
The Rise of Consultant Forecasting in Liberalized Natural Gas Markets

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Natural gas forecasting has evolved into a lucrative enterprise in the wake of U.S. energy market restructuring. The field is composed of university-trained economists who have been hired by consulting firms to produce information about the future of energy markets. The increased visibility of these firms reflects a growing reliance on consultant advisory services that try to identify core uncertainties and to help organizations have the capacity to be ready for them.

In fall 2000, natural gas forecasters emerged as architects of an energy outlook capable of altering the U.S. natural gas industry. Basing their image of the future on a forecasted rise in the long-term price for natural gas, these economists predicted an expansion to the self-enclosed North American natural gas market. While the rise in price failed to materialize, their image of the future has since inspired government and financial leaders to establish a global gas industry.

The idea that the future has a significant role to play in the construction of the present is by no means a new one. Anthony Giddens writes that “under conditions of modernity, the future is continually drawn into the present by means of the reflexive organization of knowledge environments.”¹ The discourse through which this occurs involves terminologies of risk. Ulrich Beck characterizes late modernity as a risk society, in which “everyone is caught up

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1. Anthony Giddens, *Modernity and Self-Identity* (Stanford, Calif.: Stanford University Press, 1991), 3.

in defensive battles of various types, anticipating the hostile substances in one's manner of living."²

Calculating risk in the natural gas industry is also an open-ended, future-oriented project, the goal of which is to anticipate all loci of uncertainty while increasing the chance of economic success. This is especially the case since the 1980s, when market restructuring adopted institutions from the financial industry so that natural gas prices could be based on competition rather than regulation. Restructuring also expanded the role of energy marketers. Firms such as Enron (now bankrupt) and Dynergy can generate untold profits by speculating on prices located at different trading points along the continental natural gas pipeline network.

But the industry's competitive structure has raised problems for an older market segment of energy producers and pipeline companies that seek to develop new sources of natural gas supply. By renouncing control over energy prices, government dismantled an environment in which financial instruments such as long-term contracts could diminish the high-stakes uncertainty of investing in large energy systems (pipelines, power stations). As such, market risk has become critically privatized. Today, it is extremely difficult to synchronize the long-term horizon of energy production, which is measured in years, with the short-term fluctuations of energy price. Tackling the problem is generating interest in technologies that can create perspectives that are fundamental for institutionalization and social coordination.

The purpose of this article is to identify a few of the forms in which natural gas forecasters and the consulting firms they work for become partly responsible for new energy development on a local and global scale. Since restructuring, consulting firms have had an organizational significance for the way government and industry leaders stabilize perspectives on energy markets. These firms combine technical prediction with new modes of communicative exchange and are important for the knowledge they generate but also for the forms of socialization and ritual-like learning environment they create.

In the following example drawn from fieldwork experience, I illustrate an integrated set of technologies—scenario planning, executive roundtable meetings, and Internet-based analyses—through which firms such as Cambridge Energy Research Associates (cera.com), Wood Mackenzie (woodmac.com), and Ziff

2. Ulrich Beck, "The Reinvention of Politics: Towards a Theory of Reflexive Modernization," in *Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order*, ed. Ulrich Beck, Anthony Giddens, and Scott Lash (Cambridge: Polity, 1994), 45.

Energy Group (www.ziffenergy.com) translate the uncertainties of a variety of stakeholders into their own network. By absorbing the fragmented understandings of their clients, consulting firms can provide them with an objectivized view of how the industry operates, including the risks. These understandings are becoming the undisputed assumptions in an industry characterized by controversy.

I want to emphasize the important role played by conceptualizations of the future in consultant advisory service. By producing a knowable and concrete future, consulting firms allow for the envisioning of disparate individuals as related through the simultaneity of time. Much like the production of what Benedict Anderson called “calendrical coincidence” in the lives of people near and far, consulting firms illustrate and, in doing so, produce a collective subjectivity on the energy future—a subjectivity, I might add, that is justificatory of ideals of progress, economic growth, and increased energy consumption.³

By capturing and mediating an entire ensemble of relations about the industry, consulting firms may also be regarded among the new transnational agents that Edward LiPuma and Benjamin Lee suggest are exerting control over economies once regulated in and through the national state.⁴ In their genealogy of global capitalism, LiPuma and Lee argue that, since the 1970s, markets have come to rely on a new genus of financial products and institutions whose dynamic privileges risk-to-reward ratios and whose culture they call speculative capital.

Speculative capital is a culture made up of “cultures of circulation” whose basis for generating profit relies on the circulation of knowledge, money, entertainment, and technology.⁵ It is becoming the leading edge of capitalism, and the “connectivity” that it produces—through communication networks, global financial instruments, and, as I would argue, consultant advisory services—is disrupting an industrial-based form of production with its emphasis on relations between a national labor regime, national currency, and sovereign bordered economy.⁶ Perhaps, as LiPuma and Lee argue, speculative capital amplifies a shift in power away from national state political systems and toward global financial markets. If so, then examining the advisory services of consulting firms can provide some of the details of how this transformation is taking place.

3. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (New York: Verso, 1991), 33.

4. Edward LiPuma and Benjamin Lee, *Financial Derivatives and the Globalization of Risk* (Durham, N.C.: Duke University Press, 2004).

5. LiPuma and Lee, *Financial Derivatives*, 9.

6. LiPuma and Lee, *Financial Derivatives*, 21, 85–106.

The Image of Cambridge Energy

I first learned of energy consulting firms several years ago while assisting the State of Alaska in their negotiation with Exxon and British Petroleum on plans for building a pipeline to deliver natural gas from Alaska to markets near Chicago. In these meetings, contestation was the norm, and alliances were reconstructed on a daily basis. Working with energy consultants provided both a distanced perspective on controversial issues and an acceptable level of trust on information about where everyone seemed to be headed, because no one was heading in the same direction.

Cambridge Energy has emerged as the leader within the energy consulting field, providing advisory service to 650 retainer clients worldwide, including legislatures, producers, and pipeline companies. It is a firm whose partners have credentials from the Kennedy School of Government at Harvard University and whose revenue in 2000 was \$75 million.

In fall 2000, Alaska Governor Tony Knowles retained Cambridge Energy's North American gas advisory service, a team of twelve forecasting experts, for \$350,000 to provide expertise on natural gas marketing issues. Clients of Cambridge Energy include Exxon and British Petroleum. Several months prior, Cambridge Energy forecasted a rise in the long-term price for natural gas, what industry analysts identified as a requirement for building the Alaska pipe. In client reports and public statements, Andrew Halgrave, Cambridge Energy's top advisory director, predicted that natural gas prices would rise substantially over the next years and that a fundamental change was under way in the dynamics of energy pricing in North America.

Halgrave holds an MBA in finance from the University of Texas and a BS in economics from the University of Chicago. In promotional materials, Halgrave is forecaster, author, strategic planner, economist, and market analyst. His statements in 2000 included the following: "All signs point to U.S. natural gas demand growing dramatically in the years ahead. That means gas companies will have to connect new supply in the next decade to support a 30 trillion cubic feet market."⁷ At the time of publication, competing energy consultants referred to these forecasts as "Cambridge Energy's new gas paradigm."⁸ For Alaska state officials, the significance of the paradigm was the prediction that Alaska's natural gas pipeline

7. *Alaska Journal of Commerce*, "Knowles Taps State's Gas Line Experts," March 11, 2001. Natural gas volume is measured in cubic feet. In 2000, the United States consumed 21 trillion cubic feet of natural gas.

8. *Oil and Gas Journal*, "U.S. Gas Market to Surge in Coming Decade," January 31, 2000.

would be built by the year 2007, an ambitious target for a \$20 billion project not considered economically feasible for several decades.

As per the retainer with Cambridge Energy, Governor Knowles received cell-phone access to Daniel Yergin, chairman and cofounder of Cambridge Energy. Yergin, with a PhD from Cambridge University, was an undergraduate at Yale, where he first met Knowles. According to one Alaska official, “Knowles was a good friend of Yergin and believed with this friendship, [he] could get a lot out of Cambridge Energy.”⁹ There was also the feeling expressed by this informant that Yergin could “guide [the governor] on how to get the Alaska pipe built very fast.”

The thread that connects Yergin to Cambridge Energy has been explored by *New York Times* commentator David Brooks. In his book *Bobos in Paradise*, Brooks identifies Yergin as one of America’s new elite who combines values of the countercultural 1960s with those of the enterprising 1980s.¹⁰ As a member of America’s emerging Bobo class (Bobo stands for bourgeois bohemian), Yergin is part of an intelligentsia who see their careers in capitalist terms: Yergin seeks out market niches, competes for attention, and regards Cambridge Energy ideas as property. His books on the oil industry are best sellers that have become public television programs.

Though widely acknowledged as a benchmark of the energy future, the public face of Cambridge Energy can elicit an ambivalent response, as a specific company whose edge on the forecasting market creates opportunities to hype and overhype some products. According to a senior economist for British Petroleum with whom I spoke, Cambridge Energy is “ubiquitous, dominant, and good analysts.” But as this economist explains, the firm’s success is also “marketing, their conversations with the President of the United States, their editorials published in newspapers, the ability to give Lord John Brown [CEO for BP] a phone call and get him to buy their reports, which I don’t think we even need.”¹¹

One of the key technologies of Cambridge Energy’s advisory service is scenario planning, whereby distinctive points of view on future energy situations are tailored for individual organizations. For example, in early 2001, Alaska state officials flew to Cambridge Energy headquarters in Cambridge, Massachusetts, to participate in the scenario-based study “Toward New Frontiers: The Future of

9. Larry Persily, Deputy Commissioner of Alaska Department of Revenue, personal communication, May 2001.

10. David Brooks, *Bobos in Paradise: The New Upper Class and How They Got There* (New York: Simon and Schuster, 2000), 147.

11. BP Senior Economist, personal communication, March 2002.

Gas Supply in North America.” Governor Knowles instructed officials to develop a view of the market and of the long-term investment risks on the pipeline. Over a period of one week, Alaska officials working with Cambridge Energy forecasters completed three scenarios, titled “Gas Favored,” “Supply Realignment,” and “Aftershock.” At the time, the Supply Realignment scenario was the favored outlook for the State of Alaska. It predicted that Alaska natural gas would play a critical role in America’s near-future gas supply and presented findings consistent with earlier Cambridge Energy forecasts.¹² Thus, the scenario provided the kind of independent assessment sought by the governor to promote the Alaska pipeline in negotiations with industry.

Perfecting the use of consultant scenarios requires learning new reference points, modes of observation, and objects of discourse. On the supply side, for example, Cambridge Energy’s forecasting method calls for examining “components of producibility,” such as declines in existing gas production, forecasts on future discoveries, and more.¹³ Applying scenario-based knowledge, therefore, required Alaska officials to bind their consciousness to new relations in technology, economics, and regulation that were coded in a technoeconomic vocabulary. Adopting a technoeconomic language often serves as a surrogate for political argument in defining a realm of thought or discourse concerning development.¹⁴ In Alaska, technoeconomic arguments over the best location of energy infrastructure have come into conflict with arguments about the identity of places and their environmental and aesthetic quality. These arguments have also been used to undermine the claims of local communities, for example, in the way technoeconomic details come to dominate choices about local access to natural gas.

In January 2001, within days of their return from Cambridge Energy headquarters, Alaska state officials provided testimony to the Alaska legislature on pipeline investment issues. What becomes clear from the transcript of this testimony is that scenario-based analysis transformed their unknowingness of the gas market into an image of a well-regulated and self-referential system. One official remarked to me, “You have to keep in mind, until that winter of 2000, we all knew

12. Cambridge Energy, “Long-Term Outlook,” decision brief, December 2000; Tom Robinson and Paul Hoffman, “The Long Ascent: The Challenge of Climbing to a 30 Tcf Market,” Advisory Report to Cambridge Energy Research Associates, 2000.

13. Robinson and Hoffman, “The Long Ascent.”

14. See Paul Friedrich, “Language, Ideology, and Political Economy,” *American Anthropologist* n.s., 91, no. 2 (1989): 295–312, “where the techno-economic is always linguistic, and the linguistic is always techno-economic, ideology emerges as . . . the primary output governing human acts and attitudes” (297).

there was stranded gas in arctic Alaska, but we had not really immersed ourselves in terms of ‘how did it work in the continental U.S.—supply and demand?’ So, Cambridge Energy was very educational in explaining how natural gas markets worked.”¹⁵

The executive roundtable meeting is another tool of Cambridge Energy’s advisory service. Roundtable meetings take place in Houston, San Francisco, Washington, D.C., Boston, and Calgary, and the high cost of attendance, between \$2,000 and \$8,000, ensures that participants are elite members of their own organizations. According to one Alaska state official, roundtables are “highly educational, because you’re in a room with people who do natural gas analysis for a living. From that you get a consensus on where gas supply, demand, and price is headed, you get a consensus on what the rest of the world suppliers, users, utilities, are thinking, what are they planning on, what are their expectations, because no one knows what’s going to happen.”¹⁶

Cambridge Energy executive roundtables are also events whose dramatic quality calls to mind the “staging of verification” of scientific experiments.¹⁷ For example, at one roundtable I attended, clients were invited to learn about a six-month time interval between a rise in natural gas price and a response in natural-gas-related production. The time interval was presented to clients as a “discovery” by Cambridge Energy and as a “reliable expectation” of one of the many market interactions between energy supply and demand.

Forecasters began their demonstration by presenting a set of PowerPoint images that they called their “mistaken” results. Each of these images showed a scattering of small yellow squares plotted along a time line and was accompanied by the sentence “you see, it doesn’t look right.” The final image in this sequence, however, showed the yellow squares more densely plotted and was accompanied by the statement “you see, it looks right.” Though the time interval relates an important discovery concerning the flexibility of production, what I found exciting was the skill and showmanship by which forecasters made transparent both the realities of market functioning and how those realities are constructed in a particular way.

I should note that several weeks after attending the roundtable, I learned of a U.S. Department of Energy (DOE) report produced two years earlier on the

15. Wilson Condon, Commissioner of Alaska Department of Revenue, personal communication, June 2002.

16. Larry Persily, personal communication, May 2001.

17. Alfred N. Whitehead, *Science and the Modern World* (New York: Mentor Books, 1926), 11.

six-month time interval. The DOE employed the same graph used by Cambridge Energy (a scatter plot) and in the same configuration.¹⁸ As is the case, Cambridge Energy relies on a substantial amount of data and analysis from DOE and for which they credit the organization. The lead Cambridge Energy forecaster of the roundtable I attended had previously worked for DOE. Based on the response from clients with whom I spoke on this issue, Cambridge Energy plays an important role in repackaging hard-to-find analyses. As stated by one client, “We’re interested in gas pricing, but internally, we don’t have the time or resources” to develop a sophisticated and accessible market outlook.¹⁹ Or, as stated by one Alaska official, Cambridge Energy forecasters represent “the sum total of what everyone knows” in the industry.²⁰

The jewel in the crown of Cambridge Energy roundtables is their annual executive conference called CERAWEEK, which takes place at the upscale Westin Galleria hotel and shopping mall in Houston, Texas. The *New York Times* reports that CERAWEEK is the location where “leaders of the world’s largest energy companies and those who aspire to replace them go to think big thoughts.”²¹ In 2002, the year I attended, security name tags hung from lanyards around the necks of several thousand investment bankers, energy executives, and government representatives, identifying bearers as such people as Philip Watts, then chairman of Royal Dutch/Shell, and Mikhail Khodorkovsky, then CEO of Yukos, Russia’s largest oil company.

Cambridge Energy analysis and insight are also delivered through what they call their Internet-based strategic knowledge service (cera.com). Deployed on an enterprisewide basis, this knowledge service gives each individual user the ability to proactively manage and control the flow of Cambridge Energy analysis to their desktop computer. Clients can search for specific Cambridge Energy research and utilize supporting graphics and data behind the analysis. The ability to transmit images, data, and voice accurately and instantaneously across the globe can be seen as an important technology for fostering communities of interpretation as well as imposing advisory knowledge across locally imagined socioeconomic spaces.

18. Energy Information Agency, *U.S. Natural Gas Markets: Mid-term Prospects for Natural Gas Supply* (Office of Integrated Analysis and Forecasting, U.S. Department of Energy, December 2001), xii, figure ES1.

19. Strategic gas planning analyst, Keyspan Marketing, personal communication, March 2003.

20. Larry Persily, personal communication, May 2001.

21. Neela Banerjee, “Energy Industry Gauges the Enron Damage,” *New York Times*, February 18, 2002.

The integration of Cambridge Energy technologies can also provide opportunities for select clients to promote particular proposals. For example, it was through Cambridge Energy's Internet multimedia program that I was alerted in February 2001 to Governor Knowles' guest appearance at the CERAWEEK executive conference. I can still recall my fascination as I watched on the computer screen a video broadcast of Governor Knowles in Houston, who, from the lectern, addressed several thousand executives on the benefits of building Alaska's pipeline, and, from the Internet, thousands of Cambridge Energy clients worldwide.

Reaching for the Frontiers

By fall 2000, across the industry natural gas forecasters were in agreement that a change was under way in the dynamics of energy pricing. In energy trade journals, congressional testimonies, and executive roundtable meetings, market forecasters stated that the price for natural gas fuel in the United States would rise substantially. It was the discovery by consulting firms of a *new gas paradigm*, a *new commodity price environment*, and a *next phase of high prices*.

The suddenness with which this event was acknowledged captured the attention of forecasters themselves. Within six months of the discovery, the U.S. Department of Energy stated that "the most striking aspect of the price pattern [described] was the fact that natural gas prices would be sustained at such high levels." They note that the descriptions themselves were "extraordinary."²²

But the discovery also entailed a rethinking of how the industry would now function as a market. And this rethinking was reflected in a reorganization of knowledge that occurred on at least three levels: First, natural gas forecasters introduced new ways for talking about the same topic. Natural gas imports, for example, often described as providing a small percentage of the nation's energy need, were no longer discussed as a quantifiable number. Instead, imports were suddenly talked about in terms of increasing global security. Politically unstable countries with large proven reserves of natural gas would be transformed by financial investment in these countries' energy transmission infrastructure. Investment would orient these countries toward closer economic and political relationships with the West. In short, natural gas would become a globally traded commodity.

On a second level, forecasters introduced new topics into their reports. In published weekly trade journals, *National Gas Intelligence*, *Oil and Gas*, and others, and in the daily Internet updates produced by governmental and business firms,

22. Energy Information Agency, *U.S. Natural Gas Markets*, 3, iii–xv, 1–16.

including the Energy Information Administration and CERA, new topics for discussion included building long-distance pipelines to deliver natural gas from the Arctic to mid-continental United States. Previous mention of these proposals, if discussion occurred at all, had been limited to the term *uneconomic*. Suddenly, these proposals were reflected upon as thirty-year ongoing efforts. They were windows of opportunity that must not be allowed to escape unopened into history.

On a third level, but closely related to the second, forecasters identified historic accounts as having significance, particularly descriptions from the 1970s. Before fall 2000, the past was referred to in general terms, as a shift from regulation to risk. After fall 2000, the rediscovery of old knowledges on technical design of arctic pipelines or details of congressional legislation introduced a recognizably decayed nomenclature into contemporary discussion. These knowledges also expanded the coordinates used for navigating how the industry could move forward into the future.

The essence of this discontinuity was captured in the following phrase: reaching for the frontiers. Taken literally, reaching for the frontiers signaled an effort to increase energy supply in the United States. Proven sources of natural gas that lay outside the system would be brought on line. The North American pipeline grid would significantly expand. Known gas reserves, such as those that exist in the Arctic and overseas but today remain on the frontier, would be connected to the continental pipeline network.

Thus, reaching for the frontiers meant that these frontiers themselves were now undergoing a process of being redrawn. Objects distant from each other spatially and temporally were now brought together. Such things as the Arctic, natural gas imports, the epistemic decay of historical documents, the potential for creating new economic value, and future global security were all brought closer together through discussion of reaching for the frontiers.

A Frontier Delayed

One year later, in fall 2001, demand for natural gas in the United States dropped significantly. The event was noted on the front page of the *New York Times*, whose headline stated, "Oil and [Natural] Gas Prices Plunge. . . ." ²³ As a result, prices for natural gas fell below a level that made discussion of reaching for the frontiers by market forecasters unintelligible.

23. Alex Berenson and Jonathan Fuerbringer, "Oil and Gas Prices Plunge on Fears of Worldwide Recession," *New York Times*, September 25, 2001.

Here are two statements from Cambridge Energy's Andrew Halgrave. The first quote, also shown above, was publicized during 2000: "All signs point to U.S. natural gas demand growing dramatically in the years ahead. That means gas companies will have to connect new supply in the next decade to support a 30 trillion cubic feet market. The continental U.S. is reaching for the frontiers." Eight months later and after the fall of natural gas prices, Halgrave states: "We do not see any scenario, not even to 2015, where U.S. domestic demand is likely to reach a 30 trillion cubic feet market."²⁴ In the same discussion, Halgrave offers his opinion on arctic pipelines: "There is a window of opportunity for [arctic] gas, but it is not a done deal by any stretch of the imagination. We think there is a reasonable probability or possibility to see arctic [pipe] within the course of the next decade. But that has been the case for the last three decades." Dr. Pedro Hellerman, another well-known economist, states during this same period that the Alaska pipeline is "by no means a solid project. It is to a large degree, a fantasy project."²⁵ Thus, among energy forecasters, after fall 2001 reaching for the frontiers entered into the realm of fantasy and the imaginary.

Yet, beginning in fall 2000 and over the period during which forecasters believed in a substantially higher natural gas price, government and industry had since oriented their plans toward reaching for the frontiers. Petroleum companies—Exxon, British Petroleum—who own Alaska's natural gas reserves spent \$125 million in feasibility work to build a \$20 billion pipeline. A similar investment is reported for studying a \$12 billion pipeline at the nearby Canadian Mackenzie Delta. Equal monetary outlays are reported for off-shore reserves of the eastern Canadian Arctic. Feasibility studies for importing natural gas from Qatar, Algeria, Nigeria, and other locations were completed, with companies filing requests from U.S. regulatory agencies to build twenty-seven new import terminals estimated at \$4 billion to \$6 billion each.

The U.S. Congress passed an energy bill through the House to expedite frontier pipe construction. Pipeline companies dusted off certificates from the 1970s to build arctic pipe, signing new memorandums of understanding and reactivating dissolved joint venture partnerships. Concerning Alaska natural gas development, the Alaska legislature approved a \$2 million streamlining effort of its own regulatory process in anticipation of expediting pipe proposals. Alaska Governor

24. *Alaska Petroleum News*, "Cambridge Energy Research Pessimistic about Alaska Gas," December 30, 2001.

25. *Anchorage Daily News*, "Gas Pipeline Not Feasible, Consultant Says," December 21, 2001.

Knowles spent \$500,000 on public outreach to promote pipe development, including public relations reports stating Alaska pipe would create 500,000 new jobs in the United States and overhaul the ailing U.S. steel industry with an estimated demand for eight million tons of steel pipe, a level of demand to occupy U.S. steel mills and all mills in Germany and Japan for two years, twenty-four hours a day. Reports of similar expectations are produced in Canadian territories and provinces where competing frontier projects are expected to be located.²⁶

By summer 2003, two years had passed since forecasters had given up speculation of a substantially higher natural gas price in the marketplace, yet none of these frontier projects had since been abandoned. Some commercial sponsors turned entirely away from the governing logic of the market. Concerning the Alaska pipeline, for example, petroleum companies and the State of Alaska began focusing their attention on securing financial incentives from the U.S. Congress.²⁷ New calculations came under the rubric of reaching for the frontiers. Tax mechanisms to financially support the Alaska pipe over a twenty-year period were labeled, collectively, the hybrid, combining different categories of government financial compensation, such as accelerated depreciation, commodity price floor, loan guarantee, and property tax relief. This particular package was accompanied by a new cost estimate of \$50 billion in taxpayer support.

Thus, while in 2000 historicizing the natural gas industry's future had focused on a discontinuity in forecasting knowledge, by 2003 historicizing its future had become dispersed across various nonmarket arenas, advances in technology, government financial support, and regulatory streamlining, all of which favored a continuity of movement toward the global gas frontier.

Conclusion

Michel Foucault writes that historical description can be divided into discovering discontinuity or abandoning the irruption of events in favor of stable structures. "We must not imagine," Foucault adds, "that these two great forms of description have crossed without recognizing one another."²⁸ When taken together, the attitude of natural gas forecasters and industry participants seems oriented in a

26. *State Financial Participation in an Alaska Natural Gas Pipeline* (Alaska Department of Revenue, 2002).

27. *Gas Daily*, "Senate Mulls Action on Alaska Pipeline," October 3, 2001. See also U.S. Senate Committee on Energy and Natural Resources, October 2, 2001, testimony by Terry Koonce, president of Exxon; Joseph Marushack, vice president of Conoco; Tony Knowles, Governor of Alaska.

28. Michel Foucault, *Archaeology of Knowledge* (New York: Pantheon, 1972), 6.

manner similar to Foucault's account of historical description, with forecasters favoring a discontinuity of events and industry seeking continuity through stable structures.

Perhaps in this moment when forecasters registered a discontinuity in natural gas price, the consulting firms they work for recognized a dream of industry as the sum total of what everyone already knew. But the rationality of forecasting finds its unity in the limitations imposed by its self-referentiality. It is, after all, only one mode for discovering value creation. By fall 2001, with an end to the discovery of a new gas paradigm and with reaching for the frontiers now spilling into the domain of socially coordinated communities, consulting firms had completed their reflection on the global gas industry while their economists returned to the specific mode of forecasting.

