Understanding the Impact of NOLs

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COST RECOVERY IN PETROLEUM FISCAL SYSTEMS

How Are Costs Recovered?

- Net Operating Losses (NOLs) are created in any year where the sum of the costs exceed the amount of revenue available for recovery of those costs

- For gross based fiscal systems, there is generally no allowance for cost recovery, as the tax is based on the revenue received, not net income
  - Most regimes allow costs to get hydrocarbons from the field or unit to the market to be deducted from sales revenues
  - Sales, and associated cost, to an affiliate are handled several different ways

- Conversely, cost recovery is one of the key elements of net based systems and there are many different mechanisms being used for costs recovery. For example:
  - "Cost Oil" in Production Sharing Agreements (PSAs)
  - Cost deductions, ranging from +/- 50% up to 100% of available revenue
  - Recovery over time as per a schedule, much like the depreciation of capital

What is the Value of Cost Recovery?

- Looking at the same project, but run against the fiscal systems in several different regimes, the net present value to the producer (and thus the net present cost to the government) varies greatly

- These variations are the result of several different rules of accounting for costs and NOLs
  - Which costs incurred are eligible for recovery?
  - How much time does it take to recover them?
  - Is there any interest or uplift provided?
  - Is there one or multiple tax rates ?
    (i.e. can the rate differ from when the NOL is created to when the NOL is recovered)?
  - Is the recovery of costs against the petroleum tax ultimately deductible against corporate income tax ?

- The combination of all of the above will inform the producers as to the attractiveness of the fiscal regime
  - The quicker a producer can recover their costs, the higher their NPV (attractiveness) and the lower their perceived risks

ALASKA NOLs AND THEIR IMPACT

How Are NOLs (Net Operating Losses) Created

- An NOL is created in a calendar year, when deducting allowable expenses the PTV (Production Tax Value) is less than zero

- The amount of deductible expenses below a zero PTV then become an NOL (Chart shows creation of a $500 NOL)

GVPP	**1000**
Allowable Expenses	1500
PTV	-500
NOL Created	500

- Under the current structure, the $500 in NOL would be converted at 35%, resulting in a cashable credit of $175. This **$175** represents the maximum value of that NOL to the producer which we will refer to as **100% "useful"**.

What is the Benefit of a CF (Carry Forward) NOL ?

- Much like deducting mortgage interest from your personal income tax, producers deduct their expenses and carry forward NOLs to reduce the amount of tax they will ultimately pay

- In a simple system (like most world-wide petroleum fiscal systems) the tax savings should approximate the tax rate times the CF NOL

CF NOL	**500**
Petroleum Tax Rate	35%
Expected Tax Savings	175

- However, the presence of other mechanisms, such as other credits and deductions, can reduce the amount of savings actually realized from deducting CF NOLs
  - i.e. the producer no longer receives 100% of the expected $175 NOL value

What is the Benefit of a Carry Forward NOL in AK ?

- Carry Forward NOLs ("CF NOLs") can be generated by any petroleum tax payer but likely will mainly apply to projects on the North Slope

- Modeling shows that the value to the taxpayer of the CF NOLs can be negatively impacted by credits or other mechanisms within the fiscal system:
  - For GVR Fields
    - The Gross Value Reduction applied to the GVPP
    - The $5/bbl tax credit
    - A gross minimum tax if a hard floor is adopted as per CSHB111
  - For non-GVR Fields
    - The sliding scale of per barrel tax credits
    - The gross minimum tax hard floor

- Ultimately, the above items can serve to greatly reduce the impact one might think that CF NOLs would have resulting in the taxpayer receiving only a fraction of the expected benefit (less than 100% useful)

GVR Example

- We have created a hypothetical situation in order to show the impact on the state petroleum tax take of a taxpayer using CF NOLs

- Look at a 5 year snap shot
  - Constant GVPP value of $400/year
  - Costs running $100/year
  - Petroleum tax rate of 35%
  - GVR of 20% of the GVPP
  - Per barrel tax credits
  - $500 CF NOL

- We will look at examples with and without a ‘hard floor’

- We will examine how the petroleum tax savings to the producer compare to the expected 100% useful amount of $175 in tax savings

GVR Example – Low Prices

- Without any CF NOLs, for our example GVR field at low prices the total tax owed over the 5 years would be $185

	1	2	3	4	5	Total
GVPP	400	400	400	400	400	2000
GVR	80	80	80	80	80	400
Adj GVPP	320	320	320	320	320	1600
Less Costs	100	100	100	100	100	500
PTV	220	220	220	220	220	1100
NOLs Avail	0	0	0	0	0	
NOLs Used	0	0	0	0	0	0
Adj PTV	220	220	220	220	220	1100
Tax @ 35%	77	77	77	77	77	385
Per bbl credit	40	40	40	40	40	200
Adj Tax	37	37	37	37	37	185
Min Tax @4%	0	0	0	0	0	0
Tax Paid	37	37	37	37	37	185
Income BCIT	183	183	183	183	183	915

* The per barrel credit in this example is set for ease of example, not by calculation

GVR Example – Low Prices, No Hard Floor

- With $500 of CF NOLs applied at low prices, if the CF NOLs were 100% useful we would expect to see a $175 tax savings and taxes owed of $10

	1	2	3	4	5	Total
GVPP	400	400	400	400	400	2000
GVR	80	80	80	80	80	400
Adj GVPP	320	320	320	320	320	1600
Less Costs	100	100	100	100	100	500
PTV	220	220	220	220	220	1100
NOLs Avail	500	280	60	0	0	
NOLs Used	220	220	60	0	0	500
Adj PTV	0	0	160	220	220	600
Tax @ 35%	0	0	56	77	77	210
Per bbl credit	40	40	40	40	40	200
Adj Tax	0	0	16	37	37	90
Min Tax @4%	0	0	0	0	0	0
Tax Paid	0	0	16	37	37	90
Income BCIT	220	220	204	183	183	1010

- But, the tax savings using NOLs is far less, due to the per barrel credit
  - We didn't have to take the PTV to zero, we could have taken it down to $40 and then used the per barrel credit
- The **producer only received 54% of the expected benefit**. Said another way, only $260 of his $500 value of CF NOL lowered his taxes

GVR Example – Low Prices, Hard Floor

- With the addition of a hard gross minimum tax floor for GVR fields at low prices, the producer realizes even less value from his CF NOLs.

	1	2	3	4	5	Total
GVPP	400	400	400	400	400	2000
GVR	80	80	80	80	80	400
Adj GVPP	320	320	320	320	320	1600
Less Costs	100	100	100	100	100	500
PTV	220	220	220	220	220	1100
NOLs Avail	500	280	60	0	0	
NOLs Used	220	220	60	0	0	500
Adj PTV	0	0	160	220	220	600
Tax @ 35%	0	0	56	77	77	210
Per bbl credit	40	40	40	40	40	200
Adj Tax	0	0	16	37	37	90
Min Tax @4%	16	16	16	16	16	80
Tax Paid	16	16	16	37	37	122
Income BCIT	204	204	204	183	183	978

- Now the producer receives **only 36% of the expected benefit**. 64% of the expected benefit was offset by the per barrel credits and the gross minimum tax hard floor.
  - We didn't have to take the PTV to zero, we could have taken it down to $56 and then used the per barrel credit to eliminate taxes

GVR Example – Higher Prices, No Hard Floor

- The previous examples were indicative of low prices. Let's now look at higher prices (GVPP increased 25% to $500), but all else unchanged

	1	2	3	4	5	Total
GVPP	500	500	500	500	500	2500
GVR	100	100	100	100	100	500
Adj GVPP	400	400	400	400	400	2000
Less Costs	100	100	100	100	100	500
PTV	300	300	300	300	300	1500
NOLs Avail	0	0	0	0	0	
NOLs Used	0	0	0	0	0	0
Adj PTV	300	300	300	300	300	1500
Tax @ 35%	105	105	105	105	105	525
Per bbl credit	40	40	40	40	40	200
Adj Tax	65	65	65	65	65	325
Min Tax @4%	0	0	0	0	0	0
Tax Paid	65	65	65	65	65	325
Income BCIT	235	235	235	235	235	1175

- Without use of any CF NOLs, the total tax paid would be $325.
  With $500 of CF NOL being 100% useful, the tax owed should come down to $150. (The $175 in savings)

GVR Example – Higher Prices, No Hard Floor

- Add in $500 of CF NOLs

	1	2	3	4	5	Total
GVPP	500	500	500	500	500	2500
GVR	100	100	100	100	100	500
Adj GVPP	400	400	400	400	400	2000
Less Costs	100	100	100	100	100	500
PTV	300	300	300	300	300	1500
NOLs Avail	500	200	0	0	0	
NOLs Used	300	200	0	0	0	500
Adj PTV	0	100	300	300	300	1000
Tax @ 35%	0	35	105	105	105	350
Per bbl credit	40	40	40	40	40	200
Adj Tax	0	0	65	65	65	195
Min Tax @4%	0	0	0	0	0	0
Tax Paid	0	0	65	65	65	195
Income BCIT	300	300	235	235	235	1305

- At this higher price taxes are larger than the per barrel credits so the presence of NOLs has more impact
- The **producer would realize roughly 74% of the expected benefit** of the CF NOLs, or substantially more than at lower prices

GVR Example – Higher Prices, Hard Floor

- Add a hard floor to the mix

	1	2	3	4	5	Total
GVPP	500	500	500	500	500	2500
GVR	100	100	100	100	100	500
Adj GVPP	400	400	400	400	400	2000
Less Costs	100	100	100	100	100	500
PTV	300	300	300	300	300	1500
NOLs Avail	500	200	0	0	0	
NOLs Used	300	200	0	0	0	500
Adj PTV	0	100	300	300	300	1000
Tax @ 35%	0	35	105	105	105	350
Per bbl credit	40	40	40	40	40	200
Adj Tax	0	0	65	65	65	195
Min Tax @4%	20	20	20	20	20	100
Tax Paid	20	20	65	65	65	235
Income BCIT	280	280	235	235	235	1265

- The hard floor, much like the per barrel credits, negates or “wastes” the value of some of the NOLs
- In this situation the **producer would realize roughly 50%** of the expected benefit of the CF NOLs

What is the Takeaway?

- Because of the interaction of the various mechanisms within the fiscal structure, no one item should be viewed stand alone and care should be taken to make sure the level and degree of inter-dependency is understood.

- So long as Alaska keeps some form of GVR, per barrel credits and hard floors related to gross minimum taxes, the impact of CF NOLs will range from slightly less to much less than what one would expect.

- Changing other mechanisms, such as increasing the minimum tax or reducing per barrel credits, will alter the value to the producer and the impact to the state for CF NOLs.

- A full field life cycle model able to run any number of real time what if scenarios is needed so that any changes made can be viewed to see their impact on state take.

Non - GVR Example – Low Prices

- For a Non-GVR example at low prices, with only the sliding per barrel credits and gross minimum tax applied the total tax owed is only $80
- Applying $500 CF NOLs then by definition can be worth no more than $80 or **at most 45% of the potential NOL value of $175**

	1	2	3	4	5	Total
GVPP	400	400	400	400	400	2000
Less Costs	240	240	240	240	240	1200
PTV	160	160	160	160	160	800
NOLs Avail	0	0	0	0	0	
NOLs Used	0	0	0	0	0	0
Adj PTV	160	160	160	160	160	800
Tax @ 35%	56	56	56	56	56	280
Per bbl cred	64	64	64	64	64	320
Adj Tax	0	0	0	0	0	0
Min Tax @4	16	16	16	16	16	80
Tax Paid	16	16	16	16	16	80
Income BCI	144	144	144	144	144	720

Non - GVR Example – Low Prices

- The use of $500 of CF NOLs has zero impact on the tax owed as they must be used first to reduce the PTV to zero

	1	2	3	4	5	Total
GVPP	400	400	400	400	400	2000
Less Costs	240	240	240	240	240	1200
PTV	160	160	160	160	160	800
NOLs Avail	500	340	180	20	0	
NOLs Used	160	160	160	20	0	500
Adj PTV	0	0	0	140	160	300
Tax @ 35%	0	0	0	49	56	105
Per bbl cred	64	64	64	64	64	320
Adj Tax	0	0	0	0	0	0
Min Tax @4	16	16	16	16	16	80
Tax Paid	16	16	16	16	16	80
Income BCI	144	144	144	144	144	720

- At low unit prices, the combination of the per barrel credits and the minimum tax results in **0% value to the producer;** or said another way no lost taxes by the state due to the use of CF NOLs

Non - GVR Example – Higher Prices

- Using the same increase as in the GVR high price example, the tax paid grows to $135

	1	2	3	4	5	Total
GVPP	500	500	500	500	500	2500
Less Costs	240	240	240	240	240	1200
PTV	260	260	260	260	260	1300
NOLs Avail	0	0	0	0	0	
NOLs Used	0	0	0	0	0	0
Adj PTV	260	260	260	260	260	1300
Tax @ 35%	91	91	91	91	91	455
Per bbl cred	64	64	64	64	64	320
Adj Tax	27	27	27	27	27	135
Min Tax @4	20	20	20	20	20	100
Tax Paid	27	27	27	27	27	135
Income BCI	233	233	233	233	233	1165

- Although revenues increased $100 per year ($500 overall), the combination of the per barrel credits and the minimum tax results in only a limited increase in taxes paid to the state (11% or $55/$500)

Non - GVR Example – Higher Prices

- With $500 of CF NOLs used , the tax paid is only reduced from $135 to $121

	1	2	3	4	5	Total
GVPP	500	500	500	500	500	2500
Less Costs	240	240	240	240	240	1200
PTV	260	260	260	260	260	1300
NOLs Avail	500	240	0	0	0	
NOLs Used	260	240	0	0	0	500
Adj PTV	0	20	260	260	260	800
Tax @ 35%	0	7	91	91	91	280
Per bbl cred	64	64	64	64	64	320
Adj Tax	0	0	27	27	27	81
Min Tax @4	20	20	20	20	20	100
Tax Paid	20	20	27	27	27	121
Income BCI	240	240	233	233	233	1179

- The **producer only realizes 9% of the useful CF NOL** relative to the maximum value of $175

Further Takeaways

- Use of CF NOLs has different producer value and state impact depending on the overall price level and the interaction of other credit mechanisms
- The producer will only begin to realize the full benefit of cost recovery at very high prices where the gross minimum does not come into play and the per barrel credits are greatly diminished or absent
- Only with full modeling can a somewhat clearer picture of the impact of NOLs be seen within the current SB21 based system
- It is clear that at low prices CF NOLs have much less impact than CF credits