

Greenhouse Gases Workbook - Inputs

Scheme details

Scheme name	ACP - EGD514 Assessment	Scheme_name
Opening year	2023	Opening_year_in
Scheme type (select from list)	road	Scheme_type
Current year	2022	Current_year_in

Emissions (tCO2e per year)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
Non-traded sector																											
Road without scheme																											
Road with scheme														47364.91	49401.6	50093.22	50844.62	51607.29	52381.4	53167.12	53964.63	54774.1	55595.71	56429.65			
Rail without scheme														46369.48	48363.36	49040.45	49776.06	50522.7	51280.54	52049.75	52830.49	53622.95	54427.3	55243.7			
Rail with scheme																											
Traded sector																											
Road without scheme														38882.28	40554.21	41121.97	41738.8	42364.89	43000.36	43645.36	44300.04	44964.54	45639.01	46323.6			
Road with scheme														38065.12	39701.92	40257.74	40861.61	41474.53	42096.65	42728.1	43369.02	44019.56	44679.85	45350.05			
Rail without scheme																											
Rail with scheme																											

Emission values

Non-traded values (£/tCO2e)

price base year	2010																											CO2e_value_price_base_in
price base year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
Low	83.6	84.9	86.2	87.5	88.9	90.2	91.6	93.0	94.4	95.8	97.3	99.1	100.6	102.2	103.7	105.3	106.9	108.5	110.2	111.8	113.6	115.3	117.0	118.8	120.6	122.5		
Central	167.3	169.8	172.4	175.0	177.7	180.4	183.2	185.9	188.8	191.7	194.6	198.2	201.2	204.3	207.4	210.6	213.8	217.0	220.3	223.7	227.1	230.6	234.1	237.6	241.3	244.9		
High	250.9	254.7	258.6	262.6	266.6	270.6	274.7	278.9	283.2	287.5	291.9	297.3	301.9	306.5	311.1	315.9	320.7	325.6	330.5	335.5	340.7	345.8	351.1	356.5	361.9	367.4		

source:

TAG data book v1.18 (May 2022), Table A3.4

Note: the latest BEIS carbon values (Sep 2021) are no longer split into separate "traded" and "non-traded" series.

Appraisal period and discounting

Appraisal period (years)	60	<i>Appraisal_period_length_in</i>
PV base year	2010	<i>PV_base_year_in</i>
Outputs price year	2010	<i>Price_base_outputs_in</i>
Discount period 1	30	<i>Discount_period_1_in</i>
Discount period 2	75	<i>Discount_period_2_in</i>
Discount period 3	125	<i>Discount_period_3_in</i>
Discount rate 1	3.5%	<i>Discount_rate_1_in</i>
Discount rate 2	3.0%	<i>Discount_rate_2_in</i>
Discount rate 3	2.5%	<i>Discount_rate_3_in</i>

source: TAG data book v1.16 (September 2021), Table A1.1.1

Carbon budget 1 start	2008	<i>Carbon_budget_1_start_in</i>
Carbon budget 1 end	2012	<i>Carbon_budget_1_end_in</i>
Carbon budget 2 start	2013	<i>Carbon_budget_2_start_in</i>
Carbon budget 2 end	2017	<i>Carbon_budget_2_end_in</i>
Carbon budget 3 start	2018	<i>Carbon_budget_3_start_in</i>
Carbon budget 3 end	2022	<i>Carbon_budget_3_end_in</i>
Carbon budget 4 start	2023	<i>Carbon_budget_4_start_in</i>
Carbon budget 4 end	2027	<i>Carbon_budget_4_end_in</i>

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
GDP deflator	100.0	102.1	103.7	106.0	107.7	108.3	110.3	112.3	114.6	116.9	123.4	123.4	126.9	130.9	133.3	135.9	138.6	141.8	145.0	148.4	151.8	155.3	158.8	162.5	166.2	170.1

source: TAG Data Book v1.18 (May 2022), Annual Parameters

Greenhouse Gases Workbook - Calculations																													
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035		
Appraisal period																													
Opening year	2023	<i>Opening_year</i>																											
Opening year		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Appraisal period length (years)	60	<i>Appraisal_period_length</i>																											
Appraisal period		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Check	TRUE																												
Emissions (tCO2e)																													
Non-traded sector																													
Road without scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	47364.911	49401.602	50093.225	50844.623	51607.293	52381.402	53167.123	53964.63	54774.099	55595.711	56429.646	0	0	
Road with scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	46369.477	48363.364	49040.451	49776.058	50522.699	51280.539	52049.748	52830.494	53622.951	54427.295	55243.705	0	0	
Road - change in emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-995.43447	-1038.2381	-1052.7735	-1068.5651	-1084.5936	-1100.8625	-1117.3754	-1134.136	-1151.1481	-1168.4153	-1185.9415	0	0	
Rail without scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rail with scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rail - change in emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total change in non-traded emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-995.43447	-1038.2381	-1052.7735	-1068.5651	-1084.5936	-1100.8625	-1117.3754	-1134.136	-1151.1481	-1168.4153	-1185.9415	0	0	
Change over 60 years (tCO2e)	-12097.48352	<i>Non_traded_emissions_change_60years</i>																											
Traded sector																													
Road without scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	38882.277	40554.214	41219.73	41738.803	42364.885	43000.358	43645.364	44300.044	44964.545	45639.013	46323.598	0	0	
Road with scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	38065.116	39701.916	40257.742	40861.608	41474.533	42096.851	42728.1	43369.022	44019.557	44679.851	45350.048	0	0	
Road - change in emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-817.161	-852.29892	-864.23111	-877.19457	-890.35249	-903.70778	-917.2634	-931.02235	-944.98768	-959.1625	-973.54994	0	0	
Rail without scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rail with scheme		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rail - change in emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total change in traded emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-817.161	-852.29892	-864.23111	-877.19457	-890.35249	-903.70778	-917.2634	-931.02235	-944.98768	-959.1625	-973.54994	0	0	
Change over 60 years (tCO2e)	-8930.931735	<i>Traded_emissions_change_60years</i>																											
Total change in CO2e emissions		0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1813	-1891	-1917	-1946	-1975	-2005	-2035	-2065	-2096	-2128	-2159	0	0	
Change over 60 years (tCO2e)	-22028.41525	<i>TOTAL_emissions_change_60years</i>																											
Change in opening year (tCO2e)	-1812.935465	<i>TOTAL_emissions_change_opening_year</i>																											

Greenhouse Gases Workbook - Worksheet 1

Scheme Name: ACP - EGD514 Assessment

Present Value Base Year

Current Year

Proposal Opening year:

Project (Road/Rail or Road and Ra

Overall Assessment Score:

Net Present Value of carbon dioxide equivalent emissions of proposal (£):

*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Quantitative Assessment:

Change in carbon dioxide equivalent emissions over 10 year appraisal period (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Of which Traded

Change in carbon dioxide equivalent emissions in opening year (tonnes):

(between 'with scheme' and 'without scheme' scenarios)

Net Present Value of traded sector carbon dioxide equivalent emissions of proposal (£):

(N.B. this is not additional to the appraisal value in cell I17, as the cost of traded sector emissions is assumed to be internalised into market prices. See TAG Unit A3 for further details)

*positive value reflects a net benefit (i.e. CO2E emissions reduction)

Change in carbon dioxide equivalent emissions by carbon budget period:

	Carbon Budget 1	Carbon Budget 2	Carbon Budget 3	Carbon Budget 4
Traded sector	0	0	0	-4301.238095
Non-traded sector	0	0	0	-5239.604737

Qualitative Comments:

Sensitivity Analysis:

Upper Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

£2,149,916

Lower Estimate Net Present Value of Carbon dioxide Emissions of Proposal (£):

£716,639
