Climate Models & Clean Energy

Earth's climate depends on many things. Of significance is:

1) Carbon & water cycles   (Because CO_2 and H_2O are GH gases)
2) Concentrations of GH gases in atmosphere
3) Positive/negative feedback loops (including albedo affect)
4) Ocean currents

Because climate is so complex, modelling what it might do is difficult. Scientists who model have found that → Arctic ice is melting faster than predicted and
   → oceans are absorbed carbon dioxide slower than predicted (ocean is not as good a 'sink' as we thought)

Also…   → we cannot know for sure what choices people/society will make.
   For example: Will we use less fossil fuels in the future? (hopefully!)

Sketch in Fig. 5 on page 409 here.

In the graph above, scientists make an assumption about future conditions.
   In Scenario A, humans continue to rely heavily on fossil fuels. (globally 28 Gigatonnes of carbon by 2100).
   In Scenario B, humans use much more 'clean energy' and conserve energy as well. (globally 7 Gigatonnes of carbon by 2100).

You can see that Scenario B is better!!   So how do we do this?? By making better choices.

Clean Energy	AND	Conserving Energy

Clean Energy = a source of energy that produces no significant greenhouse gas.

Clean Energy	Description
	Plant-based fuels produce energy (ie: corn oil)
	Solar panels absorb radiation (EMR) from sun and convert it to electricity. Can also use sun to directly heat water.
	Thermal energy (heat) below earth's surface is used to heat homes/buildings
	Wind causes the blades of a turbine to turn and generate electricity.
	The nuclei of uranium atoms are split which creates heat energy which is converted to electricity. **No carbon produced by radioactive waste is produced. ☹
	Moving water turns turbines which create electricity.