Which Scenario? Hmmm...?

Instructions:

1. Candidates are to peruse the material provided on the IPCC Special Report on Emission Scenarios. The material consists of a brief description of the four scenario family groups as well as a table detailing the scenario characteristics and their associated values. Pay special attention to the Table. (Remember these are characteristics for the world as a whole and not specific to a single country).

2. Fill in the Table to the left using one of three options – up, down or stable (no change) based on the summary material. This will give you a good idea of the assumptions made by climate modellers when they choose scenarios to work with.

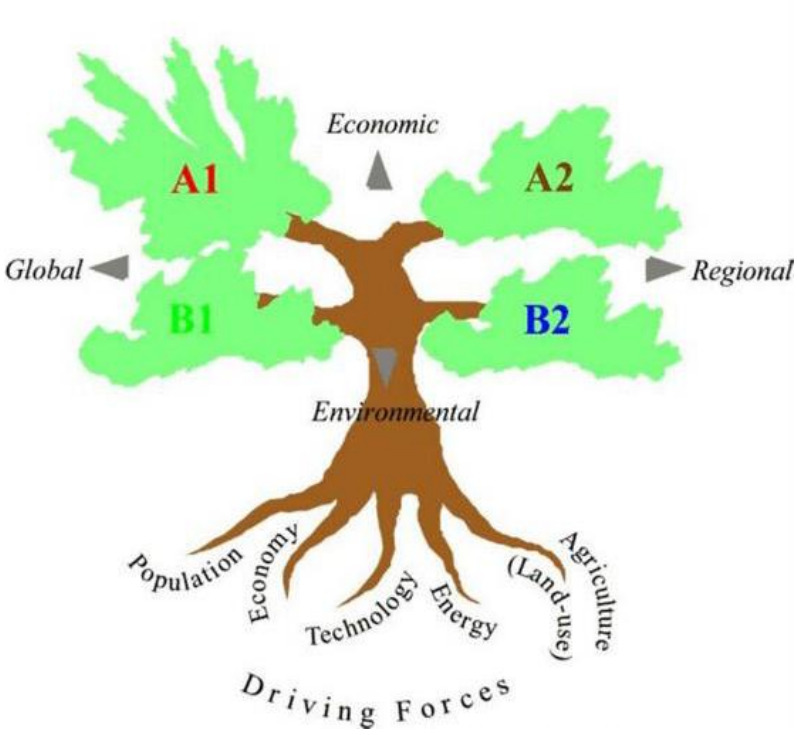
	Characteristics	2100s		
		UP	STABLE	DOWN
A2	Population Growth			
	GDP growth			
	Energy Use			
	Grassland			
	Farm / Arable Land			
	Resource Availability			
B2	Population Growth			
	GDP growth			
	Energy Use			
	Grassland			
	Farm / Arable Land			
	Resource Availability			
A1B	Population Growth			
	GDP growth			
	Energy Use			
	Grassland			
	Farm / Arable Land			
	Resource Availability			
B1	Population Growth			
	GDP growth			
	Energy Use			
	Grassland			
	Farm / Arable Land			
	Resource Availability			

3. Now use your intuition (or your knowledge of your country's policy directions) to suggest what your country may be like in the year 2100 and fill in the Table below.

	Characteristics	2050s		
		UP	STABLE	DOWN
YOUR COUNTRY	Population Growth			
	GDP growth			
	Energy Use			
	Grassland			
	Farm / Arable Land			
	Resource Availability			

Questions

1. Do your projections match any of the scenario assumptions about the globe on the previous page?
2. Which scenario(s) would you to choose to model if you were a climate modeller?



The four SRES scenario families that share common storylines are illustrated as branches of a two-dimensional tree. The two dimensions indicate the relative orientation of the different scenario storylines toward economic or environmental concerns and global and regional scenario development patterns, respectively. The A1 storyline branches out into different groups of scenarios to illustrate that alternative development paths are possible within one scenario family. Source http://www.ipcc.ch/ipccreports/sres/emission/images/4-1.gif

Scenario Descriptions – Storylines

A1

The A1 storyline and scenario family describes a future world of very rapid economic growth, low population growth, and the rapid introduction of new and more efficient technologies. Major underlying themes are convergence among regions, capacity building, and increased cultural and social interactions, with a substantial reduction in regional differences in per capita income. The primary dynamics are:

1. A strong commitment to market-based solutions.
2. High savings and commitment to education at the household level.
3. High rates of investment and innovation in education, technology, and institutions at the national and international levels.
4. International mobility of people, ideas, and technology.

The transition to economic convergence results from advances in transport and communication technologies, shifts in national policies on immigration and education, and international cooperation in the development of national and international institutions that enhance productivity growth and technology diffusion.

The A1 scenario family develops into four groups that describe alternative directions of technological change in the energy system. These are the A1T scenario group – which explores the possibility of technological change in energy end-use technologies and hence lower energy demand compared to the A1 marker scenario – the A1FI scenario group – which is sees the continued use and proliferation of fossil fuels for energy needs – and the A1B scenario group, a representative "balance" between the A1T and A1FI.

A2

The A2 storyline and scenario family describes a very heterogeneous world. The underlying theme is self-reliance and preservation of local identities. Fertility patterns across regions converge very slowly, which results in high population growth. Economic development is primarily regionally oriented and per capita economic growth and technological changes are more fragmented and slower than in other storylines. Regions with abundant energy and mineral resources evolve more resource-intensive economies, while those poor in resources place a very high priority on minimizing import dependence through technological innovation to improve resource efficiency and make use of substitute inputs.

B1

In the B1 storyline, governments, businesses, the media, and the public pay increased attention to the environmental and social aspects of development, this storyline and scenario family also describes a convergent world with the same low population growth as in the A1 storyline, but with rapid changes in economic structures toward a service and information economy, with reductions in material intensity, and the introduction of clean and resource-efficient technologies. The emphasis is on global solutions to economic, social, and environmental sustainability, including improved equity, but without additional climate initiatives.

B2

Globally, investment in energy R&D continues its current declining trend, and mechanisms for international diffusion of technology and know-how remain weaker than in scenarios A1 and B1 (but higher than in A2). Some regions with rapid economic development and limited natural resources place particular emphasis on technology development and bilateral cooperation. Technical change is therefore uneven. The energy intensity of GDP declines at about 1% per year, in line with the average historical experience since 1800. The B2 storyline and scenario family describes a world in which the emphasis is on local solutions to economic, social, and environmental sustainability. It is a world with moderate population growth, intermediate levels of economic development, and less rapid and more diverse technological change than in the B1 and A1 storylines. While the scenario is also oriented toward environmental protection and social equity, it focuses on local and regional levels.

Summary Table showing the projected characteristic end of century changes associated with the respective SRES scenarios.

Scenario Group	A1			A2	B1	B2
	A1FI	A1B	A1T			
Population growth	low	low	low	high	low	medium
GDP growth	very high	very high	very high	medium	high	medium
Energy use	very high	very high	high	high	low	medium
Land- use changes	low-medium	low	low	medium/high	high	medium
Resource availability	high	medium	medium	low	low	medium
Pace and direction of technological	rapid	rapid	rapid	slow	medium	medium
change favouring	coal	balanced	nonfossils	regional	efficiency & dematerialization	dynamics as usual