15. Intangible assets

2019	Goodwill $m	Software $m	Licences $m	Other $m	Total $m
Balance at 1 July 2018, net of accumulated amortisation and impairment	**2,881**	**-**	**311**	**79**	**3,271**
Reclassified from property, plant and equipment	**-**	**450**	**-**	**-**	**450**
Additions	**-**	**177**	**-**	**-**	**177**
Disposals	**(15)**	**-**	**-**	**-**	**(15)**
Amortisation expense	**-**	**(124)**	**(7)**	**(12)**	**(143)**
Balance at 30 June 2019, net of accumulated amortisation and impairment	**2,866**	**503**	**304**	**67**	**3,740**
Balance at 1 July 2018					
Cost (gross carrying amount)	**2,882**	**-**	**311**	**258**	**3,451**
Accumulated amortisation and impairment	**(1)**	**-**	**-**	**(179)**	**(180)**
Net carrying amount	**2,881**	**-**	**311**	**79**	**3,271**
Balance at 30 June 2019					
Cost (gross carrying amount)	**2,867**	**1,072**	**311**	**258**	**4,508**
Accumulated amortisation and impairment	**(1)**	**(569)**	**(7)**	**(191)**	**(768)**
Net carrying amount	**2,866**	**503**	**304**	**67**	**3,740**
2018					
Balance at 1 July 2017, net of accumulated amortisation and impairment	2,881	-	311	94	3,286
Amortisation expense	-	-	-	(15)	(15)
Balance at 30 June 2018, net of accumulated amortisation and impairment	2,881	-	311	79	3,271
Balance at 1 July 2017					
Cost (gross carrying amount)	2,882	-	311	448	3,641
Accumulated amortisation and impairment	(1)	-	-	(354)	(355)
Net carrying amount	2,881	-	311	94	3,286
Balance at 30 June 2018					
Cost (gross carrying amount)	2,882	-	311	258	3,451
Accumulated amortisation and impairment	(1)	-	-	(179)	(180)
Net carrying amount	2,881	-	311	79	3,271

15. Intangible assets (cont.)

Impairment testing for goodwill and intangibles with indefinite useful lives

Goodwill and other intangible assets deemed to have indefinite lives, that are significant in comparison to AGL's total carrying amount of intangible assets with indefinite lives, have been allocated to cash-generating units (CGUs) for the purpose of impairment testing as follows:

Year ended 30 June 2019	Goodwill $m	Licences $m	Total intangible assets with indefinite lives $m
Customer Markets	**886**	-	**886**
Wholesale Markets	**1,353**	-	**1,353**
Group Operations	**627**	-	**627**
Total goodwill and intangibles with indefinite useful lives	**2,866**	-	**2,866**
Year ended 30 June 2018			
Customer Markets	901	-	901
Wholesale Markets	1,353	-	1,353
Group Operations	627	311	938
Total goodwill and intangibles with indefinite useful lives	2,881	311	3,192

ACCOUNTING POLICY

Intangible assets

Intangible assets acquired separately are initially measured at cost. The cost of an intangible asset acquired in a business combination is its fair value at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortisation and any accumulated impairment losses.

The useful lives of intangible assets are assessed to be either finite or indefinite. Indefinite intangible assets are assessed at least annually for impairment. Finite intangible assets are amortised over their estimated useful life and tested for impairment whenever there is an indication that the intangible asset may be impaired.

The estimated useful life and amortisation method are reviewed at the end of each annual reporting period.

The following estimated useful lives are used in the calculation of amortisation for intangible assets with finite lives:

- Customer relationships and contracts – 3 to 20 years
- Software – 3 to 7 years
- Licences – the lesser of licence term and asset useful life

An intangible asset is derecognised on disposal, or when no future economic benefits are expected from use or disposal. Gains or losses arising from derecognition of an intangible asset are recognised in profit or loss when the asset is derecognised.

Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of the acquisition of the business less accumulated impairment losses, if any.

For the purpose of impairment testing, goodwill is allocated to each of AGL's CGUs or groups of CGUs expected to benefit from the synergies of the combination, and tested for impairment at least annually.

A CGU or groups of CGUs to which goodwill has been allocated is tested for impairment annually, or more frequently when there is an indication that the unit may be impaired. If the recoverable amount of the CGU or group of CGUs is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the CGU(s) and then to the other assets of the CGU(s) pro rata based on the carrying amount of each asset in the CGU(s). Any impairment loss for goodwill is recognised directly in profit or loss. An impairment loss recognised for goodwill is not reversed in subsequent periods.

Software

Software is measured at cost less accumulated amortisation and impairment losses. Cost includes expenditure that is directly attributable to the acquisition or development of the software.

Licences

Licences are carried at cost less any accumulated amortisation and impairment losses.

15. Intangible assets (cont.)

ACCOUNTING POLICY

Customer relationships and contracts

Customer relationships and contracts acquired in a business combination are carried at cost less accumulated amortisation and any accumulated impairment losses. Amortisation is recognised as an expense on a straight-line basis over the period during which economic benefits are expected to be received.

The direct costs of establishing customer contracts are recognised as an asset when they relate to a specific customer acquisition campaign. The direct costs are amortised over the minimum contract term. Direct costs include customer acquisition fees paid to channel partners and upfront account purchase payments. All other customer acquisition costs are expensed as incurred.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

Impairment testing for Customer Markets, Wholesale Markets and Group Operations

The recoverable amounts for the Customer Markets, Wholesale Markets and Group Operations CGUs have been determined using value in use models including an appropriate terminal value. The key assumptions in the calculation of value in use include:

- forward market-based transfer pricing between CGUs;
- customer numbers and churn;
- consumption volumes;
- energy procurement costs and volumes and generation volumes; and
- gross margin including assumptions around regulatory outcomes, pricing in unregulated markets and customer discounts.

Management do not believe that any reasonable possible change in these assumptions would result in an impairment.

The estimate of regulatory outcomes is based on actual regulatory decisions for the current price reset period, which are publicly available, together with AGL's expectations of regulatory decisions beyond the current reset period and market prices in unregulated markets. The assumed future gross margin in unregulated markets is determined with reference to historic achieved rates along with AGL's expectations of future price changes together with the impact of expected customer discounts. Customer numbers and consumption volumes are estimated based on historical experience in various segments, together with marketing strategies for the retention and winning of customers. Energy procurement costs are estimated based on the actual hedge portfolio, together with an estimate of future hedging prices and volumes beyond the period of the actual hedge portfolio.

Cash flow forecasts are based on Board approved budgets and the most recent three-year plan. The terminal value is based on final year free cash flow, except for capital expenditure, which is normalised in perpetuity adjusted for inflation of 2.5% (2018: 2.5%). Discount rates used are the pre-tax equivalent of a post-tax weighted average cost of capital of 8.6% (2018: 8.6%).

Impact of climate change related risk

The recoverable value estimates used in the impairment of assets analysis considers climate change risk through the adjustment of cash inflows associated with the planned closure of AGL's Liddell Power Station. This recoverable value estimate demonstrates that the carrying value of AGL's Group Operations CGU is not impaired.

Management recognises that there is an increased pace of change in the energy industry and associated political landscape and will continue to work towards incorporating quantification of the financial impact of climate change and related policies within our annual financial filings in accordance with Australian Securities and Investments Commission (ASIC), Australian Prudential Regulation Authority (APRA), and Australian Accounting Standards Board (AASB) recommendations.

Notwithstanding the above, any change to the planned closure dates of AGL's coal-fired generation plants as a result of climate change may have a material impact on the National Electricity Market and may result in a material change to AGL's estimated cash inflows.

No impairment loss has been recognised for the Customer Markets, Wholesale Markets or the Group Operations CGUs for the year ended 30 June 2019 (2018: $nil).

Impairment of goodwill and other intangibles with indefinite useful lives

AGL determines whether goodwill and other intangibles with indefinite useful lives are impaired at least on a semi-annual basis. This requires an assessment of impairment indications, and an estimation of the recoverable amount of the cash-generating units, using a value in use discounted methodology, to which the goodwill and intangibles with indefinite useful lives are allocated.