PLATTS
McGRAW HILL FINANCIAL

BENTEK Energy

The Future of U.S. Natural Gas

Supply, Demand & Infrastructure Developments

July 9th, 2014

Disclaimer

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference therein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed therein do not necessarily state or reflect those of the United States Government or any agency thereof.

The Future of U.S. Natural Gas

Supply, Demand & Infrastructure Developments

July 9th, 2014

Outline

- Introduction, Methodology and Overview of Market Approach (Cell Modeling and Cellcast).
- Production and Supply Prospectus.
  - Expectations By Region and Basin
  - Processing and Fractionation Expectations
  - Forecast though 2030
  - Import Picture: Canada and LNG
- Demand: The Future is In Your Hands.
  - Residential, Commercial and Industrial
  - Power Burn
  - Mexico and LNG Export
- Regional Balances Dictate Infrastructure Requirements.
  - Current and Planned Capacity
  - Shifting Dynamics and Future Pipeline Requirements
  - Storage: Why We Need It and Where
- Impact on Natural Gas Price.
  - Forecast through 2030
  - Regional Basis and Volatility

Key Takeaways

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

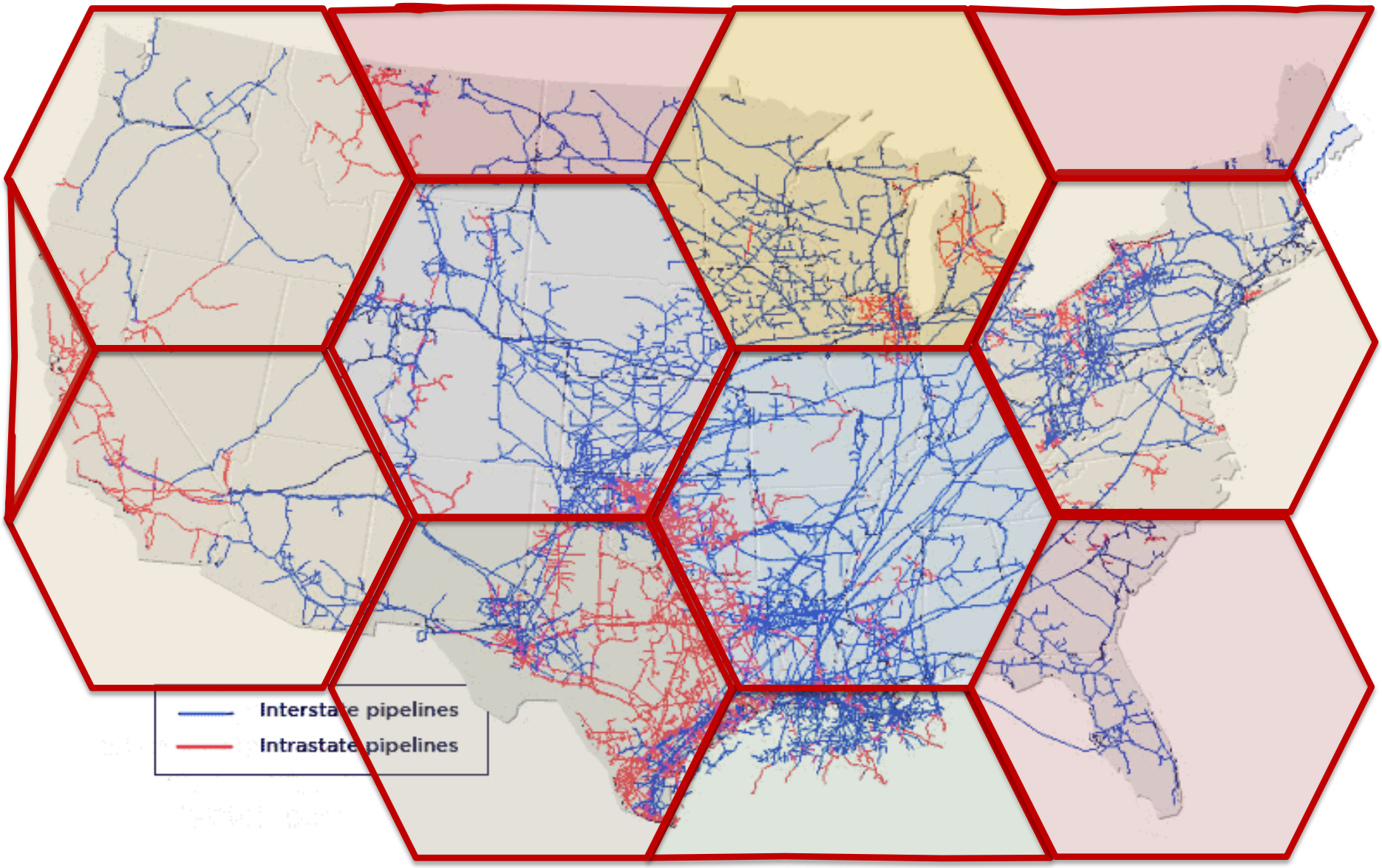
- Bentek Expects Production to Increase By 28.3 Bcf/d through 2030.
- Pace of Systemic **Demand** Is a Constraint – Demand Will Have to **Start Driving the Bus by 2018.**
- Incremental Processing Capacity Needs Vary By Basin, Total of **6-8 Bcf/d Necessary**.
- Midstream Market Participants **Eager** to Build Pipeline In Certain Regions with **38.8 Bcf/d in Proposed Projects.**
- Analysis Shows **Need for Incremental Infrastructure Projects ≥ 1.1 Bcf/d** Than What Has Been Proposed, **Specifically to Southwest Markets**.
- With Demand Increasing in Southeast, the Region Will Need **3 Bcf/d More Storage Deliverability**, Most Likely Salt.
- CPI Adjusted Natural Gas **Prices Remain Under $5.00 thru 2025,** Do Not Eclipse $6.00 Before 2030

Introduction, Methodology and Overview

Pipeline Grid is Complicated

PLATTS
McGRAW HILL FINANCIAL

BENTEK
Energy



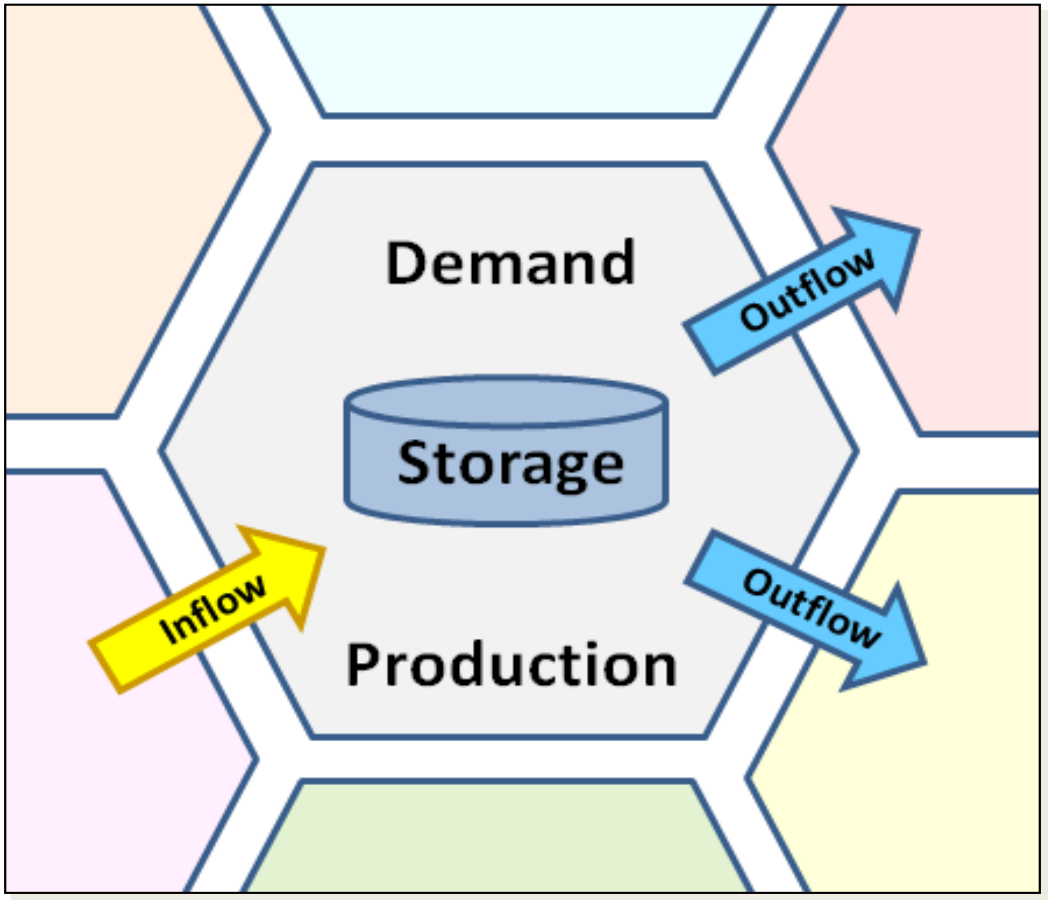
The Market Will Always Balance

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

Cell Model Gas Analysis

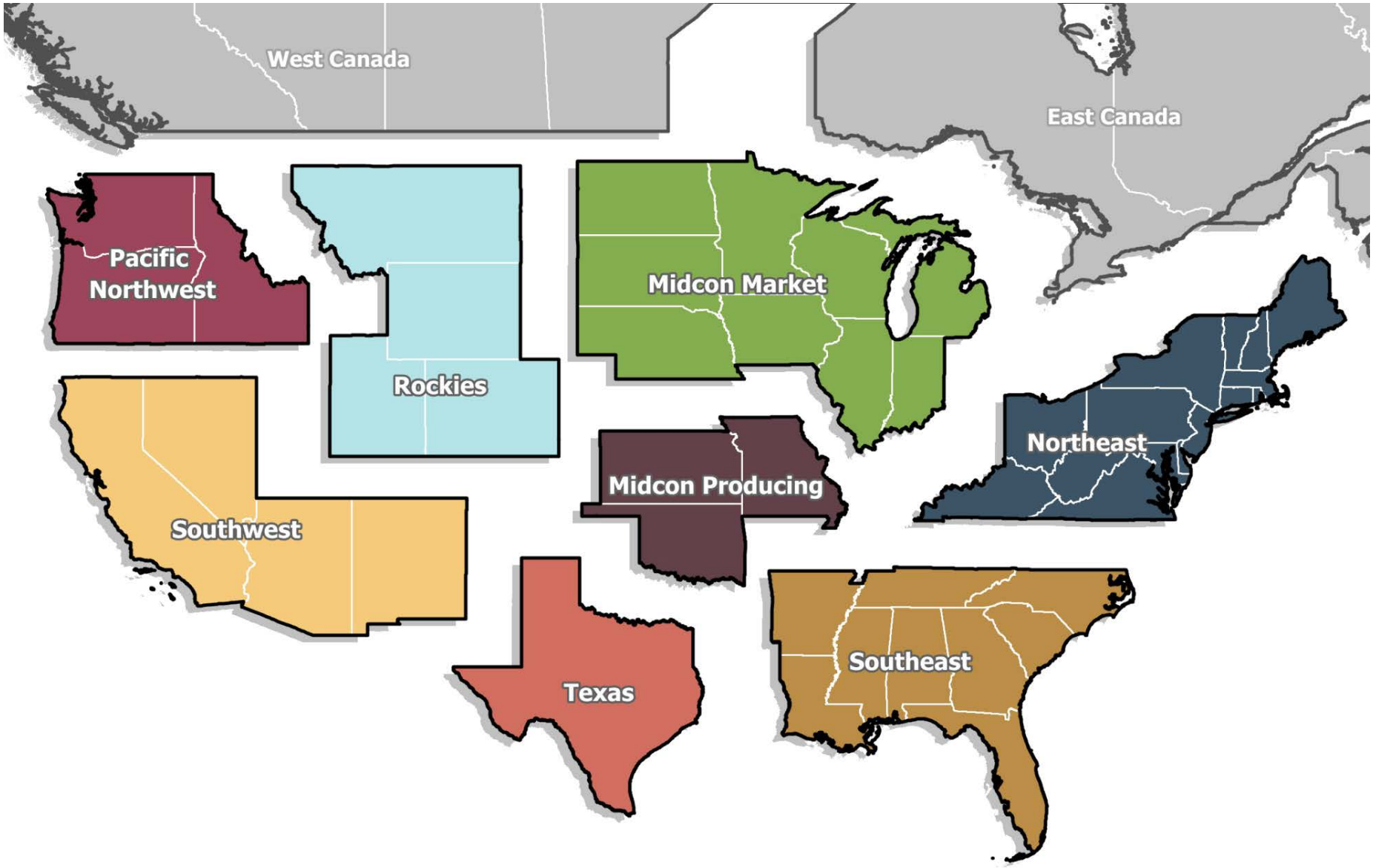
- Supply
  - Onshore Production
  - Offshore Production
  - LNG
- Demand
  - Power
  - Res/Comm
  - Industrial
  - Pipe Loss
- Inflows/Outflows
- Imports/Exports
- Storage I/W
- Storage Inventory
- Balancing Item



North American Cell Regions

PLATTS
McGRAW HILL FINANCIAL

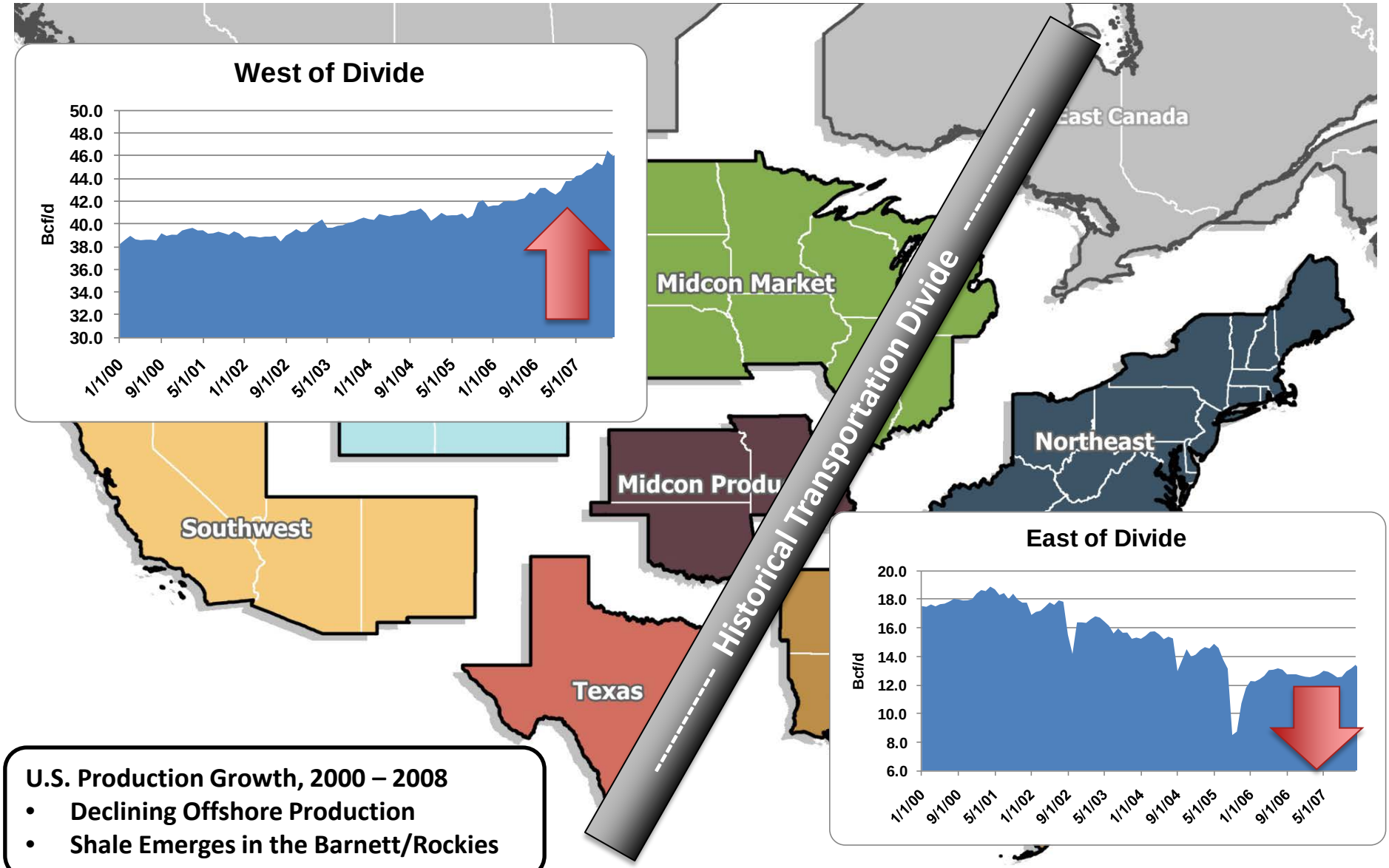
BENTEK
Energy



Historical Orientation of Midstream Infrastructure

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



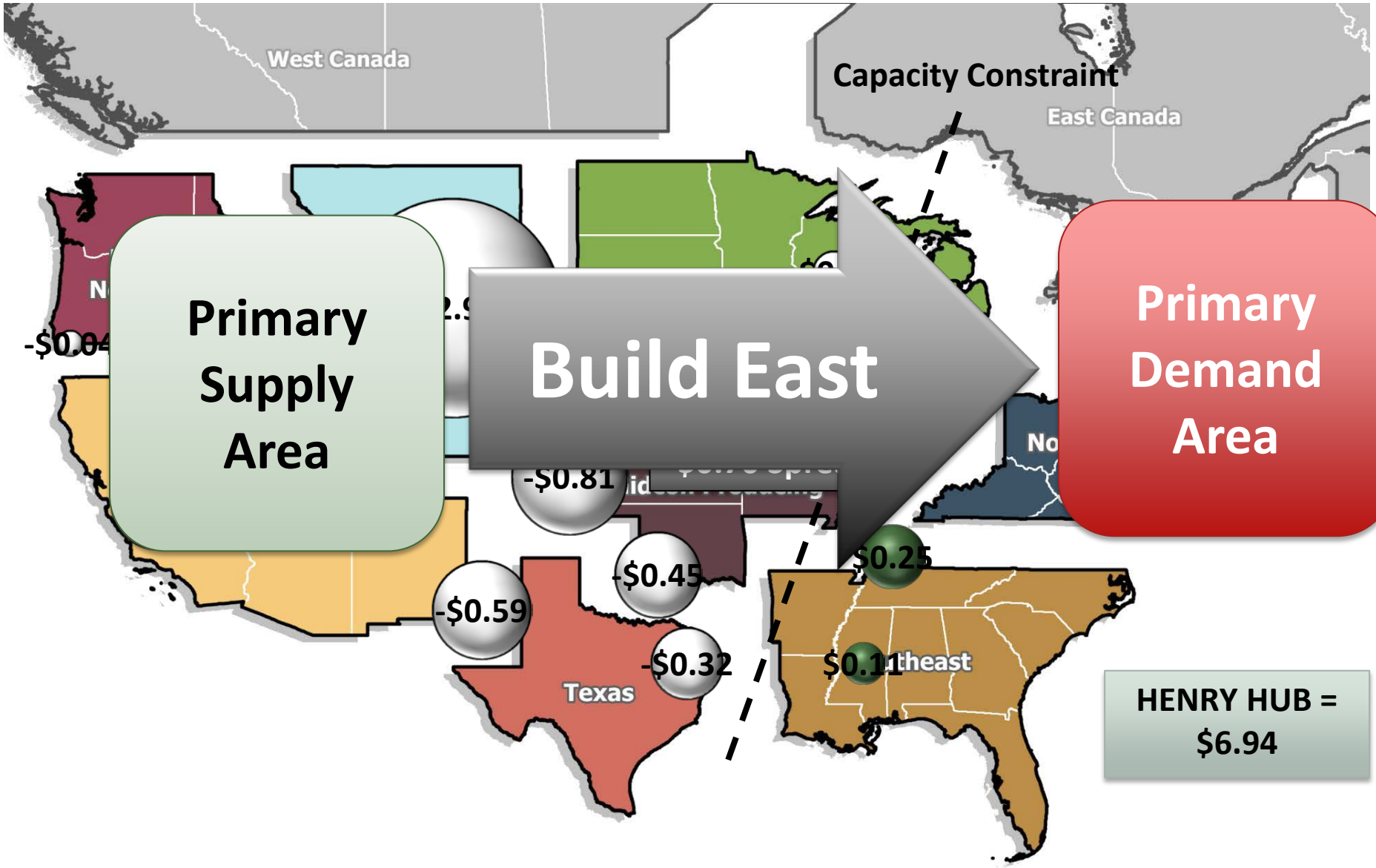
U.S. Production Growth, 2000 – 2008

- Declining Offshore Production
- Shale Emerges in the Barnett/Rockies

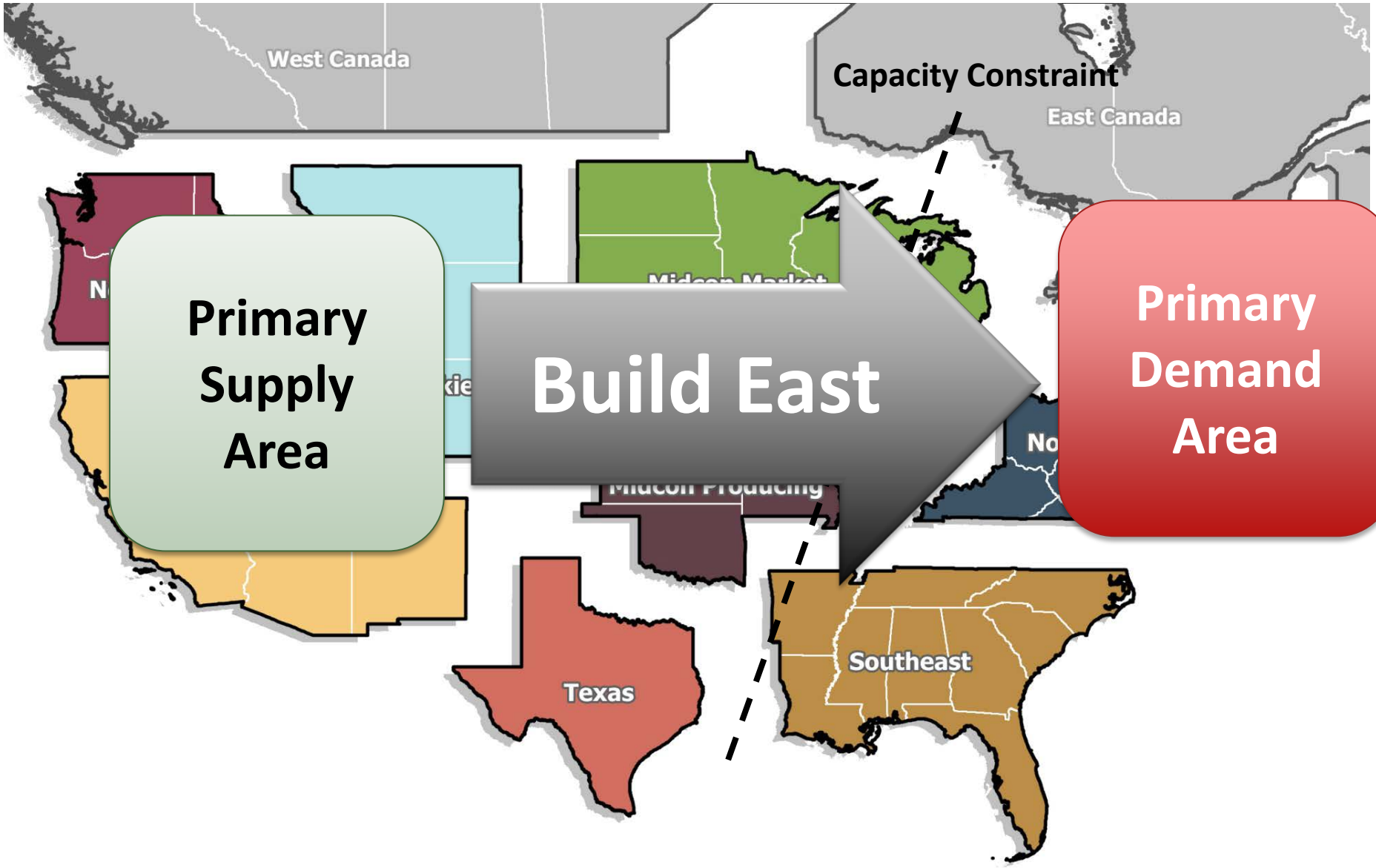
Supply, Demand and Basis Drive Infrastructure Decisions (2007 Example)

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



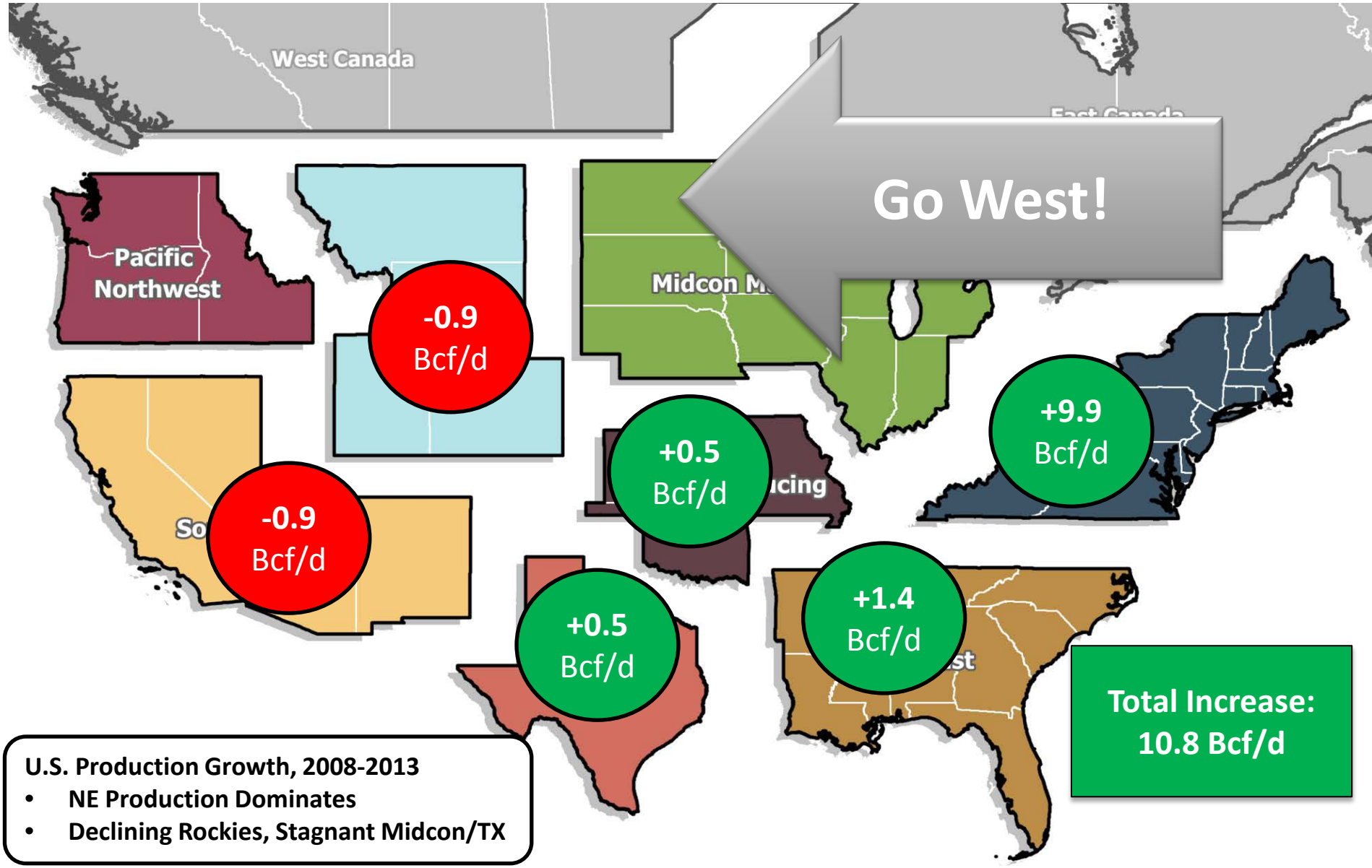
Primary Supply Area Changes



North American Production Shift Changes Midstream Needs

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



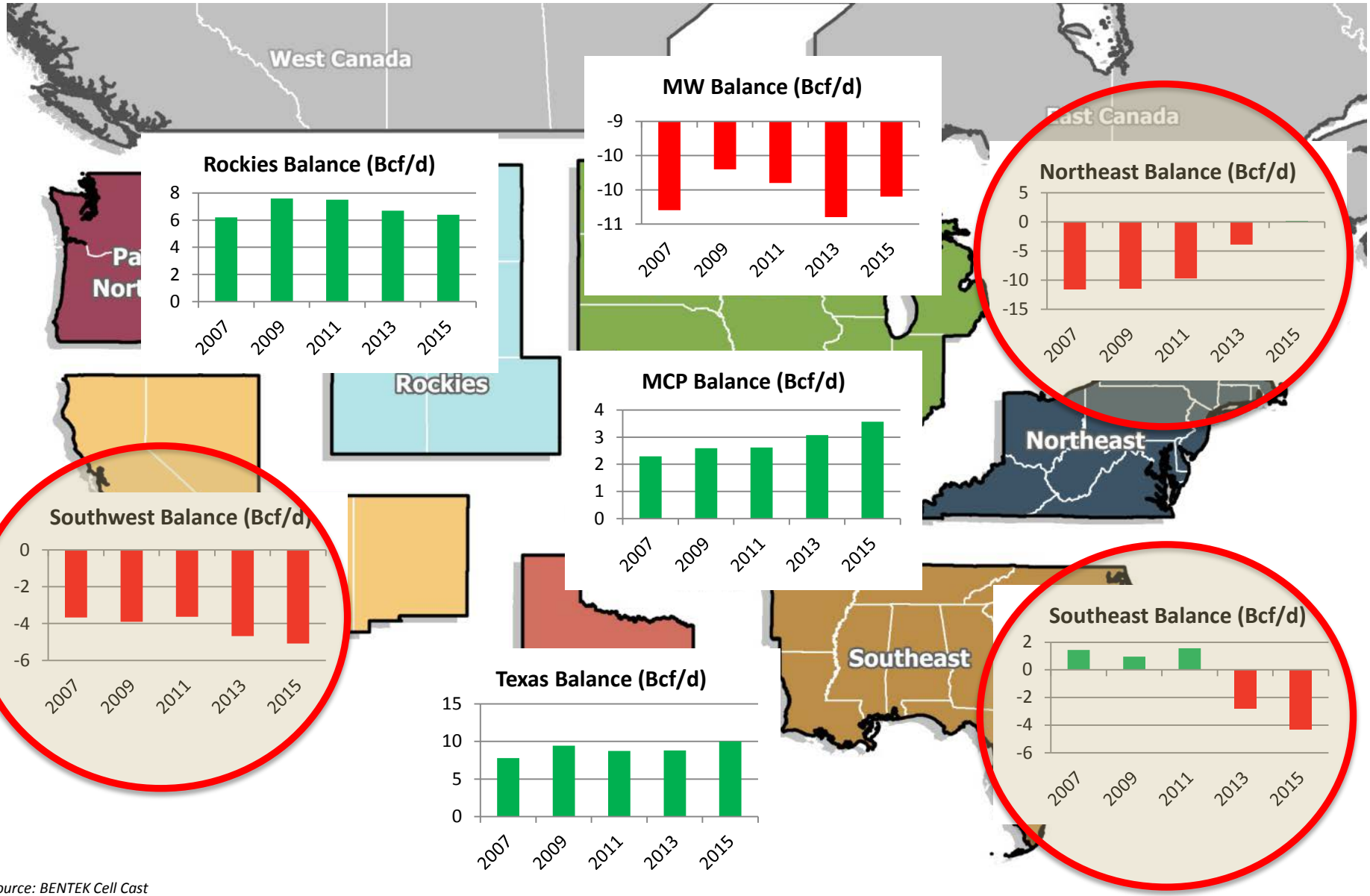
U.S. Production Growth, 2008-2013

- **NE Production Dominates**
- **Declining Rockies, Stagnant Midcon/TX**

Net Long/Short Balances Drive Midstream Decision Making

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



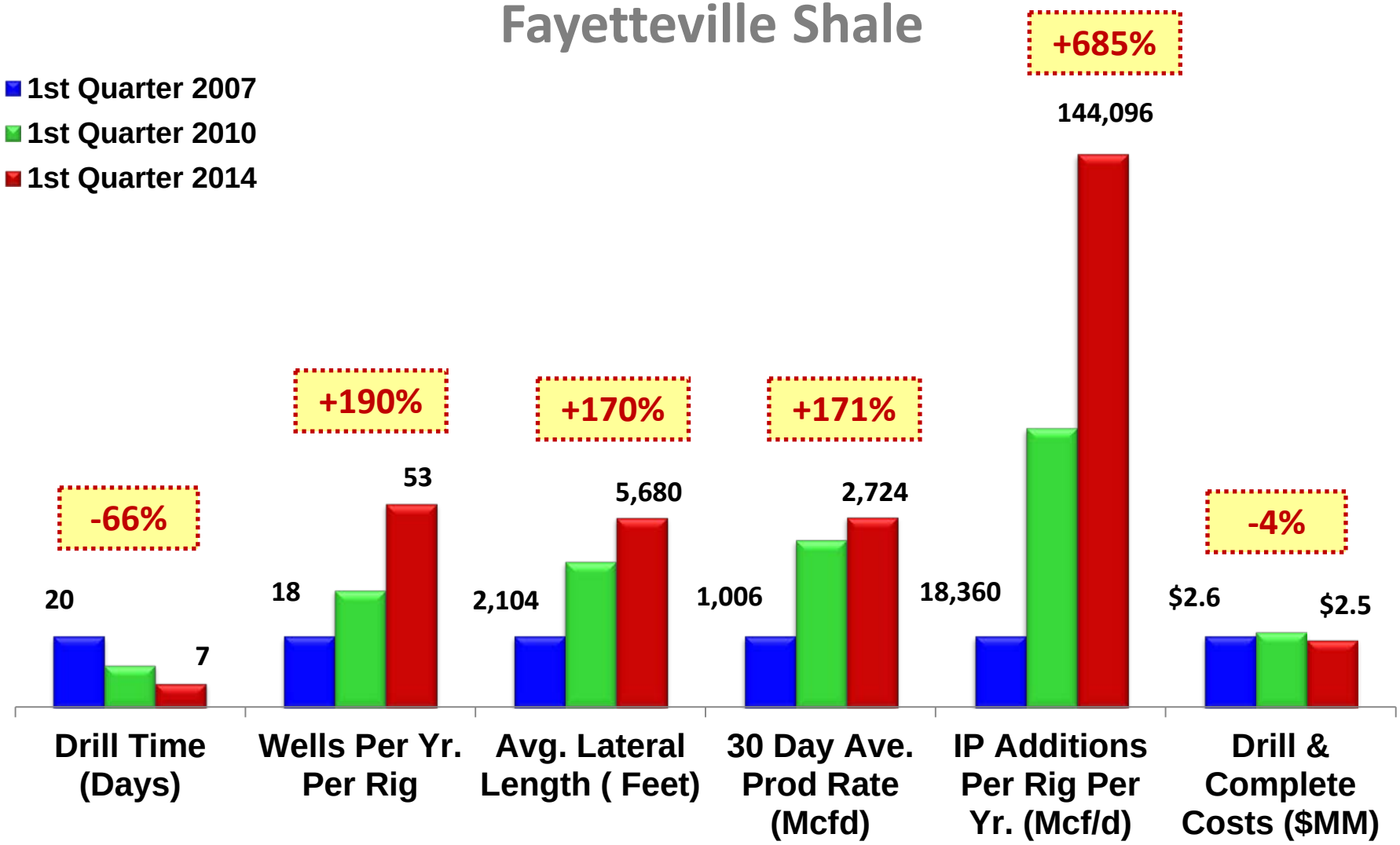
Source: BENTEK Cell Cast

Production and Supply Prospectus

Southwestern Energy's Rig Productivity Gains

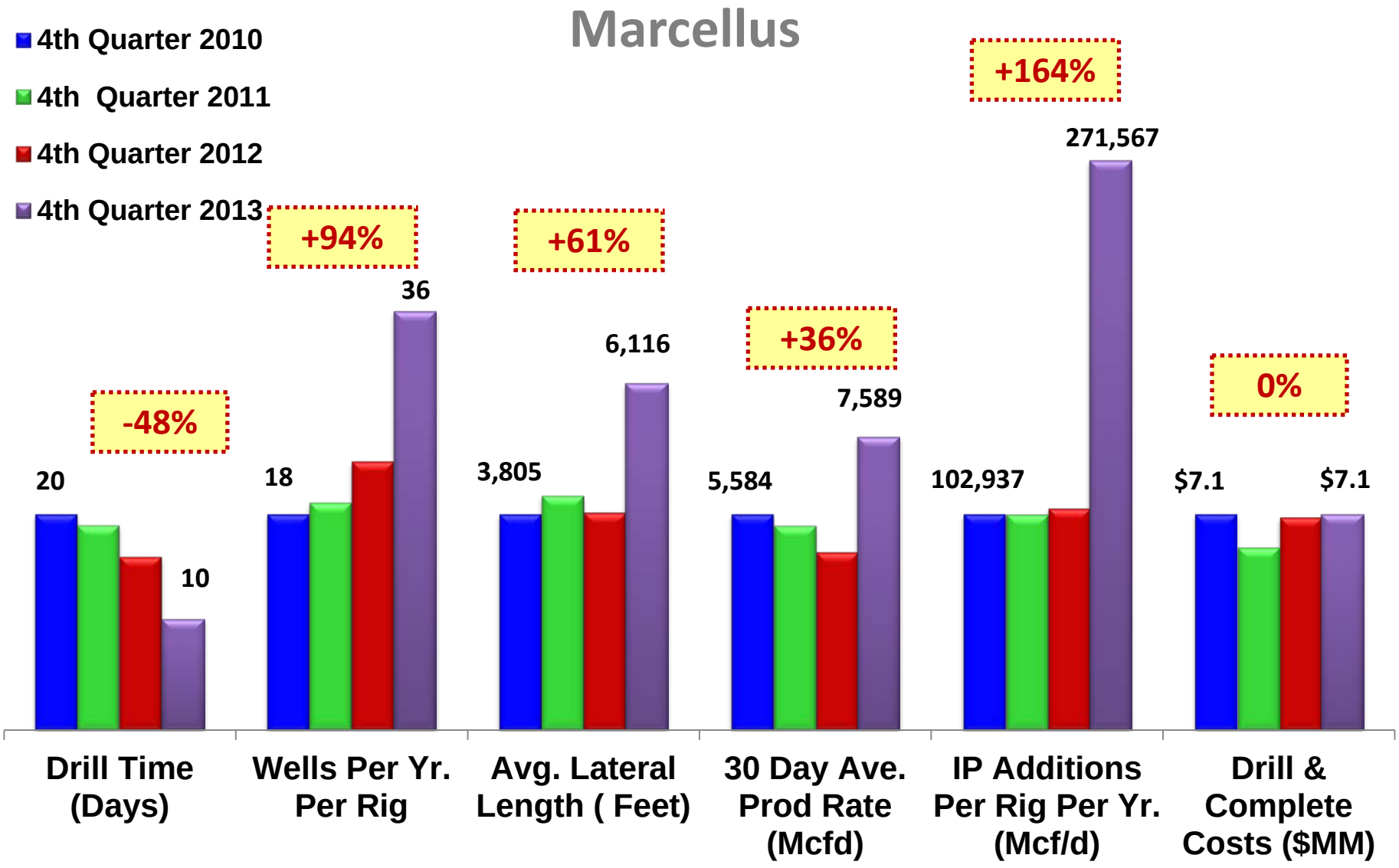
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

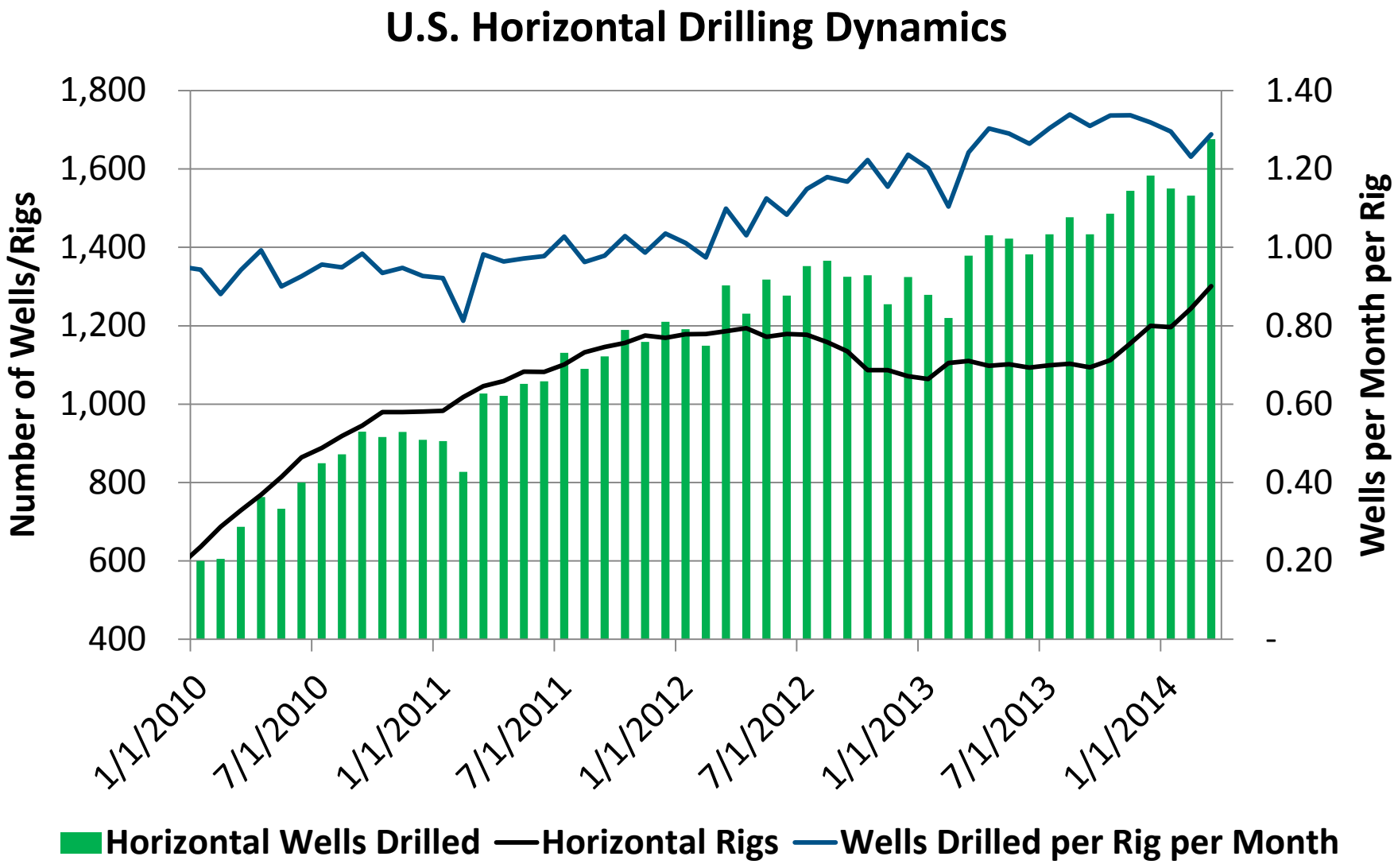


Source: Southwestern Energy Financials

Marcellus Basin Rig Productivity Gains



Trend in Drilling Leads to more wells with Fewer Rigs

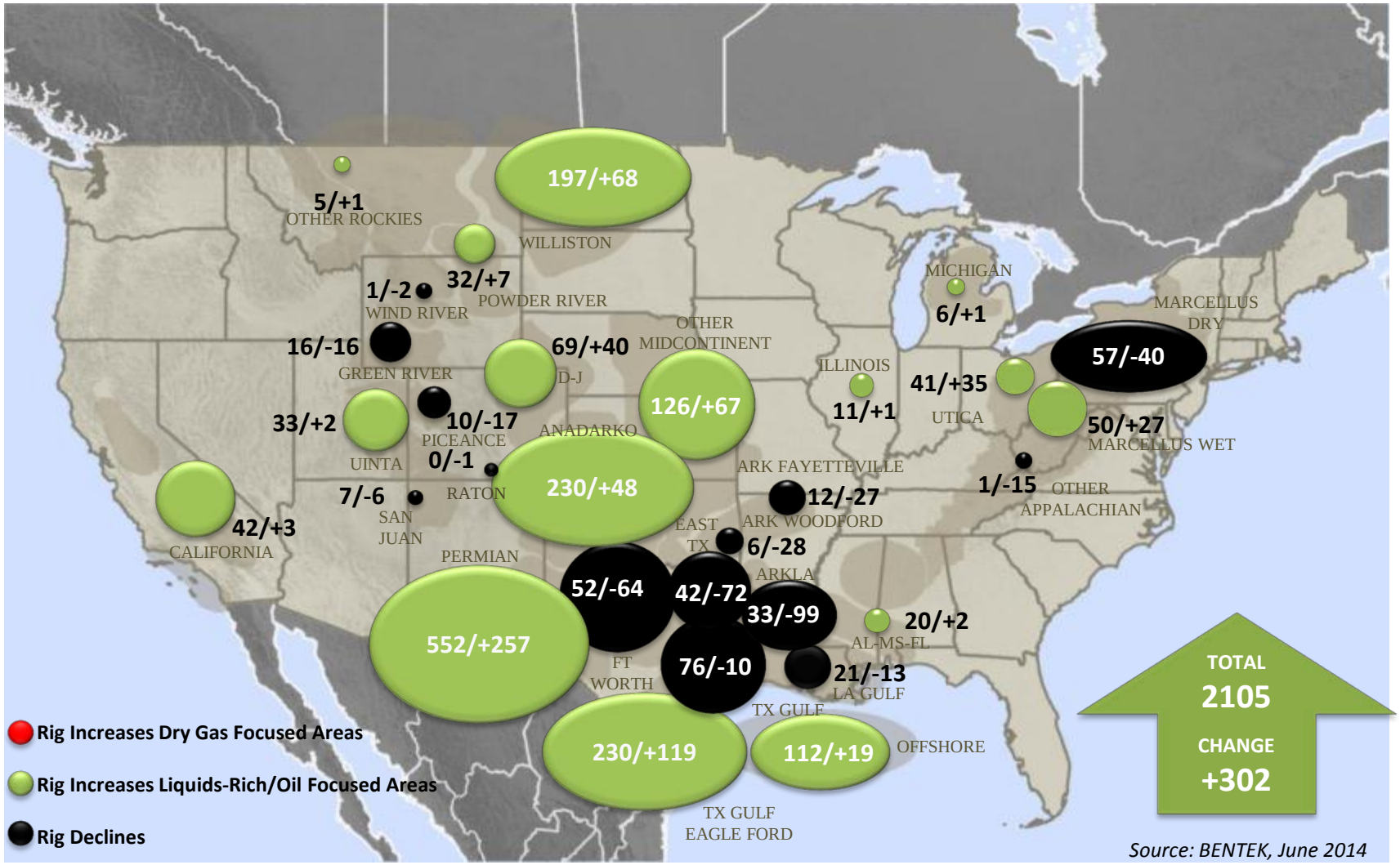


Source: BENTEK & RigData

Plays With High Returns Attract Drilling Rigs

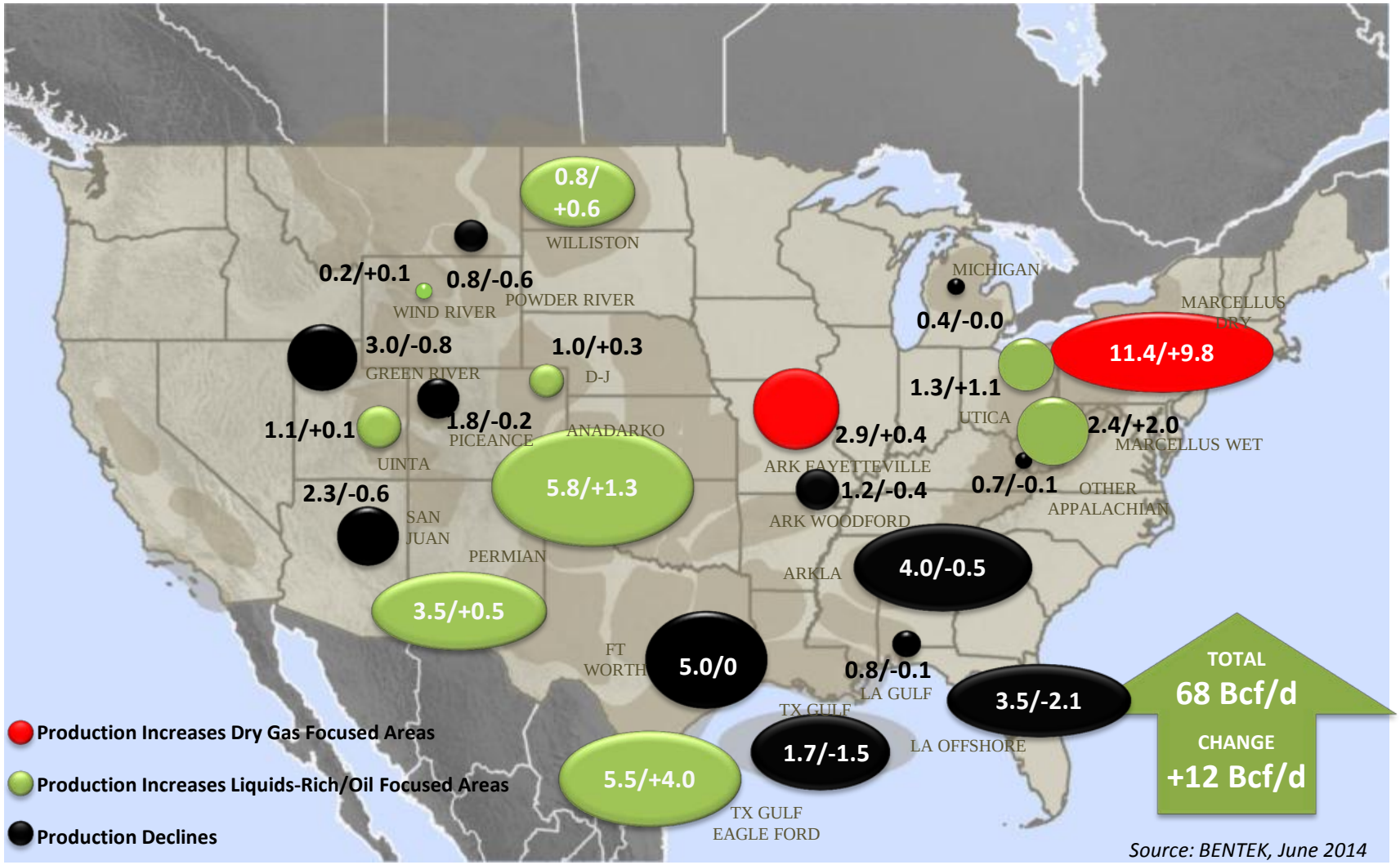
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Active rig count: June 6, 2014 / Change in rig count from June 11, 2010

Production Growth Concentrated in the Northeast and Wet Regions



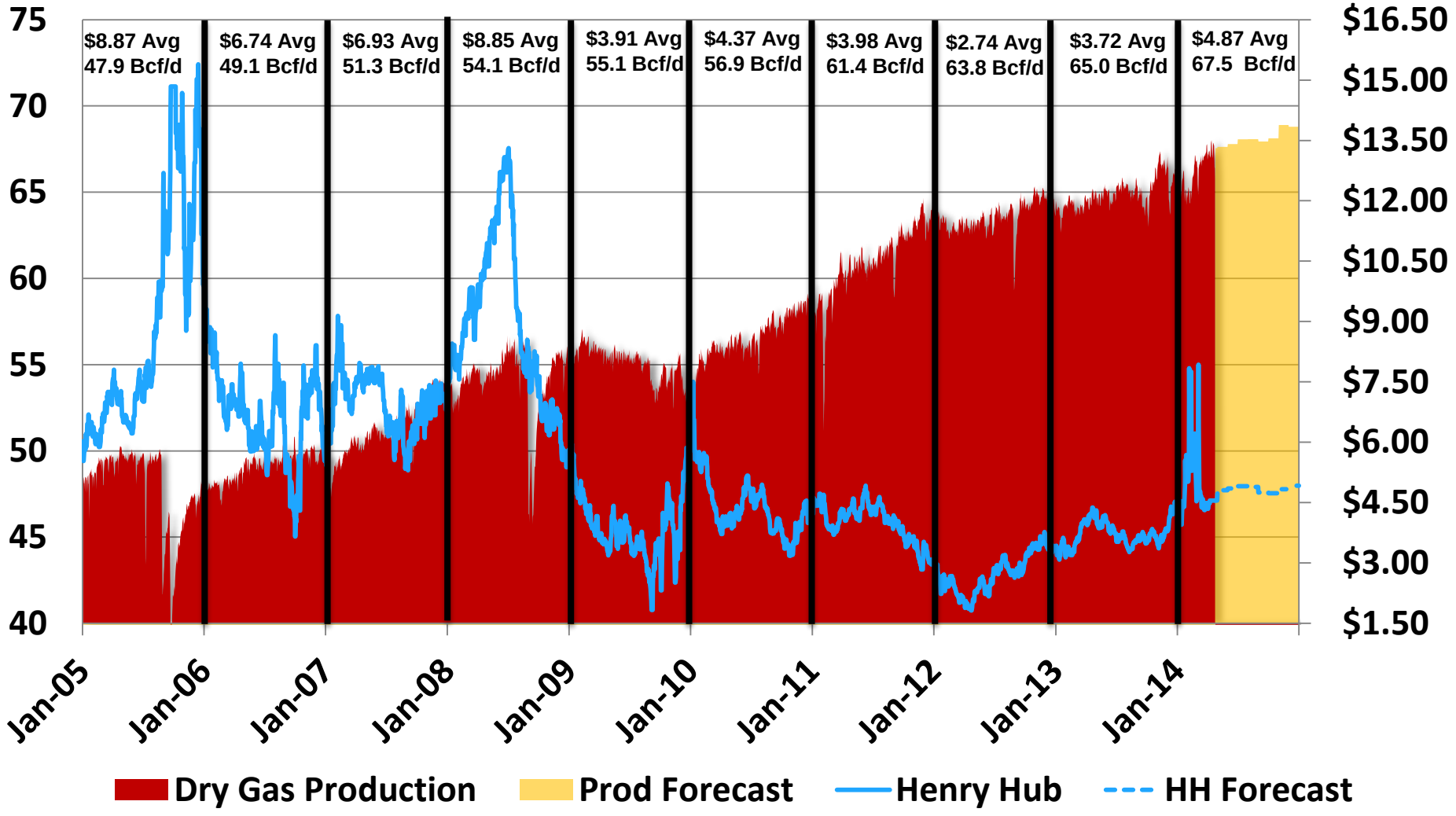
Production : June 1, 2014 / Change in Production from June 1, 2010

Historical Lower 48 Production Overview

PLATTS McGRAW HILL FINANCIAL

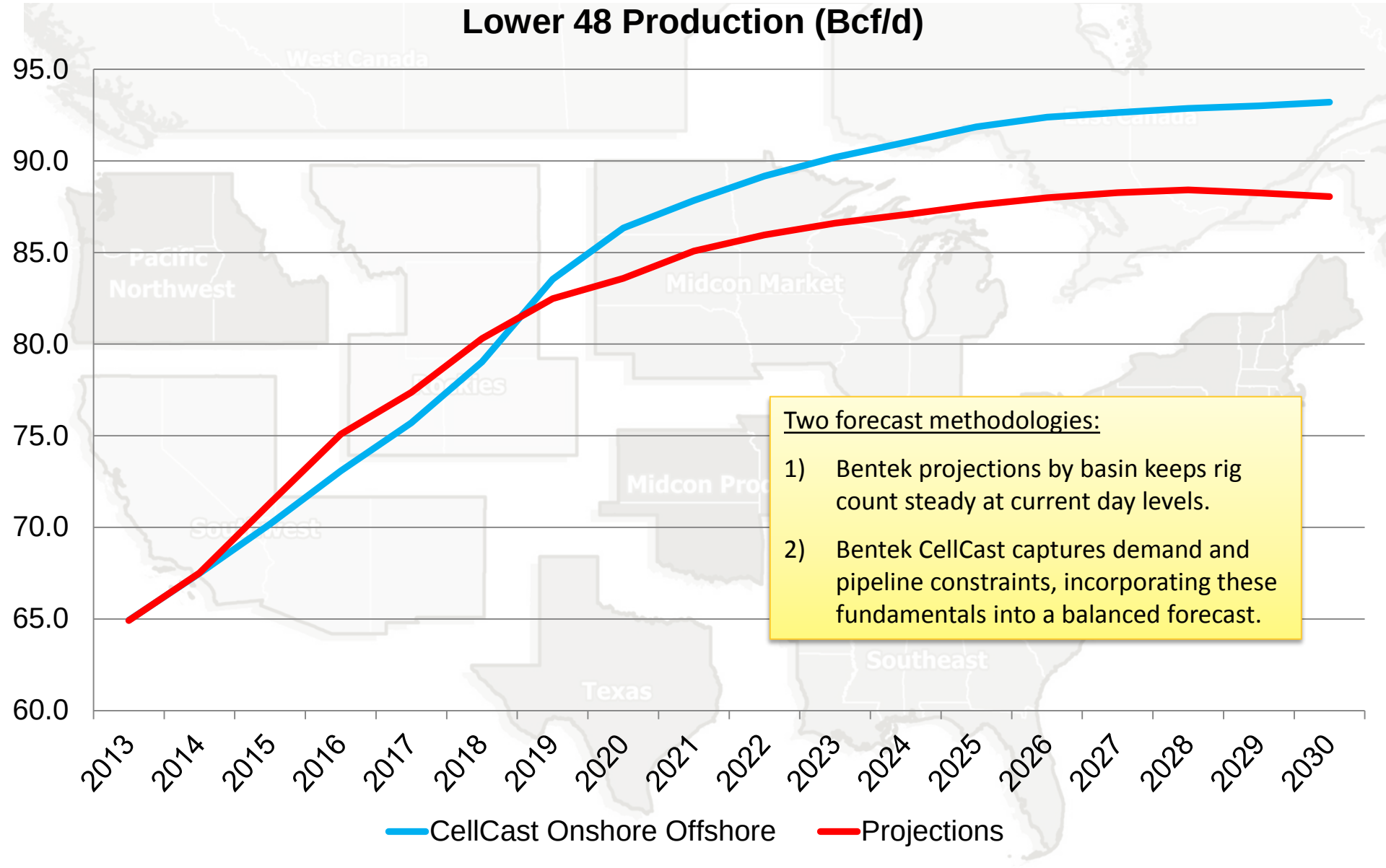
BENTEK Energy

U.S. Dry Natural Gas Production



Source: BENTEK Supply and Demand Report

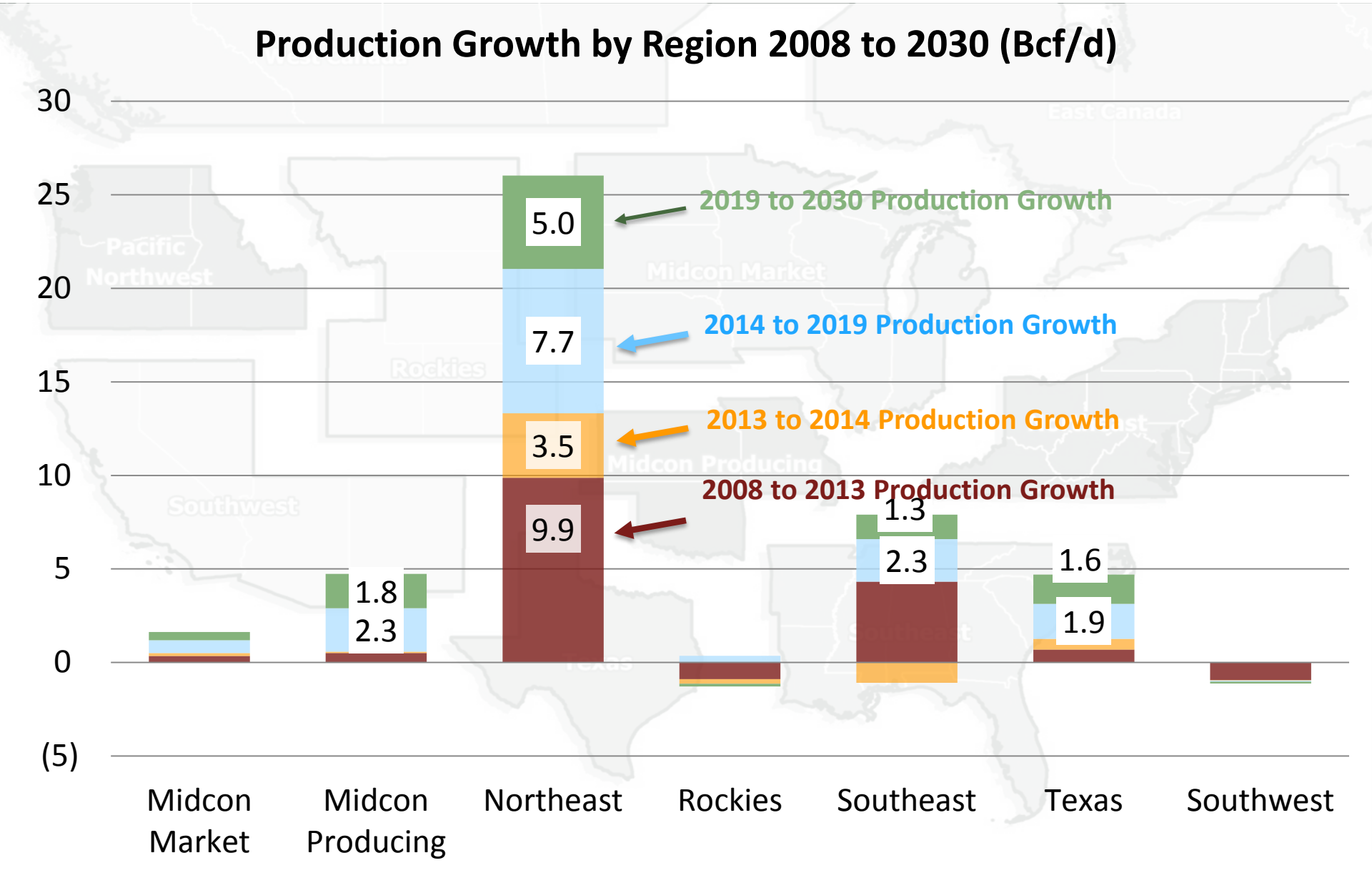
Cellcast Modeling vs. Projections



Northeast Continues to Drive Production Growth through 2030

PLATTS McGRAW HILL FINANCIAL

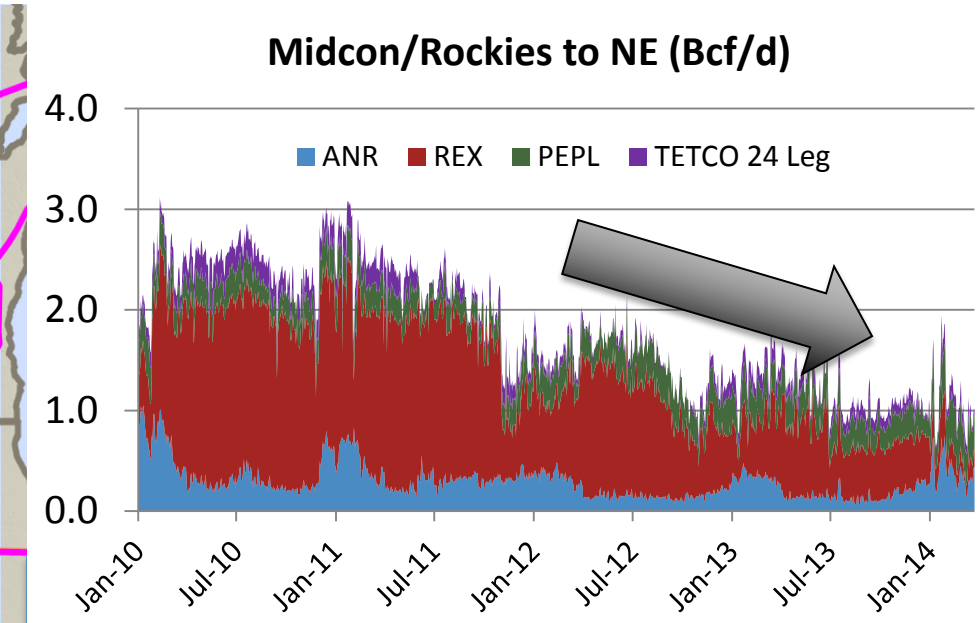
BENTEK Energy

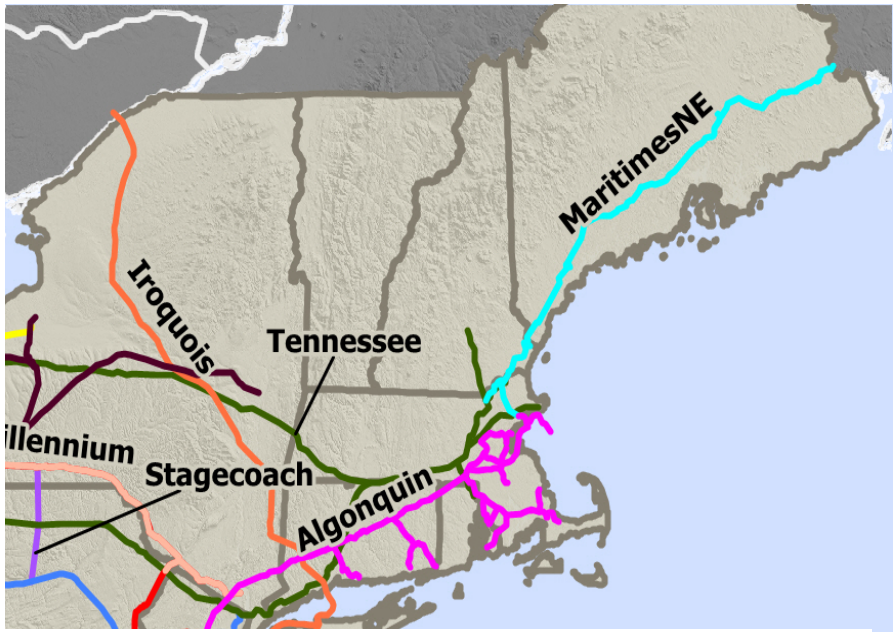


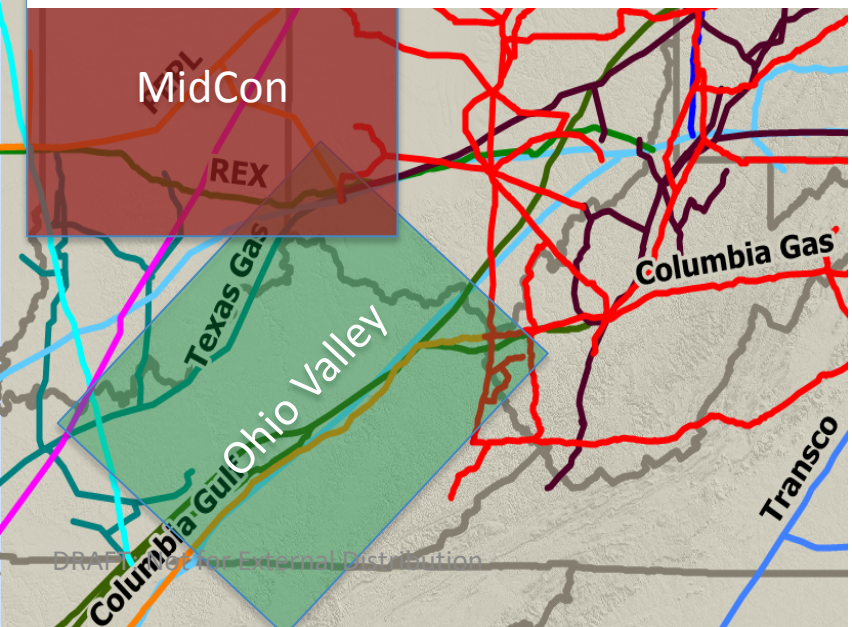
Flows from the Gulf via Ohio Valley and flows from the Midcon and Rockies Rapidly Getting Booted Out of the Northeast Region

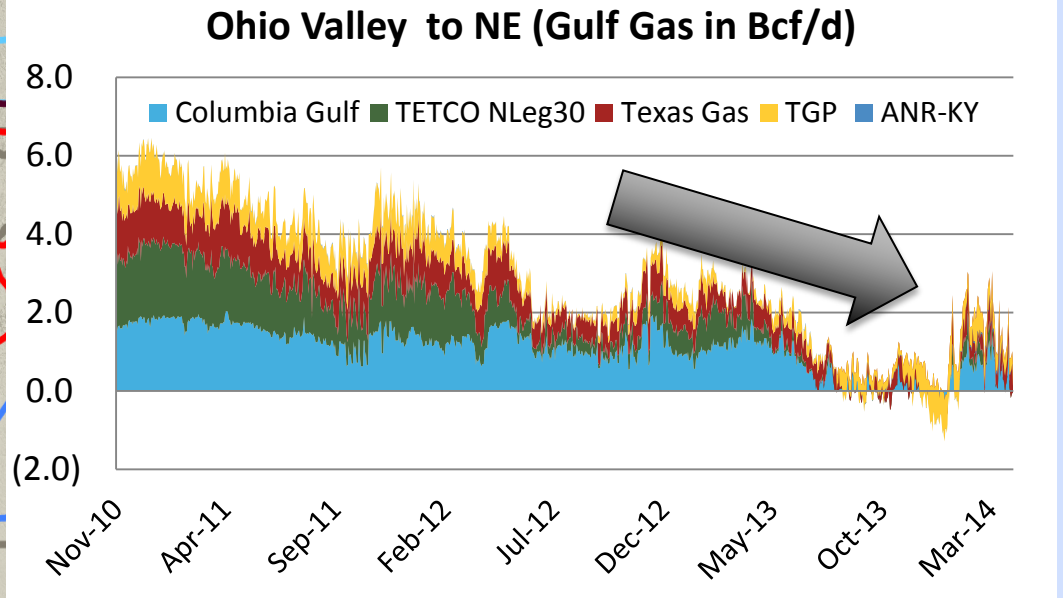
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

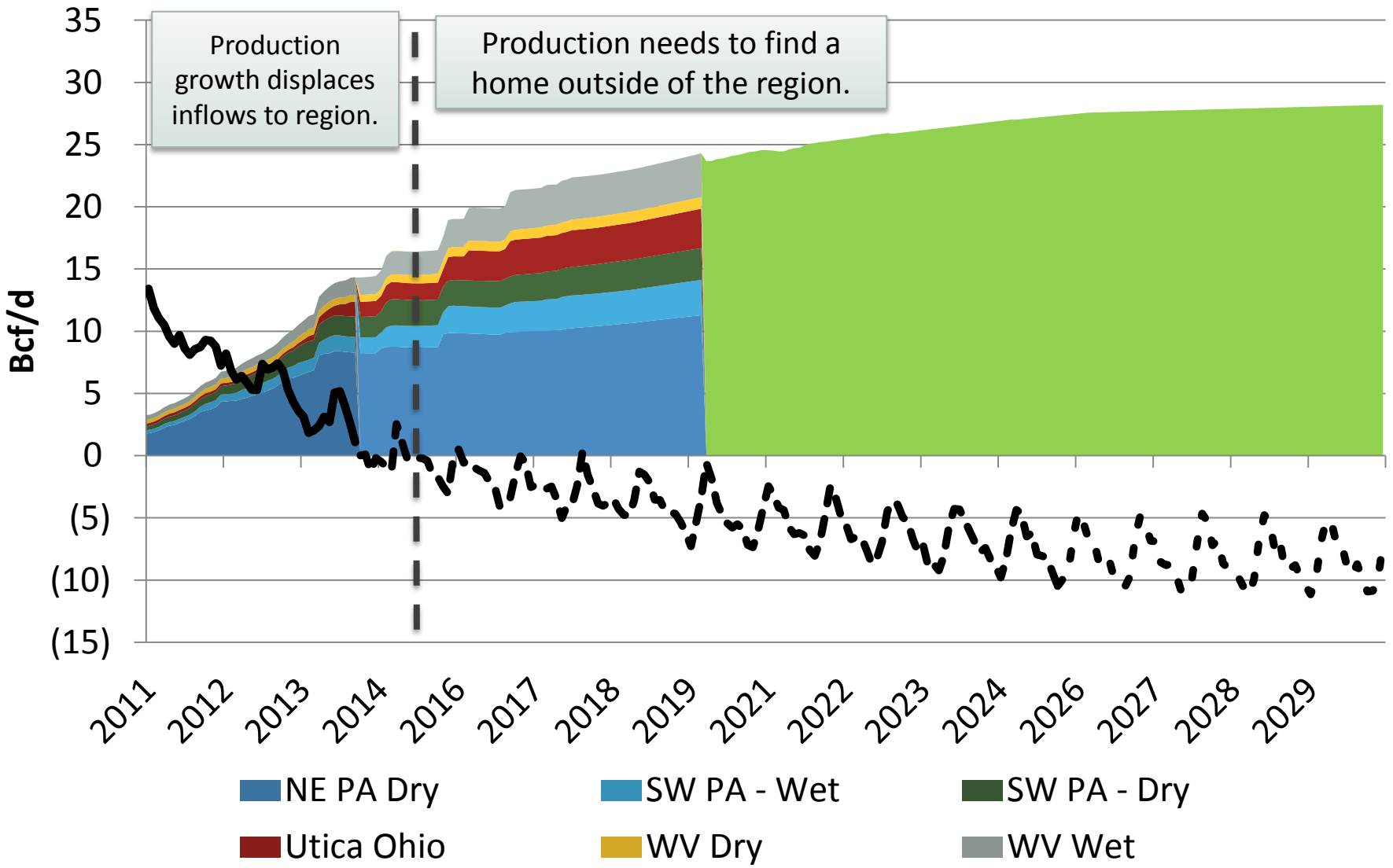




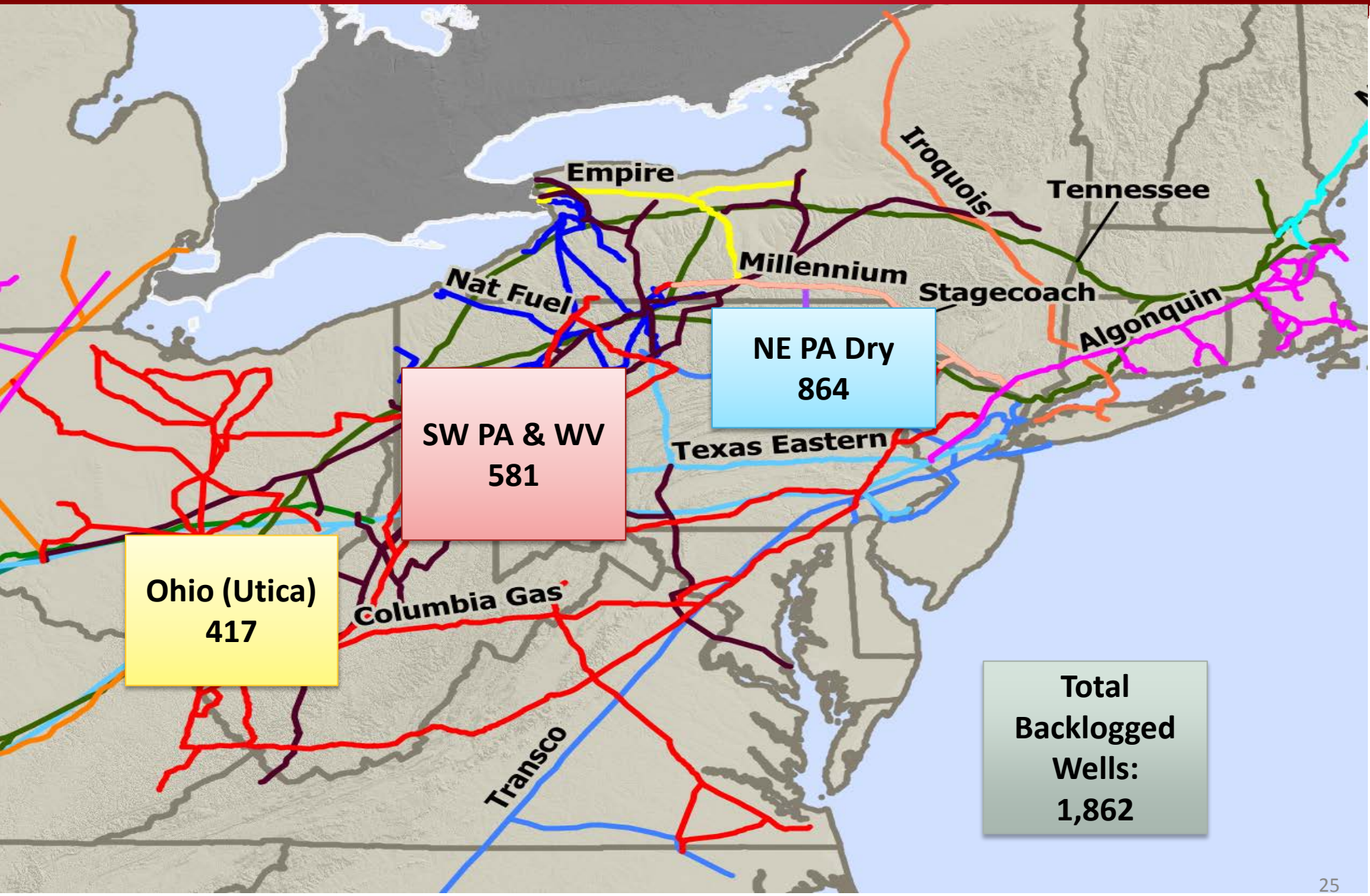




Northeast Reaches Tipping Point



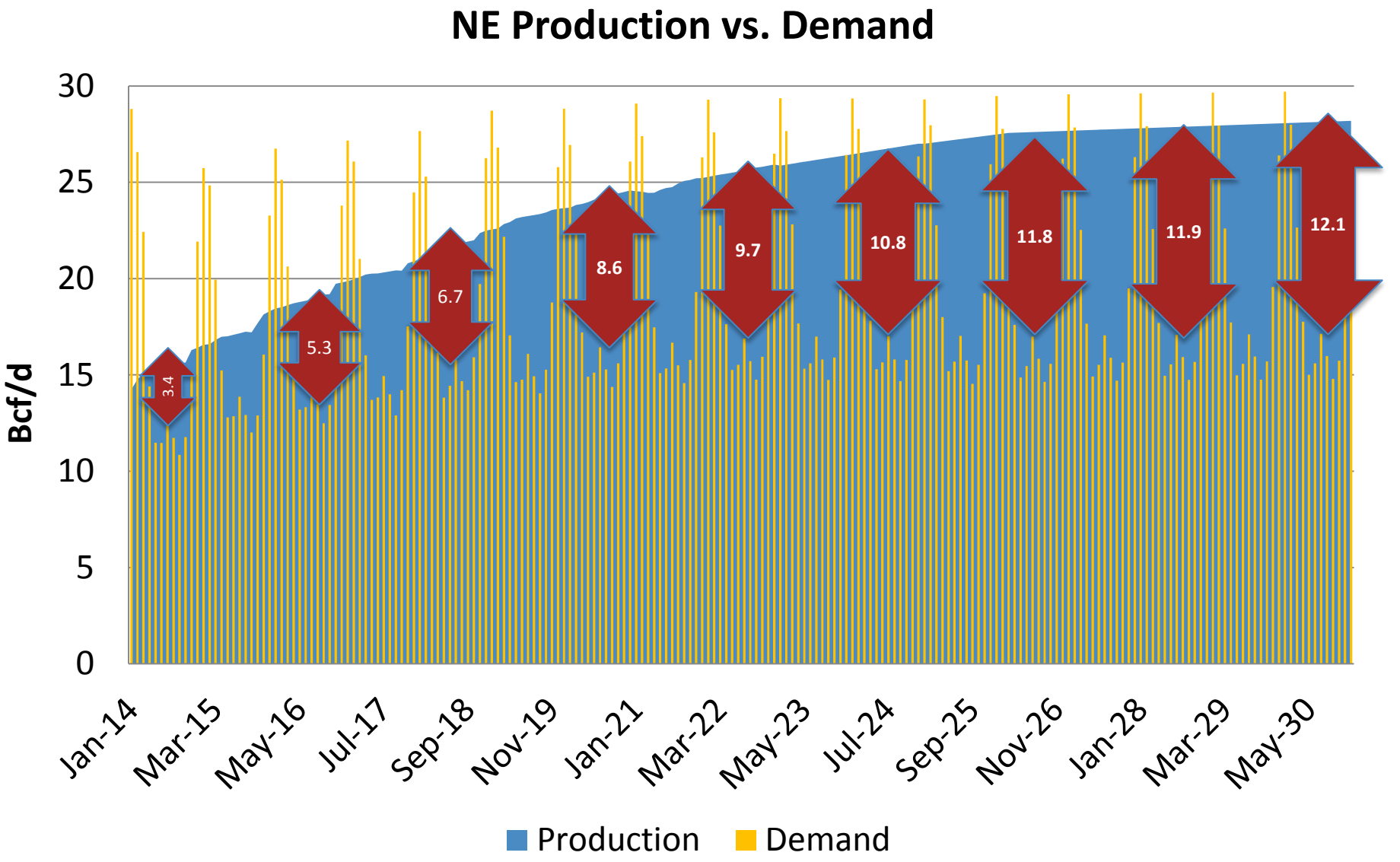
Backlogged Wells: Drilled but not Producing



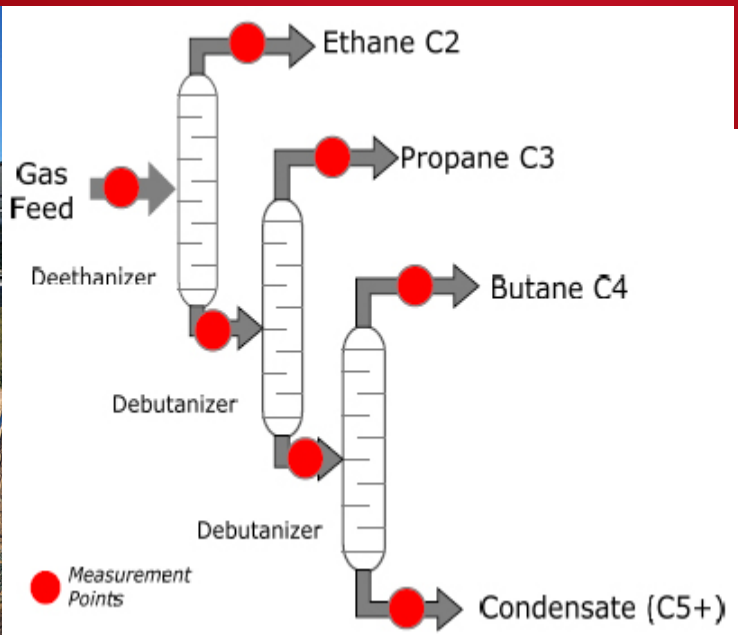
Expansion projects are critical for production growth, especially during the summer when demand drops well below production levels.

PLATTS McGRAW HILL FINANCIAL

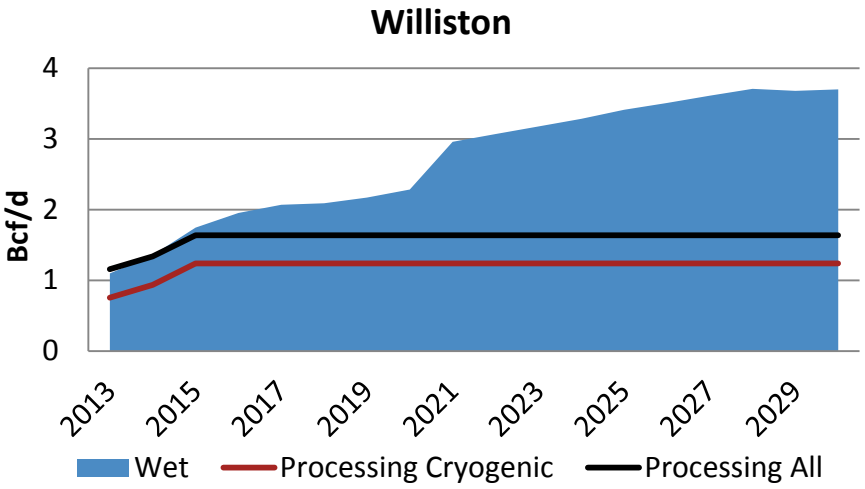
BENTEK Energy

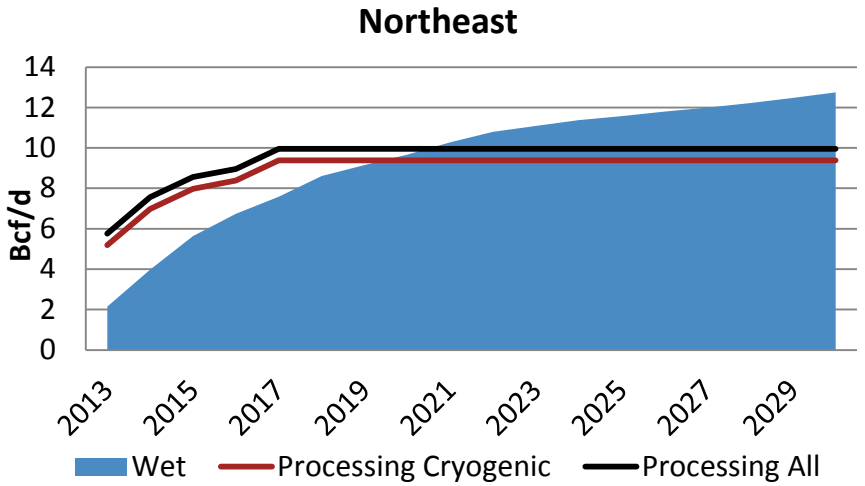


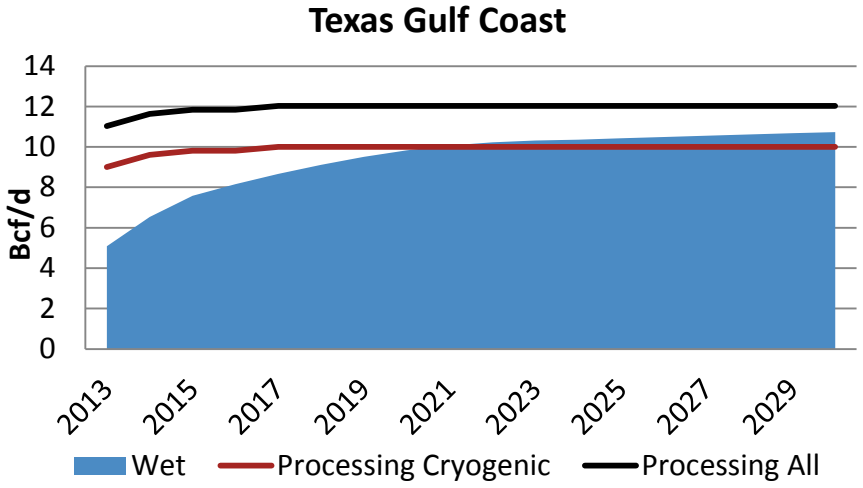
Processing and Fractionation Requirements

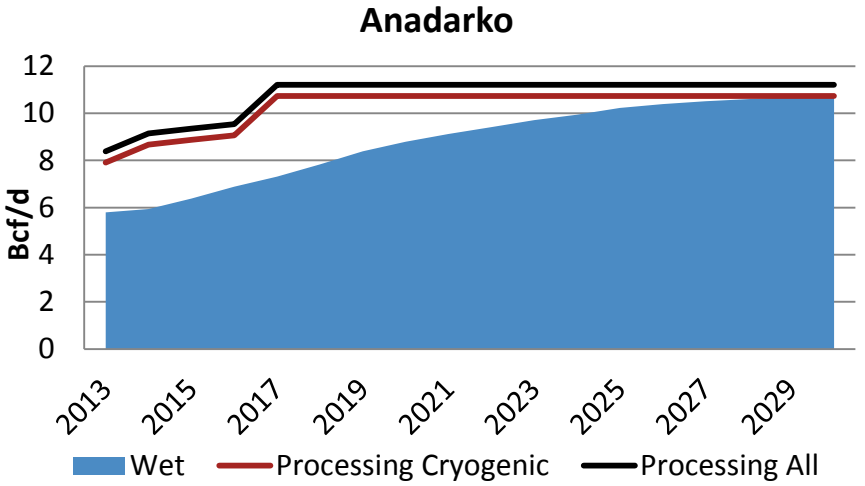


Adequate processing capacity through 2020 in most liquids-rich regions, except for Williston







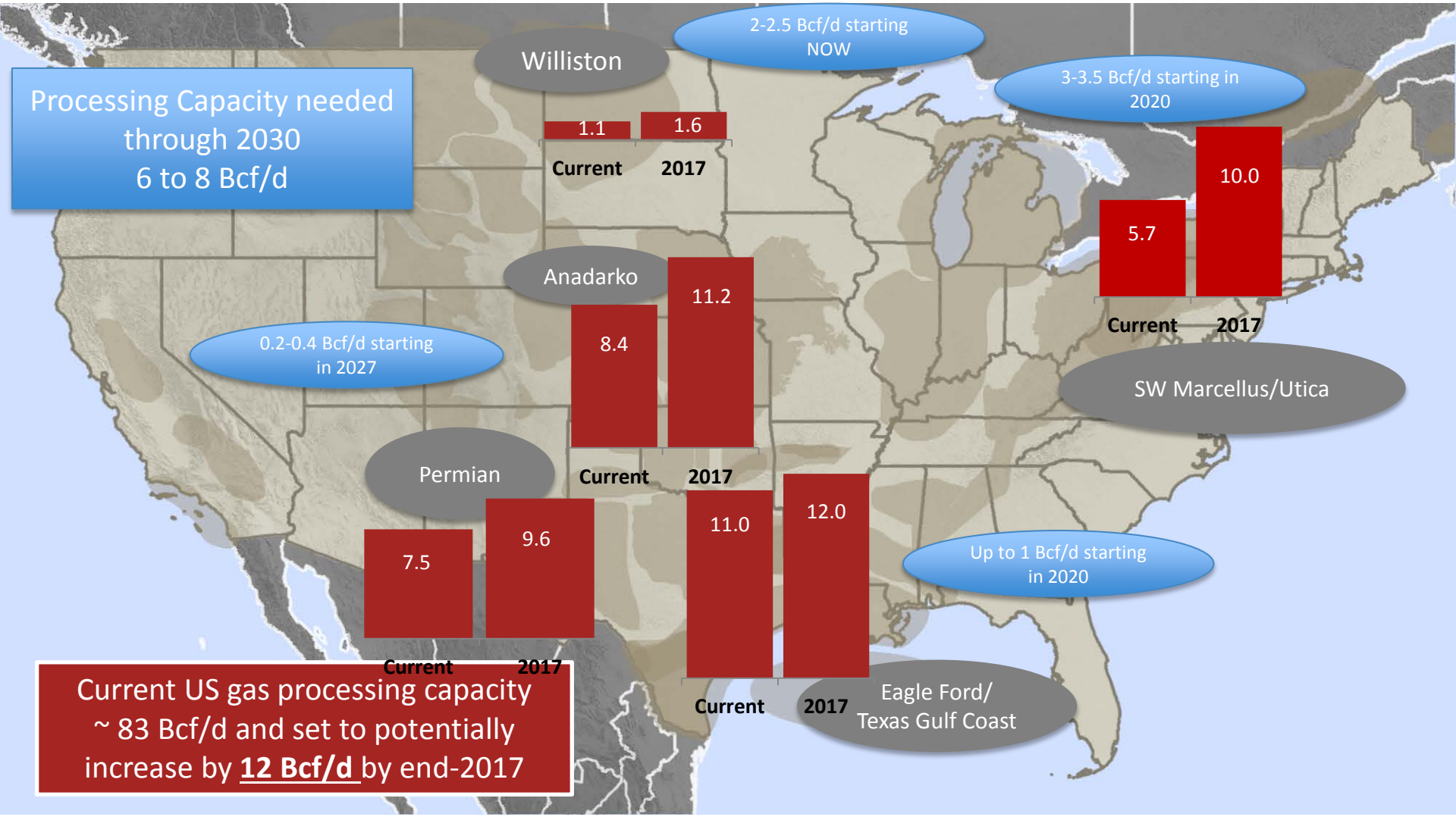


Source: Bentek's Market Call: North American NGLs, NGL Facilities Databank

Over 70 projects to build or expand processing capacity

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

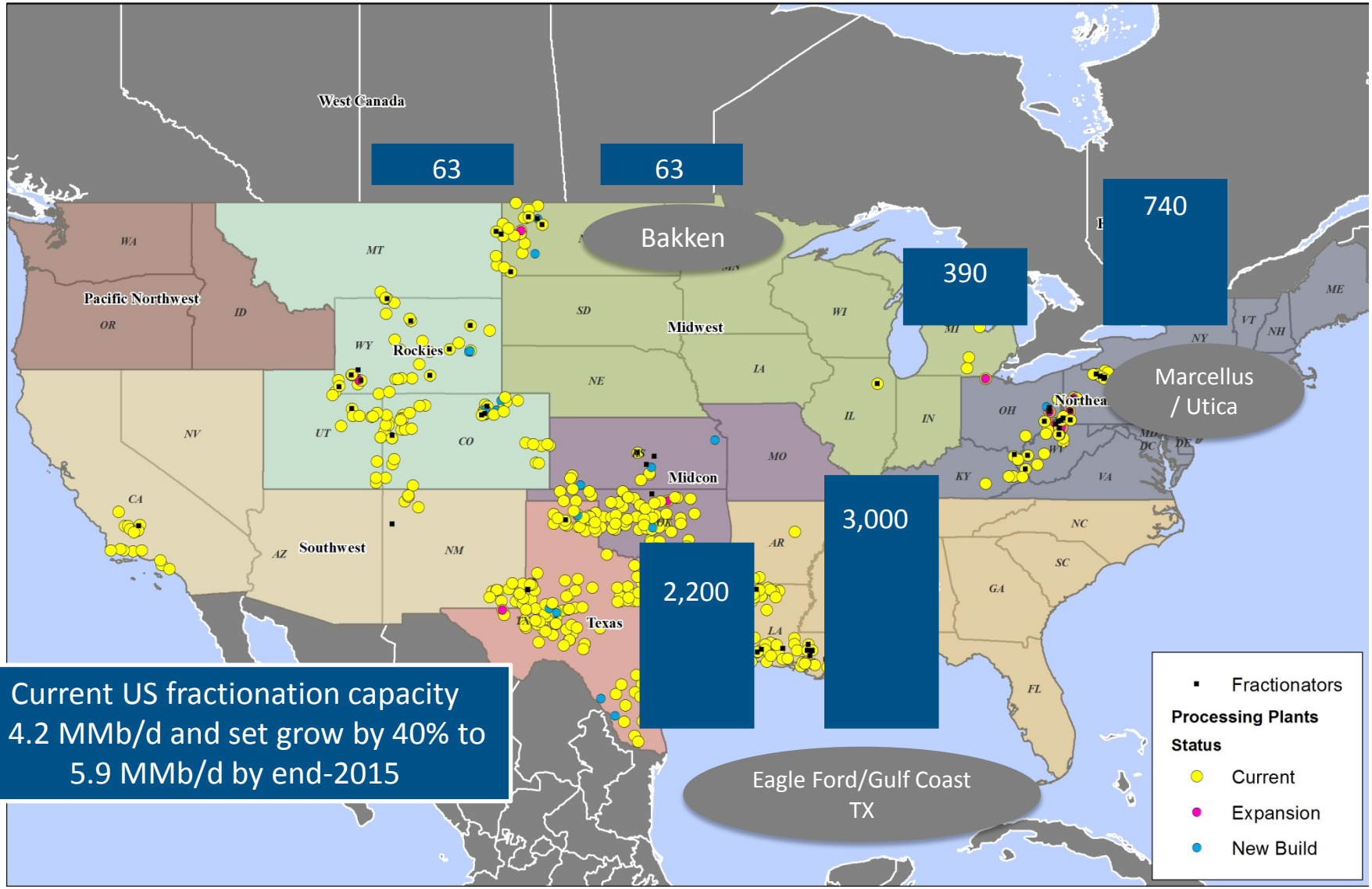


Source: Bentek's *NGL Facilities Databank Updated July 2014*

Over 30 Fractionation Projects

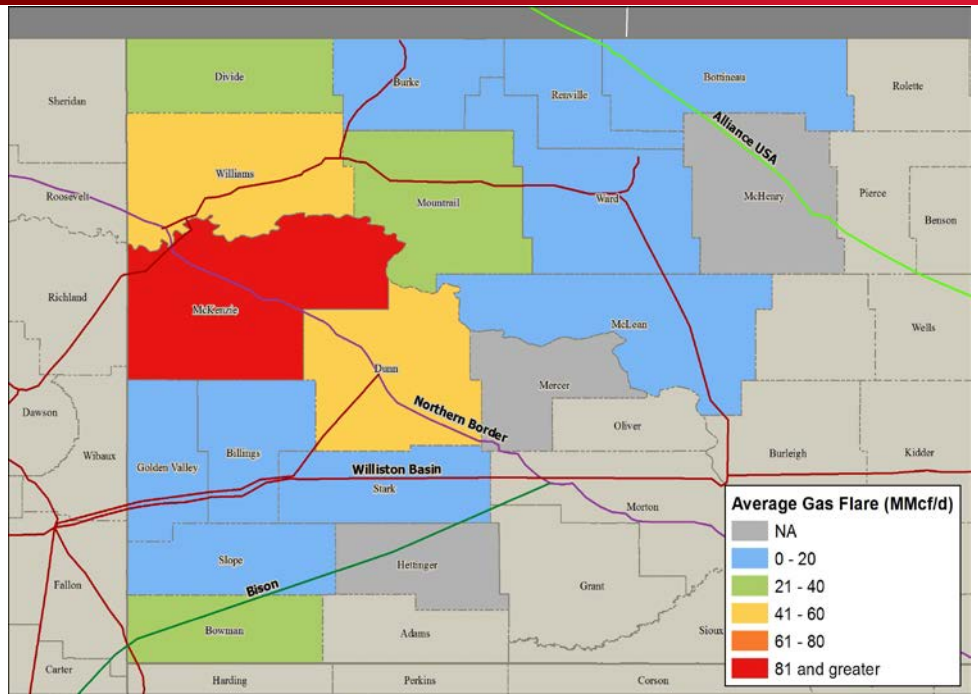
PLATTS McGRAW HILL FINANCIAL

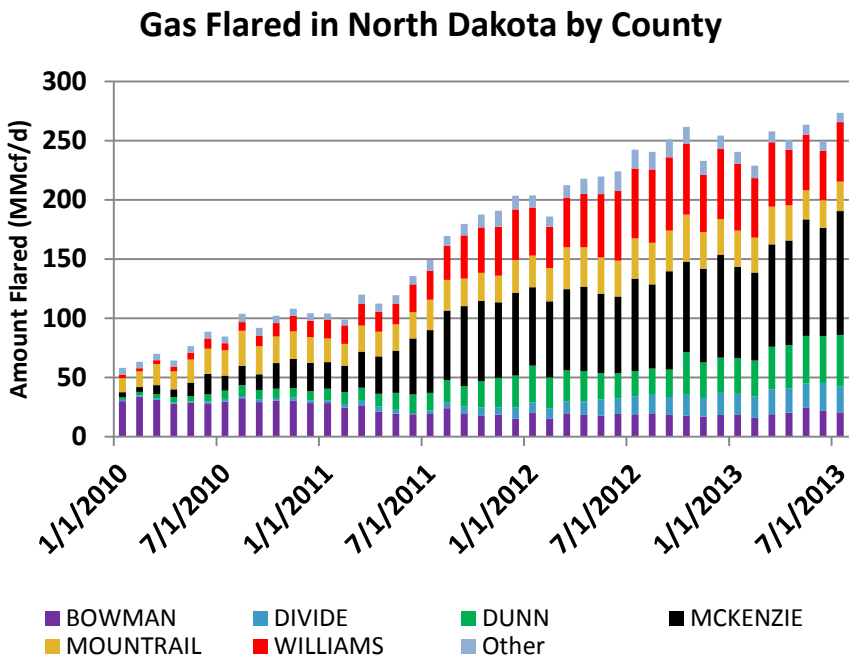
BENTEK Energy

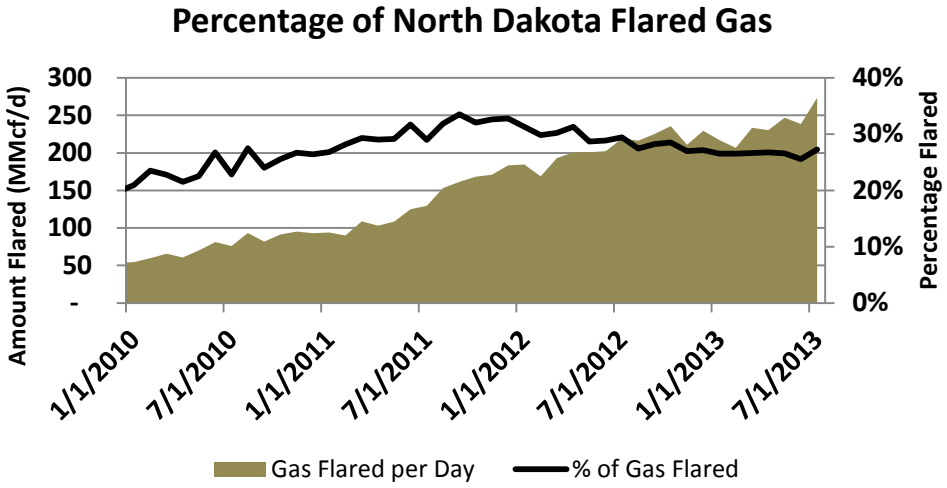


Current US fractionation capacity
~ 4.2 MMb/d and set grow by 40% to 5.9 MMb/d by end-2015

North Dakota Gas Flaring an Issue Due to Processing, Takeaway Constraints





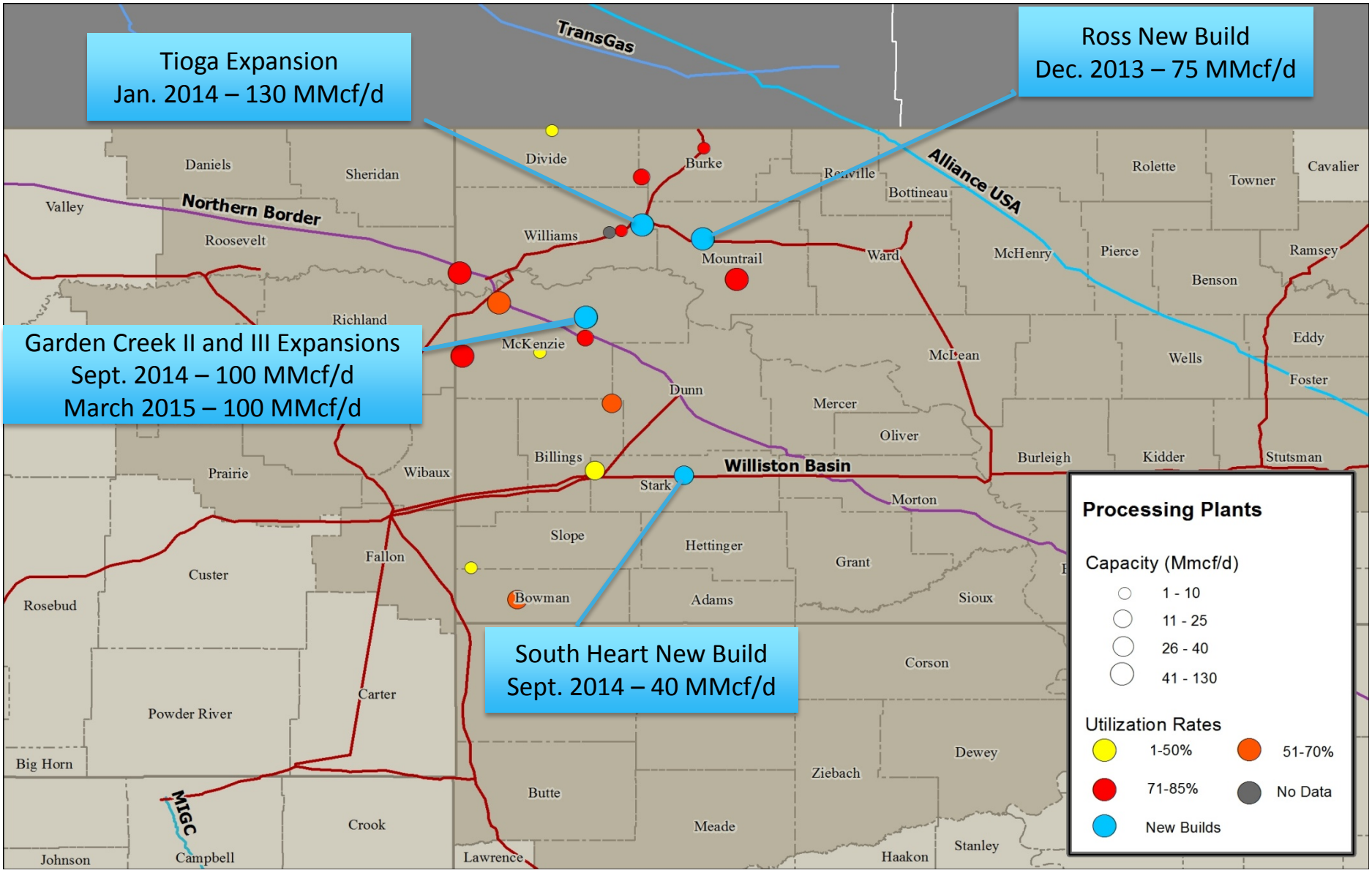


- As the result of processing and pipeline constraints, estimated flaring in ND has risen from about 50 MMcf/d at the beginning of 2010 to more than 250 MMcf/d as of July 2013
- Majority of the flaring is occurring in McKenzie County, which topped 100 MMcf/d in July
- Northern Border traverses through top three flaring counties, exemplifies the constraints in the region

New Builds, Expansions Will Add About 400 MMcf/d of Processing Capacity

PLATTS McGRAW HILL FINANCIAL

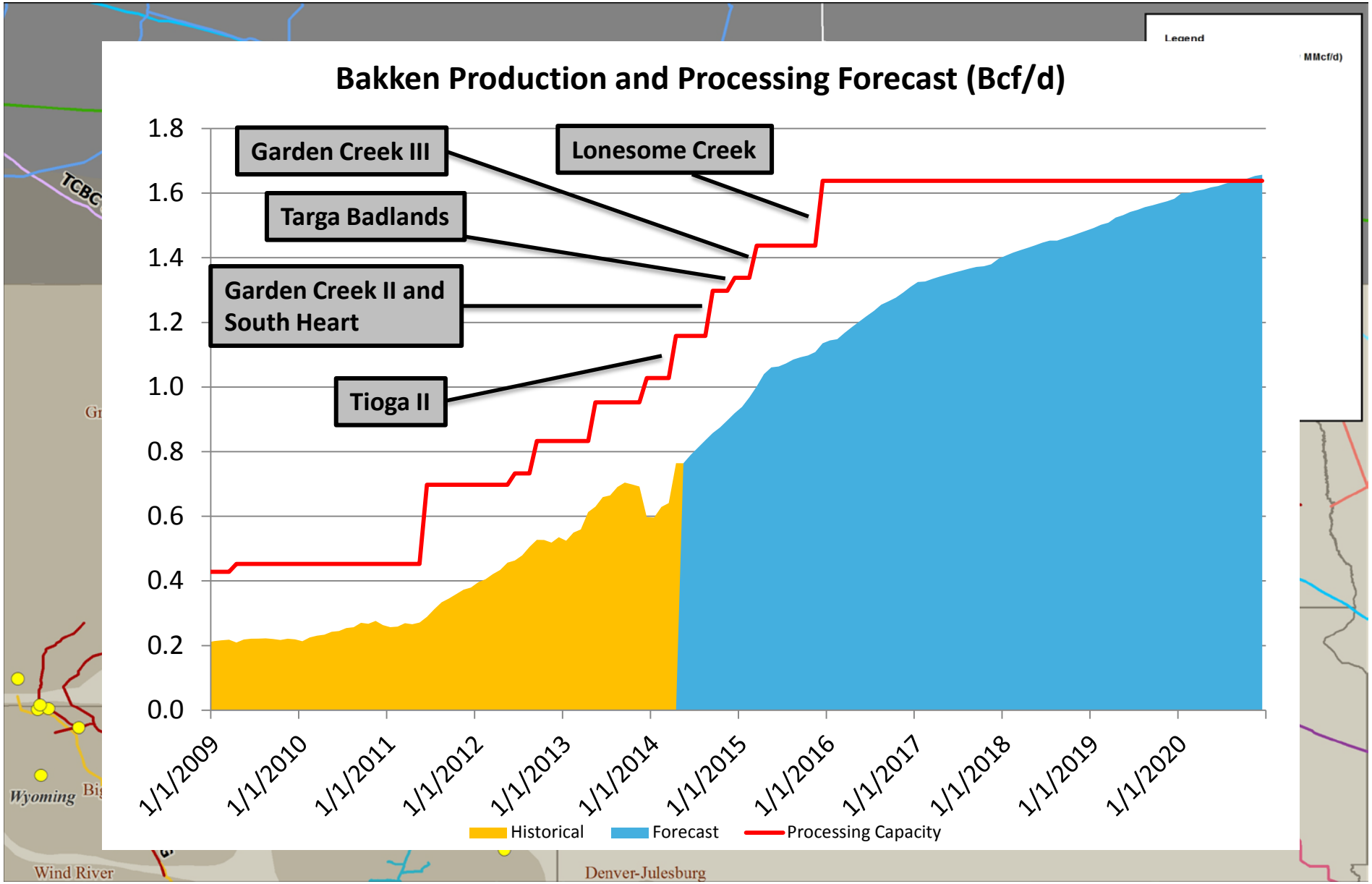
BENTEK Energy



Processing New Builds, Expansions Will Help Sustain Production Growth

PLATTS McGRAW HILL FINANCIAL

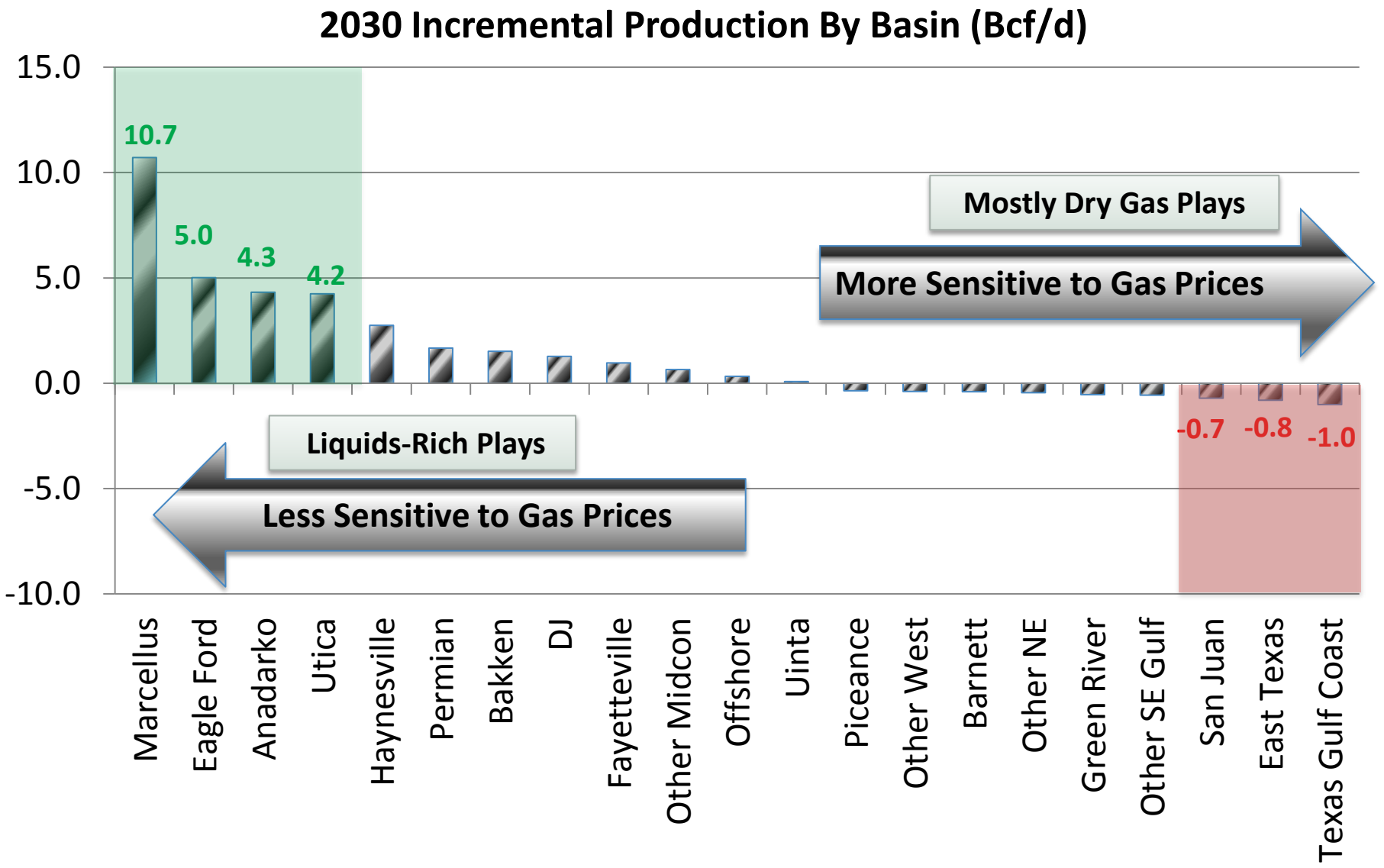
BENTEK Energy



Four Basins will add 24.5 Bcf/d of Incremental production through 2030

PLATTS McGRAW HILL FINANCIAL

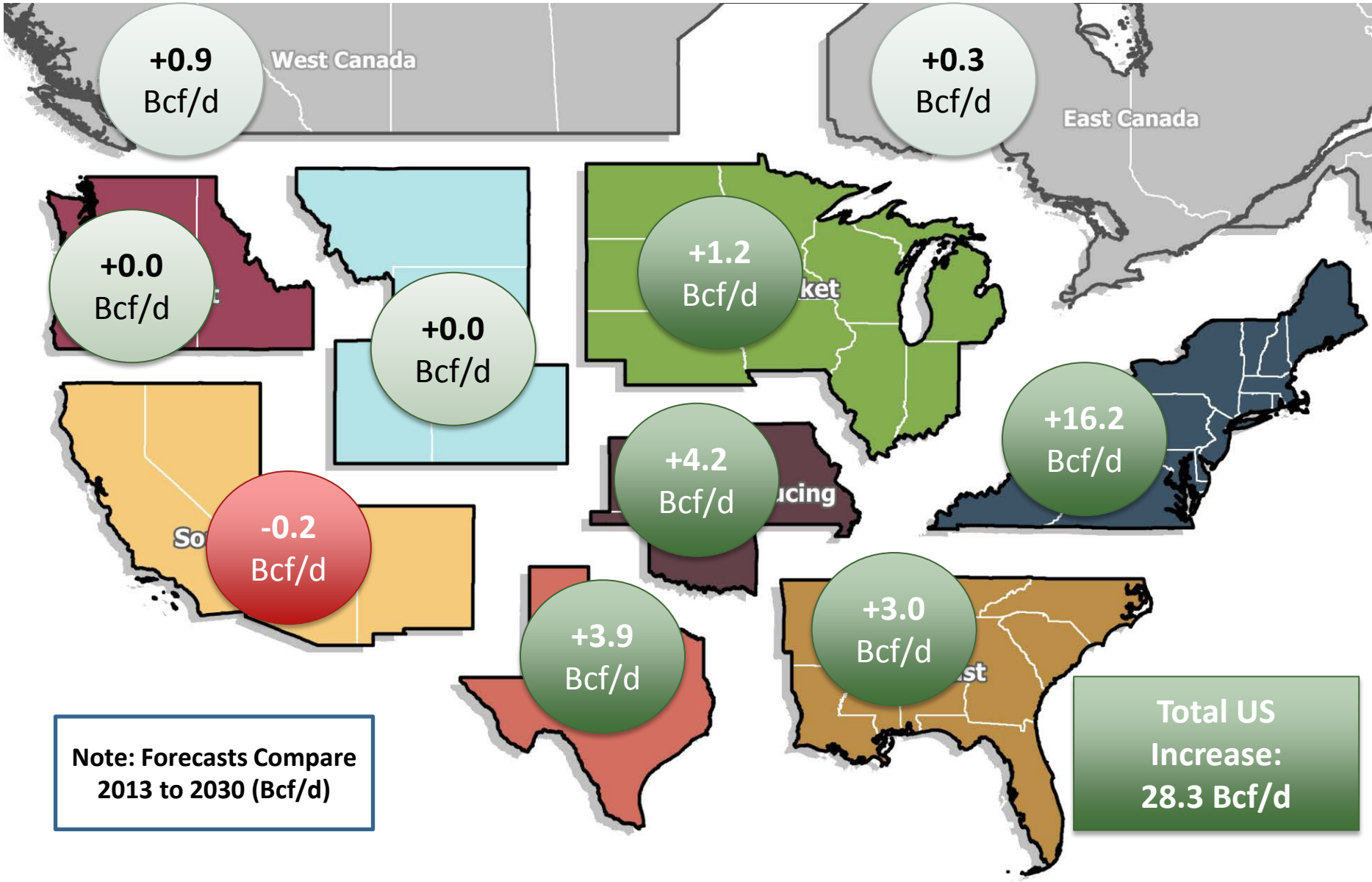
BENTEK Energy



US Production Growth Focused in East, Texas, and Midcon Producing

PLATTS McGRAW HILL FINANCIAL

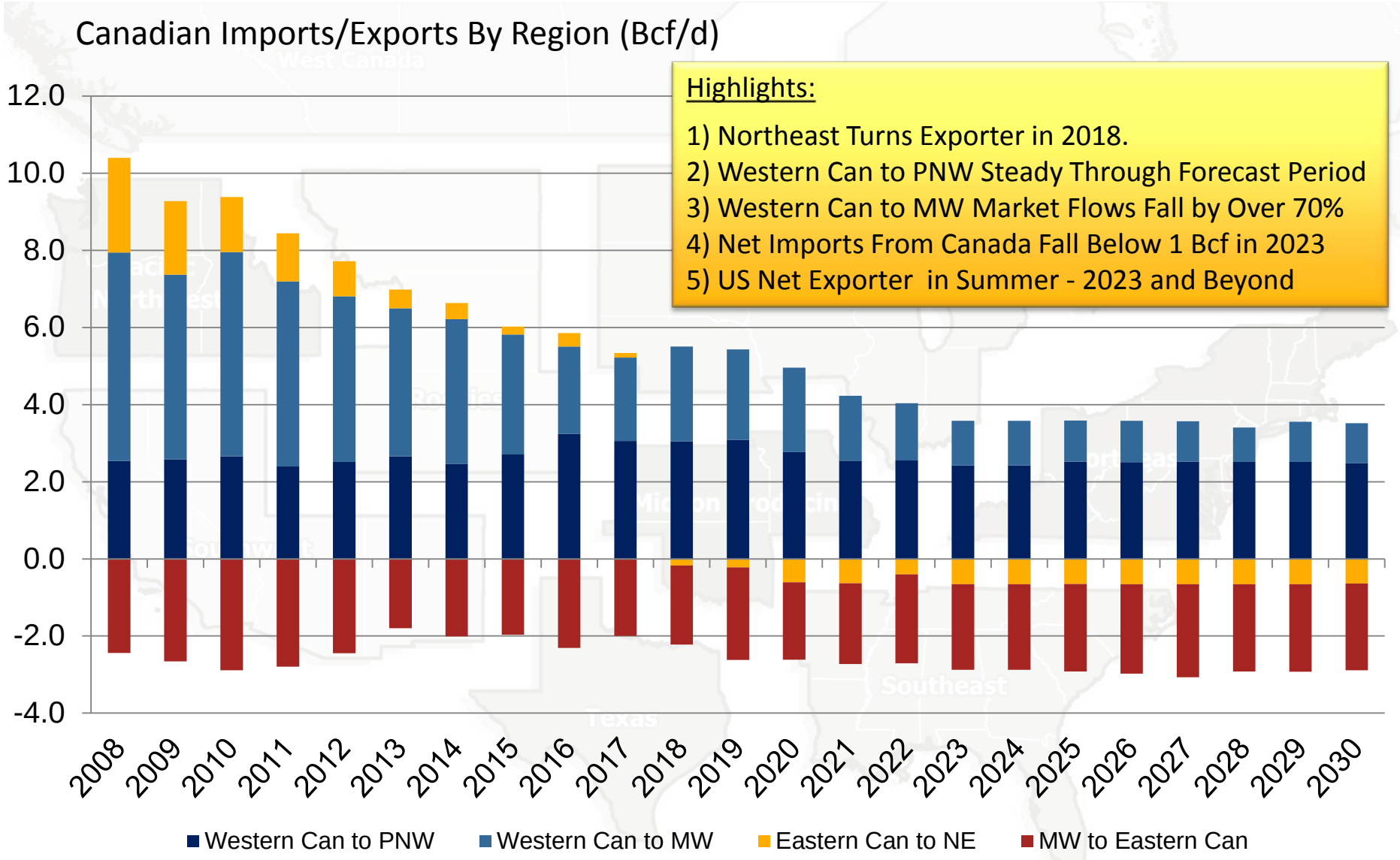
BENTEK Energy



Canadian Imports Continue Steady Decline

PLATTS McGRAW HILL FINANCIAL

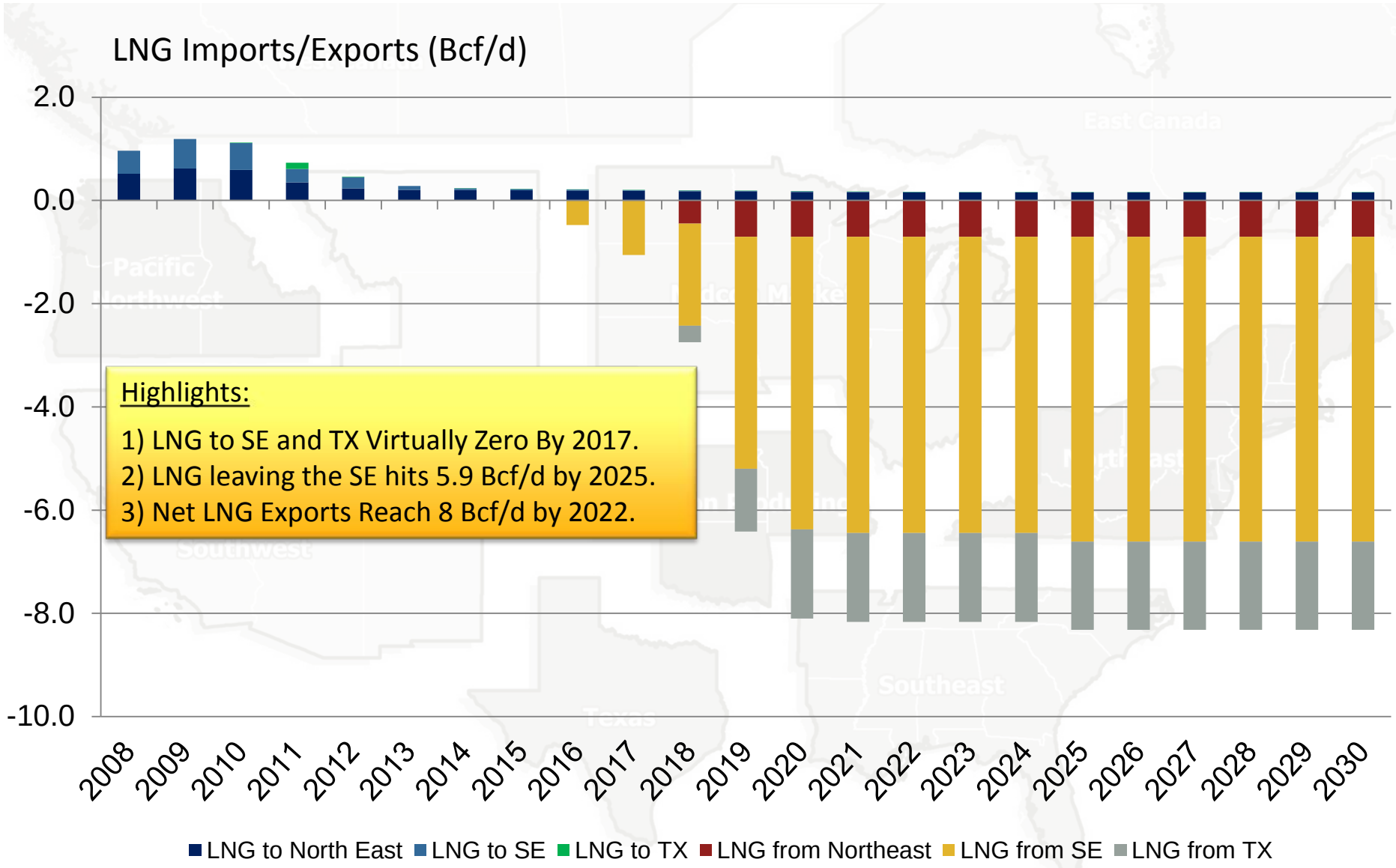
BENTEK Energy



LNG Imports Face Uncertain Future

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

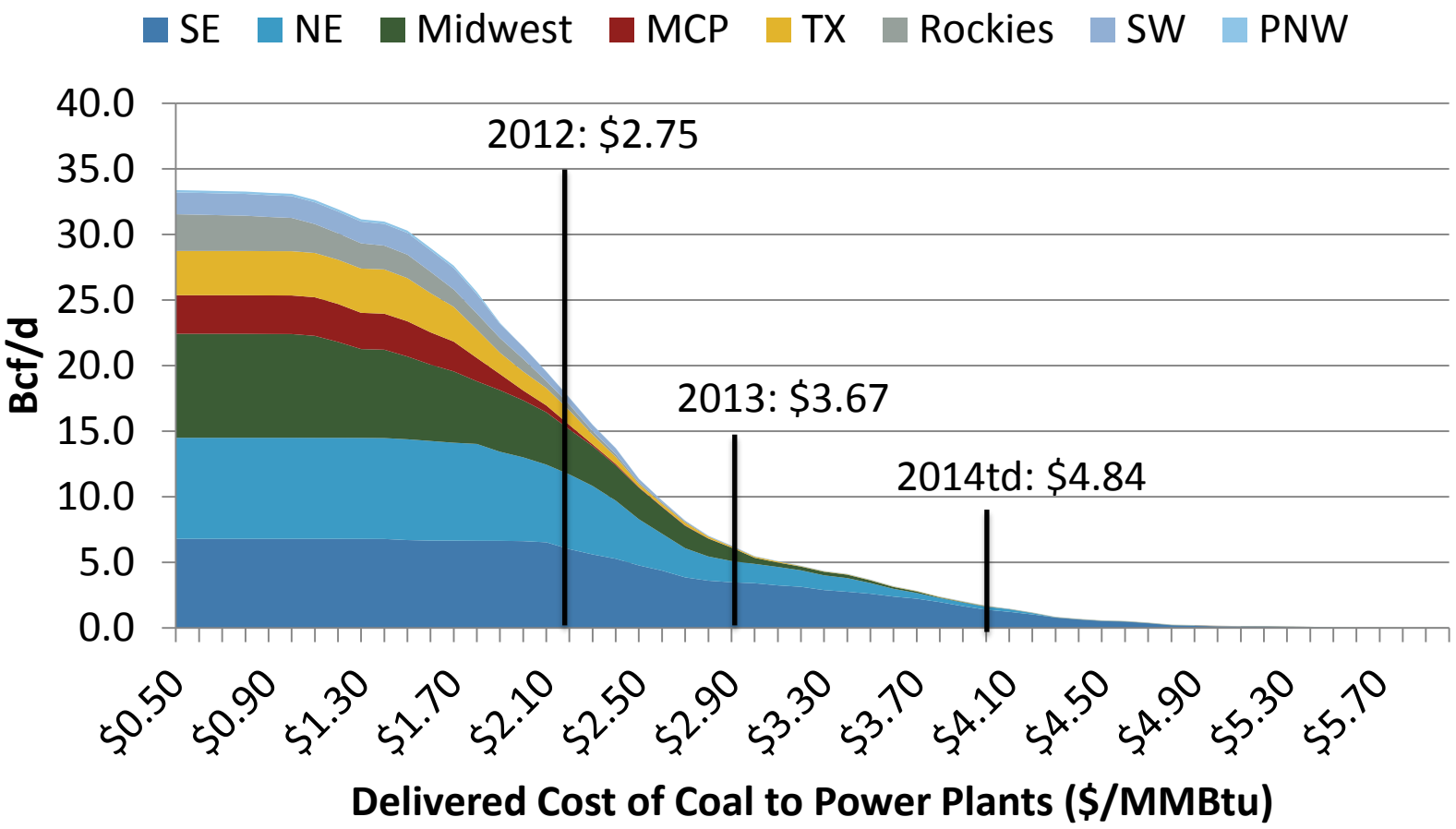


Demand: The Future Is In Your Hands

End of a Short-Lived Era: Market-Based Coal to Gas Substitution

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Limited potential for coal to gas substitution going forward.
Prices and Coal MW to Switch Out are Main Factors.

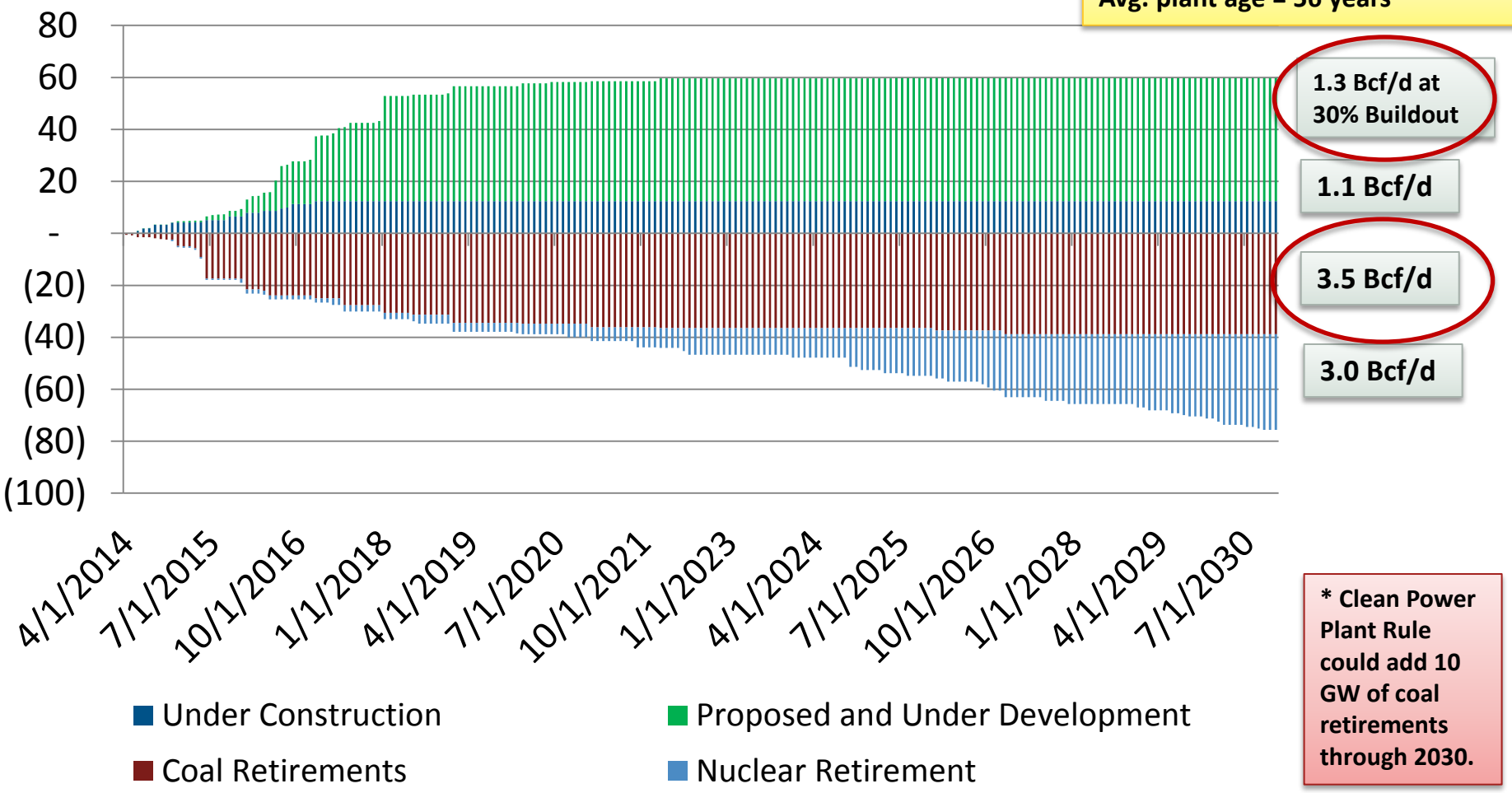
Source: BENTEK, EIA 923

EPA's Utility MATS Rule Retires Coal Plants Starting in 2015

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

Cumulative Power Plant Additions and Retirements By Fuel Type (GW)



Avg. nameplate capacity = 180 MW
Avg. plant age = 56 years

1.3 Bcf/d at 30% Buildout

1.1 Bcf/d

3.5 Bcf/d

3.0 Bcf/d

*** Clean Power Plant Rule could add 10 GW of coal retirements through 2030.**

US Industrial Expansions Focused in Southeast & Texas

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

New Industrial Demand by Facility Type by Year

Date	Number of Projects	Chemical	Estimated Demand (MMcf/d)	Other Industrial	Estimated Demand (MMcf/d)	Metals	Estimated Demand (MMcf/d)	Petroleum	Estimated Demand (MMcf/d)	Total Demand (MMcf/d)
2014	237	51	247.31	140	22.73	35	7.22	11	122.99	400.25
2015	105	33	728.63	47	5.50	16	5.86	9	147.50	887.49
2016	43	17	1,110.45	15	56.05	2	0.10	9	894.90	2,061.50
2017	16	12	1,206.85	3	1.66	0	0.00	1	130.00	1,338.51
2018	6	2	69.75	3	0.37	1	1.00	0	0.00	71.12
2019	1	1	225.99	0	0.00	0	0.00	0	0.00	225.99
2020	2	0	0.00	0	0.00	1	n/a	1	900.00	900.00
TBD*	14	7	108.57	1	n/a	4	2.00	2	20.00	130.57
Total U.S.	**424**	**123**	**3,697.55**	**209**	**86.31**	**59**	**16.18**	**33**	**2,215.39**	**6,015.43**

As of Jan. 1, 2014

*TBD - Projects announced but with no estimated in-service date

Texas

To date: 116 projects in 2014 with incremental 85 MMcf/d of demand capacity (53.8 MMcf/d verified).

Chemical
Industrial
Metals
Petroleum

Source: BENTEK US Industrial Demand Tracker

Large Scale Industrials Additions

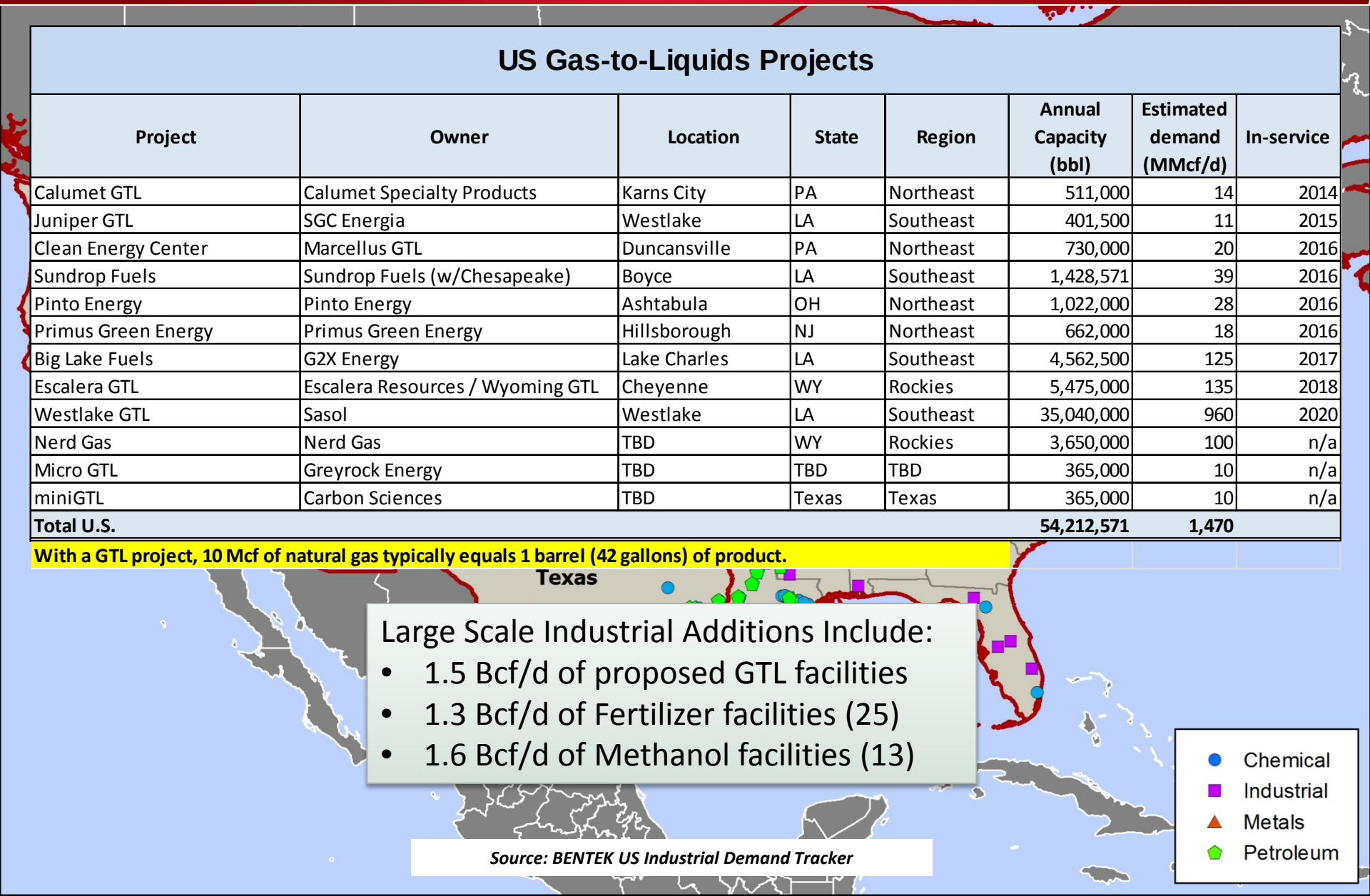
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

US Gas-to-Liquids Projects

Project	Owner	Location	State	Region	Annual Capacity (bbl)	Estimated demand (MMcf/d)	In-service
Calumet GTL	Calumet Specialty Products	Karns City	PA	Northeast	511,000	14	2014
Juniper GTL	SGC Energia	Westlake	LA	Southeast	401,500	11	2015
Clean Energy Center	Marcellus GTL	Duncansville	PA	Northeast	730,000	20	2016
Sundrop Fuels	Sundrop Fuels (w/Chesapeake)	Boyce	LA	Southeast	1,428,571	39	2016
Pinto Energy	Pinto Energy	Ashtabula	OH	Northeast	1,022,000	28	2016
Primus Green Energy	Primus Green Energy	Hillsborough	NJ	Northeast	662,000	18	2016
Big Lake Fuels	G2X Energy	Lake Charles	LA	Southeast	4,562,500	125	2017
Escalera GTL	Escalera Resources / Wyoming GTL	Cheyenne	WY	Rockies	5,475,000	135	2018
Westlake GTL	Sasol	Westlake	LA	Southeast	35,040,000	960	2020
Nerd Gas	Nerd Gas	TBD	WY	Rockies	3,650,000	100	n/a
Micro GTL	Greyrock Energy	TBD	TBD	TBD	365,000	10	n/a
miniGTL	Carbon Sciences	TBD	Texas	Texas	365,000	10	n/a
Total U.S.					**54,212,571**	**1,470**	

With a GTL project, 10 Mcf of natural gas typically equals 1 barrel (42 gallons) of product.



Large Scale Industrial Additions Include:

- 1.5 Bcf/d of proposed GTL facilities
- 1.3 Bcf/d of Fertilizer facilities (25)
- 1.6 Bcf/d of Methanol facilities (13)

Source: BENTEK US Industrial Demand Tracker

Mexico Plans 42 Gas-Fired Power Projects!!

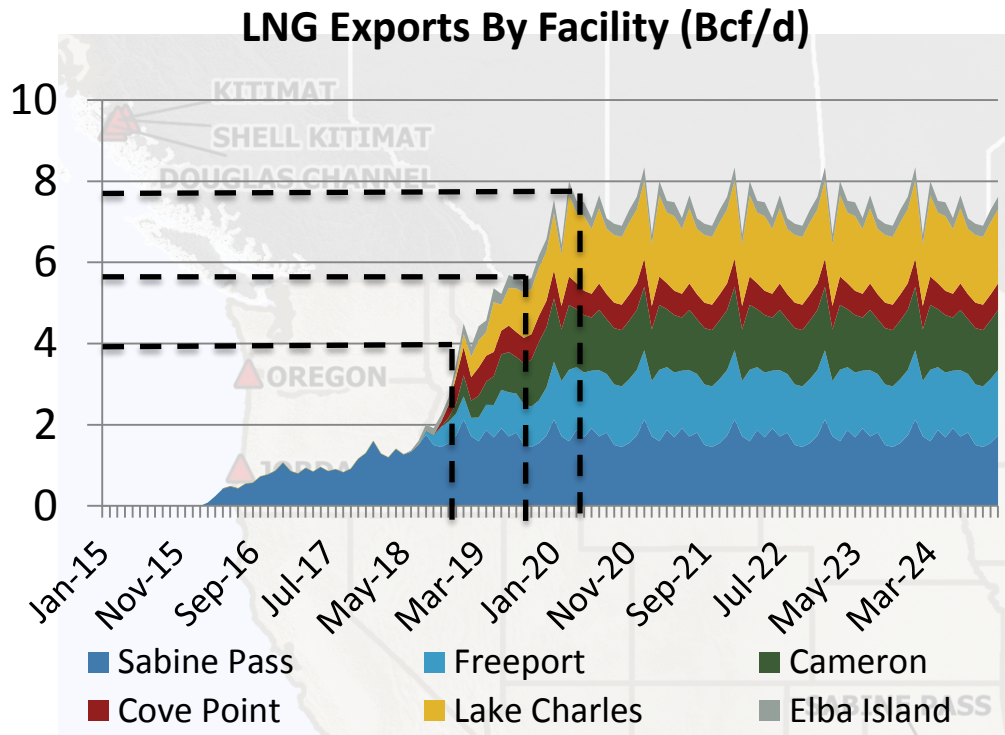
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

US LNG Export Forecast (MOUs)

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



11.6Bcf/d of MOUs have been signed on **17.4 Bcf/d** of proposed capacity.

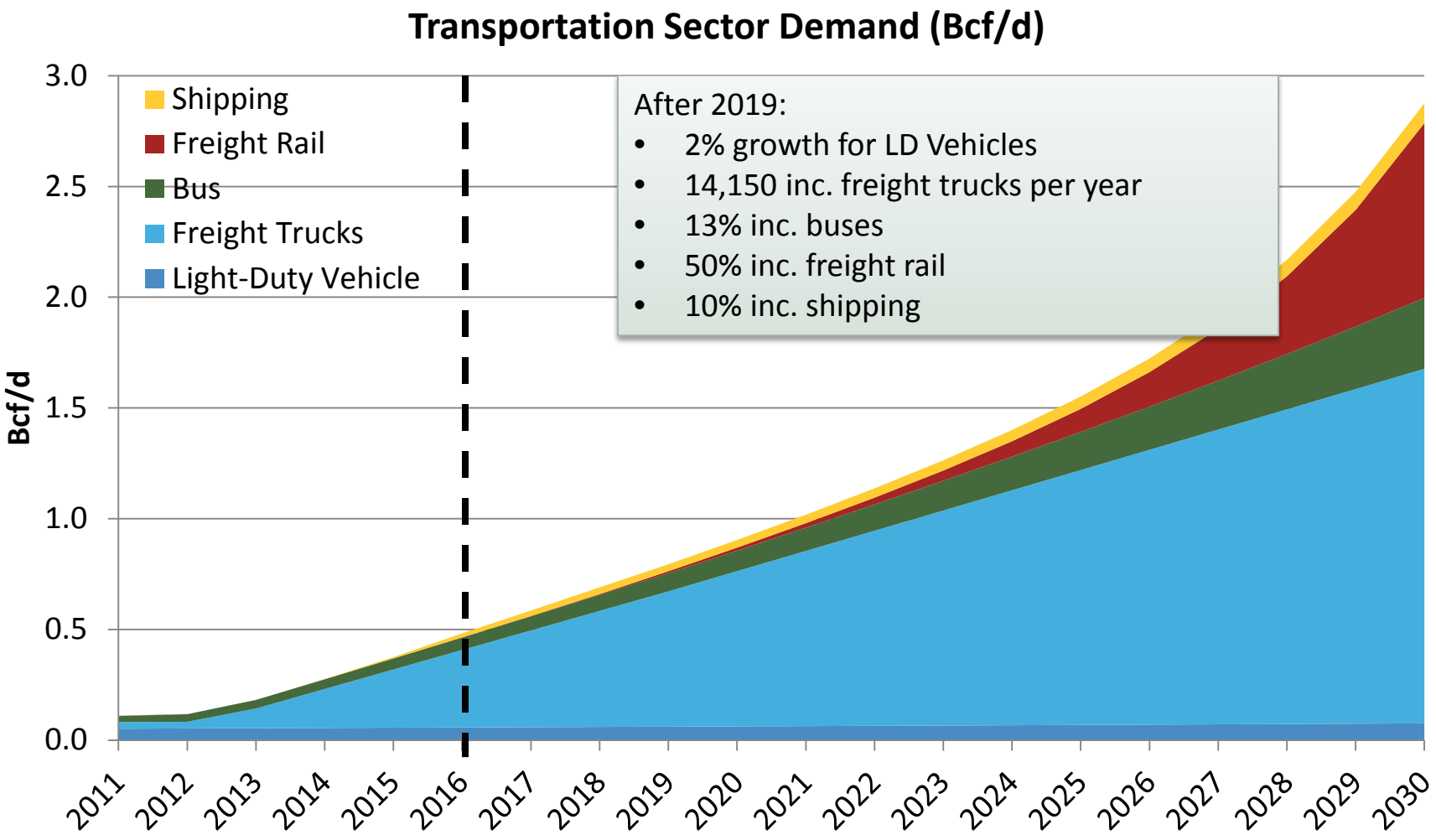
- **BENTEK expects 8.8 Bcf/d to reach execution phase (through 2023).**
- **LNG Exports could average 8 Bcf/d in 2020**

North East Exports:
Cove Point – 0.75 Bcf/d (5.6 mtpa)

Gulf Coast Export Terminals:
Freeport LNG– 1.76 Bcf/d
Lake Charles – 2 Bcf/d
Sabine Pass – 2.4 Bcf/d
Cameron – 1.6 Bcf/d

Source: BENTEK

Freight Truck Use to Drive Increased Demand in Transportation Sector



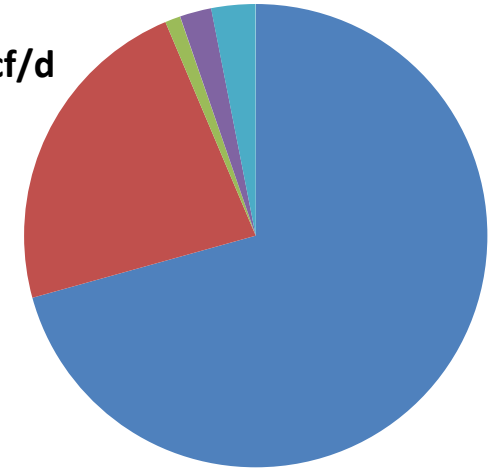
In 2012, NG consumption only makes 0.2% of total energy consumed in these sectors, but by 2025 it will grow to 2.7%

PLATTS McGRAW HILL FINANCIAL

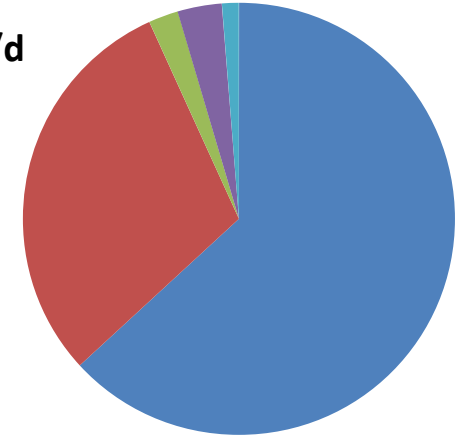
BENTEK Energy

Total Transportation Consumption Gas Equivalent

2012
60.02 Bcf/d



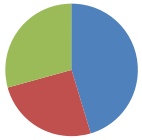
2025
56.42 Bcf/d



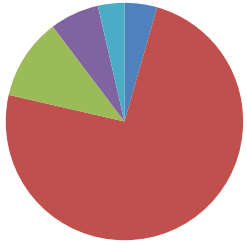
Light-Duty Vehicle Freight Trucks Bus Freight Rail Shipping

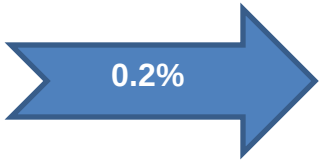
Transportation Gas Demand

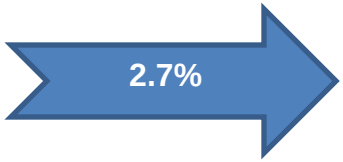
2012
0.12 Bcf/d



2025
1.52 Bcf/d



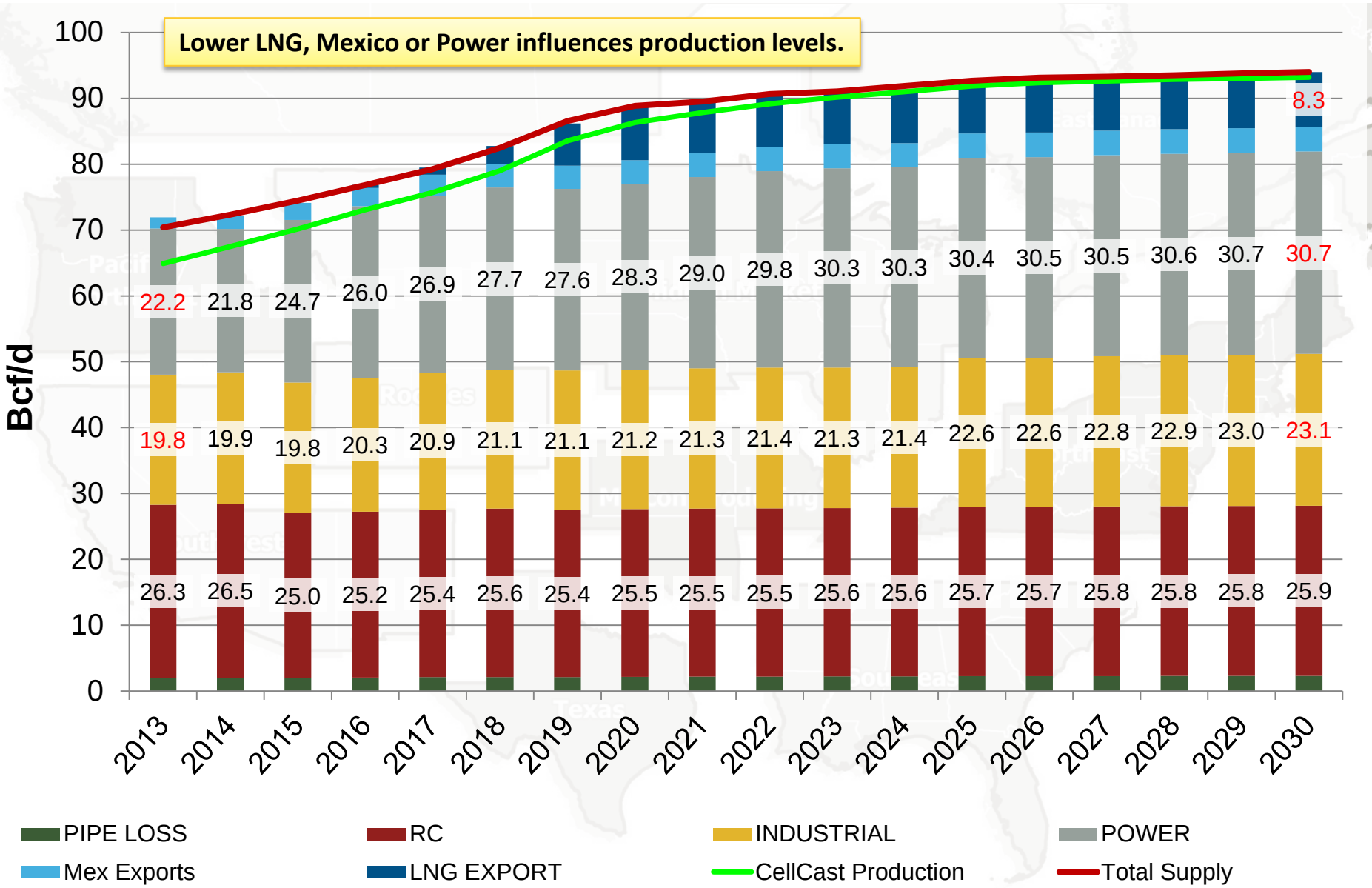




Growth in Power Burn Critical, with LNG and Mexican Exports Buttressing Production Forecast

PLATTS McGRAW HILL FINANCIAL

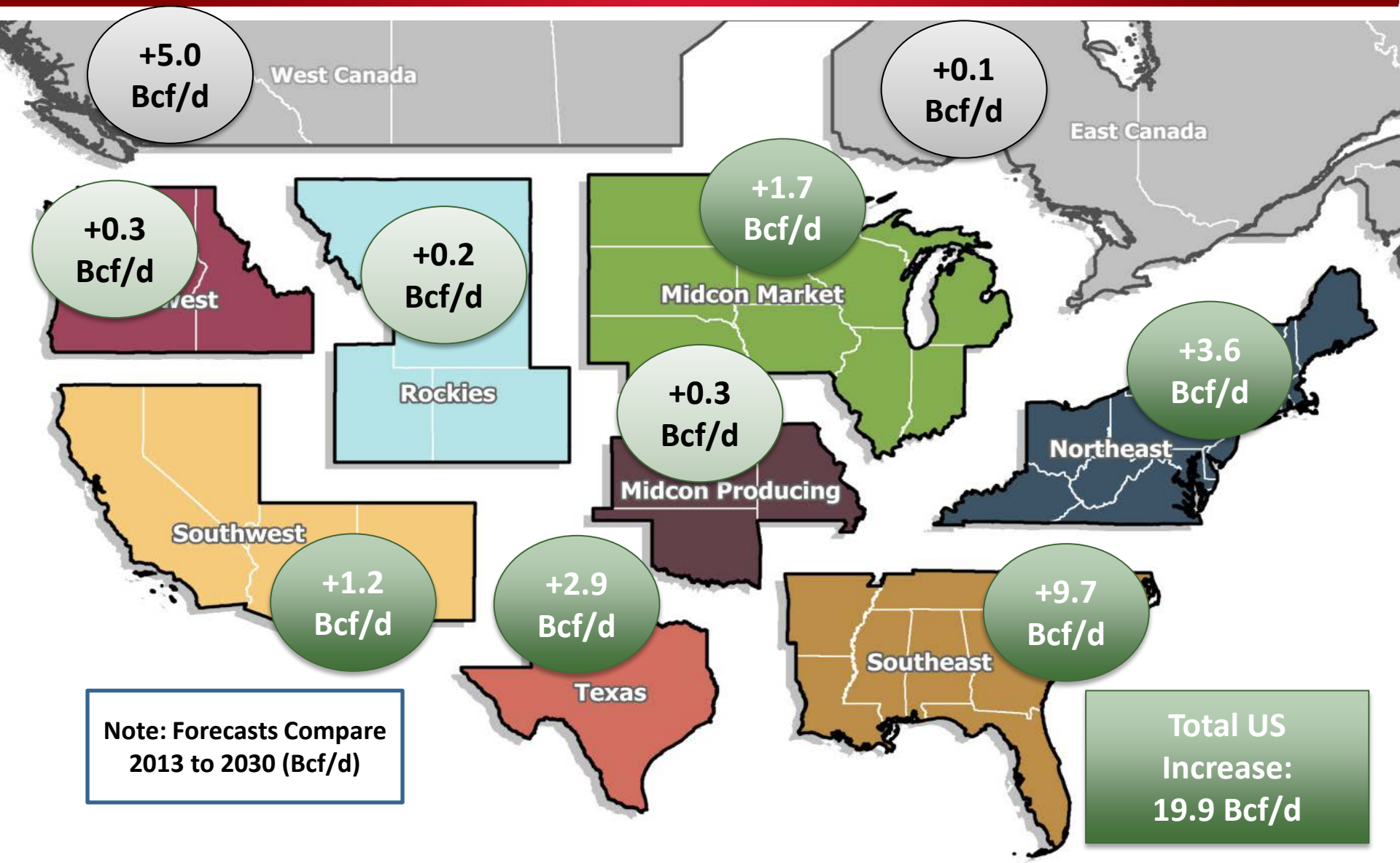
BENTEK Energy



Southeast Leads Demand Growth Followed by Northeast and Texas

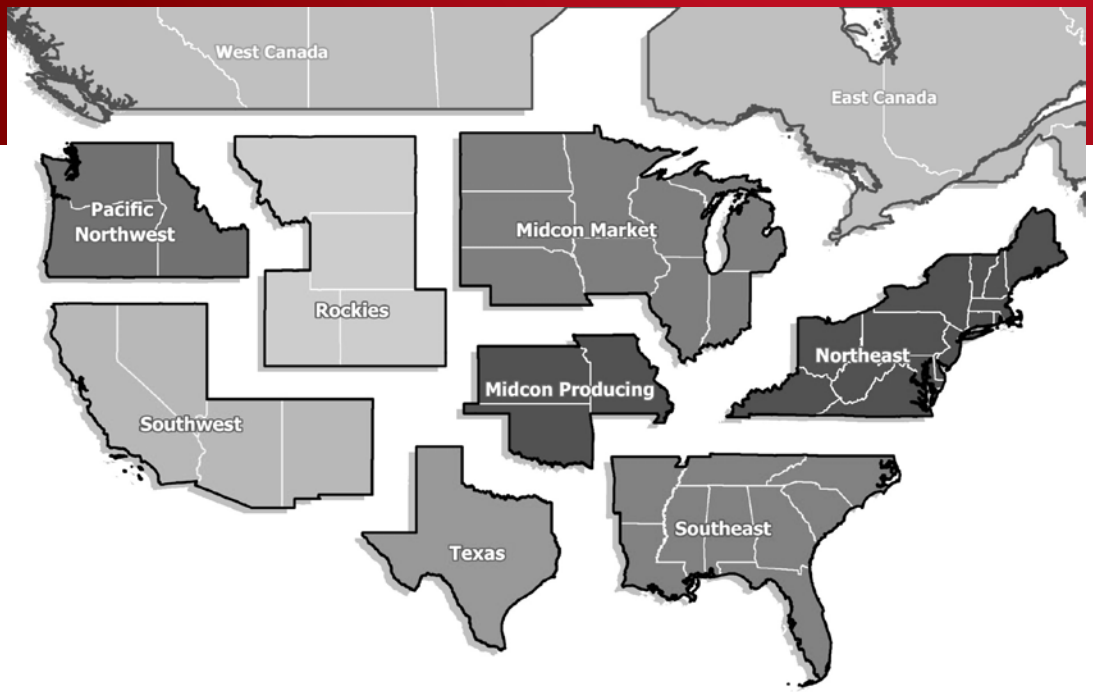
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Source: BENTEK Cell Cast

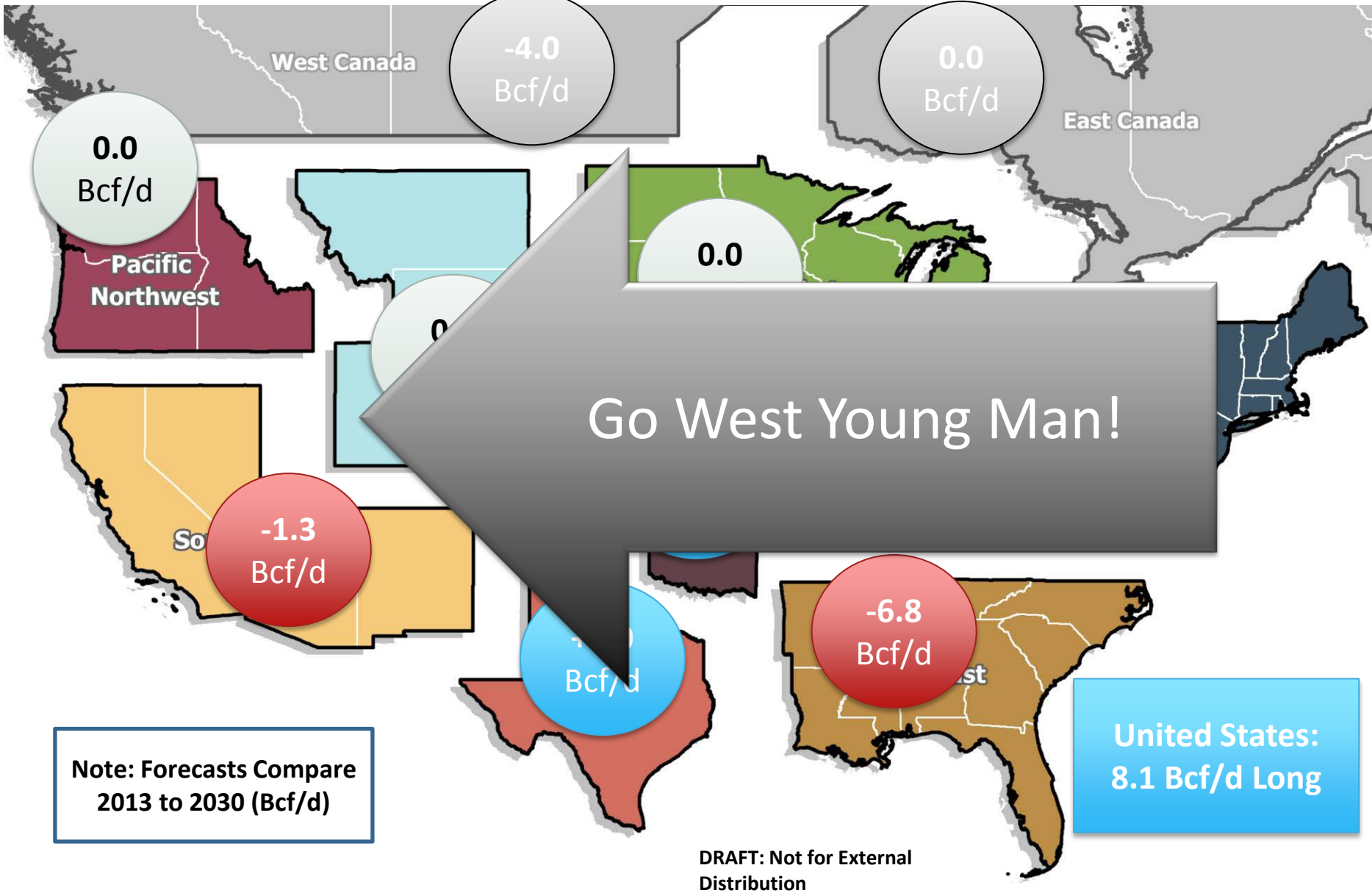
Regional Balances Dictate Infrastructure Requirements



North American Supply and Demand Balances

PLATTS McGRAW HILL FINANCIAL

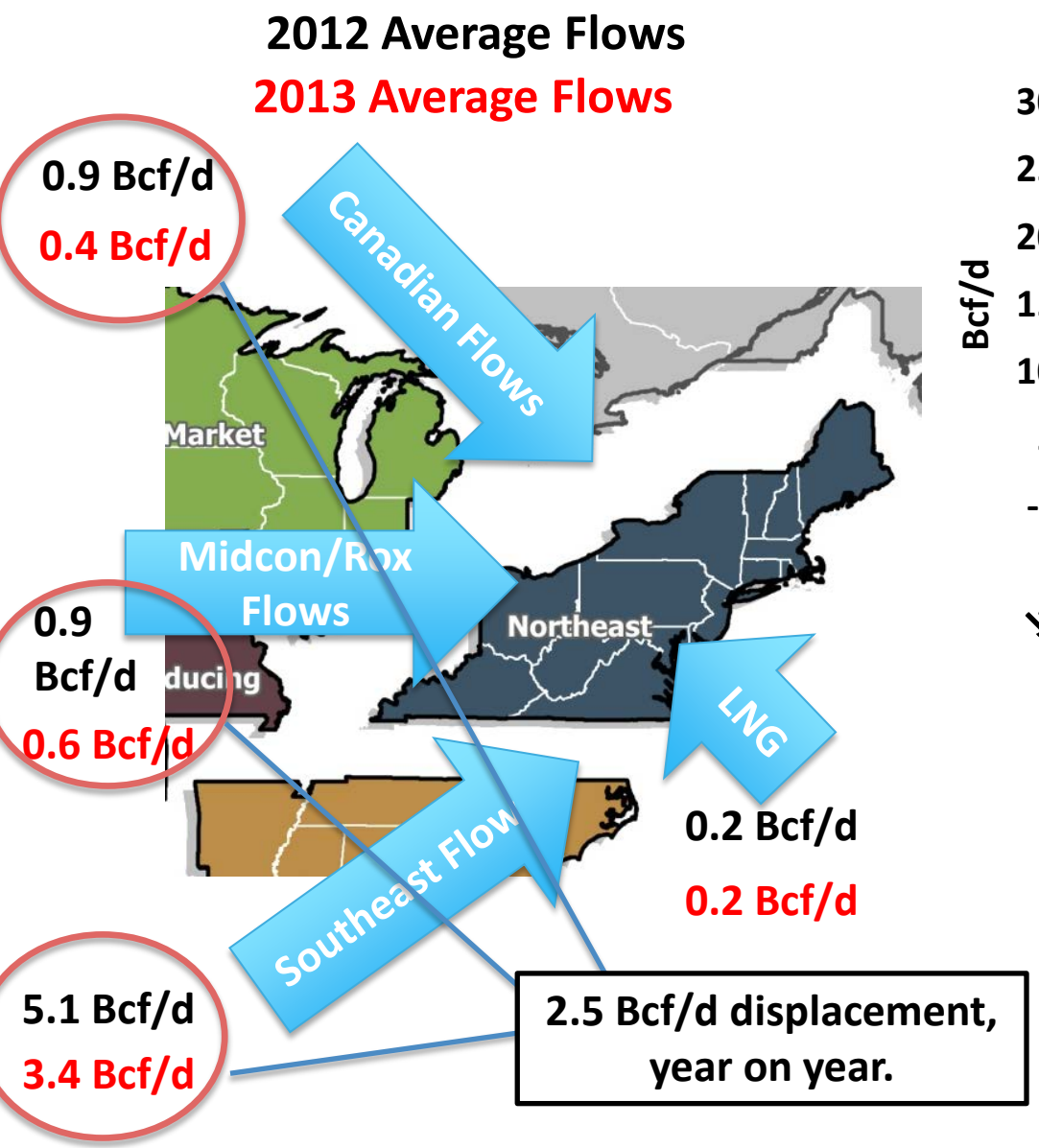
BENTEK Energy

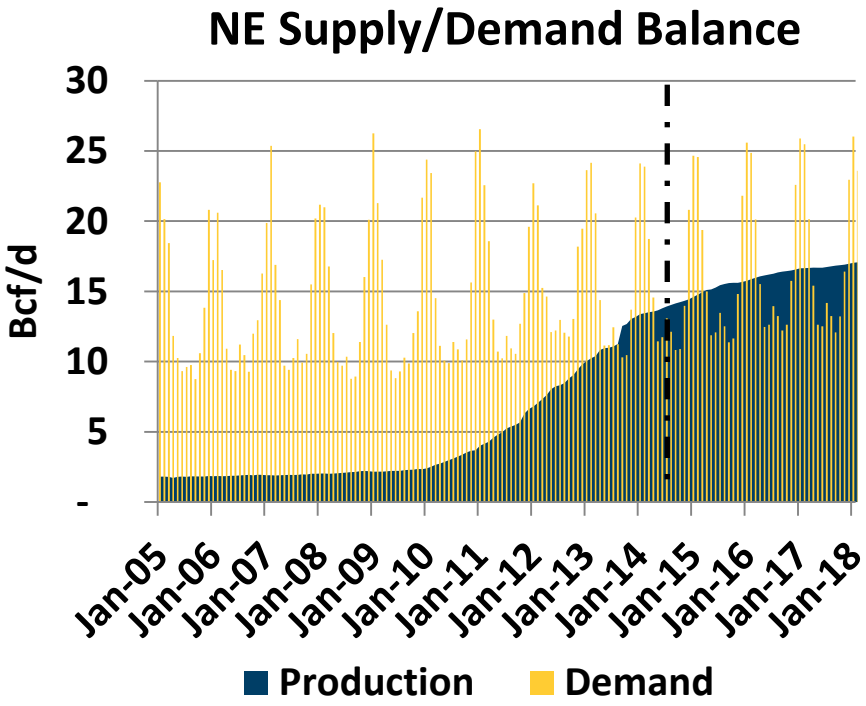


NE Production Will Upset Entire Continental Balance

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy





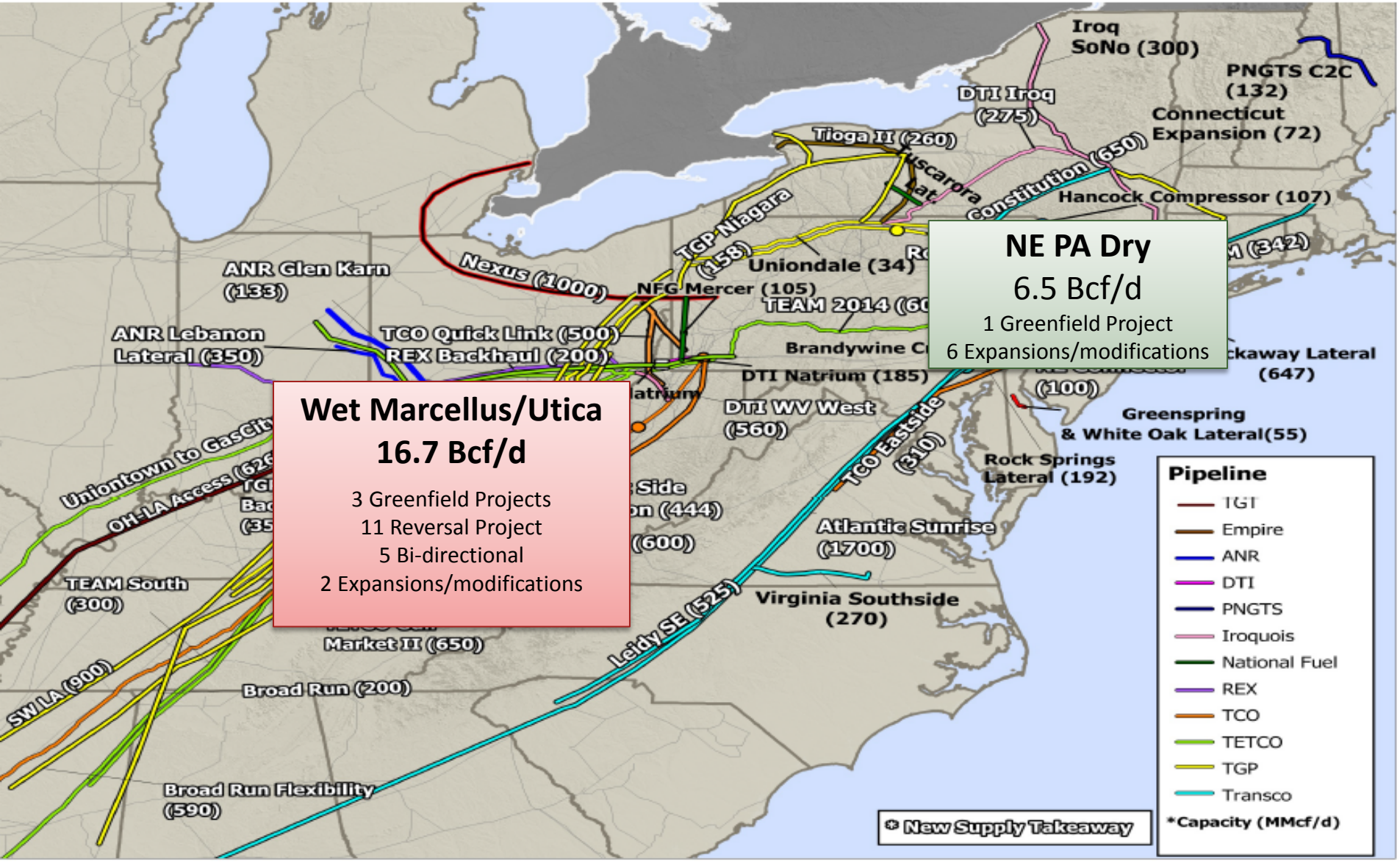
NE annual demand cannot maintain balance with production growth, thus displacing inbound flows from Canada/Midcon/Southeast. Following Winter 14-15, Northeast must export more and more gas out of the region.

More than 23 Bcf/d of announced capacity expansions in the Northeast by 2017

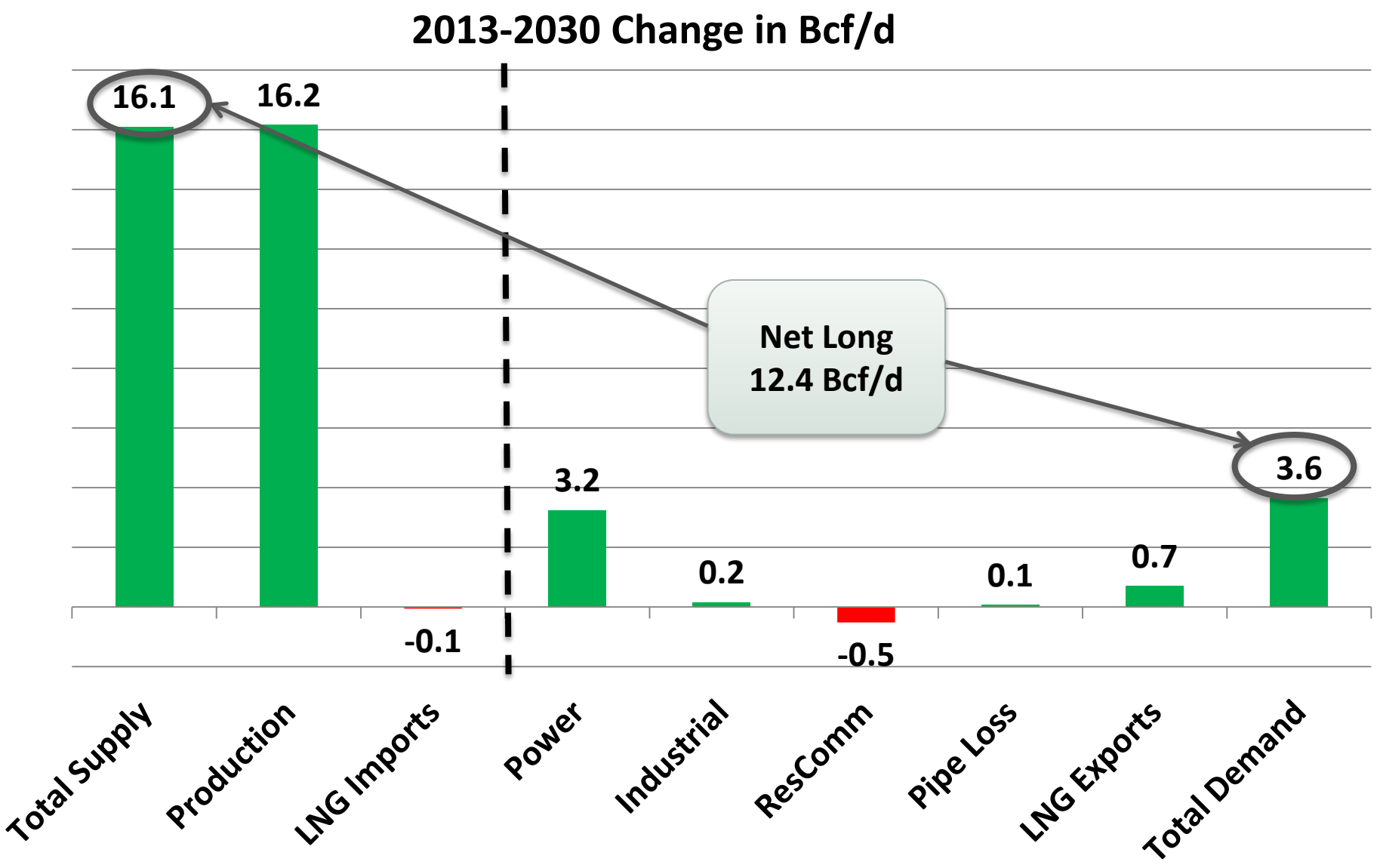
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

2014-2017 Pipeline Expansion Projects Map



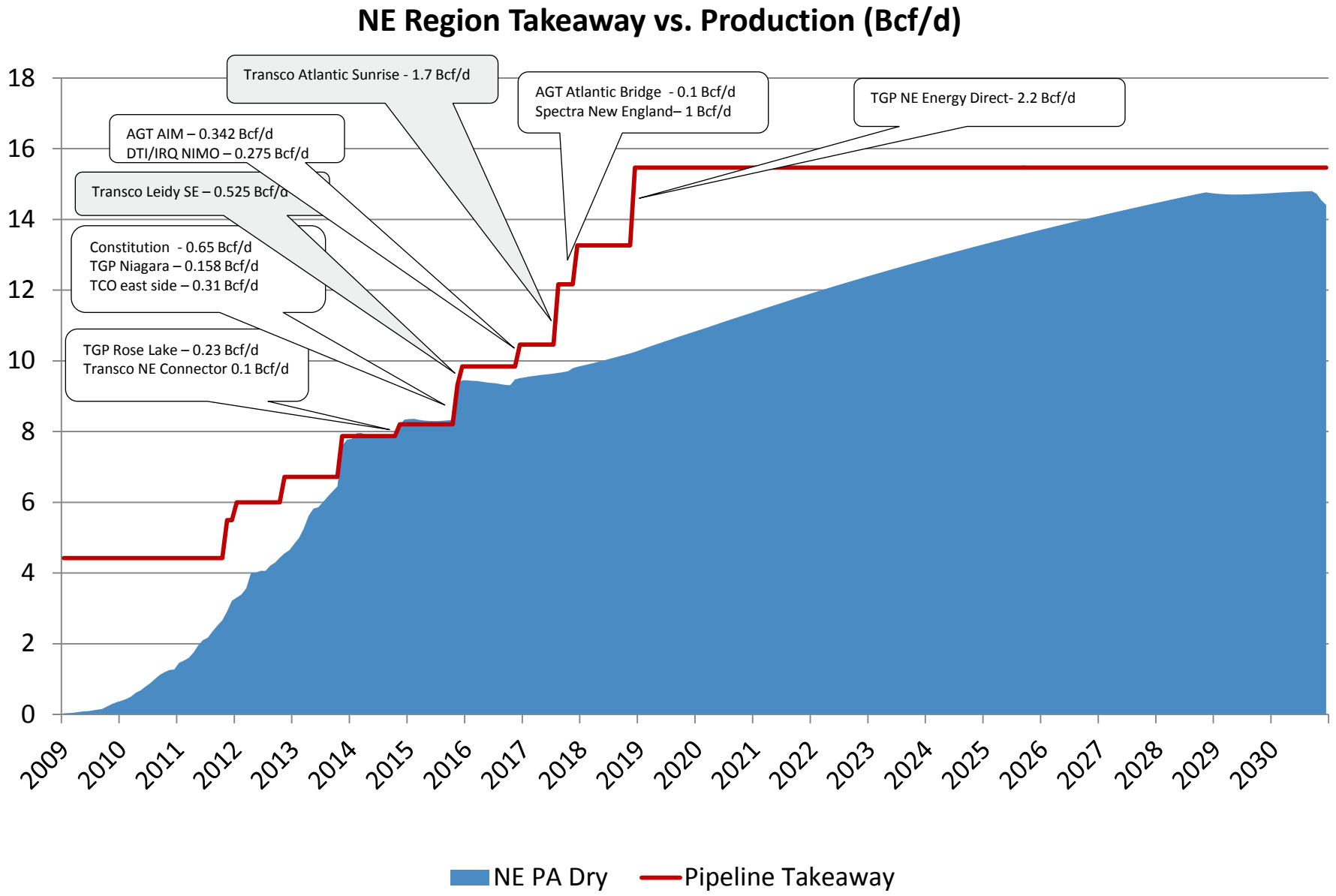
Northeast Supply and Demand Balance



NE PA Dry Forecast vs. Pipeline Capacity

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

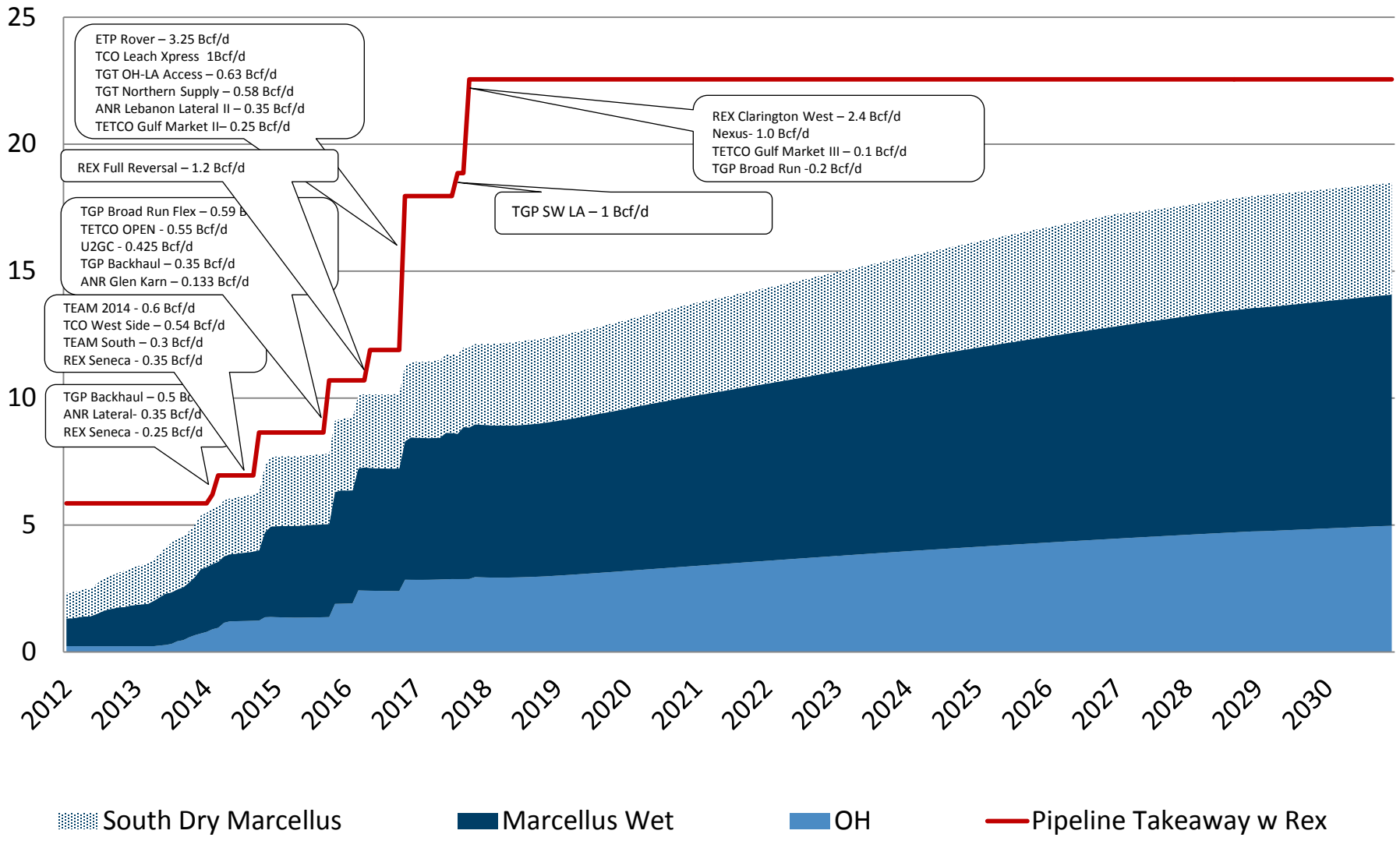


Wet Marcellus & Utica Forecast vs. Pipeline Capacity

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

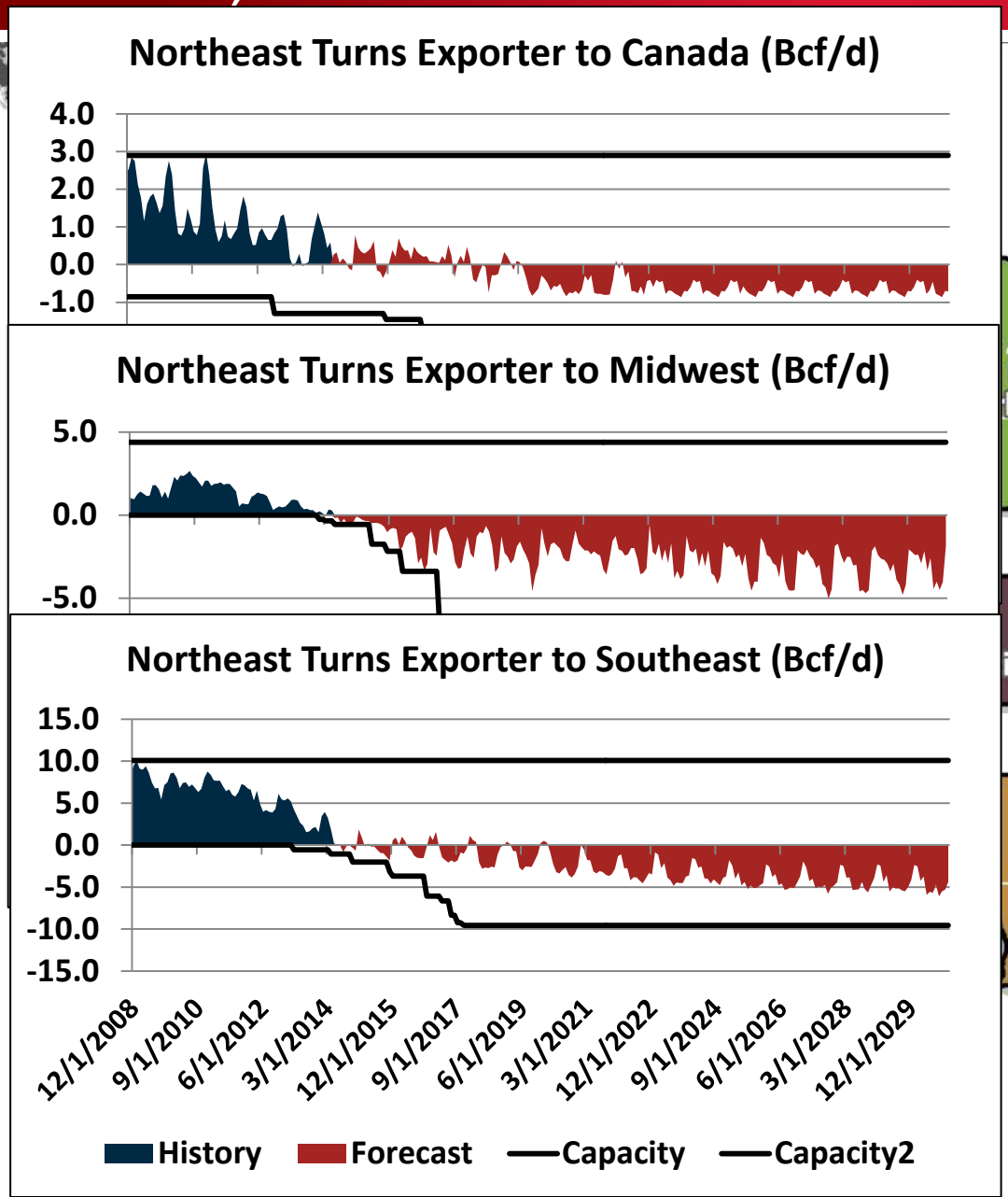
Wet Marcellus/ Utica Region Takeaway vs. Production (Bcf/d)

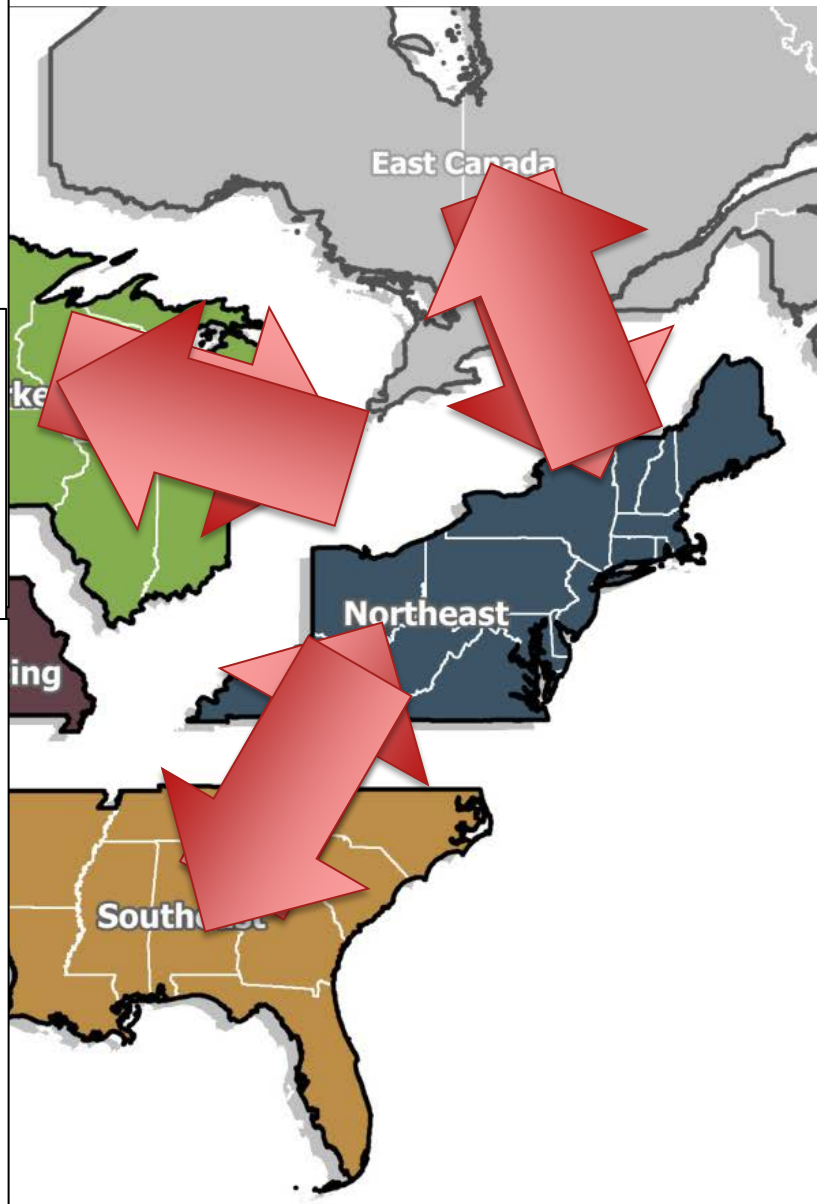


Northeast Growth Displaces Inflows, Switches to Outflows

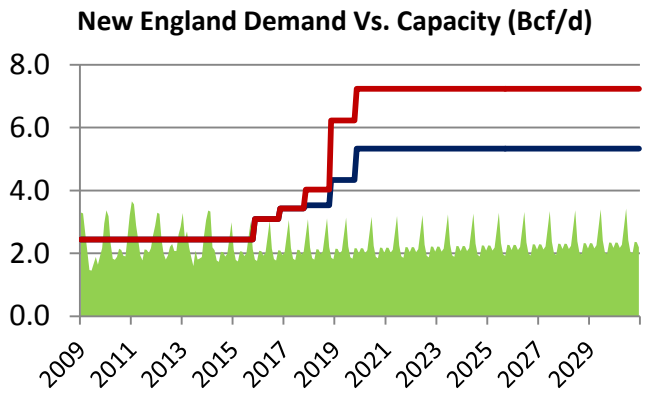
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



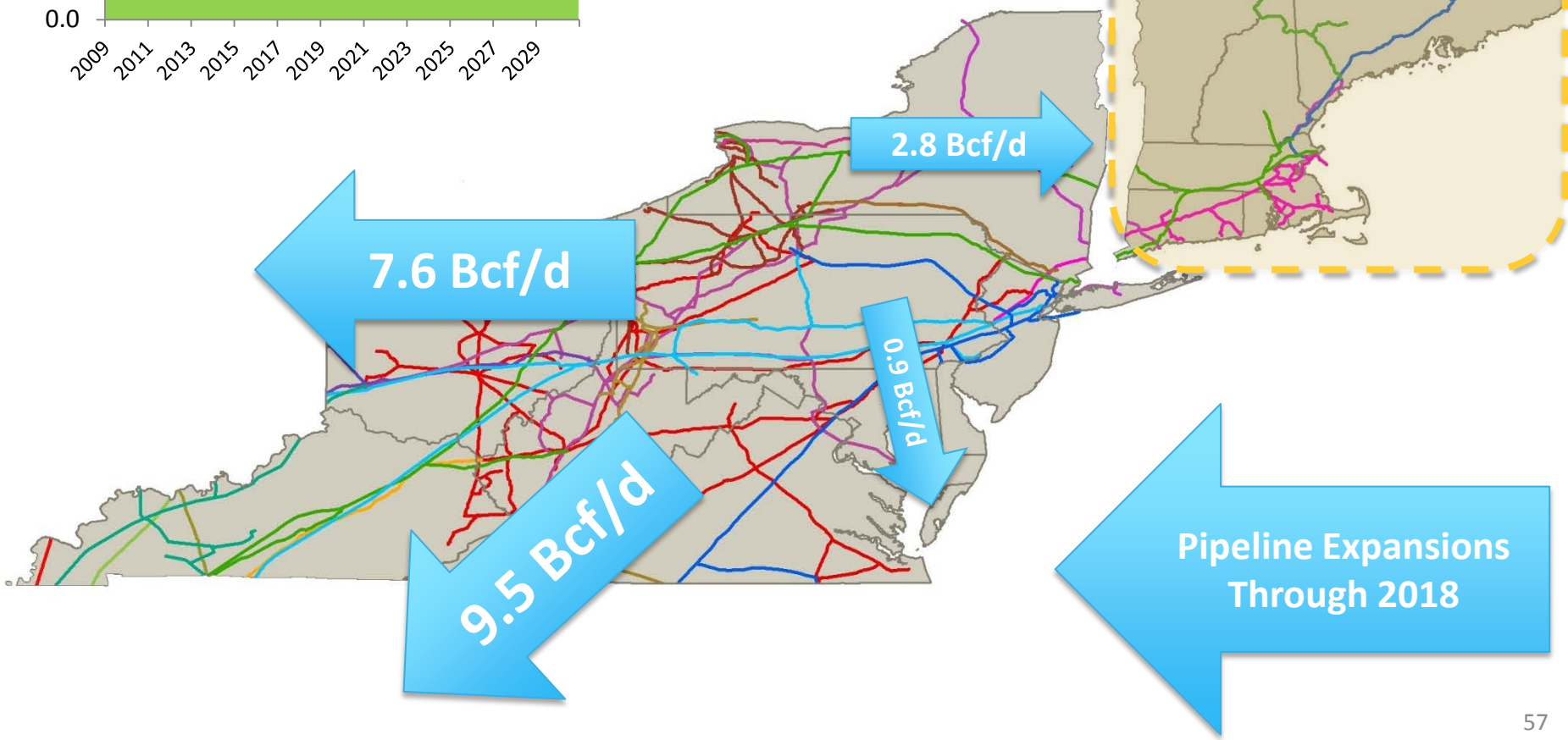


New England Market Challenged By Low Demand Growth Over Time

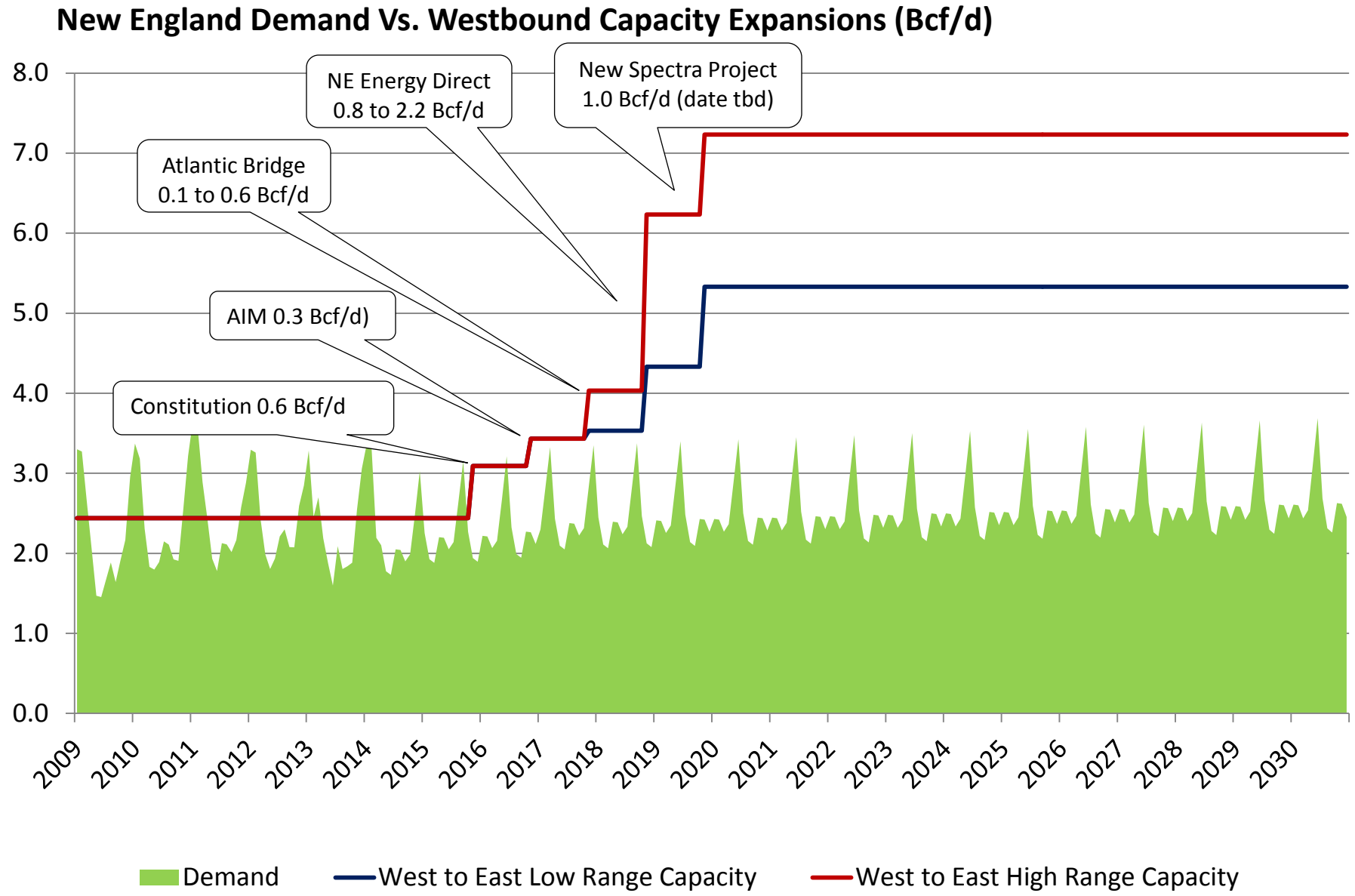


Demand vs. Capacity in Bcf/d (across Hudson River)

Region Dependent on Inflows to Satisfy Demand (No Storage)



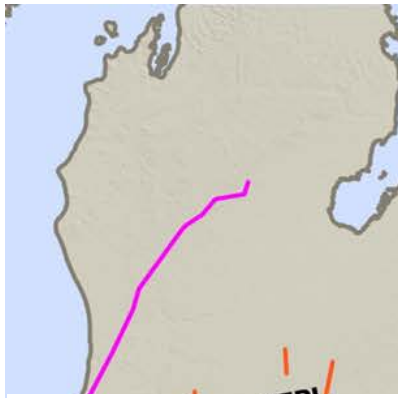
Intense Competition Into New England

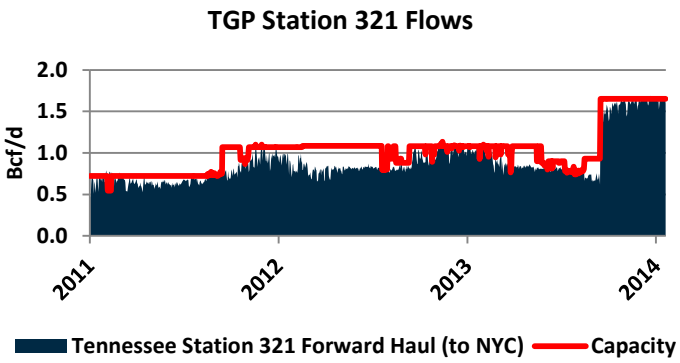


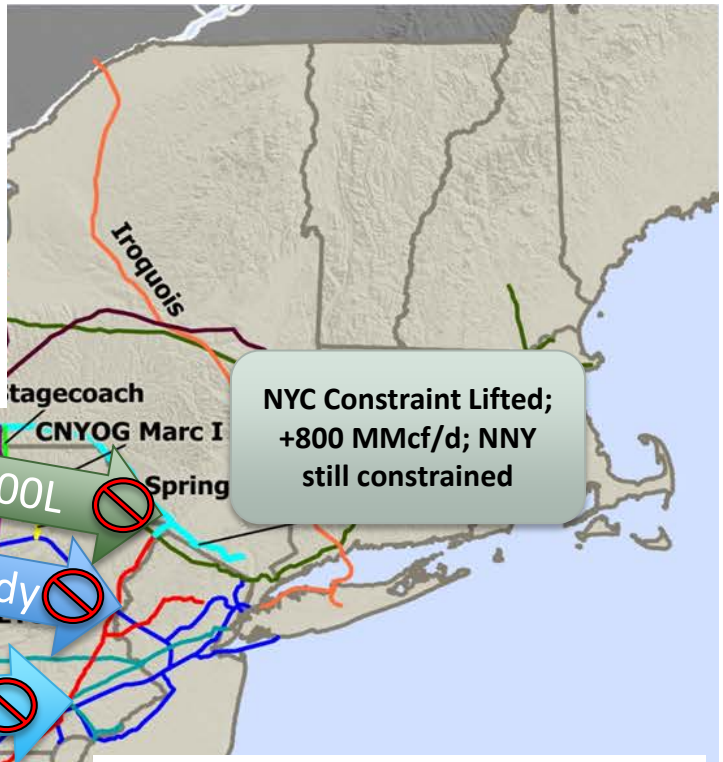
Why Transco Z6 NY and NNY blow out?

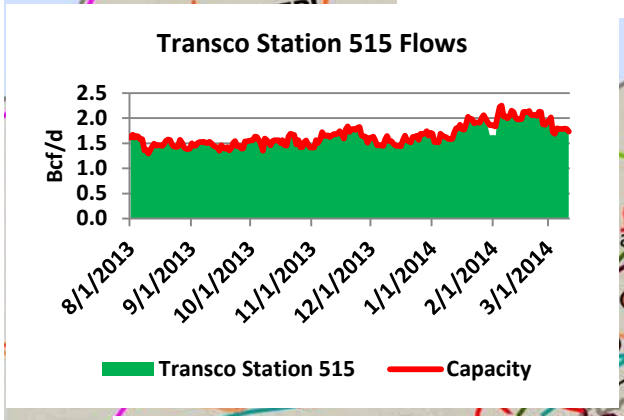
PLATTS McGRAW HILL FINANCIAL

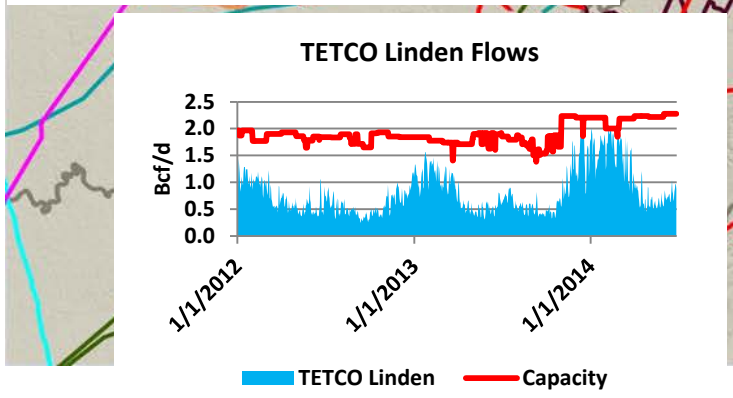
BENTEK Energy

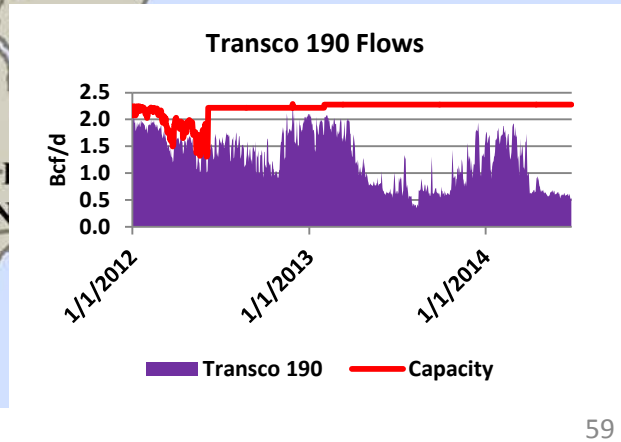




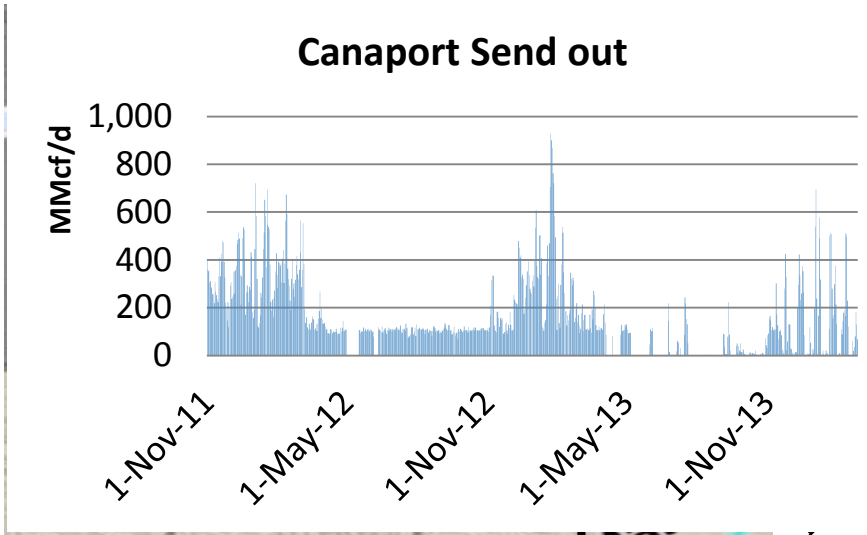


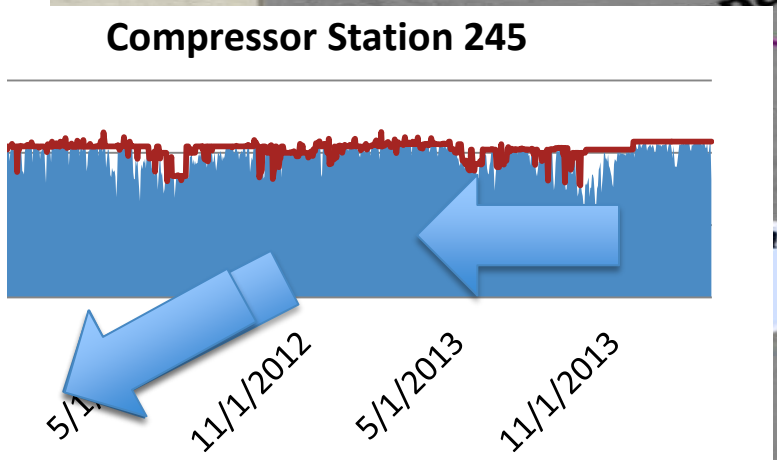


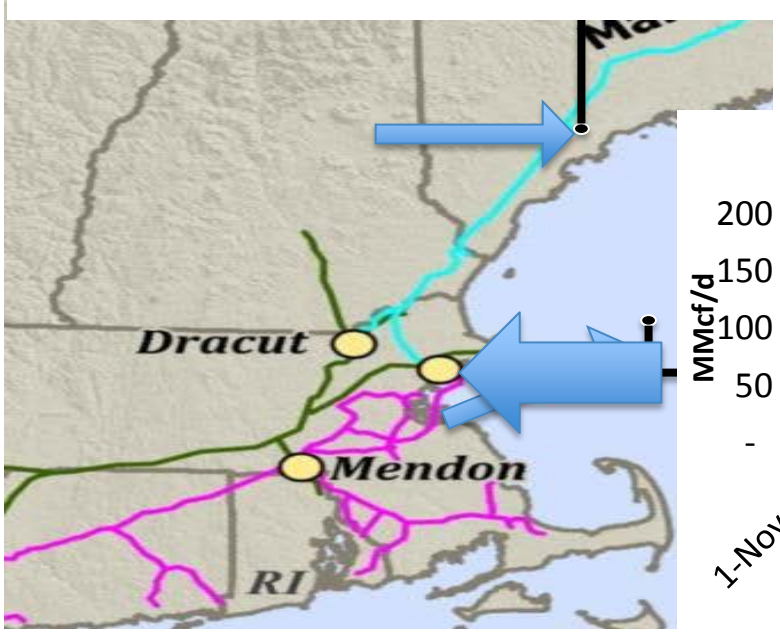


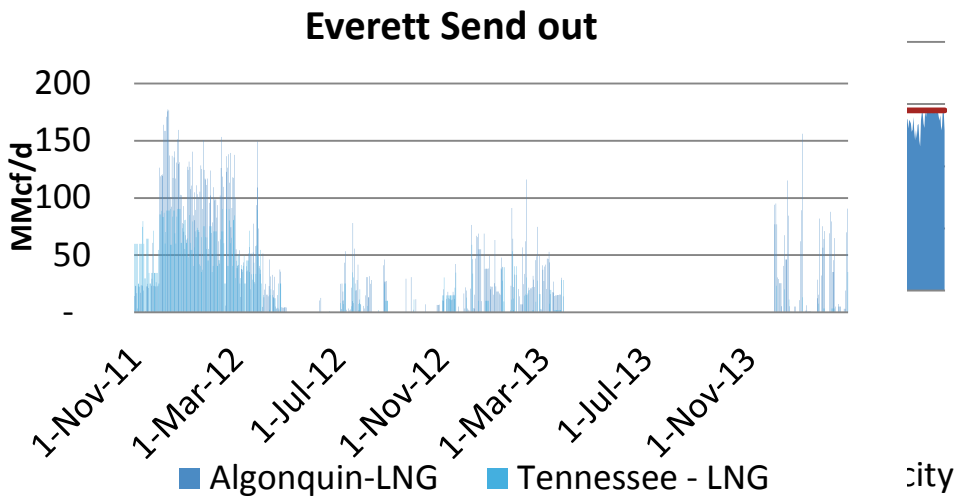


New England Sees Similar Spikes Due to Constraints, Lack of LNG





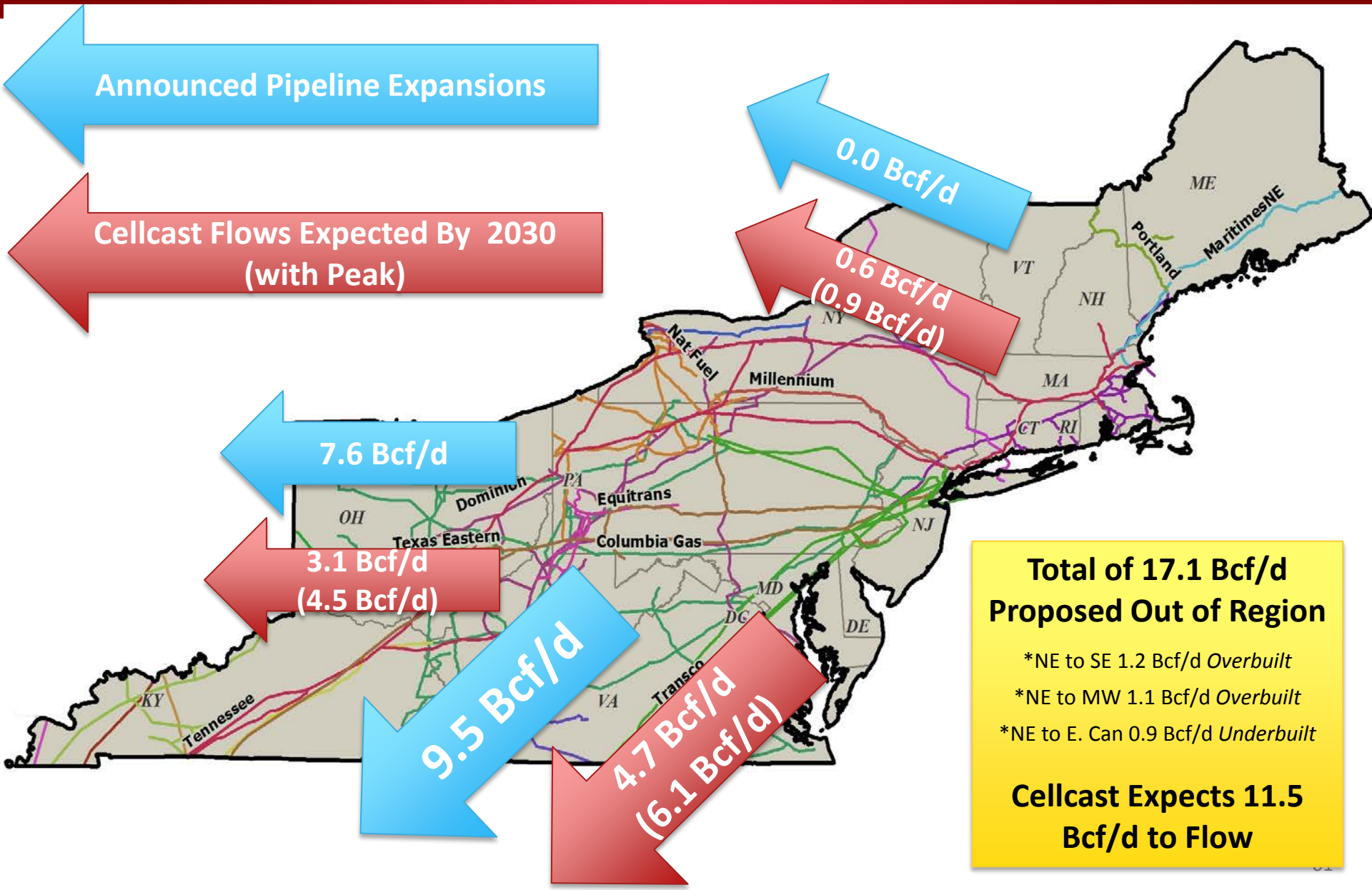




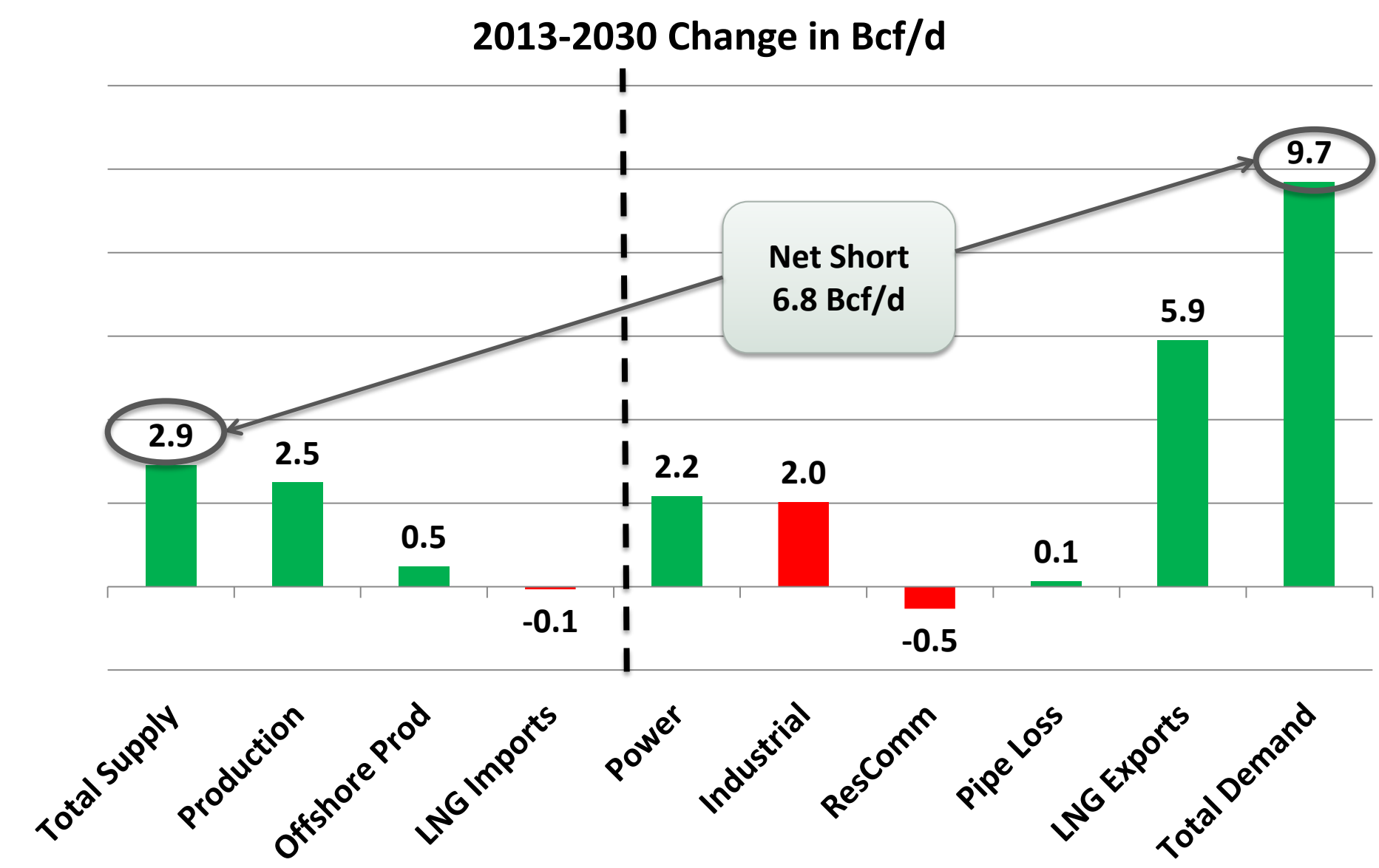
Northeast Buildout Greater than Forecast Flows

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Southeast Supply and Demand Balance



Southeast Demand Growth Requires More Inflows

PLATTS McGRAW HILL FINANCIAL

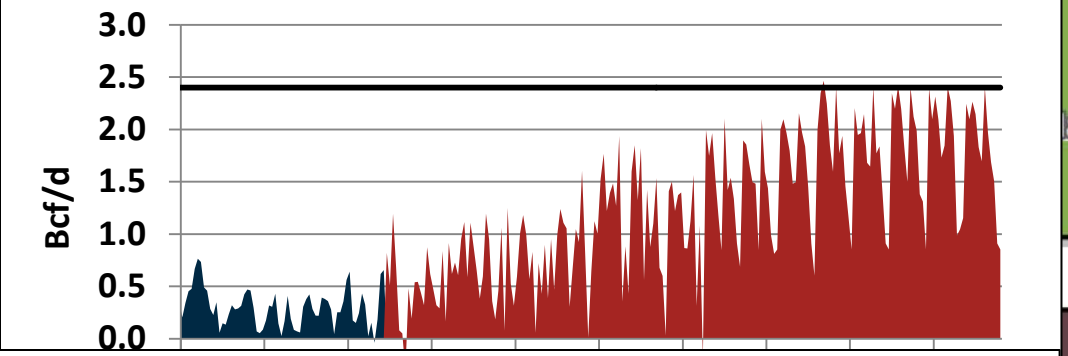
BENTEK Energy

Southeast Turns Importer from Northeast

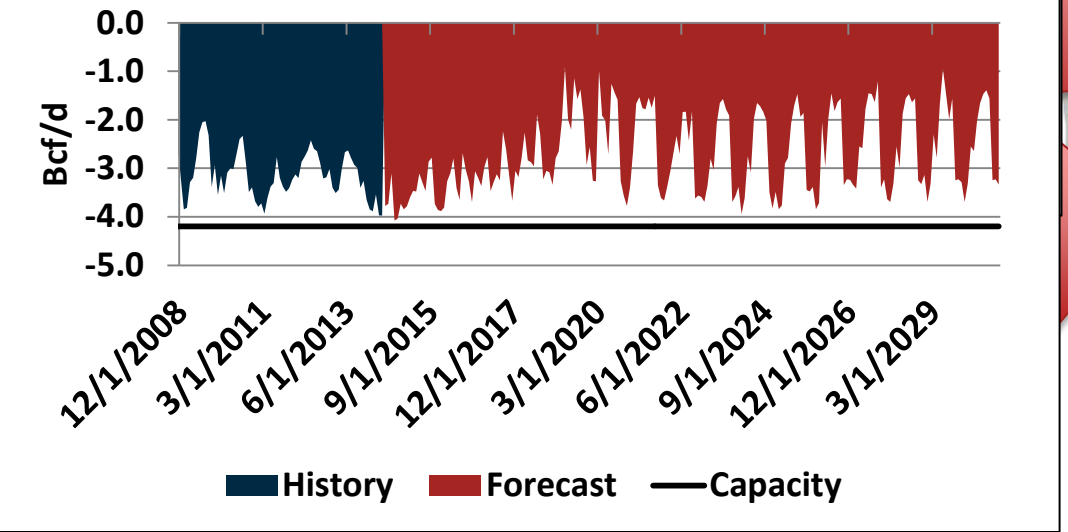
Southeast Inflows from Texas

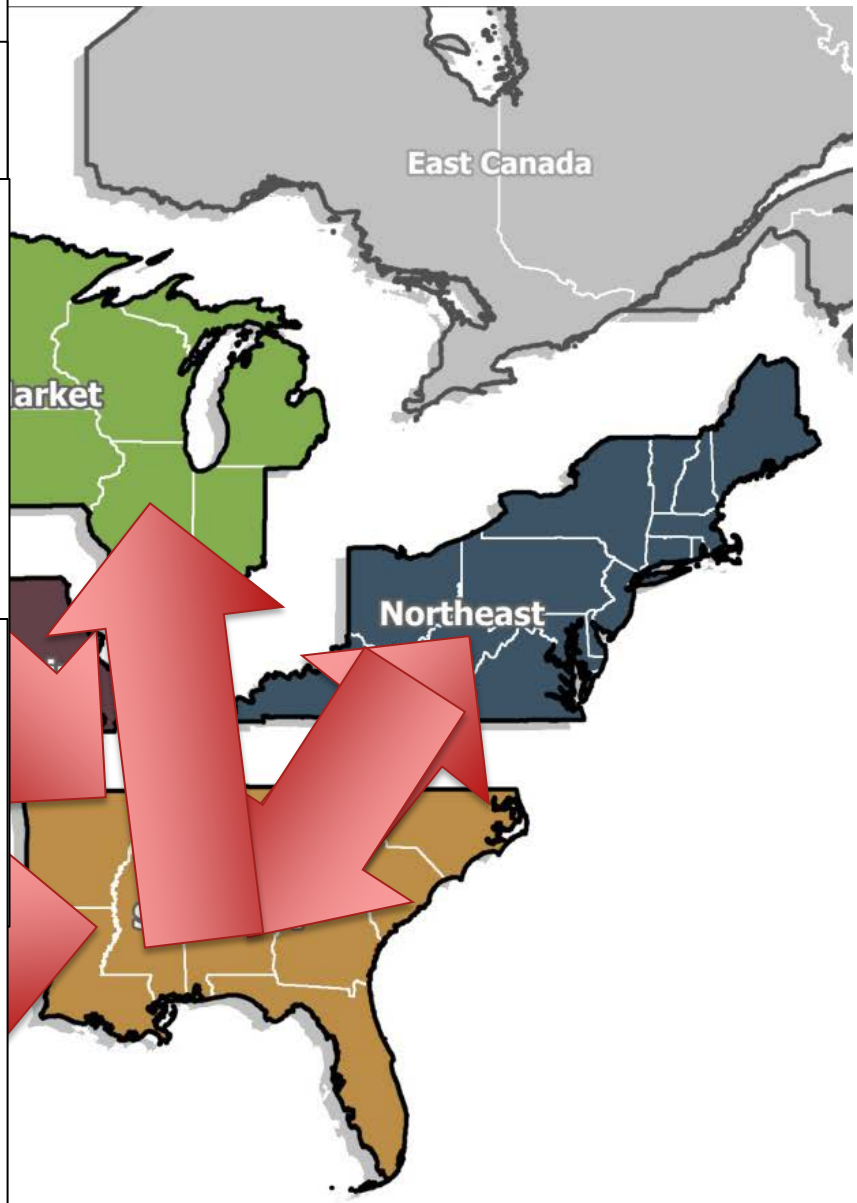
25.0

Southeast Inflows from Midcon Producing

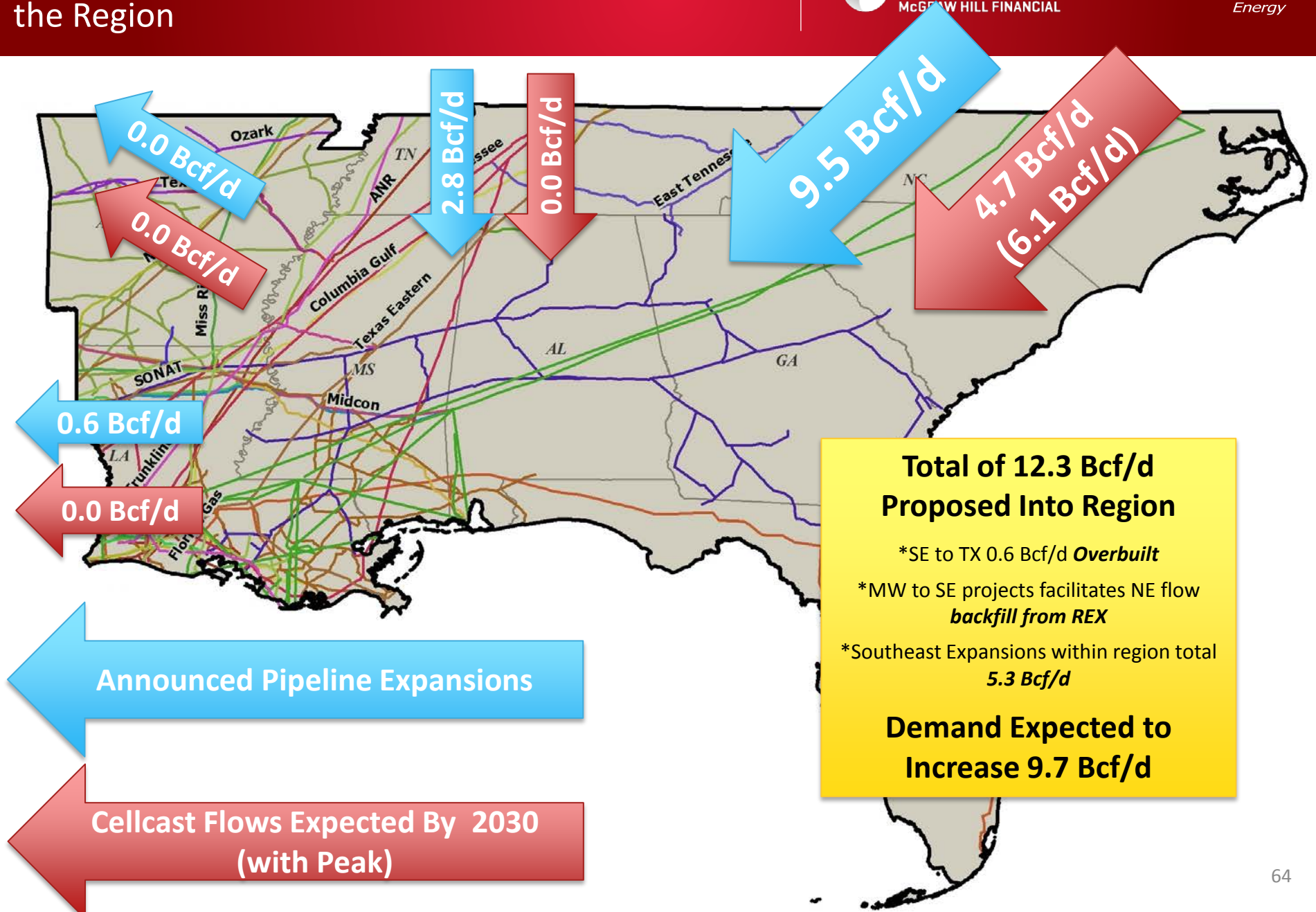


Southeast Outflows to Midcon Market

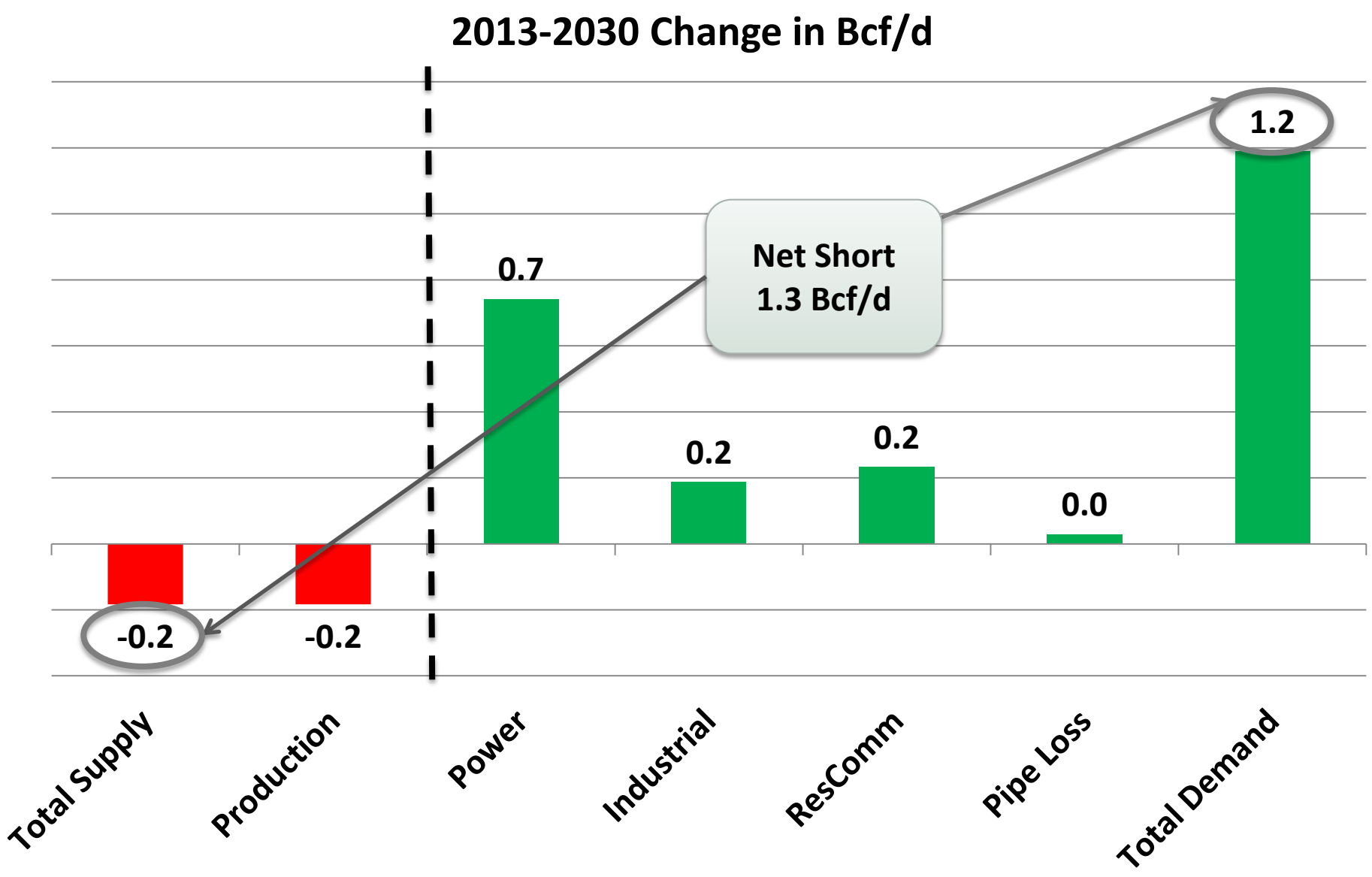




Southeast Expansions Primarily Focused Internal to the Region



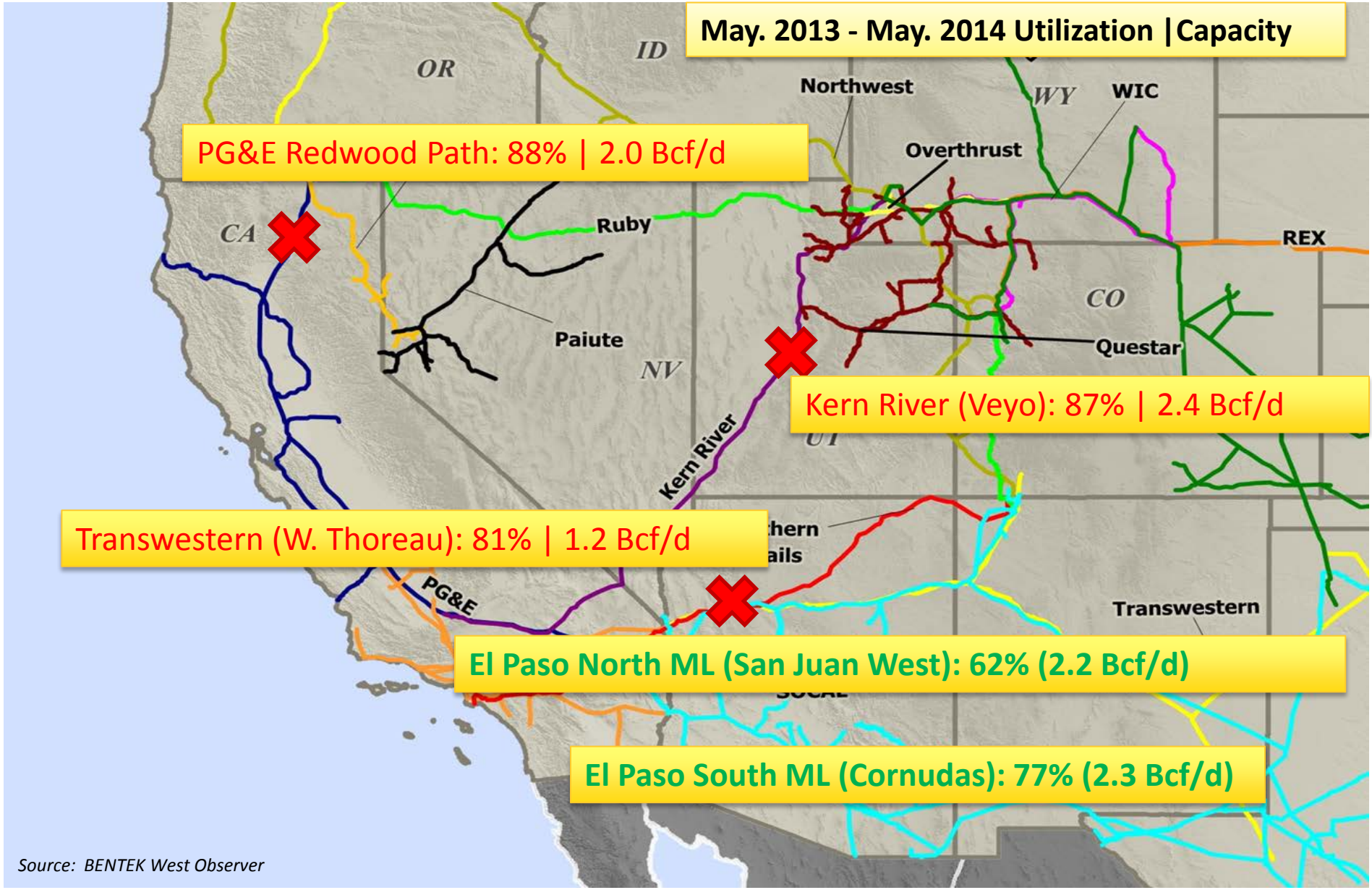
Southwest Supply and Demand Balance



Southwest is Market to Chase, But Pipeline Constraints Will Limit Flows

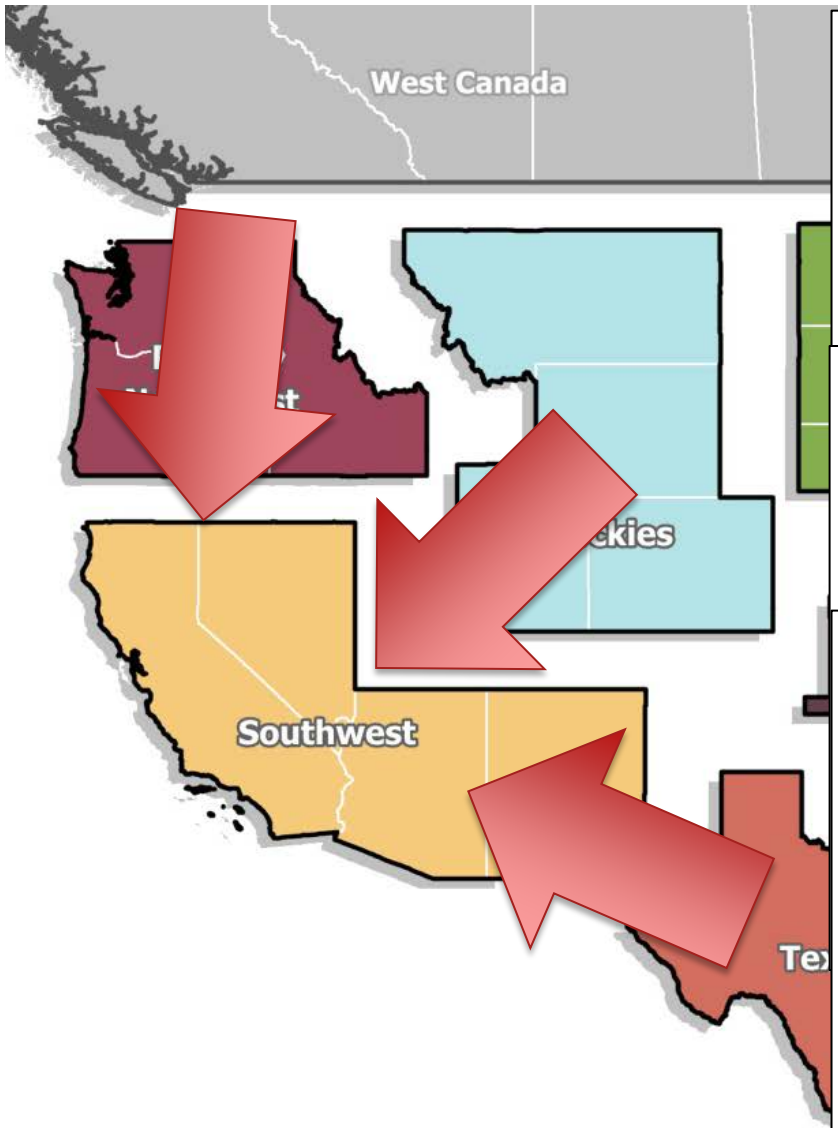
PLATTS McGRAW HILL FINANCIAL

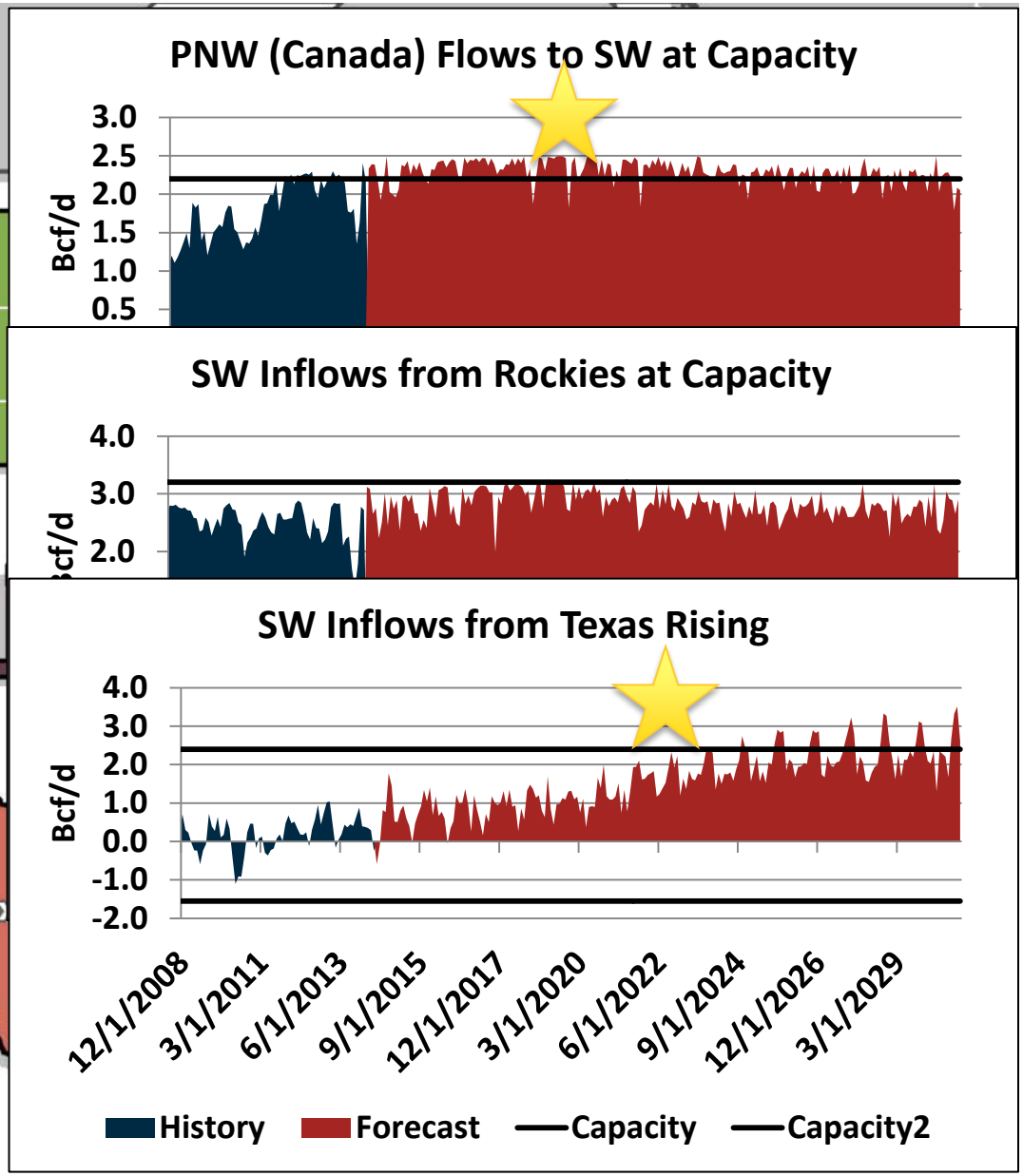
BENTEK Energy



Source: BENTEK West Observer

Constraints Into Southwest Evident

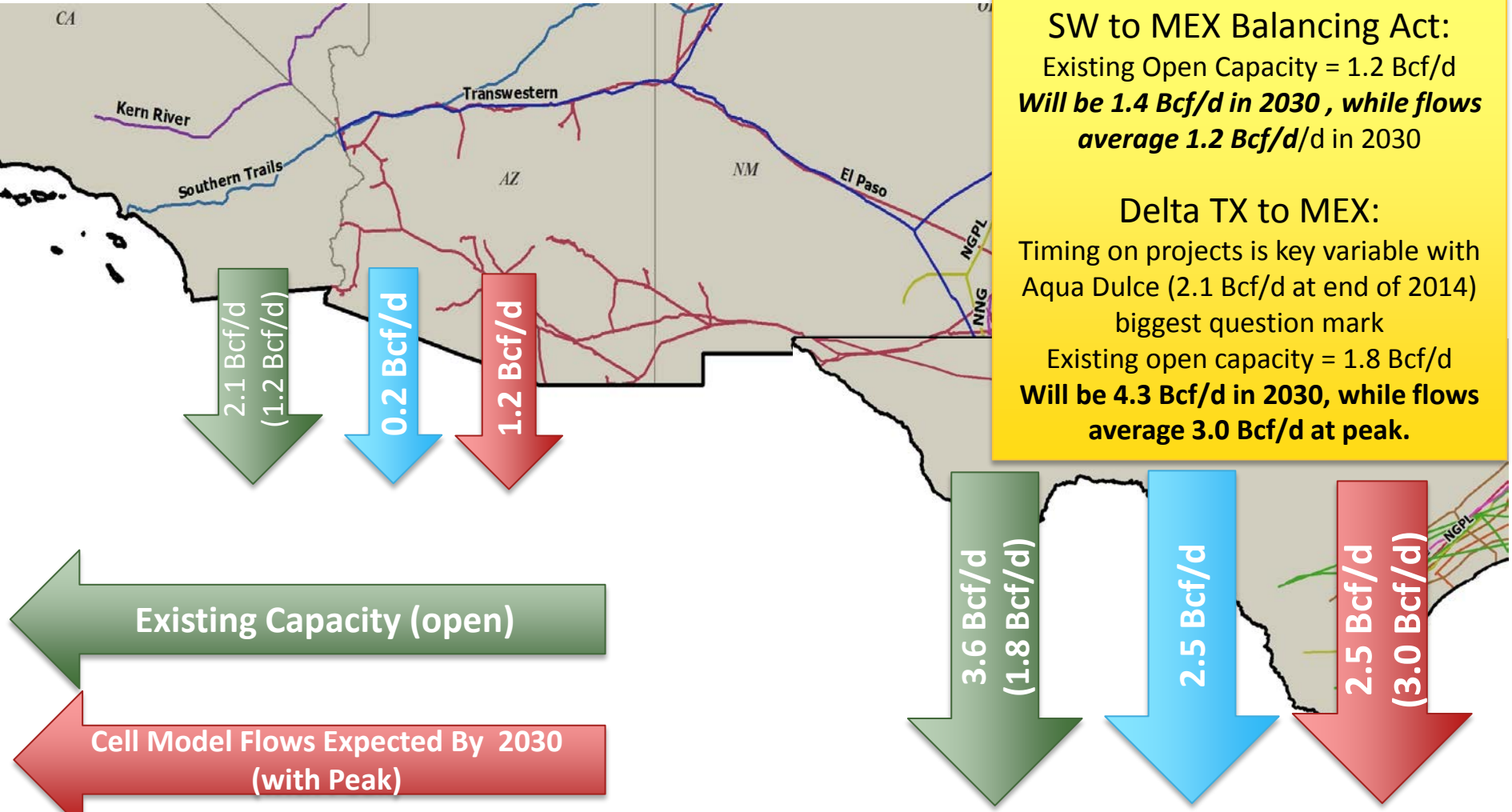




Mexico Attracting Attention

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



SW to MEX Balancing Act:

Existing Open Capacity = 1.2 Bcf/d

Will be 1.4 Bcf/d in 2030 , while flows average 1.2 Bcf/d/d in 2030

Delta TX to MEX:

Timing on projects is key variable with Aqua Dulce (2.1 Bcf/d at end of 2014) biggest question mark

Existing open capacity = 1.8 Bcf/d

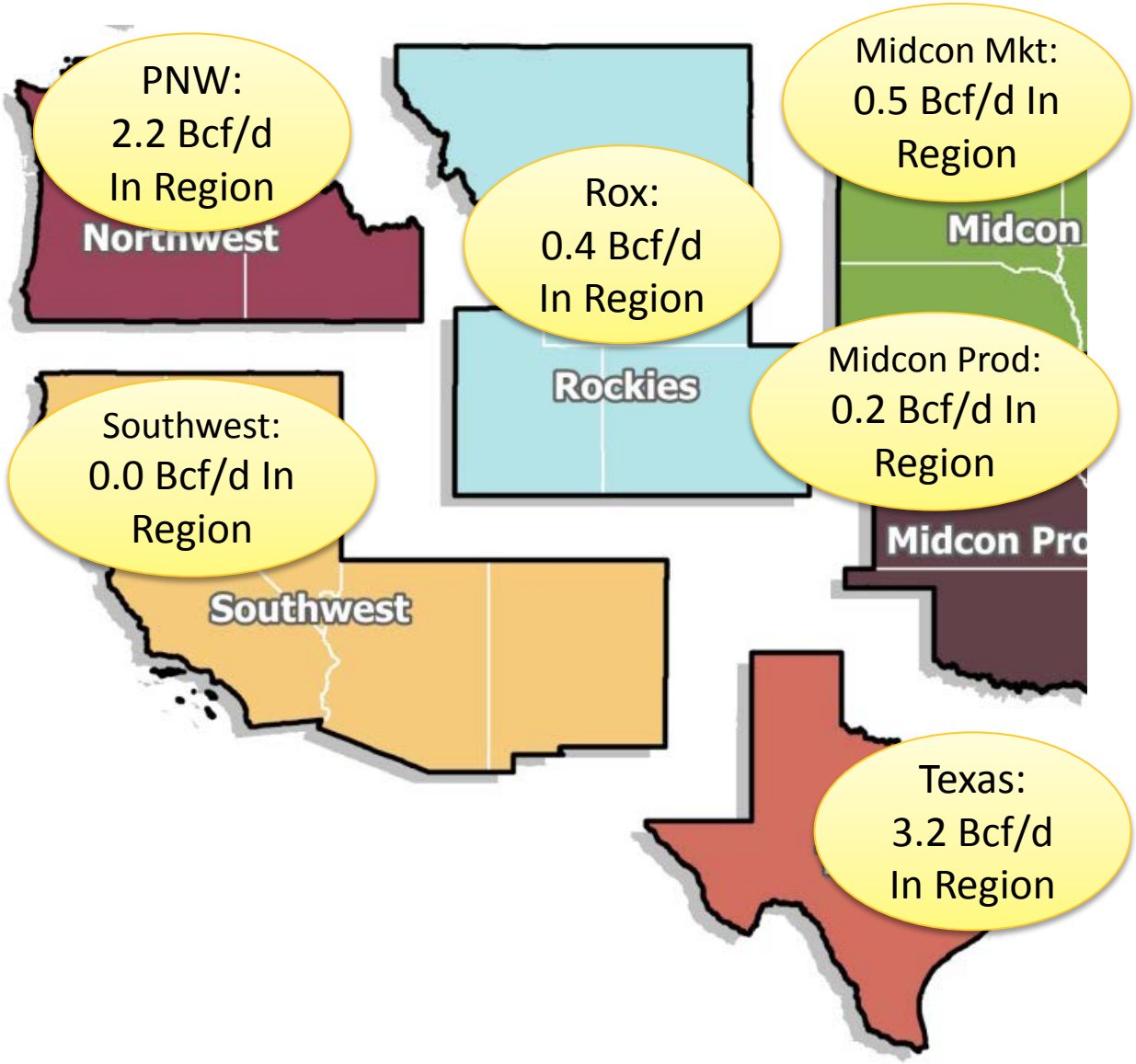
Will be 4.3 Bcf/d in 2030, while flows average 3.0 Bcf/d at peak.

Existing Capacity (open)

Cell Model Flows Expected By 2030 (with Peak)

Announced Pipeline Expansions

The Rest of the Country through 2030



PNW & Rox:

- Oregon and Washington both proposing massive pipelines to primarily serve proposed LNG projects.

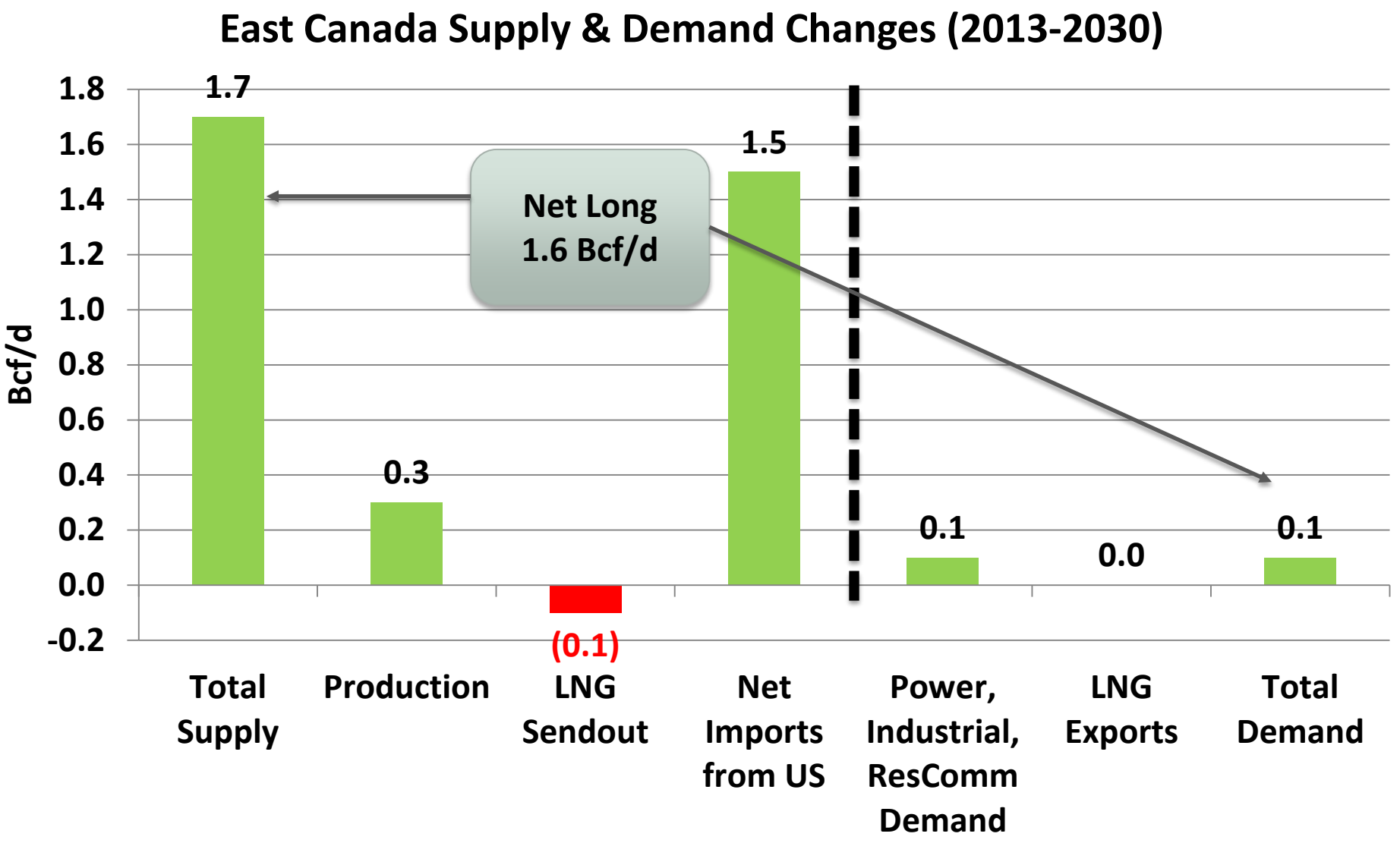
Midcon Mkt and Prod:

- Some activity around Bakken.
- Expansion to support local KS/MO demand.

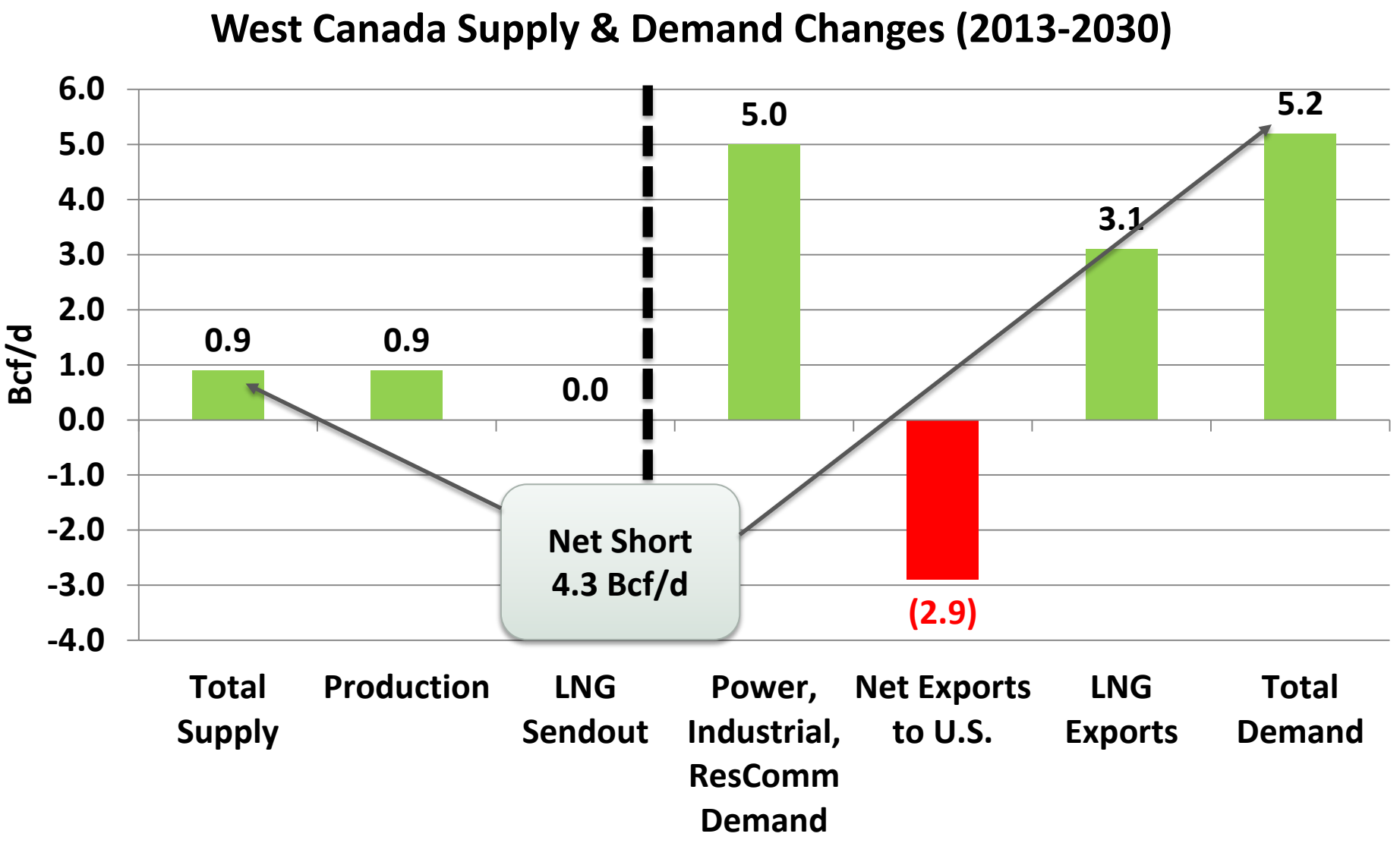
Texas and SW:

- No proposed projects from West TX to SW/Cali due to current underutilized capacity. Bentek believes this region will be constrained and underserved beginning in 2023.
- All internal TX pipeline build to support power or LNG demand.
- No inter regional pipeline expansions to Cali or SW.

East Canada Expected to Be Net Long 1.6 Bcf/d by 2030



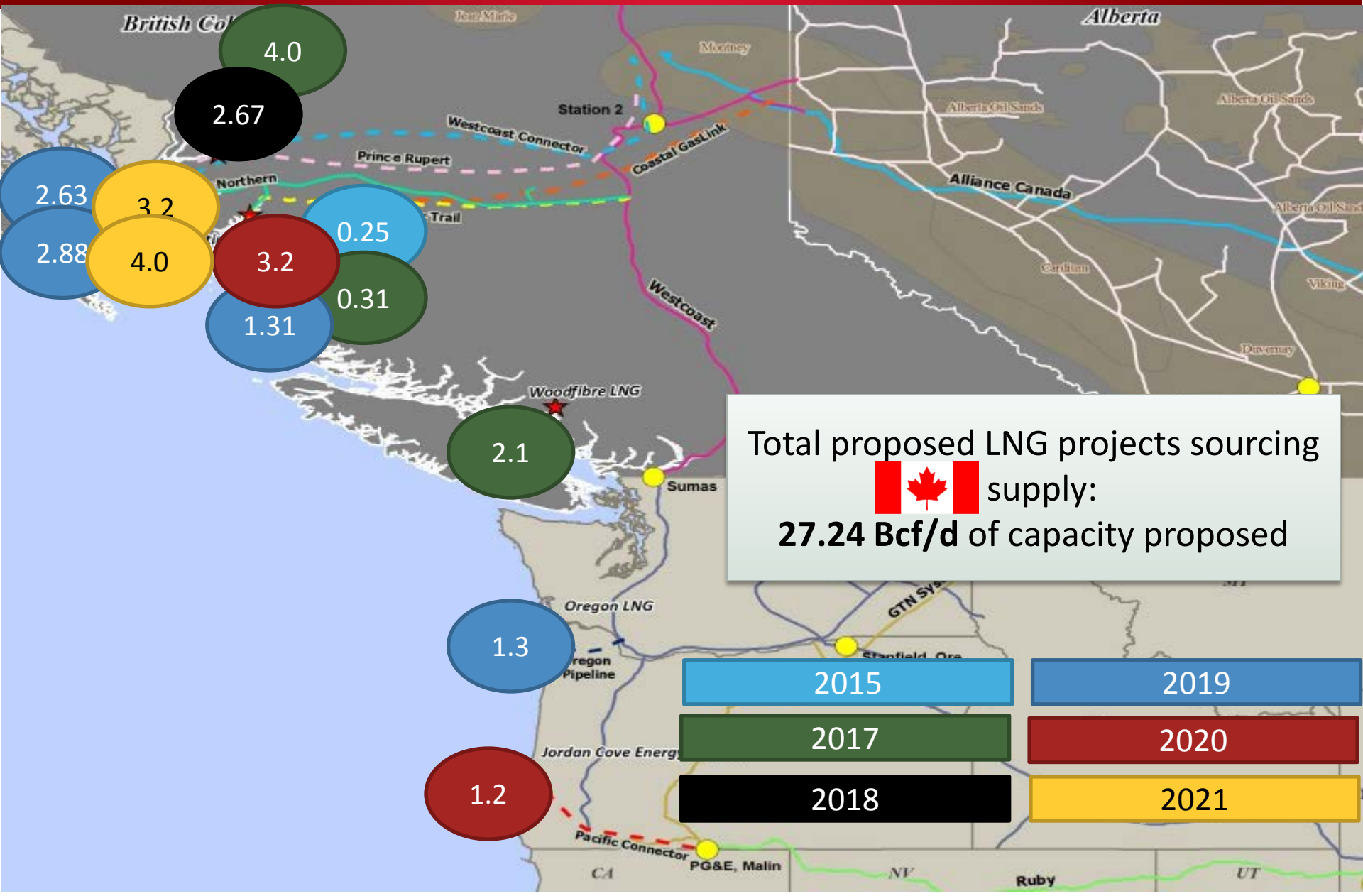
West Canada Expected to Be Net Short 4.3 Bcf/d by 2030



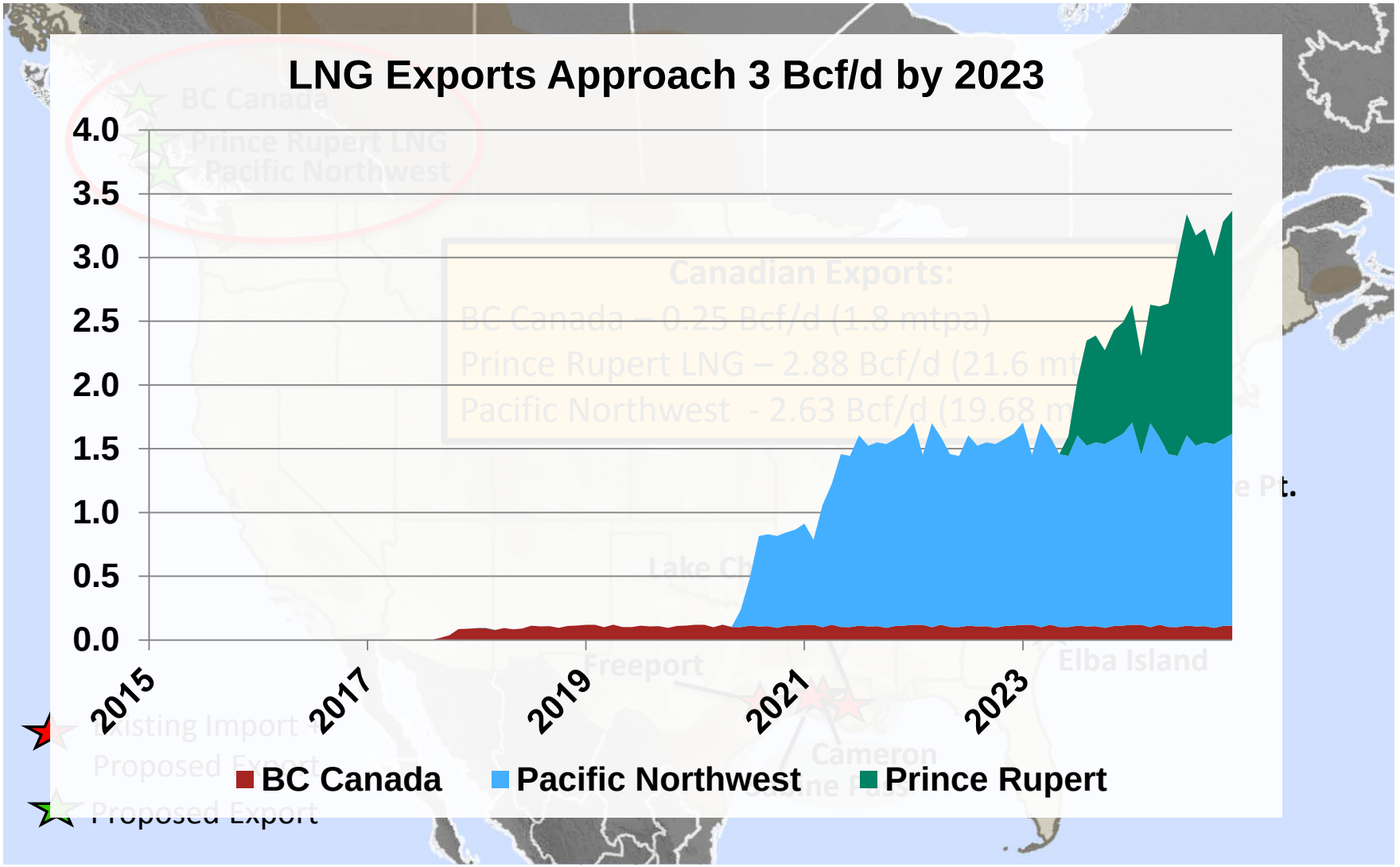
West Canada and PNW Proposed LNG Export Projects

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

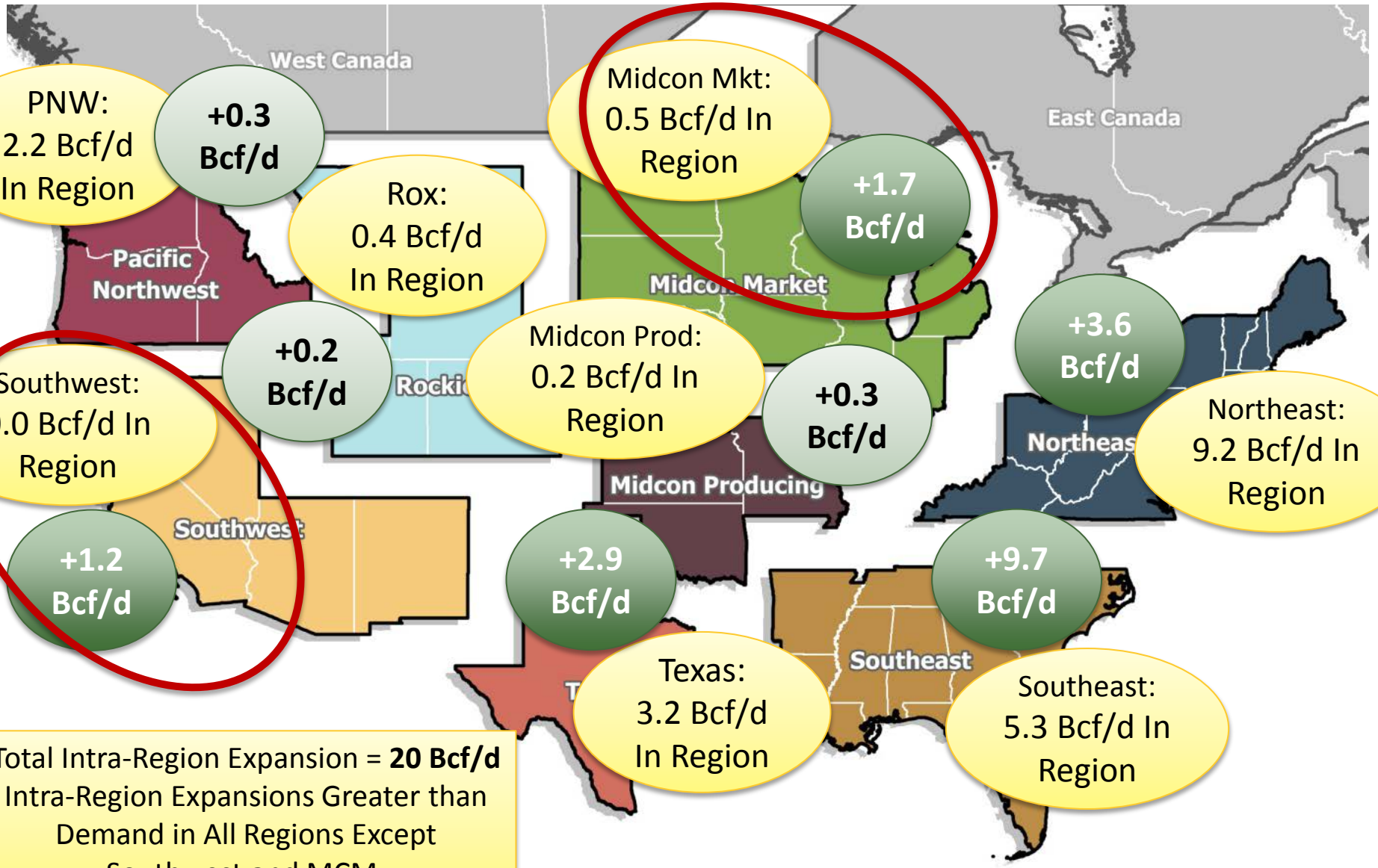


Only 3 Projects (All in Canada) in Bentek's Base Case Forecast



Source: BENTEK

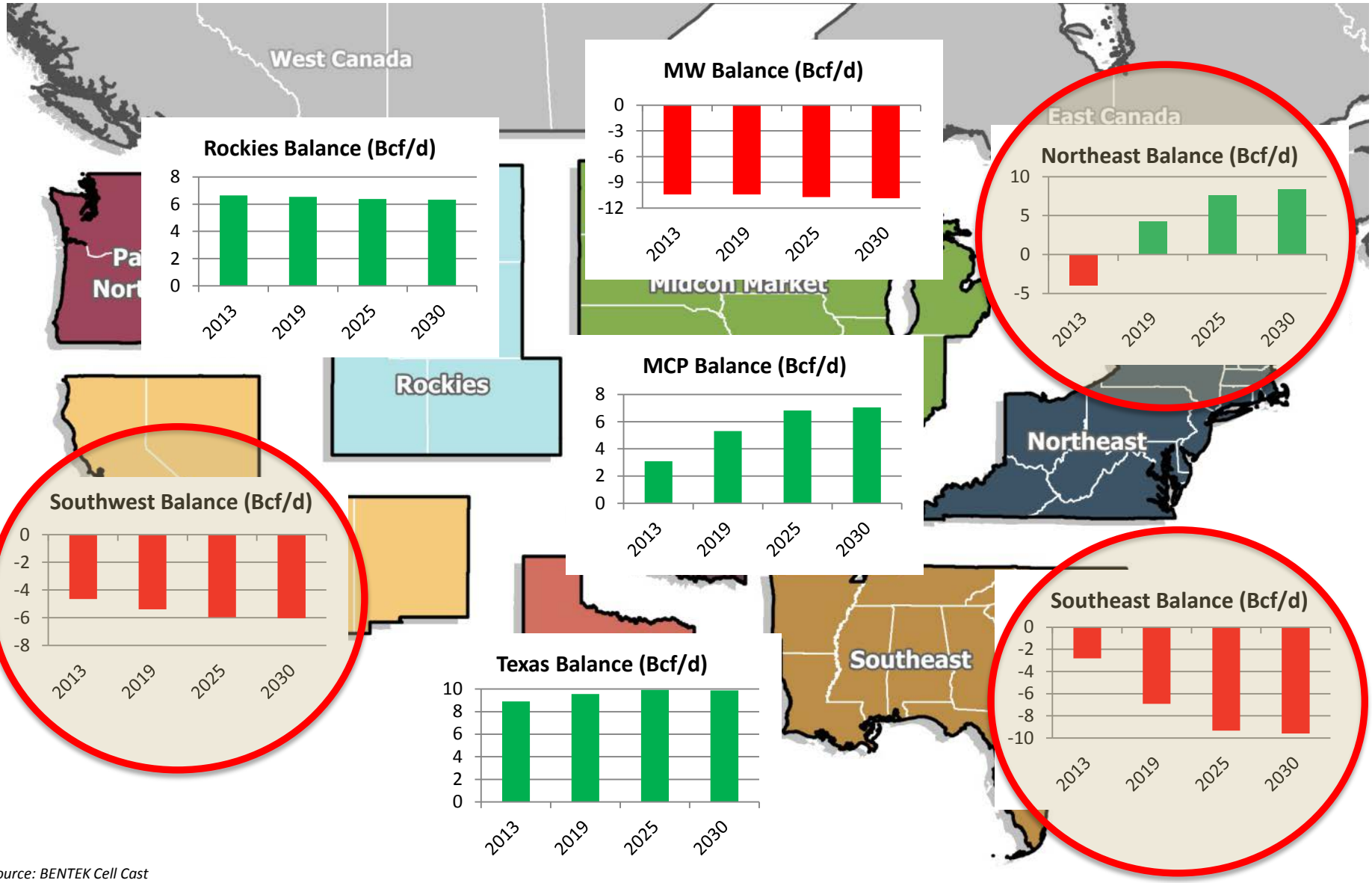
Demand Growth Compared to Intra Regional Expansion



Total Intra-Region Expansion = **20 Bcf/d**
Intra-Region Expansions Greater than Demand in All Regions Except Southwest and MCM.

Source: BENTEK Pipeline Project Tracker

Net Long/Short Balance 2030 vs. 2013

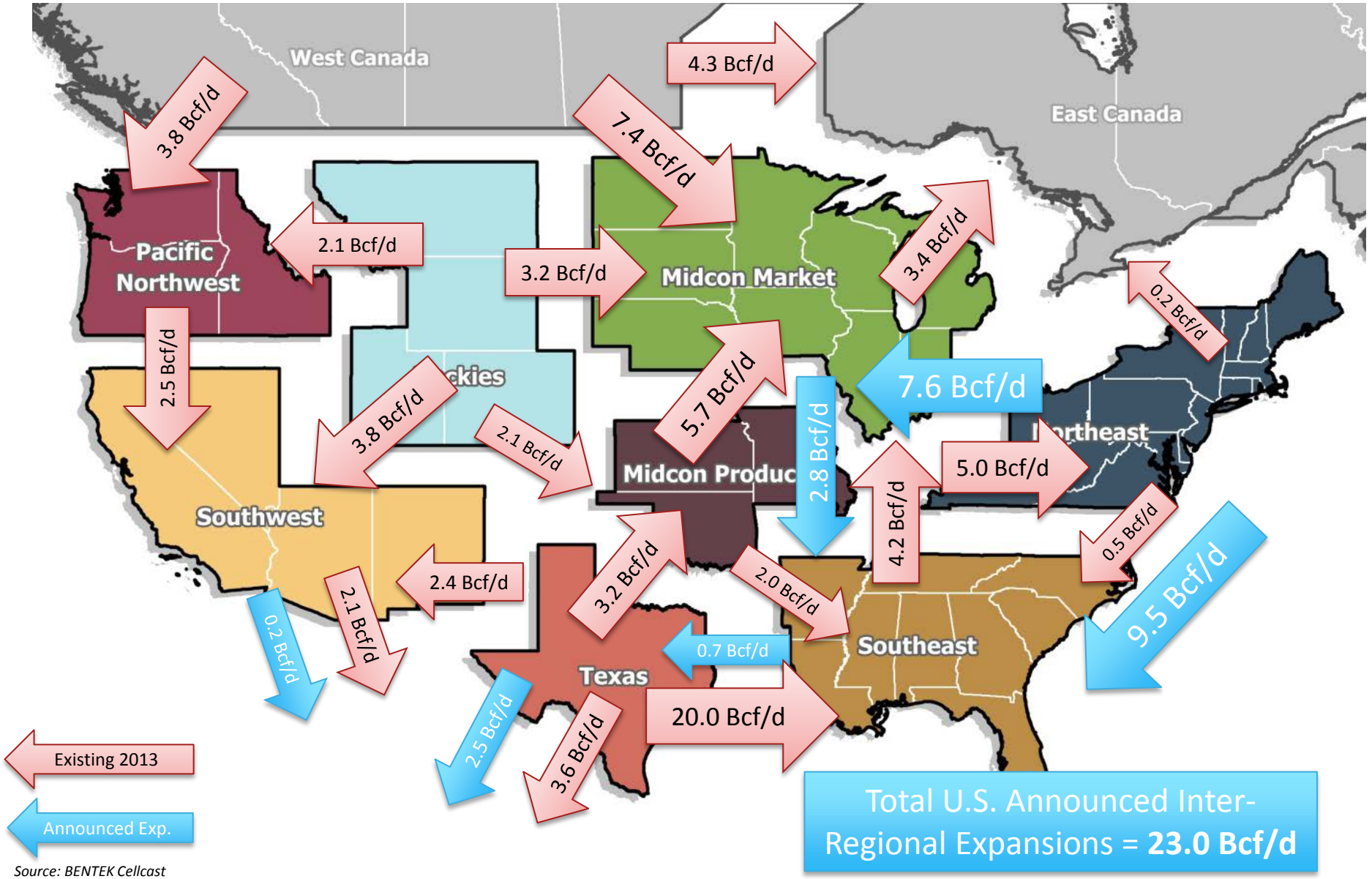


Source: BENTEK Cell Cast

Capacity in 2013 and Announced Inter Regional Expansions

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



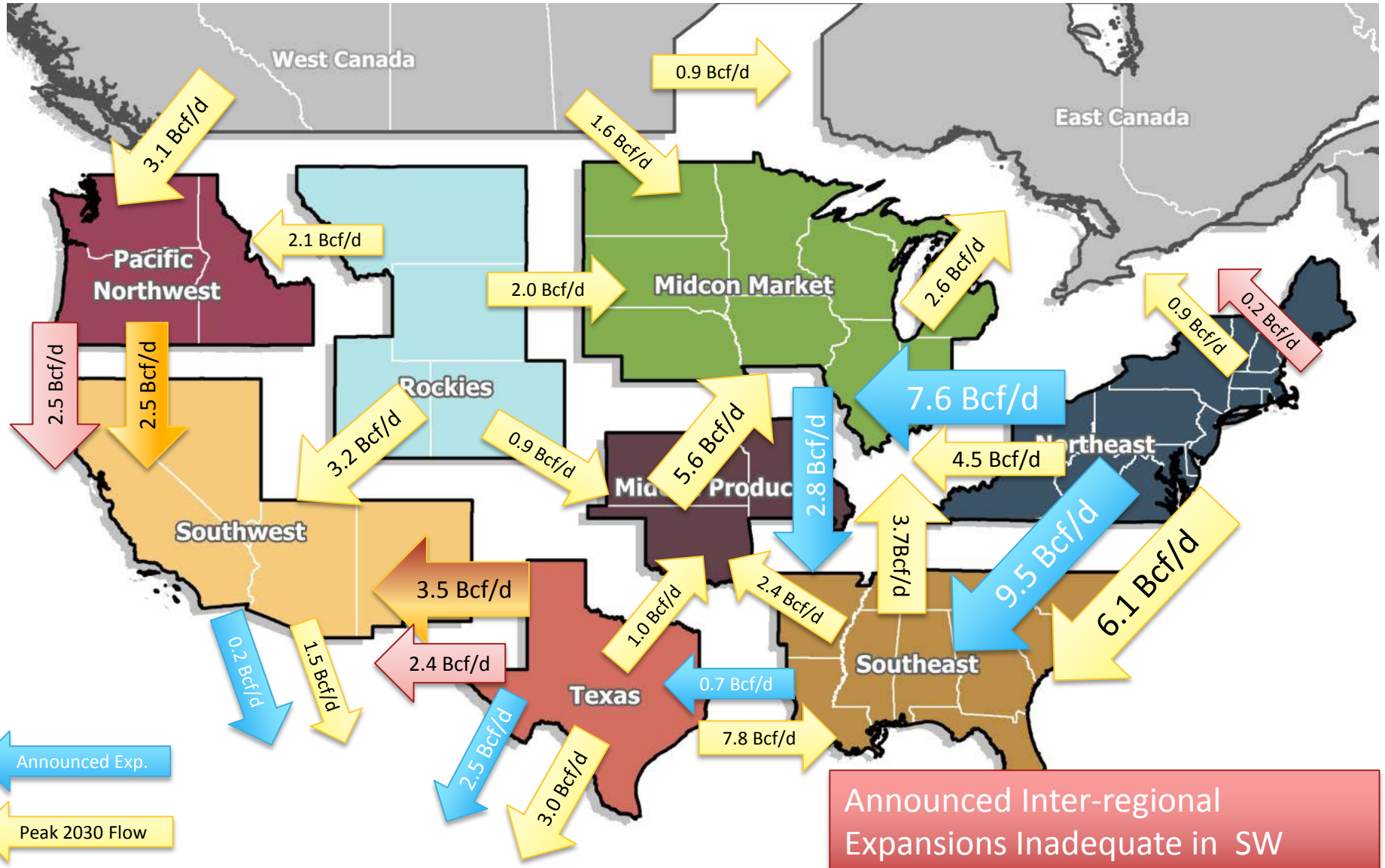
Total U.S. Announced Inter-Regional Expansions = **23.0 Bcf/d**

Source: BENTEK Cellcast

Announced Expansions Vs. Peak Flows in 2030

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



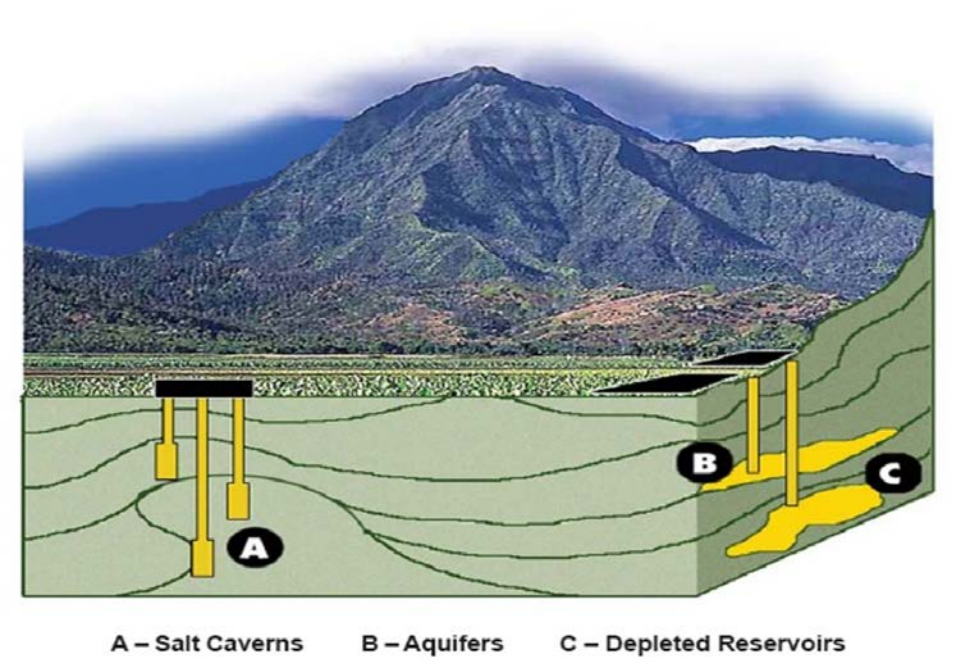
Announced Inter-regional Expansions Inadequate in SW Corridor by Minimum 1.1 Bcf/d

Source: BENTEK Cellcast

So What Does This All Mean?

- **20 Bcf/d** Intra Region Expansions Adequate to Serve Demand and Production In All Regions Except SW and Midcon Market Area.
- Midcon Market Area Covered by 5.6 Bcf/d Northeast Capacity Inflows by 2030.
- **23.0 Bcf/d** of Inter Region Expansions Cover Peak 2030 Flows in All Corridors Except TX to SW.
- At Least **1.1 Bcf/d** of Incremental Expansion Needed to SW Market.
- Total NG Infrastructure Additions Needed by 2030 = **44.4 Bcf/d**.

Storage Requirements

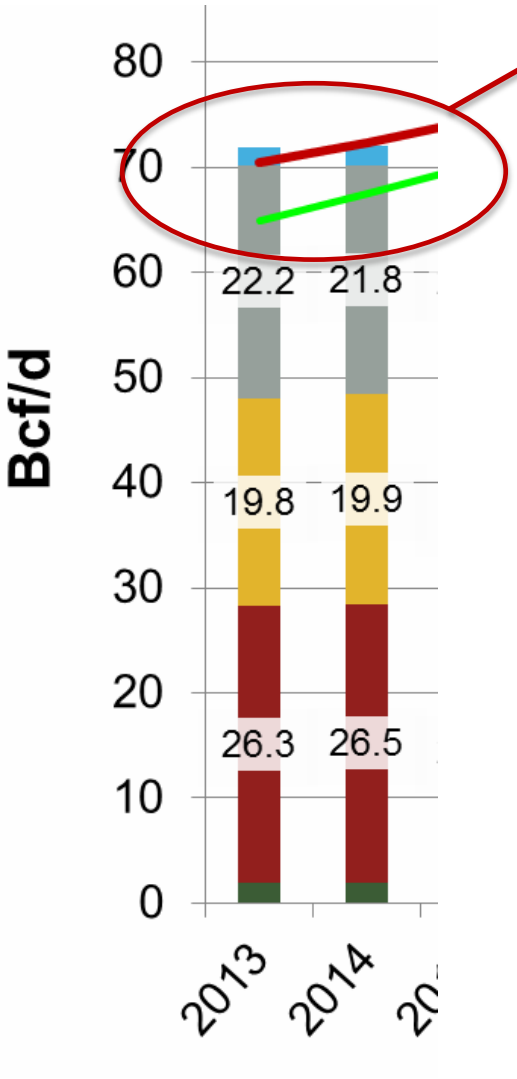


Tight Markets Put Pressure on Existing Storage Capacity

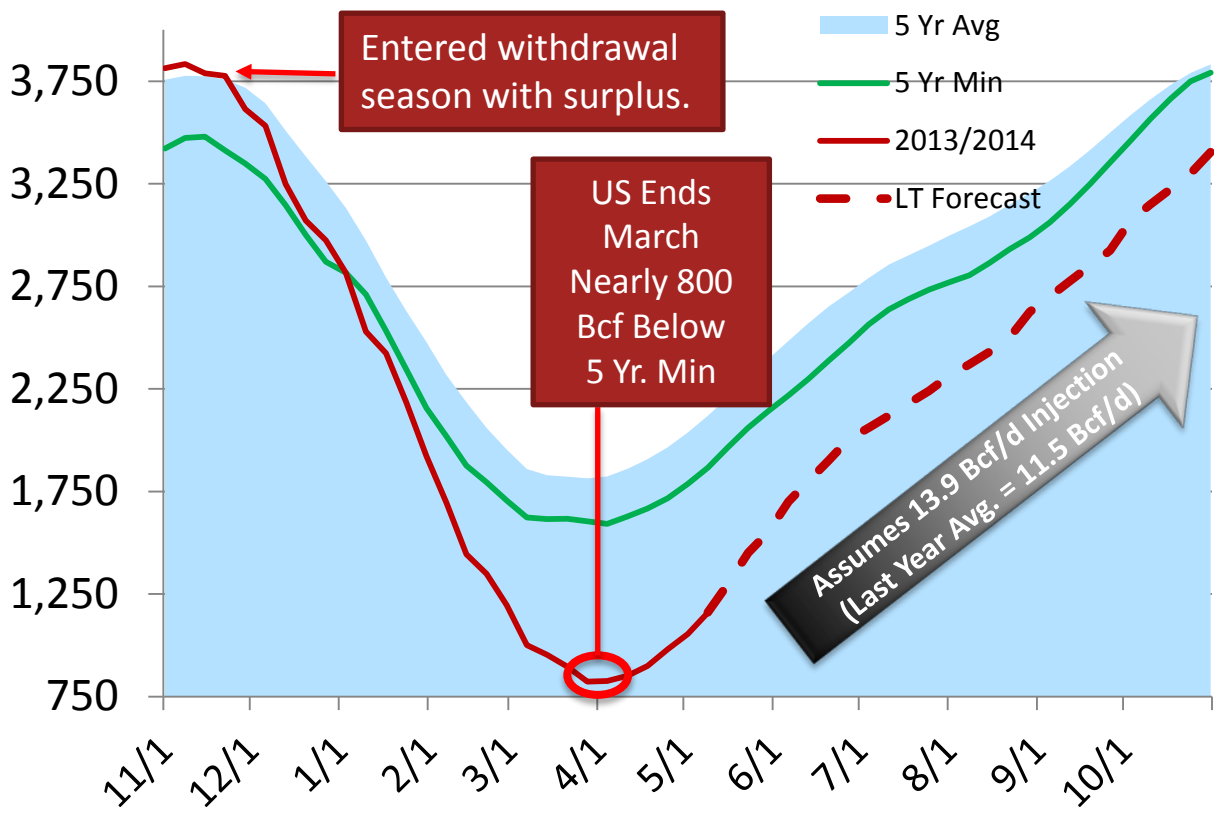
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

U.S. Net Short 5.5 Bcf/d in Winter 13/14 Driven By Weather and Associated Res/Comm Demand



US Storage Inventories (Bcf)

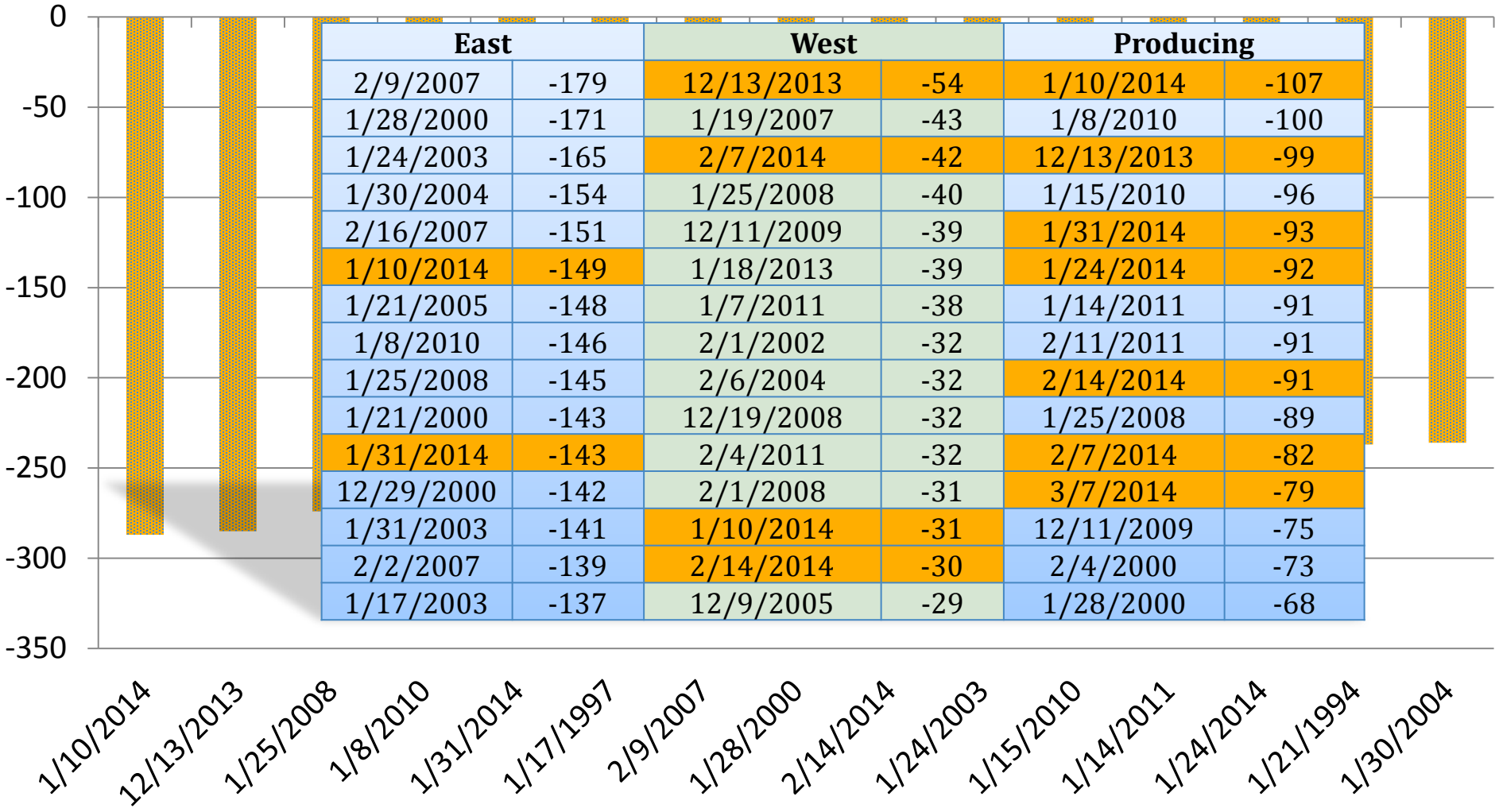


5 out of 15 largest withdrawals on record occurred this winter

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

Largest Storage Withdrawals on Record (Bcf)



East		West		Producing	
2/9/2007	-179	12/13/2013	-54	1/10/2014	-107
1/28/2000	-171	1/19/2007	-43	1/8/2010	-100
1/24/2003	-165	2/7/2014	-42	12/13/2013	-99
1/30/2004	-154	1/25/2008	-40	1/15/2010	-96
2/16/2007	-151	12/11/2009	-39	1/31/2014	-93
1/10/2014	-149	1/18/2013	-39	1/24/2014	-92
1/21/2005	-148	1/7/2011	-38	1/14/2011	-91
1/8/2010	-146	2/1/2002	-32	2/11/2011	-91
1/25/2008	-145	2/6/2004	-32	2/14/2014	-91
1/21/2000	-143	12/19/2008	-32	1/25/2008	-89
1/31/2014	-143	2/4/2011	-32	2/7/2014	-82
12/29/2000	-142	2/1/2008	-31	3/7/2014	-79
1/31/2003	-141	1/10/2014	-31	12/11/2009	-75
2/2/2007	-139	2/14/2014	-30	2/4/2000	-73
1/17/2003	-137	12/9/2005	-29	1/28/2000	-68

Natural Gas Storage Characteristics

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

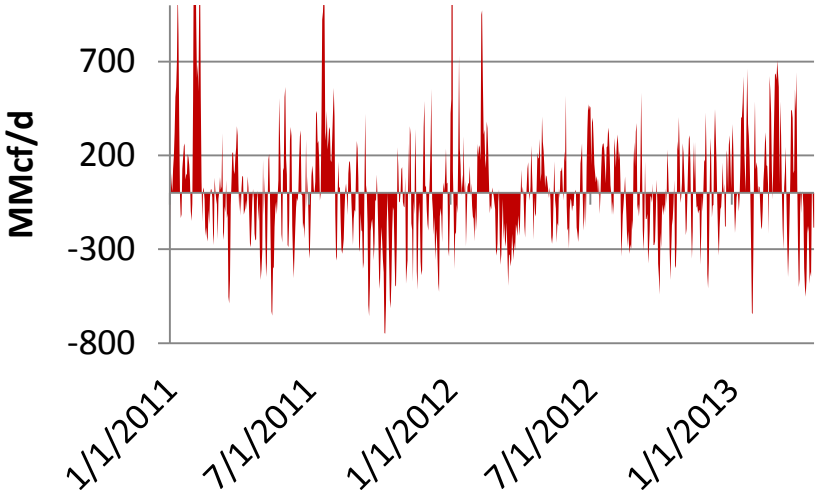
- Capacity
  - Base Gas (cushion gas)
  - Working Gas
- Usage
  - Base Load
  - Peaking
- Injection/Withdrawal Capacity
  - Cycles or "Turns"
  - Ratchets
- Ownership
  - independent storage operators (producers/merchants)
  - local distribution companies (LDC's) or other utilities
  - pipeline companies

Natural Gas Storage: 3 Types

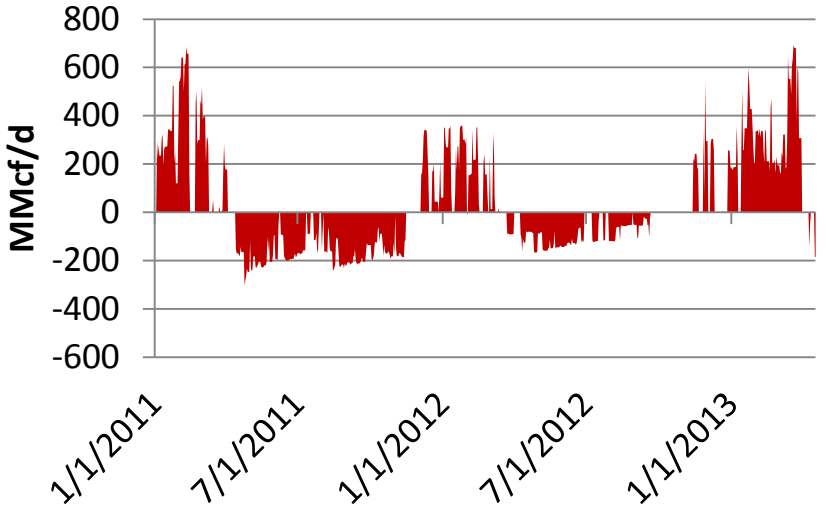
PLATTS McGRAW HILL FINANCIAL

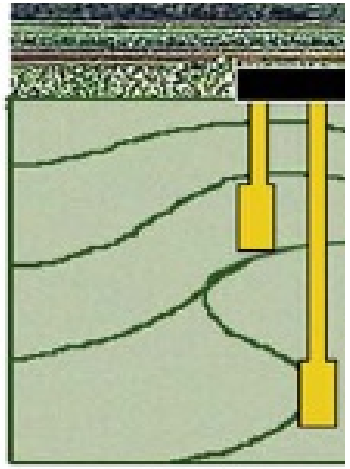
BENTEK Energy

Salt Dome: Egan



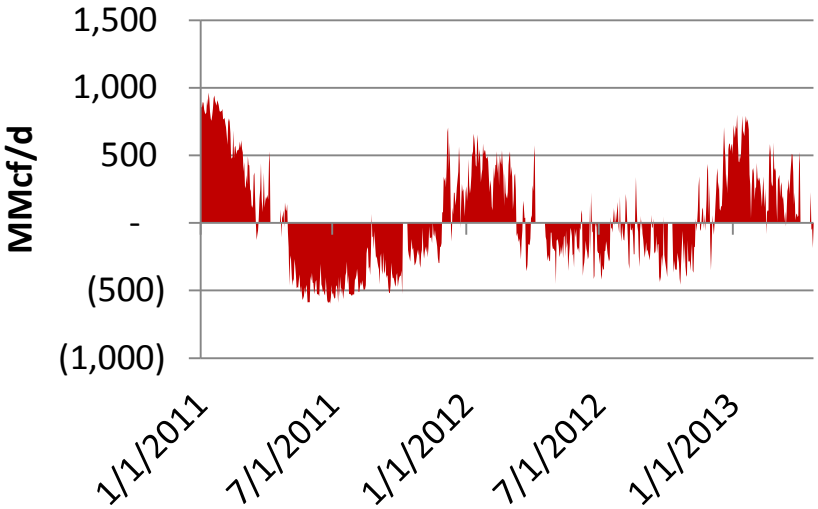
Aquifer: Blue Lake

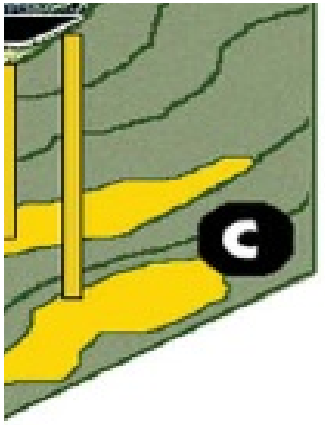




A – Salt C

Depleted Field: Clay Basin





servoirs

Gas Storage Pricing and Value

- Seasonal Valuation – the difference between the average summer-winter forward price (the spread, or strip spread) for some future period. This is called the "**intrinsic**" value of a storage facility.

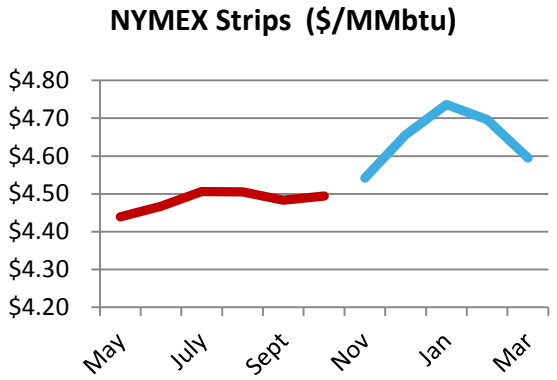
Calculate intrinsic value for summer 2014 vs. winter 2014/15.

April 7th, 2014 NYMEX Summer Strip (May-Oct) = $4.48

less

April 7th, 2014 NYMEX Winter Strip (Nov-Mar) = $4.65

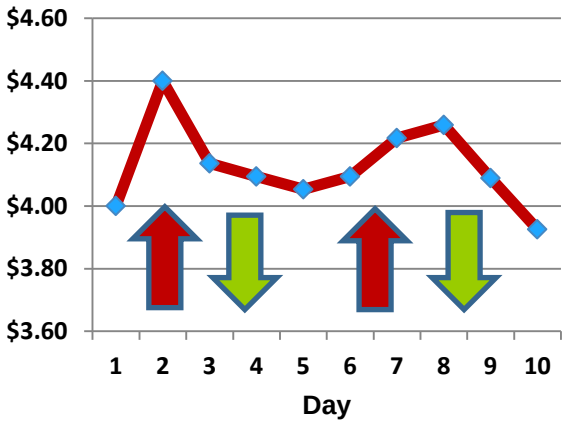
Spread = $0.17



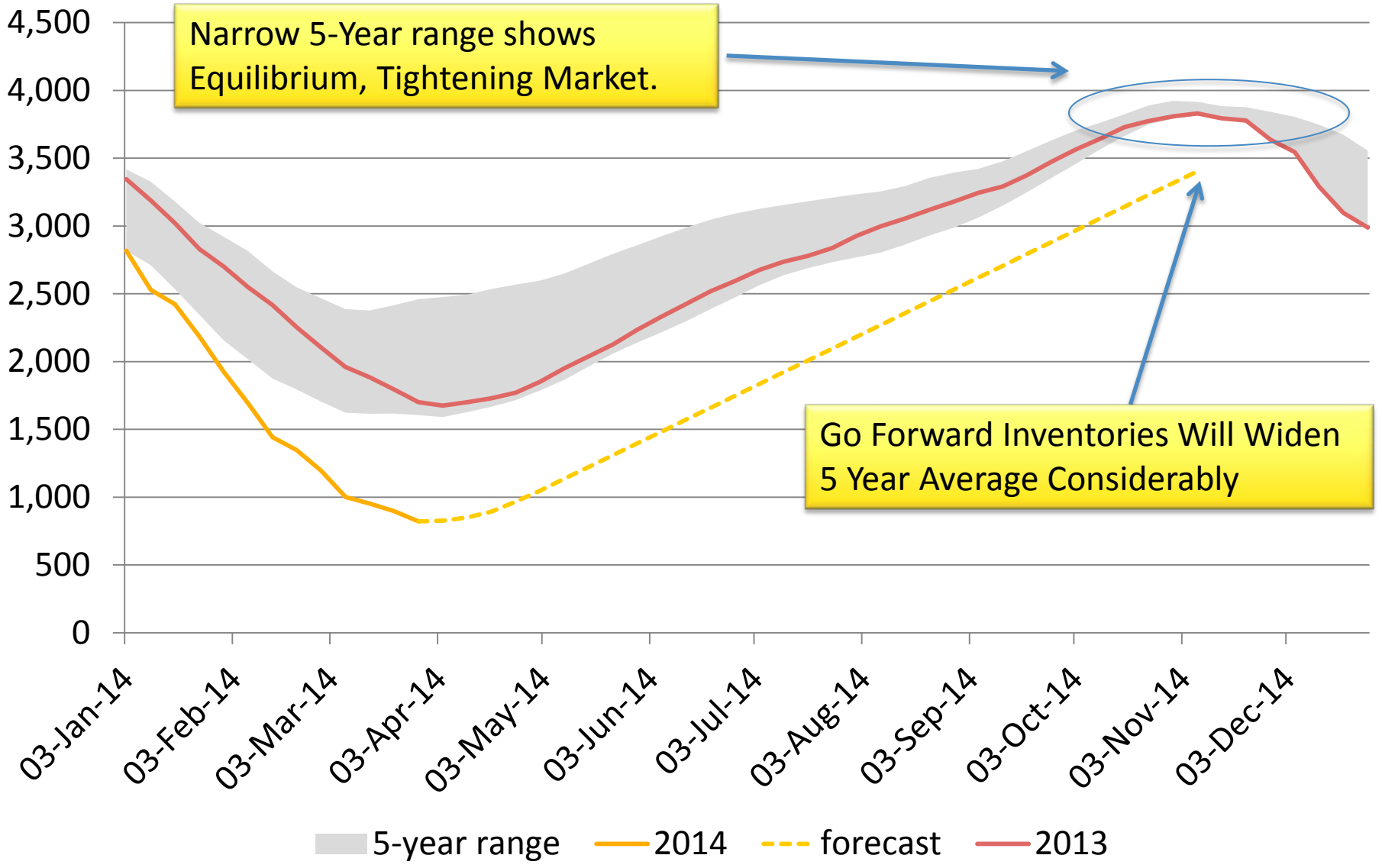
- Volatility Valuation – based on the magnitude of daily fluctuations in natural gas pricing, called the "**extrinsic**" value of a storage facility.

Measurable using option-based economics primarily determined by price volatility.

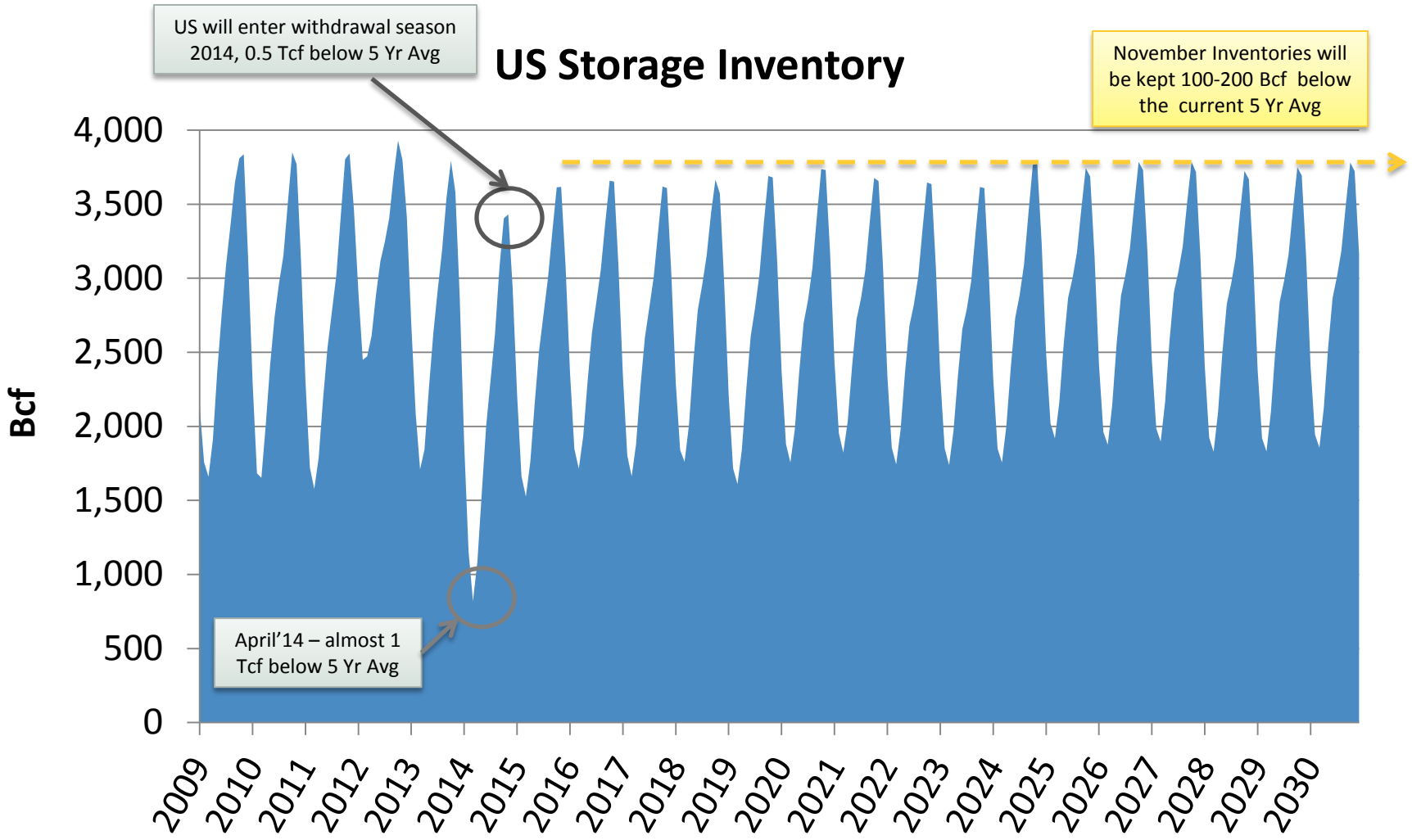
To capture extrinsic value, a storage facility must be able to switch between injection and withdrawal frequently and quickly (salt domes!).



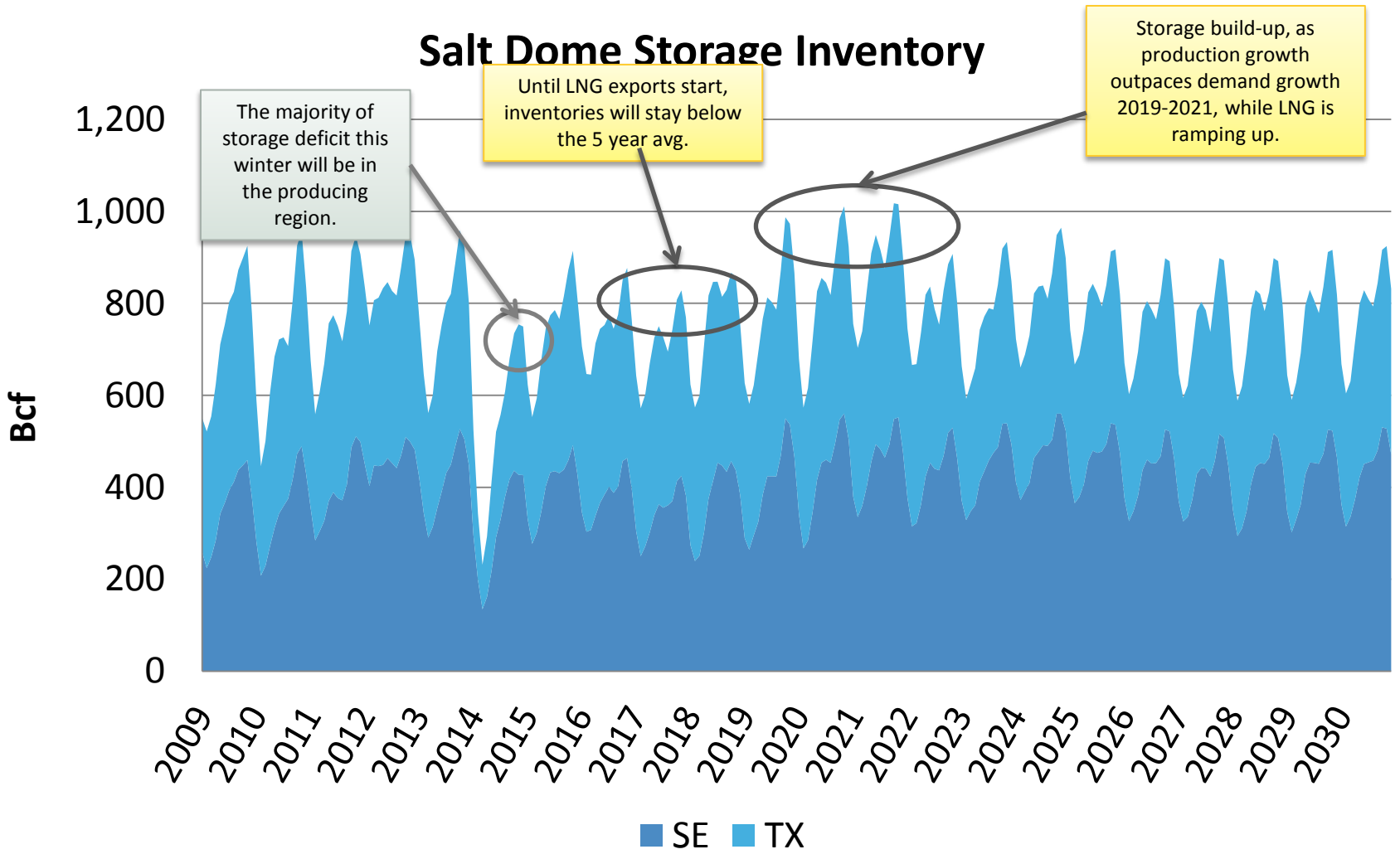
Storage 5-Year Range



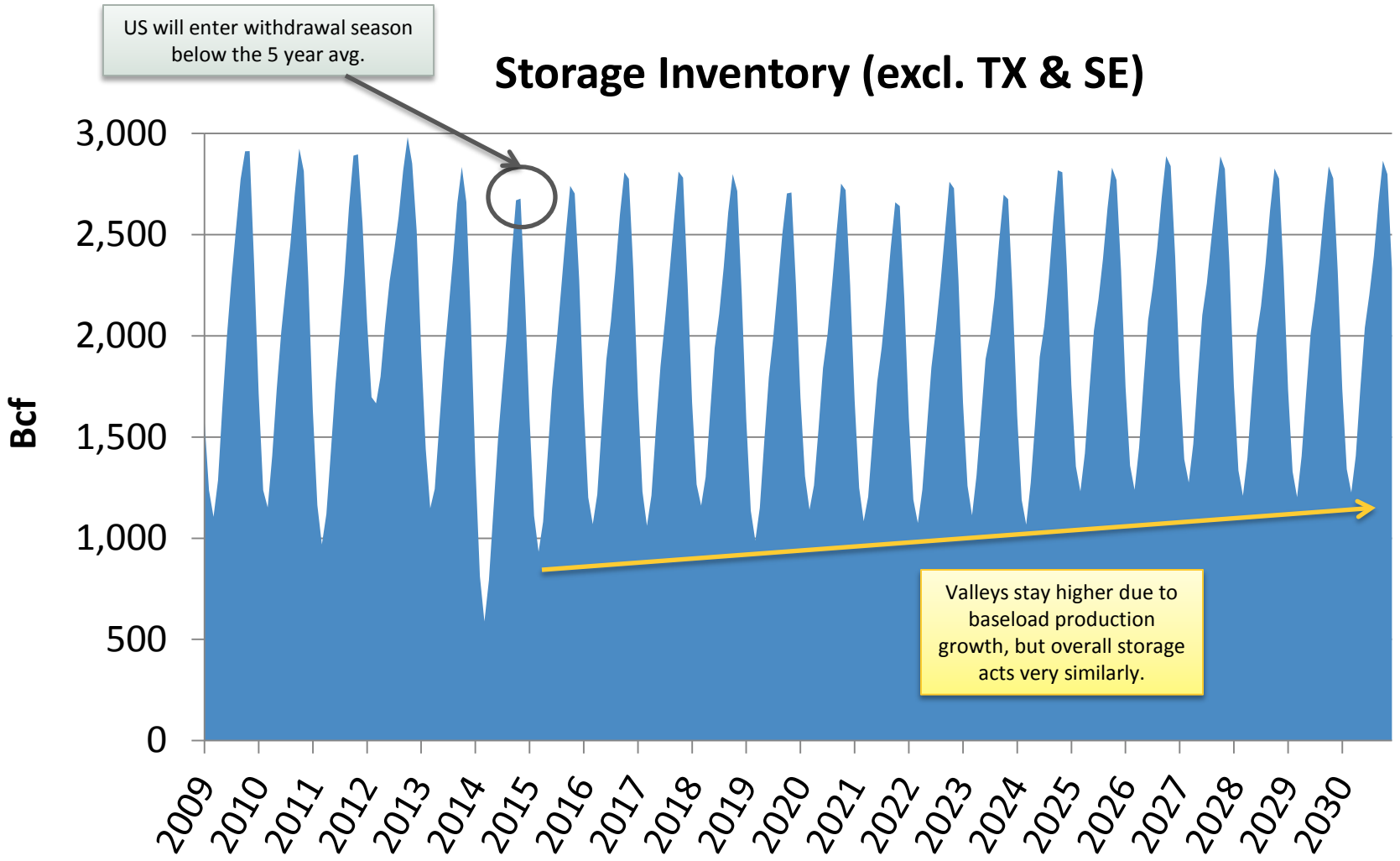
Storage Inventory



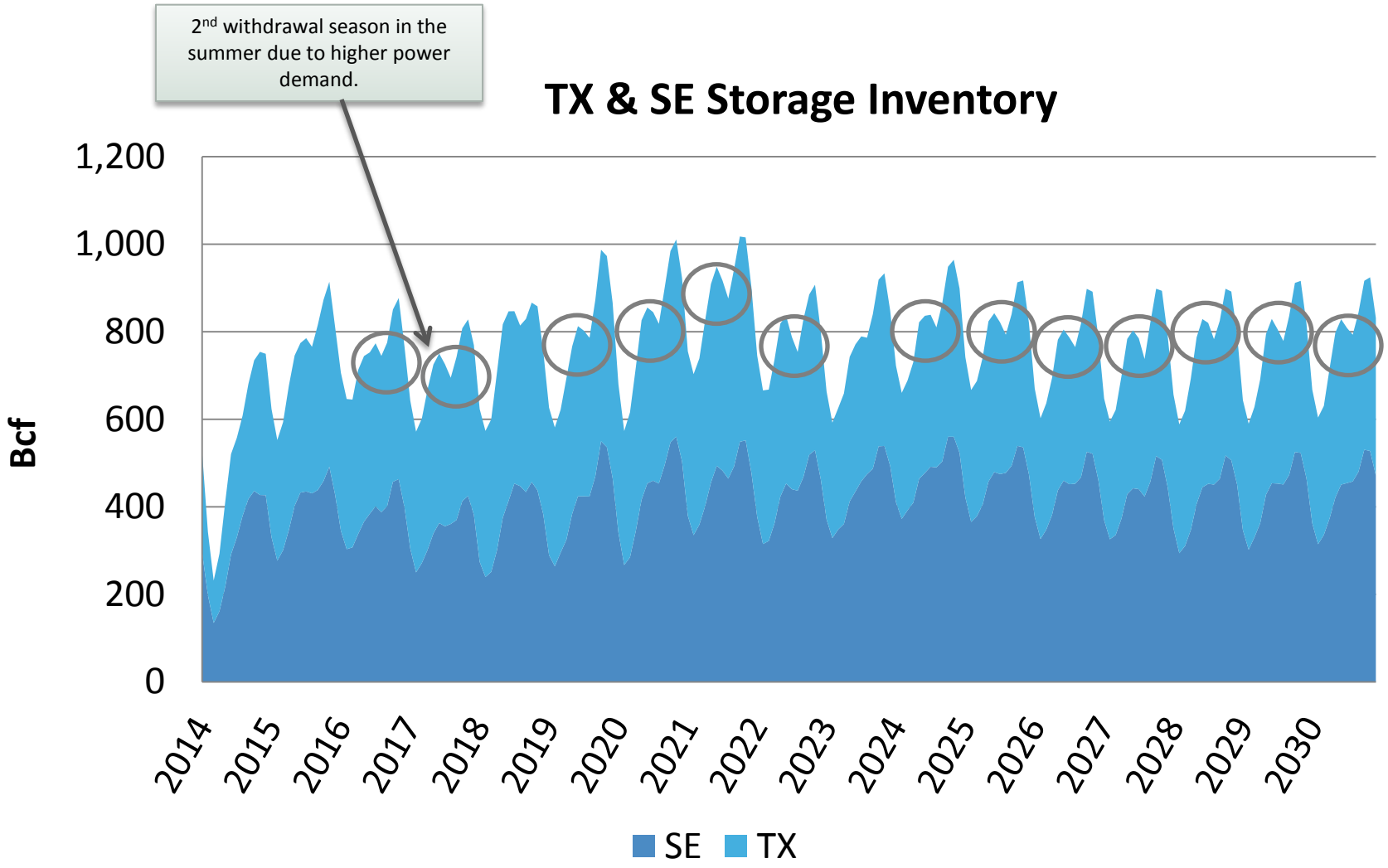
High Deliverability Storage – TX & SE
Salt Dome Storage Inventory



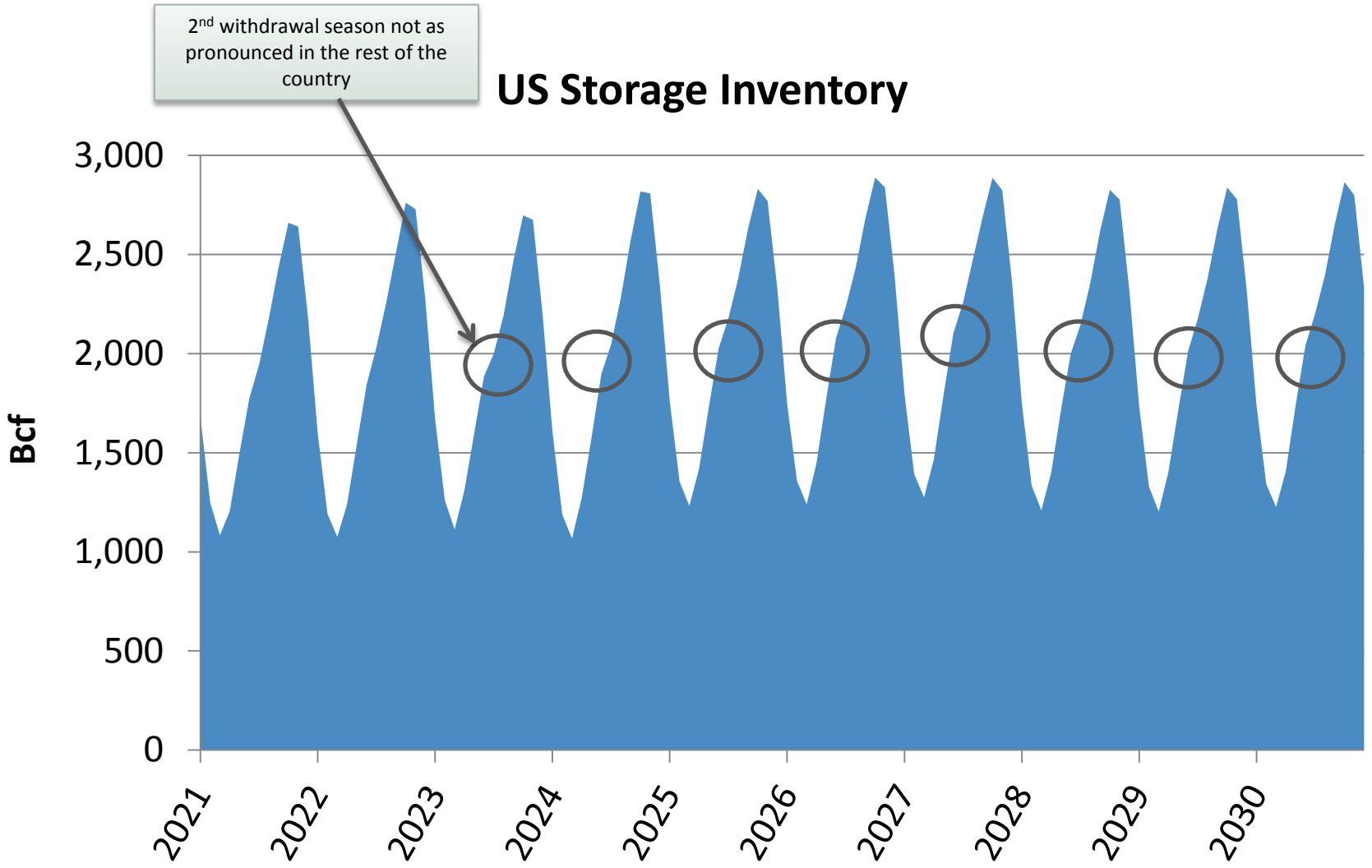
Storage Inventory excluding Salt domes in SE & TX



Power Demand Growth Changes Storage Patterns



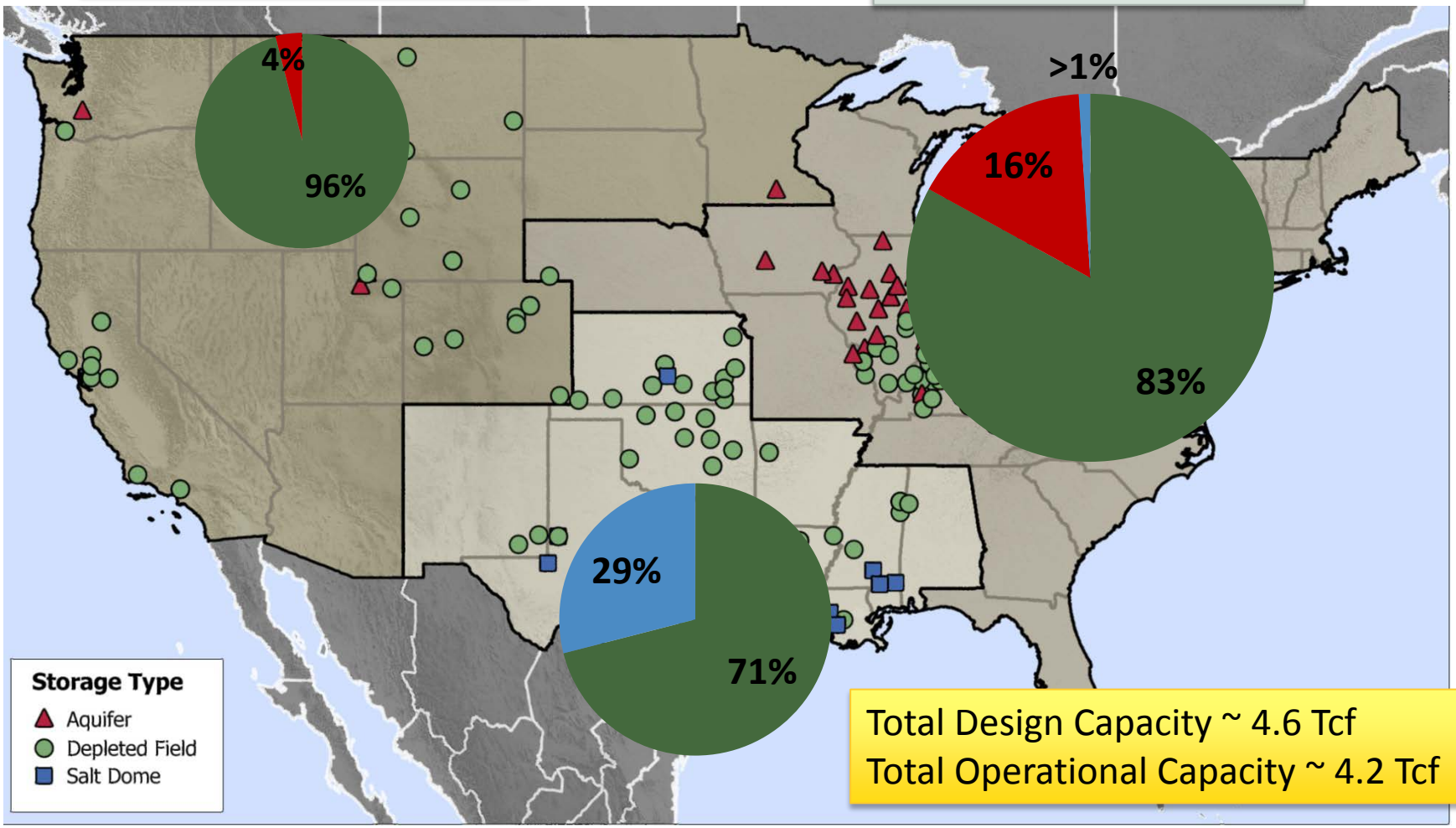
Power demand growth changes storage patterns



Storage Capacity by Field Type

PLATTS McGRAW HILL FINANCIAL

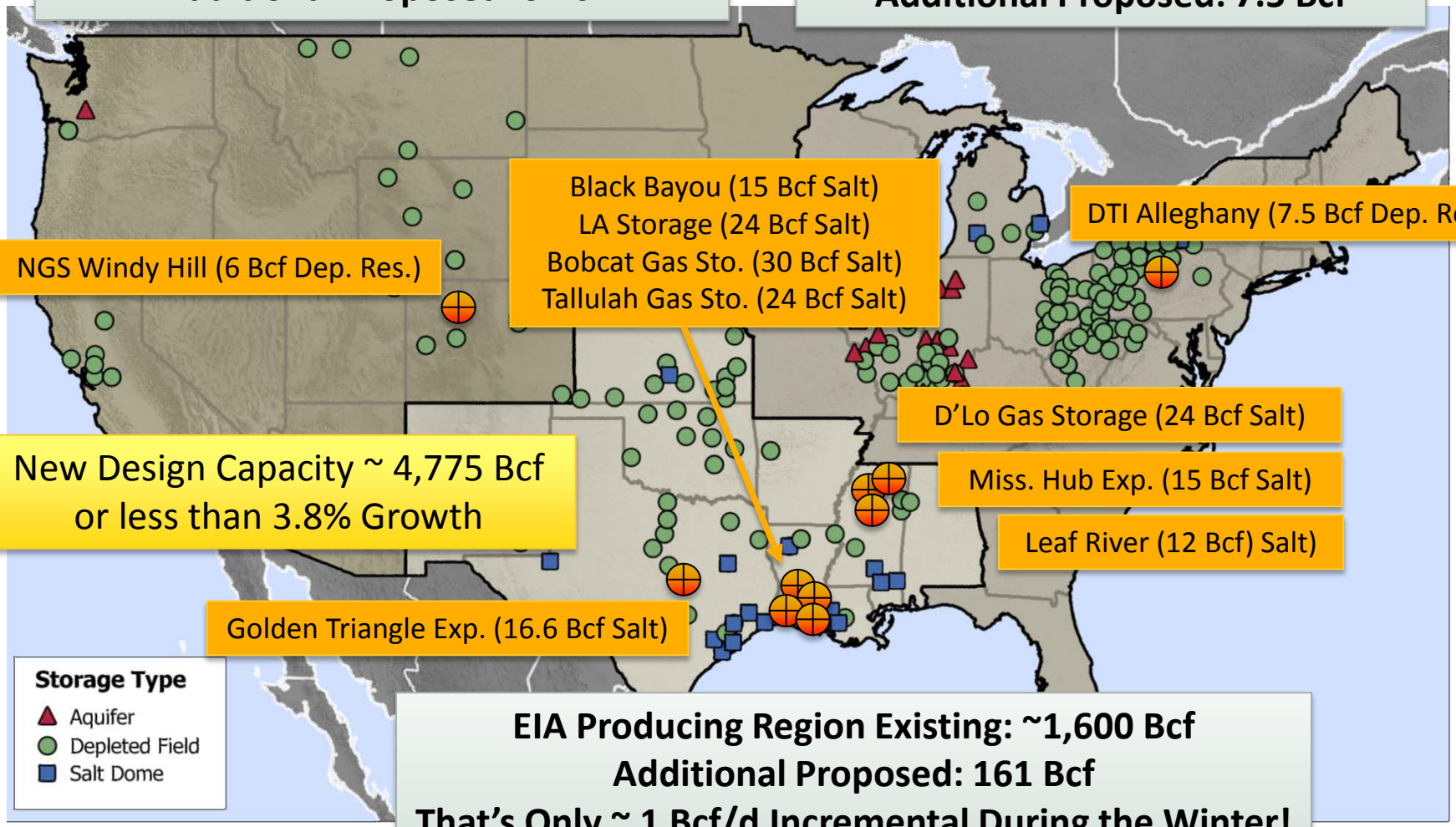
BENTEK Energy



Storage Additions By Region and Type

PLATTS McGRAW HILL FINANCIAL

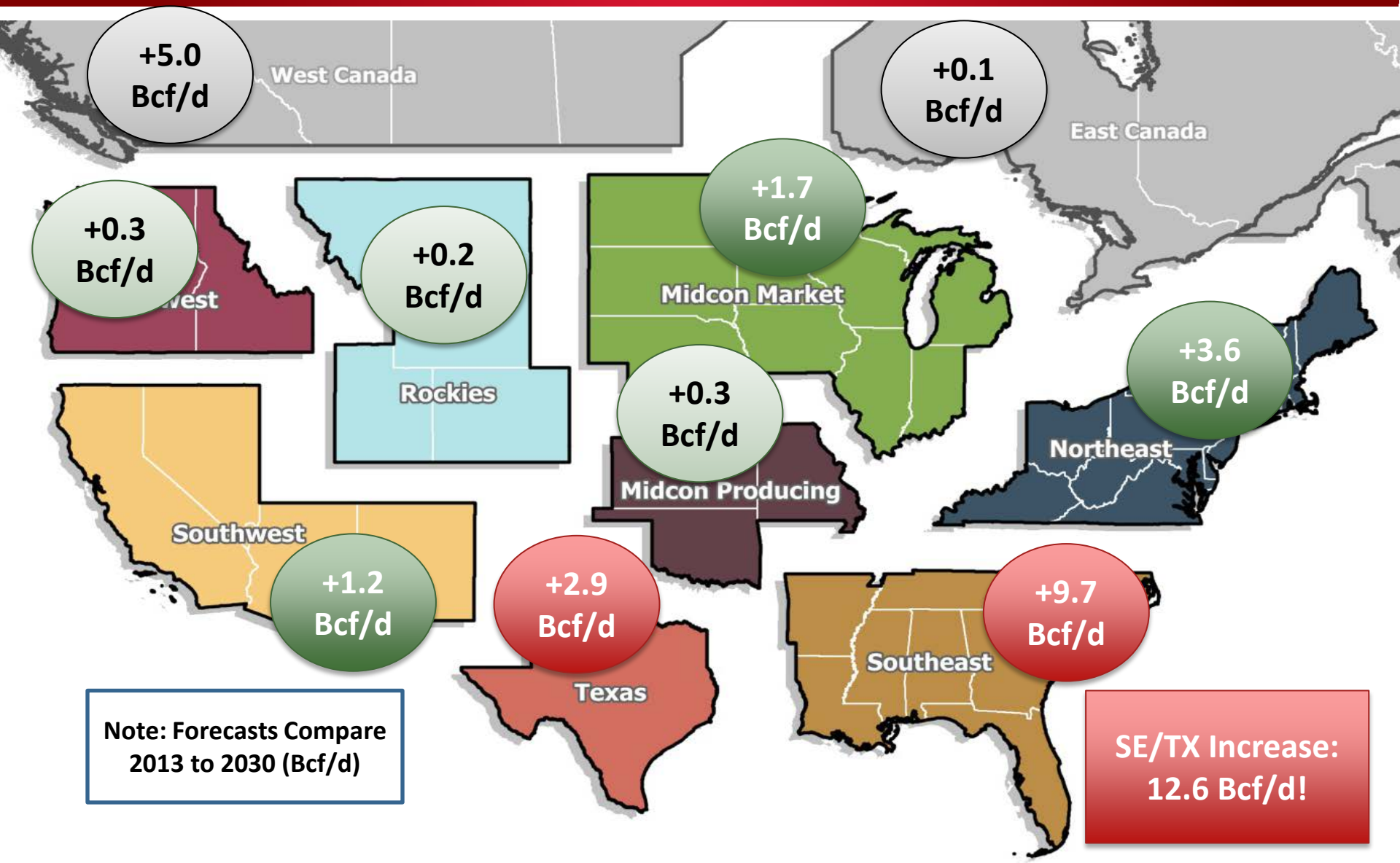
BENTEK Energy



Southeast Leads Demand Growth Followed by Northeast and Texas

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Source: BENTEK Cell Cast

So What Does This All Mean?

PLATTS McGRAW HILL FINANCIAL

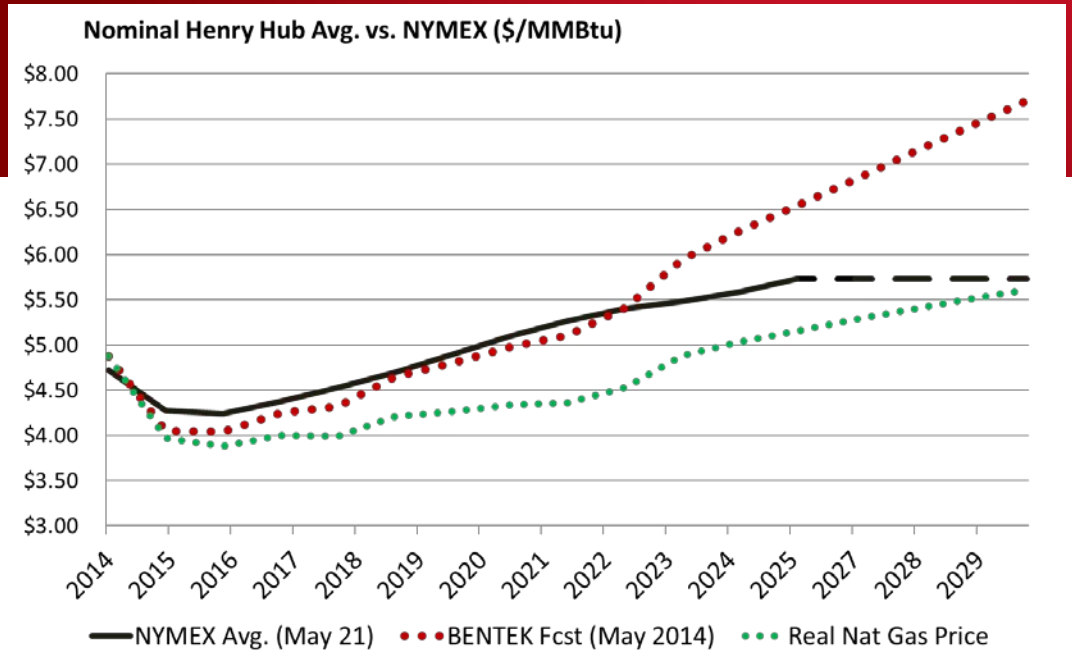
BENTEK Energy

- Northeast 29-30 Winter Demand averages 25.3 Bcf/d.
- Total Supply Available to Northeast is 28.0 Bcf/d.

- Southeast 29-30 Winter Demand averages is 26.2 Bcf/d.
- Total Supply Available to Southeast is 22.7 Bcf/d (including Northeast Inflows).

- Inter Regional Expansions to the SE provide 10.1 Bcf/d gas on 9.7 Bcf/d of Incremental Demand, Which Leaves ~ 0.5 Bcf/d of Incremental Gas Available to Southeast in 2030.
- That's Tight if Northeast Has any more Colder than Normal Winters in Store, or if all Proposed Inter Regional Expansions are Not Built…
- Bentek Estimates an Incremental **3 Bcf/d** of Storage Deliverability for the Southeast (+2 Bcf/d More than Proposed Assuming Winter Draw Downs to Zero from Proposed Storage Expansions).

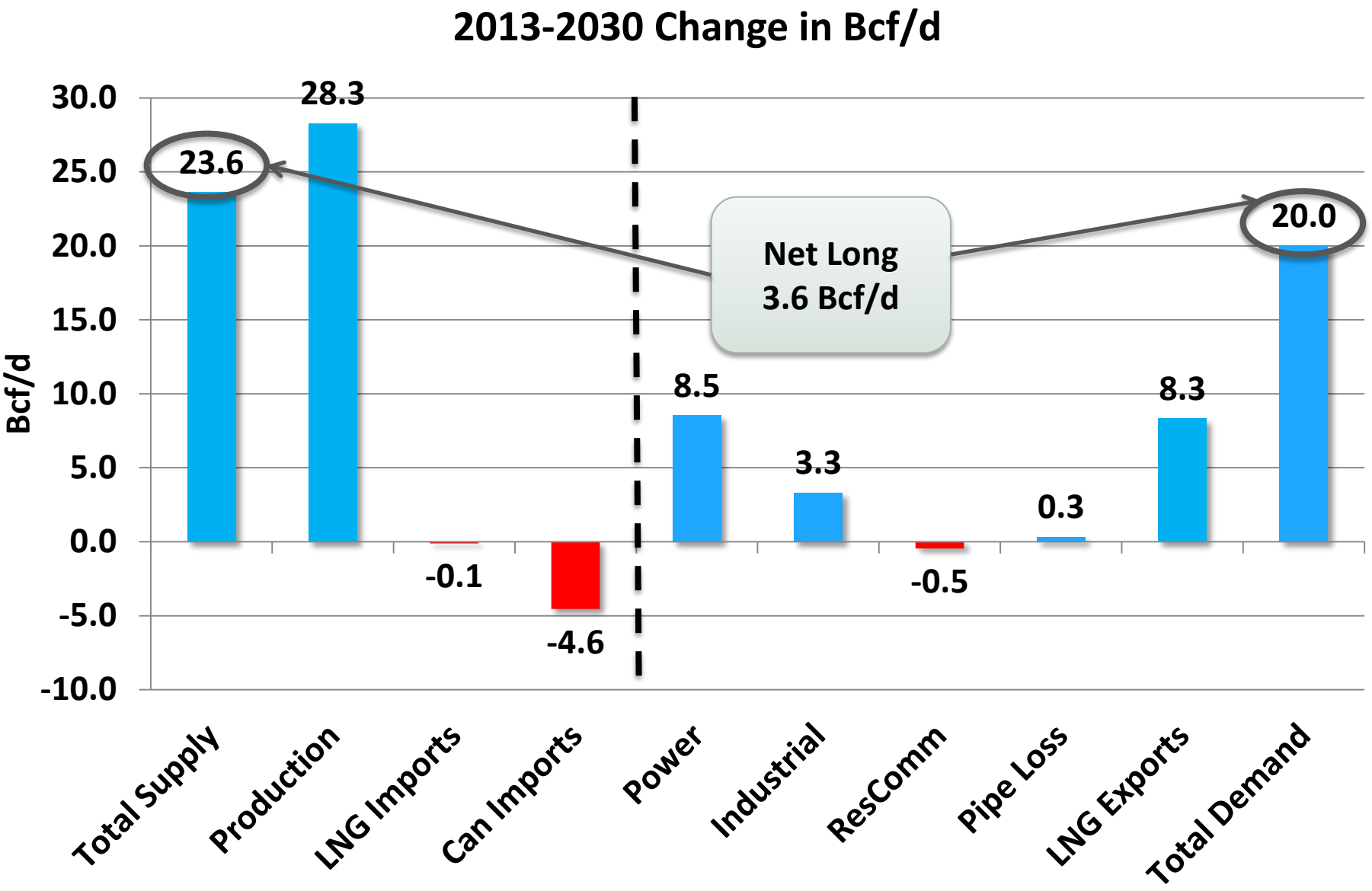
Impact on Natural Gas Price



US Supply and Demand Balance

PLATTS McGRAW HILL FINANCIAL

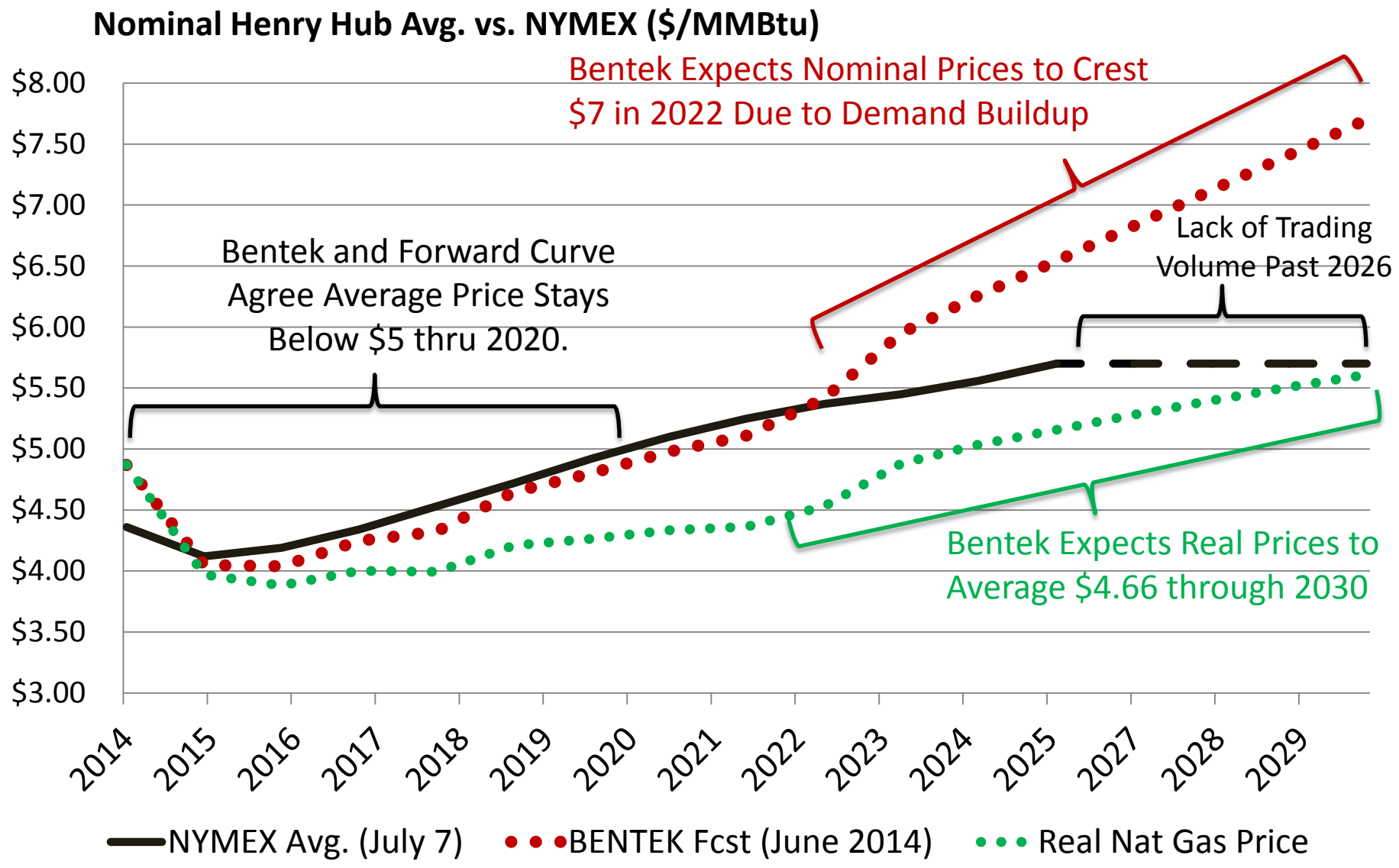
BENTEK Energy



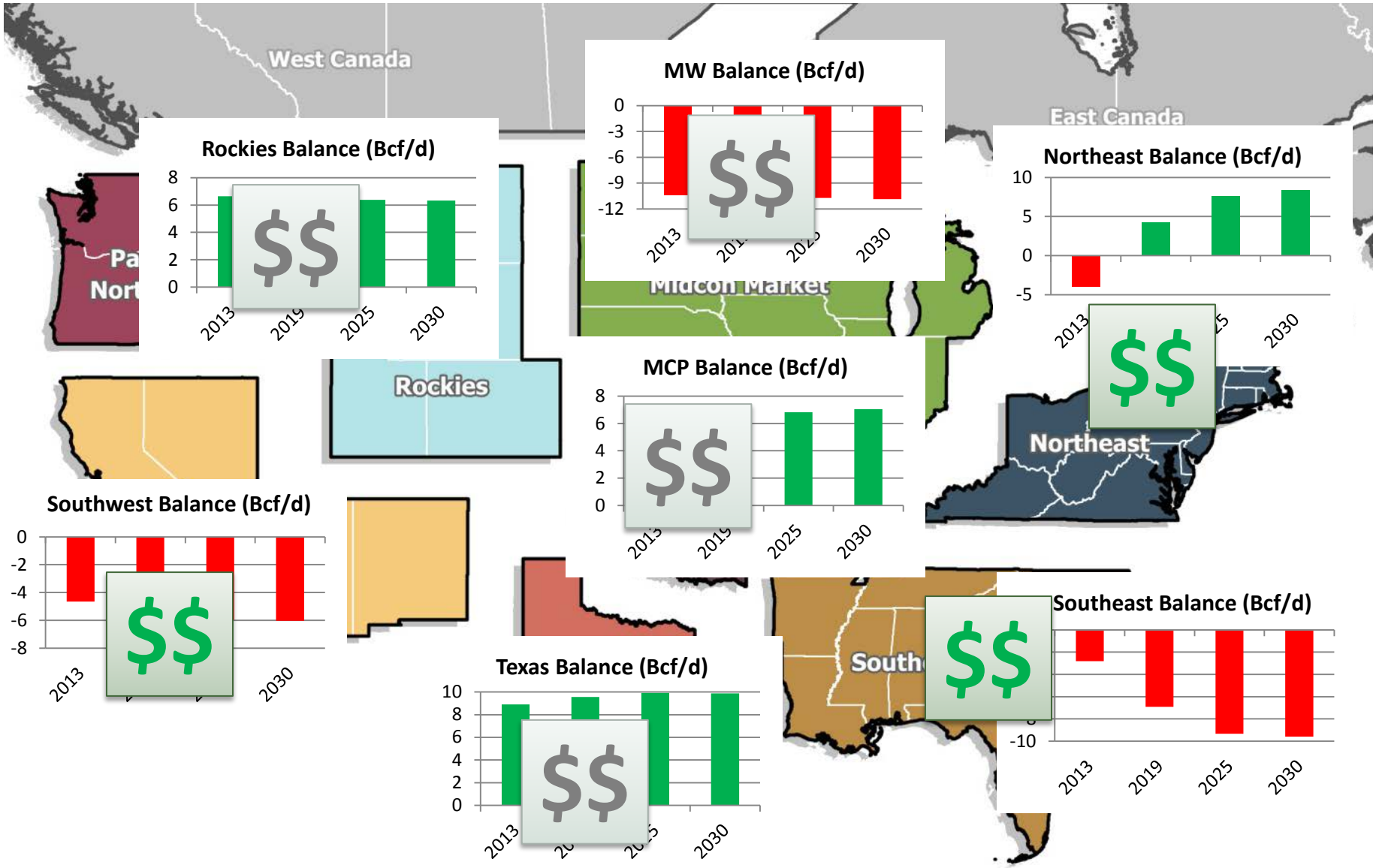
Balanced Price Forecast vs. NYMEX

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Net Long/Short Balance 2030 vs. 2013 and Basis Movement



Source: BENTEK Cell Cast

Risks to the Forecast and Open Questions?

PLATTS McGRAW HILL FINANCIAL

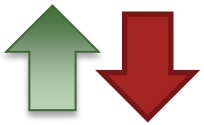
BENTEK Energy

Impact to Net Long Assumption

Emergence of new plays and improved efficiencies.

Environmental concerns over fracking, water use and other concerns.

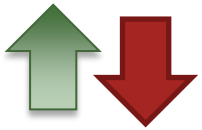
Marketed gas production decrease due to associated gas declines/ price weakness in domestic ultralights and condensate.



LNG – production will swing either way depending on pace of development.

Potential for Mexican exports to be higher.

Potential for Industrial to be higher.



Power could absorb incremental demand lost from LNG, Mexico or Industrial.

Infrastructure build out delays (both pipeline, processing and end user).

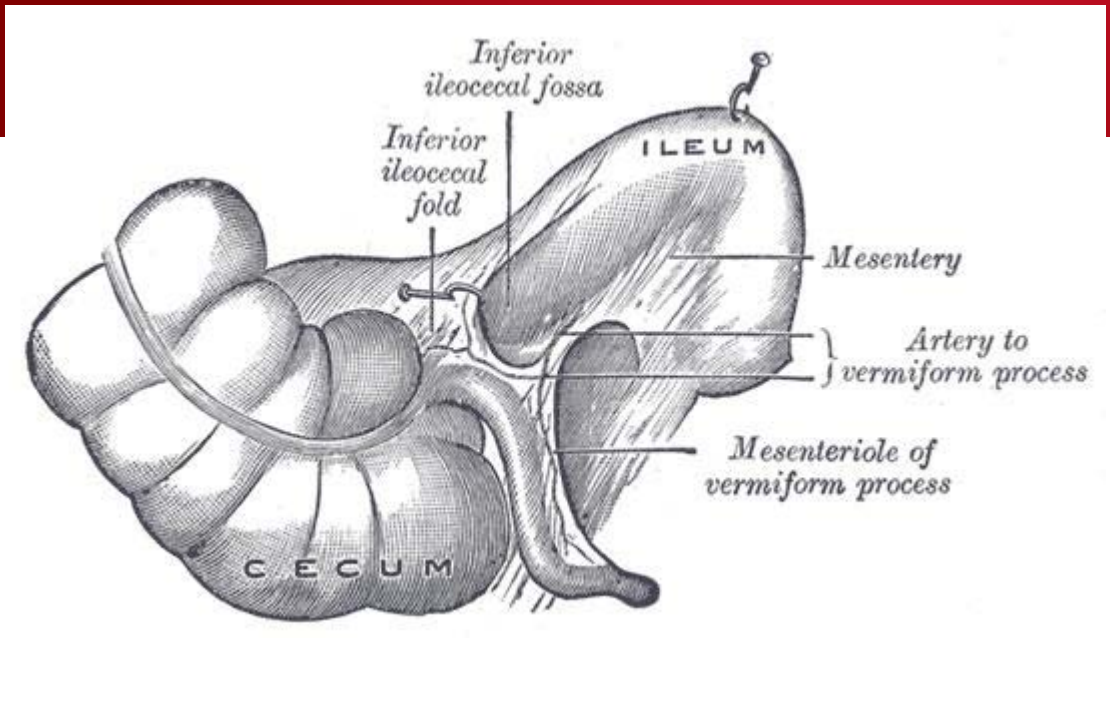
Conclusions and Takeaways

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

- Bentek Expects Production to Increase By 28.3 Bcf/d through 2030.
- Pace of Systemic **Demand** Is a Constraint – Demand Will Have to **Start Driving the Bus by 2018.**
- Incremental Processing Capacity Needs Vary By Basin, Total of **6-8 Bcf/d Necessary**.
- Midstream Market Participants **Eager** to Build Pipeline In Certain Regions with **38.8 Bcf/d in Proposed Projects.**
- Analysis Shows **Need for Incremental Infrastructure Projects ≥ 1.1 Bcf/d** Than What Has Been Proposed, **Specifically to Southwest Market**.
- With Demand Increasing in Southeast, the Region Will Need **3 Bcf/d More Storage Capacity Deliverability**, Most Likely Salt.
- CPI Adjusted Natural Gas **Prices Remain Under $5.00 thru 2025,** Do Not Eclipse $6.00 Before 2030

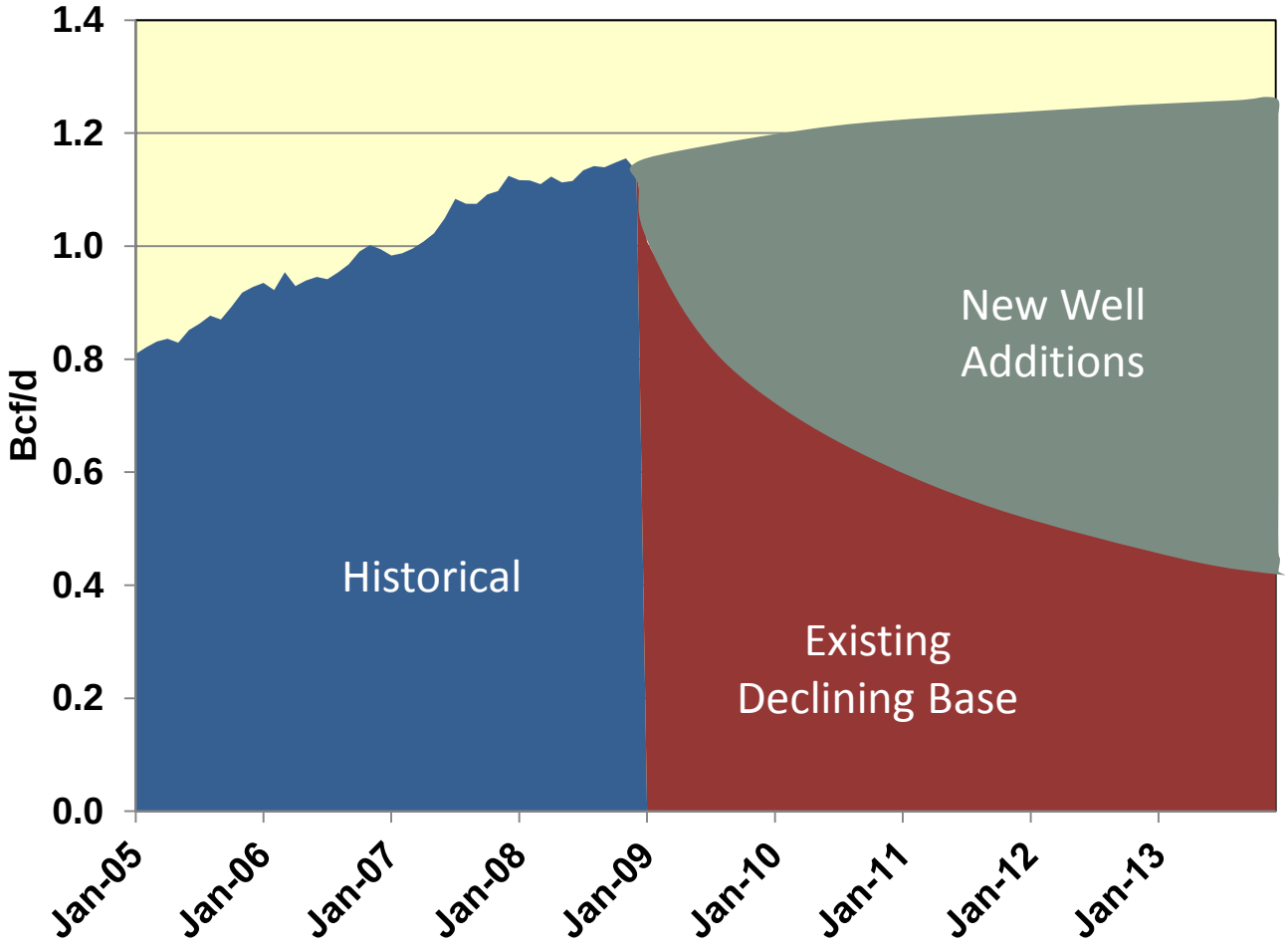
Appendix


Inferior ileocecal fossa
Inferior ileocecal fold
ILEUM
Mesentery
Artery to vermiform process
Mesenteriole of vermiform process
CECUM

Cellcast Methodology: Production Projections

- BENTEK performs projections based on individual basins/plays and are based on current drilling activity. 66 unique reporting areas with type curves developed for each class of well (Oil, gas, & CBM) and by orientation (vertical & horizontal)
- The areas are analyzed from the well level up, using well class and orientation as well groups.
- Each group is fitted with a type curve in order to predict future production trends in the area from new and existing wells.
- Each well is then assigned a production profile going forward and all wells are then aggregated to the area level.
- Each area is then aggregated to a basin, regional and national level projection.

Cellcast Methodology:
Basin Forecasting and Future Well Additions

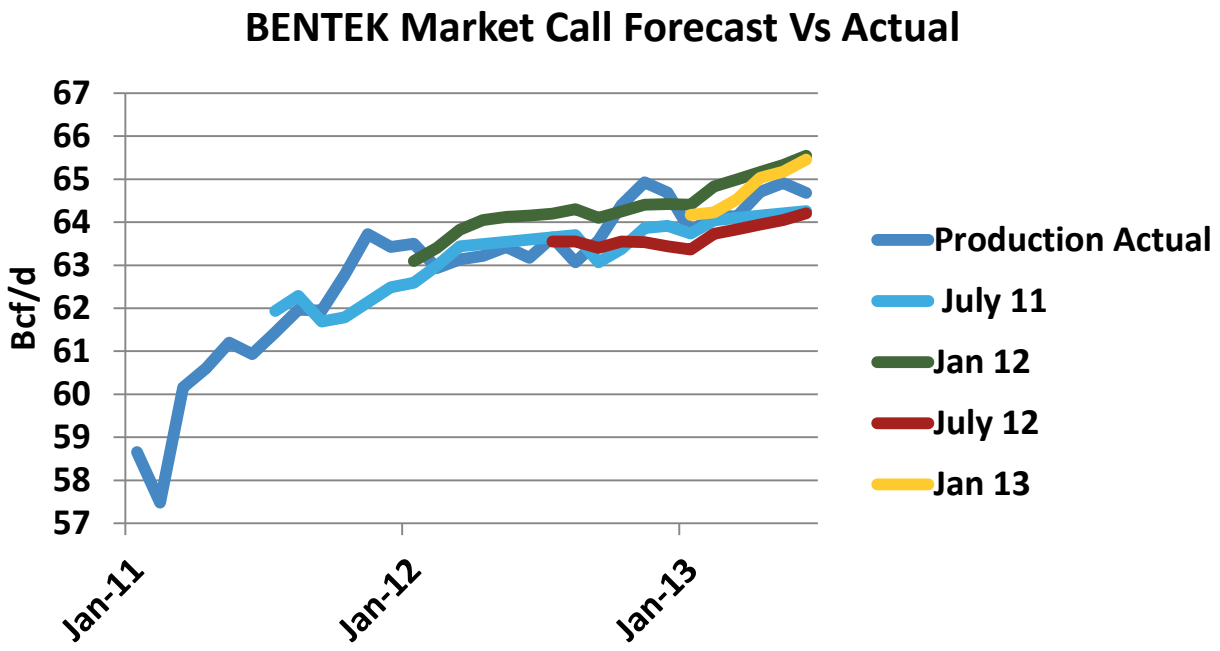


All wells in a basin or region are then aggregated and the projection from existing wells is determined. The same type curve for new drilling is applied and the new "production wedge" will be added forming the total production projection.

Cellcast Methodology: Production Forecasting

PLATTS McGRAW HILL FINANCIAL

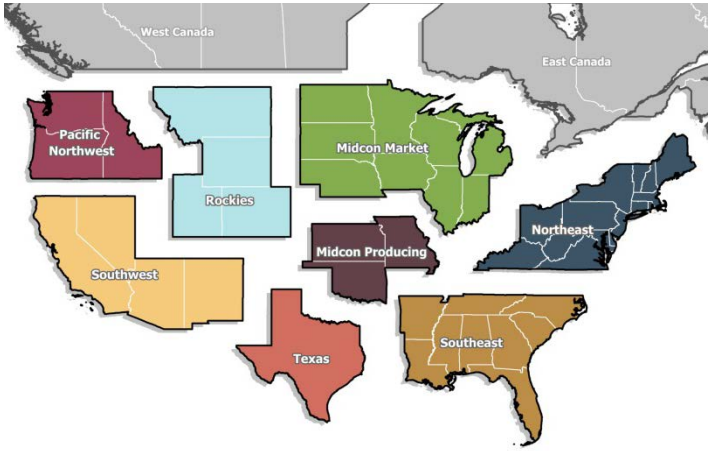
BENTEK Energy

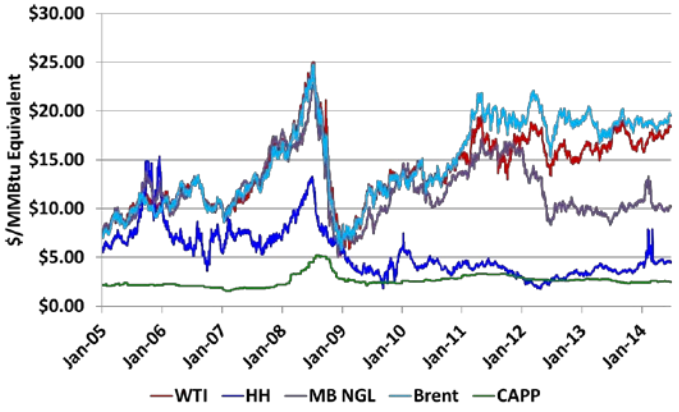


Forecast	Period	Average Error
July 2011	2.0 Yrs	0.821%
Jan 2012	1.5 Yrs	0.977%
July 2012	1.0 Yrs	0.967%
Jan 2013	0.5 Yrs	0.572%

Cellcast Methodology: Demand Forecasting

- Detailed review of historical trends.
- The three main drivers of demand are weather, market share (fuel switching), and market growth.
- BENTEK performs forecasts by demand component by cell region.
- 10 year population weighted normal temperatures structured by cell region.
- Future demand growth/decline is predicted by researching capacity additions/retirements.
- Substitute fuel price spreads and capacity limitations influence fuel switching potential.





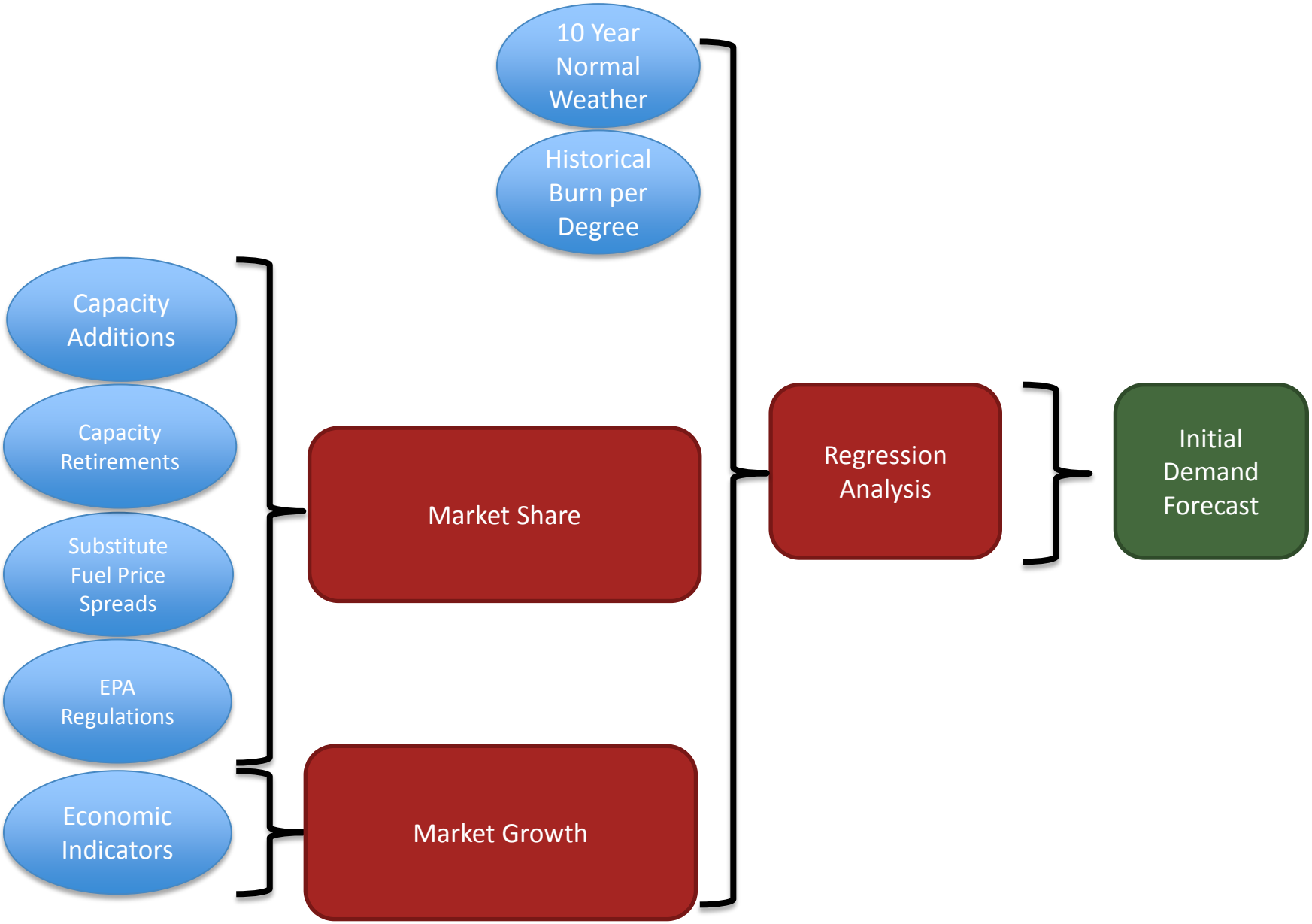
Demand Sector Assumptions and Methodology

- Power:
  - Utilize generation estimations from individual ISOs to forecast total power stack.
  - To estimate total generation growth or decline, Bentek analyzes historical trends and balancing authority outlooks presented in FERC 714 data.
  - For Nuclear, Wind, Solar, Hydro, forecasts are based on seasonal shapes of utilization and account for new infrastructure.
  - For All Other (coal, NG, oil), use an annual change to generation based on retirement or net new builds. Shape is created based on monthly norms for annual sums.
  - Assumes price responsive demand response as storage inventories adjust seasonally.

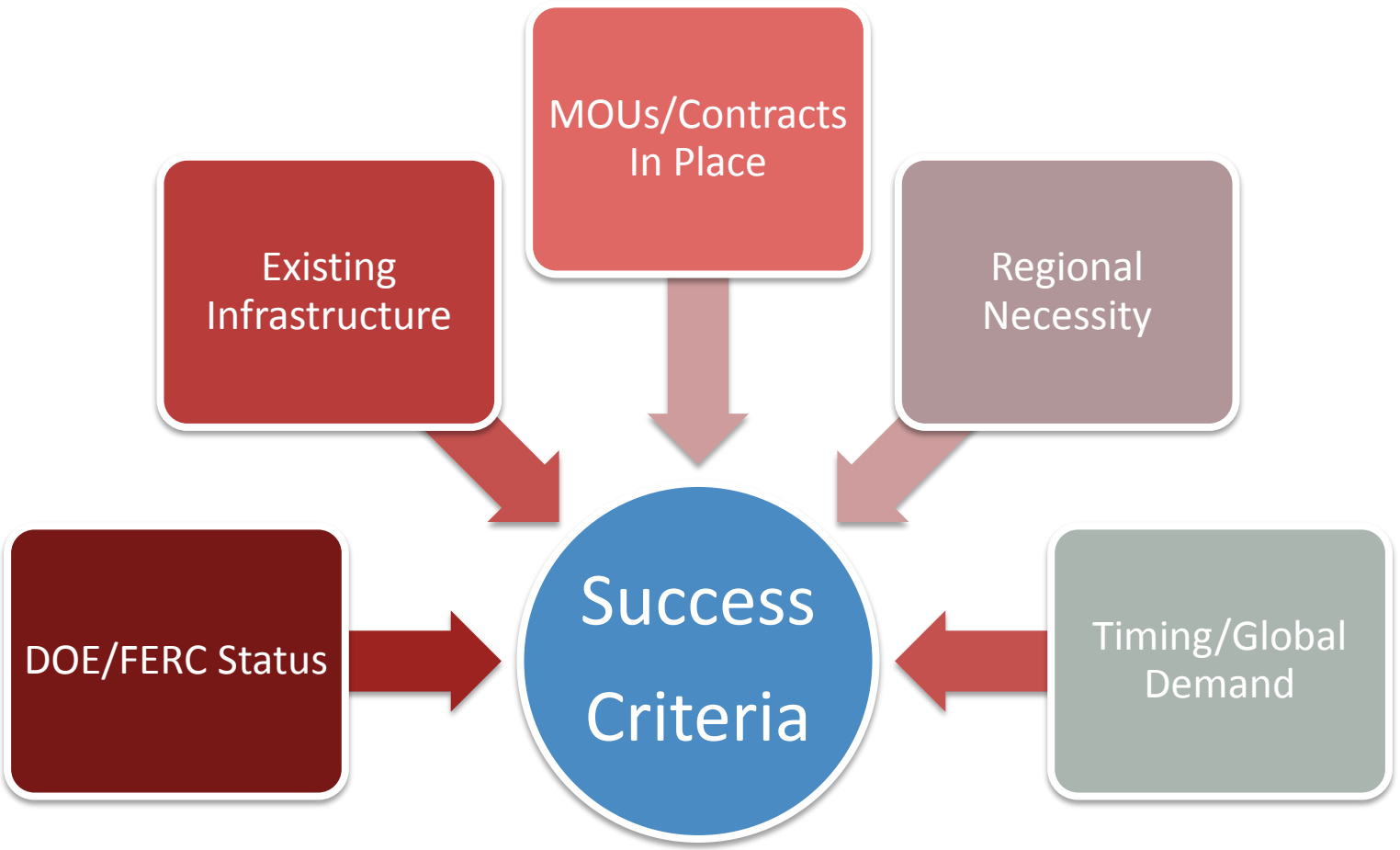
- Industrial:
  - Tracks announced industrial expansions from Industrial End Users Expansion tracker with assumed gas consumption added.
  - Uses fixed growth rate for periods out beyond announced project time-frame.
  - Assumes set utilization rates for new, near term projects.
  - Uses diminishing utilization rates for projects further out in the forecast period.

- Res/Comm:
  - Assumes small growth rate based on weather-normalized demand per region.
  - Includes new demand from transportation sector, which is assumed to be small but still contribute to overall growth.

Cellcast Methodology: Demand Forecasting



Cellcast Methodology: US LNG Export Criteria



Forecast Methodology for Cellcast

PLATTS McGRAW HILL FINANCIAL

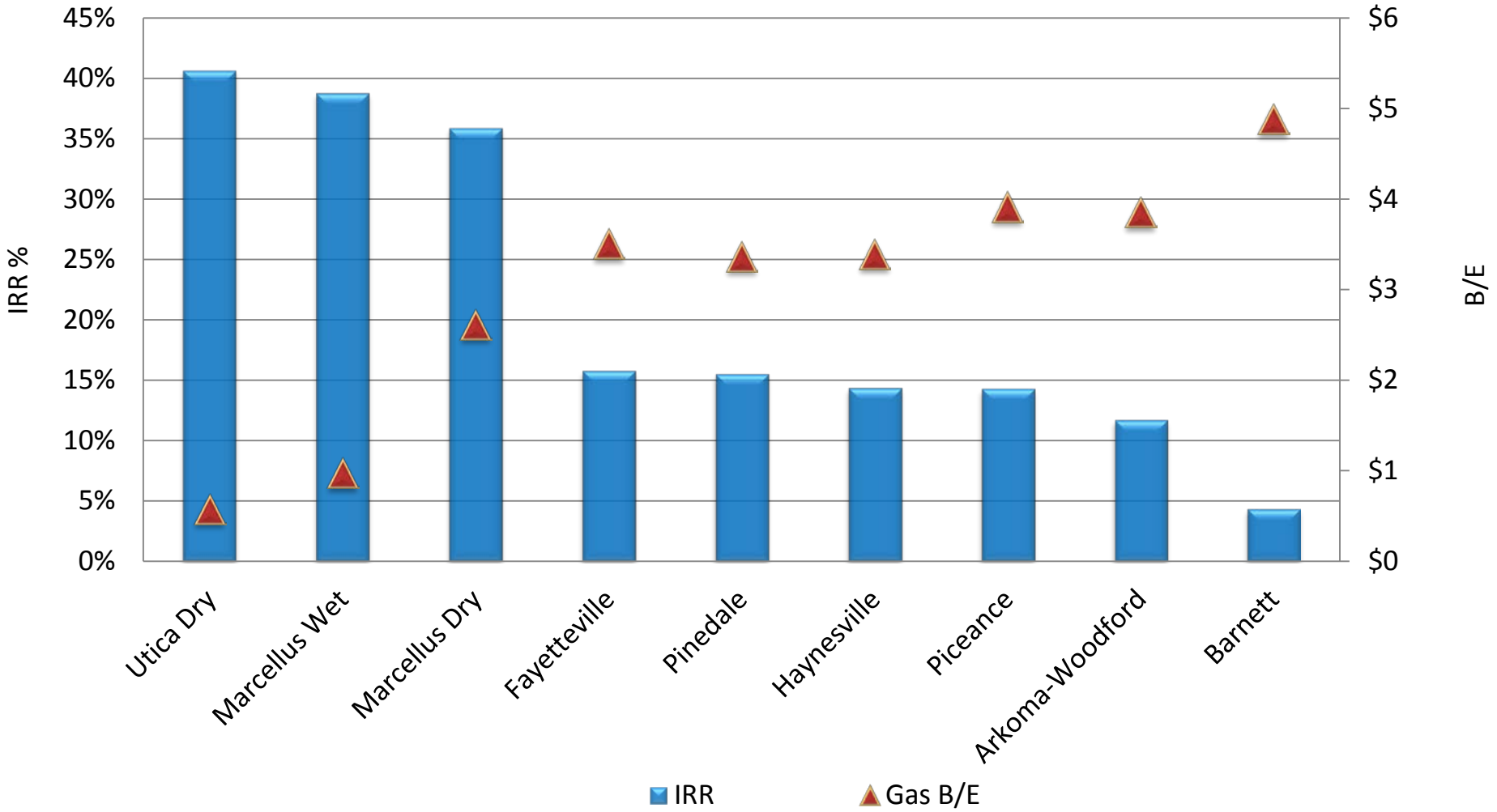
BENTEK Energy

1. Estimate initial condition for each fundamental component by region.
2. Input initial conditions into general equilibrium market balancing model.
3. Iterate adjustments of supply and demand to balance market to zero given storage requirements and pipeline transportation dynamics.

US Major Gas Plays IRR & Breakevens

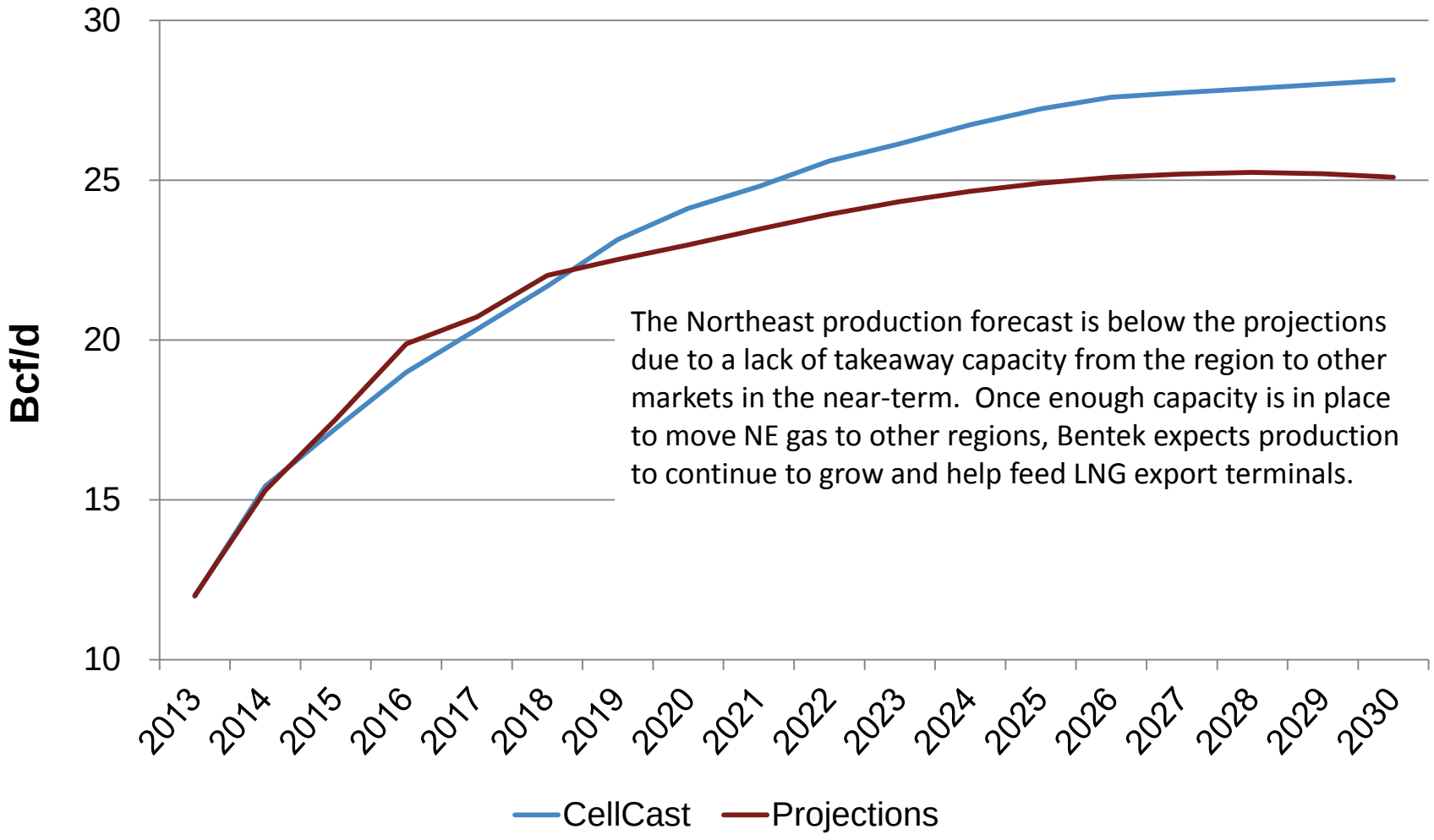
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



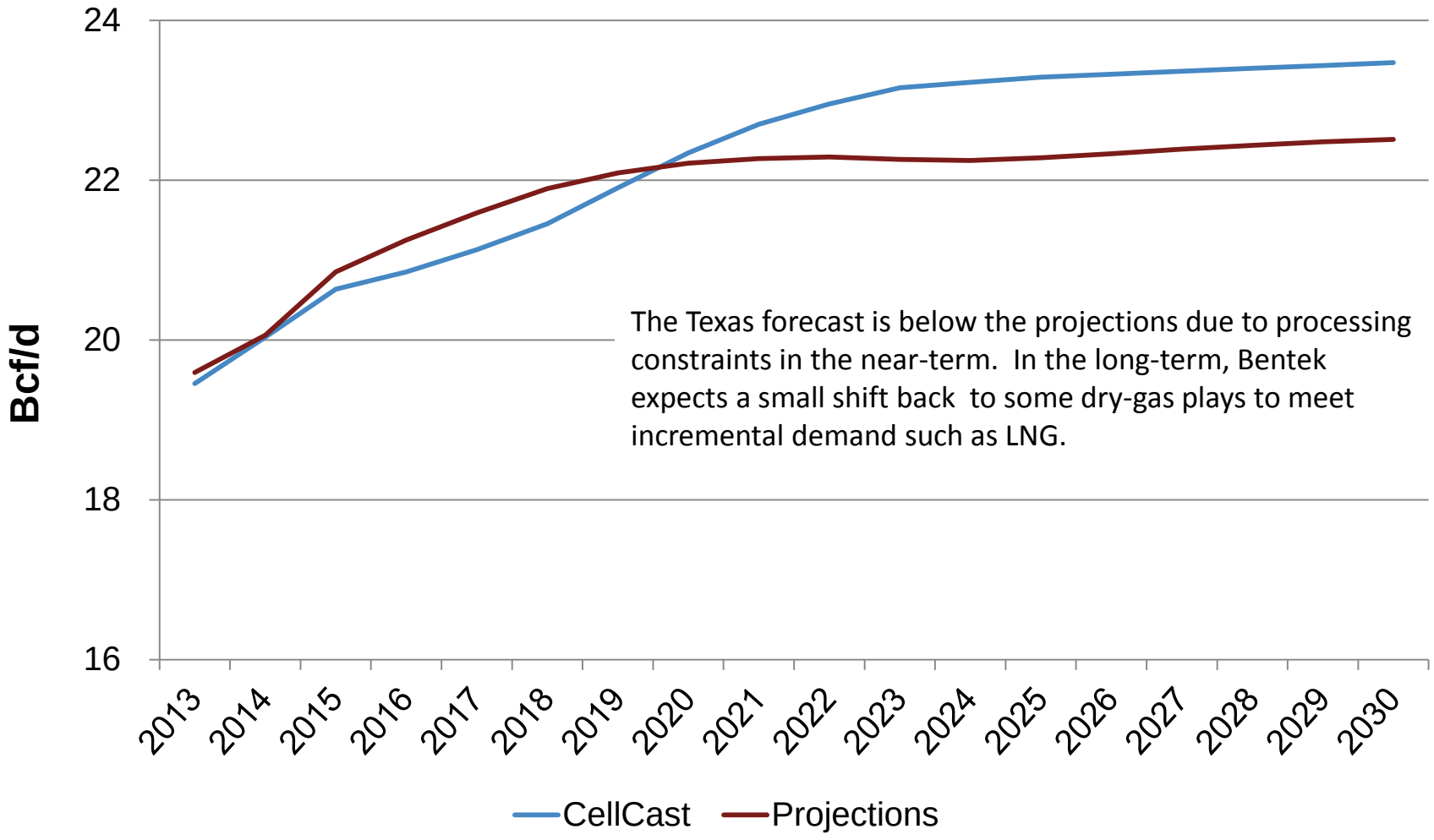
Price Assumptions: $4 Gas , $90 Oil, NGL's - 40% of Oil

Northeast CellCast vs Projections

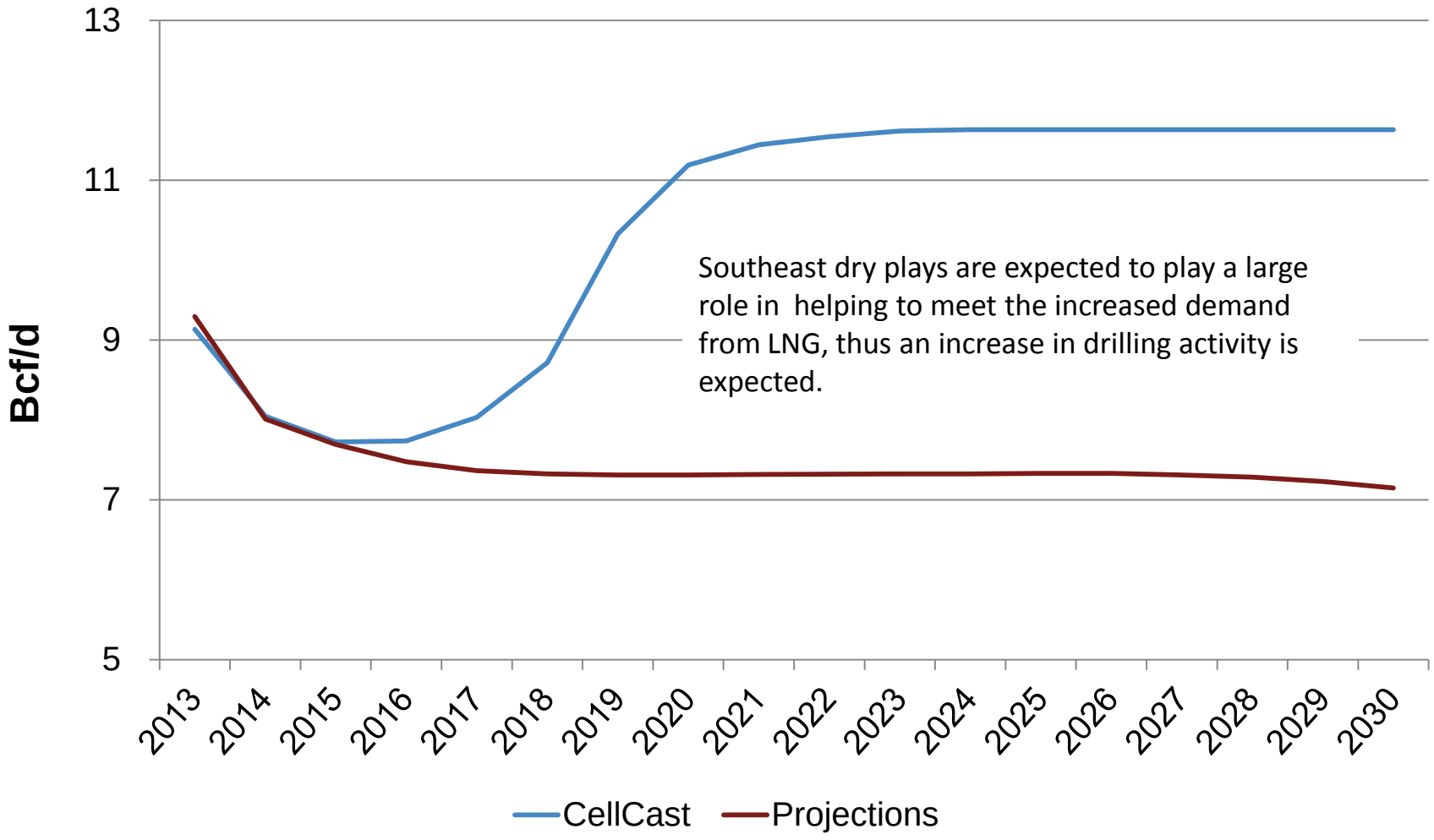


The Northeast production forecast is below the projections due to a lack of takeaway capacity from the region to other markets in the near-term. Once enough capacity is in place to move NE gas to other regions, Bentek expects production to continue to grow and help feed LNG export terminals.

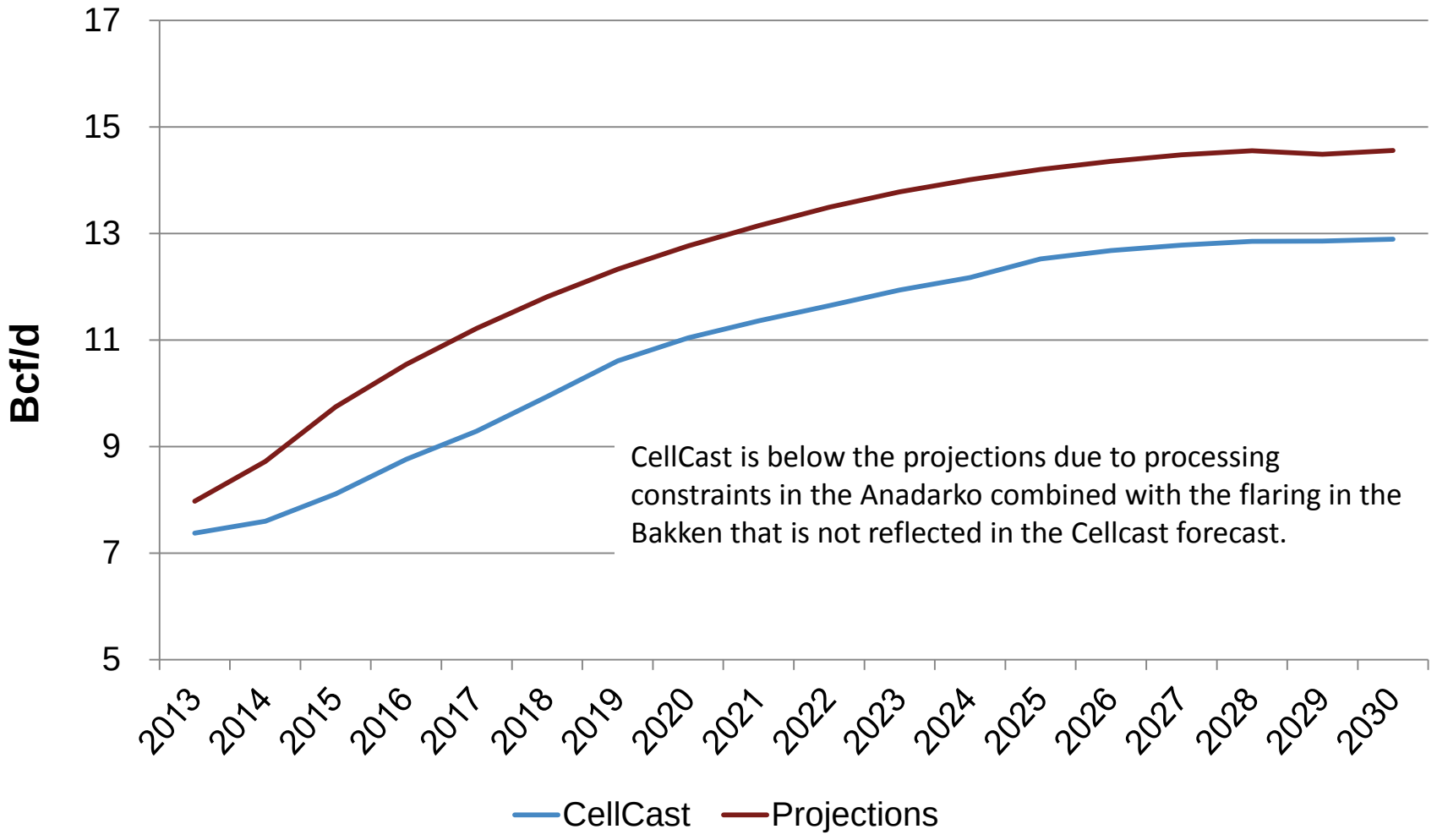
TX CellCast vs Projections



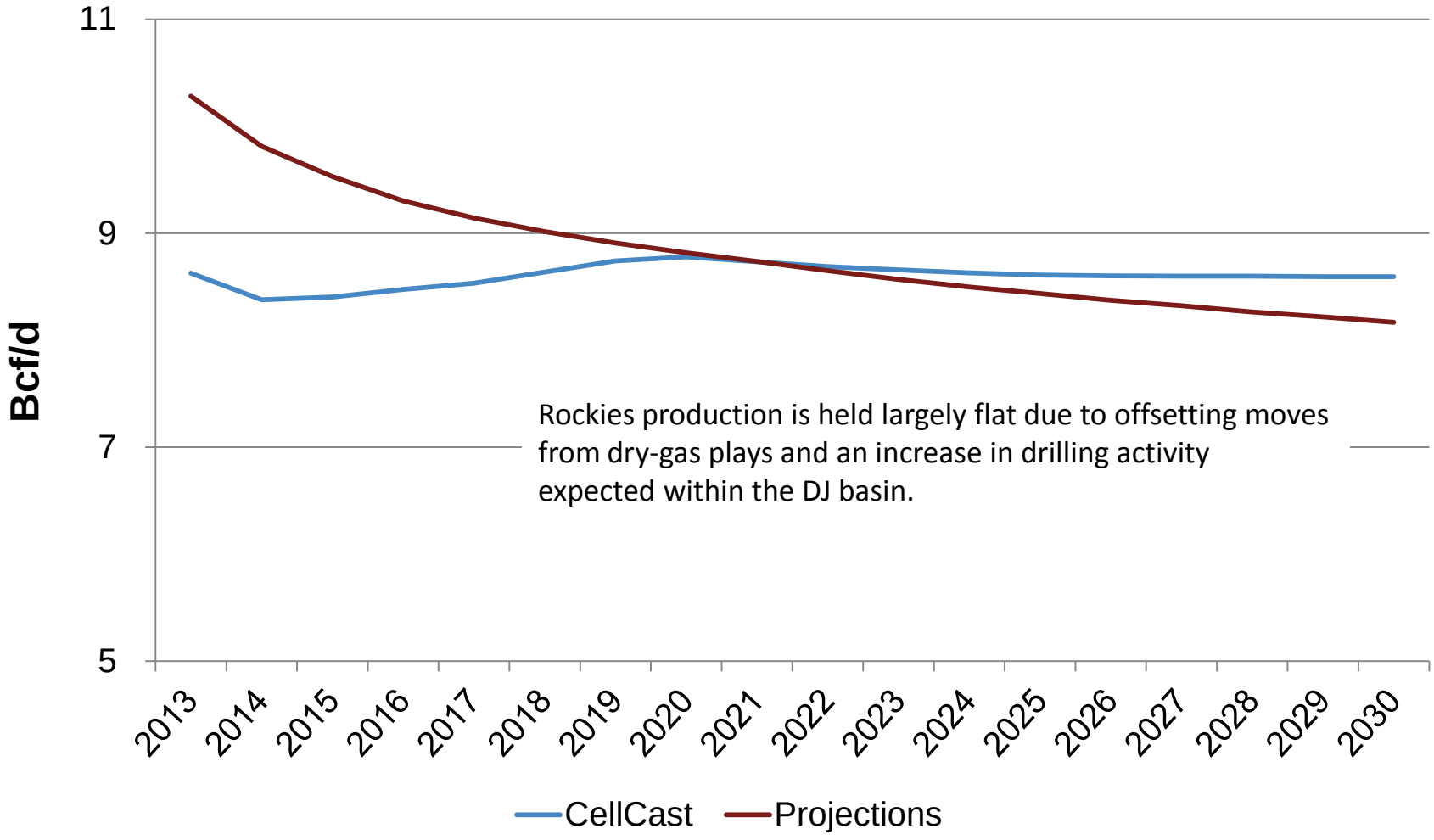
SE CellCast vs Projections



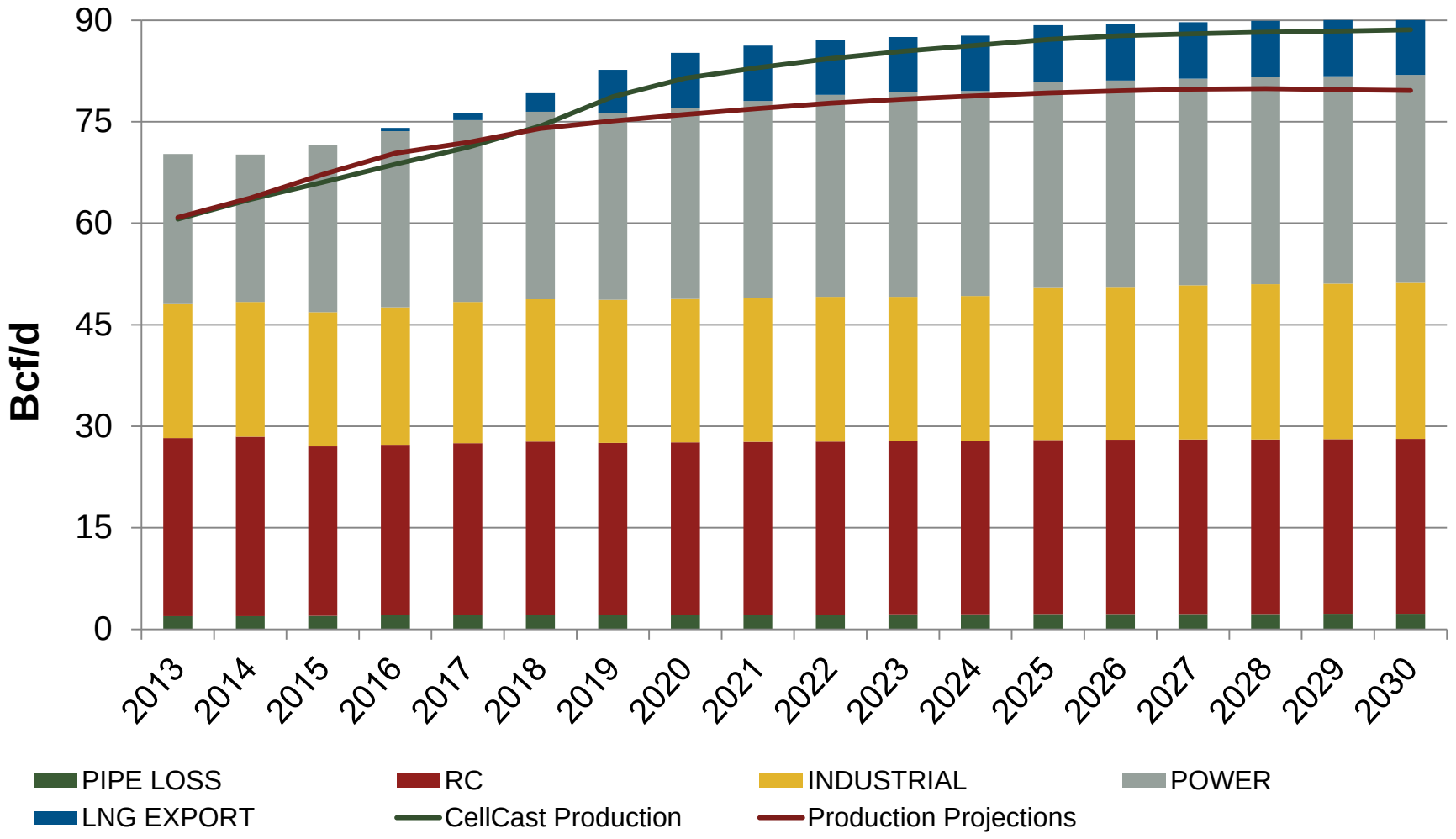
MC CellCast vs Projections



ROX CellCast vs Projections



LNG Exports drive the difference between Bentek Production CellCast & Production Projection



Wave of Expansions: Which ones will allow production to grow?

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

3.0 Bcf/d of expansion projects in 2014: Production will grow 2.8 Bcf/d
Only 30% of projects have in-service dates during the summer

2014

ANR Lateral:0.35 Bcf/d

Rose Lake I:0.23 Bcf/d

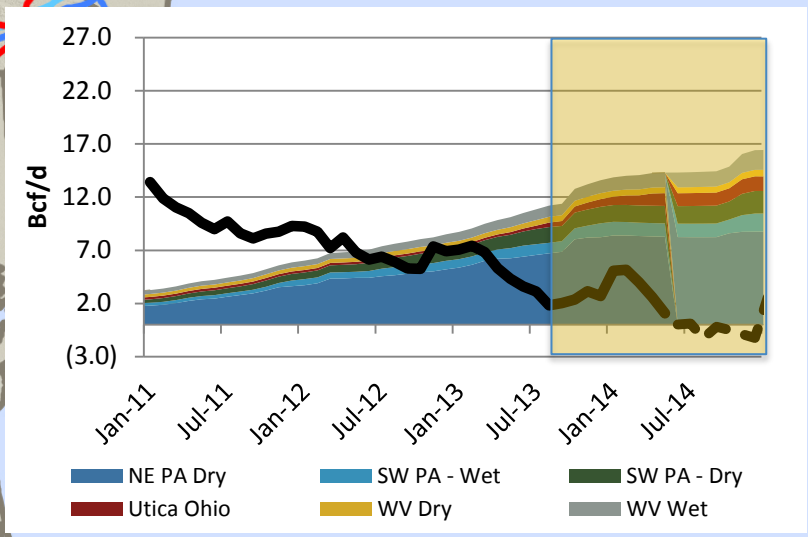
TEAM 2014 :0.6 Bcf/d

Transco Northeast Connector:0.1 Bcf/d

REX Backhaul: 0.2 Bcf/d

TGP Backhaul: 0.5 Bcf/d
TEAM 2014: 0.24 Bcf/d
TEAM South: 0.3 Bcf/d
TCO West Side: 0.54 Bcf/d

ANR
Empire
Iroquois
Tennessee
MaritimesNE
Nat Fuel
Millennium
Stagecoach
Algonquin
PEPL
REX
Texas Gas
Texas Eastern
Columbia Gas
Columbia Gulf
Transco



2015 will look very similar to 2014, especially during the summer when demand is significantly lower

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

3.8 Bcf/d of expansion projects in 2015: Production will grow 2.86 Bcf/d
REX East to West project only expansion with summer in-service date

2015

MaritimesNE

Iroquois

Empire

Tennessee

Miller

Nat Fuel

Constitution: 0.6 Bcf/d

Algonquin

ANR

TGP Niagara ~0.16 Bcf/d

PEPL

TETCO Uniontown: 0.43 Bcf/d

Texas East

TCO Eastside: 0.3 Bcf/d

REX

REX East to West: 1.2 Bcf/d

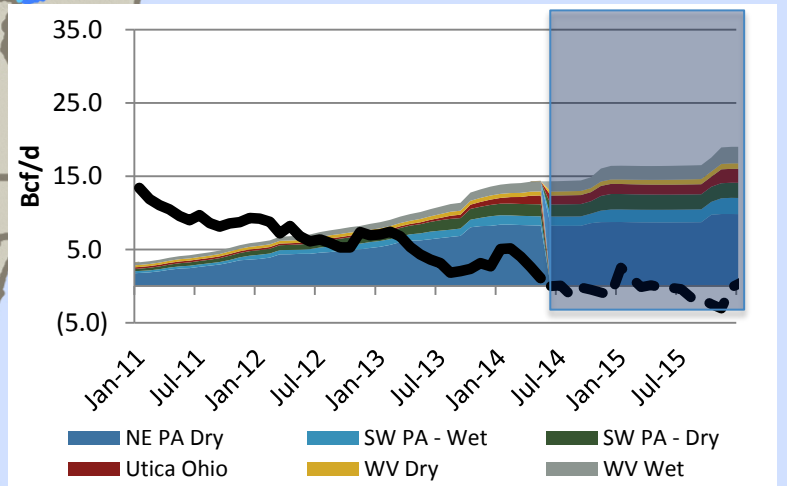
Columbia Gas

SE Transco Leidy :0.5Bcf/d

TETCO OPEN: 0.55 Bcf/d

Transco

Columbia Gulf

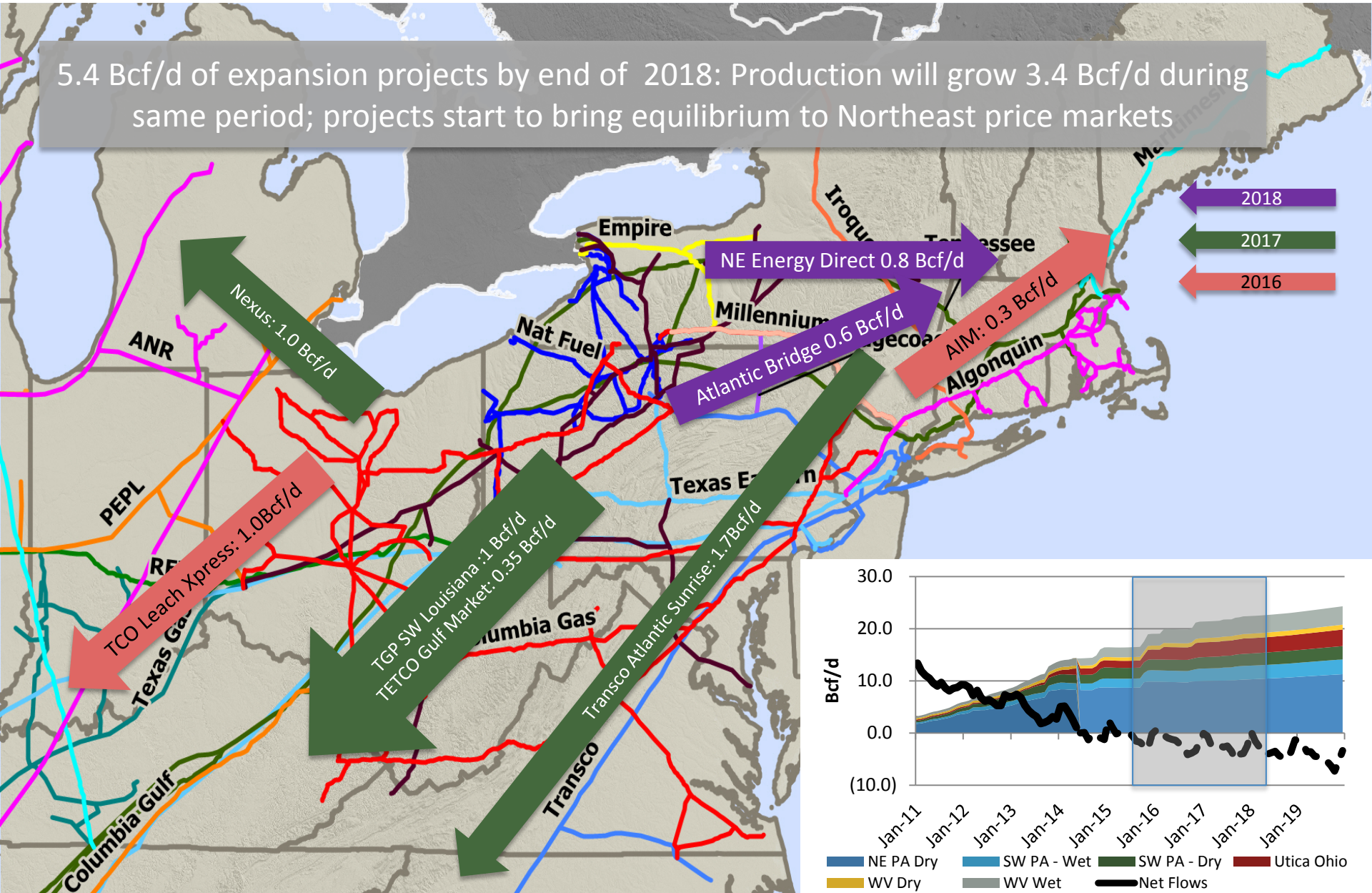


Expansions in 2016 and 2017 will continue to add relief to supply-constrained regions

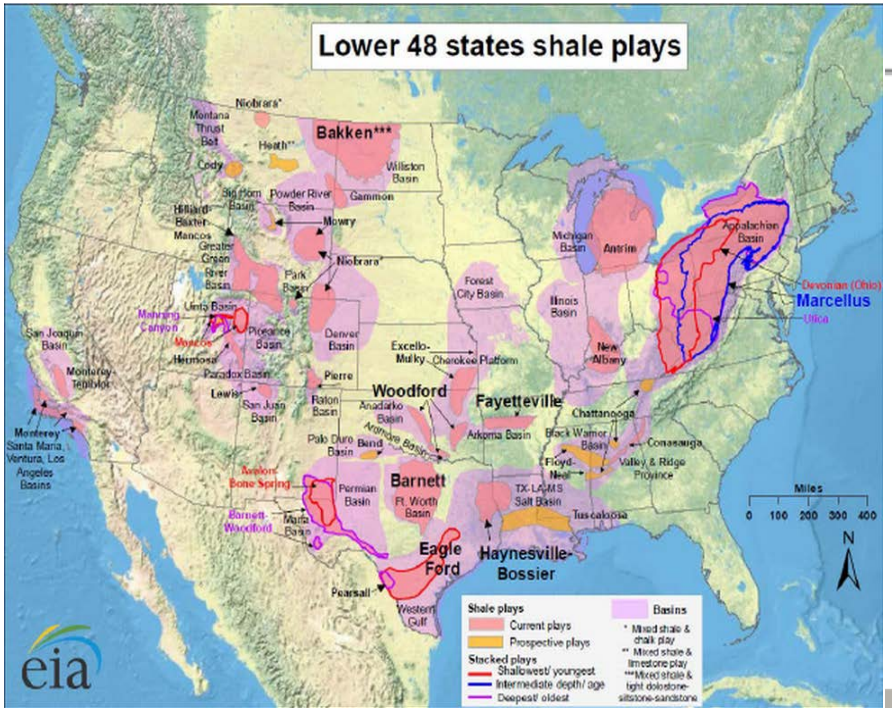
PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

5.4 Bcf/d of expansion projects by end of 2018: Production will grow 3.4 Bcf/d during same period; projects start to bring equilibrium to Northeast price markets

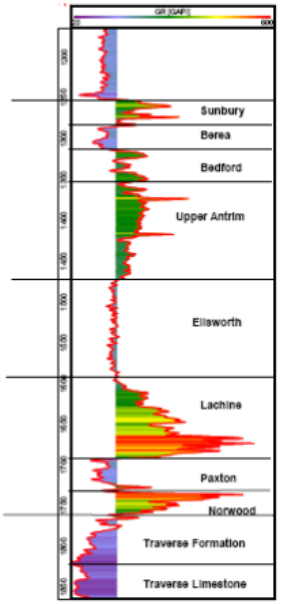


Antrim Michigan



Michigan Antrim Characteristics

- ~40% of BBEP's reserves[1], ~30% of BBEP's current production
- BBEP has interest in ~3,200 Antrim wells, operates ~53% of them
- Shallow (depth ranges from ~600' to ~2,400' MD)
- Net thickness 70-100 ft.
- Total Organic Content is 0.3% - 24%
- Gas in Place 6-15 bcf per well
- Recovery Factor 20% - 50%
- Fracture stimulation of 2-4 stages in vertical wells
  - ~19,000 gallons of fluid per stage
- History of Antrim Completions
  - 1980's wells - mainly completed in the Lachine
  - Early 1990's - completed in the Lachine and Norwood
  - Early to Mid 1990's - multi stage fracs were utilized
  - Late 1990's - early 2000's Upper Antrim tested
  - Mid 2000's to present - horizontal drilling started

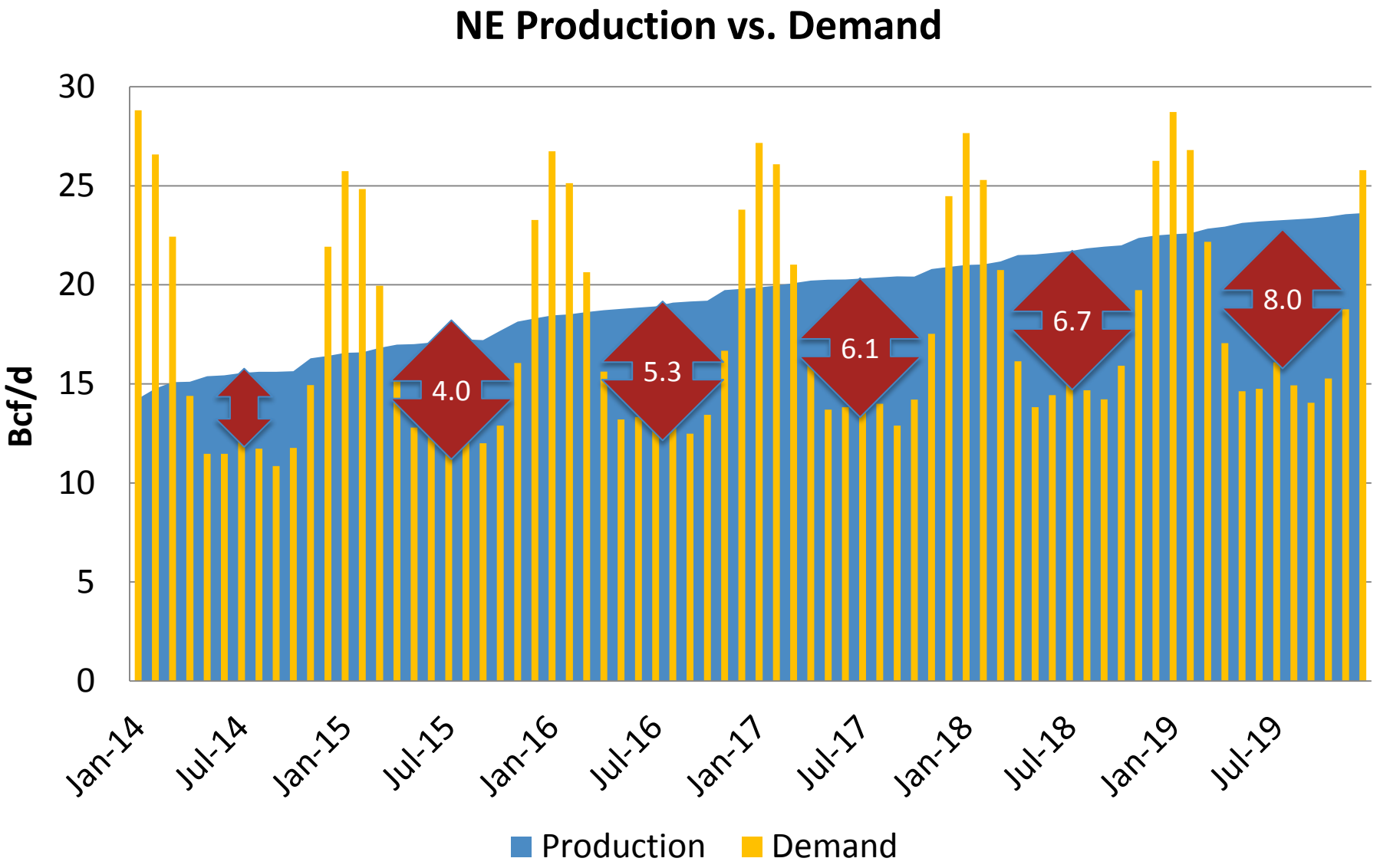


(1) Reserves data based on BBEP YE 2010 Reserve Report at SEC pricing plus estimated proved reserves of recently completed Wyoming acquisitions.

Expansion projects are critical for production growth, especially during the summer when demand drops well below production levels.

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



2014 Expansions will add 2.7 Bcf/d of Capacity

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy

Mexican Border Crossing Expansions

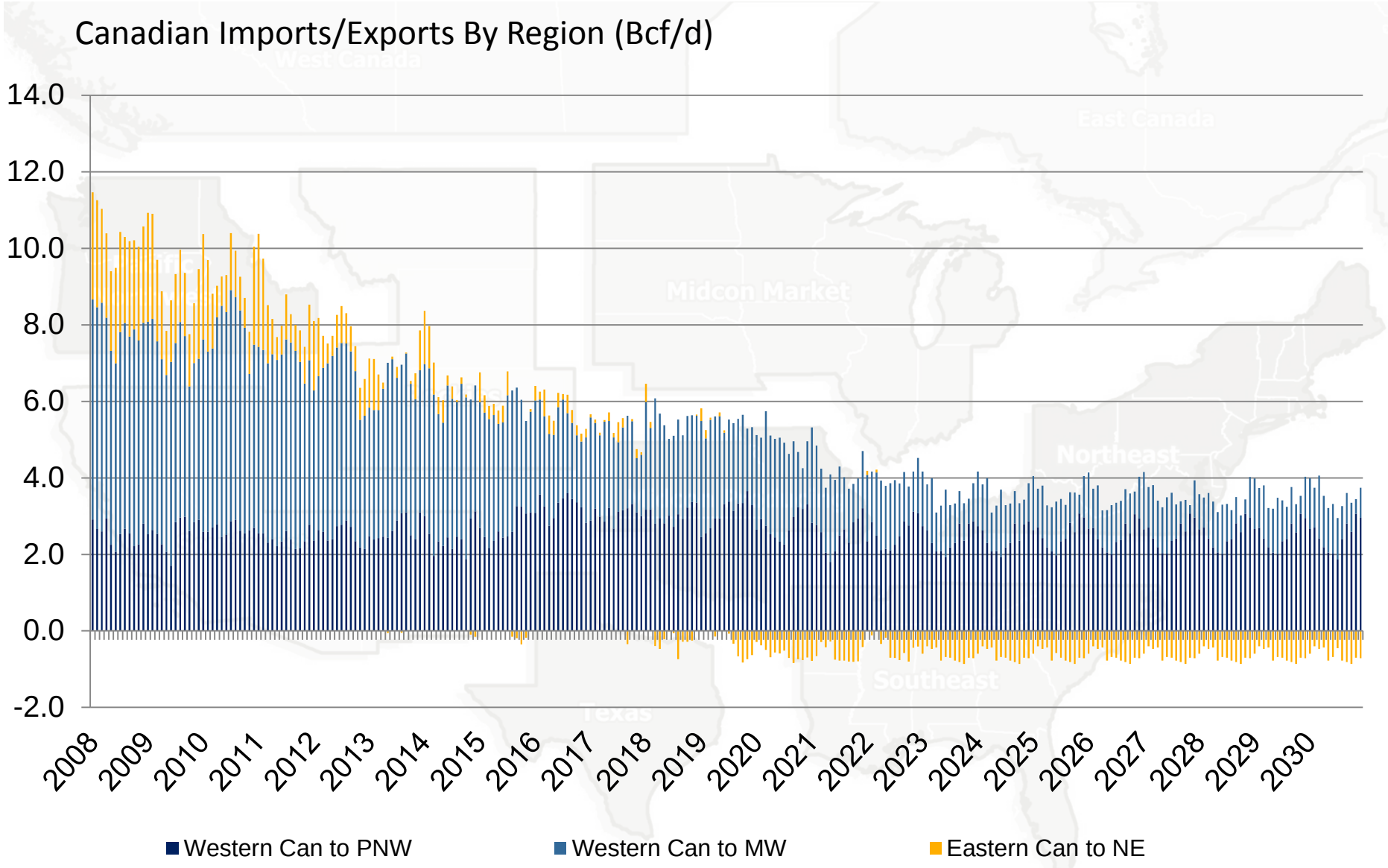
Project Name	Capacity	City	State	In-Service Date
Kinder Morgan Mier Monterrey Expansion	275	Salineno	Texas	4/1/2014
Houston Pipe Line Edinburg Extension	140	Reynosa	Texas	6/1/2014
TETCO South Texas Expansion (300 MMcf/d)	on hold	Reynosa	Texas	6/1/2014
El Paso Sierrita Pipeline**	200	Sasabe	Arizona	10/1/2014
Net Midstream/PEMEX -- Agua Dulce - Frontera	2,100	Reynosa	Texas	11/1/2014
Total Export Capacity Additions	**2,715**			
Total U.S. Export Capacity with Expansions	**8,460**			

Source: BENTEK Cell Model and Mexico Market Alert

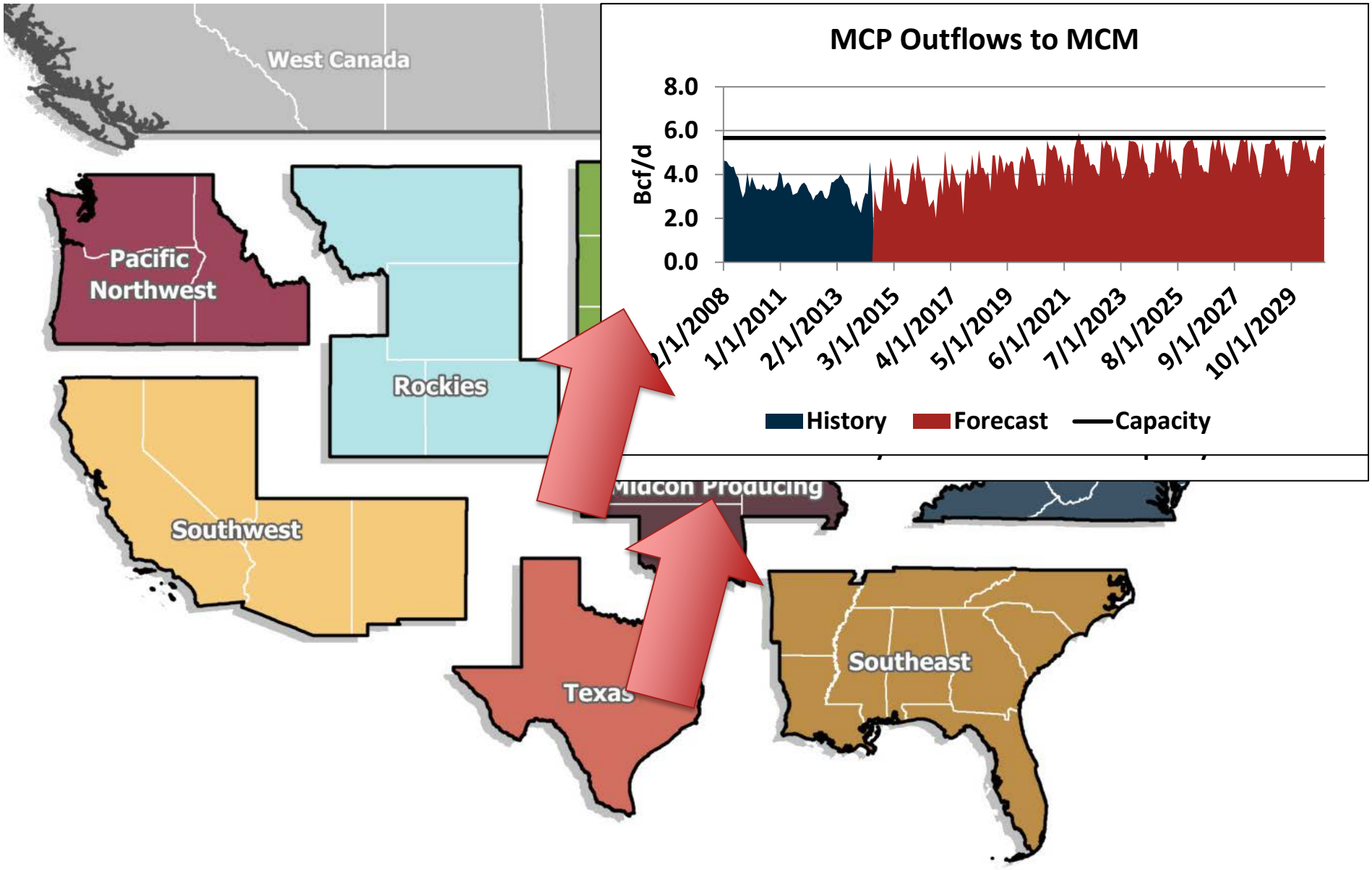
Exports to Eastern Canada started as early as 2013

PLATTS McGRAW HILL FINANCIAL

BENTEK Energy



Texas Outflows to MCP and MCP to MCM



Sufficient Capacity for Rockies Gas East, Constraints West