



Through the Fog

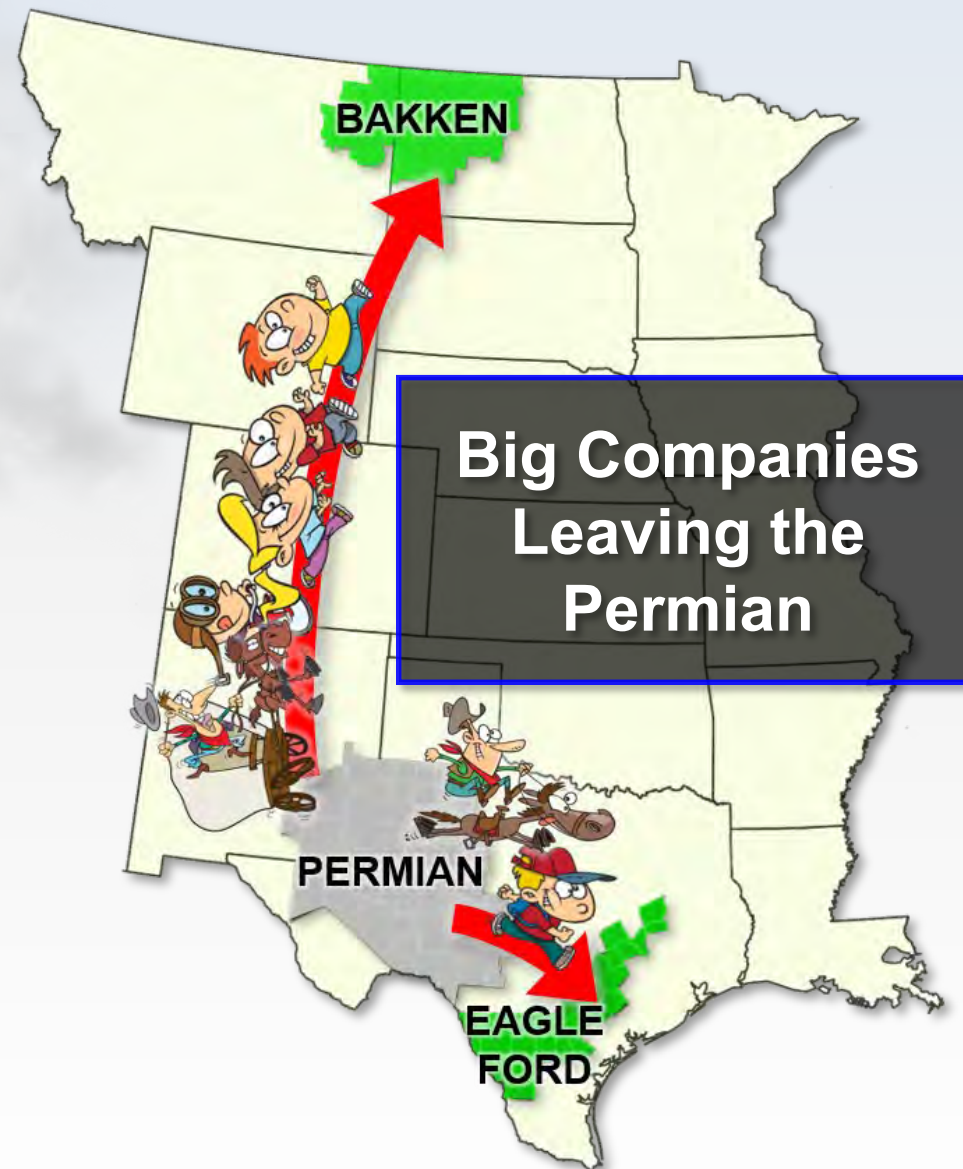
AAPG – January 2019

Three Rivers Through the Fog

**BROC1:
2010**

**FINANCIAL
CRISIS
OF 2008**

& 2009 Oil Price Collapse



Three Rivers Through the Fog

BROC 2: 2012



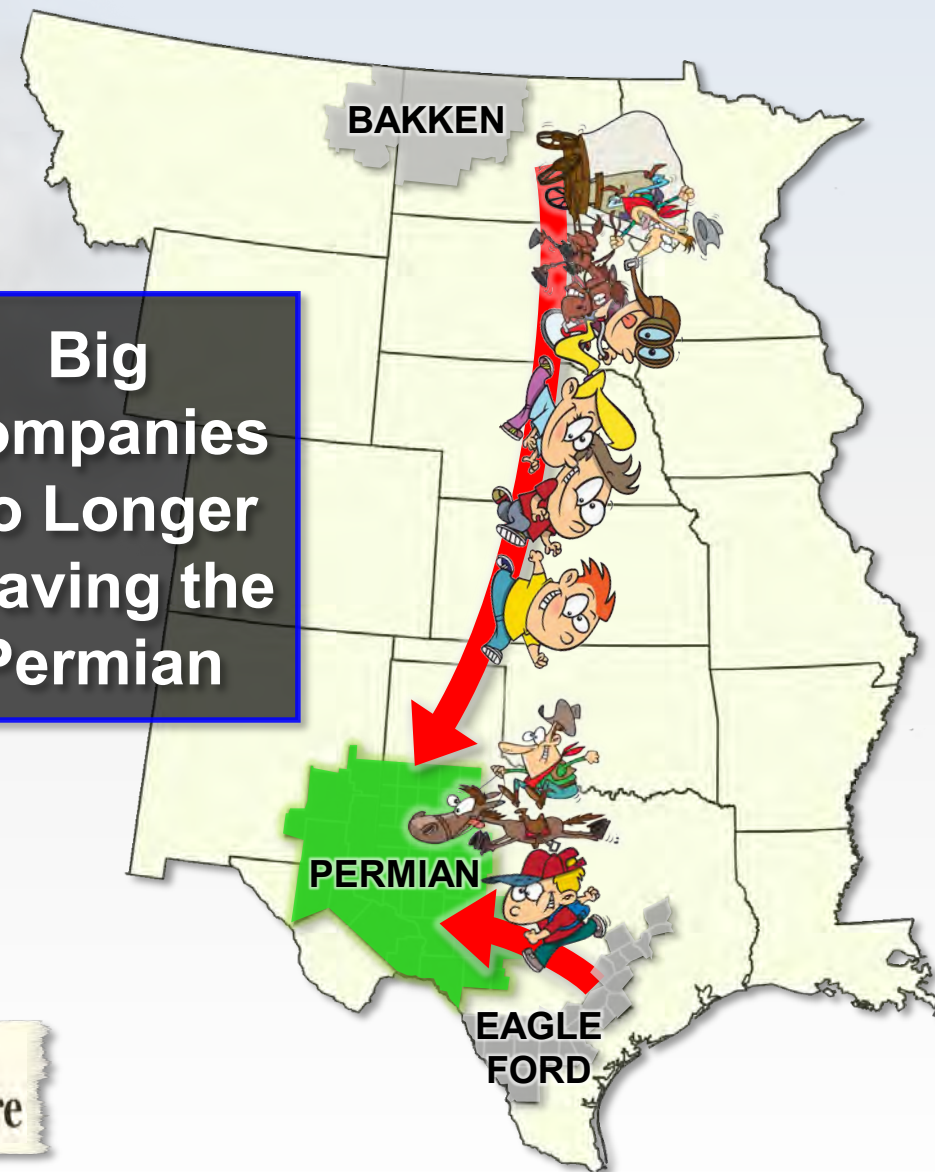
Cline is New Play
(Wolfcamp Shale Only Works in
Southern Midland Basin)



ASIA BUSINESS Jan. 30, 2013 2:09 p.m. ET

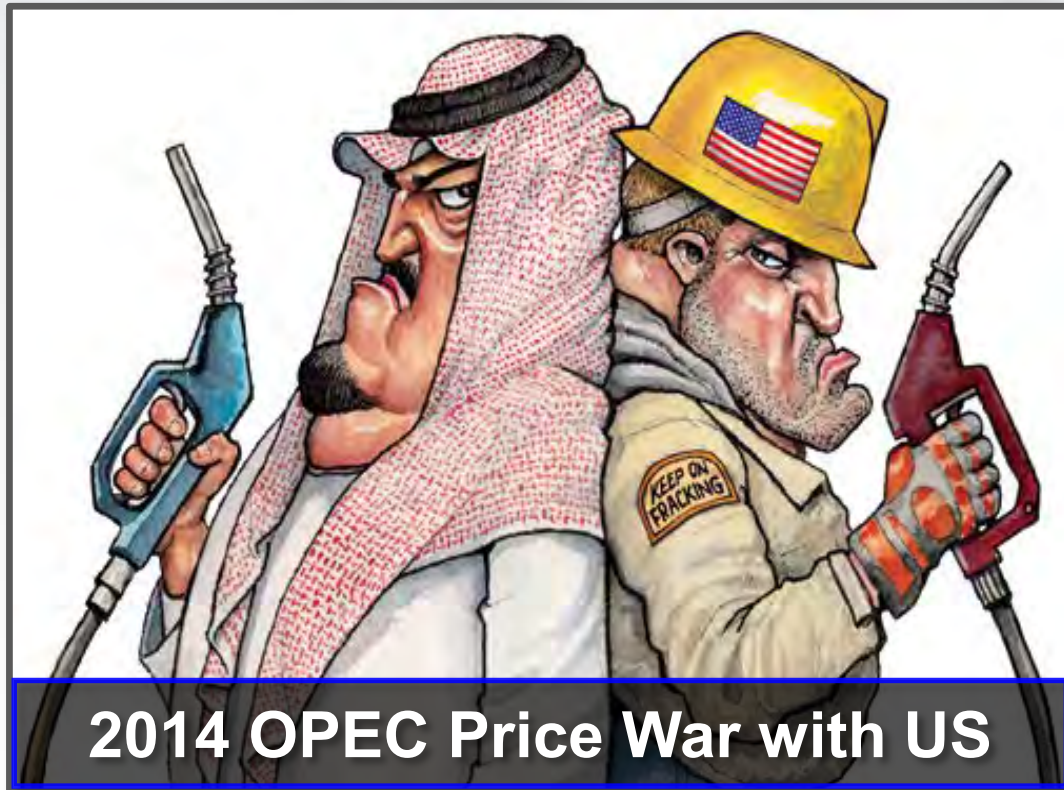
Sinochem to Buy 40% of Pioneer Natural Venture

**Big
Companies
No Longer
Leaving the
Permian**



Three Rivers Through the Fog

BROC3: **2014**



Oil Floods Market

**Feb
2016**

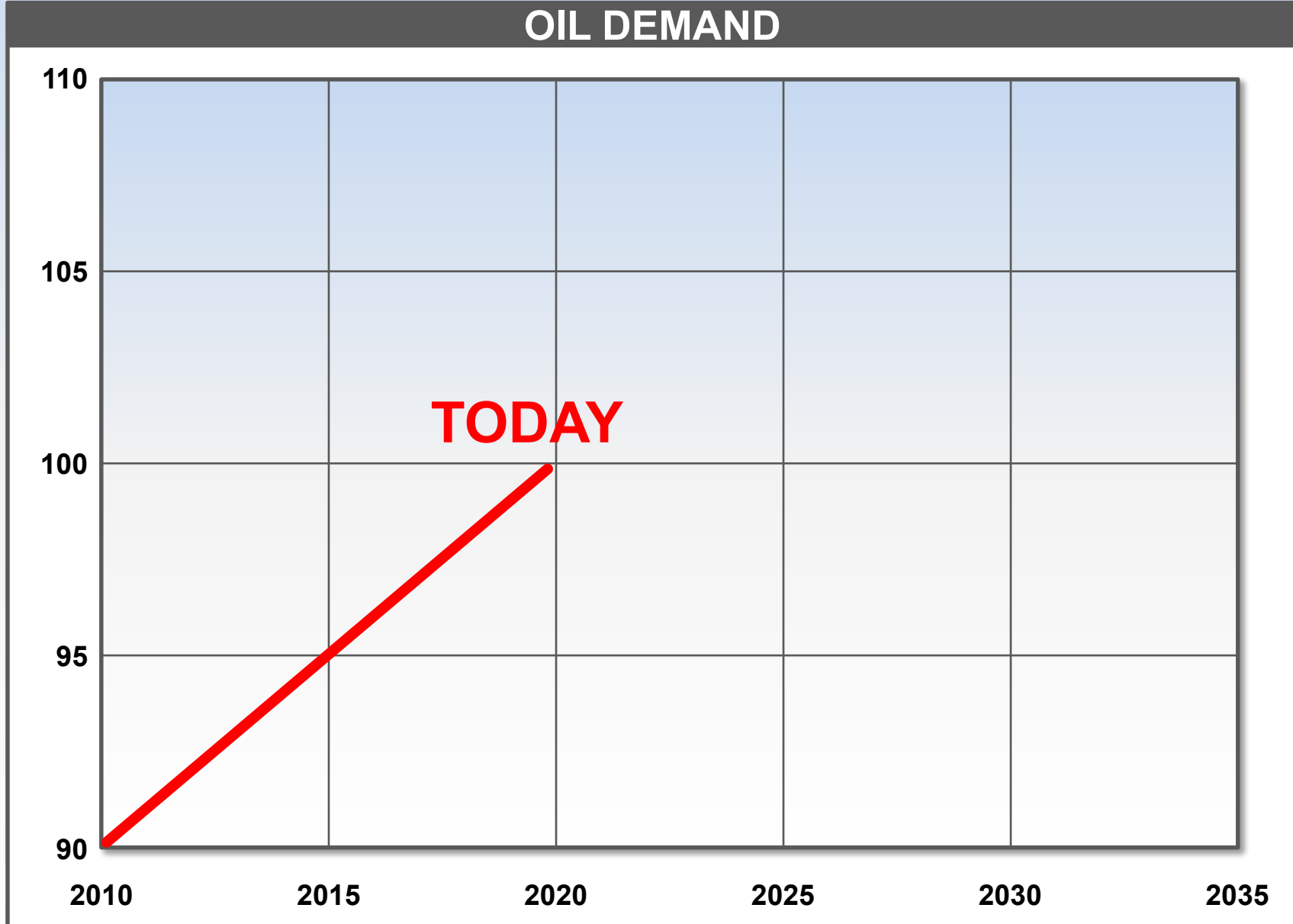

**Oil Px
\$26.14**



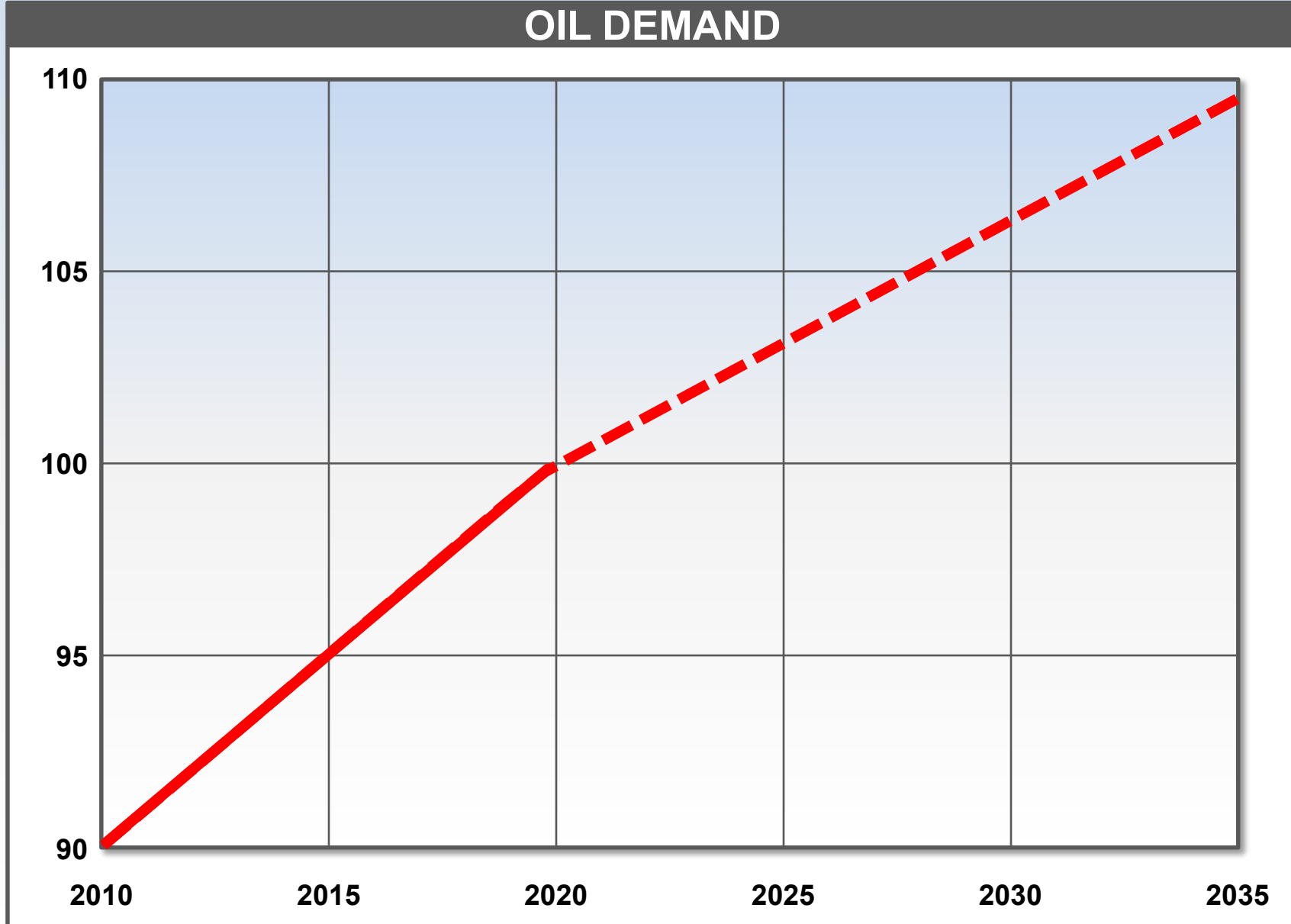


“Peak Oil Demand”

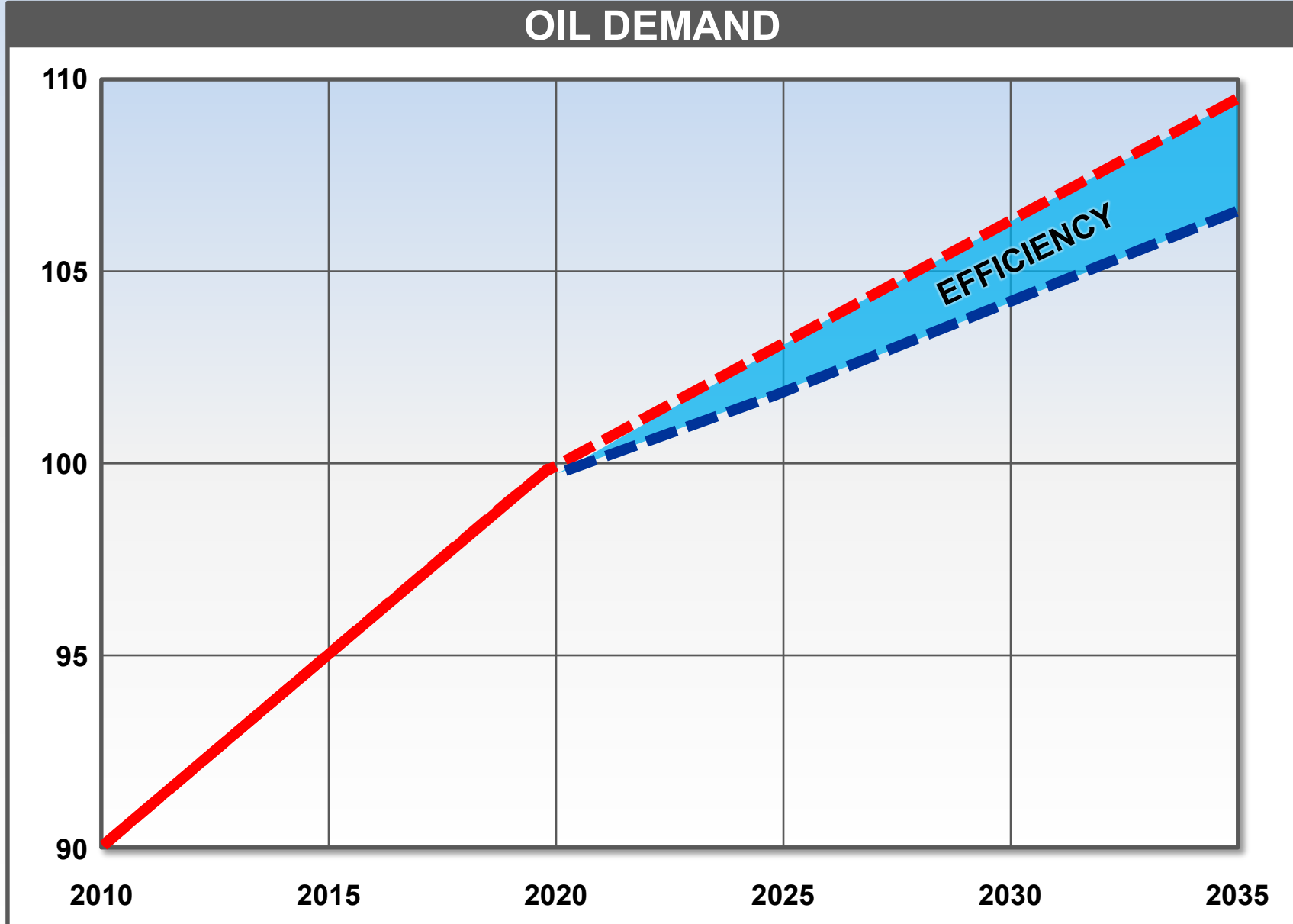
Today's Fog



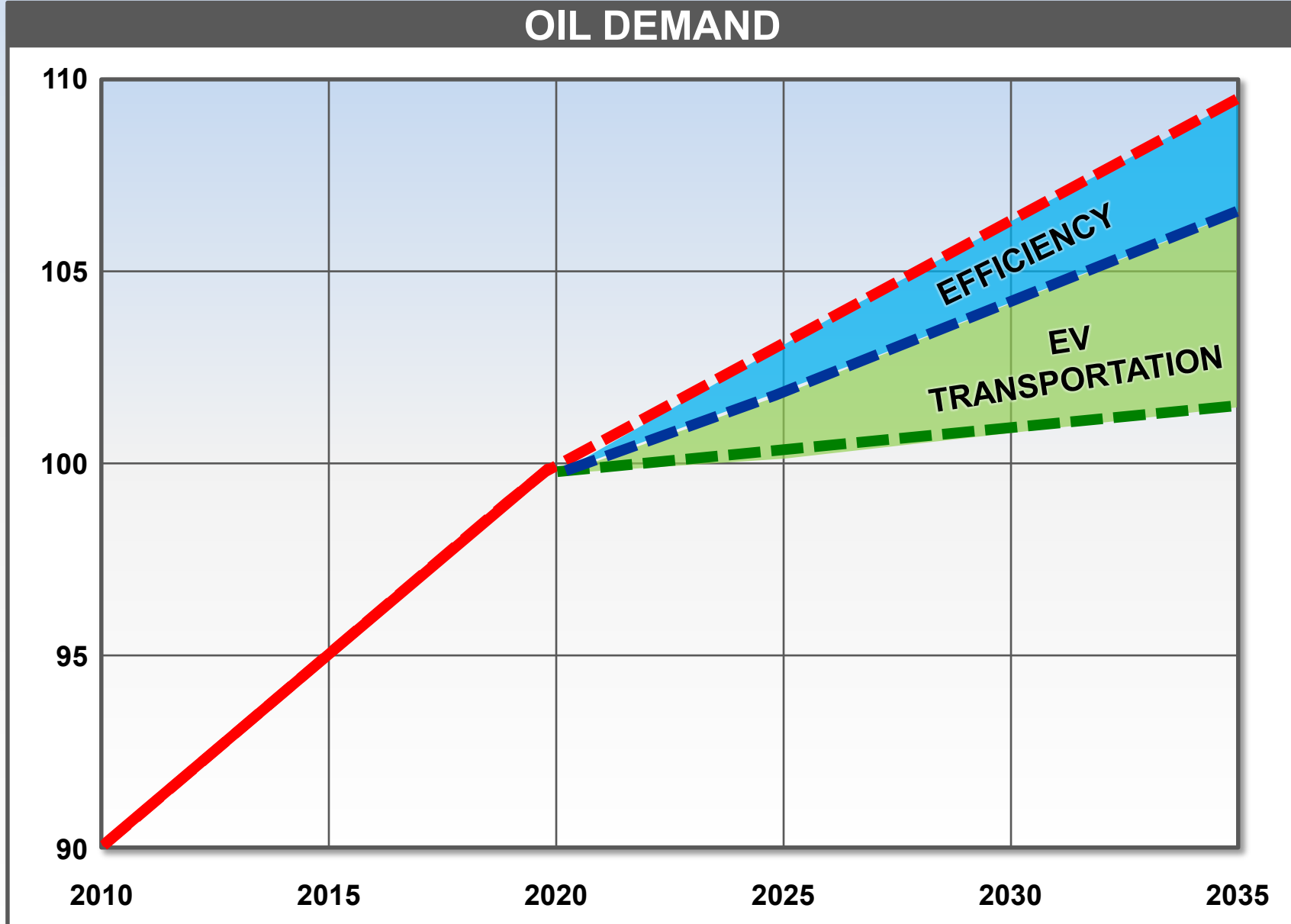
Today's Fog



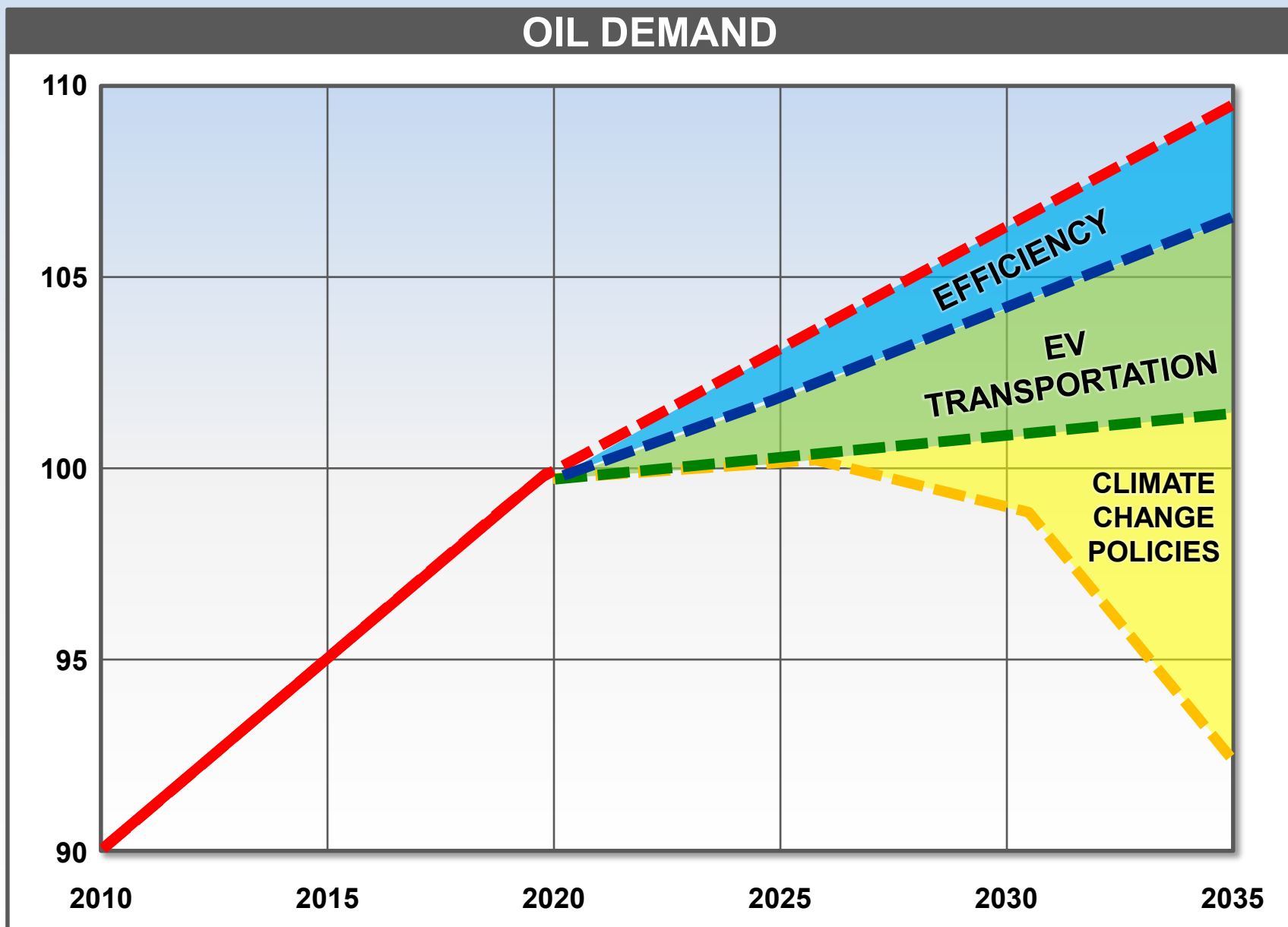
Today's Fog



Today's Fog



Today's Fog



History Lesson: “Peak Oil”

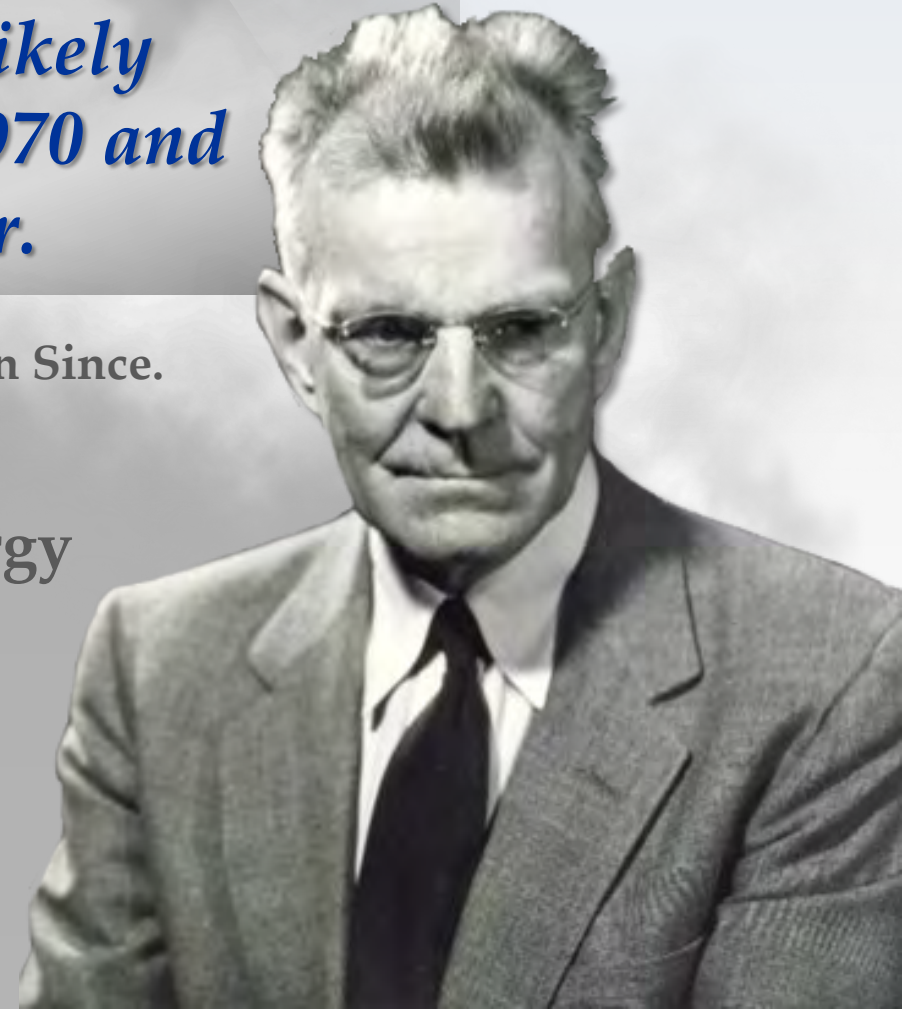
1956

M. King Hubbert, a geologist for Shell Oil, says that

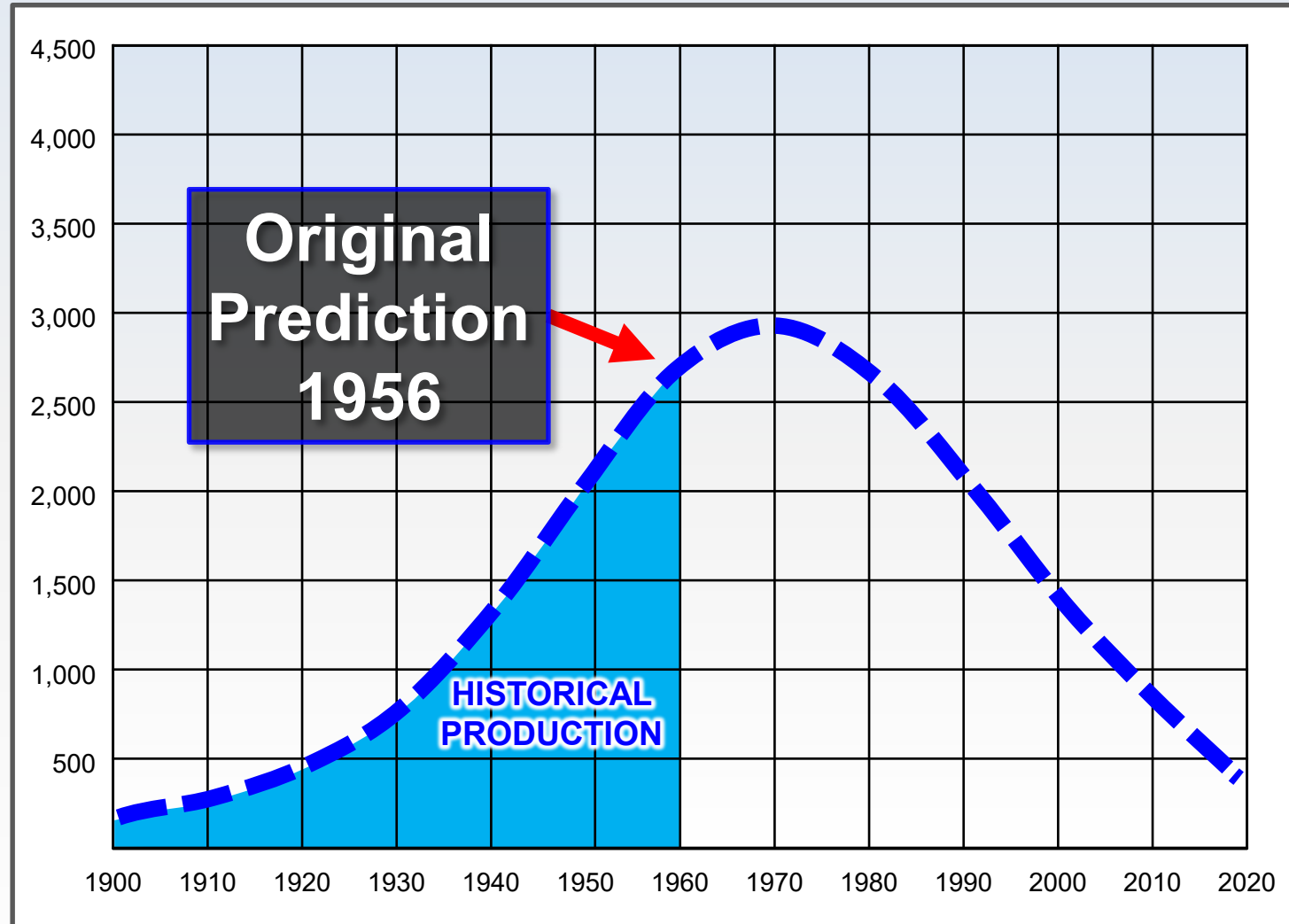
U.S. oil production will likely peak between 1965 and 1970 and decline steadily thereafter.

Others Have Made the Same Prediction Since.

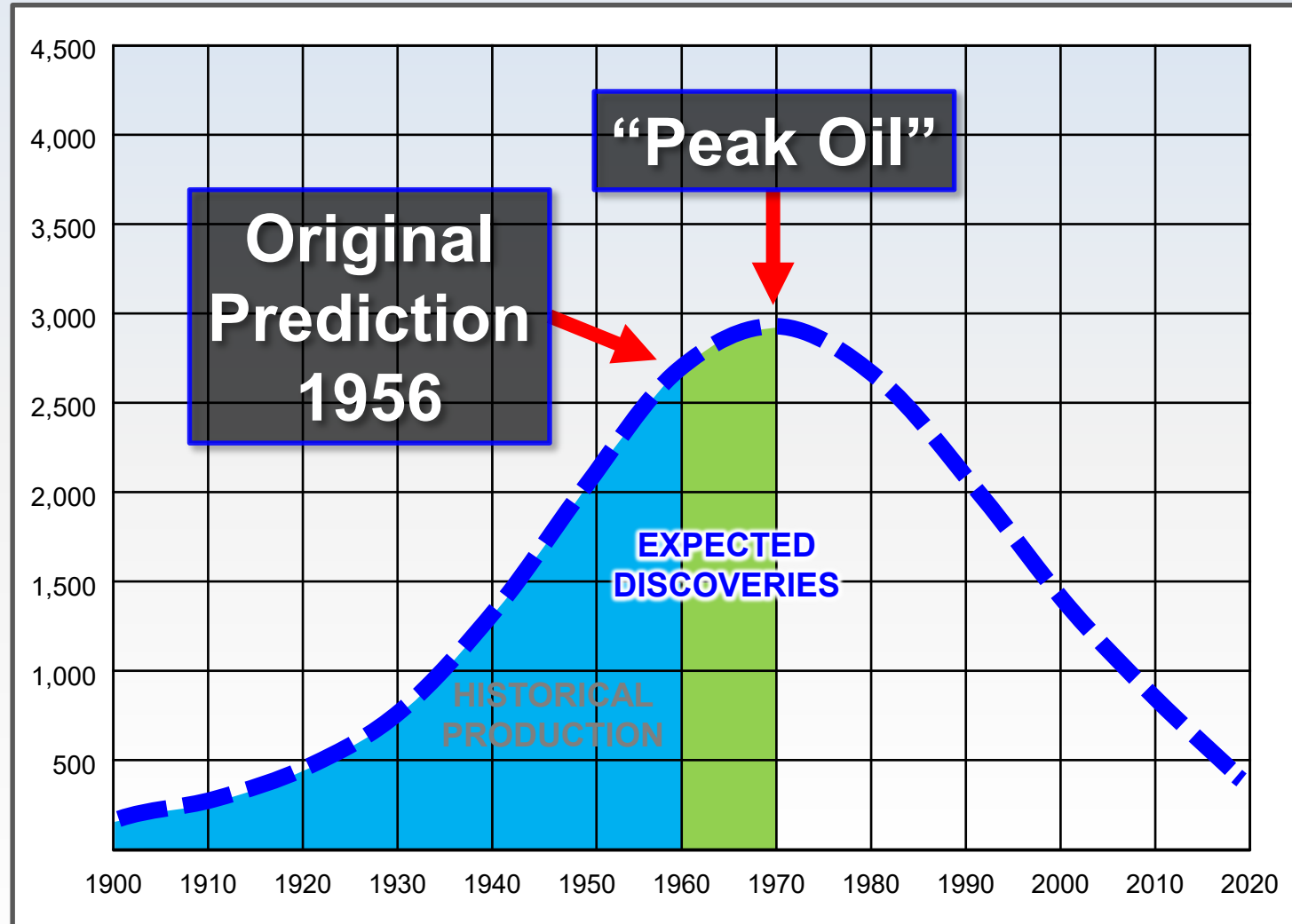
- 1972 • Esso
- 1976 • UK Dept. of Energy
- 1979 • Shell
- 1981 • World Bank
- 1997 • JD Edwards
- 2000 • EIA
- 2003 • Shell



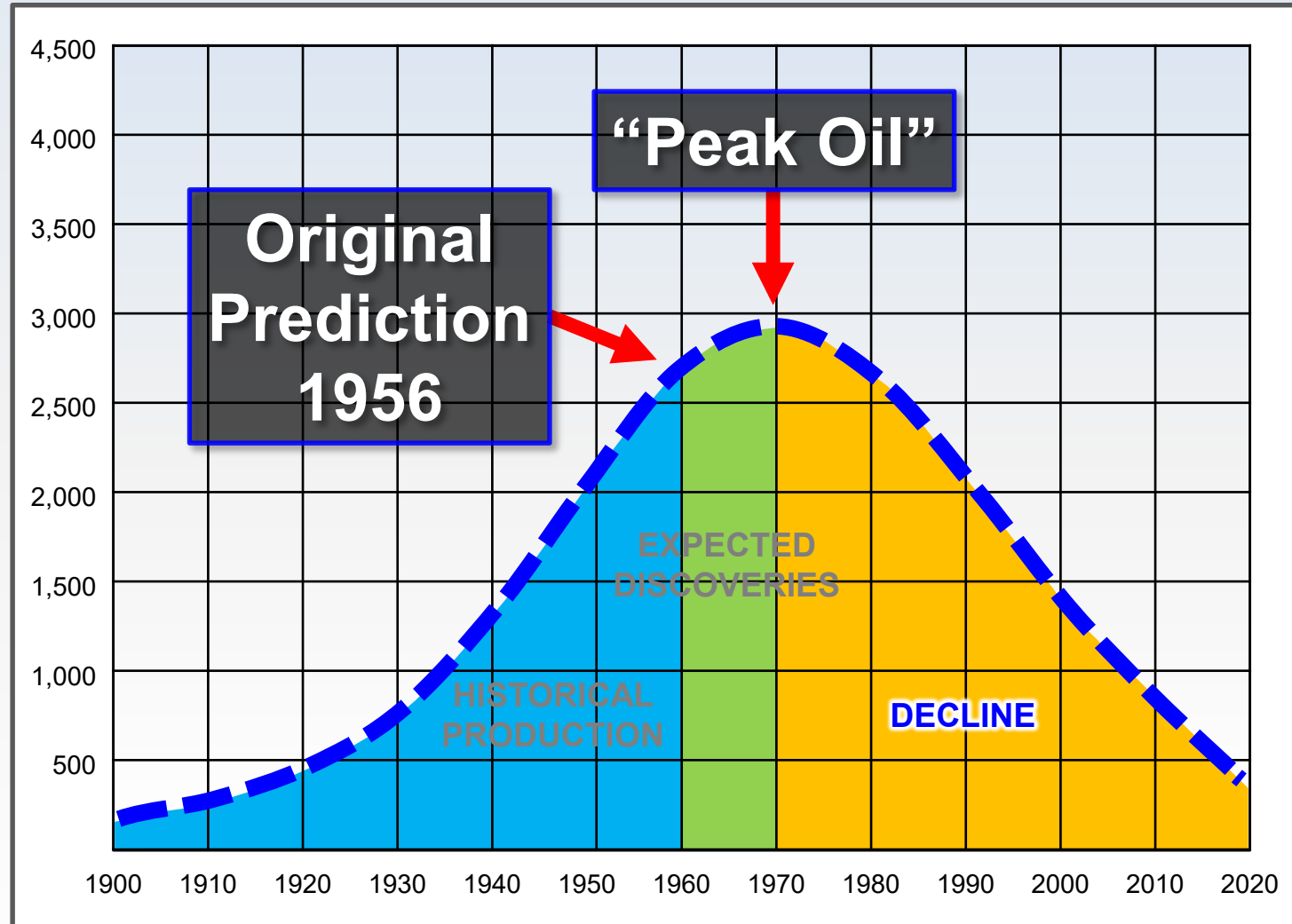
Hubbert's Original Curve



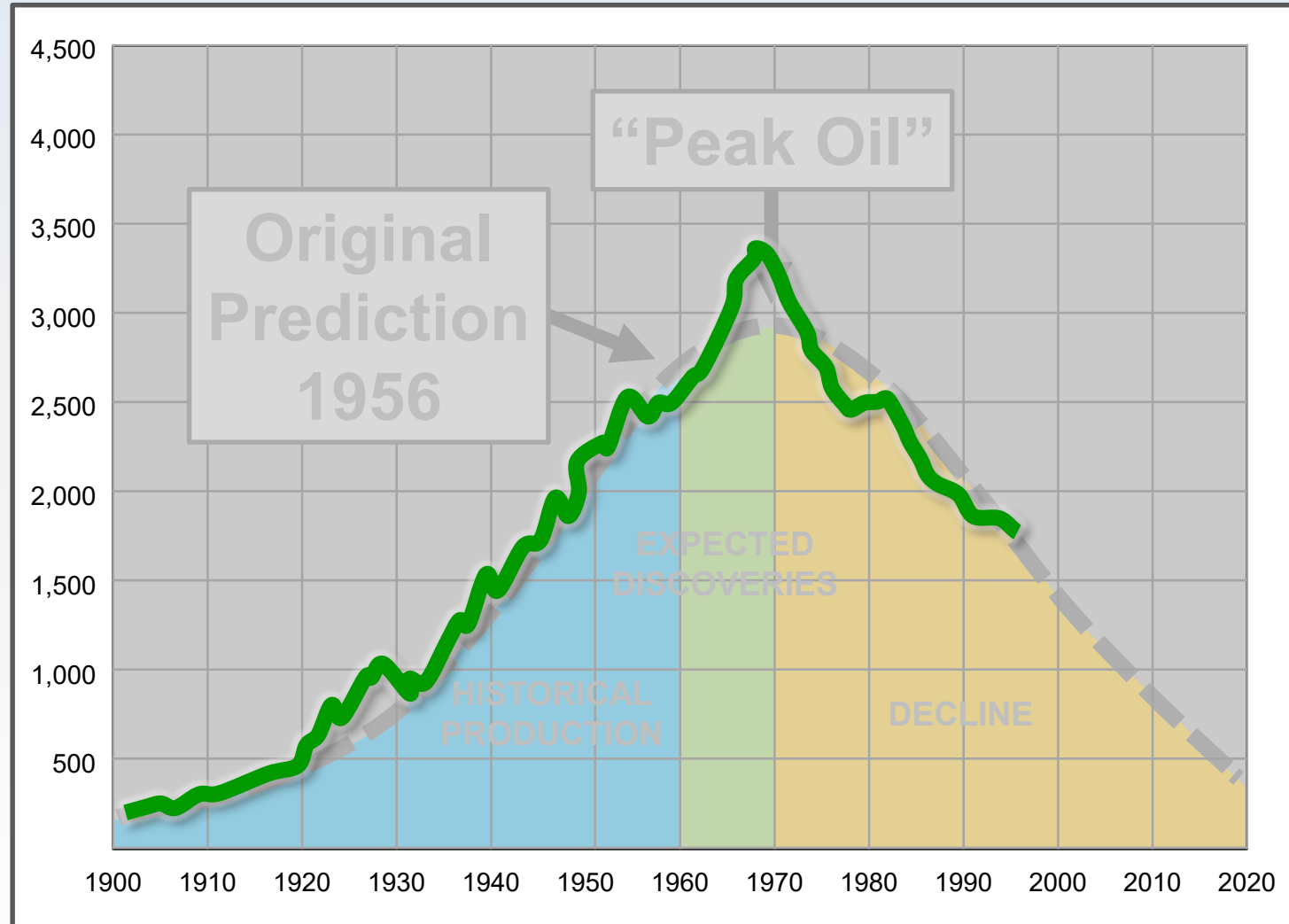
Hubbert's Original Curve



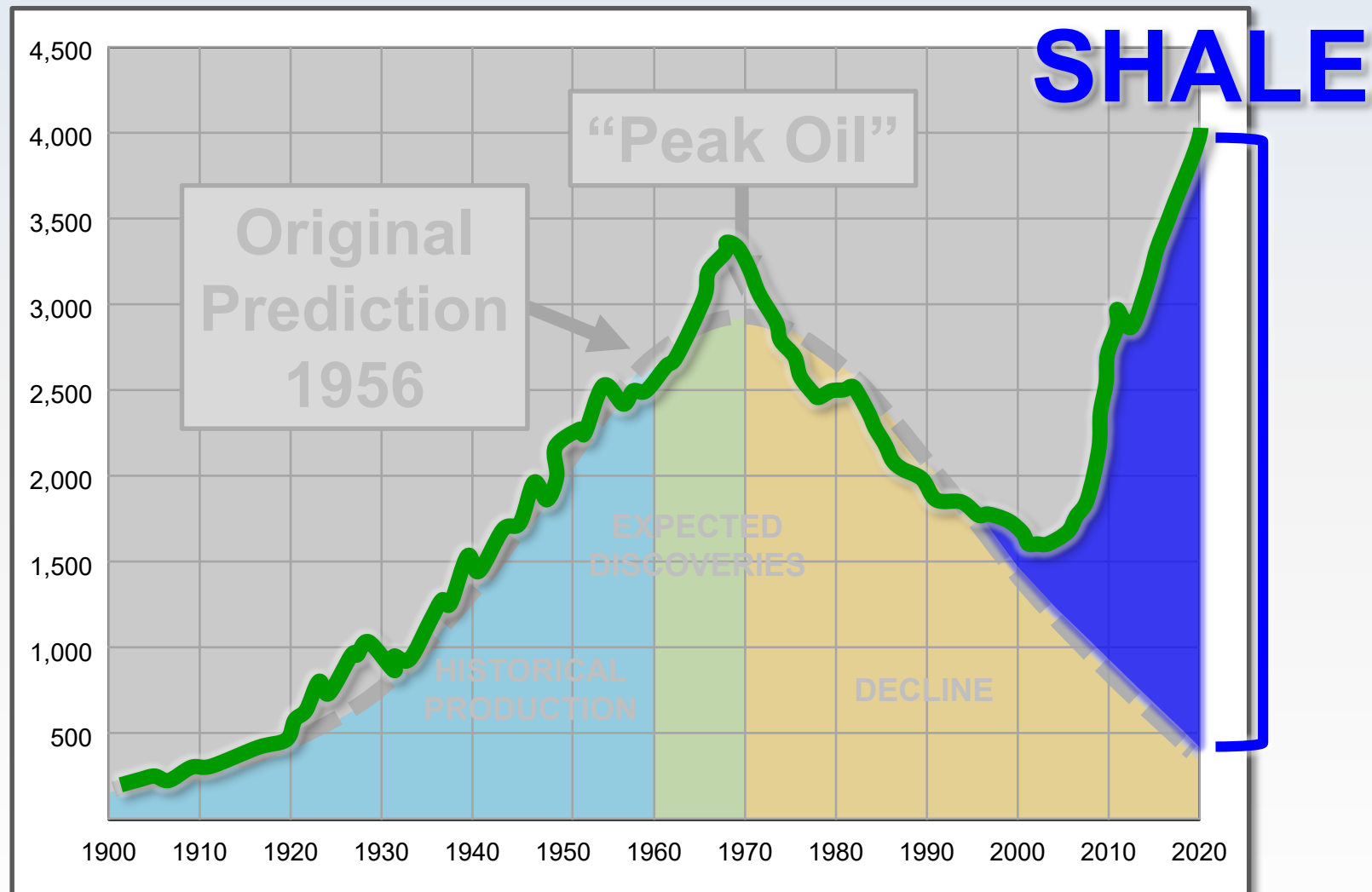
Hubbert's Original Curve



What Really Happened



What Really Happened



Baseball Philosopher



“It’s tough to make predictions – especially about the future.”⁽¹⁾

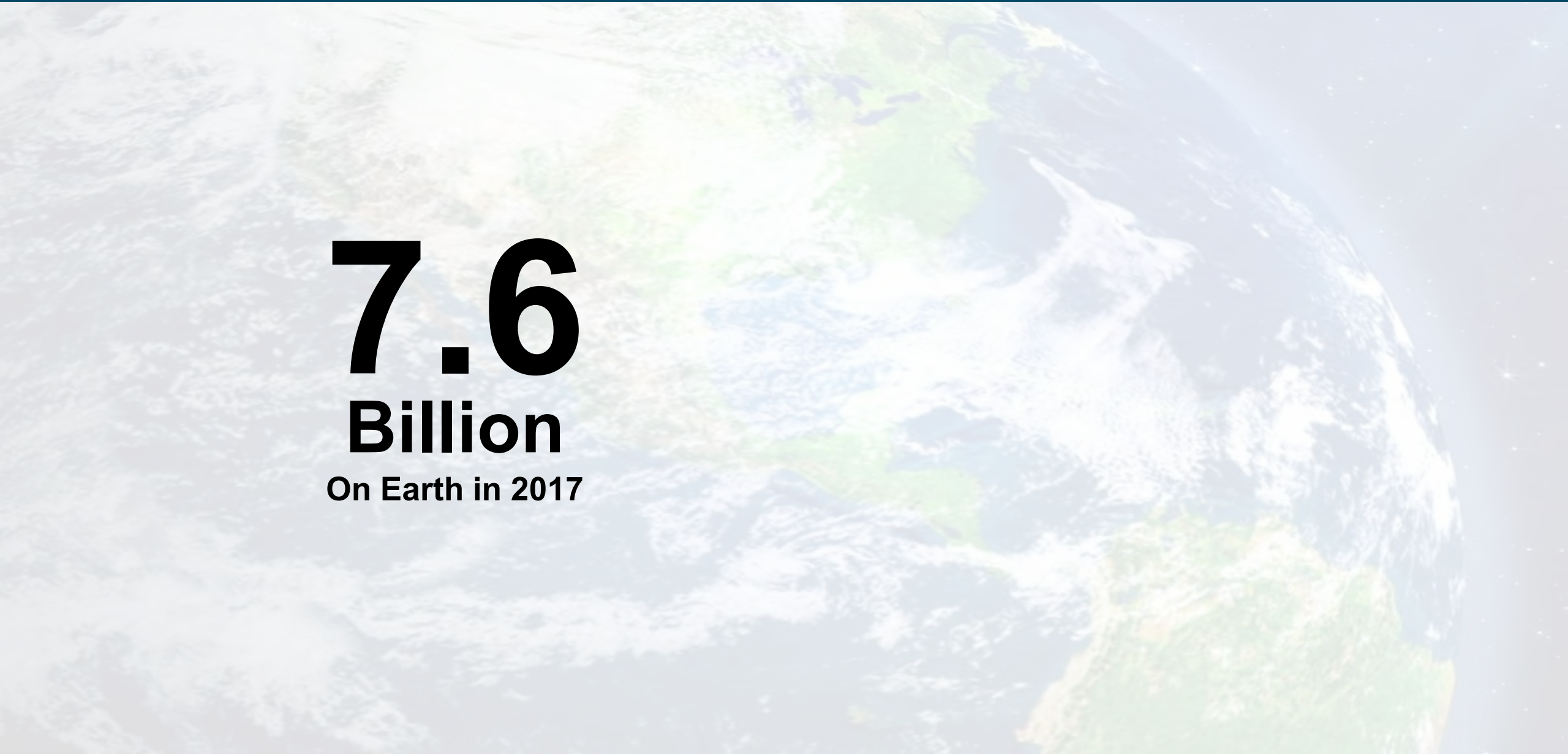
(1) This quote was originally attributed to Karl Kristian Steincke

But Wait

7.6

Billion

On Earth in 2017



But Wait

7.6

Billion

On Earth in 2017



8.6

Billion

By 2030

But Wait

7.6 Billion
On Earth 2019

→

83 Million
Per Year
By 2030

At a global level, we are witnessing the most rapid expansion of the middle class the world has ever seen

At the end of 2016, there were about 3.2 billion people in the global middle class. On average 160 million will join the middle class annually for the next 5 years.



160
Million

Each year for the next 5 years will be added to the global middle class.

At a global level, we are witnessing the most rapid expansion of the middle class the world has ever seen

+1 USA every 2 years

Let's talk about a USA slide for perspective

As of 2016, there were about 3.2 billion people in the global middle class. An average 160 million will join the middle class annually for the next 5 years.

2016

Global
Middle Class

3.2
billion

160
Million

Each year for the next 5 years will be added to the global middle class.

88 percent of the next billion entrants into the middle class will be in Asia

By 2030, Asia could represent 2/3 of the global middle class population.



88 percent of the next billion entrants into
the middle class will be in Asia

Region's Energy Mix:

50% Coal

By 2030, Asia could represent 2/3
of the global middle class population.



380m
in INDIA

550m
in CHINA

210m
in rest of ASIA

130m
in rest of the WORLD

88 percent of the next billion entrants into

the middle class will enter Asia

Region's Energy Mix:

50% Coal

By 2030, Asia could represent 2/3
of the global middle class population.

Lower Middle Class



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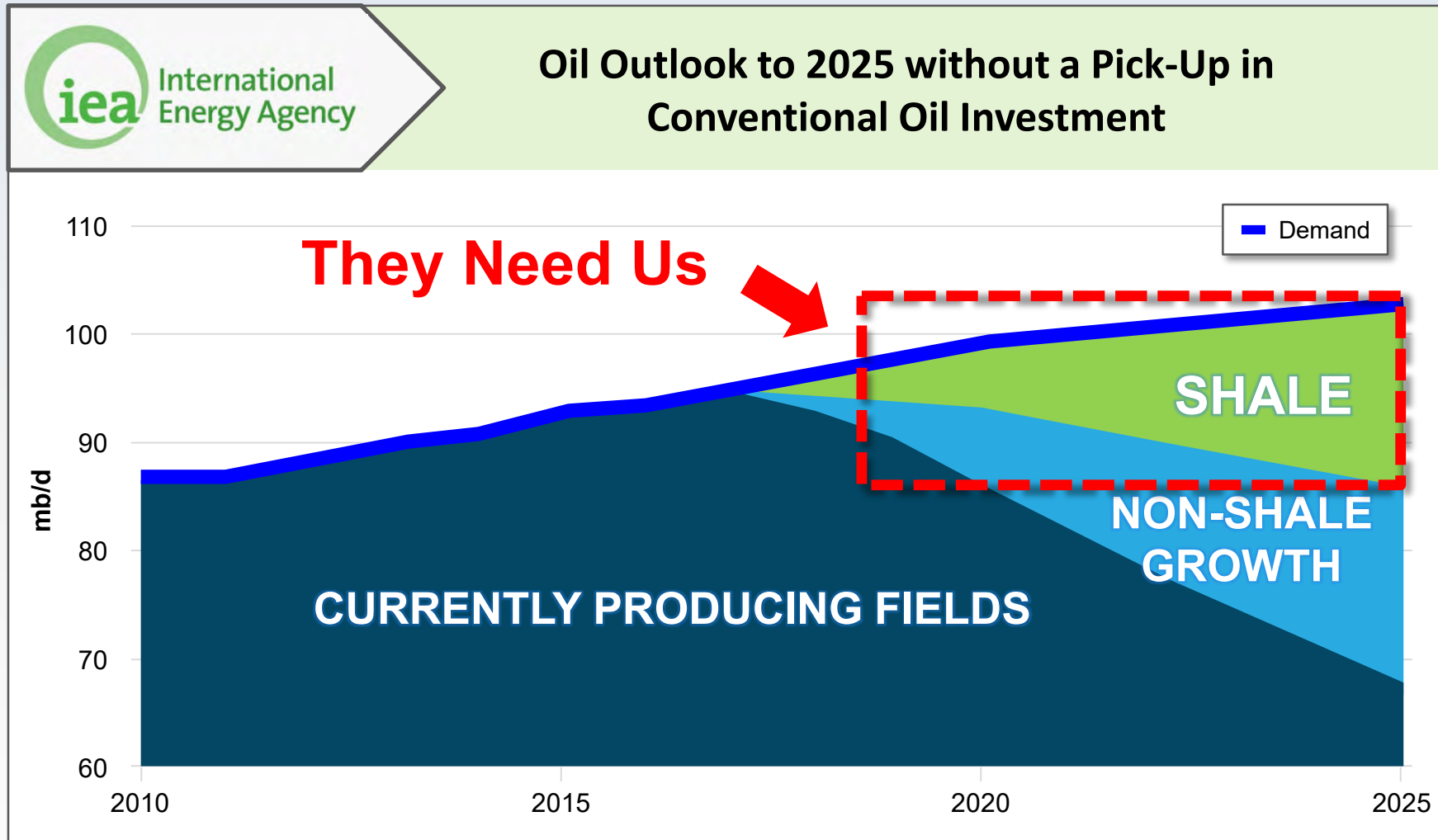
550m
in CHINA

Lower Middle Class

220m
in rest of ASIA

**They need energy any way they
can get it – cheaply and easily**

Only One Place to Get It



We Are Not Going Out of Business.

Why Does Wall Street Hate Energy?



Not Care About
Why Does Wall Street ~~Hate~~ Energy?



S&P 500 Energy

5.3% Of S&P
500 Index

APACHE	TECHNIPFMC	ONEOK
ANADARKO	HALLIBURTON	OCCIDENTAL
BAKER HUGHES	HESS	PHILLIPS 66
CABOT	HOLLYFRONTIER	PIONEER
CONOCOPHILLIPS	HELMERICH & PAYNE	SCHLUMBERGER
CHEVRON	KINDER MORGAN	VALERO
CONCHO	MARATHON PETROLEUM	THE WILLIAMS COMPANIES
DEVON	MARATHON OIL	CIMAREX
EOG	NOBLE	EXXON MOBIL
EQT	NEWFIELD	
	NATIONAL OILWELL VARCO	

S&P 500 Energy

5.3% Of S&P
500 Index

1.7% Upstream
Growth

APACHE	TECHNIPFMC	ONEOK
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S&P 500 Energy

5.3% Of S&P
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Growth

We Are Immaterial.

APACHE

TECHNIPFMC

ONEOK

ANADARKO

HALLIBURTON

OCCIDENTAL

HESS

HOLYROCK

PIONEER

CABOT

HELMERICH & PAYNE

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EXXON MOBIL

EQT

NATIONAL OILWELL VARCO

We Have Lost Money

	S&P	Energy	Outcome
2012	16.0%	4.6%	Worse
2013	32.4%	25.1%	Worse
2014	13.7%	<7.8%>	Worse
2015	1.4%	<21.1%>	Worse
2016	12.0%	27.4%	Better
2017	21.8%	<1.0%>	Worse
2018	<4.4%>	<18.1%>	Worse

6 Out of 7 Years

If You Are Wall Street

TECHNOLOGY



- BIG
20% of S&P 500
- STRONG
Beat Energy by **10x**
for the Past 7 Years
- SEXY

If You Are Wall Street



- **Small**
- **Weak**
- **Boring**

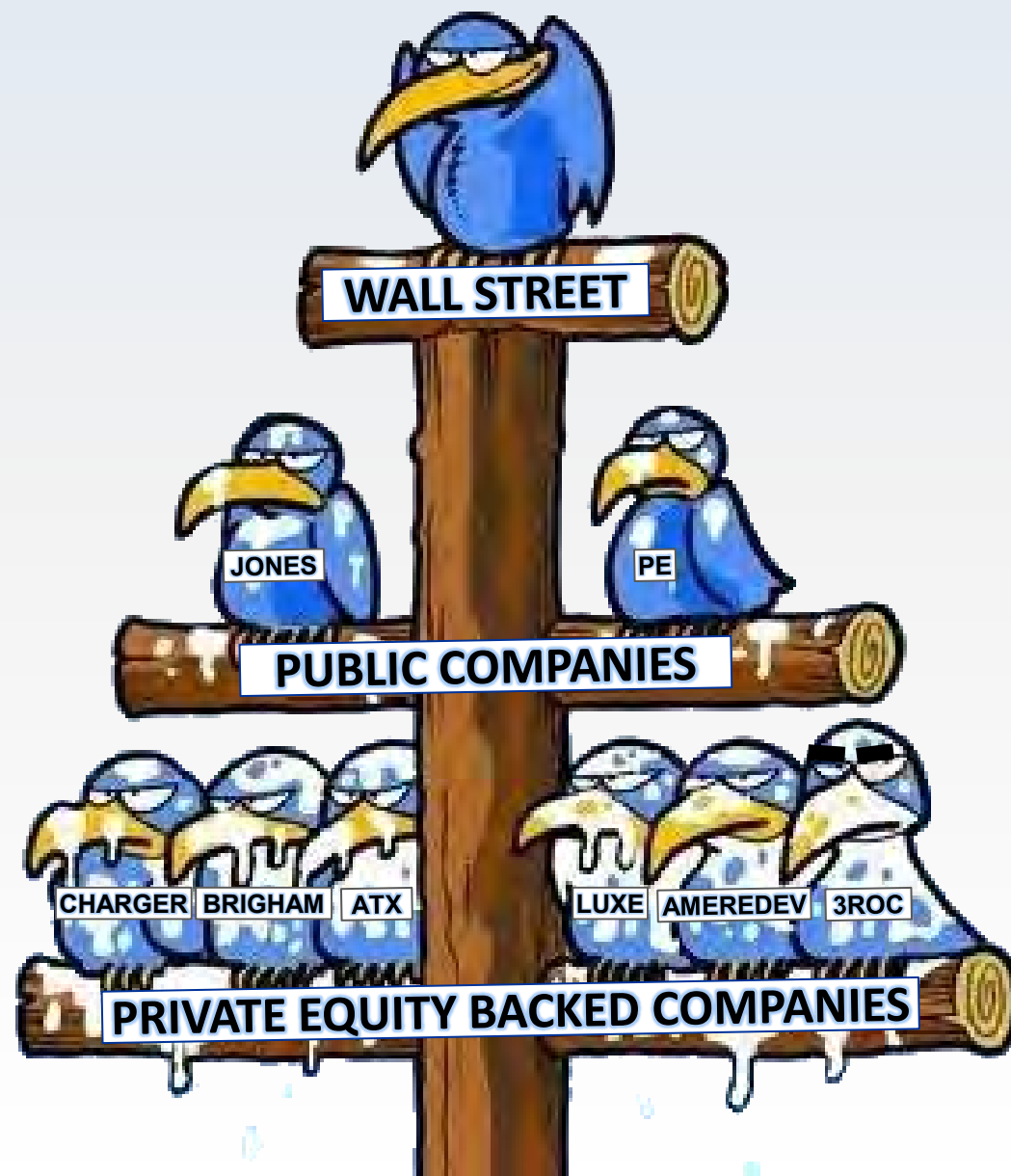
Energy Investors Want

- **Growth Within Cash Flows**
- **Return of Capital – Dividends or Share Buybacks**
- **Consolidation to Achieve Economies of Scale**

What Does This Mean To
YOU ?



It Depends Who You Are



Public Companies



Public Companies



HAVES – You're fine!

- Drill Tier 1 Acreage
- Rationalize Tier 2 Acreage
- Selective Consolidation

Public Companies



BUBBLES – Must Get Bigger

- Drill Tier 1 Acreage
- Bolt On Additional Tier 1 Acreage
- Consolidation

Public Companies



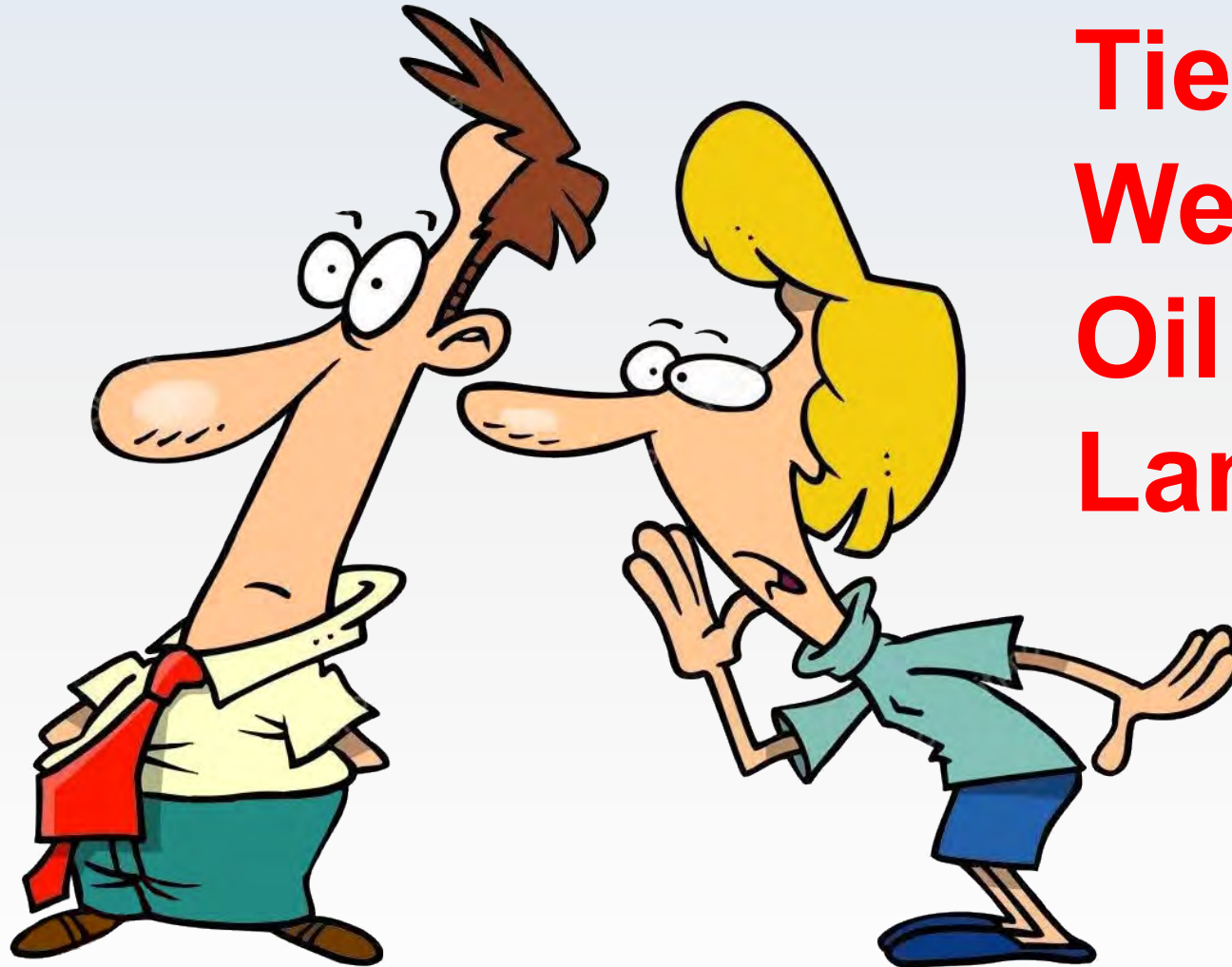
**HAVE-NOTS –
Survive!**

- No Premium Mergers

Public Companies



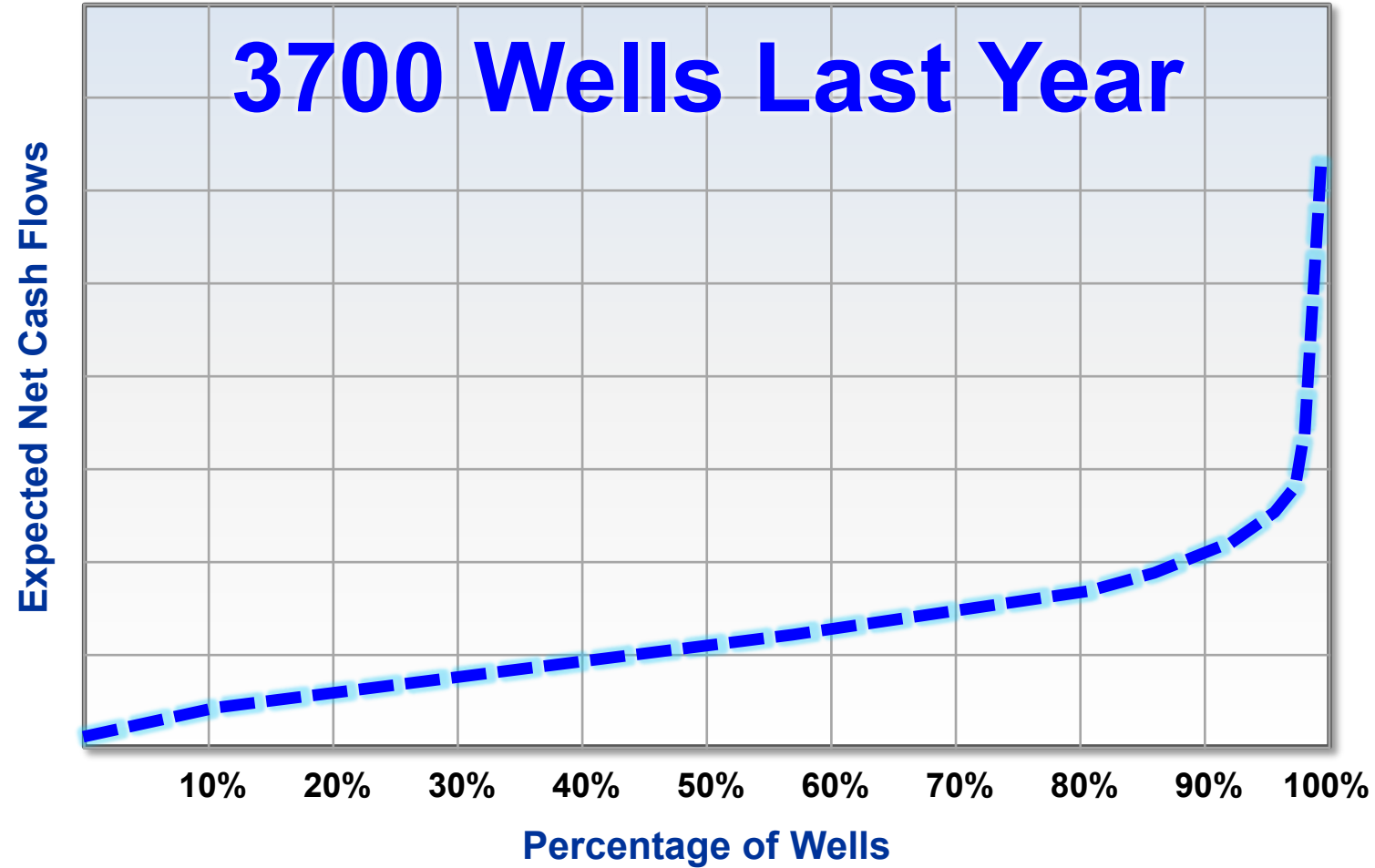
What is Tier 1 Acreage?



Tier 1 = 50%
Well IRRs at \$60
Oil Excluding
Land Cost

Tier 1 Acreage

Last 12 Months of Permian Wells
(Approximately 3700 Wells)



Tier 1 Acreage

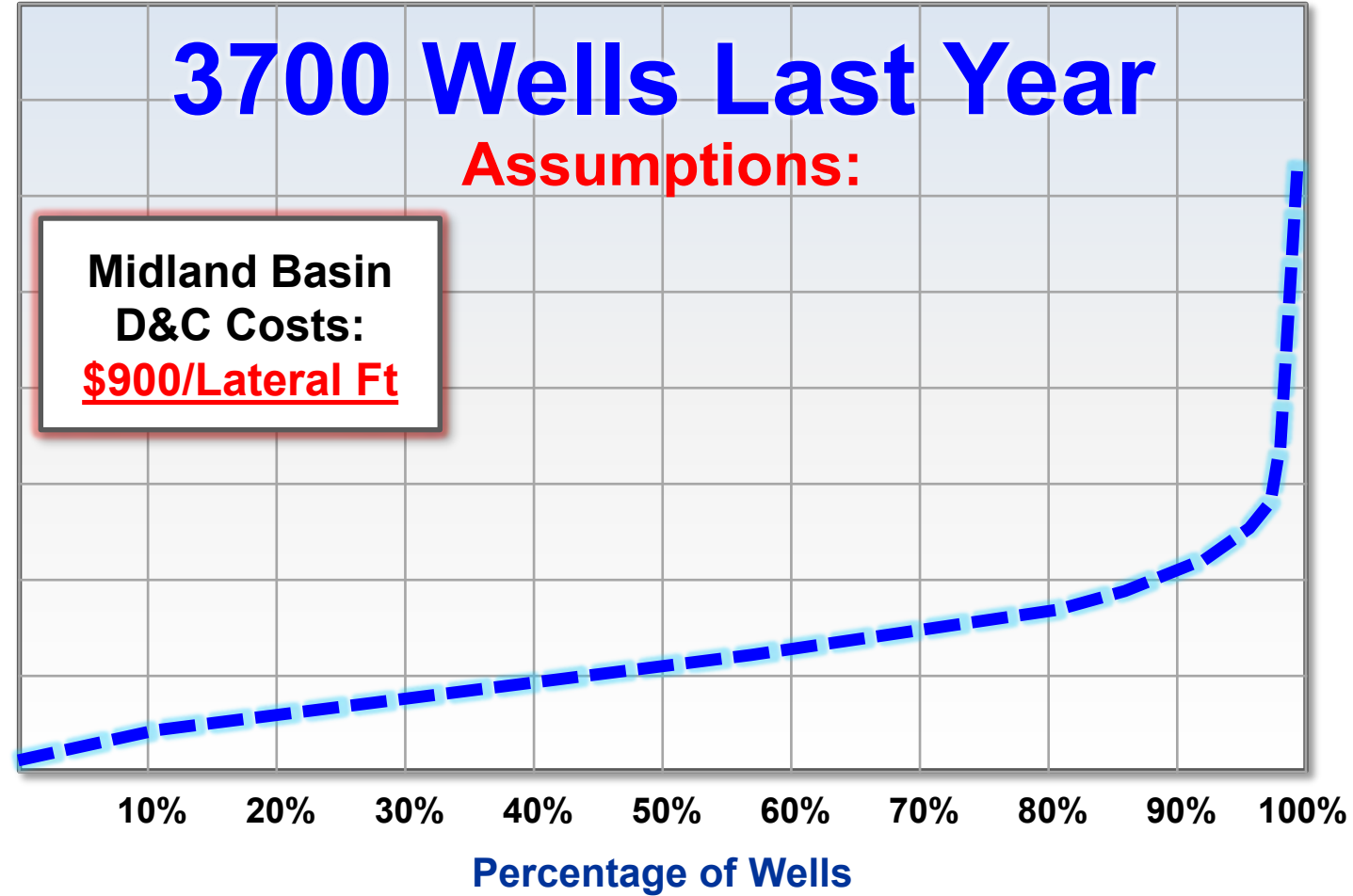
Last 12 Months of Permian Wells
(Approximately 3700 Wells)

3700 Wells Last Year

Assumptions:

Midland Basin
D&C Costs:
\$900/Lateral Ft

Expected Net Cash Flows



Tier 1 Acreage

Last 12 Months of Permian Wells
(Approximately 3700 Wells)

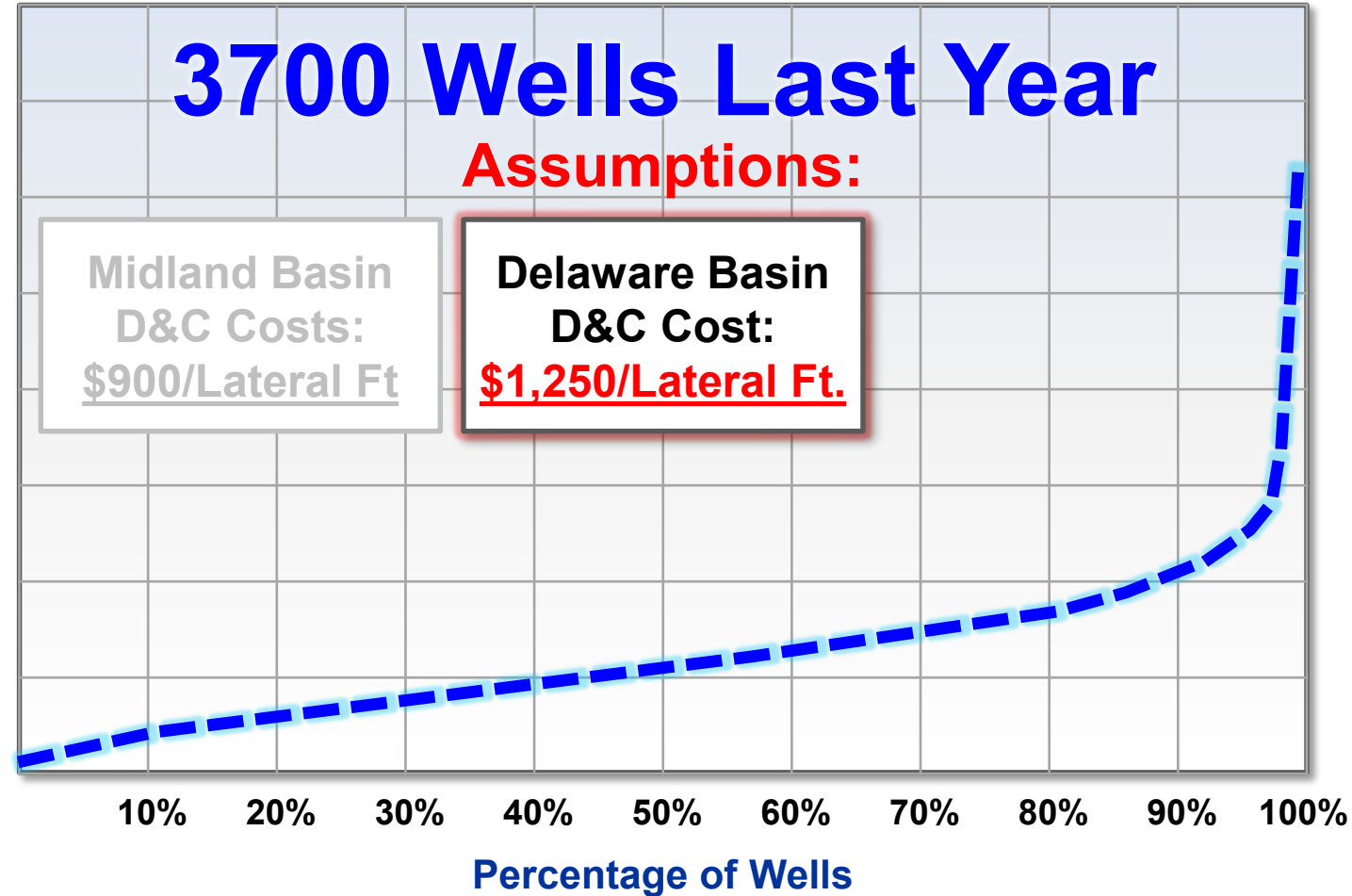
3700 Wells Last Year

Assumptions:

Midland Basin
D&C Costs:
\$900/Lateral Ft

Delaware Basin
D&C Cost:
\$1,250/Lateral Ft.

Expected Net Cash Flows



Tier 1 Acreage

Last 12 Months of Permian Wells
(Approximately 3700 Wells)

3700 Wells Last Year

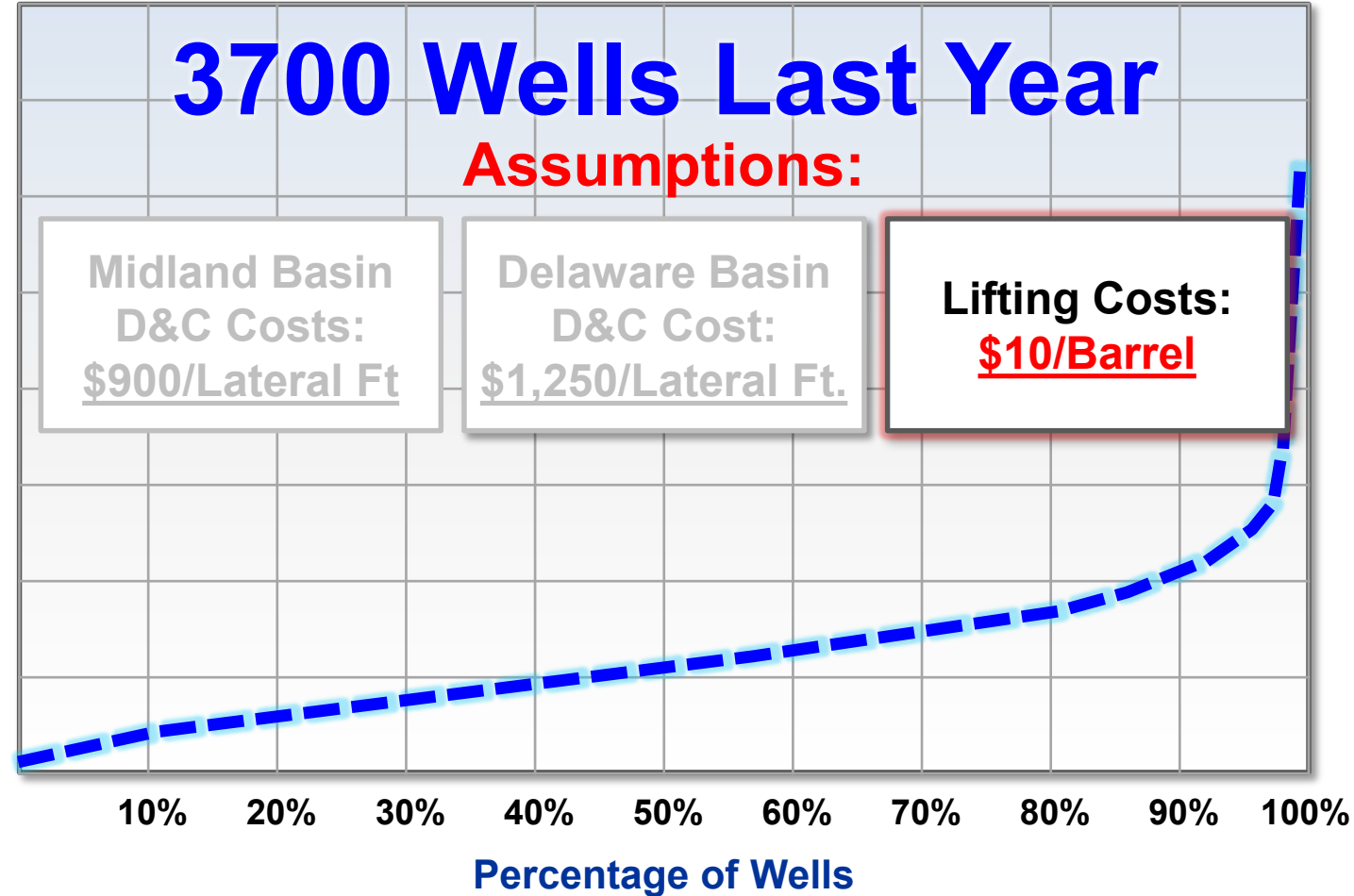
Assumptions:

Midland Basin
D&C Costs:
\$900/Lateral Ft

Delaware Basin
D&C Cost:
\$1,250/Lateral Ft.

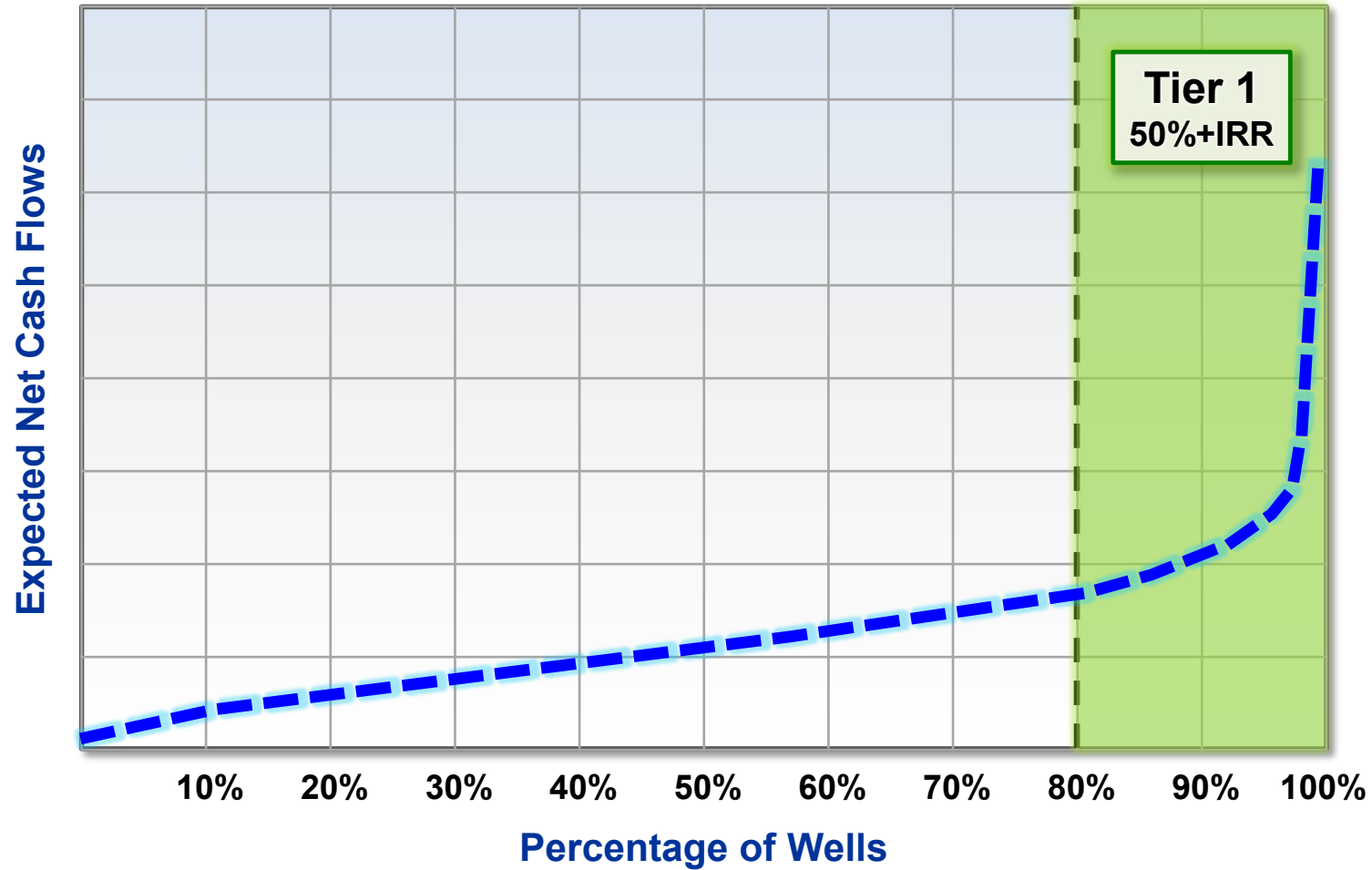
Lifting Costs:
\$10/Barrel

Expected Net Cash Flows



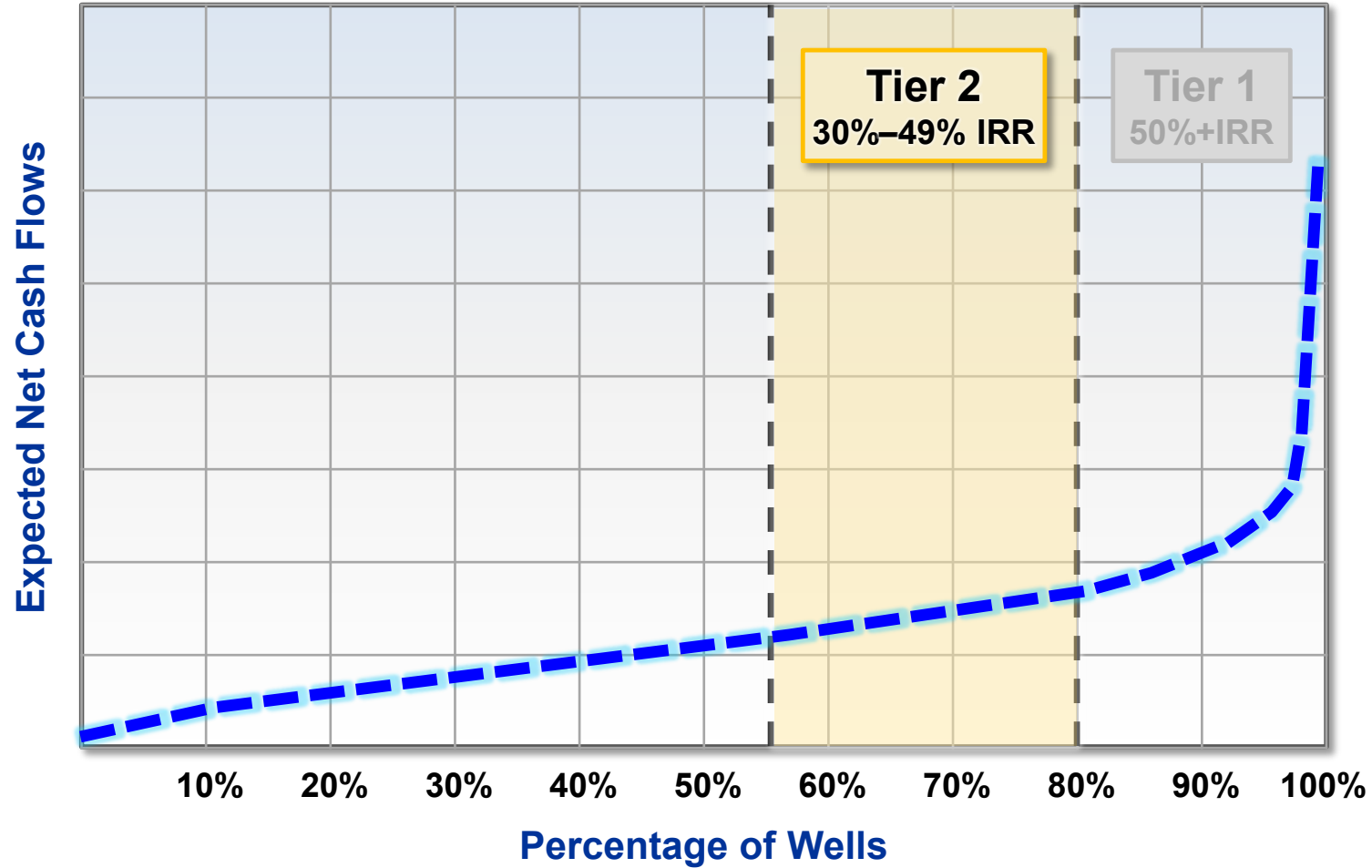
Tier 1 Acreage

Last 12 Months of Permian Wells
(Approximately 3700 Wells)



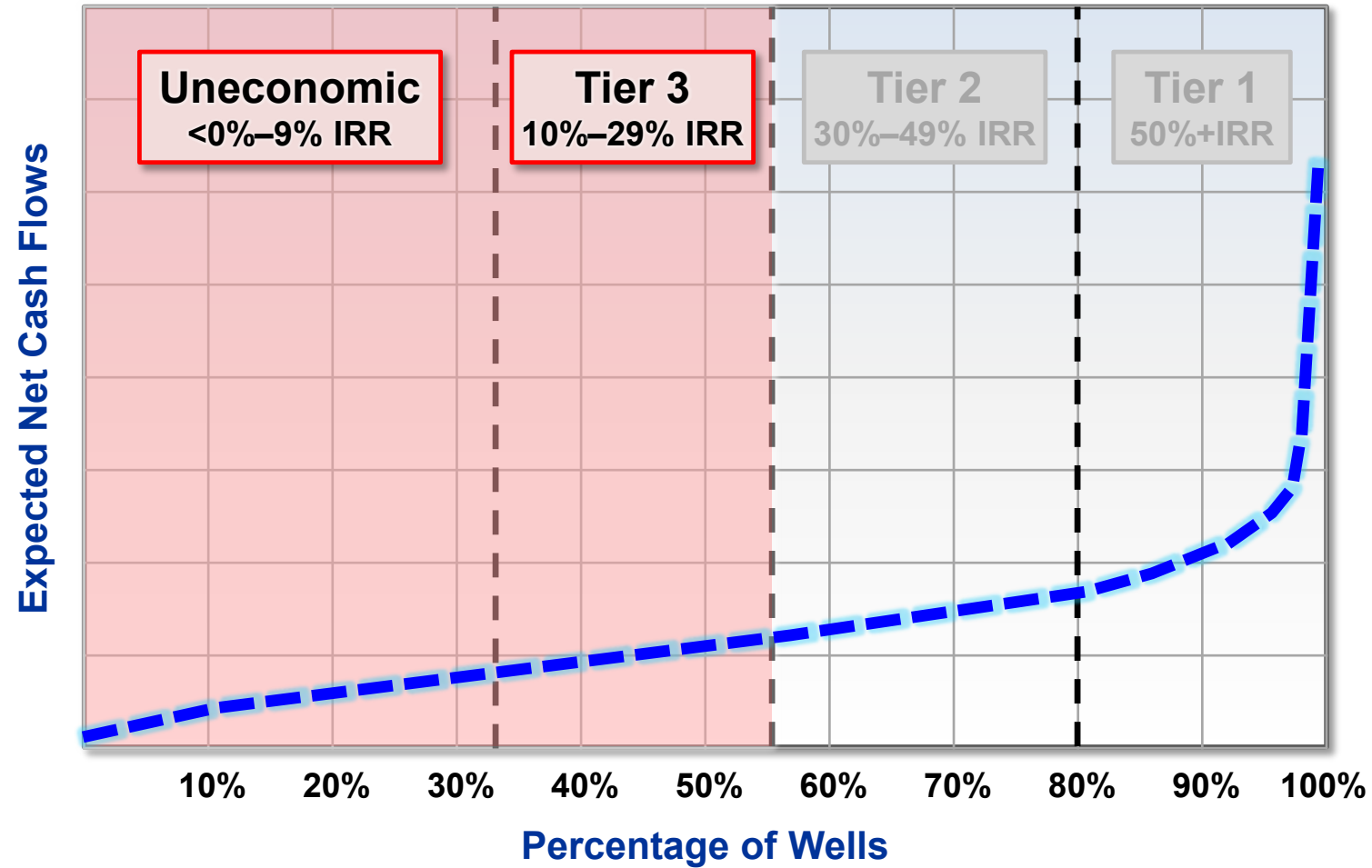
Tier 1 Acreage

Last 12 Months of Permian Wells
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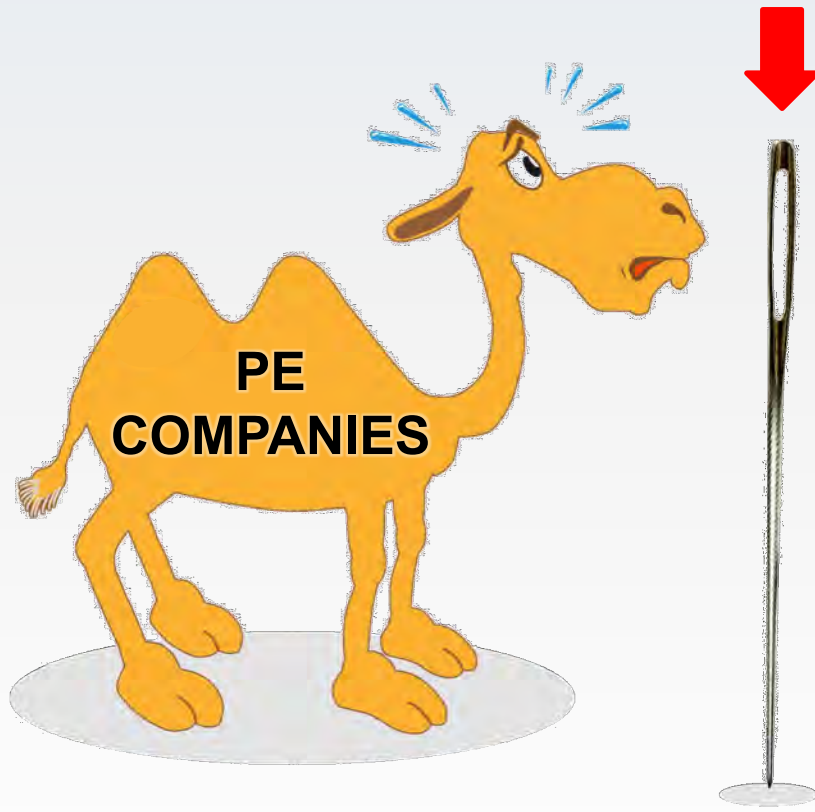
Tier 1 Acreage

Last 12 Months of Permian Wells
(Approximately 3700 Wells)



If You Are Private Equity Backed

**PE Assets That Can Be
Sold As Tier 1 Assets**

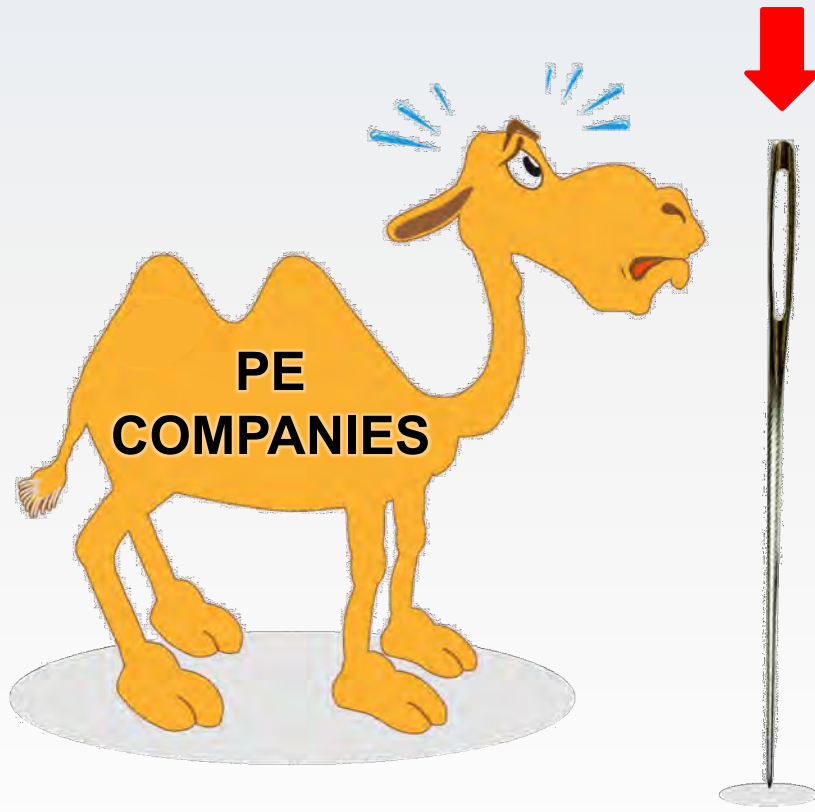


TIER 1

You're going to be fine – keep
up the good work.

If You Are Private Equity Backed

**PE Assets That Can Be
Sold As Tier 1 Assets**



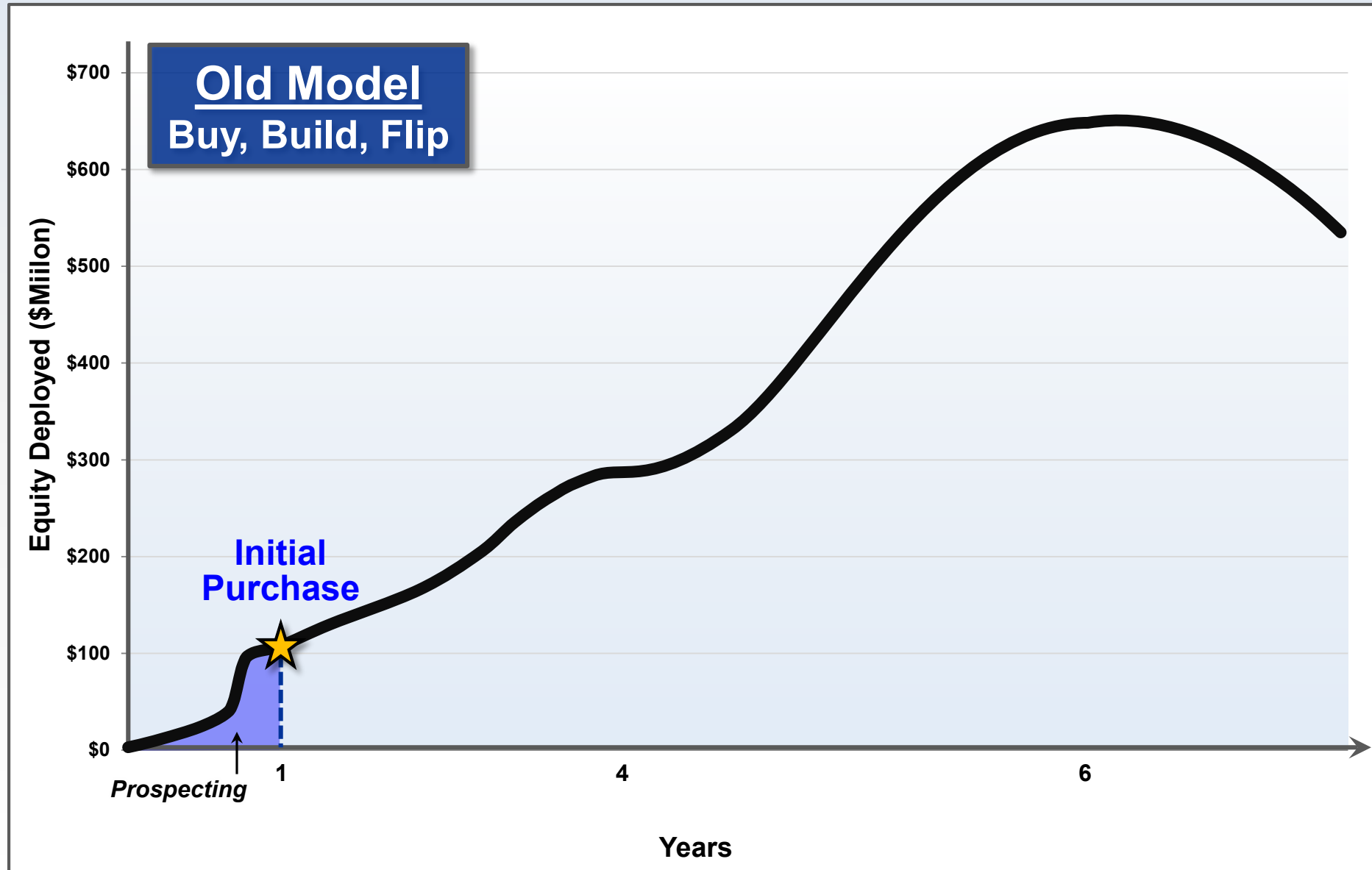
TIER 1

You're going to be fine – keep
up the good work.

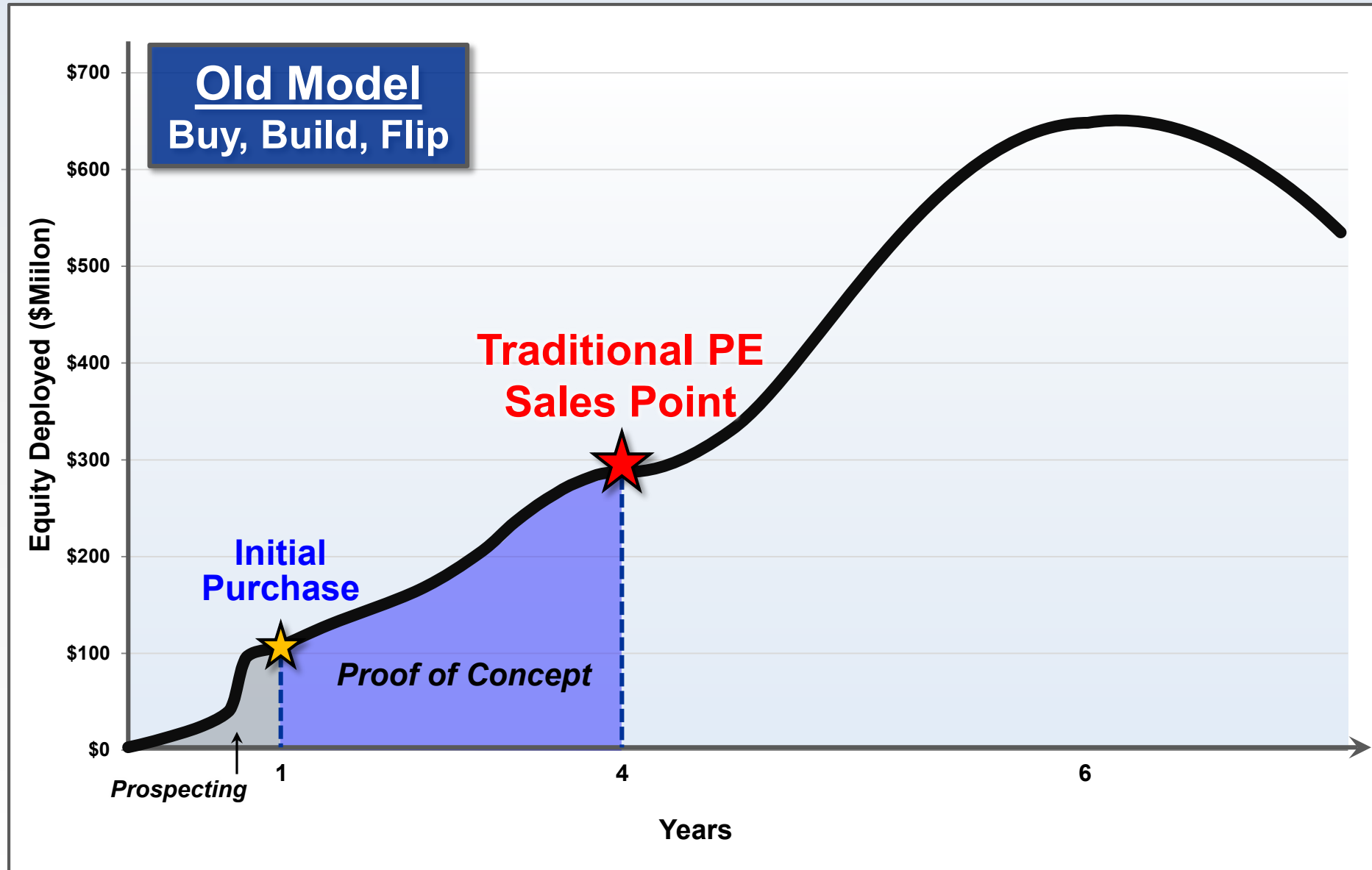
TIER 2

Implement a new
business model

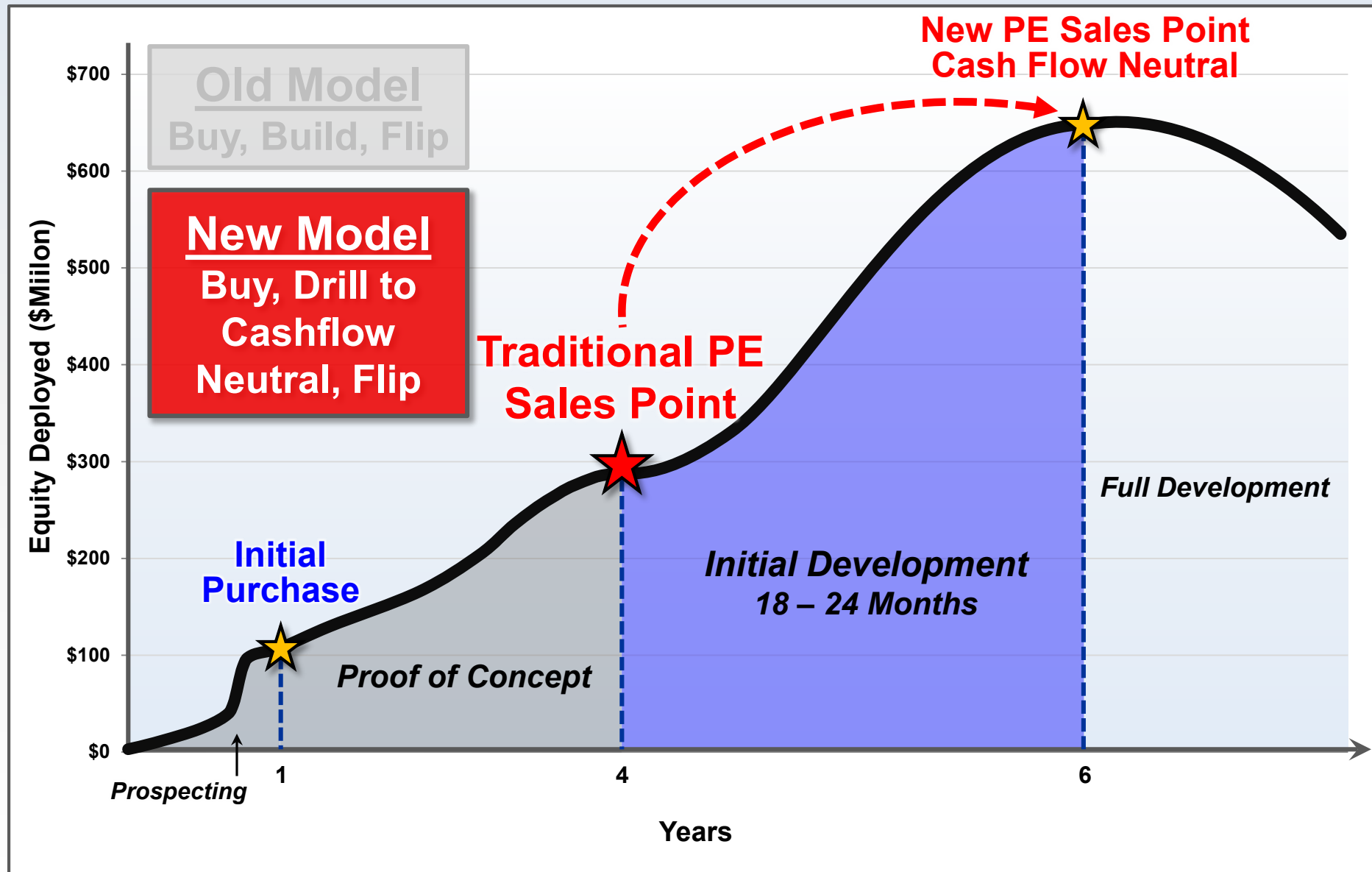
Tier 2 Assets – New Model



Tier 2 Assets – New Model



Tier 2 Assets – New Model



Tier 2 Conclusion

➤ **Expect Longer Hold Periods**

➤ **To Drill Wells Efficiently**

➤ **Use of New Technology**

➤ **More Common**

Newco

Tier 2 Conclusion

➤ Expect Longer Hold Periods

➤ **Expect Lower ROIs**

➤ To Drill Wells Efficiently

➤ Expect Lower ROIs

➤ More Common

Newco

Tier 2 Conclusion

- Expect Longer Hold Periods
- Expect Lower ROIs
- **Bigger Teams – Must Be Able to Drill Wells Efficiently**

Expect Lower ROIs

More Common

Newco

Tier 2 Conclusion

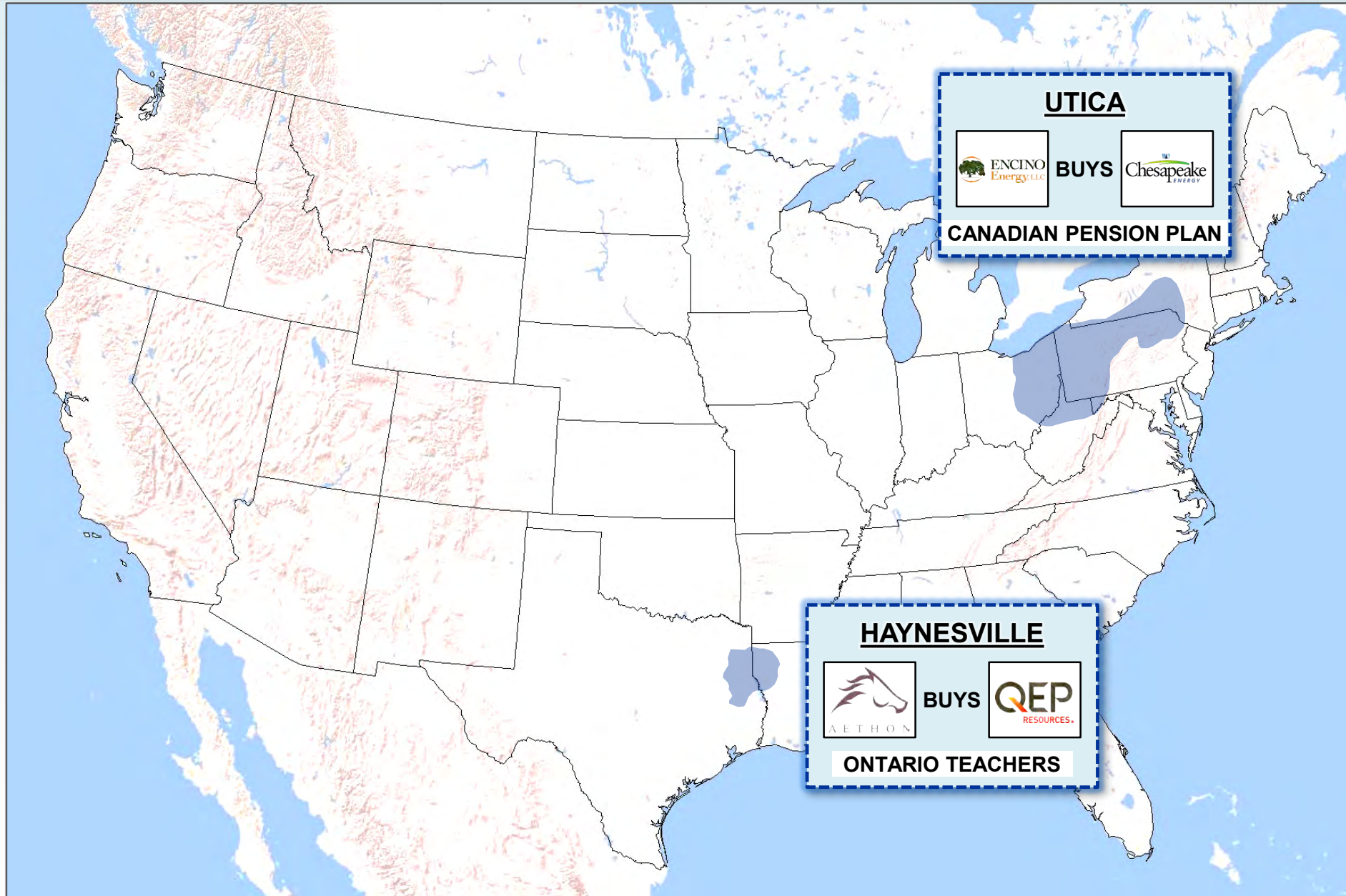
- Expect Longer Hold Periods
- Expect Lower ROIs
- Bigger Teams – Must Be Able to Drill Wells Efficiently
- **Smash Co. May Become More Common**



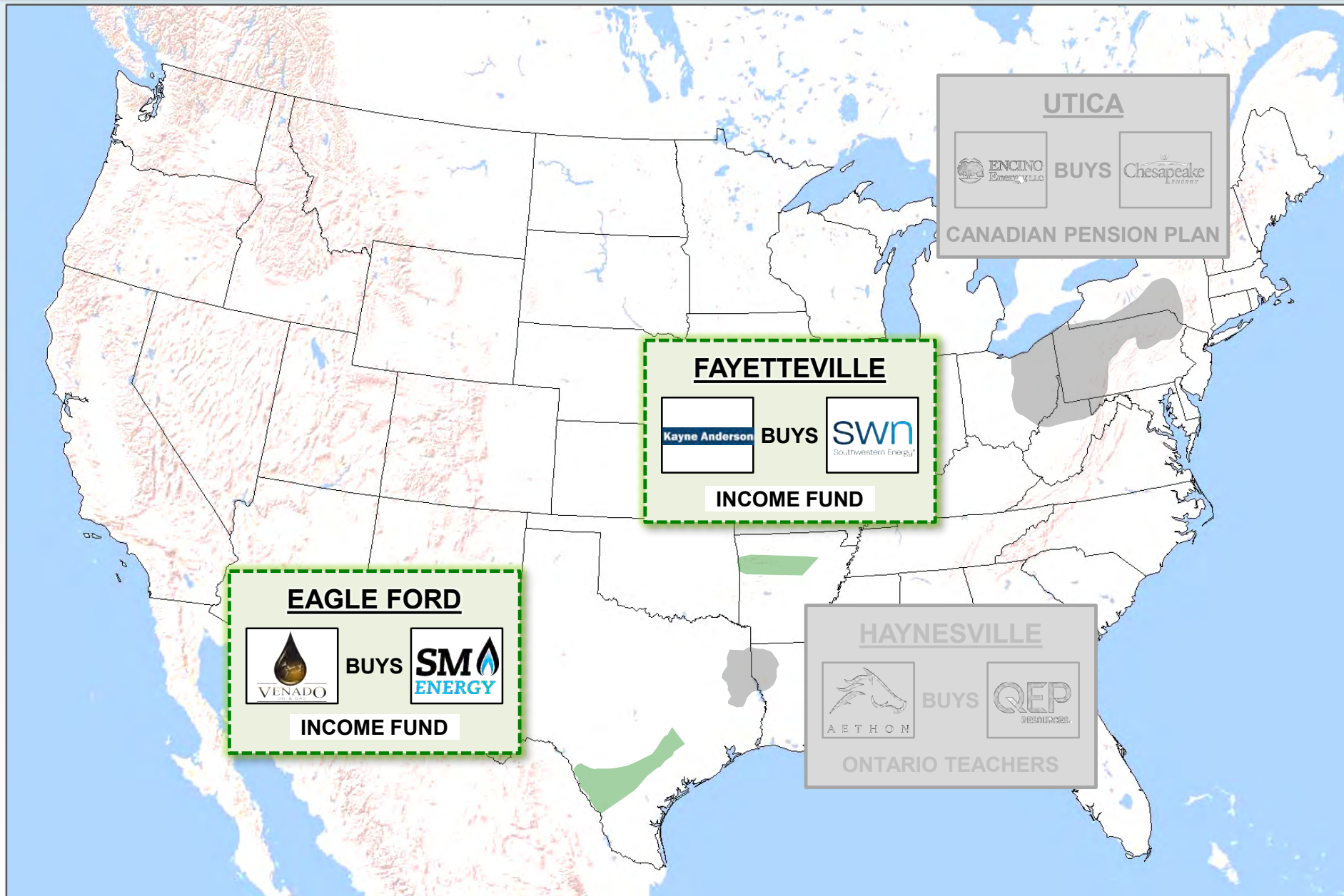
Newco



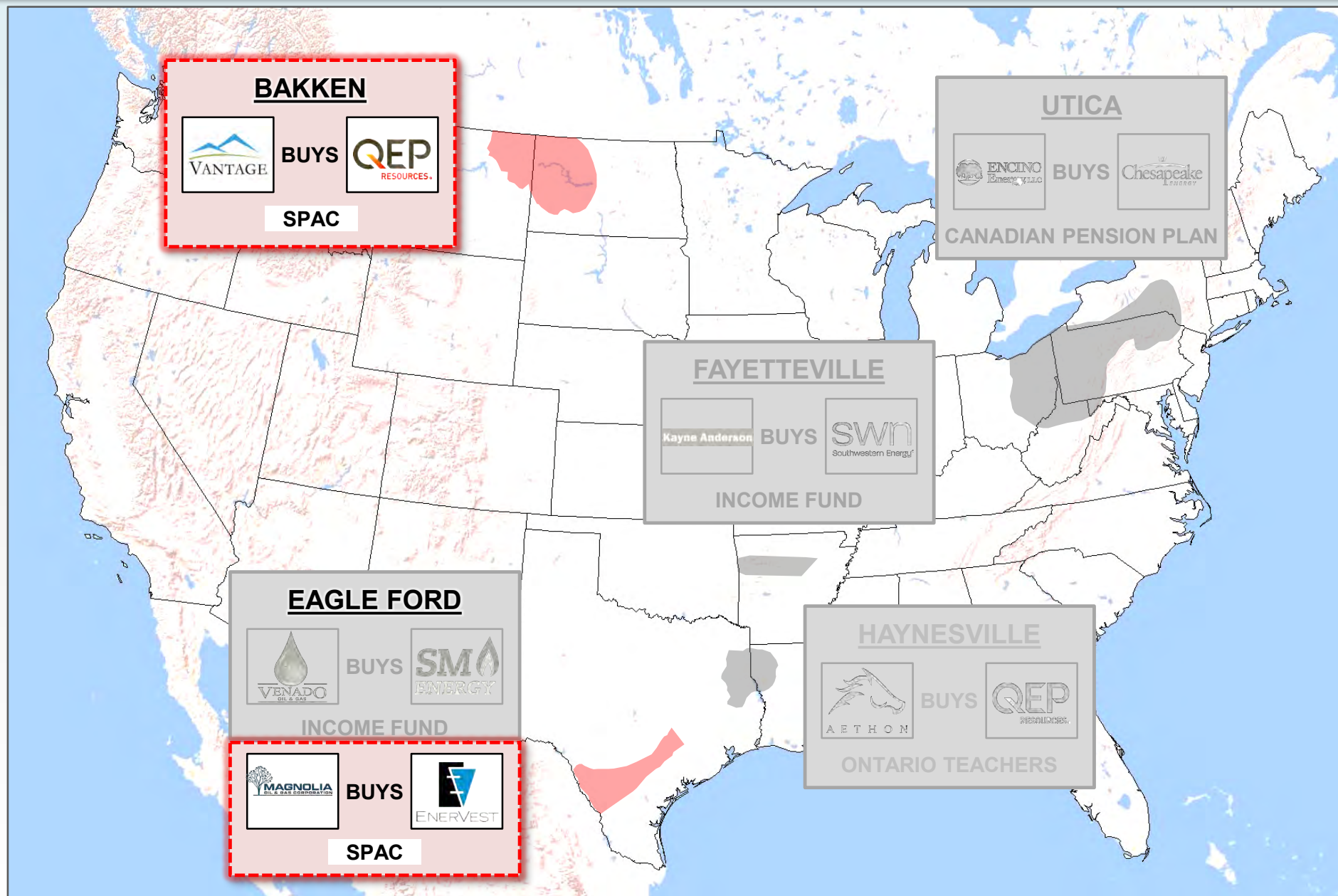
PDP / YIELD INVESTORS



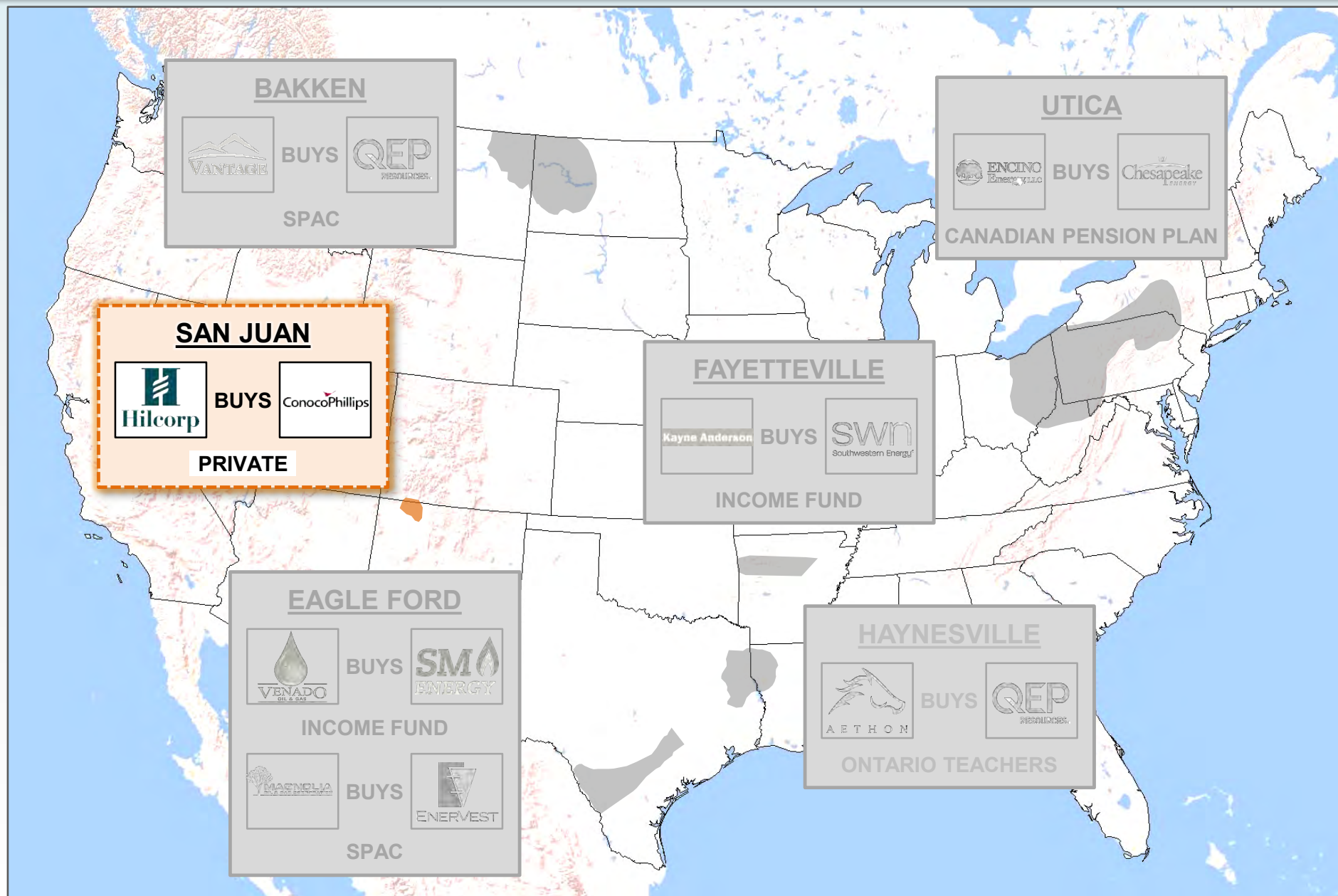
PDP / YIELD INVESTORS



PDP / YIELD INVESTORS



PDP / YIELD INVESTORS



Conclusion

Conclusion

- **Best Deals Come Out of the Fog**

Conclusion

- **Best Deals Come Out of the Fog**
- **Change is Inevitable**

Conclusion

- **Best Deals Come Out of the Fog**
- **Change is Inevitable**
- **Is the Party Over?**

Conclusion

- **Best Deals Come Out of the Fog**
- **Change is Inevitable**
- **Is the Party Over?**

ABSOLUTELY NOT

One More Thing

A dramatic, dark night sky filled with heavy, dark clouds. A bright, jagged lightning bolt strikes down from the upper left, illuminating the scene. The text "TROUBLE BREWING" is centered in a bold, red, serif font with a black outline and a slight shadow effect.

**TROUBLE
BREWING**

Private Equity



ENDOWMENT

Private Equity Investor



HEDGE FUND

Wall Street Investor

Private Equity



ENDOWMENT

Private Equity Investor

- Must beat the S&P 500



HEDGE FUND

Wall Street Investor

- Must Beat the S&P 500

Private Equity



ENDOWMENT

Private Equity Investor

- Must beat the S&P 500
- Wants to be a **Social Investor** – Hydrocarbons are out of Favor



HEDGE FUND

Wall Street Investor

- Must Beat the S&P 500
- Only Cares about Making Money

Private Equity



ENDOWMENT

Private Equity Investor

- Must beat the S&P 500
- Wants to be a Social Investor – Hydrocarbons are out of Favor
- Has Longer Hold Periods



HEDGE FUND

Wall Street Investor

- Must Beat the S&P 500
- Only Cares about Making Money
- Can Have Short-Term Thesis