Proposed Changes to NPSL Regulations

Public Workshop on the Proposed Changes to the Production Tax Lease Allowance under 11 AAC 83.241

Division of Oil and Gas

Wednesday, March 22nd, 2017

Contents of the presentation

1. Introduction
2. What is the Production Tax Lease Allowance (“PTLA”)?
3. Mutual dependency (i.e., “cross deductibility”)
4. Current solution
5. Proposed solution
6. Examples
7. Proposed changes related to HB 247
8. Update to the NPSL template
9. Additional information

1. Introduction

- On **February 14th**, 2017, DNR issued a public notice proposing changes to regulations…
  1. That would modify the calculation of the Production Tax Lease Allowance (PTLA) under 11 AAC 83.241;
     - Introduction of the "net credit augmentation rate" ("NCAR");
     - Changes related to the implementation of HB 247.
  2. That would repeal the exploration incentive credit under 11 AAC Ch. 89; and
  3. That would make changes to
     - Allow for electronic communication with the Royalty Board under 11 AAC 03.040;
     - Clarify the retroactivity of the proposed changes under 11 AAC 83.245 and 11 AAC 83.290;
     - Allow for electronic communication with the DNR Commissioner and update the DNR address under 11 AAC 83.250 and 11 AAC 83.255;
- On **March 1st**, 2017, DNR issued a supplemental notice to…
  A. Modify the proposed amendments to the PTLA;
     - Refine the applicability of the NCAR in relation to the GVR and the credits.
     - Update the "NPSL template."
  B. Extend the public comment period to April 6th, 2017; and
  C. Change the date of the public workshop to March 22nd, 2017.
- Today's public workshop will be related to the **proposed changes to the PTLA**.

1. Introduction

- Net Profit Share Leases
  - → There are 23 NPSLs in the North Slope.
  - → 10 NPSLs are in payout status as of December 2016.

NPSLs **in payout** status as of December 2016

Colville River	364470	30%	1984
	364471	30%	1984
	364472	30%	1984
Duck Island	312828	79.59%	1979
	312834	48.87%	1979
Milne Point	355016	40%	1983
	355017	40%	1983
	355018	30%	1983
	355021	30%	1983
	388235	30%	1983

NPSLs **not in payout** status as of December 2016

Nikaitchuq	391283	30%	1983
Oooguruk	355036	30%	1983
	355037	30%	1983
	355038	30%	1983
Point Thomson	312866	52.35%	1980
	343109	40%	1982
	343110	40%	1982
	343111	40%	1982
	343112	40%	1982
Kuparuk River	355023	30%	1983
	355024	30%	1983
	355030	30%	1983
	355032	30%	1983

- Motivation for the proposed changes to the PTLA

1. To implement the changes brought about by **HB 247**.
   - → Expiration date and restrictions on the use of the GVR.
2. To correct the potential **overestimation of the PTLA**.

   If the NPSL is in payout status, the calculation of the PTLA needs the use of the "**net credit augmentation rate**"…
   - → If the NPSL has production qualifying for GVR under AS 43.55.160(f); or
   - → If both (i) the NPSL generates credits as specified under 11 AAC 83.241(c) and (ii) the estimate of the "production tax before credits" is greater than the "minimum tax" generated by the NPSL.

2. What is the PTLA?

- The PTLA is an element used in the net profit share lease ("NPSL") accounting.

$$\begin{matrix}\text{preliminary}\\ \text{ending balance}\end{matrix} = \begin{matrix}\text{beginning balance}\\ \text{of development account}\end{matrix} + \begin{matrix}\text{development}\\ \text{costs}\end{matrix} - \begin{matrix}\text{production}\\ \text{revenue}\end{matrix}$$

$$\begin{matrix}\text{production}\\ \text{revenue}\end{matrix} = \begin{matrix}\text{gross}\\ \text{revenue}\end{matrix} - \text{royalty} - \begin{matrix}\text{direct}\\ \text{operating costs}\end{matrix}$$

$$\begin{matrix}\text{direct}\\ \text{operating}\\ \text{costs}\end{matrix} = \begin{matrix}\text{operating}\\ \text{costs}\end{matrix} + \begin{matrix}\text{overhead}\\ \text{allowance}\\ \text{for opex}\end{matrix} + \begin{matrix}\text{property}\\ \text{tax}\end{matrix} + \begin{matrix}\text{conservation}\\ \text{tax}\end{matrix} + \text{PTLA} + \text{abandonment}$$

→ The NPSL will be in "payout status" whenever the production revenue is greater than the beginning balance plus the development costs.

→ The PTLA is **an estimate** of the contribution to the production tax liability generated by the NPSL.

2. What is the PTLA?

- Since the PTLA is an estimate of the production tax liability generated by the NPSL:

  → We can equivalently assume that the NPSL is the only lease held by the producer in the state.

$$PTLA = PTBC - credits$$

Where PTBC represents the "production tax before application of credits."

$$PTBC = max\left\{ \begin{matrix} tax \\ rate \end{matrix} * \left(GVPP - GVR - costs - \begin{matrix} net\ profit \\ share\ payment \end{matrix} \right), \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

  - GVPP is the gross value at the point of production generated by the NPSL;
  - GVR is the gross value reduction for production from the NPSL qualifying under AS 43.55.160(f);
  - *Costs* represent the lease expenditures (including *direct costs*, property tax, and excise taxes) generated by the NPSL;
  - *Minimum tax* is the amount defined under 11 AAC 83.241(a)(2).

  → If the NPSL is not in payout status, then "net profit share payment" equals zero.

  → If the NPSL is in **payout status**, then we have **mutual dependency** since…

$$\begin{matrix} net\ profit \\ share\ payment \end{matrix} = \begin{pmatrix} net\ profit \\ share\ rate \end{pmatrix} * (GVPP - costs - PTLA)$$

3. Mutual dependency ("cross deductibility")

- If the NPSL is **<u>in payout status</u>**, then we have mutual dependency.

$$PTLA = max\left\{ \begin{matrix} tax \\ rate \end{matrix} * \left(GVPP - GVR - costs - \begin{matrix} net\ profit \\ share\ payment \end{matrix} \right), \begin{matrix} minimum \\ tax \end{matrix} \right\} - credits$$

$$\begin{matrix} net\ profit \\ share\ payment \end{matrix} = \left(\begin{matrix} net\ profit \\ share\ rate \end{matrix} \right) * (GVPP - costs - PTLA)$$

- Solution of mutual dependency

  → **<u>Iterative solution</u>**
  - Start by assuming that "net profit share payment"=0, find PTLA.
  - Use the value of the PTLA from the previous step to find "net profit share payment."
  - Repeat the previous steps until reaching convergence.

  → **<u>Algebraic solution</u>**
  - Find a reduced-form solution for the PTLA (one that does not depend on the "net profit share payment").

4. Current Solution

- 11 AAC 83.241 provides an algebraic solution to the mutual dependency issue.
  - → Step 1: Calculate the production tax before application of credits.

$$PTBC = max\left\{\begin{matrix}tax\\rate\end{matrix} * \left(GVPP - \text{GVR} - costs - \begin{matrix}\boldsymbol{net\ profit}\\\boldsymbol{share\ payment}\end{matrix}\right), \begin{matrix}minimum\\tax\end{matrix}\right\}$$

$$= max\left\{\begin{matrix}tax\\rate\end{matrix} * (GVPP - GVR - costs) * \boldsymbol{NPDF}, \begin{matrix}minimum\\tax\end{matrix}\right\}$$

The "net profit deductibility factor" ("NPDF") is used to solve the mutual dependency issue.

This is the equivalent to the "production tax net revenue" under 11 AAC 83.241(c).

Where the NPDF is defined as…

$$NPDF = \frac{1 - \begin{matrix}net\ profit\\share\ rate\end{matrix}}{1 - \left(\begin{matrix}tax\\rate\end{matrix} * \begin{matrix}net\ profit\\share\ rate\end{matrix}\right)}$$

  - → Step 2: Calculate the effective value of the credits. Then, calculate the production tax after application of credits.

$$\text{Credits}\begin{cases}\begin{matrix}effect.small\\producer\ credit\end{matrix} = min\left\{PTBC, \begin{matrix}max\ small\\producer\ credit\end{matrix}\right\}\\ \begin{matrix}effec.GVR\\oil\ credit\end{matrix} = min\left\{PTBC - \begin{matrix}effec.small\\producer\ credit\end{matrix}, \begin{matrix}max\ GVR\\oil\ credit\end{matrix}\right\}\\ \begin{matrix}effec.nonGVR\\oil\ credit\end{matrix} = min\left\{max\left\{PTBC - \begin{matrix}effec.small\\producer\ credit\end{matrix} - \begin{matrix}effec.GVR\\oil\ credit\end{matrix} - \begin{matrix}min\\tax\end{matrix}, 0\right\}, \begin{matrix}max\ nonGVR\\oil\ credit\end{matrix}\right\}\end{cases}$$

$$PTLA = PTBC - credits$$

5. Proposed Solution

- The presence of GVR and credits warrant the use of the "net credit augmentation rate."

→ Step 1: Calculate the production tax before application of credits.

$$PTBC = max\left\{ \begin{matrix} tax \\ rate \end{matrix} * \left(GVPP - \text{GVR} - costs - \begin{matrix} \boldsymbol{net\ profit} \\ \boldsymbol{share\ payment} \end{matrix} \right), \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$= max\left\{ \left[\begin{matrix} tax \\ rate \end{matrix} * (GVPP - costs) * \boldsymbol{NPDF} \right] - \left[\begin{matrix} tax \\ rate \end{matrix} * GVR * \boldsymbol{NCAR} \right], \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

NPDF and NCAR are defined as…

$$NPDF = \frac{1 - \begin{matrix} net\ profit \\ share\ rate \end{matrix}}{1 - \left(\begin{matrix} tax \\ rate \end{matrix} * \begin{matrix} net\ profit \\ share\ rate \end{matrix} \right)} \qquad NCAR = \frac{1}{1 - \left(\begin{matrix} tax \\ rate \end{matrix} * \begin{matrix} net\ profit \\ share\ rate \end{matrix} \right)}$$

If the NPSL is not in payout status, then both the NPDF and NCAR would be equal to 1.

→ Step 2: Calculate the effective value of the credits. Then, calculate the production tax after application of credits.

Credits

$$\begin{matrix} effect.small \\ producer\ credit \end{matrix} = min\left\{ PTBC, \begin{matrix} max\ small \\ producer\ credit \end{matrix} * \boldsymbol{NCAR} \right\}$$

$$\begin{matrix} effec.GVR \\ oil\ credit \end{matrix} = min\left\{ PTBC - \begin{matrix} effec.small \\ producer\ credit \end{matrix}, \begin{matrix} max\ GVR \\ oil\ credit \end{matrix} * \boldsymbol{NCAR} \right\}$$

$$\begin{matrix} effec.nonGVR \\ oil\ credit \end{matrix} = min\left\{ max\left\{ PTBC - \begin{matrix} effec.small \\ producer\ credit \end{matrix} - \begin{matrix} effec.GVR \\ oil\ credit \end{matrix} - \begin{matrix} min \\ tax \end{matrix}, 0 \right\}, \begin{matrix} max\ nonGVR \\ oil\ credit \end{matrix} * \boldsymbol{NCAR} \right\}$$

When affecting credits, the NCAR depends on 2 conditions:

- **NPSL is in payout status; and**
- **PTBC > min. tax**

Otherwise, when affecting credits, the NCAR = 1.

$$PTLA = PTBC - credits$$

6. Examples

- **Case 1: Iterative solution**
  - → The NPSL only produces **oil not qualifying for GVR**.
  - → **No credits exist**.
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$55.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$50.000
Production from the NPSL for the month (bbls)	**200,000**
Production from the NPSL not qualifying for GVR (bbls)	**200,000**
Production from the NPSL qualifying for GVR (bbls)	**0**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$8,750,000
Gross value reduction to the NPSL ($)	$0
"Costs"	$3,000,000

Production tax lease allowance	
PTLA 0	**$2,012,500**
PTLA 1	$1,620,063
PTLA 2	$1,578,857
PTLA 3	$1,574,530
PTLA 4	$1,574,076
PTLA 5	$1,574,028
PTLA 6	$1,574,023
PTLA 7	$1,574,022
PTLA 8	$1,574,022
PTLA 9	$1,574,022
PTLA 10	$1,574,022
PTLA 11	$1,574,022
PTLA 12	$1,574,022

Net profit share payment	
NPS payment 0	$1,121,250
NPS payment 1	$1,238,981
NPS payment 2	$1,251,343
NPS payment 3	$1,252,641
NPS payment 4	$1,252,777
NPS payment 5	$1,252,792
NPS payment 6	$1,252,793
NPS payment 7	$1,252,793
NPS payment 8	$1,252,793
NPS payment 9	$1,252,793
NPS payment 10	$1,252,793
NPS payment 11	$1,252,793
NPS payment 12	$1,252,793

- We begin the iteration by calculating the PTLA and assuming that the "net profit share payment" is 0.
- Then we substitute this value to find the net profit share payment.
- Then we calculate again the PTLA using the last finding.
- We repeat this process until reaching convergence.
- In this example, we reach convergence after 7 iterations.
- PTLA = $1,574,022.

6. Examples

- **Case 1: Current vs. proposed solutions**
  - → The NPSL only produces **oil not qualifying for GVR**.
  - → **No credits exist**.
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$55.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$50.000
Production from the NPSL for the month (bbls)	**200,000**
Production from the NPSL not qualifying for GVR (bbls)	**200,000**
Production from the NPSL qualifying for GVR (bbls)	**0**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$8,750,000
Gross value reduction to the NPSL ($)	$0
"Costs"	$3,000,000

Current method

$$PTBC = max\left\{ \begin{matrix} tax \\ rate \end{matrix} * \left(GVPP - GVR - costs - \begin{matrix} net\ profit \\ share\ payment \end{matrix}\right), \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$= max\left\{ \begin{matrix} tax \\ rate \end{matrix} * (GVPP - GVR - costs) * \boldsymbol{NPDF}, \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$= max\left\{35\% * (\$8{,}750{,}000 - \$0 - \$3{,}000{,}000) * \frac{1 - 30\%}{1 - (30\% * 35\%)}, \$350{,}000\right\}$$

$$PTBC = \$\mathbf{1{,}574{,}022} = PTLA$$

In this scenario, both methods produce the same answer.

Proposed method

$$PTBC = max\left\{\left[\begin{matrix} tax \\ rate \end{matrix} * (GVPP - costs) * \boldsymbol{NPDF}\right] - \left[\begin{matrix} tax \\ rate \end{matrix} * GVR * \boldsymbol{NCAR}\right], \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$= max\left\{\left[35\% * \$5{,}750{,}000 * \frac{1 - 30\%}{1 - (30\% * 35\%)}\right] - \left[35\% * \$0 * \frac{1}{1 - (30\% * 35\%)}\right], \$350{,}000\right\}$$

$$PTBC = \$\mathbf{1{,}574{,}022} = PTLA$$

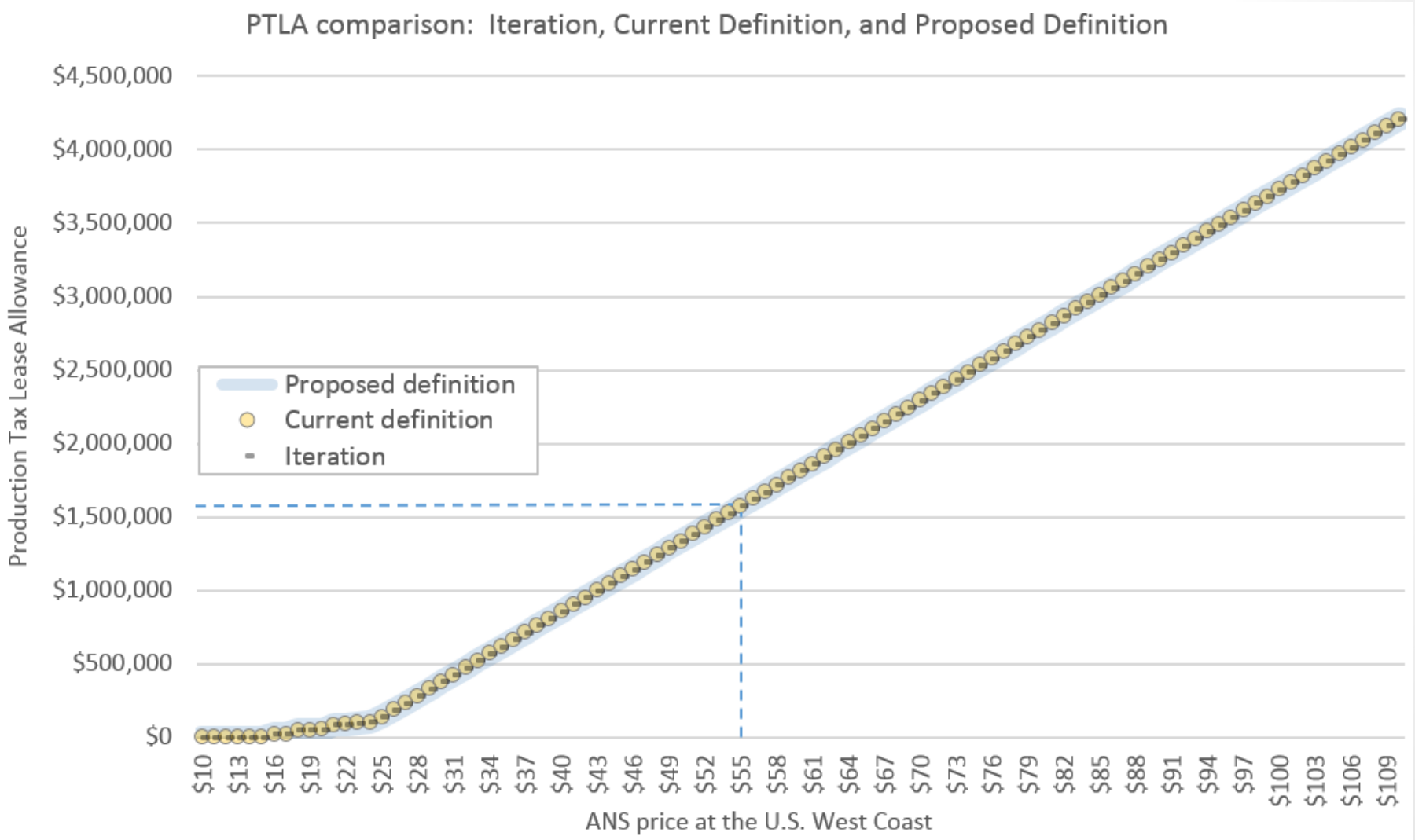
6. Examples

- **Case 1**: Graphical representation (price variation)

In a scenario where for a given NSPL…

- There is no production qualifying for GVR under AS 43.55.160(f); and
- No credits exist (or are not generated by the NPSL)

Then the current and the proposed definitions are equal to the results from the iteration method.



6. Examples

- **Case 2: Iterative solution**
  - → The NPSL only produces **oil qualifying for GVR**.
  - → **No credits exist**.
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$55.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$50.000
Production from the NPSL for the month (bbls)	**200,000**
Production from the NPSL not qualifying for GVR (bbls)	**0**
Production from the NPSL qualifying for GVR (bbls)	**200,000**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$8,750,000
Gross value reduction to the NPSL ($)	$1,750,000
"Costs"	$3,000,000

Production tax lease allowance	
PTLA 0	**$1,400,000**
PTLA 1	$943,250
PTLA 2	$895,291
PTLA 3	$890,256
PTLA 4	$889,727
PTLA 5	$889,671
PTLA 6	$889,665
PTLA 7	$889,665
PTLA 8	$889,665
PTLA 9	$889,665
PTLA 10	$889,665
PTLA 11	$889,665
PTLA 12	$889,665

Net profit share payment	
NPS payment 0	$1,305,000
NPS payment 1	$1,442,025
NPS payment 2	$1,456,413
NPS payment 3	$1,457,923
NPS payment 4	$1,458,082
NPS payment 5	$1,458,099
NPS payment 6	$1,458,100
NPS payment 7	$1,458,101
NPS payment 8	$1,458,101
NPS payment 9	$1,458,101
NPS payment 10	$1,458,101
NPS payment 11	$1,458,101
NPS payment 12	$1,458,101

- We begin the iteration by calculating the PTLA and assuming that the "net profit share payment" is 0.
- Then we substitute this value to find the net profit share payment.
- Then we calculate again the PTLA using the last finding.
- We repeat this process until reaching convergence.
- PTLA = $889,665.

6. Examples

- **Case 2: Current vs. proposed solutions**
  - → The NPSL only produces **oil qualifying for GVR**.
  - → **No credits exist**.
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$55.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$50.000
Production from the NPSL for the month (bbls)	**200,000**
Production from the NPSL not qualifying for GVR (bbls)	**0**
Production from the NPSL qualifying for GVR (bbls)	**200,000**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$8,750,000
Gross value reduction to the NPSL ($)	$1,750,000
"Costs"	$3,000,000

Current method

$$PTBC = max\left\{ \begin{matrix} tax \\ rate \end{matrix} * \ (GVPP - GVR - costs) * \boldsymbol{NPDF} \ , \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$= max\left\{ 35\% * \ (\$8{,}750{,}000 - \$1{,}750{,}000 - \$3{,}000{,}000) * \frac{1 - 30\%}{1 - (30\% * 35\%)}, \$350{,}000 \right\}$$

$$PTBC = \$\mathbf{1{,}094{,}972} = PTLA$$

In this scenario, only the proposed method generates the same answer as the iteration process.

Proposed method

$$PTBC = max\left\{ \left[\begin{matrix} tax \\ rate \end{matrix} * \ (GVPP - costs) * \boldsymbol{NPDF} \right] - \left[\begin{matrix} tax \\ rate \end{matrix} * GVR * \boldsymbol{NCAR} \right], \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$= max\left\{ \left[35\% * \$5{,}750{,}000 * \frac{1 - 30\%}{1 - (30\% * 35\%)} \right] - \left[35\% * \$1{,}750{,}000 * \frac{1}{1 - (30\% * 35\%)} \right], \begin{matrix} minimum \\ tax \end{matrix} \right\}$$

$$PTBC = \$\mathbf{889{,}665} = PTLA$$

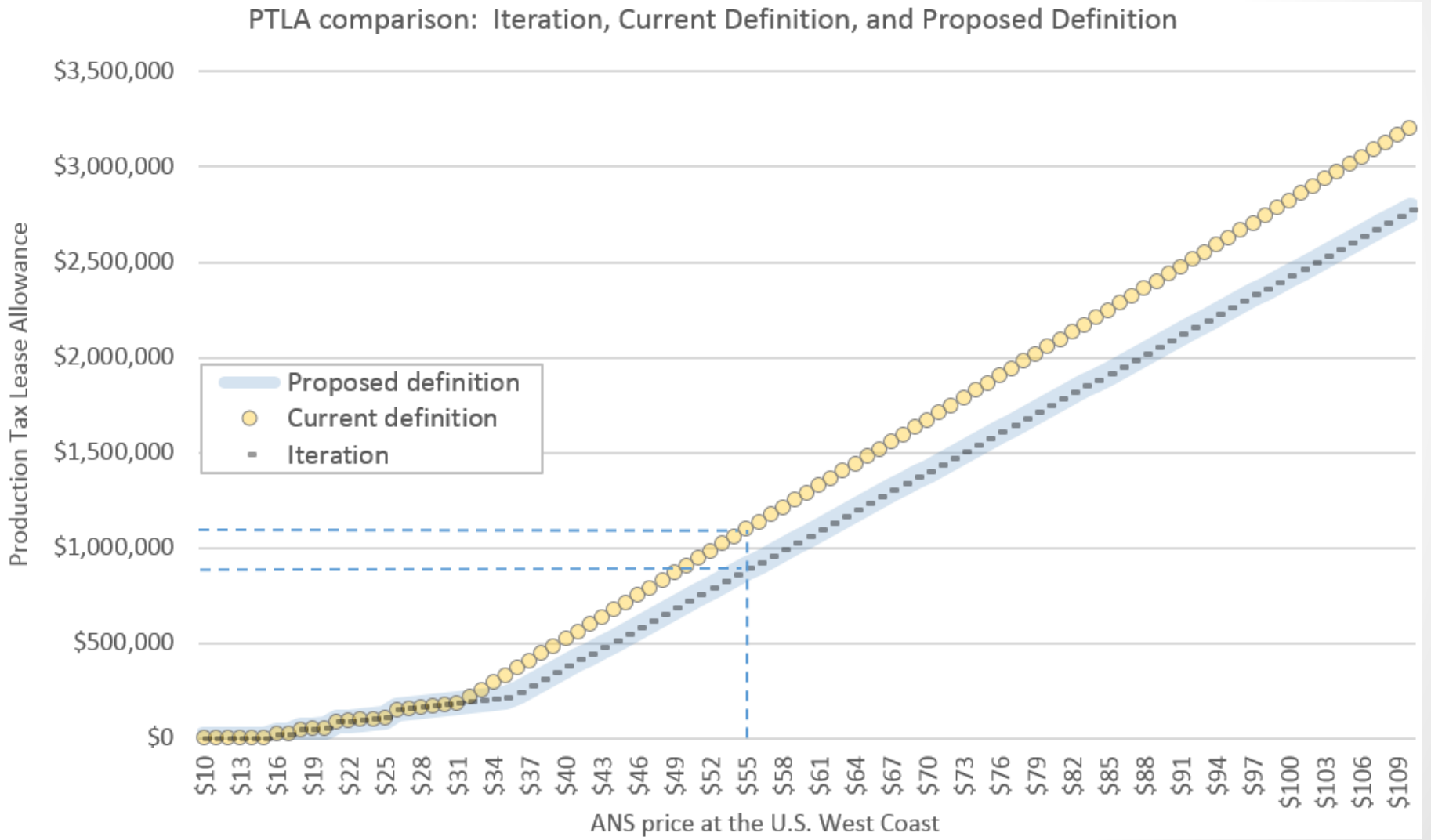
6. Examples

- **Case 2**: Graphical representation (price variation)

- The presence of production qualifying for GVR under AS 43.55.160(f) creates a **divergence** between the current definition and the results from the iteration method.

- Thus, the current definition can **overestimate** the value of the PTLA.

- We are still assuming that no credits exist (or are generated by the NPSL).



6. Examples

- **Case 3: Iterative solution**
  - → The NPSL produces both types of oil: qualifying and not qualifying for GVR.
  - → **Credits are generated** by the NPSL under AS 43.55.024(c), 43.55.024(i), and 43.55.024(j).
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$65.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$60.000
Production from the NPSL for the month (bbls)	**300,000**
Production from the NPSL not qualifying for GVR (bbls)	**150,000**
Production from the NPSL qualifying for GVR (bbls)	**150,000**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$15,750,000
Gross value reduction to the NPSL ($)	$1,575,000
"Costs"	$3,000,000

Production tax lease allowance	
PTLA 0	**$2,030,000**
PTLA 1	$904,400
PTLA 2	$786,212
PTLA 3	$773,802
PTLA 4	$772,499
PTLA 5	$772,362
PTLA 6	$772,348
PTLA 7	$772,347
PTLA 8	$772,346
PTLA 9	$772,346
PTLA 10	$772,346
PTLA 11	$772,346
PTLA 12	$772,346

Net profit share payment	
NPS payment 0	$3,216,000
NPS payment 1	$3,553,680
NPS payment 2	$3,589,136
NPS payment 3	$3,592,859
NPS payment 4	$3,593,250
NPS payment 5	$3,593,291
NPS payment 6	$3,593,296
NPS payment 7	$3,593,296
NPS payment 8	$3,593,296
NPS payment 9	$3,593,296
NPS payment 10	$3,593,296
NPS payment 11	$3,593,296
NPS payment 12	$3,593,296

- We begin the iteration by calculating the PTLA and assuming that the "net profit share payment" is 0.
- Then we substitute this value to find the net profit share payment.
- Then we calculate again the PTLA using the last finding.
- We repeat this process until reaching convergence.
- PTLA = $772,346.

6. Examples

- **Case 3: Current solution**
  - → The NPSL produces both types of oil: qualifying and not qualifying for GVR.
  - → **Credits are generated** by the NPSL under AS 43.55.023(c), 43.55.024(i), and 43.55.024(j).
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$65.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$60.000
Production from the NPSL for the month (bbls)	**300,000**
Production from the NPSL not qualifying for GVR (bbls)	**150,000**
Production from the NPSL qualifying for GVR (bbls)	**150,000**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$15,750,000
Gross value reduction to the NPSL ($)	$1,575,000
"Costs"	$3,000,000

Current method

$$PTBC = max\left\{\begin{matrix} tax \\ rate \end{matrix} * (GVPP - GVR - costs) * \boldsymbol{NPDF}, \begin{matrix} minimum \\ tax \end{matrix}\right\} = \$3{,}059{,}078$$

The NPSL taxable production (8,750 bpd) represents 17.5% of the statewide taxable production (50,000 bpd).

Credits

$$\begin{matrix} effect.small \\ producer\ credit \end{matrix} = min\left\{PTBC, \begin{matrix} max\ small \\ producer\ credit \end{matrix}\right\} = min\{\$3{,}059{,}078, \$175{,}000\} = \$175{,}000$$

$$\begin{matrix} effec.GVR \\ oil\ credit \end{matrix} = min\left\{PTBC - \begin{matrix} effec.small \\ producer\ credit \end{matrix}, \begin{matrix} max\ GVR \\ oil\ credit \end{matrix}\right\} = min\{\$3{,}059{,}078 - \$175{,}000, \$656{,}250\} = \$656{,}250$$

$$\begin{matrix} effec.nonGVR \\ oil\ credit \end{matrix} = min\left\{max\left\{PTBC - \begin{matrix} effec.small \\ producer\ credit \end{matrix} - \begin{matrix} effec.GVR \\ oil\ credit \end{matrix} - \begin{matrix} min \\ tax \end{matrix}, 0\right\}, \begin{matrix} max\ nonGVR \\ oil\ credit \end{matrix}\right\}$$

$$= min\{max\{PTBC - \$175{,}000 - \$656{,}250 - \$630{,}000, 0\}, \$1{,}050{,}000\} = \$1{,}050{,}000$$

$$PTLA = PTBC - credits = \mathbf{\$1{,}177{,}828}$$

But the PTLA from the iteration process is $772,346.

6. Examples

- **Case 3: Proposed solution**
  - → The NPSL produces both types of oil: qualifying and not qualifying for GVR.
  - → **Credits are generated** by the NPSL under AS 43.55.024(c), 43.55.024(i), and 43.55.024(j).
  - → The NPSL is in payout status.
  - → Production tax rate: 35%; net profit share rate: 30%.

Price ($/bbl)	**$65.000**
Netback costs ($/bbl)	$5.000
Netback price ($/bbl)	$60.000
Production from the NPSL for the month (bbls)	**300,000**
Production from the NPSL not qualifying for GVR (bbls)	**150,000**
Production from the NPSL qualifying for GVR (bbls)	**150,000**
Royalty rate	**12.5%**
GVPP, allocated to the NPSL ($)	$15,750,000
Gross value reduction to the NPSL ($)	$1,575,000
"Costs"	$3,000,000

Proposed method

$$PTLA = max\left\{\left[\begin{matrix}tax\\rate\end{matrix} * (GVPP - costs) * \boldsymbol{NPDF}\right] - \left[\begin{matrix}tax\\rate\end{matrix} * GVR * \boldsymbol{NCAR}\right], \begin{matrix}minimum\\tax\end{matrix}\right\} = \{\$2{,}874{,}302\ , \$630{,}000\} = \$2{,}874{,}302$$

Credits

$$\begin{matrix}effect.small\\producer\ credit\end{matrix} = min\left\{PTBC, \begin{matrix}max\ small\\producer\ credit\end{matrix} * \boldsymbol{NCAR}\right\} = min\{\$2{,}874{,}302\ , \$175{,}000 * 111.73\%\} = \$195{,}531$$

$$\begin{matrix}effec.GVR\\oil\ credit\end{matrix} = min\left\{PTBC - \begin{matrix}effec.small\\producer\ credit\end{matrix}, \begin{matrix}max\ GVR\\oil\ credit\end{matrix} * \boldsymbol{NCAR}\right\} = min\{\$2{,}678{,}771\ , \$656{,}250 * 111.73\%\} = \$733{,}240$$

$$\begin{matrix}effec.nonGVR\\oil\ credit\end{matrix} = min\left\{max\left\{PTBC - \begin{matrix}effec.small\\producer\ credit\end{matrix} - \begin{matrix}effec.GVR\\oil\ credit\end{matrix} - \begin{matrix}min\\tax\end{matrix}, 0\right\}, \begin{matrix}max\ nonGVR\\oil\ credit\end{matrix} * \boldsymbol{NCAR}\right\}$$

$$= min\{max\{PTBC - \$195{,}531 - \$733{,}240 - \$630{,}000, 0\}, \$1{,}050{,}000 * 111.73\%\} = \$1{,}173{,}184$$

$$PTLA = PTBC - credits = \boldsymbol{\$772{,}346}$$

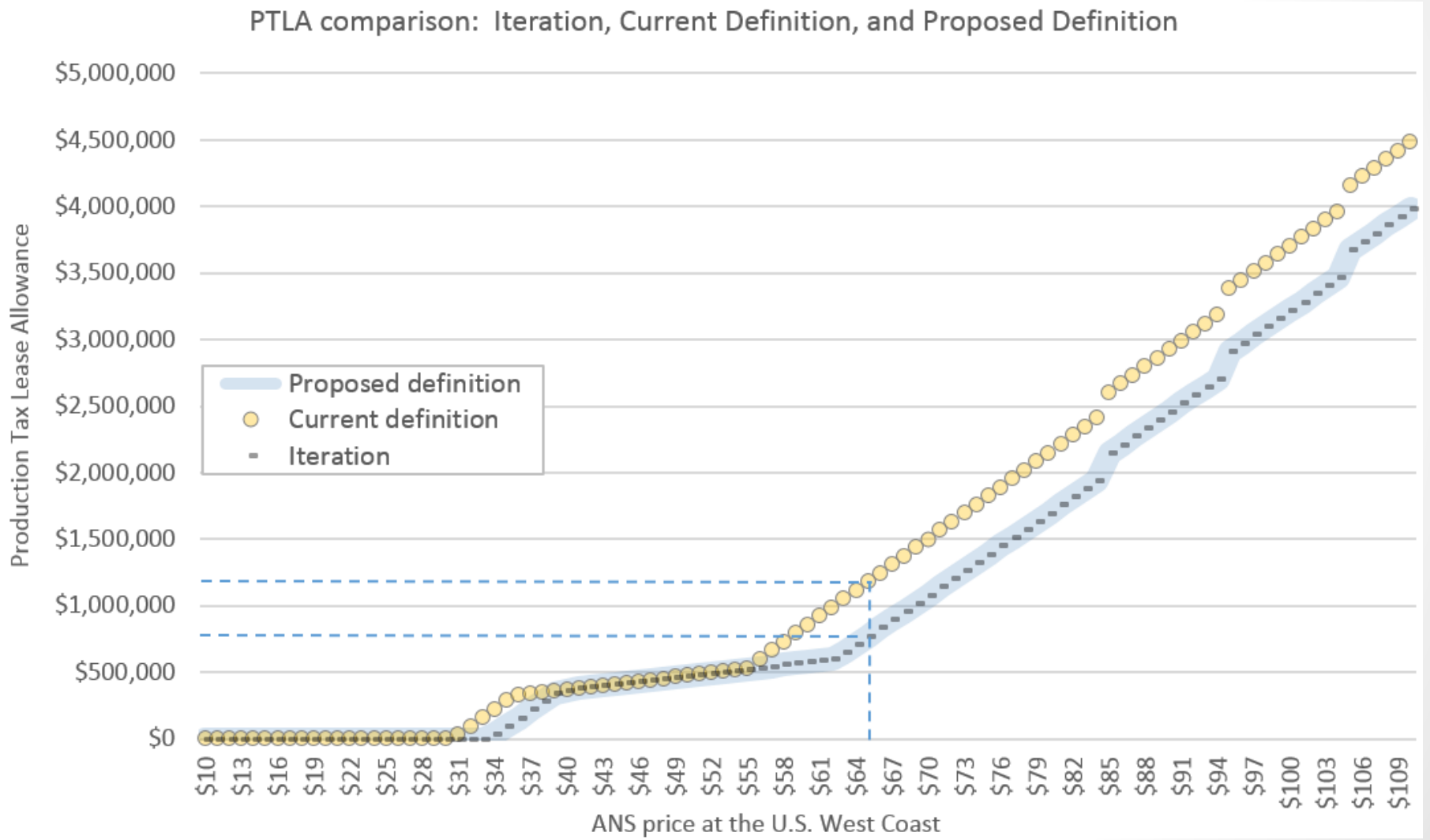
The PTLA from the iteration process is $772,346.

6. Examples

- **Case 3**: Graphical representation (price variation)

- The presence of production qualifying for GVR under AS 43.55.160(f) and credits create a divergence between the current definition and the results from the iteration method.

- Thus, the current definition can **overestimate** the value of the PTLA.



7. Proposed changes related to HB 247

- Since, in the calculation of the net profit share payment, a producer is allowed to deduct an estimate of the production tax liability generated from the NPSL…
  - → Changes to the production tax may require a modification of the regulations dealing with the PTLA under 11 AAC 83.241.
- Changes related to HB 247
  - → Section 26 of HB 247: AS 43.55.160(f)
    - Expiration date for GVR and, consequently, for the credit for GVR oil under AS 43.55.024(i)
    - Impact on 11 AAC 83.241(b)(2)(B) and (D) [credit for GVR oil]
    - Impact on 11 AAC 83.241(c) [definition of the production tax revenue]
  - → Section 18 of HB 247: AS 43.55.023(b)(2).
    - Inability to use GVR in the calculation of "loss" (i.e., negative production tax value)
    - Impact on 11 AAC 83.241(c) [definition of the production tax revenue]
  - → Section 33 of HB 247
    - It repeals the "Oil and Gas Exploration Incentive Credits" under AS 41.09.010, 41.09.020, 41.09.030, and 41.09.090.
    - Title 11, Chapter 89 of the Alaska Administrative Code represents the regulations of the exploration incentive credits.
  - → Section 41 of HB 247: The changes related to HB 247 will apply retroactively to January 1, 2017.

8. Updates to NPSL template

1. GVR qualification ("QGVR" in line 5)

   To reflect the expiration of GVR in HB 247

2. Prod. tax lease allowance loss before/after production ("PTLB" in line 34 and "PTLR" in line 68)

   To reflect the inability to use GVR in the calculation of "loss"

3. Production tax lease allowance section (e) ("PTSE" in line 49)

   To introduce the NCAR whenever there is production qualifying for GVR

4. Small producer credit allocated to the NPSL ("PTSPC" in line 58)

   To introduce the NCAR only if the "PTBC" > "PTMT"

5. Non-gross value reduction oil credit allocated to the NPSL ("NGVROC" in line 63)

   To introduce the NCAR only if the "PTBC" > "PTMT"

6. Gross value reduction oil credit allocated to the NPSL ("GVROC" in line 65)

   To specify that the effective value of this credit is the minimum of ($5*taxable oil qualifying for GVR) and (PTBC–PTSPC).

   Introduction of 2 negative signs in the formula (this is a recent update not yet present in the template).

7. Net credit augmentation rate ("NCAR" in line 66)

8. Production tax lease allowance ("PTLA" in line 67)

   Definition is the same as the NPSL template currently in place. It is different with respect to the version of the NPSL template that was made public on February 14th, 2017.

Additional Information

9. Derivation of the NPDF and NCAR

- Assume the following…
  - → The NPSL is in payout status;

$$\begin{matrix} net\ profit \\ share\ payment \end{matrix} = \begin{pmatrix} net\ profit \\ share\ rate \end{pmatrix} * (GVPP - costs - PTLA) > 0 \longrightarrow \Pi = \pi(Y - X - T)$$

  - → The production tax before credits generated by the NPSL is greater than the minimum tax;
  - → The NPSL does not generate any credits.
  - → The NPSL has production qualifying for GVR.

$$PTLA = PTBC = \begin{matrix} tax \\ rate \end{matrix} * \left(GVPP - GVR - costs - \begin{matrix} net\ profit \\ share\ payment \end{matrix}\right) \longrightarrow T = \tilde{T} = \tau(Y - GVR - X - \Pi)$$

- Solving for the value of the PTLA (i.e., T)

$$T = \tau\big(Y - GVR - X - \pi(Y - X - T)\big)$$
$$= \tau(Y - GVR - X - \pi(Y - X) + \pi T)$$
$$= \tau(Y - X) - \tau GVR - \tau\pi(Y - X) + \tau\pi T$$
$$T - \tau\pi T = \tau(Y - X) - \tau\pi(Y - X) - \tau GVR$$
$$(1 - \tau\pi)T = \tau(Y - X)(1 - \pi) - \tau GVR$$

This is the definition we used in previous slides.

$$T = \tau(Y - X)\left[\frac{1 - \pi}{1 - \tau\pi}\right] - \tau GVR\left[\frac{1}{1 - \tau\pi}\right] \longleftrightarrow PTBC = \left[\begin{matrix} tax \\ rate \end{matrix} * (GVPP - costs) * \boldsymbol{NPDF}\right] - \left[\begin{matrix} tax \\ rate \end{matrix} * GVR * \boldsymbol{NCAR}\right]$$

9. Derivation of the NPDF and NCAR

- What about the credits?
  - → While holding the previous assumptions, now assume that the production from the NPSL qualifies for the credits under AS 43.55.024(c), AS 43.55.024(i), and AS 43.55.024(j).
- The small-producer credit: AS 43.55.024(c)

$$PTBC = \underset{rate}{tax} * \left(GVPP - GVR - costs - \underset{share\ payment}{net\ profit}\right) \longrightarrow \tilde{T} = \tau(Y - GVR - X - \Pi)$$

$$PTLA = PTBC - spc = PTBC - min\{PTBC\ , \max spc\} \longrightarrow T = \tilde{T} - C_1 = \tilde{T} - min\{\tilde{T}, s\}$$

- But the effective value of the credit cannot be found until we solve the mutual dependency:

$$T = \tilde{T} - min\{\tilde{T}, s\}$$
$$= \tau(Y - GVR - X - \Pi) - min\{\tau(Y - GVR - X - \Pi)\ , s\}$$

Here, we assume that $s < PTBC$. Otherwise, the PTLA would be 0.

$$T = \tau(Y - X)\left[\frac{1-\pi}{1-\tau\pi}\right] - \tau GVR\left[\frac{1}{1-\tau\pi}\right] - s\left[\frac{1}{1-\tau\pi}\right]$$

→ Therefore, to find the effective value of the small-producer credit allocated to the NPSL, we compare the following amounts:

$$\hat{C}_1 = min\left\{\tau(Y - X)\left[\frac{1-\pi}{1-\tau\pi}\right] - \tau GVR\left[\frac{1}{1-\tau\pi}\right], s\left[\frac{1}{1-\tau\pi}\right]\right\} \longleftrightarrow \underset{producer\ credit}{effect.small} = min\left\{PTBC, \underset{producer\ credit}{max\ small} * \boldsymbol{NCAR}\right\}$$

9. Derivation of the NPDF and NCAR

- The GVR-oil credit: AS 43.55.024(i)

$$PTBC = \frac{tax}{rate} * \left(GVPP - GVR - costs - \frac{net\ profit}{share\ payment}\right) \longrightarrow \tilde{T} = \tau(Y - GVR - X - \Pi)$$

$$PTLA = PTBC - spc - GVRoil$$
$$= PTBC - spc - min\{PTBC - spc\ , \max GVRoil\} \longrightarrow T = \tilde{T} - C_1 - C_2$$
$$= \tilde{T} - C_1 - min\{\tilde{T} - C_1, g\}$$

- But the effective value of the credit cannot be found until we solve the mutual dependency:

$$T = \tilde{T} - C_1 - min\{\tilde{T} - C_1, g\}$$
$$= \tau(Y - GVR - X - \Pi) - C_1 - min\{\tau(Y - GVR - X - \Pi) - C_1, g\}$$
$$T = \tau(Y - X)\left[\frac{1-\pi}{1-\tau\pi}\right] - \tau GVR\left[\frac{1}{1-\tau\pi}\right] - s\left[\frac{1}{1-\tau\pi}\right] - g\left[\frac{1}{1-\tau\pi}\right]$$

Here, we assume that $g < PTBC - C_1$. Otherwise, the value of the PTLA would be 0.

→ Therefore, to find the effective value of the GVR oil credit allocated to the NPSL, we compare the following amounts:

$$\hat{C}_2 = min\left\{\tau(Y - X)\left[\frac{1-\pi}{1-\tau\pi}\right] - \tau GVR\left[\frac{1}{1-\tau\pi}\right] - \hat{C}_1, g\left[\frac{1}{1-\tau\pi}\right]\right\}$$

$$\frac{effec.GVR}{oil\ credit} = min\left\{PTBC - \frac{effec.small}{producer\ credit}\ ,\ \frac{max\ GVR}{oil\ credit} * \boldsymbol{NCAR}\right\}$$

9. Derivation of the NPDF and NCAR

- The non-GVR-oil credit: AS 43.55.024(j)

$$PTLA = PTBC - spc - GVRoil - nonGVRoil$$
$$= PTBC - spc - GVRoil - min\{max\{PTBC - spc - GVRoil - min\,tax\,, 0\}\,, \max nonGVRoil\}$$

$$T = \tilde{T} - C_1 - C_2 - C_3$$
$$= \tilde{T} - C_1 - C_2 - min\{max\{\tilde{T} - C_1 - C_2 - mintax\,, 0\}, g_{no}\}$$

- But the effective value of the credit cannot be found until we solve the mutual dependency:

$$T = \tilde{T} - C_1 - C_2 - min\{max\{\tilde{T} - C_1 - C_2 - mintax\,, 0\}, g\}$$
$$= \tau(Y - GVR - X - \Pi) - C_1 - C_2 - min\{max\{\tau(Y - GVR - X - \Pi) - C_1 - C_2 - mintax, 0\}, g_{no}\}$$
$$T = \tau(Y - X)\left[\frac{1-\pi}{1-\tau\pi}\right] - \tau GVR\left[\frac{1}{1-\tau\pi}\right] - s\left[\frac{1}{1-\tau\pi}\right] - g\left[\frac{1}{1-\tau\pi}\right] - g_{no}\left[\frac{1}{1-\tau\pi}\right]$$

Here, we assume that $g_{no} < PTBC - C_1 - C_2 - mintax.$

Otherwise, the value of this credit would be zero or an amount that would make the PTLA equal to the minimum tax.

→ Therefore, to find the effective value of the non-GVR oil credit allocated to the NPSL, we compare the following amounts:

$$\hat{C}_3 = min\left\{max\left\{\tau(Y - X)\left[\frac{1-\pi}{1-\tau\pi}\right] - \tau GVR\left[\frac{1}{1-\tau\pi}\right] - \hat{C}_1 - \hat{C}_2 - mintax\,, 0\right\}, g_{no}\left[\frac{1}{1-\tau\pi}\right]\right\}$$

$$\underset{oil\ credit}{effec.nonGVR} = min\left\{max\left\{PTBC - \underset{producer\ credit}{effec.small} - \underset{oil\ credit}{effec.GVR} - \underset{tax}{min}, 0\right\}, \underset{oil\ credit}{max\ nonGVR} * \boldsymbol{NCAR}\right\}$$