

# WHAT ARE SSPs?

‘SSP’ stands for Shared Socio-economic Pathways. SSPs are the latest version of ‘what if’ scenarios used to explore the consequences of greenhouse gases accumulating in the atmosphere. SSPs are needed because we can’t know what future greenhouse gas levels in the atmosphere will be, but we know the higher they are the more warming will occur. Each SSP outlines ways the world might change in the future, including different types of energy generation, rates of population growth, economic development and land uses. These lead to different levels of greenhouse gas emissions over time.

The SSP ‘names’ consist of 2 parts:

1. the ‘SSP Family’ code based on 1 of 5 global socio-economic narratives
2. the extra energy (in W/m<sup>2</sup>) reaching the Earth by 2100. This was also used for the previous ‘RCP’ scenarios.

## How do SSPs differ from RCPs?

The SSPs further refine the previous emissions scenarios which are called the ‘RCPs’ (Representative Concentration Pathways). The RCPs described how future emissions might change over time and how much extra energy (W/ m<sup>2</sup>) would be trapped by greenhouse gases. They did not consider social change or policies. By adding these societal choices, SSPs enable policy makers to identify efforts required to keep global warming below 2°C.

Want to know more? The full description of the SSP Scenarios can be found in the IPCC 6th Assessment Report (Working Group 1) pages 232-236: [www.ipcc.ch/report/ar6/wg1/](http://www.ipcc.ch/report/ar6/wg1/).

	SSP1-1.9 “SUSTAINABILITY”	SSP1-2.6 “SUSTAINABILITY”	SSP2-4.5 “MIDDLE OF THE ROAD”	SSP3-7.0 “REGIONAL RIVALRY”	SSP5-8.5 “FOSSIL-FUELLED DEVELOPMENT”
<b>RCP equivalent</b>	No equivalent RCP	RCP2.6	RCP4.5	No equivalent RCP	RCP8.5
<b>THE WAY THE WORLD MIGHT CHANGE IN THE FUTURE</b>					
<b>Emissions reduction</b>	Very high and immediate	High and immediate	Moderate from 2040s	None (minor slowing)	None (accelerating)
<b>Energy sources</b>	Renewables	Renewables and biofuels	Renewables and fossil fuels	Fossil fuels	Increased fossil fuels
<b>Carbon dioxide removal</b>	New technology	New technology	None	None	None
<b>Global socio-economic trends</b>	Gradual move towards sustainability and environmental respect; increasing action towards Sustainable Development Goals (SDGs)	Gradual move towards sustainability and environmental respect; increasing action towards SDGs	Similar to the past; unevenly distributed; slow progress towards SDGs	Slow and increasingly unequal	Rapid growth at the expense of the environment; resource intensive lifestyles and industries; high investment in health and education; dependence on technological solutions
<b>WHAT THE FUTURE CLIMATE MAY LOOK LIKE UNDER EACH SSP</b>					
<b>Global warming by 2100</b>	1.0-1.8°C	1.3-2.4°C	2.1-3.5°C	2.8-4.6°C	3.3-5.7°C
<b>Resulting global warming levels*</b>	Overshoots 1.5C slightly around 2050 then returns and stabilises near 1.5C by 2100	Reaches 2°C around 2050s and stabilises	Reach 2°C around 2050s 2.7°C by 2100	Reach 2°C around 2050s 3°C around 2070s 4°C possible by 2100	Reach 2°C around 2050s 3°C around 2060s 4°C by around 2080s

\* As a general guide or ‘rule of thumb’

