cooperative's organizational documents (articles of incorporation and bylaws) should ideally be in place prior to finalizing the business plan. If they are not, reference drafts of those documents. These organizational documents are typically not attached to the business plan, but are made available for review during due diligence. Describe any requirements for business registration with government authorities and note the status.

The electric cooperative's organizational documents (articles of incorporation and bylaws) should ideally be in place prior to finalizing the business plan.

The governance of the electric cooperative is explained in this section of the plan: the structure of the Board of Directors, membership requirements, and voting rights, provisions for audit, other board committees, and arrangements for legal representation. Mention of specific outside audit and legal firms, if already identified, is helpful, as this adds credibility to the plan, especially if they are recognized regionally or nationally.

The Board of Directors is charged with governance and setting institutional policies, and is also charged with hiring management. Together with senior management, the Board sets strategic direction, the execution of which is the responsibility of management. Management is responsible for execution of board policy, overall direction of day-to-day activities, and implementation of long-term goals and objectives. It is also responsible for recruitment and retention of qualified staff to administer and operate the electric cooperative. A discussion of the chain of command and division of responsibilities should appear in this section.

Some functions might be outsourced to facilitate startup, or permanently, as a cost-saving strategy. For example, a local telephone service provider might more easily and efficiently manage billing and collection functions than rural electric cooperative staff. Such arrangements are acceptable, but should be justified by cost savings, and the vendor referenced in the plan.

If planners have already identified senior management, include a brief biography for each person. The same can be done for founding board members and key senior staff, such as the maintenance or crew chief. Summarize all staff requirements in a table showing the position, number of staff, and salary or wage. Briefly reference planned benefit programs as well.

Target Length

- 2 pages

Key Points

- Describe project ownership and organization.
- Explain governance, audit provisions, and legal representation.
- Present biographies on key people; list staff positions and their salaries/wages.

Operational Plan

The operational plan section of the business plan provides the opportunity to describe how the project will operate, showing competence in areas such as:

- Customer inscription and service
- Connections and disconnections
- Meter reading and billing
- Accounting and finance
- Purchasing and inventory
- Maintenance and repair
- Loss control and prevention
- Engineering and planning

This section describes the plan for operating the rural electric cooperative on a day-to-day basis. Handling such a broad topic in just a few pages is a challenge, but the goal is not to create a detailed employee manual, rather just to generate confidence that the electric cooperative has a well-considered and logical operating plan.

One approach is to begin by stating the electric cooperative's operational philosophy, including priorities and targets for issues such as employee training and supervision, emergency response time, inventory levels, supplies and materials quality, cost containment, safety, customer complaints, and system reliability. The operational philosophy establishes a framework for the electric cooperative's policies without the need to describe each operational activity and procedure in the business plan.

However, do describe major programs, according to the priorities of the particular project. For example, in the case of an initial build-out reaching only a small portion of the market, the business plan should describe the operational aspects of member subscriptions and line extensions to reach additional customers. Or, in an area of anticipated high electricity theft, describe the plan for detecting, policing, prosecuting, and preventing loss. Other components of the operational plan, if unique or substantially different than industry standards, should also be mentioned.

Target Length

- 2 to 3 pages

Key Points

- State the guiding operational philosophies.
- Address enough detail to express competence in operating a electric cooperative.
- Describe major programs or thrusts, especially if different from industry norms.

Marketing Plan

Marketing begins with building enthusiasm in the community for project implementation and continues through energization and system expansion. As an ongoing process, marketing is important not only during project initiation, but also for maturing electric distribution cooperatives. A well-defined and conceived marketing plan both retains existing consumers and attracts new consumer connections. While there needs to be a person responsible for the effort, marketing is as much a client-focused attitude as it is a distinct program. Institutional cultures are normally established top-down and from early on, and care should be taken to establish an appropriate culture towards the community that the system will serve.

Effective marketing requires understanding the culture, lifestyle, and consumption habits of the community, as well as energy alternatives or competitive products available.

As with operations, the marketing plan section of the business plan should include a description of the cooperative's philosophy with regard to marketing – that is, the relationship it wants to have with customers, industry and the community at large. The marketing section of the business plan should explain where, within the cooperative, responsibility for this function lies, its funding level, and its initial focus. Typically, in the early days of electric cooperative operation, marketing is the responsibility of the whole staff. Technical, financial, and operations personnel must pitch in on membership drives and customer education, especially in areas never before electrified.

Effective marketing requires understanding the culture, lifestyle, and consumption habits of the community, as well as energy alternatives or competitive products available. Expressing this understanding through a thoughtful description of the marketing effort is the central goal of this section of the business plan.

This section should also establish electricity pricing targets, segmented at a minimum by consumer class. For rate-regulated utilities, the rates may already be established. Otherwise,

the electric cooperative must analyze the cost structure of its power supply and develop a rate scheme that is affordable, considers the pricing of competitive sources, and generates sufficient revenues to cover the cost of operations. Insert a list of the proposed rate structure.

Finally, the marketing plan should anticipate how the program might change focus as the distribution system matures and new needs, hurdles, and opportunities arise. Such changes may include integrating the marketing effort with billing and customer service, or initiating new programs such as loss reduction, incentive tariffs, and equipment sales.

The business plan should describe the regulatory authority, the process for obtaining all required approvals, and provide a status report.

Target Length

- 2 pages

Key Points

- State the philosophy of the rural electric cooperative regarding its relationship with customers.
- Show your thorough understanding of the market.
- Explain and list rates segmented by customer class.

Regulatory Approval

This section applies only to those rural cooperatives subject to regulatory oversight. Regulatory oversight can vary by province and by country. While most countries have at least requirements for electric cooperative business registration, an additional level of regulatory oversight applies in many jurisdictions.

In nearly all countries, the working hypothesis upon which regulatory oversight is based is that electric service is a natural monopoly. That is, it is not economically efficient to have more than a single service provider in an area. Once a monopoly is authorized, it must also be regulated, absent the checks inherent in a competitive market.

The regulatory authority is generally vested in a public utility commission, line ministry (such as a Ministry of Energy or Electricity), or a regulatory board, which has oversight in one or more of the following areas:

- Service territory
- Rate regulation
- Quality of service

Service territories are defined to prevent duplication of investment as well as to establish the boundaries of the electric cooperative's obligation to serve. Within the constraints of its line extension policy, that electric cooperative must serve all interested customers in its territory. This is the quid pro quo in the regulatory compact awarding a monopoly franchise to the electric cooperative.

Rate regulation is the most direct manifestation of the regulatory authority in its role as proxy for a competitive market. It is important to remember that the regulator has an equal obligation to both the customer and electric cooperative. It must be watchful to make sure customers are not overcharged but also ensure that the electric cooperative earns its margins.

Quality of service regulation ensures just that, encompassing electric cooperative response time to customer connection requests and complaints, as well as reliability and power quality.

In the case of regulatory oversight, the business plan should describe the regulatory authority, explain the areas in which the electric cooperative is subject to regulation, describe the process for obtaining all required approvals, and provide a status report.

Target Length

- 1 to 2 pages

Key Points

- Identify areas of regulatory oversight and the relevant governmental authority.
- Explain the approval process.
- Report status to date.

Financial and Economic Analysis

This section of the business plan shows that the project's financial viability has been established through a careful analysis of the project's costs and benefits. The analysis most often employs a computer-based model to compare the project's cash receipts against its cash outflow. Typically, financial projections for electric utilities are modeled over a minimum 10-year horizon. The analysis should use the most reliable data obtainable.

One of the most important steps in applying a financial model – and presenting the results in the business plan – is stating all major assumptions and parameters. These include the construction and system build-out periods, terms on project debt, sales growth, electricity rates, cost of power, operation and maintenance expenses, and line and technical losses. Take care to have good supporting data and justifications for all major assumptions.

The financial model produces detailed projections of income, cash flow, and sources/uses of funds statements, along with indicators of project viability and attractiveness (such as internal rate of return and cash return on equity). The model should analyze multiple scenarios, testing the impact of changes in key variables on the bottom line (sensitivity analysis) or identifying the values key variables must hold in order for revenues to cover costs (breakeven analysis).

The output of the financial model is often included as an attachment to the business plan. Summary tables and accompanying narrative should appear in the body of the document and describe central findings, addressing key items such as earnings, cash flow, investment return indices, and project risks. For marginal projects, the analysis should show that the project generates sufficient cash to service debt and fund depreciation, and if not, describe the level of subsidy required to achieve feasibility.

Typically, financial projections for electric utilities are modeled over a minimum 10-year horizon.

Some lenders also require an economic analysis of the project. While a financial analysis takes the viewpoint of the individual participants and estimates the financial effects of the project on them, an economic analysis takes the viewpoint of society as a whole, estimating the benefits of the project to the economy. Both use measures of discounted cash flow, but they define and value costs and benefits differently. For example, taxes are not treated as costs in the economic analysis, but subsidies are. With the above-mentioned items in mind, plan on performing only a financial analysis for the business plan. If debt or subsidy providers require an economic analysis, perform it using an accepted methodology.

Target Length

- 2 to 5 pages

Key Points

- Perform financial model projections for 10 years and an economic analysis if requested.
- State all major assumptions and have supporting justification on hand.
- Insert a table and describe key results, including project returns and risks.

Project Implementation

Now that the project has been fully presented, engineered, and analyzed, the final section of

the business plan lists and explains the concrete actions to be taken to implement the project. This is an opportunity not only to think through all the implementation steps, but also to demonstrate to the reader that the electric cooperative knows how to bring in the project on schedule and within budget, while meeting customer connection targets.

The section itself can be formatted in multiple ways, but it is always a good idea to insert a list or chart of steps and milestones planned for project implementation. A Gantt chart (a bar chart showing how all the required tasks progress, over time and with respect to each other) is often useful for this. As with most complex projects, many of the tasks overlap, and the Gantt chart is a handy tool to communicate this graphically.

The better the project team can establish a personal link between lenders and the community, the more likely are the chances of success.

Typically, the project implementation schedule focuses on the construction period, defined as the period beginning with funding and ending when the electric cooperative is energized. At this point the electric cooperative should be functioning as detailed in the operation plan. Include in this section a list of key project tasks, assignment of responsibilities, and realistic estimates of task completion times.

Equally critical is the identification of an overall project manager, ideally an individual or firm that has completed many similar assignments. If a construction firm is already identified, briefly present its experience. Project and construction management could be one and the same, depending on the size and complexity of the project.

The project implementation schedule should extend at least until system energization. If the project has phases, or a significant build-out remains after the initial project construction, then the schedule should also include subsequent customer connection milestones. The expected timing of sales and cash flow, as well as expansion costs, is more appropriately covered in the financial model discussion.

Target Length

- 1 to 3 pages

Key Points

- List concrete steps and demonstrate the ability to execute them.
- Insert a Gantt chart or other graphical representation of steps.
- Show responsibilities, completion targets, and key project milestones.

PROMOTING THE BUSINESS PLAN

Many an entrepreneur and project organizer has learned that a well-written business plan alone rarely raises money. Numerous factors contribute to a funding decision and, while it is an absolute necessity, the business plan is only a part of the process that culminates in the completion of the project.

Although the engineering must be solid and the financial projections viable, lender support of a project is as much about faith in the project organizers and the local community and economy as it is about technical factors. The better the project team can establish a personal link between lenders and the community, the more likely are the chances of success.

This means that dedication to the project, local enthusiasm, and community support all count. Be sure to make this support evident through careful advance planning for site visits by lenders. Prepare community leaders by educating them fully about the project and its benefits to the community.

Dedicate and train a two or three-person contingent from the project organizational team to host visiting consultants and prospective lenders. Depending on local facilities and equipment availability, a PowerPoint presentation is a good

way to orient the visitors upon arrival. Limit it to 10 slides and 20 minutes for best results.

Plan ahead for all stops along the tour route. Include visits with future customers, small and large, and allow time for separate conversations with any sizable industry that may exist in the area. Industry or not, it is important to demonstrate that the service area has an underlying stable, if not growing, economy.

Utilize the Executive Summary from the business plan (as is or modified for public consumption) as a tool to create local enthusiasm for the project. It can also provide talking points for community meetings, be distributed in flyers, and be circulated to any local and regional media (radio station or newspaper).

Also, create a 3-5 page project summary that can be utilized to interest prospective lenders in the project. Until initial interest is aroused, lenders are unlikely to take the time to read the full business plan. If the business plan interests a prospective lender, the next step is the due diligence process, when clarifying questions are asked and revenue and cost estimates verified. All supporting studies, facts, and figures should be readily available so as to provide a quick and comprehensive response to due diligence requests.

Finally, while not always possible, there is nothing better than local financial support to provide comfort to an outside lender. Even if they are small in amount compared to the funding target, local monetary commitments by future customers, industry, or lending institutions carry a big and positive message to prospective project financiers.

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