Impact of tax policy on US upstream and economic activity

Final report

Rystad Energy Consulting

January 2025

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This report was prepared independently by Rystad Energy for the American Petroleum Institute (1/2)

Background on this report and scope of work

- **Rystad Energy ("Rystad")** was been engaged by **American Petroleum Institute, ("API")** during H2 2024 to assess the impacts a repeal of the Intangible Drilling Cost ("IDC") deduction would have on future capital spending, drilling activity, production, and cash flow across the US lower 48 and Gulf of Mexico.
- US oil and gas companies have long been able to deduct their intangible drilling costs. On the political front, the debate around repealing the IDC has been a point of contention, with advocates citing the need for more climate action. This study serves to quantify the effects of an IDC repeal on the metrics outlined above.
- Our proprietary databases, namely ShaleWellCube (North American onshore well database) and UCube (global upstream database), in conjunction with our research and consulting experts, are used to quantify and model these effects.
- Total GDP and Employment Impact includes the direct, indirect, and induced effects calculated by API with IMPLAN economic analysis software, based on outputs from the Rystad Energy model.

This report was prepared independently by Rystad Energy for the American Petroleum Institute (2/2)

About Rystad Energy

- Rystad Energy is a specialized strategy consulting and research firm focusing on the global energy markets. The company was established in 2004, by Founding Partner and CEO Jarand Rystad.
- Today the company is still headquartered in Oslo, Norway, and has developed into a global company with offices in Houston, New York, London, Rio de Janeiro, Singapore, Tokyo, Sydney, Dubai, Bangalore and Stavanger.
- The company has expanded into additional market segments over the years, and we now continuously monitor upstream, midstream/downstream, and renewable activity through a highly trained organization of analysts and consultants.
- We are highly quantitatively oriented in our consulting work due to application of data from our proprietary databases on different energy-related topics. Furthermore, we possess solid industry expertise through our staff and a broad industry network. Combining industry expertise and proprietary data, we have become one of the world's foremost energy strategy consulting firms.
- Rystad Energy has completed over 2,200 consulting projects for more than 500 clients around the world. We continuously assist governments, NGOs, energy producers, service companies, and investors around the world, on high-impact topics across the entire energy value chain.

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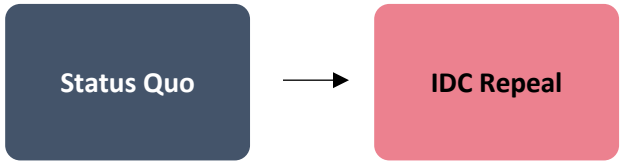
Rystad modelled the effect of a repeal of the Intangible Drilling Cost provision across three commodity price scenarios

Policy changes include a repeal of the Intangible Drilling Cost (IDC) provision

Policy Scenarios

Repealing current policy



Status Quo
- This scenario represents the current tax regime

Intangible Drilling Cost (IDC) repeal
- This represents the repeal of a long-standing tax provision that allows companies to expense, rather than depreciate, a portion of capital expenditures.

Price Scenarios

Price Scenario	Oil	Gas
Low	$50/bbl WTI	$2/MMBtu Henry Hub
Mid	$75/bbl WTI	$4/MMBtu Henry Hub
High	$100/bbl WTI	$6/MMBtu Henry Hub

Price scenarios
- Policy impacts are analyzed across three price scenarios, to show policy impacts amid the uncertain future of commodity prices

Model outputs

Rystad Outputs	IMPLAN Outputs
Production	GDP
Wells drilled	Employment
Capex	
Opex	
Taxes and royalties	

Rystad outputs
- Rystad has estimated drilling activity, production, capex royalties, and other metrics under each of the defined policy and price scenarios, leveraging Rystad's proprietary ShaleWellCube and UCube models.

IMPLAN outputs
- Using Rystad outputs on spending (capex, opex, etc.), API has calculated the effect on GDP and Employment using IMPLAN economic analysis software

Source: Rystad Energy research and analysis

An IDC repeal would reduce oil and gas activity and production, which in turn would reduce employment and GDP

Key findings

1 **An IDC Repeal would reduce oil and gas activity, production, royalties, employment, and GDP**	• An IDC repeal could reduce 2034 production by 1.7 million boe per day, decrease direct employment by 179,000 jobs, and lower direct GDP by $16 billion in the mid price scenario. • This would also increase wellhead breakevens and reduce cash flows available for reinvestment.
2 **Effects would occur regardless of commodity price environment**	• An IDC repeal would affect activity regardless of commodity price scenarios, though a low commodity price scenario would dampen policy effects • In the low price scenario, 2034 production is reduced by 2%, compared to 5% in the mid price scenario and 6% in the high price scenario • This trend holds across other metrics, such as capital investment, employment, and GDP
3 **Effects span basins, including both oil and gas basins**	• Policy effects would be widespread, though some basins would be more affected than others • Onshore production would be more affected than offshore production over a 10-year timeframe, as offshore oil and gas developments tend to have long lead times • In terms of magnitude, the Permian and Bakken would experience the largest declines in oil production, with reductions of 317 kbbl/d and 101 kbbl/d, respectively, in the mid price scenario • For gas-focused basins, the Haynesville could face a decline in 2034 of 3 bcf/d gas output, while the Marcellus and Utica together would see a reduction of 2 bcf/d, in the mid price scenario

Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs.
Note: Dollar figures in real 2024 dollars
Source: Rystad Energy research and analysis

Repealing the IDC deduction could significantly reduce activity, investment, and employment

Effects of an IDC repeal

▼ 1,700 kboe/d
2034 Oil and Gas Production

550 thousand bpd of oil production and 7 bcf/d of gas production could be at risk in 2034

- With the Permian and Haynesville accounting for 58% and 43% of this decline in oil and gas, respectively
- Impact is widespread, affecting oil and gas focused basins

▼ $16 billion
Lower 2034 GDP

Over $16 billion of annual GDP could be at risk as a result of IDC repeal

- An IDC repeal could result in a $16 billion loss in GDP, with the Permian contributing 31% of this reduction

▼ $81 billion
'25-'34 Capex

$81 billion of cumulative capex spend at risk due to reduced activity

- With the Permian, Haynesville, and Bakken making up $30 billion, $18 billion, and $9 billion of risked capex spend respectively
- This represents an overall decline of 8% in total capex spend across all basins

▼ $38 billion
'25-'34 Royalties

$38 billion of cumulative royalties at risk due to an IDC repeal

- With the Haynesville, Bakken, and Permian leading the decline, contributing $8 billion, $5 billion, and $16 billion in reduced royalties respectively
- Of the $38 billion, $31 billion is from private lands, $4 billion from federal lands, and $2 billion from state lands

▼ 8,000
'25-'34 Completed Wells

There could be 8,000 fewer wells completed from 2025 to 2034

- Decline in overall well count felt across all basins, onshore and offshore
- Oil focused basins make up 80% of this decline in well count, with gas focused basins making up the remaining 20%

▼ 179,000
Lower 2034 Employment

Total supported employment could be reduced by 179,000 jobs in 2034

- 32% of employment losses would occur in the Permian, including a loss of 9,000 direct jobs and 47,000 indirect and induced jobs
- Other regions could see a loss of 16,000 direct jobs, along with 106,000 indirect and induced jobs

Note: Under the mid price scenario ($75/bbl oil; $4.00/MMbtu gas); dollar figures in real 2024 dollars; Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs
Source: Rystad Energy research and analysis

Summary of impacts across price and IDC repeal scenarios

		Base	Delta from Base
Impacts	**Price Scenario**	**Status Quo**	**IDC Repeal**
# Wells drilled (2025 - 2034, Thousands)	High $100/bbl oil, $6/MMBtu gas	**143**	-11
Capital investment (2025- 2034, Billion USD)		**1,357**	-104
Oil production (2034, thousand bbl/d)		**13,657**	-746
Gas production (2034, bcf/d)		**131**	-10
Federal royalty income (2025- 2034, Billion USD)		**260**	-6
Private royalties (2025- 2034, Billion USD)		**1,018**	-58
GDP* (2034, Billion USD)		**372**	-16
Employment* (2034, Thousands)		**4,148**	-190
# Wells drilled (2025 - 2034, Thousands)	Mid $75/bbl oil, $4/MMBtu gas	**117**	-8
Capital investment (2025- 2034, Billion USD)		**1,108**	-81
Oil production (2034, thousand bbl/d)		**11,556**	-549
Gas production (2034, bcf/d)		**105**	-7
Federal royalty income (2025- 2034, Billion USD)		**182**	-4
Private royalties (2025- 2034, Billion USD)		**634**	-31
GDP* (2034, Billion USD)		**287**	-16
Employment* (2034, Thousands)		**3,137**	-179
# Wells drilled (2025 - 2034, Thousands)	Low $50/bbl oil, $2/MMBtu gas	**70**	-3
Capital investment (2025- 2034, Billion USD)		**670**	-24
Oil production (2034, thousand bbl/d)		**7,724**	-123
Gas production (2034, bcf/d)		**61**	-1
Federal royalty income (2025- 2034, Billion USD)		**103**	-1
Private royalties (2025- 2034, Billion USD)		**286**	-6
GDP* (2034, Billion USD)		**166**	-3
Employment* (2034, Thousands)		**1,770**	-28

Note: USD in real 2024 dollars; * Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs.
Source: Rystad Energy Ucube; Rystad Energy ShaleWellCube; Rystad Energy research and analysis

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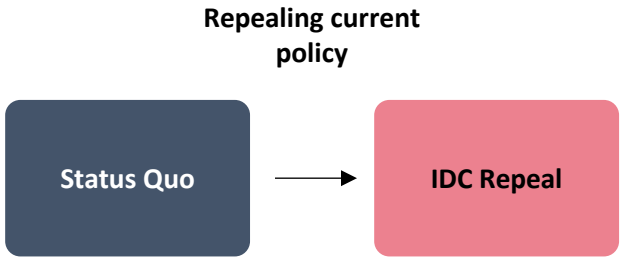

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Source: Rystad Energy research and analysis

The intangible drilling cost provision, introduced in 1913, allows a portion of well costs to be expensed immediately

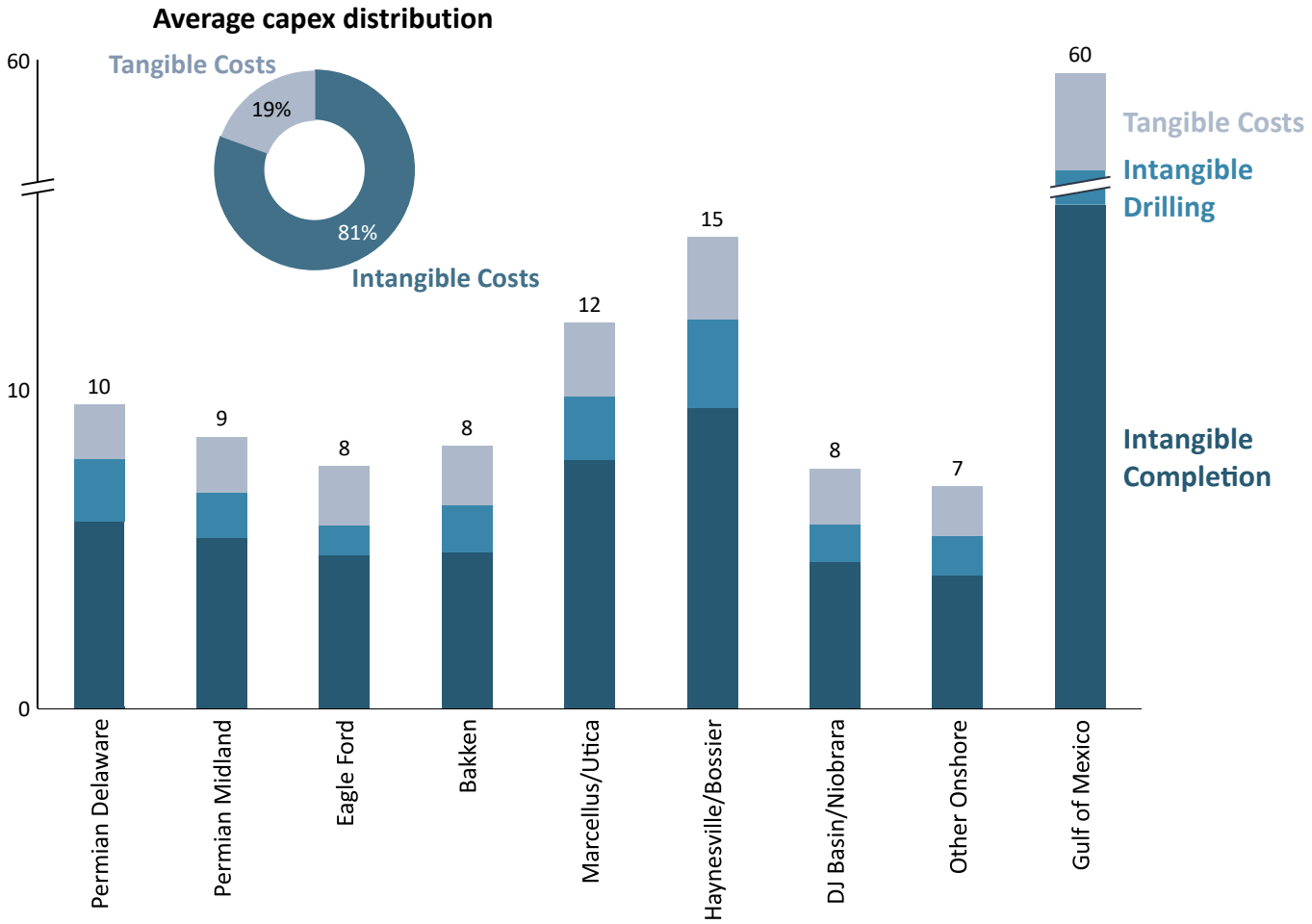
Intangible Drilling Costs	• Intangible Drilling Costs (IDC) refer to expenses related to drilling a well that have no salvageable value. • These costs include labor, chemicals, drilling mud, and other miscellaneous costs necessary for drilling that cannot be recovered after a well is completed. • These costs differ from tangible drilling costs, which include physical costs such as OCTG and facility expenses. These costs are typically capitalized and depreciated over a period of years based on the life of the equipment.
IDC Deduction	• The IDC deduction allows operators to expense 100% of intangible drilling costs over 1-5 years instead of capitalizing them over longer periods, with non-integrated companies able to deduct 100% of costs in the first year, and integrated companies being able to deduct 70% of costs in the first year. • The IDC deduction was introduced in 1913 to stimulate domestic oil and gas activity by reducing the taxable income of companies, acknowledging the substantial capital investment and risks in early exploration stages.
Policy Significance	• **High Risk and Expense:** The oil and gas industry involves significant initial capital expenditure. The IDC deduction eases this burden, especially during periods of low commodity prices. • **Marginal and Mature Assets:** If the IDC were not available, smaller operators with limited capital and higher breakevens would be impacted more and could see a decline in investment.

Introduction of Income Tax Code	Section 263(c) IRC provides support with further clarifications	Modification for Corporations	Joint Committee proposes elimination of IDC provision, doesn't pass	Renewed legislative efforts to abolish the deduction
1913	1954	1986	2013	2021-2023
The IDC deduction was introduced with the beginning of the income tax code to attract investment capital to the risky upstream industry	The 1954 code codified the option for operators to deduct IDCs, authorizing the Secretary of the Treasury to issue regulations for this purpose	Regulations modified so Integrated companies can only deduct 70% of IDCs immediately, with the remaining 30% spread over the subsequent 5 years	Despite discussions, the IDC deduction remained largely intact, underscoring its importance to the industry	The repeal of the IDC deduction has been included in proposals for changes to various tax policies and in the 2023 fiscal budget

Source: Internal Revenue Code; Internal Revenue Service; Rystad Energy research and analysis

On average, intangible drilling costs make approximately 80% of the total expenses for a well

Well capex costs by basin for completion year 2024
Million USD



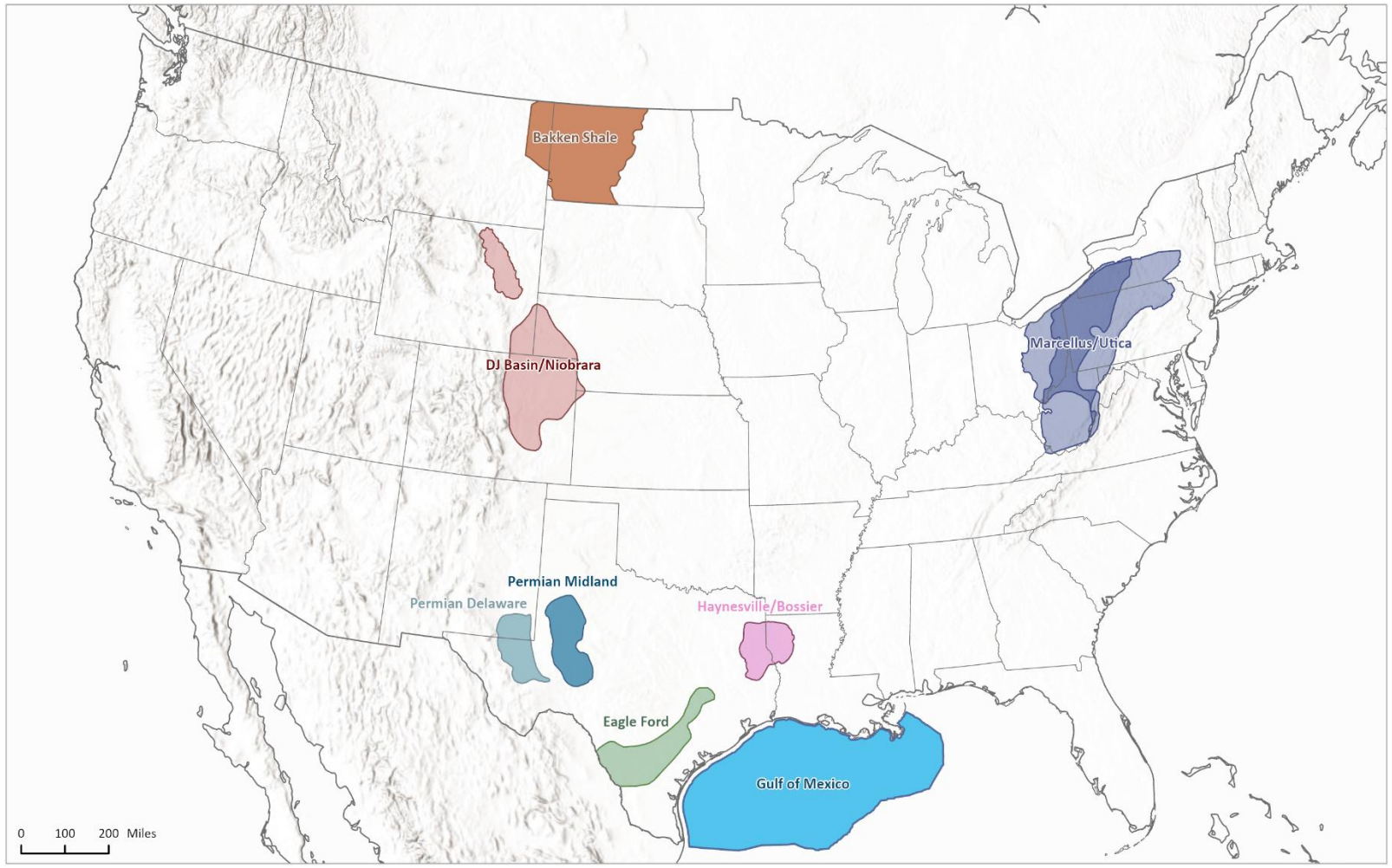
Note: Median values reported for wells completed in 2024
Source: Rystad Energy ShaleWellCube; Rystad Energy research and analysis

Well capex Breakdown

	Cost type	Description
Intangible Drilling	Drilling Services	Equipment rental and labor costs for drilling
	Rig	Drilling rig costs
	Other Drilling	Includes roads, cementing, drilling fluids etc.
Intangible Completion	Fuel and Power	Fuel and power costs during drilling process
	Water	Total cost of frac water
	Proppant	Minegate prices, rail, transloading, last mile trucking
	Stimulation	Cost of frac services net of proppant and consumables
	Other Completion	Includes coil tubing, mud handling, chemicals, perforation, etc.
Tangible Costs	Facilities	Includes production tree, wellhead equipment, and other facility costs
	OCTG	Tubing, casing, and lining costs

Eight basins are included in our analysis — selected areas comprise 93% of US capex

Map of highlighted basins and plays

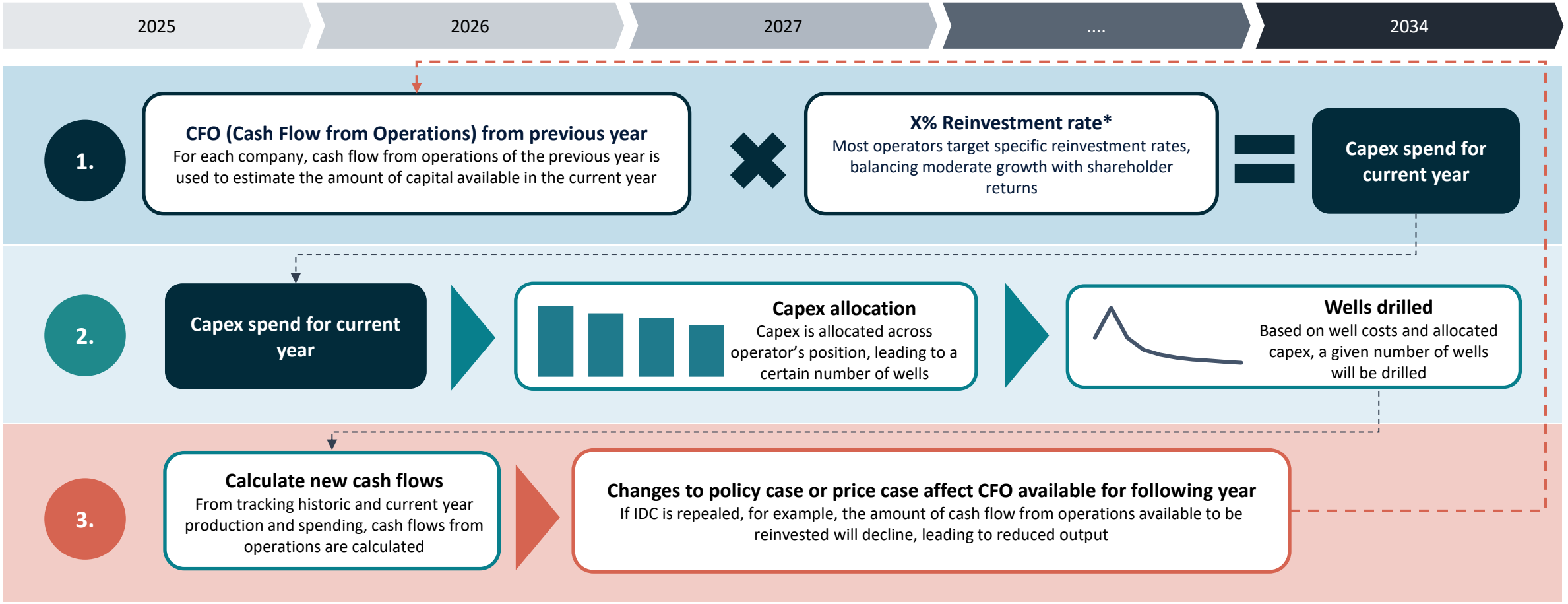


	Basin	Basin Type	2023 Capex billion USD
1	**Permian Delaware**	Liquids Play	34
2	**Permian Midland**	Liquids Play	31
3	**Gulf of Mexico**	Liquids Play	19
4	**Marcellus/Utica**	Gas Play	13
5	**Eagle Ford**	Liquids Play	11
6	**Bakken**	Liquids Play	10
7	**Haynesville/Bossier**	Gas Play	9
8	**DJ Basin/Niobrara**	Liquids Play	8
	Other Onshore (Not Included):	Liquids Play	9

Note: Other onshore includes Woodford, Austin Chalk, Meramec, Barnett, Anadarko, and others.
Source: Rystad Energy research and analysis

For onshore, target reinvestment rates and cash flows determine reinvestment and activity

The following methodology is used iteratively for every forecasted year, and for each basin of interest



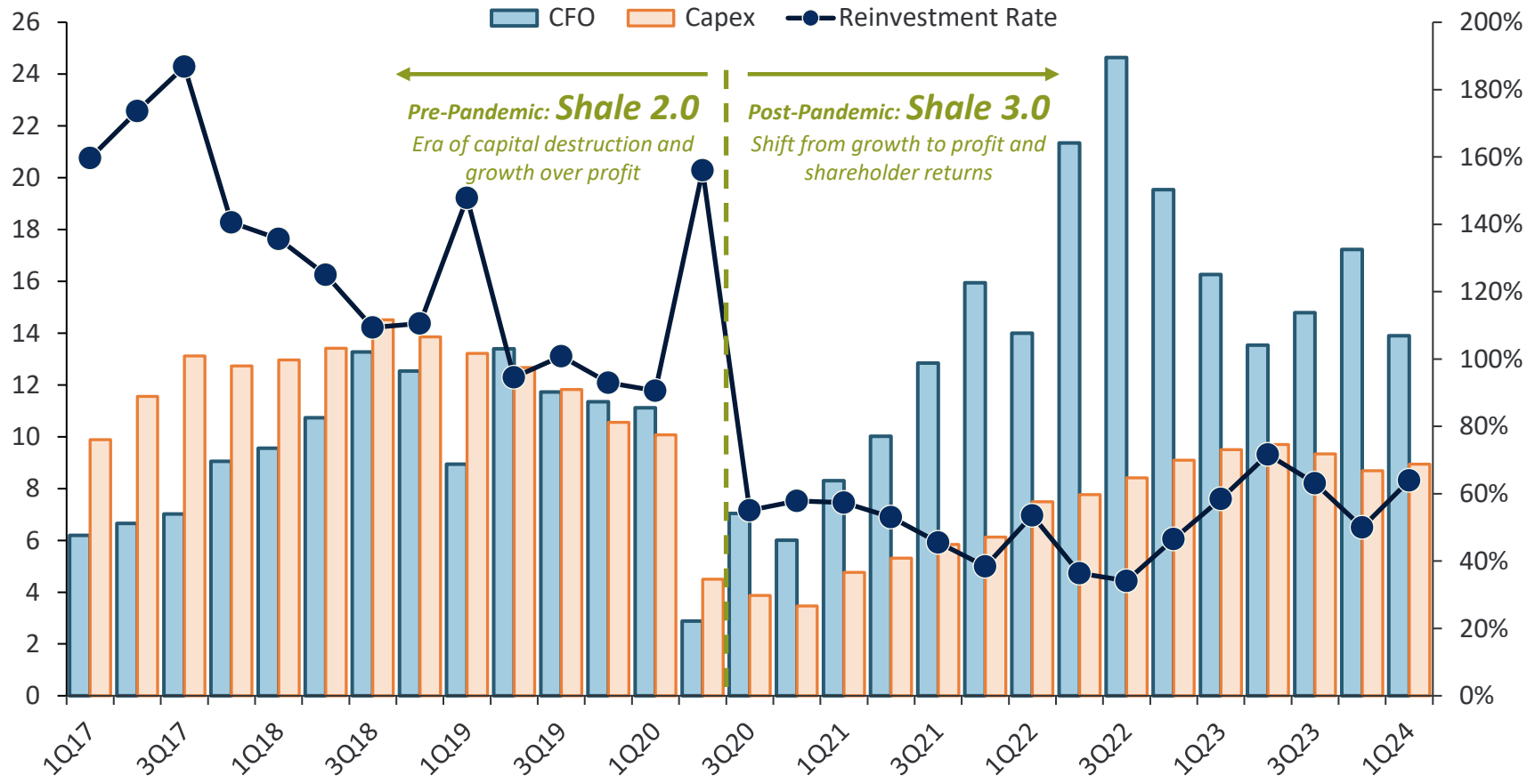
* Future reinvestment rates are modeled values by Rystad Energy
Source: Rystad Energy research and analysis

For onshore projects, we base our future reinvestment rate assumptions on recent historical trends

Reinvestment rates have undergone a decline in the Shale 3.0 era as operators prioritize shareholder returns

Quarterly CFO versus Capex for public US shale oil producers*

CFO and Capex (million USD) | Reinvestment Rate (%)

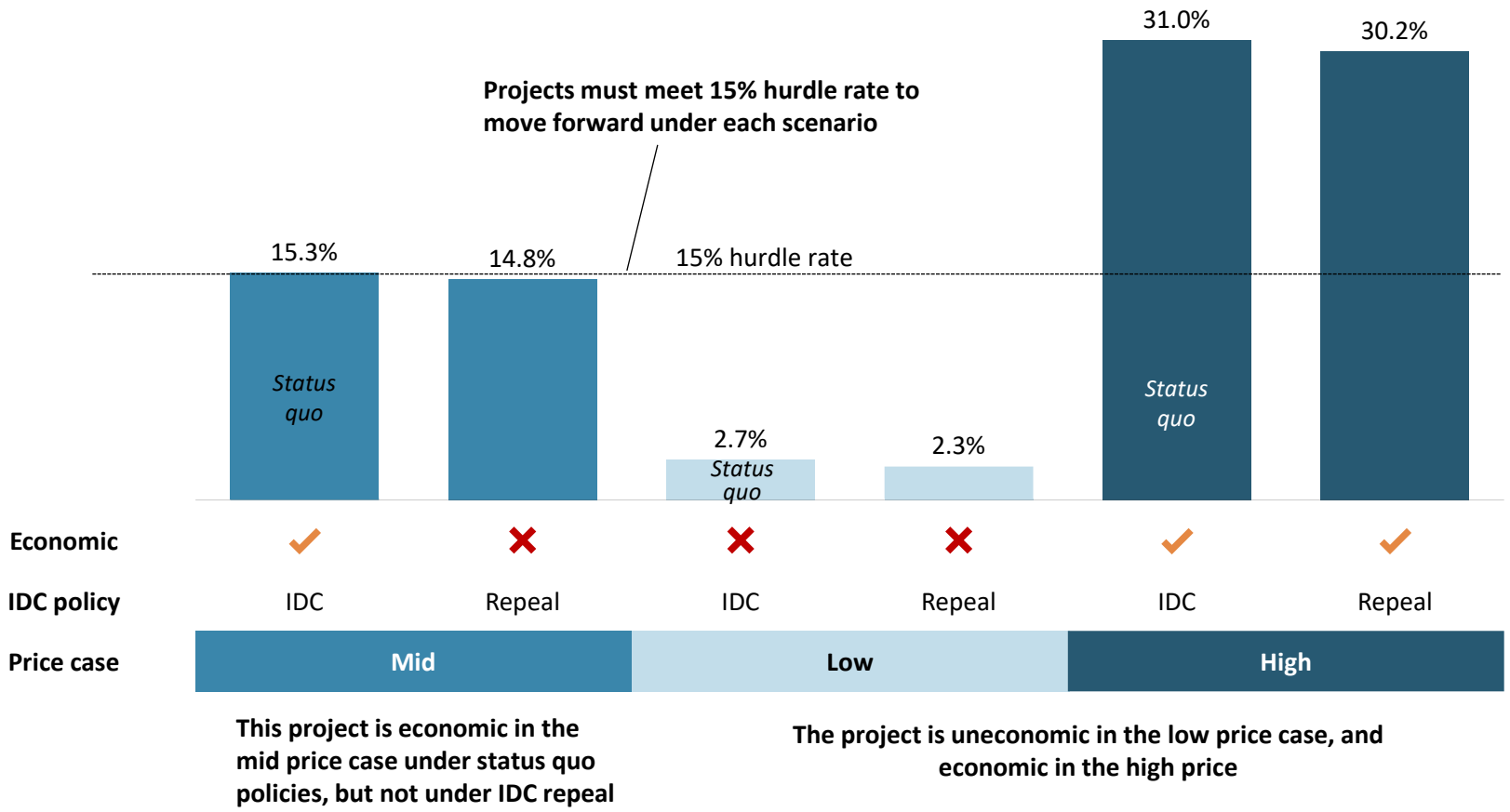


- In the decade leading up to the pandemic, the shale industry could be largely characterized as capitally destructive – with companies investing substantially more into capex and growth than paying out dividends and repurchasing shares
- Post-pandemic, the industry entered the Shale 3.0 regime – characterized by a shift from production growth to share buybacks and dividend returns
- Most players have indicated plans of flat activity or single digit production growth
- The industry now poised to enter the Shale 4.0 era – marked by consolidation and a smaller pool of larger players that seek to pair modest activity levels with shareholder returns and lower breakevens

* Current peer group of 15 public shale oil-focused producers accounted for ~34% of 2024 US shale oil output. Quarterly reinvestment rates are defined as Capex/CFO within a given quarter.
Source: Rystad Energy research and analysis

For Gulf of Mexico offshore projects, we modeled the economics of each pre-FID (final investment decision) project across the policy and price scenarios

IRR for example Gulf of Mexico pre-FID project, under various policy and price scenarios
Percentage, real terms

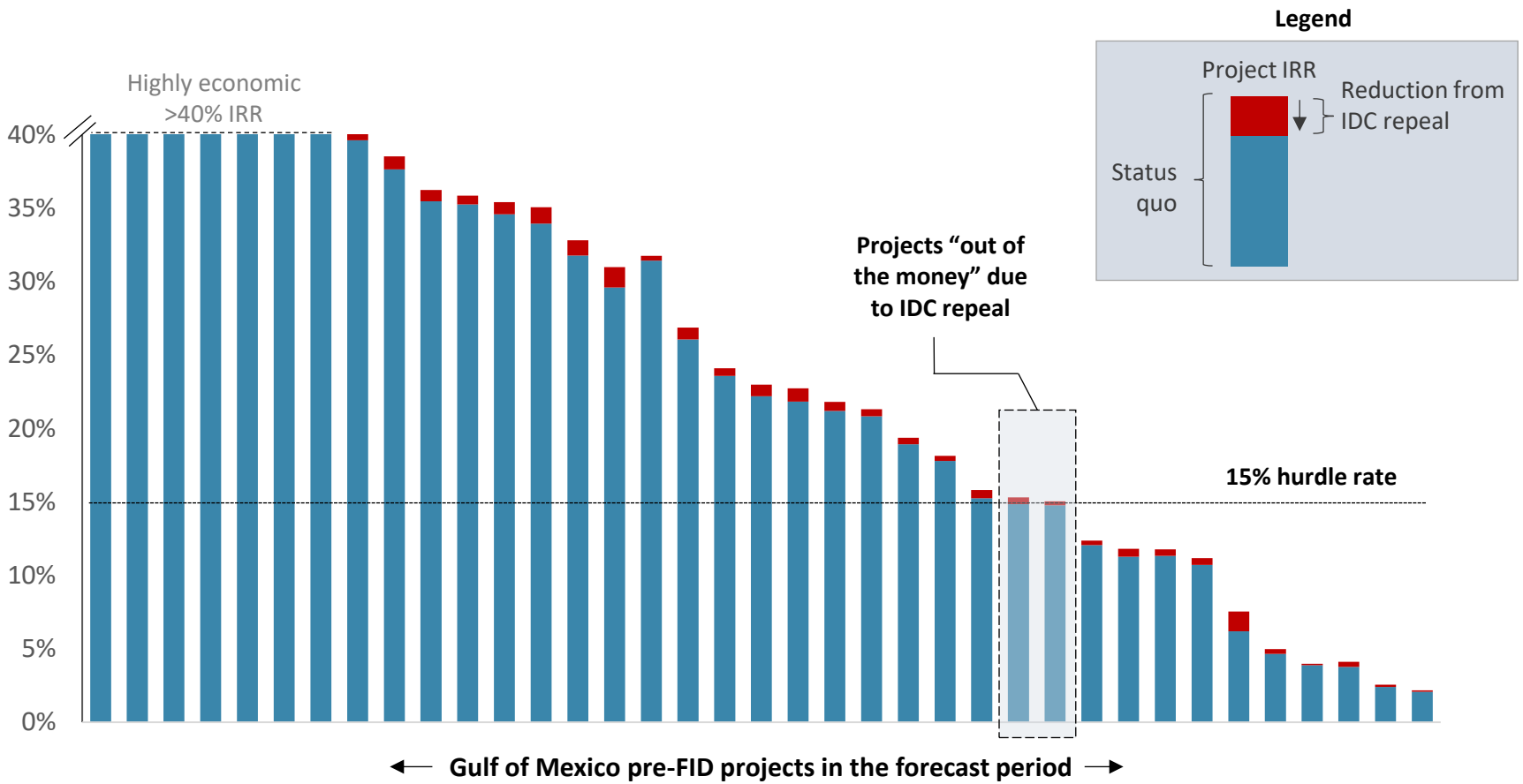


- To model impact of the IDP repeal and price on Gulf of Mexico activity and investment, Rystad Energy modelled the internal rate of return (IRR) of pre-FID projects in the Gulf of Mexico
- IRR modelling leveraged Rystad's UCube Economic Model
- For each scenario, projects with an IRR of 15% or higher were deemed to go forward, while projects with an IRR below a 15% hurdle rate did not

Source: Rystad Energy research and analysis; Rystad Energy UCube Economic Model

Activity in the Gulf of Mexico is less sensitive to changes in IDC policy over the forecast period

IRR for Gulf of Mexico pre-FID projects
Percentage, real terms



- The Gulf of Mexico is less sensitive to IDC repeal over the 2025-2034 forecast period
- A significant portion of 2024-2034 capex comes from pre-FID projects with long lead time
- Additionally, much of the activity in the Gulf of Mexico comes from infill programs that are highly economic due to already-spent capex on production platforms
- Finally, offshore projects are not influenced by the same reinvestment rate considerations as onshore activity; while shale requires constant reinvestment in fast-declining wells, offshore projects are larger and more discrete

Source: Rystad Energy research and analysis; Rystad Energy UCube Economic Model

We use an extensive range of royalty and tax models to guide our reinvestment and activity projections

Rystad Energy's model considers all selected plays, states, and land types (Federal, State, and Private) to calculate royalty type taxes based on top-line revenues. This includes royalties, ad valorem, severance, and impact taxes which are unique on land, play, and state. Corporate taxes are calculated based on state-specific regulations. This comprehensive approach ensures accurate reinvestment and activity projections.

Tax Type	Tax Base	Description	Range across US onshore and offshore
Royalties	Gross Revenue	A royalty is a payment made to the owner of mineral rights for the right to extract and produce oil and natural gas from their land. • Federal lands: These are lands owned by the federal government. • State lands: These are lands owned by individual states. • Private lands: These are lands owned by private individuals or entities.	0 to 25.0%
Severance/Ad Valorem		Production taxes on oil and gas are usually 0 to 7.5% based on Play, State and Land Type.	0 to 7.5%
Impact Fee		Taxes imposed to mitigate the impact of oil and gas production on local areas. Such tax is levied on states such as Wyoming and Pennsylvania.	0 to 6.0%
State Income Tax	Taxable Income	State-specific corporate income tax rates. Range from 0 to 8.5%.	0 to 8.5%
Federal Income Tax		Federal Income Tax (21% until end of 2017, 21% 2017 onwards).	0 to 21.0%

Source: Rystad Energy Research and analysis

IMPLAN Economic Software was used to calculate GDP and Economic impacts using outputs from Rystad's model (1/2)

IMPLAN Economic Assessment Overview

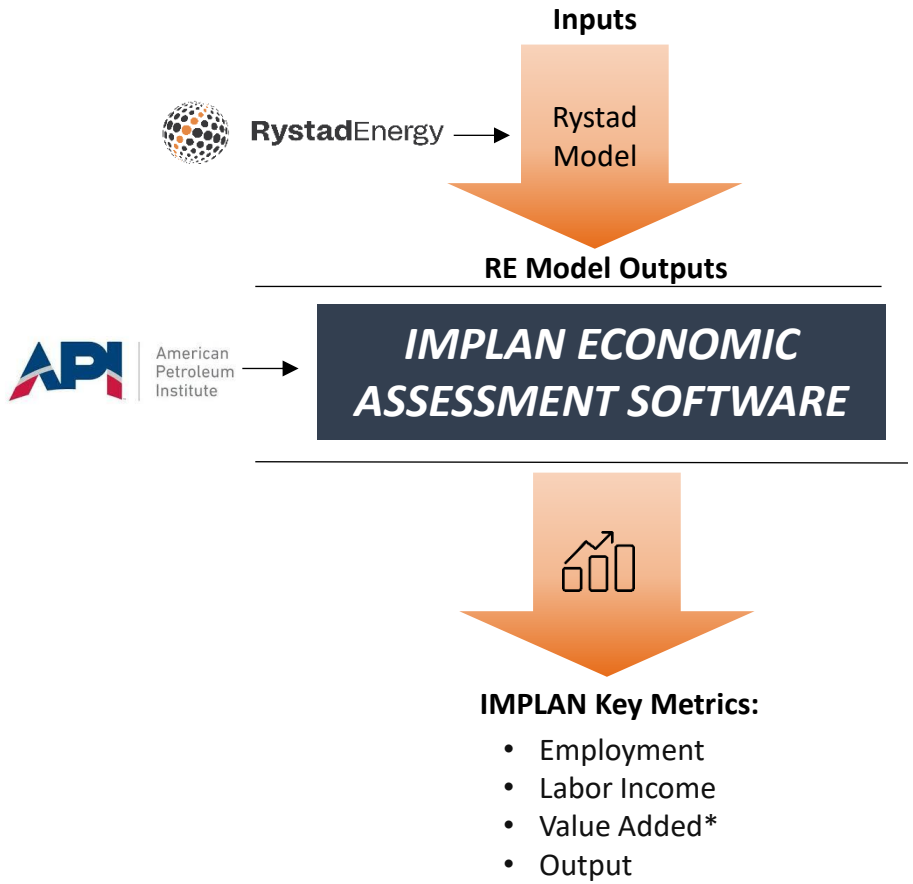
This analysis uses the IMPLAN model to determine economic impacts. IMPLAN model inputs are a product of outputs from Rystad Energy's model.

	IMPLAN description
Input-Output Analysis	Based on Wassily Leontief's method, mapping relationships between industries, households, and governments, quantifying interdependencies across economic sectors.
Data Sources	Government data from US BEA and BLS, including industry output, labor income, input purchases, taxes, household spending, and demographics, used for accurate economic modeling.
Economic Indicators	Key outputs include Employment, Labor Income, Value Added*, and Output, reflecting the economic impacts of the analyzed activities.

IMPLAN Economic Outputs Split

IMPLAN's key metrics - employment, labor income, and value added - are categorized into three types of impacts:

	IMPLAN description
Direct Effects	The immediate economic changes from an initial activity.
Indirect Effects	The effects from business-to-business transactions in the supply chain.
Induced Effects	The economic effects resulting from the spending of wages by employees involved in both direct and indirect activities.



Note: *: Value Added = GDP. Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs.
Source: Rystad Energy research and analysis

IMPLAN Economic Software was used to calculate GDP and Economic impacts using outputs from Rystad's model (2/2)

The following categories were used in the IMPLAN modeling of oil and gas development and production

- Oil and gas extraction
- Support activities for oil and gas operations
- Pipeline transportation services
- Oil and gas field machinery manufacturing
- Drilling oil and gas wells
- Refined petroleum products
- Iron and steel and ferroalloy products
- Sand and gravel
- Sand and gravel
- Water, sewage and other systems
- Ship building and repairing (topsides offshore)
- Water transport
- Other miscellaneous chemical products
- Custom computer programming services
- Architectural, engineering, and related services
- Management consulting services

The following categories were used in the IMPLAN modeling to assess the impacts of Federal Revenue Sharing

- Employment and payroll of state govt., education services
- Employment and payroll of state govt., hospitals
- Employment and payroll of state govt., other services

The following category was used in the IMPLAN modeling to assess the impacts of increased royalty income.

- Households $150-200K - increased income through private royalties

Source: IMPLAN; Rystad Energy research and analysis

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Lower 2034 Employment

Total supported employment could be reduced by 179,000 jobs in 2034

- 32% of employment losses would occur in the Permian, including a loss of 9,000 direct jobs and 47,000 indirect and induced jobs
- Other regions could see a loss of 16,000 direct jobs, along with 106,000 indirect and induced jobs

Note: Under the mid price scenario ($75/bbl oil; $4.00/MMbtu gas); dollar figures in real 2024 dollars; Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs
Source: Rystad Energy research and analysis

An IDC repeal is expected to have wide impacts, especially on capital investments and total number of wells drilled

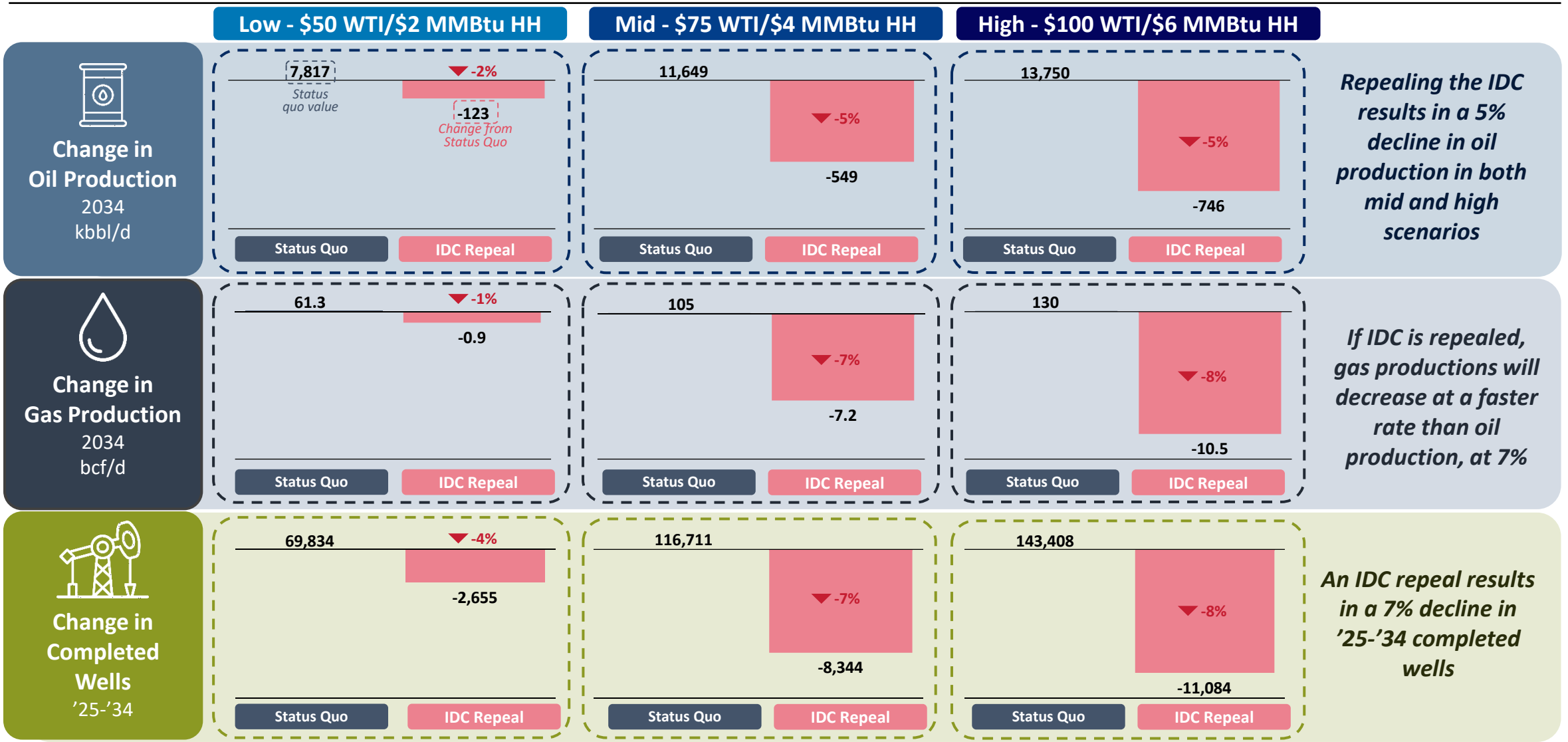
Impacts under mid-price scenario: Oil Price $75 per barrel, Natural Gas $4 per MMBtu

	Base	Policy Change	
Impacts	**Status Quo**	**IDC Repeal**	
# Wells drilled 2025-2034, Thousands	117	108	-7%
Capital investment 2025-2034, Billion USD	1,108	1,027	-7%
Oil Production 2034, Thousand bbl/d	11,556	11,006	-5%
Federal royalty income 2025-2034, Billion USD	182	178	-2%
State revenue 2025-2034, Billion USD	48	46	-4%
Private royalties 2025-2034, Billion USD	634	602	-5%
GDP* 2034, Billion USD	287	271	-6%
Employment* 2034, Thousands	3,137	2,958	-6%

Note: USD in real 2024 dollars; * Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs.
Source: Rystad Energy UCube; Rystad Energy ShaleWellCube; Rystad Energy research and analysis

IDC repeal impacts are evident in all price scenarios, but are most pronounced in mid and high price scenarios

Change from status quo by commodity price and policy scenario



Source: Rystad Energy research and analysis

IDC repeal impacts are evident in all price scenarios, but are most pronounced in mid and high price scenarios

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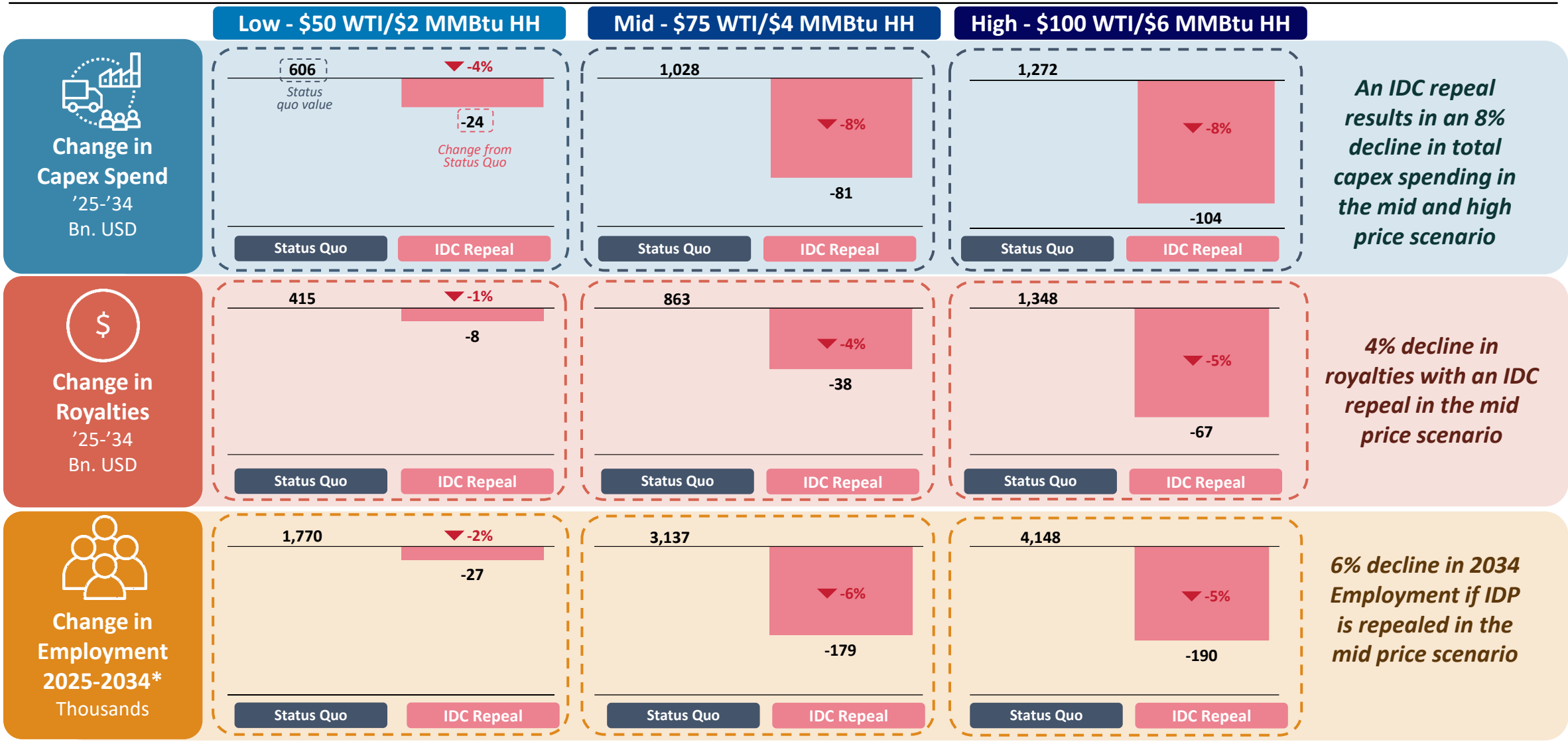


Source: Rystad Energy research and analysis. Note: USD in real 2024 dollars * Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs

Summary of impacts across price and IDC repeal scenarios

		Base	Delta from Base
Impacts	**Price Scenario**	**Status Quo**	**IDC Repeal**
# Wells drilled (2025 - 2034, Thousands)	High: $100/bbl oil, $6/MMBtu gas	**143**	-11
Capital investment (2025- 2034, Billion USD)		**1,357**	-104
Oil production (2034, thousand bbl/d)		**13,657**	-746
Gas production (2034, bcf/d)		**131**	-10
Federal royalty income (2025- 2034, Billion USD)		**260**	-6
Private royalties (2025- 2034, Billion USD)		**1,018**	-58
GDP* (2034, Billion USD)		**372**	-16
Employment* (2034, Thousands)		**4,148**	-190
# Wells drilled (2025 - 2034, Thousands)	Mid: $75/bbl oil, $4/MMBtu gas	**117**	-8
Capital investment (2025- 2034, Billion USD)		**1,108**	-81
Oil production (2034, thousand bbl/d)		**11,556**	-549
Gas production (2034, bcf/d)		**105**	-7
Federal royalty income (2025- 2034, Billion USD)		**182**	-4
Private royalties (2025- 2034, Billion USD)		**634**	-31
GDP* (2034, Billion USD)		**287**	-16
Employment* (2034, Thousands)		**3,137**	-179
# Wells drilled (2025 - 2034, Thousands)	Low: $50/bbl oil, $2/MMBtu gas	**70**	-3
Capital investment (2025- 2034, Billion USD)		**670**	-24
Oil production (2034, thousand bbl/d)		**7,724**	-123
Gas production (2034, bcf/d)		**61**	-1
Federal royalty income (2025- 2034, Billion USD)		**103**	-1
Private royalties (2025- 2034, Billion USD)		**286**	-6
GDP* (2034, Billion USD)		**166**	-3
Employment* (2034, Thousands)		**1,770**	-28

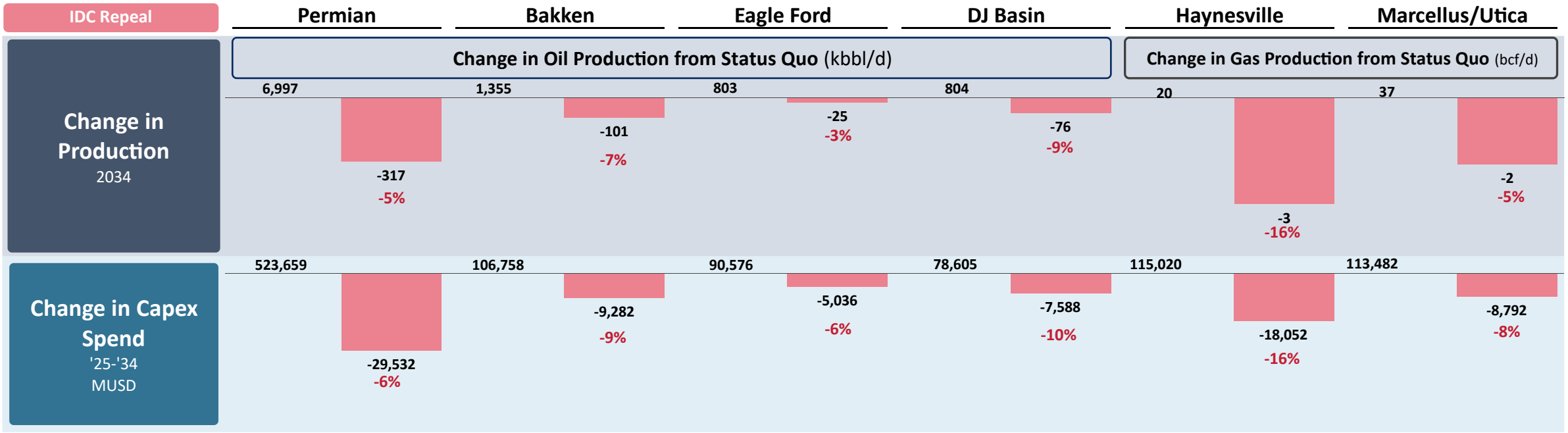
Note: USD in real 2024 dollars; * Total GDP and employment impact (direct, indirect, and induced), calculated by API using IMPLAN economic analysis software using Rystad Energy model outputs.
Source: Rystad Energy Ucube; Rystad Energy ShaleWellCube; Rystad Energy research and analysis

All basins are projected to be impacted by an IDC repeal, with the Permian and Haynesville having the largest projected reductions in production and capex

Key Takeaways:

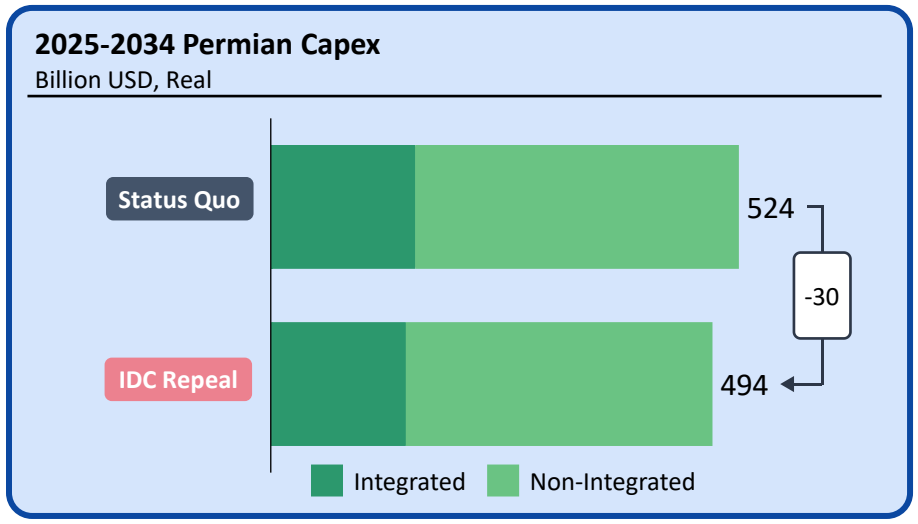
- The Permian and Haynesville are the most impacted by the combined effects of an IDC repeal. These regions could see reductions of up to 317 kbbl/d of oil production and 3 bcf/d of gas production, at the assumed mid price case
- On a percentage basis, the Haynesville could see a 16% production decline under an IDC repeal. Across oil basins, the DJ Basin is the most affected and could see a 9% decline in oil production under an IDC repeal
- In terms of capital spend the Permian could see a decline of capex spend by $29 billion due to the IDC repeal. Meanwhile, $18 billion could be in jeopardy in the Haynesville

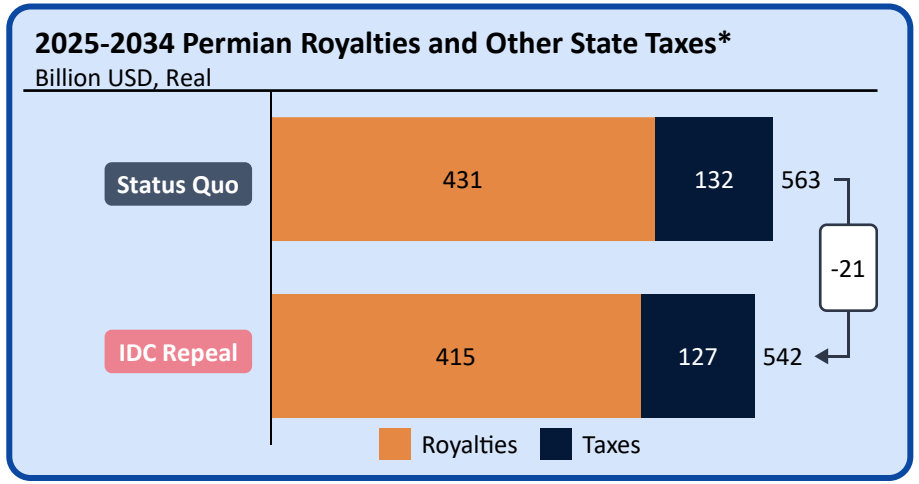
Change from status quo by basin in a mid price case

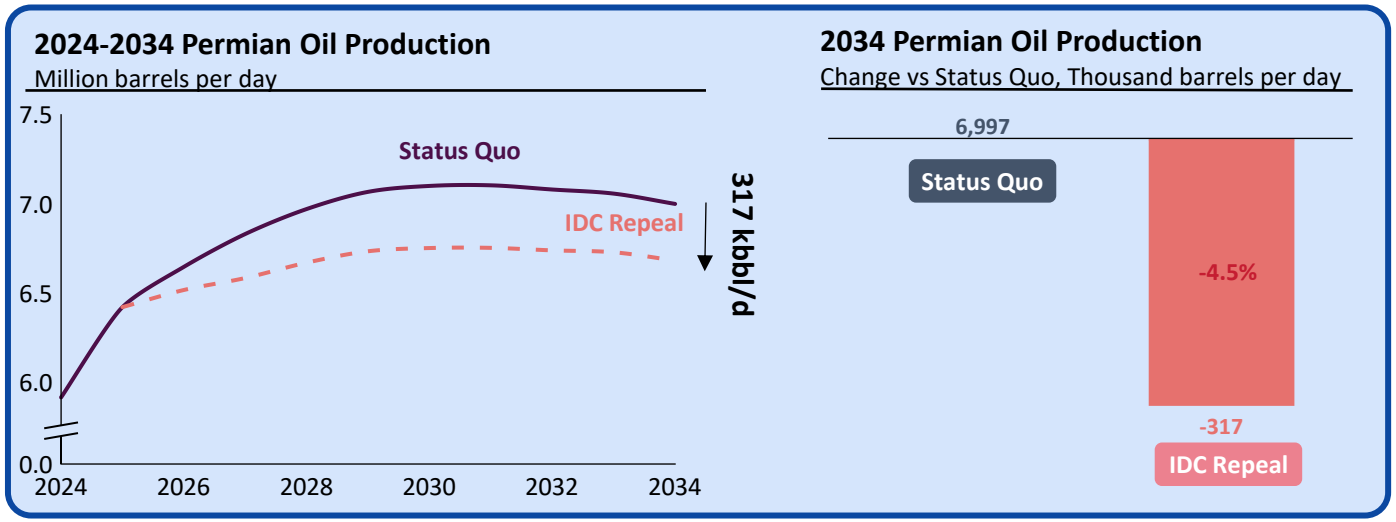


Note: real 2024 dollars
Source: Rystad Energy Ucube; Rystad Energy ShaleWellCube; Rystad Energy research and analysis

The Permian Basin could see an oil production decline of over 317 kbbl/d because of an IDC repeal





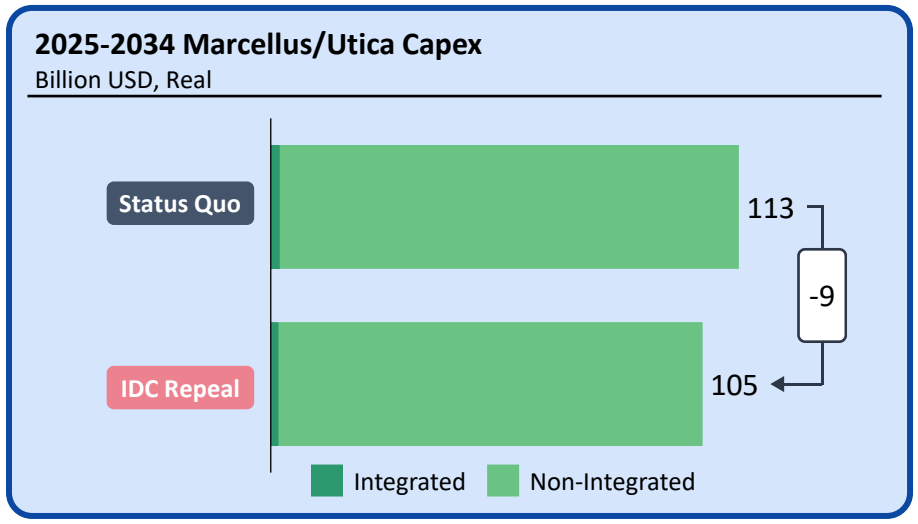


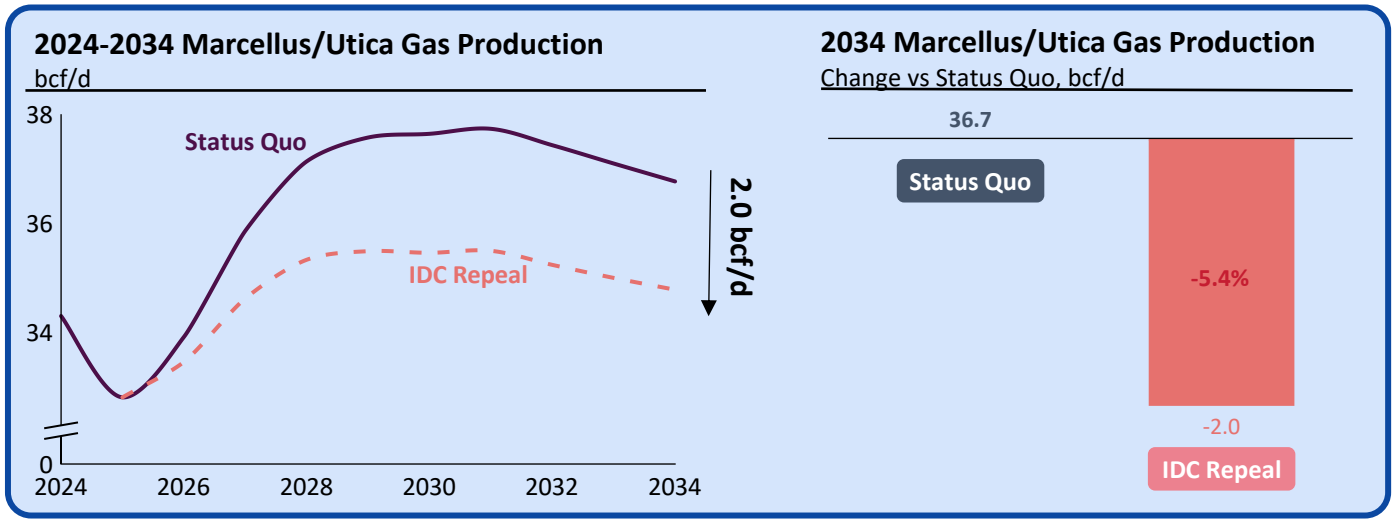
Key Takeaways:

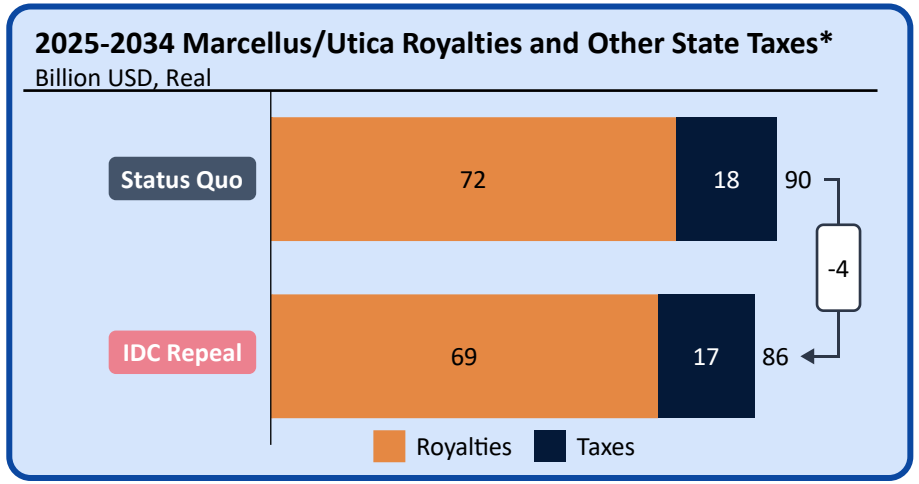
- The Permian, contributing 80% of total US oil output, could face a 317 kbbl/d decline with an IDC repeal
- Repealing the IDC could jeopardize $30 billion of Permian capex, representing a 6% decline of total 2025-2034 status quo capex spend
- Reduced drilling in the Permian could result in a $16 billion loss in royalties and a $5 billion loss in state production taxes in the next ten years. Of the $16 billion loss in royalties, $12 billion is from private lands, $3 billion from federal lands, and $1 billion from state lands

Note: USD in real 2024 dollars; *Includes Production Taxes, Ad Valorem, Severance Taxes, and other State Specific Taxes on Revenue.
Source: Rystad Energy Ucube; Rystad Energy ShaleWellCube; Rystad Energy research and analysis

An IDC deduction repeal is projected to reduce capital investments and production in the gas producing Marcellus/Utica basins







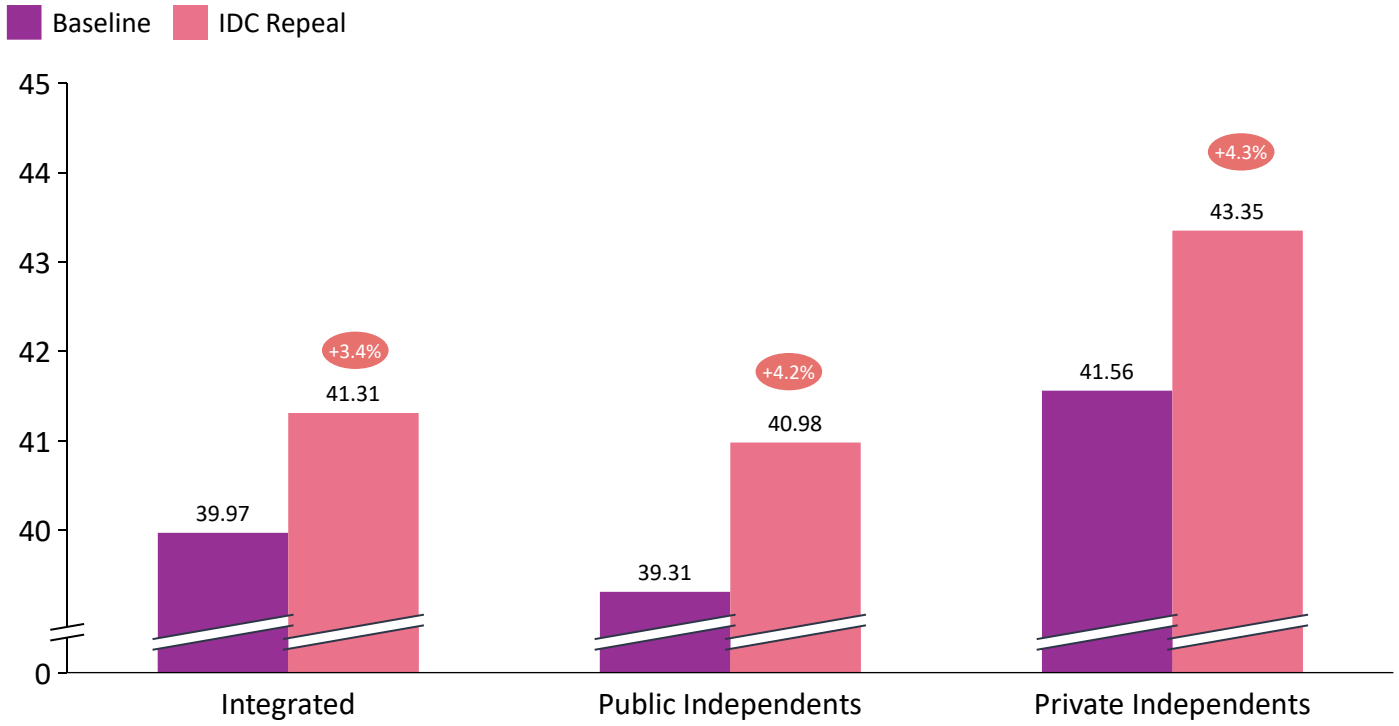
Key Takeaways:

- Repealing the IDC provision could cut natural gas production by 2 bcf/d in the Marcellus/Utica, significantly impacting US gas supply
- Enacting the IDC repeal could reduce the capex spend by $9 billion (7%) between 2024-2034
- Over the next ten years, reduced activity in the Marcellus/Utica basin could result in a $3 billion loss in royalties and a $1 billion loss in state production taxes

Note: USD in real 2024 dollars; *Includes Production Taxes, Ad Valorem, Severance Taxes, and other State Specific Taxes on Revenue.
Source: Rystad Energy Ucube; Rystad Energy ShaleWellCube; Rystad Energy research and analysis

Breakeven impact analysis indicates that independent operators, who can currently expense 100% of IDC, will be the hardest hit by the repeal of IDC deduction

Impact on Breakevens by Operator Type across Policy Scenarios
Wellhead Breakeven (USD/bbl)



Weighted Impacts*: ***IDC Repeal = +$1.59/boe***

Based on an average Permian Texas well, under Rystad mid case price assumptions

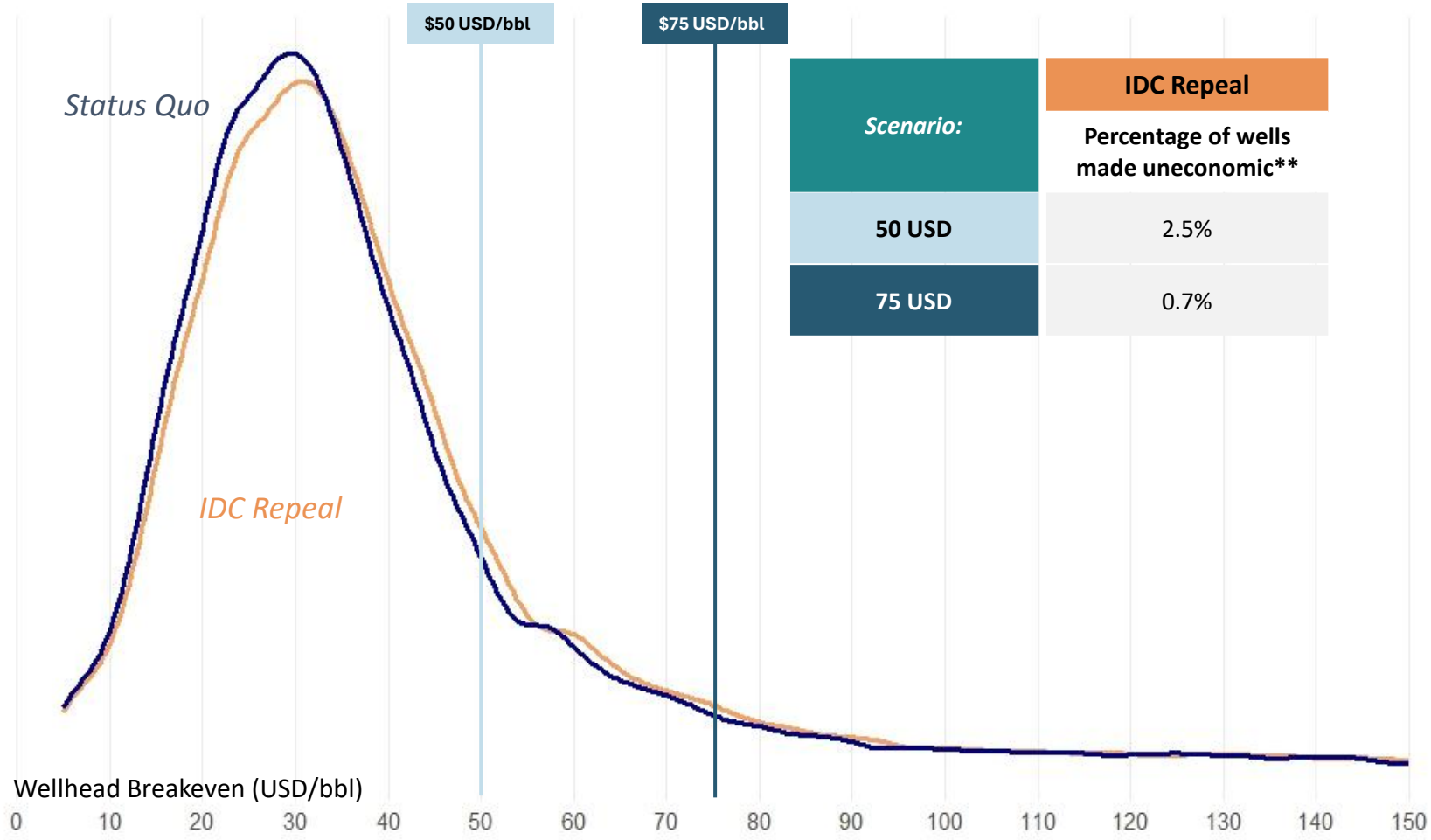
* Production Weighted Average Impacts
Source: Rystad energy Ucube; Rystad Energy ShaleWellCube; Rystad Energy Research and analysis

Key takeaways

- Independent operators, who account for over 80% of Permian production, would be the most impacted by an IDC repeal, as they expense 100% of IDCs in the year they occur, compared to integrated companies who can expense 70% of IDCs in the year they occur
- There is a bigger impact through repealing the IDC as it reduces oil and gas investments immediately, directly impacting production
- Integrated companies that already capitalize on at least 30% of intangible well costs would be marginally less affected by an IDC repeal compared to independent operators
- An IDC repeal would raise median breakeven prices by approximately $1.34 for integrated companies and $1.67-$1.79 for independent operators

An IDC repeal would raise breakevens, making some wells uneconomic; in the Permian Midland, these policies could render 0.7% of wells uneconomic at a $75 oil price.

Permian Midland Wellhead Breakeven* Distribution by Scenario



Scenario:	IDC Repeal Percentage of wells made uneconomic**
50 USD	2.5%
75 USD	0.7%

Key Takeaways

- Under a $75 WTI scenario, 0.7% of wells that were economically viable under the Status Quo become uneconomic due to the IDC repeal scenario; under a $50 WTI scenario, 2.5% of wells are rendered uneconomic by the policies
- An IDC repeal would lead to a shift of the wellhead breakeven curve to the right. This shift is particularly pronounced for private operators, which tend to have higher breakevens and are more affected by an IDC repeal
- A higher percentage of wells become uneconomic in a $50 price scenario due to more wells being in the ~$50 wellhead breakeven range. This could lead to reduced long-term drilling and completion activities, especially among smaller operators in a low-price environment
- Other basins, with less favorable breakevens could face even greater challenges, leading to reduced profitability and a sharper decline in drilling and completion activities due to IDC provision being removed

*Breakeven distribution sample based on Permian Midland horizontal wells put on production after 2020 **Indicates the proportion of economic wells that become uneconomic under an IDC repeal scenario
Source: Rystad Energy ShaleWellCube; Rystad Energy research and analysis

RystadEnergy

Navigating the future of energy

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