

**BREVET DE TECHNICIEN SUPERIEUR
- GROUPE 17 -**

Conception et réalisation de carrosseries
Constructions navales
Etude et réalisation d'outillages de mise en forme des matériaux
Industries céramiques
Industries des matériaux souples
Industries papetières
Maintenance et après vente automobile
Maintenance et après-vente des engins de travaux publics et de manutention
Mécanique et automatismes industriels
Mise en forme des alliages moulés
Mise en forme des matériaux par forgeage
Moteurs à combustion interne
Productique bois et ameublement
Réalisation d'ouvrages chaudronnés
Traitements des matériaux

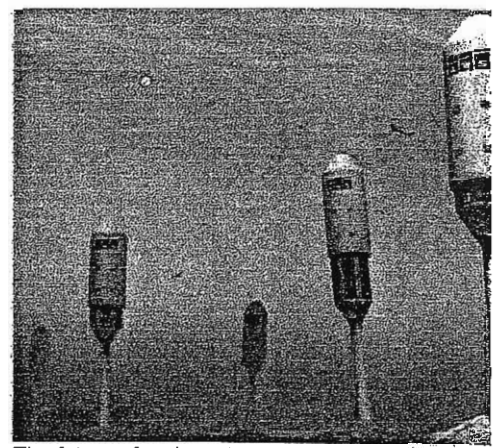
**LANGUE VIVANTE ETRANGERE
EPREUVE D'ANGLAIS**

**DUREE : 2 HEURES
COEFFICIENT : 2**

L'usage du dictionnaire bilingue est autorisé
Calculatrices et traducteurs électroniques sont interdits

Dès que le sujet vous est remis, assurez-vous qu'il soit complet.
Le sujet comporte 3 pages, numérotées de 1 à 3.

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The future of underwater scenery? An artist's impression of what a field of submarine power generators will look like

POWER-GENERATING BUOYS SHELTER IN THE DEEP

They look a bit like underwater mines, but they have a far less sinister purpose – the first of these submarine wave-energy devices should sprout up off the UK coast in 2008.

5 AWS Ocean Energy has developed an underwater buoy that harnesses wave energy from 50 metres below the surface. The British company says that because the entire device is underwater, it does not suffer from storms in the way that other wave-power devices do, and will not interfere with shipping.

It will be anchoring its first five test buoys to the seabed in a test site off the Scottish coast next year.

10 Wave power is nothing new. Perhaps the best known wave-power device is Pelamis – a red, floating, snake-like system that undulates on the surface of the sea, harnessing the energy of waves as they articulate sections up and down.

But surface generators are very vulnerable to violent storms. AWS's device, which is made from the same materials that are used in the underwater sections of oil rigs, sits in the calm deeper waters.

15 It harnesses wave energy at a distance, through the changes in pressure that waves generate by increasing and decreasing the water column.

20 The buoys are hollow and filled with a compressible gas that allows the top half of the buoy to move up and down. When a wave passes over them at the surface, the additional water stacked on top of the buoy increases the local water pressure, and the upper half of the device is pushed down.

Between waves, the water column is shorter, pressure lower, and the upper-half rises. This wave-driven pump action is converted into electricity, which can be fed into the national grid.

25 A town with 55,000 inhabitants would need half a square kilometer of seabed covered with 100 buoys to power it. The buoys could be effective in the North Atlantic, from Scotland down to Portugal, along the Pacific US Shoreline, from San Francisco in the US up to Vancouver in Canada, along the coast of Chile, and even in South Africa and New Zealand. But calmer seas, such as the Mediterranean do not have enough wave height to pump the buoy.

(365 mots)

Adapted from *New Scientist*, June 14th, 2007
Catherine Brahic.

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TRAVAIL A EFFECTUER PAR LE CANDIDAT.

1. COMPREHENSION

Rédigez un compte rendu du texte ci-joint **en français**.
Vous indiquerez le nombre de mots utilisés.

200 mots (+/- 10%) - 10 points

2. EXPRESSION

Traitez **en anglais** les **deux** sujets suivants :

- 1) Explain the advantages and drawbacks of this new device. Use your own words.

80 mots (+/- 10%) - 5 points

- 2) In your opinion, what is the energy of the future?

100 words (+/- 10%) - 5 points