2.1 Forward

On 1-Aug-2019 George Inc enters a forward contract to sell barrels of oil on 1-Nov-2021 at a strike price of CU 60 per barrel. George Inc needs to fair value the forward on their balance-sheet date, 31-Jan-2020. On this date, fresh forward contracts with a maturity of 1-Nov-2021 have a strike price of CU 80. Also on 31-Jan-2020 the risk-free rate is 3% continuously compounded. Find the fair value of the forward to George Inc.

SOLUTION

We count days from the end of 31-Jan-2020 as the balance-sheet date reflects the end of the period. We therefore have 639 days remaining until maturity.
Forward fair value =

$$23,000 \times (60 - 80) \times e^{-0.03s \times \frac{639}{365}} = CU - 436,464.02.$$

That is CU 436,464.02 liability.