

Business Planning: A Key to Energy Efficiency in Russia

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Synopsis: Business planning can promote Russian energy efficiency by attracting financing, increasing the chances of project success and highlighting the benefits of energy efficiency.

Abstract:

Financing is a significant barrier to energy efficiency in Russia. Many banks and Western companies would like to invest in energy efficiency projects in Russia, but are frustrated by the lack of Western-style business planning and preparation which goes into Russian project proposals. With support from the U.S. Department of Energy, The Pacific Northwest National Laboratory has organized several training workshops on writing business plans for energy efficiency projects.

Russian project proposals typically describe the technical measures to be implemented, and they provide a simple payback analysis of the costs. The most difficult tasks for Russian business people are often developing a marketing plan, using creative financing techniques, describing the implementation plan in sufficient detail, and providing appropriate information on the organizations involved in the project.

As Russians learn to prepare solid business plans, their ability to attract financing for energy efficiency projects and successfully implement such projects will increase. Business planning also provides a useful framework for assessing energy projects. In this sense, it can help Russian business people better understand the advantages of energy efficiency and increase their willingness to invest in demand-side measures.

1. Introduction

Energy efficiency can help Russia become more economically competitive, it can solve many of Russia's environmental woes, and it can improve the quality of life of ordinary people. Despite these advantages, implementing energy efficiency projects in Russia is often difficult because of the lack of financing and understanding of the benefits. Bankers and investors state that they have money they would like to spend in Russia, if they could find financially solid projects. Project ideas abound: almost every Russian enterprise and city has them. Yet few projects are ultimately financed. The problem in many cases is the lack of quality business plans: Russians have ideas, but often do not know how to develop them into "bankable" projects. In other words, the project ideas are not developed to the point that they ensure financiers of a reasonable return at a reasonable risk.

The Pacific Northwest National Laboratory, with support from the U.S. Department of Energy, has assisted several Russian companies and local governments in drafting business plans for energy efficiency projects through training seminars. The emphasis of these seminars has been to help Russian business people understand the type of planning necessary to carry out energy efficiency projects successfully, and to capture this in business plans that could help attract financing and foreign business partners. This assistance began in 1994 under the Memorandum for Cooperation on Energy Efficiency and Renewable Energy between the U.S. Department of Energy and the Russian Ministry of Fuel and Energy.

This paper will summarize the difficulties and successes Russians have met by analyzing the trends. A separate report entitled *Russian Business Opportunities in Energy Efficiency and Renewable Energy*, describes the specific projects of several Russian seminar participants.

2. Why Business Plans are Important

Business plans are important in any market economy, but particularly so in a country like Russia where risks are high, macroeconomic problems are pervasive, and managers with experience in business planning and project finance are rare.

2.1 Russia's Economic and Investment Climate

Russia has undergone profound economic transformation in the last several years. Only a few enterprises were privatized in 1991, but 85% of the economy had been privatized by 1995. Russia is now more "capitalistic" in this sense than Italy. Even heavy industry--metallurgy, machine building, chemicals--has been privatized. This is important for energy efficiency because industry accounts for the majority of energy use in Russia, and heavy industry is particularly energy intensive. Privatization should provide incentives for industrial firms to improve their energy efficiency. In fact, 11% of all upgrades to industrial plants in 1995 were energy efficiency measures and another 12% of the upgrades were for automation, which can also save energy.¹

Taxation, non-payments and crime remain serious barriers to investment today.² Taxes are a problem in Russia not only because they are so high, but also because tax laws change constantly. Thus tax advisers have a booming business, but average businesses see their costs skyrocket. The Russian profit tax was 35% in 1995, the excess wage tax was also 35% and the value-added tax (which covers most goods and services) was 21.5%.³ Non-payments reduce the solvency of many companies and significantly increase the commercial risk of all ventures. For example, the first question bankers usually ask regarding power project proposals is "how do you know consumers will pay?" Likewise, energy savings are financially useless if the consumer never paid the energy bill in the first place. Crime is a problem in that many entrepreneurs are scared away from Russian business because of the perceived risks to their personal safety. Organized crime can also scare away customers or make business very difficult to conduct. Theft can cut into profits and may necessitate costly security measures.

Remnants of the old corporate culture also stunt investment and growth. Most large, privatized enterprises are still very hierarchical, and they have not completely adjusted to working in a market economy. Marketing departments in many formerly state-owned enterprises remain small with few experienced staff. Most enterprise managers are loath to fire workers, but rather withhold their wages, which differs only technically from unemployment. Energy, which can account for more than 50% of an enterprise's costs, often is still treated as though it were cheap. Enterprises can afford to do so because they often do not pay their energy bills. However, the role of these enterprises in the Russian economy is decreasing as new companies and importers gain market share.

In the past two years, the economic and investment climate in Russia has improved significantly. The Russian stock market sustained higher growth than almost every other stock market in the world in 1996.⁴ Russian commercial banks are easing their lending terms, in part because the economic climate is improving, and in part because they are searching for new markets and profit centers as the federal government reduces the yield on government bonds (GKOs). Inflation is down significantly--in 1996, it was lower in Russia than in Hungary. In short, financing is becoming a more realistic option for energy efficiency projects, but obtaining it is not easy.

2.2 The Components of a Business Plan

A strong business plan will give a financier confidence that a project is financially attractive, even if conditions change somewhat. The business plan must also demonstrate that the project developer has the skills, experience and ability to implement the project successfully. Specifically, financiers look for the following types of components of a business plan:⁵

- (1) a project summary,
- (2) a description of the company (its ownership, products, services, market, competition, costs, facilities, staff and the state of its industry),
- (3) information on the other sponsors or partners and their roles,
- (4) a project implementation plan describing the scope, rationale, benefits and strategy for implementation (a more detailed feasibility study may also need to be attached),
- (5) an explanation of the proposed role of financial institution(s),
- (6) planning projections and financial data for the project,
- (7) regulatory and environmental information,
- (8) proforma financial statements: income statement, balance sheet, cash flow and financial ratios.

2.3 Russian Business Plans

Russian business people usually know that a business plan can help them develop a project and obtain financing, but they may not be aware of the necessary components of a business plan. Several problems that are often evident in Russian business plans include:

- ⊆ lack of information on markets and competition,
- ⊆ inadequate implementation plans,
- ⊆ lack of contingency plans and sensitivity analyses,

- C insufficient financial information and projections,
- C emphasis on production and supply-side energy efficiency measures, with little examination of lucrative end-use energy efficiency potential.

2.3.1. Market Information

Engineers often write business plans for their companies, and their strong knowledge of technologies and products manifests itself, but such plans frequently lack adequate market information. Market information should be at the heart of any business plan, so lack of market information is often a serious problem. One example is a business plan proposing a mini-district heating system for a new neighborhood of Samara, a town on the Volga River. The business plan provided hundreds of pages of technical specifications for the new system. Yet the plan only mentioned in passing the fact that the new neighborhood did not yet exist, and that massive financing would be needed to build the new neighborhood.⁶ Too little attention was paid to the market; consequently, the plan never got off the ground.

Another example with a happier ending is a business plan prepared by a Russian company called Criocor. Criocor assembles turbines and cryogenic equipment to take advantage of the energy given off when natural gas expands as it enters local distribution systems. The original business plan had little information on the markets for their products. When asked about this, Criocor provided information on their planned production, assuming that this was an adequate substitute. Criocor did, however, spend quite a bit of time marketing its products, and is now a relatively successful company with a well-defined niche.

Russian companies with strong marketing skills and track records of selling their products in market economies are more likely to produce solid marketing plans. Two examples of such companies are Geoterm, which has built geothermal power plants in several countries, and Inset, which produces mini-hydro power plants.

2.3.2. Implementation Plans

Implementation plans help project developers think through and prepare the details of how a project will work in reality. Russian businesses usually do an excellent job of describing the technologies and production facilities they will use to implement a project. However, they may leave out some information, such as descriptions of contracts, staffing, operations and maintenance, raw material supply, and shipping.

Viacheslav Shubin, the deputy mayor of Lytkarino, a suburb of Moscow, participated in the 1995 business plan training seminar in Washington, DC. His implementation plan was sketchy at best. However, when he returned to Russia, Mr. Shubin worked steadfastly to fill in the details of his plan to increase the energy efficiency of the local housing stock. A year later, he had negotiated contracts with several construction companies to install energy efficiency measures in residential buildings in exchange for the right to build and rent additional apartments on these buildings. The city paid nothing for the measures in this creative deal.⁷

2.3.3 Contingency plans

While contingency plans are usually part of implementation plans, they warrant special attention in a country where conditions change constantly. Russian business people, particularly those working for state enterprises, tend to shy away from describing the negative aspects of a plan. Western investors, on the other hand, may find perfectly glowing business plans hard to believe. They often show greater trust and respect for project developers who admit that there are potential problems with their plans, and develop strategies to address these problems should they arise.

Sensitivity analyses help businesses determine the feasibility of their plans even if conditions vary. In this sense, sensitivity analyses are the roots of contingency plans. Few Russian businesses use sensitivity analyses in their planning projections. At times, when they use sensitivity analyses, they avoid analyzing unfavorable scenarios. An example of this is Geoterm's original business plan for a geothermal power plant in Kamchatka. While the business plan was good as a whole, the sensitivity analyses of changing electricity prices did not address the potential that electricity prices might fall. It is true that when the plan was written, electricity prices seemed to have no limit, but recently, some regions have actually experienced falling electricity prices. The original plan did get Geoterm in a banker's door, and it was then revised with feasibility study funding from the European Bank for Reconstruction and Development.⁸

Despite the lack of written contingency plans, most Russian businesses are accustomed to working in a constantly changing environment, and to handling unexpected difficulties. Advanced planning, however, could help these businesses avoid problems, or resolve them more expediently when they do occur.

2.3.4. Financial Information and Projections

Financial information on a company is crucial for a financier to understand its financial health and ability to repay debts. This is particularly so in Russia because no standardized credit ratings exist. Even public companies have much more lenient reporting rules than public companies in the West, and most private companies in Russia are traded over the counter, so their reporting requirements are less stringent still. Thus the information in a business plan and its attachments is usually the most complete information to which a financier has access. When the financial information in a business plan is missing or incomplete, a financier has little to go by, and most likely will dismiss the business plan. Providing this information, on the other hand, builds trust.

Russian companies may avoid handing out their financial data for a variety of reasons. The Russian accounting system differs significantly from the Western one, making it tedious to convert numbers into a format that is easily understood by Westerners. For example, Russian tax laws do not require accruals, only expenses actually made. Many Russian companies have two sets of accounting books--one for the tax authorities, and one of their real financial situation. They may also be hesitant to share the real books with outsiders because of the potential tax and legal ramifications, and because of their fear that the scent of money will bring the mafia to their door.

While Russian companies which conceal financial data may extract short-term tax gains, ultimately they are cutting themselves off from potential investment. The boom in the Russian stock market has concentrated on the stocks of a few Russian companies with books audited by Western firms for two to three years.

A related problem is the lack of financial projections for a project or investment. Under the Soviet regime, Russian enterprises would calculate the simple payback for all investments. With inflation officially denied and most investments coming from the government, simple pay back calculations were sufficient. Such calculations, however, do not paint a clear picture when inflation is high and the cost of capital even higher. Lack of financial projections may also make it difficult for a Russian company to assess its ability to pay for a project, either up front or through loan payments.

The chemical manufacturer Polimer falls into this category. The company conducted engineering studies to determine how to improve its energy use and waste water treatment, and at the same time cut operating costs. Based on these studies, Polimer decided to purchase Western steam traps.⁹ It negotiated with a U.S. steam trap manufacturer to the point where the steam traps were ready at the Russian border, awaiting pre-payment. At this point the deal fell through because Polimer had miscalculated its ability to pay for the steam traps up front. Polimer could not send the money, and both sides walked away from the deal after having spent considerable time and effort in arranging it.

2.3.5. Emphasis on Supply-Side Measures

Most Russian ideas for energy-sector projects focus on the supply side. Even energy efficiency projects are usually related to efficient new supply, or rehabilitating old plants. While such supply-side measures may make sense, Russians often fail to consider the potential for end-use savings, even when end-use measures are more cost effective. The root of this supply-side focus is in the old regime, when production was king and consumption a necessity with unpleasant bourgeois undertones. It is this view that made the former Soviet Union one of the most energy-intensive regions of the world, with some of the least efficient industrial and residential facilities.

The list of Russian supply-side project ideas is very long indeed, and few of the developers of these projects have even considered demand-side energy efficiency as an alternative for meeting the energy needs of an area or a facility. One power project in southern Russia is of particular note. The Russian Government partially funded the construction of a new gas turbine power plant in Piatigorsk; the project developers, a consortium of Russian energy companies, took on debt to pay for the rest. Problems arose, government checks stopped coming, construction was halted, and now the project developers are looking for new financing to complete the project. However, two major problems stand in their way. First, the project developers have defaulted on their existing debts, so investors and banks are staying away. Second, the plant is located in southern Russia, relatively near Chechnya. The project developers claim the plant is in no danger, but Western investors have been scared by the fact that the plant is within approximately 125 kilometers of the war-torn region, particularly because Chechen fighters have targeted power plants in the past. The region this cogeneration plant would serve has a power deficit. Despite the large energy efficiency potential in the area, the project developers have not considered tapping it.¹⁰

Regional governments, however, are beginning to understand the benefits of energy efficiency. Their pleas for federal funding for new power and district heating plants have brought little money since the breakup of the Soviet Union. Regional and city governments are responsible for a large portion of energy costs because they subsidize prices to make residential energy bills affordable. As a result, several cities have begun to look seriously at energy efficiency as a means of reducing the financial burden of the subsidies on their budgets. Two prime examples of this approach are Cheliabinsk Region and the City of Kostroma.

Cheliabinsk Region has proposed a new circulating fluidized bed (CFB) power plant which would supply excess demand. Cheliabinsk officials saw this as an energy efficiency project in that the new plant would be more efficient than most existing capacity. It is interesting to note that the business plan was prepared by a German company, Agiplan, although the Cheliabinsk Region funded it.¹¹ Regional officials also entertained the idea of end-use energy efficiency and increasing the efficiency of the district heating distribution system.¹² Viacheslav Galanov, deputy head of the Cheliabinsk regional energy savings fund, participated in a business plan training seminar in Washington, DC in 1995. He tried to sell the CFB power plant proposal to several financiers, but was repeatedly told the project had problems. Several government and banking officials expressed greater interest in some of his less-developed ideas for demand-side energy efficiency projects.

The Cheliabinsk region had been working with the Russian Center for Energy Efficiency (CENEf) on regional energy policy. After Galanov's return to Russia, the U.S. Department of Energy provided project development funding for a project to increase the efficiency of the district heating system, focusing on pipeline and substation losses. Cheliabinsk officials are also considering other energy efficiency projects, such as energy efficiency measures in hospital buildings.

Kostroma is another positive example of what can happen when local officials realize that energy efficiency is less expensive for them than building new energy plants. Federal nuclear officials were planning to complete construction of a nuclear plant in Kostroma, which the people of Kostroma opposed in a binding referendum in 1996. This is the only time in Russian history local people were able to reject a nuclear power plant at the ballot.¹³ At the same time that federal officials were considering completing the nuclear power plant, local officials were developing energy efficiency projects. CENEf has recently begun working with Kostroma to develop a business plan for district heating efficiency.

3. Business Plan Assistance

Understanding how to develop a business plan usually takes training and experience, and increasingly, Russian businesses are mastering these skills. New, private companies in particular tend to attract entrepreneurs with strong business skills. Such entrepreneurs are successful because of their understanding of the market, so it is not surprising that they have a good sense of what will work in a market environment and know how to express this in a business plan.

3.1 PNNL's business plan training

In an effort to help Russian businesses and local governments understand the potential for energy efficiency and obtain financing for energy efficiency projects, the Pacific Northwest National Laboratory (PNNL) has organized a series of DOE-sponsored seminars on business planning. PNNL selected participants with promising business plans in the areas of energy efficiency and renewable energy. The participants were brought to Washington, D.C. for training in business planning and finance, using their existing business plans as the basis of their training. PNNL also invited bankers, investors and representatives of U.S. companies to meet with the Russian participants. These meetings introduced the Russians to individuals who could potentially help them finance their projects. They also helped the Russians understand the requirements and criteria of financiers, so that the Russians might improve their business plans. PNNL has also worked individually with several Russian business people and government officials to provide advice and assistance in writing business plans. Most of the projects described above were associated with this work, or with related work that PNNL is conducting with CENEf.

3.2 CENEf's work on district heating

Russian cities face tremendous financial problems because of the energy subsidies they pay. While reducing these subsidies will be the ultimate solution to this problem, for now, most residents cannot afford to pay the full cost of their utilities, primarily district heat. They have no way to control the district heat which is supplied to them; even if they insulate their apartments, their heating bills will remain the same because the bills are based on residential space, and not heat consumption. However, if cities continue to pay heat subsidies at the rate they are now paying, most will be bankrupt by the time the subsidies are eliminated.

In addition, approximately half of the heat which is produced, and for which the residents and cities pay, is lost in the pipelines and substations. CENEf and PNNL are now working on a DOE-sponsored project to write business plans for district heating efficiency measures and to structure financing for these projects.

4. Conclusions

Business planning is a key to energy efficiency in Russia because it addresses three of the problems which have plagued energy efficiency initiatives in Russia in the past: (1) lack of financing, (2) unsuccessful implementation, (3) lack of understanding of the benefits.

Most ideas for energy efficiency projects never come to fruition because the project developers do not have enough capital on hand to implement them, and they cannot attract financing to support the ideas. To attract financing, one must convince someone with money that your idea is worthwhile and will bring them a profit. A business plan is a powerful tool which project developers can use to convince financiers of a project's merit. While a business plan alone is not enough to obtain

financing, few sizeable projects are financed without business plans. This is increasingly true in Russia, where the supply of financing does not come close to matching the demand.

A business plan can help attract financing to a great extent because it demonstrates that the project developers are capable of successfully implementing the plan. It requires project developers to think about the details of project implementation, to uncover potential problems, and to produce contingency plans. A good business plan will serve as a road map, outlining how goods and services will be procured, who will be responsible for various aspects of the project, and when each step of a project is to take place. While advanced planning and proactive problem solving do not guarantee success, they certainly help.

Business planning can also have a profound impact on the way organizations use energy. The planning process forces managers to scrutinize their costs and business operations. The success of energy efficiency relies on such scrutiny. As Western-style business planning becomes more prevalent in Russia, increased energy efficiency is likely to follow as businesses try to become more competitive and cut unnecessary costs.

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Endnotes

1. *Russian Economic Trends*. 1995. 4(2): 102.
2. Braverman, p. 11; Quillin, pp. 2-3, 5-9.
3. *Russian Economic Trends*. 1995. 4(3): 39, 83.
4. O'Sullivan, p.5; *Russian Economic Trends*. 1996. 5(2): 128.
5. Mikelonis, p. 133; Economic Commission for Europe, pp. 34-37; Tanega, Chapter 6, pp.1-5.
6. AO Energoperspektiva, *Annotated Business Plan*; AO Energoperspektiva, *Feasibility Indicators....*
7. Conversation with Viacheslav Shubin, Deputy Mayor of Lytkarino, October 1995.
8. Conversations with Grigory Tomarov, Director of Geoterm-M, in July and September 1995 and May 1996.

9. Letter from Evgeny Panov, General director of Polimer, to Igor Bashmakov, Executive Director of CENEf, April 18, 1995.

10. Gasenergo Joint Stock Company; Conversations with Valery Morev, Executive Director of Energoinvest, Inc., in May and September 1996.

11. Agiplan.

12. Evans, pp. 10-23.

13. Memo from Lydia Popova, Executive Director of the Socio-Ecological Union, to William U. Chandler, December 16, 1996; Greenpeace Press Release dated December 9, 1996.

References

Agiplan. 1995. *Business Plan for a Small Power Plant in Cheliabinsk Region*. Agiplan Gruppe, Mülheim an der Ruhr.

AO Energoperspektiva. 1995. *Annotated Business Plan*. AO Energoperspektiva, Samara.

AO Energoperspektiva. 1995. *Feasibility Indicators of the Gas Turbine Mini-CHP for Energy Supply to the Sports Center Neighborhood, A Demonstration Zone in Samara*. AO Energoperspektiva, Samara.

Braverman, Daniel A. 1996. "Investing in Securities: Opportunities and Uncertainties." *Russian Financial Markets Summit Proceedings*. Euromoney, London.

Economic Commission for Europe. 1994, *Manual on Business Planning: How to Construct a Business Plan for Energy Efficiency Projects*. United Nations, Geneva.

Evans, M. 1996. *Russian Business Opportunities in Energy Efficiency and Renewable Energy*. Pacific Northwest National Laboratory, Washington, DC.

Cheliabinsk Energy Savings Fund. 1995. *Energoberezhenie v Cheliabinskoi oblasti. Osnovnye napravleniia raboty*. Cheliabinsk City Administration, Cheliabinsk.

Criocor AO. 1994. *Projects of Criocor AO on Ecologically Clean Electric Power Production without Fuel Burning*. Criocor AO, Moscow.

Gasenergo Joint Stock Company. 1996. *Business Plan: Final Stage of the Construction of Shakhtinskaya Gas Turbine Power Plant*. Gasenergo Joint Stock Company, Piatigorsk and Moscow.

Geoterm. 1995. *Verkhne-Mutnovsky Geothermal Power Plant: Business Plan*. Geoterm, Moscow.

Inset. 1996. *Proekt maloi GES*. Inset, St. Petersburg.

Kostroma City Administration. 1996. *Svedeniia o proekte: osnashchenie priborami ucheta I regulirovaniia tepla istochnikov teplovoi energii, tsentral'nykh teplovykh punktov I potrebitelei tepla g. Kostromy*. Kostroma City Administration, Kostroma.

Lytkarino City Administration. 1995. *Biznes plan proekta kompleksnoi rekonstruktsii kvartala N. 5 g. Lytkarino Moskovskoi oblasti*. Lytkarino City Administration, Lytkarino.

Mikelonis, Victoria. 1996. *Study Guide for Business Plans and Financial Proposals*. Unpublished document. University of Minnesota, Minneapolis, MN.

O'Sullivan, Stephen. 1996. "The Investor's Perspective." *Russian Financial Markets Summit Proceedings*. Euromoney, London.

Quillin, Kim. 1996. "Russian Accounting and Taxation Issues." *Russian Financial Markets Summit Proceedings*. Euromoney, London.

Russian Economic Trends. 1995. 4(2): 102.

Russian Economic Trends. 1995. 4(3): 39, 83.

Russian Economic Trends. 1996. 5(2).

Tanega, Joseph. 1995. *Guide to Bankable Proposals*. (Draft, November 1995). European Commission, Directorate General XVII, Energy, Brussels.

TOO Molinos. 1995. *Biznes Plan: Rasshirenii proizvodstva v Rossii unifitsirovannogo riada vetroelektricheskikh stantsii moshchnost'iu do 10 kVt*. TOO Molinos, Moscow.