

Distress in the Energy Industry

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Distress in the Energy Industry

January 12, 2015

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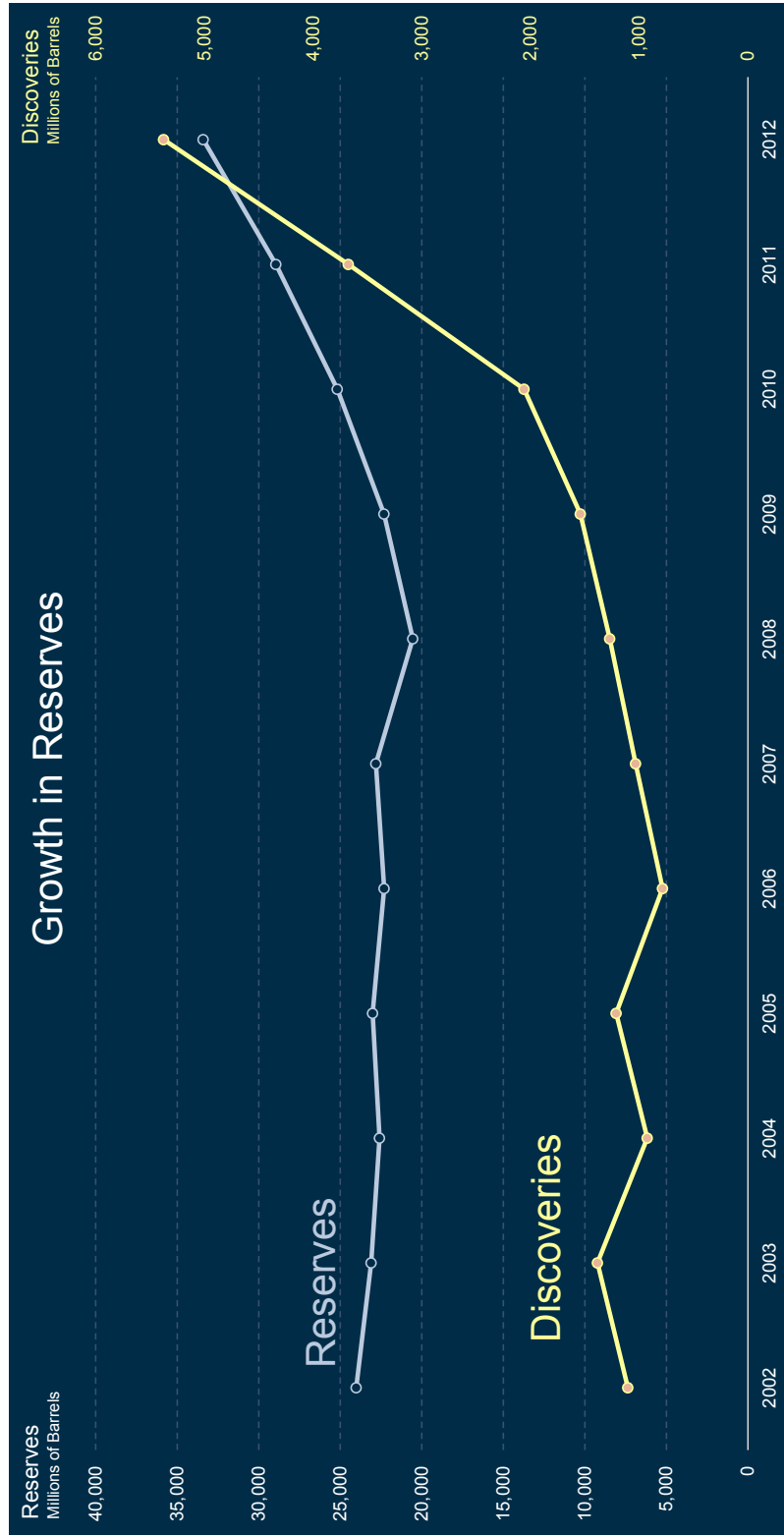


What is Driving the Oil Revolution

What is Driving the Oil Revolution

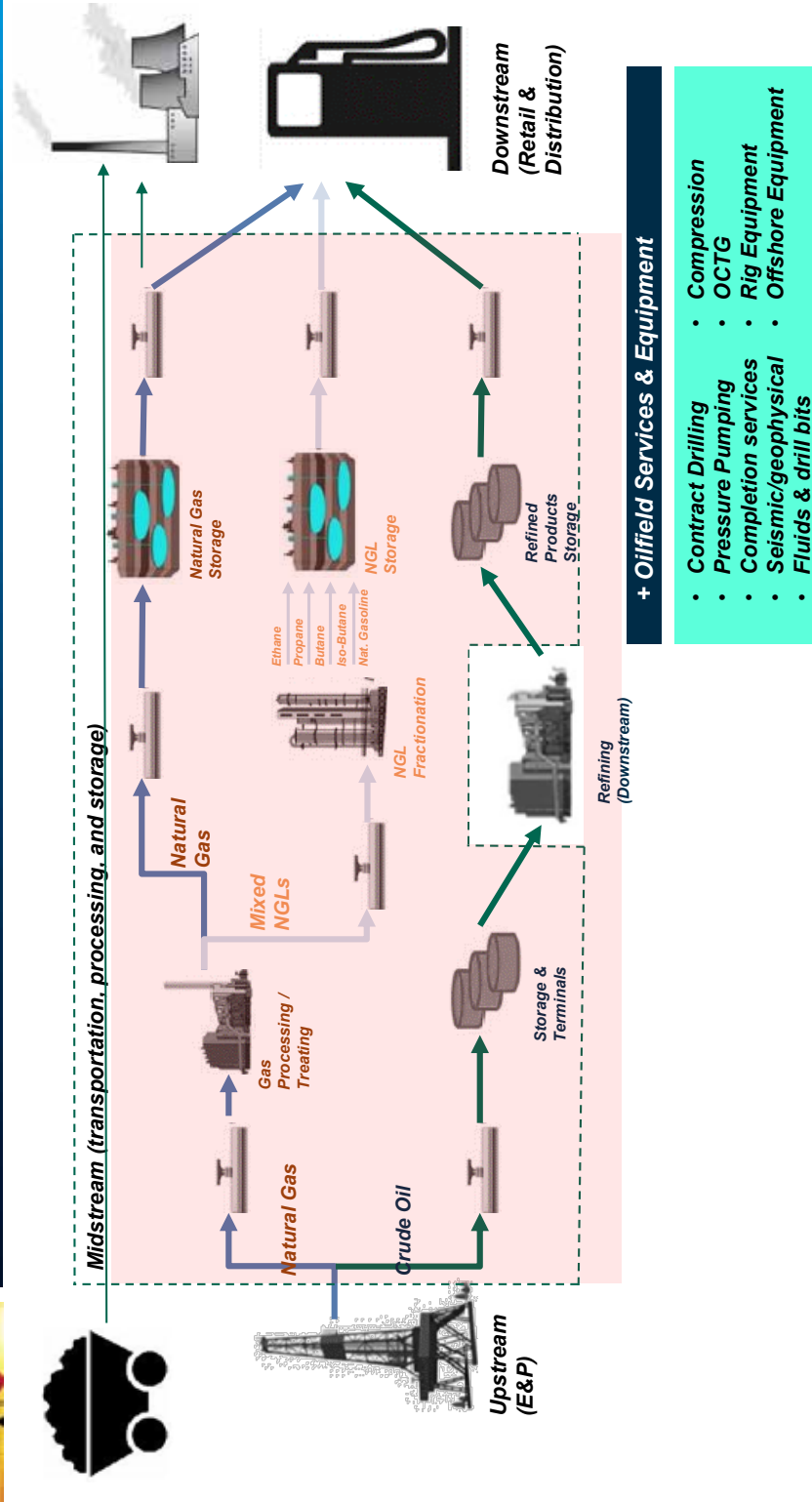


Conventional vs. Unconventional



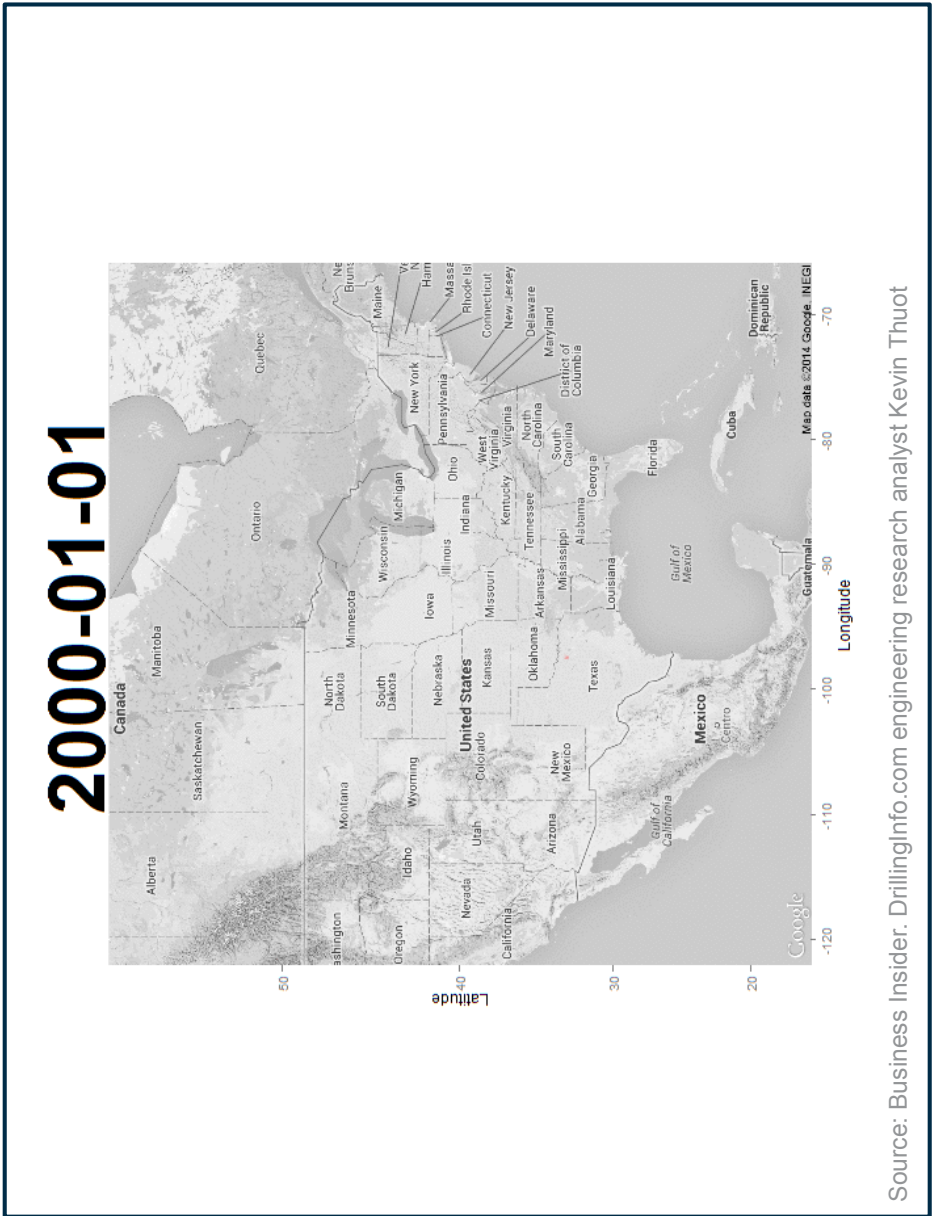
Supply Chain

From the well head to the pump



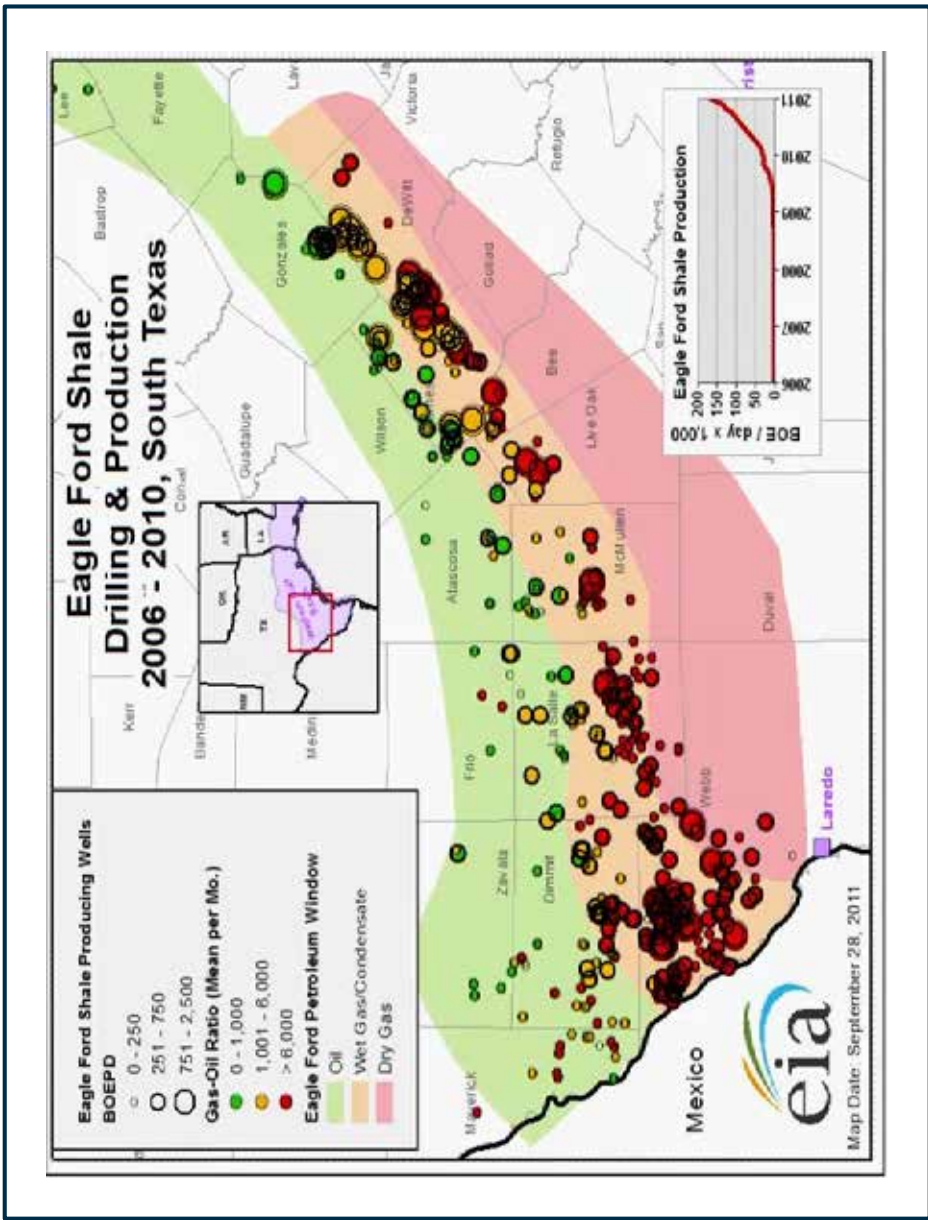
What is Driving the Oil Revolution

Conventional vs. Unconventional – Frac Locations from Year 2000 to 2014



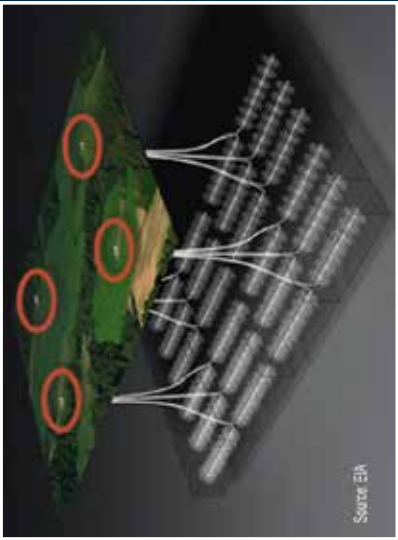
What is Driving the Oil Revolution

Conventional vs. Unconventional



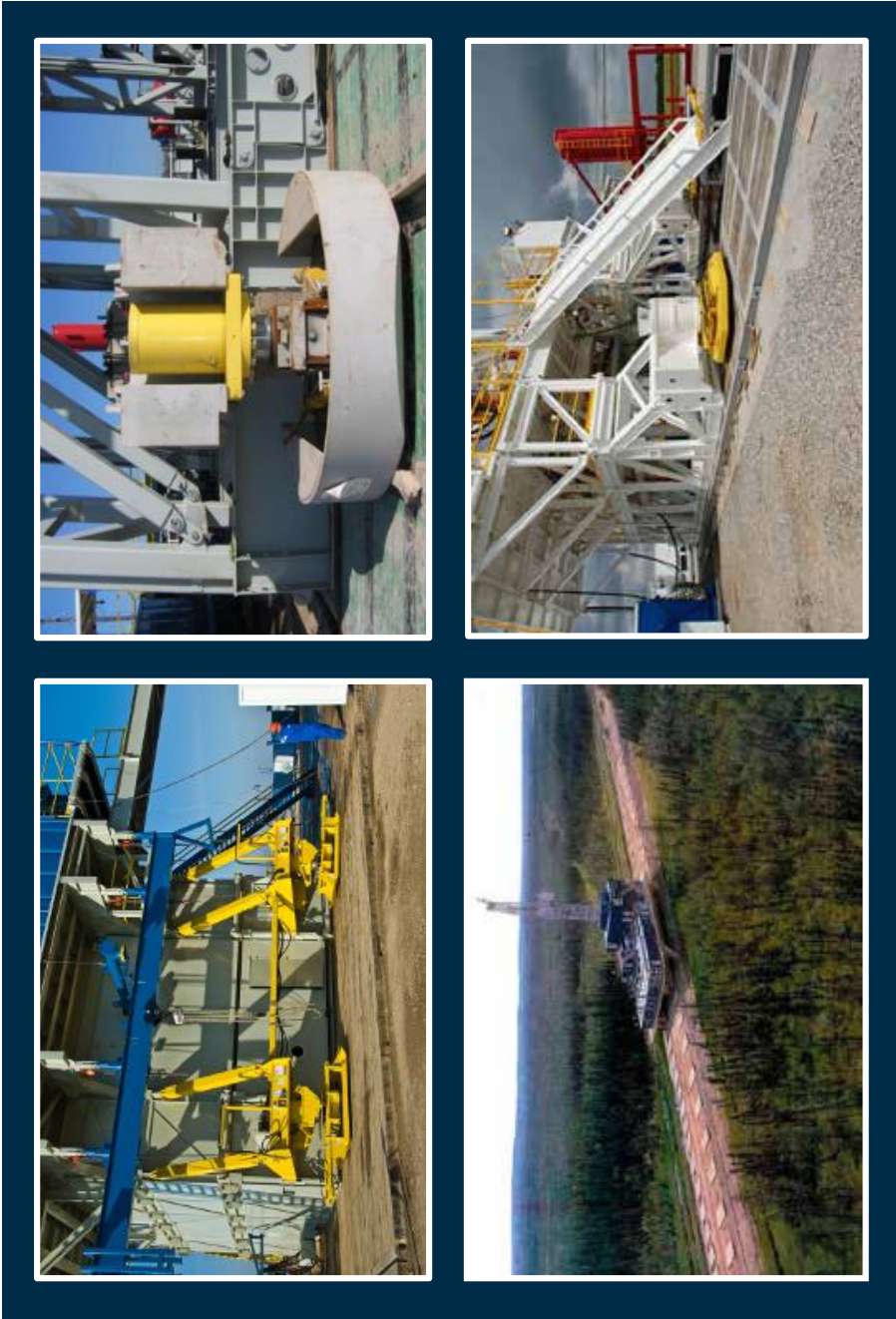
What is Driving the Oil Revolution

Technology - Tools



What is Driving the Oil Revolution

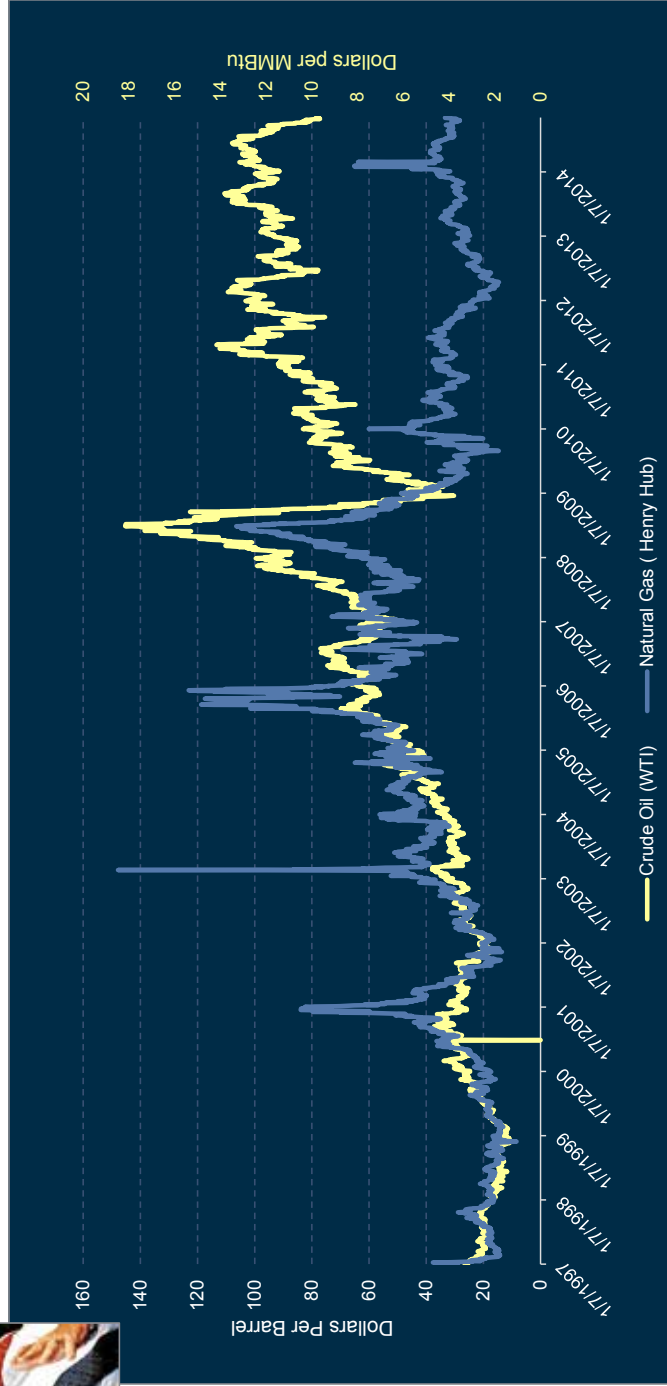
Operational Efficiency – Walking Rig



What is Driving the Oil Revolution



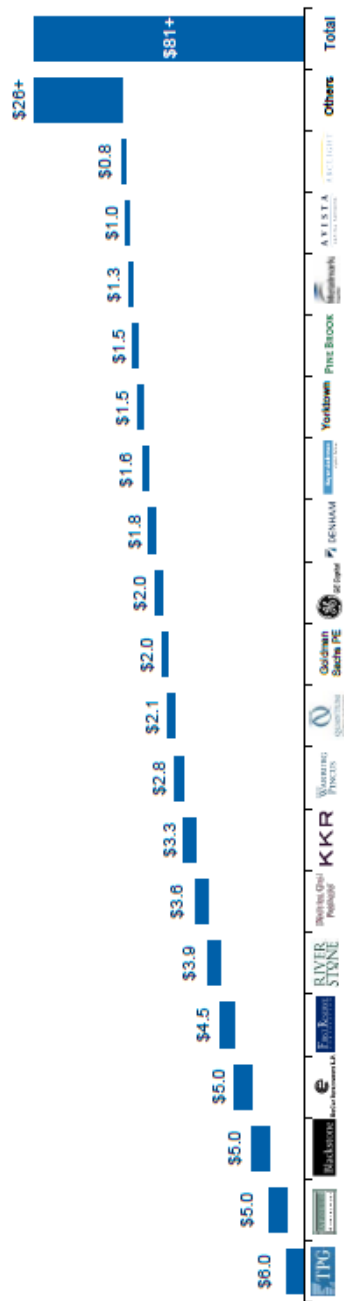
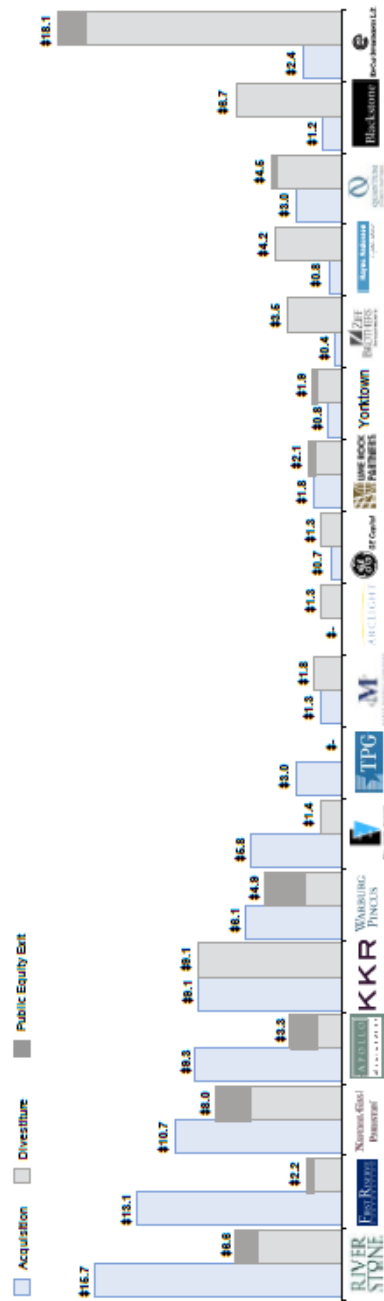
\$100/bbl Oil Price & Only Moderate Price Volatility



What is Driving the Oil Revolution

Upstream – Private Equity Capital Focused on U.S. E&P

Financial Sponsors Increasingly Active In The E&P Space – ~\$80+ B In E&P Focused Capital

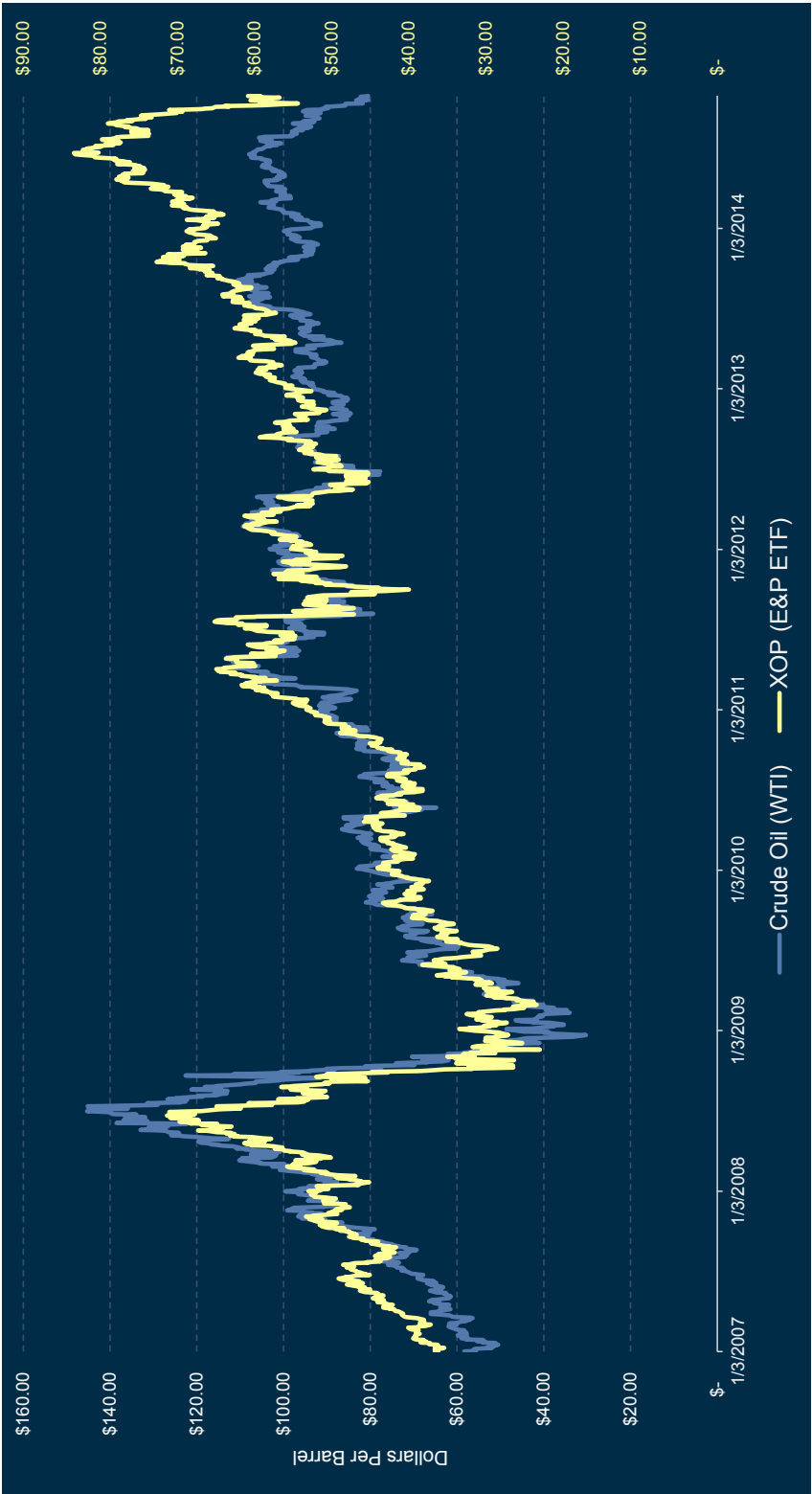
Acquisitions & Divestitures Since January 1, 2009 ⁽¹⁾

25 Source: RBC Richardson Barr internal database.
Note: Certain figures above may represent RBC estimates. (1) Represents gross values (including debt and co-investors).

What is Driving the Oil Revolution

Upstream – Commodity Price directly impact Valuations

Value is highly correlated to commodity price



What is Driving the Oil Revolution



Oil Field Services Overview

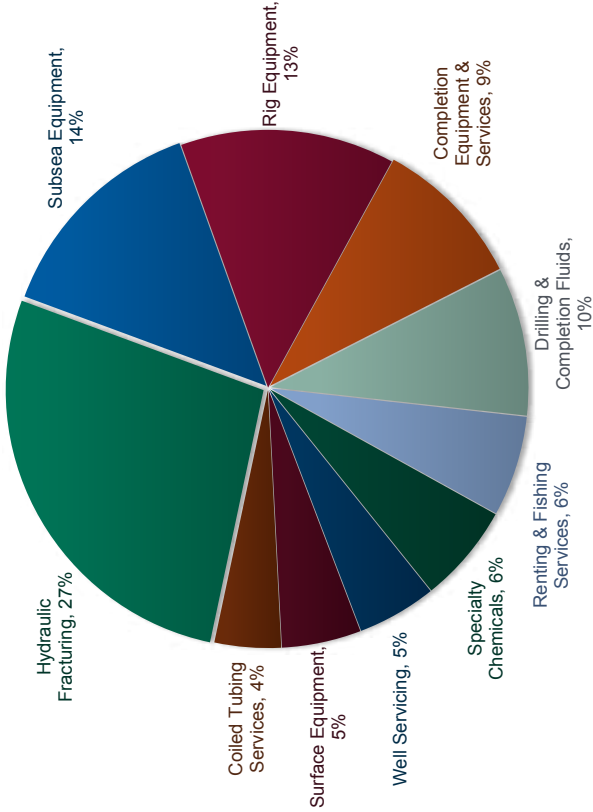
Exploration and production is highly capital intensive

- Predominantly, companies focus their capital spending and employees on their oil and gas properties
- OFS companies provide outsourced services and equipment for a variety of applications

OFS Industry is driven by activities of the E&P companies and highly cyclical

- In a typical market, E&Ps have some pricing power over OFS companies

Global OFS Spending by Service

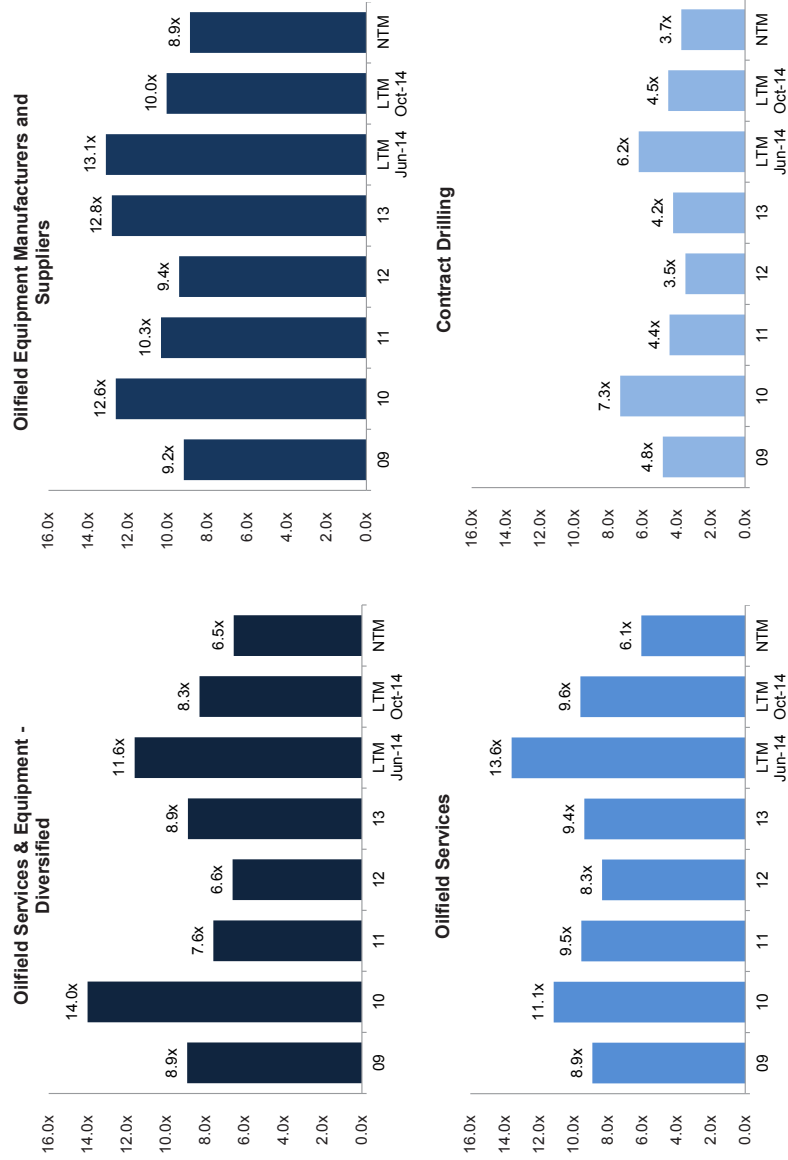


Source: Spears & Associates

What is Driving the Oil Revolution

Oil Field Services – Guideline Company Segments

Follow 60 Public Companies in Eight Segments



Vinson & Elkins

Distress in the Energy Industry

Focus on E&P

Bill Wallander, Partner
Vinson & Elkins L.L.P.

Distress in the Energy Industry

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Focus on E&P

- Energy Industry Sectors
- The Oil and Gas Supply Paradigm Shift
- Falling Energy Prices
- Effect of Falling Energy Prices
- The Runway for Restructuring
- Restructuring Issues in E&P
- Valuation Methods E&P

The Ever-Dynamic Energy Industry

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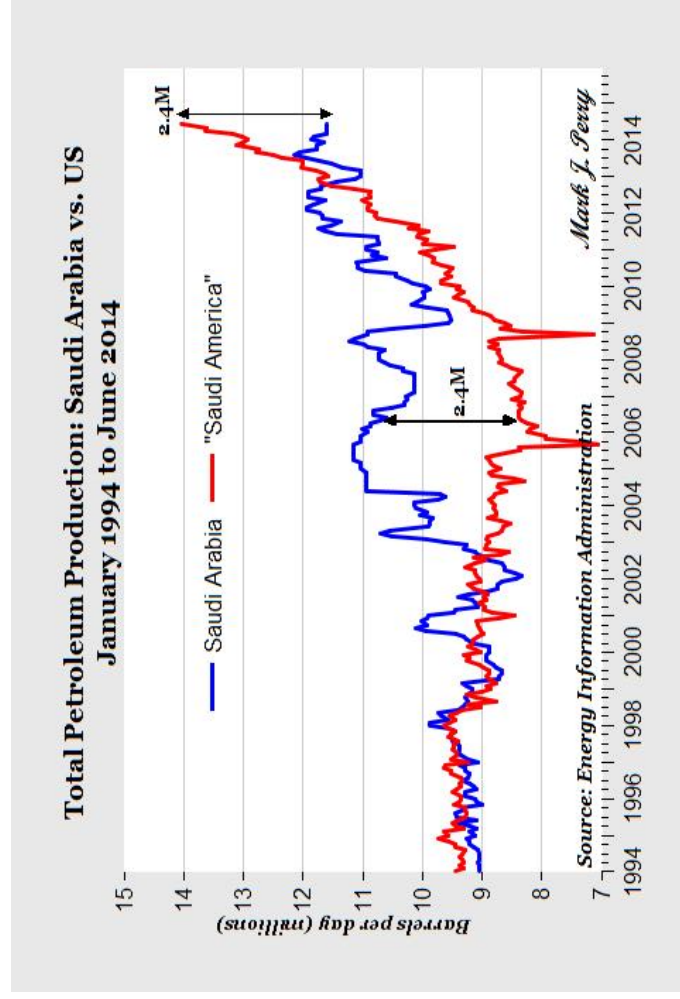
Primary Energy Industry Sectors

- Upstream (explore and produce)
 - Exploration and production
 - Offshore (Bureau of Ocean Energy Management) and onshore (State agencies)
- Midstream (prepare for transport/storage, transport, store)
 - Pipelines
 - Gathering and processing
 - Gas storage
 - Liquefied natural gas (LNG)
- Downstream (refine for sale, sale)
 - Refining and petrochemicals
 - Retail
 - Trading and marketing
 - Ethanol
 - Power
- Renewables
 - Wind
 - Solar
 - Water
- Energy Services
 - Oilfield Services
 - Shipping
 - Fracking (<http://fracking.velaw.com/>)

Oil and Gas Supply Paradigm Shift

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It Really Was Different This Time: Supply is Way Up



- U.S. production of crude oil, along with liquids separated from natural gas, surpassed all other countries in 2014, with daily output exceeding 11 million barrels in the first quarter.
- The International Energy Agency projects that U.S. oil output will surge to 13.1 million barrels per day in 2019...will see given recent price adjustments.

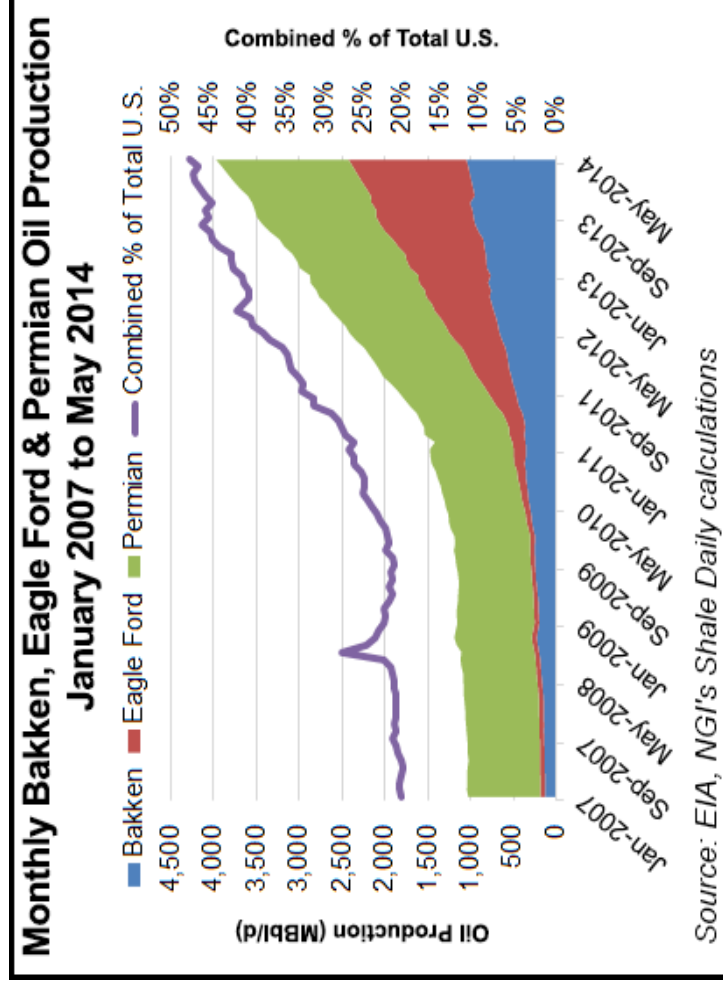
Oil and Gas Supply Paradigm Shift

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Supply Increase Via Hydraulic Fracturing of Oil

U.S. Energy Independence

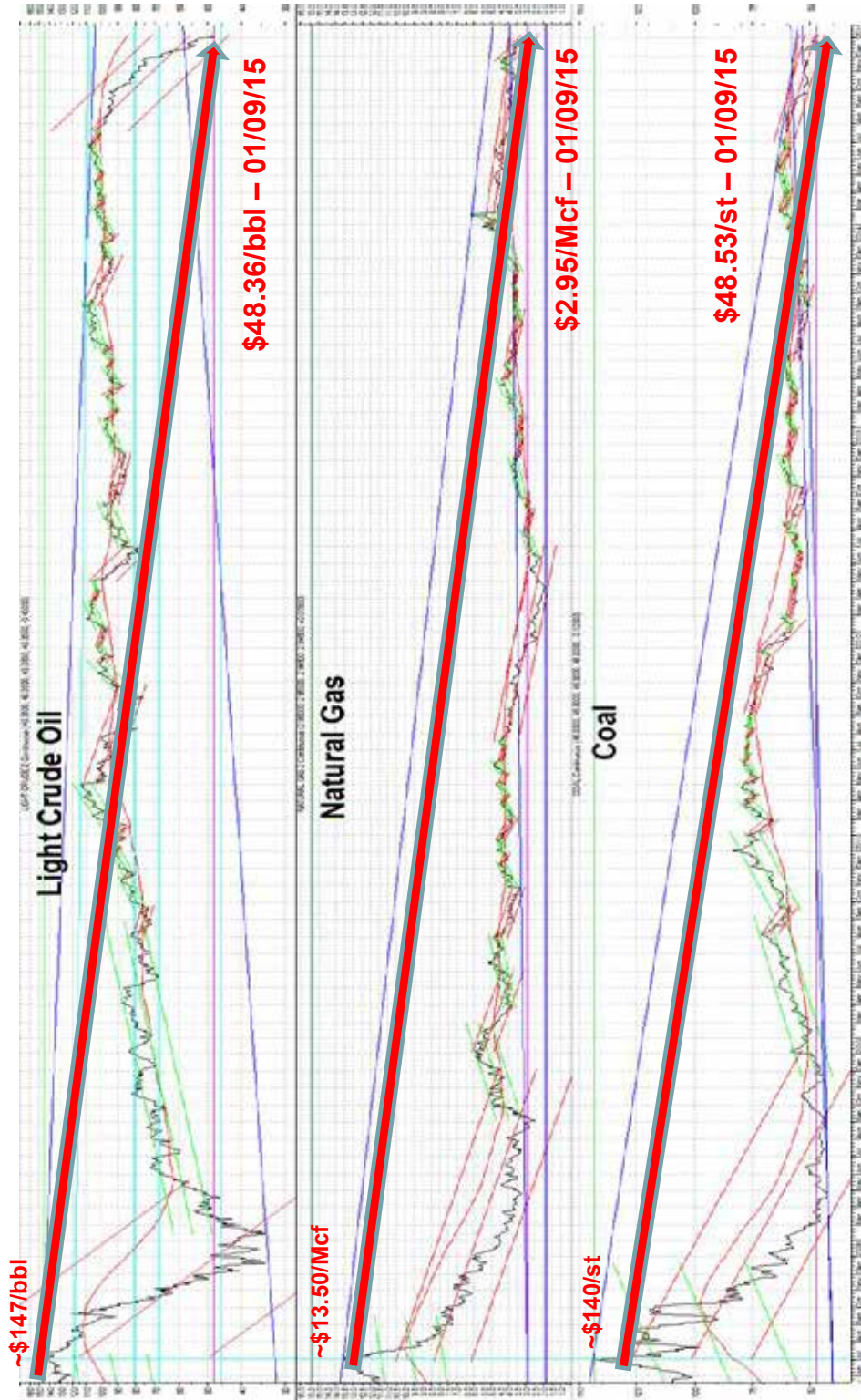
- Production in oil-rich shale plays like the Bakken, Eagle Ford, and Permian Basin are driving U.S. domestic production.
- According to EIA, oil production from shale formations in North Dakota and Texas increased by more than **78,000 barrels per day** in August 2014.



Falling Energy Prices

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Oil, Gas, Coal Under Pricing Pressure...from 2008

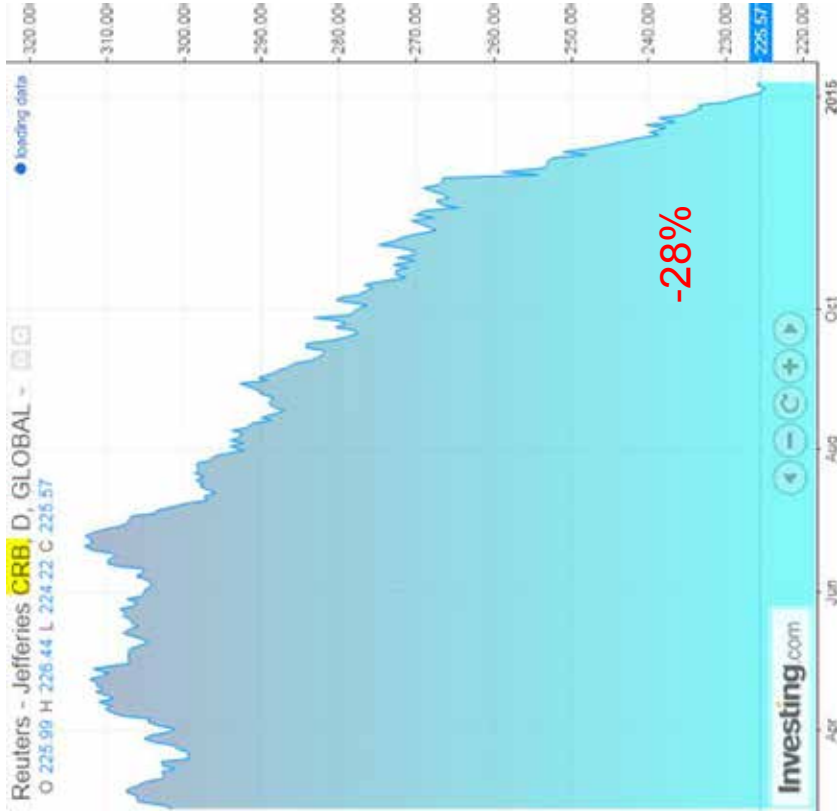


Falling Commodity Prices

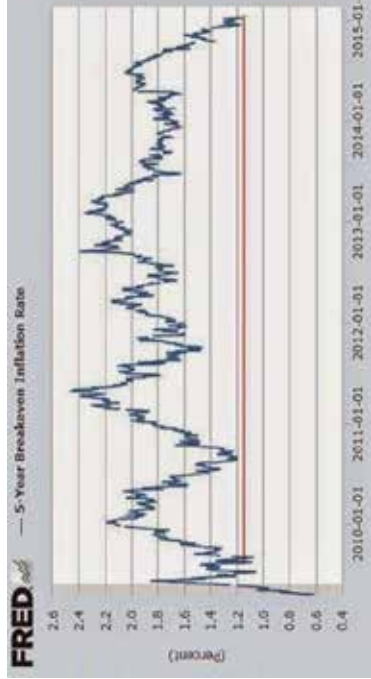
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And It's Not Just Energy...More on This Next Time....

- Commodities down generally



- What inflation?



- What earnings?



Source: <http://seekingalpha.com/article/2811465-rising-deflationary-risks-in-the-united-states?fip=0>

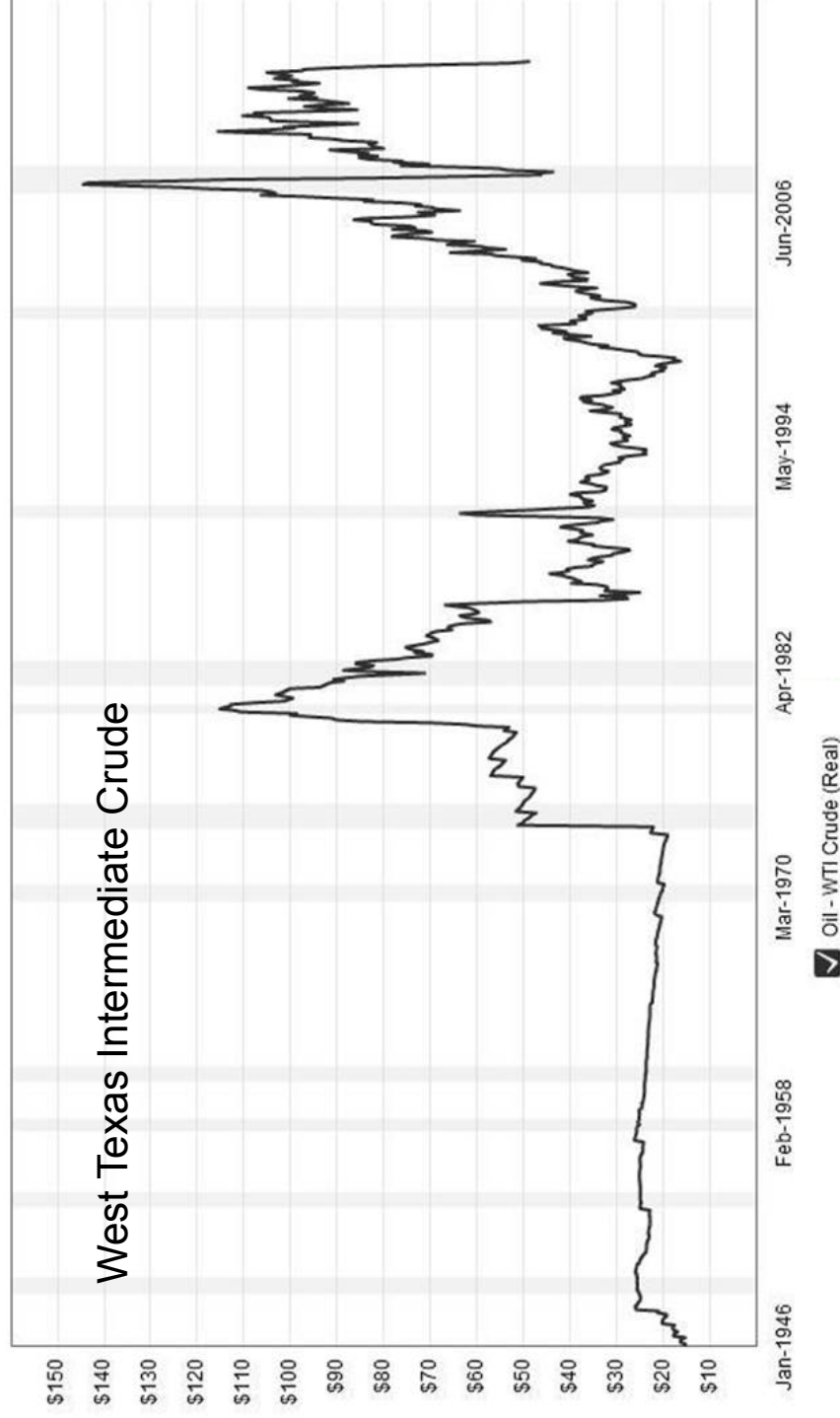
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Falling Energy Prices

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Cyclical Nature of Oil Prices: the Real Long Term

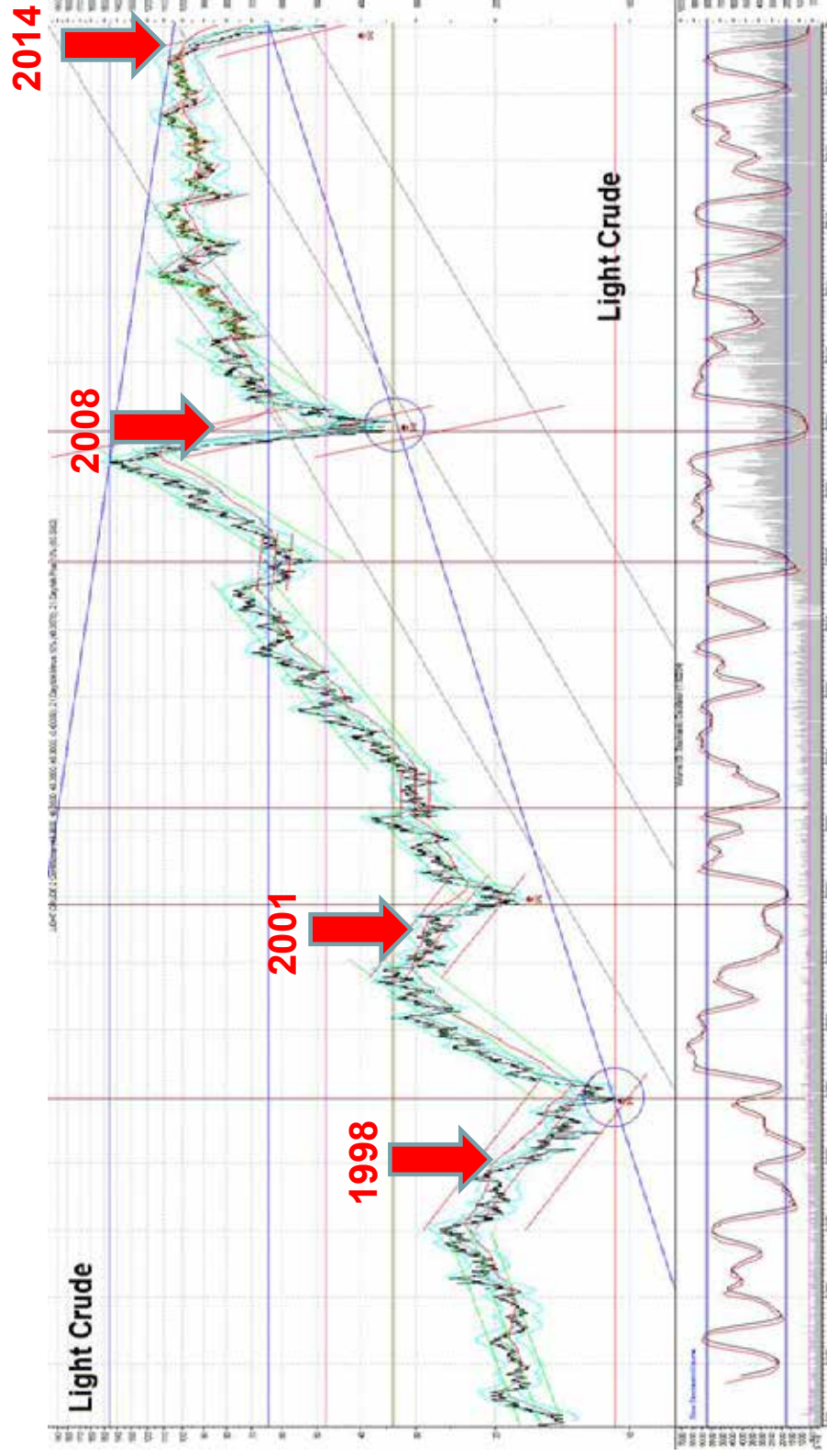


Source: <http://seekingalpha.com/article/2811295-were-drowning-in-crude-oil?ftp=0>

Falling Energy Prices

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Cyclical Nature of Oil Prices: 4 Oil Crashes Since 1994

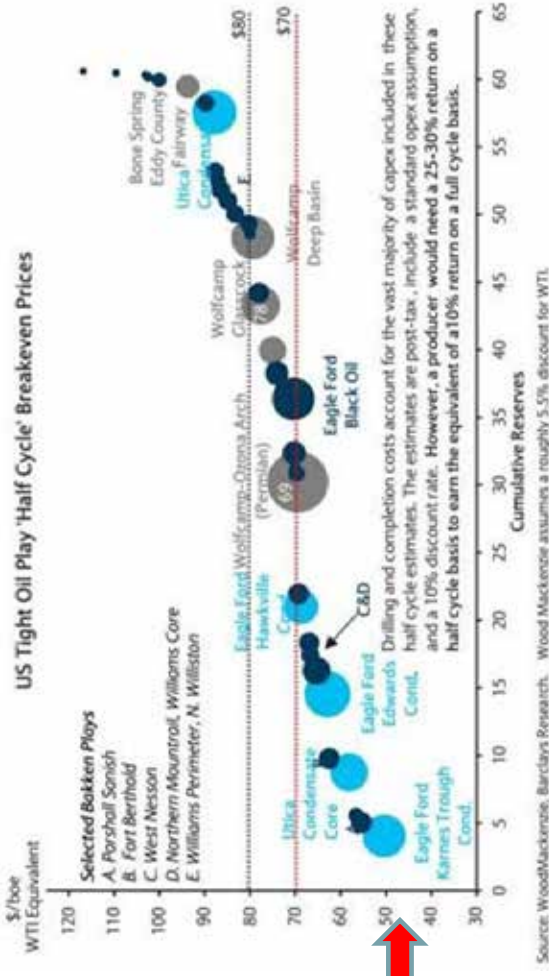


Falling Energy Prices

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Estimated Breakeven for US Oil? \$70/bbl?

Zooming in further, though it appears most US tight oil proven and probable recoverable reserves break even from \$60-80/bbl (WTI), full cycle economics would require a higher oil price. WTI may discount further than the 5.5% that WoodMac assumes. Cost improvements and infrastructure build-out should mitigate these effects.



01/09/15
You Are Here

Those with higher breakeven and leverage will face issues absent hedging relief.

Source: <http://www.thefiscaltimes.com/Columns/2015/01/09/Why-Oil-Prices-Are-Headed-Below-35-Barrel>

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Effect of Falling Energy Prices

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The Need For Revenue To Fund Debt/Negative Loops

- Exploration and production (E&P) companies commonly use debt to fund their E&P programs with the expectation that production will eventually generate enough revenue to service that debt
- Falling oil prices, however, significantly affect a highly leveraged E&P company's ability to fund debt
- The debt advanced to E&P companies in recent years is estimated to be \$300 billion in leveraged loans and \$200 billion in high yield debt
- The need for increased revenue to service debt can create a negative feedback loop with companies selling more oil to generate more revenue increasing supply and putting further pressure on prices

Effect of Falling Energy Prices

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Borrowing Base Redeterminations

- E&P companies rely on reserve-based lending (RBL) to fund operations, which is tied primarily to the value of the company's proven oil and gas reserves
- RBL loans usually require scheduled determinations of the borrowing base which can be negatively affected by falling energy prices leading to reduced availability of additional borrowings under the facility or a borrowing base deficiency
- When a borrower has already pledged substantially all of its assets as collateral, a borrowing base deficiency requires the borrower to pay down the debt in order to avoid an event of default
- While yet to be determined, the redetermination process may have a material impact on certain energy companies

Effect of Falling Energy Prices

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Role of Hedges and Cash Flow

- In order to “hedge” against a drop in prices, many E&P companies utilize options or futures or combinations such as the “3-way collar” (sell call highest price, buy put lower price, sell put lowest price)
- The effect of hedges on cash flows in a falling price environment can be illustrated by the positions of two major E&P companies: Continental Resources and Devon Energy
- Continental Resources lifted all of its hedges in early November 2014 (when oil was trading at \$83/bbl), its current production has been unprotected against the sharp decline in oil prices
- Devon Energy, on the other hand, has hedged about 140,000 bpd of crude for next year, which could result in over a billion dollars in revenue against current oil prices
- Those using the “3 way collar” are hedged to the lowest price of the sold put, in effect, a partial hedge
- Hedging programs are of definite duration, and a point exists prior to the end of the duration when creditors (anticipating the inability of the of the company to replace the hedges and continue receiving funding from hedges) tend to take action, the so-called “hedge ledge”

The Runway for Restructuring

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Overview of Energy Restructuring Process/Issues

- Pre-bankruptcy/workout considerations (risk management)
 - Warning signs of distress (downgrade, declining ratios, etc.)
 - Default
 - Collateral review/lienholders
 - Litigation risk assessment
 - Notice of default/reservation of rights
 - Forbearance agreements
 - State law remedies/receivers/injunctions
- Bankruptcy filed/typical process components
 - Case commencement (voluntary vs. involuntary)
 - Key case players (e.g., debtor, secured lender, JOAs, M&M)
 - Automatic stay (federal injunction)
 - DIP financing/cash collateral (estate funding)
 - Lien priority issues (collateral gaps, M&M lienholders)
 - Executory contracts (JOAs, leases, other)
 - Asset sales (monetizing assets for creditors)
 - Plan of reorganization (the “synthetic sale”, other)
 - Preferences (bringing back preferential transfers)
 - Fraudulent transfers (actual vs. constructive, value issues)
 - Post-confirmation activities (liquidation trusts, other)

The Runway for Restructuring – E&P

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Bankruptcy Process Challenges and Tools

- Common challenges leading to default
 - Borrowing base defaults (e.g., declining reserve values, financial covenants, etc.)
 - Inability to increase pricing/price volatility
 - Swings in value of derivatives
 - Liquidity requirements of futures hedging
 - Operations issues and unprofitable long term projects
- Leverage issues
 - Plan to reorganize debts, fix the balance sheet
 - Bind non-consenting creditors to plan
- Insufficient cash flow issues
 - Automatic stay breathing room
 - Borrow/use cash collateral on a post-petition basis
 - Deal with operating issues, contract rejection
 - Partial asset sales
- Sale processes and the free and clear trustee deed
 - Bankruptcy sale free and clear under Bankruptcy Code § 363
 - Bankruptcy Court approval eliminates risk of fraudulent transfer challenge
 - Plan sale free and clear, the “synthetic sale” concept to avoid lease transfer filing burden
- Liquidation
 - Chapter 7 liquidation, the last option

Nature of an Oil and Gas Lease – Contract or Interest?

- Personal vs. Real Property Interest
 - State Law Examples
 - Texas: Fee simple determinable, real property interest, not subject to Bankruptcy Code § 365.
 - *Terry Oilfield Supply Co., Inc. v. American Security Bank, N.A.*, 195 B.R. 66, 70 (S.D. Tex. 1996) (“A mineral lease in Texas is a determinable fee. It is not a lease or other form of executory contract that a debtor may accept or reject.”)
 - Oklahoma: Incorporal hereditament or a “profit a prendre”, real property interest, not subject to Bankruptcy Code § 365
 - See *In re Heston Oil Co.*, 97 B.R. 34, 36 (N.D. Okla. 1986) (an oil and gas lease is not an unexpired lease or executory contract within the purview of § 365 but is in the nature of an estate in real property having the nature of a fee); *In re Clark Resources*, 68 B.R. 358, 360 (Bankr. N.D. Okla. 1986) (under Oklahoma law, oil and gas lease is not an unexpired lease or executory contract under § 365).
 - Kansas: Personal property, subject to Bankruptcy Code § 365
 - *Utica National Bank and Trust Co. v. Marney*, 661 P.2d 1246 (Kan. 1983) (Holding that an oil and gas lease is not foreclosed by a mortgage foreclosure unless provided for by statute because a lease is personalty in Kansas); *Cate v. Archon Oil Company, Inc.*, 695 P.2d 1352 (Okla. 1985) (Holding that an oil and gas lease is an interest in personalty for the purposes of a sheriff's sale)
 - See *In re J. H. Land & Cattle Co.*, 8 B.R. 237, 239 (W.D. Okla. 1981) (under Kansas law, an oil and gas lease is within the reach of § 365 and may be rejected by a debtor with court approval)

Restructuring Issues – E&P

V&E

Joint Operating Agreements - Executory Contracts

- Executory contracts
 - *Wilson v. TXO Prod. Corp.* (In re *Wilson*), 69 B.R. 960, 963 (Bankr.N.D.Tex. 1987), held that a JOA is an executory contract
 - *In re Price*, 71 B.R. 341, 343 (Bankr. N.D. Okla. 1987), the court determined that the operating agreement at issue “is divisible into numerous provisions which operate separate and independent of one another, particularly the Subsequent Operation provision” at issue
- Twilight Zone Before Assumption/Rejection
 - The terms of the contract are unenforceable against the debtor as held in *NLRB v. Bildisco & Bildisco*, 465 U.S. 513, 532 (1984)
 - AFEs and drill outs (debtor is not operator)
 - Administrative claims
 - *In re Wilson* held that joint tenancy law applies in the twilight zone
- Assumption Cures and Burdens
 - Potential payment of liens (if debtor is the operator)
 - Payment of JIBs (if debtor is non-operator)
 - Payment of share of production runs (if debtor is the operator)
 - Subject to AFE’s that arose in the Twilight Zone
- Rejection
 - Doesn’t affect relationship between third parties to the JOA, deemed a breach immediately before the filing of the bankruptcy case
- If no JOA, tenancy in common can result, not a great place to be, expense recovery only from production is often the result

Restructuring Issues – E&P

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M&M Liens and Trade Vendors

- Validity and Perfection of Liens
 - Lien notice filed within applicable time period
 - Notice must meet technical requirements of statute
 - Limitations period to foreclose
- Scope of Liens
 - Varies by state (equipment/materials vs production, working interest)
 - Liens Against Non-Operators
 - Example: Texas lien is only against the operator
 - Example: Oklahoma lien encumbers “all of the leasehold” to encumber non-operators
- Lien Priority: Financial Lender vs. M&M Lien Creditor
 - Gaps in lender’s perfection
 - Relation back to commencement of work varies by state (e.g., what is continuous work)
 - Ending of period of work

Restructuring Issues – E&P

V&E

Royalty Claimants

- In most states, the failure to pay royalties does not cause lease termination (cf. time to drill or other means to hold the lease such as delay rentals) (some exceptions exist in certain states and federal leases, and the lease itself could contain a termination clause for failure to pay royalties)
- Management typically places a high priority on payment of royalty claims, as do potential purchasers
- Royalty creditors often individually have claims that are not of the magnitude of other creditors even though in the aggregate they may collectively be a large class of claimants
- Royalties often flow through a gas purchaser such that the cash does not flow through the debtor's estate
- Royalty creditors have lien rights in some states, otherwise are typically unsecured creditors
- Texas has UCC first purchaser statute (liens on production and proceeds), Oklahoma has a property statute (not UCC) which grants lien and perfection

Restructuring Issues – E&P

V&E

Royalty Claimants' Liens

- Texas Bus. & Comm. Code § 9-343
 - Provides a security interest in favor of interest owners to secure the obligations of the first purchaser of oil and gas production
 - The security interest is perfected automatically without the filing of a financing statement
 - Obtains PMSI status
 - Attaches to oil and gas production, and also in the identifiable proceeds of that production owned by, received by, or due to the first purchaser
 - *In re Semcrude, LP*, 407 B.R. 112 (Bankr.D.Del.2009)
 - Held that the banks' prior perfected security interests had priority over the producers' statutory liens under the Texas Uniform Commercial Code
 - The court reasoned that the Texas Uniform Commercial Code did not govern perfection and priority of the producer's liens under conflict of law rules
 - The producer would only have priority to the extent that they were perfected before the banks by filing a financing statement under Delaware law
- Oil and Gas Owners' Lien Act of 2010- 52 Oklahoma Statutes Section 549 *et seq.*
 - Relatively new and untested statute...NOT UCC
 - “An oil and gas lien is granted and exists as part of and incident to the ownership of oil and gas rights and is perfected automatically without the need to file a financing statement or any other type of documentation. An oil and gas lien exists and is perfected from the effective date of this act.”
 - “Except for a permitted lien, an oil and gas lien is a lien that takes priority over any other lien, whether arising by contract, law, equity or otherwise, or any security interest.”
 - Permitted lien is narrowly defined
 - Attaches to oil and gas and its proceeds

Restructuring Issues – E&P

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Farmout Agreements

- Generally, a party does work on the well and instead of being paid cash earns a percentage of the working interest
- Defined in Bankruptcy Code § 101 (21A)
- Bankruptcy Code § 541 (b)(4)(A) excludes from property of the estate interests of the debtor in hydrocarbons to the extent that debtor has transferred or agrees to transfer such interest pursuant to a farmout agreement
- Prevents the avoidance/undoing of un-recorded assignments under a farmout
- Prevents debtor from rejecting farmout agreement under Bankruptcy Code § 365 to withhold from farmee earned acreage

Restructuring Issues – E&P

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Production Payments

- Term overriding royalty satisfiable in cash or in kind contingent upon production of liquid or gaseous hydrocarbons from particular real property from a specified volume or value determined without regards to production costs
 - Defined in Bankruptcy Code § 101(42A)
- Assignee of certain types of production payment takes title to the property and as a result the production payment ceases to be property of the estate under Bankruptcy Code § 541(b)(4)(B)

Restructuring Issues – E&P

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Sale Issues

- Preferential rights to purchase/rights of first refusal/consent rights
 - Equity vs. asset sale
- Cure of M&M liens relating to JOAs/notice (TX vs OK)
- Payment of joint interest billings (“JIBs”) for executory contract assumptions
- Funding of authorizations for expenditures (“AFEs”) between signing and closing of transaction
- Allocating vendor payments and accounts receivable based on the closing date
- Notice of sale as to lessors
- Environmental concerns and holdbacks
- Form of consideration for the initial bid
- Reasonably equivalent value
- “Synthetic sales” to avoid lease transfer filing burden, pref rights

Restructuring Issues – E&P

V&E

Regulatory Matters Generally

- EPA environmental matters
 - Spills and cleanup
 - Plugging and abandonment (“P&A”)
 - Fracking concerns
- Department of Interior
 - Offshore leases
 - Operations/P&A
 - Bonding
- Federal Energy Regulatory Commission
 - Interstate transmission of electricity
 - Wholesale rates reasonableness
 - Courts not settled on jurisdiction for contract rejection matters
- State law
 - Regulation (or prohibition) of fracking
 - P&A
 - Emissions

Restructuring Issues

V&E

Valuation in Energy Restructuring

- The issue of valuation is important in many stages of a Chapter 11 proceeding including sales, use of estate property, post-petition financing secured by priming liens, and the evaluation of pre-petition transactions under fraudulent transfer laws
- When valuing a complex energy enterprise, a court will generally use one or more of the four most common valuation methods:
 - Discounted cash flow
 - Comparable companies
 - Comparable transactions
 - Market based approach

Restructuring Issues

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Valuation Methods

- Discounted cash flow (DCF)
 - Where a company's future cash flow is projected and then discounted by the projected weighted average cost of capital
 - In the context of upstream oil and gas valuations, it is common to use reserve reports that estimate the volume and recoverability of hydrocarbons
 - Valuation of E&P assets has several moving parts, including the reserve volume of hydrocarbons, the expense required to extract the hydrocarbons, the existence of arrangements with third parties having interests in the hydrocarbons, the likelihood of extraction, and the price of the hydrocarbons in the future
 - Thus, valuation hinges significantly on disputed or competing reserve reports
 - An E&P company's reserves are classified as either (1) proved or (2) unproved
 - Proved reserves are typically assigned a value using a "PV-10" methodology which discounts by 10% the present value of estimated future revenues net of expenses
 - There are three categories of proved reserves:
 - » Proved developed producing (PDP) reserves (most valuable)
 - » Proved developed non-producing (PDNP) reserves (which must be discounted based on risk and time of production)
 - » Proved undeveloped (PUD) reserves (net acreage yet to be "shot" with seismic which are often significantly discounted based on increased risk)
 - Unproved reserves are highly speculative and typically assigned little to no value

Restructuring Issues

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Valuation Methods

- Comparable company
 - Method derives a debtor's value from the relative value of its peers
 - Two-part process.
 - First, earnings before interest, taxes, depreciation, and amortization (EBITDA) of the Debtor is calculated
 - Next, multiples of EBITDA based on the EBITDA multiples of comparable companies are calculated, analyzed, and used to select an EBITDA multiple to apply to the Debtor's EBITDA to determine the Debtor's value
- Comparable transactions
 - Identifies a recent transaction of similarly situated assets or an enterprise and then scales the price according to the Debtor's assets/enterprise value
- Market based approach
 - Examines the value the market assigns to a debtor, often by using market evidence to ascertain the total capital value of the Debtor
 - Typically utilizes the market price assigned to the securities in the Debtor's capital structure by the stock or bond markets

Distress in the Energy Industry

Presented by: Marshall S. Huebner

February 2015

DavisPolk

Davis Polk & Wardwell LLP

PERSPECTIVE ON THE COAL INDUSTRY

Select Legal Issues in a Coal Chapter 11 Case

Coal restructurings present unique statutory and other issues. These include:

- Labor-related Issues
 - Collective Bargaining Agreements (1113/1114)
 - Pension obligations / withdrawal; unique attributes of UMWA multiemployer plan
 - Coal Act
 - Black Lung
 - Workers' compensation obligations
- Environmental/Regulatory Issues
 - Ongoing compliance with environmental regulations
 - Reclamation obligations
 - Permit block considerations
 - Sureties; 365(c)(2) considerations
- Contractual Issues
 - Rights under coal supply contracts
 - Liens on coal leases
 - Override agreements

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Labor-Related Issues

- Collective Bargaining Agreements (CBAs) – Sections 1113/1114
 - United Mine Workers of America (UMWA) represents certain active and retired coal miners
 - Less than 12% of all miners currently employed in the U.S. coal industry are represented by the UMWA
 - More than two-thirds of the UMWA's members are retirees
 - Obligations to UMWA-represented employees and retirees are governed by a form of industry CBA (the NBCWA), which provides for, among other things, lifetime healthcare
 - Current obligations to employees and retirees under the CBA may be adjusted under sections 1113 and 1114 of the Bankruptcy Code, which impose procedural and substantive rules for modification and rejection
 - Section 1113 requires that a debtor first make a proposal to the union before modifying or rejecting a CBA. If the union rejects the proposal, a bankruptcy court will look to whether the proposed modifications were in fact “necessary to permit reorganization of the debtor,” whether they were “fair and equitable” to all affected parties, whether the proposal was rejected “without good cause” and whether the “balance of the equities” favors rejection
 - Section 1114, which is virtually identical to section 1113, governs the modification and rejection of retiree health benefits, and courts routinely apply the same factors to analyze the sufficiency of requests under both sections
 - Unless and until the bankruptcy court approves the modifications or grants emergency relief, a company must honor the terms of the CBA
 - The NBCWA has a strong successorship clause purporting to prohibit a signatory coal company from selling its assets absent assumption of the CBA by the purchaser

Labor-Related Issues *(cont.)*

- Multiemployer Pension Plan Obligations / Withdrawal
 - Contributions to the United Mine Workers of America 1974 Pension Plan (the 1974 Plan) may be required by the CBA
 - The 1974 Plan provides pension benefits to approximately 93,000 retirees and their surviving spouses
 - Governed by the UMWA and the Bituminous Coal Operators' Association (BCOA), which is the coal industry bargaining representative. Murray Energy, as purchaser of Consol's union mines, controls the BCOA
 - Generally, a debtor may withdraw from a multiemployer pension plan with union consent or section 1113 relief; however, the 1974 Plan has taken the position that the union and individual employers do not have the authority to negotiate a modification or termination of this obligation to contribute
 - The 1974 Plan trust agreement contains an "Evergreen Clause", which provides that participating employers are bound to make continuing contributions to the 1974 Plan so long as the employer remains in the coal industry and that the amounts of contribution will be as specified in future agreements
- Joint and several withdrawal liability (lump sum vs. annual installments)
 - Generally, outside of bankruptcy, an employer is entitled under ERISA to pay withdrawal liability in equal annual installments over a period of time; however, the 1974 Plan has taken the position that, by filing a chapter 11 petition, among other things, a debtor loses this option and must pay the liability as a lump sum (as calculated by the 1974 Plan), thereby creating a large general unsecured claim for withdrawal liability
 - Similarly, when calculating the amount of the lump sum claim, the 1974 Plan has asserted that the amount should equal the nominal amount of the debtor's proportionate share of unfunded pension liabilities, rather than the effective present value of the annual installment payments

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Labor-Related Issues (cont.)

- The 1974 Plan is in “Seriously Endangered” status, may terminate and trigger mass withdrawal liability as early as 2017
 - Upon a mass withdrawal, each contributing employer will be charged with annual withdrawal liability payments
- UMW signatory companies may also contribute to a single employer defined benefit pension plan for their non-union employees
 - There are two general types of pension plans: defined benefit plans and defined contribution plans. Defined contribution plans generally do not figure prominently in bankruptcy cases because the amount of an employee’s benefit is equal to the balance of the account into which such employee has contributed a percentage of income, and thus there is no liability or shortfall to be insured by PBGC
 - In order to terminate a defined benefit plan, the debtor or PBGC must institute termination proceedings. If a defined benefit plan is terminated, PBGC will have a claim for the difference between the present value of its liabilities and the value of the plan’s assets (the “unfunded benefit liabilities” claim), which is generally a nonpriority general unsecured claim except to the extent that PBGC can establish that a portion of the claim is attributable to services rendered post-petition or within 180 days prior to bankruptcy (in which case, such portion may be entitled to administrative expense priority or priority unsecured claim status)
 - PBGC may also have a claim for termination premiums calculated at \$1,250 per participant, per year, for 3 years, which claim would be an administrative expense claim
 - Subsequent to plan termination, there is often litigation over both the size and priority of PBGC claims; these issues are complex and vary greatly by circuit
 - One common dispute centers on whether PBGC is allowed to use its regulatory (very conservative) present value methodology as opposed to the “prudent investor rate” generally used by bankruptcy courts in calculating creditor claims
 - PBGC has also made different arguments in support of its request to be treated as a secured, priority tax, other priority or administrative claimant

Labor-Related Issues (cont.)

■ Coal Act

- Statutory obligation that requires each current and former coal industry employer that was a signatory to a CBA as of July 20, 1992 to maintain the benefit plan that was in place for retirees who retired prior to October 1, 1994, and to pay annual premiums to share in the cost of health care for "orphaned" retirees whose employers have gone out of business
- Enacted in 1992 in order to provide for continued financing for retiree benefits for miners who had legitimate expectations of lifetime healthcare benefits
- Joint and several liability on entities that were under common control as of July 20, 1992
- Treated as administrative expense claims in the bankruptcy, must be paid in the ordinary course
- Caselaw is unclear on whether certain of these obligations can be modified by section 1114
 - One case has held that section 1114 can be used to modify only voluntary retiree benefits, not retiree benefits required by statutes such as the Coal Act. *Buckner v. Westmoreland Coal Co.* (*In re Westmoreland Coal Co.*), 213 B.R. 1 (Bankr. D. Colo. 1997)
 - Another case has held that, although a debtor cannot modify its obligation to pay annual or monthly premiums to the Coal Act statutory orphan funds, it can use 1114 to modify the retiree benefits it administers pursuant to the Coal Act. The case, *In re Horizon Natural Resources Co.*, 316 B.R. 268 (Bankr. E.D. Ky. 2004), was decided in the context of a liquidation, and the court found that no buyer would purchase the debtors' assets absent termination of the retiree benefits
- "Safe Harbor" – assets can be sold free and clear of Coal Act liability if the purchaser is "unrelated to the seller", and the sale is a bona fide, arm's length sale for fair market value
 - In such a case, Coal Act liability will revert back to the "last signatory operator" (*i.e.*, the most recent coal industry employer of the retiree as of July 20, 1992). If there is no more recent employer, the miner will be provided benefits from the statutory Coal Act funds administered by the UMWA

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Labor-Related Issues *(cont.)*

- **Federal Black Lung Act**
 - Provides for monthly payments to coal miners totally disabled from pneumoconiosis (black lung disease)
 - Administered similar to workers' compensation; virtually all debtors seek and are granted authority to continue to pay claims during the case
 - Coal companies are usually required to post collateral to the Department of Labor to secure obligations, and, in a bankruptcy, the Department of Labor will have a general unsecured claim against a company for any deficiency; however, an argument can be made that at least a portion of the claim (for the prior three years) may be afforded priority status as an excise tax under section 507(a)(8)(E) of the Bankruptcy Code
 - Directors and officers may incur personal civil liability if an operating company fails to maintain approved insurance or qualify as a self-insurer
 - Can likely sell assets "free and clear" of Black Lung liabilities, and liability will revert back to the most recent employer of the miner. If there is no more recent employer, the miner will be provided benefits from a statutory fund administered by the Department of Labor
 - There is an open question, however, as to whether directors and officers may still be liable under these circumstances if they are found to be "prior operators" of the mine. While there is no case law on point, the statute appears broad enough to cover this scenario
- **Workers' Compensation**
 - Virtually all debtors seek and are granted authority to pay claims and continue their workers' compensation programs (including state black lung claims)
 - Usually required to have in place under mining permits
 - Various states require collateral to be posted to secure obligations, and, in a bankruptcy, the insurance company or state insurance fund will have general unsecured claims against a company for any deficiency

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Environmental / Regulatory Issues

- Federal and state regulatory authorities impose obligations on the coal mining industry in a wide range of areas
 - Employee health and safety
 - Permitting and licensing requirements
 - Environmental protection
 - Reclamation and restoration of mining properties after mining has been completed
 - Surface subsidence from underground mining and the effect of mining on surface and groundwater quality and availability
- Over the past several years, new regulations, new interpretations of existing laws and regulations, and citizen lawsuits brought by non-governmental organizations have resulted in increased compliance costs for coal companies and their customers
 - In June 2013, President Obama announced initiatives intended to reduce greenhouse gas emissions globally, including curtailing U.S. government support for public financing of new coal-fired power plants overseas and promoting fuel switching from coal to natural gas or renewable energy sources
 - The EPA has proposed a rule that aims to reduce carbon dioxide emissions from existing coal-fired power plants by 30% by 2030 from the 2005 level, which would require the implementation of costly pollution control technology, thereby placing significant additional financial and operational burdens on power plants fueled by coal
 - Difficult to estimate impact as there will likely be years of litigation over these rules, and the EPA is not requiring progress until 2022

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Environmental/Regulatory Issues *(cont.)*

- Ongoing compliance with environmental regulations during bankruptcy
 - A debtor must continue to comply with its environmental obligations under applicable federal, state and local laws, regulations and permits, as well as obligations under court orders and settlements with regulators or non-governmental organizations
 - In the event a debtor fails to comply with its obligations, penalties assessed will be granted administrative expense status, which must be paid in full in connection with a reorganization
 - May be joint and several liability
 - Under certain federal and state laws, liability for contamination relating to a subsidiary's facility can extend to a parent if the parent is deemed to be an "operator" of the relevant facility
 - Relevant environmental permits might impose liability on the parent
 - Parent may also have other direct obligations for subsidiary liabilities under agreements with regulators or non-governmental organizations

Environmental/Regulatory Issues *(cont.)*

- **Reclamation Obligations**
 - Coal companies have the legal obligation to close and restore (or reclaim) land disturbed by mining operations
 - States require that companies post bonds to secure these reclamation obligations
 - May be joint and several liability to the extent that reclamation bonds contain indemnification provisions rendering related entities liable
 - Reclamation obligations cannot be discharged in a bankruptcy, and for all practical purposes assets cannot be sold free and clear of reclamation obligations
 - A purchaser will have to assume the obligations or negotiate with regulators to develop a solution (e.g., leave behind assets in, or dedicate future revenues to, a trust to fund the obligations); otherwise, regulators may not approve the transfer of the related mining permits to the purchaser
- **Permit Block Considerations**
 - Federal and state agencies can block the issuance or renewal of mining permits (without which a coal company cannot lawfully engage in coal mining) in order to enforce the provisions of its safety, health and environmental laws
 - May be used against the coal company, affiliate entities and persons who are deemed to be in control of the permitted entity
 - Arguably precludes reorganizing around “good” assets and leaving the “bad” assets (*i.e.*, those with reclamation obligations) behind
 - Powerful incentive for a coal mining company to comply with applicable laws and honor reclamation obligations for all affiliates

Environmental/Regulatory Issues *(cont.)*

■ Sureties

- Before a coal company can obtain mining and related permits, they must provide acceptable financial assurance to the relevant state agencies to secure performance of its obligations
- Required amount of financial assurance is supposed to be sufficient to assure the completion of the reclamation if the work has to be performed by the regulatory authority in the event of a default by the company, which would allow the state agencies issuing the permits to draw on the bonds
- Sureties require companies to execute an indemnity agreement as a precondition to issuing bonds, pursuant to which the surety may have the right to demand collateral for up to 100% of the value of the bond at any time
- Sureties cannot demand more collateral during chapter 11; but the bonds and related indemnity agreements arguably cannot be assumed absent consent by the surety
- Will generally ride through the bankruptcy unimpaired

Contractual Issues

- Termination of Coal Supply Agreements (CSAs)
 - Counterparty to a CSA may argue that the contract is a “forward contract” or “swap” that qualifies as a “protected contract” under the Bankruptcy Code, permitting the party to terminate an “in the money” contract upon a bankruptcy filing without any liability to the debtor
 - Some CSAs expressly state that they are “forward contracts” and each of the parties is a “forward contract merchant”, but that contractual language does not bind the court
 - A debtor might argue that the contract is not eligible for this safe harbor protection because the type of coal subject to the contract is not a “commodity” or is not subject to dealing in the forward contract trade
 - A debtor could also argue that the counterparty is not a protected entity (*i.e.*, not a “forward contract merchant,” “financial participant” or “commodity broker”), and the contract is not a swap agreement (which allows any counterparty to terminate)
 - Finally, a debtor could argue that even if termination is permitted, the counterparty must make a termination settlement payment
- The law in this area is not settled, creating litigation risk; issues likely would be subject to significant factual dispute, and expert investigation and testimony may be required

Contractual Issues *(cont.)*

■ Liens on Coal Leases

- Coal leases often have anti-assignment provisions, which may prohibit assigning and/or pledging a lease as collateral without the consent of the lessor
- While section 365(f) of the Bankruptcy Code allows debtors to override anti-assignment clauses, and arguably section 364 of the Bankruptcy Code allows debtors to grant a lien on assets in connection with a DIP financing notwithstanding any contractual prohibitions on granting liens, coal companies are often sensitive to relationships with their lessors and do not want to pledge their leases as collateral for financing without lessor consent (which may be difficult and costly to obtain)
 - Courts have held that a pledge does not implicate a pure anti-assignment provision because, unlike assignment, a pledge allows the title to the pledged property to remain with the pledgor
 - It can also be argued that section 365 may be used to override anti-pledge provisions on the basis that, since Congress allowed for assignment in the face of a prohibition, then pledging, something less than assignment, should also be allowed
- One alternative is to defer litigation on the issue by providing that lenders will not be granted liens on leases that restrict assignment or pledging unless such restrictions are rendered ineffective by the Bankruptcy Code or applicable nonbankruptcy law
- Lenders may also seek alternatives that would still provide them with the value of the lease (e.g., obtaining the right to assign the lease, direct the sale of the lease, access the leasehold property, credit bid for the lease, refuse the debtors' proposed assignments and rejections and cure the debtors' defaults under a lease)

Contractual Issues (cont.)

■ Override Agreements

- The terms “overriding royalty” or “override” refer to the interest in production retained by a lessee after assigning a lease to a third party, whereby the lessee-assignor receives payments from the assignee (over and above the royalty reserved in the lease payable to the lessor) based on the amount of coal mined from reserves covered by the applicable lease
- The arrangement is generally memorialized in two separate instruments, an assignment of the lease and an override payment agreement
- In a bankruptcy, the following issues may arise: whether the override agreement is executory (*i.e.*, does a debtor have to assume or reject the agreement) and whether the override agreement is integrated with the assignment or the lease (*i.e.*, if a debtor assumes or rejects the lease, does the override agreement get assumed or rejected therewith)
- In the Patriot Coal bankruptcy, the court held that an override agreement between a Patriot subsidiary and certain Alpha Natural Resources, Inc. subsidiaries was not an executory contract subject to assumption or rejection because there were no obligations remaining on the part of the assignor. The court also held that, despite the fact that it is likely that the parties would not have entered into the assignment absent the override agreement, the two documents were not integrated with the assignment or the underlying lease because they were all separate contracts serving separate purposes
 - Although these disputes are highly fact-specific, this decision provides a path for a coal company to structure an override arrangement, whereby, in a bankruptcy, it may be able to assume the lease without having to assume the override agreement and cure defaults thereunder, leaving the counterparty with a general unsecured claim for any unpaid royalties

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DISTRESS IN THE ENERGY INDUSTRY - Impact on Power

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Highlights

- Shift in electricity generation away from more carbon-intensive fuels such as coal helping to stabilize energy related CO2 Emissions
 - Regulations limiting CO2 emissions on existing and new plants
 - New plants will have to reduce CO2 emissions using a mechanism called carbon capture sequestration (CCS), but economic and technological viability is still being questioned
 - Existing plants must cut CO2 emissions by 30% by 2030 over 2005 levels
- Evolving natural gas markets contributing to increased use of natural gas for electricity generation
 - Power Industry is benefiting from the “Shale Revolution,” but there are other factors contributing to the changing landscape for power generation
 - Low cost natural gas from shale production is a secondary driver of production shift
 - Use of natural gas for electricity generation will surpass use of coal by 2035
- No coal-fired capacity additions in 1H 2014 (53.3% came from natural gas and 41.9% from renewable energy)
 - Some work on converting to natural gas over the next 1-3 years
 - No immediate construction boom in natural gas-fired facilities anticipated due to unused capacity of 70% for existing plants
 - Analysts estimate operating natural gas-burning plants at full capacity would provide 50% of US power requirements
- Pipeline construction not accelerating because gas-fired facilities already have pipelines
- Increase in power consumption and improvement in economy needed before significant construction growth of gas-fired facilities will occur

Background of Power Industry

- Independent Power Producers (IPPs) include independent and utility owned companies that own power plants.
 - Independent – AES, NRG, Calpine, Dynegy, Intergen, etc.
 - Utility owned – Edison Mission Energy (Edison International), Luminent (Energy Future Holdings), ConEd, Entergy, etc.
- The IPP industry is influenced by high capital costs to construct and maintain power plants, an inability to store output, and price volatility.
- Electricity cannot be stored and therefore must be sold into the market.
- Fuel input and energy output prices can vary widely and are impacted by events outside of an IPP's control like weather, economic climate, supply/demand, etc.
- IPPs with coal production are challenged by environmental regulations limiting emissions that will require significant capital investment to comply, seek waivers or shut down/sell assets.
- IPPs may be challenged to raise sufficient resources to fund capital expenditures needed to keep pace with regulations and technology if capital markets become less accessible due to increasing risks in the industry caused by such things as:
 - Low natural gas prices (typically sets power prices in most regions) due to shale gas boom
 - Natural gas-7fueled power supply displacing coal power supply
 - Depressed demand due to energy efficiency, demand side management, and reduced economic performance
 - Oversupply of power in all regions except Electric Reliability Council of Texas (ERCOT)

Background of Power Industry (continued)

- Market structures and regulations create uncertainty for IPPs over the long term life of power plants.
 - Regulators determine the level of ease to construct new power plants or transmission lines via permit processes, site requirements, public hearings, etc. For example, California has strict environmental and permitting regulations which limit the type of power plants that can be built.
 - Environmental regulations impact and, in some instances, create uncertainty for IPPs due to significant costs to comply or an inability to comply.
 - Limited emissions from coal power plants are expected to result in plant retirements of 68 gigawatts (GW), however extensions of time to comply with regulations are leading to market uncertainty regarding timing of impacts.
 - Regulations typically take years to be established, resulting in ambiguity for the industry (for example, mercury regulations were under consideration for years).
 - Renewable Portfolio Standards ("RPS") and federal incentives, Production Tax Credits ("PTC"), have led to additional renewable power sources being installed causing some downward pressure on wholesale power prices.
 - RPS have been passed in 29 states and require a certain percentage of power to be sourced from renewable sources - - percentage required ranges from 10%-40% with an average of 22%.
- Permanent power demand changes will have a long-term impact on power prices.
 - Power demand reductions due to demand side management and energy efficiency are expected to reduce future demand levels long term.

Shale Revolution is Impacting the power industry

Commentary

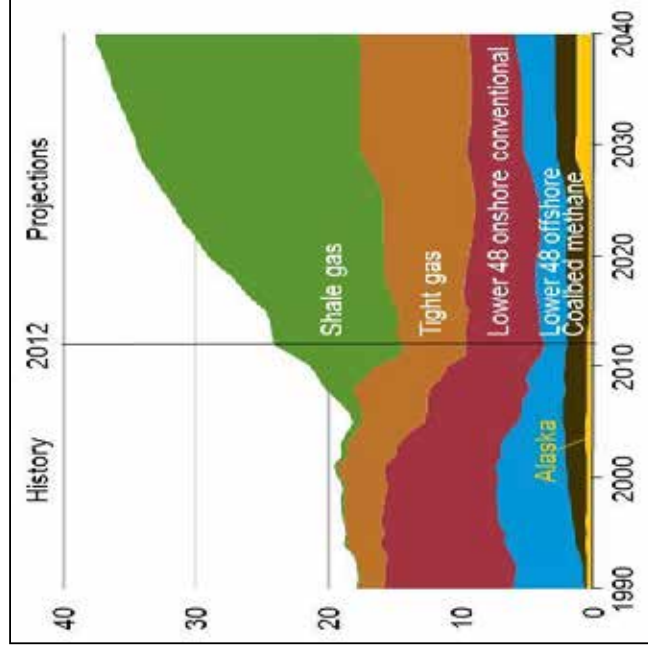
➤ General Impacts

- Shale gas provides the largest source of growth in US natural gas supply, projected to increase 56% from 2012 to 2040
- Reduced CO2 Emissions
- Supported development of intermittent Wind and Solar renewable power sources through diversification of power production

➤ Specific Impacts

- Contributing to movement away from coal-fired power generation
- Expansion of pipeline transportation and distribution infrastructure to fully utilize the increased supply of natural gas, and conversion of power plants from coal to natural gas will be needed when demand increases
- Extent of closure of coal-burning generating plants vs. conversion will be impacted by the demand for electricity
- Favorable natural gas prices have reduced the cost of producing electricity for now but could be impacted by:
 - New restrictions on shale fracking due to environmental uncertainties
 - Expansion of LNG terminals and increased exports of LNG
 - Increase price volatility risk due to inability to hedge natural gas beyond 1-2 years (Coal is typically purchased via long-term contracts which reduces this pricing risk).

Annual US Natural Gas Production (tcf)



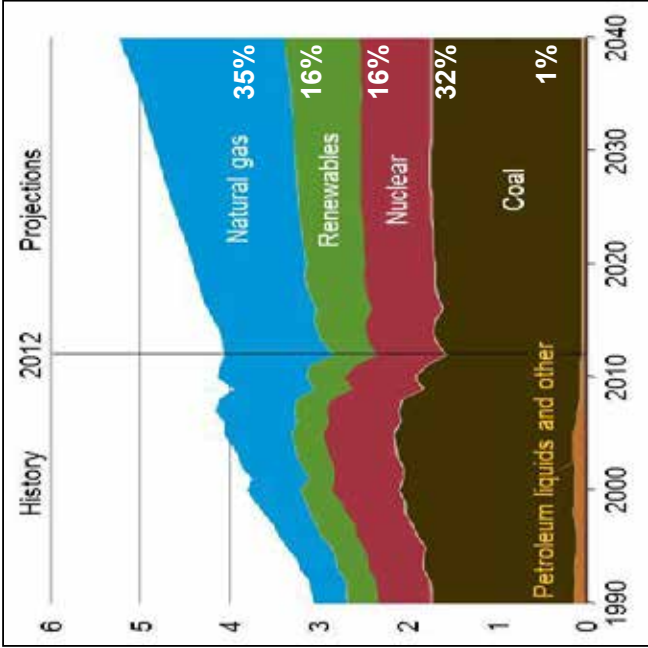
Source: Energy Information Administration

The Power Industry is benefiting from the “Shale Revolution”, but other factors contributing to the changing landscape for power generation

The expansion of natural gas power generation is leading to a shift away from coal power production

Commentary Electricity Production by Fuel, 1990-2040

- Decreasing natural gas prices, RPS, and environmental regulations for coal plants are prompting a shift to natural gas and renewable electricity production. Shift will likely cause an increase in wholesale power price volatility.
- Natural gas-fired generation projected to overtake coal-fired generation in 2019, reaching 35% by 2040.
- During the next 10 years, growth in electricity generation from renewables largely policy-driven.
- Gas procurement is typically under short-term contracts, whereas coal tends to be procured under long-term contracts.
- Gas power plants typically rely on pipeline deliveries exposing gas plants to changing pipeline rate structures, availability, and disruptions.
 - High demand for gas can limit space on pipelines
 - Coal and nuclear fuel can be stored in relatively large quantities and coal transportation is usually under long-term contracts protecting against fuel supply disruptions
- Shift to natural gas is not currently a driver of pipeline construction since all existing gas-fired facilities are already fed by an existing pipeline.



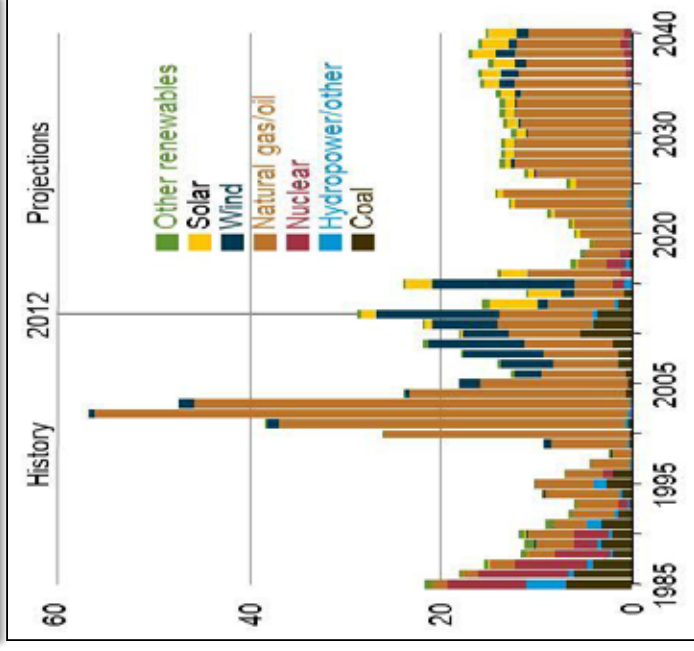
Source: Energy Information Administration

Regulations and lower natural gas prices are impacting power plant retirements and installations

Commentary

- Capacity additions projected to continue to migrate to natural gas.
- Additions to power plant capacity are projected to slow between 2016-2023 but accelerate beyond that with minimal coal capacity added.
- New capacity between 2013 and 2040 forecast to include 255 GW of natural gas (73% of additions) and 81 GS (23% of additions) of Renewables.
- Current regulations requiring coal plant emission reductions are expected to reduce approximately 68 GW of coal generation capacity over the next 4-6 years.
- Significantly lower natural gas and power prices are driving weak gross margins for coal plants leading to retirements as well as potential fuel conversion in some instances.
- Power plant installations can take considerable time and “expected” retirements could be delayed.
 - Plant retirements can be due to environmental emissions or uneconomical performance
 - Some power producers may choose to retrofit or expand existing installations to meet demands
- CO2 emissions in the electricity sector from coal combustion remain below 2011 levels through 2040 as more power plants are being fueled by lower-carbon fuels including natural gas and renewables

US Plant Capacity Add. (gwts) , 2013-2040



Source: Energy Information Administration

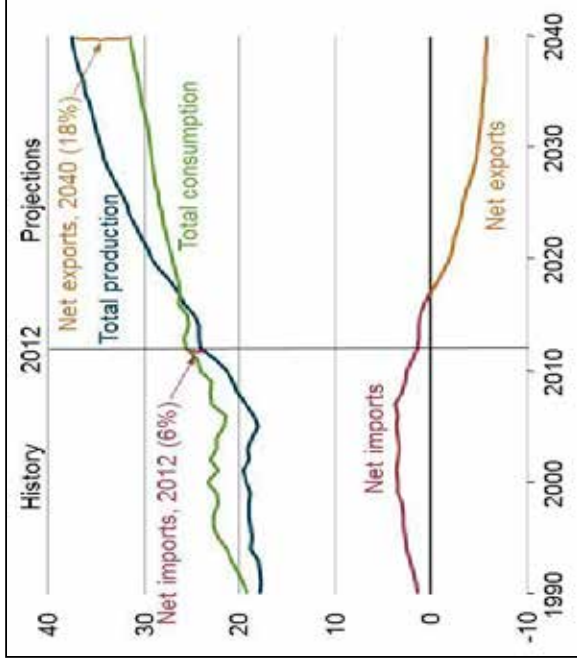
Will an increase in liquefied natural gas (LNG) exports impact the availability of cheap natural gas for the power industry?

Commentary

- Divergent views exist on the impact of LNG exports on the power generation sector.
 - Gas supply continues to outpace demand, keeping gas prices flat with minimal impact on power generation
 - Supply can't keep up with demand resulting in higher input prices for power producers
- US Energy Information Administration suggests that LNG exports will have minimal impacts on electricity sector.
 - Production growing faster than use resulting in US becoming an exporter of natural gas
 - Worst case impact from natural gas price increases caused by exporting LNG is modest (1% maximum reduction in economic output with a minimum of around .2%)
 - Export levels and LNG price increases will be constrained by limitations of the global gas market
 - Some experts believe the impacts of exporting LNG could be offset by the overall favorable economic impacts created by LNG export income
- Power Sector is focused on regulatory issues driving the shift to cleaner power-producing units than coal-fired units.
- As LNG export facilities come online over the next 2-5 years in the US, the potential exists for exports to push natural gas prices higher, impacting the cost effectiveness of natural gas-fired power units.

LNG exports could lead to increased natural gas prices making further natural gas power production less economical than it is today; however, increases in supply should outpace demand

Natural Gas Production, Consumption, Imports, 1990-2040 (tcf)



Source: Energy Information Administration

Environmental Regulations Impacting the Power Industry

- In recent years, both federal and state authorities have enacted increasingly stringent regulations limiting pollutants from power generation using carbon-based fuels. The regulations are still evolving and subject to further changes.
 - Federal and state laws can differ for the same pollutant, and power generators are required to comply with both
 - A generator may choose to pay penalties for non-compliance rather than invest capital dollars
- Regulations have had important implications for the electricity industry, forcing generators to implement costly pollution controls. Environmental regulations have had an especially profound impact on regions that rely on coal to provide electricity.
- Specific regulations include:
 - Regional Greenhouse Gas Initiative (“RGGI”)
 - Regional cap-and-trade program for CO2 Emissions applicable to fossil-fueled electric power plants larger than 25 MW located in 9 participating northeastern states
 - Mercury and Air Toxics Standards (“MATS”)
 - Issued by the EPA on 12/21/11, MATS requires fossil-fueled steam electric generators to control emissions of acid gasses, toxic metals, and mercury
 - MATS was introduced following the July 2011 finalization of its Cross-State Air Pollution Rule (“CSAPR”)
 - Together, the two rules will affect the utility industry by requiring expensive retrofits or possibly forcing plant retirements
 - MATS will require many coal-fired plants, which account for 1/2 of the acid gas emissions in the US, to install widely available pollution-control technologies including flue gas desulfurization scrubbers or dry sorbent injection systems
 - Effective in April, 2015 with full effect in 2016
 - Will likely drive a high level of coal plant closures (appears to be consensus view)
 - CSAPR – Requires states to significantly improve air quality by reducing power plant emissions that contribute to ozone and/or fine particle pollution in other states
 - In August 2012, CSAPR was vacated and remanded back to the EPA by the US Court of Appeals for the District of Columbia and the Clean Air Interstate Rule was reinstated
 - Other potential areas for regulation:
 - Coal ash removal / Cooling water intake / Greenhouse gases

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VALCON 2015
***Emerging Valuation Issues in
Bankruptcy and Beyond***

**Distress in the Energy Industry:
Renewable Energy Sector**

February 26, 2015

FOR DISCUSSION PURPOSES ONLY

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I Overview of the Renewable Energy Sector



Overview

What is Renewable Energy?

- Renewable energy is electricity generated by fuel sources that restore themselves over a short period of time and do not diminish
- Renewables are considered environmentally preferable to conventional sources and when replacing fossil fuels have significant potential to reduce greenhouse gas emissions
- Renewable technologies include:
 - Solar;
 - Wind;
 - Geothermal;
 - Biomass;
 - Biogas; and
 - Low-Impact Hydroelectricity.



- Renewable energy diversifies our energy supply and reduces dependence on imported fuels
- Renewable energy is primarily sold through a power purchase agreement (“PPA”) and not on the merchant power market

Source: EPA – *Renewable Energy*.

Overview

Barriers to Renewable Energy

- **Utility Rate Structures**
 - Unfavorable utility rate structures can increase the cost of renewables (e.g., through stand-by rates, lack of net metering) or completely disallow connection to the electrical grid
- **Lack of Interconnection Standards**
 - The absence of uniform procedures and technical requirements make it difficult for connecting renewable energy systems to the electric utility grid
- **Barriers in Environmental Permitting**
 - Large-scale renewable energy technologies are subject to all the necessary environmental permits of major industrial facilities
- **Lack of Transmission**
 - Many renewable resources are located in remote areas that lack ready or cost-effective access to transmission

Source: EPA – *Renewable Energy*.

Overview

Cost of Renewable Energy

- The United States Energy Information Administration published estimated overnight capital costs for renewables in 2010 and 2013
- Over this time period the cost to build decreased for onshore wind, solar photovoltaic, municipal solid waste, conventional hydroelectric, and pumped storage
- The overnight capital costs for solar photovoltaic decreased the most significantly of any renewable power source

	Overnight Capital Costs (2012 \$/kW)		
	2013 Report	2010 Report	% Difference
Biomass			
Biomass CC	\$8,180	\$8,205	0%
Biomass BFB	\$4,114	\$4,012	3%
Wind			
Onshore Wind	\$2,213	\$2,534	-13%
Offshore Wind	\$6,230	\$6,211	0%
Solar			
Solar Thermal	\$5,067	\$4,877	4%
Solar Photovoltaic (7 MW)	N/A	\$6,289	N/A
Solar Photovoltaic (20 MW)	\$4,183	N/A	N/A
Solar Photovoltaic (150 MW)	\$3,873	\$4,943	-22%
Geothermal			
Geothermal – Dual Flash	\$6,243	\$5,798	8%
Geothermal – Binary	\$4,362	\$4,304	1%
Municipal Solid Waste			
Municipal Solid Waste	\$8,312	\$8,557	-3%
Hydroelectric			
Conventional Hydroelectric	\$2,936	\$3,197	-8%
Pumped Storage	\$5,288	\$5,816	-9%

Source: EIA – Updated Capital Cost Estimates for Utility Scale Electricity Generating Plants, April 2013.

Overview

Incentives to Build Renewable Energy

- **Renewable Electricity Production Tax Credit (“PTC”)**
 - Originally enacted in 1992, the PTC has been renewed and expanded numerous times
 - A corporate tax credit of 2.3 cents/kilowatt-hour (“kWh”) for wind, geothermal, closed-loop biomass; 1.1 cents/kWh for other eligible technologies
 - Generally applies to the first 10 years of operation
 - The Tax Increase Prevention Act of 2014 extended the expiration date for the PTC to December 31, 2014; therefore projects that are not under construction prior to January 1, 2015, are ineligible for this credit
 - Historically when the PTC has been allowed to expire, the United States has faced a 70%-95% drop-off in installations
- **Business Energy Investment Tax Credit (“ITC”)**
 - A corporate tax credit of 30% for solar, fuel cells, small wind, and PTC-eligible technologies; 10% for geothermal, microturbines, and combined heat and power (“CHP”)
 - For systems placed in service after December 31, 2016, the current 30% credit will be reduced to 10% and the current 10% credit will expire for all technology but geothermal

Source: *United States Department of Energy; ACORE – The Outlook for Renewable Energy in America, 2014; www.dsireusa.org.*

Overview

Incentives to Build Renewable Energy

- **Renewable Portfolio Standard Policies**
 - A renewable portfolio standard or goal is a state policy designed to increase generation of electricity from renewable sources
 - These policies either require (renewable portfolio standard) or encourage (renewable portfolio goal) electricity producers to supply a certain minimum share of their electricity from designated renewable sources
- **Renewable Energy Certificates (“REC”)**
 - A REC represents the property rights to the environmental, social, and other non-power qualities of renewable electricity generation
 - A REC can be sold separately or together with the underlying physical electricity
 - As renewable generators produce electricity, they create one REC for every 1,000 kWh of electricity placed on the grid
 - If the physical electricity and the associated RECs are sold to separate buyers, the electricity is no longer considered “renewable” or “green”

Source: EIA – *Most States Have Renewable Portfolio Standards*; EPA – *Renewable Energy Certificates (RECs)*.



Key Trends in the Renewable Energy Sector

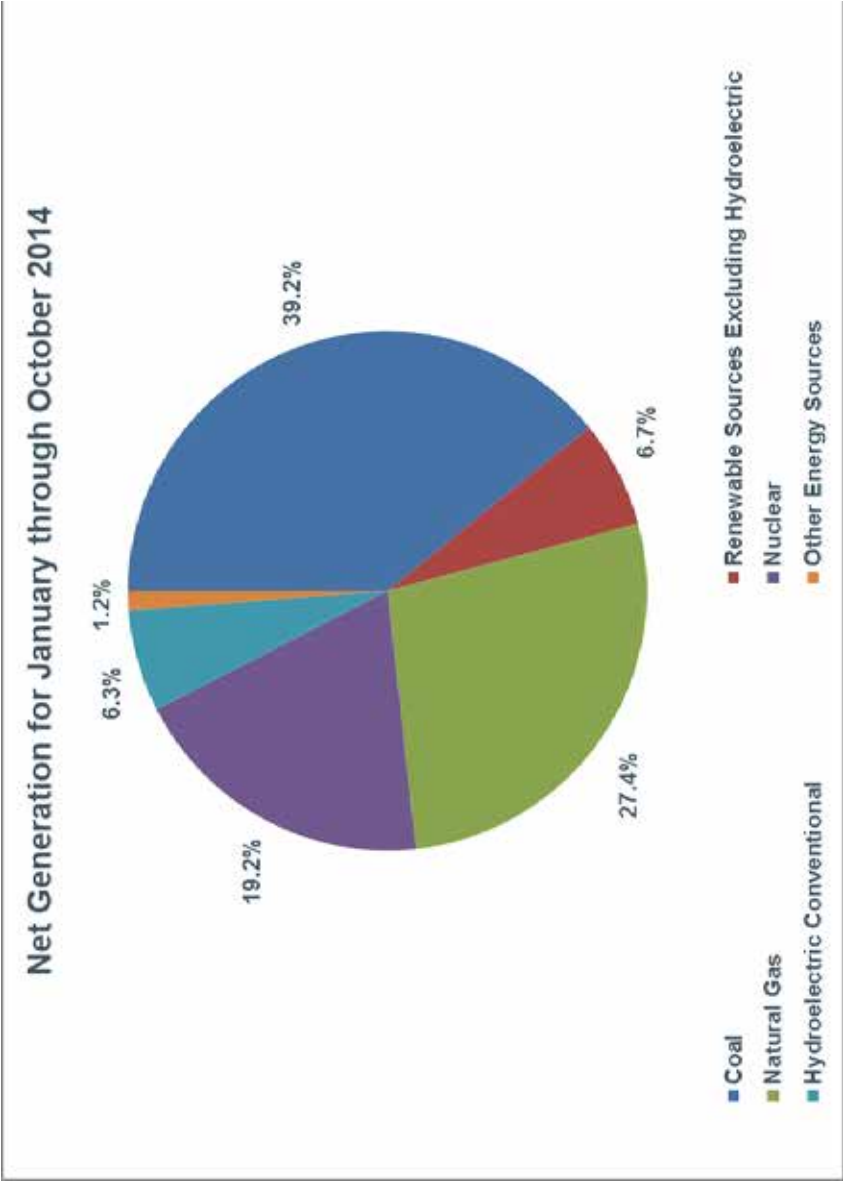


Current Environment Effect of Commodity Prices on Renewable Energy

- According to Bloomberg, while the Organization of the Petroleum Exporting Countries (“OPEC”) is driving down global crude prices, it is having less success impacting the clean power industry
- Forbes wrote in January 2015 that “as oil prices have tumbled, demand for energy efficiency and renewable energy only keeps growing”
- The International Energy Agency stated that green energy will receive nearly 60 percent of the \$5 trillion in investment in new power plants over the next decade thanks in part to global limits on greenhouse gases
- This effort has resulted in local and national incentive policies for renewable power around the world, effectively insulating the industry from market fluctuations in commodity prices
- Since renewables do not require fuel they offer stability that oil, gas, and coal cannot provide

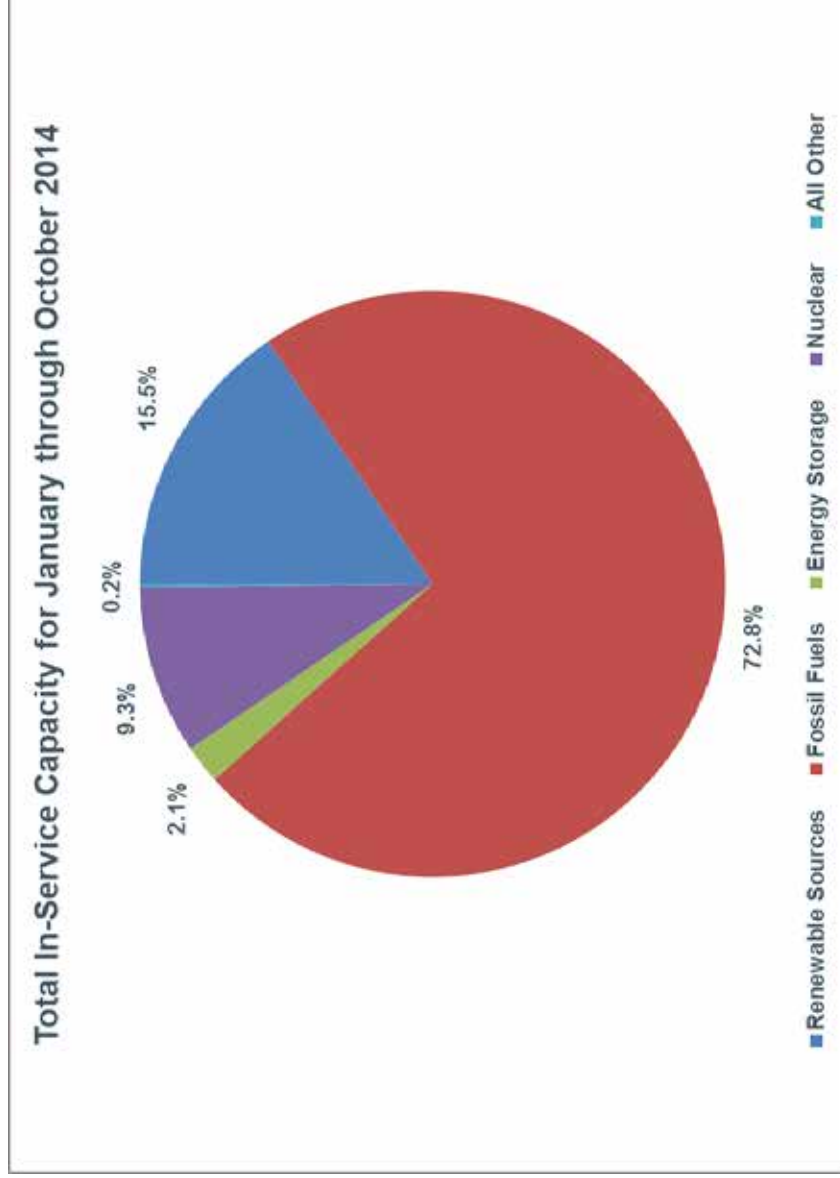
Source: Bloomberg – OPEC Squeeze on Oil Spares Renewables From Energy Turmoil, December 2, 2014; Forbes – Why Falling Oil Prices Don’t Hurt Demand For Renewable Energy, January 5, 2015.

Net Generation for All Sectors January through October 2014



Source: EIA - Electric Power Monthly, December 2014.

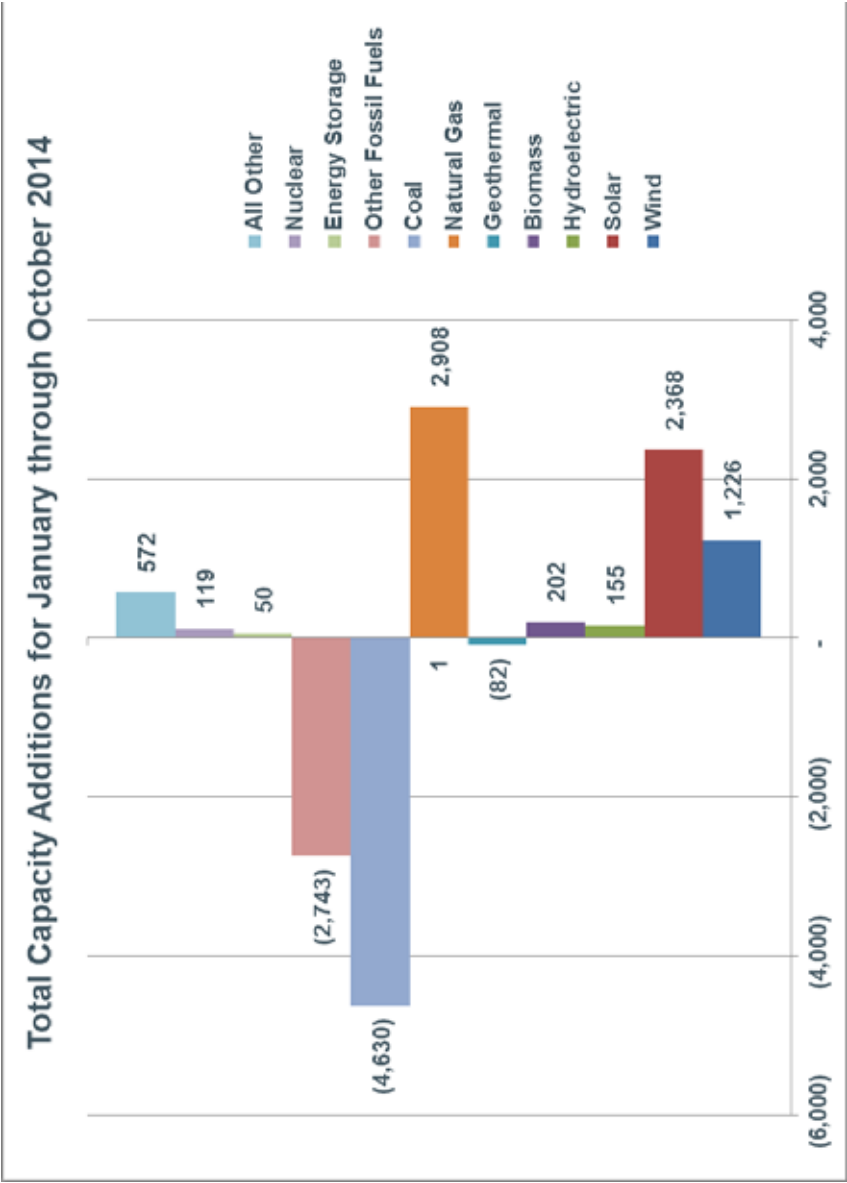
Total In-Service Capacity January through October 2014



Source: EIA - Electric Power Monthly, December 2014.

Capacity Additions January through October 2014

- Low natural gas prices continued to support overall growth
- Availability of tax subsidies and declining photovoltaic (“PV”) costs continued to drive solar development

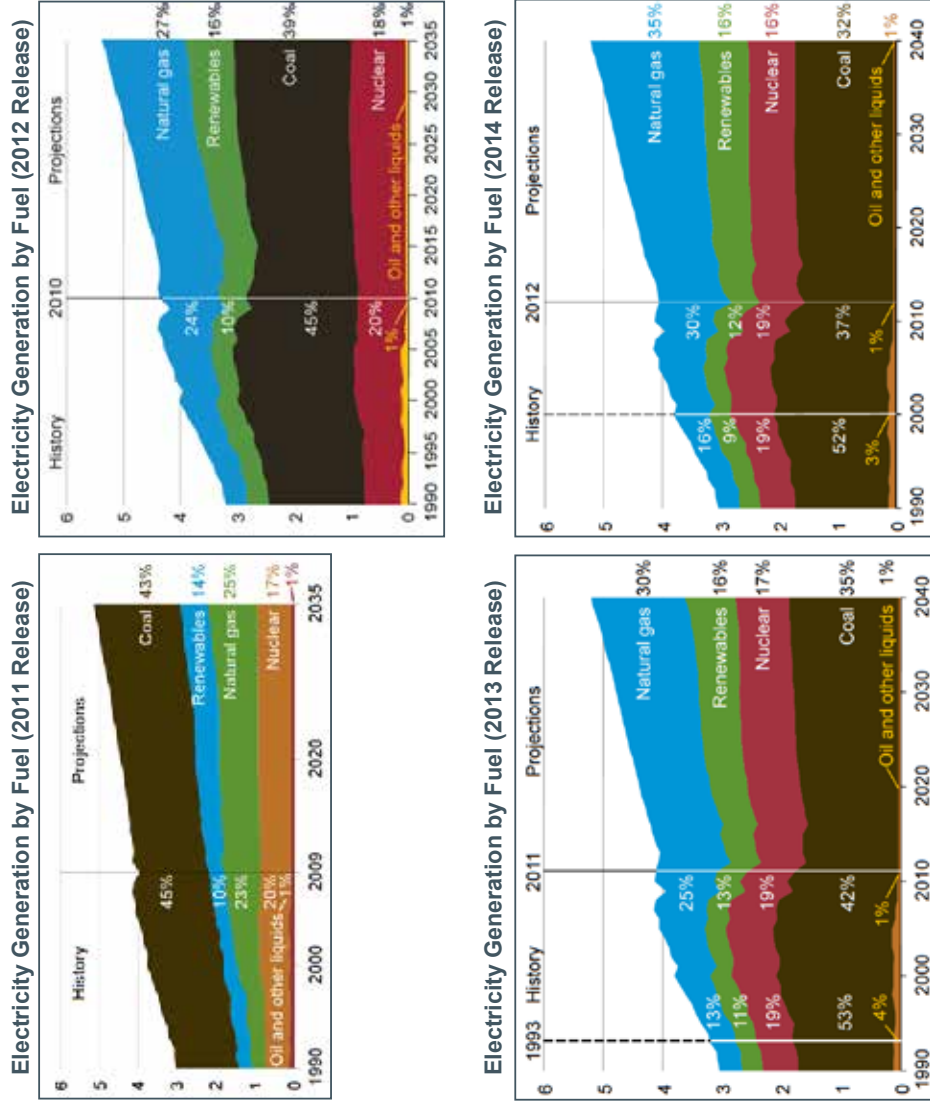


Source: EIA - Electric Power Monthly, December 2014.

Historical and Future Trends

Summary

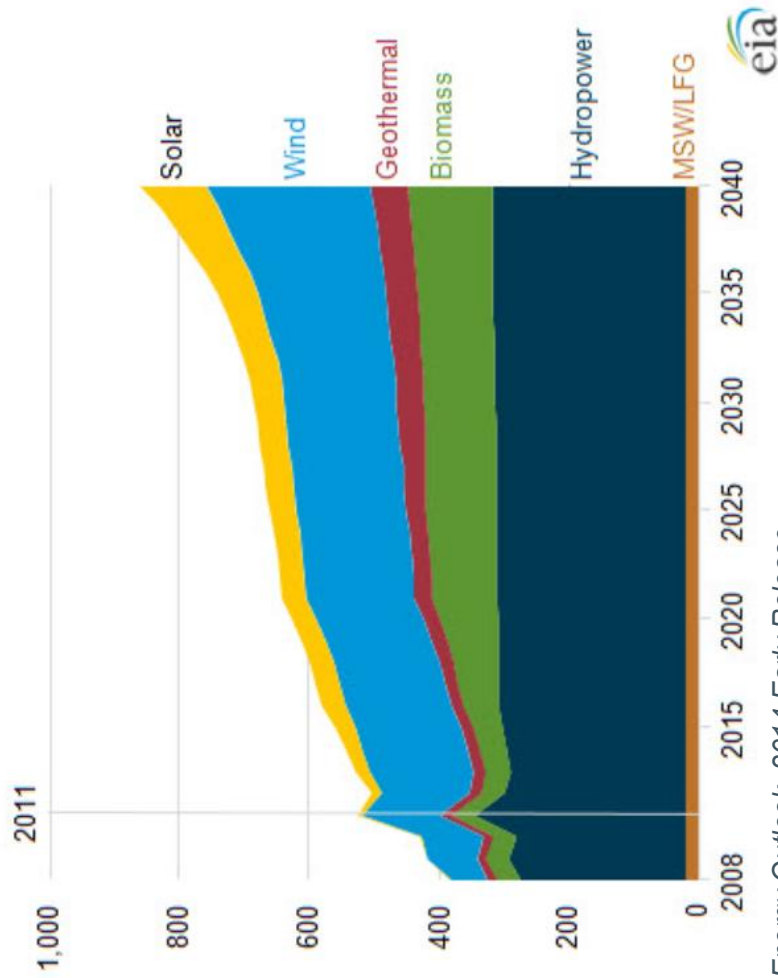
- In the 2014 publication, coal-fired generation remains pragmatic over next few years with nuclear retirements and higher natural gas prices relative to recent history
- Natural gas projected to surpass coal generation by 2035
- Renewable energy expected to grow to 16% of generation by 2040



Source: EIA – Annual Energy Outlook, 2011, 2012, 2013, and 2014 Early Release.

Current and Future Trends Renewable Energy

- EIA projects renewable generation to increase from 524 billion kWh in 2011 to 858 billion kWh in 2040 (average growth rate of 1.7% per year)
- Wind generation to increase by 134 billion kWh (2.6% growth per year)
- Solar generation to increase by 92 billion kWh (9.8% growth per year)



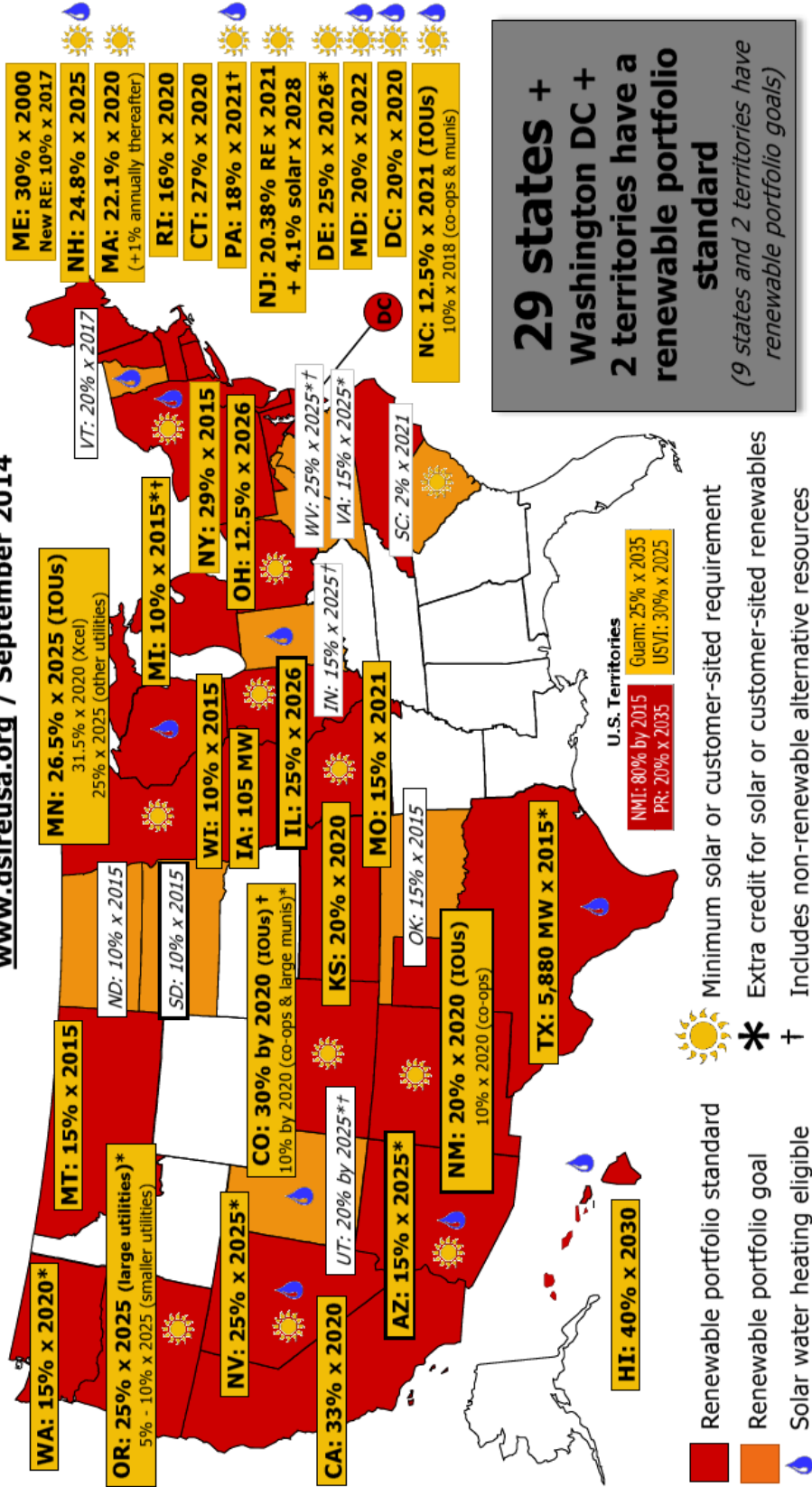
Source: EIA – Annual Energy Outlook, 2014 Early Release.

DUFF & PHELPS

Renewable Portfolio Standard Policies

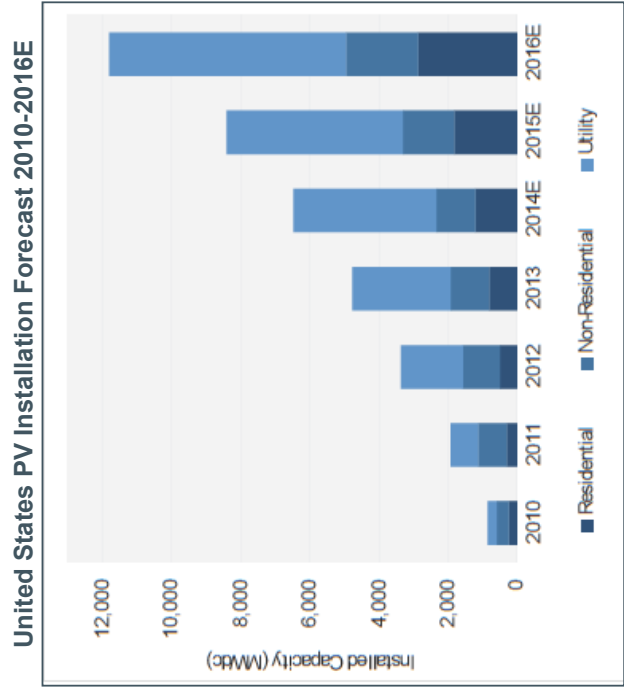
Driving Expansion in Individual States

www.dsireusa.org / September 2014



Solar Development PV Installations

- At the end of Q3 2014 the United States had 16.1 gigawatts (“GW”) of PV generating capacity compared to 1.2 GW five years ago
- Solar seeing significant growth in each segment (residential, non-residential, and utility) and 2014 was set to be the largest year in history for concentrated solar power (“CSP”)
- Because the current ITC of 30% is scheduled to decrease to 10% in 2017, developers of utility-scale projects are accelerating project timelines



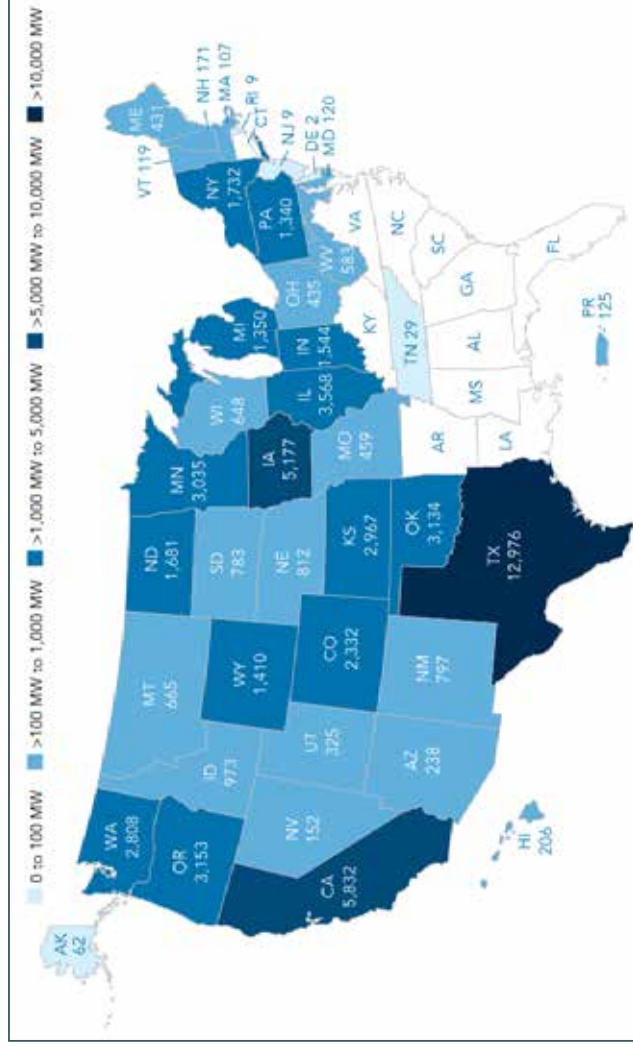
Source: SEIA – U.S. Solar Market Insight, Q3 2014.

Wind Development Wind Installations

- United States wind energy industry installed 1,254 megawatts ("MW") in the first three quarters of 2014 – more than in all of 2013
- More than 13,600 MW of wind capacity under construction
- Majority of wind construction is within Texas, followed by Oklahoma, Iowa, North Dakota, and Kansas
- Utilities continue to sign PPAs for wind power
- Corporate purchasers such as Yahoo! and Walmart have signed PPAs for wind projects

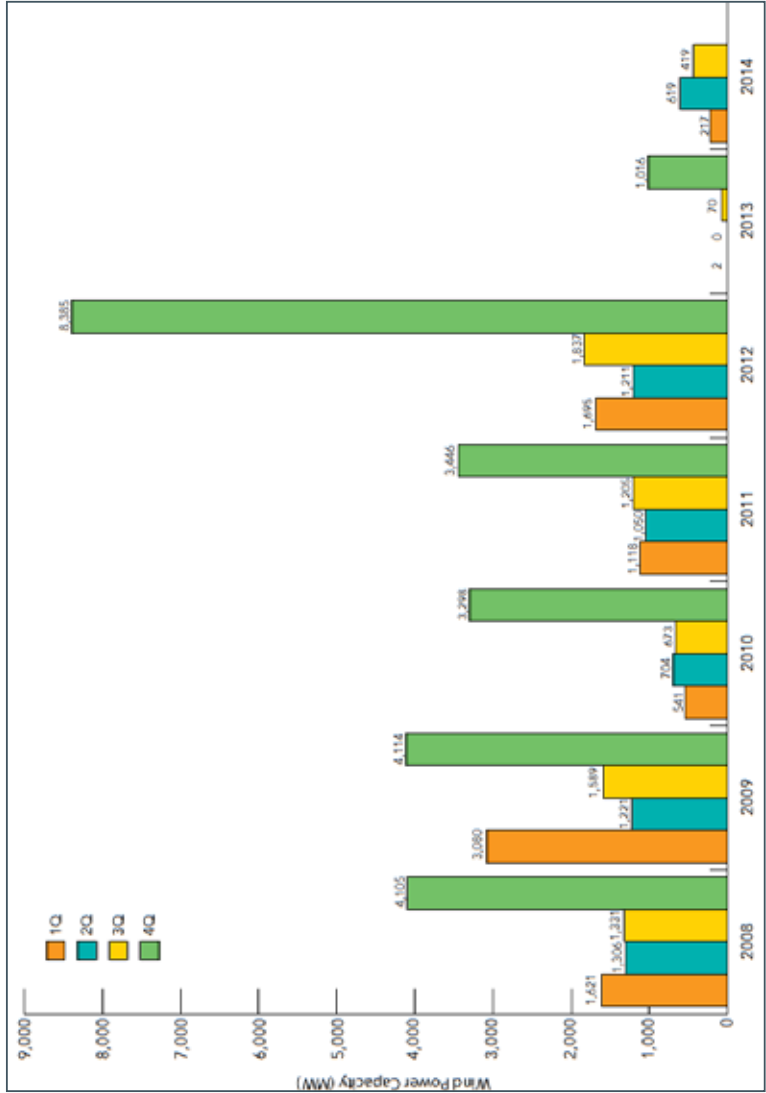
Source: AWEA – *Market Report*, Q3 2014.

United States Wind Power Capacity Installations, by State



Wind Development Wind Installations

United States Wind Power Capacity Installations, by Quarter



- Total wind power capacity installations for 2013 were over 1,000 MW
- However, the total 2013 installations represented a 92% reduction from the record-setting over 13,000 MW installed during 2012
- This drop-off can be attributed to the late extension of the production tax credit and investment tax credit in January 2013

Source: AWEA – Market Report, Q3 2014; ACORE – The Outlook for Renewable Energy in America, 2014.



Renewable Valuation Drivers



Renewable Valuation Drivers

Operating Facilities

- Asset Characteristics
 - Fuel Type
 - Capacity (incl. degradation)
 - Remaining Useful Life
 - Location
- Merchant Revenue
 - Merchant Capacity Factor
 - Location-Based Pricing
 - Forward Power & Gas Curves
 - Installed Capacity Payments
 - Ancillary Revenue
- Fixed Operating Expenses
 - Labor & Benefits
 - Plant G&A
 - Utilities
 - Insurance
 - Property Taxes
- Capital Expenditures
 - Maintenance Expenses
 - Inverter Replacement
- Contracted Revenue
 - Power Purchase Agreements
 - Tolling / Hedging Contracts
- Cash Flow Considerations
 - Working Capital
 - Accelerated Depreciation Benefits
 - Asset Retirement Obligations
 - Tax Credits / Incentives
- Variable Operating Expenses
 - Fuel Expense
 - Asset Management Fees
 - Other VOM



Renewable Valuation Drivers

Wind Development Assets

- Site Selection
 - Wind Availability Studies
 - Transmission / Distribution Lines
 - Roads / Infrastructure
 - Environmental Concerns
 - Ease of Permitting
- Land Agreements
 - Does Developer Have "Site Control"?
 - Quality of Land Leases
- Turbines
 - Technology / Size
 - Secured Supply Agreement
 - Financing / Cash for Down Payment
 - Negotiated Warranties
- Forecasted Performance
 - Forecasted Capacity Factor
 - P99, P75, P50
 - O&M Estimates
- Sales / Financing Agreements
 - Signed PPA
 - Off Taker Credit Rating
 - Long-Term Financing in Place
- Other Items
 - Transmission Queue
 - Additional Development at Site
 - Experience of Developer



Renewable Valuation Drivers

Solar Development Assets

- Site Selection
 - Solar Studies / Profile
 - Transmission / Interconnection
 - Environmental Concerns
 - Ease of Permitting
- Land Agreements
 - Quality of Land Leases
- Panels
 - Technology / Manufacturer
 - Secured Supply Agreement
 - Warranties
- Financing / Tax
 - Financing (Bank, DOE, etc.)
 - Tax Incentives (Cash Grant / ITC)
 - Tax Equity Financing
- Forecasted Performance
 - Forecasted Capacity Factor
 - Degradation Factors
 - O&M Estimates (Variable, Fixed)
- Contracted Output / Off Taker
 - Tariff Pricing
 - Signed PPA
 - Off Taker Credit Rating
 - REC Ownership
- Merchant Output
 - Available Merchant Capacity
 - Location-Based Pricing
- Other Items
 - Additional Development at Site
 - Useful Life of Technology
 - Experience of Developer



Appendix

Brief Overview of Duff & Phelps and Contact Information



Duff & Phelps

Dedicated to Delivering Value

Valuation and Corporate Finance Advisors

- More than 7,000 engagements performed in 2013
- 3,200 clients including more than one-third of the S&P 500

1,400+ Employees in more than 30 offices globally

Advisory Capability

- Valuation Advisory
- Dispute and Legal Management Consulting
- Mergers and Acquisitions
- Transaction Opinions
- Restructuring
- Alternative Asset Advisory
- Tax Services

HISTORY

-
- 1932-1994**
Duff & Phelps founded and evolves into diversified financial services firm
 - 1994**
Credit ratings business spun-off
 - 2005**
Acquired Corporate Value Consulting (CVC) from Standard & Poor's
 - 2007-2012**
Listed on the NYSE
Financial advisor to examiner in Lehman Brothers bankruptcy
Engaged by the Congressional Oversight Panel on the Troubled Asset Relief Program
Acquired 14 complementary businesses to expand our service offering
Achieved record revenue growth
 - 2013**
Taken private by The Carlyle Group, Stone Point Capital, Pictet & Cie, Edmond de Rothschild Group and Duff & Phelps Management Team

Contact Information

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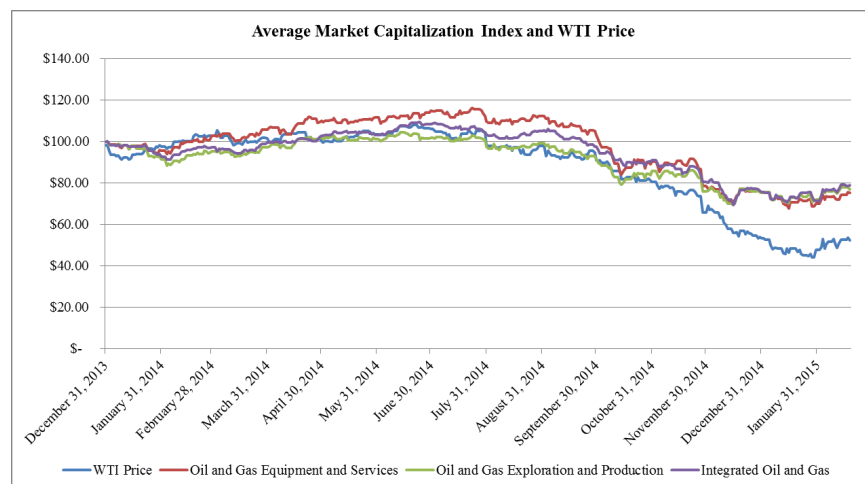
VALCON 2015
***Emerging Valuation Issues in
 Bankruptcy and Beyond***

**Valuation Metrics after the Drastic Decline in
 Oil Prices**

February 26, 2015

FOR DISCUSSION PURPOSES ONLY

Oil & Gas Industry
Market Capitalization Relative to WTI Price



Source Data: S&P Capital IQ Database.

Oil & Gas Industry

Key Valuation Metrics

Industry Metrics	WTI Spot Price	Oil and Gas Equipment and Services	Oil and Gas Exploration and Production			Integrated Oil and Gas
			Under 25% Oil	25% - 75% Oil	Over 75% Oil	
Enterprise Value / 2015 EBITDA						
February 18, 2015	\$ 52.32	7.6x	7.4x	7.4x	6.1x	6.0x
December 31, 2014	\$ 53.45	6.4x	6.1x	5.1x	5.0x	4.9x
June 30, 2014	\$ 106.07	7.4x	7.2x	5.8x	5.8x	5.0x
December 31, 2013	\$ 98.17	6.6x	6.2x	4.7x	4.5x	4.7x
Enterprise Value / Daily Production (Boe)						
February 18, 2015	\$ 52.32	N/M	\$ 45,367	\$ 63,805	\$ 88,215	N/M
December 31, 2014	\$ 53.45	N/M	\$ 45,533	\$ 63,428	\$ 85,880	N/M
June 30, 2014	\$ 106.07	N/M	\$ 64,906	\$ 96,228	\$ 153,811	N/M
December 31, 2013	\$ 98.17	N/M	\$ 51,750	\$ 87,937	\$ 125,267	N/M
Debt / Total Capital						
February 18, 2015	\$ 52.32	33%	45%	43%	32%	29%
December 31, 2014	\$ 53.45	35%	46%	46%	34%	30%
June 30, 2014	\$ 106.07	23%	27%	27%	26%	25%
December 31, 2013	\$ 98.17	20%	43%	32%	35%	24%
Debt / LTM EBITDA						
February 18, 2015	\$ 52.32	2.4x	4.0x	2.5x	2.4x	1.8x
December 31, 2014	\$ 53.45	1.9x	3.4x	2.3x	2.4x	1.3x
June 30, 2014	\$ 106.07	2.0x	2.5x	2.1x	2.1x	1.1x
December 31, 2013	\$ 98.17	1.6x	1.8x	1.9x	2.0x	1.1x

Source Data: S&P Capital IQ Database.