

Section	Indication of content
<b>1 Title of the best practice</b>	Pilot project bio energy, "De Lier"
<b>2 Precise theme of the practice</b>	Wood burning
<b>3 Objectives of the best practice</b>	Deliver heating and Electricity to three greenhouses.
<b>4 Location</b>	The Netherlands, Province of Zuid-Holland, De Lier.
<b>5 Detailed description of the best practice</b>	<p><b>Timescale:</b> A greenhouse in the city Schipluiden, started experimenting in 1984 with heating of the greenhouse by the use of woodburning. They started experimenting with this sort of heating because they wanted to decrease their energy costs. However, this experiment didn't succeed.</p> <p>In the 90's "Agro Adviesburo BV" carried out a brief feasibility study that looked at further possibilities of the use of wood burning for the production of heat and Electricity. From the outcomes of this research the involved parties decided to build a new installation.</p> <p>In 1997 the installation provided heating. In 1999 the First Electricity was delivered from the installation.</p> <p>With the results of the installation that was built in the 90's, the greenhouse wanted to start another project to build a new, modern installation, that could provide more heating and Electricity to other greenhouses as well. This installation was set to use in 2006.</p>
	<p><b>Bodies Involved / Implementation:</b> Wood fiber and sawdust trading "De Lange BV" in Stompetoren (production), local greenhouses and Agro Adviesburo BV.</p>
	<p><b>Process and detailed content of the practice:</b> Woodfiber and sawdust trading "De Lange BV" (WSL) is a supplier of wood and sawdust. For them the development of a biomass furnace was a lucrative way to get rid of their sawdust and woodfiber residues.</p> <p>This interest has resulted in WSL delivering heat to three greenhouses. The greenhouses save approximately 20% on their heating costs. To ensure that WSL will be delivering for a longer period to the greenhouses, the greenhouses and WSL agreed to a contract in which the greenhouses have a purchase obligation.</p> <p>The greenhouses also have a conventional boiler in case for some reason WSL isn't able to deliver (enough) heat.</p> <p>The biomass installation is managed by WSL. The biomass furnace gives the greenhouses a more sustainable identity. Because of this they are able to apply for 'green mortgages'. Green mortgages are loans with a low rates.</p> <p>The future of the installation of WSL looks bright. Not only has one of the three greenhouses expanded, also one other greenhouse decided to participate in the project. Because of this the heatingdemand had increased. To also increase the economical efficiency, WSL is looking into building a larger installation.</p>
	<p><b>Legal framework</b> The biomass installation had to measure up to all environmental standards</p>



	<p>there were concerning the project.</p> <p><b>Financial Framework</b> Totalbruto investment is €2.300.000. The parties involved created a construction in which payment is attached to the performance of the installations and to what extent the commitments agreed on are followed.</p> <p><b>Opportunities:</b></p> <ul style="list-style-type: none"> <li>• It is possible to produce biomass energy on a small scale base</li> <li>• The succes of the smallscale biomass installation makes it possible to extend the installation.</li> </ul> <p><b>Threats:</b></p> <ul style="list-style-type: none"> <li>• A long term commitment of the greenhouses is needed to ensure the use of the heat.</li> <li>• Technical failure leads to extra costs. Because of the small scale of the project the rendability of the installation decreases quickly.</li> </ul> <p><b>CO<sup>2</sup> reduction (expected):</b></p> <ul style="list-style-type: none"> <li>• Per year the amount of natural gas that is saved is 4.250.000m<sup>3</sup>. This comes down to 7.565 tonnes of gas.</li> </ul> <p><b>Energy production:</b> Electric power: 200 KW and thermal power: 4.000 KWt per year. This is enough to deliver Electricity for 500 households.</p>
<b>6 Evaluation</b>	<p><b>Possible demonstrated results (eg through indicators)</b></p> <ul style="list-style-type: none"> <li>• The project is increasing because of its own succes. It serves as an example for the development of other, larger biomass furnaces.</li> <li>• A smallscale project can be efficient enough when it comes to energy savings for bussinesses with a large demand of energy.</li> </ul> <p><b>Possible success factors:</b></p> <ul style="list-style-type: none"> <li>• Communicating with policy makers and the public about the plant has been from the very beginning of the project an important focus for De Lier.</li> <li>• Large commitment of all parties. Even though there has been some technical delay, the project was carried out with involvement of all parties.</li> </ul>
<b>7 Lessons learnt from the best practice</b>	<ul style="list-style-type: none"> <li>• A smallscale project can be efficient when it comes to the production of renewable energy. However, the payback period can increase very rapidly due to extra expenses that weren't calculated up front. In the case of "De Lier" the payback period was increased from 6 to 10 years.</li> <li>• A pilot project like this project can spread out and grow from the success and the experience gained.</li> </ul>
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<b>9 Other possible interesting information</b>	
<b>10. Best practice transfered</b>	

