



# Update on US Onshore August 2014

Torstein Hole, SVP US Onshore & Andy Winkle, VP Marcellus

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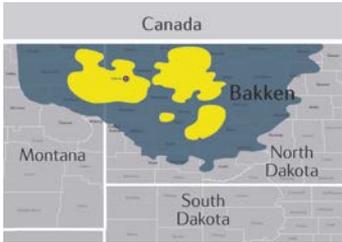
# Onshore operator commitments

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- 1 Safe operations
- 2 Minimizing our environmental footprint
- 3 Earning trust
- 4 Always improving

# Premium portfolio in core plays



## Bakken

- ~ 290 000 net acres
- Concentrated liquids drilling
- Production 50 200 boepd



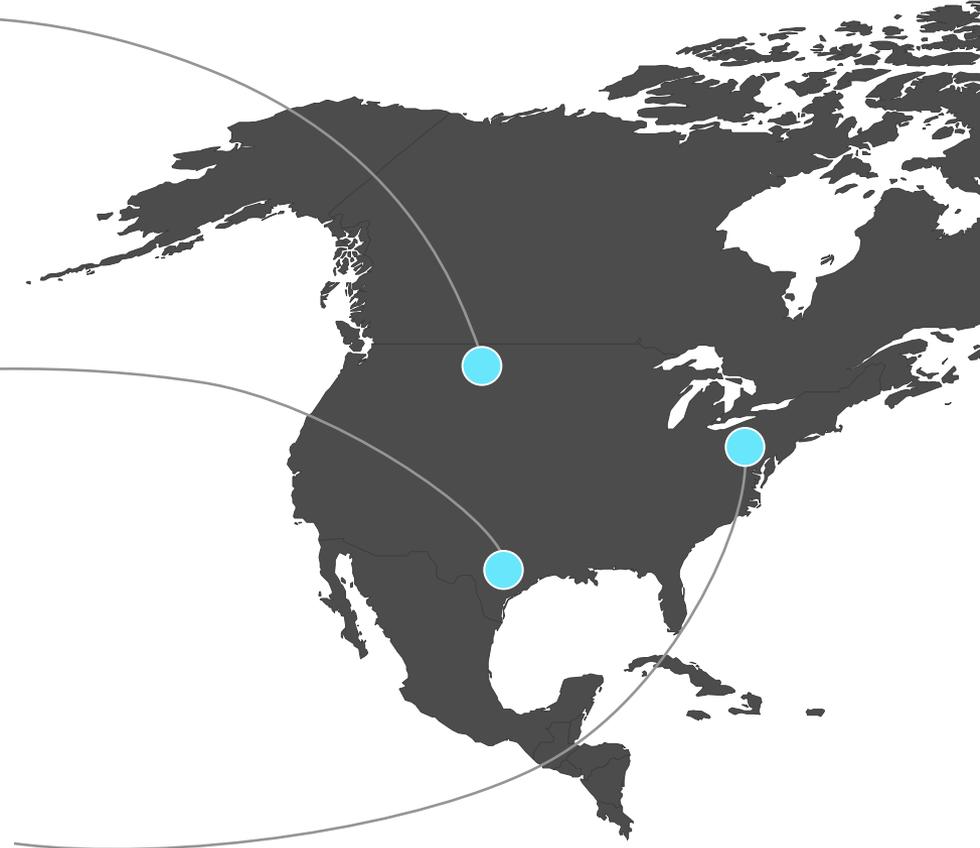
## Eagle Ford

- ~ 59 000 net acres
- Liquids ramp-up
- Production 37 700 boepd

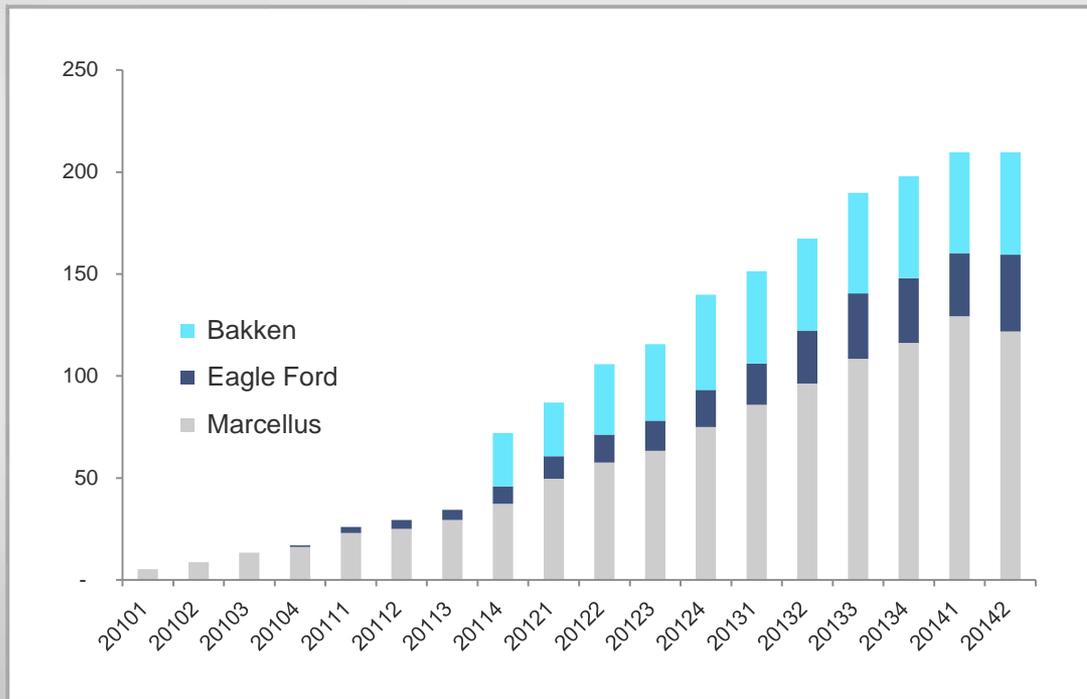


## Marcellus

- ~ 605 000 net acres
- Production 121 900 boepd



# Long-term production growth



- 2013** Eagle Ford operator
- 2012** Marcellus operator
- 2011** Bakken operator
- 2010** Eagle Ford
- 2008** Marcellus JV

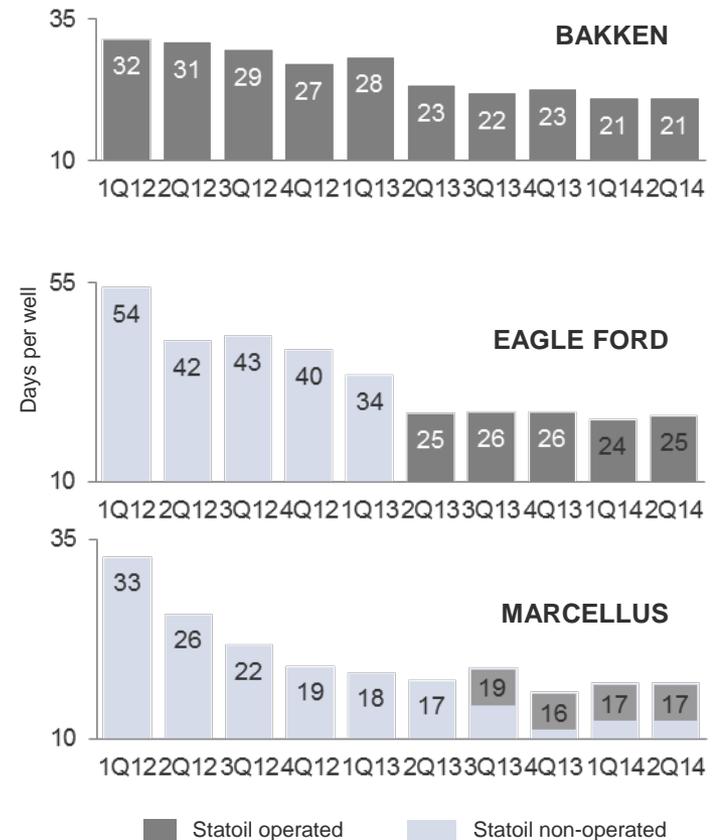
# Increased value (US onshore well manufacturing)

Total well cost ~ 90% of upstream capex,  
**25% to 50%** reduced drilling cost,  
**30% to 50%** reduced drilling time

Further total well cost reduction  
 potential ~15% by 2016

Upside from **new technology**  
 development

Drilling time reductions per well from 2012 to 2013:



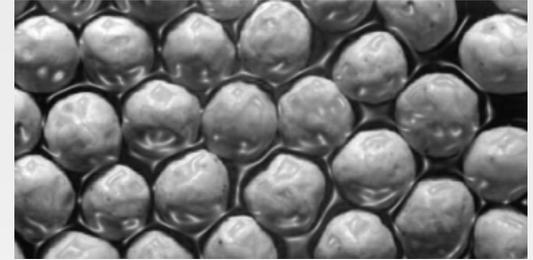
# The way forward



**Continuous focus on cost, efficiency and optimisation of operations**



**Fast-track identification, development and implementation of short-term technology upsides**



**Prioritised development of potential game-changing technologies**

SHORT – MEDIUM – LONGER TERM

- High performance / automated rigs
- Advanced ancillary drilling services;
- Remote monitoring of well / facility performance

- Choke management
- Refracturing
- Emissions, water and waste Management

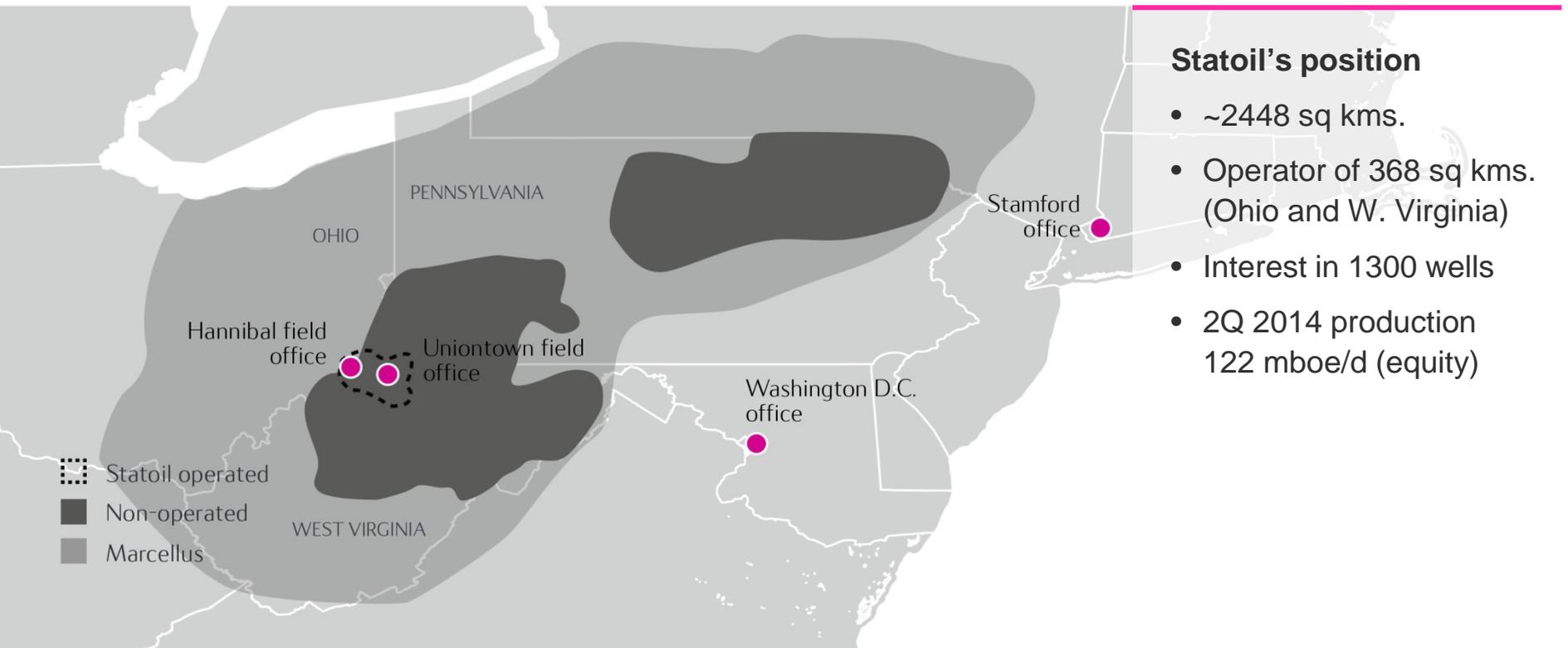
- Non-aqueous fracturing systems
- Cost-effective gas injection EOR technologies
- Advanced proppants

# The Marcellus: an onshore giant

## One of the largest gas fields in the world

- $14 \times 10^6$  M cubic meters (500 tcf)

- Production 420 M cubic meters/day
- Forecast 840 M cubic meters/day by 2030



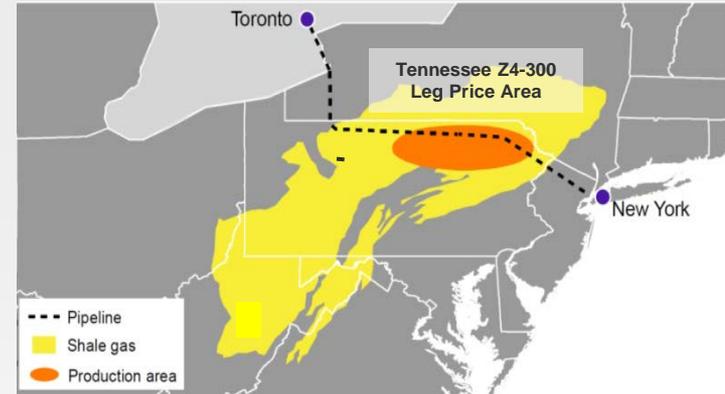
# Midstream: capturing value in the US market

## Secured access from northern Marcellus production area to premium markets in Toronto and New York

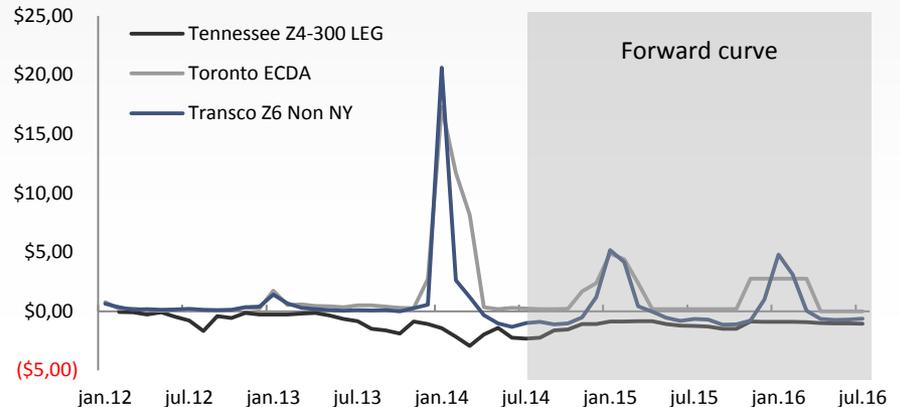
- Pipeline capacity of 320 000 MMBtu/day<sup>1)</sup> to Toronto region since Nov-2012
- Pipeline capacity of 205 000 MMBtu/day<sup>2)</sup> to New York City since Nov-2013

## Exploring new mid- and downstream opportunities for Southern Marcellus

- Sales of gas liquids
- New pipeline options to reach premium markets



Differences in prices between regional markets and Henry Hub\*  
[USD/MMBtu]



\* Source: Platts (historic) and NGX (forward 30-Jun-2014)

1) Equivalent to ~ 55,000 boe/d and 0.32 bcf/d

2) Equivalent ~ 35,000 boe/d and 0.2 bcf/d

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