

**USING PUBLIC POLICY-MAKING TO LOCK-IN AN INDUSTRY STRUCTURE;
SOCIAL CONSTRUCTION OF THE ELECTRIC UTILITY INDUSTRY VIA THE NATIONAL
CIVIC FEDERATION STUDY OF ELECTRICAL UTILITIES, 1905-7**

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Abstract

This paper examines the National Civic Federation's (NCF) study of privately- vs. publicly-owned utility systems so as to determine whether, when, and how systematic biases are embedded during the policy-making process. A review of primary documents shows that while ostensibly seeking objective findings to guide policy-making, NCF and utility leaders used pre-existing social networks, resource control, and appeals to common property-based interests to construct a preferred outcome, consistent with McGuire and Granovetter's (1994) and Granovetter and McGuire's (1998) theory of industry formation. They intentionally biased policy-making processes to create provisions which rewarded their preferred template of firm and industry and undermined alternative forms such as publicly-owned and privately-owned multi-use firms that sold electricity. This study also suggests that multi-constituency commissions may have endemic tendencies toward market-based policy formulations, especially when the subject of contention involves a threat to private property rights.

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Introduction

Deregulation and re-structuring of established industries such as electric utilities is a central issue facing contemporary federal and state governments. This paper examines the precedent-setting policy-making and industry structuration effort in the U.S. electricity industry. Analysts agree that the industry underwent a decisive shift in the 1907-1915 era and that it came to be dominated by state-regulated, investor-owned, central station utilities. Most also agree that the 1905-7 National Civic Federation (NCF) study of the relative merits of public and private ownership strongly influenced state policy-making and the resulting industry structure. Using the primary documents of NCF, central station utility leaders, and participants in the NCF Committee on Public Utility Ownership and Operation (CPOO), we show how and why the NCF CPOO formulated a policy unique among industrial nations. We also examine whether, and if so how, the business community and/or specific segments therein can systematically introduce and embed pro-business policy biases during the policy-making process.

After discussing theories of business influence over policy-making, clarifying our approach, and arriving at an appropriate method of analysis, we will examine the events preceding the NCF study, the study, and the resulting actions of participants and the NCF. We will reflect on how, why, by whom, and with what intentions were the systems of state regulation and the lock-in of central station electric utility industry created, to gain insights into the social processes by which identifiable industry groups used the policy-making process to seek self-interest and actively construct a preferred industry structure. Such insights may help to avoid similar problems and increase the effectiveness of contemporary industry re-structuring efforts.

1. Toward An Appropriate Theory and Method

Most studies of business bias in policy-making have analyzed federal New Deal and post-New Deal legislative policy. However, not all of the now-contemporary national policy was created at the federal level, formulated within legislative committees and debates, or originated with the rise of the welfare state. Policy-making within those other venues are an important subject of inquiry and essential to a full understanding of social and economic policy-making in the U.S.

During the last 15 years, political sociologists have performed a series of well-publicized studies examining the form, extent, and limits of business influence on government policy-creation. Most studies have examined struggles over policy-making within the legislative sphere (Weir, Orloff and Skocpol 1988, Hooks 1991, Quadagno 1987, 1992, Akard 1992) and debates about business influence have focused on bureaucratic actors, self-appointed (or analyst asserted) representatives of various interests, and/or functionalist deductions from policy proposals and outcomes. Other analysts studying policy formation and business influence have mainly focused on business-led social movements,¹ think-tanks,² and lobbies,³ and/or federal advisory commissions;⁴ groups expressly seeking to *formulate* policies benefiting business.

Factors argued to indicate business influence include policy-makers' dependence upon the resources of a class segment (Hooks 1991: 692), allegiance to an ideology stressing the logic of accumulation (Prechel 1991: 649) and support for maintaining and/or expanding private property rights (Campbell and Lindberg

¹ These would include the National Association of Manufacturers and the Committee on the Present Danger--Burch 1973, Boies 1995.

² Examples would include; The Conference Board, the American Enterprise Institute, and the Business Round Table--Domhoff 1979, Useem 1985, Peschek 1987.

³ cf.- Whitt 1982, Prechel 1990, Akard 1992

⁴ cf.- Priest, Syles, and Scudder 1984, Useem 1985.

1990, McGuire 1995). Autonomy of policy-creators from business domination might be indicated by the pursuit of self-interest by policy makers and bureaucratic managers (Skocpol and Amenta 1986), a long-standing institutional structure (Prechel 1991: 693, Quadagno 1992: 631), policy-makers' control over key resources (Hooks 1991: 692), and/or a distinct bureaucratic culture (Skocpol and Amenta 1986: 146).

Some policy formulating groups purport to work with an objective intent. For example, multi-constituency commissions have representatives from many interests, and are assumed to seek objectivity and to create consensus-based policy proposals; conditions which bestow a greater "social legitimacy" upon their efforts (Sheriff 1983). Yet analysts examining their use in the U.S. (Popper 1970, Komarovsky 1975, Domhoff 1979, Peschek 1987, Weinstein 1968, Sklar 1979) and other western nations (Birnbaum 1982, Popper 1970, Lazerfeld and Jaeckel 1975, Bulmer 1983b, Sheriff 1983), have identified the potential and/or actual influence of business leaders upon these activities. Unfortunately, these studies have failed to specify how, when, and why business groups influenced such commissions or to show that preferential policy outcomes emerging from commission efforts were due to the willful intentions or specific actions of identifiable groups of capitalists seeking to embed biased policy (Skocpol and Amenta 1986, Peschek 1987: 13-18).

Other studies have shown that businessmen can use social networks to deliberately shape event and organizational development toward desired economic outcomes (Granovetter 1985, David 1986, McGuire 1989, 1995 and McGuire, Granovetter, and Schwartz 1993). Such studies show that the form, boundaries, and dynamics of an entire industry can be a direct outgrowth of the mobilization of resources through existing and newly formed elite social networks, and that under certain conditions they can intentionally act so as to benefit their vested interests rather than simply pursuing abstract systemic imperatives such as technical or economic efficiency (Granovetter and McGuire 1998). Jenkins and Brents (1989) have noted that while social networks are important influences on policy formulation, rarely have analysts examined their actions or influences.

Finally, there have been studies (cf.- Prechel 1991, Campbell 1989) which demonstrate the ability of specific industries to secure legislation that benefits their collective interests. Fligstein (1990) has shown that leading firms and entire industries restructure themselves in response to the opportunities available due to changes in public policy.

Knowing that the business community can influence policy, that organized networks of businessmen can shape event development toward desired outcomes, and that entire industries react to policy-making in similar manners, begs a previously unconsidered question; Can an identifiable, socially-networked, industry segment mobilize resources to secure wide-spread support for general principles, while intentionally shaping policy-making to systematically advantage their interests and disadvantage other industry segments and/or potential organizational forms? Stated directly; Can they use the policy-making process to lock-in their preferred form of industry structure?

Identifying how pro-business biases are introduced, by whom, why, and with what effect is a difficult undertaking. Unfortunately, most analysts have assumed that the presence of business representatives indicated a collective pursuit of common interests, and/or have deduced its presence based on known outcomes. Proving bias requires a complex and inter-dependent research strategy. First, business bias must be empirically demonstrated within historical context (Jenkins and Brents 1989: 892, Prechel 1990, Hooks 1991). Therefore, it is crucial to frame a study so as to examine potential indicators of both business (Esping-Anderson, Friedland, and Wright 1976, Gilbert and Howe 1991, McGuire 1995) and political domination (Skocpol and Amenta 1986, Weir, et al, 1988).

Second, bias must be identified within the content of the policy proposal--the vehicle carrying those desires to outcomes. The best method for such a task is a content analysis--an approach used also by Jenkins and Brents (1989) and Burstein (1985--Burstein 1991:337). Impediments to detailing this causal link often emerge from competing and complex interactions among existing (and shifting) webs of

existing policy guidelines--a factor not germane to our study since this is the initial case of state policy-making in this industry. The second problem for content analyses is the inability to demonstrate intentions, vested interests, and/or the "back stage" machinations of actors. Our unusual access to primary sources detailing the public and private ideas and activities of the central-station network, NCF executives, and the CPOO members, allows us to avoid this difficulty.

A third (although rarely used) method of identifying bias involves examination of precluded alternative policy options. Most studies have only paid attention to constriction of alternatives in an ad hoc manner. One can identify constricted alternatives by comparing the proposed policies and organizational relations to those established in other similar locales, and by examining the efforts of specific actors seeking to create constrictions (Burstein 1991:336-8, Jenkins and Brents 1989). We will use both approaches to identify and explain policy formulations and omissions.

In summary, we need an analytic framework which; can identify biases and/or coordinated activities if they exist, but which does not assume their existence; does not assume unilateral or continuing influence by or upon the efforts of all actors; can perform a content analysis of the actions, proposals, and the goals of various groups and constituencies; and can systematically identify the creation and constriction of alternative policy options. A path dependent historical methodology examines each "step" in an event sequence to evaluate how actors' choices continuously re-weight the options available to themselves and other actors in subsequent periods. This approach acknowledges that "during critical moments, individual (or networked) agents can briefly hold substantial power to direct the flow of subsequent events along one path rather than another" (David 1986: 5, 9, 12).

It is the use of this method, in combination with our unusual access to primary public and private documents of participants and organizations that allows us to analyze the full context and of chronology of events, including the motives, alliances, and options available to various actors at each historical juncture. By explaining what did and did not happen at each step and its effects, we gain unique insights into the micro-politics, internal dynamics, social network activities and mobilizing efforts. In addition to explaining why the NCF CPOO *Report* came to its conclusions and how it encouraged a unique system of utility regulation, this approach allows us to identify the influence of social networks, and their intentional use of policy-making and state apparatus to structure economic relationships such as industry in manners reflective of their particular interests.

2. The Polymorphic Diversity of the Electricity Industry: 1898-1905

Virtually all scholarly studies of the electric utility industry before 1905 indicate that publicly-owned (or Not-For-Profit--NFP) firms offered lower rates than private ones with equal or better service (Bemis 1899, Hausman and Neufeld 1987, Emmons 1989: 135) and therein posed a challenge to Investor-owned Utilities (IOUs). From 1890 to 1900 NFPs doubled as a percent of all generating facilities and of all public service electricity firms. After a 53% increase in facilities and a doubling of sales from 1902 to 1907, NFPs were 27% of such facilities but constituted 8% of all such sales (USDCL 1915:18). Popular anger over IOUs' poor service, disregard for public safety, "watered" stocks, and high rates, sparked drives to create NFPs (Anderson 1981:50). Beginning in 1895 and escalating after 1903, New York, Chicago, Milwaukee, Atlanta, Detroit, Hartford, Toledo, and Cleveland, and hundreds of smaller towns, considered and over 230 created NFP systems, and voters frequently elected candidates advocating city-owned utilities. The League of American Municipalities, the National Municipal League, and the American Federation of Labor each passed resolutions calling for city-owned utilities (Bemis 1899: 676, Haskins, et al., 1903).

Investor-owned utilities responded by attacking NFP advocates and bribing city officials (Bemis 1899: 665-8, Nelson 1964: 73-82, Scoville AEIC 1900). Others engaged in predatory pricing, convinced General Electric not to sell equipment to cities, or got bankers including J.P. Morgan and Marshall Field to sponsor capital boycotts against proposed NFP electric firms (NELA 1898: 104, Rudolph and Ridley 1986: 23-37, Tebbel 1947: 102, Doherty 1923:II:173.). In addition to the NFP's economic challenge and

threat to private property rights, the IOUs opposed them because their organizational schema treated electric prices and availability as public resource and vehicle to promote social goals rather than as simple commodity sales.⁵

Chicago Edison President Samuel Insull was President of both electric industry trade associations in 1898, and was the informal leader of a group of urban electric utility executives (which we will call the Insull Circle) which had long-standing personal relationships dating from their days together at Thomas Edison's Goerck Street factory. They promoted dedicated,⁶ privately-owned, central station service and advocated a "growth dynamic" strategy for firm development. This strategy combined load building, balancing, and diversification, with territorial expansion and rate reductions. They sought economy of scale opportunities and installation of new more efficient technologies, and created differential pricing schemes that justified new investments in technology. This strategy required (and therefore advantaged) well-financed firms, especially those led by technical experts familiar with emerging technologies and their application.⁷ This Insull Circle group controlled the Association of Edison Illuminating Companies (AEIC) from 1892 through 1898, and less directly dominated the AEIC and National Electric Light Association (NELA) from 1898 to 1910 (McGuire and Granovetter 1994, Granovetter and McGuire 1998, Chung 1997).⁸

At the 1898 NELA convention Insull advocated state regulation of utilities to thwart NFP drives, as he had previously before the AEIC. He promoted "strong regulation" including long-term franchises, natural monopoly, compensation for revoked franchises, and guaranteed rates of return for IOUs (Insull 1915: 33-47). Despite the formation of an NELA committee to promote this effort, Insull's arguments were by no means universally endorsed by utility executives. By 1905 there was only one "weak" (advisory) regulation commission--Massachusetts--which had existed since 1890 (Lyon and Albrahamson 1939: 635).

While the IOU-NFP struggle was a central factor in policy-making, examining the full context of the ownership forms and organizational strategies of other electricity producers was much more complex than other analysts have understood. Another challenge to the central stations and the growth dynamic strategy came from firms selling electricity as secondary businesses from their surplus capacity or in periods of slack demand; privately-owned isolated and multi-use electric firms. One type of multi-use firm which sold spare current were railroads. Between 1902 and 1907 they increased in number from 118 to 177 firms. Their gross income almost tripled (to \$17.3 million), and they doubled the number of motors and quadrupled the number of meters (customers) they served (USDCL 1915:18). Including their own loads, railroads produced over 47.4% of all electric current in the U.S. in 1902 and 44.9% in 1907 (USDCL 1910:14).

⁵ NFPs became the norm in Scandinavia, Germany, Holland, and parts of Britain and Canada. As a public resource electricity sales were structured toward egalitarian norms and redistributive pricing actually impeded central station service to industry and created lower rates for residents. Nye 1990:140, Nelles and Armstrong 1986:101-4, Ridley and Rudolph 1986:35.

⁶ Insull, Byllesby, and Dow campaigned against involvement in traction, gas, or other "distractions" before the AEIC, since it created competition for capital and/or created contradictory demands which could impede electrical development. McDonald 1957:105.

⁷ Insull had formalized the entire schema by 1895-6, including a differential pricing scheme that assigned a demand or access charge, and then a use charge with decreasing per unit costs. During the next 5 years he tripled the number of customers and Kw/Hr. generated, and doubled his total load. He drastically increased industry from 25% in 1895 to 50% of total load by 1899, and had a dedicated workforce seeking such loads. Load increases justified new technology and that technology rendered benefits, such as a 80% decrease in coal per Kw/Hr. from 1896 to 1903 which made rate reductions possible for all customer classes and undercut other competitors. Rate fell from \$0.20 Kw/Hr. in 1892 to \$0.10 by 1897, and \$0.025 by 1909. McDonald 1962:69, Insull 1915:449-465, Hughes 1983:222.

⁸ The AEIC was a small, elite, self-selected group of IOUs dependent on Edison (then GE) equipment. The NELA was a mass organization that included all electric producers, jobbers, contractors, manufacturers, and leaders of electric unions.

Isolated systems served individual factories and apartment buildings often as auxiliary devices attached to central heating systems. When such systems sold current to nearby consumers, they were referred to as neighborhood systems. Some of these surplus capacity/slack demand firms actively *discouraged increased usage*.⁹ Isolated and neighborhood systems constituted 50% in 1889, 52% in 1899, 58% in 1902, and 58.5% in 1907, of all the electricity distributed in the U.S. (Duboff 1979:39, 218,219). As Doherty noted, “the isolated plant (is) a serious competitor...(because) many large customers could supply themselves current at a less cost than (IOUs), “ and could partially amortize their investment by selling surplus current. These factors made them a “terror...(that IOUs need to) greatly curtail” (1923:I:73, 127, II:142).

Steam and electric co-generation firms also proliferated between 1895 and 1905¹⁰ by combining the “surplus sale” strategy, with an emphasis on resource conservation.¹¹ Similar priorities guided U.S. federal development of dams for irrigation and generation. After the 1902 Irrigation Act established a “municipal preference” clause which gave NFPs near any irrigation dam the right of first refusal on any electricity generated at such sites (Schwartz 1973:III;1828).

Another alternative to the growth dynamic schema was “cream skimming;” seeking only loads that would maximize load level and balance and therein be most profitable, even if this meant refusing requests for service. Henry Doherty, an advocate of this approach, literally wrestled a member of the Insull Circle for control of a chalkboard and for the right to present his ideas before the 1902 NELA conference (Doherty 1923: II: 125, III: 74-78, 136-7).

Thus in addition to, and potentially in combination with, the economic challenge of NFPs, each of these proto-industries and alternative developmental approaches were viable, and thriving between 1900 and 1905 in the U.S. By overlooking the challenge which these proto-industry forms and their alternative organizational strategies posed to the dedicated central-station and growth dynamic approach of the Insull Circle, analysts have obfuscated their impacts the form and content of state regulation of electricity and of subsequent industry development.

3.- The Origin and Early History of the NCF: 1898-1905

McDonald (1958, 1962;113-4) and Hughes (1983: 207) argue that Insull was the prime mover behind the NCF study. Green (1956: 323) and Commons (1963: 111) claim it was spurred by United Gas Improvement—a holding company that owned Philadelphia Electric Company. Whether actors with vested interests initiated NCF actions is also an important question for us although confining our analysis to the IOU leaders is an unnecessary limitation. After all, if “demonstrat(ing) that significant sectors or groups of capitalists extraneous to the state play an important role in policy-making” (Weir, et al., 1988: 14) is essential to proving business domination in general, it is crucial to show the exact mechanisms, points, and forms of influence they (and their supporters) exerted if one is to claim that a specific segment of an industry dominated the policy-making process.

⁹ In South Carolina some factory/neighborhood systems installed load limiters. When a customer’s demand exceeded their contracted allotment of power, their lights flicked until enough lamps or motors were extinguished to bring the load down to the contracted limit. Riley 1958;83.

¹⁰ Data on such systems is sketchy. Several companies sold such equipment, and about 35 plants (from Wisconsin to Ohio) used Yaryan equipment. Yet 17 non-Yaryan plants operated in Ohio alone, so the full breadth of this approach is an important mystery. This became the dominant type of system for electric production throughout Scandinavia, Denmark, northern Germany, and Eastern Europe. McGuire and Granovetter 1998, Nye 1990; 390.

¹¹ U.S. co-generation from isolated plants, delivered 75% of the energy (electric and heat) produced vs. 8-11% (electricity only) by central generation. Adams 1900;54-7.

We examined the monthly *National Civic Federation Review* which identifies hundreds of men who sat on committees, or attended dinners and local meetings in various cities including Chicago between 1903 and 1905. However, there is no mention of Insull, or any other major AEIC or NELA leader then affiliated with an IOU firm, nor of UGI officials attending any of these meetings. Nor does a review of the voluminous correspondence among the NCF leaders show any communication with such IOU executives at this time. Thus direct evidence for self-interested IOU leaders spurring the NCF to initiate the study is weak.

However, we did find some interesting and subsequently important developments. The NCF had been formed in 1900 to develop "a systematic businessman's solution to ...government intervention into business" (Jensen 1956:iii). Its members included, government officials, and corporate, academic, press, and anti-socialist labor union leaders (Jensen 1956: 3, 98, Weinstein 1968: 7). One of three projects initially identified to be undertaken by NCF Secretary Ralph Easley was a conference on municipal ownership. Insull helped to organize that effort. He invited leaders from the electric and gas industries, wrote letters of endorsement and fund raising for the conference, and recruited speakers from both sides of the issue (NCF Papers, New Box #1, 7/25/00 10/04/00, New Box 2 1/12/01, New Box 1 10/18/00, Box 114 Misc. Folder).¹² The February conference was still being promoted in mid-January 1901, but it never occurred, apparently due to other NCF priorities. Seemingly angry that Easley abandoned the conference but kept the moneys raised, Insull withdrew from NCF participation.¹³

This failure to assemble a multi-constituency group to analyze and suggest policy about publicly-owned firms was not unique. From 1900 to 1905 the NELA tried unsuccessfully to co-sponsor such a study with the League of American Municipalities (NELA 1900: 412, NELA 1905: 8).¹⁴ Also, in 1903 the New York Reform Club held a multi-constituency conference on ownership of public utilities organized by R.R. Bowker (former New York Edison V.P. and AEIC V.P) and Alex Dow (President of Detroit Edison, a long-time Insull supporter in the AEIC). That conference was supposed to lead to a multi-constituency study but instead descended into an airing of claims and counter-claims. However, it did encourage IOU executives to re-frame their rhetoric from claimed advantages of IOUs to issues of public control over utility operations.

Meanwhile the NCF was establishing a reputation for consensus-building among competing parties and for successfully translating analysis into public policy. Yet many businessmen quit the NCF because they objected to the participation of trade unions in the organization. To avoid further controversy about unions and anti-trust legislation and retain corporate support, the NCF turned to issues upon which business and organized labor could agree such as corporate welfare (Bretners 1992: 76-8) and the public utility issue.

4. Planning, Convening, and Selecting Participants for the NCF Study

If a multi-constituency commission is established, at what stages does one or another interest, such as business, may come to dominate? Lazerfeld and Jaeckel (1975: 120, 45), Bulmer (1983b), and Sheriff (1983) identify the formulation of the problem, hiring of staff, and design of the inquiry as potential sites for introducing bias. In 1905 NCF President August Belmont and Executive Committee asked Ralph

¹² While we were working with the NCF papers, archivists had begun to recatalogue the collection but had finished only 8 such boxes. We refer to materials recatalogued as "New Box" and those which were still in their original containers as "Box." Further, all NCF references which have a single letter file designation after the word Box and the designation of a day, month, and year, or "no date" are interpersonnal correspondence. Other materials from the NCF collection will be identified as such.

¹³ Insull never explained his cessation of interaction with Easley. His anger is evident in his tone in a letter to Easley shortly after the conference failed to occur. NCF New Box 2, 2/11/01 Insull to Easley.

¹⁴ IOU executive Henry Doherty had appeared before the League in 1899 and offered to pay half the cost of such a study. In 1903 he got the National Gas Association to join the NELA in offering to fund the entire cost. Doherty 1923:I;80, 125, 223, 369.

Easley to organize the study. He directed him to meet with J. Cassat (a UGI official and Board member of the Philadelphia Electric), R.R. Bowker, several holding company executives, and President Theodore Roosevelt whom he described as "thoroughly committed to the plan" (NCF Papers Box 112, folders c 6/29/05, no date, folder e no date, and Box 114, miscellaneous folder). ¹⁵

While publicly describing the study as seeking to determine the "exact and complete facts" and "the... whole truth," Easley privately called it "preventive of socialism" (NCF Review 1905 2(4):10, Jensen 1956: 98). The biases of Easley and the NCF were also reflected in their selection of material to guide their study. They borrowed Bowker's notes intended to structure the studies following the NCF 1901 and Reform Club 1903 conferences, and some unpublished data gathered after the latter. They obtained New York Edison's accounting methodology to use as a model for both IOU and NFP firms without regard for their different philosophies and *modus operandi*.¹⁶ This method separated electrical operations and personnel from the rest of a multi-use utility systems,¹⁷ thus removing some benefits accruing to multi-use utilities--types of firms more common to NFPs (Schapp 1986: 47) and neighborhood systems.¹⁸ And they invited regulation advocates to help plan the subject, focus, and agenda of the study (NCF box 113 folder r 10/09/05).

Easley selectively recruited participants for the Investigative Committee on Public Ownership and Operation (hereafter CPOO) from IOUs, banks, railroads, labor unions, NFPs, manufacturers, and the professions. They invited Edward Bemis--an NFP executive who supported only public ownership of water and sewer utilities--who convinced Easley to not invite one of the two nationally-recognized NFP movement leaders considered for CPOO membership. Two of the three union leaders chosen were known to be biased against NFPs when selected (Green 1956: 129).¹⁹ Supposedly "impartial" public representatives included R.R. Bowker--a publisher but also a former New York Edison VP and AEIC V.P. under Insull²⁰--and Walter Fisher (despite letters from public officials in his city detailing his anti-NFP biases--Commons 1907: 265). Economist John R. Commons was hired as Secretary of and research advisor to the CPOO inquiry. Once an advocate of public ownership, Commons had co-authored with R.R. Bowker a privately-circulated pamphlet for GE and IOUs that denigrated NFPs.²¹

Evidence of Easley "stacking" the membership is also evident in the omission of certain groups. No urban NFP lighting officials, elected officials from cities considering public ownership, farmers, or people

¹⁵ Another catalyst to NCF involvement might have been the failed efforts of Ohio railroad and electric companies, led by Senator Mark Hanna--Belmont's immediate predecessor as NCF President and a railroad owner--to secure passage of a bill creating state regulation during 1904. Toledo Edison Scrapbook #7. Pg. 159, 165, 215, 222, 236, 238.

¹⁶ For example, IOUs charged customers rates that allowed them to set aside funds for construction, while NFPs borrowed at the time of construction arguing that those receiving the benefits of a new facility should pay for it.

¹⁷ This approach was pioneered and promoted by T.C. Martin--a former Edison employee who appeared to be objective since he analyzed the industry for the U.S. Census. It was essentially identical to that adopted by the NELA in 1901. NELA 1901:52-112.

¹⁸ For example, if a firm needed W number of machine tenders and X pounds of coal to produce both steam and electricity, the fuel and labor costs needed to generate Y amount of electricity would be recorded as a cost to the electric company to produce Z units of current. This approach ignores the revenues earned from that steam which was a "free" by-product of the generation. It also would record the "diseconomies" of operating that equipment in off peak periods when the secondary product might be in greatest demand. By limiting the analysis, benefits of integrated production such as a more complete utilization of fixed and variable capital, were not only lost, but actually appeared to be a liability to the firm.

¹⁹ Bemis had worked with CPOO Secretary John Commons at the Bureau of Economic Research in 1902-3. Commons 1963:65. The man he sought to remove--Frank Parsons--was a former colleague of his at Kansas State in 1898. Bemis 1899.

²⁰ Bowker was one of only five honorary members of the AEIC. Lord Kelvin, Thomas Edison, former EGE President Edward Johnson, and Wilson Howell were the others.

²¹ Cf.- "Municipalization of Electric Light and Power," GE files, Schenectady Museum, Hall of Electrical History. Box 40-19. cf.- Charles T. Hughes to Mr. Lovely 8/9/1901 and Hughes to James S. Anthony 8/6/1901.

from the western U.S.--people most familiar with and/or reliant upon NFP systems--were named as CPOO members despite direct appeals for their inclusion. These omissions seemed deliberate.²² The NCF had run a "successful" open-invitation conference on anti-trust policy in 1899. However, dissident participants led by several western politicians and farm groups held a conference the next year that railed against industrial and financial trusts and called for public ownership of utilities (Sklar 1988:208).²³

In a now classic statement, E.E. Schattschneider argued that the definition of alternatives is the supreme instrument of power (1960; 68 in Burstein 1991; 336). Easley next created an IOU-dominated *ad hoc* sub-committee to plan the CPOO meeting. They moved to limit the CPOO study to electricity, gas, water, and railroads and as Bowker suggested to ignore fifteen other types of utilities. They paid no attention to George Westinghouse's proposal for federal regulation of electric equipment and practices by the U.S. Bureau of Standards with financial underwriting by GE and Westinghouse (Leupp 1919;216-229). They also ignored the U.S. Bureau of Corporations' proposal for federal licenses and reviews of all the records, books, and accounts of all corporations with greater than \$10 million in sales and engaged in inter-state commerce (Sklar 1988;198-9) or to a New Jersey law (in place in 1906) for a Bank Oversight Committee to regulate the securities and review the books of IOUs but leaving technical issues to IOUs and local governments (McCarter 1933;36). And they ignored John Rush's proposal to survey officials and residents of 500 cities with NFPs to determine the effectiveness of those systems (NCF Box 113, folder r)

Following the advice from Hayes Robbins, they agreed to limit the CPOO to a comparison of the U.S. and Great Britain.²⁴ Further, while the NCF had publicly announced a study of public-and privately-owned utilities including separate analyses of publicly-owned and -operated, privately-owned and -operated, and publicly-owned and privately-operated firms (NCF Review 1905 2(5):3, 2(6): 1), the later "leased" NFP system never received a minute of consideration.²⁵

At the initial CPOO General Committee meeting,²⁶ the Chair, supported by the members of the *ad hoc* sub-committee beat back several attempts to expand the scope to include the other European nations and Canada, and to include other types of utilities.²⁷ The only change accepted was introduced by Boston Edison V.P (and Insull associate) Charles Edgar mandating consideration of franchises and therein reframing the study to include evaluation of state regulation. NCF leaders did this because, as they privately admitted later, they recognized that "private property, properly regulated... [was the] preferable [outcome]" (NCF Papers Box 113 folder f 8/03/07).

²² Parsons suggested their inclusion before the first CPOO meetings, as did John Rush. NCF Papers Box 113 p 5/18/05, and Box 113, r no date (Rush to Easley), (NCF box 112, folder b 8/11/05, 10/13/05.

²³ The earlier events clearly effected another NCF activity being promoted and undertaken in this period, a 1907 Conference on Anti-trust issues in which limited invitations were issued and no known opponents were invited. Sklar 1988;210.

²⁴ Robbins was NCF Secretary for New England and a supporter of regulation who had published an analysis of US and British utilities in the American Journal of Sociology in 1905.

²⁵ Such an analysis was possible. Alex Dow had discussed the merits of such systems before the NELA. NELA 1898;112-4

²⁶ The General Committee of the CPOO included almost 130 men, including 15 IOU electric, railroad, and telephone executives, plus GE officials, the Chairs of the Massachusetts Railway and Electric Commissions, and the Secretary of the latter Commission. Interestingly, two members of Insull's Circle, an executive from an IOU led by another member, holding company officials from two more IOUs led by Circle members were present, and a partner of H.M. Byllesby; a man with whom Insull was in business as a silent partner, were also members. NCF Review 11/01/05; 13-14. The Insull Circle's influence as the near unanimous voice of IOUs is a remarkable example of positioning to influence other constituencies and promote their schema.

²⁷ Bemis and Commons had previously compared British NFP and U.S. IOU electric and traction systems and little advantage was noted. Studies by NFP supporter Frank Parsons comparing the U.S. private to a dozen European state-owned telephone systems were favorable to NFPs, *except in Britain* and Russia. Bemis 1899;163-7, 570-583, 301-326. Canada was ignoring regulation but NFPs were being created in major cities and throughout the province of Ontario. Armstrong and Nelles 1986.

AEIC members had heard evidence since 1893 that regulation in Massachusetts both thwarted public ownership, provided financial stability, and rewarded investment; preconditions for pursuing the growth dynamic strategy. IOUs were urged to seek state regulation then. Copies of sample bills were distributed, several such bills were introduced, and one became law in New Jersey, but the commission collapsed in scandal (Barker in AEIC 1893:17-21, 1894:18-21, Bergen 1908:666). Major supporters of regulation in 1893 included Charles Edgar (an Insull Circle member) and John Beggs (Insull's designee as head of the AEIC, and a former V.P. and director of NY Edison).^{28 29} Thus, Insull Circle members had tried to create regulation without extra-industry support and failed.

However, there is a previously unrecognized factor influencing the timing of this NCF effort. By 1904 Insull Circle members knew that in addition to aiding IOU financing and impeding NFP development, Massachusetts regulators prohibited isolated plants from selling across a street and imposed record and meter requirements upon all electric producers-conditions that disadvantaged isolated and surplus sale oriented firms (Doherty 1923:I;123-4, II;142, III;321, Insull 1915;42-47). Further, data gathered by employees of Insull Circle member Charles Edgar showed that regulation financially advantaged large IOUs most; 100% of large but only 1/3 of the small regulated IOUs paid dividends (Burdett NELA 1906;540).

Another *ad hoc* committee composed of two supposedly impartial "public representatives:" John Agar (the President of the New York Reform Club--sponsor of the 1903 NFP conference) and Walter Fisher (the representative with anti-NFP biases) was formed to name the CPOO Executive and Investigative Committees. They appointed George Harries of Washington DC Electric and Insull to the Executive Committee and Charles Edgar, Walton Clark of UGI/Philadelphia Electric, and W.J. Clark of GE to the CPOO Investigative Committee. Not surprisingly, these were the nominees that Insull had suggested and Easley had accepted previously (NCF Box 112, folder e 9/27/05, 10/7/05).

During the next few months a five person CPOO subcommittee refined the scope and methods of the study. They rejected offers of a French association to allow the CPOO to evaluate their utilities, and of a U.S. expert to review German NFP and IOU traction firms. They upheld a CPOO decision to study and evaluate British NFP traction firms despite there being none in the U.S. with which to compare them (NCF Box 112 folder b 12/20/05, Box 113 folder r 2/11/06, folder m 1/3/06). They created a separate sub-committee to study Massachusetts' regulated IOU and NFP systems. This created an analytic barrier that later could work to the advantage of the advocates of IOUs and regulation.³⁰ Finally, they chose UGI executive Walton Clark--a man described by various CPOO members as an anti-NFP zealot--to select, hire, and set the wages and employment conditions of the CPOO's expert staff (NCF Box 113 01/03/06).

Critics of the elite theory of policy-creation, claim that analysts rely on functionalist deductions to demonstrate causality and inadequately specify how and when pro-business biases are created. Our data show that Insull and his Circle exercised significant and recurring influence on the alternatives considered and omitted, participants selected, and on the scope and focus of the study. Conspicuously absent were executives from, or consideration of the proposals or alternatives identified by Westinghouse Electric, small IOUs, rural electric systems, NFPs, multi-use IOUs or isolated lighting systems; actors with

²⁸ As a NY Edison director, Beggs was on the board with R.R. Bowker, and both then and previously as V.P. of New York Edison had overseen John Lieb--One of the other Insull Circle members. Jones 1940;170.

²⁹ For example, John Beggs organized 150 Pennsylvania firms to seek regulation in 1893 (AEIC 1893;20).

³⁰ When the IOUs being investigated by the CPOO refused to provide detailed information, the only available hard data on IOUs was that provided by this sub-committee. This both allowed for a "best case" representation of data on IOUs (because regulated ones were less inclined to financial abuse), and to ballyhoo any advantages to the effectiveness and advantages of state regulation.

interests and developmental scheme other than the "growth dynamic" and regulation strategy promoted by Insull's Circle.

Bias was introduced in a complex, subtle and multi-leveled process which enhanced the perceived benefits of private-ownership of firms, particularly dedicated central station electric service, and laid the groundwork for proposing state regulation as a preferred outcome of the study. Misrepresentation of the number and focus of studies to be conducted, the decisions to include and omit participants, scopes, methods, and geographic limits of the study, to assume the universal availability of central station IOU service, and to introduce criteria indicative of the desired "solution" of regulation -- each introduced biases that worked to the benefit private ownership and disadvantage NFP systems, and benefit dedicated central stations over smaller multi-use firms.

These biases were not created by conspiracy or all at once. Various actors undertook these actions at different points in the decision-making process. They involved repeated re-framing of the study and subject, and re-weighting of evaluation criteria, comparative subjects, and alternatives. Actors knowingly and unknowingly created these conditions while pursuing a range of goals from self-interest to ideological zealotry. This all occurred within a framework painstakingly crafted to appear fair-minded and objective. Only those with a detailed knowledge of the subject could be fully aware of the way events and processes were being skewed. Probably only a couple of people might have known the amount or extent of such bias-inducing actions.³¹ A more blatant injection of bias would have created objections and countervailing pressures that might have led to different outcomes.

5. Systematic Bias in the Funding, Execution, Drafting, Publishing, and Interpretation of the CPOO Study

The CPOO Investigating Committee visited a series of urban IOU and NFP facilities in the U.S. and Britain. As requested, NFPs in both countries provided the CPOO investigators with detailed and precise accounts of their equipment, capital investments, labor structure and wages, and analyses of their strengths and weaknesses. By contrast, claiming that "only service and rates charged matter," the IOUs "refused to permit the [NCF experts] to value their properties or to examine their books" (Commons 1907: 265). They offered only highly aggregated data--rates, total capital assets, net wages paid, etc., and only listed firm strengths (NCF 1907b: xix, NCF new Box 7 3/20/06). Further, the information provided to the NCF staff was self-report data. In this era, before the Securities and Exchange Commission required annual reports to stockholders, there was no ability to verify the accuracy of this data. Thus, comparisons between IOU and NFP systems were imprecise and minimally useful.

The CPOO's analytical procedures were unfavorable to NFPs. Walton Clark directed all hired experts to analyze municipal gas and municipal electric plants as if they were IOUs. They projected franchise fees and property tax liabilities onto NFPs (without even canceling payment-in-lieu of tax liabilities), and they ignored any secondary or dual-use benefits of NFPs (NCF Box 112 folder b 3/23/06, Box 113 folder e 3/24/06). Clark later abandoned all pretense to objectivity, trying to hire his own UGI engineers to evaluate the British NFPs, rather than independent experts (NCF Box 113 folder b 10/30/05) Easley thwarted this latter effort due to concerns with the CPOO's legitimacy. Clark may have sought to prevent what the NCF subsequently found: the preferability of NFP systems over IOUs in Britain (NCF Box 113 folder e 6/27/06). Control of the resources of the staff by an actor with a strong interest in promoting private ownership and regulation clearly allowed for the introduction of a pro-business bias consistent that projected by Hooks (1991:692).

Reflecting on modern commissions, Merton has argued that group pressures toward compromise and a crisis mentality remove the role of ideology and encourage consensus. Further, the ability to write

³¹Individuals possibly aware of many of these decisions would include Easley, Commons, Belmont, and Bemis.

minority reports actually encourages wider consensus than otherwise possible (1975: 161-4). Several theorists from different perspectives (cf. Whitt 1982 and Domhoff 1979, Campbell and Lindberg 1990) claim that when competing class interests are at the heart of the controversy, business elites are unwilling to compromise. The accuracy of these theories of process vs. class-interest as a motive for individual action are most apparent in the CPOO's interpretation and reporting of objective and subjective data.

Drafting the *Municipal and Private Operation of Public Utilities, Report to the National Civic Federation* (hereafter *Report*) was more of a political than a scholarly process (NCF 1907a, b, c, d). IOU supporters slipped passages into the *Report*--such as outlining the advantages of the London Sliding Scale system--which were, as NCF Secretary Moffitt privately admitted, "tantamount to an endorsement and clearly in the interest of private ownership" (NCF Box 113 folder m 8/3/07).

Contests over page allocations resulted in politically expedient outcomes that violated the NCF's stated goals of objectivity. For example, Parsons was granted more space to extol the virtues of publicly-owned trolleys--Parsons' personal interest. In exchange, Charles Edgar and Walton Clark received more space to critique public electric systems--their professional and occupational interest (NCF Box 112 folder c 6/28/07, 7/11/07, 7/15/07, 7/16/07 and folder e 9/6/07, 10/03/07). Practical advantage accrued to pro-IOU forces in this "deal," as Parsons praised a type of system not existing in the U.S. and Edgar obtained a larger forum in which to attack existing U.S. NFP electric firms.

NFP advocates on the CPOO Investigating committee complained that they never received the texts of IOU advocates but their protagonists saw and were responding to pro-NFP statements in their text (NCF Box 113 folder p 8/27/07). Further, they learned that texts from *both sides* were being distributed to holding and operating company executives for review, and to technical journals which (due to their dependence on IOU advertising) were "all pro-(IOU)" (NCF Box 113 folder w). This allowed NFP opponents to draft criticisms of pro-NFP sections for publication as soon as the *Report* was issued. Creating different timetables for critical responses by the pro- and anti-NFP forces would influence public perception of the study. Walton Clark claimed that drafts were circulated to obtain "beneficial criticism" on the technical points (NCF Box 113 folder p 8/02/07), but the rendering of unilateral benefit to IOU interests suggest a bias on the part of CPOO editors. Again control of the process and the resources presented an opportunity to introduce bias, here in the presentation of important data.

What other factors distinct from and/or related to the internal processes of the CPOO might have affected these dynamics, compromises and the subsequent outcomes? Komarovskiy provides an important insight when she stresses the potential impacts of sponsorship and resource provision, especially for non-governmental commissions (1975: 4). Identifying who funded the study, and whether the other resource dependencies of the CPOO influenced the processes or contributed to the dichotomy between the data and interpretation of findings in a biased manner, is crucial to this inquiry.

In 1907 it was revealed that Thomas Ryan, a trustee of Consolidated Gas--the company owning New York Edison (Jones 1940: 261-2)--had provided \$15,000 of the \$90,000 that the NCF was said to have spent on the NCF study. NCF President August Belmont then admitted that most of the CPOO funding had in fact come from other unidentified traction and light IOU firms. This briefly cast a pall of suspicion upon the NCF and contributed to Belmont's resignation in December 1907 (Green 1956: 324). However, Ryan's contribution was really only the tip of the iceberg.

Hundreds of IOUs, and their executives, board members, and suppliers, underwrote almost the entire \$150,000 cost of conducting the study and publishing the *Report* (NCF Boxes 111-113). This effort drew heavily upon the personal relationships of Insull, his colleagues at other Edison firms, and General Electric. W.J. Clark of GE chaired the CPOO Ways and Means (fund raising) Committee. He solicited GE, holding companies and firms in which GE owned stock, and their executives, gaining \$1,000 contributions from many of these (NCF Box 113 folder "funding," folder c 3/25/06, 3/27/06, 9/27/06). Insull, Chicago Edison, and two other Chicago IOUs that he personally owned, each contributed \$1,000, and he directed the score of IOU electric firms in which he was financially involved to contribute. He

sent letters to many other IOU leaders encouraging them to contribute, (cf.- NCF 112 folder e 6/23/05, folder m 10/23/06 and Box 113 folder h 7/27/06, 8/2/06, 8/29/06, folder j 8/29/06). The firms and executives of Boston Edison, Doherty, McMillan's American Light and Traction, Stone and Webster, and North American Company (including Detroit and Milwaukee Edison) all contributed and encouraged their subordinate and personally-owned subsidiaries to financially support the NCF efforts (cf.- NCF Box 113 folder e 2/23/06, 3/31/06, 10/30/096 folder h 9/28/06, 8/29/06). The Insull circle was at the heart of this effort.

Crucial to our analysis was Easley's stated goal when soliciting these funds. He told Clark to inform potential contributors that they were "furnishing the material to combat municipal ownership" (NCF Box 112 folder c 3/10/06, 3/31/06). Ideological motives were clearly influencing NCF efforts. Yet neither the public nor even most CPOO or NCF members knew of most the machinations noted above, and so they continued to view the study as objective and legitimate due in part to the participation of NFP leaders.

Resource provision and timing were especially important given organizational need of the NCF after its membership losses in 1903, and the need for a successful study and enacted policy to re-legitimate their position. The depth of this concern was reflected in the exchange of angry letters between Easley and the CPOO drafting committee (NCF Box 112 folder b, folder e 3/20/07). While the NCF and CPOO were grateful for the funding throughout the course of the study, much of the active fund raising occurred after the study was well under way, and especially after the study was completed and the drafting was occurring. This slow-motion funding made the NCF especially vulnerable to influence because it both depended on the IOUs to pay and yet since its name was prominent as sponsor, they would bear the liability if the study collapsed or the Report was deadlocked or incomplete.

Due to the incomplete data from IOUs and disagreements in interpreting the data, the CPOO was unable to agree on the implications of its findings. CPOO members Bemis and Goodnow sought consensus on a series of general propositions but IOU advocates such as Walton Clark refused to compromise "on a single proposition" thwarting the will of the majority. By delaying the drafting of the *Report*, Clark created a context encouraging negotiation with NFP advocates (NCF Box 113 folder w 8/3/07). Charles Edgar of Boston Edison and W.J. Clark of GE took advantage of Walton Clark's obduracy to strike a compromise, they would include a written discussion of regulation in exchange for the *Report's* acknowledging the legitimacy of the NFPs and the problematic operations of IOUs (NCF New Box 7 6/8/07, 6/17/07). A Faustian bargain had been struck creating an opening to discuss and therein to promote state regulation.

Significantly, the CPOO achieved one unanimous finding, "free competition had proven a total and catastrophic failure" (Jensen 1956: 238). Twenty of the 21 CPOO members agreed that public seizure should be encouraged in principle (at least to pressure IOU firms), and that cities needed to have borrowing power sufficient to undertake such actions (Commons 1907: 266). Yet despite having almost no data on privately-owned and operated systems, 19 of the 21 CPOO members agreed that "public utilities whether in public or private hands are best conducted under a system of legalized and regulated monopoly" and that "private companies should be subject to public regulation" (Anderson 1981: 45). Formally dodging the question of state vs. municipal level regulation of IOUs (Commons 1907: 266), the CPOO had included an analytic section showing the success of state-regulated IOU utilities in Massachusetts, which supported Edgar's claim that firms with guaranteed funding and natural monopoly ran well. But the data also showed that when the state regulated all utilities, the existing NFP firms did not expand nor thrive (NCF 1907b: 909-1213).

Other data interpretations were also so selective that even the CPOO staff members questioned them. The CPOO leaders claimed that British NFP trolley and gas firms were "too young" for useful comparison, negating by assertion and omission their empirical findings that such firms were economical and efficient. They also ignored evidence that IOU-NFP competition in Britain had actually improved the technical and economic operations of IOUs (Commons 1907: 265, 266), a factual finding in contradiction with the NCF's unanimous "conclusion" about the desirability of natural monopoly.

NCF leaders struck another compromise in response to Walton Clark and Charles Edgar's refusal to accept the majority interpretation of the data as indicating NFP efficiency. They let each side write its own conclusion. Parsons argued that the data that showed that both U.S. and British NFPs were economical, efficient, relatively free of corruption, and more concerned with safety than IOUs (NCF 1907a, 162, 117, 120, 184, 125, Bemis 1915: 63). Charles Edgar sticking less closely to the data gathered, labeled NFP firms a "threat to democracy," "inefficient," and "socialistic," and claimed they could not respond quickly to changing technology (NCF 1907a, 407-8, 428, 441-3).³² He attributed the efficiency of British NFPs to Britain's unique political culture and claimed that U.S. urban corruption precluded such potentials, a tack noted by Skocpol as common among actors trying to contain progressive policy efforts (in Quadagno 1987: 119). Admitting that some IOUs had invested money poorly, Edgar asserted that this was due to the destructive effects of competition. This he claimed indicated the need for a "natural monopoly" and state-guaranteed profits so as to reduce investor hesitancy (NCF 1907a:426).

The initial press reviews described the study as "inconclusive" (NCF Box 112 folder b 7/15/07). Impartial experts reviewing the *Report* noted that "the interpretations given to various facts (were often) erroneous or the facts selected for comparison were not typical of the general conditions" (Jones 1908: 732). Economist William Munro stated that the gaps between the content of the data and the claims of the advocates was so great that no general conclusion as to policy was achieved (1908: 166).

Ignoring for the moment our knowledge of the flawed boundaries and process of the study, we are left to wonder how a study, beginning with pro-NFP data and tenuous and highly equivocated findings, become widely hailed as a strong statement in favor of state regulation. There seem to be several answers. First, the NCF chose to interpret the CPOO *Report* as "clearly recommending regulation rather than public ownership," and accepted state regulation as the position of the organization. (Jensen 1956: 237-8). It promoted the IOU's *interpretation* of the study's findings and encouraged mobilization to support legislation creating state-regulated IOU systems. Thus, the NCF *interpretations* of the CPOO Report, more than the actual findings, shaped policy-making and electric utility development.

A second factor is that the content of the technically-rich NCF *Report* was rather tedious and would have overwhelmed most readers. As a result, the distillation and interpretation of the conclusions and implications of the *Report* by NCF leaders became yet another opportunity for the introduction of pro-business bias favoring private ownership and state regulation. The NCF actively cultivated press attention during the study of U.S. and British utilities and promoted the image of seeking to objectively guide U.S. policy-making. As the *Report* was being published, the NCF hosted dinners for its members and the leading citizens in several cities. During those dinners CPOO leaders explained the findings and implications of the NCF *Report*. These speeches, rather than the actual text, made the headlines and constituted the bulk of the newspaper text. NFP advocates who participated in the CPOO attended many of these dinners. However, their ability to criticize a study they had helped to conduct and summarize, and that they had enabled by activating personal networks early in the inquiry to help the NCF gain full access to and disclosure from the NFPs (NCF Box 113 folder p 9/28/06), was limited. And the critical remarks offered by these lesser known individuals were not widely circulated in the press.

U.S. (and British) IOUs used their resources to directly influence the reception and interpretation of the *Report*. They had identified hundreds of technical and policy journals and newspapers in each nation and underwrote the costs of providing them with advance copies of the *Report*. They also developed lists of hundreds of local and state officials, union leaders, businessmen, and newspaper and magazine publishers and underwrote the costs of their copies. Many of these powerful people made local news by offering the first pronouncements on the *Report* and recounting its key findings as they understood them. To (NCF

³² In an interesting irony, none of the city governments analyzed by the NCF had engaged in corruption. NCF 1907a (2), 670-685. One of the two regulatory commissions previously existing in the U.S. had been repleaded in New Jersey in 1892 following scandels and corruption. Bergen 1908:666.

Box 112 folder b 7/17/07, 3/5/07, Box 113, folder e 12/09/07). NFP supporters and pro-NFP publication outlets were conspicuously absent from the lists of those receiving free advance copies of the *Report*. As with the circulation of drafts, this practice affected the timetable for response and encouraged a pro-regulation "spin" on the findings of the *Report*. Equally as important, by buying copies of the *Report* in advance, the IOUs were providing the funding the permit these dinners and by artificially creating an audience they were also promoting the efforts and objectivity of the NCF study and organization

Because when "men define situations as real, they are real in their consequences," what the *Report* actually stated was less important than what the public, businessmen, investors, and public officials *believed* it to have said (Merton 1975: 173). By promoting a particular interpretation and blurring the distinctions between the facts of the *Report* and the NCF's deduced policy implications, the NCF actively shaped the perceived content and implications of that *Report*.

How do we explain the gap between the CPOO's empirical data and findings, or between the content of the *Report* and the interpretation? Obstructionism and stalemate, the option of writing a minority report, and the NCF's need to maintain legitimacy and not alienate more corporate supporters, pressured all parties toward deal-making rather than strict empirical deduction. Access to financial resources, especially during crises, helped to secure outcomes favorable to the resource providers.

The single thread tying together most of these actions were that they involved the efforts of Charles Edgar and Samuel Insull (the two most central actors in the electric industry trade associations--Chung 1995: 24), and Walton Clark. Two of Clark's associates at Philadelphia Electric had previously worked closely with Insull.³³ Thus unlike the initial influence that seemed to originate from multiple sources, it appears that a pre-existing social network (with the tacit support of the NCF leadership) actively shaped the course and content of the CPOO study.

6. Mobilization and Bias of IOU, Business, and Other Established Interests

To claim that pro-business biases were intentionally created in a policy-making, one must identify, the advantages accruing to one group and the disadvantages rendered to the other (Esping-Anderson, et al., 1976, McGuire 1989, 1995), and show how key actors mobilized to achieve this result. Further, the existence of bias should be obvious not only in the policy-formulation process, but in the policy enactment, implementation, and institutionalization processes (McGuire 1995:65); the four parts of the policy process.³⁴

McDonald's claim that the NCF *Report* "exactly coincided with Insull's view" is essentially correct (1958: 251, 1962: 120, Rudolph and Ridley 1986: 39). Its recommendations were consistent with his plan for: a) state regulation by commission, b) guaranteed returns based on capital valuation, sufficient to prevent confiscation of property by creditors or a financial collapse, c) long-term if not indeterminate franchise durations, d) natural monopoly, and f) "equal value" of all stocks.³⁵ These six precedents were to

³³ John Vail--one-time secretary of the AEIC and former Philadelphia Electric Chief Engineer-- had shared a room with Insull and worked with Edgar and Insull at 65 5th ave and Goerck Street. Joseph McCall, President of Philadelphia Edison was part of the leadership of the AEIC, and was one of the directors of the (jointly-owned) Electric Testing Laboratory along with Edgar, Insull, Lieb--Insull Circle member and successor to R.R. Bowker--and Alexander Dow.

³⁴ Policy formulating is the writing of the policy, enactment is securing its passage--points differentiated by Gilbert and Howe 1991:206. Policy implementation is the creation of the institutional apparatus and processes needed to carry out the policy, and policy institutionalization is creating the organizational, economic, and political interdependencies based on the continuation of the policy-based institutions and outcomes. Differentiation among these activities is especially obvious when one looks at incrementally at processes of event development.

³⁵ Equal value means that all stocks of the firm would be treated as equally valid as if all the money received had been invested, and all this invested value will be the basis for earning a return, even if the money was stolen, squandered, or used to pay dividends on non-existing revenues.

become the linchpins of future industry development and of the mobilization of political capacity in support of the NCF policy formulation, and were all included in the initial legislative proposal emanating from this study.

Some precedents had political and/or market impacts sought by IOUs. For example, state regulation removed power from people with vested interests different from the IOUs, including local officials, co-generating local businesses, and especially the voting public. The principle of "natural monopoly" prevented city officials from issuing duplicate franchises, freeing the IOUs from destructive competition and other market-based pressures to hold-down rates (Stigler and Friedland 1962, Bauer, et al., 1939). Indeterminate franchises and natural monopoly removed the recurring arena for local hearings on rates and franchise conditions. It transformed such IOU rate requests into occasional bureaucratic contests, and changed the perceived "enemy of public interest" from a profit-hungry IOU firm to distant state agencies which authorized rate increases (McGuire 1989: 194).

The "reasonable rates" provision created a contradictory mandate for commissioners--to promote the public interest *while protecting the economic health of the firms*. Competition between IOUs was replaced by competition among regulators from different states to assure returns sufficient to attract capital. This fueled a "race toward regulatory laxity" (FTC 1935: 10).³⁶ "Equal value" of stocks meant that previous investments would be legally assured of full value even if the stock had been "watered." "Guaranteed returns" assured investors that their previous (even bad) investments as well as future ones would be profitable. These two precedents transformed an industry with risky investments into one with a preferred standing among security-issuing firms and matched the "guaranteed return" advantage that previously had accrued only to holders of public (including NFP) bonds (McGuire 1989: 192-3). These factors, combined with long-term and renewable franchises and the requirement that municipal seizure be based on the full value of the stocks, allayed investor fears about buying a 20 year bond from a firm with only a few years left on its lease. Bankers, and investors benefited from these conditions.

Together these six precedents created incentives to expand a firm's operating territory and to concentrate ownership among IOU firms (Scharfman 1914: 1-18, Eshelman 1914: 156), even to a point of over-expansion and technical inefficiency (Bauer, et al., 1939). By increasing the need for capital investment, regulation made IOUs increasingly dependent on large banks which, by choosing to extend or withhold loans or whether to underwrite or purchase bonds, could determine which firms gained access to new technologies. This was central to cost reduction during this era when economic advantage accrued to firms obtaining new generating equipment (Insull 1924: 114-7). This availability of capital sparked competitive pressures on and between IOUs on two fronts. Each IOU needed to gain access to new technology or lose competitive cost-advantage in the rapidly changing area of generation where new generators used about 1/3 of the amount of coal per Kw/Hr. produced. And it pressured them to purchase and consolidate adjacent firms or risk that neighbor or another IOU taking them over and serving the integrated territory in manners that could take advantage of some economy of scale opportunities. Thus control over the growth and coordination of industry development, and the ability to contain tendencies toward destructive competition among IOUs and between IOU and NFP firms by selective investment, was in effect ceded to the banks supplying needed capital. The bias of the banks toward privately-owned firms was long standing.

Did the IOUs know and act in support of their sectorial interests? A review of the *AEIC Proceedings* and the *NELA Proceedings* from 1903-7 indicates awareness and discussion of these issues. There had been several papers and discussions of specific provisions and their advantages to electric IOUs and manufacturers, including the importance of the London Scale that was both discussed and then (at Insull's urging) it was included as a 163 page addendum to the *NELA Proceedings* (NELA 1906 III:55-218).

³⁶ As a result, by 1915 there was not a single regulated utility that was not receiving the maximum allowable rate of return from their commission. Glaeser 1957:313.

Some of the specific precedents and implications noted above were cited in the 1907 *Annual Report* of the NELA Committee on Public Policy (NELA 1907 Appendix A), a committee including Insull, Edgar, Dow, Joseph McCall (V.P. of Philadelphia Electric), and John Lieb (V.P. of New York Edison, then and earlier under Bowker) and two other long-time supporters of regulation. Insull personally led the floor debate in the trade associations outlining the benefits of proposed legislation to IOUs (NELA 1908: 55-60), and in 1909 he detailed the benefits achieved under early regulation systems (Hellman 1972: 17). These men were five of the six most central men in the AEIC and the NELA leadership (Chung 1995: 16) and four of them or their firm executives were involved in the NCF CPOO study.

Support for the NCF proposal within the business community occurred on two levels. There were general appeals to and efforts to mobilize political support around the issue of a threat to private property. And the NCF and IOU leaders emphasized specific benefits accruing to identifiable business and political groups.

Leaders of large industrial firms initially learned of the advantages of the NCF proposals for state regulation (including the London Scale which would mean lower per unit electric rates for large users) through press reports on the NCF dinners. In 1907 these points were spelled out more directly in a speeches to business groups in New York City and throughout New York State undertaken by NCF executives and supporters including New York Governor Charles Evans Hughes, Secretary of State Elihu Root, and eventually President Theodore Roosevelt promoting the merits of the NCF proposals for state regulation (Wesser 1967: 155-166, Hughes 1916, 1973: 142). The speeches stressed not only the cost advantages of the London Scale to manufacturers, but the centrality of property owners' rights, and these points were widely reported in the New York and the national business press (Hughes 1973:144). The rallying cry in defense of private property from state seizure were significant in an era when the Bureau of Corporations was calling for federal charters for all corporations and the President (unlike his successors) publicly took the position that "large corporations...were to be treated as public utilities;" a position banker Frank Vanderlip called a threat to "property rights" (Sklar 1988:346, 350-1).

Electrical manufacturers recognized that "guaranteed returns" were based on the amount of fixed capital. This encouraged IOUs to purchase and install new equipment rather than waiting to fully amortize their existing investments, and it encouraged and rewarded them for expanding into new service territories -- an action that further fueled their demand for equipment. The impacts of regulation on equipment sales would have been clear to anyone such as GE and Westinghouse officers who regularly attended the NELA convention. Also, manufacturers had often received the stock of local firms in partial payment for equipment. As holders of old, often "watered", stock of local firms, GE and Westinghouse and the large banks and prominent investors, now had fully valued assets and their value would be retained. Advantages to stockholders and investors were a central part of the NCF talks and public dinners.

Labor Union leaders were involved in the NCF *Report* and provisions in the resulting policy also benefit their interests as well as those of the IOUs. "Reasonable rates" based on a firm's fixed capital value elicited the support of labor unions because this meant that variable capital costs including labor would be "passed along" to consumers rather than taken from stockholder earnings. This removed incentives for IOUs to keep wages low or to resist unionization of either their full-time work force or occasional workers such as construction trades. Rewards for installing new technologies and building facilities, also promised significant employment opportunities for the unionized building trades.

"Natural monopoly" eliminated any pressure to reduce the labor force or engage in speed-ups as part of a competitive reaction to market forces that would have arisen had there been competition among IOUs. AFL officials also feared that city officials were preoccupied with keeping wages down so as to pass on those savings to customers. "Natural monopoly" and rates based on fixed capital allowed IOUs to provide pensions and other corporate welfare benefits not provided by cost-conscious and locally accountable U.S. and British NFPs (Munro 1908: 171).

AFL leaders also had institutional motives for supporting regulation. As leaders of skilled craft (as opposed to general trade) unions, they argued that NFP systems blurred the lines between skilled and unskilled laborers (whom they did not organize or represent). They also acknowledged the lack of municipal sector unions within the AFL, which was not interested in mobilizing this sector. Also, by opposing NFPs, the AFL contained the tendency toward political and class-based strikes (as occurred in Britain), and denied legitimacy to pro-NFP socialist union leaders who were making a bid for AFL leadership (Sullivan in NCF 1907d: 64, 74, 35-7, 60, 74, Weinstein 1968:22-3).

These provisions also ameliorated owner-worker conflict and lessened the tendency toward strikes. The resulting labor peace aided the IOUs which were stressing their reliability (due to a lack of strikes) as a major difference between their systems and NFPs, neighborhood, railroad-based IOU firms, and other decentralized electric systems, an advantage of IOUs initially identified by Dow in 1898 (NELA 1898, 95-114, 120-129) during the Insull discussion of proposed regulation. Finally, by avoiding strikes AFL unions gained legitimacy as responsible and dependable "partners" to management.

Sullivan's reports to AFL President Samuel Gompers and his debates with John Commons (NCF 1907d) were reprinted by *the NCF* as a book to educate other union leaders and to summarize the advantages of regulation and actual, potential, and strategic disadvantages of NFPs to the AFL leadership. Thus the AFL leaders mobilized in support of the NCF policy formulation because it both benefited their members and it served their vested interests as craft union leaders facing an internal challenge by political radicals.

The advantages to government officials were also highlighted. NCF Secretary John Commons drafted a bill for Wisconsin "including nearly all the recommendations of the NCF Committee" (1963:120), which the NCF promoted as a model for other states. Hughes, Root, and Theodore Roosevelt cajoled members of the New York State Assembly to support the bill, and Hughes actually toured the state rallying public and political support for the model bill (Wesser 1967: 155-166, Anderson 1981: 40-44). New York and Wisconsin enacted the NCF policy within a year. Parties and elected officials embraced these precedents because they created opportunities for new political patronage positions and for awarding economic contracts to campaign contributors. Further, by solving conflicts--however ineffectively--the state apparatus gained legitimacy and potential political challengers were denied a popular rallying cry-- a condition beneficial to politicians facing re-election.

Popper claims that former commission members rarely lobby in support of a policy (1970: 47), but Bulmer claims it is common (1983a: 565). IOU leaders including Walton Clark and Insull Circle Alex Dow and Henry Doherty, and later Insull himself, appeared before state legislatures considering adoption of the NCF model bill to detail the advantages to the industry, the state, and (due to more dependable operation) the public (Dow 1927:189-205, Doherty 1923:III:117-120). Many IOU leaders actively promoted the adoption of NCF-patterned legislation in their states.³⁷ For example, including Baltimore Electric Light and Power printed circulars, bought ads, provided speakers, etc. This firm--which shared owners with NY Edison-- promoted the NCF model bill and by 1909 it was enacted and (as in New York) other proposed regulatory schema was defeated (Brown 1936:97, 106). Clearly the pro-business policy proposal of the NCF was becoming adopted as an unaltered legislative package.

Claims of pro-business-biased policy are strengthened by showing that the NCF "solution" disadvantaged NFP firms. The most abusive and inefficient IOUs had high rates because they charged customers and paid dividends based on their watered stock. "Equal value" made these firms the most expensive for a city to buy out in terms of their real value measured in cost per unit of output. A new NFP would then have to charge rates high enough to pay for the full invested value of the seized firm, just as if the capital had been invested. Thus, "equal value" reduced the cost advantages of NFP systems in the very locations where consumer savings should have been most significant.

³⁷ As Insull noted in 1910 "Regulation was actively supported by all the leading central stations. McDonald 1962:121.

"Natural monopoly" disadvantaged NFPs by preventing competition between IOUs and NFPs. If a town with IOU service wanted to create an NFP, it would need the permission of state regulators to seize the IOU facility. NFPs had to pay for the system at closing, rather than from post-seizure earnings--a norm for IOUs taking over NFPs during this era (Jones 1914: 97). Since towns had to get loans from banks--many of whom held securities in the IOU being seized--this inhibited take-overs and encouraged high valuation and payment for the seized IOU system. Legal wrangling about the value of assets and terms of sale would often result in delays and extensive litigation, and provided IOUs with a long period during which they could influence officials and/or elections so as to prevent the takeover.

The biases of the NCF were also demonstrated in its acts of omission. They ignored what Commons argued was "the principal lesson...(of) the investigation, namely the importance of having a physical valuation of the property as a starting point for regulation" (1907: 266). They understated the importance and failed to detail a method of assessing "value." And after the CPOO dodged the question of whether state or local regulation was preferable, the NCF took advantage of this omission and advocated state regulation.

The NCF ignored impediments to public ownership. It did not examine the ambiguous legal position of publicly-owned firms in general, or prohibitions on retail sales to the general public (Schap 1986: 27, Wilcox 1914: 72). They did not address whether municipalities could seize the part of a large IOU system operating within its borders (Wilcox 1908: 581) or whether NFP systems could operate outside of their municipal jurisdictions. These uncertainties impeded NFPs access to new efficient generating technologies (Insull 1924: 114-7) and to economy of scale opportunities--undermining their relative cost advantages. They also ignored examples of the failure of state regulation in Europe, a condition that Alex Dow--President of Detroit Edison (NELA 1908: 63-4)--and others (Thompson 1915: 85) knew about; nor did they pay attention to the potential for IOU-NFP direct competition to increase technical and economic efficiency through competition as it did in Britain (Commons 1907: 266).

The CPOO and the NCF ignored that 98% of U.S. NFP electric firms were "lighting only" firms with extreme load imbalances because their capital sat idle for 16-18 hours per day (USDCL 1905: 58-62), that 87% of the NFP electric firms were in towns of less than 5,000 people (USDCL 1910: 29)(preventing economy of scale advantages, no matter who owned them) and that in most NFP towns the IOUs had refused to initiate service. They also failed to note that all these deleterious conditions were changing as the *Report* was being written (USDCL 1910: 13), in effect promoting a policy that undermined improved service by NFP firms. The issues of concern to NFPs that the CPOO did consider, assuring, the right to home rule, adequate borrowing powers, and sufficient funding, were ignored by NCF policy-formulators.

Finally, to solidify our claim of a business-biased policy, we need to: a) demonstrate that the enacted NCF regulatory policy had biased outcomes, and b) examine the subsequent actions of the NCF to see if this example was part of a recurring pattern of their actions. The initial regulatory rulings reflected the CLASS-specific impacts noted above. As the NELA Public Policy Committee had predicted, "a drop in the... push for municipal ownership" occurred within a year. Wisconsin and New York were the first two states to enact the NCF formulated policy. The first decisions of the New York State regulatory commission prohibited direct competition and prohibited the expansion of an NFP outside of a city's boundary (Hellman 1972: 13, 16, Rudolph and Ridley 1986: 44). Wisconsin required NFP take-overs to be paid in full before seizure and prohibited the creation of new NFP systems in cities with IOU service (Wilcox 1914: 75-6). Their Commission also granted rate increases to 50 of 52 IOUs applying and *denied rate decreases* to 28 of the 39 NFPs during the same period (Jones 1914). Liberal valuation of IOU assets by various commissions fueled further rate hikes and public anger (Kerr 1914: 26).

By 1911 the drive toward regulation spurred by the NCF CPOO study ran out after 13 states adopted the NCF precedent-based regulation (Anderson 1981: 56). The NCF then sponsored another multi-constituency study of regulatory commissions (NCF 1913, Weinstein 1968: 34, Jensen 1956: 292). It emphasized the need to eliminate impediments to regulation (NCF 1913: 1-6, 10-21), and created "a model bill (which) could... prevent from crystallizing...(support) for government ownership and operation

of public utilities whether state or inter-state" (Weinstein 1968: 33). This second "objective" NCF Report was followed by another round of lobbying by NCF and IOU leaders, this time including Insull himself. During the next two years, 17 more states enacted regulatory legislation and seven states and three territories modified their laws to bring them in line with the new NCF model Bill (Scharfman 1914: 8)

7. Summary

The CPOO study and the *NCF Report* rendered advantage to IOUs while systematically disadvantaging NFPs. Control over the dynamics of industry development moved from class-based struggles over the rate of profit and legitimacy of private ownership to resource-based contests "adjudicated" by regulators and bankers. The creation of biases which shaped the CPOO study and policy precedents had been instigated and created by supporters and executives of the IOUs in support of their particular interests, and the NCF leadership in support of business community interests in maintaining and extending private property rights. However, the broad reframing of these precedents by the NCF encouraged the mobilization of political support consistent with the notions of a corporatist approach to policy-making, despite the fact that very little attention had been paid to these other interest communities during the course of study and analysis.

Finally, the fact that Insull and his associates were active in so many spheres after the execution of the study and after a second commission to refine the proposed policy, indicates that their intent and initial actions were not an accident. This pre-existing network was a crucial factor in formulating and enacting, and institutionalizing the policy most supportive of their vested interests.

8. Conclusion

Domination of the policy-making process is dominated by business in general and the IOUs in particular. We find that, cloaked in a mantle of objectivity and representation-based legitimacy bestowed by a multi-constituency commission, NCF leaders, the Insull Circle and their supporters repeatedly and often (but not always) intentionally, though subtly and incrementally influenced the process and content of the CPOO study and policy formulation processes, and they embedded biases advantageous to the depiction and supportive of privately-owned IOUs. The motive for non-industry actors were general principals held by businessmen, especially support for private property rights. While these biases were created by many different actors and took place on several different levels, the Insull Circle group were disproportionately involved in the introduction of biases, interpretation and dissemination of findings, and mobilization of political support to ensure enactment and institutionalization of the preferred policy.

Consistent with Jenkins and Brents (1989) and McGuire (1995), we find that these actors drew upon pre-existing social networks to frame, refocus, and constrain the execution and interpretation of the study so as to benefit IOUs. This outcome is different from that found by Brents, who showed a divided NCF unable to formulate social welfare policy or mobilize special interests during the 1910-40 period (1992: 95). One key difference between her analysis and ours is that it is very clear that the Insull Circle and IOUs controlled the availability, timing, and level of resources, especially financial support, but also knowledge, staff assistance, etc. Thus, an effective theory of policy-formulation must examine and identify the actions, effects, and resource-based contributions of pre-existing social networks, an argument consistent with and a logical extension of the socially-embedded industry formation theory argued by Granovetter (1985), McGuire, et al, (1993), and McGuire and Granovetter (1994).

Another important finding is that while the introduction of bias was led by leaders of the industry with the greatest self-interest in the outcome, the mobilization of political support for enactment and

institutionalization was framed in terms of a corporatist agenda.³⁸ NCF and IOU leaders carefully outlined the potential benefits to other key constituencies, including financiers, manufacturers, unions, and politicians. However, in our case, the NCF rather than the state was the lead actor and the state politicians were simply another constituency to be mobilized.

One factor which appears to have influenced the success of the NCF and Insull Circle was the existence of a preferred policy before the study was begun. This factor may be especially important given the indecisive and contradictory findings of the actual CPOO study (despite all the efforts to bias the findings and exposition). One might wonder if this limits the generalizability of our findings. However, Sheriff (1983: 675) and Bulmer (1983b: 663) each claim that pre-selected policy-formulations are common and that commissions are generally instruments intended to spread a pre-established policy proposal to a wider audience. Sheriff also suggests that even the limited congruence between a commission's findings and subsequent policy formulations are not unusual (1983: 676)!

Yet one may wonder why the biases so obvious in this case are not immediately apparent in the commissions examined by Popper, Komarovsky, and others. Our research method and the breadth of the available data may partially explain the visibility of bias in this case. However, a more important factor may be the subject examined by the NCF CPOO commission. Most commissions focus on social problems involving behavior or technology. This commission focused on economic issues with component which effected the entire business community--the potential contraction of property rights and capital accumulation--and actors were motivated by and emphasized those issues when making decisions. This implies that pro-business bias is not endemic to policy-formulation by multi-constituency commissions. Absent issues with implications across the business community, political or cultural groups may be more successful in exerting influence and shaping policy formulation. This suggests that the autonomy of the policy-formulating apparatus from business influence may vary depending on the content of the policy under consideration, tempered by the institutional processes of the policy-creating organization (cf. Prechel 1991, Hooks 1991, Quadagno 1992, and McGuire 1995). Conservative analysts examining business mobilization in opposition to environmental regulations which effect all segments of the business community and threaten private property rights, have noted similar patterns of mobilization in our contemporary era (Weaver 1978).

Skocpol and Amenta (1986) and Prechel (1991: 693) have argued that the clear instrumentalism of the pre-1920 era resulted from the malleability of "young" immature bureaucracies. However, multi-constituency commissions by their nature are *ad hoc*, and lack clearcut norms, managerial self-interests, and a constricting bureaucratic culture. So, while networks may well take on an increased prominence in young organizations in general, this type of policy-creating organization will almost always be "young". This would suggest strong generalizability to other commission-based policy-formation efforts. It also explains why the commission process seems to have so little "autonomy" from business influence compared to policy generated by bureaucracies with clearcut norms of procedure and professional identities.

This study may have important contemporary implications. Multi-constituency commissions have become a popular vehicle for state and local governments seeking to evaluate options and propose policy, especially when politicians seek to distance themselves from responsibility for those decisions. One might expect to find biases like those we found being interjected in contests over, the reallocation of funds within federal block grants, community vs. industrial development, privatization or "municipalization" of utilities, jails, and transit firms, or deregulation of industry. Understanding the

³⁸ Corporatism is a cooperative approach to policy-making in which business, labor, and government create policy (often involving the existence, level, and form of state intervention) by general consensus. It generally operates consistent with four principles; Unity, Order, national interest, and success. The goal is to provide non-zero/sum outcomes in arenas in which all three groups are well-organized and yet not can dominate or unilaterally overcome the initiatives of the others (Winkler 1977).

procedural and structural dynamics, and the sequential and incremental opportunities by which business-based biases can be interjected into commission processes is important for analysts seeking to understand how policy is formulated, and for social activists and commissioners who seek to avoid the impacts such bias.

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The phrase the social construction of technology is used in at least two different, though overlapping, ways. Broadly it refers to a theory about how a variety of social factors and forces shape technological development, technological change, and the meanings associated with technology. The starting point for understanding both the broad theory of the social construction of technology and the SCOT version of that theory is to compare them with another view of technology referred to as technological determinism. Technological determinism has two basic tenets: (1) that technology develops independently from society; and (2) that when a technology is taken up and used, it has powerful effects on the character of society. Keywords: Industry-science cooperation Innovation policy Public support Policy evaluation Emerging economy. ABSTRACT. This article explores the utilization of public policies aimed at supporting industrial innovation, and, in particular, enterprises involved in industry-science cooperation. In doing so, they aim to reduce failures in allocation of the support measures and increase the policy effectiveness. Firms, on their part, decide which policy. The market structure influences firms' innovation incentives and, thus, may affect the propensity to apply for state support (Aghion, Bloom, Blundell, Griffith, & Howitt, 2005; Arnold & Hussinger, 2005). Firms that compete on foreign markets cope with difficult market conditions and seek to gain additional public funding. A public utility company (usually just utility) is an organization that maintains the infrastructure for a public service (often also providing a service using that infrastructure). Public utilities are subject to forms of public control and regulation ranging from local community-based groups to statewide government monopolies. Public utilities are meant to supply goods/services that are considered essential; water, gas, electricity, telephone, and other communication systems represent much of the...