FLORIDA STATE UNIVERSITY

Political and Economic Institutions Regarding Siting of Energy Facilities: "Hold Out" and "NIMBY" problems, with concurrent developments in undergraduate education

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Description: The "holdout" problem occurs when one economic agent attempts to construct a portfolio of economic assets (often land) from multiple sellers. When a public good has diffuse public benefits but costs concentrated on a few, a "NIMBY" problem (Not In My Back Yard) may exist.

Budget: $79,621

Progress Summary

1) **The "Hold-Out" project (with graduate student Sean Collins).** The experimental design is complete, the programming is complete, IRB approval has been obtained, and we have conducted two complete experimental treatments. This research was presented at one of the Presidential Sessions at the 2009 Meetings of the Southern Economics Association in November in San Antonio. Findings will be submitted to a major economics journal such as the *Journal of Law and Economics*.

The "hold-out" concept is discussed repeatedly in the context of public policies regarding land acquisition and facilities siting, but a clear definition is elusive. To economists, the most likely definition is that a profitable amalgamation of land parcels by one buyer from competing sellers does not obtain because of the failure of the private bargaining process. However, the term seems to be used more for delay instead of failure in bargaining, or even the very different concept of creation of any bilateral bargaining situation of the buyer and the "last" or "holding-out" seller, which may be inconvenient to the buyer but is immaterial in terms of economic efficiency unless efficient trades actually fail.

Our first task was to create a "best case" scenario to observe holdout, which could then serve as a test-bed to examine changes in institutions and/or information conditions to ameliorate hold-out. There was no possibility of eminent domain proceeding. The buyer would have to purchase all parcels in order to reap the synergistic gains from amalgamation. There would be no contingent contracting, so that the buyer would face the so-called "exposure problem" of having to pay for some of the parcels before knowing whether he/she could obtain all of them. The buyer would also be unable to borrow against the eventual value of the amalgamated properties. All of this would unfold in the context of valuations which made the amalgamation profitable to the buyer relative to the separate values placed on the parcels by the sellers. If hold-out existed, it would mean the failure of bargaining to capture mutually beneficial gains from exchange.

The design conditions above were good; however, we then had to choose certain information conditions, the effects of which on the "best case" objective were ambiguous. For example, should the terms of the contracts be common knowledge? Might that stoke the fires of "me last" among the sellers; on the other hand, it might be a vehicle for developing reasonable expectations among the sellers as to what to expect from the negotiations.

We realized that there was an array of these information conditions that, while ambiguous as to their propensity to promote holding-out, were clearly different from what one might recognize as the archetypal approach to the facilities siting problem when approached by governments or by private parties. In the contemporary era, governments often operate in the context of "Government in the Sunshine" and "Freedom of Information" provisions that promote transparency and common knowledge. Conversely, private acquirers of large parcels often resort to the opposite: non-disclosure agreements and dummy corporations to keep as little information as possible from affecting the negotiations. Therefore, even in our "best case" scenario, we began with two information conditions. One we call "government" in which sellers know how many units the buyer has purchased, all contract prices as they occur, and they can continue to communicate with one another throughout the negotiations. In the other, "private," information condition, sellers do not know how many of the parcels the buyer has purchased, they do not know the other contract prices, and there is an enforced non-disclosure condition.

Our results are unambiguous: we observe the hold-out problem in our baseline design. In half of the cases the contracting fails, so we have successfully created a test-bed which we can use to investigate institutional and information conditions that might ameliorate hold-out. Our second experimental treatment has been completed, and again the results are clear: contingent contracting significantly ameliorates the hold-out problem.

2) **The "NIMBY"project (with Co-PIs Doug Norton and Svetlana Pevnitskaya).** The experimental design and programming are complete, IRB approval was obtained, and the first twelve experimental sessions have been conducted. The first presentations of the design were at the 2009 Southern Economics Association meetings and the 2010 American Economics Association meetings. The first public presentation of the results will be at the 2010 World Meetings of the Economic Science Association in Stockholm in July.

To review, the NIMBY problem deals with siting issues in which external effects are "good" for some members of "society" and bad for others. Without the debate over the alternate energy bio-mass facility in Tallahassee, people might have questioned our hypothetical scenario. Even as our research was underway, a similar scenario played out with the cancellation of the bio-mass facility in Gadsden County. Different citizens with credentials as "environmentalists" viewed the plant as either "good" (due to development of an alternative energy infrastructure with an eye to global issues of sustainability and global warning) or "bad" (due to local environmental effects). Examination of public goods provision problems in such a heterogeneous-preferences situation opens a new direction for research in economics.

In initial presentations of the design, our decision mechanism, the generalized voluntary contributions mechanism (GVCM) will be received as an important institution in its own right.

We are now analyzing the data. Preliminary data suggests effects of the nature of the conflict ("censored" versus "uncensored" conflicts) and from the intensity of minority preferences either for or against the projects.

3) **The undergraduate course (The Economics of Sustainable Energy) with Doug Norton** was taught for the first time in the Spring Semester, 2010. We capped the enrollment at about 26 students, and about 19 of those remained in throughout the course.