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Negotiation

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Here Comes the Sun: Interviews with Individual Solar Energy Customers

Note: Details of the cases described herein, including the names of individuals and entities, have been omitted to protect the confidentiality of the data

I. Introduction

Renewable energy is one of the fastest growing areas of the economy. Within the umbrella of renewable energy sources, solar energy has a unique niche in that both large utilities and private individuals have the capabilities to produce it.

This paper studies negotiations between four households and Solar One, a mid-sized solar energy company. A homeowner's decision to invest in solar panels is a complicated and often expensive transaction. The process of negotiating the purchase and installation of a solar system can take over a year to complete. The total cost of the system can easily climb into the tens of thousands of dollars. Moreover, the alternative to not installing a solar system, or the best alternative to a negotiated agreement ("BATNA"), is an attractive one from an economic perspective—the household will simply pay whatever the public utility charges for electricity. An individual who wants to install solar panels on his or her house faces many choices along the way: how powerful a system do I want? How much can afford, and how will I finance it? Where will the panels be installed? How long will the system be functional? What if I sell my house?

Undoubtedly, there are benefits to installing a solar system. An individual is able to produce his or her own electricity, essentially locking in the price of electricity at the cost of the

system. Perhaps more importantly to many solar system owners, solar systems replace fossil fuel consumption and mitigate greenhouse gas emissions that contribute to global warming.

Governments incentivize solar system installation. The City of Columbia offers a solar rebate. *Rebates and Loans, COLUMBIA WATER & LIGHT*, <http://columbiapowerpartners.com/rebates-and-loans/> (last visited October 29, 2017). The federal government allows thirty percent of the cost of the solar system to be applied to an individual's federal income taxes in a non-refundable tax credit. *Investment Credit* 2-3 (2016), <https://www.irs.gov/pub/irs-pdf/f3468.pdf>. While these incentives are attractive, there is also uncertainty in installing a solar system. The City of Columbia's rebate, for instance, depends on the availability of funds in the city coffers, and the federal income tax credit could change depending on the prevailing political climate. Finally, as with any burgeoning technology, the cost of the system is subject to change—as more advanced technology develops, the costs of solar systems decrease while the efficiency and power of those systems increase. All of these considerations are in the minds of individuals entering into a negotiation for a solar system.

II. Interview Goals and Hypotheses

I interviewed four households that recently negotiated with Solar One. The central theme of this research was to examine how a repeat player in a complex transaction, Solar One in this case, structured a negotiation. I hypothesized that Solar One would structure the negotiation in such a way as to maximize power for itself. However, I also believed that I would find examples of integrative bargaining in the negotiation in that both parties have the potential to be better off if the solar system is tailored to the household's needs. I also wanted to know what motivated the households to invest in a solar energy system and how that motivation factored into the negotiation.

I asked questions of the households to determine how they prepared for the negotiations, asked for bids, and decided to enter into negotiations with Solar One. Then I asked questions to discover how the negotiation itself was structured, such as where the negotiation took place, how much the terms changed, and how the negotiation ended. I wanted to find out what persuasive techniques Solar One used, including reliance on framing effects and cognitive biases.

When I talked to these households prior to the formal interview, they typically responded to the effect of, “We didn’t negotiate much,” so I wanted to see if that were true. Finally, I was curious about the personality of the Solar One agent and how that factored into the negotiation.

III. Background Information

Solar One advertises itself by way of an interesting amalgamation of “green” promotional materials and investment and cost saving materials. The company stresses both the average return on investment of a solar system and, for instance, how many trees planted constitute the equivalent of a solar system installed. Solar One conducts energy audits in addition to installing solar systems.

In general, solar energy is a booming sector of the economy. *See generally* Brian Palumbo, Note, *Looking in the Side-View Mirror: Assessing the Current and Future State of the Solar Energy Industry as It Reaches the Mainstream*, 41 COLUM. J. ENVTL. L. 183 (2016). Third party financing, developed primarily within the last ten years, allows private parties to acquire solar systems without having the large amount of capital needed on hand. *Id.* at 193-94. Moreover, third party financing has allowed companies, including Solar One, to advertise monthly payments on a solar system that are less than an individual’s previous utility bill. The Investment Tax Credit (“ITC”) allows private parties to claim a credit up to thirty percent of the total cost of a renewable energy system on their federal income taxes. *Id.* at 191; *Investment Credit, supra*. However, the overall success of the industry is tied to the continuation of the ITC and other public subsidies—

such as the one the City of Columbia offers, *Rebates and Loans, supra*—as well as “net metering,” a policy in which the private solar energy producer is paid for energy sent back into the grid when the solar system produces energy in excess of household consumption. *See id.* at 195 (Issues surrounding net metering are currently being debated and litigated, and are beyond the scope of this paper).

In spite of the state of flux generally in the solar industry, business on the ground in the City of Columbia is growing rapidly. The households I interviewed indicated that there were several companies able to install solar systems and that it took several weeks at times to make an appointment with a Solar One representative and several months to set up a time to have a system installed due market conditions.

IV. Data Collection

A. Household 1

Household 1 has lived in their home for over thirty years. They wanted to buy a solar system in order to make their own energy and be less reliant on the grid. They also wanted to invest in a solar system as a way to limit their carbon footprint.

Household 1 had been seriously considering investing in a solar system for five years. They researched extensively before negotiating with Solar One: they contacted three companies and received bids from two. The third company never responded to a request for a bid. They researched online and decided to get a solar system now because they were confident that the relative costs of systems were low and that the overall technical capabilities of the systems were high. Household 1 decided to go with Solar One because the company offered the cheaper of the two bids and was willing to install a solar system that would cover one hundred percent of the household energy

needs, which was one of their goals in the negotiation. Household 1 did not consult with a lawyer or an outside financier.

Household 1 negotiated with two Solar One representatives at a table in the household's living room. The personalities of the representatives were friendly—one of the household members even gave some transplanted hostas to one of the company agents! It was not a hard sell, as opposed to the approach of the other solar company. Solar One mailed Household 1 a bid within a week of the negotiation.

Household 1 said they did not negotiate over the distributive terms—in other words, there was no back and forth regarding the price. However, they did request a large system—one hundred percent household energy coverage, even in the summer with the air conditioner running. Solar One did not offer any discounts, and they placed a yard sign in front of the house one day without asking. The extended contracting process was completed via a program that allows for the online transfer of documents, and the couple did not alter any terms in the online documents.

Household 1 received the rebate from the City of Columbia and will apply for the ITC in their taxes this upcoming year. They said the tax incentives and rebate contributed to their decision to get solar, but that they probably would have purchased a solar system regardless. Household 1 did not get an energy audit through Solar One because they had one conducted previously by the City of Columbia.

After the negotiation, Household 1 reported that they were extremely satisfied with the transaction (10 out of 10). They reported that Solar One was very responsive to their questions and needs. Last, Household 1 received a gift card from Solar One for referring another customer to the company.

B. Household 2

Household 2 had been thinking seriously about acquiring a solar system for a few months, but had the project in mind for some years before that. Household 2 wanted a solar system because of its positive environmental impact.

Prior to negotiating, Household 2 talked to a friend who had a system installed and called Solar One to have the company explain the process. Solar One's bid was the only one Household 2 received. Household 2 decided to go with Solar One because the process was easy and Solar One was ready to start work. Household 2 did not seek outside advice prior to entering the transaction. During the negotiation, Household 2 sat at their dining room table with one agent of Solar One. The personality of the Solar One representative was outgoing; they trusted her, but could still tell she was a salesperson. Household 2 related that the price of the solar system did not change much during the negotiation. They negotiated a down payment, and Solar One offered a slight discount for putting up a yard sign.

After the negotiation, Solar One was responsive to questions, and was able to reschedule some of the installation work. The contract took about a week to finalize, a process which involved sending documents back and forth via a program that allows for the online transfer of documents. Household 2 never altered any terms in this program.

Household 2 had an energy audit completed by Solar One. Household 2 was satisfied with the transaction (8 out of 10). They wish they had gotten a larger system, but Solar One said they could not. Household 2 received a rebate from the City of Columbia and will apply for the ITC on their next federal income tax return.

C. Household 3

Household 3 has been interested in acquiring a solar system for about nine months. They were inspired after talking to an exhibitor on Earth Day and learning about different financing options for solar systems, which would allow them to finance their solar system at a lower monthly cost than their current utility bill. Household 3's sole reason for wanting a solar system was to replace their fossil fuel consumption with renewable energy. Household 3 had a strong preference for a system installed on their roof; however, they own a large piece of land, so a ground system was a possibility. In preparing for the negotiation, Household 3 did not consult any outside advice but did have a strong grasp on the technical aspects of solar systems.

Household 3 received bids from two different companies, Solar One and Solar Two. Both companies presented bids at the home of Household 3. Household 3 reported that the representative from Solar Two was too much of a salesperson; the negotiation felt like a car sale. Moreover, Solar Two was confused about whether the bid was for a ground or a roof system, and the sales representative was unable to answer technical questions about the solar system. Household 3 said there were technical and logistical flaws in the bid. By contrast, the representative from Solar One used computer-based aids to simulate a future roof system. The agent was able to answer technical questions about system power. Household 3 said the agent was still a salesperson, but the agent was pleasant and eloquent and could immediately calculate costs based on the power of the proposed system. Additionally, the Solar One representative was familiar with the Boone County code, whereas the Solar Two representative apparently was not.

Household 3 arrived at an impasse in the negotiation largely because of their preference for a rooftop system. Based on the advice from the Solar One representative, Household 3 decided that they needed to replace their roof before installing a solar system, the life of which can span

up to fifty years. In spite of the impasse, Household 3 said they were satisfied with the bid and will likely sign on the dotted line after they replace their roof.

D. Household 4

Household 4 runs a sizeable business from their home, so they have an above average demand for energy and require a larger system, ultimately ten times the size of the system installed at Household 2. Entering the negotiation, Household 4's goal was to have their business run on one hundred percent solar power. Household 4 was a sophisticated negotiator in several respects: several years ago, they installed a small solar system at their home themselves. Additionally, they did extensive research to find out about a federal grant for rural small business owners, which could offset part of the cost of the system. They were also fully informed about the federal tax incentives and talked to a bank beforehand in an effort to secure financing required by the federal grant.

Household 4 decided to get a bid from Solar One because a friend recommended the company. Also, Solar One was big enough and connected enough to help secure the financing required by the federal grant. An agent from Solar One worked with Household 4 from the beginning of the negotiation. The Solar One agent agreed to write the federal grant application. Household 4 reported that the personality of the agent was especially important in this negotiation, and the agent got along well with Household 4 and was able to collaborate.

Negotiations between Household 4 and Solar One have taken place over almost half a year and are ongoing. The places of the negotiation were at Household 4's home twice, over the phone multiple times, and once in a meeting downtown in the City of Columbia.

The terms of the negotiation have changed dramatically since the start. Originally, Household 4 wanted only one installation phase; however, the project changed to at least two

phases when Household 4 realized that installation over several years would more fully capture federal tax incentives. As a result, the parties have spent considerable time negotiating the cost of the system back and forth. The federal grant application is due later this year, and the parties still need to agree on a final price term. However, Household 4 reports a high level of satisfaction with Solar One based on the company's ability to collaborate in the process.

V. Discussion

What did I learn from the data? Some of my hypotheses were largely disproven. First of all, I thought Solar One would structure its transactions in a way that would be analogous to, say, a car dealership so that it could maximize power across multiple complex transactions. I figured Solar One would install more or less the same system, but on different roofs, and offer price discounts to frame the price of the system in a way to maximize profits. I hypothesized that Solar One would use its market power in the fast-moving renewable energy economy to capitalize on high demand in and around the City of Columbia. What I learned, however, is that solar system transactions are far more integrative in nature than I initially anticipated. For instance, all of the proposed four solar systems were unique. Household 1 had a one-hundred-percent system installed, yet Household 2 received a smaller one. Further, the negotiations reached an impasse with Household 3 largely based upon the advice of Solar One to install a new roof first, evidencing a problem solving approach to the negotiation.

I was curious to find out how well these households prepared for negotiations. I knew that Solar One would be well prepared. The data show that households did conduct both internal and external research in their preparation; the four households all knew what they wanted and had performed at least minimal outside research. Households 3 and 4 seemed better prepared to negotiation because they had additional technical expertise. Finally, one might predict that the

results would have been better for the households had they all received more bids—two households received two bids and two households received only one bid. The data, however, show that all the households reported high levels of satisfaction with their negotiations with Solar One. Perhaps this demonstrates Solar One’s sophistication as a repeat player in negotiations; Solar One might be attuned to notions of fairness in the community and be better able to give reasonable bids as a result.

Next, I hypothesized that Solar One would present essentially the same sales pitch each time, but Solar One did not. I was very curious about the framing effects Solar One would employ. It seems that they did frame the price in certain favorable ways. For instance, in three out of four cases Solar One portrayed the cost of the solar system relative to the cost of the household’s current energy bill. The cost of the system was always lower; thus, the households always perceived a gain. Solar One did occasionally offer discounts, as was the case with Household 2, essentially lowering the price for the minimal cost to the household of displaying a yard sign. Solar One did not always use this persuasive technique though.

One hypothesis that I made that was confirmed was that it was important to have an agent negotiate with a relatable personality. All households reported that they got along well with Solar One’s agent. Solar One did not gain a reputation for being a particular aggressive negotiator, in contrast to Solar Two. I might speculate that this could change depending on what type of customer is across the table. For instance, all four households were interested in acquiring a solar system to offset their carbon emissions; many were already sold on the idea of green energy and did not value their BATNAs (continuing to use fossil fuel energy) very highly. Had the households instead been focused on the investment that solar panels offer, more aggressive negotiating on the part of both parties might have been utilized. I would hypothesize further that the households would have

achieved better distributive results had they negotiated through an agent. Perhaps this is one way that Solar One has structured these repeat negotiations in a way to give itself power, for a homeowner saying, “We want to negotiate this deal through our lawyer,” would seem unusual.

Additionally, I was curious about how the place of the negotiations affected the negotiation, which was the case in our classroom example that took place in an airport on a time crunch. Almost all of these negotiations, by contrast—setting aside the fact that many of these transactions were completed via a file sharing program—took place in the households’ homes. It is not a stretch to say that the choice of place by Solar One put the households more at ease. The households might have been more willing to spend a significant amount of money in an investment in their homes while sitting at their dining room tables.

VI. Conclusions

How have my interviews affected how I view negotiations in the future?

First, I know I have a tendency to distrust repeat players in negotiations. The car sale example is an apt analogy for repeat players who might seek to structure negotiations in a way to maximize their power. For whatever reason, this was not the case here. With the possible exception of Household 2, all of these negotiations involved a degree of integrative bargaining. To this end, integrative bargaining can serve as a successful business model. Solar One’s customers all reported high levels of satisfaction, and two of the households were involved in referrals. There is an incorrect assumption that hard distributive bargaining maximizes profits; however, the negotiations with Solar One might suggest that integrative bargaining and collaborating with one’s customers yield better results, and perhaps higher profits, in a complex transaction such as this one.

Next, I learned that a business needs to have flexibility in adapting its sales pitches. Although several persuasive techniques appeared to work consistently, such as framing the cost of the solar system as lower than the current monthly utility bill so that the customer always perceives a gain, Solar One did not always use every persuasive technique in the book. All the households I interviewed, however, appeared sophisticated in recognizing sales pitches, so perhaps the Solar One agents knew how to read the counterparts well and refrain from hard sells when they were not necessarily needed.

I also perceived that market conditions can have a profound effect on negotiations. It is not too speculative to suggest that the booming market for solar energy contributed to the relative satisfaction levels of the four households. Negotiations in a different type of market might have been more contentious. Related to the notion of market conditions, it seems, of course, that price and purely distributive terms are always a factor. For example, Solar One bid appropriately in the case of Household 1, which had received a higher bid from a competitor.

Finally, from a business management perspective, the agents a business hires are incredibly important, especially for repeat players in complex negotiations. All four households reported that getting along well with the Solar One agent was a factor in the success of the negotiations. Household 3 even said that they stopped negotiating with Solar Two in part because of an agent who seemed to be less than competent.

Over all, the power balance I hypothesized would exist between a repeat player in a complex negotiation and a private individual did not seem to manifest itself too dramatically. However, I still have a basis to suspect that the relatively high levels of satisfaction the households reported were caused by the households' coming into the negotiation with strong desires to acquire a solar system; the favorable current market conditions for solar systems, including tax subsidies

and rebates; and the combination of the personality of the solar representative and the place of the negotiations at the households' homes.