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FROM HISTORIC BUYOUT TO BANKRUPTCY: A CASE STUDY ON THE LEVERAGED BUYOUT OF ENERGY FUTURE HOLDINGS

RETROSPECTIVE CONSIDERATIONS ON LEVERAGE AND THE MACROECONOMIC ENVIRONMENT

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This thesis examines the historic LBO of Texas-based EFH, formerly TXU, led by PE firms KKR, TPG, and GS in 2007. The $45 billion deal, heavily debt-financed, relied on assumptions of stable energy prices and operational efficiencies. However, EFH faced significant challenges, including the 2008 financial crisis, the shale gas revolution lowering electricity prices, increasing environmental regulations and intensified competition in Texas' deregulated energy market. This case study explores the role of high leverage, shifting macroeconomic conditions, and operational missteps in EFH's 2014 bankruptcy, drawing lessons on LBO risks and financial sustainability.

Keywords: Corporate Finance, Private Equity, Debt, Leverage, Leveraged Buyout, Bankruptcy, Macroeconomics, Energy

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[General remarks: the company before the take-private will be referred to as “TXU” while the company after the take-private will be referred to as “EFH”. Furthermore, the consortium of buyers that acquired the company on the 10th of October 2007 will be referred as “the buyers” or “the sponsor group”.]

Introduction

In the spring of 2015, Marc Lipschultz leaned back in his chair, the soft hum of Manhattan filling his office. As KKR’s Global Head of Energy and Infrastructure, Lipschultz was a central figure in some of the firm’s boldest ventures. A Princeton graduate and a Yale Law School alumnus, his path to becoming a titan in private equity was paved with calculated risks and high-stakes deals. Yet, the headlines from the previous year still haunted him: “TXU’s Collapse: A $45 Billion Energy Gamble Gone Wrong.” It was a stark reminder of the fallout from one of the largest private equity buyouts in history—a deal he had championed. A knock on his office door interrupted his thoughts. Henry Kravis, the co-founder of KKR, entered with a casual but purposeful stride. Kravis, a graduate of Claremont McKenna College and Columbia Business School, had built his legacy as one of the architects of modern private equity. Known for his role in the groundbreaking RJR Nabisco deal, he embodied the audacity and ingenuity that defined KKR. Yet, his expression today was more tempered, his focus sharper.

“Marc,” Kravis began, settling into a chair opposite him. “I’ve been reviewing the latest proposal you brought in—the midstream gas acquisition in the Rockies. An interesting asset, no doubt. But after TXU and Samson, we can’t afford another stumble. The investment committee will need more than a compelling story this time.” Lipschultz straightened. “Henry, I believe the fundamentals of this deal are sound. It’s a different market environment, and our leverage model—” Kravis raised a hand, his tone firm but not dismissive. “Marc, I’m not saying no. What I’m saying is that we need a clearer view of the past before stepping into the future. TXU and Samson both unraveled because of factors we could have better controlled, and others

we couldn't. I want you to conduct a comprehensive review of both cases. What went wrong? What lessons can we extract? And most importantly, how can we ensure it doesn't happen again?" Lipschultz nodded, his mind already racing. "Understood. I'll start immediately."

As Kravis rose to leave, he added, "Marc, this isn't just about mitigating risks. It's about rebuilding confidence—in the committee, in you, and in the future of our energy investments." Left alone, Lipschultz gazed out the window. His office overlooked a cityscape that seemed to mirror his career—towering peaks of success shadowed by valleys of missteps. Resolute, he called to his assistant: "Clear my schedule for the week. And find me every document we have on TXU and Samson. It's time to dig in." As the door closed, Lipschultz opened the first file on TXU. The headlines, the projections, the post-mortem analyses—all stared back at him. For Lipschultz, this wasn't just a review; it was a reckoning. For Kravis, it was a chance to reaffirm KKR's legacy. And for the firm, it was an opportunity to chart a more calculated path forward.

The sponsor group

KKR

The sponsor group was led by KKR, a pioneer in private equity and leveraged buyouts, founded in 1976 by Henry Kravis and George Roberts. By 2007, KKR had established a strong track record in buyouts, including high-profile deals like the acquisition of RJR Nabisco in 1989, which solidified its reputation in the industry. Specifically in the utilities sector KKR, together with TPG, acquired Texas Genco in for $3.7 billion in 2004 and later sold it for a combined $4.9 billion profit just after one year (Anderson and Creswell 2010). Moreover, KKR attempted to acquire Unisource in 2003, however, the deal was ultimately blocked by regulators (Reuters, 2007). At the time of the TXU deal, KKR managed a diverse portfolio of investments across various sectors, valued at approximately $54 billion in assets under management (AUM).

TPG

TPG, founded in 1992 by David Bonderman and James Coulter, is known for its strategic focus

on large-scale, transformational investments in sectors like technology, healthcare, and industrials. TPG had rapidly grown into one of the world's leading private equity firms, managing roughly $30 billion in AUM by 2007. Notable deals included investments in Metro-Goldwyn-Mayer and FIS Data Systems (Mergermarket 2024). Similar to KKR, TPG previously sought to execute a buyout in the utilities sector through an attempted acquisition of Portland General; however, the deal was ultimately thwarted due to regulatory challenges (Reuters, 2007).

Goldman Sachs Capital Partners

Goldman Sachs Capital Partners (GSCP), the private equity arm of Goldman Sachs, had extensive experience in leveraged buyouts and growth capital investments. By 2007, GSCP was managing approximately $20 billion in AUM and had co-invested in various landmark transactions like the acquisition of FIS Data Systems for €8.5 billion in 2005 or the acquisition of ISS A/S for €4.1 billion in 2005 (Mergermarket 2024). With its established network and capital resources, GSCP provided additional financial expertise and backing for the TXU deal, reinforcing the sponsor group's ability to secure financing the largest leveraged buyouts to date.

Historical Timeline – Events leading up to the take-private

In 1882, the Dallas Electric Lighting Company began providing electricity to North Texas, marking the birth of what would later become TXU. Three years later, the Fort Worth Electric Light and Power Company extended similar services to Fort Worth, laying the groundwork for the region's electrification and positioning these early pioneers as central players in Texas's energy future. The momentum of these early initiatives accelerated in 1912 with the creation of Texas Power & Light Company (TP&L). Consolidating 13 electric companies under the Electric Bond and Share Company (EB&S)—a General Electric subsidiary established to finance the electrification of America—TP&L brought structure and scale to the region's energy network (TXU Energy n.d.). EB&S subsequently expanded its reach by forming Dallas

Power & Light (DP&L) in 1917 to serve the Dallas area and Texas Electric Service Company (TESCO) in 1929 to support Fort Worth and its western territories. The prosperity of EB&S was not without challenges. The Public Utility Holding Company Act of 1935, designed to dismantle monopolistic utility holding companies, targeted EB&S as a test case (U.S. Energy Information Administration 1993). In 1938, the U.S. Supreme Court ruled in favor of the Securities and Exchange Commission, forcing EB&S to divest its holdings and fundamentally reshaping the energy industry (Justia 1938). The reorganization culminated in the establishment of Texas Utilities Company in 1945, a publicly owned holding company uniting TP&L, DP&L, and TESCO under a single corporate framework while maintaining their operational independence. Decades later, in 1984, these entities merged into a new principal subsidiary, Texas Utilities Electric Company, further simplifying and streamlining operations (TXU Energy n.d.). The 1990s heralded an era of ambitious expansion for TXU. In 1995, the company ventured into Australia with the acquisition of Eastern Energy Ltd (CNN 1999). This was followed by the $1.7 billion purchase of ENSERCH Corp., a Dallas-based natural gas company, in 1996 (New York Times 1996). Two years later, TXU completed a $10 billion acquisition of The Energy Group in the UK, positioning itself as a formidable multinational energy player (New York Times 2002). Reflecting this transformation, the company rebranded as TXU in 1999, embracing a global identity. However, TXU's international ambitions faced significant hurdles. Its entry into the UK market, marked by a costly bidding war with PacifiCorp, saddled its European operations with substantial debt. Falling energy prices and mounting financial liabilities exacerbated these challenges. By September 2002, administrators were appointed for TXU's UK operations, leading to its exit from the European market (New York Times 2002). The UK retail business and associated gas fields were sold to Eon, marking a retreat from what had been a cornerstone of TXU's international strategy (The Guardian 2002). Back in Texas, the company faced a transformed energy landscape. The state's electricity market underwent

significant deregulation in 2002 under Senate Bill 7, requiring energy providers to unbundle their operations into generation, transmission/distribution, and retail services (House Research Organization 2001). In response, TXU restructured into three distinct entities: TXU Energy for retail services, TXU Power for wholesale generation, and TXU Electric Delivery for transmission and distribution. John Wilder, who served as CEO from 2004 to 2007, spearheaded TXU's modernization. Under his leadership, the company's stock price surged, bolstered by aggressive cost-cutting measures. However, his controversial plan to construct 11 coal-fired power plants in Texas drew widespread criticism from environmental advocates, creating friction between TXU's growth strategy and public sentiment (Reuters 2007).

Presentation of the Target

At the end of 2006, TXU Corp., a Dallas-based energy company, managed an extensive portfolio of competitive and regulated energy businesses primarily operating in Texas. The company had 7,262 full-time employees (TXU Corp. 2006).

Company structure (pre-transaction)

(**Case Exhibit 1)** From a legal perspective, the company comprised three main subsidiaries: TXU Energy Company LLC ("TXU Energy Company"), TXU Electric Delivery Company ("TXU Electric Delivery"), and TXU Generation Development Company LLC ("TXU DevCo"). TXU Energy Company, along with its subsidiaries, focused on competitive market activities, including electricity generation, retail electricity sales to both residential and business customers, wholesale energy transactions, and commodity risk management and trading. TXU Electric Delivery conducted regulated electricity transmission and distribution operations within Texas. TXU DevCo was responsible for the development of new lignite/coal-fueled generation facilities. For reporting purposes, TXU structured its business into two operating segments: TXU Energy Holdings and TXU Electric Delivery. The former included TXU Energy Company and TXU DevCo, while the latter encompassed the operations of TXU

Electric Delivery and its bankruptcy-remote financing subsidiary. The TXU Energy Holdings segment was managed as an integrated business but was divided for operational accountability and performance management into distinct areas: electricity generation (TXU Power), retail electricity sales (TXU Energy), wholesale energy market operations (TXU Wholesale), and the development of generation facilities (TXU DevCo).

KPIs (Info from AR2006)

As end of 2006, TXU Corp. had a substantial generation portfolio focused on various fuel sources and operational strategies within Texas. The company's total generation capacity reached 17,605 MW, distributed across lignite/coal, nuclear, and natural gas plants. The energy mix comprised 53.8% natural gas, 33.2% lignite/coal, and 13.1% nuclear (**Case Exhibit 2)**. The lignite/coal fleet, comprising four plants (Big Brown, Monticello, Martin Lake, and Sandow) with a combined capacity of 5,837 MW, operated primarily as baseload generation to meet steady demand. TXU's nuclear capacity, delivered through two units at the Comanche Peak plant, accounted for 2,300 MW and operated with a high capacity factor of 98.8% in 2006, marking it as one of the top-performing nuclear facilities in the U.S. for reliability and efficiency (TXU Corp. 2007).

The company's natural gas fleet provided a flexible 9,468 MW of capacity, with the ability to ramp up or down to meet peaking demand. This flexibility aligned well with TXU's operations within the Electric Reliability Council of Texas (ERCOT) market, where natural gas serves as the predominant fuel and largely sets electricity prices. The ERCOT region accounted for approximately 85% of Texas's electricity demand, making it a key market for TXU, with robust opportunities for optimized generation. The peak hourly demand in the ERCOT market grew by 2.8% from 1996 to 2006, outperforming the national average (TXU Corp. 2007).

TXU's retail arm, TXU Energy, served a diverse customer base of over 2.1 million Texans, encompassing residential, small business, and large commercial clients. Within the total

ERCOT market TXU held 37% of the residential market and 26% of the small business segment. This strong market position provided TXU with a significant competitive advantage and facilitated economies of scale in service and operations (TXU Corp. 2007).

Moreover, TXU Electric Delivery operates the largest distribution and transmission system in Texas providing power to over 3 million electricity delivery points over more than 100,000 miles of distribution lines and 14,300 miles of transmission lines (TXU Corp. 2007)

From an environmental and fuel sourcing perspective, TXU maintained a diverse approach. Around 67% of the lignite fuel for its coal plants was sourced from company-owned or leased lignite reserves, reducing the impact of fluctuating market prices. The company also supplemented lignite with Western coal from the Powder River Basin, securing supply and transport through contracts extending to 2009. TXU was also a leading purchaser of renewable energy, acquiring power from wind facilities with 704 MW capacity, which highlighted its commitment to diversifying its energy portfolio while maintaining a primarily fossil-fuel-based generation mix (TXU Corp. 2007).

TXU's balanced generation capacity and established customer base allowed it to navigate the competitive Texas market while addressing environmental and regulatory considerations associated with its coal and lignite assets. This positioning underscored its strategic intent to operate efficiently in an increasingly regulated energy landscape (TXU Corp. 2007).

Financial highlights

From 2003 to 2006, TXU Corporation demonstrated robust financial performance. Revenue grew consistently, with annual figures increasing from $8.6 billion in 2003 to approximately $10.9 billion in 2006, reflecting a compound annual growth rate (CAGR) of around 8%. Cost management was effective during this period, maintaining gross margins in the range of 64%, indicative of strong operational efficiency. EBITDA also showcased resilience, averaging 32% of revenue, underscoring the company's ability to manage operating expenses effectively. Net

income displayed a positive trajectory, bolstered by stable demand in the deregulated Texas electricity market and a diversified energy portfolio, including natural gas, coal, and nuclear energy assets. These financial metrics highlight TXU's solid market positioning and the effectiveness of its cost leadership strategy during this pre-LBO period (**Case Exhibit 3; Case Exhibit 4**)

The Take-Private

Deal Description

In February 2007, whispers of a potential leveraged buyout placed TXU Corp. at the center of intense speculation. On February 22, the last trading day before rumors surfaced, TXU's stock closed at $57.49 (**Case Exhibit 5**). Just two days later, The Wall Street Journal reported that the company was in talks with a consortium of private equity firms. On February 26, 2007, TXU announced that it had entered into an agreement and plan of merger with Texas Energy Future Merger Sub Corp, a merger sub and wholly-owned subsidiary of Texas Energy Future Holdings Limited Partnership, a company controlled by a consortium of investors consisting of KKR, TPG and GS Capital Partners (KKR 2007). This transaction would become the largest private equity deal in history at the time. The deal offered TXU shareholders $69.25 per share in cash, representing a 20% premium over the February 22 closing price and a 25% premium over the stock's average price for the previous 20 trading days (KKR 2007). As part of the agreement, the buyers pledged to hold the company for at least five years, signalling a long-term commitment to its transformation. A pivotal element of the transaction was its focus on environmental and consumer commitments. To address public criticism of its coal strategy, the consortium immediately announced plans to withdraw applications for eight of the eleven proposed coal-fired power plants. Additionally, they pledged to support a mandatory cap-and-trade program for carbon emissions and appointed William Reilly, a former Environmental Protection Agency (EPA) administrator, to TXU's board. Moreover, extensive lobbying efforts

were made to get backing for the deal that was not only controversial from an environmental but also from a regulatory point of view (**Case Exhibit 6**). For consumers, the company committed to reducing electricity prices by 10% for residential customers in TXU Energy's traditional service area and introduced price protection guarantees through September 2008 (KKR 2007). Throughout the negotiation process, TXU sought to maximize shareholder value. By April 2007, the company had signed confidentiality agreements with 10 potential bidders, including Dallas-based Hunt Oil and a consortium of Blackstone, Carlyle, and Riverstone (CNBC 2007). However, after contacting more than 70 potential buyers, no superior offers materialized. The "go-shop" period, a 50-day window allowing TXU to seek alternative proposals, ended on April 16 without any competing bids. The terms of the agreement included a $375 million breakup fee should a higher offer have emerged (CNBC 2007). On September 7, 2007, TXU shareholders overwhelmingly approved the transaction, with 95% voting in favor of the merger (KKR 2007). The buyout officially closed on October 10 when TXU became a wholly owned subsidiary of Texas Holdings, a Delaware limited partnership controlled by the Sponsor Group. Exactly $35.75 billion of debt was used in the take-private of TXU. More specifically, the debt originated from $24.5 billion in senior secured bank loans and $11.25 billion in senior unsecured bridge loans (Reuters, 2007). On average, the majority of the debt carried an interest rate tied to the 6-month LIBOR at 5.37%, with an additional margin of 2.5% (EFH, 2007). Following the completion of the deal, TXU was renamed Energy Future Holdings Corp. (EFH), and its shares were delisted from the New York Stock Exchange and the Chicago Stock Exchange. The buyout also brought significant leadership changes. C. John Wilder, TXU's CEO, had previously announced his intention to step down upon the transaction's completion. Wilder's three-year tenure was marked by a remarkable turnaround for TXU, generating a 495% return for shareholders. His efforts earned him Institutional Investor's "Best CEO in the Power Sector" award for three consecutive years. However, Wilder's aggressive

expansion strategy, including plans to double TXU's coal-fired power generation, drew sharp criticism from environmental groups (Reuters 2007). The consortium distanced itself from this approach, siding with public sentiment and scaling back the company's coal ambitions as part of the buyout agreement.

Company structure (post-transaction)

(**Case Exhibit 7)** From a legal standpoint, EFH was structured under Texas Energy Future Holdings Limited Partnership controlled by the consortium of investors. EFH Corp. operated as the parent holding company, overseeing two primary divisions: Energy Future Competitive Holdings Company (EFC Holdings) and Energy Future Intermediate Holding Company LLC (Intermediate Holding). These divisions were responsible for managing the competitive and regulated operations of the corporation, respectively. Energy Future Competitive Holdings Company (EFC Holdings) functioned as the principal entity overseeing EFH's competitive electric market activities. TCEH was a central subsidiary under EFC Holdings and managed Luminant and TXU Energy. Luminant, a key part of TCEH, was organized into Luminant Power, Luminant Energy, and Luminant Construction. Luminant Power was responsible for electricity generation from a portfolio of plants fueled by lignite/coal, nuclear, and natural gas, providing substantial capacity within the ERCOT market. Luminant Energy played a strategic role in wholesale energy operations, which included dispatching electricity generation, sourcing electricity for TXU Energy and other customers, and managing commodity price risks. Additionally, Luminant Energy engaged in hedging and trading activities to optimize the economic value of the generation fleet. Luminant Construction focused on the development and construction of new generation facilities to meet the increasing demand for electricity in Texas, including lignite-fueled units. TXU Energy served as the retail electric provider, supplying electricity to residential and business customers across competitive ERCOT regions and maintaining a significant share of the retail market. On the other hand, Energy Future

Intermediate Holding Company LLC (Intermediate Holding) was created to oversee EFH's regulated operations, specifically through Oncor Holdings. This structure aimed to protect Oncor's financial and operational stability by ring-fencing (i.e. the legal and financial separation from the parent) its activities from the competitive side of EFH's business. Oncor Electric Delivery Holdings Company LLC (Oncor Holdings) managed Oncor Electric Delivery Company LLC (Oncor), which was responsible for regulated electricity transmission and distribution operations throughout Texas. As the state's largest transmission and distribution network, Oncor delivered power to over three million customers, ensuring reliability and safety. Oncor operated under the regulatory oversight of the Public Utility Commission of Texas (PUCT), adhering to stringent standards for service reliability. The operations also included Oncor Electric Delivery Transition Bond Company LLC, a bankruptcy-remote entity designed to issue securitization bonds. This subsidiary provided financial separation to ensure Oncor's obligations were distinct from EFH's other businesses, thus shielding Oncor from potential financial issues within EFH Corp.'s competitive segment. To reinforce Oncor's independence and ensure separation from the competitive energy businesses, the consortium of buyers sold a 19.75% stake in Oncor in November 2008 for a consideration of $1.254 billion to a group of investors consisting of GIC Special Investments, the infrastructure investment arm of the Government of Singapore and Borealis Infrastructure Management, the investment arm of OMERS (Torys, 2008). Operationally, EFH Corp. was divided into two main segments: the Competitive Electric segment, represented primarily by TCEH, and the Regulated Delivery through Oncor.

Industry Analysis

Political, Economic, and Technological Landscape

The U.S. energy market in 2007, particularly in Texas, was shaped by decades of regulatory evolution, economic shifts, and technological advancements. Since the 1970s energy crises, the

market had undergone a significant transformation, transitioning from regulated monopolies to a more competitive and decentralized system. This shift was accelerated by the Public Utility Regulatory Policies Act (PURPA) of 1978, which encouraged the development of alternative energy sources and allowed independent power producers to enter the market (Tennessee Valley Authority 2007).

Texas's energy market stood out as a leader in implementing these changes, supported by its unique and largely independent grid managed by the Electric Reliability Council of Texas (ERCOT). Unlike other U.S. grids, ERCOT operates almost entirely within Texas and is exempt from federal oversight by the Federal Energy Regulatory Commission (FERC). This independence gave Texas the flexibility to design a deregulated energy market where electricity prices were determined by supply and demand. ERCOT also oversaw grid reliability and facilitated the integration of renewable energy sources, such as wind and solar, which became significant contributors to the state's energy mix (Lumley 2024).

Economic forces further shaped the market. Natural gas prices, a key driver of electricity costs, were high in 2007 (**Case Exhibit 8**) and projected to rise further due to increasing demand and limited supply. Natural gas was used to power natural gas plants that converted gas into energy. Companies like TXU that also relied on other inputs such as coal to produce energy (**Case Exhibit 2)**, were able to pocket the difference between the natural gas price and the cheaper input source (e.g. coal). The historical volatility of natural gas prices posed significant risks for energy producers heavily reliant on this fuel source (FERC 2008). Companies like TXU mitigated some of this risk by relying on cheaper coal inputs, but this strategy exposed them to growing regulatory and environmental scrutiny.

The electricity generation industry was asset-intensive, requiring significant capital expenditures (CAPEX) to develop and maintain power plants and transmission networks (**Case Exhibit 9)**. These high CAPEX requirements created substantial entry barriers for new

competitors, favoring large, established players like TXU, NRG Energy, and Entergy. However, this capital intensity also heightened financial pressure, especially during periods of price volatility or market shifts driven by the deregulation initiated by Senate Bill 7 (1999) and fully implemented by 2002. Deregulation unbundled generation, transmission, and distribution services, fostering competition but also introducing financial uncertainty as electricity prices became market-driven and enhanced price volatility (Cities Aggregation Power Project, Inc. 2009).

Meanwhile, renewable energy, particularly wind power, was rapidly gaining traction. Driven by declining costs and state policies such as the Renewable Portfolio Standard (RPS) and the Competitive Renewable Energy Zone (CREZ), wind energy emerged as a growing force in the market (Maguire 2016). While EFH remained one of the largest electricity providers in Texas, its market share was steadily eroding due to increased competition and the expansion of renewables (**Case Exhibit 10**). Although renewables represented a smaller share of the energy mix in 2007, their expansion disrupted traditional dynamics by lowering electricity prices and intensifying competition.

Technological advancements during this period also played a crucial role. Innovations in natural gas extraction, such as hydraulic fracturing and horizontal drilling, increased supply and laid the groundwork for the shale gas revolution. At the same time, coal-fired power plants faced mounting pressure to comply with stricter environmental regulations. Retrofitting these plants with emissions-control technologies like scrubbers led to high environmental capital expenditures (**Case Exhibit 11**), reducing their competitiveness compared to cleaner alternatives such as natural gas and renewables (Rallo et al. 2012).

ERCOT's adoption of advanced grid management technologies enabled it to handle the complexities of a deregulated market and integrate intermittent renewable energy sources like wind and solar. This technological progress ensured grid stability while supporting Texas's

growing renewable energy sector (Lumley 2024).

Social and Environmental Landscape

By 2007, environmental concerns were becoming a central issue in the energy sector. Coal-fired power plants, in particular, faced scrutiny for their greenhouse gas emissions and pollutants like mercury and sulfur dioxide. The Clean Air Act imposed stricter regulations, requiring significant investments in emissions control technologies. For companies like TXU, compliance with these regulations created substantial financial burdens (EPA).

Rapid urbanization and population growth in Texas, particularly in cities like Dallas, Houston, and Austin, compounded by economic expansion and rising temperatures due to climate change, further drove electricity demand. This demand peaked during summer months when air conditioning loads were at their highest. Providers like TXU faced the dual challenge of meeting rising demand while navigating shifting consumer preferences that increasingly prioritized affordability, reliability, and environmental impact (EFH 2007, p.16).

Meanwhile, the transition to renewable energy heightened the demand for workforce training, as the energy sector struggled with shortages of skilled labor. This challenge was exacerbated by competition from higher-paying industries like oil and gas (Sigalla 2007). Additionally, water usage became a pressing concern in drought-prone Texas. Coal and natural gas plants required significant amounts of water for cooling, whereas renewables like wind and solar offered more sustainable, low-water alternatives (King, Duncan and Webber 2008).

Competitors

In 2007, TXU operated in a highly competitive Texas energy market shaped by deregulation and dynamic shifts in demand. Its key competitors included NRG Energy, Nextera Energy, Entergy, AES, CenterPoint Energy, Dominion Energy, and Sempra (**Case Exhibit 9)**.

NRG Energy, one of EFH's closest competitors, pursued strategic investments in renewable energy, particularly wind power. NRG aligned itself with growing public and regulatory

demand for cleaner energy, giving it a clear advantage over TXU, which relied heavily on coal and natural gas (NRG Energy 2006). Entergy shared EFH's focus on traditional energy sources but maintained a more balanced strategy by modernizing its infrastructure and emphasizing operational efficiency (Alliance for Affordable Energy 2018).

Nextera Energy, in contrast, positioned itself as a leader in renewable energy innovation, prioritizing wind and solar technologies. This forward-thinking approach enabled Nextera to excel in a market increasingly focused on sustainability, whereas TXU's slower transition to renewables left it at a disadvantage (NextEra Energy 2007). AES, like TXU, focused on power generation but lagged in adopting renewable energy or innovative strategies (AES Corporation 2007).

CenterPoint Energy primarily concentrated on transmission and distribution, insulating itself from the fuel price volatility that plagued TXU but limiting its ability to capitalize on renewable energy opportunities (CenterPoint Energy 2007). Dominion Energy and Sempra adopted more balanced and conservative approaches, focusing on infrastructure investments and financial stability, respectively (Dominion Energy 2007; Sempra Energy 2008).

In terms of scale and demand, TXU was the largest electricity provider in Texas, benefiting from a significant customer base and infrastructure assets. However, its reliance on coal and natural gas left it poorly positioned to compete in a market increasingly driven by sustainability, innovation, and resilience. NRG Energy and Entergy better addressed these shifts through diversification and innovation, while competitors like Nextera, CenterPoint, Dominion, and Sempra leveraged unique strengths in renewables, infrastructure, and financial discipline to capitalize on the evolving market landscape.

PE Landscape

Overview of the Private Equity Market (2003-2007)

Between 2003 and 2007, the private equity market experienced a period of prolific growth and

transformative changes, characterized by substantial increases in both the scale of operations and the complexity of investment strategies. By the end of 2007, total assets under management in private equity reached approximately $2.3 trillion, a remarkable increase from about $1.7 trillion at the beginning of the period (Preqin, 2012). This phase marked a significant rise in fundraising and deal activity (**Case Exhibit 12**), driven by favorable economic conditions, innovative financial instruments, and an influx of institutional capital.

The private equity fundraising landscape was notably characterized by record highs in capital raised. In 2007 alone, private equity firms raised $653 billion, illustrating a nearly 21% increase compared to $541 billion in 2006 (**Case Exhibit 13**). Large buyout funds were particularly significant contributors to this growth, as more investors sought exposure to leveraged buyouts (LBOs), which had consistently delivered higher returns compared to traditional asset classes.

During this period, the appetite for private equity investments was buoyed by a strong economic backdrop featuring low interest rates and an expanding economy that facilitated better financing conditions for leveraged buyouts (**Case Exhibit 15)**. According to McKinsey & Company (2009), approximately 80% of the capital invested during this timeframe was directed toward buyout transactions, underscoring the dominance of this strategy in private equity activities.

Moreover, this era saw the proliferation of larger deal sizes, with notable transactions emerging as key indicators of the industry's dynamism. In 2007, the average size of buyout deals surpassed $1 billion, marking a clear indication of the aggressive bidding environment and increasing valuations of target companies (**Case Exhibit 14**; **Case Exhibit 16)** (Bain & Company, 2011). The heightened competition for high-quality assets drove many private equity firms to pursue innovative financing structures and operational improvements to deliver value. Additionally, firms began to adopt more sophisticated funding mechanisms, such as collateralized loan obligations (CLOs), to support their investments.

Despite these favorable conditions, hints of unease began to emerge towards the end of 2007 as

market participants started expressing concerns regarding inflated asset valuations and potential challenges in achieving exit strategies in an overheated market. Analysts and investors began to reflect on the implications of high leverage and the sustainability of returns in an economic climate that was showing signs of volatility. Overall, however, the period from 2003 to 2007 represented a zenith for private equity characterized by exceptional growth, innovative strategies, and robust deal-making activity.

Investment Strategies (2003-2007)

Throughout the period from 2003 to 2007, private equity firms utilized a diverse array of investment strategies, reflecting the evolving landscape and the varied market opportunities available. The predominant strategies included leveraged buyouts (LBOs), growth equity, and venture capital, each of which played a pivotal role in shaping the private equity market.

The most significant strategy employed throughout this timeframe was leveraged buyouts. In 2006, leveraged buyouts comprised approximately 64% of total private equity deal volume, highlighting the prevalence of this approach within the industry (Kaplan and Strömberg, 2009). Firms capitalized on favorable debt market conditions (**Case Exhibit 15)**, which allowed them to finance acquisitions through high leverage ratios, thereby amplifying potential returns. Firms capitalized on favorable debt market conditions, which allowed them to finance acquisitions through high leverage ratios, thereby amplifying potential returns. Notable LBO transactions from this period included the acquisition of TXU Energy for $45 billion by a consortium led by Kohlberg Kravis Roberts (KKR) and TPG Capital, the transaction this case study is dealing with, and the $15 billion leveraged buyout of The Hertz Corporation in 2005 by Carlyle Group, Clayton, Dubilier & Rice, and Merrill Lynch (The Carlyle Group, 2005). Moreover, Yell Group was sold to Apax Partners and Hicks Muse Tate & Furst by BT Group for over $2 billion in 2002 (Private Equity International, 2002).

Additionally, firms increased their focus on operational improvements post-acquisition to

enhance the value of portfolio companies. Strategies included cost-cutting measures, restructuring, and strategic repositioning to foster growth in profitability. This trend gained traction as firms recognized the importance of not just financial engineering but also effective management practices in driving returns (McKinsey & Company 2009).

In addition to leveraged buyouts, growth equity investments gained considerable traction during this period. Private equity firms sought to tap into the expanding technology and emerging markets that offered significant growth potential. Growth equity, which focuses on infusing capital into companies in their growth stages without seeking complete ownership control, constituted about 10-15% of total private equity activity in these years (Preqin 2008). Firms targeted promising sectors such as healthcare, technology, and consumer products, positioning themselves to benefit from increasing valuations as companies evolved and scaled.

Venture capital also played a key role in the private equity ecosystem during this time, although it represented a smaller fraction of total private equity investments compared to LBOs. From 2003 to 2007, venture capital investments saw a revival as technology markets recovered following the dot-com crash of the early 2000s. By 2007, venture capital funds raised approximately $39.7 billion, with a focus on high-growth potential sectors such as information technology and biotechnology (National Venture Capital Association, 2008). The renewed interest in technology startups and innovative business models reflected the broader economic recovery and heightened investor sentiment towards the tech sector.

Economic Growth

From 2003 to 2007, the global economy experienced substantial growth, with the United States' GDP expanding at an average annual rate of approximately 2.5% (SIFMA 2006). This period of expansion boosted consumer confidence and fueled corporate profitability and market expansion. As companies exhibited strong growth potential, private equity firms found ample opportunities for acquisitions and investments.

Moreover, the rise of emerging markets during this period further diversified the scope of investment opportunities for private equity firms. As economies such as China and India accelerated their growth trajectories, investors were keen to increase their exposure to these markets, further stimulating demand for private equity (World Bank, 2023).

Low Interest Rates

One of the most significant factors influencing the private equity market during this period was the sustained low-interest-rate environment (**Case Exhibit 17**), initiated by the Federal Reserve's monetary policy following the 2001 recession. The federal funds rate was maintained at historical lows, hovering around 1% until mid-2004, before gradually increasing to approximately 5.25% by 2006 (Federal Reserve, 2023). This accessibility to cheap debt facilitated leveraged buyouts, allowing private equity firms to finance acquisitions with high levels of leverage, thereby magnifying potential returns.

The low rates also encouraged corporate borrowing, and many firms took advantage of these conditions to finance expansions, acquisitions, and operational enhancements, which aligned closely with private equity investment strategies.

Capital Market Dynamics

The capital markets exhibited robust liquidity, and the availability of debt financing surged, particularly for leveraged transactions. Between 2005 and 2007, there was a significant increase in the issuance of collateralized loan obligations (CLOs) and high-yield bonds, offering private equity firms attractive financing options. In 2007, U.S. high-yield bond issuance averaged approximately $10 billion per month, indicating a robust market during that period (Maurer et. al 2008).

This influx of debt capital, paired with strong equity markets, further propelled private equity deal activity. Notably, the S&P 500 index achieved significant gains, closing above 1,500 points in October 2007, reflecting the overall bullish investor sentiment prevalent at the time (Standard

& Poor's, 2007).

Exit Strategies

The favorable economic landscape also benefited private equity firms' exit strategies, as companies acquired during the boom experienced rising valuations. Initial public offerings (IPOs) and sales to strategic buyers became increasingly common as market sentiment remained positive through 2007. Reports indicated that private equity-backed IPOs reached around $30 billion in proceeds in 2007, solidifying exits as a lucrative avenue for investment realization (Bain & Company, 2011). This success in exits not only generated returns for investors but also reinforced the attractiveness of private equity investing, encouraging further capital inflows.

Regulatory Landscape (2003-2007)

The regulatory landscape for private equity during the period from 2003 to 2007 was shaped by evolving frameworks and scrutiny aimed at enhancing transparency, protecting investors, and addressing systemic risks. While the regulatory environment was generally favorable, emerging discussions surrounding accountability and governance foreshadowed significant changes that would follow in subsequent years.

Key Regulatory Developments

1. **Securities and Exchange Commission (SEC) Oversight**: During this timeframe, the SEC began to examine the private equity industry's practices more closely. In 2006, the SEC proposed new rules that required investment advisers to register with the agency, an initiative aimed at increasing transparency and protecting investors. This move marked a pivotal shift as it acknowledged the growing importance of private equity in the financial markets (SEC, 2006).

2. **The Dodd-Frank Act**: Although the Dodd-Frank Wall Street Reform and Consumer Protection Act was enacted only after the financial crisis in 2010, discussions surrounding its implications were already underway in this period. Concerns about systemic risks associated with high leverage, particularly in light of major LBO transactions, prompted calls for a

regulatory framework that would monitor private equity more closely (U.S. Senate, 2010).

3. **Tax Regulations**: The tax treatment of carried interest, which allowed private equity fund managers to be taxed at capital gains rates on their earnings, continued to be a focal point of debate. While private equity firms benefited from favorable tax treatment, legislators and advocacy groups increasingly questioned whether this structure was equitable, setting the stage for future legislative challenges (Joint Committee on Taxation, 2007).

Impact on Market Dynamics

The regulatory developments during this period emphasized the need for greater accountability and transparency within the private equity industry. As investments became larger and more complex, both investors and regulatory bodies sought to ensure that private equity firms upheld fiduciary responsibilities and managed risks effectively.

Additionally, the heightened regulatory attention contributed to the formation of industry standards and best practices, encouraging firms to enhance their governance structures and operational transparency in anticipation of potential legislative changes. The increasing scrutiny of investor relationships and reporting requirements urged firms to implement robust compliance frameworks to preempt any regulatory backlash.

Increased Competition

1. **Growth of Private Equity Firms**: During these years, the number of private equity firms grew substantially, contributing to heightened competition. According to Preqin (2012), the number of private equity firms globally surged from 1,013 in Q1 2007 to over 1,196 by 2007. This increase included not just traditional buyout firms but also more specialized funds focusing on sectors such as distressed assets, energy, and technology.

2. **Large Fund Raises**: The competition was exacerbated by record-breaking fundraising efforts. Private equity firms capitalized on favorable market conditions, with global private equity fundraising increasing from about $101 billion in 2003 to $541 billion in 2006 (**Case**

Exhibit 113) This influx of capital drove firms to pursue larger deals and compete aggressively for high-quality assets.

Emergence of New Players

1. **Institutional Investors**: The participation of institutional investors, such as pension funds, insurance companies, and sovereign wealth funds, became increasingly influential during this period. These entities sought higher returns in a low-interest-rate environment and allocated significant resources to private equity investments, often through direct investments or co-investments. Institutions began leveraging their capital to co-invest alongside private equity firms, thereby increasing competition for portfolio companies (Kaplan & Strömberg, 2009).

2. **Rising Interest from Hedge Funds**: Hedge funds also began to enter the private equity space, applying their capital and financial engineering expertise to pursue longer-term investments in companies. This trend resulted in the blurring of lines between private equity and hedge funds, intensifying competition for deal flow and innovative investment strategies (McKinsey & Company 2009). Hedge funds' entry into private equity also introduced new tactics and greater competition in structuring deals and harvesting returns.

Development after the Buyout

At the time of the buyout, TXU operated some of the oldest coal-fueled power plants in Texas and had announced plans to construct 11 additional lignite/coal-fueled generation units. These plans sparked public outcry due to concerns over harmful emissions, and environmental groups threatened lawsuits to block the construction (**Case Exhibit 18**). In response, EFH's new owners agreed to reduce the planned number of plants from 11 to three (**Case Exhibit 6**) and committed to investing $1 billion to reduce emissions of mercury, nitrogen oxides, and sulfur dioxide from its existing coal plants (**Case Exhibit 19**).

The years immediately following the take-private coincided with tightening environmental regulations. Between 2008 and 2013, EFH incurred additional capital expenditures to install

pollution control equipment to comply with these requirements. Despite these efforts, environmental groups continued to criticize EFH's reliance on coal-fired plants, and in 2013, the "Beyond Coal" campaign sought to persuade EFH's customers to switch electricity providers (**Case Exhibit 20**). This sustained environmental criticism further tarnished EFH's reputation and contributed to customer attrition.

At the same time, EFH struggled to navigate a deregulated and increasingly competitive Texas energy market. Between 2008 and 2013, EFH lost approximately one-fifth of its retail customers (**Case Exhibit 21; Case Exhibit 22**) and sales volume due to rising competition (**Case Exhibit 23; Case Exhibit 22**). This decline stood in sharp contrast to the private equity sponsors' expectations of market share growth following deregulation. The competitive pressures significantly weakened EFH's dominant position in the ERCOT region and eroded its revenue base.

The financial landscape was also rapidly shifting. The leveraged buyout was financed with aggressive levels of debt, amounting to 6.45x EBITDA (**Case Exhibit 24)**, leaving EFH highly exposed to external shocks. The 2008 financial crisis exacerbated these vulnerabilities by freezing credit markets and widening spreads (**Case Exhibit 15)**, making refinancing nearly impossible. The crisis also caused a sharp decline in electricity demand (**Case Exhibit 25**), particularly in the industrial sector, undermining the investment thesis that had relied on steady growth in energy consumption. Faced with these challenges, EFH initiated liability management programs in 2009 to reduce its debt burden and extend maturities for $23.5 billion in obligations (**Case Exhibit 26**). The company also activated the Payment-in-Kind (PIK) feature on its toggle notes to conserve cash, deferring interest payments in the short term but increasing its long-term liabilities (**Case Exhibit 27**). While these measures provided temporary liquidity relief, they added to EFH's overall debt burden, exacerbating its financial difficulties.

Simultaneously, the fracking boom, which began in the late 2000s, transformed the U.S. energy market. A surge in natural gas production led to a sharp decline in gas prices (**Case Exhibit 8**), rendering natural gas-fired power plants far more competitive than EFH's coal-fired plants. This development disrupted EFH's investment thesis, which had assumed high gas prices would enhance the competitiveness of its coal plants. To mitigate gas price volatility, EFH had locked in gas prices through extensive hedging contracts (**Case Exhibit 28**). However, these contracts committed EFH to pay significantly above-market prices, creating a substantial cost disadvantage compared to competitors who benefited from falling natural gas prices. This miscalculation further weakened EFH's financial position.

By 2013, EFH was grappling with mounting financial and operational pressures. Despite substantial investments in environmental compliance, ongoing customer losses, and efforts to restructure its debt (**Case Exhibit 26**), the company's position remained precarious. Despite substantial investments in environmental compliance, ongoing customer losses, and efforts to restructure its debt (**Case Exhibit 26**), the company's position remained precarious. Its inability to adapt to the evolving energy market, compounded by the effects of the financial crisis and the fracking revolution, left EFH unable to service its $40 billion debt burden. In 2014, EFH filed for bankruptcy, marking the culmination of years of financial and operational challenges.

Assignment Questions

1. Does TXU's business model support an aggressive capital structure that is typical in LBOs?
2. How could sponsor-specific characteristics and the macroeconomic environment have influenced the leverage?
3. Are classic capital structure theories suitable to assess LBO leverage? Are there any other methods?
4. What role did the 2008 financial crisis play in the bankruptcy? What measures did EFH undertake to improve their financial situation?
5. Which role did the gas boom play in the bankruptcy? Assess the hedging strategy of EFH.

Introduction

This teaching note aims to analyse the key factors contributing to EFH's bankruptcy and evaluate their respective significance, focusing on the interplay between the private equity consortium's leverage decisions and external macroeconomic forces.

The analysis begins by assessing whether TXU's business model supported high leverage, using peer comparisons and benchmarks to evaluate the company's suitability as an LBO target. It further seeks to explain the leverage structure employed by the private equity consortium by contextualising it within the broader landscape of comparable transactions, sponsor-specific characteristics, and the macroeconomic environment at the time of the deal.

The teaching note then explores the role of macroeconomic factors, including the 2008 financial crisis and the gas boom, which significantly disrupted TXU's financial stability. The analysis highlights how external shocks, such as frozen credit markets and declining natural gas prices, interacted with the leveraged structure and undermined the company's financial position.

Ultimately, the objective of this teaching note is to assess the extent to which the acquirers' decisions contributed to the bankruptcy relative to the influence of external, uncontrollable factors. By disentangling these contributions, the analysis seeks to provide a nuanced understanding of the causes of EFH's financial collapse.

Does TXU's business model support an aggressive capital structure that is typical in LBOs?

Kaplan and Strömberg (2009) emphasize that LBO structures are most effective for companies with strong and predictable cash flows, which are crucial for servicing debt and avoiding financial distress. This focus aligns with lenders' primary concern: the borrower's ability to meet debt obligations, including interest and principal repayment. Key business model characteristics influencing the magnitude and reliability of cash flows are evaluated in this section.

To determine TXU's suitability as an LBO target, its financials were benchmarked against those

of competitors (**Case Exhibit 9)**. The peer group includes energy companies operating primarily in Texas and other major U.S. energy companies with operations in different states. All data reflects the situation as of December 31, 2006, and where full-year financial data was needed, last twelve months (LTM) figures were used to ensure consistency with the information available to investors at the time.

Strong candidates for LBOs typically operate in mature or niche industries with stable customer demand and predictable end markets. In the case of electricity, the product is considered an essential service with highly inelastic demand in the short term (Burke and Abayasekara 2018). Residential and commercial consumers rely on electricity for basic operations and comfort, rendering demand relatively unaffected by economic fluctuations. However, Burke and Abayasekara (2018) found that price elasticity becomes more significant over the long term. Additionally, the stability of the Texas energy market was undermined by the cyclical behaviour of deregulated electricity markets, driven by inherent market dynamics and delays in investment (Arango and Larsen 2011). On the other hand, TXU Electric Delivery, responsible for regulated electricity transmission and distribution, generated highly predictable cash flows, despite this segment accounting for only 12.1% of the company's total revenue (net of intercompany eliminations) in 2006 (**Case Exhibit 29**). Furthermore, the sector experienced a positive outlook, supported by Texas's strong population growth, economic expansion, and rising temperatures due to climate change.

A strong and defensible market position contributes significantly to the predictability of cash flows. In 2006, TXU held the largest market share in the ERCOT region, with 37% of the residential market and 26% of the small business market (**Case Exhibit 10**). These advantages positioned TXU ahead of new entrants due to economies of scale, decades of operational experience, and substantial financial resources for investment. However, since the deregulation of the retail electricity market in 2002, the market faced potential disruption from new

competitors. While deregulation provided upside potential by removing price controls from public bodies, TXU struggled to capitalise on these opportunities, evidenced by declining market shares. Between 2002 and 2006, TXU lost an average of 2-3% annually in the residential and small business segments and 7.3% per year in the large business segment (**Case Exhibit 10**).

Capital expenditures are another critical factor influencing cash flow availability for debt service. Private equity investors often aim to limit CAPEX to maximise cash flow (Rosenbaum and Pearl 2013). For TXU, CAPEX was necessary to maintain and expand infrastructure, ensure reliable service, and comply with regulatory requirements. From 2002 to 2006, CAPEX remained stable at around 10% of revenue, with an increase to 17.3% in 2006 (as a percentage of LTM revenue), aligning with peer group levels (**Case Exhibit 9)**. While this expenditure level was consistent with the energy industry, other sectors, such as professional services, often require significantly lower CAPEX. High CAPEX requirements, if poorly managed, could pressure liquidity post-LBO. However, companies with substantial CAPEX needs can still be attractive LBO targets if they exhibit other favourable characteristics, such as high profit margins, strong growth potential, or defensible market positions (Rosenbaum and Pearl 2013). Fixed assets, or tangible assets, play a crucial role in facilitating leverage by serving as high-quality collateral for creditors, thereby reducing lending risks (Titman and Wessels 1988). A positive relationship exists between asset tangibility (measured as the ratio of fixed assets to total assets) and leverage (Hall 2012). In 2006, TXU demonstrated an asset tangibility ratio of 67.3%, significantly above the peer group median of 55.3% (**Case Exhibit 9)**. This suggests that TXU had the capacity to support higher leverage compared to its peers.

EBITDA is a widely used metric in corporate finance, often considered a proxy for profitability, cash flow, and debt-servicing ability. Despite criticism from investors such as Warren Buffett and Seth Klarman, who argue that EBITDA ignores capital expenditures (Klarman 1991), the

EV/EBITDA multiple remains a primary valuation tool for private equity deals (Mauboussin 2018). Bouwens et al. (2019) reported that the use of EBITDA in corporate reporting increased significantly between 2005 and 2016, particularly in capital-intensive industries. Pre-LBO profitability positively influences deal leverage (Titman and Wessels 1988; Colla et al. 2012). Between 2002 and 2006, TXU achieved a five-year average EBITDA margin of 30.2%. By the end of 2006, TXU reported a last twelve months (LTM) EBITDA margin of 53.2%, significantly exceeding the peer group average by 22 percentage points (**Case Exhibit 9)**. Peaking gas prices (**Case Exhibit 8**) and TXU's significant exposure to coal-fired plants (**Case Exhibit 29**) which were relatively cheaper, were the main drivers behind the exceptional profitability. Such high profitability suggests a cash-generative business capable of supporting substantial leverage, though it does not guarantee debt-servicing ability.

The pre-transaction leverage of TXU provides additional insights into the firm's financial health and ability to handle debt. Change-of-control clauses typically require the refinancing of all existing debt during an LBO, rendering pre-transaction leverage irrelevant from a private equity perspective. Nevertheless, it can indicate the firm's capacity to manage high leverage and its relationships with creditors. In 2006, TXU had a leverage ratio of 3.33x, slightly below the peer group median of 3.46x. However, the company's approximated cost of debt, calculated as LTM interest expenses divided by net debt, was 13.6%, significantly higher than the industry median of 7.6% and the 75th percentile of 11.7%. This elevated cost of debt indicated higher perceived risk by creditors, unfavourable credit terms, or potentially legacy debt with high interest rates. These factors would have warranted detailed due diligence by the private equity consortium.

Finally, TXU's long-term debt-to-total capital ratio of 76.2% exceeded the peer group median by 27.1%, and its debt-to-equity ratio of 730% was 599.8% higher than the median. This heavy reliance on long-term debt highlighted a capital structure with a limited equity buffer, increasing vulnerability to economic downturns or rising interest rates. While such high leverage may

appear alarming, it also demonstrated that TXU had experience operating under these conditions, supported by its high EBITDA levels. This may have influenced the private equity consortium's decision to apply similar leverage ratios post-buyout, assuming the company's cash flows could sustain the heightened debt levels.

TXU exhibited several key business model characteristics that made it a generally favourable LBO target. Operating in the essential electricity market, the company benefited from relatively stable and predictable cash flows, particularly in its regulated transmission and distribution segment. However, the deregulation of the retail electricity market introduced competitive pressures and market volatility, leading to a sustained decline in market share across key segments. Despite this negative trend, TXU's dominant position in the ERCOT region provided competitive advantages through economies of scale and operational expertise, which supported cash flow stability. Furthermore, the company’s significant asset base served as valuable collateral, enabling it to secure high leverage. Although high capital expenditures were necessary for maintaining infrastructure, TXU's strong profitability indicated sufficient cash flow generation to service debt.

Nonetheless, the negative trend of losing market share raises important questions: Was the erosion of market share a temporary consequence of early deregulation, or did it indicate a deeper inability to compete effectively in a newly competitive environment? Could TXU’s business model withstand further market disruptions, or would the trend eventually undermine its ability to generate stable cash flows? These uncertainties cast a shadow on its long-term suitability as an LBO target, offering critical areas for further reflection.

How could sponsor-specific characteristics and the macroeconomic environment have influenced the leverage?

Sponsor-specific characteristics

Research suggests that characteristics related to the financial sponsor significantly influence the

degree of leverage employed in LBOs. Based on an analysis of 180 public-to-private LBOs in the U.S. between 1997 and 2007, Demiroglu and James (2010) concluded that the reputation of PE firms positively correlates with the level of leverage used in buyouts. This relationship arises because lenders perceive reputable PE firms as less likely to engage in risky behaviour, reducing concerns about moral hazard. Similarly, De Maeseneire and Brinkhuis (2012), in their analysis of 126 private equity-backed buyouts in Europe between 2000 and 2007, found that reputable private equity investors tend to employ above-average leverage due to their established credibility with lenders.

As of 2007, the consortium behind TXU's buyout—comprised of KKR, TPG, and Goldman Sachs—was recognized as belonging to the upper echelon of private equity firms. Of the ten largest leveraged buyouts ranked by CNN Money (2006), six were executed by at least one of these firms, highlighting their prominence and influence in the industry.

Both KKR and TPG had experienced significant regulatory setbacks in prior acquisition attempts, which may have driven a determination to ensure the success of subsequent deals. In 2003, KKR’s bid for Unisource, a utility company in Arizona, was rejected by the Arizona Corporation Commission due to concerns about financial risks and potential adverse impacts on customers. Similarly, TPG's attempt to acquire Portland General, a utility in Oregon, was rejected in 2005 by the Oregon Public Utility Commission, which expressed reservations about private equity ownership of a public utility (Reuters 2007).

To ensure the TXU acquisition's success, the buyers made numerous concessions. These included addressing environmental concerns by reducing the number of proposed coal-fueled power plants from 11 to 3, and gaining support from influential environmental groups. Significant lobbying efforts were undertaken, with at least $17 million spent to secure legislative backing and block potential regulatory interventions. These efforts included providing breakfast tacos to legislators, distributing San Antonio Spurs tickets, and recruiting

prominent Texas political figures—such as Ronald Kirk, James A. Baker III, and Donald L. Evans—as lobbyists, directors, or advisors to strengthen political influence (Anderson and Creswell 2010). The buyers also committed to holding a majority stake in TXU for at least five years to mitigate public and legislative concerns. These concessions likely incurred substantial costs, prompting the use of aggressive financing structures supported by optimistic financial projections to achieve target returns. The determination to avoid another blocked acquisition aligns with findings by Cheffins and Armour (2007), who emphasize the strategic importance of overcoming regulatory barriers in private equity transactions.

Past successes in the energy sector also likely bolstered the confidence of TXU's acquirers to use significant leverage. In 2004, KKR and TPG participated in a consortium that acquired Texas Genco for $3.7 billion (**Case Exhibit 30**), subsequently selling it to NRG Energy one year later for a profit of $4.9 billion (Anderson and Creswell 2010). Such successes may contribute to what Cressy et al. (2007) describe as increased confidence, prompting private equity firms to adopt more aggressive investment strategies. Wright et al. (2009) further support this notion, indicating that prior successes can reinforce strategic approaches, motivating firms to push the boundaries of leverage and deal structuring.

Finally, Demiroglu and James (2010) observed that reputable PE firms are more active during favourable credit market conditions, such as low credit spreads and lax lending standards. As discussed in the subsequent section, the credit market environment at the time of TXU’s buyout was highly favourable (Cheffins and Armour 2007), further enabling the use of elevated leverage.

Several sponsor-specific factors influenced the leverage structure pursued in TXU's buyout, including the consortium's reputation, prior failures in the energy sector, and past successes that may have fueled overconfidence. The determination to avoid another failed acquisition led to costly concessions and aggressive lobbying efforts, while favourable credit market conditions

further enabled the high leverage employed. A potential avenue for future research could explore the relationship between a fund's dry powder and the failure rates of buyouts, questioning whether external pressures to deploy capital lead to rushed due diligence and riskier deal structures.

Macroeconomic environment

The 1980s marked the advent of the leveraged buyout era, fueled by favourable credit markets and the rise of junk bonds. This period saw high-profile transactions such as the RJR Nabisco buyout, driven by aggressive financial engineering. However, the subsequent collapse of the junk bond market and the financial distress of over-leveraged firms led to a decline in LBO activity in the early 1990s (Kaplan and Strömberg 2009).

By the mid-2000s, the LBO market experienced a resurgence, culminating in record-breaking activity during 2006–2007 (Kaplan and Strömberg 2009) (**Case Exhibit 12**) with buyouts in North America growing from 235 buyouts in 2000 to 1,097 and 1,216 buyouts in 2006 and 2007 respectively (**Case Exhibit 14**). Public-to-private transactions dominated this era, supported by structural shifts in financing sources. Institutional lenders such as hedge funds and collateralized loan obligation (CLO) managers reduced the reliance on traditional banks, expanding the availability of credit (Kaplan and Strömberg 2009).

The mid-2000s were characterized by robust GDP growth and an expanding energy sector, which contributed to general economic optimism. This encouraged aggressive valuations and high leverage levels for transactions across all industries (**Case Exhibit 16)**, including the energy sector which was mainly driven by rising electricity demand and perceived market stability. TXU's buyout occurred amidst these favourable conditions, as private equity sponsors capitalized on the market's enthusiasm (Cheffins and Armour 2007). An analysis of 12,901 buyouts across all industries in North America between 2000 and 2015 yielded results in line with the findings presented above. After refining the dataset by excluding transactions lacking

deal value and/or EBITDA data and establishing a minimum deal value threshold of $100 million to mitigate distortions caused by insignificant transactions (e.g. add-ons), a clear upward trend in valuation multiples was observed, culminating in a peak during 2006 and 2007, with a median of 10.9x EBITDA paid by PE investors (**Case Exhibit 14**).

Low global interest rates further supported this boom by facilitating access to inexpensive debt. The ICE BofA US High Yield Index Option-Adjusted Spread (OAS), a widely used financial metric that measures the extra yield (spread) investors demand for holding high-yield bonds compared to risk-free government bonds reached an all-time low in June 2007 (**Case Exhibit 15)**. During this period, debt typically accounted for 55%–85% of private equity deal structures (Cheffins and Armour 2007). Research by De Maeseneire and Brinkhuis (2009) and Axelson et al. (2013) highlight the opportunistic behaviour of private equity sponsors, who increased leverage levels as credit spreads narrowed. This behaviour aligns with the market timing theory of capital structure, suggesting that LBO sponsors are more reactive to financing conditions than public companies (Baker and Wurgler 2002). The availability of cheap debt not only made large transactions feasible but also encouraged private equity sponsors to pursue aggressive capital structures. Lastly, the rise of covenant-lite loans in the mid-2000s fundamentally altered the risk landscape of LBO financing. By 2007, 59.3% of LBO loans lacked financial maintenance covenants, compared to none before 2004 (Demiroglu and James 2010). These loans offered private equity firms greater flexibility in structuring transactions, albeit at the cost of higher financial risk.

Ultimately, the leverage structure of TXU's buyout was driven by a combination of sponsor-specific factors—such as reputation, past failures, and successes—and a highly favourable macroeconomic environment marked by low interest rates, abundant credit, and the rise of covenant-lite loans. While these factors enabled an aggressive capital structure, they also raised important questions about its sustainability. Would a more conservative approach have been

better suited to address the risks in TXU's business environment, or would it have meant missing the unique opportunities offered by the favourable market conditions of the mid-2000s?

Are classic capital structure theories suitable to assess LBO leverage? Are there any other methods?

Classic capital structure theories, such as the trade-off theory and pecking order theory, are largely unsuitable for assessing LBO leverage because they fail to reflect the unique, short-term, transaction-focused nature of LBOs (De Maeseneire and Brinkhuis 2012). These theories are developed to explain the steady-state capital structures of public firms, focus on optimizing leverage based on tax shields, distress costs (Modigliani and Miller 1963), and information asymmetry. In contrast, LBOs prioritize maximizing equity returns and rely heavily on external debt, dictated more by prevailing market conditions than theoretical optimization principles (De Maeseneire and Brinkhuis 2012; Axelson et al. 2013). For example, the trade-off theory fails to capture the behaviour of PE sponsors, who often borrow aggressively during favourable debt markets without regard to balancing tax benefits against distress risks. Similarly, the pecking order theory, which assumes firms prefer internal financing over external debt to minimize information asymmetry (Myers 1984), is not relevant to LBOs. PE sponsors leverage external debt as much as the market allows, with due diligence and lender processes reducing concerns about asymmetry.

Instead, alternative methods, such as examining leverage in comparable transactions (Rosenbaum and Pearl 2013), provide a more practical framework for evaluating LBO capital structures. Comparing leverage levels across similar deals offers insights into industry norms and market expectations, capturing factors such as sector-specific risks, deal size, and prevailing debt market conditions. This transactional approach provides a benchmark against which the leverage of a specific LBO, such as TXU, can be assessed, offering a more tailored and empirical method of analysis.

For this purpose, comparable transactions in the energy industry were collected and benchmarked against the take-private of TXU. The buyers applied a leverage of 6.45x EBITDA on TXU. This means that the debt used to finance the transaction was 6.45 times the EBITDA of TXU at the time of the acquisition. To compute the leverage of comparable transactions, all leveraged buyouts in the energy sector leading up to the TXU transaction were considered, within a timeframe of five years before the transaction to ensure meaningful results. Although no geographical restrictions were set, the majority of identified buyouts involved US-based companies. Approximately 300 transactions met the established criteria: energy sector buyouts disclosed deal values, and a timeframe spanning 2002 to 2007. This dataset was narrowed to include only those deals for which the necessary figures—total debt used in the transaction and the target's EBITDA—were available. This refinement resulted in approximately 15 relevant buyouts (**Case Exhibit 24)**. The median leverage ratio of this peer group was found to be 5.98x, slightly below the leverage employed by TXU's buyers. Thus, it can be inferred that the leverage applied in the TXU buyout was consistent with the range typically observed in the energy sector. To contextualize the results found within the energy sector, the development of Debt/EBITDA levels in global buyouts was also analysed, with 88.5% of the transactions in the dataset occurring in North America or Europe (**Case Exhibit 16)**. The analysis reveals that the median leverage ratio for 2007 buyouts across all industries stood at 5.1x, which is lower than the 6.45x leverage used by the buyers and the 5.98x median leverage observed in the energy sector in the past years.

In summary, classic capital structure theories fail to account for the temporary, transaction-specific nature of LBO financing. Alternative methods, such as comparable transaction analysis, provide practical insights, as seen with TXU's 6.45x EBITDA leverage aligning with energy-sector norms. Another common method is debt capacity analysis, used in every LBO to evaluate a target's ability to sustain leverage. While a full analysis is beyond the scope of this

case, a simplified version is briefly outlined in part one of the teaching note.

What role did the 2008 financial crisis play in the bankruptcy? What measures did EFH undertake to improve their financial situation?

The financial crisis caused a volatile financing environment and therefore is closely connected to the previously discussed optimal level of debt. Credit markets froze as the failure of major institutions such as Lehman Brothers and Bear Stearns highlighted the vulnerability of the financial system to risky lending practices, particularly in subprime mortgages. The crisis drained liquidity from financial markets as investors and institutions hoarded cash to safeguard against potential losses. Credit spreads widened significantly as investors demanded higher returns to compensate for increased risk (Colla et al. 2012). The OAS grew rapidly starting from the second half of 2007, reaching an all-time high of 21.82% on the 15th of December 2008 (**Case Exhibit 15)**. Consequently, it became very difficult to refinance debt. EFH's inability to bring its leverage back to manageable levels is an example of adjustment costs caused by market frictions that lead to a suboptimal debt structure as discussed by Strebulaev (2007) in his proposed enhanced trade-off theory.

Following the crisis, electricity demand dropped significantly (**Case Exhibit 15**). According to Energy Central (2020), the financial crisis caused a 17-month, 5.1% drop in electricity demand across the United States. The residential and commercial sectors were hit the least with just a 2.7% and 3% decrease in demand respectively. However, the industrial sector, to which EFH had significant exposure (**Case Exhibit 31**), was hit hard, declining in demand by 11.3%. The expectation of steadily increasing energy demand, a cornerstone of the investment thesis from 2007, turned out to be anything but true. Unlike the post-COVID-19 period, the economy recovered very slowly, causing interest rates to stay near zero for a decade (**Case Exhibit 17**).

EFH responded to financial market dislocation with a series of measures aimed at managing its debt and liquidity challenges. In 2009, the company launched a liability management program

to reduce debt and extend maturities, proposing bondholders swap their debt for new instruments with later maturities at a discount (Anderson and Creswell 2010). This initiative resulted in a $2.0 billion debt reduction and the extension of approximately $23.5 billion in maturities to 2017-2021 (**Case Exhibit 26**). Amid declining gas prices (**Case Exhibit 8**) and asset values, EFH sold a controlling interest in its natural gas gathering pipeline business in August 2009 and recorded a $44 million gain from land and water rights sales (**Case Exhibit 32**). In May 2009, EFH and TCEH activated the Payment-in-Kind (PIK) feature on their toggle notes, allowing them to issue new debt instead of making cash interest payments. EFH and TCEH increased the interest rates on their toggle notes from 11.25% to 12.00% and from 10.50% to 11.25%, respectively, issuing $150 million and $98.5 million in new notes, which saved $141 million and $92 million in immediate cash interest payments while increasing annual cash interest obligations by $17 million and $10 million, respectively (**Case Exhibit 127**). These actions, while increasing future costs, were less aggressive than the typical 280-basis-point spread increase associated with PIK as reported by Colla et al. (2012).

The 2008 financial crisis disrupted EFH's expectation of steadily increasing energy consumption, but the modest decline in electricity demand was likely not the primary cause of its distress. The following section will explore another factor that may have played a more decisive role. Nonetheless, the crisis indirectly contributed to EFH's bankruptcy by freezing credit markets, widening spreads, and making refinancing impossible, leaving EFH unable to manage its high leverage. This raises further questions: Were other PE-owned, highly levered energy companies similarly affected? If so, how did they navigate these challenges?

Which role did the gas boom play in the bankruptcy? Assess the hedging strategy of EFH.

Rising energy prices in the early 2000s incentivized the exploration of unconventional gas reserves, leading to the adoption of fracking as a mainstream technology in the U.S. energy industry by 2008, coinciding with record-high gas prices (**Case Exhibit 8**). This period marked

the beginning of a shale gas revolution, with shale gas production in the U.S. growing at a CAGR of 57.69% between 2007 and 2011 (**Case Exhibit 33**). In the deregulated Texas energy market, where electricity prices closely followed natural gas prices, companies like EFH, capable of generating electricity from cheaper fuels such as coal, could capitalize on the price differential (Anderson and Creswell 2010). The fracking boom significantly increased the natural gas supply, resulting in a sharp decline in gas prices (**Case Exhibit 8**). Contrary to the 2007 investment thesis, which anticipated that higher natural gas prices would enhance the competitiveness of TXU's coal-fired plants, natural gas-fired power plants became more economically viable than coal-fired plants. Consequently, coal-fired electricity generation in the U.S. declined by over 60% between 2007 and 2019 (Black et al. 2021).

As gas prices were a critical underlying factor for the investment thesis, the buyers sought to minimize this risk through an extensive hedging strategy designed to stabilize cash flows and shield the company from price volatility. Through its subsidiary Luminant, EFH was not only engaged in electricity generation and wholesale (TXU Energy was responsible for the retail business) energy sales and purchases but also in commodity risk management and trading activities. EFH adopted an extensive hedging strategy to limit this exposure (**Case Exhibit 28**), committing to hedge approximately 80% of Luminant's baseload generation gas price exposure over a five-year rolling horizon. By early 2008, EFH had effectively "sold forward" 2.4 billion MMBtu of natural gas, securing prices ranging from $7.25 to $8.15 per MMBtu through a series of financial contracts. This forward sale equated to the gas needed to produce around 305,000 GWh at an assumed market heat rate. Given the historical correlation between gas prices and electricity prices, EFH expected these hedges would stabilize cash flows and mitigate the impacts of any adverse price fluctuations in natural gas markets. To execute this hedging program, EFH's subsidiaries engaged in natural gas-related financial instruments, secured largely by a first-lien interest in TCEH's assets. This arrangement minimized liquidity

requirements, as the collateral structure meant no immediate cash or letter of credit was needed to support the margin requirements for these transactions. This structure allowed EFH to implement a robust hedge without significantly drawing on its liquidity or impacting its cash position. By March 2008, approximately 95% of these hedging transactions were fully collateralized by first-lien interests, effectively reducing EFH's direct liquidity exposure.

While the spot price for natural gas amounted to $7.11 per MMBtu at the end of December 2007, it drastically decreased in the following years, reaching a low of $1.95 per MMBtu in April 2012 (**Case Exhibit 8**). Apart from the short spike of gas prices shortly after the take-private, which saw the gas price peaking at $12.69 in June 2008, the actual gas price turned out to be significantly lower than the price locked in by EFH's management (ranging from $7.25 to $8.15) for most of the time. Because EFH had locked in gas prices that ended up being higher than the new market rates, they were effectively paying more for gas than competitors who hadn't hedged or relied on gas-powered plants instead of coal-fired generation plants. EFH had locked into five-year contracts, so they were bound to buy gas at those pre-agreed prices, even though cheaper options were available. This mismatch meant that the company's costs remained high while competitors could take advantage of the low market prices, putting EFH at a financial disadvantage.

While fracking had been utilized for decades, the scale and speed of the fracking revolution were unprecedented (Black et al. 2021), significantly disrupting EFH's investment thesis by driving natural gas prices to unexpected lows. Although the buyers could have exercised greater caution regarding the potential impact of disruptive technologies like fracking on the energy market, the unprecedented nature of the revolution made it difficult to fully anticipate its effects on the utility industry at the time of the acquisition. This prompts a broader question: Could other energy companies have fared better by taking a more conservative approach to future electricity prices and adopting different, potentially more effective, hedging strategies?

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List of Abbreviations

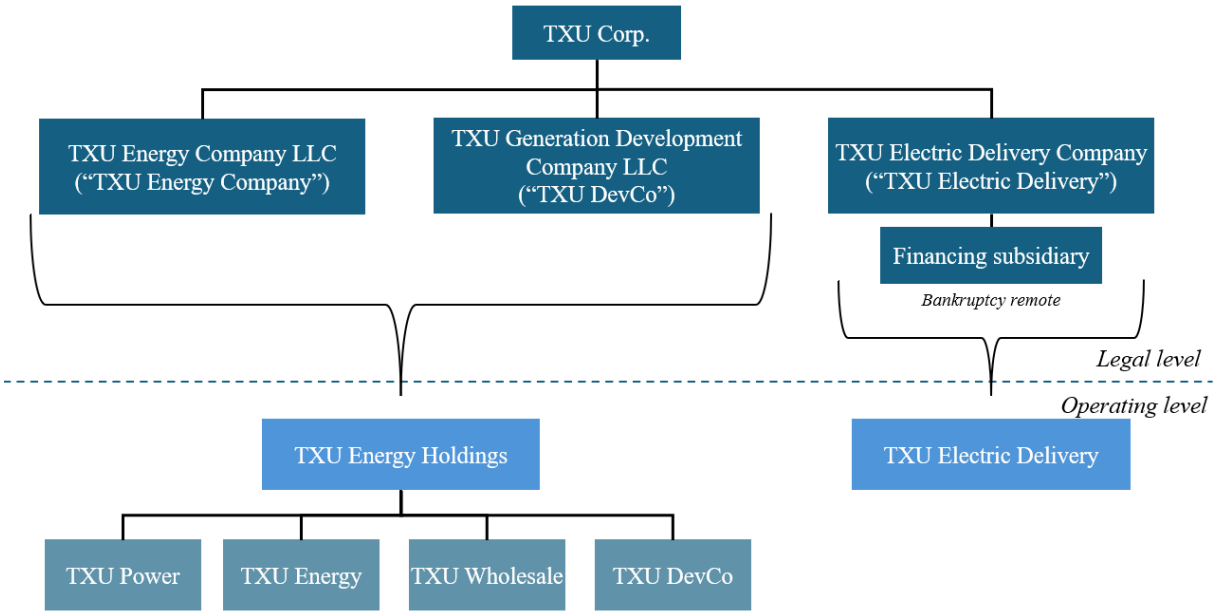
ANSI	American National Standards Institute
AUM	Assets Under Management
BofA	Bank of America
CAA	Clean Air Act
CAGR	Compound Annual Growth Rate
CAIR	Clean Air Interstate Rule
CAMR	Clean Air Mercury Rule
CAPEX	Capital Expenditures
CAPM	Capital Asset Pricing Model
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CLO	Collateralized Loan Obligations
COVID-19	Coronavirus Disease 2019
CREZ	Competitive Renewable Energy Zone
CSAPR	Cross-State Air Pollution Rule
CSR	Corporate Social Responsibility
DCF	Discount Cash Flow
DP&L	Dallas Power and Light
EB&S	Electric Bond and Share Company
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EFC Holdings	Energy Future Competitive Holdings Company
EIA	Energy Information Administration
ERCOT	Electric Reliability Council of Texas
ERP	Equity Risk Premium

ESG	Environmental Social Governmental
EV	Enterprise Value
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GS	Goldman Sachs
GSCP	Goldman Sachs Capital Partners
GWh	Gigawatt hours
ICE	Intercontinental Exchange
IEEE	Institute of Electrical and Electronic Engineers
IPO	Initial Public Offering
KKR	Kohlberg Kravis Roberts
KPI	Key Performance Indicator
LBO	Leveraged Buyout
LIBOR	London Inter-Bank Offered Rate
LTM	Last Twelve Months
M&A	Mergers and Acquisitions
MATS	Mercury and Air Toxics Standard
MMBtu	Million British Terminal Units
MW	Mega Watt
NERC	North American Electric Reliability Corporation
NOx	Nitrogen Oxides
OAS	Option-Adjusted Spread
OSHA	Occupational Safety and Health Administration
PE	Private Equity

PIK	Payment-in-Kind
PUCT	Public Utility Commission of Texas
PURPA	Public Utility Regulatory Policies Act
REC	Renewable Energy Credit
REP	Retail Electricity Provider
RPS	Renewable Portfolio Standard
SEC	Securities and Exchange Commission
SO2	Sulfur Dioxide
TCEH	Texas Competitive Electric Holdings
TCEQ	Texas Commission on Environmental Quality
TESCO	Texas Electric Service Company
TP&L	Texas Power and Light Company
TPG	TPG Capital
TV	Terminal Value
TXU Corp	TXU Corporation – until LBO in 2007
TXU DevCo	TXU Generation Development Company
U.S.	United States
UK	United Kingdom
USCAP	United States Climate Action Partnership
WACC	Weighted Average Cost of Capital
g	growth rate
i.e.	id est

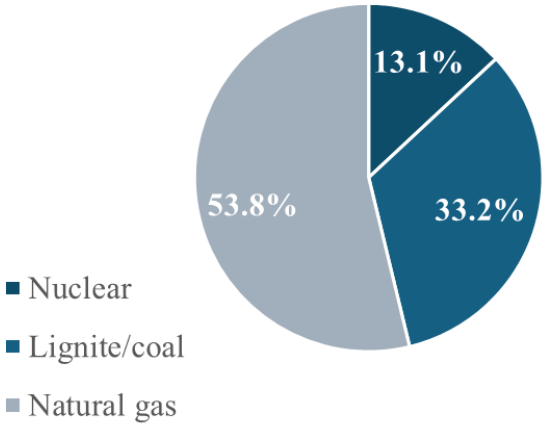
Case Appendix

Case Exhibit 1: TXU pre-transaction company structure



Source: TXU Corp. 2006 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000114036107004767/txucorp10k_123106.htm

Case Exhibit 2: TXU energy split by source (2006)



Source: TXU Corp. 2006 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000114036107004767/txucorp10k_123106.htm

Case Exhibit 3: TXU Key Financials

USDm	2003	2004	2005	2006
Revenue	8,600	9,308	10,662	10,856
Gross profit	4,960	5,461	6,401	8,072
EBITDA	2,274	2,574	3,831	5,490
Net income	544	-	1,743	2,573

Source: Bloomberg

Case Exhibit 4: TXU Income Statement, BBG Adjusted

In Millions of USD except Per Share 12 Months Ending	FY 2002 12/31/2002	FY 2003 12/31/2003	FY 2004 12/31/2004	FY 2005 12/31/2005	FY 2006 12/31/2006	FY 2007 12/31/2007
Revenue	**9,896.0**	**8,600.0**	**9,308.0**	**10,662.0**	**10,856.0**	**7,992.0**
+ Revenue From Electric	9,896.0	8,600.0	9,308.0	10,662.0	10,856.0	7,992.0
+ Revenue from Gas	0.0	0.0	0.0	0.0	0.0	0.0
+ Revenue from Water	0.0	0.0	0.0	0.0	0.0	0.0
+ Other Revenue	0.0	0.0	0.0	0.0	0.0	0.0
- Cost of Revenue	**4,087.0**	**3,640.0**	**3,847.0**	**4,261.0**	**2,784.0**	**3,025.0**
+ Fuel Cost	*4,087.0*	*3,640.0*	*3,847.0*	*4,261.0*	*2,784.0*	*3,025.0*
+ Purchased Power Cost	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
+ Purchased Gas & Water Cost	0.0	0.0	0.0	0.0	0.0	0.0
Gross Profit	**5,809.0**	**4,960.0**	**5,461.0**	**6,401.0**	**8,072.0**	**4,967.0**
- Operating Expenses	4,151.0	3,410.0	3,647.0	3,346.0	3,412.0	3,744.0
+ Maintenance Expenses	0.0	0.0	0.0	0.0	0.0	0.0
+ Depreciation Expenses	868.0	724.0	760.0	776.0	830.0	1,049.0
+ Taxes Other Than Income	478.0	390.0	367.0	364.0	390.0	375.0
+ Other Operating Expense	2,805.0	2,296.0	2,520.0	2,206.0	2,192.0	2,320.0
Operating Income (Loss)	**1,658.0**	**1,550.0**	**1,814.0**	**3,055.0**	**4,660.0**	**1,223.0**
+ AFUDC - Equity	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
+ Interest Income	*31.0*	*36.0*	*28.0*	*48.0*	*46.0*	*80.0*
+ Interest Expense	882.0	784.0	695.0	802.0	830.0	1,510.0
+ Interest Expense On Bonds	*808.0*	*784.0*	*695.0*	*802.0*	*830.0*	*1,510.0*
- AFUDC - Debts	*12.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
+ Other Interest Expense	*86.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Pretax Income (Loss), Adjusted	**281.0**	**818.0**	**123.0**	**2,407.0**	**3,728.0**	**-1,026.0**
- Abnormal Losses (Gains)	461.5	0.0	1,638.0	-137.0	127.0	0.0
Pretax Income (Loss), GAAP	**281.0**	**818.0**	**123.0**	**2,407.0**	**3,728.0**	**-1,026.0**
- Income Tax Expense (Benefit)	99.0	252.0	42.0	632.0	1,263.0	-364.0
Income (Loss) from Cont Ops	**182.0**	**566.0**	**81.0**	**1,775.0**	**2,465.0**	**-662.0**
- Net Extraordinary Losses (Gains)	4,392.0	-16.0	-404.0	53.0	-87.0	-25.0
Income (Loss) Incl. MI	**-4,210.0**	**582.0**	**485.0**	**1,722.0**	**2,552.0**	**-637.0**
- Minority Interest	0.0	0.0	0.0	0.0	0.0	0.0
Net Income, GAAP	**-4,210.0**	**582.0**	**485.0**	**1,722.0**	**2,552.0**	**-637.0**
- Preferred Dividends	22.0	22.0	22.0	10.0	0.0	0.0
- Other Adjustments	0.0	0.0	849.0	0.0	0.0	0.0
Net Income Avail to Common, GAAP	**-4,232.0**	**560.0**	**-386.0**	**1,712.0**	**2,552.0**	**-637.0**
Net Income Avail to Common, Adj	**-4,232.0**	**560.0**	**-386.0**	**1,712.0**	**2,552.0**	**-637.0**
Net Extraordinary Losses (Gains)	4,392.0	-16.0	-404.0	53.0	-87.0	-25.0
Basic Weighted Avg Shares	556.0	644.0	600.0	476.0	460.0	1,664.9
Basic EPS, GAAP	**-7.62**	**0.87**	**-0.64**	**3.60**	**5.55**	**-0.38**
Basic EPS from Cont Ops, GAAP	**0.29**	**0.85**	**-1.32**	**3.71**	**5.36**	**-0.40**
Basic EPS from Cont Ops, Adjusted	**1.11**	**0.85**	**1.41**	**3.43**	**5.63**	**-0.40**
Diluted Weighted Avg Shares	556.0	758.0	600.0	486.0	467.0	1,664.9
Diluted EPS, GAAP	**-7.62**	**0.81**	**-0.64**	**2.50**	**5.46**	**-0.38**
Diluted EPS from Cont Ops, GAAP	**0.29**	**0.79**	**-1.32**	**2.61**	**5.27**	**-0.40**
Diluted EPS from Cont Ops, Adjusted	**1.11**	**0.79**	**1.41**	**2.33**	**5.54**	**-0.40**

Source: Bloomberg

Case Exhibit 5: TXU Historical Stock Price (10-Oct-1997 – 10-Oct-2007)

Source: LSEG Data & Analytics (formerly Refinitiv) https://www.lseg.com/en/data-analytics/refinitiv.

Case Exhibit 6: An excerpt from "For Buyout Kingpins, the TXU Utility Deal Gets Tricky"

But in the TXU quest, K.K.R. (run by Mr. Kravis), T.P.G. (run by another storied dealmaker, David Bonderman) and Goldman needed more than just cheap and easy bank loans. Because it was an influential utility, TXU was a political hot potato. Snaring it would require an elaborate charm offensive.

To that end, the K.K.R. group spent at least $17 million on lobbying (including 2,400 breakfast tacos on the Legislature's opening day and San Antonio Spurs tickets for certain state representatives), according to Texans for Public Justice, a watchdog group. According to the group and others, the lobbying money was used to win over opponents in the Texas Legislature and fend off legislation that would have given regulators power to veto the deal.

"When I started hearing certain legislative members members who would naturally otherwise be allies to us parrot the bullet points that were being made by the company, I knew we were in trouble," recalls Tim Morstad, who represented AARP and who was an advocate for significant electricity rate cuts.

The buyout group also sought friends in high places. It signed on several powerful Texas politicos as lobbyists, directors or advisers, including Ronald Kirk, the former mayor of Dallas who is now the Obama administration's trade representative; James A. Baker III, the former secretary of state and Bush family confidant, who was given a million shares as part of the buyout; Donald L. Evans, the former secretary of commerce; and Lyndon L. Olson Jr., a former Texas state representative.

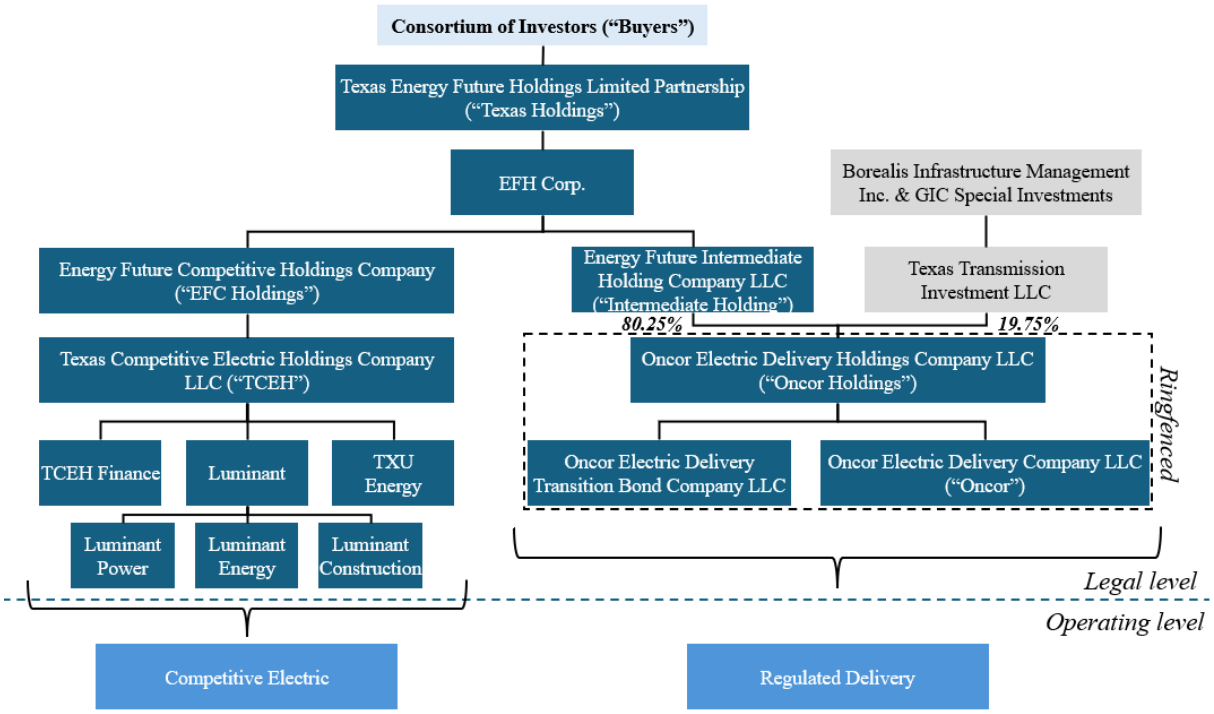
"They were hiring Democrats and Republicans alike," says Tom Smith, director of the Texas division of Public Citizen, a consumer advocacy group. "They would have hired a socialist if we had any in Texas."

Other advisers for the buyout team approached environmentalists, including the Natural Resources Defense Council and James D. Marston and Fred Krupp, two leaders of the Environmental Defense Fund, to support the deal. The buyout team offered to cut the number of proposed coal-fueled plants to 3 from 11.

When the deal was announced on Feb. 26, 2007, Mr. Krupp heralded it as "one of the most significant developments in America's fight against global warming" and commended K.K.R. and T.P.G. for dropping 8 of the 11 proposed coal plants, along with other commitments.

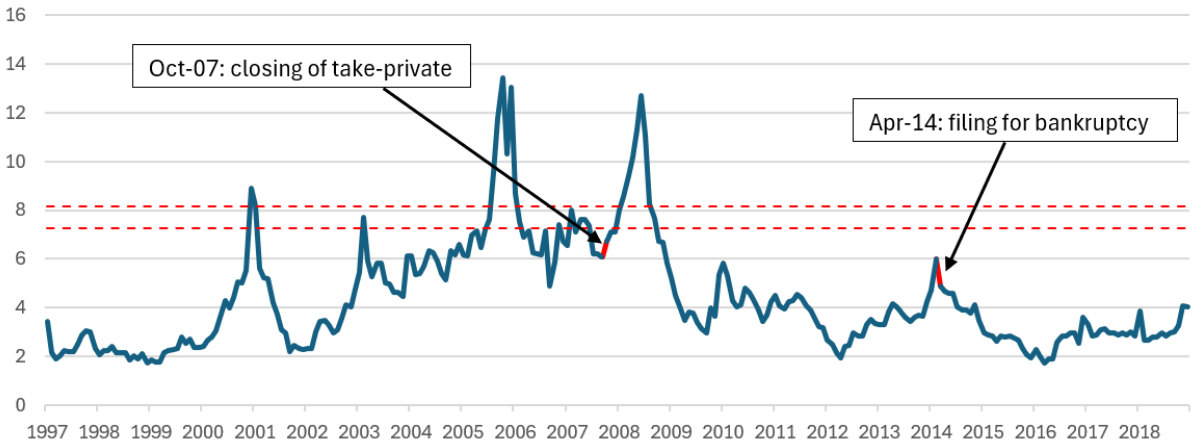
Source: New York Times. (2010). https://www.nytimes.com/2010/02/28/business/energy-environment/28txu.html

Case Exhibit 7: TXU post-transaction company structure



Source: TXU Corp. 2007 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000119312508071313/d10k.htm; TXU Corp. 2008 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000119312509043067/d10k.htm

Case Exhibit 8: Henry Hub Natural Gas Spot Price ($ per MMBtu) (1997-2019)



Source: U.S. Energy Information Administration. (2024). https://www.eia.gov/dnav/ng/hist/rngwhhdm.htm.

Case Exhibit 9: Peer analysis of TXU

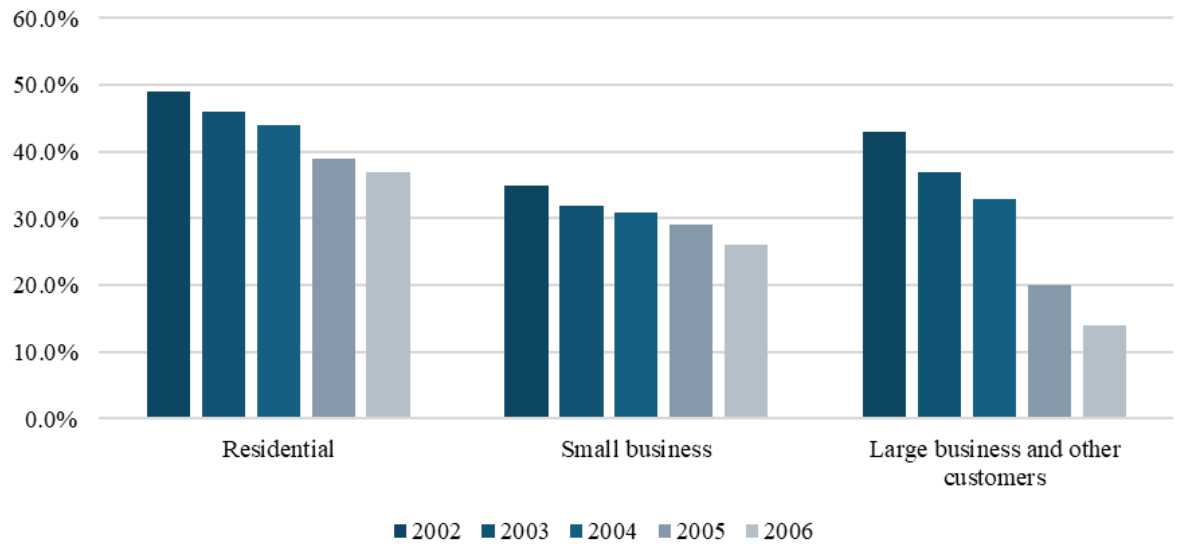
As of 31/12/2006

Company Name	Ticker	LTM Revenue (in $m)	LTM EBITDA Margin	5yr Avg. EBITDA Margin	EV (in $m)	EV / Revenue	EV / EBITDA	EV / EBIT	Net Debt (in $m)	Leverage (Net Debt / EBITDA)	Interest Expense (in $m)	Effective Cost of Debt	Long Term Debt / Total Capital	Debt / Equity	LTM CAPEX (in $m)	CAPEX / Revenue	PP&E (in $m)	PP&E / Total Assets
AES	AES	10,811	25.5%	37.4%	27,139	2.65x	7.66x	10.14x	14,851	4.55x	1,762	11.9%	66.8%	310.2%	1,022	9.5%	16,152	55.7%
American Electric Power	AEP	12,537	31.3%	25.6%	26,040	2.15x	8.13x	14.11x	12,329	3.67x	1,357	11.0%	49.1%	133.4%	3,222	25.7%	24,284	67.1%
CenterPoint Energy	CNP	10,067	22.9%	20.1%	12,442	1.28x	8.41x	13.25x	8,465	5.71x	1,200	14.2%	73.8%	583.6%	828	8.2%	8,492	49.6%
Duke Energy	DUK	10,469	37.7%	19.2%	30,126	1.85x	6.14x	9.97x	18,260	3.25x	723	4.0%	38.5%	77.8%	2,950	28.2%	29,200	53.4%
Entergy	ETR	11,104	28.1%	27.5%	23,705	2.35x	8.48x	13.23x	8,309	2.81x	651	7.8%	49.1%	101.7%	2,235	20.1%	19,426	63.0%
Exelon	EXC	15,797	40.3%	46.7%	49,502	3.22x	6.35x	8.49x	13,018	1.73x	878	6.7%	50.1%	135.8%	2,396	15.2%	21,981	51.4%
Nextera Energy	NEE	15,251	26.6%	38.6%	26,482	2.24x	6.41x	9.54x	11,742	2.37x	691	5.9%	44.8%	124.2%	1,958	12.8%	22,421	68.0%
NRG Energy	NRG	5,164	46.2%	23.9%	6,468	2.69x	15.40x	28.75x	6,561	5.23x	456	7.0%	55.1%	127.1%	219	4.2%	2,609	34.9%
Dominion Energy	D	17,283	46.1%	30.1%	45,522	2.56x	11.60x	19.07x	18,548	4.53x	1,873	10.1%	44.2%	135.1%	3,814	22.1%	28,940	55.0%
Edison International	EIX	12,529	37.5%	35.7%	22,979	1.94x	5.69x	8.33x	7,011	1.98x	1,574	22.5%	49.0%	109.4%	2,289	18.3%	18,588	53.4%
PG&E	PCG	13,066	38.2%	49.2%	23,860	2.04x	4.38x	6.43x	9,570	1.66x	615	6.4%	48.9%	124.7%	2,215	17.0%	19,955	58.6%
Public Service Enterprise	PEG	12,209	31.2%	25.5%	28,253	2.38x	10.64x	14.96x	11,644	4.89x	749	6.4%	56.4%	168.9%	1,050	8.6%	12,676	42.5%
Sempra	SRE	12,448	23.7%	28.7%	14,384	1.25x	5.02x	6.42x	2,143	1.06x	617	28.8%	33.6%	75.8%	2,377	19.1%	11,756	40.2%
Southern	SO	14,494	37.8%	35.0%	41,003	3.03x	9.40x	13.84x	15,803	3.24x	1,566	9.9%	45.8%	136.5%	2,780	19.2%	29,480	73.9%
TXNM Energy	TXNM	1,988	22.9%	18.6%	3,705	2.37x	12.53x	26.97x	2,479	5.20x	182	7.3%	43.9%	185.4%	287	14.4%	2,988	58.3%
Xcel Energy	XEL	10,256	26.7%	23.8%	14,953	1.55x	7.79x	13.68x	7,166	3.75x	450	6.3%	51.5%	124.3%	1,577	15.4%	14,696	68.3%
75th percentile		**14,137**	**38.1%**	**37.0%**	**29,658**	**2.63x**	**10.33x**	**14.75x**	**14,393**	**4.81x**	**1,514**	**11.7%**	**54.2%**	**160.8%**	**2,684**	**19.9%**	**23,818**	**66.1%**
Average		**11,592**	**32.7%**	**30.3%**	**24,785**	**2.22x**	**8.38x**	**13.57x**	**10,494**	**3.48x**	**959**	**10.4%**	**50.0%**	**165.9%**	**1,951**	**16.1%**	**17,728**	**55.8%**
Median		**12,329**	**31.3%**	**28.1%**	**24,950**	**2.29x**	**7.96x**	**13.24x**	**10,607**	**3.46x**	**736**	**7.6%**	**49.0%**	**130.3%**	**2,225**	**16.2%**	**19,007**	**55.3%**
25th percentile		**10,309**	**25.8%**	**23.8%**	**14,526**	**1.87x**	**6.19x**	**8.75x**	**7,050**	**2.08x**	**616**	**6.4%**	**44.4%**	**113.1%**	**1,029**	**10.3%**	**11,986**	**50.1%**
Energy Future Holdings	**TXU**	**11,236**	**53.2%**	**30.2%**	**37,194**	**3.49x**	**9.60x**	**12.23x**	**12,327**	**3.33x**	**1,675**	**13.6%**	**76.2%**	**730.0%**	**1,943**	**17.3%**	**17,192**	**67.3%**
Δ% to peer group*		**-8.9%**	**22.0%**	**2.1%**	**49.1%**	**52.3%**	**20.6%**	**-7.6%**	**16.2%**	**-3.8%**	**127.6%**	**6.0%**	**27.1%**	**599.8%**	**-12.7%**	**1.1%**	**-9.5%**	**12.0%**

**Change in % is a relative value for absolute numbers (e.g. revenue) and an absolute value for percentages (e.g. EBITDA margin)*

Source: LSEG Data & Analytics (formerly Refinitiv). (2024). https://www.lseg.com/en/data-analytics/refinitiv.

Case Exhibit 10: TXU's estimated share of ERCOT retail markets (2002-2006)



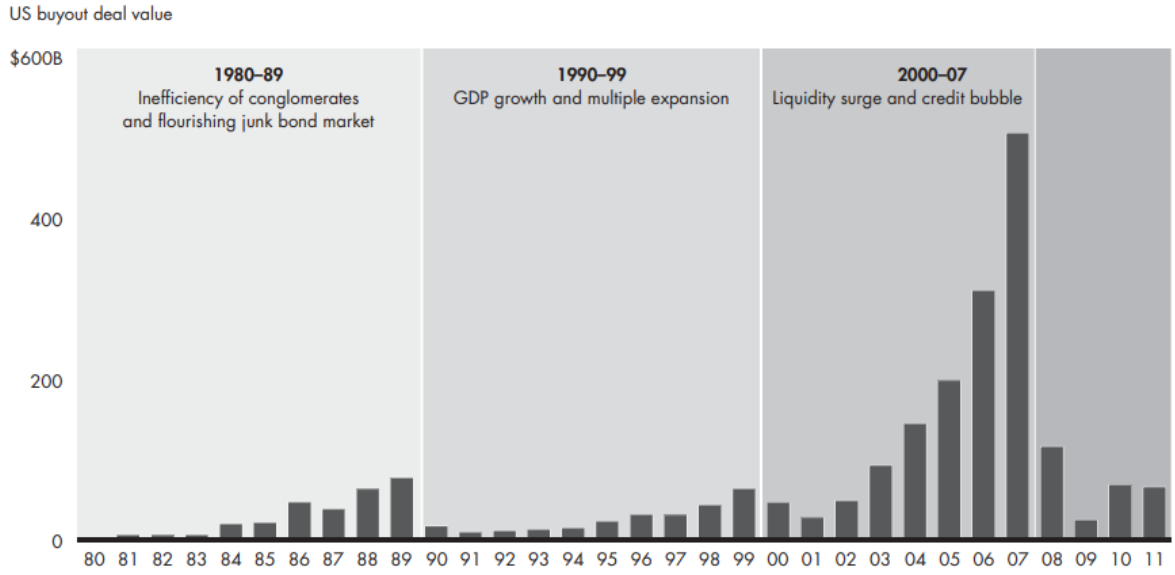
Source: TXU Corp. 2006 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000114036107004767/txucorp10k_123106.htm; TXU Corp. 2004 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000102329105000007/body10k.htm

Case Exhibit 11: EFH Environmental Capital Expenditures (2007-2014)

Year	Enviromental Cap.Ex. In $mio	Coal Units	MW
2007	65	9	5837
2008	191	9	5837
2009	149	9	7217
2010	106	9	8017
2011	142	9	8017
2012	270	9	8017
2013	93	9	8017
2014	76	9	8017
	Gesamt: 1092	**Ø: 9**	**Ø: 7372**

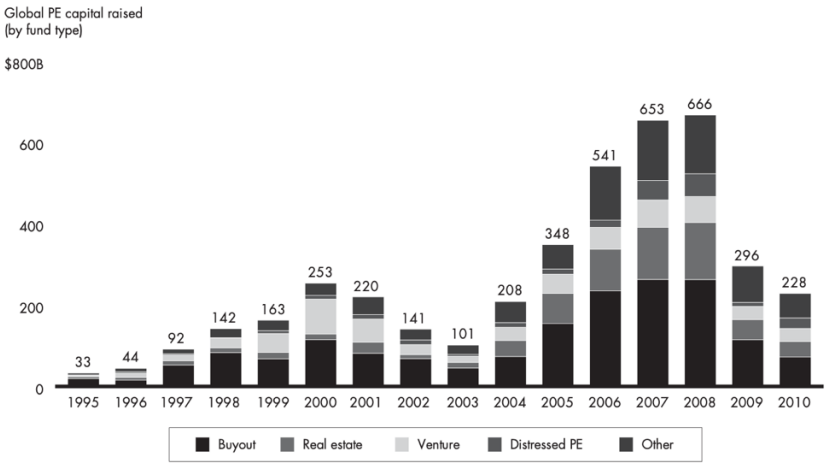
Source: EFH 2007-2014 Annual Report

Case Exhibit 12: Total US buyout deal value (1980-2011)



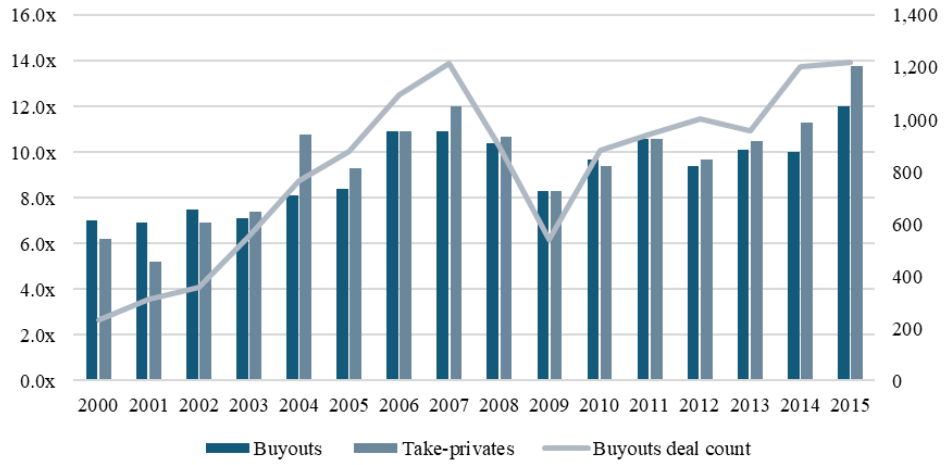
Source: Bain. (2012). *Global Private Equity Report*. https://www.bain.com/contentassets/084348d468b84c9d8223d8fb0d129d55/bain_and_company_global_private_equity_report_201220public.pdf

Case Exhibit 13: Fundraising Activity 1995-2010



Source: Bain & Company. 2011. *Global private equity report*. https://media.bain.com/Images/2011-02-24%20REPORT%20Global%20Private%20Equity%20report%202011%20-%20MEDIA.pdf

Case Exhibit 14: Median EV/EBITDA and deal count of buyouts in North America (2000-2015)

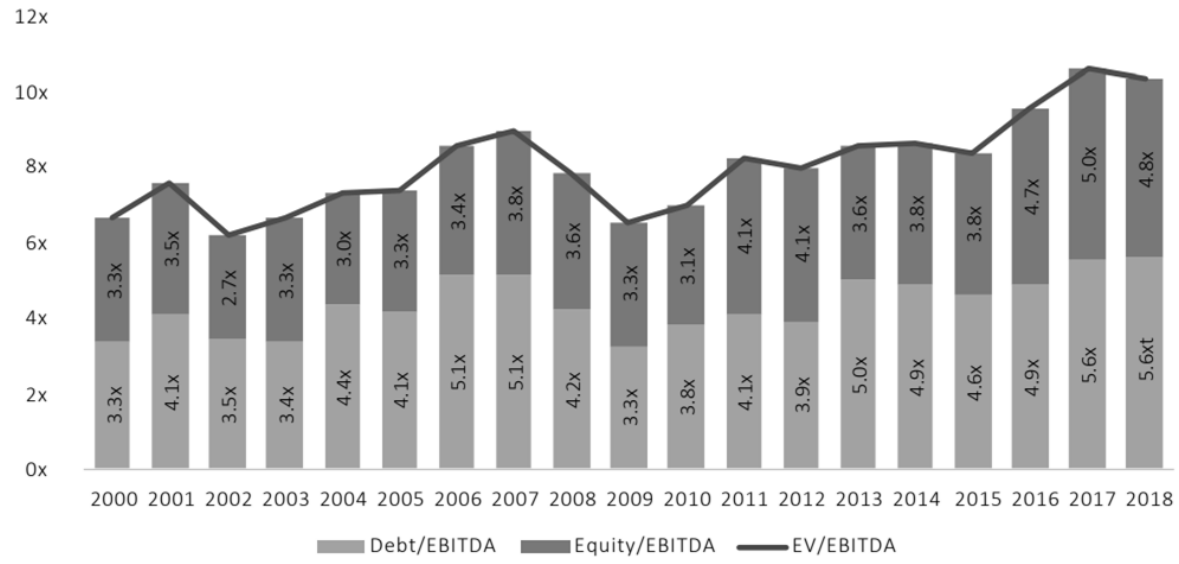


Source: MergerMarket. (2024). https://www.mergermarket.com/deals/search.

Case Exhibit 15: ICE BofA US High Yield Index Option-Adjusted Spread in % (1997-2015)

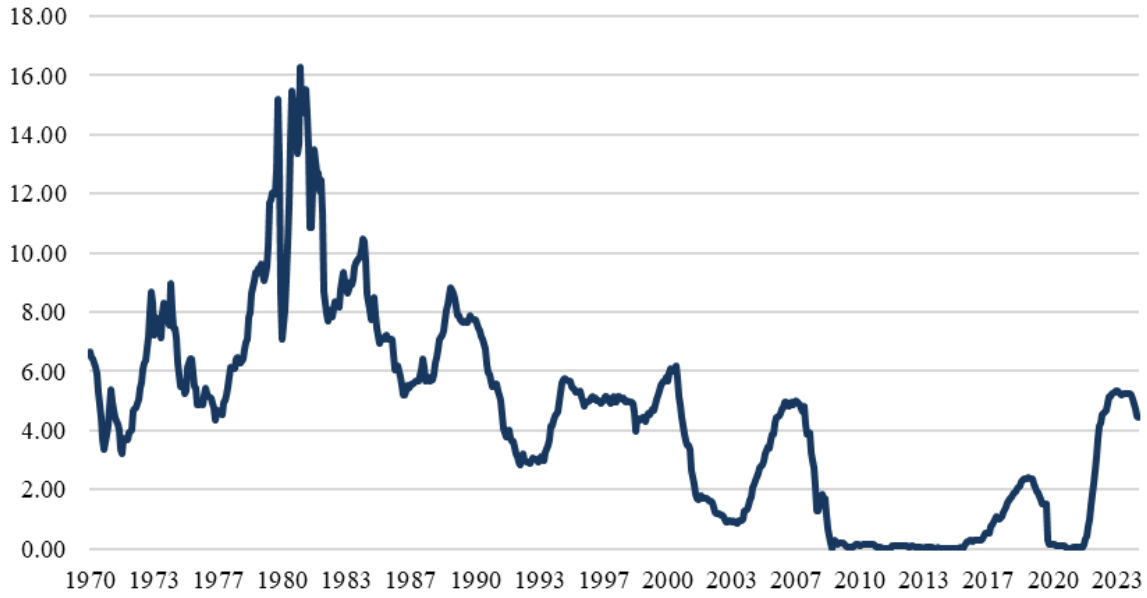
Source: Federal Reserve Bank of St. Louis. (2024). https://fred.stlouisfed.org/series/BAMLH0A0HYM2

Case Exhibit 16: Median global buyout multiples (2000-2018)



Source: Pitchbook. (2018). *Exploring Buyout Multiples: Part III*. https://files.pitchbook.com/website/files/pdf/PitchBook_4Q_2018_Analyst_Note_Exploring_Buyout_Multiples_Part_III.pdf

Case Exhibit 17: 3-Month Treasury Bill Secondary Market Rate in % (1970-2024)



Source: Federal Reserve Bank of St. Louis. (2024). https://fred.stlouisfed.org/series/TB3MS

Case Exhibit 18: Sierra Club Lawsuit

Sierra Club Files Suit Against Luminant

MAY 4, 2012 | 3:00 PM
BY TERRENCE HENRY

Comments Off
Email
Post

This week the **Sierra Club** filed a federal lawsuit against Energy Future Holdings Corp. and its subsidiary, **Luminant Generation Company**. The Sierra Club alleges that Luminant's Big Brown coal-fired power plant has "thousands of ongoing air pollution violations" of the **Clean Air Act**. The plant is located approximately 65 miles northeast of Waco in Freestone County.

PHOTO BY SAUL LOEB/AFP/GETTY IMAGES
The lawsuit says Luminant has violated the Clean Air Act. (Pictured: the AEP coal plant in West Virginia.)

The Sierra Club says that the particular emission from the Big Brown power plant is excessive soot. Soot is particularly harmful, mentions the press release, because it "contributes to asthma, heart attacks, serious respiratory illnesses, and thousands of premature deaths every year." They also say that it contains mercury and other toxic chemicals.

In an e-mail to Stateimpact Texas, Ashley Barrie of Luminant offered this response: "Luminant stands by its strong track record of exemplary compliance in meeting or outperforming all environmental laws, rules, and regulations." She says that the Sierra Club's suit is based on "unfounded accusations from a group that has made these same claims before."

Source: State Impact https://stateimpact.npr.org/texas/2012/05/04/sierra-club-files-suit-against-luminant/

Case Exhibit 19: 1 $billion Deal

Luminant avoids lawsuit over new Texas coal plant

By **Reuters**

December 10, 2008 1:36 AM GMT · Updated 16 years ago

Aa

HOUSTON (Reuters) - Luminant, the largest electric generating company in Texas, said on Tuesday it has reached an agreement with environmental groups to avoid a lawsuit aimed at stopping construction of a new coal-fired power plant.

Under the agreement with the Sierra Club and Public Citizen, Luminant agreed to further restrict emissions of mercury and other pollutants at the 1,600-megawatt Oak Grove power plant now under construction in Robertson County.

TXU's new owner, Energy Future Holdings Corp, also agreed to invest $1 billion to increase emission controls at Luminant's new coal plants and at 5,800 MW of existing coal generation.

In August, Sierra Club filed a suit to stop Houston-based Dynegy Inc and LS Power Group, from building the 900-MW Sandy Creek coal plant in McLennan County, Texas.

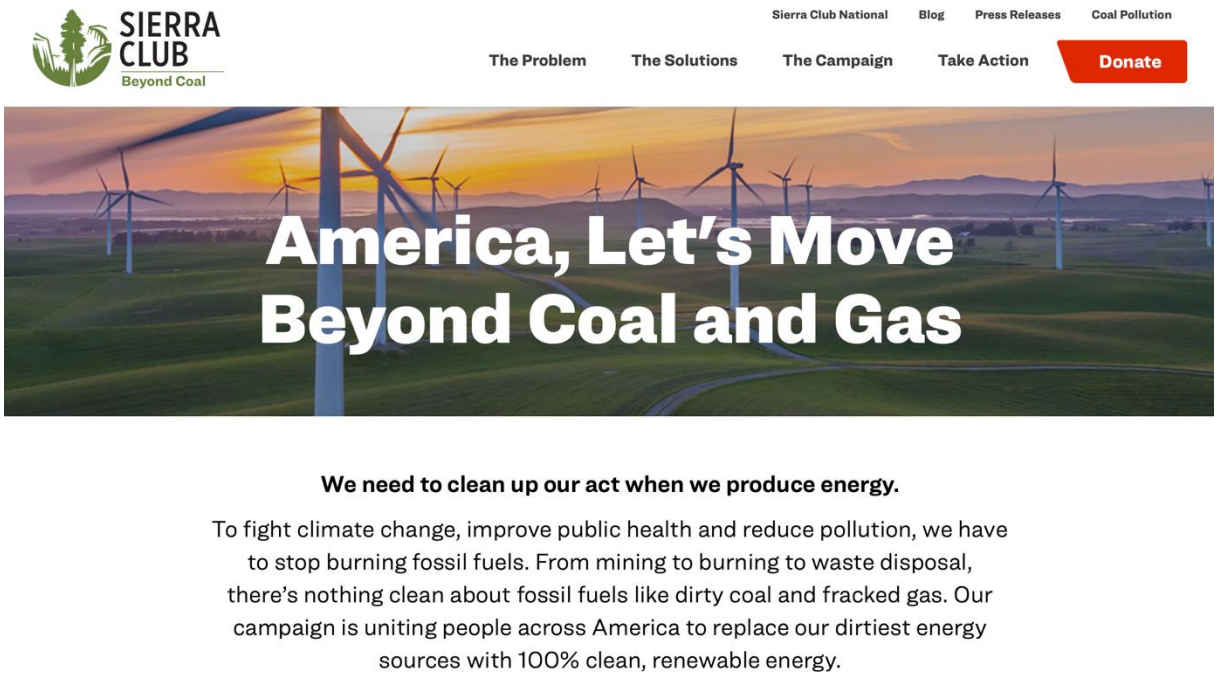
The Texas grid agency is counting on new coal plants coming online in the next two summers to bolster generation and avoid possible blackouts.

Oak Grove's first unit is expected to be online in late 2009. Luminant owns and operates more than 18,000 MW of generating capacity in Texas.

Source: Reuters. 2008.

https://www.reuters.com/article/business/environment/luminant-avoids-lawsuit-over-new-texas-coal-plant-idUSTRE4B9071/

Case Exhibit 20: Beyond Coal Campaign 2013 by Sierra Club



We need to clean up our act when we produce energy.

To fight climate change, improve public health and reduce pollution, we have to stop burning fossil fuels. From mining to burning to waste disposal, there's nothing clean about fossil fuels like dirty coal and fracked gas. Our campaign is uniting people across America to replace our dirtiest energy sources with 100% clean, renewable energy.

Source: Sierra Club. 2013. https://coal.sierraclub.org

Case Exhibit 21: Excerpt – Customer Count Data 2007

Competitive Electric Segment

Customer Count Data

	Year Ended December 31,			Change %	Change %
	2007	2006	2005	2007/2006	2006/2005
	Successor	Predecessor			
Customer counts:					
Retail electricity customers (end of period and in thousands) (a):					
Historical service territory:					
Residential	1,543	1,624	1,769	(5.0)	(8.2)
Small business (b)	241	258	281	(6.6)	(8.2)
Total historical service territory	1,784	1,882	2,050	(5.2)	(8.2)
Other territories:					
Residential	332	247	213	34.4	16.0
Small business (b)	15	9	7	66.7	28.6
Total other territories	347	256	220	35.5	16.4
All territories:					
Residential	1,875	1,871	1,982	0.2	(5.6)
Small business (b)	256	267	288	(4.1)	(7.3)
Total all territories	2,131	2,138	2,270	(0.3)	(5.8)
Large business and other customers	33	44	55	(25.0)	(20.0)
Total retail electricity customers	2,164	2,182	2,325	(0.8)	(6.2)

(a) Based on number of meters.
(b) Customers with demand of less than 1 MW.

Source: TXU Corp. 2007 Annual Report, p.60.

https://www.sec.gov/Archives/edgar/data/1023291/000119312508071313/d10k.htm

Case Exhibit 22: Excerpt – Sales Volume and Customer Count Data 2013

Competitive Electric Segment
Sales Volume and Customer Count Data

	Year Ended December 31,			2013	2012
	2013	2012	2011	% Change	% Change
Sales volumes:					
Retail electricity sales volumes – (GWh):					
Residential	22,791	23,283	27,337	(2.1)	(14.8)
Small business (a)	5,387	5,914	7,059	(8.9)	(16.2)
Large business and other customers	9,816	10,373	12,828	(5.4)	(19.1)
Total retail electricity	37,994	39,570	47,224	(4.0)	(16.2)
Wholesale electricity sales volumes (b)	38,320	34,524	34,496	11.0	0.1
Total sales volumes	76,314	74,094	81,720	3.0	(9.3)
Average volume (kWh) per residential customer (c)	14,815	14,617	16,100	1.4	(9.2)
Weather (North Texas average) – percent of normal (d):					
Cooling degree days	103.0%	114.7%	132.7%	(10.2)	(13.6)
Heating degree days	117.8%	82.0%	109.7%	43.7	(25.3)
Customer counts:					
Retail electricity customers (end of period, in thousands) (e):					
Residential	1,516	1,560	1,625	(2.8)	(4.0)
Small business (a)	176	176	185	—	(4.9)
Large business and other customers	17	17	19	—	(10.5)
Total retail electricity customers	1,709	1,753	1,829	(2.5)	(4.2)

(a) Customers with demand of less than 1 MW annually.
(b) Includes net amounts related to sales and purchases of balancing energy in the ERCOT real-time market.
(c) Calculated using average number of customers for the period.
(d) Weather data is obtained from Weatherbank, Inc., an independent company that collects and archives weather data from reporting stations of the National Oceanic and Atmospheric Administration (a federal agency under the US Department of Commerce). Normal is defined as the average over the 10-year period from 2000 to 2010.
(e) Based on number of meters. Typically, large business and other customers have more than one meter; therefore, number of meters does not reflect the number of individual customers.

Source: EFH Corp. 2013 Annual Report, p.77.

https://www.sec.gov/Archives/edgar/data/1023291/000102329114000008/efh-12312013x10k.htm

Case Exhibit 23: Excerpt – Sales Volume 2007

Competitive Electric Segment

Sales Volume Data

	Year Ended December 31,			Change %	Change %
	2007 (a)	2006	2005	2007/2006	2006/2005
	Combined	Predecessor			
Sales volumes:					
Retail electricity sales volumes – gigawatt hours (GWh):					
Historical service territory:					
Residential	23,029	25,932	29,239	(11.2)	(11.3)
Small business (b)	6,670	7,753	9,004	(14.0)	(13.9)
Total historical service territory	29,699	33,685	38,243	(11.8)	(11.9)
Other territories:					
Residential	4,194	3,663	3,416	14.5	7.2
Small business (b)	813	671	674	21.2	(0.4)
Total other territories	5,007	4,334	4,090	15.5	6.0
Large business and other customers	14,537	14,031	15,843	3.6	(11.4)
Total retail electricity	49,243	52,050	58,176	(5.4)	(10.5)
Wholesale electricity sales volumes	39,112	36,931	52,001	5.9	(29.0)
Net sales (purchases) of balancing electricity to/from ERCOT(c)	669	874	4,787	(23.5)	(81.7)
Total sales volumes	89,024	89,855	114,964	(0.9)	(21.8)
Average volume (kWh) per retail customer (d):					
Residential	14,532	15,359	15,825	(5.4)	(2.9)
Small business	28,640	30,360	32,078	(5.7)	(5.4)
Large business and other customers	375,949	285,277	243,538	31.8	17.1
Weather (service territory average) – percent of normal (e):					
Percent of normal:					
Cooling degree days	99.1%	117.6%	107.0%		
Heating degree days	99.6%	79.2%	90.0%		

(a) See "Presentation and Analysis of Results" above for explanation of this non-GAAP presentation.
(b) Customers with demand of less than 1 MW annually.
(c) See Note 1 to Financial Statements for discussion of trading and ERCOT balancing activity.
(d) Calculated using average number of customers for period.
(e) Weather data is obtained from Weatherbank, Inc., an independent company that collects and archives weather data from reporting stations of the National Oceanic and Atmospheric Administration (a federal agency under the US Department of Commerce).

Source: TXU Corp. 2007 Annual Report, p.59.

https://www.sec.gov/Archives/edgar/data/1023291/000119312508071313/d10k.htm

Case Exhibit 24 Leverage of Comparable Transactions in the Energy Sector (2003-2007)

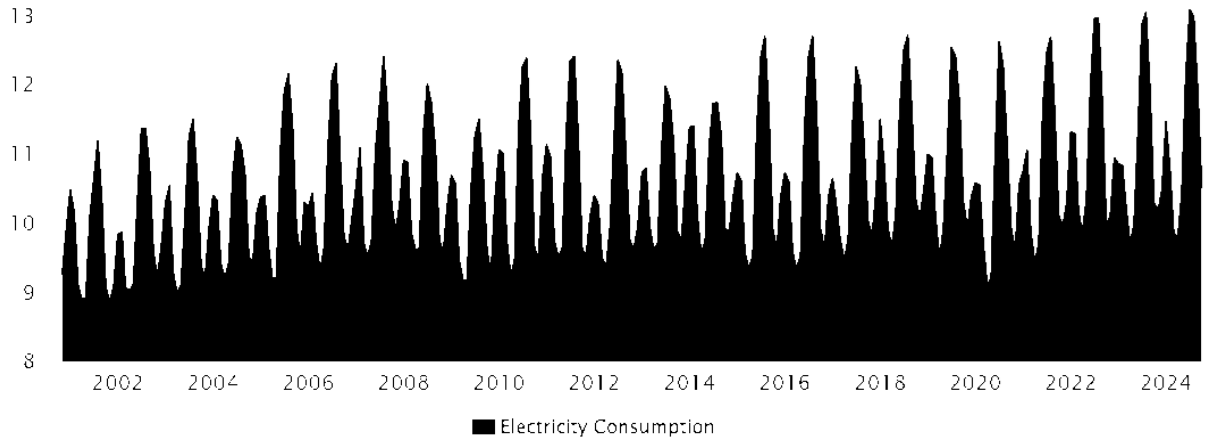
Date	Target	Country	Seller Company	Bidder Company	Stake	EV (in $m)	Revenue (in $m)	EBITDA (in $m)	EV/Revenue	EV/EBITDA	Leverage
Aug. 07	San Antonio Internacional Ltd	US	Pride International	GP Investments Limited	100%	1,000.0	823.9	214.2	1.21x	4.7x	2.80x
Nov. 06	Seitel Inc	US		ValueAct Capital, LLC	100%	672.3	149.2	114.1	4.51x	5.9x	3.51x
Sep. 06	Boart Longyear Pty Ltd	AU	Bain Capital LP; Ad	Macquarie Group Ltd - M	100%	3,154.9	983.7	192.3	3.07x	15.7x	7.26x
Aug. 06	Kinder Morgan Inc	US		Kinder Morgan (manager	100%	27,457.0	1,586.0	604.0	17.31x	45.5x	12.09x
Jul. 06	Duquesne Light Holdings Inc	US		Macquarie Consortium	100%	2,591.8	772.6	260.6	3.35x	9.9x	4.49x
May. 06	Hawkeye Holdings Inc. (80% S	US		Thomas H Lee Partners L	80%	1,169.7	89.1	21.1	13.13x	55.5x	30.82x
Oct. 05	EXCO Resources (PA), LLC	US	Cerberus Capital M	EXCO Holdings II, Inc	100%	699.6	178.0	106.6	3.93x	6.6x	3.28x
Sep. 05	Inexus Group Holdings Limitec	UK	Star Capital Partner	Challenger Infrastructure	100%	852.9	43.9	26.4	20.30x	33.8x	19.87x
Jun. 05	Elster Group GmbH	DE	E.ON SE	CVC Advisers Ltd	100%	1,815.8	1,630.0	152.5	1.25x	13.3x	7.66x
Apr. 05	International Energy Group Lt	UK		Prime Infrastructure Gro	100%	451.3	112.5	37.3	4.07x	12.3x	9.02x
Feb. 04	Plains Resources Inc	US	Kayne Anderson Ca	Vulcan LLC	100%	459.7	21.9	41.8	20.99x	11.0x	5.98x
Dec. 03	North American Construction	CA		Perry Strategic Capital; St	100%	310.5	308.0	65.0	1.01x	4.8x	3.67x
Apr. 03	Magellan Midstream Partners	US	Williams Companie	MMP Acquisitions L.P	55%	1,507.7	434.5	172.2	3.47x	8.8x	1.16x

75th percentile	15.22x	24.7x	10.56x
Average	7.51x	17.5x	8.59x
Median	3.93x	11.0x	5.98x
25th percentile	2.16x	6.2x	3.39x

Feb. 07	Energy Future Holdings Corpo	US		TXU Acquisition Consorti	100%	44,161.4	10,856.0	5,795.0	4.07x	7.6x	6.45x

Source: MergerMarket. (2024). https://www.mergermarket.com/deals/search

Case Exhibit 25: US Monthly Electricity Consumption in kWh/Day bn (2000-2024)



Source: U.S. Energy Information Administration. (2024).

https://www.ceicdata.com/en/united-states/electricity-supply-and-consumption/electricity-consumption

Case Exhibit 26: An excerpt from "EFH Corp.'s Strategies" in EFH's AR2011

Strengthen our balance sheet through a liability management program. In 2009, we initiated a liability management program focused on improving our balance sheet, and we expect to opportunistically look for ways to reduce the amount and extend the maturity of our outstanding debt. Activities under the liability management program do not include debt issued by Oncor or its subsidiaries. The program has resulted in the capture of $2.0 billion of debt discount and the extension of approximately $23.5 billion of debt maturities to 2017-2021. Activities to date have included debt exchanges, issuances and repurchases as well as amendments to the Credit Agreement governing the TCEH Senior Secured Facilities. See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations – Significant Activities and Events – Liability Management Program" and Note 10 to Financial Statements for additional discussion of these transactions.

We regularly monitor the capital and bank credit markets for liability management opportunities. Future activities under the liability management program may include the purchase of our outstanding debt for cash in open market purchases or privately negotiated refinancing and exchange transactions (including pursuant to a Section 10b-5(1) plan) or via public or private exchange or tender offers.

In evaluating whether to undertake any liability management transaction, including any refinancing, we will take into account liquidity requirements, prospects for future access to capital, contractual restrictions, the market price of our outstanding debt and other factors. Any liability management transaction, including any refinancing, may occur on a stand-alone basis or in connection with, or immediately following, other liability management transactions.

Source: EFH Corp. 2011 Annual Report.

Case Exhibit 27: An excerpt from "Financial Condition" in EFH's AR2008

PIK Interest Election — EFH Corp. and TCEH have the option every six months until November 1, 2012, at their election, to use the payment-in-kind (PIK) feature of their respective toggle notes in lieu of making cash interest payments. While EFH Corp. and TCEH have sufficient liquidity to meet their anticipated ongoing needs without use of this PIK feature, the companies elected to do so for the May 1, 2009 interest payment date as an efficient and cost-effective method to further enhance liquidity, in light of the substantial dislocation in the financial markets. Moreover, the incremental liquidity obtained by using the PIK feature of the toggle notes for this specific payment period more than offset the liquidity that was effectively lost as a result of the default by affiliates of Lehman under TCEH's Senior Secured Facilities. In the future, EFH Corp. and TCEH will evaluate use of the PIK feature at each election period, taking into account market conditions and other relevant factors at such time.

EFH Corp. will make its May 2009 interest payment by using the PIK feature of the EFH Corp. Toggle Notes. The election will increase the interest rate on the toggle notes from 11.25% to 12.00% during the interest period covered by the PIK election and require EFH Corp. to issue an additional $150 million principal amount of EFH Corp. Toggle Notes on May 1, 2009. In addition, the election will increase liquidity by an amount equal to approximately $141 million, constituting the amount of cash interest that otherwise would have been payable on May 1, 2009, and increase the expected annual cash interest expense by approximately $17 million, constituting the additional cash interest that would be payable with respect to the $150 million of additional toggle notes.

Similarly, TCEH will make its May 2009 interest payment by using the PIK feature of the TCEH Toggle Notes. The election will increase the interest rate on the TCEH Toggle Notes from 10.50% to 11.25% during the interest period covered by the PIK election and require TCEH to issue an additional approximately $98.5 million principal amount of TCEH Toggle Notes on May 1, 2009. In addition, the election will increase liquidity by an amount equal to approximately $92 million, constituting the amount of cash interest that otherwise would have been payable on May 1, 2009, and increase the expected annual cash interest expense by approximately $10 million, constituting the additional cash interest that would be payable with respect to the $98.5 million of additional toggle notes.

Source: EFH Corp. 2008 Annual Report.

https://www.sec.gov/Archives/edgar/data/1023291/000119312509043067/d10k.htm

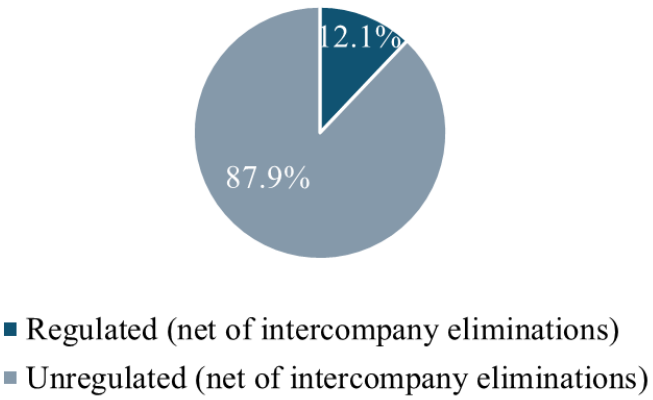
Case Exhibit 28: An excerpt from "EFH Corp.'s Strategies" in EFH's AR2007

- ***Reduce the volatility of cash flows through a commodity risk management strategy***. A key component of EFH Corp.'s risk management strategy is its plan to hedge approximately 80% of the natural gas price risk exposure of Luminant's baseload generation output on a rolling five-year basis. The strong historical correlation between natural gas prices and wholesale electricity prices in the ERCOT market combined with the significant liquidity in certain natural gas markets provides an opportunity for management of EFH Corp.'s exposure to natural gas prices. As of March 14, 2008, approximately 2.4 billion MMBtu of natural gas (equivalent to the natural gas exposure of approximately 305,000 GWh at an assumed 8.0 MMBtu/MWh market heat rate) have been effectively sold forward by EFH Corp.'s subsidiaries over the period from 2008 to 2013, at average annual prices ranging from $7.25 per MMBtu to $8.15 per MMBtu. Taking into consideration the estimated portfolio impacts of EFH Corp.'s retail electricity business, these natural gas hedging transactions result in EFH Corp. having effectively hedged approximately 84% of its expected baseload generation natural gas price exposure (on an average basis for 2008 through 2013). Certain of the hedging transactions are directly secured with a first-lien interest in TCEH's assets, which eliminates liquidity requirements because no cash or letter of credit posting is required. In addition, the uncapped TCEH Commodity Collateral Posting Facility, which is also secured by a first-lien interest in TCEH's assets, supports the margin requirements for a significant portion of the remaining hedging transactions. Consequently, as of March 14, 2008, approximately 95% of the hedging transactions were secured or supported by first-lien interests in TCEH's assets and result in no direct liquidity exposure.

Source: TXU Corp. 2007 Annual Report.

https://www.sec.gov/Archives/edgar/data/1023291/000102329112000004/efh-20111231x10k.htm

Case Exhibit 29: TXU revenue split by regulated vs. unregulated (net of intercompany eliminations)



Source: TXU Corp. 2006 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000114036107004767/txucorp10k_123106.htm

Case Exhibit 30: KKR's and TPG's exit from Genco

BUSINESS

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NRG to Acquire Texas Genco in a Deal Valued at $5.8 Billion

By Reuters

Oct. 3, 2005

NRG Energy said yesterday that it would buy Texas Genco Holdings for $5.8 billion in cash and stock in a deal that would nearly double NRG's asset base and allow it to enter the growing Texas wholesale electricity market.

The deal may also spark a new round of consolidation among merchant energy producers, which are still recovering from a credit crunch in late 2001 that drove several large independent power producers, including NRG, into bankruptcy.

The private equity firms Texas Pacific Group, Kohlberg Kravis Roberts, Blackstone Group and Hellman & Friedman bought Texas Genco last summer for $3.7 billion, using $900 million of their own cash and borrowing the rest. NRG and Texas Genco said in a statement that NRG would pay $4 billion in cash and $1.8 billion in stock, and assume more than $2.5 billion of Texas Genco debt.

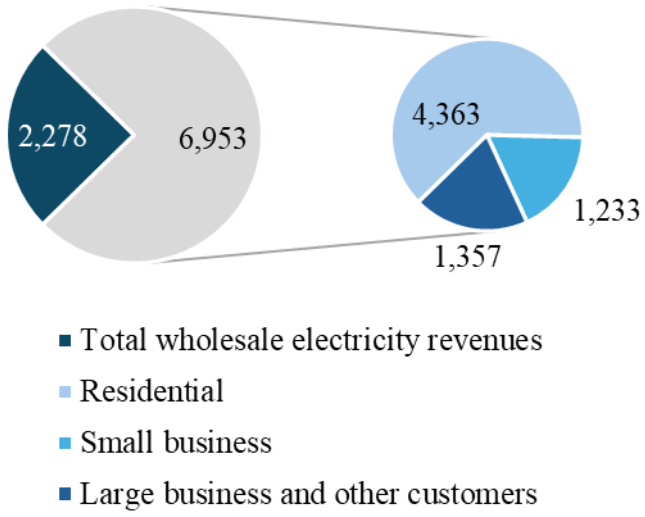
The deal is a payout for the private equity firms, which stand to make more than five times their investment. NRG, however, is spending a substantial amount of money for a company that was owned by the buyout shops for barely a year.

"I think we paid a fair price at the right time," said David Crane, NRG's president and chief executive. "Companies like this don't become available in our sector very often."

NRG said the Texas Genco combination was expected to lead to substantially greater earnings and cash flow per share.

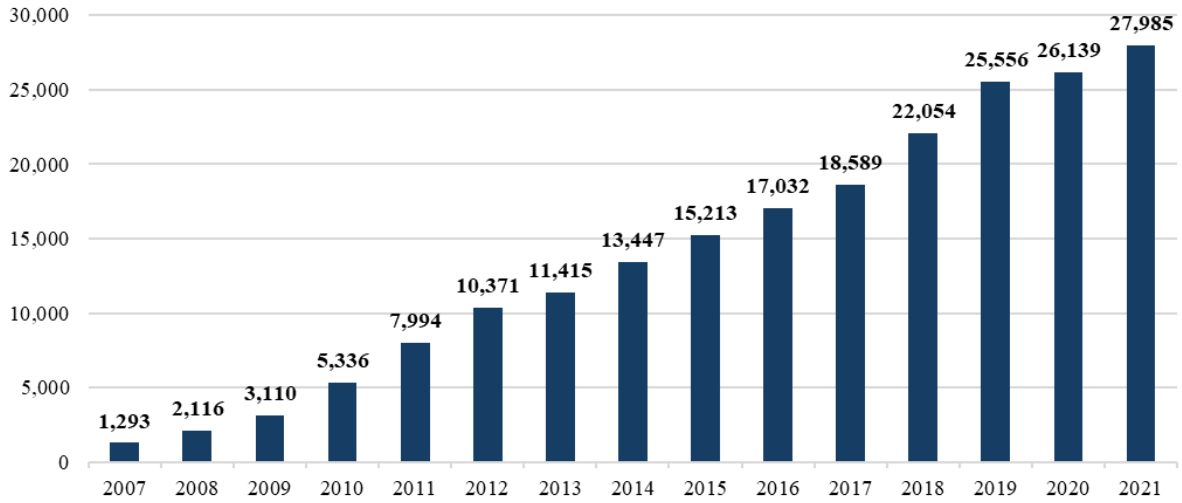
Source: New York Times. (2005). https://www.nytimes.com/2005/10/03/business/nrg-to-acquire-texas-genco-in-a-deal-valued-at-58-billion.html

Case Exhibit 31: Retail Electricity and Wholesale Electricity Revenues in $m (2006)



Source: TXU Corp. 2006 Annual Report. https://www.sec.gov/Archives/edgar/data/1023291/000114036107004767/txucorp10k_123106.htm

Case Exhibit 33: US Shale Gas Production in billion cubic feet (2007-2021)



Source: Energy Information Administration https://www.eia.gov/dnav/ng/hist/res_epg0_r5302_nus_bcfa.htm (see downloaded Excel to create graph)