Sustainable Energy Action Plan

Judenburg 2020

of the Municipality of Judenburg, Austria

submitted to the Covenant of Mayors

Formally approved by the Municipal Council on the 25th of October, 2012

Developed by

Municipality of Judenburg Hauptplatz 1 8750 Judenburg Austria www.judenburg.at	Energy Agency Upper Styria Holzinnovationszentrum 1a 8740 Zeltweg Austria www.eao.st

Supported by the European Union – Intelligent Energy Europe

Co-funded by the Intelligent Energy Europe Programme of the European Union

1 General information about Judenburg

Judenburg is located in the federal state of Styria in the Southeast of Austria. With about 9.300 inhabitants on 13 km², it is densely populated. As capital of the district Murtal and seat of schools, offices and court it is administration and educational centre for the region. Judenburg used to be an international trading centre in the Middle Ages, then a centre of steel manufacturing in pre-industrial times. With the advent of industrialisation near the end of the 19th century Judenburg became an important site of the Austrian steel industry. After the breakdown of the heavy industry in the early 1980s, the town is now home again to successful specialized industrial companies, like Stahl Judenburg, Frauenthal Automotive, SKF Sealing Solutions Austria, Wuppermann Austria, Wuppermann Engineering, Eagle Burgmann, Collini, and Rockmore International. Most jobs are found in the service sector (also including the hospital), whereas trade has lost some of its importance due to a competing shopping centre outside town. Thanks to the town's location on the cycle path along the River Mur, its old town centre and some attractions, tourism is becoming increasingly important, especially among bike tourists and "50plussers". Agriculture plays a minor role in Judenburg itself, but the whole region relies heavily on forestry.

Due to the structural changes of the last decades, Judenburg is suffering from a decrease in population and, in particular, a migration of well-educated young adults to centres like Graz and Vienna. On the other hand, the town has started to attract big city-refugees, above all artists and intellectuals, but to a much lesser degree.

Judenburg has been very engaged and active in the field of environmental protection since 1985 and has been recognized widely for this, even on an international level. The town has been a member of the Climate Alliance since 1992 and joined the Austrian e5-programme (European Energy Award) in 2006, currently holding the European Energy Award in Silver. Furthermore, a local transport plan was designed in 2010 (evaluated in an ADVANCE audit in 2013). Out of these initiatives, a Sustainable Energy Action Plan was set up in 2011, including concrete recommendations and planned measures in order to save energy and to reduce greenhouse gas emissions. Judenburg was the second municipality in Styria to submit a SEAP to the Covenant of Mayors.

2 SEAP process

The SEAP was developed in the course of the EU-funded international project "eReNet – Rural Web Energy Learning Network for Action" with assistance from the Energy Agency Upper Styria. The project united rural communities and scientific institutions from Austria, Greece, Germany, Croatia, Bulgaria and Portugal under coordination of the National Technical University of Athens. The project aimed at supporting rural communities in joining the Covenant of Mayors, drafting Sustainable Energy Action Plans, and simplifying the access to grants and funds for the realization of RES/RUE-measures

Project and SEAP milestones:

09/2011: eReNet-Kick-off meeting in Greece

09/2011: Stakeholder and project analysis

03/11/2011: Municipal council approves Judenburg's adhesion to CoM

10/2011: 1st eReNet-workshop in Croatia about SEAP development for project partners

12/2011-01/2012: Questionnaire analysis, stakeholder involvement

12/2011-03/2011: Emission baseline inventory

02/2012: 1st eReNet-progress meeting in Portugal

03-09/2012: Definition of vision, targets and measures for SEAP

16/4/2012: SEAP planning workshop

05/2012: 2nd eReNet-workshop in Germany

28/06/2012: 1st public SEAP presentation

09/2012: eReNet-midterm meeting in Bulgaria

19/09/2012: 2nd public SEAP presentation

25/10/2012: Adoption of SEAP by municipial council

08/04/2013: Info-day about RES/RUE measures and financing

05/2013: 2nd eReNet-progress meeting in Austria

11/2013: Info-day about project financing

2nd half of 2013: Identification of two bankable RES/RUE-projects

31/12/2013: End of eReNet-project

Stakeholder involvement

Stakeholder involvement played a crucial role in developing the SEAP. Involvement of the stakeholders took place in different forms. At the beginning of the project the most important stakeholder groups were identified. The general public was informed about the eReNet-project and the impending SEAP development through articles in the municipal magazine and local newspapers. Using questionnaires seven groups of stakeholders (municipality and other institutions; citizens; manufactures, trades and services; planners and developers; schools and institutions of further education; energy companies / utilities – energy agencies; farmers and environmental producers) were interviewed about their knowledge of Judenburg's activities in climate protection and their attitudes and needs concerning renewable energies and lifelong learning.

Two public presentations and discussions were organized by the town administration during the development process of the SEAP (June 2012, September 2012).


First public SEAP- presentation (municipal council)

Second public SEAP-presentation during the ceremony celebrating Judenburg's 20 year membership in the Climate Alliance.

Baseline Emission Inventory

For the calculation of emission reduction targets a baseline emission inventory including energy consumption and CO_2 emissions from the years 1990 und 2011 was produced.

Planning workshop and elaboration of measures

The SEAP was elaborated from March to September 2012 in project team workshops, public presentations and a day-long planning workshop with experts from the municipality, Energy Agency and Municipal Utilities. In addition the general public was regularly informed about the progress of the SEAP development through the media.


SEAP planning workshop 16th of April, 2012

The SEAP includes targets and actions for the sectors buildings and facilities, transport, energy production, land use planning, public procurement, awareness building and working with citizens.

Resolution of municipal council and submission to CoM

The SEAP „Energy Action Plan Judenburg 2020“ was formally approved by the Municipal Council on the 25th of October, 2012 and subsequently submitted to the Covenant of Mayors.

3 Energy Action Plan Judenburg 2020

3.1 Summary

Judenburg was the second municipality in the Austrian Province of Styria to submit a Sustainable Energy Action Plan to the Covenant of Mayors. Assisted by the Energy Agency of Upper Styria, it took one year to complete the SEAP titled “Energy Action Plan Judenburg 2020”, which is another important milestone in the almost 25 year-long history of environmental and climate protection in Judenburg. The town has been a member of the Climate Alliance since 1992 and is holding the European Energy Award in Silver.

Judenburg’s CO_2 reduction goal is minus 28 % by 2020 compared to 1990, thereby even outreaching the EU’s climate protection goals. Since Judenburg had started energy accounting for the public buildings and made its first energy concept back in 1990, it was possible to take the Kyoto base year as baseline for the SEAP as well.

The SEAP aims at reducing the total energy consumption in the town area and increasing the production of renewable energies. Centre piece of the action plan are measures to lower the energy consumption of the municipal buildings by 24 % and the CO_2 emissions by 60 % compared to 1990 by the year 2020. 100 % of the energy used for heating are supposed to come from renewable sources. The dependency on energy imports for energy and heat production shall be tackled with the increased use of traditional local energy sources like water and biomass (wood).

Core actions to reach these goals are:

- construction resp. expansion of a district heating network in the whole town area, powered with waste heat from the pulp mill Heinzel Pulp at nearby Pöls
- expansion of renewable energies (solar energy, wind power, hydropower)
- procurement of green energy for public buildings as good practice
- RUE measures in public buildings and facilities (including residential buildings)
- grants by the Municipality for RES/RUE measures in private and tertiary buildings (thermal insulation, biomass heating, solar thermal systems, photovoltaic installations, and heat pumps)
- expansion and promotion of non-motorized private transport (walking, cycling) and public transport in the Municipality of Judenburg and the region
- sustainable public procurement of products and services

- public awareness raising campaigns and information about climate protection and renewable energy

As a long term vision, by the year 2050 100 % of the energy consumed in the area of Judenburg are supposed to come from renewable sources. To reach this goal the potential of hydropower, wind power und photovoltaic is to be expanded from 30.000 MWh to a total production of 50.300 MWh, saving 15.600 tons of CO_2 per year.

As in many other European towns, traffic proves to be the problem the hardest to tackle. Whereas traffic volume increased by 53 % from 1990 to 2011, it is expected to languish at the present level until 2020. Financing a city bus line and a regional linked transport system, promoting public transport through improvements of timetables and lines as well as projects to get children to walk to school and kindergarten instead of being driven are among the measures planned to reduce car traffic.

Completing the hard technical measures, the SEAP includes soft measures to help implementing climate friendly and energy efficient technologies and further promote energy saving in all stakeholder groups: financial incentives by the Municipality, consciousness building activities and information about climate protection and renewable energies, along with setting good examples on the Municipality's side.

The industrial sector is not covered by the action plan since it is out of the municipality's sphere of influence.

The SEAP was developed during one year by a team consisting of about 15 employees of Municipality, Energy Agency and the local energy supplier Stadtwerke Judenburg. A thorough questionnaire analysis among the most important stakeholders and two public presentations enabled the inclusion of suggestions by citizens, entrepreneurs and energy experts. The final presentation took place in front of more than 100 guests of the ceremony celebrating Judenburg's 20 year membership in the Climate Alliance on September, 20th 2012. On October 25th, 2012 the action plan was approved by the Municipal Council of Judenburg and immediately submitted to the Covenant of Mayors.

3.2 Targets and visions

Upmost goal of the SEAP is a reduction of energy consumption in the town area and an increase of energy produced from renewable sources.

By 2020 28% of the CO_2 emissions of the Municipality of Judenburg compared to 1990 shall be reduced. As a long-term vision, 100% of the energy production of Judenburg shall be based on regional renewable energy sources by the year 2050.
To reach this aim and to reduce the dependence on (fossil) energy imports, the traditional energy sources water and biomass as well as industrial waste heat as a source for district heating will be developed.

Priority areas of action are:

- municipal buildings, tertiary buildings, residential buildings,
- transport,
- local district heating
- green electricity production from hydro-, wind- and PV-power

Furthermore, the SEAP includes measures in the field of land use planning, public procurement as well as work with citizens and local/regional stakeholders.

To reach these targets an all-encompassing energy strategy guided by the following priorities is necessary:

- Development and use of all technical RES and RUE potentials
- Optimization, expansion and efficiency improvement of existing hydroelectric power stations
- Increased use of wind power, photovoltaic and solar thermal energy
- Use of waste heat and energy from industrial processes
- Removal of all legislative and administrative obstacles to increasing energy efficiency and using renewable energy sources; promotion of the substitution of fossil energy sources with local renewable energy sources (biomass, solar energy, geothermal heat, waste heat, hydropower)
- Measures to reduce the need and consumption of energy, utilization of waste heat and heat recovery should come prior to providing additional primary energy
- Additional measures to divert the usage of energy into a more sustainable direction since efficiency gains in electrical appliances are used up again by increased usage. Especially in the transport sector energy usage and emissions cannot be reduced without a change in users' behaviour.
- In the implementation of the SEAP land use, ecological and social criteria are as important as the filling and reduction of demands and economic efficiency.

3.3 Organisational and financial aspects

3.3.1 Coordination and organisational structures created / assigned

The existing municipal energy team / e5 team (e5= European Energy Award) is responsible for the realization of the action plan under the coordination of the head office of town administration. The main part of work is done by the municipal environmental department with support of specialists from related municipal departments, experts from the Energy Agency of Upper Styria (Energieagentur Obersteiermark GmbH) and the Municipal Utilities (Stadtwerke Judenburg AG).

3.3.2 Staff capacity allocated

The actions and measures in the SEAP are realized by different departments in the town administration (planning and building department, environmental department, facility management, head office) and by the Municipal Utilities. Assistance is given by the Energy Agency Upper Styria.

3.3.3 Budget

Allocated budget

1. Staff costs of the Municipality of Judenburg and Energy Agency (EAO) for the development of the action plan and key projects: 94,640 € (September 2011 until December 2013)
2. Material costs for the implementation of environmental measures in Judenburg: 114,000 € (per year until 2020)
3. Staff costs for municipal staff for the realisation of planned measures (budget is included in the yearly municipal household): circa 50,000 € (per year until 2020)
4. plus additional project oriented investment budget of the town administration for extraordinary measures like sanitation of public buildings etc. (costs must be ascertained in the planning process)
5. plus project oriented costs for measures of the Energy Agency (EAO) and the Municipal Utilities (Stadtwerke Judenburg)

Foreseen financial sources for the investment within the action plan

1. development of the action plan and key projects: financed by subsidies from the European Union / Programme IEE within the project eReNet (RURAL WEB ENERGY LEARNING NETWORK FOR ACTION) plus own funds of the Municipality of Judenburg and the Energy Agency Upper Styria (EAO)
2-3. Material and staff costs for the implementation of environmental measures in Judenburg: annual municipal household of the Municipality of Judenburg
4. financing of extraordinary measures like sanitation of public buildings etc.: individual authorization by the municipal council for each extraordinary measure
5. financing of projects of the Energy Agency (EAO) and the Municipal Utilities (Stadtwerke Judenburg): own funds of the institutions

3.3.4 Planned measures for monitoring and follow-up

The official monitoring of the implementation of the action plan is in the responsibility of the municipal council of Judenburg. Technical support is provided by the municipal environmental department and the municipal energy team (e5 team) which has six regular meetings per year. A member of the energy team gives the municipal council at least one annual report about the actual implementation status of the planned measures.

Every two years an extended implementation report which contains the status of the realisation of the measures of the action plan has to be delivered to the Covenant of Mayors. As a European Energy Award community (e5-Gemeinde) Judenburg additionally undergoes a periodic certification process, where the RES activities of the municipality are evaluated (the latest being in 2013).

4 Baseline emission inventory

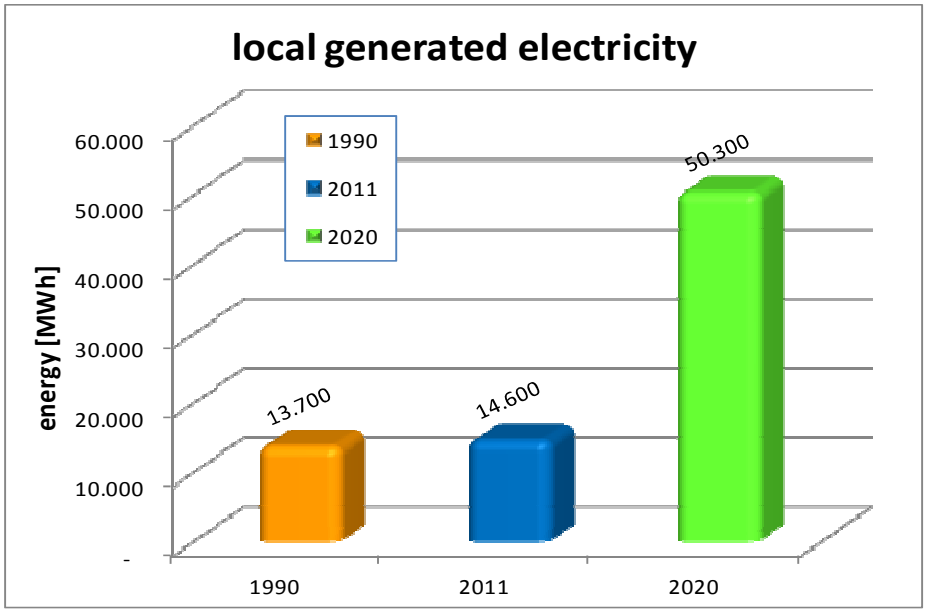
For the BEI data for the following areas were gathered:

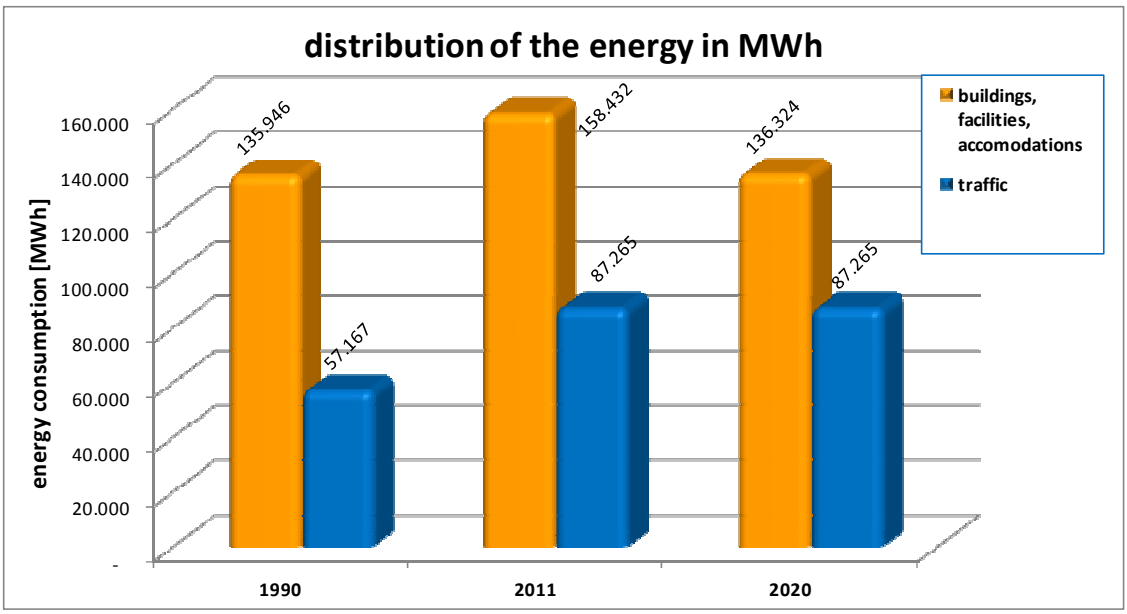
- Municipal buildings, equipment & facilities
- Tertiary (non municipal) buildings, equipment & facilities
- Residential buildings
- Transport
- Local electricity production
- Local heating

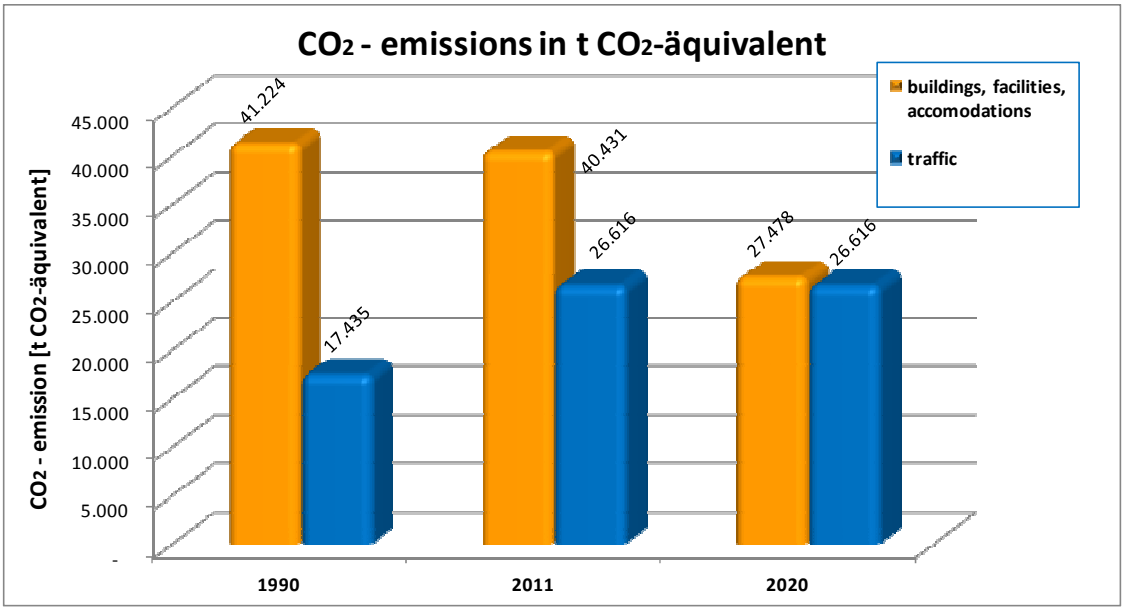
The industrial sector was excluded because the freely available data is very sparse and the sector itself outside the municipality's sphere of influence. Furthermore, energy consumption and emissions from industries depend heavily on the business cycle.

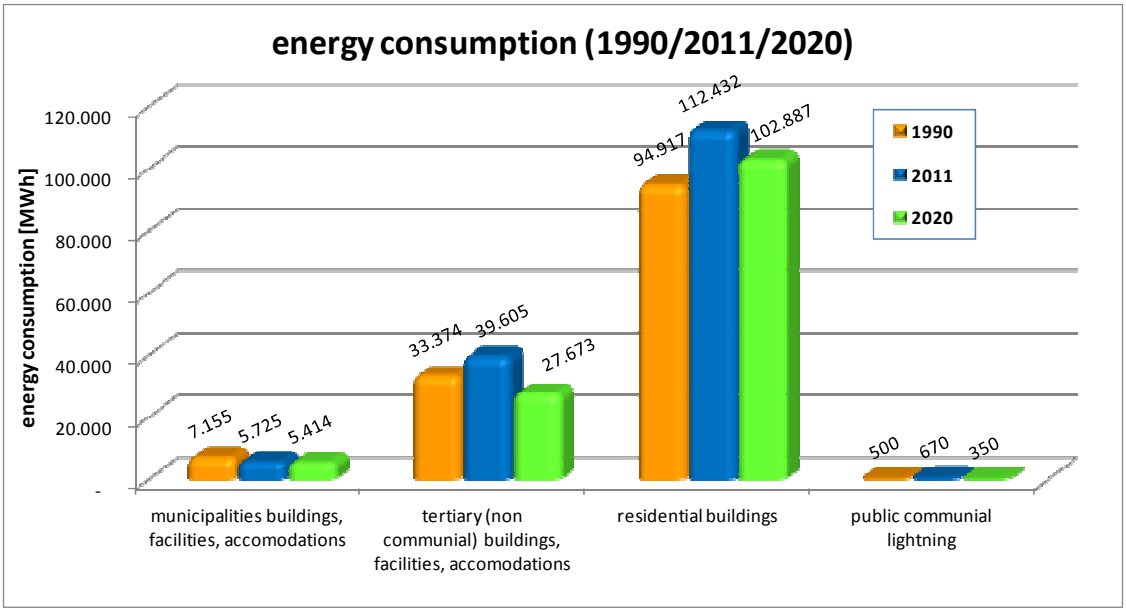
For the BEI two baselines were used: 1990 (Judenburg started energy accounting for the public buildings and made its first energy concept in the Kyoto base year) and 2011, the year before the SEAP production. The projections are for the year 2020.

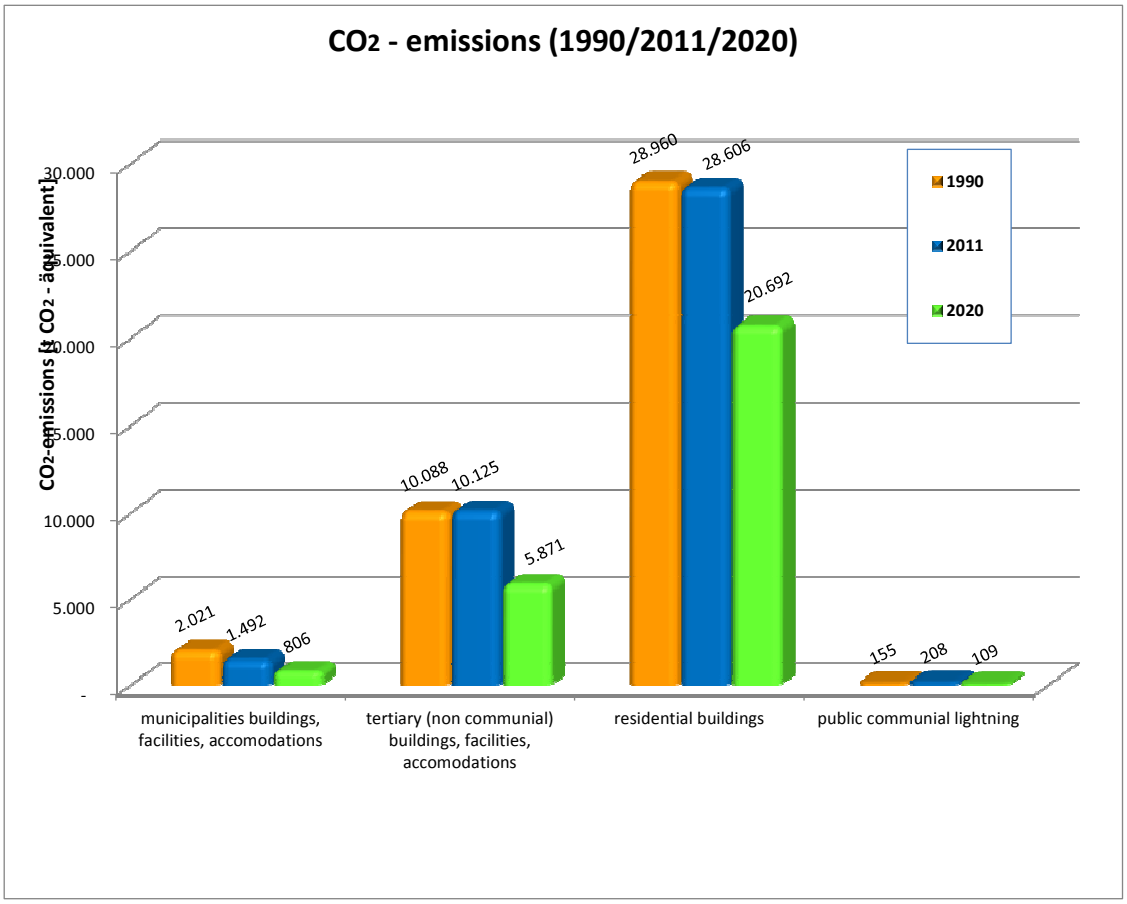
Overview



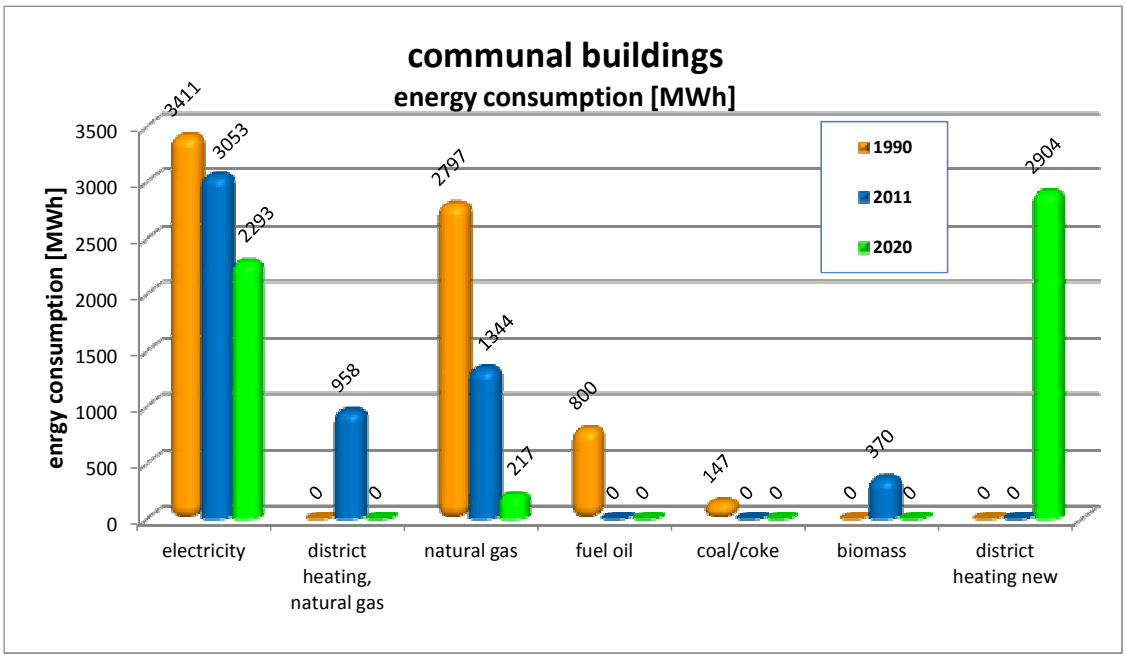

distribution of the energy in MWh
energy consumption [MWh]
160.000
140.000
120.000
100.000
80.000
60.000
40.000
20.000
-
135.946
57.167
158.432
87.265
136.324
87.265
1990
2011
2020
buildings, facilities, accomodations
traffic

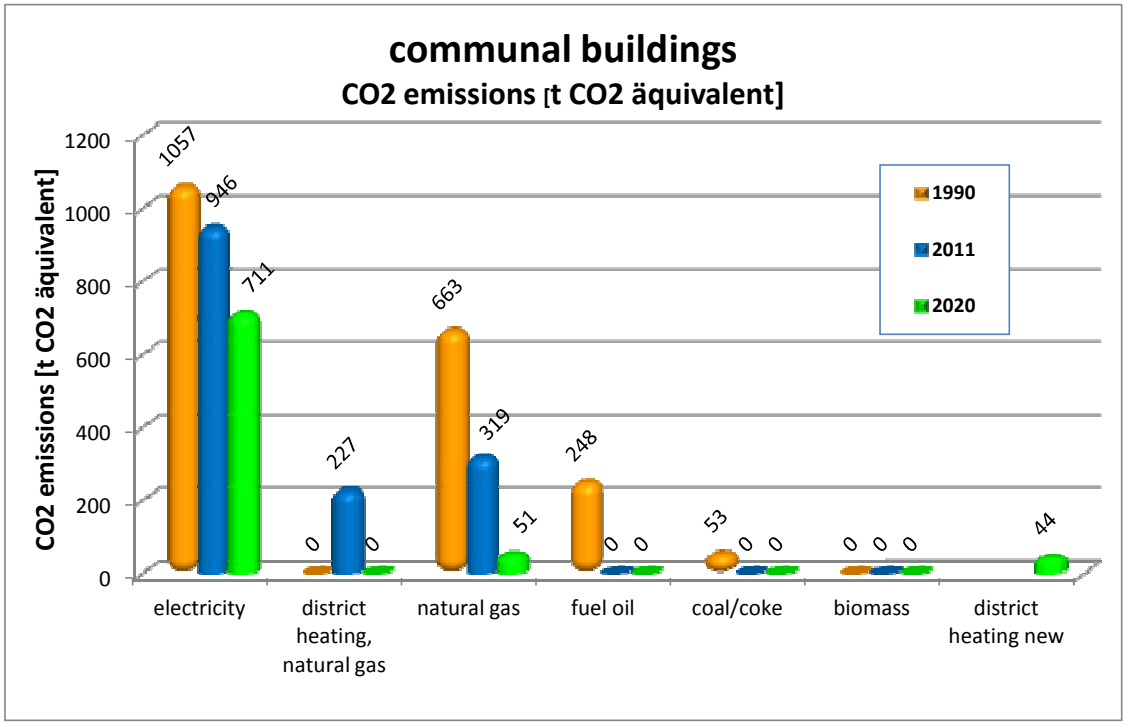

CO2 - emissions in t CO2-äquivalent
CO2 - emission [t CO2-äquivalent]
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
-
41.224
17.435
40.431
26.616
27.478
26.616
1990
2011
2020
buildings, facilities, accomodations
traffic

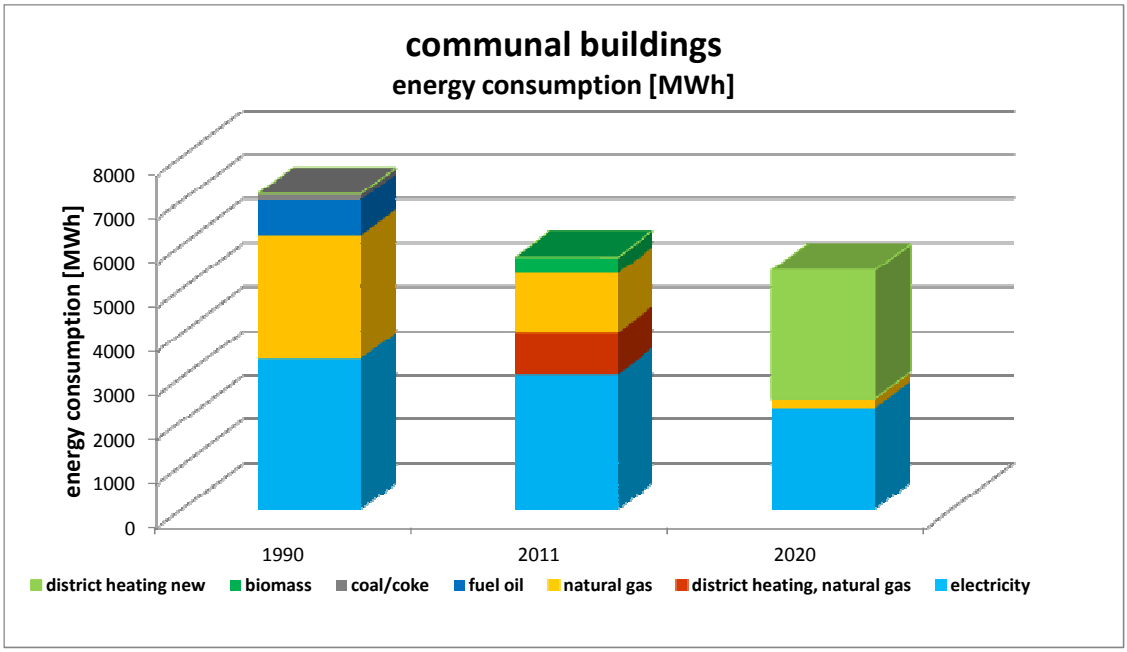

energy consumption (1990/2011/2020)
energy consumption [MWh]
120.000
100.000
80.000
60.000
40.000
20.000
-
7.155
5.725
5.414
33.374
39.605
27.673
94.917
112.432
102.887
500
670
350
1990
2011
2020
municipalities buildings, facilities, accomodations
tertiary (non communial) buildings, facilities, accomodations
residential buildings
public communial lightning


CO2 - emissions (1990/2011/2020)
CO2-emissions [t CO2 - äquivalent]
30.000
10.000
5.000
-
2.021
1.492
806
10.088
10.125
5.871
28.960
28.606
20.692
155
208
109
1990
2011
2020
municipalities buildings, facilities, accomodations
tertiary (non communial) buildings, facilities, accomodations
residential buildings
public communial lightning

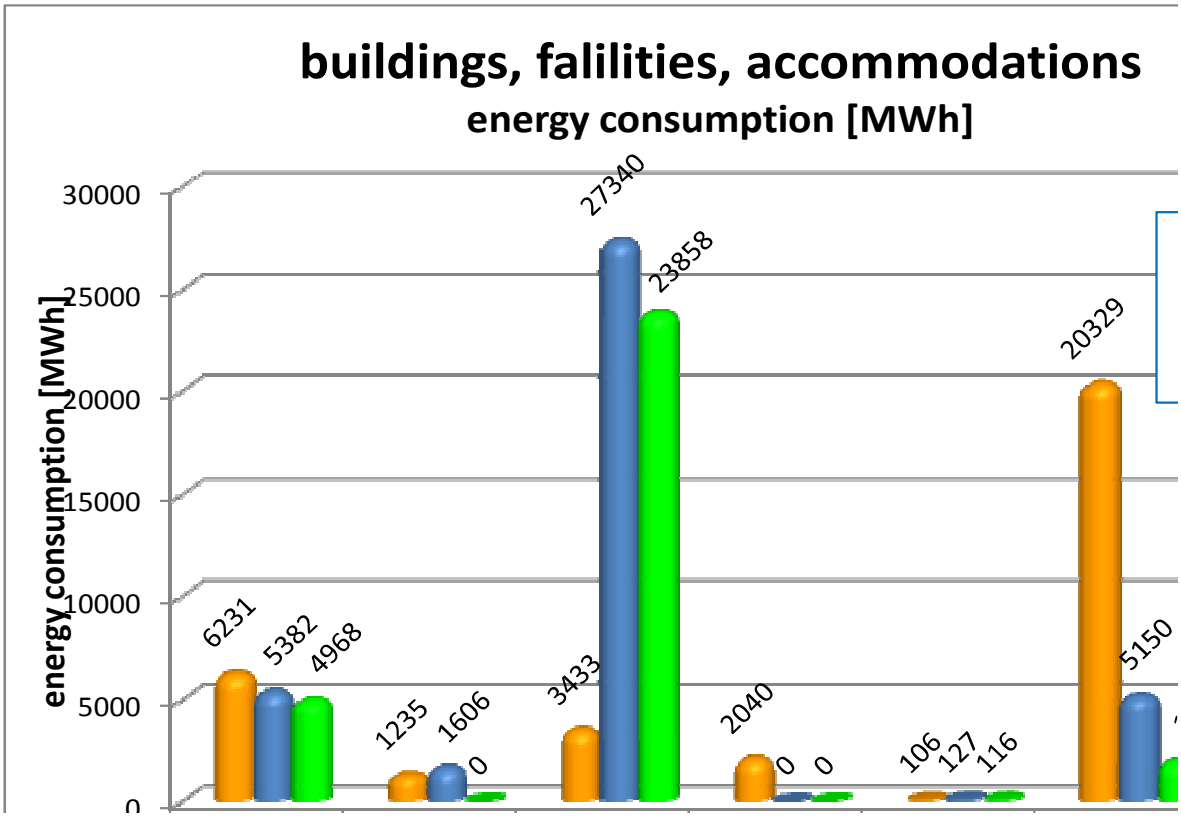
Public buildings

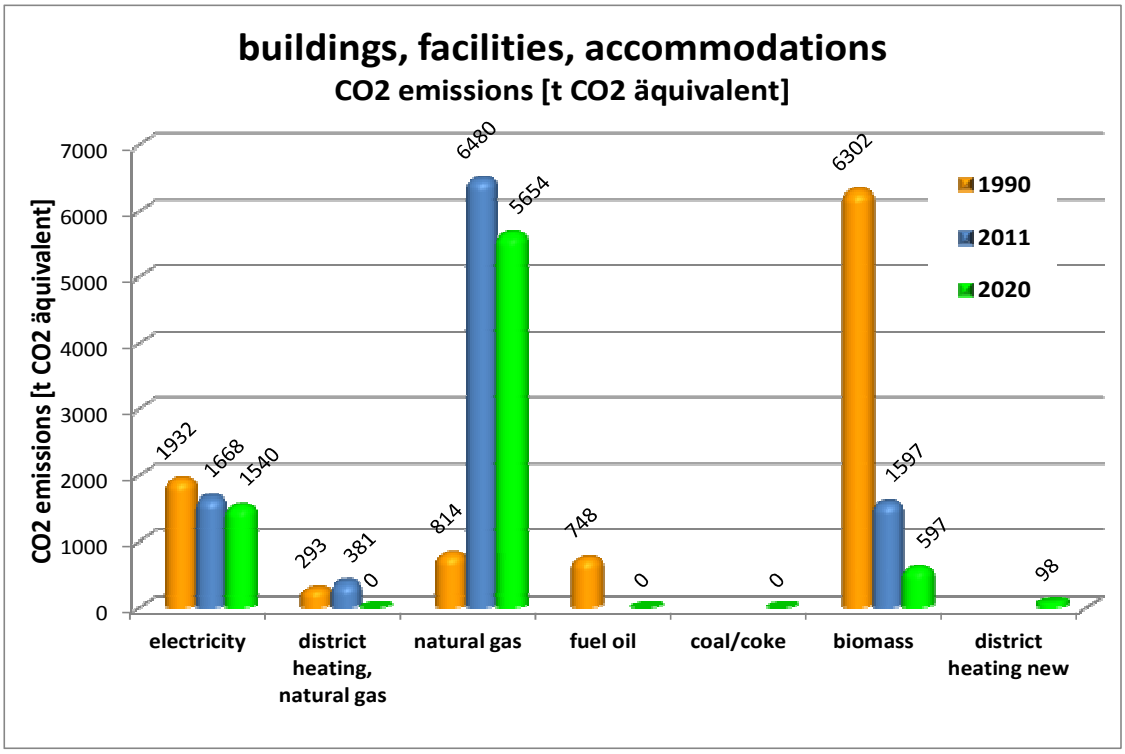


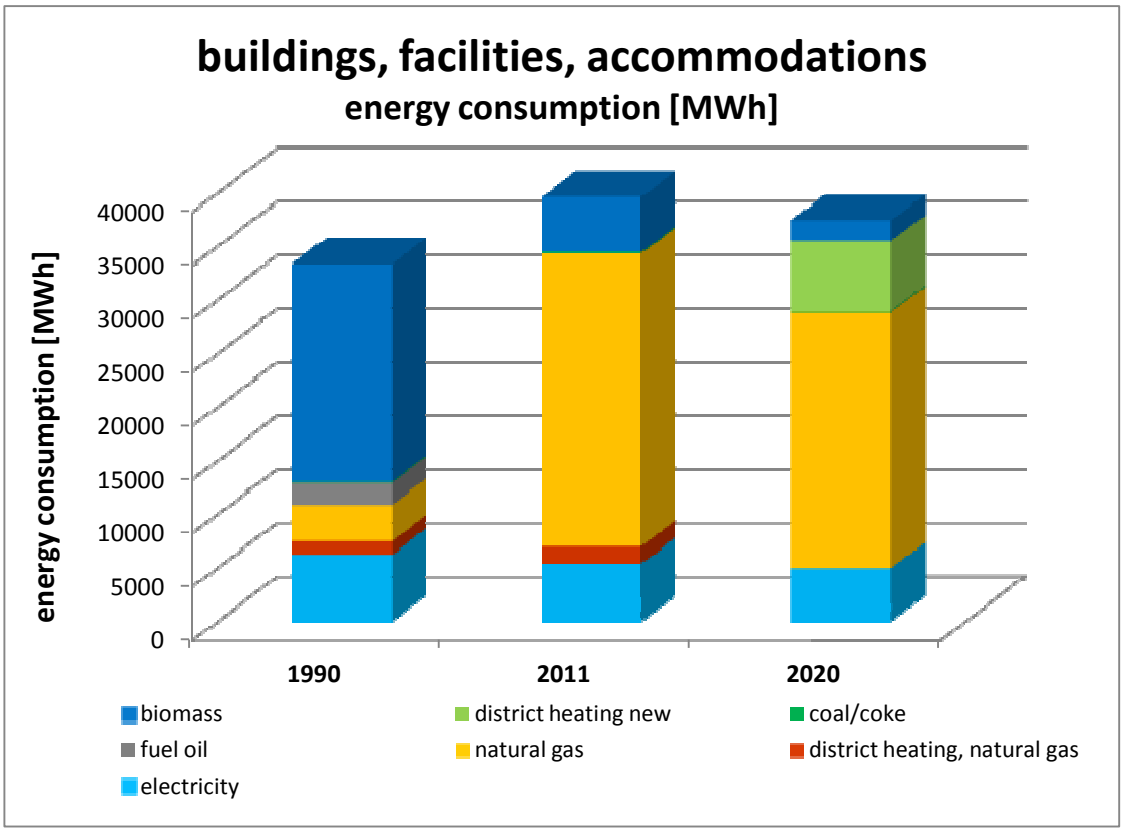




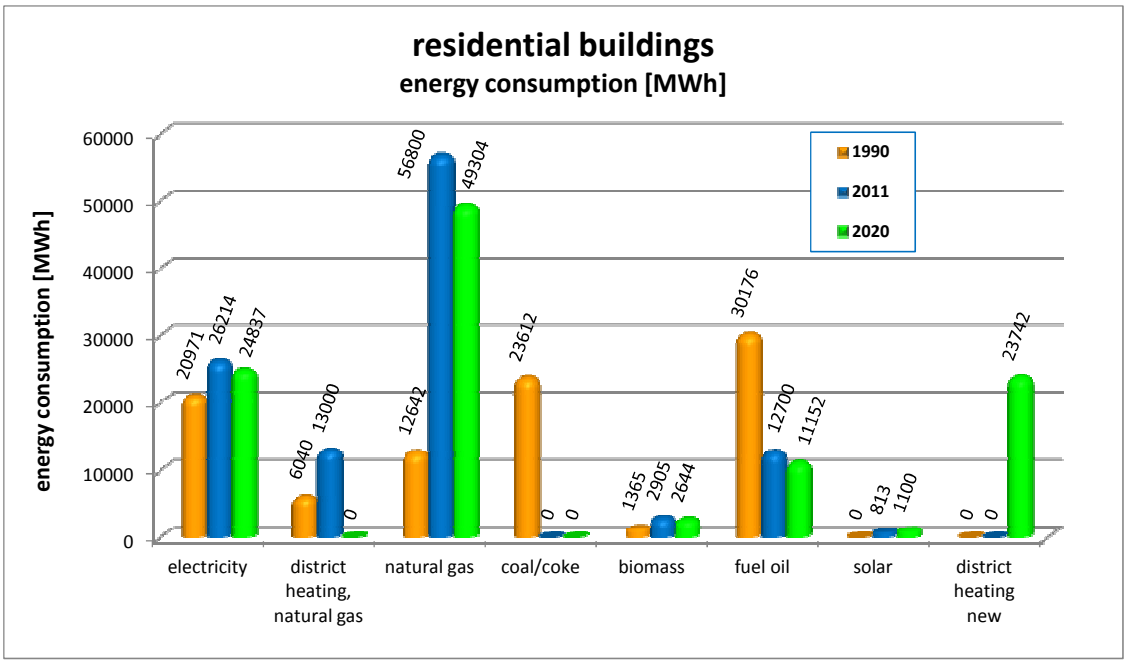
Tertiary buildings and accommodations (attendance building)

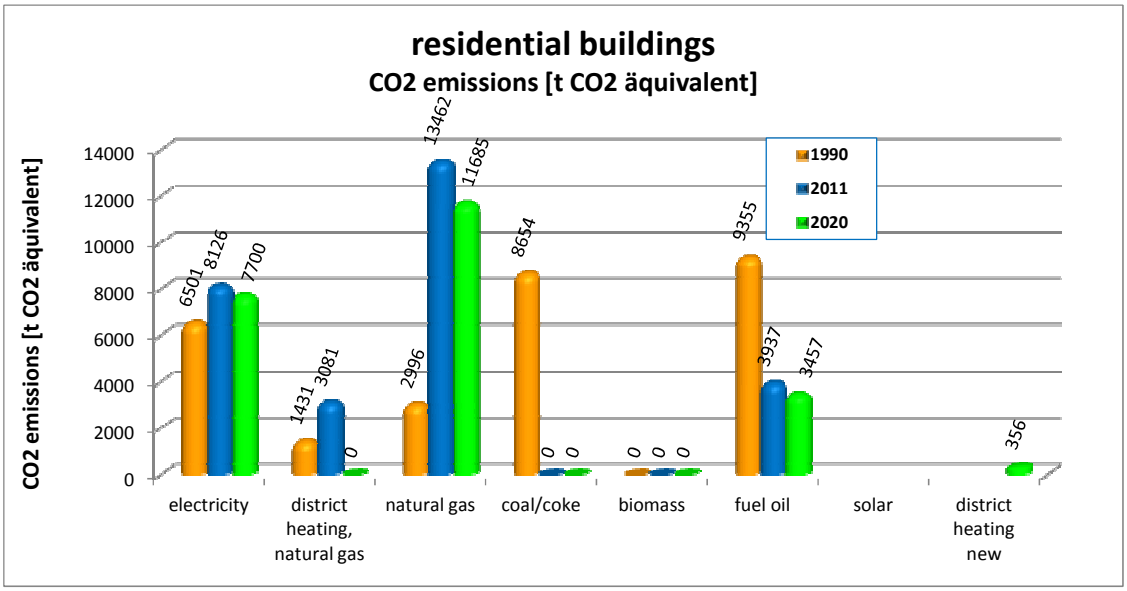


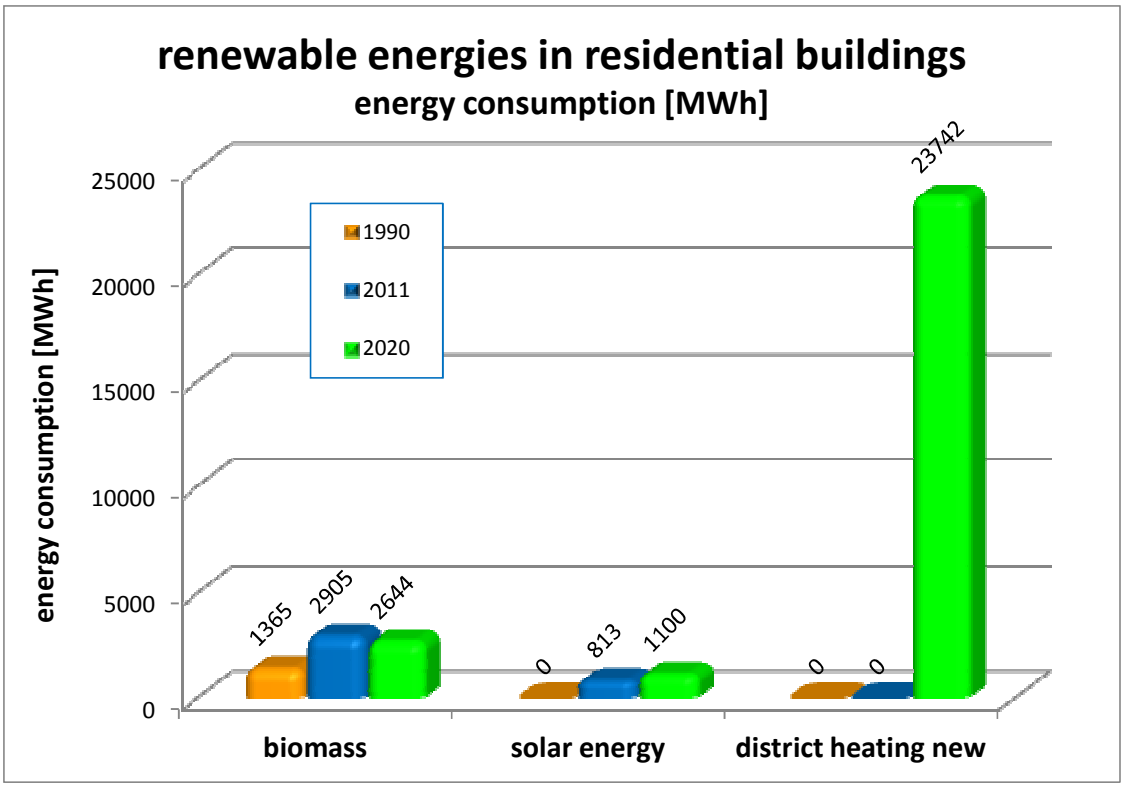

buildings, facilities, accommodations
CO2 emissions [t CO2 äquivalent]
CO2 emissions [t CO2 äquivalent]
7000
6000
5000
4000
3000
2000
1000
0
1932
1668
1540
293
381
0
814
6480
5654
748
0
0
6302
1597
597
98
1990
2011
2020
electricity
district heating, natural gas
natural gas
fuel oil
coal/coke
biomass
district heating new

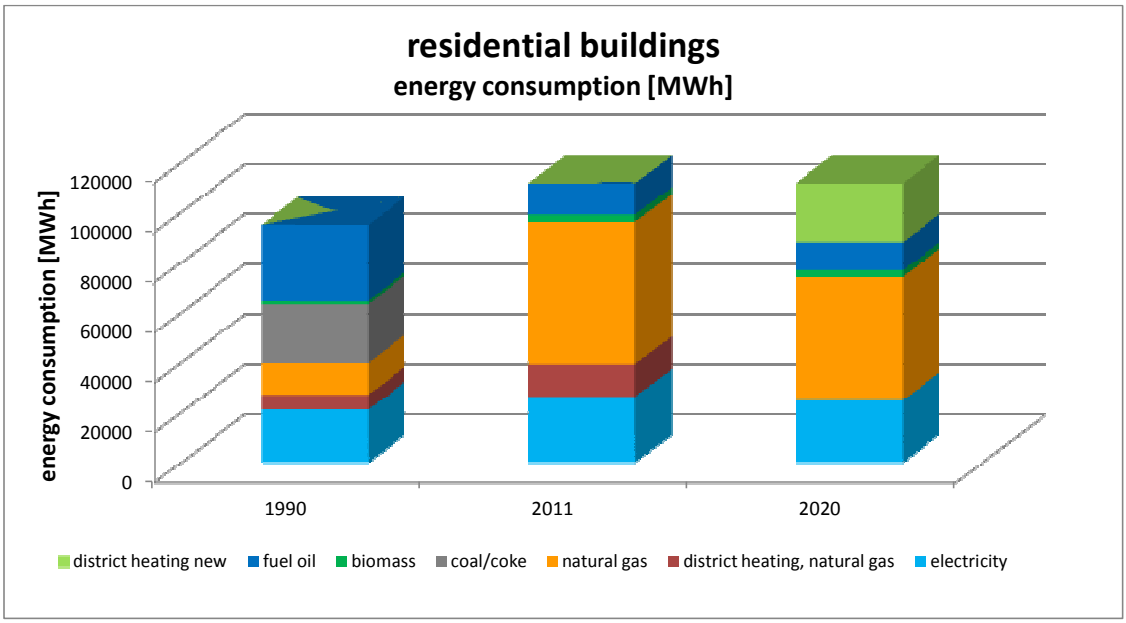

buildings, facilities, accommodations
energy consumption [MWh]
energy consumption [MWh]
40000
35000
30000
25000
20000
15000
10000
5000
0
1990
2011
2020
biomass
district heating new
coal/coke
fuel oil
natural gas
district heating, natural gas
electricity

Residential buildings






renewable energies in residential buildings
energy consumption [MWh]
energy consumption [MWh]
25000
20000
15000
10000
5000
0
1990
2011
2020
1365
2905
2644
0
813
1100
0
0
23742
biomass
solar energy
district heating new


residential buildings
energy consumption [MWh]
energy consumption [MWh]
120000
100000
80000
60000
40000
20000
0
1990
2011
2020
district heating new
fuel oil
biomass
coal/coke
natural gas
district heating, natural gas
electricity

5 Planned activities and measures up to the year 2020

5.1 Sector 1: Buildings, equipment / facilities & industries

5.1.1 Municipal buildings, equipment & facilities

The municipality of Judenburg has been taking a lot of RUE measures in public buildings since 1990 but there is still potential for improvement due to the changed state of the art. All measures in this field of action account for an expected energy saving of 311 MWh/a and an expected CO_2-reduction of 686 t/a.

Measures to reduce energy consumption in buildings include:

1. Conversion of the energy book keeping system for public buildings into an online-system
Responsible: environmental department
Implementation: by December 2012
Estimated costs: EUR 2,000 (staff costs)

2. Issuing of Energy Performance Certificates for all public buildings (except residential buildings)

- town hall
- schools: 2 primary schools, comprehensive school with polytechnic (2 buildings)
- 3 kindergartens
- sports facilities: indoor + outdoor public swimming pool (including sauna), 2 gymnasiums, stadium
- venue hall
- former monastery Herrengasse 12 (housing public library and class rooms)
- former monastery Kaserngasse 22 (housing music school and offices)
- museums: town museum, PUCH-museum
- fire brigade
- municipal building yard

Responsible: building and planning department
Implementation: by December 2013
Estimated costs: EUR 15,000 (staff costs)

3. Conversion of public buildings with electric heating systems to district heating (town museum, primary school, music school, Herrengasse 12, new building yard)
Responsible: building and planning department + environmental department
Implementation: by 2014
Estimated costs: EUR 1,890,680
Expected CO_2 reduction: 444 tons/year

4. District heating connection for all other public buildings (town hall, fire brigade, venue hall, old building yard, PUCH museum, Kaserngasse 22)

Responsible: building and planning department + environmental department

Implementation: December 2014

Estimated costs: EUR 149,500

Substituted fossil energy: 2.392 MWh (gas)

Expected CO_2 reduction: 472 tons/year

5. Concepts for energetic remediation of public (non-residential) buildings with calculation of costs and savings in energy consumption, energy costs, CO_2 emissions

Responsible: building and planning department + environmental department

Implementation: by 2020

Estimated costs: to be worked out

Expected CO_2 reduction: to be worked out

6. Energy saving trainings for housekeepers and facility managers

Responsible: environmental department

Implementation: continuously

Estimated costs: EUR 2,000

Expected energy savings: 100 MWh

Expected CO_2 reduction: 27 tons/year

5.1.2 Tertiary (non municipal) buildings, equipment & facilities

The tertiary sector is outside the municipality's direct sphere of influence but can be influenced indirectly through giving good examples on the town's side, financial incentives for RUE measures and providing information. Municipal Utilities and Energy Agency also offer professional advisory services. Especially important in the tertiary sector is the connection of as many buildings as possible to district heating.

In sum, all measures are expected to yield annual energy savings from 11,932 MWh, a renewable energy production from 55 MWh / year and a CO_2 reduction of 4,254 tons / year.

1. Economic incentives (public municipal grants) for energetic renovations (thermal insulation) and the use of RES in the private and tertiary sector (solar thermal energy, photovoltaic, biomass heating, heat pumps)

Responsible: environmental department

Implementation: continuously

Estimated costs: EUR 10,000 per year (almost only for PV)

Expected energy production: 55 MWh / year

Expected CO_2 reduction: 17 tons/year

2. Energy consulting for enterprises (ÖKOPROFIT)

Responsible: Energy Agency Upper Styria (EAO)

Implementation: continuously

Estimated costs: not assessable, financed by companies

3. Expansion of the district heating system

Responsible: Municipal Utilities (Stadtwerke Judenburg)

Implementation: continuously

Estimated costs: not assessable, financed by Municipal Utilities

5.1.3 Residential buildings

28 % of the energy used in Judenburg are used for room and water heating. This is in accordance with international trends. That is why most international and national strategies to reduce energy consumption focus on thermal insulation and the increased use of RES in residential buildings. At the moment the remediation rate of buildings in Judenburg is at 1% per year, with no increase in sight.

In the residential building sector 9,545 MWh energy per year are expected to be saved, yielding a CO_2 reduction of 7,914 tons/year.

1. Economic incentives (public municipal grants) for energetic renovations (thermal insulation) and the use of RES in the private sector (solar thermal energy, photovoltaic, biomass heating, heat pumps)

Responsible: environmental department

Implementation: continuously

Estimated costs: EUR 30,000 per year

Expected energy production: 83 MWh / year

Expected CO_2 reduction: 23.3 tons/year

2. Check and upgrade of thermal insulation and heating systems of all 31 public residential buildings to the state of the art (reduction of heating demand from 100 kWh/m²/a to 50 - 60 kWh/m²/a)

Responsible: facility management

Implementation: by 2020

Estimated costs: to be ascertained

3. District heating for all 22 public residential buildings (402 flats, heated living area 21,714.71 m²)

Responsible: facility management

Implementation: by 2013

Estimated costs: EUR 150,000

Expected CO2 reduction: 569 tons/year

4. "Green house number" for private residential buildings (certification system with incentive function)

Responsible: environmental department

Implementation: by 2014

Estimated costs: to be ascertained

5.1.4 Municipal public lighting

1. Step-by-step replacement of the public lighting system with LED technology (1,400 light points)

Responsible: Municipal Utilities, building and planning department, environmental department

Implementation: continuously by 2020

Estimated costs: to be ascertained

Expected energy savings: 320 MWh

Expected CO_2 reduction: 99 tons/year

Industries

Although industrial consumption makes up 53% of the whole energy consumption in Judenburg, this sector is excluded from the SEAP. The main reason is that industrial energy consumption (mainly steal industry) depends on the world economy and on global demand of steal and is not in the influence area of the town administration. However, the town administration will take actions like energy consulting.

5.2 Sector 2: Transport

Judenburg has been doing a lot to improve the quality of transport. Since 1985, three traffic concepts have been made, the latest one in 2010. Parking spaces are managed, the municipality finances a city bus and co-finances a transport association, and cycling paths have been built. However, traffic is growing. From the baseline year 1990 to 2011 there was an increase of CO_2-emissions from private transport by 53%. Due to the decrease in population and a certain saturation in cars per household, emissions from transport are expected to stagnate until 2020.

Fields of action for the municipality in the traffic sector are mainly public transport, the municipal fleet, and awareness buildings activities.

5.2.1 Municipal fleet

1. Increased usage of electric and hybrid cars and procurement of cars with the best emission standards

Responsible: all departments with car fleet: facility management, building yard, building and planning department, Municipial Utilities

Implementation: continuously

Estimated costs: demand-oriented

2. Purchase of two electric bikes for the town administration staff for official trips

Responsible: facility management

Implementation: by 2013

Estimated costs: EUR 4,000

5.2.2 Public transport

1. Quality improvement for the public "Citybus" (line network, schedule, bus stops)

Responsible: environmental department

Implementation: 2013-2015

Estimated costs: EUR 70,000 costs per year for Citybus fleet

2. Suggestions for quality improvement of the regional bus fleet "Regionalbus Aichfeld" (line network, schedule, bus stops)

Responsible: environmental department

Implementation: 2013-2015

Estimated costs: EUR 105,000 costs per year for regional bus fleet

3. Improvement of the interchange between public bus and railway

Responsible: environmental department

Implementation: 2013-2015

4. Connection of town districts without public transport facilities to the public transport network (e.g. Reifling)

Responsible: environmental department

Implementation: 2013-2015

5. Mobility advice and sale of public transport tickets in the information and tourism office

Responsible: local tourism association

Implementation: 2013-2015

5.2.3 Private and commercial transport

1. Expansion of the public parking space management system in the town centre of Judenburg

Responsible: building and planning department

Implementation: 2013-2014

Estimated costs: EUR 60,000 per year for the management of the public parking space

2. Link to a ridesharing website on the municipal website

Responsible: environmental department

Implementation: by December 2013

5.2.4 Other measures in the transport sector

1. Promotion of Walking in town instead of driving by car (secure and short walking paths)

Responsible: building and planning department

Implementation: continuously

Estimated costs: EUR 10,000 per year for planning and construction

2. Promotion of cycling and of cycle tourism

Responsible: building and planning department

Implementation: continuously

Estimated costs: EUR 50,000 per year for planning and construction

3. Yearly participation in the European car-free day

Responsible: environmental department

Implementation: continuously

4. "Footbus" for pupils (organized walks to schools along fixed paths)

Responsible: environmental department

Implementation: 2013

Estimated costs: EUR 500 per year

5. Participation of schools in the Climate Alliance's "climate-miles-campaign" for pupils

Responsible: environmental department

Implementation: 2013-2014

5.3 Sector 3: Local electricity production

The Municipal Utilities are planning to expand their green energy production to a degree that 100% of the energy consumed in their supply area come from renewable sources by 2050.

5.3.1 Hydroelectric power

1. Expansion of the existing hydropower station (built in 1904) from 2.3 MW (14.8 GWh) to 6.3 MW (30.3 GWh)

Responsible: Municipal Utilities

Implementation: by 2020

Estimated costs: EUR 3,000,000

Expected renewable energy production: 15,700 MWh/a

Expected CO_2 reduction: 4,867 t/a

5.3.2 Wind power

1. Construction of a wind park at the Klosteralm, 18 GWh production

Responsible: Municipal Utilities

Implementation: by 2020

Estimated costs: EUR 1,800,000

Expected renewable energy production: 18,000 MWh/a

Expected CO_2 reduction: 5,580 t/a

5.3.3 Photovoltaic

1. 350 kWp PV-system at the military training area Seetal (TÜPL Seetal)

Responsible: Municipal Utilities

Implementation: by 2015

2. 1,500 kWp PV-system in Judenburg-West ("sale and lease back" with citizens)

Responsible: Municipal Utilities

Implementation: by 2015

3. "Sale and lease back"-PV-systems for public participation in Microregion Aichfeld (5 municipalities, including Judenburg)

Responsible: Microregion Aichfeld, Energy Agency Upper Styria

Implementation: by 2015

4. Small PV-systems on private homes

Responsible: citizens

Implementation: continuously

Estimated costs for all measures: EUR 3,000,000

Total expected renewable energy production: 2,000 MWh/a

Total expected CO_2 reduction: 620 t/a

5.4 Sector 4: Local district heating / cooling, CHPs

5.4.1 District heating plant

1. Expansion of biomass waste-heat powered district heating grid in Judenburg-West and centre, goal 12 MW

Responsible: Municipal Utilities

Implementation: 2012/2014

Expected CO_2 reduction: 4,760 t/a

2. Switch from gas to biomass waste-heat in district heating grid Murdorf (substitution of natural gas by industrial biomass waste heat from pulp mill)

Responsible: Kelag Wärme

Implementation: 2012/2014

Expected CO_2 reduction: 3,320 t/a

Total expected renewable energy production: 33,100 MWh/a

5.5 Sector 5: Land use planning

5.5.1 Strategic urban planning

1. Incorporation of environmental and energetic criteria into the newly revised Urban Development Concept

Responsible: Building and planning department

Implementation: 2013

2. Definition of priority areas for district heating

Responsible: Building and planning department, environmental department

Implementation: 2013

3. Formulation of sustainable guiding principles for the Municipality of Judenburg

Responsible: Head office of town administration

Implementation: 2015 - 2020

5.5.2 Transport / mobility planning

1. Planning and realization of Shared Space in town centre

Responsible: Building and planning department

Implementation: 2012

Estimated costs: EUR 275,000

5.5.3 Others

1. Common regional planning of municipalities in Microregion Aichfeld considering issues of climate protection

Responsible: Microregion Aichfeld

Implementation: by 2020

2. Pool of public estates in Microregion Aichfeld with coordinated prices

Responsible: Microregion Aichfeld

Implementation: by 2020

5.6 Sector 6: Public procurement of products and services

5.6.1 Energy efficiency requirements/standards

1. Procurement of electrical devices with highest energy efficiency at the time of purchase (environmental labels)

Responsible: Municipality / IT-department

Implementation: continuously

2. Procurement of energy-efficient lamps

Responsible: Municipality Facility management

Implementation: continuously

5.6.2 Renewable energy requirements/standards

1. Procurement of green energy for public buildings (town hall)

Responsible: environmental department

Implementation: 2013 resp. 2020

2. Biomass-district heating for public buildings

Responsible: building and planning department + environmental department

Implementation: by 2014

5.6.3 Others

1. Waste prevention at public events (production and use of refillable "Judenburg"-plastic cup)

Responsible: City management, environmental department

Implementation: 2013

2. Sustainable public procurement for all relevant products and services

Responsible: Municipality

Implementation: 2013

3. Municipality of Judenburg holds 25 % of shares of fair trade-shop "Weltladen"

Responsible: Municipality

Implementation: continuously (since 2010)

5.7 Sector 7: Working with citizens and stakeholders

5.7.1 Advisory services

1. Energy counselling for households and builders

Responsible: Environmental department, Municipal Utilities, Energy Agency

Implementation: continuously

2. Special energy counselling for households at risk of poverty

Responsible: Energy Agency

Implementation: continuously

5.7.2 Financial support and grants

1. Public subsidies for thermal insulation, biomass heating systems, thermal solar energy, photovoltaic systems, and heat pumps

Responsible: Municipality

Implementation: continuously

Estimated costs: EUR 30,000 €/year

Expected energy savings: 83 MWh

Expected CO_2 reduction: 23.3 t/a

2. Evaluation of subsidy scheme and adaption to energy action plan (higher subsidies for more efficient RUE-techniques)

Responsible: Environmental department, Energy Agency

Implementation: 2013

5.7.3 Awareness raising and local networking

1. Municipal networks (environmental department, board of works and environment, e5-team consisting of members of municipality and municipal utilities, environmental consultative committee of citizens)
Implementation: existing

2. Regional networks (Microregion Aichfeld)
Implementation: existing

3. Expansion of civic participation structures and possibilities
Responsible: Municipality
Implementation: by 2015

4. Cooperation with local and regional organisations, especially in the fields of environment and education
Responsible: Environmental department
Implementation: continuously

5. Awarding of prizes to citizens, organisations and businesses for exemplary deeds and projects in favour of the environment
Responsible: Environmental department, environmental consultative committee of citizens
Implementation: continuously every two years
Estimated costs: every two years EUR 2,500, there of EUR 1,400 for prizes

5.7.4 Training and education

1. Regular training for municipal employees and caretakers about energy efficiency and environmental protection
Responsible: Head office of town administration, Environmental department
Implementation: continuously
Estimated costs: EUR 15,000 €/year

2. Public relations and awareness raising activities about the sustainable use of natural resources through media, reports, events, presentations etc.
Responsible: Environmental department
Implementation: continuously
Estimated costs: EUR 15,000 €/year

General remark: In this list only direct effects of measures in the energy action plan from 2011 to 2020 can be shown. For indirect measures like awareness raising activities effects are not specified separately as they are seen as part of the realization of the more substantial measures.

6 Appendix: Statistical data on the Municipality of Judenburg

Judenburg

Inhabitants (1.1.2012):	9,331
Main place of residence	8,579
Number of households (1.1.2012):	4,891
Area:	1,322 ha
Usage:	
Agricultural landscape:	370 ha
Forest:	418 ha
Business / Industries:	88 ha
Housing:	206 ha
Others:	240 ha
Altitude:	708 m (station) / 737 m (main square) above sea level

Statistics	**2011**	**2001**	**1991**	**1981**
Inhabitants	9,347	10,130	10,581	11,188
Number of houses	1,933	1,797	1,638	1,536
Number of households	4,889	4,705	4,493	4,223
Number of businesses	578	551	474	428

District Murtal:

38 municipalities

73,966 inhabitants (1.1.2012)

1,675,80 km^2 area

Source: Statistik Austria, Stadtamt Judenburg, Stadtwerke Judenburg AG