

# TPA

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## Resilience of the shale production

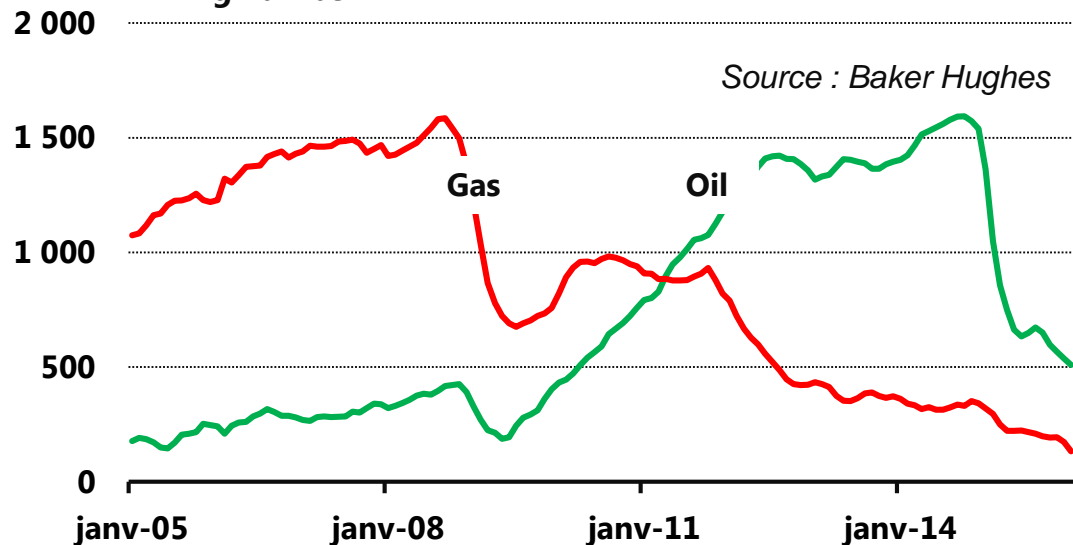
Philippe Charlez, Total  
05/04/2016 – ASPO



# Shale oil production is resilient

Rig number

Source : Baker Hughes

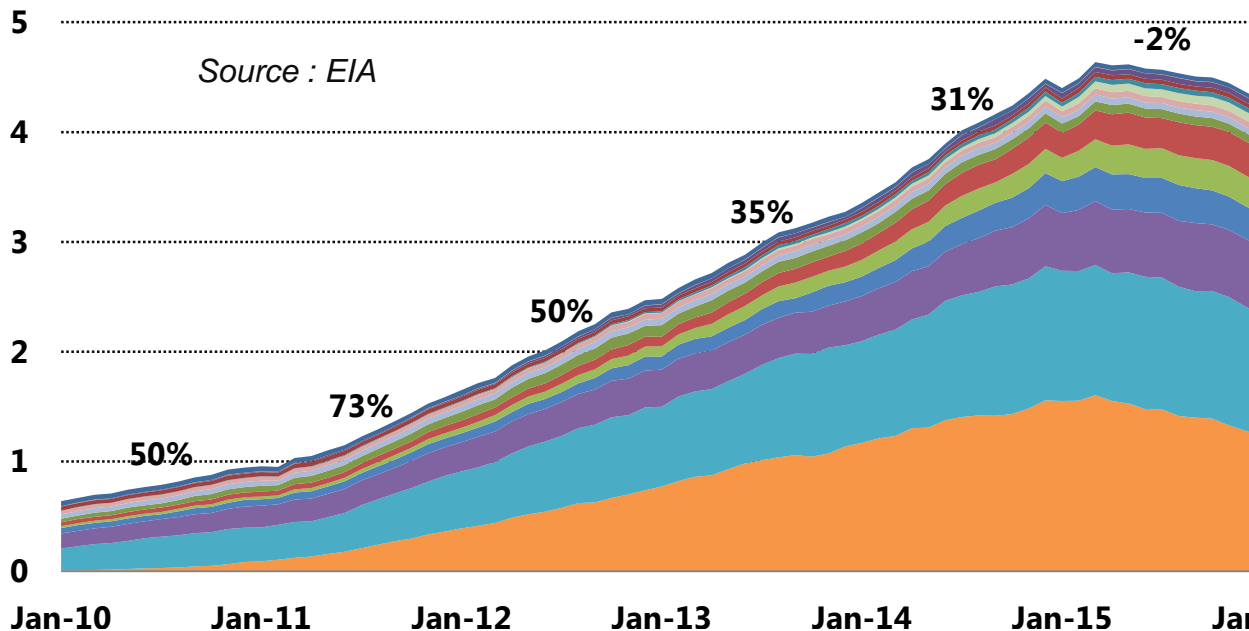


## Resilience

Low and delayed impact of production with respect to reduction of activity

Production (Mbopd)

Source : EIA



- Monterey
- Haynesville
- Woodford
- Austin Chalk
- Marcellus
- Utica
- Delaware
- Yeso & Glorieta
- Granite Wash
- Wolfcamp
- Bonespring
- Niobrara-Codell
- Spraberry
- Bakken
- Eagle Ford

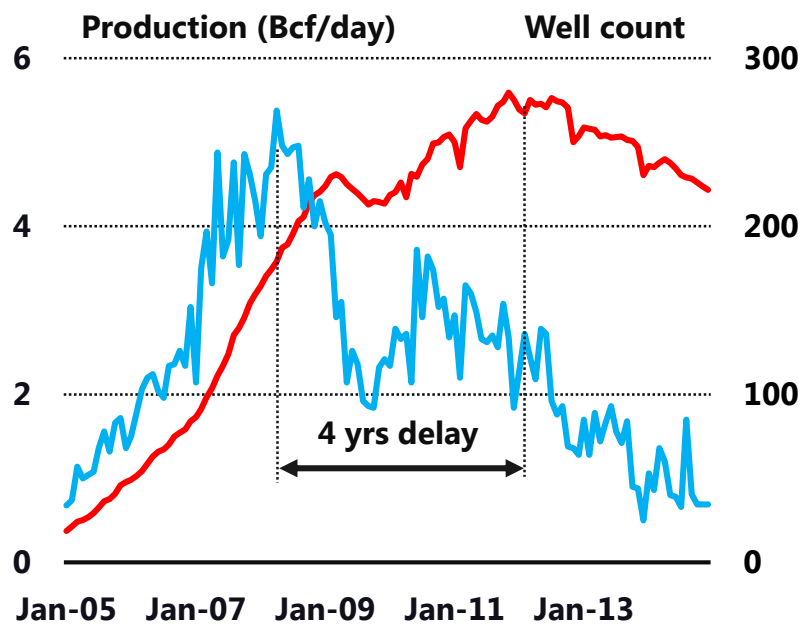
**TPA**

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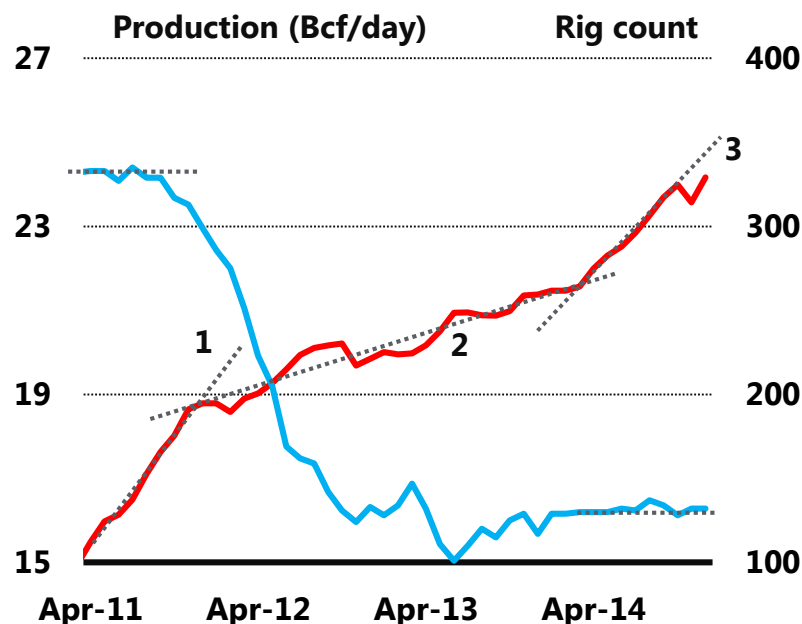
# Shale gas production is resilient

Source : ITG



— Well count  
— Production

**Barnett shale**

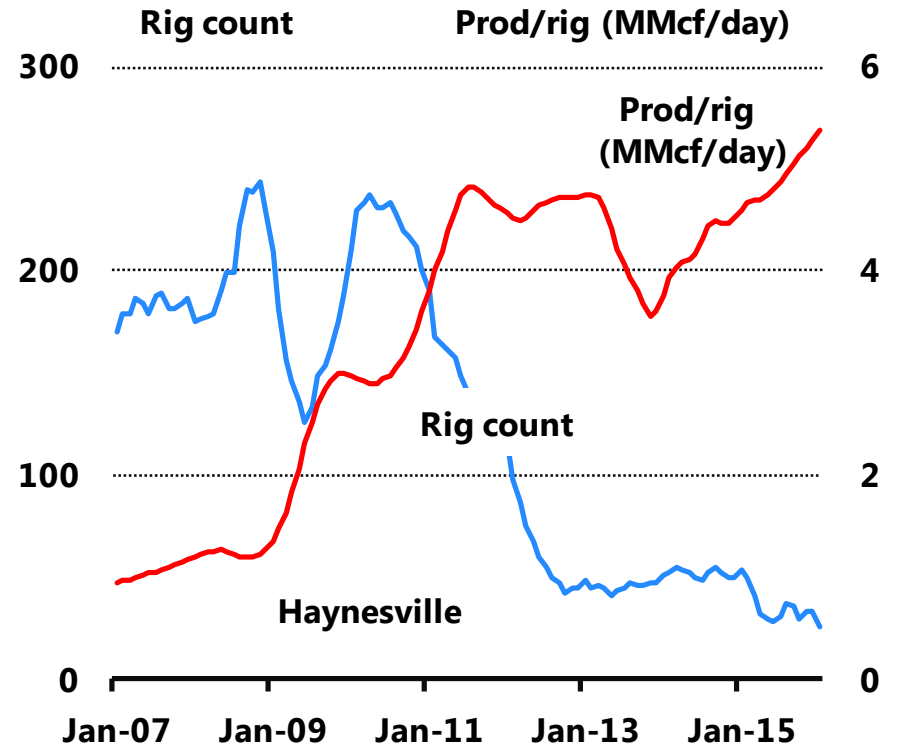
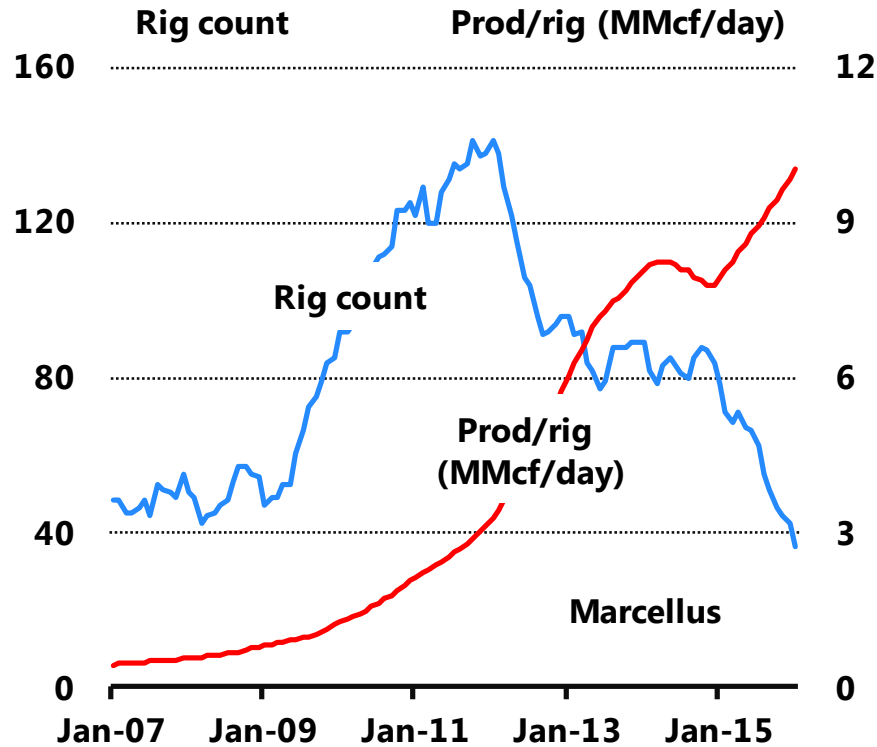


— Rig count  
— Production

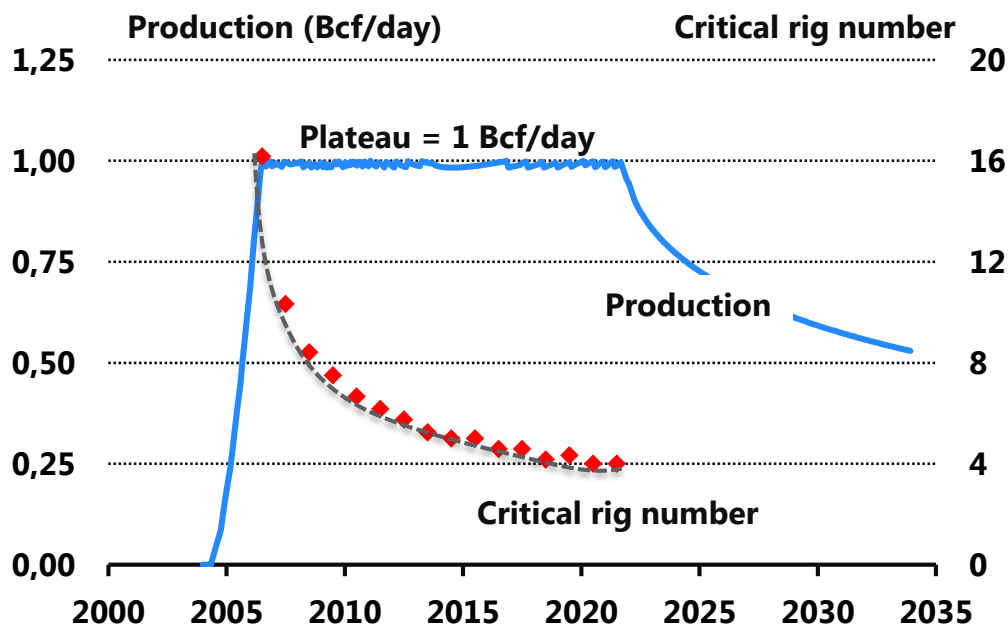
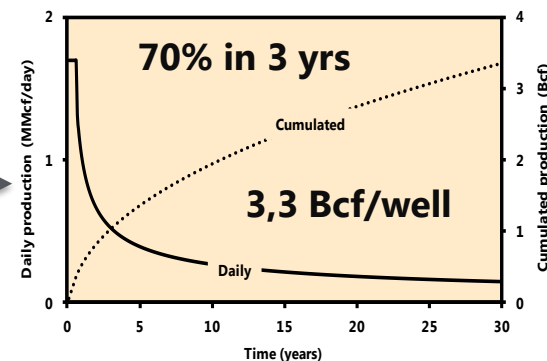
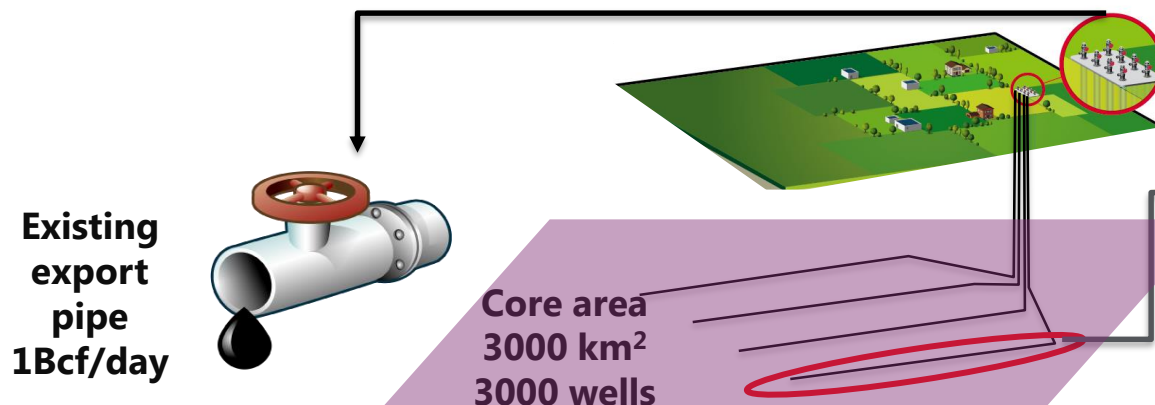
**Barnett + Haynesville + Marcellus**

# Shale gas production is resilient: production per rig

Source : EIA

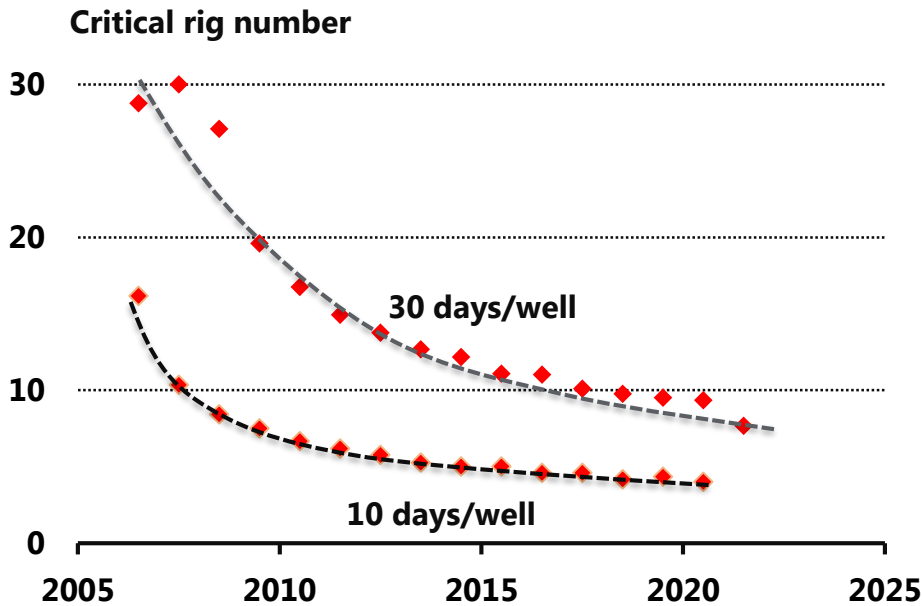


# Resilience factors (UFDsim)

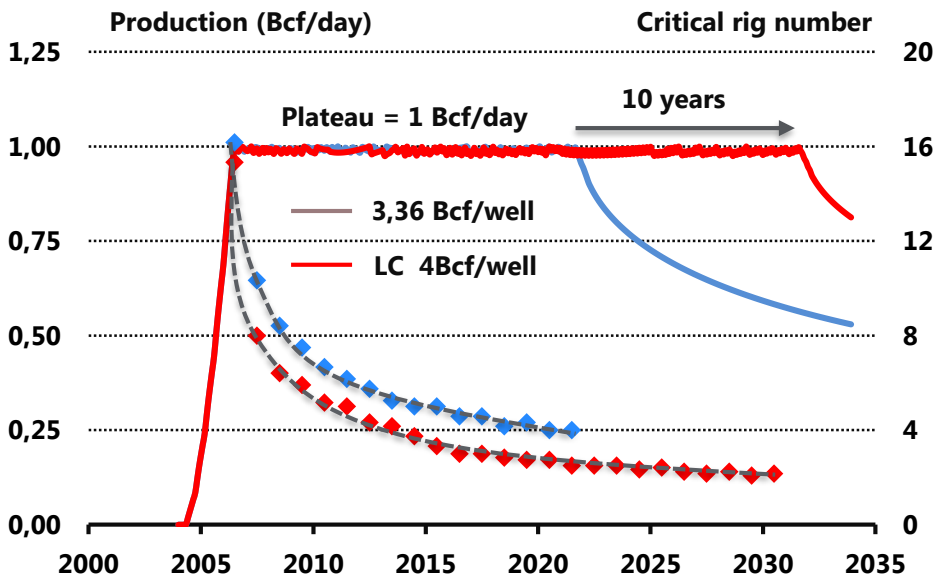


**First resilience factor  
is well number**

# Resilience factors (UFDsim)

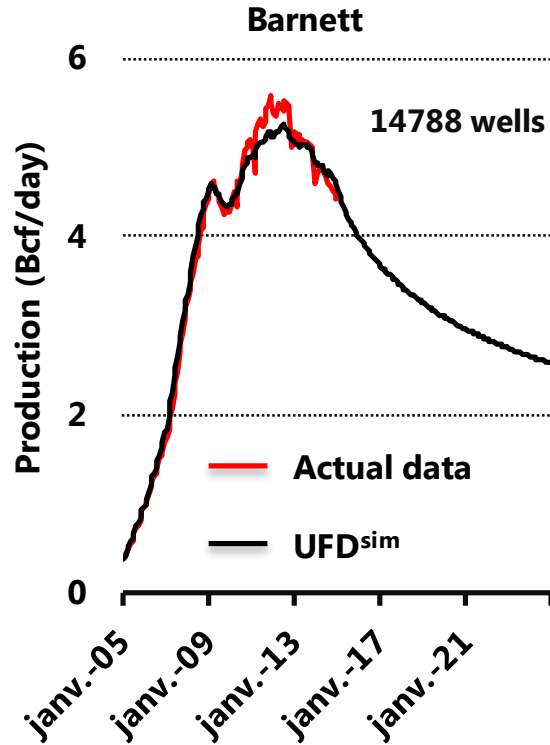


**Second resilience factor is operational performances**



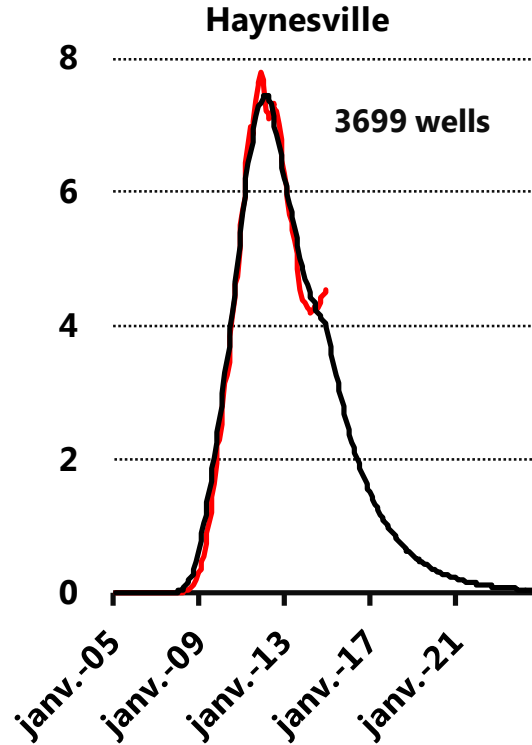
**Third resilience factor is well/géological performances**

# Resilience of the US main gas plays (UFDsim)



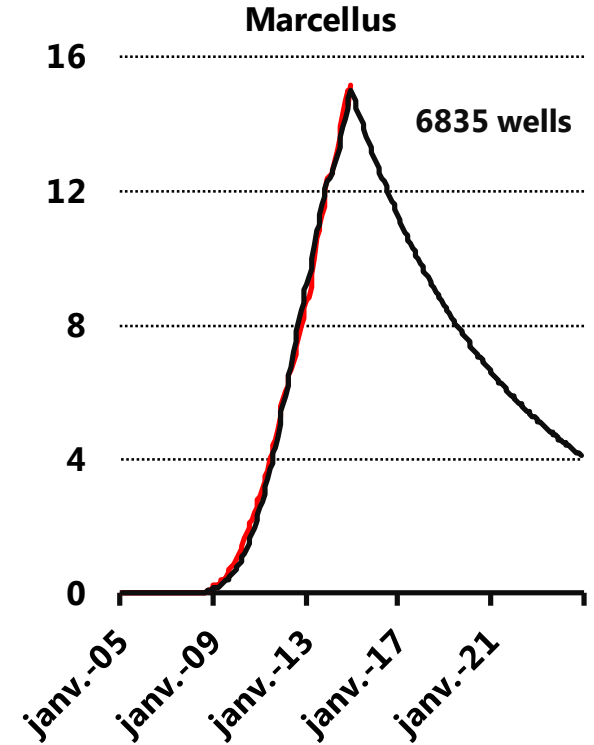
EUR UFD<sup>sim</sup> = 1,97 Bcf

EUR actual = 2,17 Bcf



EUR UFD<sup>sim</sup> = 6,48 Bcf

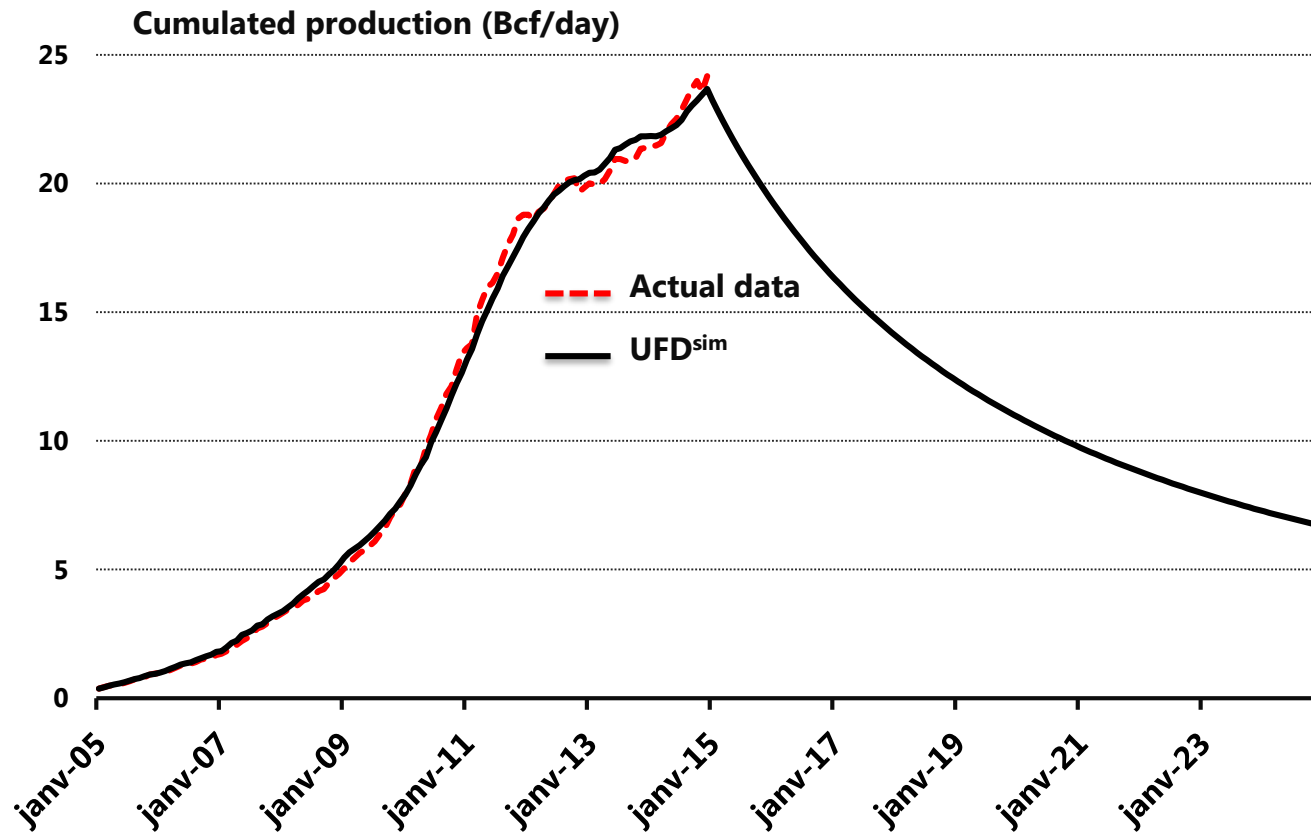
EUR actual = 6,72 Bcf



EUR UFD<sup>sim</sup> = 7,5 Bcf

EUR actual = 7,42 Bcf

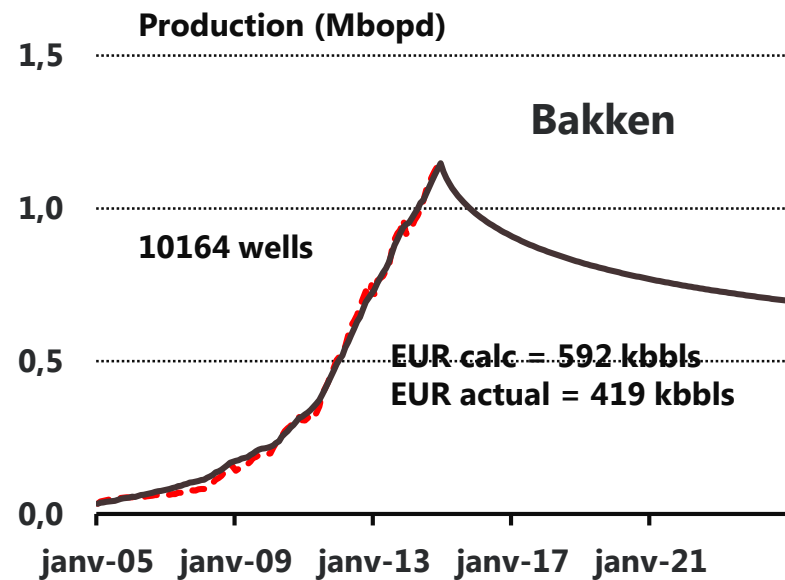
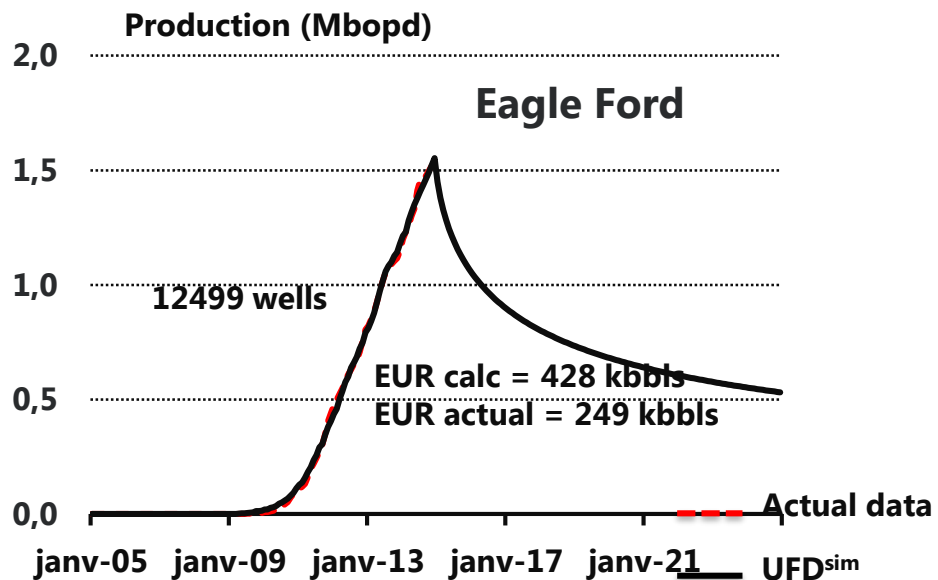
# Resilience of the three american gas plays (UFDsim)



Date	Decline
2015	19%
2016	16%
2017	15%
2018	13%
2019	11%
2020	10%
2021	10%
2022	9%
2023	9%
2024	8%



# Resilience of the two american oil plays (UFDsim)



Date	Decline
2015	27,0%
2016	12,0%
2017	8,5%
2018	6,6%
2019	5,4%
2020	4,6%
2021	4,0%
2022	3,5%
2023	3,2%
2024	2,9%

