



Australian Government

The Treasury

STRONG GROWTH, LOW POLLUTION

MODELLING A CARBON PRICE

The Treasury



Key points

- The Australian and global economies both continue to grow strongly as emissions grow more slowly and then fall
 - By 2020, Australia's income per person is around \$9,000 high than today (for a 550ppm scenario)
 - By 2020, national employment is projected to increase by 1.6 million jobs
- Pricing carbon will drive a structural change in the economy



Description of scenarios

	Core Policy	High Price
World action	Medium – 550ppm	Ambitious – 450ppm
2020 emission target	-5 per cent	-25 per cent
2050 emission target	-80 per cent	-80 per cent
2012-13 starting price	\$20 (\$23 for Household modelling)	\$30
EITE assistance	Assistance starts to 94.5 or 66 per cent depending on intensity, declines at 1.3 per cent per year.	
Fuel	Off-road from '12-13, heavy on-road from '14-15	CPRS fuel treatment as of Nov 2009
Exclusions	Agriculture, forestry, decommissioned mines, legacy waste, synthetic gases.	
International linking	Unrestricted from 2015-16	

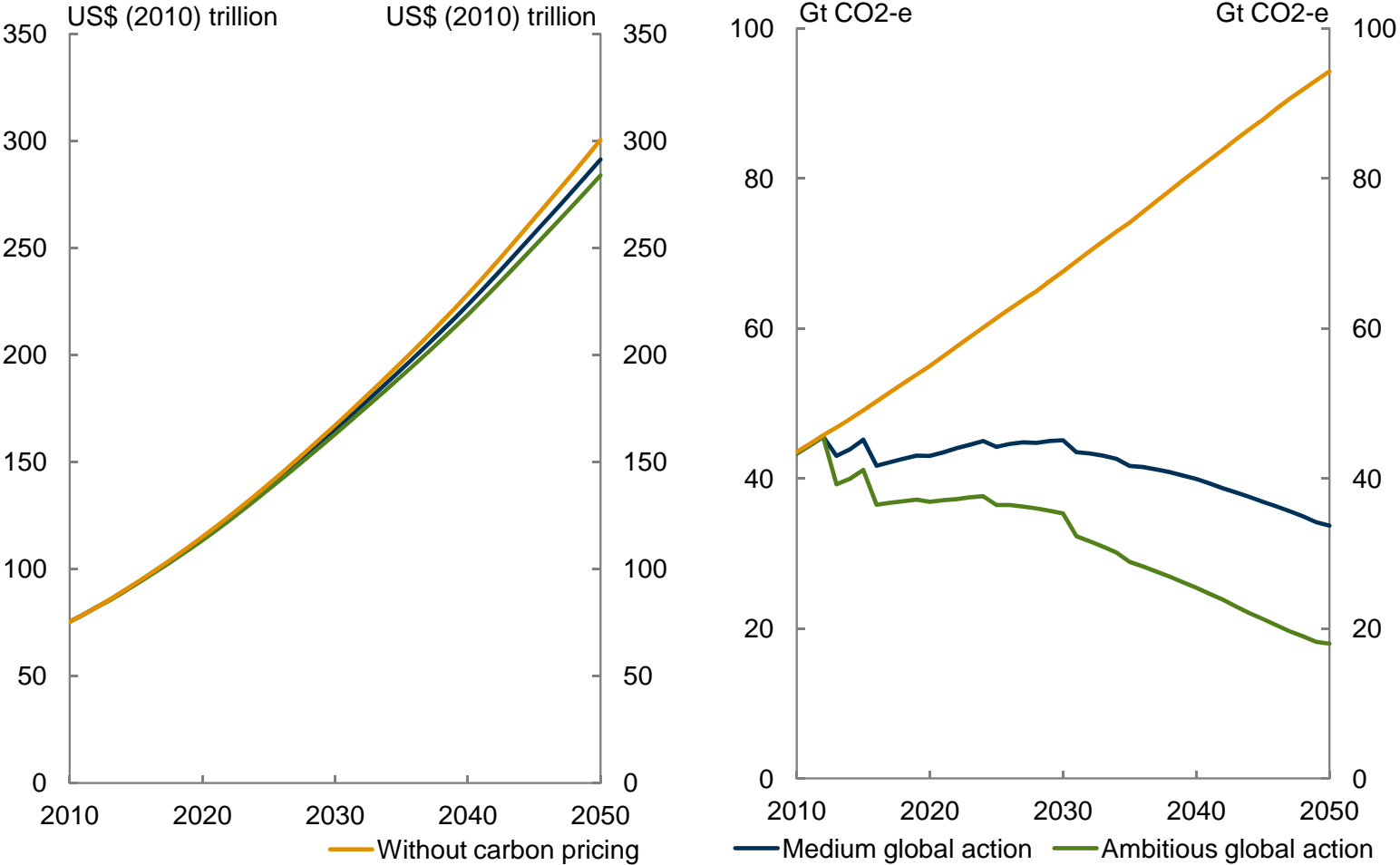


Carbon prices

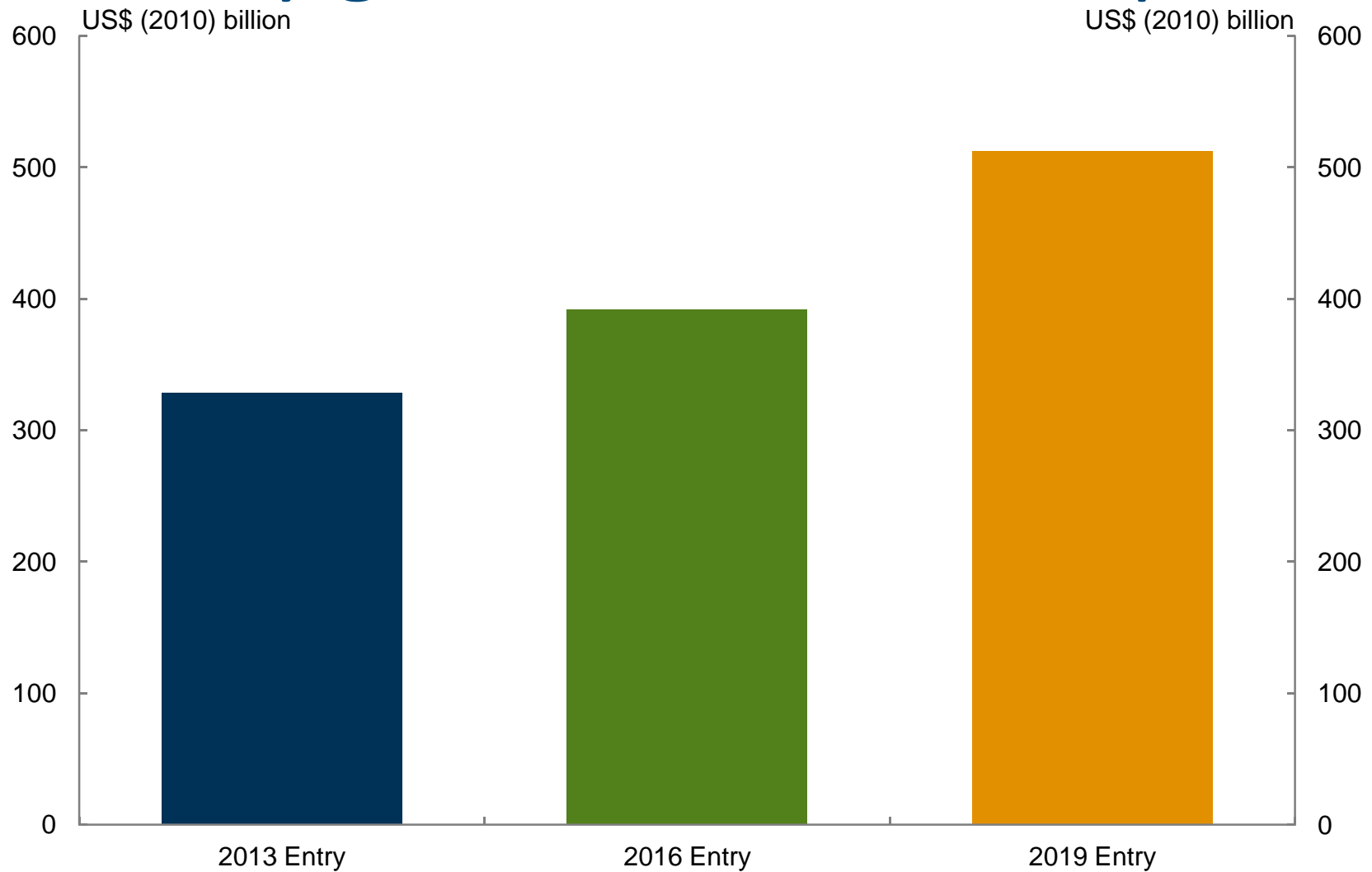
- World prices (EUAs) have ranged from A\$16 to A\$23 /t CO₂-e over the past 3 months
 - The PC found cost of ‘non-market’ policies can range up to hundreds of dollars per tonne
- World prices are expected to be around A\$29/t CO₂-e in 2015 16, with medium global action



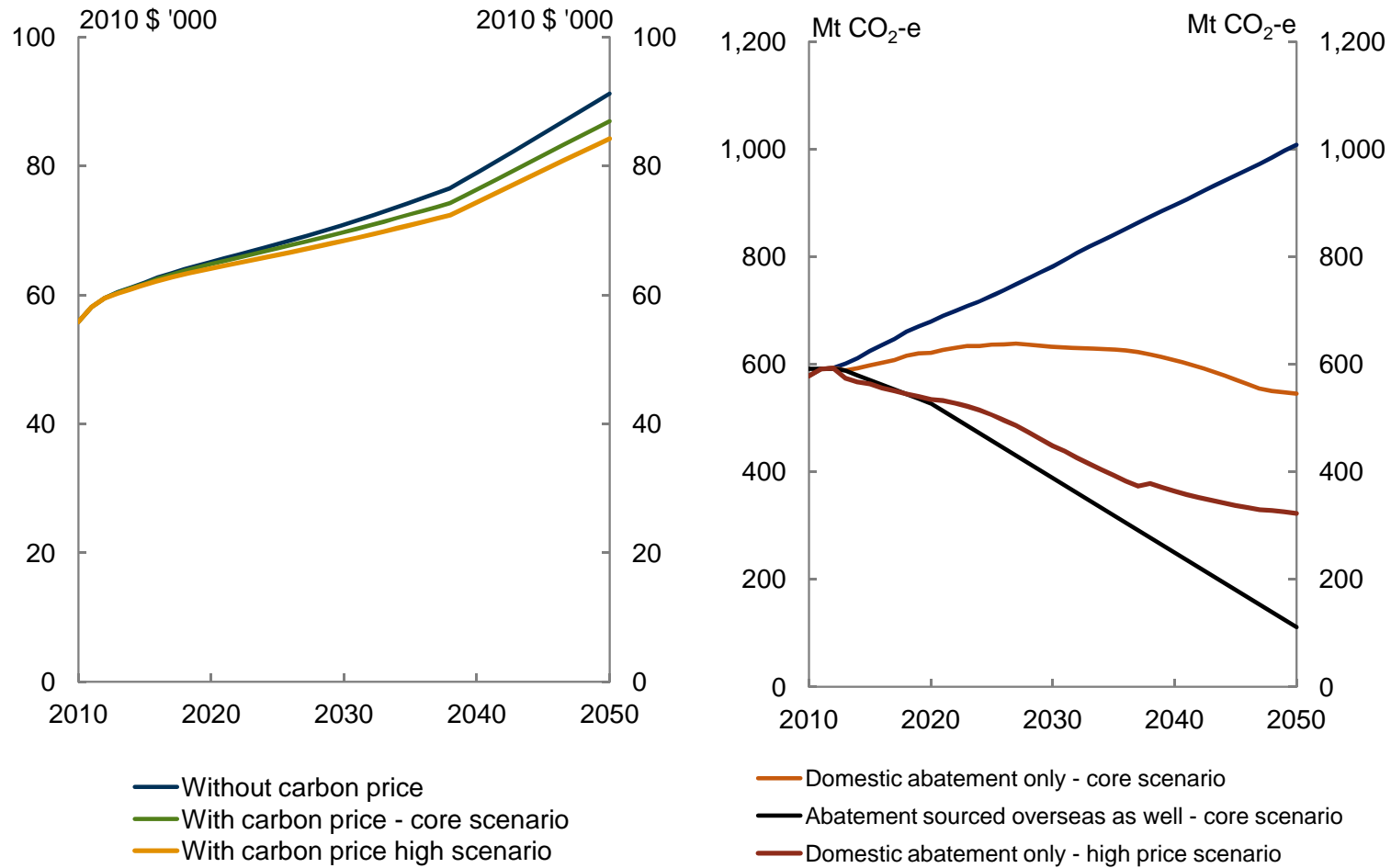
Gross world product and emissions



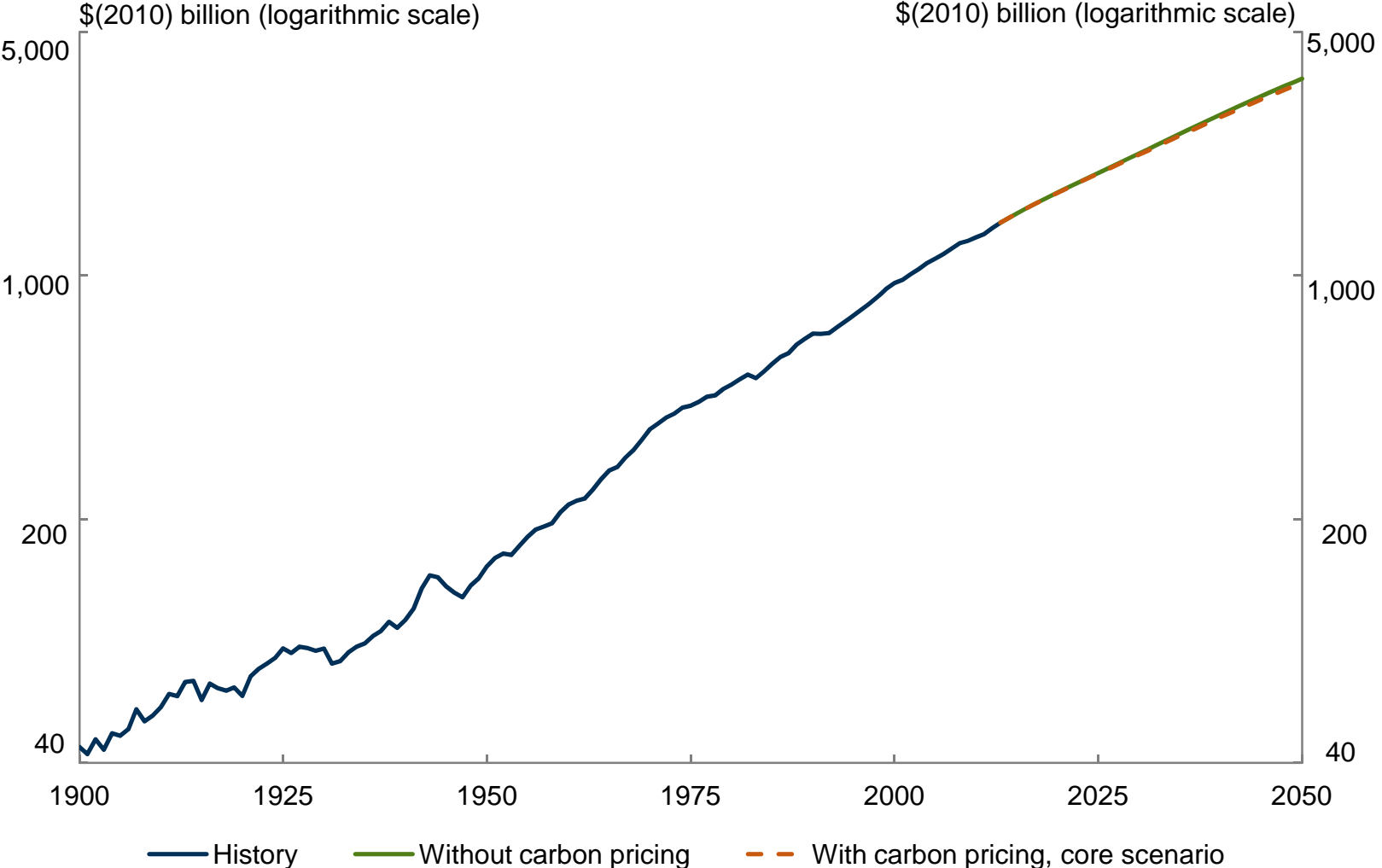
Early global action is cheaper



Australian GNI per person and emissions

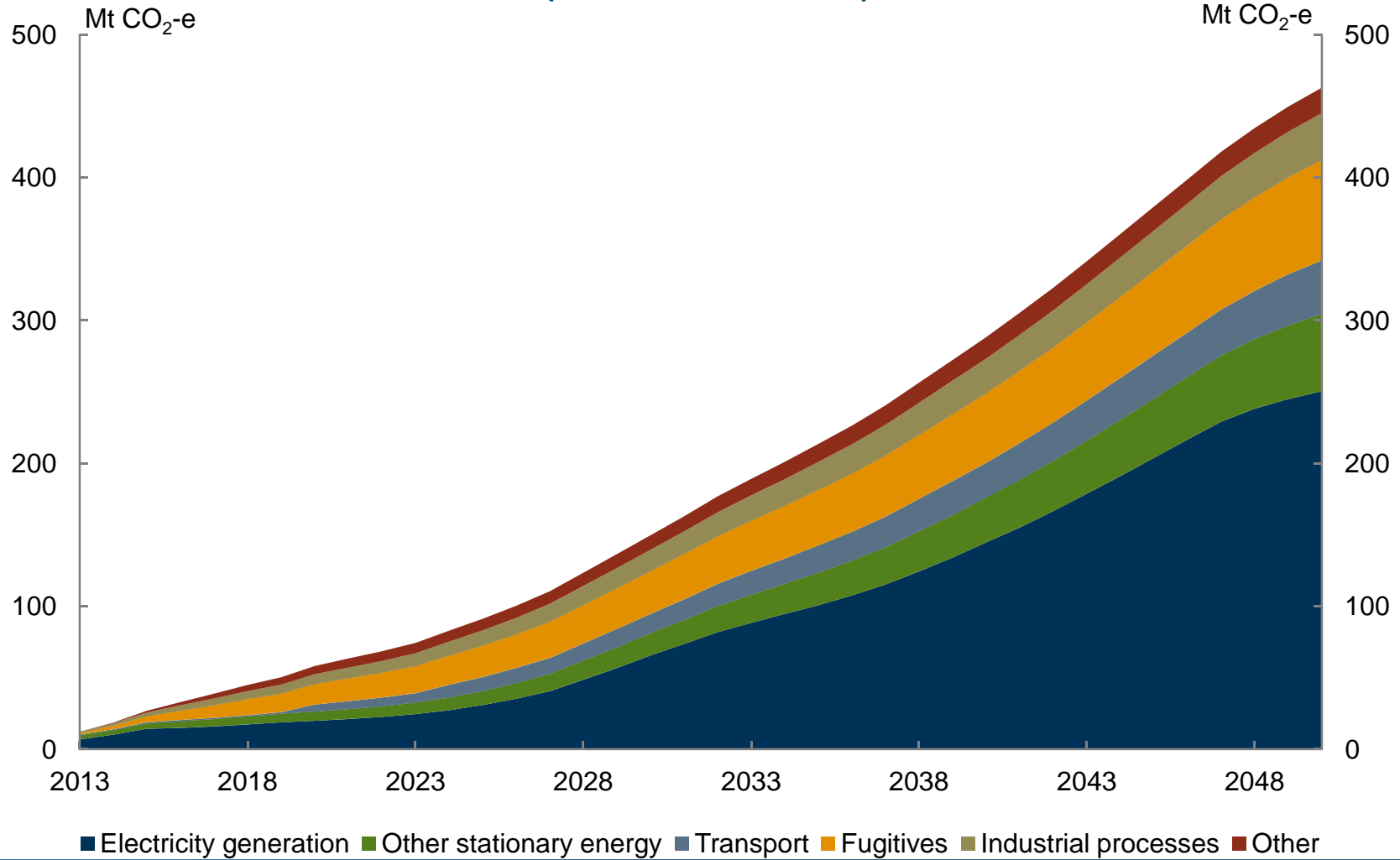


GDP with or without a carbon price



Abatement by sector

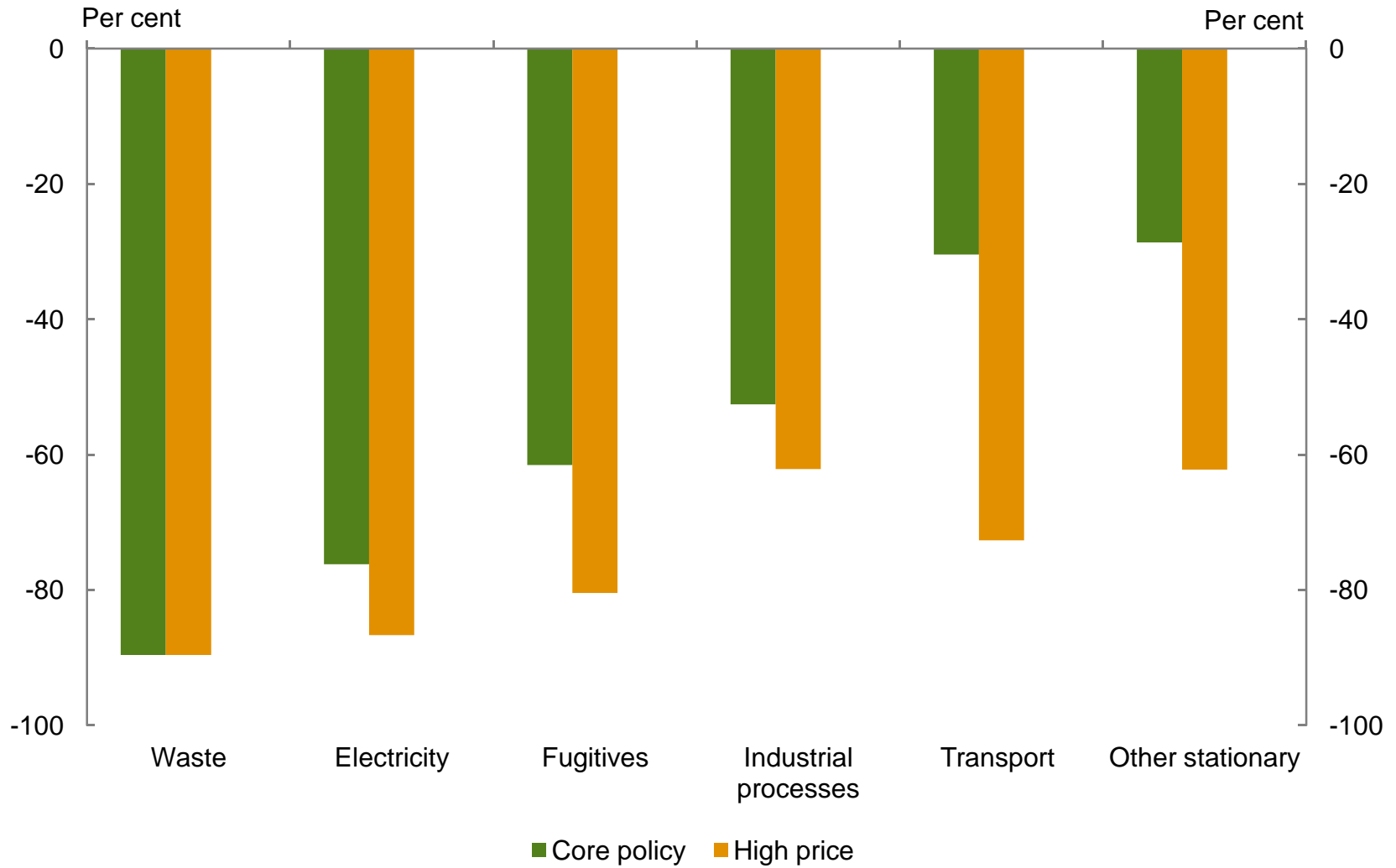
(Core Scenario)



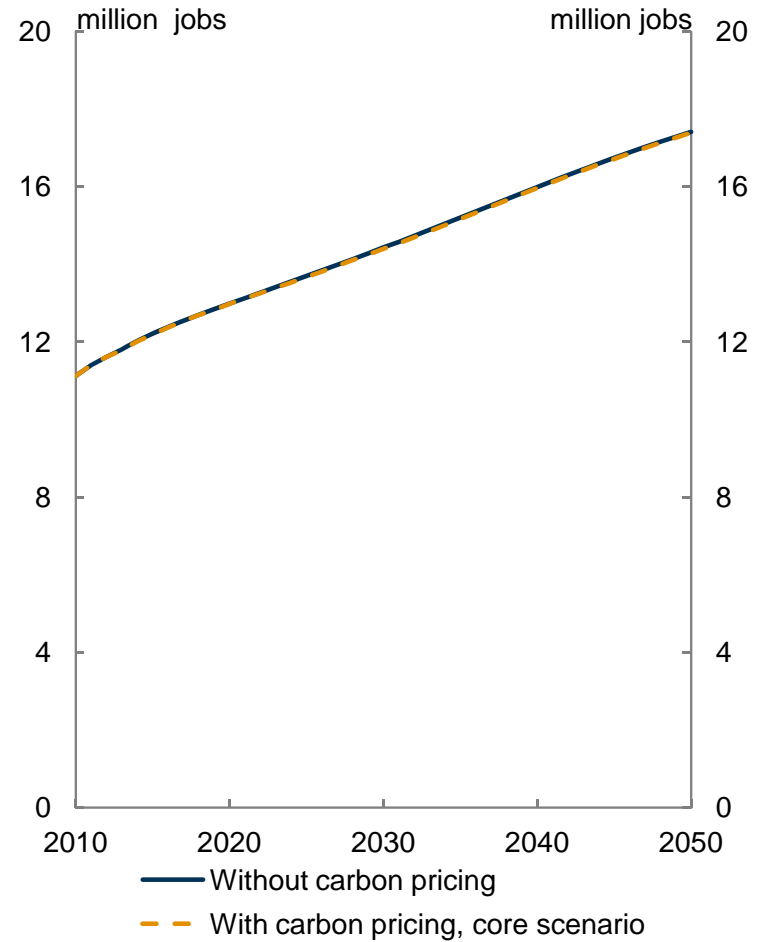
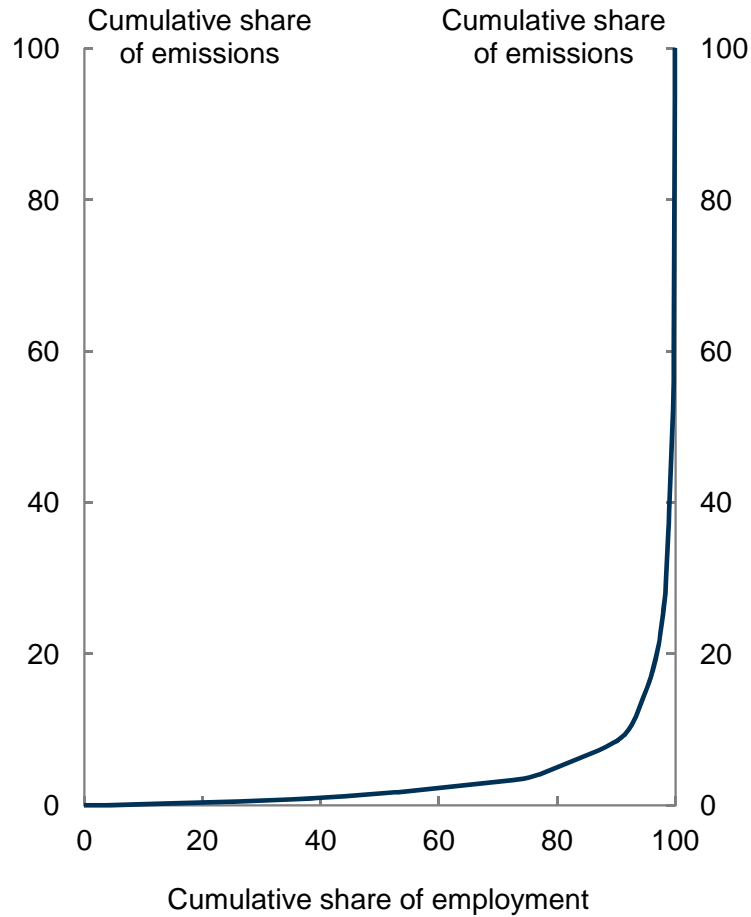
■ Electricity generation ■ Other stationary energy ■ Transport ■ Fugitives ■ Industrial processes ■ Other



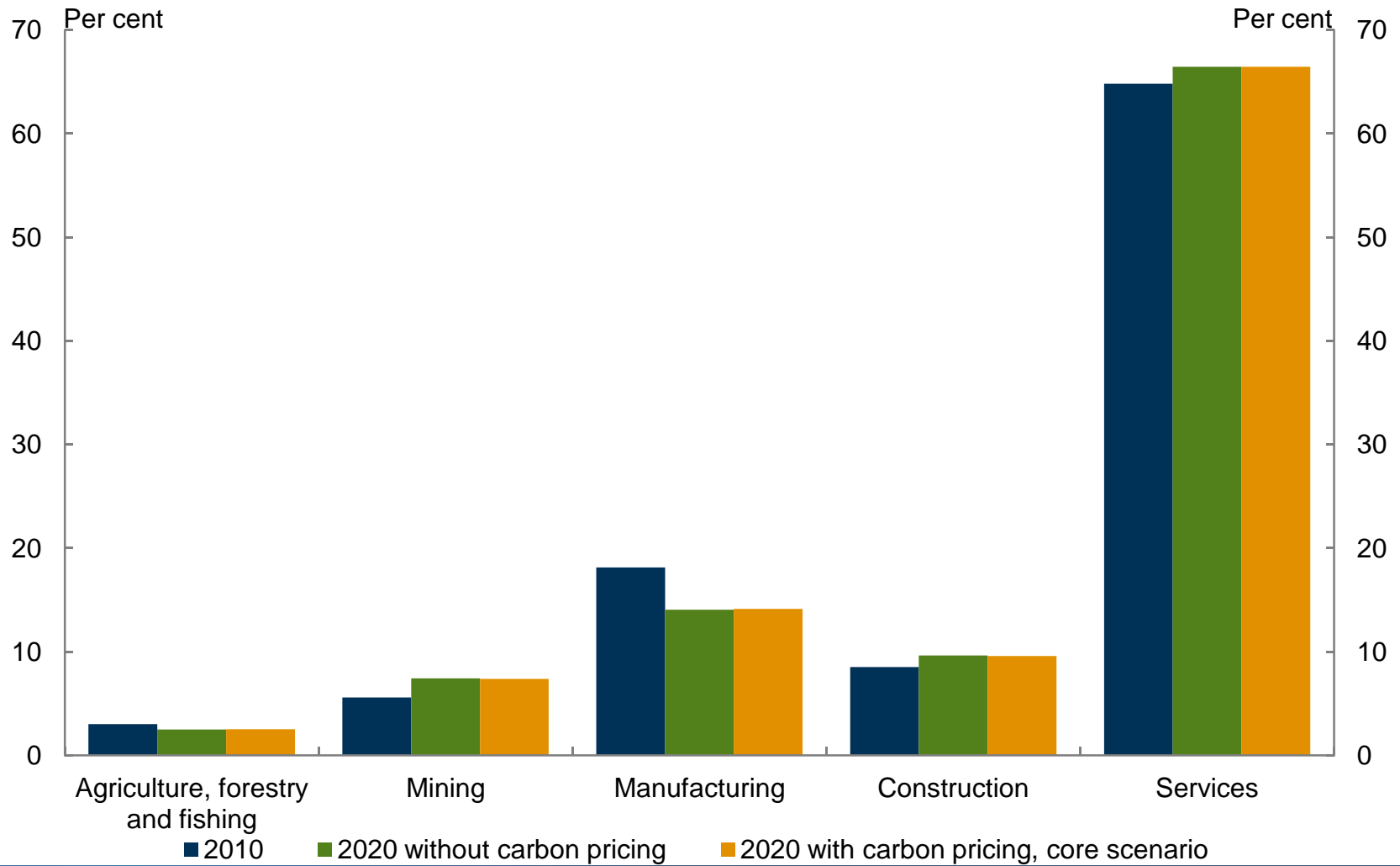
Emission reductions by sector



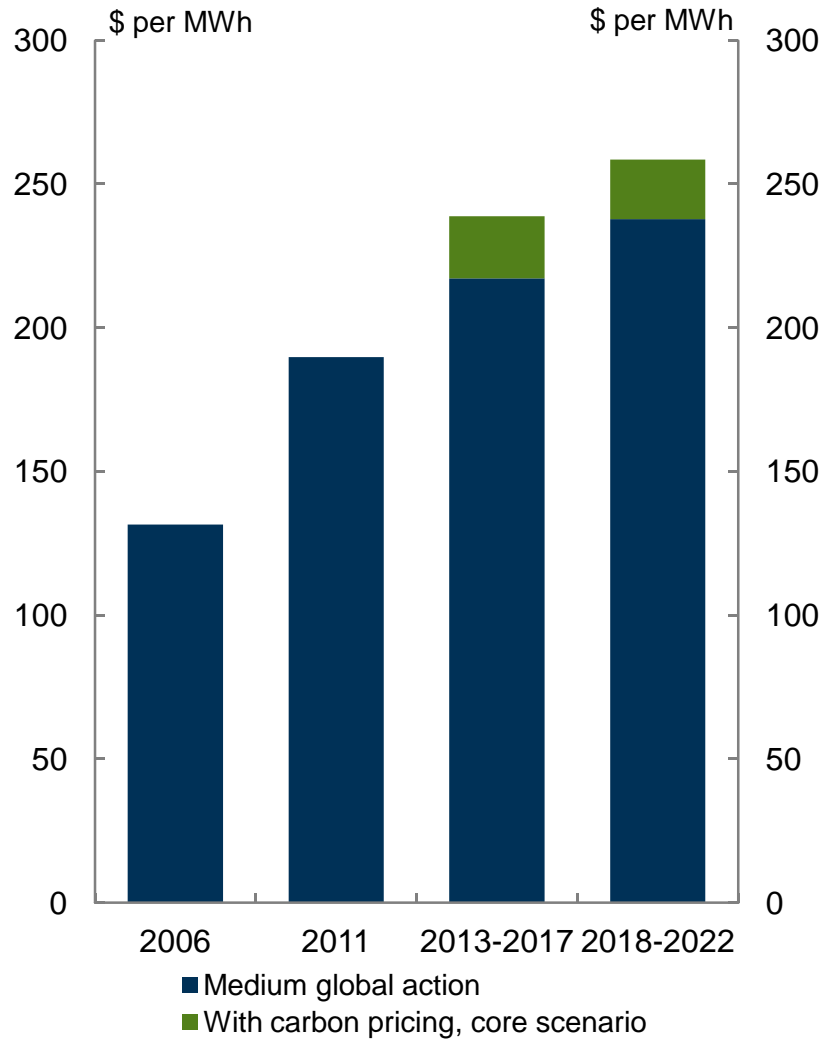
Australian employment



Industry shares of the economy



Modest impact on prices

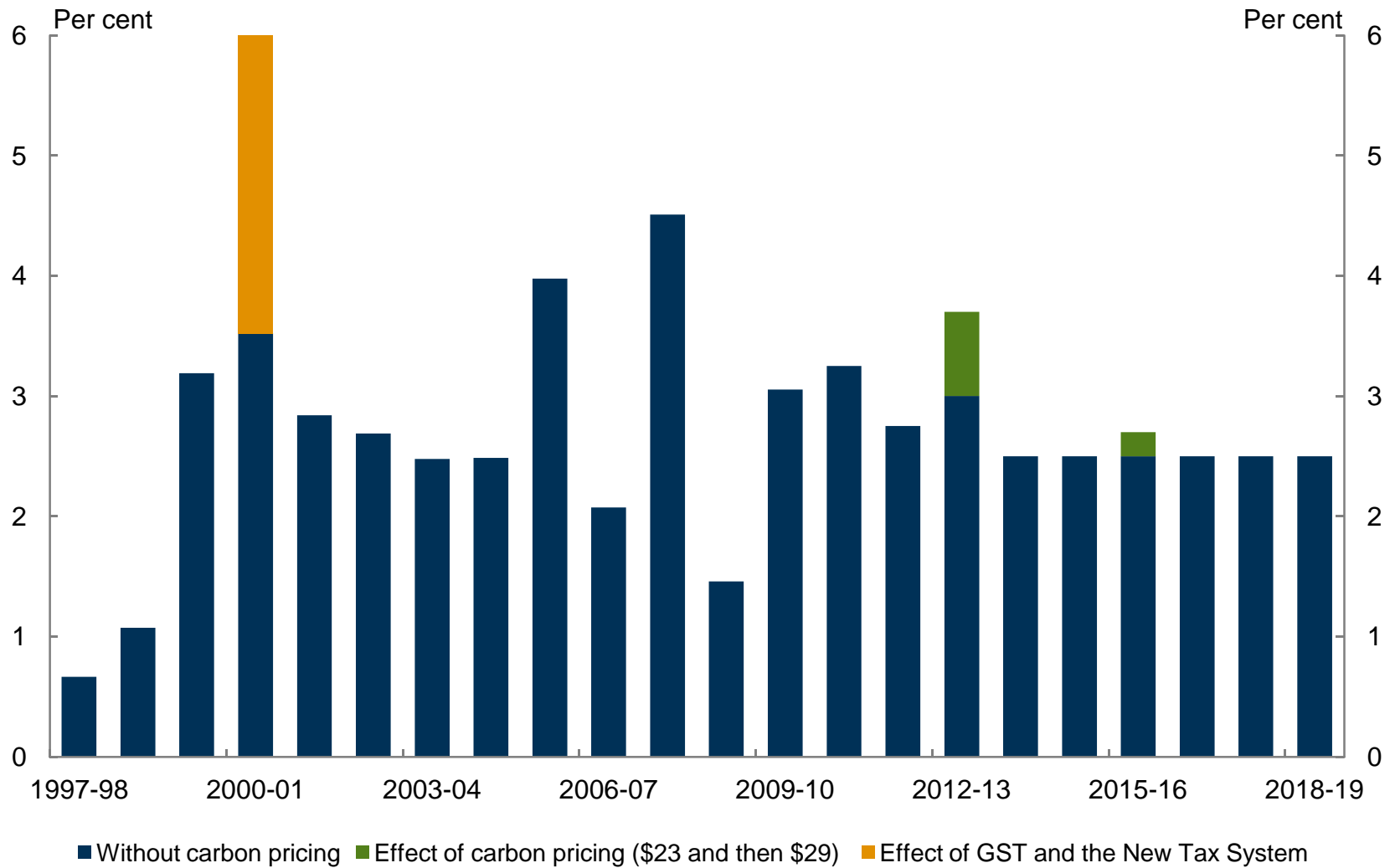


Effect of \$23/t CO₂-e carbon price on expenditure in 2012-13

	Weekly Expenditure	Consumer Prices
	\$ per week	Per cent
Electricity	3.30	10
Gas	1.50	9
Food	0.80	<0.5
Overall effect	9.90	0.7



Price increase in context



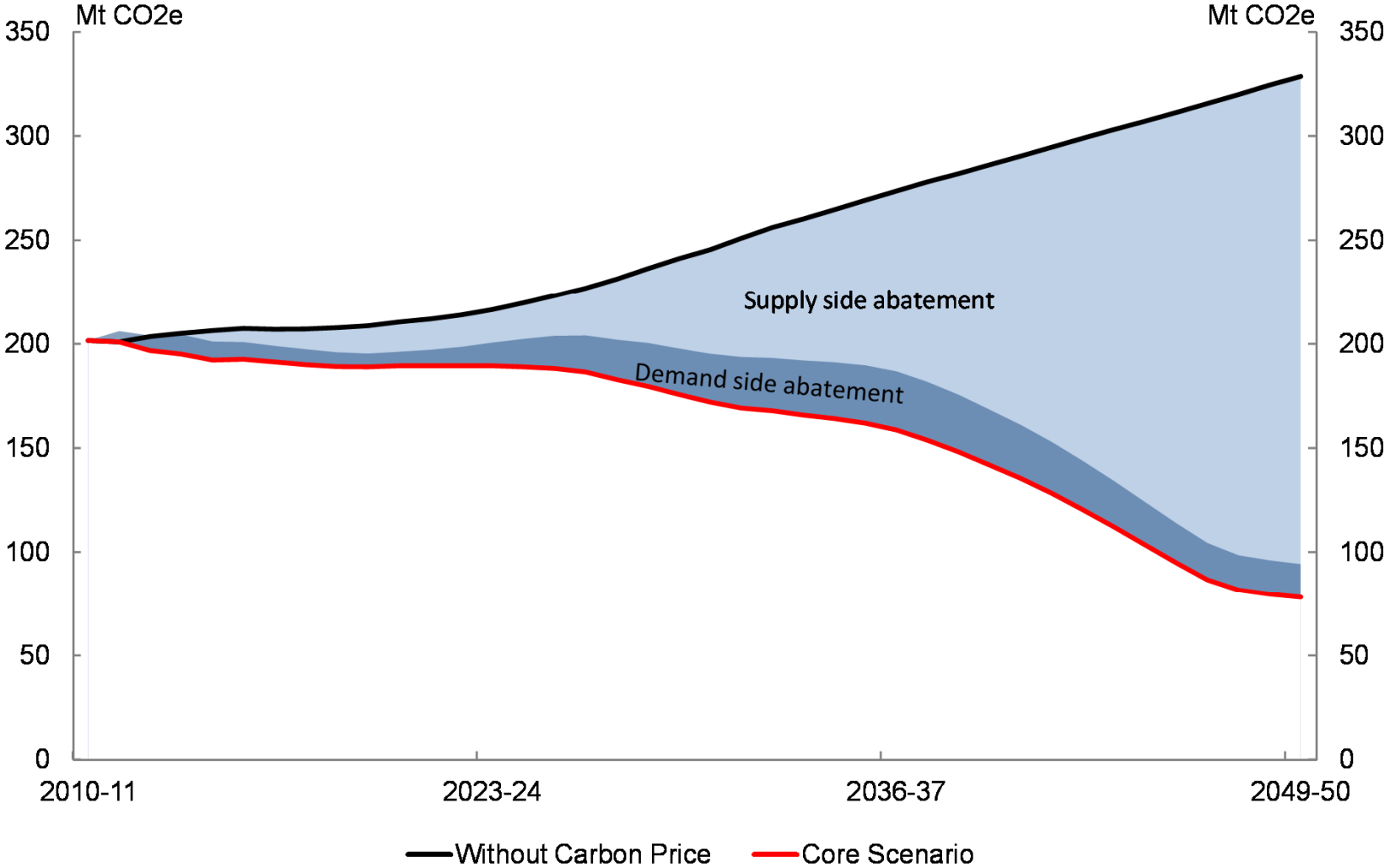
Household electricity prices

(\$20 Core Scenario, per cent change from reference)

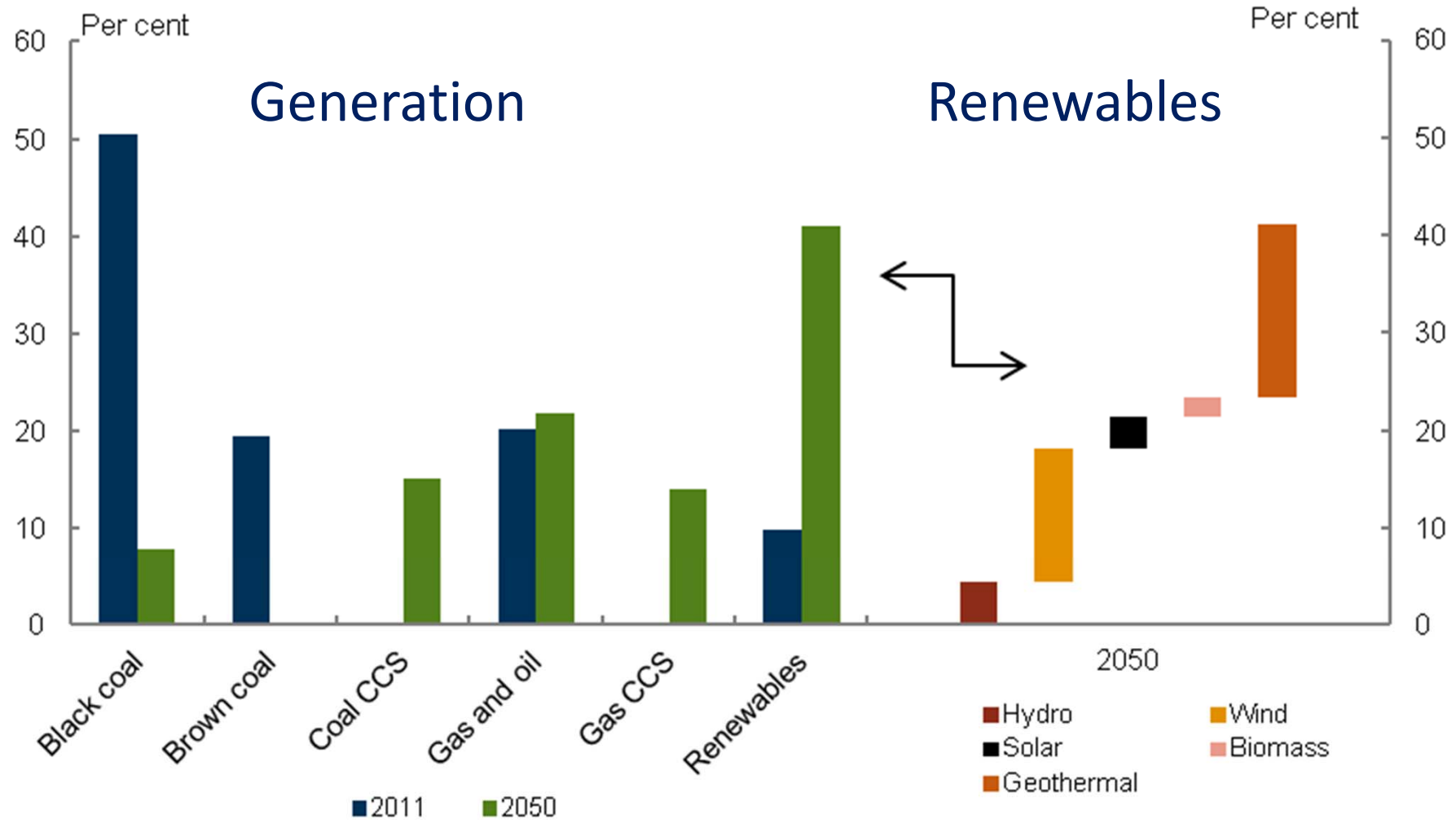
	Core Scenario			High Price scenario		
	2013-2017	2018-2022	2046-2050	2013-2017	2018-2022	2046-2050
NSW	9	8	35	16	19	52
VIC	10	8	31	20	25	52
QLD	10	9	35	20	21	57
WA	10	10	37	14	23	55
SA	8	7	23	16	19	40
TAS	9	9	28	16	23	45
NT	8	6	24	18	20	53
Avg	10	8	33	17	21	51



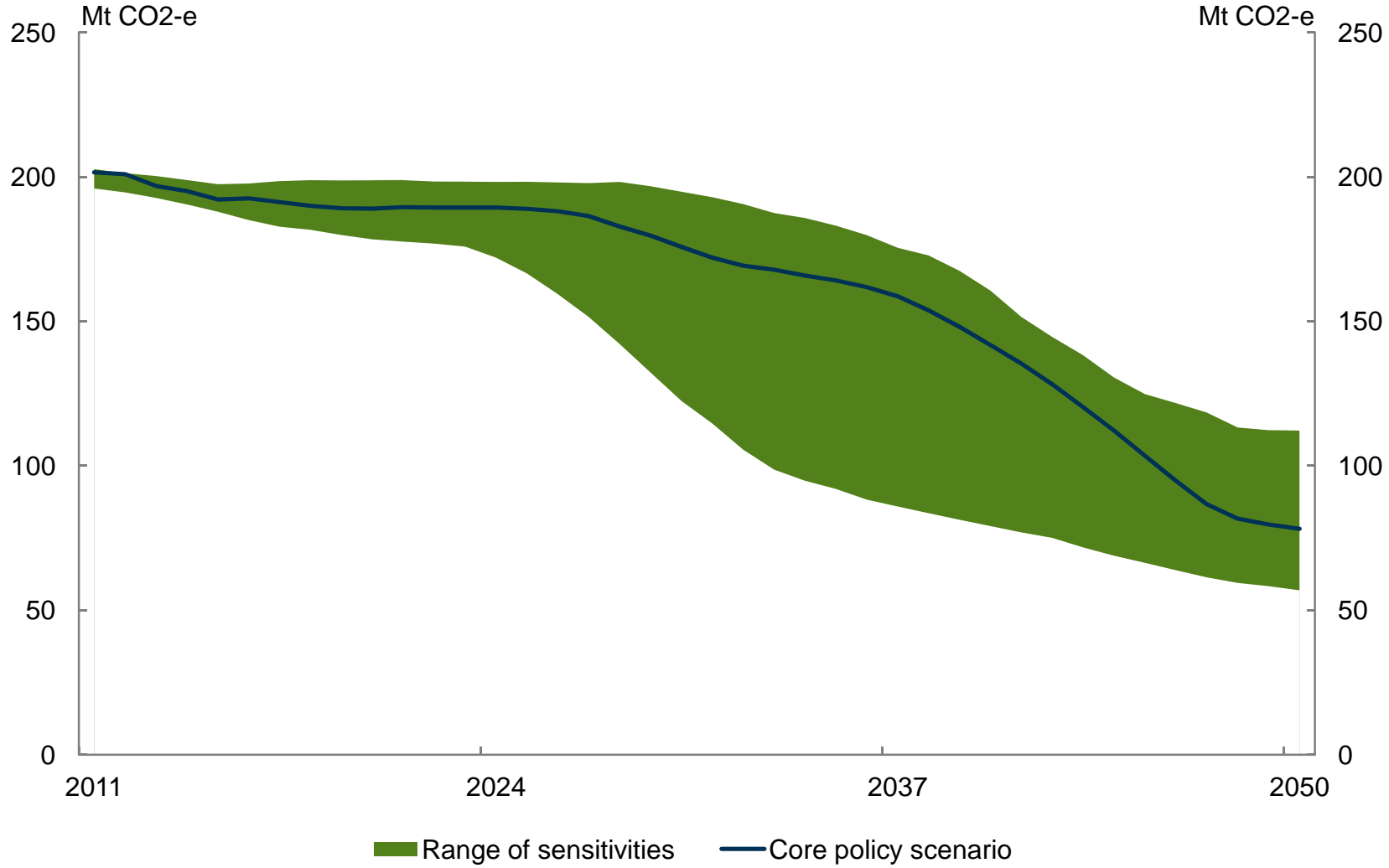
Electricity sector emissions



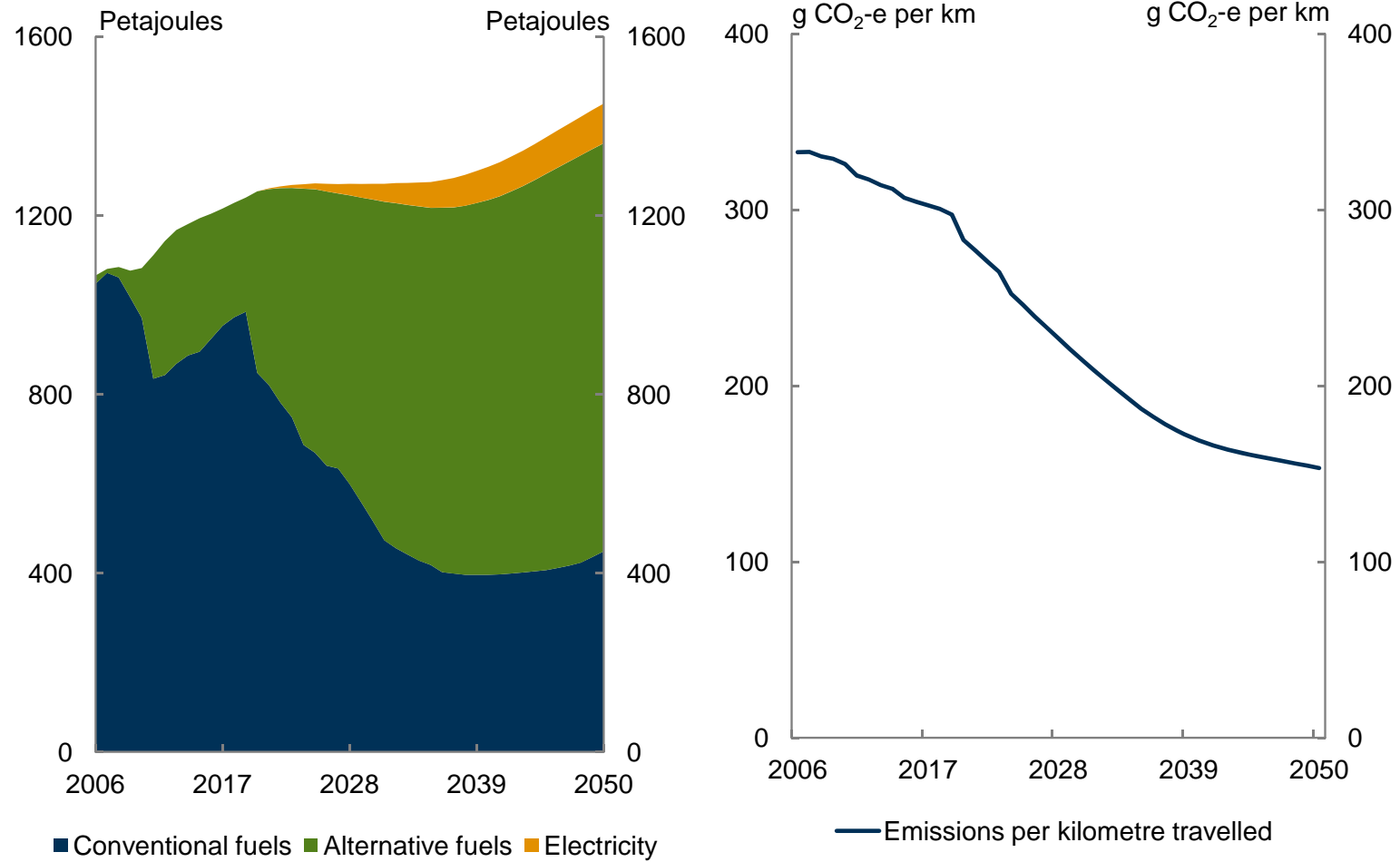
A clean energy future (core policy scenario)



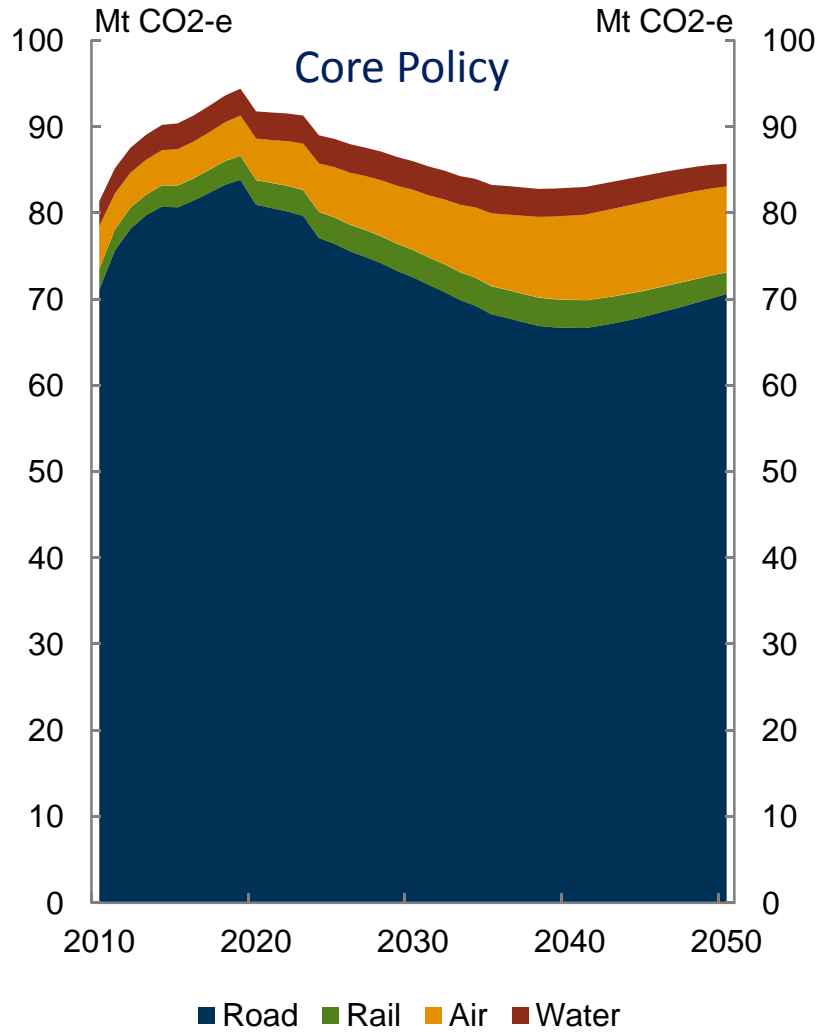
Electricity emissions sensitivity



Transport fuels and emissions



Transport emissions by sector



Emissions and abatement in Transport (Mt)

	Core Policy	High Price
2010		
Emissions	71	71
2020		
Emissions	81	79
Abatement	4	6
2050		
Emissions	71	31
Abatement	24	64



Summary indicators

	Medium global action	Core Policy	High price
Current levels - at 2010			
Domestic emissions, Mt CO ₂ -e	578	578	578
GNI per person, \$ '000	55.8	55.8	55.8
Medium term - at 2020			
Emission target, per cent, change from 2000 level	-	-5	-25
Domestic emissions, Mt CO ₂ -e	679	621	534
Carbon price, real, \$/t CO ₂ -e	-	29	62
GNI per person, \$ '000	65.1	64.8	64.1
GNI, change from global action scenario, per cent	-	-0.5	-1.4
GDP, change from global action scenario, per cent	-	-0.3	-0.9
Emission intensity of GDP, kg CO ₂ -e/\$	0.39	0.36	0.31



Summary indicators (continued)

Long term - at 2050

Emission target, per cent, change from 2000 level	-	-80	-80
Domestic emissions, Mt CO ₂ -e	1008	545	323
Carbon price, real, \$/t CO ₂ -e	-	131	275
GNI per person, \$ '000	91.2	86.9	84.2
GNI, change from global action scenario, per cent	-	-4.7	-7.1
GDP, change from global action scenario, per cent	-	-2.4	-4.7
Emission intensity of GDP, kg CO ₂ -e/\$	0.28	0.15	0.09

Overall impact, 2010 to 2050

Australian real GNI per person, average annual growth, per cent	1.2	1.1	1.0
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