

Name \_\_\_\_\_ Branch / semester \_\_\_\_\_

TD Teacher \_\_\_\_\_ Grade \_\_\_\_\_ /25

## NO DOCUMENTS ALLOWED

## PART ONE: GRAPH READING 5 points

## Heat supply from renewable energy sources in the E.U. (in Twh)

Source: BMU Publications, June 2008

	2000	2001	2002	2003	2004	2005
Wood / wood waste	497.8	498.7	496.0	511.7	517.4	521.2
Biogas	4.6	7.0	8.4	3.8	4.1	4.0
Municipal waste	6.6	7.8	8.8	6.7	6.1	6.1
Solar thermal energy	4.7	5.4	5.9	6.7	7.3	8.0
Geothermal energy	5.2	6.4	6.5	6.7	6.7	6.7
R.E.S. heat, total	519.0	525.3	525.5	535.5	541.6	545.9

R.E.S. = Renewable energy sources

Fill in the missing words **in the right form**, taking care **NOT TO USE THE SAME WORD TWICE**.

- From 2000 to 2005, the amount of heat from biogas \_\_\_\_\_ (verb)  
\_\_\_\_\_ (adverb) even if it \_\_\_\_\_ (verb) at 8.4 Twh in 2002.
- From 2000 to 2005, there was a \_\_\_\_\_ (adjective) \_\_\_\_\_  
(noun) in the amount of heat produced from solar thermal energy.
- The amount of heat from geothermal energy \_\_\_\_\_  
(verbal phrase) from 2003 to 2005.
- Globally, we can see that in the EU, since 2000, the share of heat from renewable energies  
\_\_\_\_\_ (verb).
- In 2005, the amount of heat produced from solar thermal energy was \_\_\_\_\_  
\_\_\_\_\_ (comparative phrase) the heat production from biogas.
- In all the years included in this study, the \_\_\_\_\_ (adjective) renewable  
source of heat was wood and wood waste.

## **PART TWO: Report Writing**

**20 points**

### **INTRODUCTION**

Europe is now an essentially urban society, with four out of five Europeans living in towns and cities. Most of the environmental challenges facing our society originate from urban areas. The European Commission has long recognised the important role that local authorities play in improving the environment, and their high level of commitment to genuine progress. The European Green Capital Award has been conceived as an initiative to promote and reward these efforts.

#### **Annual award from 2010**

Starting in 2010, one European city will be selected each year as the European Green Capital of the year. The award is given to a city that:

- Has a consistent record of achieving high environmental standards;
- Is committed to ongoing and ambitious goals for further environmental improvement and sustainable development;
- Can act as a role model to inspire other cities and promote best practices to all other European cities.

**Therefore, the European Green Capital should not be the ideal city with all environmental problems solved. It will be an ordinary city with its typical metropolitan challenges but also with a strong commitment towards a "green" future, thus with strong "green" potential.**

#### **Selection criteria**

After a preliminary evaluation process in which the following criteria were assessed (quality of local ambient air, noise pollution, waste production and management, water consumption, and waste water treatment), three cities have been pre-selected: Amsterdam, Freiburg and Hamburg.

Three major areas will now be evaluated to guide the final evaluation process:

- **Local contribution to global climate change through the development of renewable energies**
- **Local transport**
- **Availability of green areas open to the public**

#### **TASK:**

**As a member of the evaluation panel, you have been asked to review the applications and choose the city you believe is doing the most to solve environmental problems.**

**In a report of 250 words (minimum) – 400 words (maximum), you will assess the three cities according to the main criteria and give your recommendation for the European Green City Award.**

**You will focus on present environmental situations and achievements over the last five to ten years but also on plans and measures for future improvements and the city's capacity for standing as a role-model for other European cities.**

## **DOCUMENT 1: Cities' highlights**

### **AMSTERDAM**

#### **Bikes have overtaken cars**

**The City of Amsterdam has made great efforts to promote greener means of transport, and successfully. The citizens now prefer bicycles over cars.**

With roughly 750,000 residents, Amsterdam is the biggest city of Holland and part of the great metropolitan area 'Randstad'. The Dutch are fond of biking, and Amsterdam has always been a popular city for cycling.

Approximately three out of four of Amsterdam residents own a bicycle, and bicycles are the most commonly used means of transport.



#### **The city provided the framework**

Over the last thirty years, the municipal authority of Amsterdam has worked hard on encouraging bicycle use by providing cycle paths and lanes; bicycle and pedestrian friendly roads and an extensive network of parking facilities for bicycles. The main bicycle routes through the city are part of the 'Hoofdnet Fiets' bicycle network. A complex network of bicycle routes runs through the entire city, which ensures all of Amsterdam is safely and comfortably accessible by bicycle.



## **FREIBURG**

### **Energy from wind, sun and water**

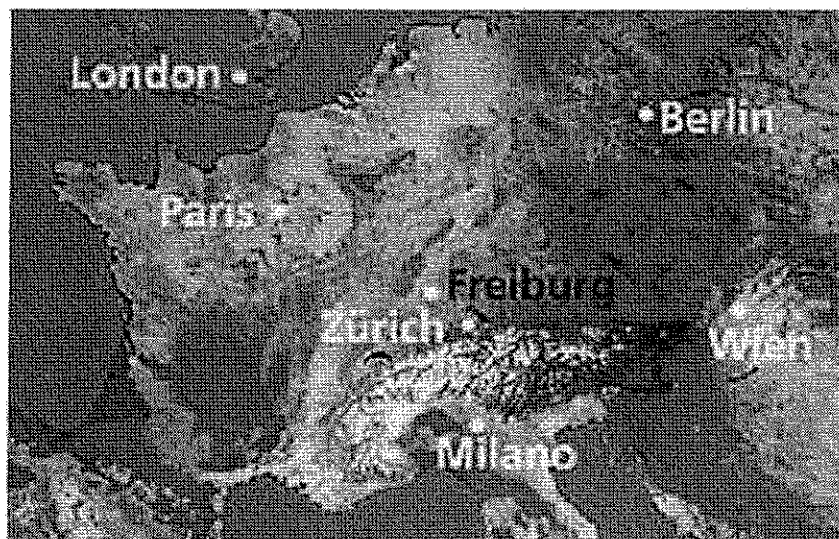
**The City Council of Freiburg is working on a concept of supplying all public facilities with eco-power.**

Freiburg in Southern Germany, on the western edge of the Black Forest, is the hottest and sunniest major city in Germany. And the sun, together with the wind and the waters of small rivers feeding into the nearby Rhine, plays a role in supplying the city with electricity. Wind power and bio mass are the major sources of renewable energy, and the city council plans to expand the capacity of wind mills and bio mass plants in the city area.

### **Solar energy from roof tops**

A smaller share of renewable energy is covered by hydro- and solar power. The city council has decided to increase the importance of these two sources in the near future: 1.2 per cent of the city's power supply should be covered by solar energy in 2010. Today the share is 0.85 per cent. In order to expand the total surface of solar energy systems, the city avails roof areas on public buildings for solar power installations.

Included in these strong targets on sustainable energy is also the combination of a district heating system with low emissions buildings.



# HAMBURG

## Green development around Europe's second largest port

Situated on the banks of the river Elbe, Hamburg is one of the ten largest cities in Europe. With its 1.8 million inhabitants, Hamburg has been faced with ever increasing space requirements. It is working hard to fulfil them through ambitious urban planning, resorting to "brownfield recycling" (renovation of former factory zones). For instance, 155 hectares of the eastern port zone situated on the northern banks of the River Elbe have since 1997 been allocated for re-development as a residential and office area named "HafenCity" (PortCity).



## Successful initiatives to combat climate change

Despite a growing number of containers handled in the Port of Hamburg, the overall CO2 emissions from transport from Hamburg City has been kept at a steady level for the past ten years.

This success can partly be explained by the efforts which Hamburg's Port Authority has put into improving air quality in the heart of the big city. For instance, the Port Authority supports and assists terminal management enterprises in climate protection initiatives such as van carriers with hybrid drive.

CO2 per capita from transport  
in tonnes of CO2

1990:	2.89
1997:	2.17
2003:	2.25
2004:	2.17
2005:	2.04
2006:	1.98

Percentage of electricity  
consumption from renewable sources

1997	4,46
2003	8,12
2004	9,45
2005	10,39
2006	11,75

Total CO2 equivalent per capita,  
including emissions from  
electricity use, in tonnes of CO2

1990:	11.71
1997:	11.72
2003:	10.56
2004:	9.98
2005:	9.69
2006:	8.84

## DOCUMENT 2: Comparative table

	AMSTERDAM	FREIBURG	HAMBURG
<b>Main figures and features</b>	<ul style="list-style-type: none"> <li>- 750,000 inhabitants</li> <li>- 219 km<sup>2</sup>, of which 12% parks and natural preserves;</li> <li>- Capital of the Netherlands; financial and cultural capital.</li> </ul>	<ul style="list-style-type: none"> <li>- 220,000 inhabitants</li> <li>- 150 km<sup>2</sup>, of which 40 % forest;</li> <li>- consensus on sustainability across all political parties + citizens' commitment.</li> </ul>	<ul style="list-style-type: none"> <li>- 1.77 million inhabitants</li> <li>- 755 km<sup>2</sup> of which 22% public green areas, woodland and nature reserves;</li> <li>- 2<sup>nd</sup> largest city in Germany and Europe's 2<sup>nd</sup> largest port.</li> </ul>
<b>CO2 emissions per capita</b>	5.9 tonnes in 1990 and still increasing since then	high but 13 % reduction since 1992	high but more than 15 % reduction since 1990
<b>Share of renewables in electricity consumption</b>	37 % of households uses electricity from renewable sources	4 %; aimed to reach 10 % by 2010	12%
<b>Proportion of all journeys under 5 km by car</b>	25 % (61% by bicycle)	low (high share of cycling)	33,5 % (56 % by bicycle or walking)
<b>Other transport features</b>	<ul style="list-style-type: none"> <li>- residents' use of bicycle = 0.87 times a day VS 0.84 times for car use</li> <li>- complex network of bicycle routes and parking facilities</li> <li>- 100% low-emission public transport with very good access;</li> <li>- continuous upgrading of bicycle and public transport facilities, road pricing, electric vehicles promotion...</li> </ul>	<ul style="list-style-type: none"> <li>- 85 % minimum low-emission buses and significant expansion of tram network over last 10 years;</li> <li>- high accessibility of public transport</li> </ul>	<ul style="list-style-type: none"> <li>- very extensive cycling network =&gt; increasing share of cycling;</li> <li>- 70 % of all container traffic by rail;</li> <li>- current implementation of pedestrianisation, traffic speed reduction and rail/subway system improvement measures.</li> </ul>
<b>Share of citizens living within 300m from public green area</b>	70.7 % (96.4 % including "water areas")	100 %	89 %
<b>Other "green" features</b>	<ul style="list-style-type: none"> <li>- city in rural surroundings;</li> <li>- historic extensive canal system which attracts 4.2 million visitors per year;</li> <li>- multifunctional green areas; children's farms; small recreational mini parks; no streets without trees</li> </ul>	<ul style="list-style-type: none"> <li>- 31.27 m<sup>2</sup> of green areas per inhabitant = 50 % increase as against 10 years ago;</li> <li>- 30 m<sup>2</sup> of nature reserve per inhab.;</li> <li>- green roofs for energy efficiency + green on tram tracks for noise reduction.</li> </ul>	<ul style="list-style-type: none"> <li>- 29 natural reserves and 36 landscape protection areas;</li> <li>- development of open and green areas in disadvantaged districts;</li> <li>- projects of a public park, 2 new nature reserves and expansion of existing nature reserves.</li> </ul>