

NAME and group number : -----

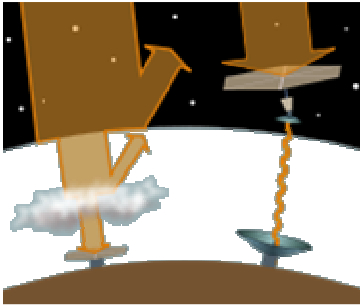
CH1 gr. A, B & C
English test MD 06/09

CAUTION : - write your name and group number at the top of every page,
- do all the exercises on this paper (pages 2, 3 & 4),
- do **NOT** use any type of dictionary or other document,
- give the **4** pages back at the end of your test.

Document for the comprehension exercises :

Space-based solar power

From Wikipedia, the free encyclopedia



On the left: Part of the solar energy is lost in its way through the atmosphere by the effects of reflection and absorption.

On the right: Space-based solar power systems are an attempt to convert [solar energy] in space, outside the atmosphere, to avoid these losses.

§1 Space-based solar power (SBSP) (or historically space solar power (SSP)) is a system for the collection of solar power in space, for use on Earth. SBSP differs from the usual method of solar power collection in that the solar panels used to collect the energy would reside on a satellite in orbit, often referred to as a solar power satellite (SPS), rather than on Earth's surface. In space, collection of the Sun's energy is unaffected by the day/night cycle, weather, seasons, or the filtering effect of Earth's atmospheric gases. Average solar energy per unit area outside Earth's atmosphere is on the order of ten times that available on Earth's surface.

§2 The collection of solar energy in space for use on Earth introduces the new problem of transmitting energy from the collection point, in space, to the place where the energy would be used, on Earth's surface. Since wires extending from Earth's surface to an orbiting satellite would be impractical, many SBSP designs have proposed the use of microwave beams to transmit power wirelessly. The collecting satellite would convert solar energy into electrical energy, which would then be used to power a microwave emitter directed at a collector on the Earth's surface. Dynamic solar thermal power systems are also being investigated.

§3 Many problems normally associated with solar power collection would be eliminated by such a design, such as the high sensitivity of conventional surface solar panels to corrosion and weather, and the resulting maintenance costs. Other problems may take their place though, such as cumulative radiation damage or micrometeoroid impacts.

§4 Producing electricity from sunlight in space is not a new or untried technology. Many space-faring craft, such as rovers and shuttles, are covered in solar cells, and hundreds of operating satellites use solar energy as their main source of power. What has never been tried before is transmitting that power back to Earth for our use, or building any space structure even remotely as large as would be required.

§5 Being a clean and safe energy design, space-based solar power has the potential to play a significant role in solving global energy and environmental problems if the basic issues of cost and engineering can be addressed. It utilizes space outside of Earth's ecological system, and may essentially produce no by-products.

Vocabulary help

- an attempt = une tentative

§1: rather than = plutôt que ; average = moyen ; available = disponible ;

§2 : a wire = un câble ; a design = un projet ;

§4 : to fare = voyager ; craft = un vaisseau ; remotely = de loin ;

§5 : a by-product = un effet secondaire.

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I. COMPREHENSION (20 points)

Read the text on page 1, then do the exercises.

A. Fill in the table below.

Name of new system	
Objective	
5 advantages	
1 technical problem	
2 suggested solutions to this technical problem	
2 old problems solved thanks to this new technology	
2 new problems because of this new technology	
A really new technology? (yes / no answer + 1 example)	
2 conditions of success	
2 world problems partly solved thanks to this new technology	

B. Sum up the article in 1 paragraph (4 lines maximum)

C. Translate the following passages into French

1) **Taken from §1:** SBSP differs from the usual method of solar power collection in that the solar panels used to collect the energy would reside on a satellite in orbit, often referred to as a solar power satellite (SPS), rather than on Earth's surface.

2) **Taken from §2:** The collecting satellite would convert solar energy into electrical energy, which would then be used to power a microwave emitter directed at a collector on the Earth's surface.

3) **Taken from §4:** What has never been tried before is transmitting that power back to Earth for our use, or building any space structure even remotely as large as would be required.

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III. WRITING (10 points)

What do you think of the film “Midnight in the Garden of Good and Evil”?

Answer this question in 170 words (+ or – 10 %). You can speak about the storyline, the scenery, the period, the characters, the actors, the film director, the music, etc., but you must justify your opinion.
Don't forget to give examples and write the exact number of words at the end of your writing.

The end – Thank you