

Klimatstrategi

7 MARS 2016

”

.....

*When the pilgrims smell the meadows of paradise
They are filled with courage to face life,
They divine that the hardships and the doubts in life,
The tall mountains and the sore feet,*

*Will be given their good interpretation. They whisper:
Thank you, thank you for everything and for all, bless them all.
O Creator, let the sun of eternity be reflected
In the drop of water.*

*Soon, o God, that which was shattered will be healed,
Soon, you the Supreme Being, will be all in everything
Your might, eternal God, is faithfulness,
Your righteousness, o God, is mercy. Amen”*

(From Hymn 49, *Hjärtats sånger*, (The Songs of the Heart). Martin Lönnebo

ABSTRACT

In "An Episcopal Letter on the Climate" the bishops of *Svenska Kyrkan* (The Church of Sweden) establish that:

Climate change is probably the biggest common challenge ever faced by humanity. This challenge and how to work with it must impact society's development and make us reconsider our way of thinking regarding our lifestyle, welfare, sustainability and justice: for the sake of creation, for the sake of life, for the sake of our grandchildren and for the sake of their grandchildren.

Svenska kyrkan (The Church of Sweden) is Sweden's largest member organisation. The diocese of Linköping today counts 366.000 members. Moreover, the Church of Sweden is one of the biggest real estate owners in Sweden. In addition to buildings, we own and manage a lot of woodland, farm land and considerable financial assets. This gives us far-reaching responsibilities.

For a long time the diocese of Linköping has been implementing an active environmental effort. Now we are taking this work a step further. The Diocese of Linköping has drawn up this climate strategy in response to the requests that the bishops of Sweden direct to church in "An Episcopal Letter on the Climate", including the request to set ambitious targets for energy, buildings and climate impact.

This is done by formulating a vision and by setting concrete targets for the climate work to be done by the whole of the Diocese of Linköping.

Regarding these issues, the diocese organisation does not formally govern the separate church districts/parishes. Apart from implementing this strategy into our own management and activities, the role of the diocese organisation in relation to this strategy will be to support and inspire the church districts and parishes in their implementation of different measures. We will continually follow up, evaluate and communicate target achievements and offer our support with formulating and implementing action plans. We will also serve as a resource for common procurements and will offer training/exchange of experiences/networking to relevant categories of professionals and to elected representatives.

The targets will thus be the outcome targets of the efforts made by the diocese organisation to promote the fields: property, energy and environment.

This climate strategy includes buildings, transport, cemetery maintenance, the diocese management of land, forests and funds as well as church life and church activities.

We have formulated a vision, objectives and milestones.

Our overall vision is that:

The diocese of Linköping will not contribute to global warming.

More specifically this means that;

In 2045 at the latest, the diocese of Linköping will have achieved climate neutrality, i.e. not leaving any net contribution to global warming. Before the year 2020, the climatic pressure will have decreased by at least 30% (within the areas where we have a good basis for calculation - reference year 2011/2012).

These overall objectives will further on be broken down into a number of milestones that are to be described within each respective field.

Even now I am a bearer, the kingdom of God breaks through and I am challenged to see its signs, I am also challenged to see myself as the sign that I already am of the kingdom of God, by grace. Those of us who want to appear as a church have a responsibility to help people see that God operates, and to actively make ourselves available. God loves the world, and we, the people, have a calling to show, in word and action, God's love to the world. (Levande tillsammans med Kristus – om en kyrka i rörelse - Living together with Christ: Being a Church on the Move, Martin Modéus, Pastoral letter on behalf of the Diocese of Linköping)

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1 INTRODUCTION

We are both loved by and the co-lovers of creation. Therefore, we can sing together with Saint Francis of Assisi about Mother Earth, Sister Water and Brother Sun and embrace all that lives and all that has been created,¹ and free-heartedly take our places in God's vision of the good kingdom. (Levande tillsammans med Kristus – om en kyrka i rörelse - Living together with Christ: Being a Church on the Move, Martin Modéus, Pastoral letter on behalf of the Diocese of Linköping)

In "An Episcopal Letter on the Climate" the bishops of *Svenska Kyrkan* (The Church of Sweden) establish that:

Climate change is probably the biggest common challenge ever faced by humanity. This challenge and how to work with it must impact society's development and make us reconsider our way of thinking regarding our lifestyle, welfare, sustainability and justice: for the sake of creation, for the sake of life, for the sake of our grandchildren and for the sake of their grandchildren.

The bishops claim that the emissions of Sweden should decrease by 80–95 percent between the years 1990 and 2050, which implies that in 2050, the annual emission of carbon dioxide equivalents per person and year amounts to one tonne. According to *Naturvårdsverket* (The Swedish Environmental Protection Agency) today's emissions per person amount to approximately six tonnes (national emissions) and to around ten tonnes per person when all the emissions related to Swedish consumption (including import of goods and services), are included.

The bishops observe that neither Sweden nor the other countries in the international community are today prepared to make the required political decisions to establish a quick conversion of the energy systems. In order for us to progress, it is of utmost importance that we take our responsibility and see the possibilities we have and look for ways where everybody can contribute to solutions on their merits.

"Now it is time for science, politics, economy, culture and religion – everything that reflects human dignity – to interact. The climate challenge is existential and spiritual, as it affects the fundamental conditions of human life in the most profound sense : What is the human role in creation? ..."

The climate issue is certainly an ethical and theological issue.

¹ Cf. Sw. Hy. 23.

In his encyclical, Pope Francis writes on environment and climate.

"This sister (mother Earth) now cries out to us because of the harm we have inflicted on her by our irresponsible use and abuse of the goods with which God has endowed her. We have come to see ourselves as her lords and masters, entitled to plunder her at will. The violence present in our hearts, wounded by sin, is also reflected in the symptoms of sickness evident in the soil, the water, in the air and in all forms of life. This is why the earth herself, burdened and laid waste, is among the most abandoned and maltreated of our poor; she 'groans in travail' (Rom 8:22). We have forgotten that we ourselves are dust of the earth (cf. Gen 2:7); our very bodies made up of her elements, we breathe her air and we receive life and refreshments from her waters." (Laudato Si – On Care for Our Common Home)

In the episcopal letter the ethical dimension is expressed as follows;

"According to Christian faith, our thoughts and care should be focused on those who are the most vulnerable and the most underprivileged.

Those who will be the first to be affected by climate change are those who have contributed to it the least. They live in poverty, with little capacity to handle droughts and floods, and most of them live in the very parts of the world where the problems with climate related catastrophes are anticipated to be the worst. Moreover, they risk being bereaved of their rights to development, unless they are given support for powerful development of renewable energy sources. Cheap, fossil fuels have been an important building block of the prosperity of the wealthy countries. And from that perspective, the fact that the industrialised countries have thus almost put an end to the discharge absorbing capacity of the atmosphere must be regarded as profoundly unjust."

Therefore, the climate issue is to a large extent a matter of justice. It is of utmost importance to prevent climate change and at the same time provide opportunities of development for the poor populations of the world.

The bishops point out that leadership is required to bring about change. Not only political leadership, but also leadership at all levels and among all actors of society. Humans and organisations that dare to take a stand take initiatives and set an example. In 'Värna den Jord Gud älskar' (Preserve the Earth Loved by God) Sveriges Kristna Råd (The Christian Council of Sweden) also encourages churches in Sweden to implement concrete measures to reduce their ecological footprints".

Svenska kyrkan (The Church of Sweden) is Sweden's largest member organisation. The diocese of Linköping today counts 366.000 members. We meet people in all stages of life.

Moreover, The Church of Sweden is one of the biggest real estate owners in Sweden. In addition to buildings, we own and manage a lot of woodland, farm land and considerable financial assets. This gives us a position with far-reaching responsibilities.

The episcopal letter is concluded with a number of requests - some of which are directly addressed to church itself.

- to set ambitious targets for energy savings in the buildings of the Church of Sweden and for the use of renewable energy.
- that the management of the economic assets of church – shares, forests and land – shows how a theologically reflected vision on Creation contributes to the reduction of climate impact and to the acceleration of climate conversion.
- to let the church services, prayers, conversations and singing of the congregations clearly express the hope that gives power and commitment to the future of the whole of the creation.
- to implement common activities of support and inspiration for people who wish to work for a sustainable and fair lifestyle.
- to use the tools available to support the climate and environment efforts of the parish, for instance the possibilities of climate certification.

This climate strategy has been created by the diocese of Linköping in response to these requests.

It constitutes a description of where we are and what we wish to accomplish through our climate work. By means of a vision and quantitative/qualitative objectives we define our own responsibility. Hopefully, we can also inspire others into action.

Both in terms of knowledge and previous work, the starting point varies from field to field, and the operational plans will require constant adjustments and further development. However, here we set a clear course and define our own commitment. By means of our measures we can help create hope. The hope that change is possible.

"We need a feeling of hope that liberates the power of action. Hope can be bred in songs praising the beauty of nature and the love of the Maker. In the kingdom of God, everything is a gift before it turns into a mission. Man is indissolubly a part of Creation's web of life, yet he has a unique mission. We live in the tension between smallness and greatness, limitation and infinity, sin and redress. Conversion is possible" (An Episcopal Letter on the Climate")

"Even now I am a bearer. The kingdom of God breaks through and I am challenged to see its signs, I am also challenged to see myself as the sign of the kingdom of God, which I already am, by grace. Those of us who want to appear as a church have a responsibility to help people see that God operates, and to actively make ourselves available. God loves the world, and we, the people, have a calling to show, in word and action, God's love to the world. (Levande tillsammans med Kristus – om en kyrka i rörelse - Living Together with Christ: Being a Church on the Move)

2 BACKGROUND – THE CLIMATE ISSUE IN THE WORLD AROUND US

2.1 UN WORK ON CLIMATE CHANGE

In their fifth report from the autumn of 2013, the Intergovernmental Panel on Climate Change of the UN, IPCC² determines with 95% certainty that human activities cause most of the observable climate changes. Climate change is one of the biggest global challenges of our time. In the beginning, discussions were conducted on various natural disasters in faraway countries, now the talks are more and more focusing on how climate change aggravates other environmental and social problems. Minor or major climate related events affect for instance, food production, water supply and infra structure and/or the world economy. Climate change affects equality and reinforces inequalities. Ecosystems as well as human systems are vulnerable worldwide. The IPCC point out the existence of so called threshold effects, meaning that ecosystems can handle a certain degree of changes fairly well, and then all of a sudden they collapse when the changes surpass a certain limit. Consequently, climate debate is more and more conducted on how we should manage and avoid risks before we reach these thresholds and on the necessity to adapt to the damage already done..

In order to keep the consequences of climate change at a manageable level, the IPCC recommends, among other measures, the countries of the world to endeavour to reduce their emissions from fossil fuels. The manageable level of climate change is popularly called the "2-degree target", *i.e.* that the average temperature increase of the Earth does not exceed two degrees between 1990 and 2100. In order not to exceed this level, the use of fossil must be reduced so that the emissions of carbon dioxide culminate no later than in 2020. If the world manages to achieve this objective, the carbon dioxide content of the atmosphere should then, up until 2100, decrease roughly to today's level. This is due to the fact that a significant quantity of emissions remains in the atmosphere and continues to contribute to global warming. Due to inertia in the climate system's reaction to emissions, some of the warming occurs with a certain delay. Therefore, the global average temperature will probably continue to increase and the sea-level-rise will continue for hundreds of years, even if man's releases of greenhouse gases came to a complete stop tomorrow. Some of the carbon dioxide is absorbed on land, particularly by plants, trees and the soil, and some is dissolved in the seas in roughly equivalent proportions, where the carbon dioxide contributes to major ocean acidification. Thus, climate change is intrinsically linked to other environmental challenges too. Therefore, a determined climate policy is needed, where the key issues are energy efficiency, reduced consumption of fossil fuels and an increased use of bioenergy.

At the UN climate conference in Paris, just before Christmas in 2015, 195 countries came to an agreement on limiting the increasing average temperature on Earth. At the conference, the climate policy target was tightened so that the world should keep the temperature increase well below 2 degrees, endeavouring to limit warming to 1.5 degrees.

At the end of 2015, 188 countries had handed in national plans for emission reductions. The syntheses of these plans draw attention to the fact that they do not sufficiently trigger the reduction of global emissions and that they are insufficient for the achievement of the

² Intergovernmental Panel on Climate change

temperature target. In the future, a gradual and substantial tightening up of the countries' emission reduction plans is therefore required.³

Some 50 countries are included in the group "Least developed countries" (LDC). The emission reduction requirements for these countries will be minimal or non-existent, not only in absolute terms but also compared to *business as usual*. The requirements of clarity for their plans on climate change will not be very strict. The agreement urges countries to submit a description (intended nationally determined contributions, INDC) on how they intend to help achieve the aim of the agreement. The promises of the countries apply during different periods. Therefore, the agreement urges everybody to start in 2020 and thereafter report their results every five years.

2.2 EU WORK ON CLIMATE CHANGE

In 2008 the EU recognised the so called 20-20-20 objective, which implies that by 2020 the countries of the union undertake to:

- Reduce the greenhouse gas emissions by at least 20 percent, compared to the levels in 1990.
- Reduce energy use by 20 percent.
- Increase the share of renewable energy⁴ to 20 percent of all the energy consumption.
- Increase the share of biofuels in transports to 10 percent.

The milestones are to be reached by 2020. In their Roadmap for Moving to a Low-Carbon Economy in 2050, published in 2011, the EU also expressed their objective to decrease the carbon dioxide emissions of the union by 80 percent before 2050. Currently there is an ongoing discussion of raising the objectives to reduce the greenhouse emissions to 40 %, increase the share of renewable energy to 27 % and reduce the total energy use by 27%. In the spring of 2016, the EU has still not made any decisions regarding changes in their vision based on the results from the climate conference in Paris.

2.3 WORK ON CLIMATE CHANGE - SWEDEN

In 1999, *Sveriges riksdag* (The Swedish Parliament) formulated fifteen environmental quality objectives, which were extended with one more in 2005. The efforts to reach the short term environmental quality objectives (target year 2020) and the long term generation objective (target year 2050) form the basis of the national environmental policy. The environmental quality objectives with their clarifications are to provide a long term picture of the environmental effort objectives and act as guidelines for the environmental efforts of society as a whole, including public authorities, county administrative boards, municipalities as well as industry and other operators. The aim of two of the environmental quality objectives is to reduce climate impact.

³ The Government, Letter 2015/16:87, Control Station for the 2020 Climate and Energy Policy Objectives and Climate Adaptation

⁴ Renewable energy is energy that is generated from non-fossil sources. That is, energy generated from the wind, the sun, water power and biofuels.

”Limited Climate Impact”:

*"In accordance with the UN Framework Convention on Climate Change, the concentrations of greenhouse gases in the atmosphere are to be stabilised at a level where human impact on the climate system is not harmful. The target is to be reached in a way and at a rate that preserve biodiversity, ensure food production and do not jeopardize any other objectives for sustainable development. Together with other countries, Sweden has a responsibility to make sure that the global target can be achieved."*⁵

”Sound, Built Environment”:

*"Cities, towns and other built environments are to constitute a sound and healthy living environment. Natural and cultural values are to be safeguarded and developed. Buildings and facilities are to be located and designed in compliance with environmental requirements and with a view to benefit long-term management of land, water and other resources."*⁶

Buildings account for nearly 40 of the total energy use in Sweden. The environmental quality objective ”Sound, Built Environment” has a milestone including the halving of the energy use of buildings by 2050. This with due regard to the great cultural values of various building environments.

The environmental quality objectives are annually evaluated by the Swedish Environmental Protection Agency on the basis of different indicators, assessing whether the environmental objective can be reached before the year 2020 by means of the efforts currently made and the currently existing instruments. Unfortunately the current assessment indicates that neither of the two environmental objectives can be reached. Thus, efforts further than those complying with current regulatory requirements and the encouragements provided by the instruments are needed. The housing and the transport sectors are the sectors in society where the effects of a conversion would be the greatest.

Many of the large real estate companies, publicly as well as privately owned, have made great efforts to improve the energy efficiency of their property. In terms of achieved energy efficiency, the publicly owned estates are somewhat ahead of the privately owned ones. Examples of public real estate proprietors that have successfully worked with energy efficiency are: Akademiska hus, Vasakronan, Västfastigheter, Alingsåshem, Statens fastighetsverk etc. Companies like Castellum, Fabege and Diligentia are good examples of private actors. Even the inter branch organisation Fastighetsägarna urges its members to make their buildings more energy efficient and to enhance their environmental effort, at the same time as profitable measures are in focus.

Good examples: Statens fastighetsverk work with the project Energy strategy 2013-2016 with the aim of reducing energy use by 26 % by 2016. In order to reduce energy consumption, in particular for heating, activities and electric cooling, specific measures are taken. Moreover, special efforts are made to improve lighting, both in terms of energy efficiency and of improved visitors' experience. Priority buildings are the most energy consuming ones. They include many of the Swedish castles, which demand considerable cultural value consideration

⁵ Government Bill 2000/01:130

⁶ Government Bill 2000/01:130

Good examples 2: Fabege is a real estate company, mainly owning buildings in the Stockholm area. On an average, the energy consumption of the estates of Fabege is more than 50 % lower than the average reported by Energimyndigheten (Energy Authorities) for the climate zone of Stockholm County. The success factors of their energy and environmental efforts are their systematic approach in terms of energy efficiency, environmental certification of reconstructions and constructions of new buildings and their work with green rental agreements. The company has an overall approach to ecological values, energy, indoor environment, waste management, transports, travel habits, chemicals and environmentally safe construction materials. The objective is to create long-term sustainable environments both in separate buildings and in town district development.

Swedish Municipalities and Counties⁷ establish in a report that there are profitable energy efficiency measures in habitation that actually cover more than the sector's share of society's energy and climate objectives. This applies to all kinds of habitation, irrespective of ownership. According to this report, it is possible to achieve a 35% energy saving in most of the buildings by means of measures that are technically possible and economically reasonable. However, active efforts such as strategic thinking and sustainability are needed.

2.3.1 Swedish Climate Efforts after the Climate Conference in Paris.

In an opinion piece published in DN⁸ in February 2016, the Swedish Environmental Objectives Council gave a number of proposals, endorsed by 7 out of 8 parliamentary parties. In line with the UN decision, they suggest a tightening of the current Swedish environmental objective – which, up to now, has been expressed as a vision where in 2050, Sweden is not to have any net emissions of greenhouse gases to the atmosphere. So the Environmental Objectives Council proposes that the parliament advances the objective to 2045. According to the proposal, net zero in 2045 implies that the Swedish emissions are to have decreased by at least 85% compared to 1990. The Environmental Objectives Council believes that an 85% decrease until 2045 is an ambitious objective, considering the rapid population growth that is expected in Sweden until the middle of this century. In addition, emissions remaining in 2045 (the following years achieving negative emissions) are to be compensated for through measures in accordance with internationally agreed rules, which makes the objective even more ambitious.

The suggestion implies that the Swedish emissions per capita would be less than a tonne per person, a level in line with the Paris agreement. At the same time, it may be necessary to develop strategies and measures in order to reduce emissions in other countries caused by Swedish consumption.

⁷ *Billions of Reasons to Save*, SKL, 2011

⁸ <http://www.dn.se/debatt/tidigarelagg-svenska-klimatmalet-till-2045/>

Moreover, The Environmental Objectives Council proposes that the parliament adopts a climate change act clarifying the climate policy processes and the long-term orientation of the work. This act could, inter alia, imply a governmental presentation, every term of office, of an action plan showing the required measures to achieve the long-term objective and at the same time, the opportunity will be provided to regularly consider if there is any need to strengthen the intermediate objectives that are set on the way towards 2045.

It is further proposed to the government that they establish an independent climate policy council. One of the tasks of the council would then be to give a "second opinion" by scrutinizing the overall climate policy of the government – in particular ensuring that the policies of different areas work together.

Later on this year, when The Environmental Objectives Council submits its final report in June (2016) they intend to return to the issues regarding instruments and concrete measures to achieve the proposed long-term objective.

3 THE DIOCESE OF LINKÖPING AND THE ROLE OF THE DIOCESE ORGANISATION

The diocese of Linköping includes 30 church organisations or independent parishes, which are divided into 9 deaneries in Östergötland and in the north of Småland, see map below.

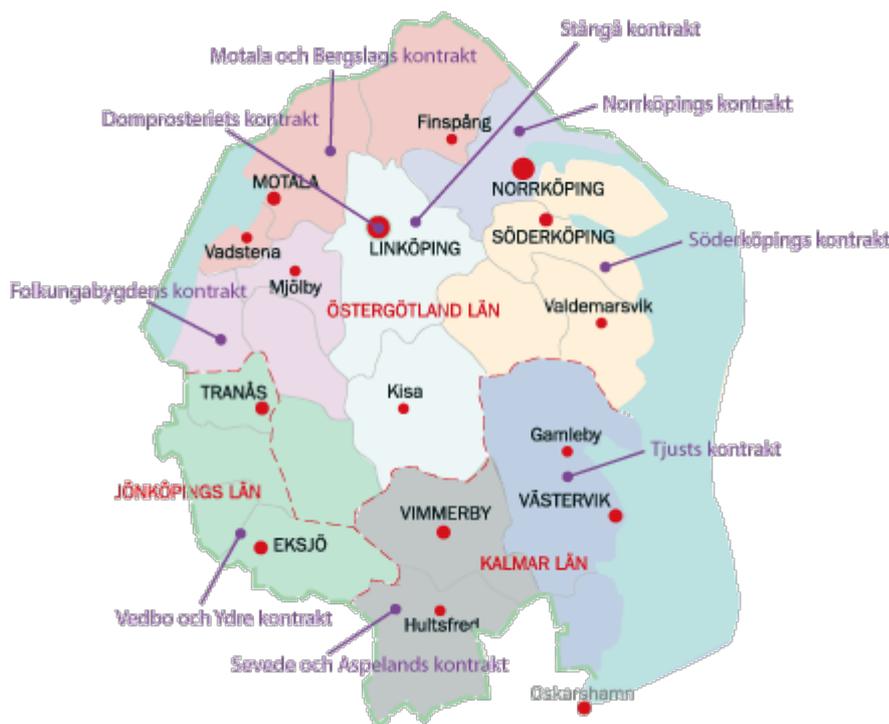


Figure 3: Map of the diocese of Linköping.

For a long time the diocese of Linköping has been implementing an active environmental effort.

The diocese of Linköping wants to take on the challenges of the episcopal letter. We, the diocese organisation, church organisations and parishes would like to take our own climate issue initiatives and act as models in the climate and environment area.

Regarding these issues, the diocese organisation does not formally govern the church districts/parishes. The targets will be the outcome targets of the efforts made by the diocese organisation to promote the fields of energy, climate and environment.

Apart from implementing this strategy into our own management and activities, the role of the diocese organisation in relation to this strategy will be to support and inspire the church districts and parishes. We will do this by:

- Formulating a vision and setting concrete ambition targets for the climate efforts of the whole of the diocese, and to work actively together with the church districts and the parishes to incorporate these into the local environmental documents. Here a central tool will be parish instruction.
- Continually following up, evaluating and communicating target achievements.
- Offering support to formulate and implement action plans.

- Offering our help with joint procurement and recommending suppliers of relevant products and services.
- Developing and implementing projects together with parishes and church districts that would make it easier for individual church members to contribute to a climate-smart future.
- Offering training/exchange of experiences/networking to all relevant categories of professionals and to elected representatives
- Highlighting and spreading good examples.
- Offering support by means of active networking between the parishes of the diocese, parishes in other dioceses and other important actors within and outside the Church of Sweden.

The climate strategy includes buildings, transport, cemetery maintenance, the diocese management of land, forests and funds as well as church life and church activities.

4 CURRENT SITUATION

4.1 BUILDINGS

In recent years, the diocese organisation has run an energy efficiency project including enhanced cooperation at diocese and deanery level on energy and building issues.

The aim of the project is:

- To create a basis for energy and cost efficient and climate smart management of the real estate of the diocese.
- To give the church districts as well as the parishes and the diocese a more professionally based description of reality, as a basis for future decisions on investments, operation and sales.
- To develop and test new models to ensure regional competence within the energy and real estate areas.

The energy efficiency project and many of the figures identified within the project are described more in detail in Annex A. In Annex B there is data on electricity consumption, own electricity generation with wind and solar power energy and the share of renewable energy and renewable total energy.

4.1.1 Buildings – Energy Use and Emissions of Carbon Dioxide.

Out of the 30 units of the diocese, 29 have completed the project's energy survey of their buildings. We have also made an inventory of the own buildings of the diocese. In total, 624

buildings were inspected, of which 254 churches, 164 parish halls and 206 other buildings⁹. These buildings make up a total of 260 000 m² of heated surface.

The churches make up 50 %, the parish halls constitute slightly more than a fourth and other buildings slightly less than a fourth of the surface.

The energy sources used in the buildings are heating oil, district-heating, pellets and electricity. At the time of the energy inspections, the total energy consumption amounted to 40 900 MWh.

In total apx 2 900 MWh of heating oil (EO1), 14 300 MWh of district-heating, 807 MWh of pellets and 22 900 MWh of electricity. This generates annual carbon dioxide emissions of more than 5 000 tonnes.

4.1.2 Savings Potential – Buildings

As a result of the energy project, a number of measures for energy savings for every building were presented to each participating parish/church district. The measures have been divided into three different types of measures: investment measures, operation and maintenance measures and measures requiring further investigations. In total for the 624 buildings, measures are proposed that may generate annual energy and carbon dioxide savings of approximately:

| Type of Energy | Energy-Saving [MWh/year] | Reduction of Carbon Dioxide Emissions [tonnes/year] | Reduction [%] |
|------------------|--------------------------|-----------------------------------------------------|--------------------------------------|
| Heating Oil | 1,500 | 400 | 50 |
| District Heating | 2,100 | 200 | 15 |
| Heating Pellets | 160 | 0 | 20 (energy) |
| Electricity | 6 000 | 750 | 26 |
| Total | 9,750 | 1350 | 24 (energy) 27 (CO ₂) |

Table 1: Savings potential through proposed measures expressed in MWh and in percent.

The savings potential for energy reduction in the parishes/church districts varies between 10 and 40 %.

Some of the proposed measures in the reports do not present energy savings and reduced CO₂ emissions. This has two main reasons: either we are dealing with measures that should be taken even if no savings need to be calculated because the measures must be implemented anyway, or they are measures that require further investigations in order to give a good indication of the magnitude of the savings and the investment.

No quantifications of savings potentials from improved planning/more efficient use of the premises are included, as this is completely due to the local activities. However, the potential is

⁹ The group "other buildings" includes: annexes (heated), parish centers, chapels, parsonages, other residential buildings, crematoria, mortuaries, other assembly halls etc.

great. All in all, taking into account the non-quantified measures and an improved performance scheme, a 30% reduction of the energy consumption by 2020 is perfectly reasonable.

4.2 TRANSPORT AND WORKING MACHINES

The diocese organisation and church districts/parishes make use of vehicles mainly for transport of personnel and participants in different activities. We also use some vehicles for the transport of goods etc. The extent is only vaguely known at diocese level. For the Cabinet of the Diocese (incl. Centre for Pilgrims) there are consumption and CO₂ statistics as a part of the environmental certification. Based on the unclear starting point, the objectives should concern in particular the guidelines for vehicle purchases, the choice of means of transport and various measures to develop infrastructure in order to avoid fossil fuelled transport.

Because of cemetery maintenance, the Church of Sweden is a large actor within green open space maintenance. Again the starting point is incomplete, therefore the main focus should again be to prioritise machines and tools that are not fossil fuelled, and also to encourage extensive maintenance methods (including climate friendly plant choices for grave decorations). Moreover, maintenance methods can often have a very positive impact on biological diversity.

4.3 LAND, FORESTS AND FUNDS

The world, Creation, the animals, the riches of nature and the fellow beings are not objects that we dispose of but which we consider in relation to ourselves. Everything and all are in relation with God. Therefore, all relations are expressions of spirituality – God exists in everything.¹⁰

Christian faith and philosophy say that all life was created by God and is sacred. The mission of man is to cultivate and to preserve creation responsibly. The care for nature mainly involves species whose survival is threatened. The diocese manages the assets of church. Management is to be sustainable and give a good financial return.

Land

In their agricultural management, the diocese shall strive to positively stimulate the tenants to comply with the intentions of existing environmental legislation and also in other ways contribute to increasing awareness and insights into environmental and natural values in agriculture. The diocese is favourable to organic farming and seeks to ensure that organic farming is to be found among the leasehold properties of the Church. Within the environment area, substantial investments are made in terms of rehabilitation of manure management facilities, heating facilities, separate sewerages and waste separation sheds. Much emphasis is put on the use of environmental and recyclable building materials.

¹⁰ Barry Commoner, *Everything is connected to everything else*. Quoted from Anne Marie Dalton and Henry C. Simmons, *Ecotheology and the practice of hope*, s 25.

Forests

Forestry is to be active, target-oriented and shall proceed in line with the prerequisites given by nature. The annual felling volume is to be determined on the grounds of long-term, sustainable felling level calculations.

The forestry of the diocese is to contribute to the conservation of forest biodiversity, to the ensuring of the forest ecosystem functions and to the preservation of valuable cultural environments for the future. We are to use techniques and methods that prevent environmentally harmful pollution and limit forestry impact on soil, water and air. We are to consider the viewpoints of both internal and external interested parties and take the interests of society into account. Our forestry management is to reach or exceed the requirements imposed by laws and regulations. Our forestry is to meet the requirements of FSC® (license no FSC-C014110) and PEFC™.

Our forestry personnel are to be highly qualified within environment and forestry management. The forestry activities are to be guided by continuous development and improvement.

Funds

Two sources of Christian ethics – The Creation and The Revelation in the Bible – provide the basis for two basic moral principles that give guidance in the capital management work within the Church of Sweden, that is: the principle of human dignity and the idea of trusteeship.

As regards capital management, the diocese of Linköping is to strive to be a responsible investor. This implies that both ethical and financial aspects are to be taken into account when evaluating investments.

Investments are to be subject to environmental consideration and respect, human rights and working conditions and good corporate governance.

4.4 CHURCH LIFE AND CHURCH ACTIVITIES.

Thus, heaven and earth, paradise and everyday life belong together in the vision of God's kingdom. Our struggle for a righteous world is not an amendment to Christian faith, something that can be balanced against the core of faith and question why church "is dealing with the environment instead of talking about God". In the vision of God's kingdom, the outlines of love's peace for the universe are seen. In the reconciliation of every relation, God takes the first step, in Jesus Christ. The heavenly vision in the First Epistle to the Corinthians, that one day God will be all in all, everywhere, is reflected in the complicated present. In God's kingdom everything is connected. Living Together with Christ: Being a Church on the Move)

On the basis of the issue: What does it mean to be a church in our time? The diocese of Linköping has worked on three focal areas since 2012, that is: relations, the vision of God's kingdom and signs where all three are connected. The theme of the year 2014 was the vision of God's kingdom and "Show God's love to the world". This can be seen as a prophetic year, challenging us. Our focus, then, was specifically on ecotheology. Ecotheology gave us a language to describe both amazement over the beauty of creation, the seriousness of the misuse of creation and a vision for a living planet, where "living congregations" work together for healing,

or as Bishop Martin writes: joy, liberation, authenticity and mercy for all of the planet. It also gave us a language to the way God works from inside of creation, healing and renewing.

For a few days, the bishop gathered priests, deacons, janitors, administrative staff, hosts/hostesses, pedagogues, musicians and elected representatives to participate in a conference with discussions on the theme.

The diocese reception for all, which took place in Vadstena in September 2014, was also characterized by this theme. At this occasion, organic "stallholders" were mixed with prayer, conversations, singing and music and a feeling of closeness around a shared meal. "Friday lunch without meat", was a choice in which the Bishop invited and invites us to participate wherever we are - challenging the increasing meat consumption in the country.

During the "Eco-hike" from Uppsala to the climate conference in Paris, in the late summer and autumn of 2015, Pilgrimscentrum was taking part in its coordination. Two of the diocese priests walked all the way, one stretch each, and in that way they gave continuity to the hike. Many other people from the diocese participated in the hike, walking different distances – this also being a way for the diocese of Linköping to take a stand. Moreover, many of the seminars/meetings of Pilgrimscentrum have included elements of ecotheology. Pilgrimscentrum is also part of an international network, "Green Pilgrimage", where the idea is that the pilgrim destinations in the world and the ways leading there, could serve as models for sustainable development.

Environmental certification efforts have been made within the diocese for many years, and at present some of the parishes of the diocese are heading for phase 3. Since a number of years, the Cabinet of the Diocese holds a phase 3 environmental certificate. This working method, which is now spreading across the diocese, is supported by the Cabinet of the Diocese.

During Earth Hour, which is the world's largest environmental manifestation, the lights are turned off locally throughout the diocese.

The diocese is part of a national ecotheological network, centred in the diocese of Västerås.

In other words, the environmental efforts, which are partly described in this document, exist in an entirety that is practically theological and theologically practical, and extend beyond the boundaries of the diocese. It is a matter of a global, national, regional and local commitment for the survival of the Earth.

The base is an ecotheological view on life, the planet and spirituality, where everything is linked to everything, where man is an integrated part of creation, where our way of preserving and caring for the earth in the diocese expresses our relation to God and our spirituality. Prayer, solar cells, pilgrimages and forest management, conversations and real estate management, a sustainable lifestyle and sustainable church services - everything is connected in the world that God loves. We want to bear witness of this, and we believe that the one who gives us power in our work and perseverance in our hope is God.

"When you send your Spirit, they are created, and you renew the face of the ground."
Psalm 104:30

The seven directions that Bishop Martin Modéus makes visible in his pastoral letter can all be linked to a global approach to our lives with God in the world - *i.e.* an ecotheological approach. In this document, we raise some of these directions as challenging questions to ourselves:

"From despair to hope." How can we, together, rest in the hope and the power that God gives, so that we can persevere and be concrete in our environmental efforts?

"From user to carrier." We are carriers of love to the world and to the planet, carried by the one who carries all. We are also responsible for the planet. So how do we use it?

"From activity producer to community in life." How can we create community in life, where we work together for a living planet as living co-workers?

5 VISION AND OBJECTIVES

5.1 VISION

The diocese of Linköping shall not contribute to global warming.

The diocese of Linköping is to be climate neutral, *i.e.* we are not to leave any net contribution to global warming and are also to act as models of environmental work. As a single player or together with others, The Church of Sweden in the diocese of Linköping is to work actively in the efforts to solve the climate challenge and give full expression to the idea that 'the redemption of creation is possible'.

5.2 OBJECTIVES

Our overall objectives are:

In 2045 at the latest, the diocese of Linköping is to have achieved climate neutrality, i.e. not leave any net contribution to global warming. By the year 2020, climate pressure is to be reduced by at least 30% (within areas that are currently measurable).

In order to achieve these overall objectives we have formulated the following milestones within each respective field (reference year is 2011/2012 unless otherwise specified).

5.2.1 Milestones Buildings

- Electricity consumption is to be reduced by 50 % by 2045.
 - Electricity consumption is to be reduced by 25% by 2020.
 - The share of own generated electrical power is to be at least 20% by 2020.
 - At the latest in 2020, only ecolabelled /or own produced renewable electricity is to be used.
- The use of heating oil for heating is to cease by 2045.
 - All the use of heating oil as main energy source is to cease by the year 2020.
 - The use of heating oil for heating is to be reduced by 50% by 2020.
- Green district-heating is to be chosen when offered by the suppliers.

5.2.2 Milestones Transport, Working Machines and Cemeteries.

- When replacement is needed, vehicles that are not powered by fossil fuels are to be chosen, whenever possible.
- At the latest in 2020, the vehicles of the Diocese organisation are to be primarily powered by non-fossil fuels.
- By 2020, there is to be a functional charging infrastructure for electrical vehicles within the Diocese of Linköping.
- Within cemetery management, the development of tools/vehicles that are powered by non-fossil fuels are to be supported.
- Methods that reduce climate impact and promote biodiversity within the field of cemetery maintenance are to be supported (plant choices and extensive maintenance etc.).
- When using public transports, we shall always endeavour to choose modes of transport having low climate impact.

5.2.3 Milestones Land, Forests and Funds

Land

- Investments are made notably in production facilities for organic production.
- Solar cell facilities are built on a number of annexes where this is possible and economically viable.

Forests

- 5-10 % of the productive areal is earmarked for nature preservation, and another 5-10 % will be earmarked out of general consideration shown when felling in production forests.
- In order to contribute to positive rural development, the Diocese seeks cooperation with the county administrative boards to protect and develop big areas with a high environmental value. Within the next few years a number of new reserve areas will be investigated in Gryt, Ulrika, Hannäs, Yxnerum, Regna and S:t Anna.
- The Diocese is to be at the forefront in their efforts to achieve the national and regional environmental objectives. To reach all of the certification objectives in accordance with FSC® (license no FSC-C014110) and PEFC™.

- Nature Preservation Forests. Earmarked nature preservation forests are to be developed annually through active forestry in at least three territories.
- Climate (transport/machines etc.). Road constructions must be done with great care for environmental values and optimally conducted in relation to transport distance and profitability. When purchasing transport vehicles, those with non-fossil fuels shall be chosen at first hand. Alkylate based petrol and veg oils are to be used for chainsaws and brush cutters.
- Responsibility Species - County Administrative Board. Continued development and cooperation with the county administrative boards regarding the management of areas for the favouring of endangered species. Reverdin's Blue at the property of the Church in Punderum, Ukna is an example of actions and cooperation.
- Development of methods within forest management and methods for quality assurance of felling directives for certain areas are being developed. Directives for all forestry actions where, in the coming years, special attention will be given to reducing ground damage and in particular ground damage near water courses.

Funds

- The asset fund of the Diocese of Linköping shall invest in companies/activities respecting the following principles in their business:
 - To follow international regulatory frameworks aiming at preserving humans and the environment.
 - That the result of the activities of the companies contributes positively when being assessed from an economic and social perspective in relevant communities.
 - That the company also takes into consideration the needs of future generations when using natural capital.
 - That the company works towards minimising their negative effects on the environment globally, regionally and locally by using for instance the best available technology.
- The diocese of Linköping sees climate change as a serious threat and therefore we have a restrictive approach to investments in companies involved in the extraction of fossil energy sources. The asset managers of the Church of Sweden and the Diocese of Linköping are instead supposed to invest in companies that constructively contribute to solving the climate issue.
- The Diocese of Linköping is supposed to choose companies/securities on the basis of positive criteria. That is, companies that contribute to sustainable development in their business or through their products and services.

5.2.4 Milestones – Church Life

- To continue and deepen the ecotheological reflection within the Diocese of Linköping based on the framework of the pastoral letter/work with the view on church.
- To make the Diocese of Linköping a credible voice in climate / environmental issues.
- To deepen our work with environmental certification and environmental objectives.
 - At least 10 certified units by 2020.
 - Other units will have incorporated relevant parts of the climate/environmental strategy of the Diocese of Linköping into their Parish Instructions/Operational Plans or into other plan documents.
 - That the Cabinet of the Diocese upholds its certification.
- To continue and deepen the integration of pilgrim and sustainability issues.
 - To deepen the regional cooperation between parishes, municipal energy administrators, the diocese and the county administrative board on relevant activities, such as Earth Hour.
 - To continue developing the local, regional and international networks aiming at making pilgrimage a tool for a better understanding of the climate and environmental issue, both at the pilgrimage destinations and along the pilgrims' ways, and a contribution to a locally sustainable development where Church plays an important and positive role, all this in line with Green Pilgrimage Network.
 - That the Diocese of Linköping, through Pilgrimscentrum in Vadstena, takes on a leading and initiating role in these networks.
 - To build on the experiences from the Eco-hike to Paris (contacts, networks and pilgrims' way) and use these for a continued climate /environmental issue commitment.
- That great environmental/climate ambitions will pervade the continued work of the Diocese organisation on purchases/procurement, both on their own and within the framework of the ventures of the Cabinet of the Diocese.
- To develop projects/activities that will facilitate for the members of church to lead a life with a low climate impact.

6 WORKING Method

6.1 ORGANISATION – WHO DOES WHAT AND HOW WE DO THIS TOGETHER

Diocese Board

Determines and follows up the climate strategy.
Reviews the strategy when appropriate, but at least every 4 years.

Responsible Administrator at the Cabinet of the Diocese

Elaborates an annual operational plan.
Plans and implements agreed projects.
Is responsible for the follow-up in relation to agreed objectives and compiles an annual report to the Cabinet.

People Responsible for Milestones

Responsible for relevant projects. Provide the material for follow-ups. Interact with responsible administrator.

Communications Department

Responsible for the communication plan and includes the key figures and the follow-up in the annual report and the financial statement.

Environmental Reference Group

Annual evaluation of the target achievement, and discussions/recommendations of new measures.

6.2 COMMUNICATION PLAN

A communication strategy has been developed in parallel with the climate strategy.

The main objective of this communication is to create participation and acceptance for the objectives, throughout the diocese. To take a strong stand and define our responsibility in the climate issue and create credibility for our climate efforts both internally and externally.

The main target groups are primarily managers/policymakers, and those responsible for energy/climate/environmental issues within the Church of Sweden in the Diocese of Linköping. Another important target group is all the 'partners' of the diocese organisation of Linköping in

the field, for instance the County Administrative Board, energy advisors, other dioceses, Cabinet of the Diocese and other communities.

It goes without saying that the members of church are also an important target group, but then in particular as regards the communication of good examples and what church achieves locally and regionally, rather than the strategy as such.

6.3 FOLLOW-UP

Every milestone is to be followed up annually by means of relevant indicators. These can be quantitatively (wherever possible) but also qualitatively descriptive. Examples of follow-up formats with indicators are found in Annexes D and E. These examples mainly concern energy use, but will be developed into other objectives.

7 ACTION PLAN AND MEASURES

The purpose of setting up climate objectives and elaborating an action plan to reduce the climate affecting activities of the organisation is to continuously reduce our climate impact. The objectives may be comprehensive as well as detailed and shall apply to every relevant function and at all levels of the organisation, from management to collaborator level. The difference between comprehensive and detailed climate objectives is that the former are long-term objectives including several detailed interim objectives.

When the present situation description of for instance the response report from the buildings has been realised and the climate objectives have been formulated it is time to elaborate an action plan. The results of the previous work form the basis of the action plan then describing the measures to take in order to reach the agreed objectives.

The action plan comprises activities that shall be implemented over the coming years. The action plan is a living document that requires continuous updates and forms the basis of each respective operational plan and therefore, it is not included in the strategy document. An example of an action plan is found in Annex C. This example does not yet comprise the whole strategy.

8 REFERENCES

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ANNEXES

ANNEX A CURRENT SITUATION BUILDINGS IN FIGURES

Out of the 30 units of the Diocese of Linköping, 29 have completed the project's energy survey of their buildings. We have also made an inventory of the own buildings of the diocese organisation. In total, 624 buildings were inspected, of which 254 churches, 164 parish halls and 206 other buildings¹¹. These buildings make up a total of 260 000 m² of heated surface (The surface of Pilgrimcentrum is excluded).

The churches make up 50 % (130 840m²), the parish halls constitute 28% (73 070m²) and other buildings 22% (56 336m²) of the surface, see diagram below.

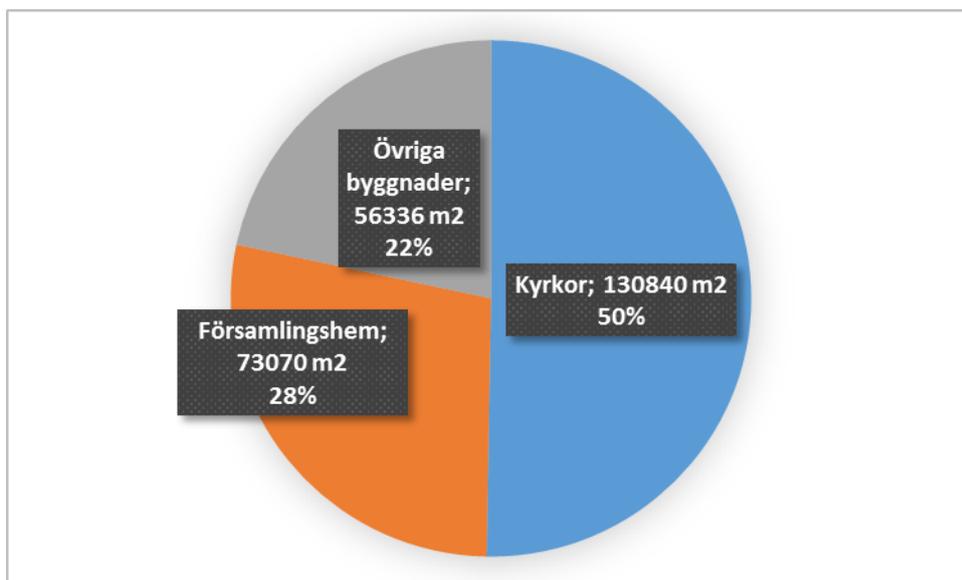


Figure 1: Division of surface for types of buildings in the project, surface [m²] and share [%]

The energy sources used in the buildings are heating oil, district-heating, pellets and electricity. At the time of the energy inspections, the total energy consumption amounted to 40 860 MWh.

As the inspections were made in the years 2012-2014, the figures of the energy statistics derive from various years between 2010 and 2013, (primarily 2011/2012). The division of types of energy in the various buildings appears in the diagram below:

¹¹ The group "other buildings" includes: annexes (heated), parish centers, chapels, parsonages, other residential buildings, crematoria, mortuary, other assembly halls etc.

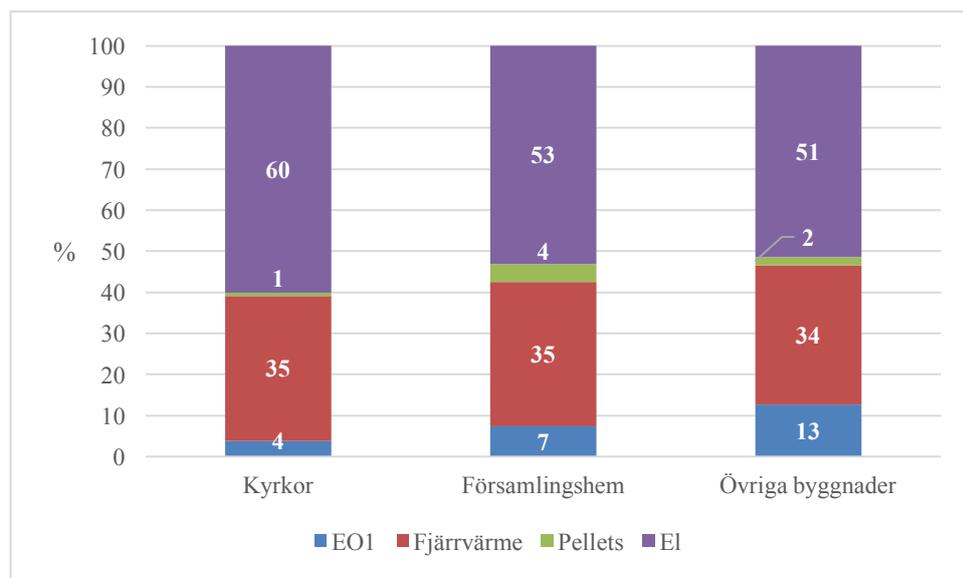


Figure 2: Division of Energy Types Used in the Churches, Parish Halls and Other Buildings

In total approx 2 900 MWh of heating oil (EO1), 14 250 MWh of district-heating, 807 MWh of pellets and 22 900 MWh of electricity.

The Environmental Impact of the Buildings – Emissions of Carbon Dioxide

Electricity Use

The assumed current situation as regards electricity consumption is that the parishes and church districts purchase without any requirements as to origin marking, *i.e.* what we call "Nordic Mix". During the time of the energy efficiency project, many parishes/church districts have concluded agreements on Sound-environmental-choices-electricity, installed solar cell facilities or purchased wind power shares, where Nordic mix is the starting point and the transition to renewable sources is seen as a measure to take. Vreta kloster is excepted, due to the fact that they had already bought wind power shares before the project and therefore their electricity use counted as renewable even before the project. For the other units, the years 2011-2012 were used as a starting point as the most uniform background data was to be found for these years.

For such calculations *Energimyndigheten* (The Energy Office) proposes the use of an average of Nordic electricity mix for the years 2005-2009 of 125, 5 kg CO₂ ekv./MWh.

The electricity consumption of the included units of 22 700¹² MWh thus generated carbon dioxide emissions of 2 850 tonnes of CO₂.

Use of District-Heating

The Environmental Impact of district-heating has been calculated using measured values for local district-heating facilities, compiled by the interbranch organisation Svenska Fjärrvärme for the

¹² A total of 22 900 MWh of electricity, minus 220 MWh for wind power (Vreta kloster), rounded off to 22 700 MWh

year 2012. 24 of the parishes/church districts use district-heating (large-scale)/(small-scale) Some of them purchase district-heating from several networks, which means that there are between 25 and 30 district-heating suppliers within the diocese. Linköpings Tekniska Verken is the dominant supplier of district-heating, supplying almost 30 % of the district-heating within the diocese and the buildings of the diocese organisation. The network of Eon in Norrköping-Söderköping supplies almost 20 %. In order to calculate the carbon dioxide emissions from district heating, data from Svensk Fjärrvärme has been taken to demonstrate the combustion emission factors for the eight suppliers that together supply a little more than 80 % of the district-heating to the parishes, the church districts and the diocese. The share of fossil fuels in the district-heating mix varies between 1 and 15 %. Suppliers and their emission factors as well as the emissions generated by the parishes are illustrated in the table below:

| Unit | Share of Total District-Heating Supplies [%] | District-Heating Networks | g CO ₂ eq/kWh | kWh District-Heating | tonnes CO ₂ |
|-----------------------------------------------------------------------------------|----------------------------------------------|---------------------------------|--------------------------|----------------------|------------------------|
| Linköping Cathedral Church District, Cabinet of the Diocese, Vreta kloster Parish | 28.25 | Tekniska Verken in Linköping AB | 126 | 3,926,061 | 495 |
| Norrköping Church District | 18.73 | EON Norrköping-Söderköping | 118 | 2,602,507 | 307 |
| Södra Tjust Church District | 6.88 | Västervik Energi & Miljö AB | 94 | 956,071 | 90 |
| Södra Vedbo Church District | 5.67 | Eksjö Energi AB | 94 | 787,863 | 74 |
| Finspång Parish | 4.09 | Finspångs Tekniska Verk AB | 102 | 568,960 | 58 |
| Vimmerby Church District | 3.92 | Vimmerby Energi & Miljö AB | 21 | 544,127 | 11 |
| Vadstena Church District, Vadstena Folk High School | 10.27 | Rindi Energi AB Vadstena | 34 | 1,426,720 | 49 |
| Tranås Church District | 3.48 | Tranås Energi AB | 20 | 483,718 | 10 |
| Total | 81 | | | 11,296,027 | 1,093 |
| | | | | | |

Thus, 80 % of the district-heating supplies caused 1 100 tonnes of carbon dioxide emissions. The total emission factor for the eight biggest suppliers was estimated to 97 g CO₂ ekv/kWh for combustion, and counting on the total volume of used district-heating of 14 250 MWh gives a 1 380 tonne carbon dioxide emission.

Heating Oil

The emission factor for heating oil stated by Svenska fjärrvärme is 270 kg CO₂ ekv/MWh for energy conversion. The included parishes, church districts and the diocese used a total of 2 900 MWh of heating oil, which caused apx 780 tonnes of CO₂.

Conclusion - Emissions of Carbon Dioxide

To sum up, the emissions of carbon dioxide of the buildings that are included in the project are distributed as shown in the table below:

| Type of Energy | MWh | Share of Purchased Energy [%] | Tonnes of CO ₂ | Share of total of CO ₂ [%] |
|------------------|--------|-------------------------------|---------------------------|---------------------------------------|
| Electricity | 22,700 | 56 | 2,850 | 57 |
| District Heating | 13,800 | 35 | 1,380 | 28 |
| Heating Oil | 2,100 | 7 | 780 | 15 |
| Pellets | 807 | 2 | 0 | 0 |
| Total | 37,400 | | 5,010 | |

This annex contains two tables. The electricity agreements of the units and own electricity production in the form of wind power or solar electricity are shown in the table below.

In October 2014, the Diocese of Linköping concluded a procurement agreement of Sound-Environmental-Choices-Electricity, to which the units could accede. These units are marked in the column: The Agreement of the Diocese Some units have their own running agreements elsewhere or chose to have their own agreements, these are shown in the column: Own agreements. As regards these agreements, there is rarely any information as to whether renewable electricity with origin marking or Sound-Environmental-Choices-Electricity marking is purchased anyway. Some units have notified of their decision to accede to the agreement of the diocese after the expiry of their existing agreement.

Units owning wind power shares are marked in the column: Wind power and in the footnote there is data on shares etc. The units are then members of Vindkraftkooperativ (SVEF) or of Kyrkvinden. Both of these are associations where the members buy wind power shares. Each share equals 1000 kWh per year. If the wind power electricity is not sufficient the difference is bought from either Gislaveds energi (SVEF) or Kalmar Energi (Kyrkvinden) in the form of 100 % renewable electricity from wind, water, sun and biofuels, however not as Sound-Environmental-Choices-Electricity.

Units that have invested in their own solar energy production are shown in the last column and in case of existing data on production, this is mentioned in the footnote of each respective unit.

The second table illustrates data on the share of renewable energy and total energy.

| | The Agreement of the Diocese (sound-environmental-choices-electricity) | Own agreements (missing data) | Wind Power | Own prod. of solar energy |
|--------------------------------|-------------------------------------------------------------------------------|--------------------------------------|-------------------|----------------------------------|
| Parish/Church District | | | | |
| Aneby Church District | X | | | |
| Aspelands Church District | X | | X ¹³ | X ¹⁴ |
| Borensberg Church District | X | | | |
| Finspång Parish | X | | | |
| Folkungabygden Church District | X | | X ¹⁵ | |
| Kinda Church District | X | | | |
| Kärna Parish | | (X) ¹⁶ | | |

¹³ Shares in Sv. Vindkraftkooperativ 300 shares = 300 000 kWh/year

¹⁴ 112 m² solar panels, annual production 12 000 – 13 000 kWh

¹⁵ 100 shares of wind power. Apx 100000kWh/år. Concerns three buildings, outside the agreement Rerm. 18000kWh/år.

¹⁶ Have made the decision to accede to the agreement of the diocese on 2016-06-01 after the expiry of their existing agreement.

¹⁷ Sv. Vindkraftkooperativ/Gislaveds Energi, data on number of shares missing

¹⁸ Kyrkvinden, 1406 shares = 1 406 000 kWh/year

¹⁹ Apx 2500 kWh/year

| Parish/Church District | The Agreement of the Diocese (sound-environmental-choices-electricity) | Own agreements (missing data) | Wind Power | Own prod. of solar energy |
|---------------------------------------|------------------------------------------------------------------------|-------------------------------|-----------------|---------------------------|
| Linköping Cathedral Church District | X | | | |
| Motala Church District | | | X ¹⁷ | |
| Norra Tjust Church District | X | | | |
| Norrköping Church District | | X | X ¹⁸ | |
| Rimforsa Parish | X | | | |
| Slaka-Nykils Church District | X | | | X ¹⁹ |
| Söderköpings St. Anna Parish | X | | | |
| Södra Tjust Church District | X | | | |
| Södra Vedbo Church District | X | | | X ²⁰ |
| Södra Vi-Djursdala Parish | X | (X) ²¹ | | |
| Tranås Church District | | X ²² | | X ²³ |
| Vadstena Church District | X | | | X ²⁴ |
| Valdemarsvik-Ringarum Parish | X | | | |
| Vikingstad Parish | X | | | |
| Vimmerby Church District | | (X) ³⁰ | | |
| Vist-Vårdnäs Church District | X | | | |
| Vreta kloster Parish | X | | X ²⁵ | |
| Västra Vikbolandet Parish | | (X) | | |
| Ydre Church District | X | | | |
| Åkerbo Parish | X | | | |
| Åtvid Parish | X | | | |
| Östra Ryd Parish | X | | | |
| Östra Vikbolandet Church District | | (X) | | |
| The Cemetery Management of Norrköping | | (X) | | |
| The Cabinet of the Diocese | X | | X ²⁶ | |
| Stiftsgården Vårdnäs | X | | | X ²⁷ |
| Pilgrimscentrum | X | | | |
| Vadstena Folk High School | X | | | |
| Gransnäs Diocese Youth Retreat Centre | | X | X ²⁸ | |

Table 2: Statement of electricity supply contracts for the units.

²⁰ Apx 4800 kWh/year

²¹ Will join the common agreement of the diocese after the expiry of their current agreements.

²² Sound-environmental-choices-electricity from Tranås energi.

²³ Apx 2000 kWh/year

²⁴ Apx 3000 kWh/year

Shares in Sw. Vindkraftkooperativ, apx 280 shares = 280 000 kWh/year

²⁶ Shares in Sw. Vindkraftkooperativ, 140 shares = 140 000 kWh/year

²⁷ Apx 1000 kWh/year

²⁸ Shares in Sw. Vindkraftkooperativ apx 265 shares = 265 000 kWh/year

In the next table we describe the share of own electricity generation through wind power shares or solar cell installations in relation to the total energy use of the unit as well as the share of Sound-environmental-choices-electricity and/or the share of own electricity generation in relation to the total energy use of the unit. If we are not certain whether the units buy Sound-environmental-choices-electricity or not they are marked with "??". In the third column of the table, we describe the share of renewable energy in relation to the total energy use. *I.e.*, in this column all the energy is included, even pellets and the renewable share of District-Heating¹⁵.

| Parish/Church District | Share of Own Electricity Generation [%] | Share of Sound-Environmental-Choices-Electricity and/or Own Energy Generation. [%] | Share of Renewable Energy in Relation to Total Energy [%] |
|-------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Aneby Church District | | 100 | 92 |
| Aspelands Church District | 35 | 100 | 83 |
| Borensberg Church District | | 100 | 100 |
| Finspång Parish | | 100 | 91 |
| Folkungabygden Church District | | 10029 | 96 |
| Kinda Church District | | 100 | 95 |
| Kärna Parish | | ? ³⁰ | 48 |
| Linköping Cathedral Church District | | 100 | 85 |
| Norra Tjust Church District | | 100 | 75 |
| Norrköping Church District | 62 | 100 | 91 |
| Rimforsa Parish | | 100 | 79 |

The share of renewable energy of the district-heating has been calculated as an average for the electrical networks supplying 80% of the district-heating to the units if the diocese. The renewable share is 87,9 %.

²⁹ 100 wind power shares for three buildings, agreement with Kalmar Energi 100 % renewable.

³⁰ Entering into the agreement of the diocese –SEC electricity

| Parish/Church District | Share of Own Electricity Generation [%] | Share of Sound-Environmental-Choices-Electricity and/or Own Energy Generation. [%] | Share of Renewable Energy in Relation to Total Energy [%] |
|---------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| Slaka-Nykil Church District | | 100 | 98 |
| Söderköping St. Anna Parish | | 100 | 97 |
| Södra Tjust Church District | | 100 | 95 |
| Södra Vedbo Church District | 0.2 | 100 | 94 |
| Södra Vi-Djursdala Parish | | ? ³⁰ | 50 |
| Tranås Church District | | 100 | |
| Vadstena Church District | 1 | 100 | 94 |
| Valdemarsvik-Ringarum Parish | | 100 | 96 |
| Vikingstad Parish | | 100 | 98 |
| Vimmerby Church District | | ? ³⁰ | 33 |
| Vist-Vårdnäs Church District | | 100 | 85 |
| Vreta kloster Parish | 45 | 100 | 92 |
| Västra Vikbolandet Parish | | ? | - |
| Ydre Church District | | 100 | 77 |
| Åkerbo Parish | | 100 | 100 |
| Åtvid Parish | | 100 | 100 |
| Östra Ryd Parish | | 100 | 100 |
| Östra Vikbolandet Church District | | ? | - |
| The Cemetery Management of Norrköping | | ? | |
| The Cabinet of the Diocese | 87 | 100 | 92 |
| Stiftsgården Vårdnäs | | 100 | 95 |
| Pilgrimscentrum | | 100 | 100 |
| Vadstena Folk High School | | 100 | 92 |
| Gransnäs Diocese Youth Retreat Centre | 79 | 79 | 79 |
| Total | 11 | 86 | 81 |

Table 3: Shares of Sound-Environmental-Choices-Electricity and wind and solar power energy in relation to the total of energy use and the share of the total of renewable energy in relation to the total of energy use.

ANNEX C DRAFT OF ACTION PLAN 2016-2019

| Measure | Responsible | Timetable | Evaluation Method |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------|--------------------------------------------------------|
| Anchor the objectives throughout the organisation | Per Rosenberg | March 2016-December 2016 | Questionnaire - Survey |
| Support to the units in their development of a policy, set objectives and produce an action plan. | Annika Deltin | 2016-2017 | Yes/no from all the units |
| Development of networks for knowledge and experience sharing. | Annika Deltin | 2016-2019 | Annual interim report describing the current situation |
| Coordination of training | Annika Deltin | 2016-2019 | Annual listing of trainings |
| Support to the units in their monitoring work | Annika Deltin | 2017-2019 | A number of annual follow-ups of total |
| Annual monitoring and feed-back | Per Rosenberg | 2017-2019 | Annual report |
| Continual roll-out and joint procurement of SEC marked electricity | Per Rosenberg | 2016-2019 | |
| Continued work together with national heritage boards in order to create an explicit code of practice regarding solar energy installations on heritage buildings | Annika Deltin/Niklas Fredriksson | | |
| Advocacy and development of a common blanket order regarding solar energy installations | Annika Deltin | | |
| Establishment of a starting point for cemetery maintenance and climate as well as for transports. | | | |
| Developing the | Per | | |

application (*klimatklivet* -
Climate leap) for
recharging infrastructure
Advocating environmental
certification

Rosenberg/Annika
Deltin

+/Per Rosenberg

Develop cooperation
within GPN/monitoring
of the Eco-hike

Lars
Cederlöw/Per
Rosenberg

To be further
developed...

ANNEX D HIGHLIGHTING THE RESULTS

In this annex there are two diagrams illustrating in what ways each unit contributes to reducing both electricity use and the use of heating oil. The left hand side of the diagrams illustrates the current status (blue bar) – the quantity of electricity and oil that was used at the beginning of the project. The right hand side of the diagrams illustrates the quantity of electricity and oil to be used when we have achieved the objective together (blue bar). Please note that the lateral scale (the y-axis) does not start at zero. The savings potential for every unit, calculated in the response report, is illustrated as red bars between the two blue bars. The units are anonymous and as can be seen, some have greater and some have less potential. As measures are implemented and followed up, the red bars can be replaced by actual savings.

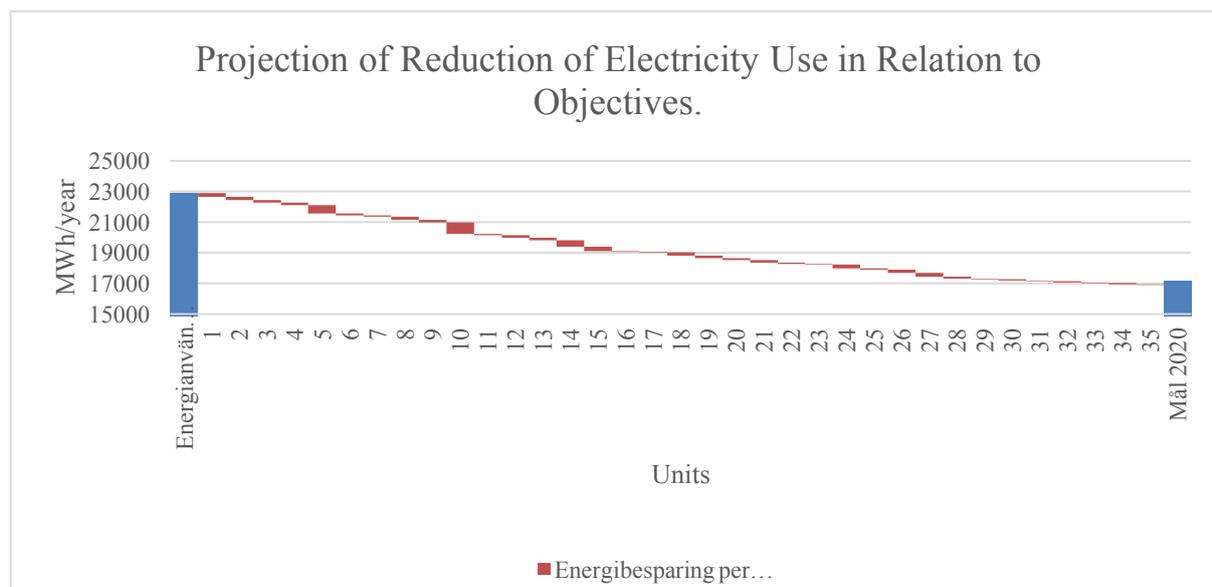


Figure 3: Projection of reduction of electricity use from the current situation to the objective of 2020. Please note that the y-axis starts at 15 000 MWh!

As regards electricity use, it seems as if the proposed measures (if they are all implemented) suffice to reach somewhat further than the objective to reduce electricity use by 25 % by 2020.

Following the same principle, the diagram below illustrates the potential for the use of heating oil. However, in this diagram only the units using oil are represented. Please note that in this diagram too, the scale of the y-axis does not start at zero but at 1 000 MWh. The objective of the use of oil is to (at least) halve it by 2020.

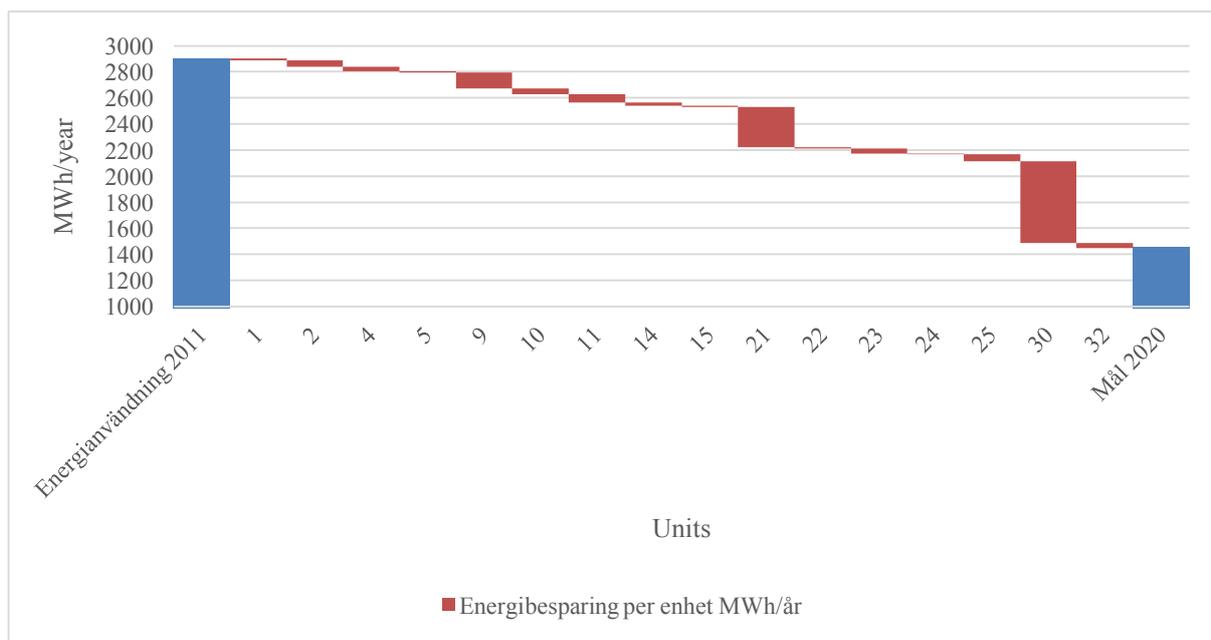


Figure 4: Projection of reduction of heating oil use from the current situation to the objective of 2020. Please note that the y-axis starts at 1 000 MWh!

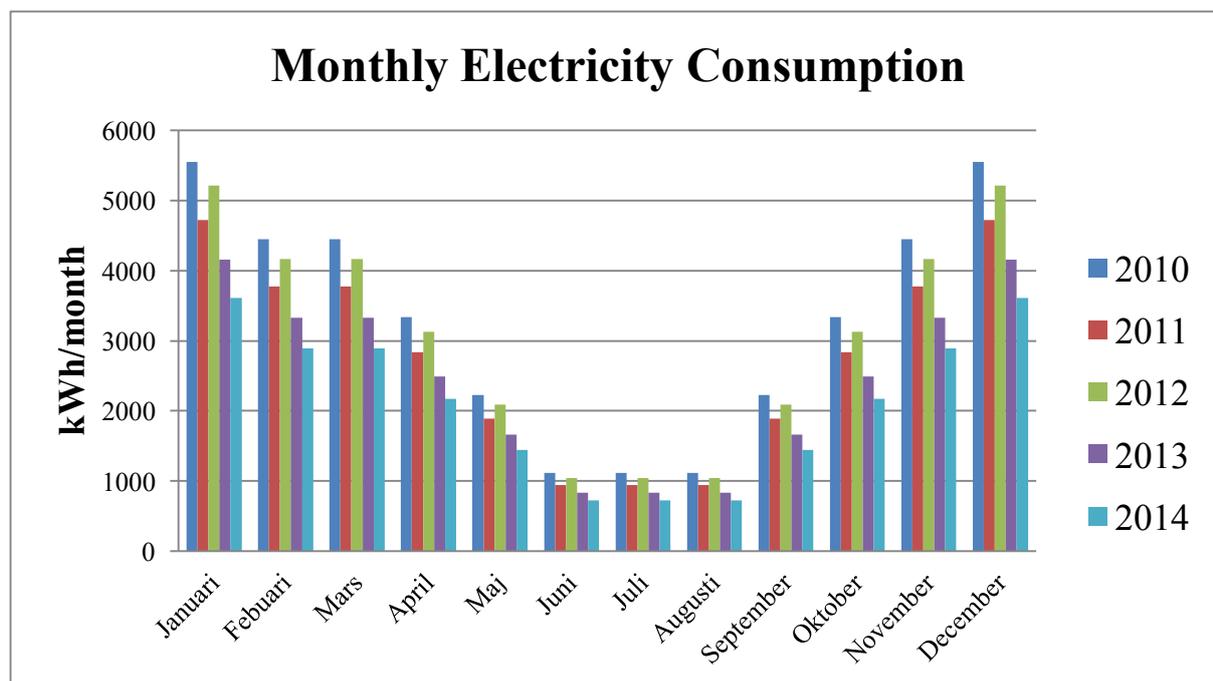
As to the use of heating oil, a few units dominate both in terms of use and in terms of savings potential. The diagram makes it clear that the objective cannot be achieved unless all units really take appropriate measures and here the predominant units in particular have a huge responsibility.

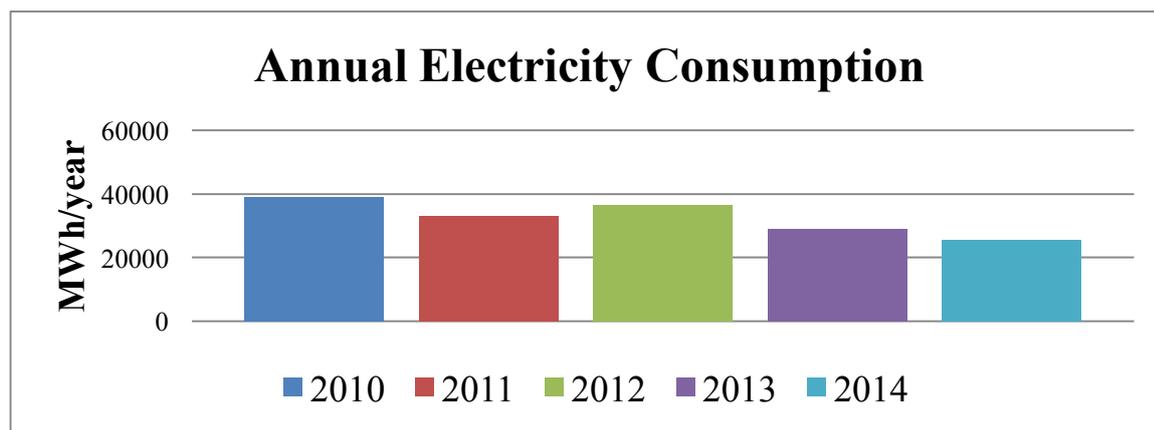
ANNEX E EXAMPLE - TEMPLATE FOR THE MONITORING OF ENERGY USE

Electricity

kWh/month

| Month | 2010 | 2011 | 2012 | 2013 | 2014 |
|-----------|-------|-------|-------|-------|-------|
| January | 5555 | 4722 | 5213 | 4155 | 3615 |
| February | 4444 | 3777 | 4170 | 3324 | 2892 |
| March | 4444 | 3777 | 4170 | 3324 | 2892 |
| April | 3333 | 2833 | 3128 | 2493 | 2169 |
| May | 2222 | 1889 | 2085 | 1662 | 1446 |
| June | 1111 | 944 | 1043 | 831 | 723 |
| July | 1111 | 944 | 1043 | 831 | 723 |
| August | 1111 | 944 | 1043 | 831 | 723 |
| September | 2222 | 1889 | 2085 | 1662 | 1446 |
| October | 3333 | 2833 | 3128 | 2493 | 2169 |
| November | 4444 | 3777 | 4170 | 3324 | 2892 |
| December | 5555 | 4722 | 5213 | 4155 | 3615 |
| Total | 38885 | 33052 | 36490 | 29086 | 25305 |





| Basic Information | |
|---------------------------------|--|
| Name: | |
| Number of Buildings: | |
| Surface Area [m ²]: | |
| Number of Members: | |
| Operating Hours [h/year]: | |
| Number of Services: | |

| Energy Information | | |
|--------------------|------------------------|-----------------|
| Energy Carrier | Consumption [kWh/year] | Price [SEK/kWh] |
| Electricity | | |
| District Heating | | |
| Oil | | |
| Natural Gas | | |
| Biogas | | |
| Pellets | | |
| Diesel Fuel | | |
| Petrol | | |
| Miscellaneous | | |
| Total | | |

| Performance Indicator Energy | | | | |
|------------------------------|--|-------------------------|--|--------------------|
| Buildings | | kWh/Number of Buildings | | SEK/Building |
| Area | | kWh/m ² | | SEK/m ² |
| Number of Members | | kWh/Number of Members | | kWh/Member |
| Number of Services | | kWh/Number of Services | | SEK/Service |
| Operating Hour | | kWh/Operating Hour | | SEK/Operating Hour |
| Renewable Fuels | | kWh Renewable Fuels | | Share of |

| | | | | |
|--|--|--|--|----------------------|
| | | | | Renewable Fuels % |
|--|--|--|--|----------------------|