

FLORIDA STATE UNIVERSITY

Political and Economic Institutions Regarding Siting of Energy Facilities

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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: \$43,663

Universities: FSU

Progress Summary

I. RELATION TO WORK AS FUNDED

A comparison with the original proposal for this project will demonstrate that it is evolving exactly along the lines that we originally proposed. Graduate student Sean Michael Collins is, as advertised, a co-author on the hold-out paper. As noted, he has successfully received his Ph.D. and is now a faculty member at Fordham University. As the funding on this grant has drawn down, we were able to offer partial summer support to graduate student David Johnson.

II. RELATION TO FSU/IESES GOALS

The project operates at the intersection of economics and sustainable energy and the environment, the fundamental nexus of IESES, because the siting of alternative energy facilities is often driven by economic, organizational, and environmental considerations. The Tallahassee experience with the bio-mass plant was a perfect example of the heterogeneous public goods valuation problem.

III. POTENTIAL FOR EXTENDED FUNDING

See the discussion of the NSF grants above. In addition, Isaac has been listed as a Co-PI on the large DOE grant relating to energy improvement districts, and a new evolved grant that shares many of the goals for undergraduate education as our “Economics of Sustainability” course. It is our understanding that IESES is considering funding to allow the Economics of Sustainability to be adapted to the new Master’s program.

2010 Annual Report

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.

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, sometimes 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 goal in this first set of experiments was simple. If "hold-out" is an empirically worrisome economic phenomenon, we ought to be able to find it in subjects who make decisions in our laboratory. Therefore, our first task was to create a "best case" scenario to observe holdout, which could then serve as a test-bed in which to examine changes in institutions and/or information conditions to ameliorate hold-out. Several design issues were obvious in creating this best-case scenario. There was no possibility, not even a threat, of any eminent domain proceeding. The buyer would have to purchase all of the 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 successfully obtain all of them. And, the buyer would be capital constrained, that is, 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 as far as they went, but we then had to choose certain information conditions whose effects on the "best case" objective were ambiguous. For example, should the terms of the contracts be common knowledge? On the one hand, that might stoke the fires of "me last" among the sellers; on the other hand, it might be a vehicle for the development of reasonable expectations among the sellers as to what to expect from the negotiations.

What we realized was 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. On the other hand, private acquirers of large parcels often resort to just the opposite: institutions such as non-disclosure agreements and dummy corporations to keep as little information as possible from seeping into 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 fact, in about half of the cases the contracting fails. This means that 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 unambiguous: contingent contracting significantly ameliorates the hold-out problem.

A version of this research was one of the chapter's in Mr. (now Dr. and Prof.) Collins' dissertation. Sean has just joined the faculty of Fordham University. We are working on restructuring the paper from a dissertation chapter format to that of a journal article, and our intention is to submit it to *The Journal of Law and Economics*.

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 was at the 2010 World Meetings of the Economic Science Association in Stockholm in July, and it will also be presented at the International Social Dilemmas Conference at Rice University in September and the Southern Economic Association Meetings in November.

Just to review for anyone who did not read our original proposal, the NIMBY issues deals with siting issues in which external effects are "good" for some members of "society" and bad for others. If the debate over the alternate energy bio-mass facility in Tallahassee had not happened, people might have thought we were making things up if we had hypothesized a 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" ended up viewing the plant as either a "good" (because of the development of an alternative energy infrastructure with an eye to global issues of sustainability and global warning) or a "bad" (because of the local environmental effects). Examination of public goods provision problems in such a heterogeneous-preferences situation is, by itself, opens a new direction for research in economics.

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

We completed the last experimental session during Finals Week, so we are only now beginning to analyze the data. The aggregate data reveals effects of the nature of the conflict (what we call "censored" versus "uncensored" conflicts), from whether the groups have a majority positive or negative valuation, and also from the intensity of minority preferences either for or against the projects. We have applied to the NSF for funding to continue research on this project.

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. The class was composed of exceptionally enthusiastic students, and we received numerous instances of informal feedback thanking us for designing the course and hoping that it can continue. The formal course evaluations were quite favorable (1s and 2s).

4) IESES funded travel. Doug Norton and I traveled (with the grant paying part of the funds) to Guatemala in April of 2009. In addition to presenting previous but related work to the Association of Private Enterprise Economists, the trip allowed us to visit the campus of and interact with faculty from Universidad Francisco Marroquin. We attended sessions at APEE on related topics that were composed entirely of economists from outside of North America. Since that visit, faculty at Francisco Marroquin has

reiterated the possibilities of working jointly with our experimental social science research group. And, we met with an engineering student in Guatemala who works in the development area and discussed how issues of sustainability are impacting a developing country such as Guatemala. This is the only travel that was included in the budget for this grant.

5) NSF grants. The large DUU grant to NSF was not funded. The feedback was that the funding agents preferred a much more centralized academic structure than we had proposed. While I disagree that this “top down” structure is useful as a way of promoting new directions in research and believe that the decentralized structure of reliance upon young faculty is superior, the model of the funding agencies is what it is and we cannot change that in the short run.

Last semester, Isaac was the lead faculty member in an IESES graduate fellowship pre-proposal to the NSF (IGERT). We did not receive a request to propose, although the reaction to the underlying scholarly proposal was positive. We intend to promote the kind of planning and interaction that the planning process anticipated, and is clearly needed in advance of a successful IGERT, and try again in the future.

The personnel on this IESES grant (Isaac, Norton and Pevnitskaya) submitted a regular-cycle NSF grant to the Economics program in August of 2010. Announcements will be in December.