35. Cash and cash equivalents (cont.)

Year ended 30 June 2018[1]	Balance at beginning of financial year $m	Net repayments $m	Non-cash movements $m	Balance at end of financial year $m
Liabilities arising from financing activities				
USD senior notes	938	-	(7)	931
Subordinated notes	650	-	-	650
Medium term notes	598	-	-	598
Bank loans	830	(420)	-	410
CPI bonds	160	(73)	1	88
Other loans	155	(11)	-	144
Lease liabilities	157	(9)	6	154
Deferred transaction costs	(15)	-	3	(12)
	3,473	(513)	3	2,963

1. Comparatives have been restated for the adoption of AASB 16 Leases. Refer to Note 38(c).

ACCOUNTING POLICY

Cash and cash equivalents

Cash and cash equivalents comprise cash at bank and on hand and short-term deposits with an original maturity of three months or less that are readily convertible to known amounts of cash. The carrying amount represents fair value.

For the purposes of the Consolidated Statement of Cash Flows, cash and cash equivalents consist of cash and cash equivalents as defined above net of outstanding bank overdrafts.

36. Financial instruments

(a) Classes and categories of financial instruments and their fair values

The following table combines information about:

- classes of financial instruments based on their nature and characteristics;
  - Amortised cost
  - Fair value through profit or loss ('FVTPL')
  - Fair value through other comprehensive income ('FVOCI')
- the carrying amounts of financial instruments;
- fair values of financial instruments (except financial instruments when carrying amount approximates their fair value); and
- fair value hierarchy levels of financial assets and financial liabilities for which fair value was disclosed.

36. Financial instruments (cont.)

	Carrying value						
	Financial assets			Financial liabilities			
2019 $m	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost	Total
Cash and cash equivalents	-	-	115	-	-	-	115
Other financial assets	-	93	-	-	-	-	93
Trade and other receivables	-	-	1,703	-	-	-	1,703
Future deposits and margin calls	-	-	531	-	-	-	531
Borrowings	-	-	-	-	-	(2,678)	(2,678)
Derivative financial instruments	627	-	-	(658)	-	-	(31)
Finance lease liabilities	-	-	-	-	-	(172)	(172)
Trade and other payables	-	-	-	-	-	(1,556)	(1,556)
Deferred consideration	-	-	-	-	-	(199)	(199)
Total	627	93	2,349	(658)	-	(4,605)	(2,194)

	Carrying value						
	Financial assets			Financial liabilities			
Restated 2018 $m[1]	FVTPL	FVOCI	Amortised cost	FVTPL	FVOCI	Amortised cost	Total
Cash and cash equivalents	-	-	463	-	-	-	463
Other financial assets	-	64	-	-	-	-	64
Trade and other receivables	-	-	1,775	-	-	-	1,775
Future deposits and margin calls	-	-	344	-	-	-	344
Borrowings	-	-	-	-	-	(2,809)	(2,809)
Derivative financial instruments	567	-	-	(513)	-	-	54
Finance lease liabilities	-	-	-	-	-	(154)	(154)
Trade and other payables	-	-	-	-	-	(1,579)	(1,579)
Deferred consideration	-	-	-	-	-	(211)	(211)
Total	567	64	2,582	(513)	-	(4,753)	(2,053)

1. Comparatives have been restated for the adoption of AASB 9 Financial Instruments and AASB 16 Leases. Refer to Note 38(c).

(b) Fair value measurements

The following table provides an analysis of financial instruments that are measured subsequent to initial recognition at fair value, grouped into Levels 1 to 3 based on the degree to which the fair value is observable.

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (as prices) or indirectly (derived from prices).
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

There were no material transfers between Level 1 and Level 2 during the year.

36. Financial instruments (cont.)

2019	Carrying amount $m	Level 1 $m	Level 2 $m	Level 3 $m	Total $m
Financial assets					
Equity instrument financial assets					
Unlisted equity securities	-	-	-	-	-
Unlisted investment funds	93	-	-	93	93
Derivative financial instruments					
Cross currency swap contracts - cash flow and fair value hedges	136	-	136	-	136
Interest rate swap contracts - cash flow hedges	-	-	-	-	-
Forward foreign exchange contracts - cash flow hedges	1	-	1	-	1
Energy derivatives - cash flow hedges	33	-	33	-	33
Energy derivatives - economic hedges	594	145	78	371	594
Total financial assets	857	145	248	464	857
Financial liabilities					
Derivative financial instruments					
Cross currency swap contracts - cash flow and fair value hedges	-	-	-	-	-
Interest rate swap contracts - cash flow hedges	(57)	-	(57)	-	(57)
Energy derivatives - cash flow hedges	(5)	-	(5)	-	(5)
Energy derivatives - economic hedges	(653)	(293)	(151)	(209)	(653)
Total financial liabilities	(715)	(293)	(213)	(209)	(715)

2018	Carrying amount $m	Level 1 $m	Level 2 $m	Level 3 $m	Total $m
Financial assets					
Equity instrument financial assets					
Unlisted equity securities	16	-	-	16	16
Unlisted investment funds	48	-	-	48	48
Derivative financial instruments					
Cross currency swap contracts - cash flow and fair value hedges	72	-	72	-	72
Interest rate swap contracts - cash flow hedges	1	-	1	-	1
Energy derivatives - cash flow hedges	6	-	6	-	6
Energy derivatives - economic hedges	561	34	187	340	561
Total financial assets	704	34	266	404	704
Financial liabilities					
Derivative financial instruments					
Cross currency swap contracts - cash flow and fair value hedges	(59)	-	(59)	-	(59)
Interest rate swap contracts - cash flow hedges	(43)	-	(43)	-	(43)
Energy derivatives - cash flow hedges	(95)	-	(95)	-	(95)
Energy derivatives - economic hedges	(418)	(159)	(70)	(189)	(418)
Total financial liabilities	(615)	(159)	(267)	(189)	(615)

Management has assessed that the carrying value of financial assets (excluding derivative financial assets) and financial liabilities (excluding derivative financial liabilities) to be comparable to fair value.

36. Financial instruments (cont.)

Estimation of fair values

The following summarises the major methods and assumptions used in estimating the fair values of financial instruments:

- Receivables/payables with a remaining life of less than six months, the notional amount is deemed to reflect the fair value. All other receivables/payables are discounted to determine the fair value if the effect of discounting is material.
- The fair value of forward foreign exchange contracts and energy derivatives is calculated as the present value of expected future cash flows estimated and discounted based on the applicable yield curves derived from quoted interest rates that reflect the credit risk of various counterparties. Interest rate and cross currency swaps are measured at the present value of future cash flows estimated and discounted based on the applicable yield curves derived from quoted interest rates that reflect the credit risk of various counterparties.
- The fair value of borrowings is determined as the present value of future contracted cash flows and credit adjustments. Cash flows are discounted using standard valuation techniques at applicable market yield having regard to timing of cash flows.
- The fair value of energy derivatives is determined as the present value of future contracted cash flows and credit adjustments. Cash flows are discounted using standard valuation techniques at applicable market yield having regard to timing of cash flows.
- The fair value of lease liabilities is estimated as the present value of future cash flows discounted where the effect of discounting is material.
- The fair value of deferred consideration is determined as the present value of future contracted cash flows and credit adjustments. Cash flows are discounted using standard valuation techniques at applicable market yield having regard to timing of cash flows.

The following table provides a reconciliation of fair value movements in Level 3 financial instruments.

	2019 $m	2018 $m
Opening balance	**215**	(97)
Total gains or losses recognised in profit or loss		
Settlements during the year	**(413)**	54
Changes in fair value	**457**	263
Premiums	**(32)**	(41)
Purchases	**28**	49
Disposals	**-**	(13)
Closing balance	**255**	215

The total gains or losses for the year included a gain of $11 million relating to energy derivative Level 3 contracts held at the end of the reporting period (2018: a gain of $280 million). Fair value gains or losses on energy derivatives are included in other expenses in the line item 'Loss/(gain) on fair value of financial instruments' in Note 4.

The sensitivity of Level 3 contracts with significant unobservable inputs, where the inputs are higher by 10 percent is $(257) million and lower by 10 percent is $263 million (profit after tax increase/(decrease)). Input changes were applied to forward prices with references to electricity market and emissions schemes, cost-based indexes, contract volumes and management's assumptions on long-term commodity curves.

(c) Capital risk management

AGL's objectives when managing capital are to safeguard its ability to continue as a going concern, so that it can continue to provide returns for shareholders and benefits for other stakeholders and to maintain an appropriate capital structure of debt and equity.

In order to maintain or adjust the capital structure, AGL may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt. AGL's overall capital management strategy remains unchanged from 2018.

The capital structure of AGL consists of net debt (borrowings offset by cash and cash equivalents) and total equity (comprising issued capital, reserves and retained earnings).

AGL monitors capital on the basis of the gearing ratio and funds from operations (FFO) to interest expense cover.

36. Financial instruments (cont.)

The gearing ratio is calculated as net debt divided by adjusted total capital. Net debt is calculated as total borrowings, adjusted for cross currency swap hedges and deferred borrowing costs, less cash and cash equivalents. Adjusted total capital is calculated as total equity less the hedge reserve plus net debt. The gearing ratio at the end of the reporting period was as follows:

	2019 $m	Restated 2018 $m[1]
Current borrowings	**102**	34
Non-current borrowings	**2,748**	2,929
Total borrowings	**2,850**	2,963
Adjustment for cross currency swap hedges and deferred borrowing costs	**(135)**	(9)
Adjusted total borrowings	**2,715**	2,954
Cash and cash equivalents	**(115)**	(463)
Net debt	**2,600**	2,491
Total equity	**8,438**	8,301
Hedge reserve	**26**	96
Adjusted equity	**8,464**	8,397
Net debt	**2,600**	2,491
Adjusted total capital	**11,064**	10,888
Gearing ratio	**23.5%**	22.9%

1. Comparatives have been restated for the adoption of AASB 9 Financial Instruments and AASB 16 Leases. Refer to Note 38(c).

(d) Financial risk management

AGL's activities expose it to a variety of financial risks, including market risk (interest rate risk, foreign currency risk and energy price risk), credit risk and liquidity risk. AGL's overall risk management program focuses on the unpredictability of markets and seeks to manage the impact of these risks on its financial performance. AGL uses a range of derivative financial instruments to hedge these risk exposures.

The Board of Directors has overall responsibility for the establishment and oversight of the risk management policy and framework. The Board has established the Audit & Risk Management Committee (the Committee), which is responsible for approving AGL's risk management policy and framework for identifying, assessing and managing risk. The Committee is also responsible for reviewing and updating the risk profile, monitoring the effectiveness of the risk management framework and reviewing at least annually the implementation of the risk management policy and framework. The Committee reports regularly to the Board of Directors on its activities.

AGL has written policies covering specific areas, such as interest rate risk, foreign currency risk, energy price risk, credit risk, liquidity risk, and the use of derivative and non-derivative financial instruments. Compliance with policies and exposure limits is reviewed on a continuous basis.

(e) Interest rate risk management

AGL is exposed to interest rate risk as it borrows funds at both fixed and floating interest rates. The risk is managed by maintaining an appropriate mix between fixed and floating rate borrowings, and by the use of interest rate swap contracts or other hedging instruments.

AGL regularly analyses its interest rate exposure, by taking into consideration forecast debt positions, refinancing, renewals of existing positions, alternative financing, hedging positions and the mix of fixed and floating interest rates.

At the end of the reporting period, AGL had the following financial assets and liabilities exposed to floating interest rate risk:

Floating rate instruments	2019 $m	2018 $m
Financial assets		
Cash and cash equivalents	**115**	463
Total financial assets	**115**	463
Financial liabilities		
USD senior notes (after effect of cross currency swaps)	**860**	860
Subordinated notes	**-**	650
Bank loans	**820**	410
Other loans	**133**	144
Interest rate swap contracts	**(945)**	(1,205)
Total financial liabilities	**868**	859

36. Financial instruments (cont.)

Interest rate swap contracts - cash flow hedges

The following table details the notional principal amounts and remaining terms of interest rate swap contracts outstanding at the end of the reporting period:

Outstanding hedging instruments cash flow hedge - receive floating, pay fixed contracts	Average contracted fixed interest rate		Notional principal amount		Carrying value of outstanding hedging instruments		Change in fair value of hedging instruments	
	2019 %	2018 %	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Less than 1 year	**3.13**	2.57	**340**	510	**(5)**	(2)	**3**	10
1 to 2 years	**3.47**	3.13	**345**	340	**(13)**	(6)	**(1)**	4
2 to 3 years	**3.12**	4.29	**355**	245	**(14)**	(13)	**(7)**	4
3 to 4 years	**3.86**	3.41	**170**	305	**(15)**	(7)	**(4)**	(1)
4 to 5 years	**2.92**	3.86	**200**	170	**(10)**	(11)	**(6)**	-
5 years or more	**-**	2.92	**-**	200	**-**	(3)	**-**	(2)
Total			**1,410**	1,770	**(57)**	(42)	**(15)**	15

	Financial year	2019 $m	2018 $m
Aggregate notional principal of the outstanding interest rate swaps		**1,410**	1,770
Included in this amount:			
Forward interest rate swap contracts		**465**	565
Of which:			
Commences in	**2019**	**-**	150
Commences in	**2020**	**275**	225
Commences in	**2021**	**40**	40
Commences in	**2022**	**150**	150

Hedged items	Nominal amount of hedged items (assets/ liabilities)		Change in fair value for recognising hedge ineffectiveness		Balance in cash flow hedge reserve for continuing hedges		Balance in cash flow hedge reserve for which hedge accounting is no longer applied	
	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Variable rate borrowings	**1,410**	1,770	**17**	(11)	**(56)**	(39)	**-**	-

The following table details the effectiveness of the hedging relationship and the amounts reclassified from hedging reserve to profit or loss:

Hedging instruments - hedge effectiveness	Current period hedging losses recognised in OCI		Amount of hedge ineffectiveness recognised in profit or loss[1]		Amounts classified to profit or loss due to hedged future cash flows being no longer expected to occur	
	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Variable rate borrowings	**(17)**	11	**(2)**	(6)	**-**	2

1. Included in line item 'Loss/(gain) on fair value of financial instruments' within other expenses in the Consolidated Statement of Profit or Loss.

The interest rate swaps settle on a quarterly basis. The floating rate on the interest rate swaps is the Australian Bank Bill Swap (BBSW) reference rate. AGL will settle the difference between the fixed and floating interest rate on a net basis. During the year, no hedges were de-designated and all underlying forecast transactions remain highly probable to occur as per original forecast.

36. Financial instruments (cont.)

Interest rate sensitivity

The following sensitivity analysis has been determined based on the exposure to interest rates for both derivative and non-derivative instruments at the end of the reporting period and the stipulated change taking place at the beginning of the financial year and held constant throughout the reporting period.

At the end of the reporting period, if interest rates had been 50 basis points higher or lower and all other variables were held constant, AGL's profit after tax and other comprehensive income would have been affected as follows:

	Profit/(loss) after tax increase/(decrease)		Other comprehensive income increase/(decrease)	
	2019 $m	2018 $m	2019 $m	2018 $m
Interest rates +0.5 percentage points (50 basis points)	**(2)**	-	**(16)**	(12)
Interest rates -0.5 percentage points (50 basis points)	**2**	-	**17**	13

(f) Foreign currency risk management

AGL undertakes certain transactions denominated in foreign currencies; consequently, exposures to exchange rate fluctuations arise. Foreign currency risk arises primarily from overseas term borrowings and firm commitments for the purchase of plant and equipment which are denominated in foreign currencies. Exchange rate exposures are managed within approved policy parameters utilising forward foreign exchange contracts and cross currency swap contracts.

Forward foreign exchange contracts - cash flow hedges

AGL's Corporate Treasury policy requires the hedging of foreign currency risk using forward foreign exchange contracts. The Corporate Treasury's policy is to hedge currency exposures of anticipated cash flows in excess of $2 million and to not enter into forward foreign exchange contracts until a firm commitment is in place.

AGL enters into contracts to purchase plant and equipment denominated in foreign currencies. AGL enters into forward foreign exchange contracts to hedge the exchange rate risk arising from these anticipated future purchases, which are designated as cash flow hedges. During the year, no hedges were de-designated and all underlying forecast transactions remain highly probable to occur as per original forecast.

There was $31 million of forward foreign exchange contracts outstanding at the end of the reporting period (2018: $37 million). The fair value of those contracts is not material.

	Average exchange rate		Contract value (foreign currency)		Contract value (local currency)		Carrying value of outstanding hedging instruments		Change in fair value of hedging instruments	
Cash flow hedges - Outstanding contracts	2019	2018	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Buy JPY										
0 to 6 months	**78.65**	81.30	**1,061**	691	**13**	9	**1**	-	**1**	-
6 - 12 months	**77.37**	80.49	**1,305**	1,729	**17**	21	**-**	-	**-**	-
1 - 2 years	**76.02**	79.55	**100**	559	**1**	7	**-**	-	**-**	-
Sell US Dollars										
0 to 6 months	**0.701**	0.734	**14**	16	**21**	21	**-**	-	**-**	-

	Change in fair value for recognising hedge ineffectiveness		Balance in cash flow hedge reserve for continuing hedges		Balance in cash flow hedge reserve for which hedge accounting is no longer applied	
Hedged items	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Forecast purchases	**(1)**	-	**1**	-	**-**	-

36. Financial instruments (cont.)

The following table details the effectiveness of the hedging relationships and the amounts reclassified from hedging reserve to profit or loss:

Hedging instruments - hedge effectiveness	Change in fair value of hedging instruments recognised in OCI 2019 $m	2018 $m	Amount of hedge ineffectiveness recognised in profit or loss 2019 $m	2018 $m	Amounts classified to profit or loss due to hedged future cash flows being no longer expected to occur 2019 $m	2018 $m	Amount reclassified to profit or loss due to hedged items affecting profit or loss 2019 $m	2018 $m
Forecast purchases	**(1)**	-	**-**	-	**-**	-	**-**	-

Cross currency swap contracts

Under cross currency swap contracts, AGL has agreed to exchange specified foreign currency loan principal and interest amounts at agreed future dates at fixed exchange rates. Such contracts enable AGL to eliminate the risk of movements in foreign exchange rates related to foreign currency denominated borrowings.

The fair value of cross currency swaps at 30 June 2019 was an asset of $136 million (2018: asset of $13 million), of which $116 million (2018: $71 million) is in a cash flow hedge relationship, $16 million (2018: $(58) million) is in a fair value hedge relationship and $4 million relates to the currency basis of the cross currency swaps.

Cross currency swap contracts

The following tables detail the cross currency swap contracts in hedges outstanding at the end of the reporting period:

Outstanding contracts	Average interest rate 2019 %	2018 %	Average exchange rate 2019	2018	Contract value (foreign currency) 2019 $m	2018 $m	Contract value (local currency) 2019 $m	2018 $m	Fair value/carrying amount 2019 $m	2018 $m
Buy US dollars										
2 to 5 years	**4.47**	4.55	**0.888**	0.888	**165**	165	**186**	186	**59**	38
5 years or more	**4.46**	4.53	**0.787**	0.787	**530**	530	**674**	674	**77**	(25)

The following table details the effectiveness of the hedging relationship and the amounts reclassified from hedging reserve to profit or loss:

Outstanding contracts	USD CCIRS Cash flow hedges 2019 $m	2018 $m	USD CCIRS Fair value hedges 2019 $m	2018 $m
Carrying amount of hedging instruments				
- Assets	**116**	71	**16**	-
- Liabilities	**-**	-	**-**	(58)
Total carrying amount of hedging instruments	**116**	71	**16**	(58)
Change in value of hedging instruments	**45**	39	**74**	(46)
Change in value of hedged items	**(45)**	(39)	**(72)**	43
Change in value of hedging instruments recognised in reserve	**(8)**	(6)	**n/a**	n/a
Hedge ineffectiveness recognised in profit or loss[1]	**-**	-	**2**	(3)
Amount reclassified from hedge reserve to profit or loss[2]	**53**	45	**n/a**	n/a
Balance in cash flow hedge reserve for continuing hedges	**(15)**	(9)	**n/a**	n/a

1. Included in line item 'Loss/(gain) on fair value of financial instruments' within other expenses in the Consolidated Statement of Profit or Loss.
2. The profit or loss from foreign exchange movement of the hedging instrument offsets the profit or loss from the foreign exchange movement of the borrowings in an effective hedge relationship.

(g) Energy price risk management

AGL is exposed to energy price risk associated with the purchase and/or sale of electricity, gas, oil and environmental products. AGL manages energy risk through an established risk management framework consisting of policies to place appropriate risk limits on overall energy market exposures and transaction limits for approved energy commodities, requirements for delegations of authority on trading, regular reporting of exposures and segregation of duties.

It is AGL's policy to actively manage the energy price exposure arising from both forecast energy supply and customer energy load. AGL's risk management policy for energy price risk is to hedge forecast future positions for up to five years into the future.

Exposures to fluctuations in the wholesale market energy prices are managed through the use of various types of hedge contracts including derivative financial instruments.

36. Financial instruments (cont.)

The following table details the fair value of energy derivatives outstanding at the end of the reporting period:

	2019 $m	2018 $m
Energy derivative financial assets - current		
Energy derivatives - cash flow hedges	**32**	6
Energy derivatives - economic hedges	**229**	250
	261	256
Energy derivative financial assets - non-current		
Energy derivatives - cash flow hedges	**1**	-
Energy derivatives - economic hedges	**365**	311
	366	311
Energy derivative financial liabilities - current		
Energy derivatives - cash flow hedges	**-**	24
Energy derivatives - economic hedges	**576**	316
	576	340
Energy derivative financial liabilities - non-current		
Energy derivatives - cash flow hedges	**5**	71
Energy derivatives - economic hedges	**77**	102
	82	173

Energy derivatives – cash flow hedges

Derivative financial instruments are used by AGL in the normal course of business in order to hedge exposure to fluctuations in energy prices. The aggregate notional volumes of the outstanding energy derivatives at 30 June 2019 were 4 million MWh (2018: 9 million MWh). Energy derivatives are either designated in cash flow hedge relationships or remain non-designated. AGL will only apply hedge accounting to existing energy hedge relationships and will not apply hedge accounting to any new energy derivative arrangements.

	Average purchase price		Quantity		Carrying value of outstanding hedging instruments		Change in fair value of hedging instruments	
Hedging instruments - Outstanding contracts	2019 $	2018 $	2019 MWh m	2018 MWh m	2019 $m	2018 $m	2019 $m	2018 $m
Buy electricity	**77.42**	79.96	**4**	9	**117**	**(166)**	**117**	**(166)**

	Change in fair value of hedging instruments used to determined hedge ineffectiveness		Balance in cash flow hedge reserve for continuing hedges		Balance in cash flow hedge reserve for which hedge accounting is no longer applied	
Hedged items	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Forecast purchases	**(117)**	166	**28**	(90)	**-**	-

	Change in fair value of hedging instruments recognised in OCI		Hedge ineffectiveness recognised in profit or loss		Cost of hedging recognised in OCI		Amount from cash flow hedge reserve transferred to inventory		Amount from cost of hedging reserve transferred to inventory	
Hedging instruments - hedge effectiveness	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m	2019 $m	2018 $m
Forecast purchases	**117**	(166)	**-**	-	**-**	-	**-**	-	**-**	-

Energy derivatives – economic hedges

AGL has entered into certain derivative instruments for economic hedging purposes under the Board-approved risk management policies, which do not satisfy the requirements for hedge accounting under AASB 9 *Financial Instruments*. These derivatives are therefore required to be categorised as held for trading and are classified in the Consolidated Statement of Financial Position as economic hedges. Changes in the fair value of derivative instruments that do not qualify for hedge accounting are recognised immediately in profit or loss as part of (loss)/gain on fair value of financial instruments.

36. Financial instruments (cont.)

Energy price sensitivity

The following table details the sensitivity to a 10 percent increase or decrease in the energy contract market forward prices. A sensitivity of 10 percent has been used as this is considered reasonably possible, based on historical data relating to the level of volatility in market prices.

At the end of the reporting period, if the forward prices had been 10 percent higher or lower and all other variables were held constant, AGL's profit after tax and other comprehensive income would have been affected as follows:

	Profit/(loss) after tax increase/(decrease)		Other comprehensive income increase/(decrease)	
	2019 $m	2018 $m	2019 $m	2018 $m
Energy forward price +10%	**(274)**	(304)	**25**	44
Energy forward price -10%	**280**	337	**(25)**	(44)

The movement in profit after tax is mainly attributable to an increase/decrease in the fair value of certain energy derivative instruments which are not hedge accounted by AGL. The movement in other comprehensive income is due to the reclassification and/or amortisation of historical hedge accounted derivatives.

(h) Credit risk management

AGL manages its exposure to credit risk using credit risk management policies which provide credit exposure limits and contract maturity limits based on the credit worthiness of counterparties. AGL's exposure and the credit ratings of its counterparties are continuously monitored and the aggregate value of transactions concluded is spread among approved counterparties.

Trade and other receivables consist of approximately 3.7 million residential, small business and large commercial and industrial customers, in New South Wales, Victoria, South Australia and Queensland. Ongoing credit evaluation is performed on the financial condition of customers and, where appropriate, an allowance for expected credit loss is raised. AGL does not have any significant credit risk exposure to any single customer or any group of customers.

AGL limits its exposure to credit risk by investing surplus funds and entering into derivative financial instruments only with approved financial institutions that have a credit rating of at least A from Standard & Poor's and within credit limits assigned to each financial institution. Derivative counterparties are limited to high creditworthy financial institutions and other organisations in the energy industry. AGL also utilises International Swaps and Derivative Association (ISDA) agreements with derivative counterparties in order to limit exposure to credit risk through the netting of amounts receivable from and amounts payable to individual counterparties.

At the end of the reporting period, there was a significant concentration of credit risk with certain counterparties in relation to energy derivatives undertaken in accordance with the AGL's hedging and risk management activities. The carrying amount of the financial assets recognised in the financial statements, which is net of impairment losses, represents the maximum exposure to credit risk.

AGL does not hold any collateral or other credit enhancements to cover this credit risk.

(i) Liquidity risk management

Liquidity risk is the risk that AGL will not be able to meet its financial obligations as they fall due. Ultimate responsibility for liquidity risk management rests with the Board of Directors, who have established an appropriate liquidity risk management framework for the management of AGL's short, medium and long-term funding and liquidity management requirements.

AGL manages liquidity risk by maintaining adequate cash reserves, banking facilities and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows and matching the maturity profiles of financial assets and liabilities.

The following table details AGL's remaining contractual maturity for its non-derivative financial liabilities with agreed repayment periods. The amounts are based on the undiscounted cash flows of financial liabilities on the earliest date on which AGL can be required to pay. The table includes both interest and principal cash flows. To the extent that interest flows are at floating rate, the undiscounted amount is derived from interest rate curves at the end of the reporting period.

36. Financial instruments (cont.)

2019	Less than 6 months $m	6 - 12 months $m	1 - 2 years $m	2 - 5 years $m	More than 5 years $m	Total $m
Non-derivative financial liabilities						
Trade and other payables	**1,556**	**-**	**-**	**-**	**-**	**1,556**
USD senior notes	**23**	**23**	**46**	**350**	**944**	**1,386**
Subordinated notes	**-**	**-**	**-**	**-**	**-**	**-**
Medium term notes	**15**	**15**	**30**	**615**	**-**	**675**
Bank loans	**70**	**9**	**362**	**33**	**422**	**896**
CPI bonds	**6**	**6**	**12**	**38**	**41**	**103**
Other loans	**8**	**7**	**15**	**43**	**89**	**162**
Lease liabilities	**13**	**12**	**23**	**69**	**251**	**368**
Deferred consideration	**-**	**36**	**37**	**115**	**124**	**312**
	1,691	**108**	**525**	**1,263**	**1,871**	**5,458**

Restated 2018[1]	Less than 6 months $m	6 - 12 months $m	1 - 2 years $m	2 - 5 years $m	More than 5 years $m	Total $m
Non-derivative financial liabilities						
Trade and other payables	1,579	-	-	-	-	1,579
USD senior notes	22	22	43	342	955	1,384
Subordinated notes	19	19	40	136	1,699	1,913
Medium term notes	15	15	30	645	-	705
Bank loans	7	7	15	23	471	523
CPI bonds	6	6	12	38	55	117
Other loans	9	8	17	48	108	190
Lease liabilities	8	8	21	59	254	350
Deferred consideration	-	35	36	112	163	346
	1,665	120	214	1,403	3,705	7,107

1. Comparatives have been restated for the adoption of AASB 9 Financial Instruments and AASB 16 Leases. Refer to Note 38(c).

36. Financial instruments (cont.)

The following table details AGL's liquidity analysis for its derivative financial instruments. The amounts are based on the undiscounted net cash inflows and outflows on those derivatives instruments that settle on a net basis, and the undiscounted gross inflows and outflows on those derivatives that require gross settlement. For interest rate swaps, the amount disclosed has been determined by reference to the projected interest rates as illustrated by the yield curves at the end of the reporting period.

2019	Less than 6 months $m	6 - 12 months $m	1 - 2 years $m	2 - 5 years $m	More than 5 years $m	Total $m
Derivative financial instruments						
Gross settled						
Cross currency swap contracts - pay leg - floating	**(17)**	**(16)**	**(31)**	**(273)**	**(828)**	**(1,165)**
Cross currency swap contracts - receive leg - fixed	**22**	**22**	**43**	**343**	**888**	**1,318**
Net receive/(pay)	**5**	**6**	**12**	**70**	**60**	**153**
Net settled						
Interest rate swap contracts	**(10)**	**(11)**	**(19)**	**(19)**	**-**	**(59)**
Energy derivatives	**(331)**	**(218)**	**(148)**	**(90)**	**(42)**	**(829)**
	(336)	**(223)**	**(155)**	**(39)**	**18**	**(735)**

2018	Less than 6 months $m	6 - 12 months $m	1 - 2 years $m	2 - 5 years $m	More than 5 years $m	Total $m
Derivative financial instruments						
Gross settled						
Cross currency swap contracts - pay leg	(21)	(20)	(41)	(310)	(908)	(1,300)
Cross currency swap contracts - receive leg	21	21	41	337	898	1,318
Net receive/(pay)	-	1	-	27	(10)	18
Net settled						
Interest rate swap contracts	(8)	(8)	(13)	(17)	-	(46)
Energy derivatives	(218)	(113)	(120)	(83)	(136)	(670)
	(226)	(120)	(133)	(73)	(146)	(698)

36. Financial instruments (cont.)

ACCOUNTING POLICY

Financial assets

Non-derivative financial assets

Classification

AGL classifies its financial assets in the following measurement categories:

- those to be measured subsequently at fair value (either through other comprehensive income, or through profit or loss), and
- those to be measured at amortised cost.

The classification depends on AGL's business model for managing financial assets and the contractual terms of the cash flows. For assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held. For investments in equity instruments that are not held for trading, this will depend on whether AGL has made an irrevocable election at the time of initial recognition to account for the equity instrument at fair value through other comprehensive income. AGL reclassifies debt investments when and only when its business model for managing those assets changes.

Measurement

At initial recognition, AGL measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

Debt instruments

Subsequent measurement of debt instruments depends on AGL's business model for managing the asset and the cash flow characteristics of the asset. There are two measurement categories into which AGL classifies its debt instruments:

- Amortised cost: Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortised cost. A gain or loss on a debt instrument that is subsequently measured at amortised cost and is not part of a hedging relationship is recognised in profit or loss when the asset is derecognised or impaired. Interest income from these financial assets is included in finance income using the effective interest rate method.
- Fair value through other comprehensive income (FVOCI): Assets that are held for collecting contractual cash flows and through sale on specified dates. A gain or loss on a debt investment that is subsequently measured at FVOCI is recognised in other comprehensive income.
- Fair value through profit or loss (FVTPL): Assets that do not meet the criteria for amortised cost or FVOCI are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognised in profit or loss and presented net in the statement of profit or loss within other gains/(losses) in the period in which it arises.

Equity instruments

On initial recognition, AGL elects to classify each equity instrument as FVTPL or FVOCI. AGL subsequently measures all equity investments at fair value. Where AGL has elected to present fair value gains or losses on equity investments in other comprehensive income, there is no subsequent reclassification of fair value gains or losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognised in profit or loss as other income when AGL's right to receive payments is established. Impairment losses (and reversal of impairment losses) on equity investments measured at FVOCI are not reported separately from other changes in fair value. Changes in the fair value of equity instrument financial assets classified as FVTPL are recognised in expenses in the statement of profit or loss as applicable.

Derivative financial instruments

Derivative financial instruments are stated at fair value, with changes in fair value recognised in the statement of profit or loss. Where derivative financial instruments qualify for hedge accounting, recognition of changes in fair value depends on the nature of the item being hedged. Hedge accounting is discontinued when the hedging relationship is revoked, the hedging instrument expires, is sold, terminated, exercised, or no longer qualifies for hedge accounting.

AGL documents at the inception of the hedging transaction the economic relationship between hedging instruments and hedged items including whether the instrument is expected to offset changes in cash flows of hedged items. AGL documents its risk management objective and strategy for undertaking various hedge transactions at the inception of each hedge relationship.

AGL's risk management policy is to establish a hedge ratio of 1:1.

Fair value hedge

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recognised in profit or loss immediately, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk. The change in the fair value of the hedging instrument and the change in the hedged item attributable to the hedged risk are recognised in profit or loss in the line item relating to the hedged item.

36. Financial instruments (cont.)

ACCOUNTING POLICY

Hedge accounting is discontinued when the hedging instrument expires or is sold, terminated, or exercised, or when it no longer qualifies for hedge accounting. The fair value adjustment to the carrying amount of the hedged item arising from the hedged risk is amortised to profit or loss from that date.

Cash flow hedge

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges is recognised in the cash flow hedge reserve within equity, limited to the cumulative change in fair value of the hedged item on a present value basis from the inception of the hedge. The gain or loss relating to the ineffective portion is recognised immediately in profit or loss, within other expenses.

When option contracts are used to hedge forecast transactions, AGL may elect to designate only the intrinsic value of the option contract as the hedging instrument. Gains or losses relating to the effective portion of the change in intrinsic value of the option contracts are recognised in the cash flow hedge reserve in equity. Gains or losses related to the time value element of the option are recognised in a cost of hedging reserve.

When cross-currency contracts are used to hedge forecast transactions, AGL may elect to designate only the change in fair value of the cross-currency contract related to the spot component as the hedging instrument. Gains or losses relating to the effective portion of the change in the spot component of the cross-currency contracts are recognised in the cash flow hedge reserve in equity. The change in the currency basis spread element of the contract that relates to the hedged item is recognised within other comprehensive income in the costs of hedging reserve within equity. In some cases, AGL may designate the full change in fair value of the cross-currency contract (including currency basis spread) as the hedging instrument. In such cases, the gains or losses relating to the effective portion of the change in fair value of the entire cross-currency contract are recognised in the cash flow hedge reserve within equity.

Amounts accumulated in equity are reclassified in the periods when the hedged item affects profit or loss, as follows:

- The gain or loss relating to the effective portion of hedge contracts are ultimately recognised in profit or loss as the hedged item affects profit or loss within expenses.
- The gain or loss relating to the effective portion of the interest rate swaps hedging variable rate borrowings is recognised in profit or loss within 'finance costs'.

When a hedging instrument expires, or is sold or terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative deferred gain or loss and deferred costs of hedging in equity at that time remains in equity until the forecast transaction occurs. When the forecast transaction is no longer expected to occur, the cumulative gain or loss and deferred costs of hedging that were reported in equity are immediately reclassified to profit or loss. Hedge ineffectiveness is recognised in profit or loss within other expenses.

CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

Fair value of financial instruments

Management uses their judgement in selecting an appropriate valuation technique for financial instruments not quoted in an active market. For derivative financial instruments, assumptions are made based on quoted market rates adjusted for specific features of the instrument. Other financial instruments are valued using a discounted cash flow analysis based on assumptions supported, where possible, by observable market prices and rates.