Value Adjustment - When, Why, How and a simple example

MMP GEA CPL - Crude Oil Evaluation

Bjørn Haugland

June 2026

Value Adjustment | When?

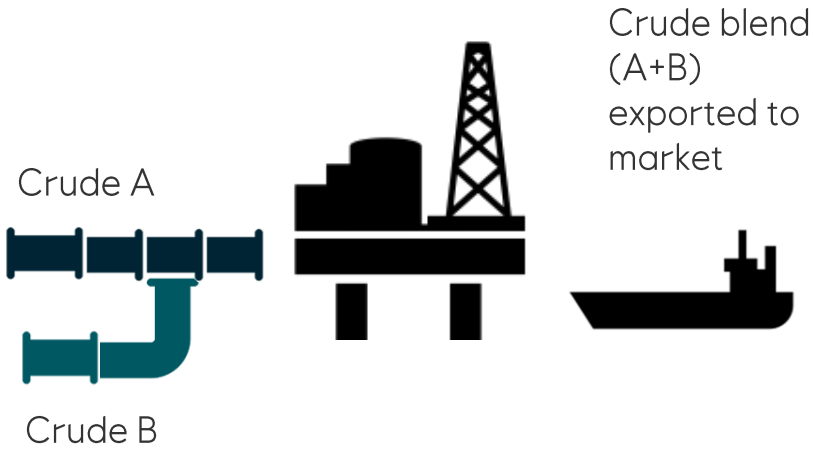
A new stream with different ownership is commingled into an existing platform/infrastructure

Before commingling

- Crude A is exported to market through platform

After commingling

- Crude B delivers into the same platform as crude A
- Crude A and B are commingled and sold in the market as a blend



Value Adjustment | Why?

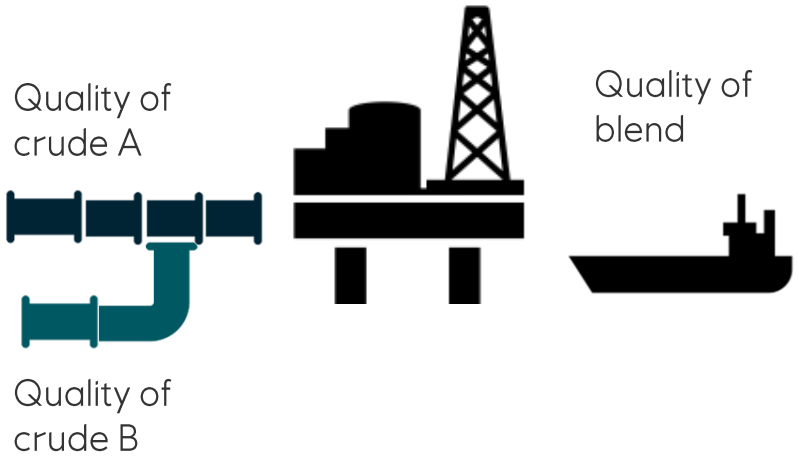
The difference in quality (and value) of the commingling streams triggers compensation

Before commingling

- Value of crude A is 50 $/bbl

After commingling

- Value of crude B is 46 $/bbl
- Value of the blend is an average value depending on blending ratio



Value Adjustment | How?

The principle for the Value Adjustment is to adjust for the **product value** difference between the substreams

- The product value of each stream is calculated using formulas based on the technical value of its fractions.

Sum of {yield of fraction x product price}

- Typical formulas in Europe are:
  - Oseberg Transport System (OTS)
  - Forties Pipeline System (FPS)

Tie-in agreement

Appendix C

Measurement, Sampling, Allocation and Value Adjustment

Value Adjustment | How?

The principle for the Value Adjustment is to adjust for the **product value** difference between the substreams

- Value Adjustment
  - Kind
    - Volume (+/- bbl to lift)
    - Weight (+/- tonnes to lift)
  - Cash

Tie-in agreement

Appendix C

Measurement, Sampling, Allocation and Value Adjustment

OTS and FPS formulas

OTS formula

Cut (deg C)	Fraction	Quality adjustment
C1 - C4	Gas	Heat Value (1.16*LSFO)
iC5 - 165	Naphtha	No
165 - 250	Kero	Specific Gravity
250 - 375	Gasoil	Specific Gravity
375+	Atm residue	Sulphur, wt% Viscosity @ 80 deg C

FPS formula

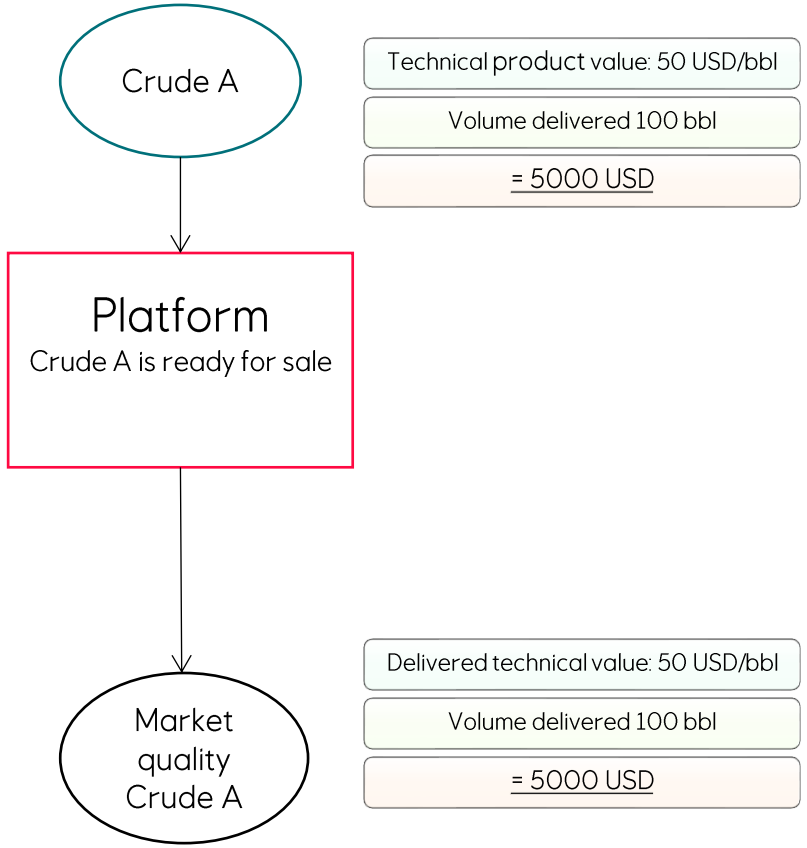
Cut (deg C)	Fraction	Quality adjustment
C1 - C4	Gas	Heat Value (1.16*LSFO)
iC5 - 150	Naphtha	No
150 - 250	Kero	Specific Gravity
250 - 350	Gasoil	Specific Gravity
350 - 550	Vacuum Gasoil	Sulphur, wt%
550+	Vac residue	Sulphur, wt% Viscosity @ 100 deg C

Each stream is analyzed for distillation cuts and properties

The product value for each stream is the sum of the fractions multiplied by the corresponding product prices, adjusted for qualities

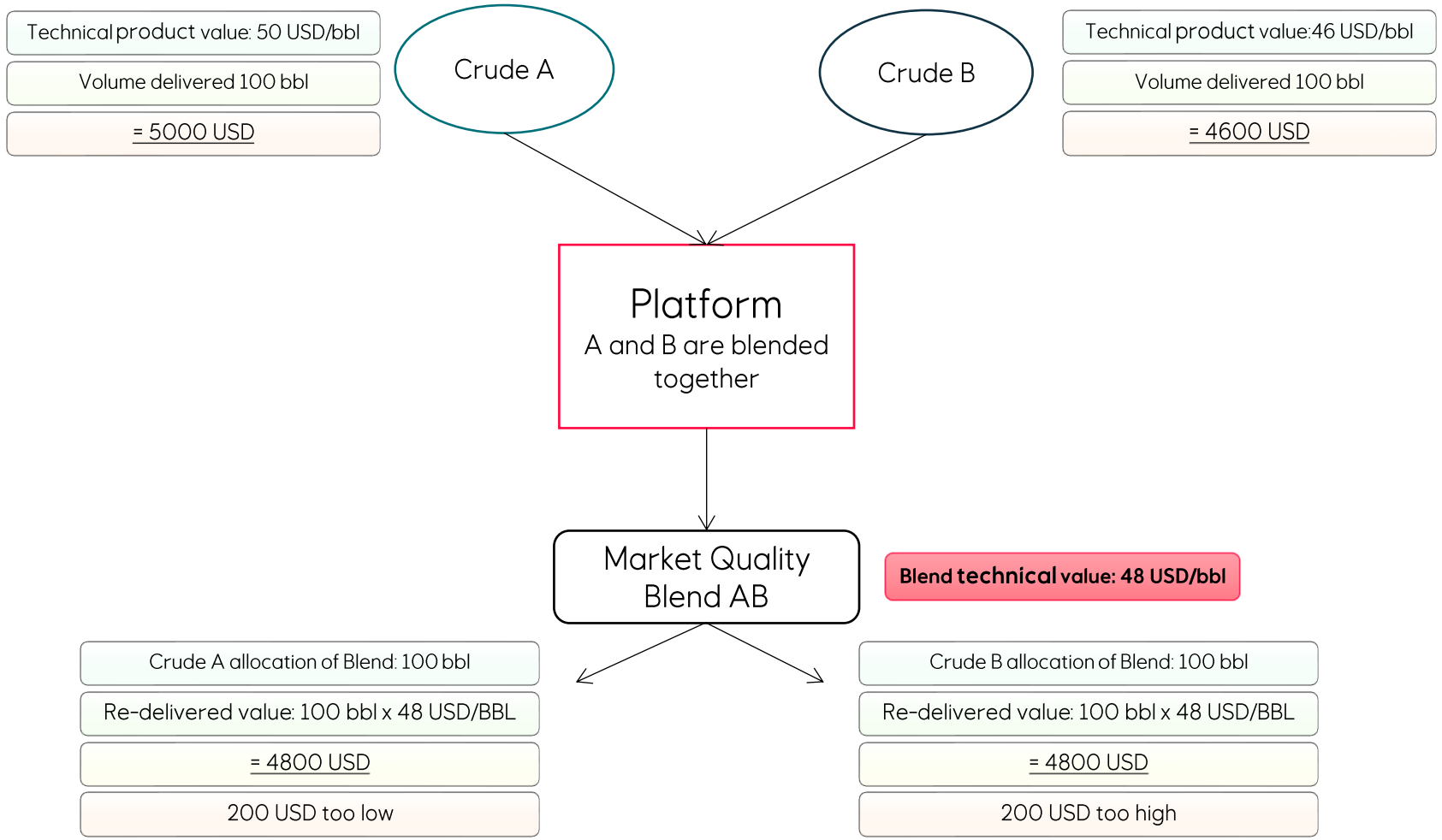
Example - Before commingling of crudes

Crude A has a technical product value of 50 USD/bbl



After commingling and allocation

Crude B delivers into the same platform as Crude A, the two streams are commingled and sold in the market as Blend AB



How are the value adjusted volumes calculated?

The technical product value of the Blend AB is calculated based on the technical product value of stream A and B

Blend AB technical product value: 48 USD/bbl

Crude A

- Technical product value: 50 USD/bbl
- Difference in value vs. Blend AB

  50 – 48 = +2 USD/bbl

  2/48 = 0.042
- Value Adjusted volume for Crude A

  100 bbls * 0.042 = 4.2 bbls
- Allocated and Value Adj volumes

  100 + 4.2 = 104.2 bbls

Crude B

- Technical product value: 46 USD/bbl
- Difference in value vs. Blend AB

  46 – 48 = - 2 USD/bbl

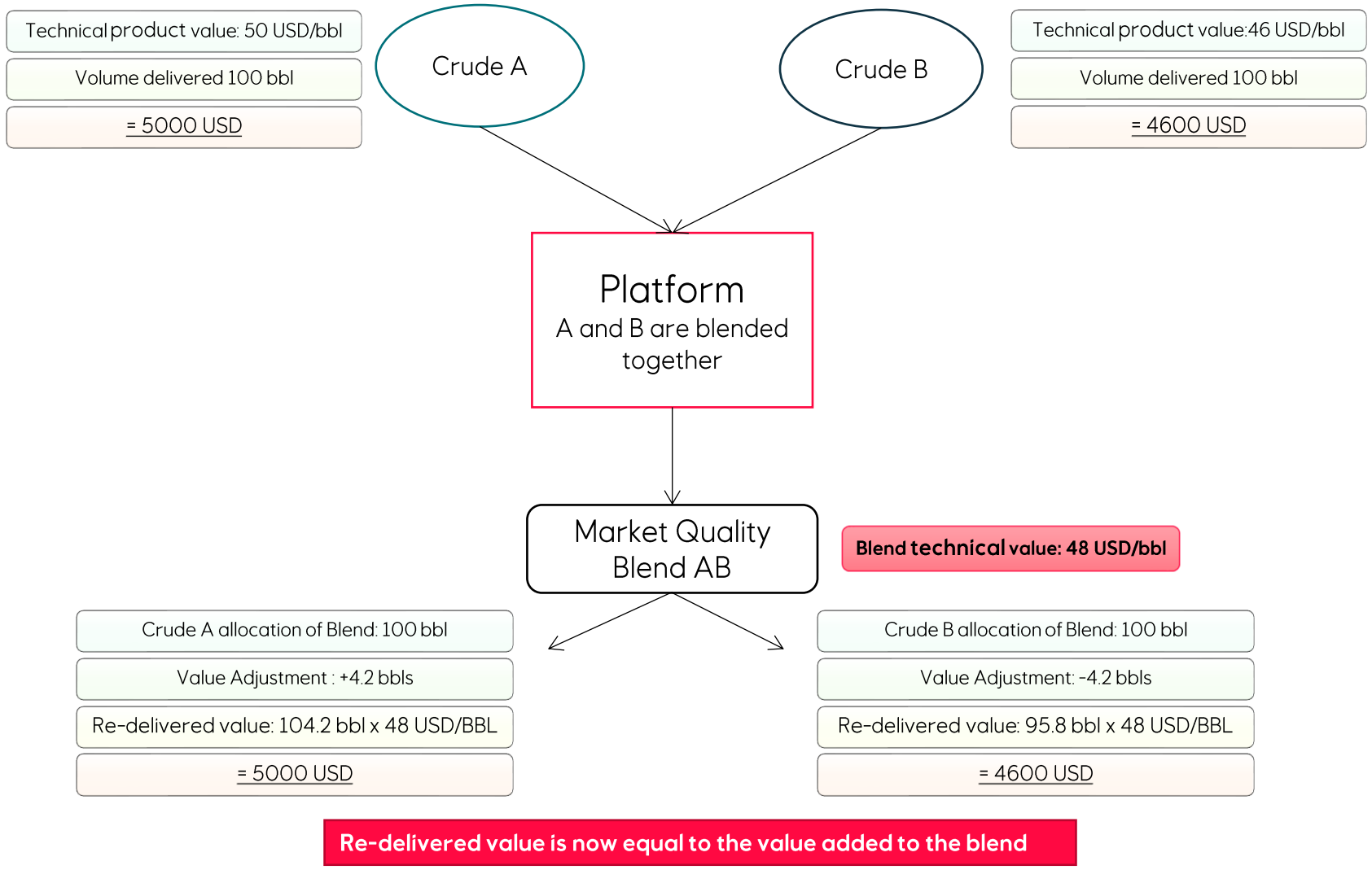
  - 2/48 = - 0.042
- Value Adjusted volume for Crude B

  100 bbls * - 0.042 = - 4.2 bbls
- Allocated and Value Adj volumes

  100 - 4.2 = 95.8 bbls

After commingling,allocation and Value Adjustment

Crude A and Crude B are re-delivered the same value as delivered by getting more/less volume of Blend AB



Value Adjustment principles

- The principle for the Value Adjustment is to compensate for difference in quality and value between Crude A and Crude B
- If it is challenging to measure one of the streams (stream A), the Blend AB can be measured, and stream A can be calculated by difference.
    - This principle may be used even though all substreams can be measured.
- Quality of sampling is crucial

- Challenges to measure and analyze the different streams often occurs due to
    - Commingling and co-processing of streams

Value Adjustment