RCP8.5 Business as Usual
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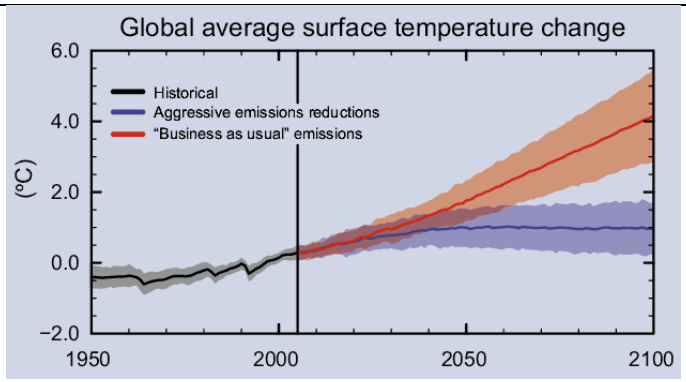
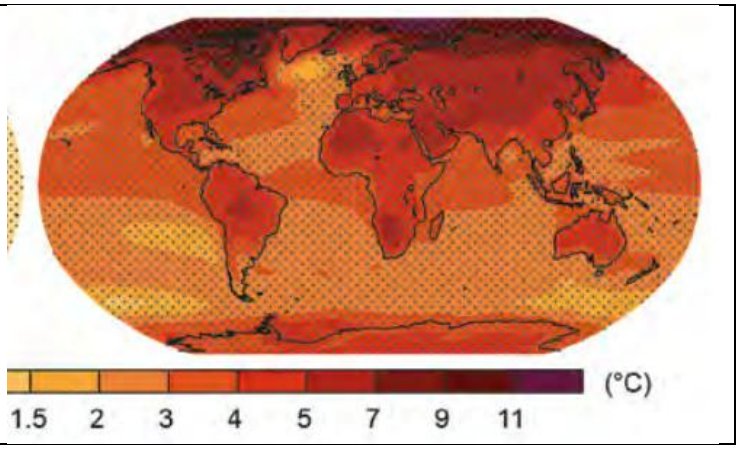
The RCP8.5 combines assumption about high population and relatively slow income growth with modest rates of technological change and energy intensity improvements, leading in the long term to high energy demand and GHG emissions in absence of climate change policies. Compared to the total set of Representative Concentration Pathway (RCPs), RCP8.5 thus corresponds to the pathway with the highest greenhouse gas emissions.

http://www.iiasa.ac.at/publication/more_XJ-11-141.php





The scenario's storyline describes a heterogeneous world with continuously increasing global population, resulting in a global population of 12 billion by 2100. Per capita income growth is slow and both internationally as well as regionally there is only little convergence between high and low income countries. Global GDP reaches around 250 trillion US2005$ in 2100. The slow economic development also implies little progress in terms of efficiency. Combined with the high population growth, this leads to high energy demands. Still, international trade in energy and technology is limited and overall rates of technological progress is modest. The inherent emphasis on greater self-sufficiency of individual countries and regions assumed in the scenario implies a reliance on domestically available resources. Resource availability is not necessarily a constraint but easily accessible conventional oil and gas become relatively scarce in comparison to more difficult to harvest unconventional fuels like tar sands or oil shale. Given the overall slow rate of technological improvements in low-carbon technologies, the future energy system moves toward coal-intensive technology choices with high GHG emissions. Environmental concerns in the A2 world are locally strong, especially in high and medium income regions. Food security is also a major concern, especially in low-income regions and agricultural productivity increases to feed a steadily increasing population.[8]
Compared to the broader integrated assessment literature, the RCP8.5 represents thus a scenario with high global population and intermediate development in terms of total GDP (Fig. 4). Per capita income, however, stays at comparatively low levels of about 20,000 US$2005 in the long term (2100), which is considerably below the median of the scenario literature. Another important characteristic of the RCP8.5 scenario is its relatively slow improvement in primary energy intensity of 0.5% per year over the course of the century. This trend reflects the storyline assumption of slow technological change. Energy intensity improvement rates are thus well below historical average (about 1% per year between 1940 and 2000). Compared to the scenario literature RCP8.5 depicts thus a relatively conservative business as usual case with low income, high population and high energy demand due to only modest improvements in energy intensity (Fig. 4).
http://link.springer.com/article/10.1007%2Fs10584-011-0149-y/fulltext.html#Sec9

RCP8.5	Anthropogenic CO2 Emissions (PgC/year)			Natural Emissions (PgC/year)		C02 (PPM)	C02 (PPM)			Methane (PPB)
Year	FF+Ind	AFL	Total	Land	Ocean	Atmosphere	Atmosphere			Atmosphere
2000	6.82	1.21	8.03	−1.14 ±0.87	−2.14 ± 0.32	368.9	Min	???	Max	1751
2010	8.90	1.08	9.98	−1.30 ±1.64	−2.53 ± 0.43	389.3	366	394	413	1779
2020	11.38	0.91	12.29	−1.43 ±1.82	−3.02 ± 0.51	415.8	386	425	449	1924
2030	13.79	0.74	14.53	−1.76 ±2.22	−3.47 ± 0.54	448.8	412	461	496	2132
2040	16.69	0.65	17.34	−2.15 ±2.13	−3.96 ± 0.67	489.4	443	504	555	2399
2050	20.03	0.58	20.61	−2.35 ±2.45	−4.47 ± 0.76	540.5	482	559	627	2740
2060	23.32	0.50	23.82	−2.71 ±2.38	−4.92 ± 0.84	603.5	530	625	713	3076
2070	25.75	0.42	26.17	−2.57 ±2.42	−5.24 ± 0.97	677.1	588	703	810	3322
2080	27.28	0.31	27.59	−1.96 ±2.64	−5.40 ± 1.14	758.2	651	790	914	3490
2090	28.24	0.20	28.44	−1.63 ±2.70	−5.45 ± 1.18	844.8	722	885	1026	3639
2100	28.68	0.09	28.77	−1.27 ±2.90	−5.44 ± 1.22	935.9	794	985 ± 97	1142	3751

FF+Ind - Fossil fuels and other industrial sources

AFL - Agriculture,Forestry,Land Use

Emissions - Values for for decadal mean values; 2010 =average 2005-2014

RCP8.5	Effective Radiative Forcing (Watts/square meter)				Global Mean Surface Temperture Above Preindustrial (Degees C)				
Year	CO2	Methane	Other	Total	5%	17%	50%	83%	95%
2000	1.51	0.47	-0.53	1.45			0		
2010	1.80	0.48	-0.44	1.84	0.83	0.89	0.97	1.07	1.22
2020	2.15	0.54	-0.37	2.32	0.97	1.11	1.26	1.44	1.59
2030	2.56	0.61	-0.26	2.91	1.25	1.37	1.54	1.89	1.99
2040	3.03	0.70	-0.12	3.61	1.53	1.73	1.89	2.28	2.37
2050	3.56	0.80	0.01	4.37	1.8	2.08	2.3	2.79	2.97
2060	4.15	0.90	0.08	5.13	2.15	2.48	2.76	3.34	3.59
2070	4.76	0.97	0.16	5.89	2.56	2.85	3.2	3.91	4.21
2080	5.37	1.01	0.22	6.60	2.91	3.25	3.65	4.53	4.82
2090	5.95	1.05	0.32	7.32	3.23	3.56	4.17	5.05	5.41
2100	6.49	1.08	0.40	7.97			4.61		

	RCP8.5	Annual % Change	GTC/ Decade	Cuumulative GTC
2010	8.90		89.00	89.00
2020	11.38	2.79	113.80	202.80
2030	13.79	2.12	137.90	340.70
2040	16.69	2.10	166.90	507.60
2050	20.03	2.00	200.30	707.90
2060	23.32	1.64	233.20	941.10
2070	25.75	1.04	257.50	1198.60
2080	27.28	0.59	272.80	1471.40
2090	28.24	0.35	282.40	1753.80
2100	28.68	0.16	286.80	2040.60

CO2 Emissions Fossil fuels and other industrial sources

Looking at the fossil fuel reserves (see Carbon Budget), there are ample known reserves and potential resources for this scenario - the cumulative CO2 emissions would be less than 3/5 of that which would be emitted by known reserves and potential resources (