

Eat that Frog:

planning and paying for plugging



PURVIS ENERGY
ADVISORS

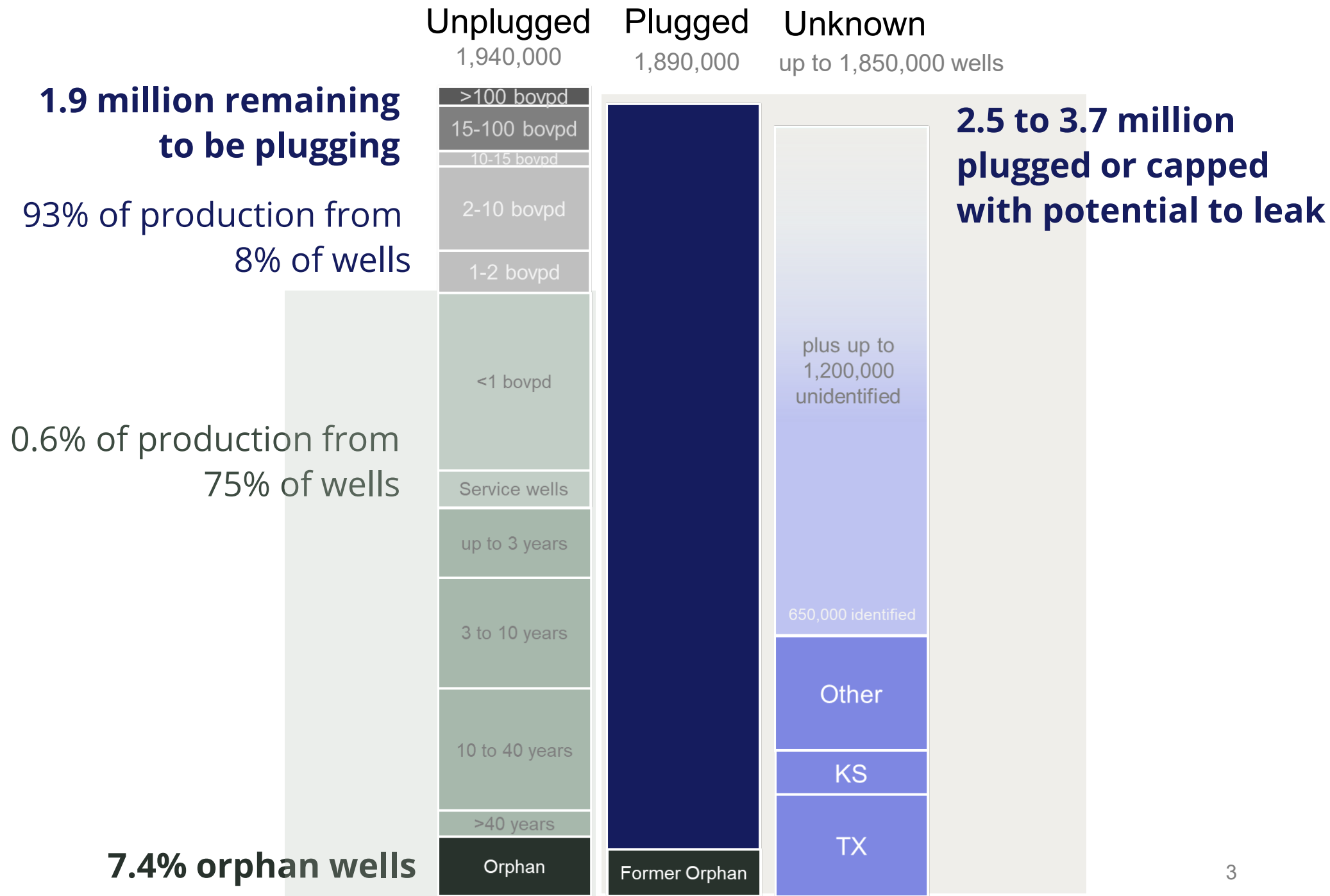
*Forging insight for oil and gas companies to
succeed in a changing energy landscape*

AAPL Annual Meeting
June 24, 2026

“One of the major
issues facing the
industry”



PURVIS ENERGY
ADVISORS



**Operators plug
19,700 wells per year
(2018 to 2023)**

~1.1% of wells / year
concentrated with
shale drilling

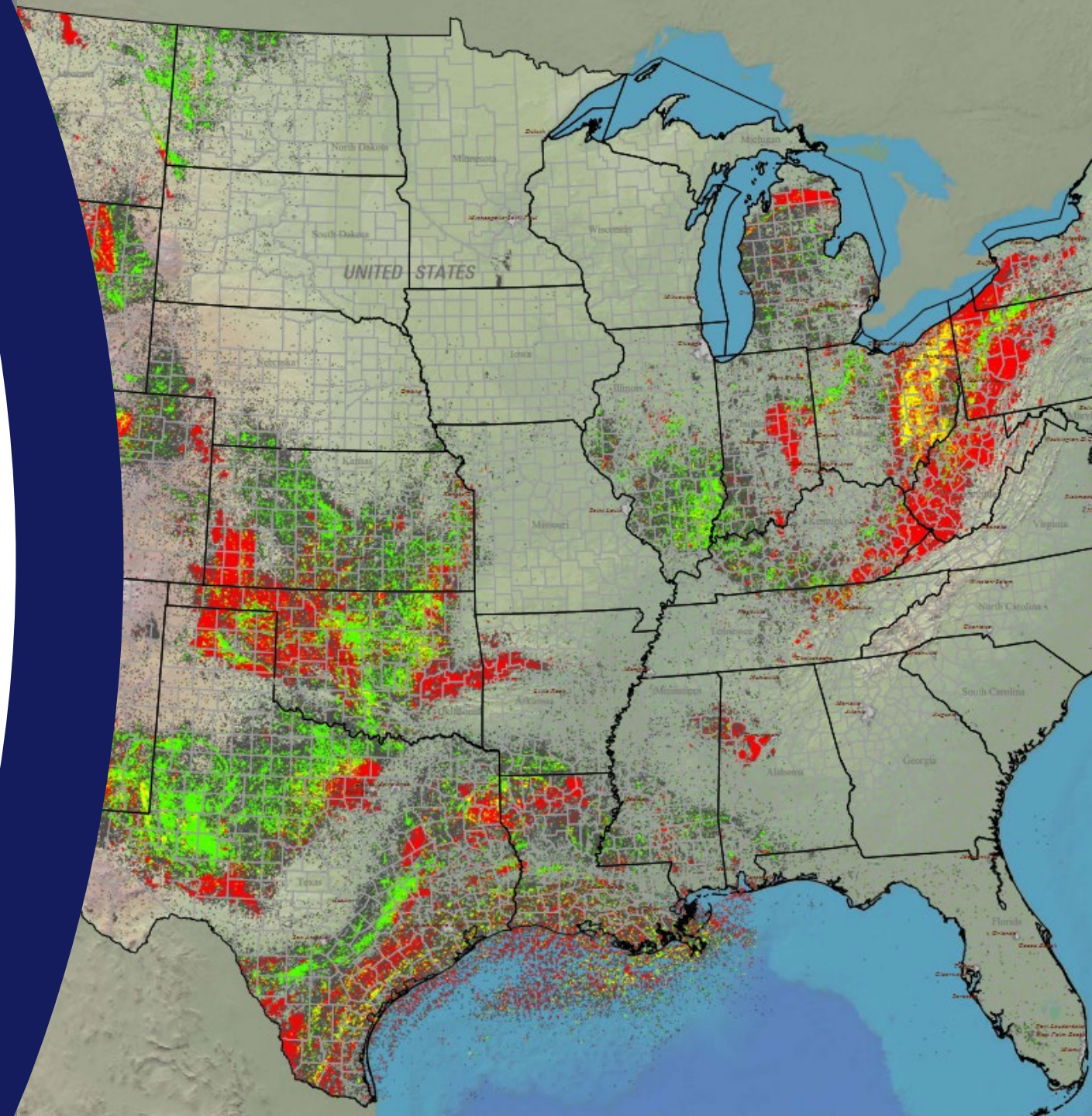
**Most low producers owned
by non-shale companies**

Unplugged

1,940,000

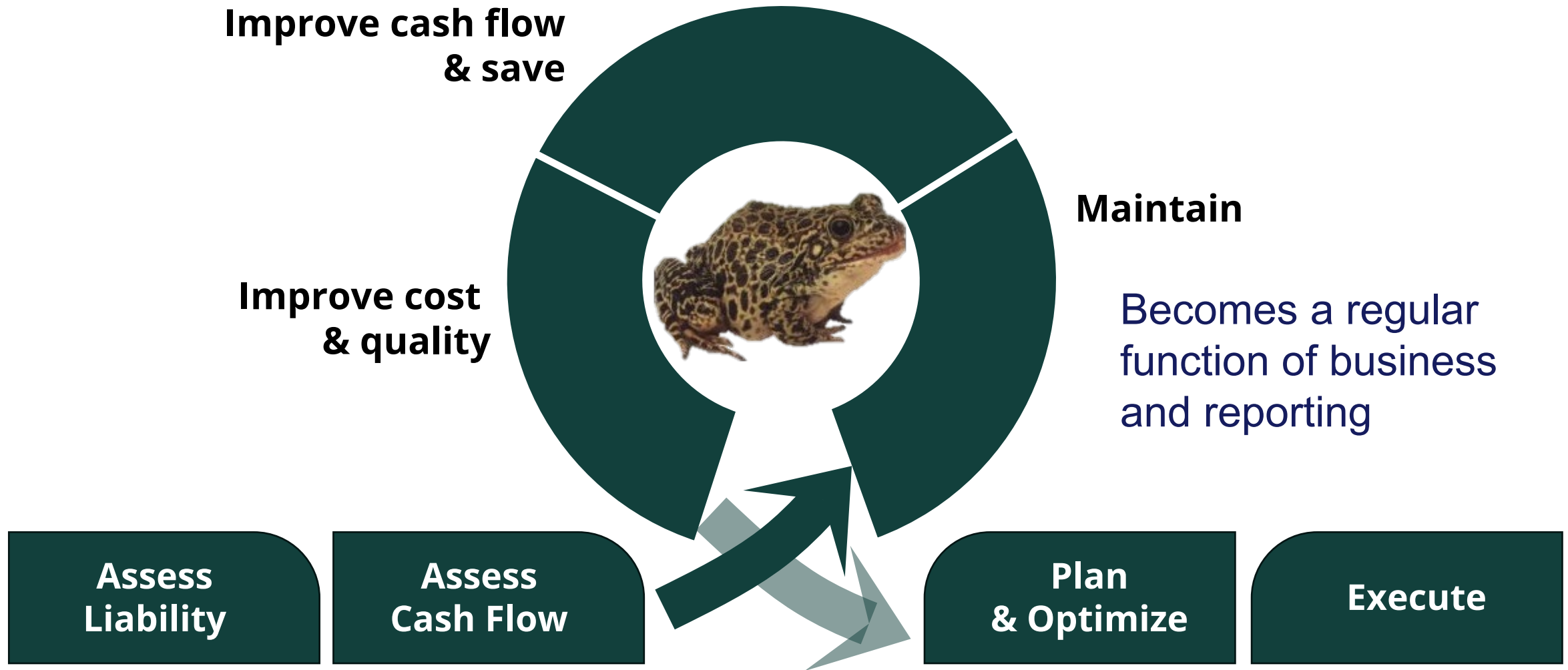


Decommissioning is
well-known
statutory
ethical
part of the business



“Failure to plan is a
plan to fail”





1. Scope of work beyond “plugging”

Downhole	Surface		Surface
Plugging (planned ops)	Removal	Wells sites Shared facilities	Restoration or Reclamation
Salvage	Salvage		
	Remediation		
Contingency	Contingency Remediation		Contingency
Legacy	Legacy		Legacy

1. Scope of work beyond “plugging”

“Abandonment, Decommissioning, and Restoration Costs”

ADR Costs per SPE

“Asset Retirement Obligations”

AROs per accountants

Downhole

Surface

Surface

Removal
(planned ops)

Removal

Shared facilities

Removal
or Reclamation

Salvage

Salvage

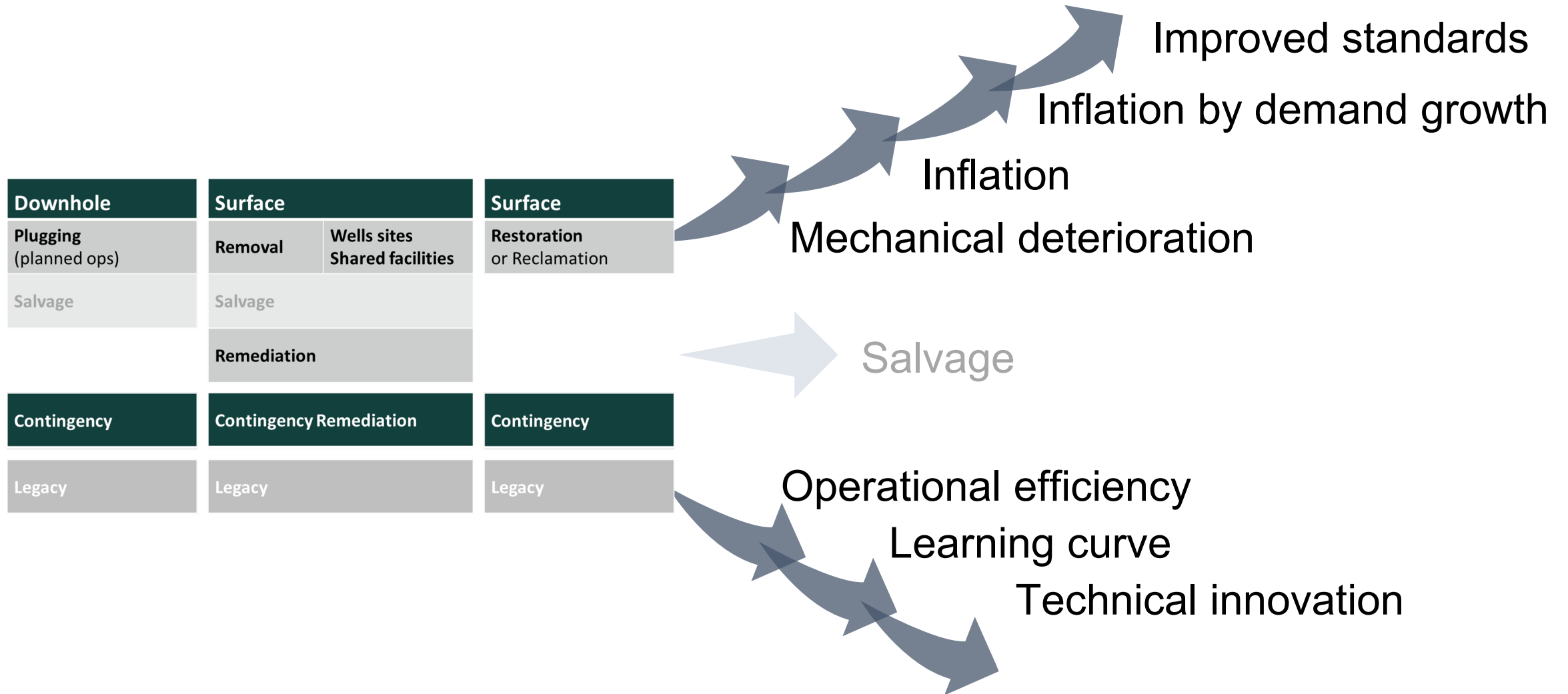
Contingency

Contingency Remediation

Contingency

Assess Liability

...and how it may change with time



Assess Liability

1. Scope of work

2. Priority of work

Besides timing for end of life. . .

Legal

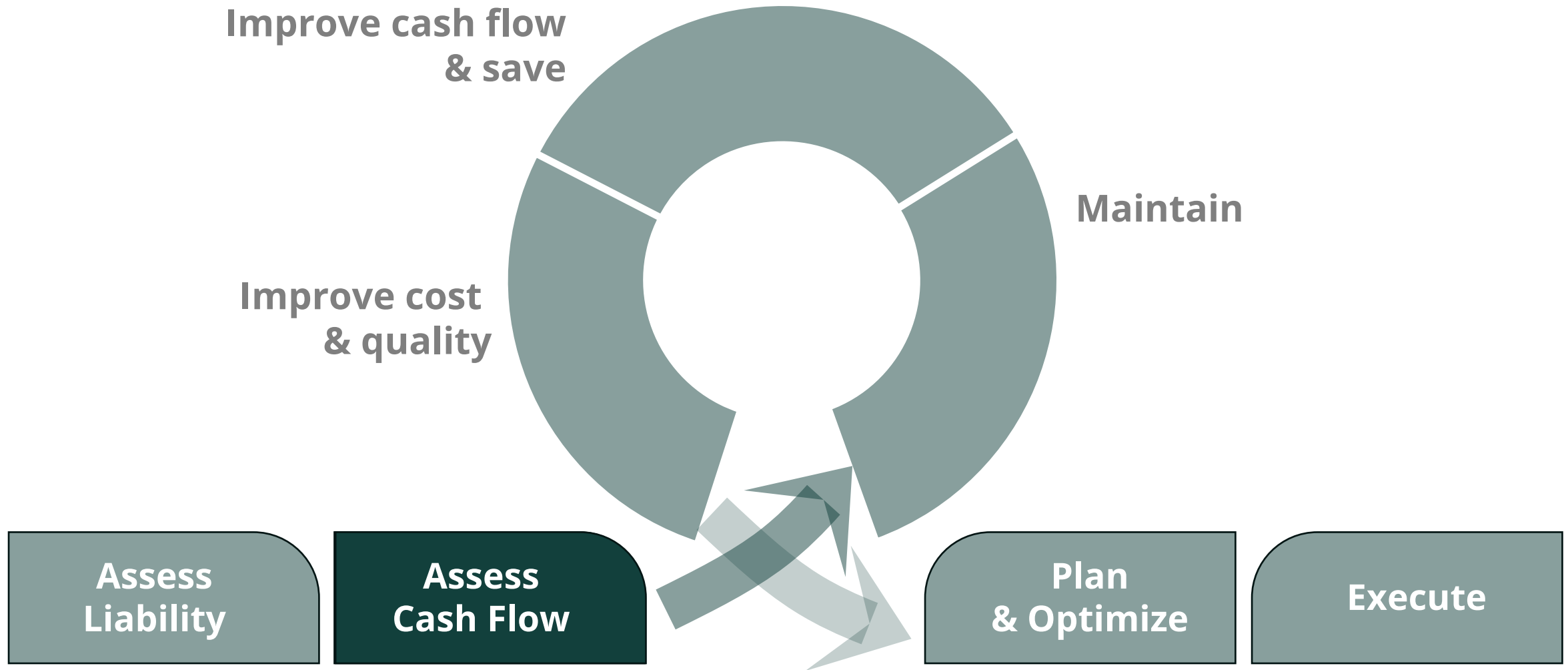
State regs
State law
Mineral lease
Landowner
Federal air/water

Risk of Failure

Historical leaks/failures
Current leaks/failures
Corrosivity of air, soil,
groundwater, prod fluids
Pressure
Mechanical risk (design,
depth, age)

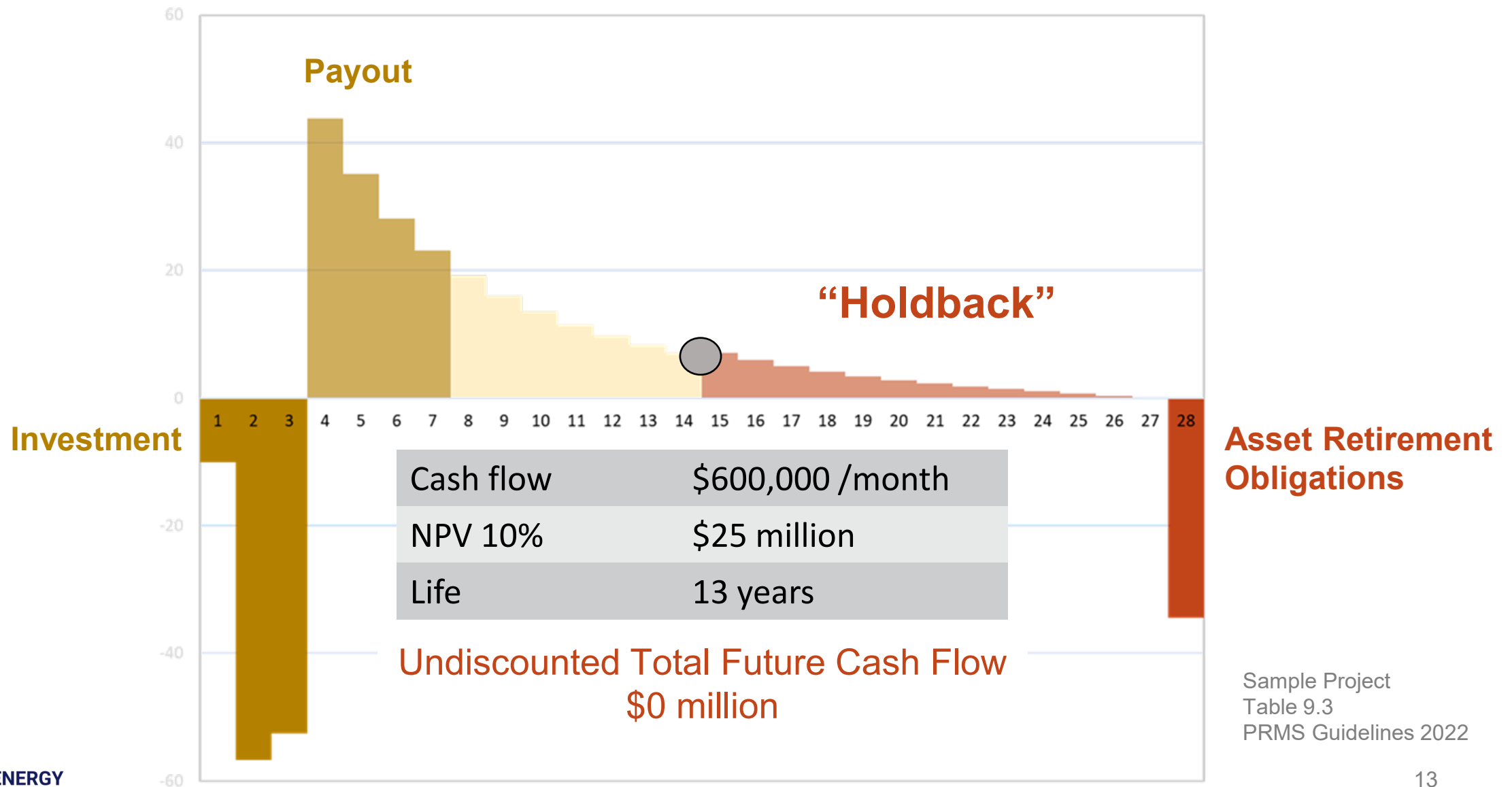
Consequences of Failure

Proximity to people and
structures
Proximity to fresh water
Pressure



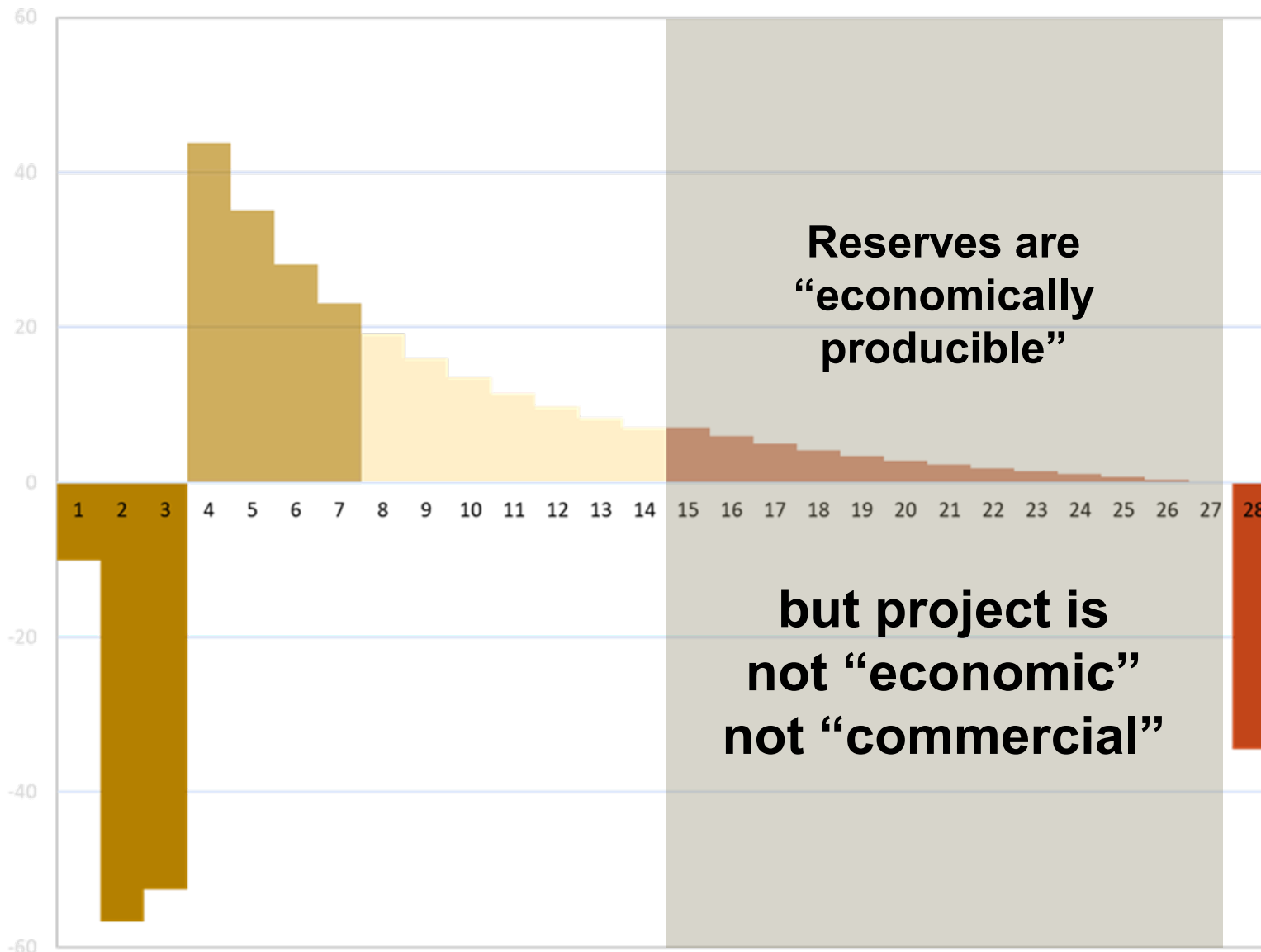
Assess Cash Flow

Using cash flow instead of NPV

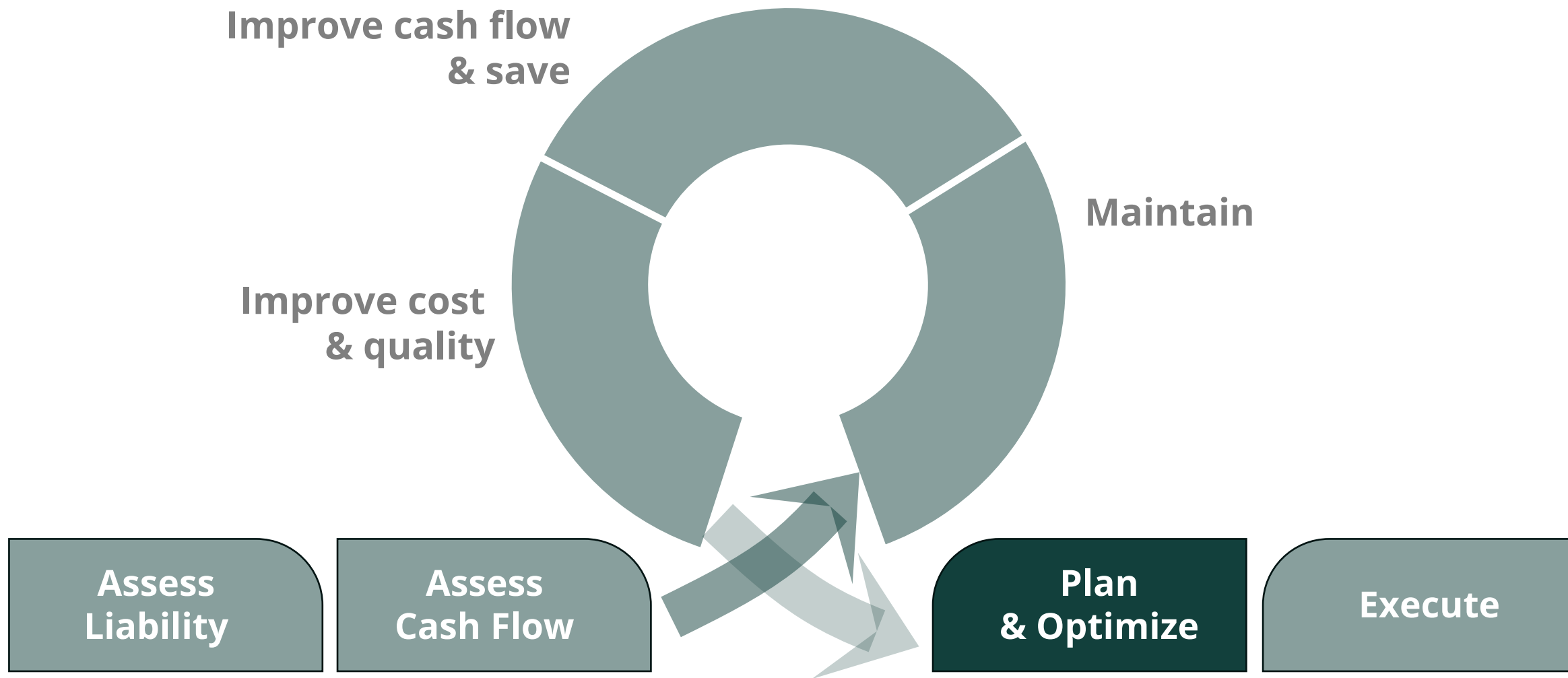


Assess Cash Flow

Using cash flow instead of NPV



Sample Project
Table 9.3
PRMS Guidelines 2022



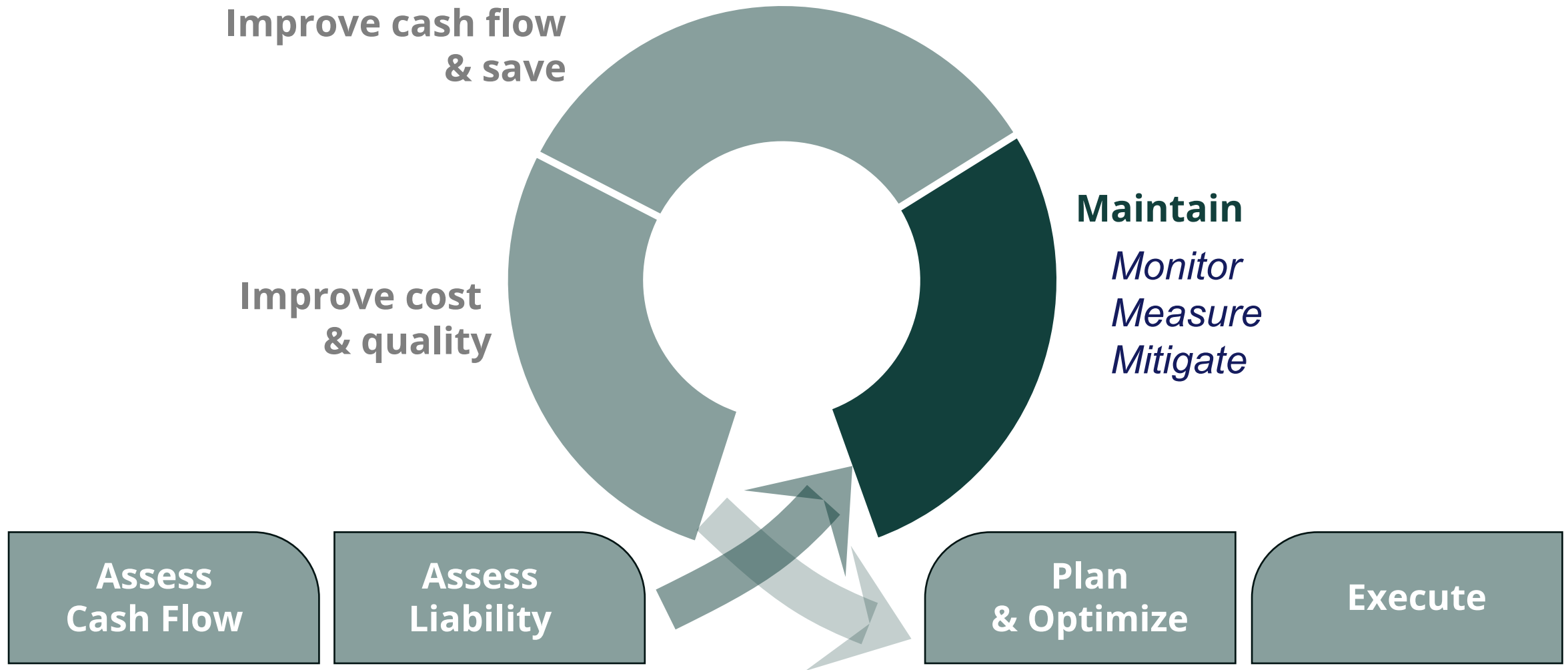
Plan & Optimize

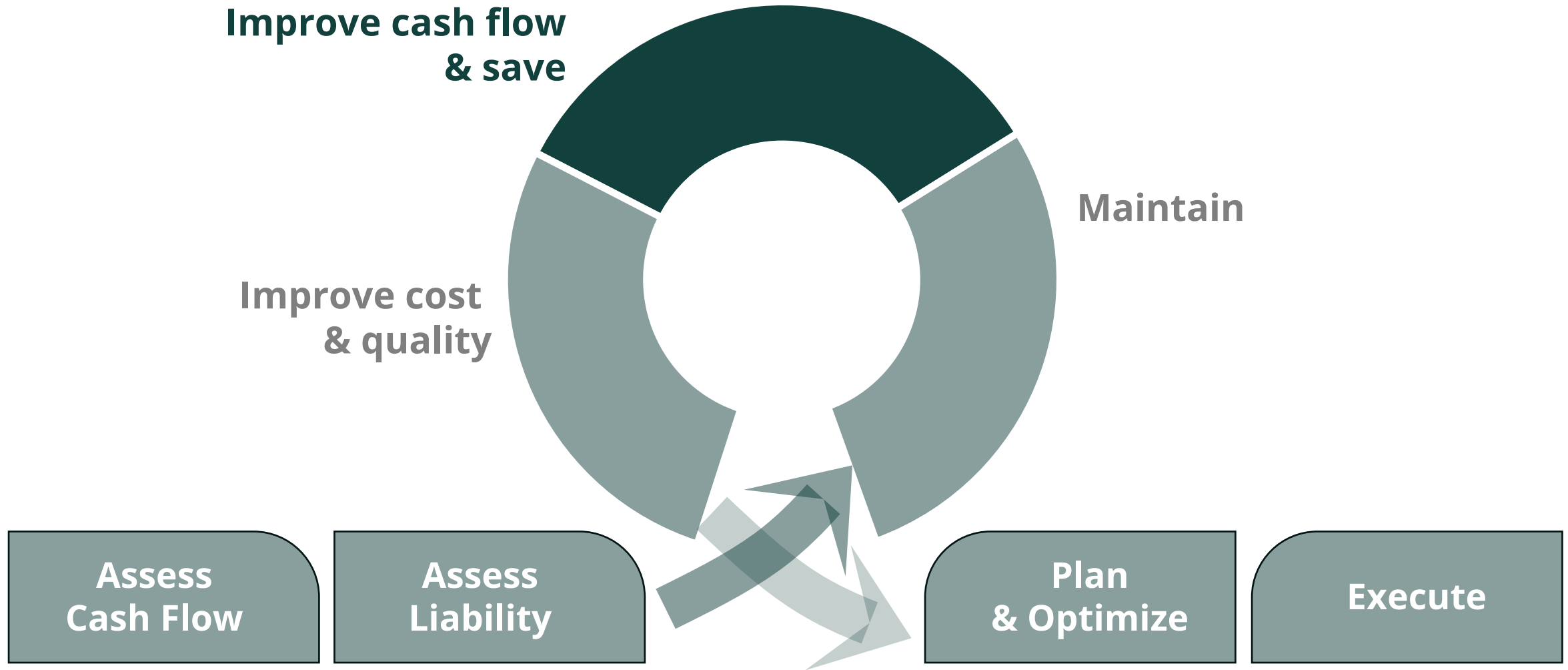
Custom Prioritization

Optimized Batches

Software can optimize overall program into batches using custom, multi-variable prioritization

...both short-term and long-term plans

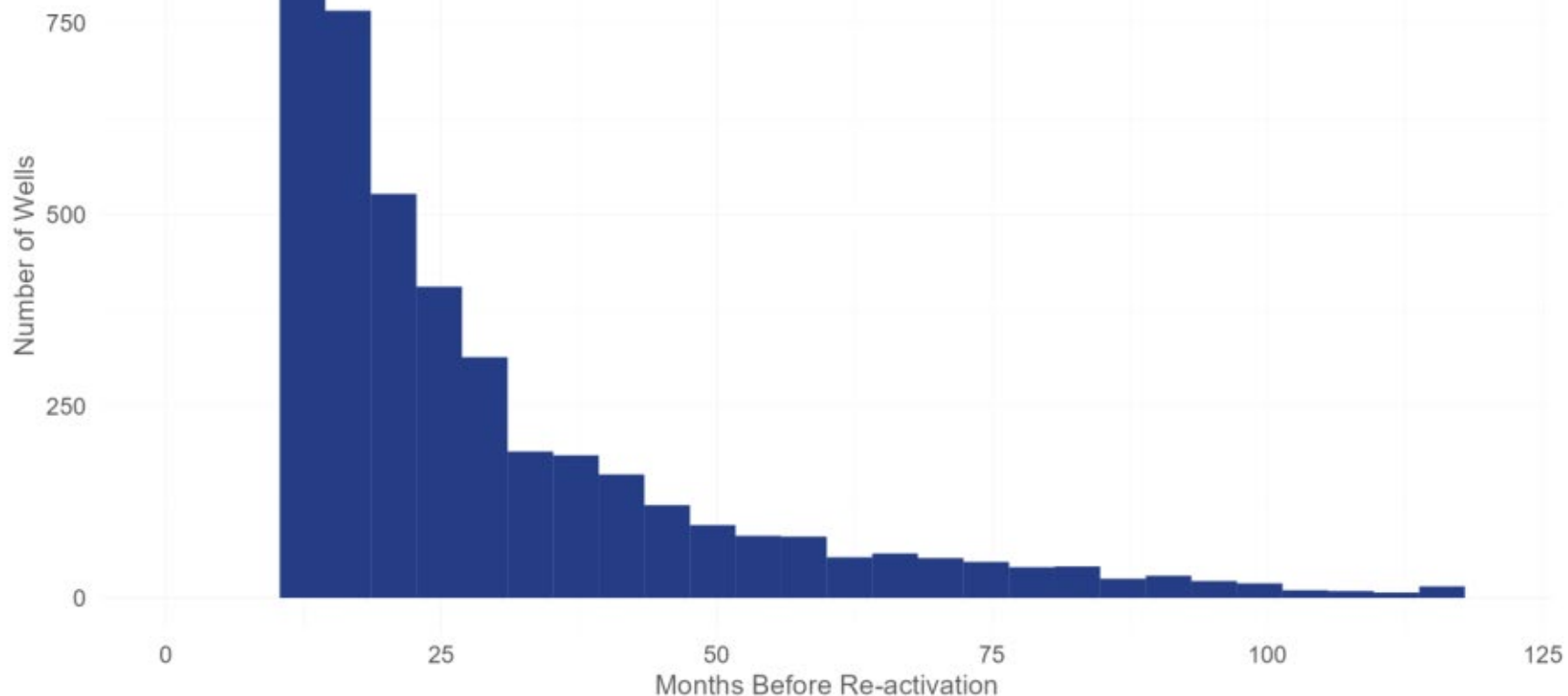




Improve cash flow

1. Produce more oil and gas

Longer idle => less likely to reactivate
Longer idle => less volume if reactivated



Histogram of time spent shut-in before reactivation for wells that were drilled during or after 1993, and shut-in between 2000 and 2010.

Adam Peltz
EDF
October 2024

Improve cash flow

1. Produce more oil and gas
2. **Re-purpose**

Lots of ideas. . .

Energy Storage	Geothermal	Carbon Sequestration	Other
Gravity Thermal Hydraulic	Direct use Refrigeration Low-temp generation High-temp generation	Supercritical Waste Liquid	Rare Earth Hydrogen with fire flood Hydrogen with bacteria

Improve cash flow

1. Produce more oil and gas
2. **Re-purpose**

Lots of ideas. . .

Energy Storage	Geothermal	Carbon Sequestration	Other
Gravity Thermal Hydraulic	Direct use Refrigeration Low-temp generation High-temp generation	Supercritical Waste Liquid	Rare Earth Hydrogen with fire flood Hydrogen with bacteria
<i>Proximity to demand</i> <i>Depth</i> <i>Mechanical</i>	<i>Heat flow</i> <i>Ability to fracture</i> <i>Proximity to need</i>	<i>Mechanical integrity</i> <i>Risk of leakage</i>	<i>Low yield</i> <i>Immature technology</i>

. . but limited application

. . .and none past pilot stage

Improve cash flow

1. Produce more oil and gas
2. Re-purpose
3. **Plug for carbon credits**

Orphan Wells

Idle Wells

Marginal Wells



Protocols only



Protocols and
Projects



ONYX
TRANSITION



Improve cash flow

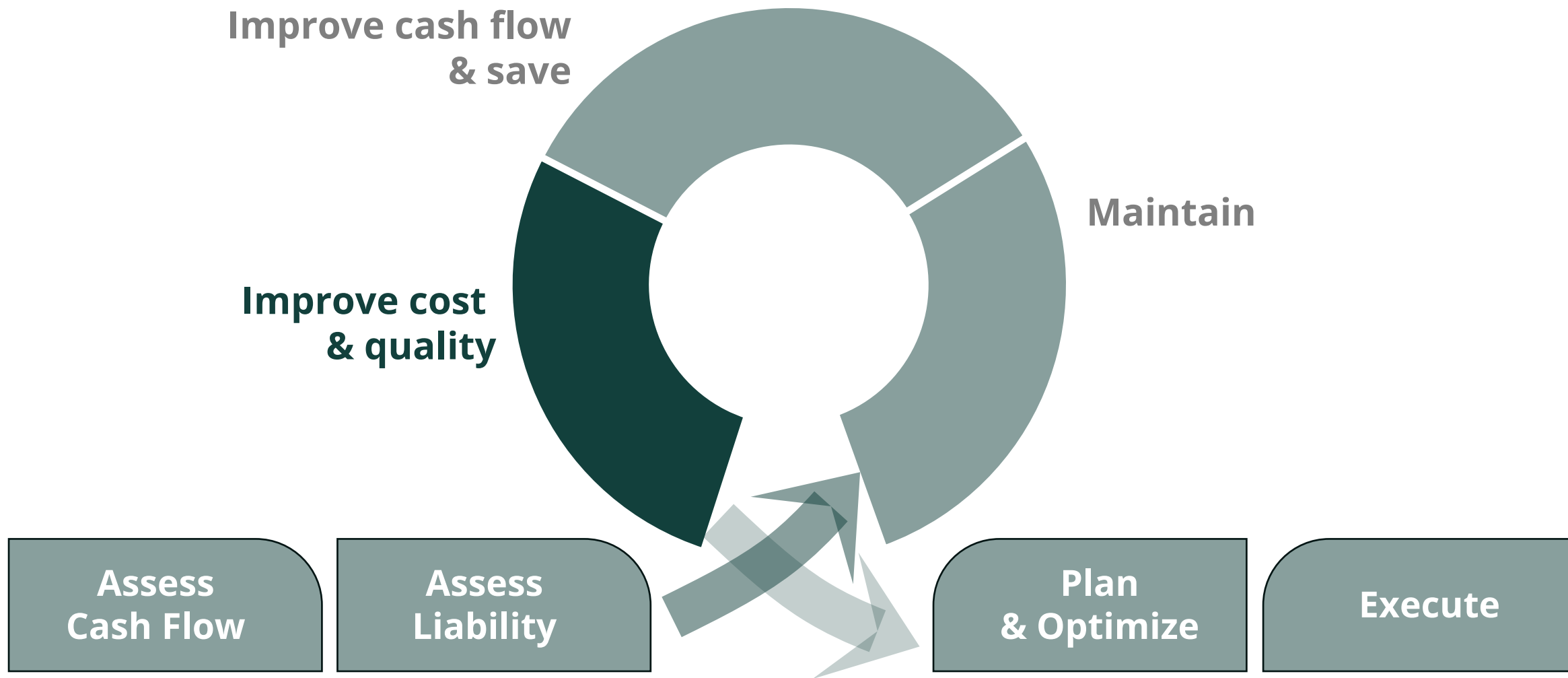
1. Produce more oil and gas
2. Re-purpose
3. Plug for carbon credits

4. **SAVE**

Bank, Escrow

“Whole life insurance”
for wells. . .







Improve cost
& quality

Performance of plugging depends on...

Products

Procedure

Profile

Placement

*after "Well Closure Collaboration: The State of Technical Knowledge" by Allan Fogwill,
Petroleum Technology Alliance of Canada, Oct 16 2024*

See also

**Payne Institute for
Public Policy**

"Best Methods for Abandoning an Idle Oil
Well and the Longevity of Wellbore
Cement" Jim Crompton Aug 21, 2025



Improve cost
& quality

Two active studies, more coming

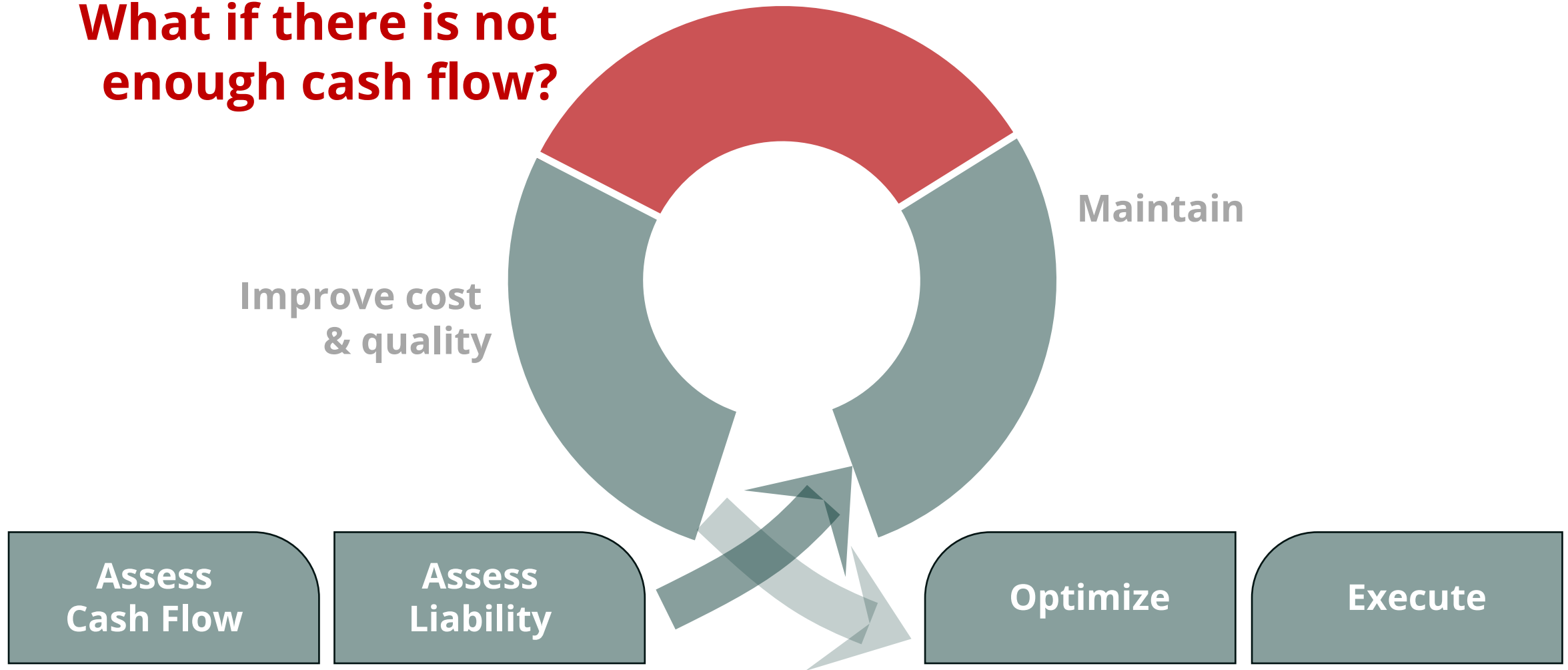
U.S. National Academies of Science, Engineering and Medicine

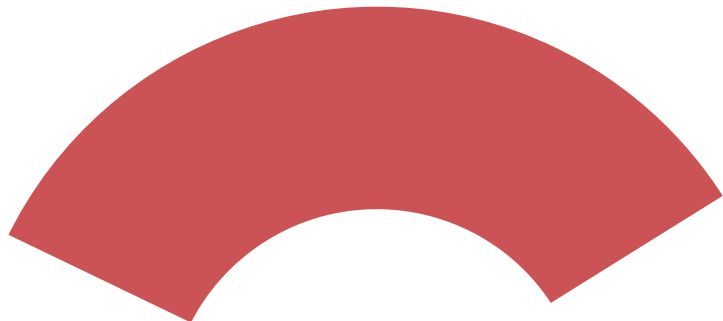
“Technologies and Practices for Plugging and Remediating Orphaned and Abandoned Oil and Gas Wells”

Petroleum Technology Alliance of Canada

“Plug and Abandon Strategies for Canada’s Oil & Gas Wells to stop Surface Casing Vent Flow (SCVF) and Gas Migration (GM)”

What if there is not enough cash flow?



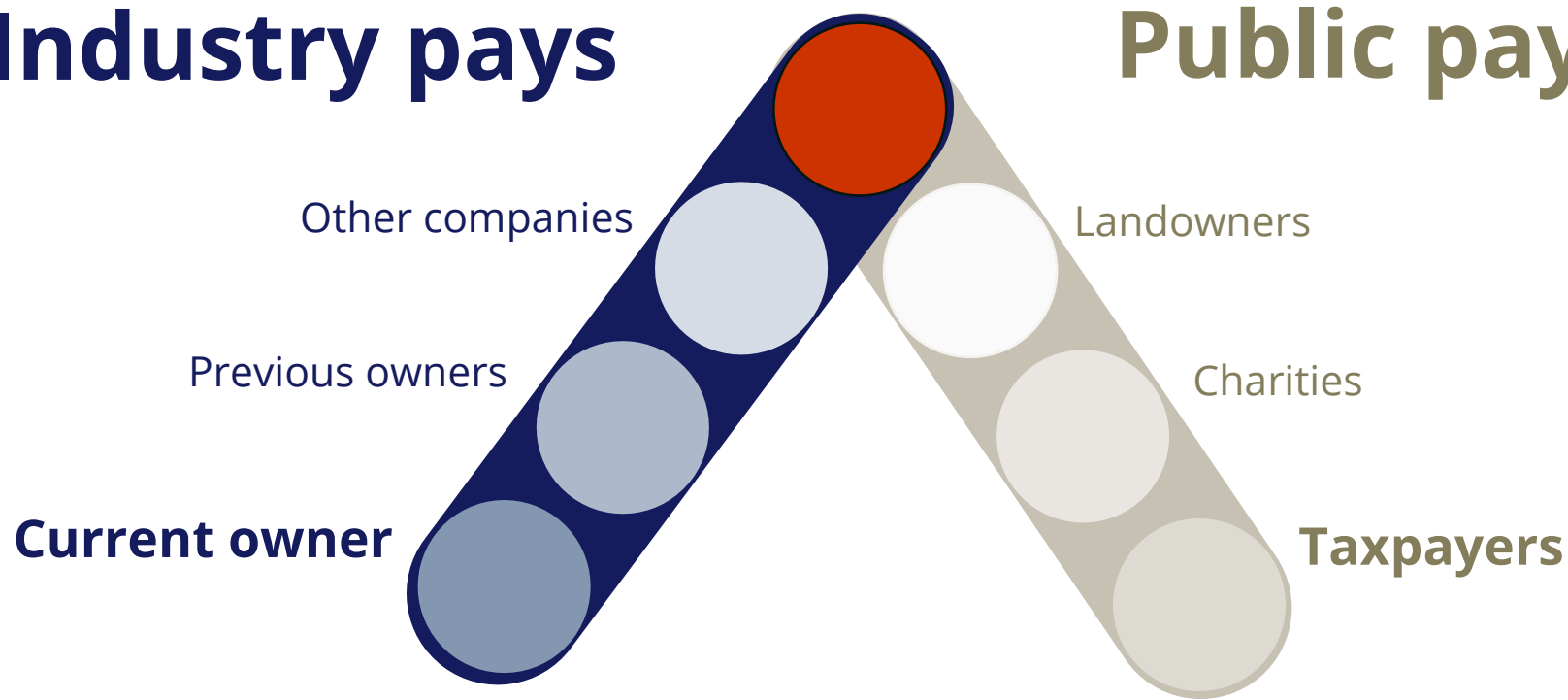


Only three basic options

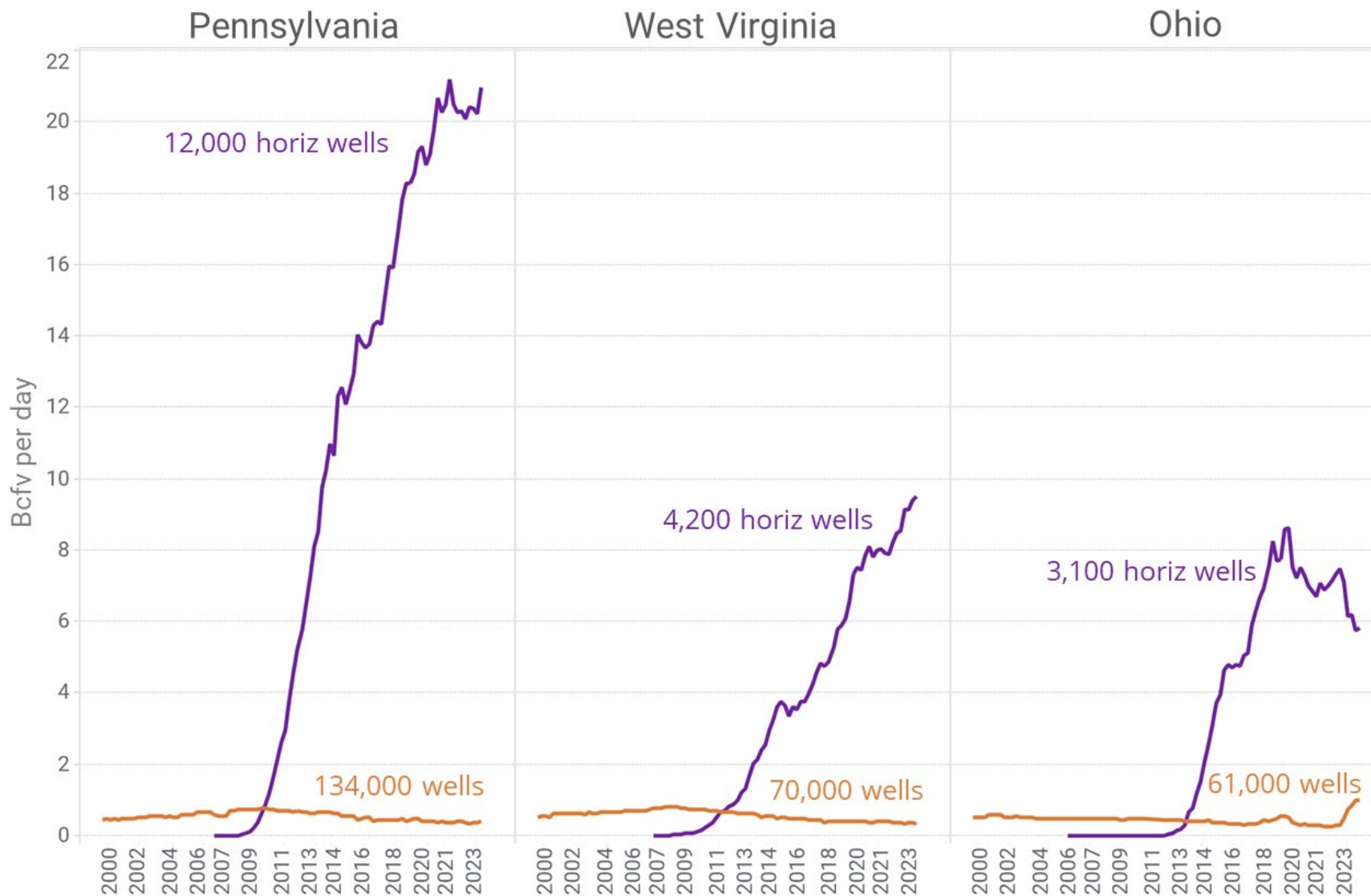
**Work not
performed**

Industry pays

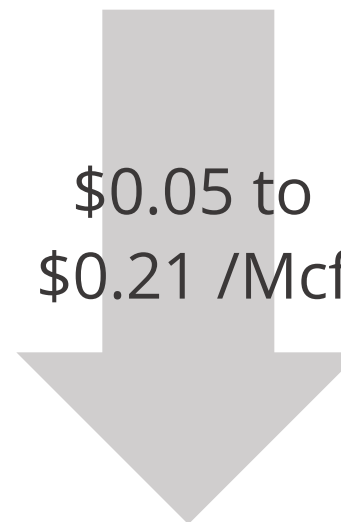
Public pays



*after "Filling the Hole, Part 2: The Solution" by Dwayne Purvis, Ted Boettner
Ohio River Valley Institutes, May 14 2025*



Existing shale wells
96% of PDP
\$6.5 billion



Existing non-shale wells
4% of PDP
\$31.8 billion

\$0.05 to
 \$0.21 /Mcf



Prohibitive or
impossible

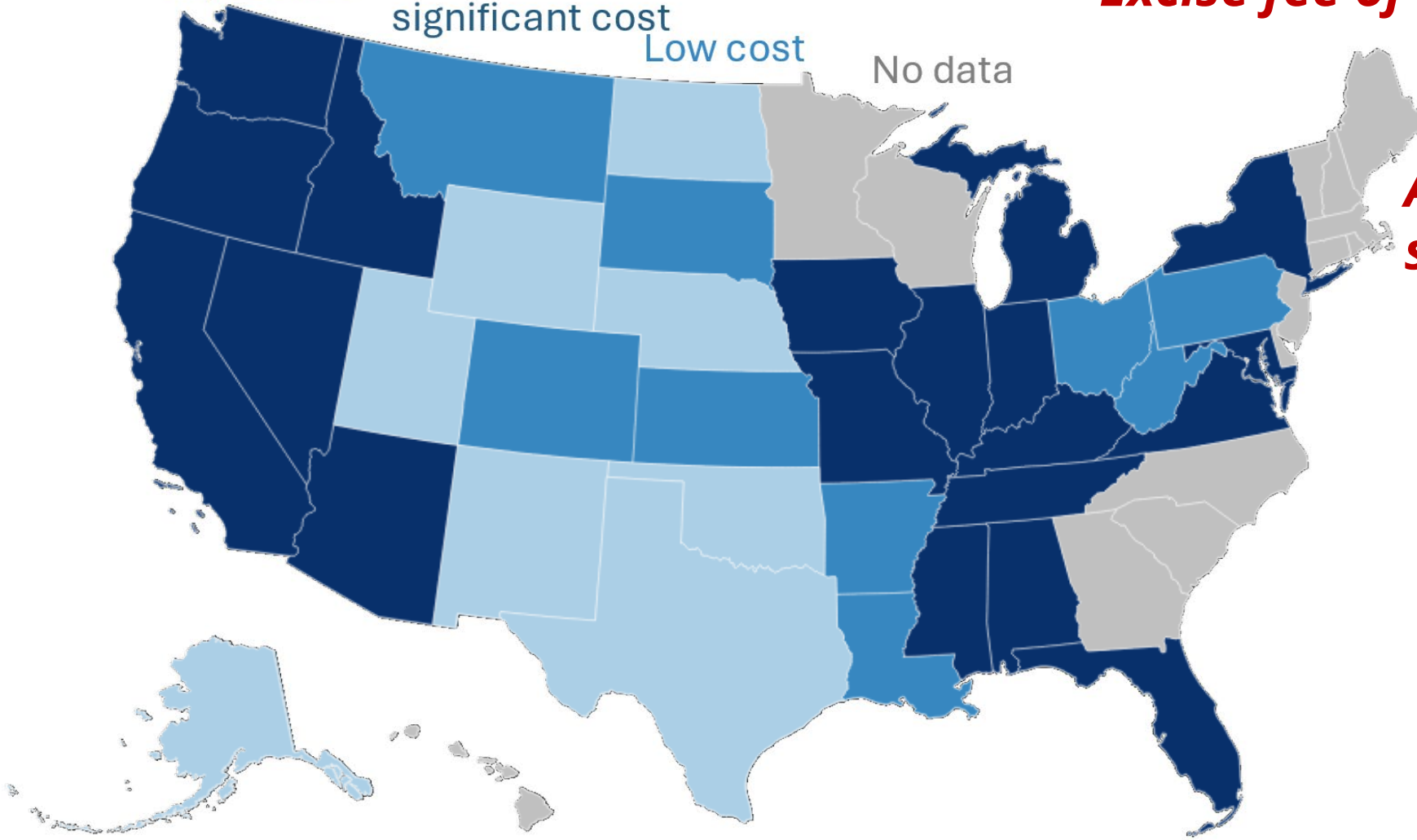
Modest or
significant cost

Low cost

No data

Excise fee of dollars per barrel

***Administered by gov't
sponsored entity***



Thank you.
Questions? Ideas?

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