



POWER
Low Carbon Economies



INTERREG IVC
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REGIONS OF EUROPE SHARING SOLUTIONS



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ANNEX 2

Best practice Identified and transferred

Section	Indication of content
1 Title of the best practice	New sustainable location for regional waste service
2 Precise theme/issue tackled by the practice	Sustainable building project that also includes use of renewable energies
3 Objectives of the best practice	<ul style="list-style-type: none"> • To move 5 separate locations of the regional waste service to 1 centralized location; • To make this location as sustainable as possible.
4 Location	's-Hertogenbosch, Noord-Brabant, The Netherlands
5 Detailed description of the best practice	<p>Time-scale</p> <ul style="list-style-type: none"> • September 2007 - decision municipality of 's-Hertogenbosch to move the five locations to one location; • September 2007 - March 2009 Preparation phase; • March 2009 - September 2011 (expected) construction phase. <p>Bodies involved/implementation</p> <ul style="list-style-type: none"> • Province of Noord-Brabant; • Regional Waste Service, owned by the Municipality of 's-Hertogenbosch. <p>Process and detailed content of the practice</p> <p>In September 2007 the municipality of 's-Hertogenbosch made the decision to move the 5 locations of the regional waste service to one location. At this location several activities will be carried out. such as:</p> <ul style="list-style-type: none"> • Collecting waste from households; • Collecting waste from businesses; • Collecting of hazardous waste; • Transfer station for waste. <p>The goal was to make this location as sustainable as possible. The preparation of the whole project took approximately 1,5 years. The preparation phase contained the global design of the location, a first, preliminary design and the formulation of the final terms and specifications.</p> <p>Also a research has been carried out on how to reach the goal to make the location as sustainable as possible. This research covered a wide range of aspects, not only on sustainable constructing but also what kind of</p>

possibilities there were to use windenergy, solar energy, warmth storage and biomass based energy. The research showed that there were in fact opportunities to use these initiatives for the production of heat and energy for this location.

The research also showed that the initial budget wouldn't be sufficient for these kind of ambitions. However, when in June 2008 the municipal council of 's-Hertogenbosch determined the new climate policy, new opportunities occurred to carry out these activities with an additional budget. Also the Province of Noord-Brabant invested in this project. Slowly the original goal to make the location as sustainable as possible, shifted to a new goal: to make the new location carbon neutral.

Since the regional waste service collects prunings, the research showed that there would be no trouble in producing warmth. The only problem was, to make it profitable other purchasers for the produced warmth needed to be found. Next to the location where the regional waste service will be established, is also a new business area going to be set up. The businesses that were interested in moving to this new business area were approached by the regional waste service to see if they had an interest in purchasing the warmth from them.

This resulted in 12 businesses that will be connected to the heating system by a 1,5 km long tube, transferring the heat from the incinerators to their offices.

After the preparation phase the construction of the location itself started. This will take approximately another 1,5 years and is expected to be ready in the second quarter of 2011.

There are several ways in which the regional waste service establishes this carbon neutral location; sustainable constructing, renewable energies, exchange of energy/heating and warmth storage.

Sustainable constructing

By the use of:

- Maximum isolation;
- Green (overgrown) roofs, facades;
- Solartubes;
- LED-lights in the outside area;
- Daylight switched fixtures;
- Renewable energies
- Between 4.000 to 5.000m² of solarcells on the roofs of the buildings for electricity. Since the energy production during the day is more than that gets used by the regional waste service and too little for what they need during the night, they contacted the Waterboard, which has several buildings situated next to the location of the waste service. The Water board itself produces electricity by processing sewage. Their need for energy is exactly the opposite: they need more during daytime and less

	<p>during the night. The Waterboard and Regional Waste Service have decided to establish an electricity connection that allows them to transfer their surplus of electricity;</p> <ul style="list-style-type: none"> • Two wood-fired incinerators, producing 1,6 MW heating in total. The heat goes first into a reservoir where it's stored. In that way whenever an office needs the heat, you can avoid that the incinerators need to start up for individual offices. From the reservoir, the warmth gets transferred through heat exchange units, that is a separate system. Each office has its own connections to this system, with in their own building their own separate system to distribute the heat. The incinerator will be producing energy for 8 months per year. Research showed that keeping the incinerators working during summer wouldn't be efficient. Therefore, they're only turned on for 8 months a year. <p>Legal framework</p> <p>There were several legislations that needed to be taken into account:</p> <ul style="list-style-type: none"> • Heat production legislation; • Distortion of competition - The regional waste service received governmental fundings for constructing this new location and the incinerators. But they are going 'on the market' with the heat that is produced; • Electricity legislation. <p>Financial framework</p> <p>The heating system has a total cost of 1,5 million euros. The Regional Waste Service received 40% of fundings from the Province of Noord-Brabant for this investment.</p>
<p>6 Evaluation</p>	<p>Energy production</p> <p>1,6 MWt.</p> <p>Main Barriers and Threats</p> <ul style="list-style-type: none"> • Throughout the process it became very clear that a large sum of investments is needed for the development of these kind of installations. Without fundings, this concept wouldn't be able to exist.; • With a small amount of purchasers, there is a large risk that if one of the purchasers for some reason fails to continue his contract (even though the contracts are for 10 years), a large part of the income needed to make the heating system profitable will fall out. <p>Possible demonstrated results</p> <ul style="list-style-type: none"> • This project developed itself along the way because of the commitment of different parties, such as politicians, governmental agencies as well as businesses and other energy producing companies in the area;

	<ul style="list-style-type: none"> • A smallscale project can be profitable as long as the whole process is overthought really well and there are different parties willing to invest in an initiative like this.
7 Lessons learnt from the best practice	<p><i>Success factors</i></p> <ul style="list-style-type: none"> • This project started out a bit smaller, but along the way it attracted more parties to participate in it. It was striking to see that the involvement of other parties attracted even more parties to join. This made it possible to let the project evolve; • The establishment of a climate policy at the beginning of this project, created opportunities to get the goals for this location to a higher level.; • The investments made by the Province of Noord-Brabant were crucial for the profitability of the heating system; • The strength of this project is also in the short distance between the available resources (the biomass that gets collected on the location), the processing of the resources into wood-chips, and the purchasers located in the vicinity of the incinerators. This reduced the distribution costs significantly.
8 Contact information	<p>Regional Waste Service 's-Hertogenbosch (Regionale Afvalstoffendienst 's-Hertogenbosch) Contact person: Mr. Pieter van Hagen P.O. 12345 5200 GZ 's-Hertogenbosch The Netherlands T +31 6 22206301 E afvalstoffendienst@s-hertogenbosch.nl</p>
9 Other possible interesting information	
10. Best practice transferred	