



Memorandum

To: 2003 Distributed Energy Market Study Subscribers

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Subject: Main Quantitative Findings

As part of the **Primen Distributed Energy Market Study 2003** (DEMS03), “Converting Distributed Energy Prospects Into Customers,” we fielded a short quantitative survey to more than 800 commercial, industrial, and institutional energy users. This memo presents the main findings from that quantitative survey, results of which are also being woven into our forthcoming report summarizing the findings from the 100 in-depth, qualitative interviews that make up the core of the DEMS03 project.

Sample surveyed

The sample for the DEMS03 survey queried 806 energy users in April and May of 2003. Four hundred completes were among users with an average demand of 300 kW - 10 MW, with the remaining 406 completes among mass-market users with an average demand of between 10 kW and 299 kW. (See Table 1.) The results in this summary were weighted to reflect their true representation in the population of U.S. businesses. Businesses with fewer than five employees and those that had their energy bills included in their rent were excluded from the sample, as were agricultural, construction, and mining businesses.

Table 1. Survey Sample Plan and Completes

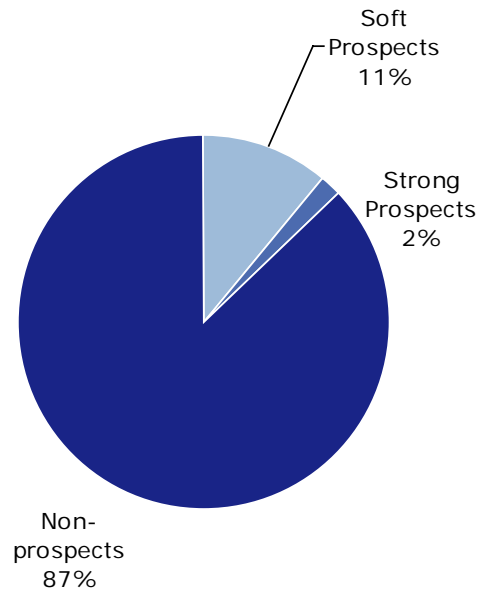
	Targeted completes	Actual completes
Mass market (10 kW to 299 kW)	400	406
Large (300 kW to 10 MW)	400	400
Manufacturing	100	130
Schools, colleges, & universities	100	115
Restaurants	100	100
Other (all other sectors except agriculture, mining, & construction)	500	461
Total	800	806

How receptive to baseload DE are energy users?

Overall, **13%** of the business establishments we surveyed this year ***say their likelihood of acquiring baseload DE in the next two years is greater than 50%***. In keeping with last year’s practice, we classify this group as “receptive” to baseload DE — meaning that they would seriously entertain an offer if approached by a DE supplier.

Within this 13%, however, are two distinct categories of prospects: strong and soft. **Strong prospects**, which totaled 2% of respondents, say they are >50% likely to acquire baseload DE in the next two years and are actively evaluating their options. **Soft prospects**, which totaled 11% of respondents, also say they are >50% likely to acquire baseload DE in the next two years, but they have not begun to actively investigate their options. (See **Figure 1**.)

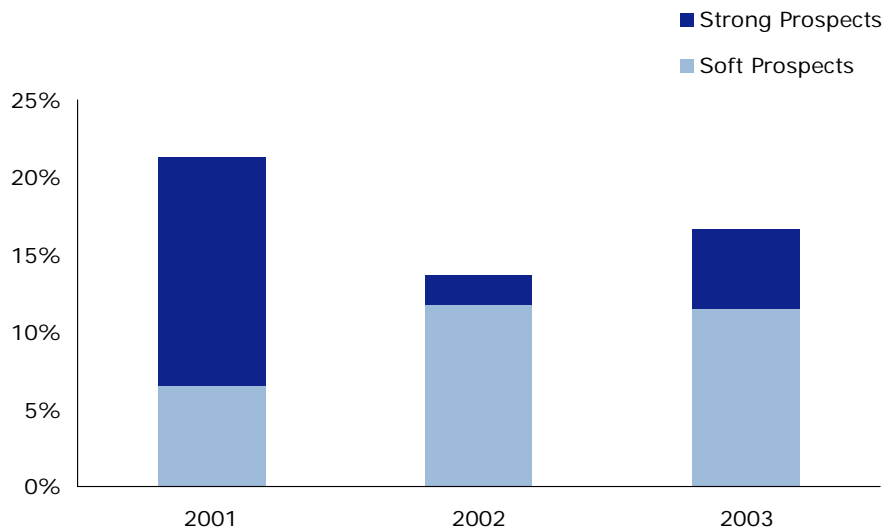
Figure 1. Relative number of prospects for acquiring DE within the next two years



How has receptivity to baseload DE changed in the past year?

Although the prospects percentage is the same as we found in the 2002 DE Market Study, they come from a much broader group of industries and customer sizes than last year's study, which only covered users above the 300 kW level. When we compare this year's data with the 2002 data (looking only at those sectors and customer sizes that were included in both years) we find a marginally significant increase in strong prospects, from 2% to 5% — meaning that ***receptivity to baseload DE has increased slightly in the past year.*** (See Figure 2.)

Figure 2. User receptivity to baseload DE shows signs of rebounding



Who are the most receptive customers?

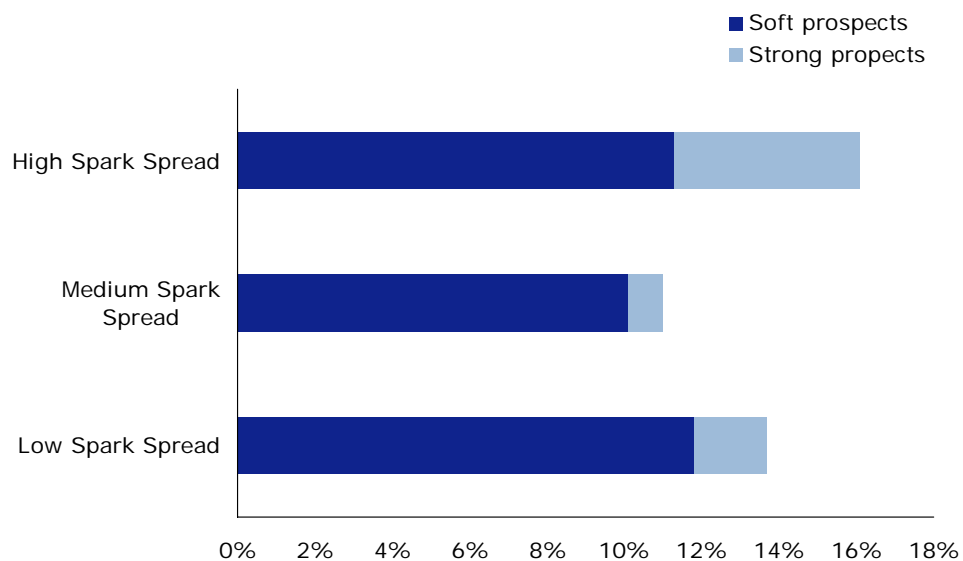
Receptivity by size

The greatest receptivity is found in larger users, with 4.1% of them being strong prospects. Among mass market users in the 10-299 kW size range, only 1.8% are strong prospects.

Receptivity by region

Among all prospects, **the greatest receptivity is found in the high spark spread states**, though the lowest interest is in medium spark spread states, not low spark spread states. (See **Figure 3**.) Among strong prospects, the higher interest in high spark spread states is an indication that energy cost pressure is the primary driver for baseload DE projects.

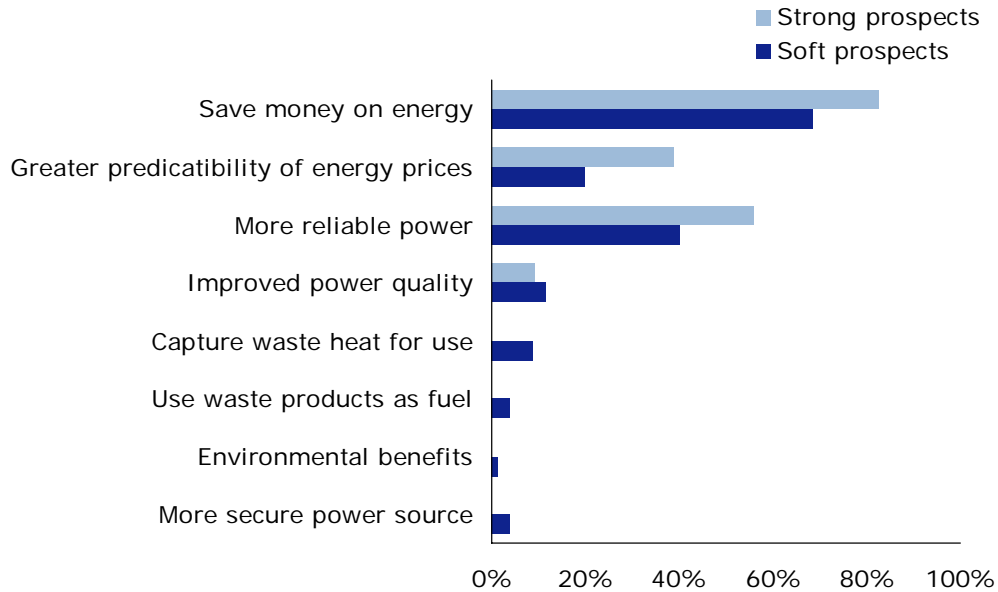
Figure 3. Relative number of prospects by region



The perceived benefit of baseload DE

Respondents identify **three main benefits of DE: save money on energy, more reliable power, and greater predictability of energy prices**. (See **Figure 4**.) Even among soft prospects, who identified other benefits, these three areas dominated as the rationale for pursuing DE projects.

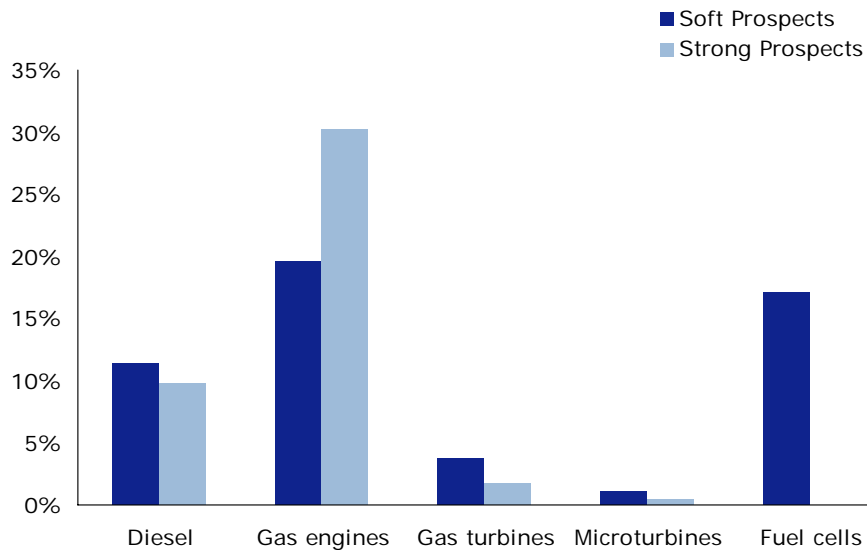
Figure 4. Perceived benefits of baseload DE



DE technology preferences

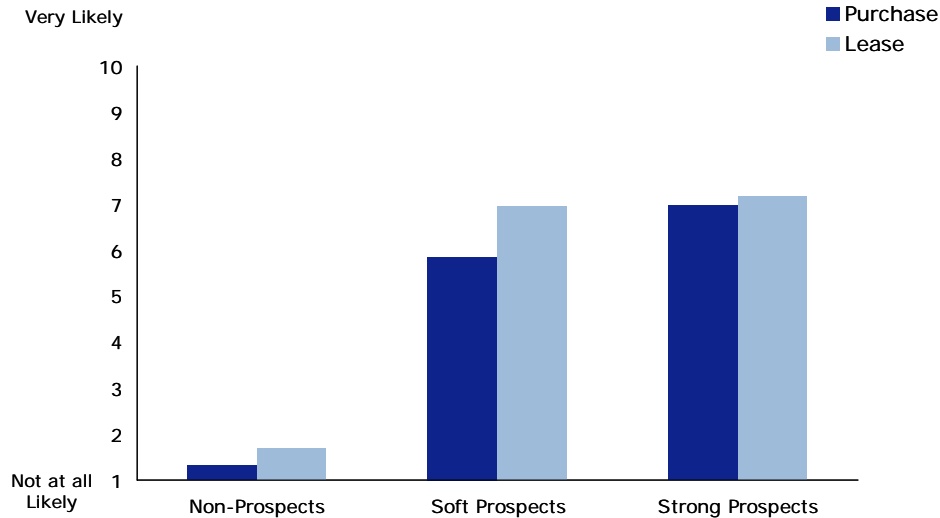
Strong prospects have a high preference for **gas engines** as their **technology of choice**, with diesel engines and gas turbines far behind. (See **Figure 5**.) Only 1% of strong prospects said that microturbines are their preferred technology, and none mentioned fuel cells. Among soft prospects, however, 17% indicated that fuel cells would be their preferred technology, only slightly below the 20% who preferred gas engines.

Figure 5. Technology preferences among prospects



Leasing vs. Purchase Preference

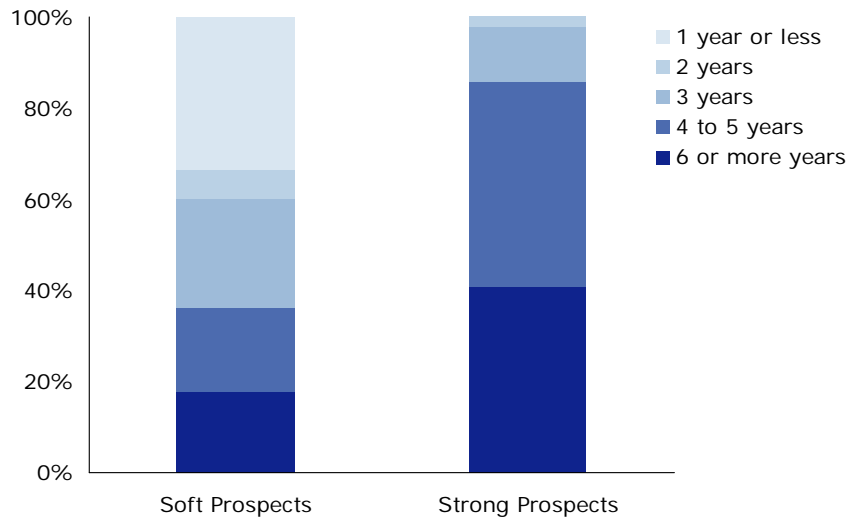
Prospects are roughly evenly split in rating their likelihood to buy or to lease baseload DE equipment, with leasing being slightly more likely. This subtle shift from last year's preference for buying might be an indication that capital budgets have become even tighter at many companies.



Payback Requirements

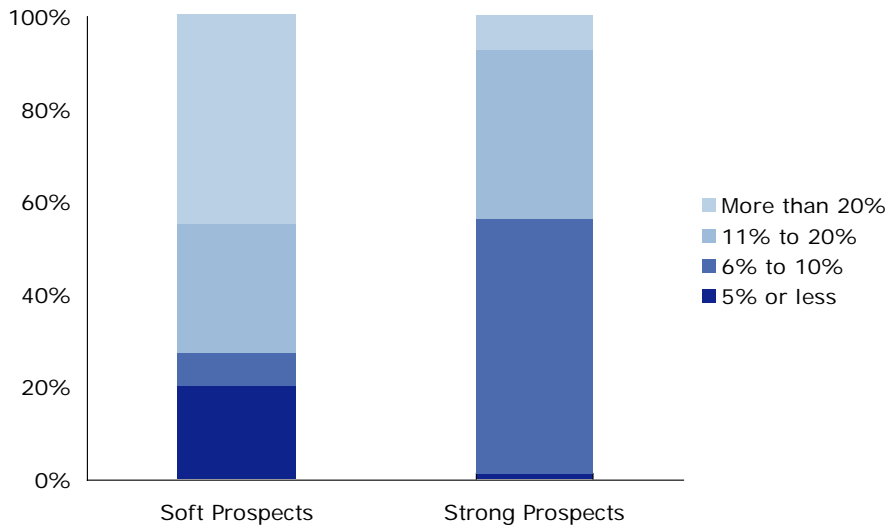
Strong prospects have far more realistic payback requirements for baseload DE than soft prospects. In fact, 86% of strong prospects are willing to accept a payback of four years or more on a DE project. For soft prospects, 37% find a four-year or longer payback acceptable. (See **Figure 7**.)

Figure 7. Minimum acceptable payback for purchase among DE prospects



The finding extends to leasing DE: strong prospects have less stringent savings requirements than soft prospects. For strong prospects, 56% would find a savings of 10% or less acceptable, roughly double the level of soft prospects. (See **Figure 8**.)

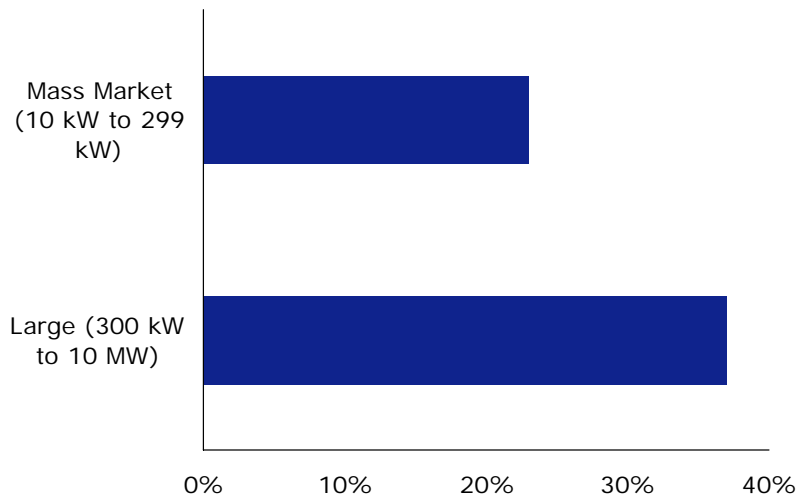
Figure 8. Minimum acceptable savings for DE leasing among prospects



Standby Generation Saturation

The market for standby generation is far larger than baseload applications. Primen’s survey finds that 37% of large business establishments already have standby generation capabilities, while a surprising 23% of mass market businesses also do. (See **Figure 9**.)

Figure 9. Standby generation saturation among prospects and non-prospects

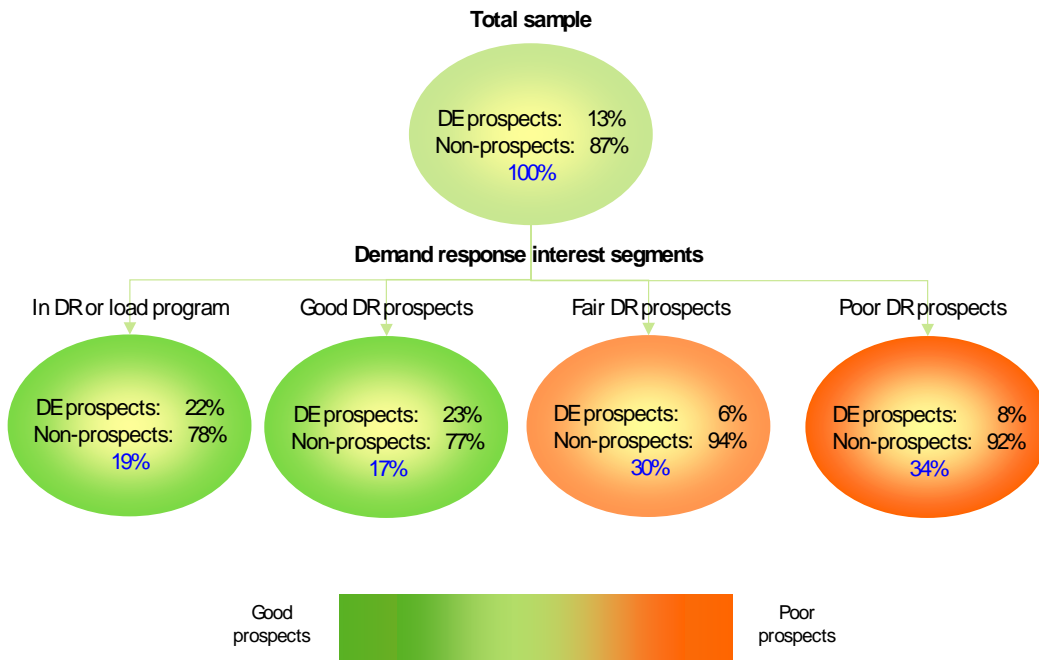


Targeted Marketing Efforts to Identify DE Prospects

Because the overall incidence of DE prospects remains low, the challenge is to identify characteristics among energy users that might point to a higher likelihood to purchase DE systems, so that targeted marketing efforts can be effective. In the below material, Primen looks at various indicators that provide a portrait of the prototypical DE prospect.

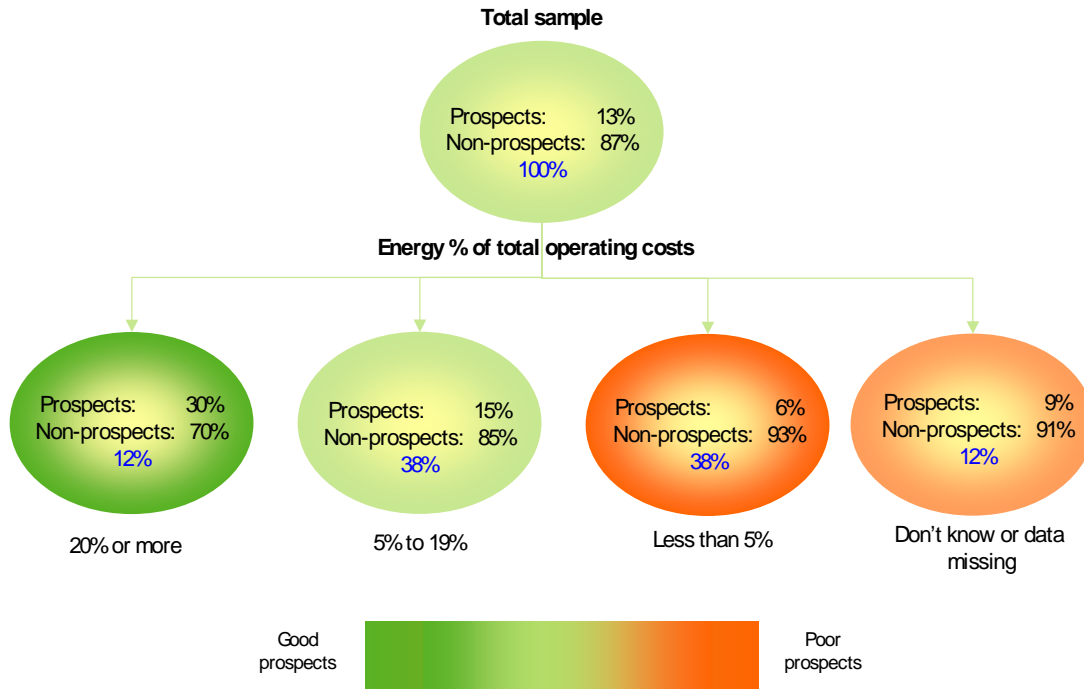
Interest in DE systems is substantially higher among those energy users that are also good prospects for participation in demand response programs. In fact, energy users already participating in demand response programs also represent fertile ground for utilities that are seeking potential DE customers (**Figure 10**).

Figure 10. DE prospects and demand response (DR) program interest



The higher the energy portion of operating costs, the more likely a company is to be a DE prospect. About 45% of the total prospects (strong and soft prospects combined) have energy costs that exceed 5% of operating costs, and 30% of this group have energy costs of 20% or more of operating costs (**Figure 11**). Of the 2% that are strong prospects, almost half have energy expenses of 20% or more of total operating costs. Due to sample size, this percentage is not statistically valid. However, it may be an indicator.

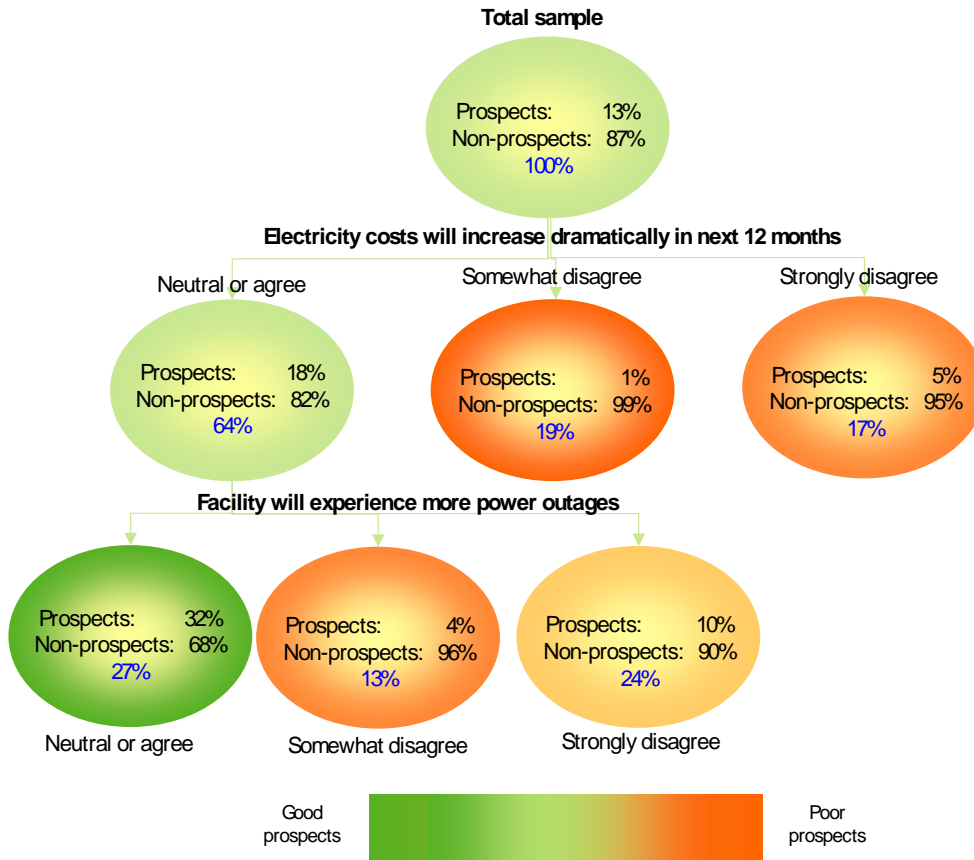
Figure 11. DE prospects by energy portion of total costs



The bubble charts in **Figures 12 and 13** show the characteristics of companies that can be used to target prospective buyers of DE systems. The analytic technique used to create these charts is also valuable for exploring the reasons businesses are prospects for DE. Once the reasons for interest in DE are identified, they can be used as part of the message for marketing these systems. Alternatively, utilities that would prefer to discourage independent generation in certain customer classes can orient their marketing toward that end.

The finding of greatest interest in **Figure 12** is that businesses most likely to be DE prospects must believe both that electricity costs will increase substantially in the next year and that their facility will experience an increase in power outages. If they believe that costs will rise but that their level of outages will remain steady or drop, their interest in distributed energy is lower than average.

Figure 12. DE prospects and their beliefs about energy



Satisfaction with utility services shows a similar pattern (**Figure 13**). Businesses must have poor satisfaction both with their utility’s emergency response performance and with their power quality before they become prime candidates for distributed energy. Moreover, when satisfaction with both of these performance factors is low, interest in distributed energy more than triples from the 13% level to 39%.

Figure 13. DE prospects and utility performance satisfaction

