



Marcellus Shale and Rail: A Forecast

2013 Pennsylvania Rail Freight Seminar

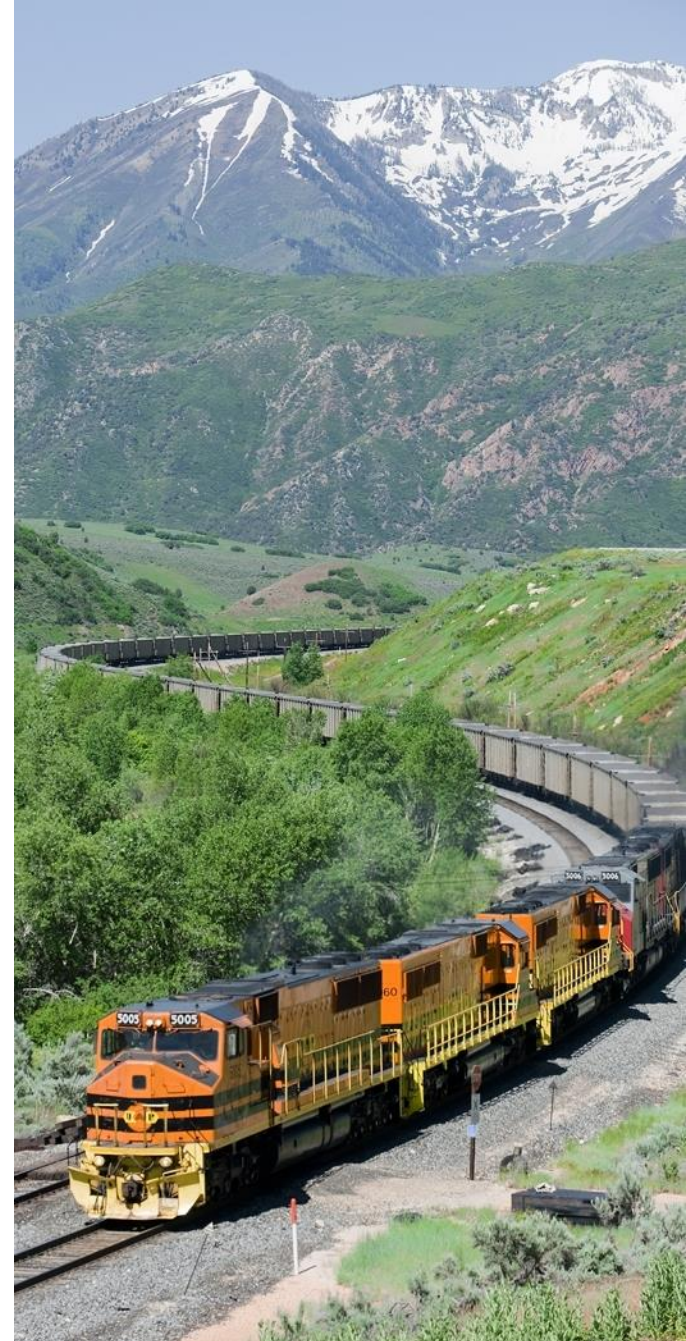
Ryan Fischer, AVP Emerging Markets
Genesee & Wyoming Inc.





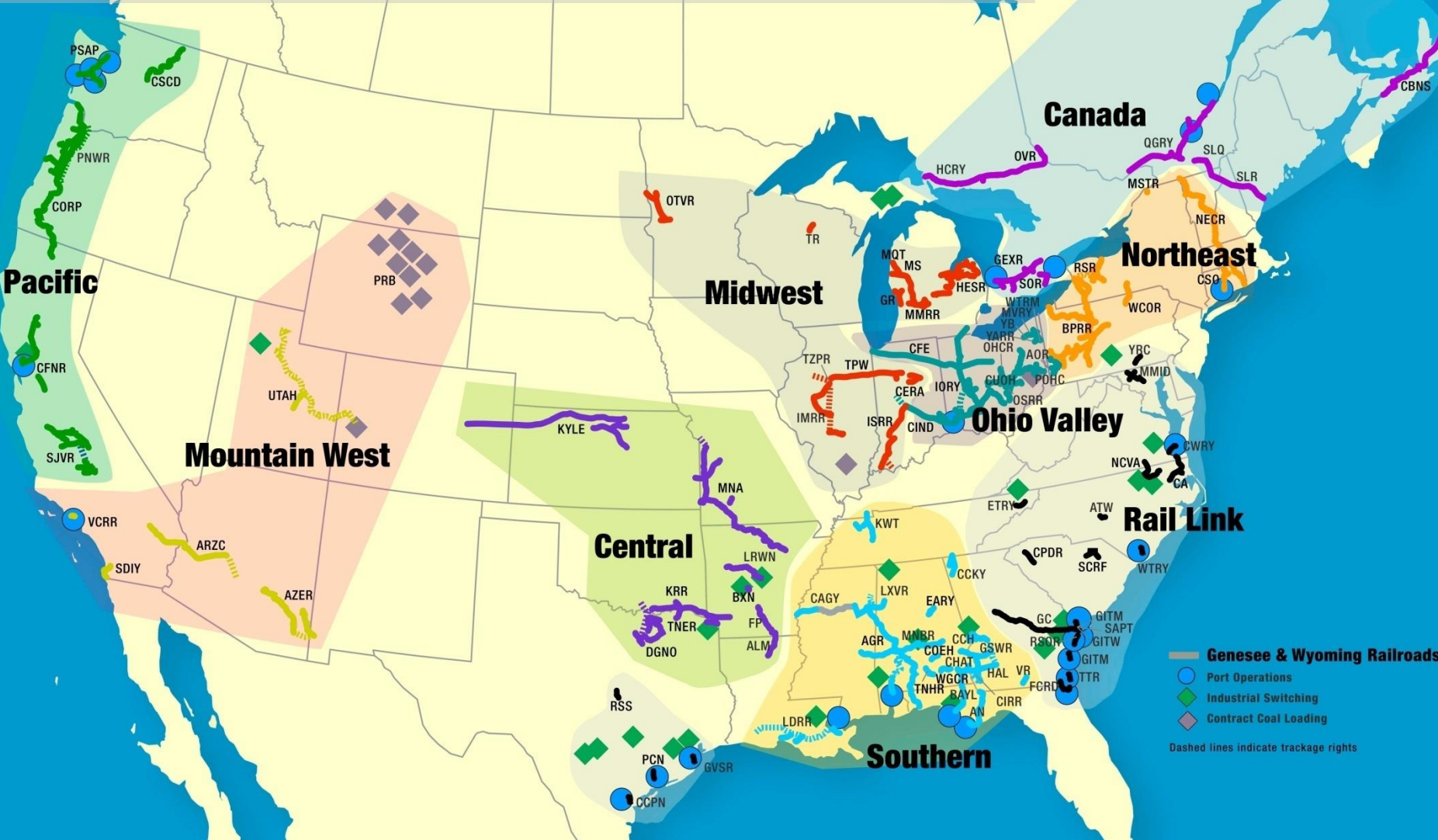
Overview

- Listed on NYSE with market cap of ~\$4 billion
- Own 111 railroads and employ ~4,500 people serving 2,000 customers
- Operate over 15,000 miles of track with ~1,000 locomotives
- Provide rail services in the United States, Canada, Australia, the Netherlands and Belgium



Genesee & Wyoming Inc.

Nine North American Regions





Northeast Region

- Buffalo & Pittsburgh RR serves numerous sand, pipe customers in western dry and wet Marcellus
- Wellsboro & Corning RR added with RailAmerica, serves heart of dry Marcellus



“Got shale? You need rail.”



Shale to rail – What does it mean?

Inputs ~ 30+ railcars per well:

- 4-6 railcars of OCTG (pipe)
- 15-30+ railcars of sand
- 1 railcar of calcium chloride
- 1 railcar of barite
- ½ railcar of cement

Outputs ~ 10+ railcars per well:

- 4-6 railcars of drill cuttings
- Varying NGLs, brine and crude



Shale-related shortline traffic

Based on RMI RailConnect Index of Shortline Traffic

	2009	2010	2011	2012	Change 2009-12
Stone, clay & aggregates (sand)	470,055	562,236	754,869	771,525	64.1%
Petroleum & coke	217,954	254,259	278,851	256,622	17.7%
Chemicals	753,850	812,808	1,114,270	1,147,241	52.2%

G&W shale traffic up across several regions

NY/PA and Ohio

- Both major regions handling 200-300 shale-related cars/month (3-5% of traffic) even with Marcellus down
- Sand first, followed by pipe, stone, and NGLs
- New fractionation plant (June) to add 5K+ cars/year

Wellsboro & Corning (acquired 1/13)

- Vast majority of traffic is Marcellus-related

Traffic excludes some stone customers whose volumes cannot be specifically attributed to shale drilling

M3/UEO fractionation plant (Scio, Ohio)

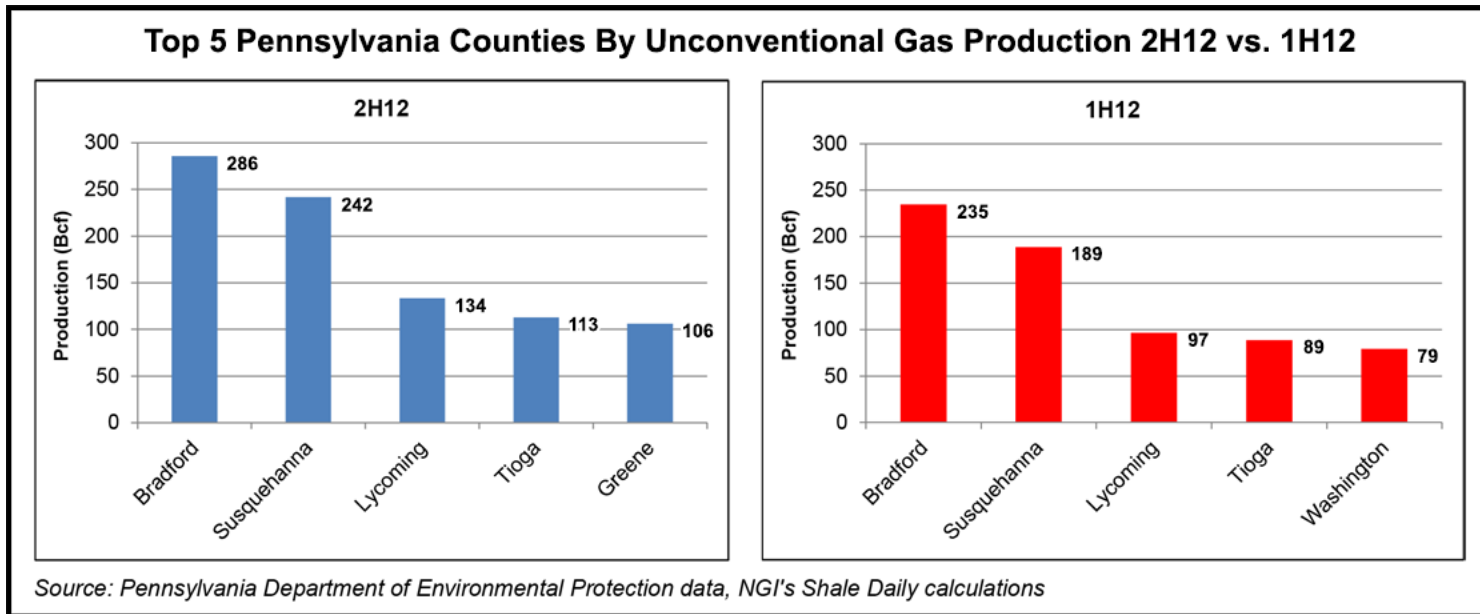
- 42,000' of track
- 4 loading tracks, load 55 cars/day
- On site storage for ~250 rail cars
- 16 loading racks
- Rail yard will have three locomotives



Broader Marcellus trends to watch

- Supply: More takeaway, w/backlog of wells “turned on”
 - Dry gas projects in northeast of state
 - Processing/fractionation plants, ethane and propane pipe in southwest
 - Risks of oversupply?
- Demand: Where will it come from?
 - LNG export decision in coming months? Will they be seasonal?
 - Will new power generation demand be enough?
- Western Pennsylvania growth north of Pittsburgh?

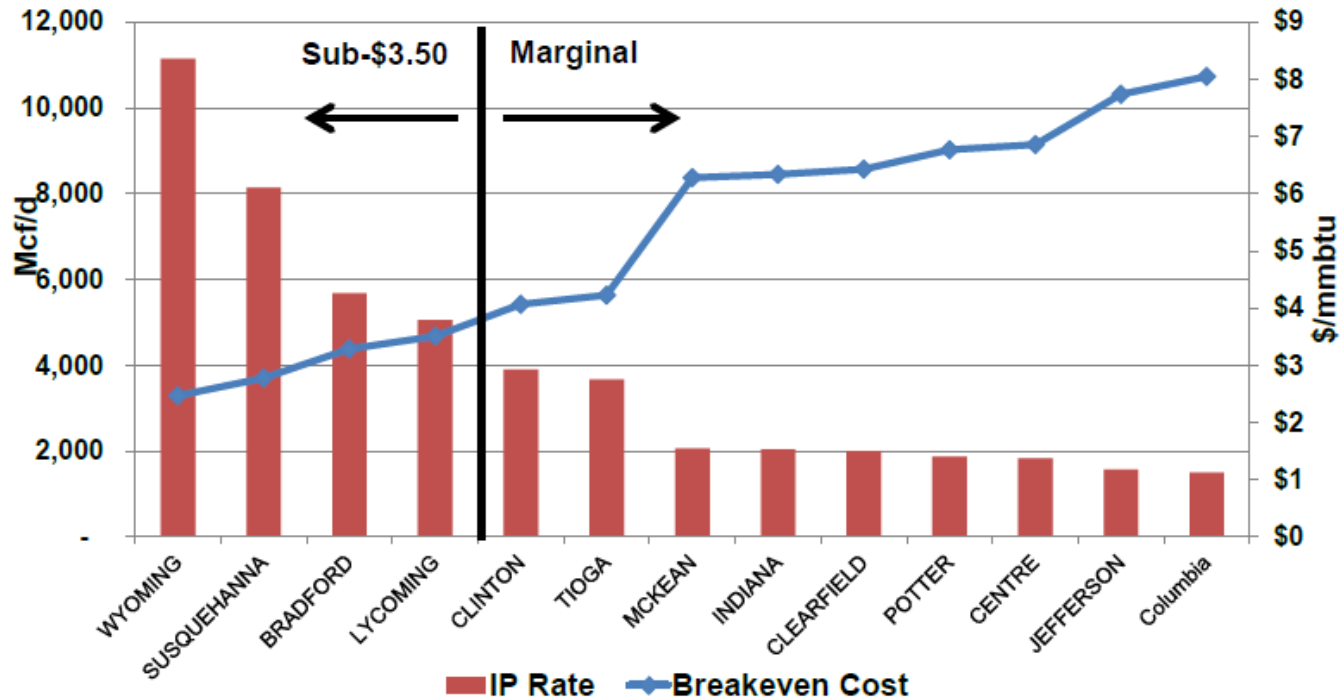
Pennsylvania 2012 production



Tough economics in western dry Marcellus

*Wyoming/Eastern PA Counties Fare Best;
Central/ Western Counties are Marginal Dry Producers*

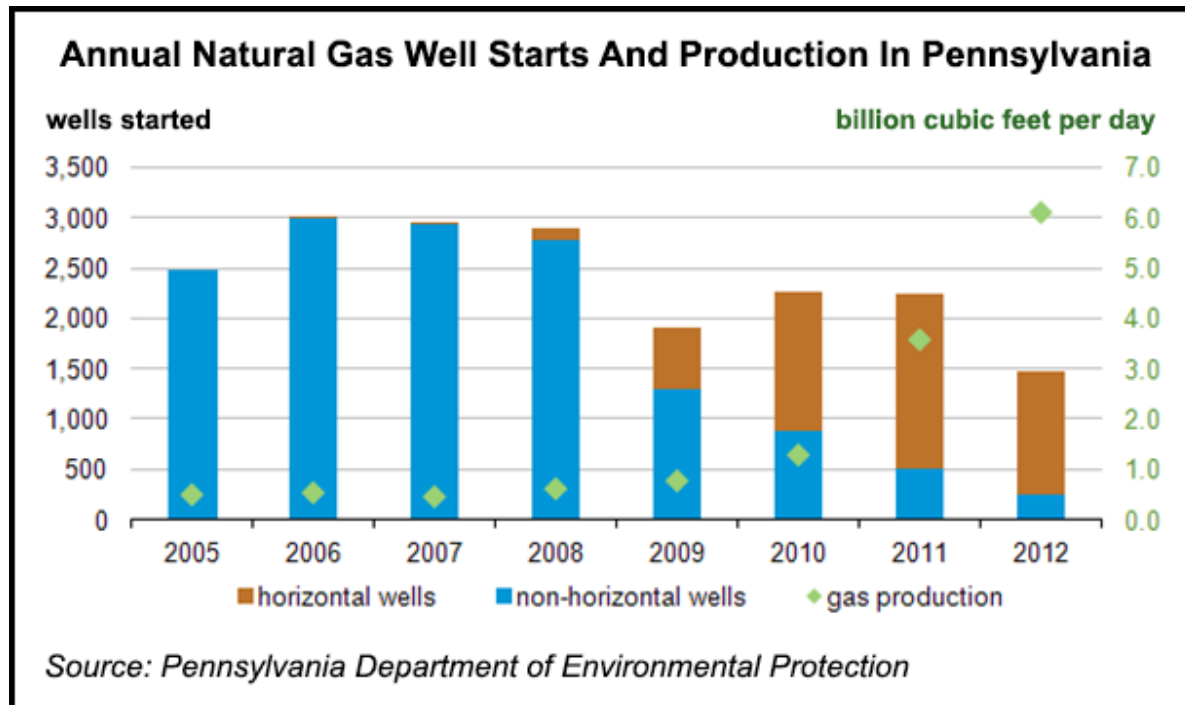
Northern PA IP Rate and Breakeven Cost by County



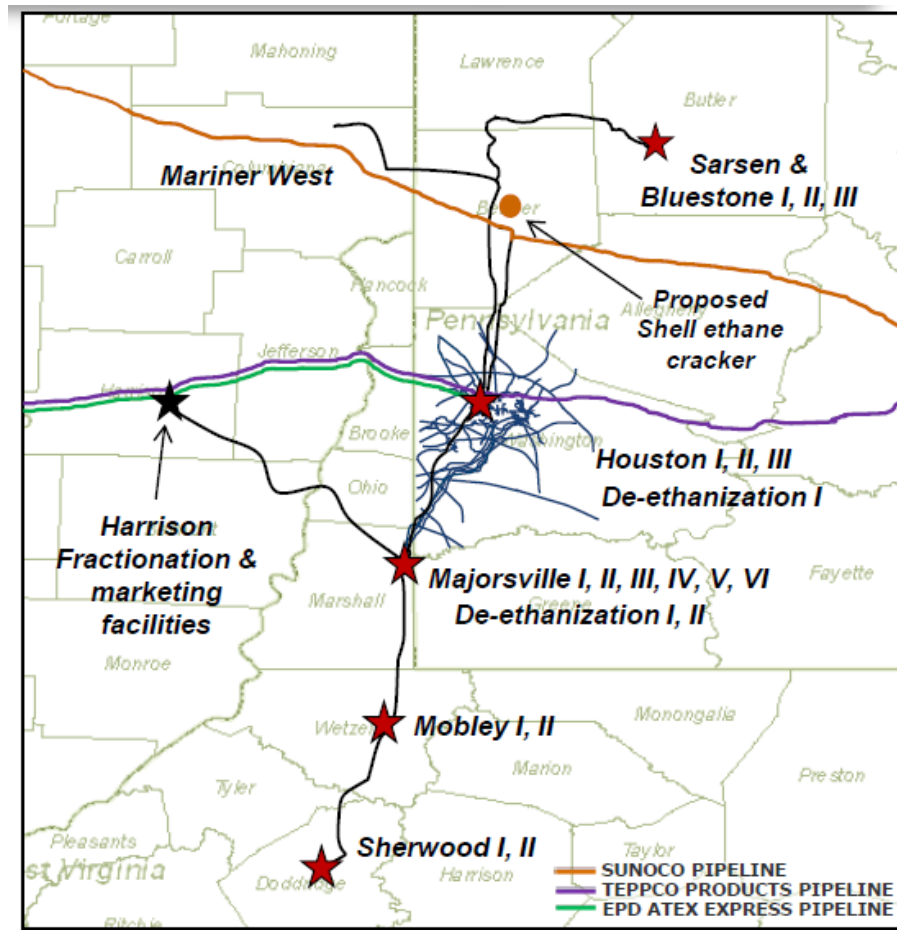
*D&C Costs are \$5.0M in all scenarios; *Assumes 10% Discount Rate; *Lease Operating is \$1.35

Source: Bentek

Less drilling, but more production?



Expanded processing, fractionation networks



Source: MarkWest Energy Partners

More ethane, propane takeaway

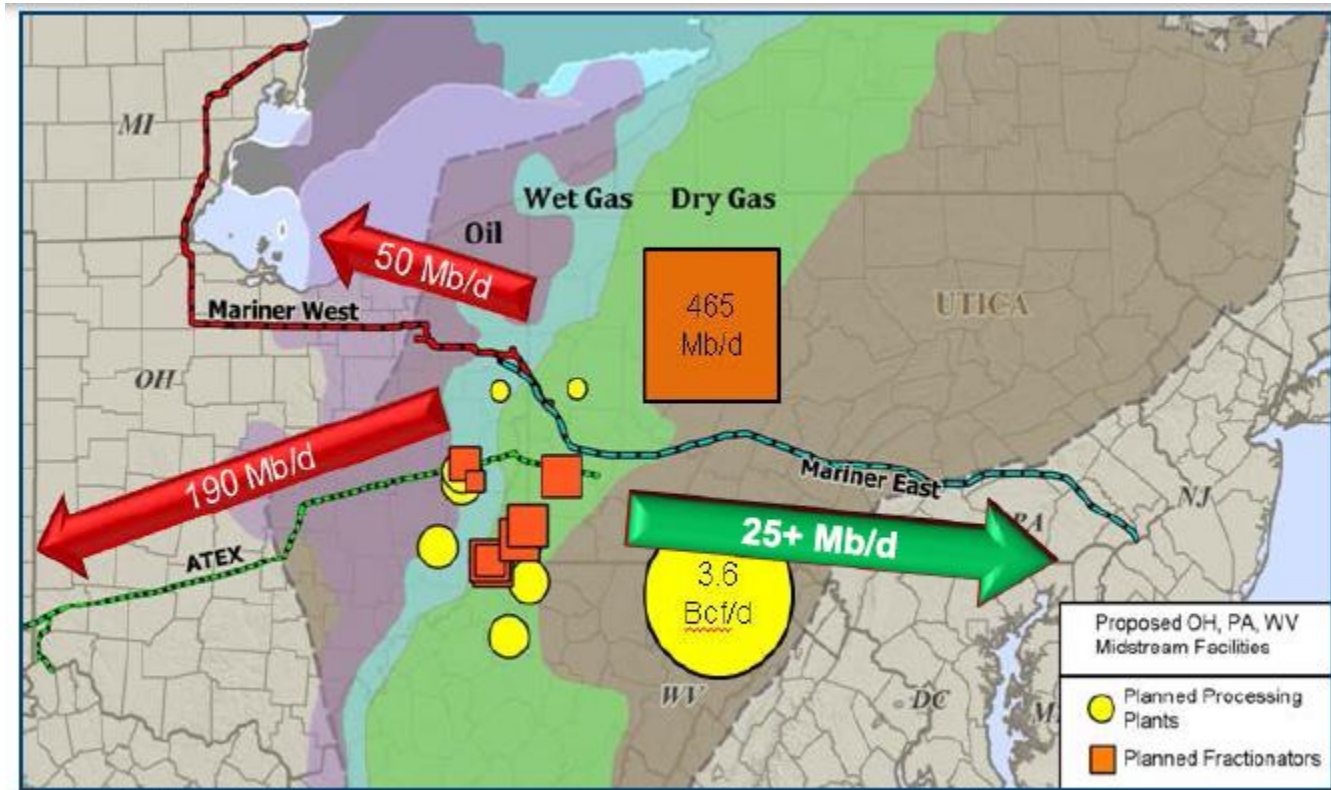
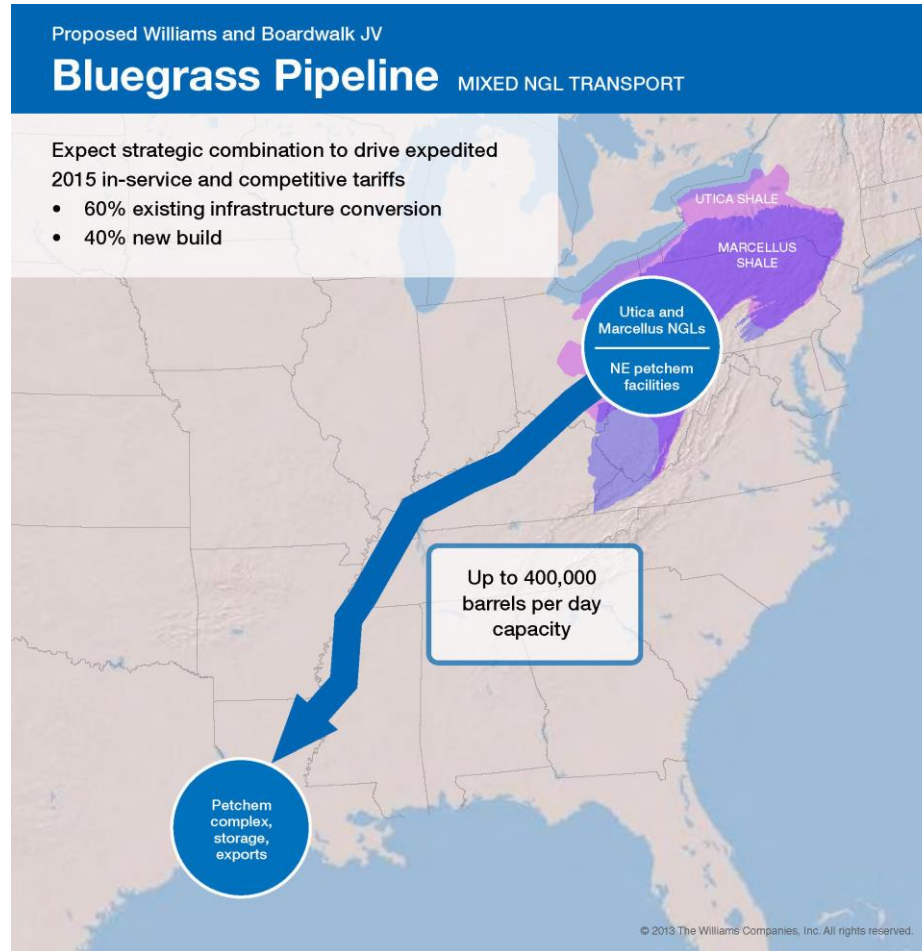


Image Source: BENTEK

“Y-grade” pipeline to the Gulf?



Challenges for Marcellus rail

- Defining the market
 - Pipelines vs. rail? Competition from other shale plays?
- Committing to long-term track investments
- Optimizing use of sites (unit trains?)
 - What's the best use of limited properties for transloads, etc.?
- Maintaining service to existing (non-shale) customers
- Strong competition between railroads for projects



**Zero
Injuries**

Our Goal Every Day