

# Challenges for Illinois Basin Coal

## The Coal Institute 2016 Spring Meeting

April 13-14, 2016  
Ballantyne Resort  
10000 Ballantyne Commons Parkway  
Charlotte, NC 28277

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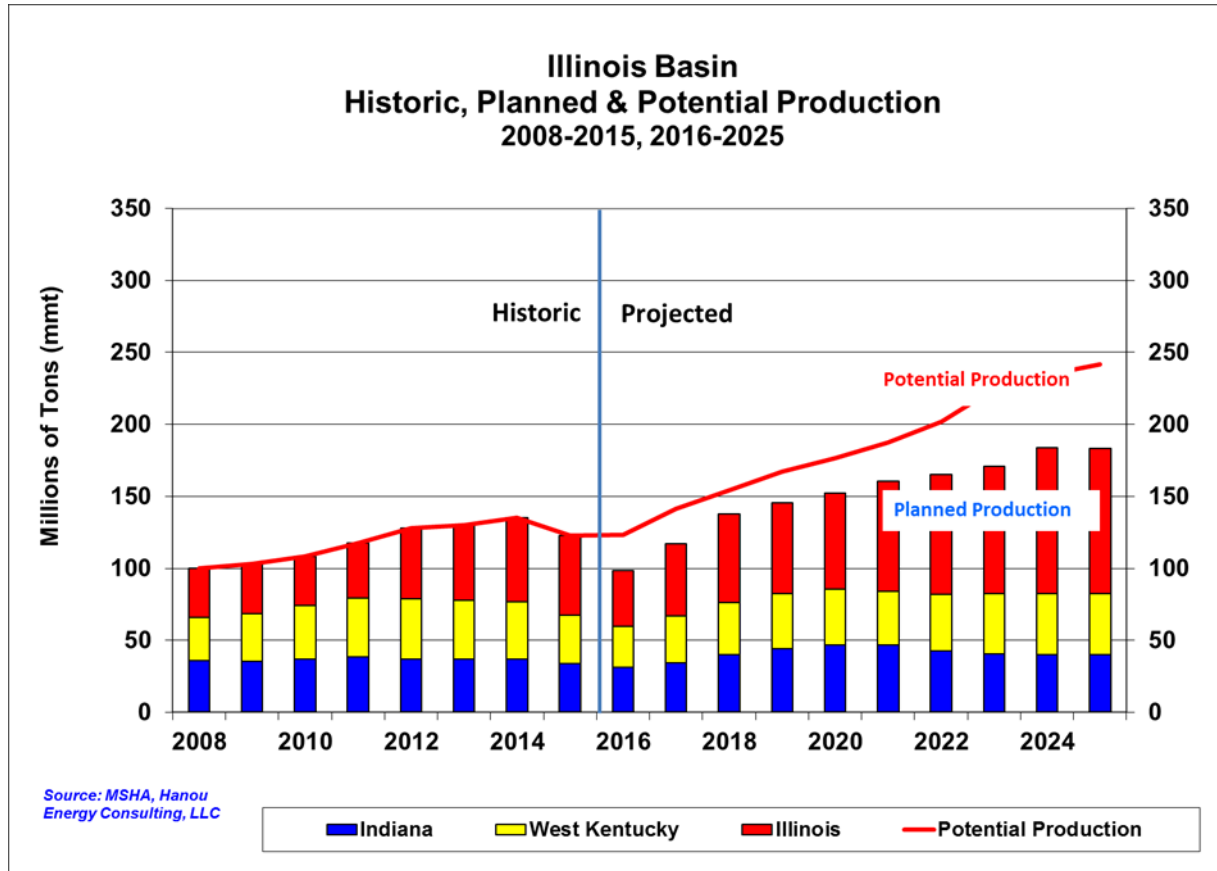


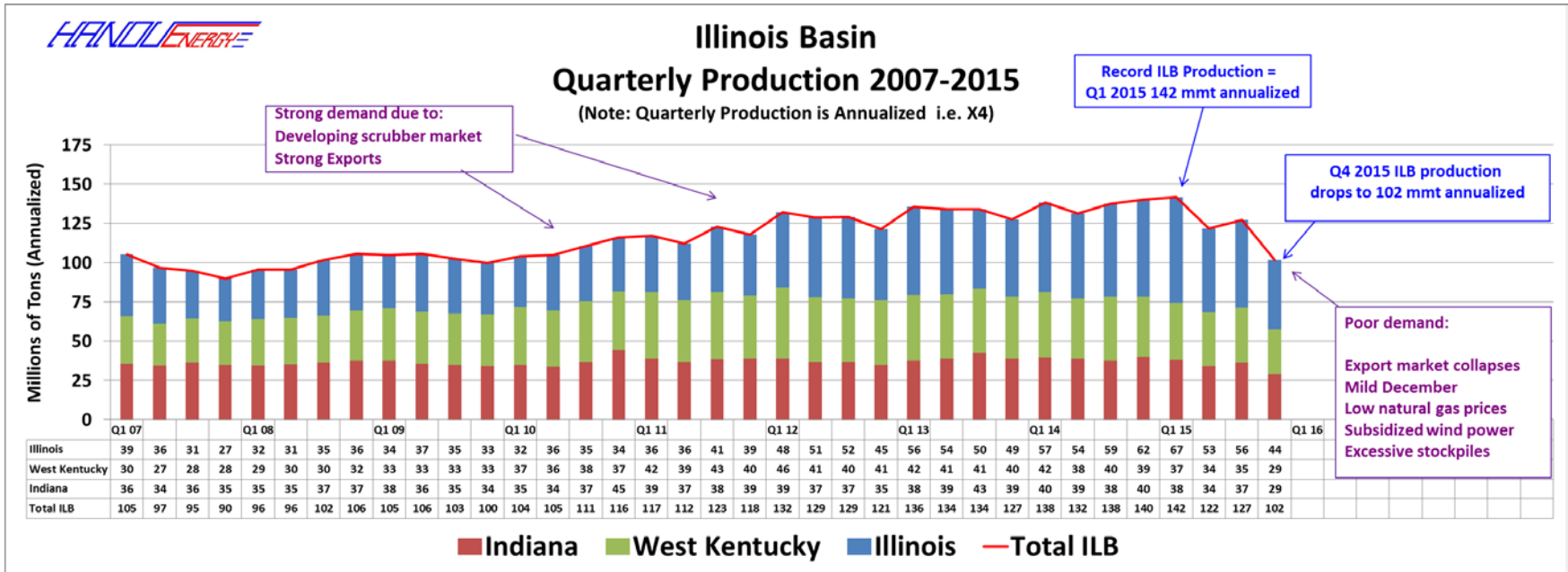
The following presentation has been derived from Hanou Energy's:

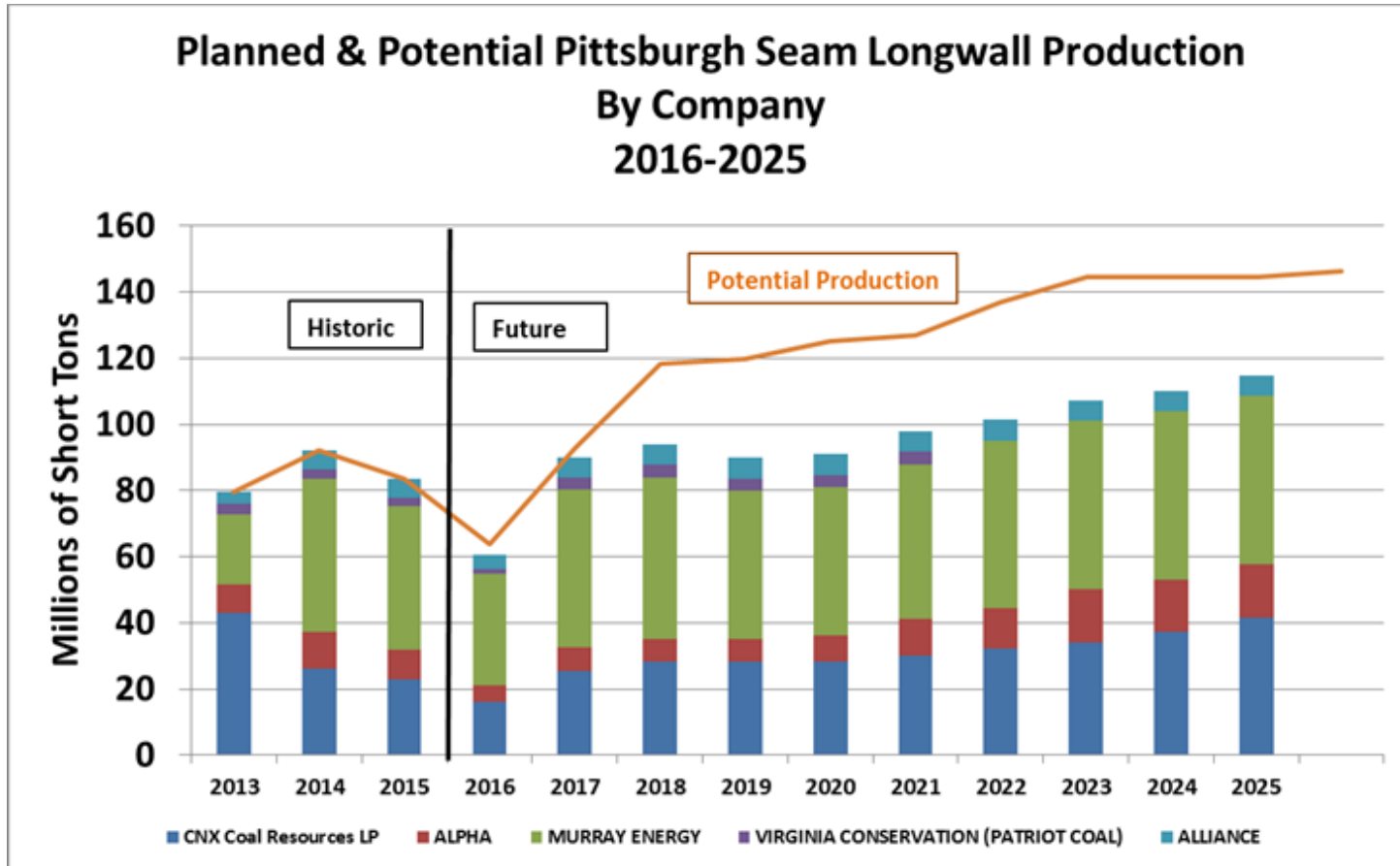
- **Illinois Basin Coal Supply, Demand & Price Trends 2016-2035**
- **Powder River Basin Coal Supply, Demand & Price Trends 2016-2035**
- **Original research**

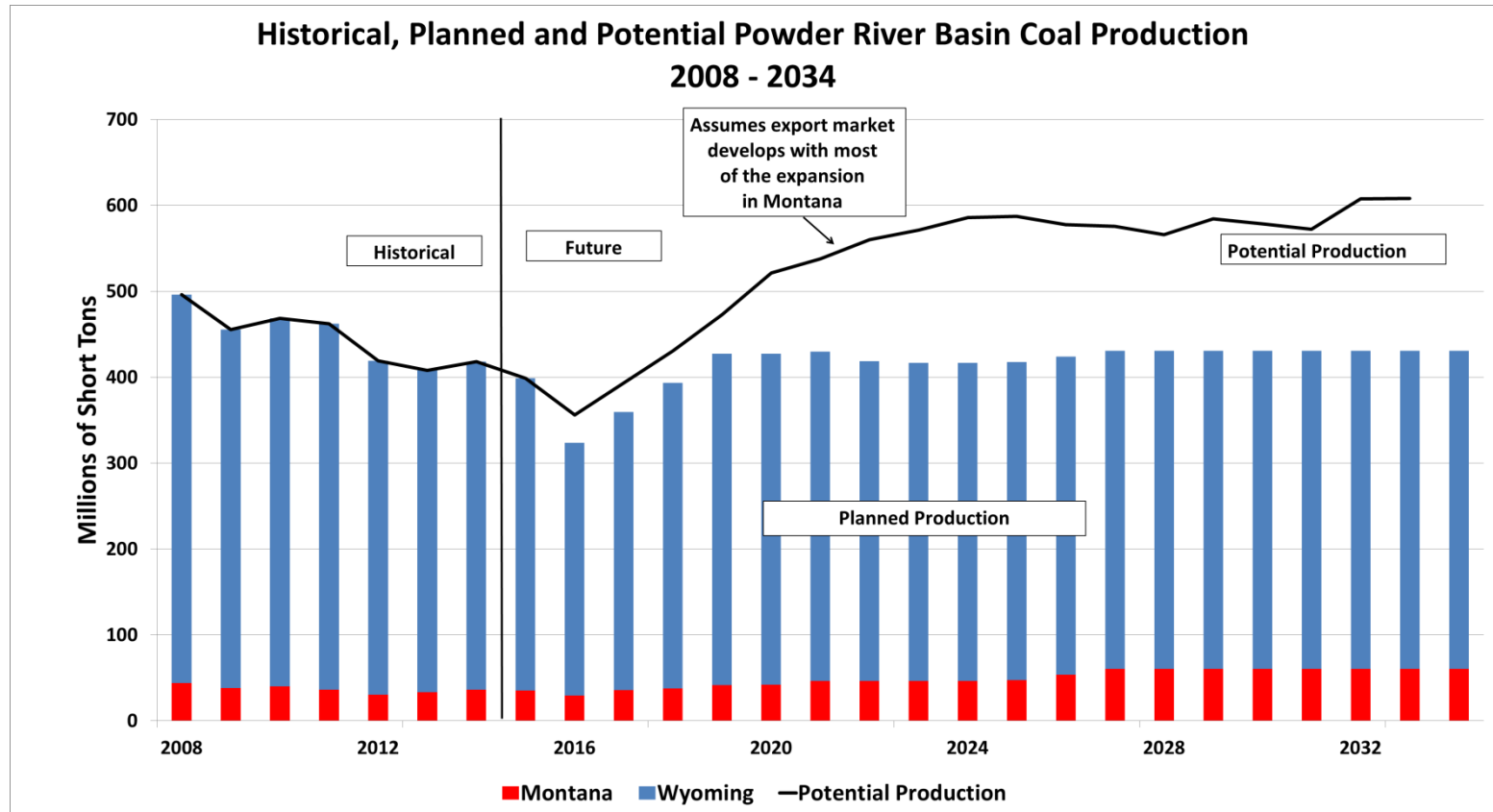
Inquire for details

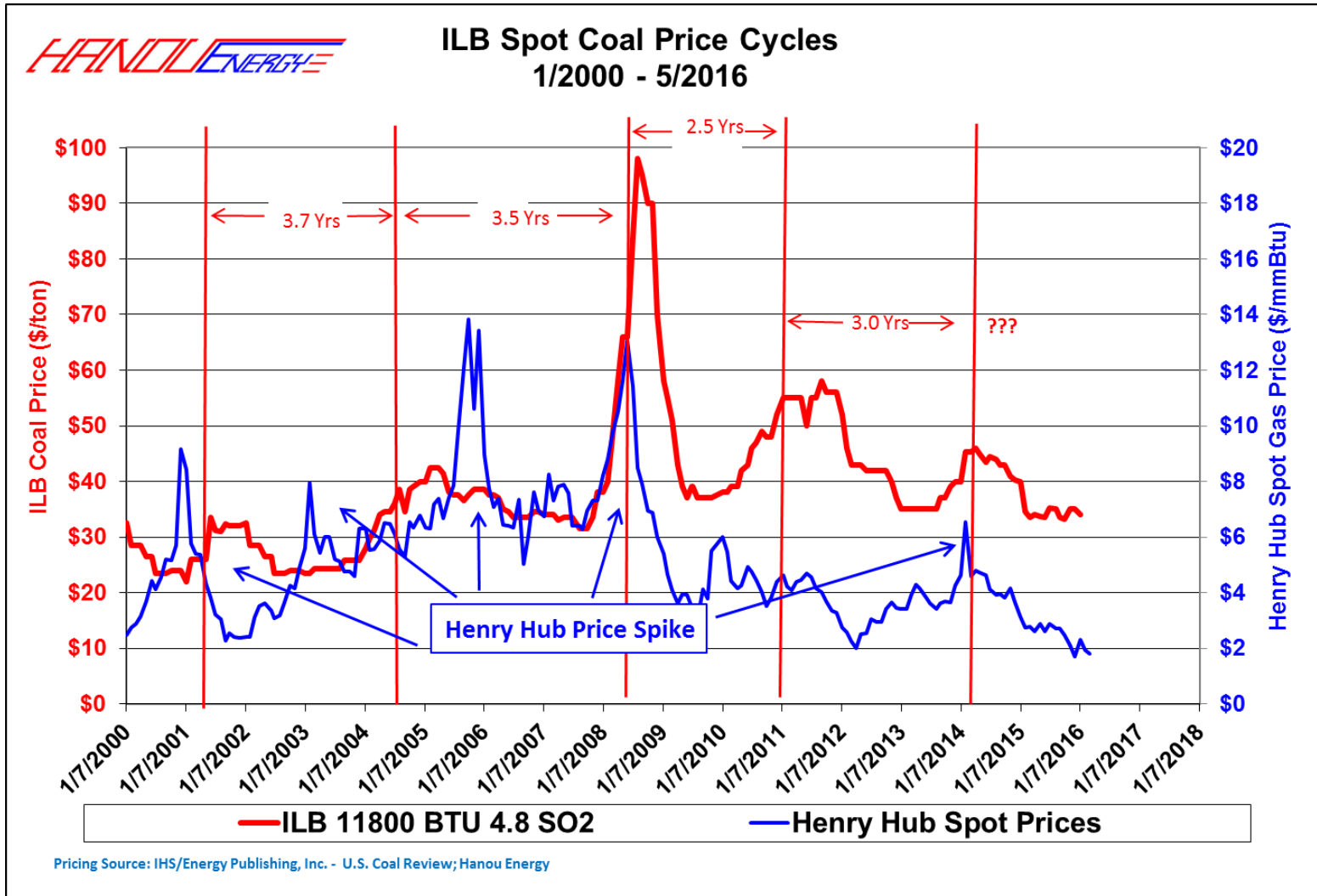










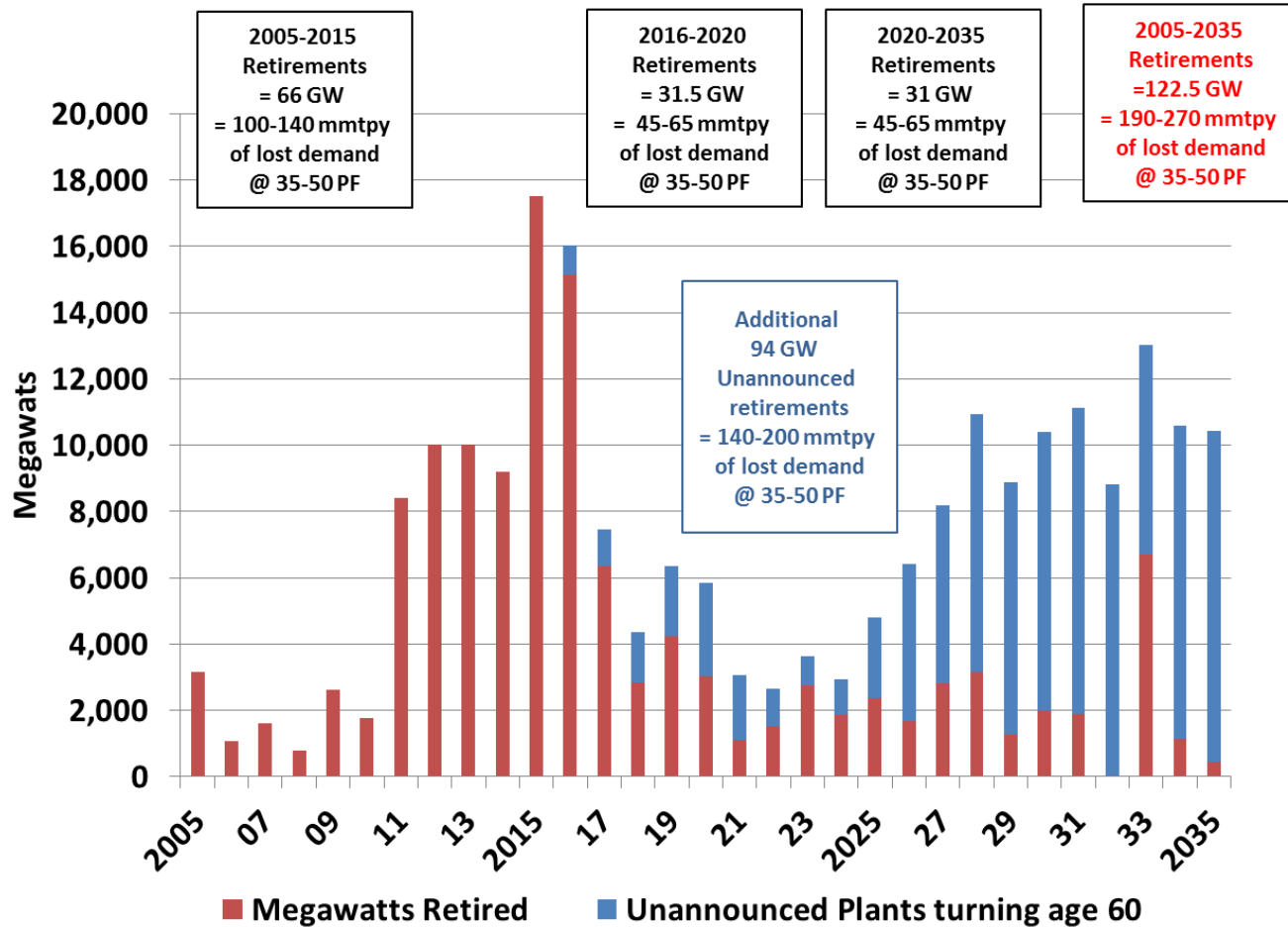




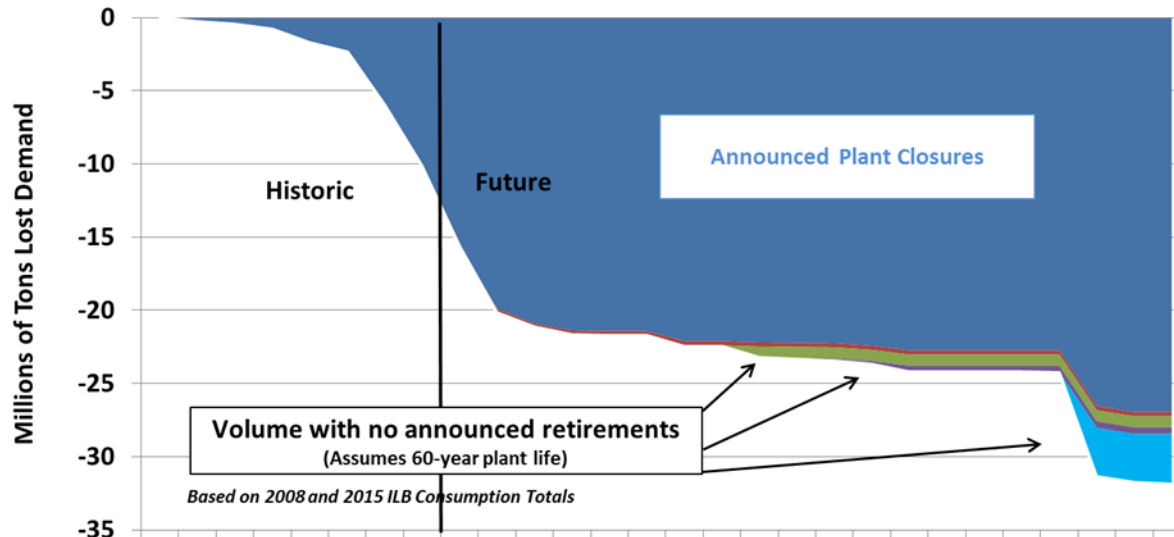
<b>Utility Stocks for Electricity Generation</b>				
<b>(millions of tons)</b>				
<b>Month/Year</b>	<b>Bituminous Coal</b>	<b>Sub-Bituminous Coal</b>	<b>Lignite Coal</b>	<b>Total</b>
11/5/13	74.9	75.6	5.3	155.8
12/3/13	73.0	70.0	5.0	148.0
1/7/14	62.2	64.8	5.3	132.3
<b>2/4/14</b>	<b>54.7</b>	<b>58.9</b>	<b>5.4</b>	<b>118.9</b>
<b>3/6/14</b>	<b>54.2</b>	<b>58.4</b>	<b>5.4</b>	<b>118.0</b>
4/3/14	59.5	62.6	6.2	128.3
5/1/14	62.9	67.0	6.3	136.2
6/5/14	61.9	64.6	6.4	132.9
7/3/14	59.5	59.7	6.2	125.4
8/7/14	59.4	55.2	6.4	121.0
9/4/14	62.2	55.9	6.1	124.2
10/2/14	68.2	61.9	6.1	136.2
11/6/14	69.7	66.5	5.6	141.7
12/4/14	72.6	72.7	6.1	151.4
1/8/15	70.4	79.2	5.6	155.1
2/5/15	64.7	80.3	5.3	150.3
3/5/15	65.7	84.8	5.0	155.6
4/2/15	71.2	91.7	5.3	168.2
5/7/15	75.1	94.3	5.2	174.6
6/4/15	73.9	89.1	4.8	167.8
7/2/15	69.3	86.1	4.8	160.2
8/3/15	68.9	84.5	4.6	158.1
9/3/15	70.4	87.4	4.6	162.4
10/1/15	76.2	95.0	4.6	175.8
11/5/15	80.1	103.7	4.7	188.5
<b>12/3/15</b>	<b>82.8</b>	<b>109.4</b>	<b>5.0</b>	<b>197.1</b>
<b>1/7/16</b>	<b>78.0</b>	<b>106.4</b>	<b>4.7</b>	<b>189.1</b>

Source: EIA

### U.S. and Canadian **Announced** & **Unannounced** Coal Plant Retirements 2005-2035



### Cumulative Consumption Impact of U.S. Power Plants Consuming Illinois Basin Coal Likely to Close by 2035 *Based on 2008 & 2015 ILB Demand*



Based on 2008 and 2015 ILB Consumption Totals

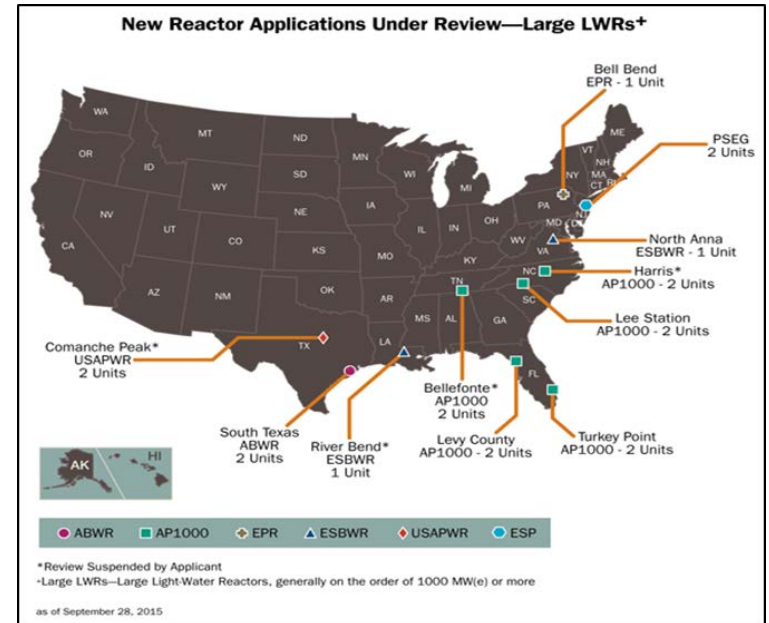
	8	09	2010	11	12	13	14	2015	16	17	18	19	2020	21	22	23	24	2025	26	27	28	29	2030	31	32	33	34	2035	
1971-1975 Built Plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-3.3	-3.3	-3.4
1966-1970 Built Plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
1961-1965 Built Plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8	-0.8
Pre-1961 Built Plants	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Announced Retirements	0.0	-0.3	-0.5	-0.8	-1.7	-2.4	-6.0	-10.0	-15.0	-19.0	-20.0	-21.0	-21.0	-21.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-22.0	-26.0	-26.0	-26.0
Grand Total Cumulative	0.0	-0.3	-0.5	-0.8	-1.7	-2.4	-6.0	-10.0	-15.0	-20.0	-21.0	-21.0	-21.0	-21.0	-22.0	-22.0	-23.0	-23.0	-23.0	-23.0	-24.0	-24.0	-24.0	-24.0	-24.0	-24.0	-31.0	-31.0	-31.0

■ Announced Retirements      ■ Pre-1961 Built Plants  
■ 1961-1965 Built Plants      ■ 1966-1970 Built Plants

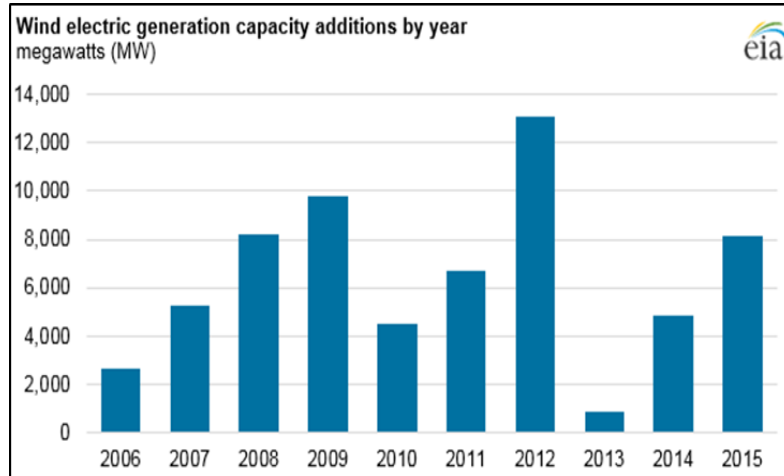
# Nuclear Power

## Nuclear Units Under Construction in U.S.

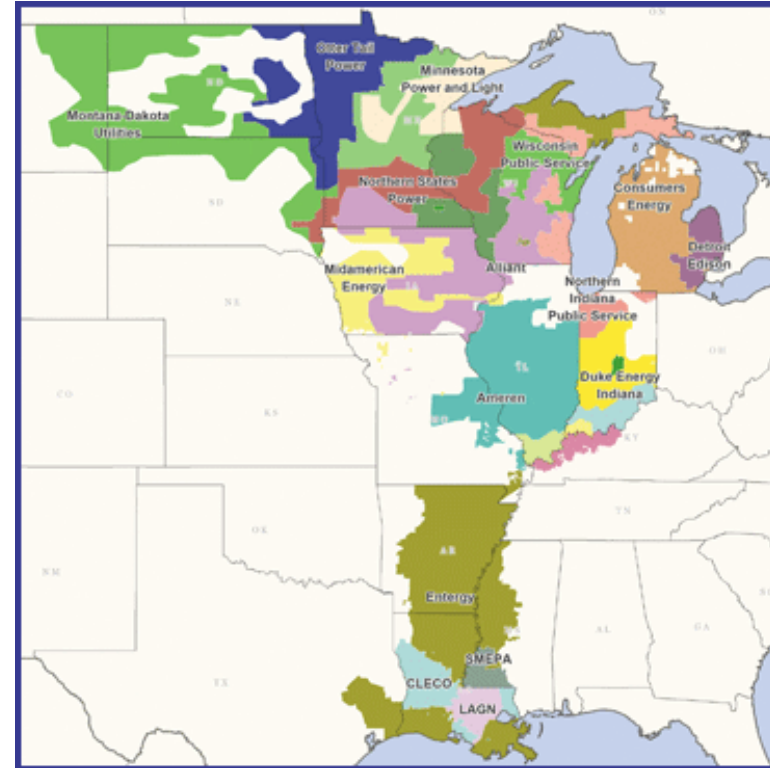
Name	Type	Capacity (MWe) net / gross	Construction Start Date	Expected completion
Vogtle 3 (Georgia)	AP1000	1,117 / 1,250	3/15/2013	6/1/2019
Vogtle 4	AP1000	1,117 / 1,250	11/22/2013	2020
V.C. Summer 2 (South Carolina)	AP1000	1,117 / 1,250	3/9/2013	6/1/2019
V.C. Summer 3	AP1000	1,117 / 1,250	11/2/2013	6/1/2020
Watts Bar 2 (Tennessee)	PWR	<u>1,150 / 1,237</u>	1973	9/30/2016
<b>Total capacity</b>		<b>5,618 / 6,237</b>		
<b>Equivalent tons of coal @ 80%PF</b>		<b>17-19 mmtpy</b>		



# Wind Power

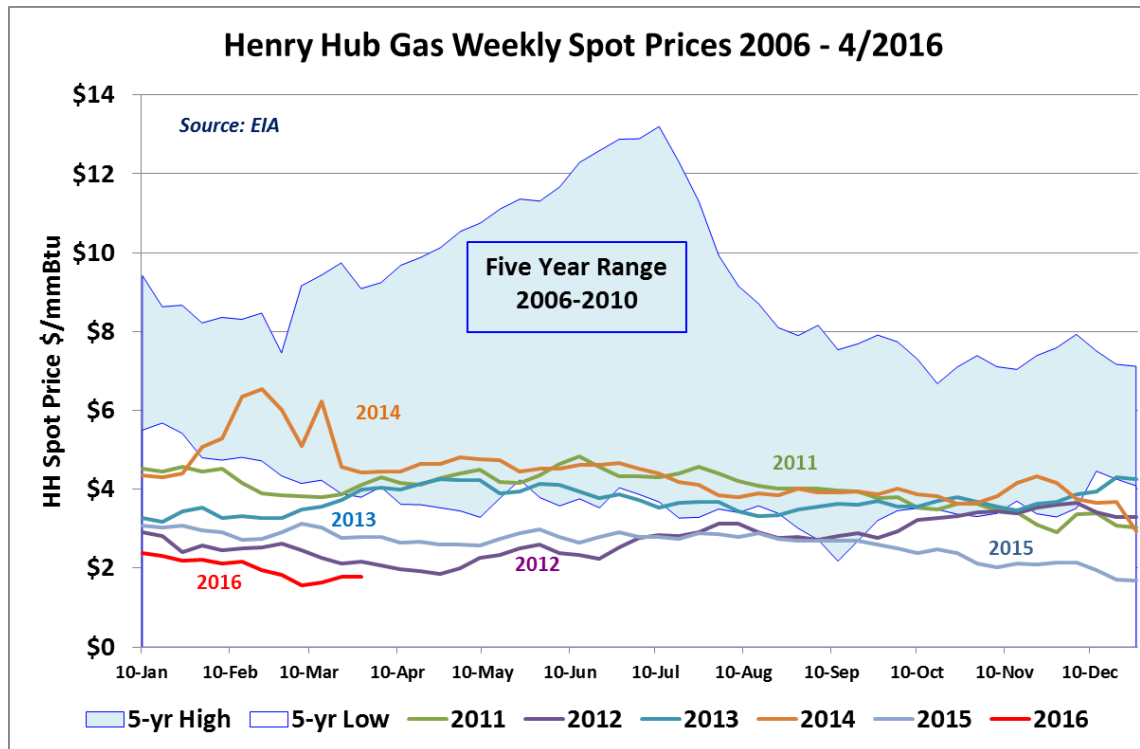


## MISO System



Source: EIA

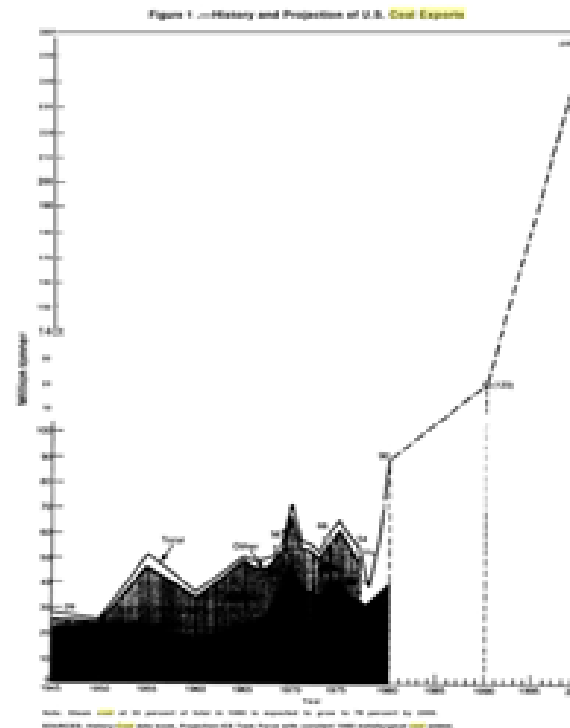
# Natural Gas

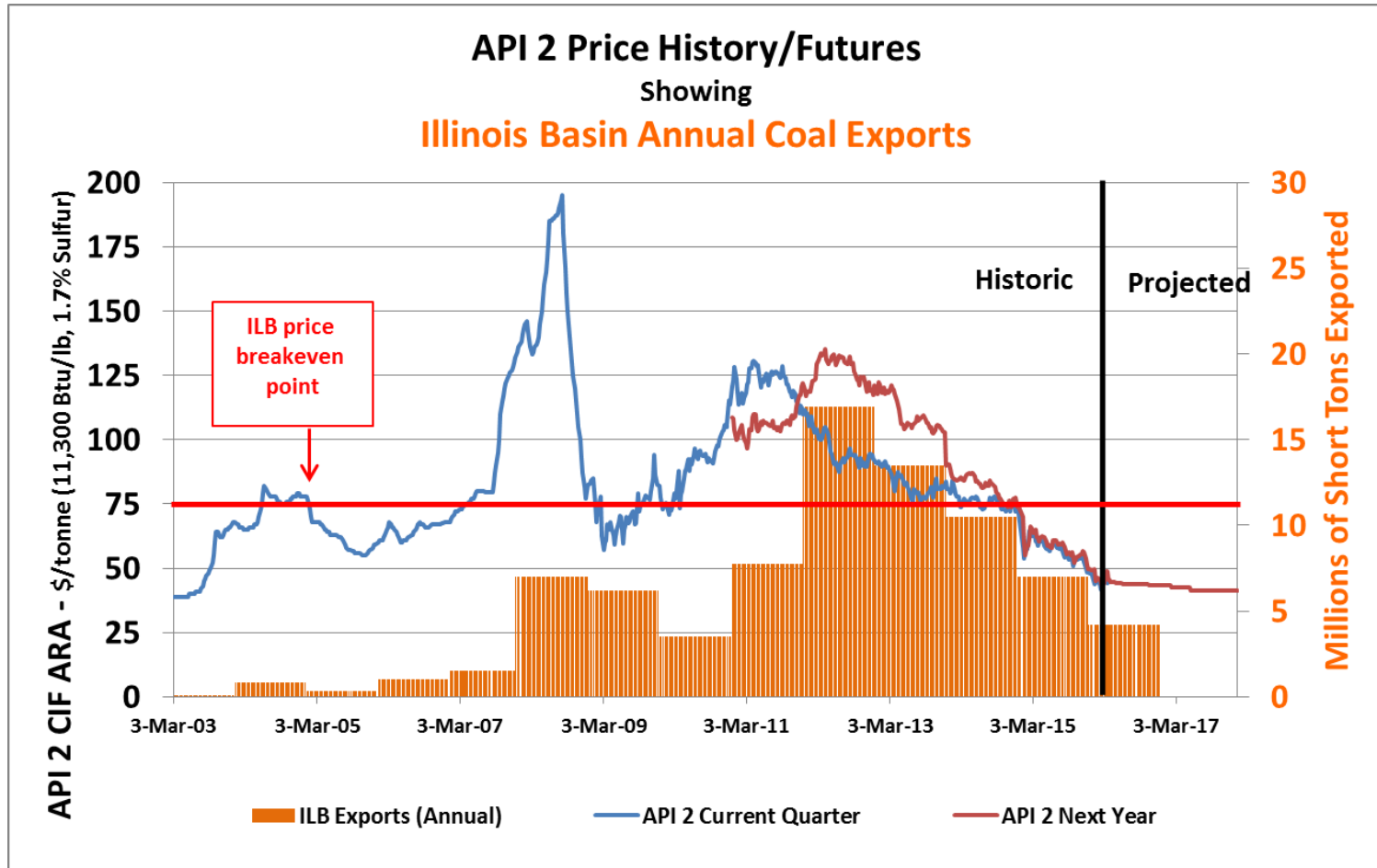


# Exports

What was the  
US Office of Technology Assessments  
projecting in 1978?

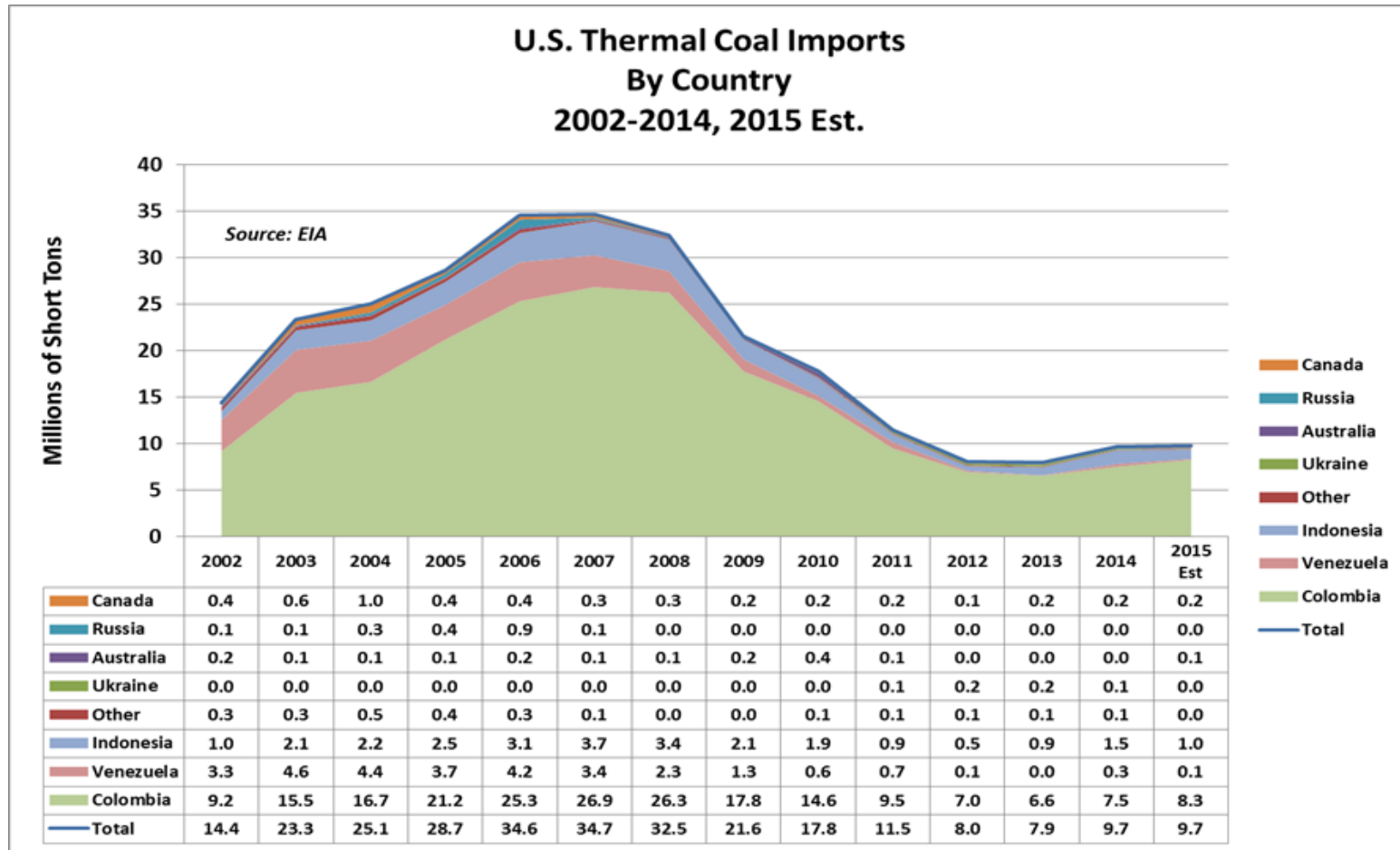
- US exports to grow
  - from 40 mmt in 1978
  - To 90 mmt in 1980
  - to 120 mmt in 1990
  - to 255 mmt in 2000
- Is history repeating itself?
  - 1981 = 113 mmt = record



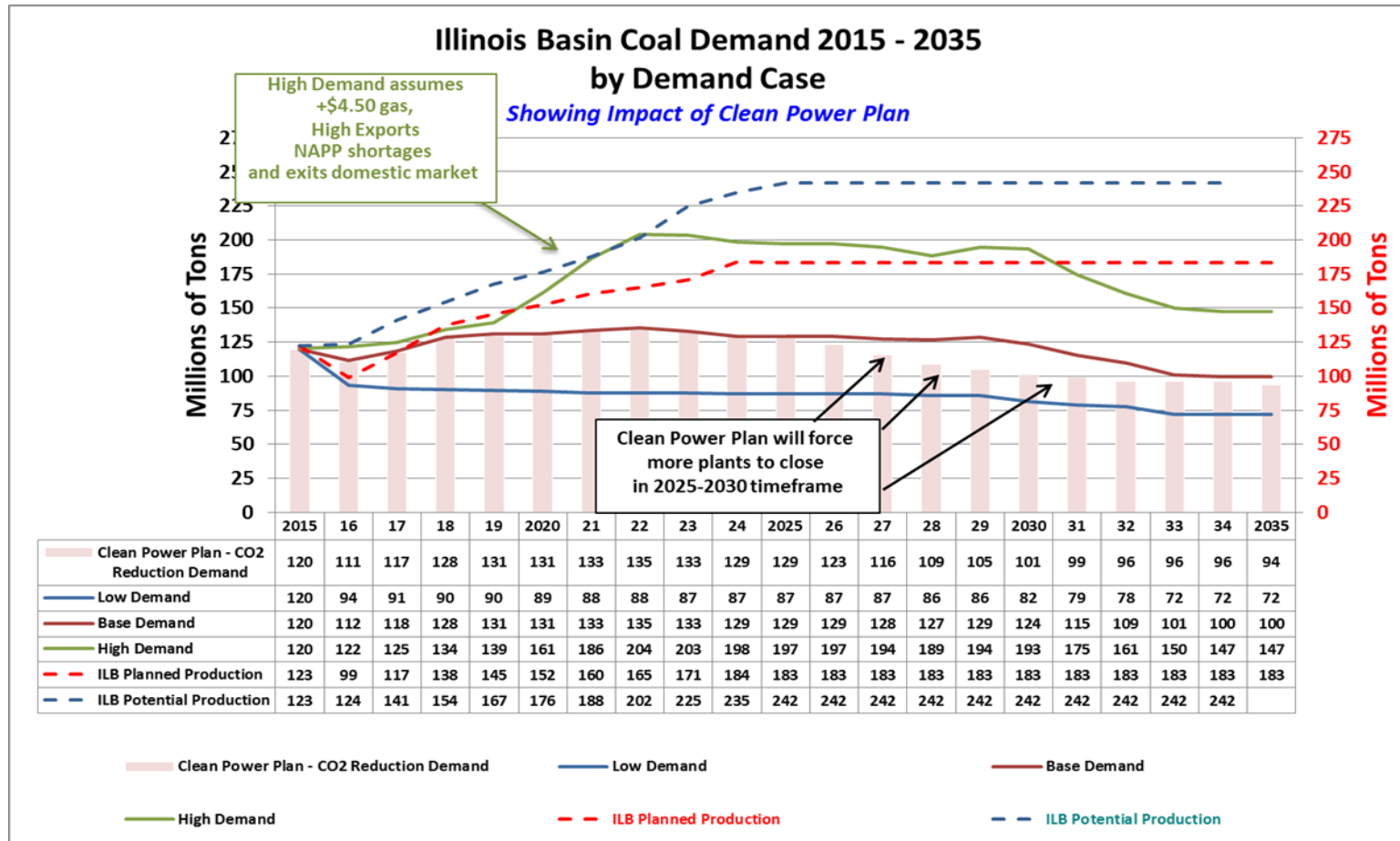




# Imports



# Illinois Basin Demand Forecast



# Finis

*The future belongs to the low cost producer!*

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