

## Impairment –Worked example (Depreciated replacement cost approach)

In 20X1, the City of Diffcar purchased a new mainframe computer at a cost of £10 million. Diffcar estimated that the useful life of the computer would be seven years, and that on average 80% of central processing unit (CPU) capacity would be used by the various departments. A buffer of excess CPU time of 20% was expected and needed to accommodate scheduling jobs to meet peak period deadlines.

Within a few months of acquisition, CPU usage reached 80%, but declined to 20% in 20X5 because many applications of the departments were converted to run on desktop computers or servers. A computer is available on the market at a price of £500,000 that can provide the remaining service potential of the mainframe computer using the remaining applications.

### How would this impairment be accounted for?

#### Solution

The indication of impairment is the significant long-term change in the technological environment resulting in conversion of applications from the mainframe to other platforms, and therefore decreased usage of the mainframe computer.

Impairment loss is determined using the depreciated replacement cost approach as follows:

The acquisition cost is £10million

Accumulated depreciation at 20X5 (£10 million, multiplied by 4 and divided by seven) is £5,714,286

The carrying amount is thus £4,285,714

The replacement cost is £500,000

Accumulated depreciation on this replacement cost (£500,000 multiplied by 4 and divided by 7) is £285,714

The recoverable service amount is thus £214,286

Therefore, the impairment loss £4,285,714 less £214,286 is **£4,071,428**. This would be accounted for as follows:

Debit the statement of financial performance by: £4,071,428

Credit the mainframe computer (as a non-current asset) by: £4,071,428

The carrying amount of asset after impairment loss £214,286

## Impairment –Worked example (Restoration cost approach)

In 20X4, North District Primary School acquired a bus at the cost of £200,000 to help students from a nearby village to commute free of charge.

The school estimated a useful life of 10 years for the bus. In 20X9, the bus sustained damage in a road accident, requiring £40,000 to be restored to a usable condition. The restoration will not affect the useful life of the asset.

The cost of a new bus to deliver a similar service is £250,000 in 20X9.

Impairment is indicated because the bus has sustained physical damage in the road accident.

### How would this impairment be calculated and accounted for in the school's financial statements?

#### Solution

The impairment loss using the restoration cost approach would be determined as follows:

The acquisition cost is £200,000

The accumulated depreciation at 20X9 (that is £200,000 multiplied by 5 and divided by 10) is £100,000

Thus the carrying amount is £100,000

The replacement cost is £250,000

Accumulated depreciation on (that is £250,000 multiplied by 5 and divided by 10) is £125,000

So the depreciated replacement cost in an undamaged state is £125,000

Less the restoration cost £40,000 gives a recoverable service amount of £85,000

Thus the impairment loss of £100,000 less £85,000 is **£15,000** and would be accounted for as follows:

Debit the Statement of financial performance by £15,000

Credit the vehicle account (as a non-current asset) by £15,000

The carrying amount of asset after impairment loss is £85,000.

## Impairment –Worked example (Service units approach)

In 20X3, Ornog City Council constructed a 20-story office building for use by the Council in downtown Ornog at the cost of £80 million. The building was expected to have a useful life of 40 years.

15 years later in 20Y8, National Safety Regulations required that the top four stories of high rise buildings should be left unoccupied for the foreseeable future. The building has a fair value less costs to sell of £45 million in 20Y8 after the regulations came into force. The current replacement cost of a similar 20-story building is £85 million.

Impairment is indicated because the extent of use of the office building has changed from 20 floors to 16 floors as the result of new National Safety Regulations. The reduction in the extent of use is significant and the occupation of the building is expected to remain at the reduced level (16 floors) for the foreseeable future.

### How would we calculate and account for the impairment loss?

#### Solution

The impairment loss using the service units approach would be determined as follows:

The acquisition cost is £80,000,000

The accumulated depreciation at 20Y8 (that is £80,000,000 multiplied by 15 and divided by 40) is £30,000,000

Thus the carrying amount is £50,000,000

The replacement cost of a 20-story building is £85,000,000

The accumulated depreciation on this would be (£85,000,000 multiplied by 15 and divided by 40) £31,875,000

The depreciated replacement cost (before adjustment for remaining service units) is £53,125,000

The value in use of the building after the regulation came into force would be £53,125,000 multiplied by 16 and divided by 20, that is £42,500,000

The fair value less costs to sell of the building after regulation came into force in 20Y8 is £45,000,000

The recoverable service amount, that is the higher of value in use and fair value less costs to sell, is £45,000,000

The impairment loss is therefore £50,000,000 less £45,000,000 which is **£5,000,000** and would be accounted for as follows:

Debit the Statement of financial performance by £5,000,000

Credit the Building account as a non-current asset by £5,000,000

The carrying amount of asset after recognising the impairment loss is £45,000,000.