

<b>Municipality of Marchtrenk</b>	
<b>Description of the action</b>	
Contracting in four public buildings owned by the municipality of Marchtrenk (two schools, one kindergarten, one community centre) Modernization of building - and service installation; energy - controlling	
<b>Initial Situation</b>	<b>Final Situation</b>
<ul style="list-style-type: none"> <li>- Very high energy consumption</li> <li>- Old facilities which require renovation</li> <li>- Oversized boiler</li> </ul> <p>The municipality wanted to lower its energy costs and wanted to implement an ecological operational management in the course of a project dealing with energy saving. Therefore, a contract was signed with Siemens Building Technologies, Building Automation, in 1998.</p>	<ul style="list-style-type: none"> <li>- Replacement of the water heater and the gas burner</li> <li>- Switching from oil to gas as a fuel</li> <li>- Installation of an energy management system</li> <li>- Exchange of all pumps, servo motors and controllers</li> <li>- Installation of the digital system UNIGYR</li> <li>- Installation of equalizer valves</li> <li>- Replacement of the electrical control cabinet (heating/ventilation)</li> <li>- Energy monitoring with consumption control</li> </ul>
<b>Energy savings:</b> kWh/year	<b>Investment: 254.400 €</b> (€ 132.300 subsidies considered)
<b>Economic savings:</b> 26.300 €/year	<b>Pay-back: 9,7 years</b> (5 years subsidies considered)
<b>CO2 emissions savings:</b> 211 t/year	<b>contact: e-mail:</b> daniel.schinnerl@siemens.com

<b>Federal sports school Linz</b>	
<b>Description of the action</b>	
Energy contracting in the Federal Sports School in Upper Austria at the Gugl in Linz. Renewal of the control technology, installation of solar panels in order to support heat water production, installation of heat recovery, energy controlling and energy monitoring	
<b>Initial Situation</b>	<b>Final Situation</b>
<ul style="list-style-type: none"> <li>- High energy costs</li> <li>- High operating costs</li> <li>- Modernization of the building management system necessary</li> <li>- Limited internal financial resources</li> </ul>	<ul style="list-style-type: none"> <li>- Renewal of the control technology</li> <li>- Installation of solar panels (180 m<sup>2</sup>) to support hot water production</li> <li>- Installation of heat recovery</li> <li>- Circulation pump with energy efficiency class A</li> <li>- Installation of legionella prevention</li> <li>- Energy controlling and monitoring</li> </ul>
<b>Energy savings:</b> kWh/year	<b>Investment: 567.000 €</b> (385.000 considering subsidies)
<b>Economic savings:</b> 46.500 €/year	<b>Pay-back: 12,2 years</b> (8,3 years considering subsidies)
<b>CO2 emissions savings:</b> 176 t/year	<b>contact: e-mail: daniel.schinnerl@siemens.com</b>

<b>Private hospital Vienna</b>	
<b>Description of the action</b>	
Private hospital in Vienna, Art Nouveau Building with 6.000 m <sup>2</sup> effective area, 120 beds und 5 operating rooms. Modernization and extension of the control technology, operating optimization of the refrigerating plant and the ventilation system, energy-controlling	
<b>Initial Situation</b>	<b>Final Situation</b>
<ul style="list-style-type: none"> <li>- Modernisation/Optimization of the facilities necessary</li> <li>- High energy and operating costs</li> <li>- Limited internal financial resources</li> </ul> <p>The contracting - contract with Siemens Technologies, Building Automation was signed in 1998.</p>	<ul style="list-style-type: none"> <li>- Modernization and extension of the control technology</li> <li>- Optimization of the cooling plant</li> <li>- Renovation of the ventilation system</li> <li>- Energie-Controlling</li> <li>- Reduced maximum installed load from district heating supply after optimization</li> </ul>
<b>Energy savings:</b> kWh/year	<b>Investment: 314.700 €</b>
<b>Economic savings:</b> 48.700 €/year	<b>Pay-back: 6,5 years</b>
<b>CO2 emissions savings:</b> t/year	<b>contact: e-mail: daniel.schinnerl@siemens.com</b>

<b>KRAGES Güssing</b>	
<b>Description of the action</b>	
Hospital in Güssing; about 12.000 m <sup>2</sup> effective area; 140 beds and 3 operating rooms. Operating optimization of the ventilation system	
<b>Initial Situation</b>	<b>Final Situation</b>
Operating of ventilation system with a time-clock; e.g. in operating rooms from 06:00 to 18:00, 7 days a week full load; rest of the time part load, although operating rooms are not used most of the time on weekends and also after 16:00	New operating mode for ventilation system in operating rooms after clarification of new mode with the authorities (implemented in summer 2012): <ul style="list-style-type: none"> <li>- From 22:00 to 06:00, the system switched off</li> <li>- From 06:00 to 22:00, the system runs on level 1 (part load), only when the climatic conditions in the operating rooms reach a threshold level, the system automatically switches to level 2</li> <li>- Emergency switch for turning the system on also during "off-mode"</li> <li>- Integration into BMS</li> </ul>
<b>Energy savings:</b> <b>22.300 kWh/year</b>	<b>Investment: 2.000 €</b>
<b>Economic savings:</b> <b>2.500 €/year</b>	<b>Pay-back: 0,8 years</b>
<b>CO2 emissions savings:</b> <b>9,6 t/year</b>	<b>contact: e-mail: ungerboeck@grazer-ea.at</b>

<b>KRAGES Güssing_advanced</b>	
<b>Description of the action</b>	
Hospital in Güssing; about 12.000 m <sup>2</sup> effective area; 140 beds and 3 operating rooms. Operating optimization of the ventilation system_advanced	
<b>Initial Situation</b>	<b>Final Situation</b>
Operating of ventilation system with a time-clock; e.g. in operating rooms from 06:00 to 18:00, 7 days a week full load; rest of the time part load, although operating rooms are not used most of the time on weekends and also after 16:00	New operating mode for ventilation system in operating rooms according to operating schedule (planned for winter 2013/2014): - From 22:00 to 6:00 the system is switched off - From 06:00 to 22:00 the system runs on level 1 (part load) when an operation is planned - otherwise the system is switched off; only when climatic conditions in the rooms reach a threshold level, the system automatically switches to level 2 - Emergency switch for turning the system on also during "off-mode" - Integration into BMS
<b>Energy savings:</b> 37.000 kWh/year	<b>Investment:</b> 7.000 €
<b>Economic savings:</b> 4.100 €/year	<b>Pay-back:</b> 1,7 years
<b>CO2 emissions savings:</b> 15,9 t/year	<b>contact: e-mail:</b> ungerboeck@grazer-ea.at