

Before the
Alaska State 25th Legislature Third Special Session

Regarding the
**TransCanada Application Pursuant to the
Alaska Gasline Inducement Act**

Statement of

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**John F. Kennedy School of Government
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Introduction

My name is Joseph P. Kalt. I am the Ford Foundation Professor of International Political Economy at the John F. Kennedy School of Government, Harvard University, and a Visiting Professor at the Eller College of Management at the University of Arizona. The Kennedy School is Harvard's graduate school for the study of public policy and public administration. I also work as a senior economist in the Cambridge, Massachusetts, and Tucson, Arizona, offices of Compass Lexecon, an economics consulting firm. I have attached my biography as Attachment I.

I hold B.A., M.A., and Ph.D. degrees in economics and am a specialist in the economics of competition, antitrust, and regulation, with particular emphasis on the transportation, energy, communications, and financial sectors. Throughout my professional career I have conducted research, published, taught, and testified extensively on the economics of market structure, competition, antitrust policy, regulation, pricing, and strategic

performance in the energy industries (including natural gas transportation and marketing) and various other segments of the economy.

Of particular relevance, I have extensively studied the production and pipeline transportation of oil and gas resources throughout North America and, specifically, in Alaska. I have testified as an expert in various state and federal proceedings concerning the valuation of Alaskan North Slope crude oil and natural gas for purposes of royalty and taxation, and I have studied and testified as an expert regarding the regulation of the Trans Alaska Pipeline System.

I have now been asked by ExxonMobil Corporation to analyze key elements of the AGIA license application filed by TransCanada Alaska Company, LLC, and Foothills Pipe Lines Ltd. (together “TransCanada”) to build and operate a natural gas pipeline. In particular, I have been asked to assess the economics of TransCanada’s AGIA application from the perspective of the State’s and producers’ interests as direct or indirect shippers on the proposed TransCanada pipeline.

Key Findings

Based on my analysis of the economics of TransCanada’s proposal to build and operate the critical pipeline infrastructure upon which North Slope gas development now depends, I find that four key aspects of the proposal bear particular attention:

- **The State’s Interests:** Certainly, at least at this stage of project development, the State’s interests are aligned with those of a North Slope gas producer. Alaska has abiding interests in (1) maximizing the ultimate magnitude and value of North Slope gas production; (2) expeditious completion of the major pipeline system upon which such development depends; and (3) minimization of dispute and litigation with the pipeline owner/operator over the life of the system.

- **TransCanada’s Shifting of Risk:** The TransCanada proposal shifts substantial risk away from TransCanada and to producer-shippers and, in turn, to the State of Alaska. Unless subjected to appropriate, negotiated contractual risk-reward protections, this is markedly contrary to each of the State’s interests noted above.
- **Threats to Producers’ Economics:** In light of TransCanada’s aggressive shifting of risks to producers (and the State) via the significant long-term, non-cancelable obligations of producers anticipated in the TransCanada proposal, claims of “robust” producer returns are dangerously overstated in the analysis of the State’s consultant (Black and Veatch).
- **Need for Contract Negotiations and Conditioning:** In the presence of the very large risks that producers and the State are being asked to assume under TransCanada’s proposal, it is in the producer-shippers’ and State’s best interests that contracting with TransCanada for long-term transportation be approached in a standard, businesslike manner. This means negotiating contracts and conditioning “open seasons” on pipeline capacity so as to strike sustainable agreements that reflect balanced allocations of risk.

Let us examine these findings in detail.

The State’s Interests: What Should It Care About?

The question of whether the TransCanada proposal sufficiently protects and maximizes the benefits to Alaskans is one that will have significant ramifications for the State’s ability to fully realize its return from the development of the State’s resource. The State’s direct monetary interests, derived from the payment of royalties and severance and income taxes, are very much the same as those of a prospective producer-shipper on the pipeline. Gas will not flow and revenues will not be earned if pipeline development is delayed by inflexibility in project contracting or by the shifting of so much risk to producers, without offsetting protections and rewards, as to threaten the economics of producers’ investments. The cost, delay, and disruption that can plague such an expensive and long-lived project will not be held at bay over the project’s life if initial contracting does

not undertake best efforts to arrive at fair and balanced allocations of risks and rewards. With the only certainties about the future decades in world energy markets being that they are uncertain and will be volatile, contractual *imbalance* as risk converts itself to reality is a recipe for maximizing conflict among the stakeholders.

Project Risks Cannot Be Eliminated: Where Does TransCanada Put Them?

With daily reports of world crude oil prices hitting ever-higher peaks and pulling up natural gas prices in the process, it is easy to believe that there is and will continue to be an endless supply of investment dollars ready and willing to flow into development of North Slope gas. But, as Figure 1 should remind us, we have been here before – and billions of dollars were lost betting that the price run-ups of the 1970s and early 1980s would not turn into two decades of prices substantially below their peak.

In fact, North Slope gas development, itself, was a victim of these risks. As everyone here is likely aware, during the early development of the State's crude oil resources, the expectation was that natural gas resource development would soon follow. However, dramatically declining worldwide energy prices subsequently rendered such natural gas projects uneconomic in light of the very high costs associated with providing transportation from such a remote area. The extremely high costs of TransCanada's proposed pipeline – estimated at \$31.5 billion by the State's consultant, Black and Veatch ("B&V") – are no less a source of potential risk and impediment to North Slope development today. In fact, the cost of the proposed pipeline would far exceed the cost of any recent majority privately financed infrastructure development anywhere in the world (see Figure 2). TransCanada's proposal is approximately three times more expensive than the next largest "mega" project. Furthermore, the risk burden these figures

imply is only magnified by the remarkable size and length of TransCanada's proposed pipeline, the remoteness of the resource base, the arctic environment, and the existence of multiple state, provincial, national, and Native governmental jurisdictions along its path.

In light of the risks, it is readily understandable that TransCanada has assiduously sought to protect its economic interests by minimizing the risks it bears. In the process, however, TransCanada has shifted the lion's share of the project's risks to producer-shippers and those (like the State) with a producer's interests. This risk shifting is most starkly seen in TransCanada's proposal that producer-shippers be expected to sign long-term non-cancelable commitments to provide the pipeline developer with a steady stream of cash flows over the project life span. The mechanisms by which this would be achieved include:

- 25-year, firm ship-or-pay contracts for pipeline capacity;
- The absence of a project completion guarantee from TransCanada (leaving risks on producers and taxpayers);
- Cost recovery guarantees that leave TransCanada with a minimal cost at risk of about \$125 million out of \$31 billion.

Risk, Risk Shifting, and Producer Economics

The costs to the producer-shipper of risk-shifting elements of the TransCanada proposal can be easily illustrated by the fact that TransCanada is looking for 25-year producer ship-or-pay contracts for essentially the entire capacity of the pipeline. Such 25-year, firm ship-or-pay contracts create fixed obligations that are payable to TransCanada over the next 25 years whether or not the producers ship gas on the system and whether or not producing and selling Alaska North Slope gas is actually profitable. For all intents and purposes, producer-shippers are being asked to take on the economic equivalent of a long-term stream of mortgage or lease payments that would

effectively finance and pay for the pipeline. In the process, producer-shippers would be taking on the risks of the system, but without acquiring any ownership and control. It's like putting up the financing to pay for a new house or a new condominium, but then letting the builder remain as perpetual landlord.

The fundamental economic character of producer-shippers' financial obligations have not been accurately characterized in B&V's analysis of the economics that *producers* face in developing and selling Alaskan gas. Since the producer-shippers would have to pay TransCanada the stream of mortgage-like payments over the next 25 years regardless of other market and/or project changes, these obligations shift gas price, cost, and geologic risk to producer-shippers. The pipeline developer, meanwhile, would receive a stream of payments that are effectively guaranteed by the financial capability of the producer-shippers signing the long-term ship-or-pay contracts.

Critically, TransCanada's ability to raise the financing in this case is not dependant on TransCanada's financial capabilities. Rather, it is based almost exclusively on the financial capabilities of the parties signing the ship-or-pay contracts. TransCanada is essentially a pass-through middleman in the financing chain. For these reasons, it is the producers' balance sheets and debt-carrying capacity, not TransCanada's, that are the keys to the financial markets' willingness to finance the pipeline.

The financial implications of this risk shifting for the producer-shippers are not properly recognized by the net present value ("NPV") and rate of return calculations of the State's consultant, Black & Veatch. In its analysis, B&V treats the ship-or-pay contracts as an operating expense ("OPEX") of the producer-shippers, rather than as a fixed commitment that

must be paid regardless of other market developments. This is economically incorrect: The ship-or-pay contracts are actually capital commitments whose basic payment obligation does not vary with operations (throughput). Financial markets (and economics) properly treat such commitments as upfront debt *of the producer-shippers*¹ – especially under the huge costs and unique risks of an Alaskan gas pipeline. TransCanada ends up bearing the relatively low risk that very large and financially sound producer-shippers like ExxonMobil, BP, and ConocoPhillips will not be able to pay their debts. The producer-shippers, meanwhile, end up bearing the very substantial risks of volatility in world energy markets, the uncertainties of geologic unknowns in the arctic, and the vagaries of domestic and international politics and regulation affecting development costs and pricing. Failure to account for this leads B&V to overstate the risk borne by TransCanada and understate the risk borne by producers.

The Threat to Producers' Economics

Under proper treatment of ship-or-pay commitments, B&V's characterization of producers' economics of investing in and developing North Slope gas as "robust" evaporates. With project risk shifted overwhelmingly to producer-shippers under TransCanada's proposal, it is inappropriate to discount the costs of the pipeline tariff at the overall project risk rate since that payment stream is guaranteed by the producer's debt-bearing capability. Using a 6% discount rate (as a measure of the producer's weighted average cost of debt) for the projected stream of tariff costs, B&V's claim of an NPV project worth of \$13.5 billion collapses to worse than breakeven (see Figure 3). That is, the overall project does not generate enough risk-adjusted revenue to cover producers' costs of capital. The State cannot have security

¹ See, e.g., Standard & Poor's, *Operating Lease Analytics, Corporate Ratings Criteria 2006*; and Brealey, Richard A., Stewart C. Myers, and Franklin Allen, *Principles of Corporate Finance*, 9th edition, McGraw-Hill Irwin, 2008, at 706.

that the TransCanada proposal will enable the development of the State's gas resources.

But is there really much risk being borne by producers, in light of the very high prices and go-go investment environment we now see in energy markets around the world? History says there is. While describing the producer returns as "robust," even the B&V sensitivity analysis acknowledges that positive producer returns evaporate if prices fall 40-60% from the B&V base case of steadily rising prices.² While world energy prices are likely to be on an upward trend over the very long term, history tells us that such trends can be upended for sustained periods of time.

Consider the actual case of the 1980s and 1990s shown in Figure 1. World oil prices peaked in 1982, and then embarked on a long period in which prices were far below the peak. It was not until 2004 that prices once again exceeded the 1982 level. At the peak in the early 1980s, "consensus forecasts" (see Figure 4) of rapidly rising prices implied "robust," positive economics for a multitude of potential projects (including a natural gas pipeline from the North Slope). Given the subsequent decline in world energy prices, however, investors in many of those projects, if they had moved forward, would have regretted their decision. Billions of dollars were lost as expectations were dashed. Accounting for the possibility that price forecasts may turn out to be significantly overly optimistic is clearly relevant to the discussion of the "robustness" of producer economics. If history repeated itself, based on the pattern of percentage declines shown in Figure 1 – which it could – B&V's framework indicates that the Alaskan producers' NPV would be reduced to approximately *negative* \$1.5 billion.

² Black & Veatch, AGIA NPV Analysis Report Prepared for the State of Alaska, May 22, 2008, at 222.

Producers bear risks not only of price decline. Mega projects can also experience significant cost overruns, especially in new and untested environments. For example, the cost of the TAPS crude oil pipeline was originally estimated at \$900 million, but eventually ballooned to over \$8 billion in the 1970s.³ That represents a ninefold increase in project cost and subsequent tariffs. Such cost escalation on large energy projects is not unique to the TAPS project. More recently, even smaller, faster-to-market projects have exhibited significant increases in costs. For example, press reports indicate that the Nabucco Gas Pipeline (serving Europe) is over budget by 60% due to increasing materials cost and the Sakhalin-2 project has exceeded early cost estimates by over 100%.⁴

Other important factors that can affect producer profitability include the fiscal regimes under which they operate. While the B&V analysis assumes a certain set of governmental fiscal policies over the life of the pipeline, the chance that these policies may change over time creates an additional layer of uncertainty that must be considered in the context of existing price and cost risks faced by the producers. As so many countries around the world have learned, uncertainty regarding fiscal regimes raises producer risk and deters investment and development in otherwise well-functioning marketplaces.

³ Testimony of Monte Canfield, Jr., Director, Energy and Minerals Division, GAO, before the Senate Committee on Energy and Natural Resources, *Planning and Construction of the Trans-Alaska Pipeline*, September 26, 1977.

⁴ “Sakhalin Energy Projects Face Reality Check”, *Eurasia Daily Monitor*, July 27, 2005, http://www.jamestown.org/edm/article.php?article_id=2370064; and “Nabucco natural gas pipeline over budget as steel prices soar”, *International Herald Tribune*, June 3, 2008, <http://www.iht.com/articles/2008/06/03/business/pipe.php>.

Protecting the State and Producer-Shippers through Negotiation and Conditioning

As I have discussed above, the risk-shifting contained in the TransCanada proposal is understandable from TransCanada's perspective. At the same time, however, it is eminently rational for the producers and the State to work to protect their interests. It is not in producers' or the State's interests to treat the TransCanada proposal as "take it or leave it." As in any case of a business proposal involving substantial risk and huge cost, producer and State interests here should be protected by allowing parties to negotiate over key terms and conditions that define the project's risk-sharing relationships.

It is standard practice for prospective shippers to "condition" their bids in a new pipeline's "open season" for capacity contracting on contractual provisions and terms that protect their interests. Similarly, it is standard practice that prospective shippers engage in extensive negotiations and discussions with the pipeline developer. This often leads to extensive changes in what the developer might originally propose – changes that ultimately result in a sustainable, viable project that all parties can enter into and live with over the long term. In this context, North Slope producer-shippers should be expected to condition "open season" offers to TransCanada and to negotiate with TransCanada. Doing so is consistent with their interests and ultimately serves to protect the State's interests.

While it is up to the parties to define the key elements of their negotiations, there are several aspects of the TransCanada proposal that are reasonable candidates for possible negotiation and conditioning as part of the pipeline capacity contracting and development process. These include measures to provide:

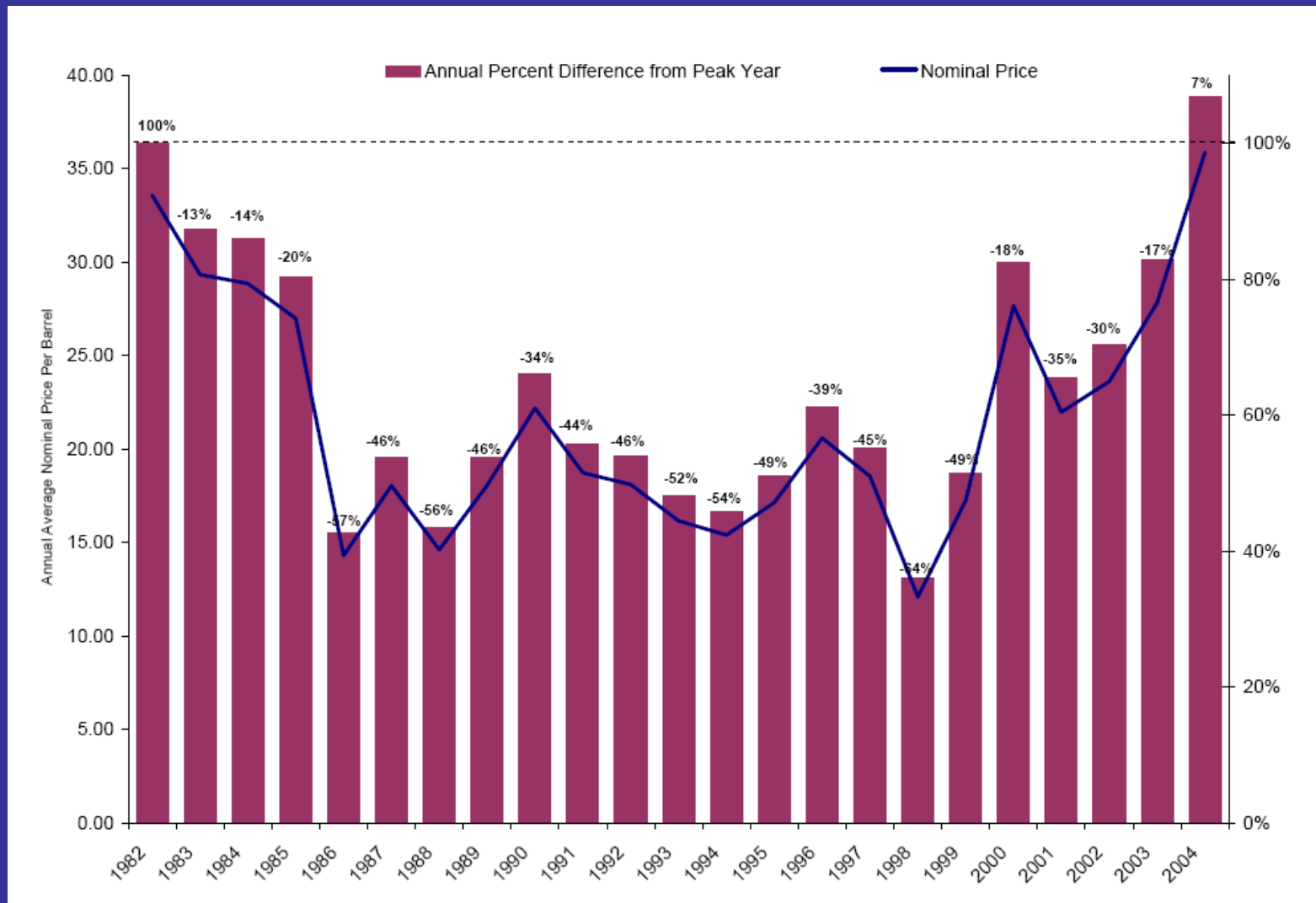
- Tariffs commensurate with risk allocation between TransCanada v. the State and producer-shippers;
- Matching of risk and control via producer-shippers holding ownership interest in accord with expected throughput⁵;
- Conditioning and/or modifying such provisions as downstream TransCanada exclusivity, withdrawn partner liability, and cost overrun responsibility (all of which now are tilted strongly in TransCanada's favor).

Finally, conditioning and negotiation over these kinds of matters should not be viewed as setbacks to the process of establishing a pipeline project in a reasonable timeframe. Given the possibility that the lack of flexibility around key risk and control provisions could create a “one size fits none” outcome, the ability to condition bids and engage in negotiations of key terms and conditions can enhance the chances for the State's resources to be developed sooner rather than later. And, developing a pipeline with a balanced sharing of risk and reward will promote a pipeline system that is sustainable and subject to fewer disputes and disruptions over its life. This is clearly in the State's interest.

⁵ With access by future expansions and producer-shippers now being protected by new FERC access rules pursuant to recent federal legislation.

Figure 1

DESPITE FORECAST MADE AT A PEAK, WORLD ENERGY PRICES CAN KILL PRODUCER ECONOMICS



Source: EIA.

Figure 2

THE TRANSCANADA PIPELINE IS EXTREMELY COSTLY

Project Name	Amt. (\$B)	Country	Sector	Year
TCPL Alaska Gas Pipeline Proposal	31.5*	United States	Natural Gas Pipeline	N/A
Saudi Kayan Petrochemical Complex	10.00	Saudi Arabia	Petrochemical/Chemical Plant	2008
Rabigh Petrochemical Expansion Project	9.90	Saudi Arabia	Petrochemical/Chemical Plant	2006
Abu Dhabi Aluminium Smelter	7.05	United Arab Emirates	Processing Plant	2007
Liaoning Nuclear Power Plant Project	6.94	China	Power	2008
Jamnagar Petrochemicals Refinery Complex	6.00	India	Petrochemical/Chemical Plant	2006
Qatargas 4	5.71	Qatar	Oil Refinery/LNG and LNG Plants	2007
Fujian Refining and Ethylene Joint Venture Project	5.60	China	Petrochemical/Chemical Plant	2007
YanSab Petrochemical Complex	5.00	Saudi Arabia	Petrochemical/Chemical Plant	2006
Indiana Toll Road	4.83	United States	Road	2006
Qatar Aluminum Trust	4.74	Qatar	Processing Plant	2007
QCTC Nakilat LNG Vessels	4.74	Qatar	LNG	2006
FARAC Toll Road PPP	4.28	Mexico	Road	2007
Ambatovy Nickel Project	3.70	Madagascar	Mining	2007

Note: * In 2008 dollars according to Black Veatch NPV₁₀ analysis at 9.

Source: Project Finance and Infrastructure Finance, Issues 288 and 277., Dealogic.

Figure 3

PURPORTEDLY “ROBUST” PRODUCER ECONOMICS v. REALITY OF RISK SHIFTING

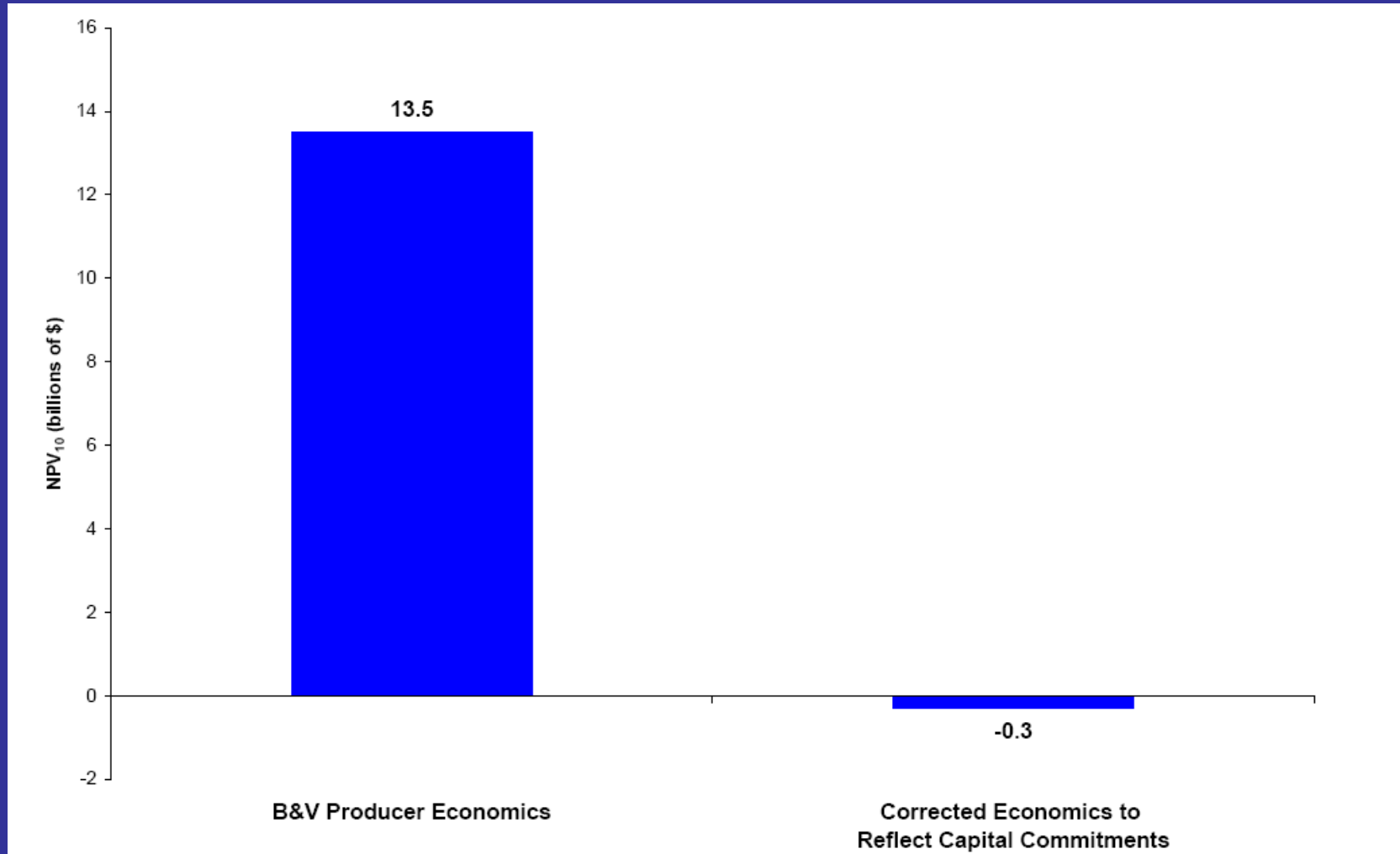
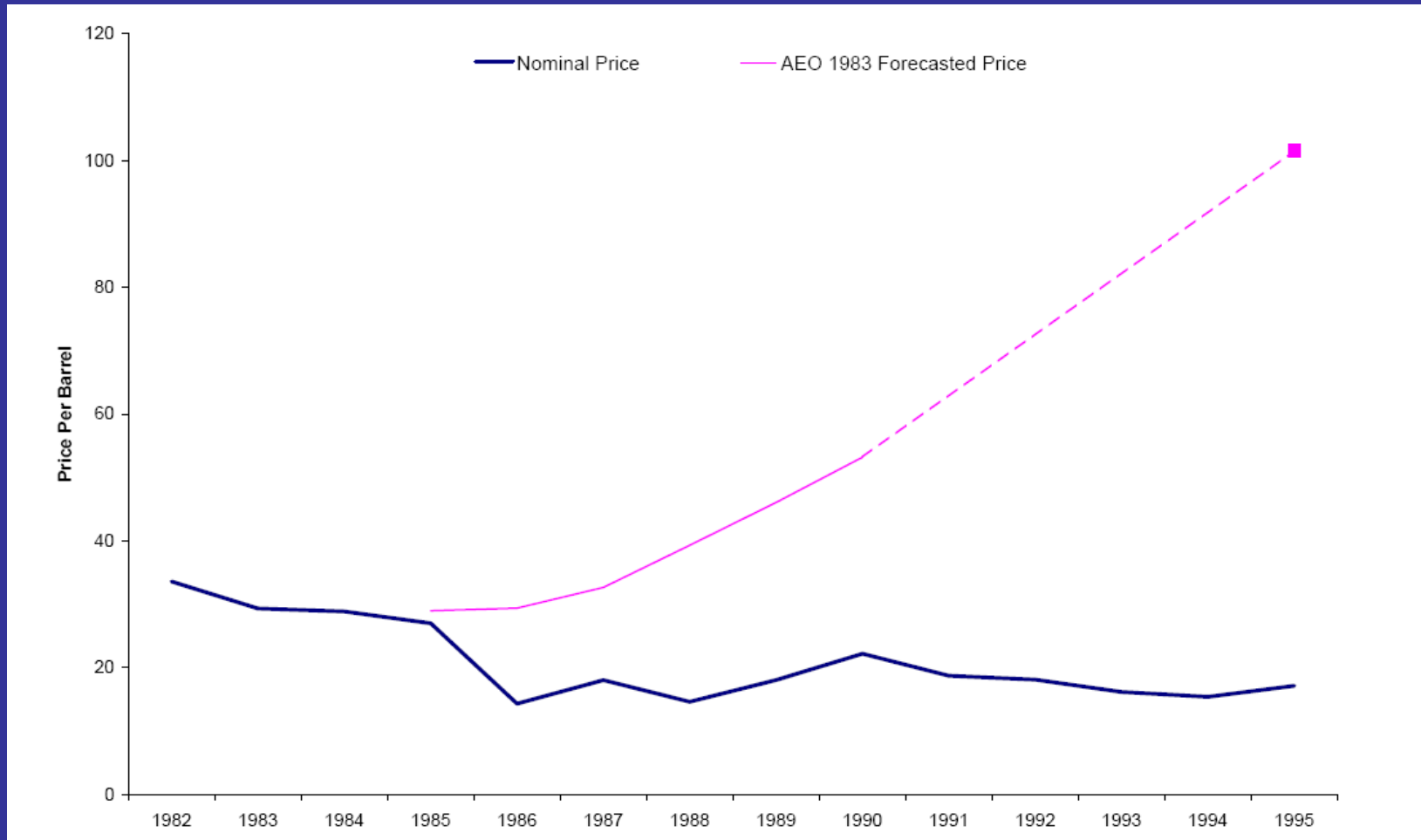


Figure 4

THE PRICE PER BARREL OF OIL v. THE AEO 1983 FORECASTED PRICE PER BARREL OF OIL



Source: EIA.

Attachment I

JOSEPH P. KALT
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Joseph P. Kalt is the Ford Foundation Professor of International Political Economy at the John F. Kennedy School of Government at Harvard University. He joined the faculty at Harvard in 1978 and is a specialist in the economics of development, political economy, industrial organization, antitrust, and regulation. The Kennedy School of Government is Harvard's graduate school for public policy and administration, and Prof. Kalt has served as the School's Academic Dean for Research, chair of degree programs, chair of Ph.D. programs, and chair of the economics and quantitative methods section. Since 2005, Prof. Kalt also has served as a visiting professor at The University of Arizona's Eller College of Management. He received his Ph.D. (1980) and M.A. (1977) in Economics from the University of California at Los Angeles, and his B.A. (1973) in Economics from Stanford University.

Prof. Kalt's publications include *The Economics and Politics of Oil Price Regulation*, *Drawing the Line on Natural Gas Regulation* (with Frank C. Schuler), *Petroleum Price Regulation: Should We Decontrol?* (with Kenneth Arrow), and *New Horizons in Natural Gas Deregulation* (with Jerome Ellig). He is a Senior Economist with Compass Lexecon, an FTI Consulting company specializing in the economics of competition and regulation. He previously founded The Economics Resource Group, an economics consulting firm acquired by Lexecon in 1999. Prof. Kalt has appeared frequently as an expert before the U.S. Congress and various state, federal and international tribunals, and he has served as mediator and arbitrator in various private and intergovernmental disputes. Prof. Kalt has also served as an adviser to various national and international governments, including the U.S., Thailand, China, Canada, and numerous American Indian tribes.

Prof. Kalt is widely recognized for his work in economic development on American Indian reservations and among First Nations in Canada. In 1987, he founded (with Stephen Cornell) the Harvard Project on American Indian Economic Development. He continues to serve as the Project's co-director. He is a principal author of *The State of the Native Nations: Conditions under U.S. Policies of Self-Determination* (with the Harvard Project), co-editor and a primary author of *What Can Tribes Do? Strategies and Institutions in the Economic Development of American Indian Reservations* (with Stephen Cornell), and a principal author of *Rebuilding Native Nations: Strategies for Governance and Development*. In 2005, Professor Kalt received the National Center for American Indian Enterprise Development's First American Leadership Award for his contributions to research in public policy affecting Native peoples.

Prof. Kalt is a member of the Board of Trustees of The Communications Institute, the National Advisory Board of The Big Sky Institute, and the Board of Directors of The Sonoran Institute. He served on the President's Commission on Aviation Safety and on the Steering Committee of the National Park Service's *National Parks for the 21st Century*.

Prof. Kalt is a native of Tucson, Arizona. He and his wife, Judy Gans, have two children. The family owns Arrow Mountain Ranch, with horse breeding and training operations in Montana and Arizona.