

**English comprehension test**  
**“Solar tower pilot plant” – Correction elements**

Source :

<http://www.youtube.com/watch?v=C-EvV90MeDY> (Enviro Misson Limited)

Don Quijote & Sancho Panza (who fought against the **windmills** (= moulins à vent) in La Mancha).

Plains of La Mancha, 100 km south of Madrid.

Beautiful **countryside** now used for farming **wheat** (= blé) and growing **grapes** (= raisin) and **olives**.

Extraordinary power plant that produces electricity economically, simply from hot air.

Commissioned by the West German Ministry of Research and Technology, **built** (= construit ← pp de build) in Spain by the German civil engineer, Schlack & Partners.

Its design **relies on** (repose sur, to rely) one of the most basic principles : hot air rises (to rise = monter).

**As** (comme, tandis que, pendant que) sun **heats** (chauffe) the air **beneath** (en-dessous) the collector area, air **seeks** (= cherche) and **finds** the only way upwards and out. **As** it does so, it turns a turbine that produces electricity. It is simple but extremely **effective** (efficace).

4.4 ha of plastic material, **held** (hold = tenir) in position and pulled (pull = tirer) by **heavy weights** (lourds poids) to keep all **tight** (serré) because of the wind generated inside and, in this area generally, winds may get up to 150 km/h.

During the day : air at 50 °C. It flows **towards** (dans la direction de) the chimney.

Interesting thing also : also works at night **as well as** (aussi bien que) day, and **cloudy** (nuageux) or **rainy** (pluvieux) days as well.

The ground beneath the air is **heated up** (chauffé) to **such a** (un tel/une telle) degree during the day, **that** at night, it reradiates this heat back again, keeping the air hot and flowing towards the chimney all the time.

Plastic : 0.1 mm **thick** (épais). Very **strong** (fort, résistant). Transmits Infra Red radiations but is resistant to Ultra Violet radiations that **tend to** (to tend to = avoir tendance à) degrade plastics.

Life of sheets of plastics like this : around 10-20 years.

What surprised the builders of the chimney was that **instead of** (au lieu de) creating a desert beneath the collector area, plants **grew** (pp de grow = pousser) because of **greenhouse effect** (effet de serre) which produces large **quantities (amounts)** of condensation during the night.

Air enters the tower by a **funnel** (entonnoir). Then the blades (les pales) of the turbine turning slowly round.

Chimney = **hollow** tube, 200 m high and 10 m in diameter.

4 blades can be adjusted while the turbine is turning to maintain a constant optimum speed around 36 km/h.

Maximum power : 60 kiloWatts. Not much but despite (en dépit de, malgré) its size, the plant was built in Spain for no more than 1 million US dollars. Economic proposition.

**The bigger the chimney**, *ie (id est, c'est-à-dire)* the higher it is and the wider the diameter, **the greater the efficiency** and the higher the power output that can be generated.

One **unbeatable** (imbattable) advantage : **inexhaustible** (inépuisable) source of free and original energy : the sun.

See : <http://www.youtube.com/watch?v=cLLiGTZxH5s>