IFRS[®] Foundation





Numerical examples

EEG meeting March 2019

AP 1G

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In year X0, the regulator sets the rate for Entity A for the following three-year period (ie X1–X3).

Entity A incurs input costs for waste water treatment chemicals which are an allowable operating expenditure. The estimated cost of this input is CU30 for each year in the period X1–X3. The regulatory agreement provides for this input to be included in the rate on a cost-recovery basis at a 0% margin.

During X1, the actual input cost of the chemicals is CU6 higher than estimated. The regulatory agreement establishes that any variance between estimated and actual allowable operating expenses arising in period 'n' is included in the rate charged to customers in period 'n+2'.

No further input cost variances arise during the three-year period. The example assumes that Entity A does not receive compensation for the time-lag and that the effect of the time value of money is immaterial.

| Year to 31 December - CU | X1 | X2 | Х3 |
|------------------------------|------|------|------|
| Revenue (amounts billed) | 30 | 30 | 36 |
| Regulatory income/(expense) | 6 | - | (6) |
| Operating expenses | (36) | (30) | (30) |
| Profit/(loss) | - | - | - |
| Regulatory asset/(liability) | 6 | 6 | - |

(*): Examples similar to Example 1 were discussed by the Board at its meetings in April 2017, June 2017 and May 2018.



The regulatory agreement penalises Entity B if it does not achieve a specified customer satisfaction level, monitored by using customer surveys. At the end of year X0, survey results show that Entity B has not achieved the required level of customer satisfaction. As a result, Entity B is required to deduct from its billings to customers during year X1 a specified penalty amount. According to the regulatory agreement, the penalty amount to be deducted from billings to customers does not accrue any interest.

When preparing its financial statements for year X0, Entity B estimates the penalty amount to be CU140, based on the amounts of penalties charged by the regulator in the last five years when similar performance targets were not achieved.

Early in X1, Entity B receives the final rate determination confirming the penalty amount relating to year X0 is CU140.

| Year to 31 December - CU | X0 | X1 | TOTAL |
|------------------------------|-------|-------|-------|
| Revenue (*) | - | (140) | (140) |
| Regulatory income/(expense) | (140) | 140 | - |
| Profit/(loss) | (140) | - | (140) |
| Regulatory asset/(liability) | (140) | - | - |

* This is only used to represent the lower amount included in the billings to customers. It does not represent a debit balance accounted for in the revenue line.



Entity C recognises an environmental provision in X0 for clean-up costs it will need to incur in X20. Entity C estimates that in X20 it will incur clean-up costs amounting to CU1,000. Entity C discounts the total estimated costs of CU1,000 using a discount rate of 2.5%, recognising a liability amounting to CU610 at the end of X0 (Figure 1 in slide 6).

According to the regulatory agreement, environmental clean-up costs are an allowable expenditure. However, the regulatory agreement does not allow Entity C to include the environmental clean-up costs in the rate billed to customers until it carries out the related cash disbursements (ie until X20).

The regulatory agreement gives Entity C the right to recover the environmental clean-up costs in equal instalments over a period of two years from the date of payment (ie during years X21 and X22) by adding them to the RCB at the beginning of that period and providing a return on the outstanding amounts at the beginning of each year during that period (Figure 2 in slide 6). For simplicity, the example assumes that the regulatory asset is not subject to any additional risks not present in the environmental clean-up provision.

(*): This example was discussed by the Board at its meeting in December 2018.



Example 3—environmental clean-up costs (2/3)*

| Figure 1 | | | | | | | | |
|---|-----|-----|-----|--|-----|---------|--|--|
| IFRS balances (in CU) | X0 | X1 | X2 | | X19 | X20 | | |
| Environmental liability - opening balance | - | 610 | 626 | | 952 | 976 | | |
| Enviromental costs | 610 | - | - | | - | - | | |
| Unwinding of discount | - | 15 | 16 | | 24 | 24 | | |
| Cash payment | - | - | - | | - | (1,000) | | |
| Environmental liability - closing balance | 610 | 626 | 641 | | 976 | - | | |

| Figure 2 | | | | | | | |
|---|----|---|-------|-------|-------|--|--|
| Regulatory balances (in CU) | XO | | X20 | X21 | X22 | | |
| Regulatory Capital Base (RCB) - opening balance | - | - | - | 1,000 | 500 | | |
| Enviromental costs | - | - | 1,000 | - | - | | |
| Regulatory recovery | - | - | - | (500) | (500) | | |
| Regulatory Capital Base (RCB) - closing balance | - | - | 1,000 | 500 | - | | |



In X0, Entity C recognises a regulatory asset for the same amount as the environmental liability because the regulatory agreement allows those costs to be recovered through future billings to customers. This example assumes that when measuring the related regulatory asset, Entity C uses as a discount rate the same rate of 2.5% that it used when discounting the expected environmental clean-up costs to account for the liability at the end of X0.⁽¹⁾

During X1–X20, Entity C unwinds the discount and recognises interest expense, increasing the environmental provision by the same amount. During the same period, the movement of the related regulatory asset mirrors the accounting for the environmental liability. This is shown in Figure 3.⁽²⁾

| igure 3 | | | | | | | | |
|-----------------------------|-------|------|--|------|-------|-------|-------|--|
| IFRS Profit or loss (in CU) | X0 | X1 | | X20 | X21 | X22 | Total | |
| Revenue | - | - | | - | 525 | 513 | 1,038 | |
| Regulatory income/(expense) | 610 | 15 | | 24 | (500) | (500) | - | |
| Environmental expense | (610) | - | | - | - | - | (610) | |
| Financial cost | - | (15) | | (24) | - | - | (390) | |
| Profit/(loss) | - | - | | - | 25 | 13 | 37 | |

(1): The example assumes that the regulator compensates Entity C for the time-lag between the payment of the environmental clean-up costs and their subsequent recovery through the rates, by allowing an interest rate of 2.5% on the balance of the regulatory asset outstanding at the beginning of each year X21 and X22.
(2): Decimals have been rounded.

Assume same fact pattern as Example 1 with the following modification:

- the regulatory agreement compensates the entity for the effects of the time-lag between the origination of the RTD in year X1 and its reversal in X3, by applying annual interest of 3% on the outstanding balance of the RTD at the beginning of each period.

Consequently, the regulatory asset accrues interest of CU0.18 during X2 (CU6 x 3%) and CU0.19 (CU6.18 x 3%) during X3. The cumulative interest of CU0.37 (CU0.18 + CU0.19) is included in the rate charged during X3, together with the CU6 RTD reversing in that year.

This example assumes that the 3% interest rate established by the regulatory agreement is an appropriate rate to use to discount the estimated future cash flows when measuring the regulatory asset at each year end.

(*): A similar example to Example 1A was discussed by the Board at its meeting in May 2018.



The statement(s) of financial performance and financial position would be as follows:^(*)

| Year to 31 December - CU | X1 | X2 | Х3 |
|---|------|------|--------|
| Revenue (amounts billed) | 30 | 30 | 36.37 |
| Regulatory income/(expense) - RTD | 6 | - | (6) |
| Regulatory interest income | - | 0.18 | 0.19 |
| Regulatory expense (interest included in revenue) | - | - | (0.37) |
| Operating expenses | (36) | (30) | (30) |
| Profit/(loss) | - | 0.18 | 0.19 |
| Regulatory asset/(liability) | 6 | 6.18 | - |

(*): This example does not reflect the proposed presentation requirements tentatively agreed by the Board in November 2018. Greater presentation details are only being provided to illustrate the mechanics of the measurement model.

During year X0, a severe storm occurs causing damage to the infrastructure used to deliver services to customers. Entity D incurs costs to repair the damage of CU1,640.

Entity D submits a rate change request during year X0, asking for the full CU1,640 to be included in the rate for the two-year period X1–X2.

The regulator's final determination of the allowable amount is still outstanding when Entity D finalises its financial statements for year X0. Entity D considers Scenarios 1–4 in Figure 1 in slide 11 represent reasonably possible outcomes to be considered in estimating the future cash flows.



Example 4—estimating future cash flows

| In CU | Scenario probability | X1 | X2 | Total | % recovery of actual expenses incurred |
|------------------------------------|-------------------------|-----|-----|-------|--|
| Actual operating expenses incurred | | - | - | 1,640 | |
| Rate change request submitted | | 760 | 880 | 1,640 | 100% |

| Scenario 1 | 5% | 500 | 700 | 1,200 | 73% |
|--------------------------|-----|-----|-----|-------|------|
| Scenario 2 | 10% | 640 | 750 | 1,390 | 85% |
| Scenario 3 (most likely) | 80% | 720 | 840 | 1,560 | 95% |
| Scenario 4 | 5% | 760 | 880 | 1,640 | 100% |
| Expected cash flows | | 703 | 826 | 1,529 | 93% |

Entity D would need to use judgement to decide whether reporting information using the most likely amount method or the expected value method is likely to better predict the future cash flows resulting from the regulatory asset.



Example 4A—estimating future cash flows: most likely amount

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For the year-ended X0, Entity D assumes that the regulator will:

(a) allow recovery of the regulatory asset over 2 years, ie during years X1-X2; and

(b) give the entity 3% interest on the outstanding balance of the regulatory asset at the start of each year. The example assumes the 3% interest rate is an appropriate rate to discount the estimated future cash flows.⁽¹⁾

| Figure 2– | Statements of financial performance and financial position |
|-----------|--|
| | cash flows discounted using a 3% discount rate) |

| In CU | XO | X1 | X2 | Total |
|--------------------------------------|---------|-------|-------|---------|
| Revenue (RTD reversal plus interest) | 0 | 767 | 865 | 1,632 |
| Regulatory income / (expense) (RTD) | 1,560 | (720) | (840) | 0 |
| Operating expenses | (1,640) | - | - | (1,640) |
| Profit / (loss) | (80) | 47 | 25 | (8) |

| Regulatory interest included in revenue (3% on | | | | |
|--|---|----|----|----|
| opening balance of regulatory asset) | - | 47 | 25 | 72 |

| Regulatory asset (origination + interest - recovery) | 1,560 | 840 | - | - |
|--|-------|-----|---|---|
|--|-------|-----|---|---|

(1): Decimals have been rounded.

Example 4B—estimating future cash flows: expected value

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For the year-ended X0, Entity D assumes that the regulator will:

(a) allow recovery of the regulatory asset over 2 years, ie during years X1-X2; and

(b) give the entity 3% interest on the outstanding balance of the regulatory asset at the start of each year. The example assumes the 3% interest rate is an appropriate rate to discount the estimated future cash flows.⁽¹⁾

| Figure 3– | -Statements of financial performance and financial position |
|-----------|---|
| | (cash flows discounted using a 3% discount rate) |

| In CU | X0 | X1 | X2 | Total |
|--------------------------------------|---------|-------|-------|---------|
| Revenue (RTD reversal plus interest) | - | 749 | 851 | 1,600 |
| Regulatory income / (expense) (RTD) | 1,529 | (703) | (826) | - |
| Operating expenses | (1,640) | - | - | (1,640) |
| Profit / (loss) | (111) | 46 | 25 | (40) |

| Regulatory interest included in revenue (3% on | | | | |
|--|---|----|----|----|
| opening balance of regulatory asset) | - | 46 | 25 | 71 |

| Regulatory asset (origination + interest - recovery) | 1,529 | 826 | - | - |
|--|-------|-----|---|---|
|--|-------|-----|---|---|

(1): Decimals have been rounded.

Example 5—methods to measure RTDs that relate to items forming part of the RCB

Entity E incurs CU100 of expenses during the year X0, which it recognises in the statement(s) of financial performance, applying IFRS Standards.

- (a) The regulatory agreement identifies the amount of CU100 as an allowable expenditure, which is added to the RCB at the end of X0. As a result, the CU100 is identified as a RTD that the model would recognise as a regulatory asset.
- (b) Entity E will include an additional CU20 in the amount charged to customers in each of the next five years—X1 through X5.
- (c) The regulatory agreement provides an annual overall return rate of 8% on the opening balance of RCB. The 8% return for each year is included in the rate billed to customers in that year (slides 15–16). Slides 17–18 illustrate the case when there is a gap of one year between the period in which the 8% return accrues and the period when it is included in the rate billed to customers.
- (d) For the purposes of this illustrative example, it is assumed that an interest rate of 3% would reflect the time value of money and risks inherent in the cash flows arising from the regulatory asset.



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Example 5A—method 1 & accrual and billings coincide*

| Table 1—Discounting | Fable 1—Discounting using rate at 8% and period interest accrual coincides with billing—In CU | | | | | | | | | | | |
|-------------------------------------|---|--------------|---------|-------------|------------|---------|----------------------|----------|--|--|--|--|
| Discounted cash flows | (CFs) | X0 | X1 | X2 | ХЗ | X4 | X5 | TOTAL | | | | |
| Estimated future CFs | | - | 28.00 | 26.40 | 24.80 | 23.20 | 21.60 | 124 | | | | |
| Discount factors (using | g rate 8%) | - | 0.93 | 0.86 | 0.79 | 0.74 | 0.68 | - | | | | |
| Discounted CFs | | 100.00 | 25.93 | 22.63 | 19.69 | 17.05 | 14.70 | - | | | | |
| Regulatory asset | | X0 | X1 | X2 | ХЗ | X4 | X5 | TOTAL | | | | |
| Opening balance | | - | 100.00 | 80.00 | 60.00 | 40.00 | 20.00 | - | | | | |
| Origination | | 100.00 | - | - | - | - | - | 100.00 | | | | |
| Recovery | | - | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | (100.00) | | | | |
| Overall return at 8% | | - | 8.00 | 6.40 | 4.80 | 3.20 | 1.60 | 24.00 | | | | |
| Recovery of overall re- | turn at 8% | - | (8.00) | (6.40) | (4.80) | (3.20) | (1.60) | (24.00) | | | | |
| Closing balance | | 100.00 | 80.00 | 60.00 | 40.00 | 20.00 | 0.00 | - | | | | |
| Statement(s) of finance | cial performance | X0 | X1 | X2 | ХЗ | X4 | X5 | TOTAL | | | | |
| Revenue | | - | 28.00 | 26.40 | 24.80 | 23.20 | 21.60 | 124 | | | | |
| Reg income/(expense |) | 100.00 | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | - | | | | |
| Expenses | | (100) | - | - | - | - | - | (100) | | | | |
| Profit/(loss) | | - | 8.00 | 6.40 | 4.80 | 3.20 | 1.60 | 24 | | | | |
| | | \downarrow | | | γ | |] | ↓ ↓ | | | | |
| Recognition of regulatory returns - | | | | 24.00 | | | 24 | | | | | |
| Recognised in X0 | | | Reco | ognised thr | oughout X1 | L-X5 | Total reg returns | ulatory | | | | |

(*): Example discussed by the Board at its meeting in December 2018. Formatting used in this slide has been changed.



Example 5B—method 2 & accrual and billings coincide*

| Table 2—Discounting using rate at 0% and period interest accrual coincides with billing—In CU | | | | | | | | | | | |
|---|-----------|---------|----------------------|----------|---------|---------|----------|--|--|--|--|
| Cash flows (CFs) | X0 | X1 | X2 | X3 | X4 | X5 | TOTAL | | | | |
| Estimated future CFs | - | 28.00 | 26.40 | 24.80 | 23.20 | 21.60 | 124 | | | | |
| Regulatory asset | X0 | X1 | X2 | Х3 | X4 | X5 | TOTAL | | | | |
| Opening balance | - | 100.00 | 80.00 | 60.00 | 40.00 | 20.00 | - | | | | |
| Origination | 100.00 | - | - | - | - | - | 100.00 | | | | |
| Recovery | - | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | (100.00) | | | | |
| Overall return | - | - | - | - | - | - | - | | | | |
| Recovery of overall return | - | - | - | - | - | - | - | | | | |
| Closing balance | 100.00 | 80.00 | 60.00 | 40.00 | 20.00 | - | - | | | | |
| Statement(s) of financial performance | X0 | X1 | X2 | Х3 | X4 | X5 | TOTAL | | | | |
| Revenue | - | 28.00 | 26.40 | 24.80 | 23.20 | 21.60 | 124 | | | | |
| Reg income/(expense) | 100.00 | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | - | | | | |
| Expenses | (100) | - | - | - | - | - | (100) | | | | |
| Profit/(loss) | - | 8.00 | 6.40 | 4.80 | 3.20 | 1.60 | 24 | | | | |
| | ↓ - | | | γ | | J | → | | | | |
| Recognition of regulatory returns | | | | 24.00 | | | 24 | | | | |
| Recognis | sed in X0 | Re | Total reg returns | gulatory | | | | | | | |



Example 5C—method 1 & accrual and billings do not coincide*

| ble 3—Discounting using rate at 8% but period interest accrual is different from billing—In CU | | | | | | | | | | | | | |
|--|-------|---------|---------|---------|---------|---------|--------|----------|--|--|--|--|--|
| Discounted cash flows (CFs) | хо | X1 | X2 | X3 | X4 | X5 | X6 | TOTAL | | | | | |
| Estimated future CFs | - | 20.00 | 28.00 | 26.40 | 24.80 | 23.20 | 1.60 | 124 | | | | | |
| Discount factors (using rate 8%) | - | 0.93 | 0.86 | 0.79 | 0.74 | 0.68 | 0.63 | - | | | | | |
| Discounted CFs | 98.51 | 18.52 | 24.01 | 20.96 | 18.23 | 15.79 | 1.01 | - | | | | | |
| Regulatory asset | хо | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL | | | | | |
| Opening balance | - | 98.51 | 86.39 | 65.30 | 44.12 | 22.85 | 1.48 | - | | | | | |
| Origination | 98.51 | - | - | - | - | - | - | 98.51 | | | | | |
| Recovery | - | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | - | (100.00) | | | | | |
| Overall return at 8% | - | 8.00 | 6.40 | 4.80 | 3.20 | 1.60 | - | 24.00 | | | | | |
| Recovery of overall return at 8% | - | - | (8.00) | (6.40) | (4.80) | (3.20) | (1.60) | (24.00) | | | | | |
| Unwinding effect | - | (0.12) | 0.51 | 0.42 | 0.33 | 0.23 | 0.12 | 1.49 | | | | | |
| Closing balance | 98.51 | 86.39 | 65.30 | 44.12 | 22.85 | 1.48 | - | - | | | | | |
| Statement(s) of financial performance | X0 | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL | | | | | |
| Revenue | - | 20.00 | 28.00 | 26 40 | 24 80 | 23 20 | 1 60 | 124 | | | | | |

| Discounted cash flo | ows (CFs) | X0 | X1 | X2 | X3 | X4 | X5 | X6 | TOTAL |
|----------------------|--------------------|--------|---------|-----------|------------|---------|---------|------------|----------|
| Estimated future C | Fs | - | 20.00 | 28.00 | 26.40 | 24.80 | 23.20 | 1.60 | 124 |
| Discount factors (us | sing rate 8%) | - | 0.93 | 0.86 | 0.79 | 0.74 | 0.68 | 0.63 | - |
| Discounted CFs | | 98.51 | 18.52 | 24.01 | 20.96 | 18.23 | 15.79 | 1.01 | - |
| Regulatory asset | | X0 | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL |
| Opening balance | | - | 98.51 | 86.39 | 65.30 | 44.12 | 22.85 | 1.48 | - |
| Origination | | 98.51 | - | - | - | - | - | - | 98.51 |
| Recovery | | - | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | - | (100.00) |
| Overall return at 89 | 6 | - | 8.00 | 6.40 | 4.80 | 3.20 | 1.60 | - | 24.00 |
| Recovery of overall | l return at 8% | - | - | (8.00) | (6.40) | (4.80) | (3.20) | (1.60) | (24.00) |
| Unwinding effect | | - | (0.12) | 0.51 | 0.42 | 0.33 | 0.23 | 0.12 | 1.49 |
| Closing balance | | 98.51 | 86.39 | 65.30 | 44.12 | 22.85 | 1.48 | - | - |
| Statement(s) of fin | ancial performance | X0 | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL |
| Revenue | | - | 20.00 | 28.00 | 26.40 | 24.80 | 23.20 | 1.60 | 124 |
| Reg income/(exper | nse) | 98.51 | (12.12) | (21.09) | (21.18) | (21.27) | (21.37) | (1.48) | - |
| Expenses | | (100) | - | - | - | - | - | - | (100) |
| Profit/(loss) | | (1.49) | 7.88 | 6.91 | 5.22 | 3.53 | 1.83 | 0.12 | 24 |
| | | ↓ | | | Υ | | | J | Ļ |
| Recognition of regu | ulatory returns | (1.49) | | | 25.49 | | | | 24 |
| | Recognised | in X0 | R | ecognised | throughout | t X1-X6 | Total | regulatory | returns |

(*): Example discussed by the Board at its meeting in December 2018. This example reflects the present value effect caused by the delay in the billings of the accrued interest. Formatting used in this slide has been changed.



Example 5D—method 2 & accrual and billings do not coincide*

| Table 4—Discounting using rate at 0% but period interest accrual is different from billing—In CU | | | | | | | | | | |
|--|------------------|---------|------------|-----------|---------|---------|------------|----------|--|--|
| Cash flows (CFs) | X0 | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL | | |
| Estimated future CFs | - | 20.00 | 28.00 | 26.40 | 24.80 | 23.20 | 1.60 | 124 | | |
| Regulatory asset | XO | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL | | |
| Opening balance | - | 100.00 | 80.00 | 60.00 | 40.00 | 20.00 | 0.00 | - | | |
| Origination | 100.00 | - | - | - | - | - | - | 100.00 | | |
| Recovery | - | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | - | (100.00) | | |
| Overall return | - | - | - | - | - | - | - | - | | |
| Recovery of overall return | - | - | - | - | - | - | - | - | | |
| Unwinding effect | - | - | - | - | - | - | - | - | | |
| Closing balance | 100.00 | 80.00 | 60.00 | 40.00 | 20.00 | 0.00 | - | - | | |
| Statement(s) of financial per | formance X0 | X1 | X2 | Х3 | X4 | X5 | X6 | TOTAL | | |
| Revenue | - | 20.00 | 28.00 | 26.40 | 24.80 | 23.20 | 1.60 | 124 | | |
| Reg income/(expense) | 100.00 | (20.00) | (20.00) | (20.00) | (20.00) | (20.00) | 0.00 | - | | |
| Expenses | (100) | - | - | - | - | - | - | (100) | | |
| Profit/(loss) | - | - | 8.00 | 6.40 | 4.80 | 3.20 | 1.60 | 24 | | |
| | Ļ | | | γ | | | J | Ļ | | |
| Recognition of regulatory ret | urns - | | | 24.00 | <u></u> | | | 24 | | |
| | Recognised in X0 | F | Recognised | throughou | t X1-X6 | Total | regulatory | returns | | |



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Example 6—changes in estimates: amount* (1/2)

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This fact pattern continues with Example 4A. Early in year X1, Entity D receives the final rate determination confirming the amount and recovery period of the timing difference resulting from repairing the storm damage. The rate determination confirms that:

- a) Entity D can recover CU1,600 of the CU1,640 repair costs incurred when it repaired the damage caused by the storm (ie the final approved amount is CU40 higher than the amount initially estimated);
- b) Entity D will recover the CU1,600 by increasing the rate charged to customers in X1 through X2; and
- c) Entity D will be compensated for the effects of the time-lag by including in the rate charged to customers 3% interest on the outstanding balance of the regulatory asset at the beginning of each year.

For the year X1, the statement(s) of financial performance of Entity D reflects:

- a) revenue of CU778 consisting of the actual recovery of CU730 billed during the year and interest of CU48 also billed during the year (3% on CU1,600, which is the outstanding balance of the regulatory asset at the start of X1 of CU1,560 plus the additional CU40 that the regulator subsequently allows in the final rate determination);
- b) regulatory income for the additional CU40 storm damage repair costs incurred in year X0 that was not included in Entity D's initial estimate but the regulator allows in the final rate determination; and
- regulatory expense of CU730 for the amount of the regulatory asset recovered through the rate during X1.

Note: This example assumes that the interest rate of 3% is an appropriate rate to use for discounting the estimated future cash flows.

(*): Example discussed by the Board at its meeting in July 2018.

| Statements of financial perfo | rmance and financial position ^{(1), (2)} |
|-------------------------------|---|
| Cash flows discount | ed using 3% discount rate |

| In CU | X0 | X1 | X2 | Total |
|--------------------------------------|---------|-------|-------|---------|
| Revenue (RTD reversal plus interest) | - | 778 | 896 | 1,674 |
| Regulatory income (RTD origination) | 1,560 | 40 | - | 1,600 |
| Regulatory expense (RTD reversal) | - | (730) | (870) | (1,600) |
| Operating expenses | (1,640) | - | - | (1,640) |
| Profit / (loss) | (80) | 88 | 26 | 34 |

| Regulatory interest included in revenue | - | 48 | 26 | 74 |
|---|---|----|----|----|
|---|---|----|----|----|

| Regulatory asset (origination + interest - recovery) | 1,560 | 870 | - | - |
|--|-------|-----|---|---|
|--|-------|-----|---|---|

(1): Decimals have been rounded.

(2): This example does not reflect the proposed presentation requirements tentatively agreed by the Board in November 2018. Greater presentation details are only being provided to illustrate the mechanics of the measurement model.



Example 7—changes in estimates: timing* (1/2)

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This fact pattern continues with Example 4A. Early in year X1, Entity D receives the final rate determination confirming the amount and recovery period of the timing difference resulting from repairing the storm damage. The rate determination confirms that:

- a) Entity D can recover CU1,560 of the CU1,640 repair costs incurred when it repaired the damage caused by the storm (ie the regulator approves 100% of the entity's estimated amount at the end of year X0);
- b) Entity D will not recover the CU1,560 in two years as initially estimated but in **three years** by increasing the rate charged to customers in X1 through X3; and
- c) Entity D will be compensated for the effects of the time-lag by including in the rate charged to customers 3% interest on the outstanding balance of the regulatory asset at the beginning of each year.

At the end of year X1, the statement of financial performance of Entity D reflects:

- a) revenue of CU537 consisting of the actual reversal of CU490 billed during the year and interest of CU47 also billed during the year (3% on CU1,560, which is the outstanding balance of the regulatory asset at the start of X1); and
- b) regulatory expense of CU490 for the amount of the regulatory asset recovered through the rate during X1.

Although the regulatory determination slows the timing of the cash inflows, no loss is recognised in year X1 because the entity is being compensated for the time-lag.

Note: This example assumes that the interest rate of 3% is an appropriate rate to use for discounting the estimated future cash flows.

(*): Example discussed by the Board at its meeting in July 2018.

| Statements of financial performance and financial position ^{(1), (2)} Cash flows discounted using 3% discount rate | | | | | | |
|--|---------|-------|-------|-------|---------|--|
| In CU | X0 | X1 | X2 | Х3 | Total | |
| Revenue (RTD reversal plus interest) | - | 537 | 567 | 551 | 1,655 | |
| Regulatory income (RTD origination) | 1,560 | - | - | - | 1,560 | |
| Regulatory expense (RTD reversal) | - | (490) | (535) | (535) | (1,560) | |
| Operating expenses | (1,640) | - | - | - | (1,640) | |
| Profit / (loss) | (80) | 47 | 32 | 16 | 15 | |

| Regulatory interest included in revenue | - | 47 | 32 | 16 | 95 |
|---|---|----|----|----|----|
|---|---|----|----|----|----|

| Regulatory asset (origination + interest - recovery) | 1,560 | 1,070 | 535 | - | - |
|--|-------|-------|-----|---|---|
|--|-------|-------|-----|---|---|

(1): Decimals have been rounded.

(2): This example does not reflect the proposed presentation requirements tentatively agreed by the Board in November 2018. Greater presentation details are only being provided to illustrate the mechanics of the measurement model.



Example 7A—changes in the interest/ return rates (1/2)

This fact pattern continues from Example 7 with the following modification. During year X1, the regulatory agreement resets the interest/ return rate to 5% for the remaining balance of the RTD for the next 2 years. The new rate is to be applied from 1 January X2. The amounts charged to customers through the rate during X1 are unchanged from the amounts in the previous slide.

During years X2–X3, the interest/ return that will be earned on the remaining balance of the regulatory asset will be higher than originally estimated because the regulatory interest/ return rate established by the regulatory agreement has been increased to reflect a change in market rates. The 5% rate is still assumed to be an appropriate rate to use for discounting the estimated future cash flows. Discounting the estimated future cash flows using the 5% as a discount rate for the applicable years X2–X3 results in the year-end present value amounts for the regulatory asset shown in slide 24.

The table shows that the change in estimated future cash flows plus the change in discount rate does not have an effect on the present value measure of the regulatory asset when the timing of the cash flows coincides with the timing of the change in interest/ return rate. However, the change in the interest/ return rate does have an effect on the revenue the entity is entitled to bill during years X2–X3. This has an equivalent effect on the amount of profit reported in years X2–X3.





Example 7A—changes in the interest/ return rates (2/2)

| Statements of financial performance and financial position ^{(1), (2)} Cash flows discounted using 3% in X1 and 5% in X2–X3 | | | | | | |
|--|---------|------------|-------|-------|---------|--|
| In CU | X0 | X 1 | X2 | Х3 | Total | |
| Revenue (RTD reversal plus interest) | - | 537 | 589 | 562 | 1,688 | |
| Regulatory income (RTD origination) | 1,560 | - | - | - | 1,560 | |
| Regulatory expense (RTD reversal) | - | (490) | (535) | (535) | (1,560) | |
| Operating expenses | (1,640) | - | - | - | (1,640) | |
| Profit / (loss) | (80) | 47 | 54 | 27 | 48 | |

| Regulatory interest included in revenue | - | 47 | 54 | 27 | 128 |
|---|---|----|----|----|-----|

| Regulatory asset (origination + interest - recovery) | 1,560 | 1,070 | 535 | - | - |
|--|-------|-------|-----|---|---|
|--|-------|-------|-----|---|---|

(1): Decimals have been rounded.

(2): This example does not reflect the proposed presentation requirements tentatively agreed by the Board in November 2018. Greater presentation details are only being provided to illustrate the mechanics of the measurement model.



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