

# Restructuring Recharged

*The Superior Performance of  
Competitive Electricity Markets 2008-2016*

Philip R. O'Connor, Ph.D

April 2017



## TABLE OF CONTENTS

|                                                                                    |    |
|------------------------------------------------------------------------------------|----|
| <b>INTRODUCTION</b>                                                                | 4  |
| <b>OVERVIEW</b>                                                                    | 5  |
| <b>NOTE ON DATA SOURCES</b>                                                        | 5  |
| <b>SECTION 1: PRELUDE TO COMPETITIVE RESTRUCTURING 1975-1995</b>                   | 5  |
| Converging Conditions—Energy Price Surges & Stagflation                            |    |
| From Regulation to Markets in Network Industries                                   |    |
| <b>SECTION 2: THE TRANSITION TO COMPETITION IN THE ELECTRIC INDUSTRY 1996-2008</b> | 9  |
| Federal Electricity Restructuring Policy                                           |    |
| Precursors to Competitive Electricity Reform in the States                         |    |
| Principles & Implementation of Retail Electricity Choice                           |    |
| The Transitional Decade 1998-2007                                                  |    |
| <b>SECTION 3: COMPETITION VS MONOPOLY IN THE FLAT-LOAD ERA 2008-2016</b>           | 13 |
| The Foundations of the Electricity Monopoly Model                                  |    |
| Changing Conditions in the Electricity Industry                                    |    |
| Growth of Customer Choice                                                          |    |
| Price Trend Divergence in the Flat-Load Era                                        |    |
| Price Volatility                                                                   |    |
| Attracting Capital                                                                 |    |
| Generation Effectiveness                                                           |    |
| Resource Adequacy                                                                  |    |
| Capacity Factors                                                                   |    |
| Generation Potency                                                                 |    |
| The Results of Customer Choice—As Favorable as Intended                            |    |
| <b>SECTION 4: COMPETITIVE INNOVATION</b>                                           | 23 |
| The Innovative Nature of the Electricity Industry                                  |    |
| Modern Monopoly Is Inhospitable to Innovation                                      |    |
| Innovation Is Central to Choice Markets                                            |    |
| <b>SECTION 5: UNSUSTAINABLE MONOPOLY</b>                                           | 26 |
| New Converging Conditions                                                          |    |
| 1. The Flat-Load Era                                                               |    |
| 2. Generation “Dys-Economics”                                                      |    |

## ABOUT THE AUTHOR

## ENDNOTES

## LISTING OF FIGURES

- Figure 1: Energy Commodity Price Trends
- Figure 2: CPI, Bond, Mortgage Rate Trends
- Figure 3: 14 Customer Choice Jurisdictions
- Figure 4: Residential Switching Activity
- Figure 5: C&I Switching Activity by Year
- Figure 6: Percentage of Load Switched
- Figure 7: Residential Weighted Average
- Figure 8: Commercial Weighted Average
- Figure 9: Industrial Weighted Average
- Figure 10: All-Sector Weighted Average
- Figure 11: Nominal Weighted Average
- Class in Choice and Monopoly States
- Figure 12: Inflation-Adjusted Weighted
- Customer Class in Choice and Monopoly
- Figure 13: State Ranking—Residential
- Figure 14: State Ranking—Commercial
- Figure 15: State Ranking—Industrial
- Figure 16: State Ranking—All-Sector
- Figure 17: “Effectiveness” Ratios, ‘97-2007
- Figure 18: Change in Resource Adequacy
- [Generation Output/Consumption]
- Figure 19: Change in Capacity Factors
- Figure 20: “Potency” Ratios, 1997-2007
- Figure 21: GDP & Electricity Usage Correlation
- Figure 22: State Ranking – Consumption
- Figure 23: Generation % by Energy Type
- Figure 24: Generation % by Energy Type
- Figure 25: Generation Percentages by

## LISTING OF TABLES

- Table 1: Timeline of Federal Deregulation

## INTRODUCTION

It's been a solid two decades since state and federal policymakers began taking steps to end the traditional monopoly regulatory approach to determining electricity prices for consumers. Twenty years ago federal regulators adopted rules promoting competition in regional wholesale electricity markets and the first states adopted programs to promote competition in retail electricity markets.

Providing considerable historical context, our study's author observes that traditional monopoly regulation served the nation well for about a century. But beginning in the 1970s the monopoly fabric started to fray. The resulting sweeping regulatory reforms of the railroad, trucking and telecommunications industries set the stage for similar reforms introducing competitive market forces into the energy sector.

These reforms congealed in the 1990s with considerable momentum nationally for competition in electricity—that is until the well-intentioned but poorly-conceived market restructuring in California imploded. This prompted a number of states to reconsider opening their retail markets to competition. To their credit more than a dozen states and the District of Columbia persevered, adopting electricity market restructuring programs that avoided the pitfalls of California and benefited the interests of consumers and the overall economy and the environment.

As the study explains, we now have a strong data set of two decades' experience with two sets of states:

- Those that adopted competitive reforms promoting market forces in the electricity sector, and
- Those that chose to maintain the traditional regulated monopoly approach.

The data are compelling, showing that consumers are considerably better off with competition than monopoly regulation:

plants under monopoly regulation receive their investment plus a rate of return regardless of the performance of the power plant. The efficiencies gained by power plants in competitive markets therefore produced not only economic but environmental gains.

As our authors note, the compelling disparity between competition and monopoly regulation is setting the stage for a second round of electricity restructuring as states once again confront the fact that monopoly regulation is not ideal because it serves the interests of utility investors over the interests of electricity customers. So this has become a driving force for states to consider a competitive market in favor of the state's citizens.

But perhaps the stronger driving force behind this pending second wave of competitive electric industry restructuring is the panoply of consumer-empowering technological innovations that promise to further transform the way consumers use electricity and interact with their electricity provider. These technologies will prosper in competitive states where monopoly barriers to entry have been removed.

This trend will be driven further in competitive markets as competing suppliers vying for customers innovate to differentiate themselves from their competitors. Real-time pricing complemented by state-of-the-art meters and thermostats will empower customers as never before. Monopoly regulation is inherently inhospitable to this wave of innovation, our author points out.

The bottom line is that consumers want and expect choices. They have them in nearly every other area of their lives. That is why there is a dizzying array of colorful options as we walk down the aisle of our neighborhood grocery store. That's why automobiles come in numerous and customizable configurations and colors, and why we have innumerable telecommunications options beyond the old black rotary phone that prevailed under monopoly

## OVERVIEW

As retail electricity competition in the United States began two decades since its commencement, a new era of electricity industry restructuring is gathering momentum. The incompatibility of the traditional vertical monopoly with new, converging conditions makes comprehensive reforms a necessity.

- The allocation of electricity generating capacity has created **risks to consumers** in regulated monopoly states. To inefficient consumer and investor subsidies have led to overall increases in electricity prices and to choice states.
- The electric industry has endured a **crisis of confidence** and there is no end in sight.
- **Generation dys-economics** have replaced the traditional verities of power plant investment with a belief in predictable fuel prices, technological innovation and consumer preferences.

**Digital customer sovereignty** is overpowered by the fact that customers are merely "ratepayers" who are categorized and limited to a few restricted choices and service offerings that lack innovation. Competitive markets empower customers in today's digital era. There is compelling evidence of the superior economic performance since 2008 of the 14 competitive retail jurisdictions compared to the 35 monopoly states:

- Prices in competitive states have trended downward while in monopoly states prices have trended upward, producing a double-digit gap in average prices when adjusted for inflation.
- Competitive markets have attracted new investment in generation at rates comparable to monopoly states.
- Competitive states increased production capacity changes in load, while in monopoly states capacity has declined relative to load growth.

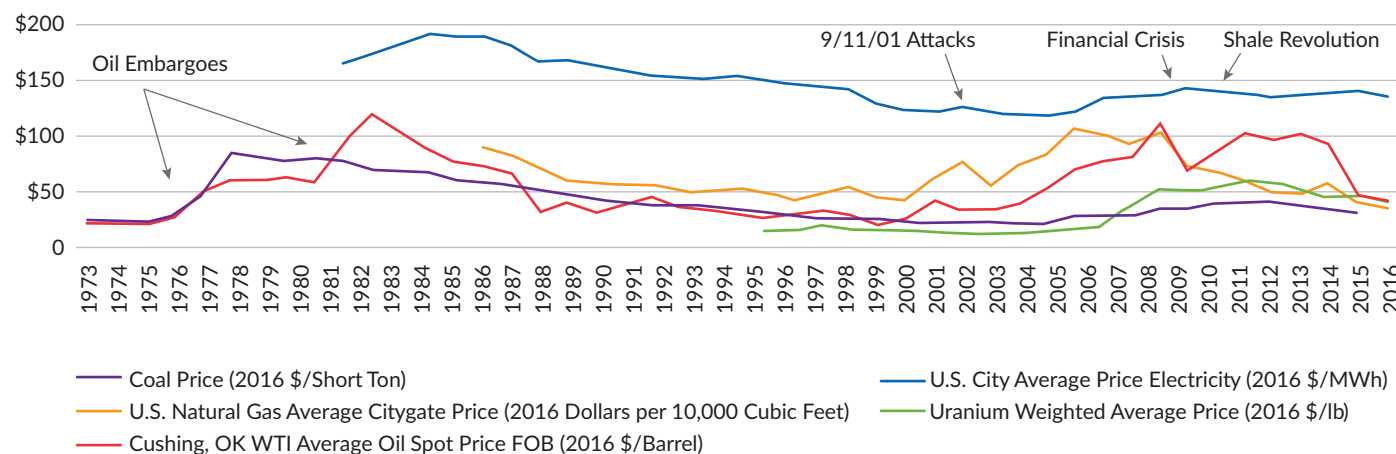
nearly a decade afterward, U.S. public policy was hostage to the “energy crisis.”<sup>2</sup> In a succession of presidential messages and addresses between 1971 and 1980, Richard Nixon and Jimmy Carter anticipated and responded to the original 1973-74 embargo and the disruption following the 1979 Iranian revolution.<sup>3</sup>

Dramatic increases in oil and other fuel prices in domestic and international markets initially precipitated well-intentioned yet often misbegotten policies, producing adverse unintended results. Energy price increases were both a cause and a result of broader economic trends, the most significant of which were high interest and inflation rates.

The oil price surges in the 1970s were accompanied by corresponding dramatic price increases in coal and natural gas. As shown in Figure 1, inflation-adjusted prices for raw fuels were at historic, economic shock-inducing levels. Further, natural gas was in short supply for industrial processes and for winter home heating. There were long lines at gasoline service stations and rationing not seen since World War II. Electricity prices were driven up as fuel prices rose. Coal prices experienced a different dynamic as Western surface mining began to take market share, eventually pushing coal prices downward.

**Figure 1: Energy Commodity Price Trends**

*Events in the 1970s caused unprecedented energy prices*

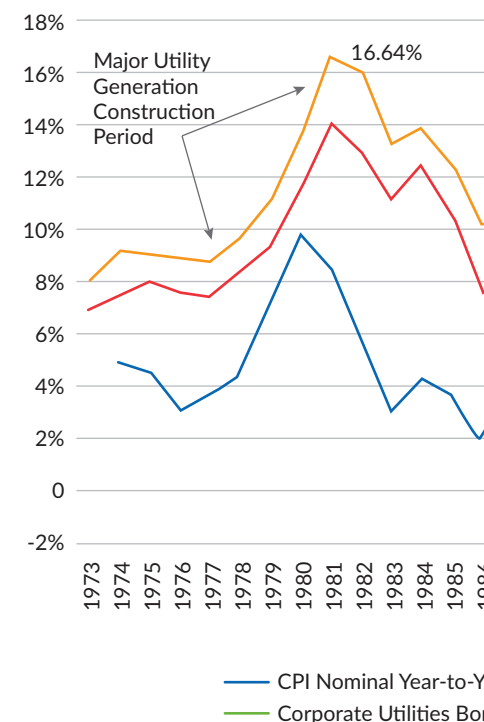


Steep increases in energy prices reverberated across the economy, interacting with other conditions and policies. Figure 2 shows the steep rise in inflation and the cost of money from the mid-1970s and into the early 1980s. There was an especially pernicious impact on the electric

industry, which was in the midst of a major power plant construction program. Utility borrowing costs and bond yields tracked closely with general inflation, government bond yields and home mortgage interest rates.

**Figure 2: CPI, Bond, Mortgage Rates**

*Energy shocks contributed to extraordinary high costs*



## From Regulation to Markets in Network Industries

The dividing line between success and failure in the deregulation of network industries was not aimed at addressing the troubles that emerged. The belief was that more regulation failed, while reliance on market forces generally yielded favorable results.

It has been nearly four decades since the “deregulation” of airlines, railroad, interstate bus service. While each of these segments had its own historical path, all were connected. Their respective regulatory systems evolved out of the seminal experience of railroad regulation inaugurated in the late 19th century. The procedures of railroad regulation were

Find the full text of this and thousands of other resources from leading experts in dozens of legal practice areas in the [UT Law CLE eLibrary \(utcle.org/elibrary\)](http://utcle.org/elibrary)

## Title search: Restructuring Recharged The Superior Performance of Competitive Electricity Markets 2008-2016

Also available as part of the eCourse

[2017 Gas and Power eConference](#)

First appeared as part of the conference materials for the  
16<sup>th</sup> Annual Gas and Power Institute session

"Status, Structure, and Successes of U.S. Retail Markets"