

MASTER'S THESIS

EMPLOYEE COMMITMENT TO ENERGY MANAGEMENT

A qualitative interview study about employee commitment to energy management in industrial companies and public real estates

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ABSTRACT

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<p>Abstract</p> <p>Energy management is increasingly important to organisations that consume significant amounts of energy mainly due to the needs to comply with changing legislation and for saving financial resources. Even though energy management has received academic attention, it has not been studied in the perspective of employee commitment. Employee commitment may create various benefits to an organisation and its employees. Hence, this study aims at creating a better understanding of why employees commit to energy management and how it may be enhanced.</p> <p>This qualitative study was conducted using theme interviews as a data collection method. 14 employees, working among energy management, in eleven organisations in the fields of industrial companies (5) and public real estates (6) were interviewed. The data was analysed using thematic analysis.</p> <p>The findings of the study revealed that employees might have various different motives towards energy management. Besides motives, there are many opportunities and challenges related to energy management that may influence employee commitment to energy management. In addition, the results suggest that human resource management practices can have a significant influence on enhancing employee commitment to energy management.</p> <p>Because of the novelty of the subject, this study provides a basis for future research on employee commitment to energy management. It also presents suggestions for energy management practitioners in regard with enhancing employee commitment to energy management.</p>	
Keywords energy management, employee commitment, energy efficiency, human resource management practices, energy management practices	
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1 INTRODUCTION

The aim of this chapter is to introduce the research topic to the reader of this study. It will present the background of the study including motivation for research. Then it will go through the research task and research questions of the study and shortly presents the key concepts used throughout the study. Finally, it will describe the structure of the study.

1.1 Background of the study

Due to the need to preserve the environment that we live in, in recent years different environmental laws, regulations, policies and guidelines in international and national level have increased, affecting the business activities of many organisations. In 2009 the European Union enacted the climate and energy package and two of its key objectives was to cut 20 per cent in greenhouse gas emissions and to improve EU's energy efficiency by 20 per cent by year 2020 (European Commission, 2014), whereas the new 2030 Framework for climate and energy sets targets for the period between 2020 and 2030 aiming e.g. at a 40 per cent cut in greenhouse gas emissions and at least 27 per cent energy savings (European Commission, 2015). In a national level, the new energy efficiency law came into effect in Finland in the beginning of 2015, affecting energy management for example in large enterprises (Finlex, 2014). Now, many organisations are presumed to encounter new challenges in improving energy efficiency through energy management.

Business practitioners of all kinds of fields have been interested in energy management and energy efficiency already for decades. This is not only seen in the improved levels of energy efficiency but also in the increasing amount of literature and research on the subjects. However, the subject of energy management seems still relatively new in the academic sense and thus there is still much more to be discovered. Many studies focus on the technical aspects of energy efficiency forgetting the so-called softer sides of energy management such as employee commitment. Fortunately, some researchers and practitioners

acknowledge the importance of commitment arguing that effective energy management requires employee commitment (Antunes, Carreira and Mira da Silva, 2014; Coppinger, 2010; Dusi & Schultz, 2012; Kannan & Boie, 2003; Motiva Oy, 2014a; Tuomaala & Virtanen, 2011; Van Gorp, 2004).

Employee commitment is a complex concept and thus as a research topic might not be the simplest one. It has a long academic history all the way from organisational commitment. However, former research on commitment has been mainly focusing on organisational commitment (see Allen & Meyer, 1996; Brown, 1996; Mowday, Steers & Porter, 1979; Steers 1977) and the benefits it may create to the organisation and its employees. Even though, employee commitment has received academic attention as well, research on employee commitment still often refers to the former research on organisational commitment. Thus, it appears like employee commitment has not obtained the same amount of interest compared to organisational commitment. One possibility to explain the descending interest in researching employee commitment might be related to complexity of the concept. Employee commitment can have multiple targets and motives (Becker, Billings, Eveleth & Gilbert, 1996) and thus making every commitment unique. This may cause difficulties in comparing research findings of employee commitment. However, there is significant evidence to support the argument that employee commitment may create various benefits to an organisation (Nijhof, de Jong & Beukhof, 1998) and its employees (Meyer & Herscovitch, 2001). Even though the interests of researchers on employee commitment might be declining, energy management practitioners may feel quite the opposite. Hence, the subject of this study seems worth a further research.

In terms of complying with the changing laws and regulations related to energy management, organisations must be capable of adapting to change and they need to discover new ways to practise even more effective energy management. Committed employees might ease these challenges, although there is only little evidence to support the idea that employee commitment should be promoted in energy management. However, employee commitment may lead to competitive advantage and financial success (Mowday, 1998). Thus, further research is encouraged because of the possible value it creates for the organisations in need, as well as to the research on energy management. Studying perspectives of energy management that have not been studied before may encourage researchers to study further the different elements of energy management.

Employee commitment is an interesting topic for a research, because like energy management, there is still much more to be discovered. The methods to enhance employee commitment have not received as much attention as one might think, even though this could be of great interest for business practitioners. Former research on organisational and employee commitment has suggested that there are several human resource management (HRM) practices that might help in solving this problem. Hence, another reason to study employee commitment is to learn more about HRM practices that might enhance employee commitment to energy management.

Finally, as far as this study knows, employee commitment to energy management has not been studied before. Because the combination of these concepts is quite unfamiliar and new, it requires especial attention for the sake of research on employee commitment as well as energy management. It may provide new academic insights and encourage further research on the subject. This study may also present some new ideas for business practitioners and hopefully make them see the importance in employee commitment. In addition, this study will provide some new insights on what kind of HRM practices could enhance employee commitment to energy management and how. Ultimately, the managerial implications of this study should contribute to the changing needs of energy management in industrial companies and public real estates.

1.2 Research task and research questions

As far as this study knows, employee commitment to energy management has not been studied before. It is a matter that has not yet received the attention it deserves in academic world or in working life either. Therefore, in order to address the research gaps previously mentioned in both employee commitment and energy management literature, this study aims at creating a deeper understanding of employee commitment in relation to energy management from the point of view of employees working among energy management in organisations in the fields of industrial companies and public real estates. More specifically, the purpose of this study is to examine the various reasons on why employees commit to energy management, including possible motives, opportunities and challenges in employee commitment to energy management. Additionally, another purpose of this study is to survey how human resource management practices (HRM) might enhance employee commitment to energy management. More detailed research questions are presented in order to fully comply with the research task:

Main question:

Why do employees commit to energy management and how it may be enhanced?

Sub questions:

1. What motivates employees towards energy management?
2. What are the opportunities and challenges in committing to energy management?
3. How may human resource management practices enhance employee commitment towards energy management?

1.3 Key concepts of the study

The definitions presented here are the concepts most often mentioned in this study. There are various different definitions available for the concepts of energy management and employee commitment. Energy management is still a relatively new research topic and the definitions seem to change over time as more research reveals its multidimensionality. Employee commitment on the other hand has a long history of research and it has strong similarities to concept of organisational commitment. Even though both concepts have received a great amount of attention, the former literature did not provide definitions that could perfectly suit the purposes of this study. However, existing definitions provide an excellent background for the definitions used in the study. These concepts will be discussed in more detailed in the following chapter.

Energy management – a long-term strategy (Rohdin et al., 2007, as cited in Antunes et al., 2014) that aims at constantly improving energy efficiency (Thollander & Ottosson, 2010) by the means of supporting practices (Antunes et al., 2014).

Employee commitment – an attachment (Mathieu & Zajac, 1990) of an employee to one or more targets in a work environment (Cohen, 2003). Employee commitment is different depending on the motives to and targets of the commitment (Becker et al., 1996) and it is affected by employee's feelings and attitudes about the commitment (Brown, 1996).

1.4 Structure of the study

The structure of the study follows five main chapters presented in figure 1. Firstly, after the introduction, the literature chapter of the study introduces former research of energy management and employee commitment. The backgrounds of both topics will be presented followed by the defining of the two key concepts. In regard with energy management, energy management practices are introduced whereas in terms of employee commitment, human resource management practices related to employee commitment are presented. Then, this study presents connections between employee commitment and energy management in the former literature. Finally, this chapter ends with a summary of the key findings of former literature.

Secondly, the chapter of research methodology presents and validates the methodological choices used in this study, including research design, data collection method and method used for data analysis. In addition, the entire process of data collection is described as accurately as possible.

Thirdly, the most significant research findings are presented for providing answers to the research questions of this study.

Lastly, this study ends with a discussion. Summary of the study and managerial implications are presented. The credibility, including reliability and

validity, of the study is evaluated. Finally, limitations are discussed and suggestions for future research will be presented.

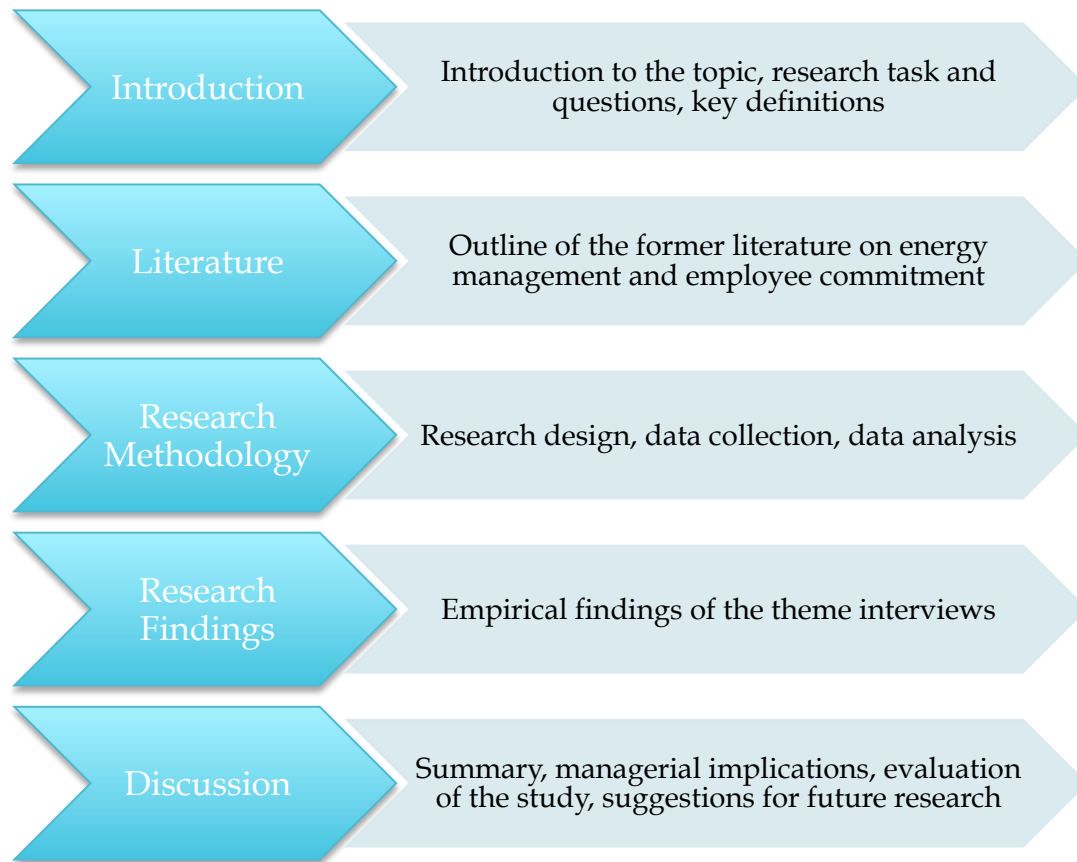


FIGURE 1 Structure of the study

2 LITERATURE

The literature chapter of the study will present former research and literature as well as key concepts in more depth. The first part will go through the energy management literature. The background of energy management is introduced explaining the currency of the subject. Then, the definitions of energy management will be introduced formulating the definition used in this study. Additionally, references to commitment in the literature of energy management are presented.

The second part examines former literature of employee commitment. The background of employee commitment will be introduced as well as motivation for researching the topic. Then, the definitions of employee commitment will be presented and the definition used in this study is introduced. Links between energy management and employee commitment will be gathered from the commitment literature and discussed. Finally, based on all the topics examined, a summary of the key literature is presented.

2.1 Energy management

2.1.1 Background of energy management

Energy management is becoming increasingly essential to organisations around the world (Antunes et al., 2014). In recent years, businesses, industries, government organisations and NGOs have all been under serious economic and environmental pressure (Ates & Durakbasa, 2012). In almost all organisations, investment decisions have been made based on meeting the increasing environmental standards regarding environmental pollution and energy consumption, and being and staying competitive. Hence, for many organisations, energy management has been an important instrument for meeting the required objectives as well as insuring business survival and success. (Ates & Durakbasa, 2012.) However, even though there is a considerable potential in practising energy management such as saving energy

and reducing costs, it is still often neglected (Carbon Trust, 2015). Today, organisations increasingly focus on their core business, leaving fewer resources to spare for other areas such as energy management (Thollander & Ottosson, 2010).

As mentioned, many organisations must practice energy management in order to comply with legislation, energy standards and their requirements (Antunes et al., 2014). Especially, climate change legislation requires practising effective energy management in an organisation (Carbon Trust, 2015). In 2009 the European Union enacted the climate and energy package and two of its key objectives was to cut 20 per cent in greenhouse gas emissions (from 1990 levels) and to improve EU's energy efficiency by 20 per cent by year 2020 (European Commission, 2014). The newest objectives set by the EU in 2014 are even more stringent. A new 2030 Framework for climate and energy sets targets for the period between 2020 and 2030 aiming e.g. at a 40 per cent cut in greenhouse gas emissions compared to 1990 levels and at least 27 per cent energy savings compared with the business-as-usual scenario (European Commission, 2015). All of these together set clear targets for improving energy efficiency in EU countries now and in the future.

With the targets set by the EU in mind, a new energy efficiency law came into effect in Finland, in the beginning of 2015, affecting energy management practices for example in large companies (Finlex, 2014). This law regulates the promotion of energy efficiency; the use of energy audits to promote energy efficiency; the execution of cost-benefit analysis for promoting effective cogeneration of electricity and heat, and the utilisation of surplus heat; as well as the obligation of the companies operating in the energy market striving to promote the efficient and economical use of energy by their customers (Finlex, 2014). The law applies to e.g. large companies, the energy audits carried out in these companies, and the employees responsible for the company's energy audits (Finlex, 2014). According to Finlex (2014) energy efficiency law obliges large companies to carry out an energy audit at least every four years. However, if a company has a certified energy management standard such as ISO 50001, it does not need to carry out obligatory energy audits (Finlex, 2014). Thus many organisations in Finland simply must practise energy management due to the requirements set by the EU and Finnish legislation. In regard with recent changes in legislation, now many organisations in Finland may need to examine their energy management practices and discover more effective ways to improve energy efficiency.

Besides legislation, Dörr, Wahren and Bauernhansl (2013) argue that the pressure of using less energy, especially in manufacturing companies, arises also from customers and nongovernmental organisations. The need of being environmentally responsible is pushing organisations to practise more effective energy management (Carbon Trust, 2015). It seems like consumers are increasingly aware of environmental impacts that are caused by different organisations, thus the customers might prefer products and services that are produced with using as little energy as possible, hence causing less harm to the environment. Finally, another compelling reason for organisations to practise energy management more eagerly is the climbing energy prices (Dörr et al.,

2013; Carbon Trust, 2015). Changes in energy prices seem as a motivator for many organisations to consider new ways of saving energy, which again requires energy management practices.

Even though not all organisations have to, some organisations are eager to practice energy management because of the various benefits it may create to the organisation. Naturally, energy management is practised as it leads to substantial energy savings (Ates & Durakbasa, 2012). Hence, many organisations practice energy management in order to improve their energy use, and reduce energy costs (Antunes et al., 2014). Energy management may thus create financial benefits such as profitability and potential growth to the organisation (Kannan & Boie, 2003). In addition to financial benefits, Kannan and Boie (2003) suggest that energy management is desired in any industry because of the social and environmental benefits it creates to the enterprises, their workers and the society. According to Carbon Trust (2015), effective energy management is required in order to be environmentally responsible. It appears like some organisations might consider energy management as a proof of acting environmentally friendly. Thus, many organisations practice energy management in order to improve their corporate image (Antunes et al., 2014) and to impress nongovernmental organisations (Dörr et al., 2013).

2.1.2 Defining energy management

Academics and practitioners use the concept of energy management very differently (Böttcher & Müller, 2014). However, there still seems to exist some similarities in many definitions. One of the similarities is that the aim of energy management appears to be energy efficiency. According to Piper (1999, as cited in Introna, Cesarotti, Benedetti, Biagiotti & Rotunno, 2014), energy management aims at using supplied energy as efficiently and effectively as possible. Additionally, Capehart, Kennedy and Turner (2012), have also come to a similar conclusion by suggesting that energy management means the efficient and effective use of energy. Thollander and Ottosson (2010) also emphasise the meaning of energy efficiency by defining energy management as “a means to overcome barriers to energy efficiency” (p. 1126). Finally, in their definitions, Rohdin, Thollander and Solding (2007, as cited in Antunes et al., 2014) as well as Bunse, Vodicka, Schonsleben, Brulhart and Ernst (2011) suggest that energy efficiency requires different energy management activities. Thus, what appears to be similar to many definitions is that energy management and energy efficiency are strongly linked together. Hence, it seems clear that energy efficiency is pursued through energy management and energy management requires energy management activities.

Another similarity found in few definitions is that energy management seems to require long-term thinking as well as continuous improvement. Piper (1999, as cited in Introna et al., 2014) defines energy management as a systematic and continuous approach for energy efficiency. With a reference to continuity, Motiva Oy (2014a) adds that the aim of energy management is to constantly reduce energy consumption and maintain the reached level of improvement. Motiva Oy (2015) continues to argue that continuous

improvement in energy management includes developing energy efficiency practices, implementing them and monitoring the impacts of those practices. In addition, Rohdin et al. (2007, as cited in Antunes et al., 2014) emphasise the longevity that energy management entails. In their definition, energy management requires promoting a long-term strategy (Rohdin et al., 2007, as cited in Antunes et al., 2014). Hence, energy management seems to be referred to as a strategy that is continuously improved and has long-term goals or targets.

Some definitions seem to indicate that energy management should not be considered alone but together with other processes of the organisation. In Motiva Oy's (2014a) definition, energy management means taking energy systematically into account in different operations of a company. Carbon Trust (2015) seems to agree by arguing, that in order to reach its full potential, energy management must be integrated in organisation's wider management processes and corporate social responsibility (CSR) policy. In addition to Carbon Trust, some take the bigger picture into account in their definitions and consider e.g. the social, financial and/or environmental aspects of energy management. One of those is the definition by Capehart et al. (2012), in which energy management is "the efficient and effective use of energy to maximise profits (minimise costs) and enhance competitive positions" (p. 1). This definition brings out the very important financial aspect of energy management as well as competitive advantage that is not commonly mentioned in energy management definitions. In addition, Petrecca (1992, as cited in Introna et al., 2014) also emphasises the financial aspect by defining energy management as "ensuring that users get all the energy necessary, when and where it is needed, and of the quality requested, supplied at the lowest cost" (p. 109). This definition seems to take a more customer oriented approach to energy management and thus it might not provide general enough definition to energy management in all organisations. However, Petrecca (1992, as cited in Introna et al., 2014) continues to argue that the aim of energy management must be achieved while protecting both production and environmental needs. Finally, Böttcher and Müller (2014) appear to take into account the goals the organisation has by defining the aim of energy management as energy and carbon performance that support achieving the organisation's overall goals. Hence, it appears like energy management is defined as meaning much more than just pursuing energy efficiency at any cost. It seems to be linked to financial, environmental and even social impacts as well as to the organisational goals among other things.

In addition to the already mentioned aspects of energy management, few definitions emphasise the meaning of technology in energy management. Carbon Trust (2015) defines energy management as "the use of technology to improve the energy performance of an organisation". According to Backlund, Thollander, Palm and Ottosson (2012, as cited in Antunes et al., 2014), energy efficiency can be improved by investing in energy technologies and promoting energy management practices. These definitions seem to indicate that energy management and energy technologies have a strong link between each other and that improving of energy efficiency in an organisation requires energy technologies. Additionally, Bunse et al. (2011) define energy management as

including control, monitoring, and improvement activities. Hence, it may be assumed that these practices might require energy technologies as well.

To sum up, based on former literature it seems like the most important aim of energy management is to improve energy efficiency in an organisation. Energy management is considered as a strategy that requires long-term thinking and continuous improvement. It is also closely linked with financial and environmental impacts as well as the overall goals of the organisation. Finally, the use of energy technologies is essential to energy management. Hence, energy management can have multiple different meanings depending on its targets and the context it is studied in. However, this study defines energy management as a long-term strategy (Rohdin et al., 2007, as cited in Antunes et al., 2014) that aims at constantly improving energy efficiency (Thollander & Ottosson, 2010) by the means of supporting practices (Antunes et al., 2014). The potential energy management practices are further discussed in the following section.

2.1.3 Energy management practices

The former literature suggests that there are few energy management practices that all organisations should practise (Antunes et al., 2014). Promoting these energy management practices may lead to improved energy efficiency (Backlund et al., 2012, as cited in Antunes et al., 2014). However, energy management practices differ greatly and there does not exist the so-called right practices (Antunes et al., 2014). Based on former literature, researchers and business practitioners seem all to have a different view on what are the most important energy management practices. However, many of them have some similarities and with a closer look, the most common energy management practices may be discovered.

It appears like many researchers and business practitioners believe that effective energy management should include set goals or targets that are constantly pursued. Ates and Durakbasa (2012) agree with this argument by indicating that setting an energy saving target is a necessary activity for energy management. Setting measurable energy saving targets is key for implementing a successful energy management programme (Dusi & Schultz, 2012; Motiva, 2015; SEAI, 2015). Thus, it is relevant that an organisation is constantly aware of its energy saving potential (Motiva, 2015). In addition to target setting, one of the minimum requirements for energy management practices is to have a written energy policy (Antunes et al., 2014; Ates and Durakbasa, 2012; Carbon Trust, 2015; SEAI, 2015). According to Carbon Trust (2011, as cited in Antunes et al., 2014) “the energy policy must provide a clear definition of energy objectives and targets, ensure sufficient resources and the commitment to maintain an energy strategy” (p. 805). This requires training of staff, communicating and performing regular reviews, among other activities (Carbon Trust, 2011, as cited in Antunes et al., 2014). Additionally, the energy policy should provide guidance to the organisation in the procurement of energy related equipment, services and resources (Antunes et al., 2014).

Another important practice is to create an action plan or an energy strategy for energy management (Antunes et al., 2014; Dusi and Schultz, 2012). After setting an energy policy, an action plan is created for defining how to achieve the proposed goals and for prioritising and assigning actions to employees, including responsibilities, time and budgets (Antunes et al., 2014). In addition, a long-term energy strategy is needed for practising successful energy management (Carbon Trust, 2015; Thollander & Ottonsson, 2010). According to Thollander and Ottonsson (2010), the existence and duration of a long-term energy strategy in energy management is especially important for industrial companies. Reducing energy use and energy costs could be one of many goals included in the energy strategy (Thollander & Ottonsson, 2010). Hence, it seems like achieving the set goals of energy management requires careful planning and thorough implementation. Creating an action plan and or an energy strategy may help in reaching these goals.

In regard with implementing action plans or strategies for energy management, there are various practices that need to be taken into account. One of the most essential practices is metering the energy consumption of main processes (Antunes et al., 2014; Ates & Durakbasa, 2012; Motiva, 2015) and identifying the main consumers of energy in the organisation (Dusi & Schultz, 2012; SEAI, 2015). Naturally, one of the minimum requirements is to have implemented energy efficiency projects according to the set targets (Ates & Durakbasa, 2012; Motiva Oy, 2015). Other important energy management practices are setting payback criteria for energy efficiency investments, careful allocation of the company's energy costs, and screening of various information sources for energy efficient technologies (Thollander & Ottonsson, 2010). Finally, Dusi and Schultz (2012) suggest that energy management requires also bench marking, audits, reporting, and communication. Finally, the importance of continuous improvement seems evident by the practitioners. An organisation should check and take corrective action when needed, and review and improve the system continually (Motiva, 2015; SEAI, 2015). According to Antunes et al. (2014) the management is responsible for reviewing all the implemented measures.

In regard with personnel, it is essential to have an addressed team or individuals in charge of energy management in an organisation (Antunes et al., 2014; Dusi & Schultz, 2012). The responsibilities regarding energy management should be clearly determined within the organisation (Motiva, 2015). Ates and Durakbasa (2012) suggest that having an official energy manager is a necessary practice for energy management. In addition, many scientists and practitioners argue that one of the required energy management practices is to ensure management commitment (see Antunes et al., 2014; Carbon Trust, 2015; Dusi & Schultz, 2012; Thollander & Ottosson, 2010). According to Carbon Trust (2015) successful energy management requires commitment of the senior management. Thollander and Ottosson (2010) seem to agree by explaining that top management's support is the outmost importance for energy management programme to succeed.

It appears like there are several different energy management practices that could assist in improving energy efficiency in an organisation. However,

based on former literature, the most important practices in an organisation seem to include setting energy saving goals or targets, creating an energy policy, establishing an action plan or an energy strategy, metering energy consumption, defining the main users of energy, ensuring management commitment, and addressing a team or individuals responsible of energy management in an organisation. The next section will go more deeply into the meaning of commitment in energy management.

2.1.4 Commitment in energy management literature

Several academics and practitioners have already acknowledged the meaning of commitment in energy management (see Antunes et al., 2014; Coppinger, 2010; Dusi & Schultz, 2012; Kannan & Boie, 2003; Motiva Oy, 2014a; Tuomaala & Virtanen, 2011; Van Gorp, 2004). However, compared to employee commitment it appears like management commitment has received much more attention in the energy management literature. Antunes et al. (2014) argue, that management commitment is the foundation for energy management, whereas the awareness and support of the organisation's staff is significant as it affects the outcomes of whether energy improvement efforts will be achieved. Commitment activity, in general, is needed to promote energy management inside the organisation, to define an energy policy and regularly review objectives and project status (Antunes et al., 2014).

As mentioned, many researchers and practitioners highlight the meaning of top management commitment, senior management commitment or more generally management commitment in energy management (see Antunes et al., 2014; Carbon Trust, 2015; Coppinger, 2010; Dusi & Schultz, 2012; ISO, 2011; Kannan & Boie, 2003; Motiva Oy, 2014a; SEAI, 2006, as cited in Antunes et al., 2014; SEAI, 2015). According to Antunes et al. (2014) ensuring management commitment is one of the commonly practiced energy management activities in organisations. It should be clear from the beginning that energy management is a permanent activity that requires top management commitment (Kannan & Boie, 2003). A firm management commitment is essential for achieving energy savings and practising successful energy management (Kannan & Boie, 2003; ISO, 2011; Motiva Oy, 2014a; Tuomaala & Virtanen, 2011). Coppinger (2010) argues that it is critical to get the commitment of corporate managers already before implementing an energy management programme. Without the management support, energy management will fall apart and be marginalised (Carbon Trust, 2015). One crucial aspect of management commitment is to ensure all the necessary resources for energy management such as human, financial and technological resources (Antunes et al., 2014; Carbon Trust, 2015; Coppinger, 2010). Resources are required for supporting the energy management programme (Coppinger, 2010) and improving energy performance (Antunes et al., 2014).

One of the reasons why top management commitment is required in energy management is for creating energy management roles or team (Antunes et al., 2014). The company CEO must dedicate the necessary personnel for the support of energy management (Coppinger, 2010). The former literature seems

to agree that there should be at least one employee in the organisation dedicated for energy management such as energy manager. SEAI (2006, as cited in Antunes et al., 2014) argue, that the first step in ensuring management commitment is assigning the role of energy coordinator. Kannan and Boie (2003) seem to support this argument by suggesting introducing an organisational structure in which at least one person would be responsible for the overall energy related activities. This energy manager should have the technical know-how on the organisation's production processes (Kannan & Boie, 2003). According to Dusi and Schultz (2012), successful energy management programmes have often an authorised upper management energy programme chairman, or a corporate energy manager. However, instead of hiring a dedicated energy manager, the production manager or plant supervisor could be assigned responsible of energy related activities thus reducing personnel costs (Kannan & Boie, 2003). In this case, the person responsible should receive a payment according to the achieved energy savings in addition to the regular salary (Kannan & Boie, 2003).

It appears like creating a specific team or a steering committee for energy management is encouraged as it may help to achieve the energy efficiency targets more effectively. Coppinger (2010) argues that an energy steering committee could be organised to provide strategic oversight to an energy management programme and to take responsibility on meeting the programme goals and allocating resources properly. Additionally, participation of the executive in corporate energy meetings creates credibility to the energy management program and guarantees better follow-up from participants (Coppinger, 2010). Thus, it seems like if the management is committed to energy management and takes actively part in decision-making, it may encourage other employees to commit as well. Whether there is a team or individuals responsible for energy management, the new organisational structure and delegated responsibilities will induce a wider interest and thus commitment to energy management practices (Kannan & Boie, 2003).

In addition to providing resources and addressing an energy manager role or a team, management commitment appears to have many other meanings to energy management. Management commitment is also needed for creating an energy policy, promoting and communicating about energy management inside the organisation, and defining energy objectives and targets (Antunes et al., 2014; ISO, 2011, as cited in Antunes et al., 2014). ISO (2011, as cited in Antunes et al., 2014) argues that besides the mentioned, management commitment is essential for establishing a long-term plan for energy management, ensuring results are measured and reported, defining energy performance indicators and conducting management reviews. Carbon Trust (2011, as cited in Antunes et al., 2014) adds that especially senior management commitment is essential for ensuring visibility across the organisation. SEAI (2006, as cited in Antunes et al., 2014) then suggests that management commitment can be achieved through creating an effective, manageable energy statement describing the programme goals. Unfortunately, to this day former literature does not provide any other information on how exactly management commitment to energy management

may be enhanced in an organisation, even though its meaning is described as significant by various sources.

According to former literature and practitioners, in addition to management commitment, organisational or corporate commitment appears to be essential as well to energy management. Corporate commitment is one of the most important parts in implementing an energy management programme in an organisation (Coppinger, 2010). A successful energy management strategy and continuous improvement require a strong commitment throughout the organisation (Van Corp, 2004). The entire personnel need to be committed to the common objectives for achieving energy savings and practising successful energy management (Motiva Oy, 2014a; Tuomaala & Virtanen, 2011). In case of industrial companies, it is especially important to have the support of the plant managers in order to implement the initiatives that have been identified through the energy management programme (Coppinger, 2010). Organisational commitment is required for creating an energy policy that improves energy performance by ensuring it is documented and regularly assessed thus providing a framework for setting and reviewing energy targets (ISO, 2011, as cited in Antunes et al., 2014). Most importantly, the awareness and support of the organisation's employees is significant as it affects the outcomes of whether energy improvement efforts will be achieved (Antunes et al., 2014).

Based on former literature, it could be summarised that successful energy management requires commitment throughout the organisation. Management commitment is significant as it is needed for providing the necessary resources, addressing an energy management team or an energy manager, and setting energy saving targets and energy policy among other duties. However, it seems like energy management requires commitment from all employees, especially the ones who are the most involved with energy management. Thus, these are the ones responsible for implementing energy management activities.

2.2 Employee commitment

2.2.1 Background of employee commitment

Already since the 1950s commitments in the workplace have attracted the attention of academics and practitioners (Cohen, 2003). Especially organisational commitment has received a great amount of attention mainly due to the managers' and organisational analysts' interest towards finding ways to increase employee performance and retention (Steers, 1977). However, little is known about employee commitment to targets such as energy management or energy efficiency. One thing is still certain: employee commitment leads to positive effects for the company (Nijhof et al., 1998) and its employees (Meyer & Herscovitch, 2001). However, what kinds of positive effects still seems to remain as a question with many possible answers.

It appears like a committed employee gains certain benefits of the commitment, which in turn reflects as benefits to the organisation as well.

According to Meyer and Herscovitch (2001), different forms of commitments in the workplace are likely to create employee wellbeing. Employees committed to their jobs have increased job satisfaction and higher motivation (Fornes, Rocco & Wollard, 2008). Because highly committed employees are more motivated than less committed employees (Hackman & Oldham, 1976, as cited in Fornes et al., 2008), they may perform better than employees who are less committed (Mowday, Porter & Dubin, 1974, as cited in Steers, 1977). Lastly, committed employees might be more adaptable to changes in an organisation (Nijhof et al., 1998). To sum up, committed employees seem to feel comfortable and motivated in their jobs and thus more adaptable to changes and more effective compared to employees who are not committed.

The benefits that a committed individual employee gains from the commitment appear to reflect directly or indirectly as organisational benefits as well. One of the most significant benefits is that employees committed to their jobs or careers have lower intentions to quit and are less absent from work (Bishop & Scott, 1997, as cited in Fornes et al., 2008). Thus, organisations may have interests on enhancing commitment if they desire to maintain their workforce in the organisation. Additionally, there are various forms of commitments in the workplace that might influence organisational effectiveness (Meyer & Herscovitch, 2001). When the employees are committed to their jobs, they are satisfied and motivated and thus have higher employee effort (Fornes et al., 2008). Hence, employee commitment may create many positive outcomes such as improved production and improved performance (Fornes et al., 2008). Hence, Mowday (1998) claims that employee commitment may even lead to financial success and competitive advantage, thus it is relevant factor in management and competitive strategy. Individual employee commitment and commitment to work groups may also improve pro-social behaviour, group cohesion and thus team performance (Bisho & Scott, 1997, as cited in Fornes et al., 2008). However, Nijhof et al. (1998) argue that the most important effects of employee commitment are committing to change and taking actively part in change processes, thus bringing in new ideas to the organisation. The benefits different commitments may create to the organisation are various and depend highly on the targets of commitment.

It appears like organisational commitment has been researched greatly for many decades in order to create a better understanding of the concept, the benefits it may create to the organisation and thus finding ways to enhance organisational commitment. However, employee commitment has not received quite as much attention. The difficulty in studying employee commitment might be related to the complexity of the concept. The following section will present various definitions of workplace commitments, aiming at understanding better the multidimensional concept of employee commitment and finally forming the definition used in this study.

2.2.2 Defining employee commitment

The concept of employee commitment is multidimensional and its definitions differ greatly. Even though the study of workplace commitments have gained

increasingly more attention, there still remains confusion and disagreement on what commitment is, where it is directed, how it develops, and how it affects behaviour (Meyer & Herscovitch, 2001). Despite the focus on employee commitment in this study, literature concerning other forms of workplace commitments is used for understanding the complexity and formation of the concept. Researches of all kinds of commitments often refer to organisational commitment, hence it is here seen as a basis for the definition of employee commitment.

Many researchers study commitment from the point of view of organisational commitment (see Allen & Meyer, 1996; Brown, 1996; Mowday et al., 1979; Steers 1977). The definitions of organisational commitment describe the feeling of commitment as an involvement (Porter & Smith, 1970, as cited in Mowday et al, 1979), attachment (Mathieu & Zajac, 1990; Meyer & Allen, 1996; Morrow, 1993, as cited in Fornes et al., 2008) or dedication (Brown, 1996) to the organisation. Porter and Smith (1970, as cited in Mowday et al, 1979,) consider organisational commitment as an involvement by defining it as “the relative strength of an individual's identification with and involvement in a particular organisation” (p. 226). Brown (1996) on the other hand suggests that organisational commitment means the kind of dedication to and support of the organisation that exceeds job expectations and rewards. However, many researchers define organisational commitment as “the psychological and emotional attachment of employees to their organisations” (Mathieu & Zajac, 1990; Meyer & Allen, 1996; Morrow, 1993, as cited in Fornes et al., 2008). Even though these definitions have some differences, it is clear that commitment includes strong feelings towards the organisation. In addition, Brown's (1996) definition takes into consideration that commitment requires not only the dedication of the employee but the support of the organisation as well.

What seems still uncertain in organisational commitment is to how do employees commit to an organisation. Porter et al. (1974, as cited in Steers, 1977) argue that an employee, who is committed to the organisation, (1) accepts and agrees with the organisational goals and values, (2) is willing to put more effort to his/her work on behalf of the organisation, and (3) has a strong desire to maintain as a part of the organisation. With rather similar views, Mowday et al. (1979) argue that organisational commitment is derived from behavioural and attitudinal commitment. In attitudinal commitment an individual relates to an organisation and its goals and aims at achieving these goals by maintaining within the organisation. In behavioural commitment an individual chooses to link itself to an organisation by behaving or acting in a way that it exceeds normative expectations. (Mowday et al., 1979.) Hence, both of these ideologies seem to agree that a committed employee accepts the goals of the organisation, wishes to maintain in an organisation and is willing to work harder than expected.

Organisational commitment seems to have different levels of commitment depending on the motives the employee has towards staying in the organisation. Thus some researchers have come to a conclusion that the definition of organisational commitment entails several different components or categories. Allen and Meyer (1996) have created a three component view to

explain the meaningfulness of organisational commitment. They argue that organisational commitment has three different components or scales of commitment: affective, continuance and normative commitment. These three scales differ in reasons why employees stay in the organisation and how they are committed to the organisation. In affective commitment employees stay in an organisation because they want to and they have an emotional attachment to the organisation. In continuance commitment employees stay in an organisation because they have to. Their commitment is based on the recognition that the cost of leaving the organisation is greater than staying. In normative commitment employees stay in an organisation because they ought to do so and this arises from the feeling of obligation to the organisation. (Allen & Meyer, 1996.) Hence, committed employees do not necessarily have only positive feelings or motives towards the organisation but instead commitment may also arise from the feelings of compulsion or obligation towards the organisation.

Despite the context in which commitment is studied, whether organisational or employee commitment, all commitments have few similarities (Meyer & Herscovitch, 2001). Many researches seem to agree with definitions of organisational commitment and define commitment as a feeling of attachment. Morrow (1993, as cited in Cohen, 2003) argues, that commitment is commonly seen as “an attitude that reflects feelings like attachment, identification, or loyalty to the object of commitment” (p. 11). Cohen (2003) supports the argument by describing individual employee commitment as an attachment that may be psychological as well as emotional. In addition, according to Meyer and Herscovitch (2001) all definitions of commitment in general tend to follow two characteristics in which (a) commitment is a mind-set or a force that can take different forms and it (b) binds an individual to a course of action. Fornes et al. (2008) on the other hand emphasise the meaning of values by defining individual commitment as “the strength of the employee’s identification with the values of other individuals and peers within the organisation (team commitment), and his/her work (job commitment) and careers (career commitment)” (p. 6).

It seems like employee commitment may have various similarities to organisational commitment. However, what seems to be a significant difference between these two types of commitments is the target or targets of commitment. Hence, it is now well recognised that employees can develop multiple commitments (Meyer & Herscovitch, 2001). A number of researchers believe that employee commitment can have multiple foci (or objects or targets) and motives (Becker et al., 1996). All commitments have at least one or more targets (Brown, 1996; Meyer & Herscovitch, 2001) and the levels of commitment differ towards different targets in the work environment (Cohen, 2003). According to Brown (1996) commitment may vary according to differences in focus, terms, and time-specific evaluation. An individual can make multiple commitments to a certain party and the strength of the commitment is dependent on the individual’s constant evaluation of the commitment. The commitment is then affected by the individuals’ feelings and attitudes about the commitment as well as history and reasons behind it. (Brown, 1996.) All

commitments are affected by the individual's own reasons and motivations (Argyris, 1998). Hence, instead of committing only to the organisation, an employee may commit to many other targets in the workplace and the commitments are all different depending on the motivation and reasons behind them.

In regard with employee commitment, it appears like the target or focus of commitment may be almost anything related to the work environment. Like already mentioned, an employee can be committed to the organisation he/she works for (Brown, 1996; Cohen, 2003; Meyer & Herscovitch, 2001; Mowday et al., 1979). Commitment may also be developed to professions and occupations (Becker et al., 1996; Cohen, 2003; Gouldner, 1958, as cited in Becker et al., 1996; Meyer & Herscovitch, 2001), unions (Cohen, 2003; Gordon, Beauvais & Ladd, 1984, as cited in Becker et al., 1996; Meyer & Herscovitch, 2001; Mowday et al., 1979), careers (Cohen, 2003; Meyer & Herscovitch, 2001), and the job itself (Cohen, 2003; Järvi, 2000). The target of commitment may also be an idea, a cause (Brown, 1996), a project, or a program (Argyris, 1998). An individual employee can commit to goals (Järvi, 2000; Meyer & Herscovitch, 2001), objectives and norms of the organisation (Järvi, 2000). Other foci of commitment may be a person, a group of persons (Argyris 1998; Brown, 1996; Järvi, 2000), teams (Cohen, 2003; Meyer & Herscovitch, 2001) or leaders (Meyer & Herscovitch, 2001). In more detail, the former literature suggests that employees can be committed to co-workers, supervisors and top management (Becker et al., 1996; Meyer, Allen, & Smith, 1993; Reichers, 1986, as cited in Becker et al., 1996). Finally, it can be concluded that committing to anything related to the work environment is called employee commitment.

Employee commitment appears to be a multidimensional concept that has several different definitions. Based on former literature, this study defines employee commitment as an attachment (Mathieu & Zajac, 1990) of an employee to one or more targets in a work environment (Cohen, 2003). Employee commitment is different depending on the motives to and targets of the commitment (Becker et al., 1996) and it is affected by employee's feelings and attitudes about the commitment (Brown, 1996).

2.2.3 Human resource management practices

There is not much understanding on how commitment can be created and supported by individuals in an organisation (Fornes et al., 2008). However, it is argued that good human resource management (HRM) practices and trust in management may enhance in encouraging employee commitment (Collier & Esteban, 2007; Whitener, 2001). The level of engagement and commitment is determined by employees' reactions to these practices (Vance, 2006). If the HRM practices that build commitment are not promoted and invested in, these might be overlooked by the needs of other business processes in an organisation (Fornes et al., 2008). However, there is no one "right" or "best" way to stimulate commitment in an organisation (Vance, 2006) and it must be understood that, "employee commitment cannot be enforced, it can only be nurtured" (Collier & Esteban, 2007, p. 25).

There appears to exist some similar opinions on what kind of commitment should be encouraged. Employees who are committed primarily out of desire are more likely to create commitment than the ones who commit out of obligation or to avoid costs (Meyer & Herscovitch, 2001). As explained earlier, Meyer and Herscovitch (2001) have divided commitment into continuance, normative and affective commitment. Continuance commitment may be created by e.g. invoking fear of failure to achieve a desired outcome. Normative commitment may be enhanced by providing opportunities that lead employees feeling indebted. Finally, affective commitment may be developed through allowing employees to participate in the development and implementation of a policy. (Meyer & Herscovitch, 2001.) Thus, the methods used for stimulating employee commitment may vary depending on what kind of commitment is desired. However, Meyer and Herscovitch (2001) argue that affective commitment has a stronger impact on behaviour than does continuance or normative commitment. Argyris (1998) on the other hand presents two different ways in which employees experience commitment: externally and internally. In external commitment employees have little power to influence their destinies, whereas in internal commitment employees take more responsibility for their own destinies. Internal commitment comes mainly from within and it reinforces empowerment. Both external and internal commitments are valuable in the workplace. (Argyris, 1998.) Hence, it is suggested to use methods that promote internal and external commitment as well as affective commitment.

The methods that may be used for enhancing employee commitment are often described as human resource (HR) practices (Vance, 2006), human resource management (HRM) practices (Collier & Esteban, 2007), human resource development (HRD) practices (Bartlett & Kang, 2004; Nijhof et al., 1998) or high-commitment practices (Whitener, 2001). HRD practices enable fostering and influencing to desired workplace attitudes and employee behaviours (Bartlett & Kang, 2004). High-commitment practices on the other hand are described as including organisation-wide human resource policies and procedures that affect employee commitment and motivation (Whitener, 2001). However, the aim of all these practices seems mutual: enhancing employee commitment. Thus, for the sake of simplicity, this study uses a singular term of human resource management (HRM) practices to describe the practices or activities that may stimulate, enhance, strengthen or foster employee commitment.

Management support and communication between the management and other employees appear as essential HRM practices that may enhance employee commitment. According to Nijhof et al. (1998), several activities can stimulate commitment such as meetings where employees are informed about the organisation, informal sessions or contacts between managers and employees, and even parties for employees. These activities seem to impact commitment as they all involve sharing information and communicating to one another. In addition Whitener (2001) argues that trust in management may impact on building employee commitment. Trust in management works as a mediator between organisational support and organisational commitment (Whitener, 2001). The meaning of management is vital also because commitment correlates

with management style, colleagues and thus teamwork (Nijhof et al., 1998). Hence, management support is needed for encouraging HRM practices, for creating a pleasant work environment, and for sharing information through communication.

A few researches reveal that training is one of the HRM practices that may stimulate commitment. Comprehensive training and development activities are the kind of activities that affect employee commitment and motivation (Whitener, 2001). Vance (2006) seems to agree with this statement by arguing that to engage and create commitment in employees, an organisation must invest in training and development. Additionally, Nijhof et al. (1998), add that besides training, commitment can be stimulated through education. In addition to providing access to training, motivation to learn from training and gained benefits of training, it is essential to have the support of the management for training (Bartlett & Kang, 2004). All of these together have a positive relation to affective and normative commitments (Bartlett & Kang, 2004). Hence, some former literature suggests that training may help in creating or enhancing employee commitment.

Another way to stimulate employee commitment seems to be giving feedback and compensation to employees. Fornes et al. (2008) propose that giving feedback and recognition are valuable practices for building commitment. In addition to recognitions, compensation and creating better career paths create dependency and thus external commitment (Argyris 1998). Whitener (2001) suggests that developmental appraisals, and competitive and equitable compensation may affect motivation and employee commitment. In exchange for their commitment employees are expecting something in return from the organisation such as secure jobs and fair compensation (Vance, 2006). Committing to a specific target such as an organisation requires that an employee makes investments of time, and emotional and psychological energy. Hence, employees are usually doing so in order to get something of value in return such as goods, money, property, favours, affection, attention or gifts. What is given in return of commitment, affects the intensity of a commitment. However, if the expectations are not met, the commitment erodes. (Vance, 2006.) Even though not explicitly explained, it seems like the former literature is focusing on positive feedback rather than negative feedback. Hence, it is suggested that unlike positive feedback, negative feedback might not enhance in creating commitment whereas a fair compensation and especially positive feedback may stimulate employee commitment.

Besides management support, communication, training, feedback and compensation, there are various other HRM practices that might enhance employee commitment. Recruitment and employee selection are important for engaging and committing employees to an organisation (Vance, 2006). Similarly, Whitener (2001) emphasises selective staffing in creating employee commitment. Besides the selection of employees, it appears like employee commitment may be stimulated through creating opportunities that enable employees to influence their own job and work tasks. Vance (2006) suggests that to engage employees, an organisation must invest in job and task design, performance management and career development. Argyris (1998) argues that

creating better career paths create external commitment. Fornes et al. (2008) suggests that the following propositions help in building commitment: creating equity, fairness, autonomy, designing interesting work, and having clear congruency between organisational mission and values and personal ones. These antecedents or causes lead to meaningfulness of career, work, peers, and self, creating an attachment to the job, career, and work teams thus enabling individual commitment (Fornes et al., 2008).

According to former literature, there seems to exist some support to the argument that human resource management practices may stimulate employee commitment. However, it appears like there is still no certainty on what kind of HRM practices are the most effective ones, but instead there are several suggestions on what those practices could be. Additionally, the most prominent practices may differ depending on the target of commitment. Finally, based on the former literature, this study suggests that there are at least a few HRM practices that should be studied further in order to find out whether they have an impact on enhancing employee commitment to energy management. These practices are management support, communication, training, feedback and compensation.

2.2.4 Energy management in employee commitment literature

As far as this study knows, employee commitment in relation to energy management has not been studied before. However, employee commitment has been researched in relation to aspects somewhat similar to energy management. Subjects concerning corporate social responsibility and environmental management have some similar elements to energy management. Hence, this former literature is used for creating a deeper understanding of employee commitment to energy management.

Regardless of the target of commitment it appears like the definitions of employee commitment do not have drastic differences compared to one another. The literature concerning employee commitment to environmental or social aspects seem to rely on the early literature of employee commitment. Even though the researches are decades apart from each other's the concept of employee commitment seems to have remained quite the same. Collier and Esteban (2007) study the relation between employee commitment and corporate social responsibility (CSR) in their research. They argue that employee commitment to CSR is a diverse and complex phenomenon that is influenced by employee perceptions and corporate background. Firstly, employees must be motivated to deliver CSR requirements and secondly committed to overcoming the challenges and achieving the goals of CSR. Commitment then reinforces and embeds motivation. (Collier & Esteban, 2007.) Govindarajulu and Daily (2004) on the other hand, study enhancing environmental performance in an organisation and emphasise the meaning of management commitment. They define commitment according to Argyris (1998, as cited in Govindarajulu & Daily, 2004), in which commitment means activating the human mind and producing human energy. Commitment is necessary for implementing any new initiative or idea (Argyris, 1998, as cited in

Govindarajulu & Daily, 2004). Hence, defining the concept of employee commitment has not changed greatly over the years, but instead it seems like employee commitment has been studied in more depth and in relation to various different targets.

It appears like many researchers have grown interests towards understanding how employee commitment could enhance environmental or social performance in an organisation. Some studies have concentrated on finding out how human resource management (HRM) practices could be utilised in pursuing CSR or energy management. According to Collier and Esteban (2007) there is evidence that good HRM practices can encourage employee commitment. In regard with enhancing environmental performance in an organisation, Govindarajulu and Daily (2004) present four key elements that may encourage and motivate employees for environmental improvement efforts. These are: management commitment, employee empowerment, rewards, and feedback and review (Govindarajulu & Daily, 2004). The paper written by Stone (2005) discusses the best practices and methods used in environmental programmes such as cleaner production (CP) and pollution prevention (PP) projects and in former literature. Stone (2005) argues that the key organisational factors that affect the decision to implement environmental programmes and enhance continuous improvement are commitment, leadership, support, communication, staff involvement and programme design. In addition, if an organisation desires to achieve sustainability, it requires continuous improvement and implementing continuous improvement requires commitment (Stone, 2005). Hence, there is some evidence that commitment is essential in achieving sustainability in an organisation.

In regard with commitment, Stone (2005) argues that the literature on environmental programmes as well as environmental management often stress the importance of top management commitment. This might be due to top management's significant role in driving change within organisations (Stone, 2005). Similarly, in enhancing environmental performance in an organisation, the meaning of management commitment is essential (Govindarajulu & Daily, 2004). According to Govindarajulu and Daily (2004), top management commitment works as a framework for environmental improvements as top management chooses the environmental policies and decides the required level of training and communication. Top management provides commitment by adopting a formal Environmental Management System (EMS) into the organisation. A formal EMS structure increases employee awareness of environmental issues and provides purpose for environmental improvements. (Govindarajulu & Daily, 2004.)

Even though management commitment and especially top management commitment is proved to be significant, there are still many unsolved issues and more research should be conducted regarding the topic. According to Stone (2005), environmental programme guides do not pay enough attention to the process of gaining or enhancing top management commitment. Gaining the commitment of top management tends to be seen as a need for a change agent who will be responsible of implementing a marketing exercise that should convince top management to carry through an environmental programme. In

this case the responsibility lies heavily on the change agent's commitment and marketing skills. However, the members of environmental programme teams often have technical backgrounds but no formal marketing experience. Additionally, it is questionable where the change agent gets the support and authority required to gain top management commitment. (Stone, 2005.) Hence, how top management commitment is gained still remains as a mystery.

Besides management commitment Govindarajulu and Daily (2004) bring out two other important elements of commitment: communication and training. It is essential that the management communicate frequently about environmental programs, initiatives, goals and priorities in order for employees to understand what is expected in achieving the goals (Govindarajulu & Daily, 2004.) In regard with committing to energy management, it seems important that all the employees are aware of the energy saving goals and how these goals are reached. Govindarajulu and Daily (2004) continue to argue that it is also important for managers to provide employees with specific and thorough training. Training is needed because of the changes occurring in organisational culture due to adoption of an environmental management programme. Managers need to train new employees but keep on training current employees as well. Training is required throughout the organisation in order to enhance its possibilities in responding to the needs of its environmental policy. (Govindarajulu & Daily, 2004)

Even though top management commitment is clearly emphasised, it is suggested that commitment should be pursued not only on top management level but within other staff as well (Stone, 2005). At the same time, top management need to understand the meaning of organisational culture (Govindarajulu & Daily, 2004). Organisational culture can either support or undermine motivation for environmental improvements (Govindarajulu & Daily, 2004). Thus top management need to encourage organisational culture that allows employees to make environmental improvements (Mallak & Kurstedt, 1996, as cited in Govindarajulu & Daily, 2004). In regard with employee commitment to CSR, Collier and Esteban (2007) add, that the whole cultural context and the entire personnel need to support and embed CSR in an organisation. The ones who are responsible must enable and nurture employee commitment to CSR so that it is embedded in the organisational culture. In this process the commitment of senior management is vital, not only because they are needed to embed CSR to organisational processes, practices and procedures, but also because without their support employees might more easily neglect their ethical responsibilities in working life. (Collier & Esteban, 2007.) Hence, it appears like whatever the target of commitment is, whether it is an environmental programme or CSR or even energy management, the entire personnel need to be committed to the common goals, thus meaning that the target of commitment is embedded in the organisational culture. Hence, commitment throughout the organisation is required.

Even though no research is made on employee commitment to energy management, the literature on employee commitment to other topics similar with energy management may offer some ideas on what is relevant. It seems like the nature of employee commitment remains quite the same no matter

what the target of commitment is. According to former literature it is assumed that employee commitment to energy management may be enhanced via human resource management practices. Different researchers appear to have some differences of opinion on what exactly are the “best or right” practices. What seems evident is that in employee commitment to energy management, management commitment and especially top management commitment are significant and the basis for employee commitment. The former literature also offers some support that HRM practices such as management support, feedback, rewards, communication and training may assist in committing to targets similar to energy management. However, it is important to remember the meaning of organisational culture, thus all the employees should be committed to energy management.

2.3 Summary of the key literature

Like many other concepts, energy management and employee commitment have both various different definitions. This study defines energy management as a long-term strategy (Rohdin et al., 2007, as cited in Antunes et al., 2014) that aims at constantly improving energy efficiency (Thollander & Ottosson 2010) by the means of supporting practices (Antunes et al., 2014). Organisations practice energy management to comply with legislation (Carbon Trust, 2015; Dörr et al., 2013), energy standards and their requirements (Antunes et al., 2014). Obviously, reasons to practice energy management arises from desire to improve energy use, reduce energy costs (Antunes et al., 2014), and gain energy savings (Ates & Durakbasa, 2012), thus creating profitability and potential growth (Kannan & Boie, 2003). Pressure towards more effective energy management may also arise from nongovernmental organisations (Dörr et al., 2013) and rising energy prices (Carbon Trust, 2015; Dörr et al., 2013). Finally, energy management may be practiced in order to reply to customer pressure (Dörr et al., 2013), to improve corporate image (Antunes et al., 2014) or to act environmentally responsibly (Carbon Trust, 2015).

Employee commitment has its roots in a long history of organisational commitment research. The concept of employee commitment is multidimensional and complex and it has several different definitions. In this study, employee commitment is defined as an attachment (Mathieu & Zajac, 1990) of an employee to one or more targets in a work environment (Cohen, 2003). Employee commitment is different depending on the motives to and targets of the commitment (Becker et al., 1996) and it is affected by employee’s feelings and attitudes about the commitment (Brown, 1996). The interest towards studying employee commitment has increased possibly due to the multiple benefits it can create within an organisation (Nijhof et al., 1998). Employee commitment may create improved production, improved performance and higher employee effort (Fornes et al., 2008). In addition, it might lead to financial success and competitive advantage (Mowday, 1998). This could be due to the fact that employees who are highly committed may

perform better than less committed ones (Mowday et al., 1974, as cited in Steers, 1977). Additionally, individuals may bring in new ideas by committing to change and taking actively part in change processes (Nijhof et al., 1998). However, the true benefits depend on the target of commitment. Each commitment should be examined according to the specific target of the commitment.

Management practices are valuable and even necessary whether in case of energy management or employee commitment. It appears like there are several different energy management practices that may lead to improved energy efficiency in an organisation (Backlund et al., 2012, as cited in Antunes et al., 2014). Based on former literature, the most essential energy management practices seem to include setting energy saving targets (Ates & Durakbasa, 2012; Dusi & Schultz, 2012; Motiva, 2015; SEAI, 2015), creating an energy policy (Antunes et al., 2014; Ates & Durakbasa, 2012; Carbon Trust, 2015; SEAI, 2015), establishing an action plan and/or an energy strategy (Antunes et al., 2014; Carbon Trust, 2015; Dusi & Schultz, 2012; Thollander & Ottosson, 2010), metering energy consumption (Antunes et al., 2014; Ates & Durakbasa, 2012; Motiva, 2015), identifying the main users of energy (Dusi & Schultz, 2012; SEAI, 2015), addressing a team or individuals responsible of energy management (Antunes et al., 2014; Ates & Durakbasa, 2012; Dusi & Schultz, 2012; Motiva, 2015), and ensuring management commitment (Antunes et al., 2014; Carbon Trust, 2015; Dusi & Schultz, 2012; Thollander & Ottosson, 2010). However, energy management practices differ greatly and there does not exist the so-called right practices (Antunes et al., 2014).

In terms of employee commitment, there is some evidence that good human resource management (HRM) practices can enhance encouraging employee commitment (Collier & Esteban, 2007; Whitener, 2001). Several activities may stimulate employee commitment such as training (Nijhof et al., 1998; Vance, 2006; Whitener, 2001), compensation (Vance, 2006; Whitener, 2001) and, designing interesting job and tasks (Fornes et al., 2008; Vance, 2006). Management support and communication are also highly recommended HRM practices by the former literature (Nijhof et al., 1998). Additionally, formal and informal meetings between management and employees can stimulate commitment (Nijhof et al., 1998). Other practices that may enhance in building commitment are: giving feedback and recognition (Fornes et al., 2008; Whitener, 2001), performance management, and career development (Vance, 2006). Finally, the level of commitment is determined by employees' reactions to these practices. However, there is no one "right" or "best" way to stimulate commitment in an organisation. (Vance, 2006.)

In regard with employee commitment to energy management, the former literature does not provide straightforward information or research about the topic at hand. However, the literature concerning energy management, and literature on employee commitment to aspects similar to energy management, have to some extent recognised the meaning of commitment, especially management commitment. In regard with energy management, especially top management and management commitment are vital right from the beginning (Kannan & Boie, 2003). Without top management support, energy management

will fall apart and be marginalised (Carbon Trust, 2015). Management commitment is required for creating energy management roles or team, ensuring all the necessary resources (Antunes et al., 2014; Carbon Trust, 2015; Coppinger, 2010) and defining common goals or targets for energy management (ISO, 2011; SEAI 2006; both as cited in Antunes et al., 2014). Whereas management commitment is seen as the foundation for energy management, the awareness and support of the organisation's staff determine whether the energy improvement efforts will be achieved (Antunes et al., 2014). Hence, employee commitment is required from all the employees including top management as well as employees implementing the energy efficiency projects.

In terms of literature concerning employee commitment to targets similar to energy management, employee commitment is needed for example for employees to overcome the challenges and achieving the goals of CSR. (Collier & Esteban, 2007.) Stone (2005) argues that commitment is one of the key organisational factors that affect the decision to implement environmental programmes. Commitment is also needed for implementing continuous improvement and thus achieving sustainability (Stone, 2005). The literature also emphasise the meaning of management commitment (Collier & Esteban, 2007; Govindarajulu & Daily, 2004; Stone, 2005). Top management commitment works as a framework for environmental improvements as top management chooses the environmental policies and decides the required level of training and communication (Govindarajulu & Daily, 2004). Commitment of senior management is vital, not only because they are needed to embed corporate social responsibility (CSR) to the organisation, but also because without their support employees might more easily neglect their ethical responsibilities in working life (Collier & Esteban, 2007). According to Stone (2005) top management commitment has also a significant role in driving change within organisations. At the same time, top management need to understand the meaning of organisational culture (Collier & Esteban, 2007; Govindarajulu & Daily, 2004) meaning that the entire personnel should also be committed to the common targets (Collier & Esteban, 2007; Stone, 2005).

Finally, based on former literature, it is suggested that implementing HRM practices may enhance employee commitment to energy management. These HRM practices might include management support (Antunes et al., 2014; Coppinger, 2010; Dusi & Schultz, 2012; Govindarajulu & Daily, 2004; Kannan & Boie, 2003; Stone, 2005), feedback (Fornes et al., 2008; Govindarajulu & Daily, 2004; Whitener, 2001), compensation (Fornes et al., 2008; Govindarajulu & Daily, 2004; Kannan & Boie, 2003; Vance, 2006; Whitener, 2001), communication (Dusi & Schultz, 2012; Govindarajulu & Daily, 2004; Nijhof et al., 1998; Stone, 2005), and training (Bartlett & Kang, 2004; Govindarajulu & Daily, 2004; Nijhof et al., 1998; Vance, 2006; Whitener, 2001).

Even though there is no research available in employee commitment to energy management, the literature on energy management and employee commitment has offered excellent support for understanding the relation between the two concepts and thus, foundation for further research.

3 RESEARCH METHODOLOGY

This chapter aims to explain the methods applied in the study. It will go through the research design of the study and the entire process of data collection including introducing the background of the data collection, justifying the choices made when selecting the interviewees, and describing the data collection method used in this study. It will also present the contents of the theme interviews that were used as a data collection method. Finally, the method used for data analysis is described.

3.1 Research design

This study aims to achieve better understanding of employee commitment in regard with energy management in industrial companies and public real estates. As already mentioned, to this date this specific topic has not been studied before. Due to this nature of the topic, this study will be implemented with qualitative research methods. Qualitative research aims at gaining more profound understanding of a certain phenomenon (Kananen, 2014). Instead of finding statistical generalisations, qualitative research strives to describe an event or phenomenon and/or to give a theoretically meaningful interpretation to a certain phenomenon (Tuomi & Sarajärvi, 2009). Qualitative research often aims at inducing hypotheses with the use of collected data (Silverman, 2011). The topic of this study requires familiarisation as well as deeper understanding of the subject in case. Thus qualitative research represents suitable methods for the purposes of this study.

In order to deepen the understanding of the studied phenomenon, this study follows an inductive approach. In inductive approach the collected data plays a central role in the research (Hirsjärvi & Hurme, 2008). Analysing the data should reveal answers to the research questions (Tuomi & Sarajärvi, 2009). In his study the data collected via theme interviews is extremely significant in defining the results of the study. However, former literature is used for creating a theoretical framework for this study and to support the data collection and

analysis, thus representing some aspects of abductive approach. In abductive approach, the researcher has some main theoretical ideas that he/she aims to verify with the use of the collected data (Hirsjärvi & Hurme, 2008). Hence, this study combines both inductive and abductive approaches.

3.2 Data collection

3.2.1 Background and data collection method

In this study data collection was carried through by face-to-face semi-structured interviews that are here referred to as theme interviews. Theme interview is defined as a semi-structured interview, because it has one element that stays the same in each interview – the themes (Hirsjärvi & Hurme, 2008). Theme interview is a conversation about themes the interviewer has decided beforehand (Kananen, 2014) and it proceeds according to the chosen themes and more specific questions related to those themes (Tuomi & Sarajärvi, 2009). Theme interview aims at gaining an understanding of the examined phenomenon creating a general view of the subject in case (Kananen, 2014). People's interpretations, meanings they give to things and how meanings are developed in interaction, are highlighted in theme interviews (Hirsjärvi & Hurme, 2008). This study aims especially at bringing out meanings about a certain phenomenon, thus making theme interview an excellent data collection method.

The data collection via theme interviews was executed in this study as a part of a project work for Rejlers Oy. Rejlers Oy is a company offering consultancy services to customers in the fields of energy, building, real estate, industry and infrastructure (Rejlers Group, 2015). In terms of energy management, Rejlers Oy provides consultancy services regarding energy use and purchase, as well as energy efficiency (Rejlers Oy, 2015). The aim of the project was to examine the current state of energy management in Finland. More specific interest was given to various energy management practices applied in these organisations. The data collected was of great interest to Rejlers Oy as it was utilised for planning and creating a new online solution that could help organisations in performing more effective energy management in their organisations.

Besides Rejlers Oy, the data gathered via theme interviews was used for the benefit of this study, and another study conducted by a fellow student. Hence, the data collected via theme interviews was used as research data in two separate Master's Theses. This meant that the data collection had three purposes: to provide valuable information for Rejlers Oy, and to represent the empirical data for this and another study. Because of the three different purposes of the collected data, theme interview as a data collection method was a suitable choice. As it turned out, theme interview enables to combine different themes in a same interview as long as the general topic remains the same. All the themes were highly related to energy management or energy efficiency.

Hence, using theme interview assured that all the topics relevant to the research needs were covered without having to sacrifice in quality of the data.

3.2.2 Selecting the interviewees

The interviewees of this study represented eleven (11) organisations in the fields of industrial companies (5) and public real estates (6). As already mentioned the interview study project conducted for Rejlers Oy examined the current state of energy management in Finland. Altogether 32 organisations were interviewed in the fields of industrial companies, public and private real estates, public residential buildings, municipal residential buildings, wholesale and retail trade, transportation and warehousing, and other fields of business. I myself was in charge of conducting 17 of those 32 interviews, hence only these 17 interviews were considered as possible empirical data for this study. However, this study examines only industrial companies and public real estates, thus narrowing the number of interviews down to eleven. These eleven interviews were selected based on their fields of business and the purposes of this study.

In qualitative research selecting the interviewees of the study should not be random, but selective and suitable for its purpose, although the criteria that determines what is considered as “suitable” should be justified (Tuomi & Sarajärvi, 2009). In this study, the interviewees were selected based on careful consideration. Different aspects, such as what kind of organisations to include and who are the people to interview, influenced the selection. Selecting the organisations for the interview study project for Rejlers Oy was carried through based on the needs of Rejlers Oy, myself, and the fellow student. The main idea was to interview organisations that practice energy management. Hence, most of the organisations were chosen based on the assumption that they consume a great deal of energy and thus practice energy management at least to some extent. Main emphasis was given to organisations that represent industrial companies and public real estates.

The data collected from these two business fields were chosen for this study firstly because they represent the majority of all the interviewed organisations. This would enable creating deeper understanding of employee commitment in the two fields and possible comparison of those fields. Secondly, they were especially interesting because they were expected to consume a great deal of energy and receive pressure towards practicing energy management. In 2014, industrial sector consumed 47 per cent and heating of buildings 25 per cent of the total energy consumption in Finland (Statistics Finland, 2015). According to Motiva Oy (2015) in regard with companies, the motive for practicing effective energy management may arise from the want to improve energy and material efficiency, thus reducing costs. Energy efficiency could also help companies to improve their competitiveness in their markets (Motiva, 2015). In regard with public sector, Motiva Oy (2014b) suggests that organisations receive a great amount of pressure and are challenged by legislation as well as other obligations. Energy efficiency should be improved not only for bringing substantial cost savings but also for the sake of the

environment. Reducing greenhouse gases and thus enhancing the quality of environment is one of the obligations expected from the public sector. Finally, public administrations are also expected to act as strong forerunners of energy efficiency. (Motiva, 2014b.) Even though the motives for enhancing energy efficiency might be somewhat different for industrial companies and public real estates, one thing is for sure – they both benefit from practicing energy management. In both fields, energy management requires taking energy efficiency systematically into account in all the different operations of the organisation (Motiva, 2015). Companies should emphasise the need for continuous improvement in energy management (Motiva, 2015) whereas long-term collaboration is essential in public sector (Motiva, 2014b).

Field of business, assumed large energy consumption and additionally, even physical locations of the organisations were considered when choosing the interviewed organisations. The aim was to interview organisation in several different locations in Finland. However, also transportation to and within the location was considered. The interviewer had to travel to each interview from Jyväskylä and that is why convenient public transportation was taken into account as well. This is why this study consists of organisations that were located in rather large cities and cities near to Jyväskylä, such as Äänekoski. The eleven organisations that were interviewed for this study had their head quarters located in Espoo (2), Helsinki (3), Kuopio (1), Lahti (1), Tampere (1), Turku (1), and Äänekoski (2).

In this study the selection of the interviewees was particularly important because it was necessary that the interviewee understood the specifics of energy management. In qualitative research it is important that the people who are interviewed have experience or know as much as possible about the researched topic (Tuomi & Sarajärvi, 2009). Hence, in order to gain the most reliable and diverse information, the aim in this study was to find an employee who has the most experience or knowledge about energy management within the organisation. The interviewees were chosen based on their responsibilities in regard with energy management. However, the job titles of the interviewees differed greatly (see table 1). In case of two interviews, more than one person took part in the interview. In one organisation two employees participated the interview and in another organisation even three employees wanted to take part in the interview. In all the other interviews only one person was interviewed at a time.

Number of Interviewees	Job Title of the Interviewee
1	Apprenticeship Student
2	CEO
3	CEO
4	Design Engineer

5	Development Manager
6	Energy Manager
7	Energy Specialist
8	Leading Specialist
9	Project Manager
10	Project Manager
11	Real Estate Manager
12	Real Estate Manager
13	Technical Building Manager
14	Vice President

TABLE 1 Job titles of the interviewees in alphabetical order

In terms of choosing the “right” number of interviews, it was considered whether the eleven interviews provide enough data in order to answer the research questions of this study. Five industrial companies and six public real estates were chosen for this study even though there was more data available from different fields of business. Research data should always be collected the amount that solves the research task (Kananen, 2014). However, when conducting more interviews does not reveal any new information but instead keeps repeating the same pattern that already conducted interviews have revealed, then a suitable amount of interviews is reached (Eskola & Suoranta, 1998; Kananen, 2014). This phenomenon, in which new interviews do not reveal any more relevant or new information, is called saturation (Hirsjärvi & Hurme, 2008). Hence, in case of not reaching saturation with the chosen eleven interviews, more interviews could have been analysed. However, after analysing the data of the eleven interviews, there was no need to add any additional data to this study.

3.2.3 Data collection

Together with the fellow student we were in charge of planning and conducting the interviews in the interview study project conducted for Rejlers Oy. The planning of the theme interviews started in the beginning of September 2014. Rejlers Oy assisted in planning the interviews and allowed us students to make our own contributions to the content of the interviews. It was vital to include all the questions needed in order to find answers to the research questions of this study. While planning the theme interview template, at the same time it was necessary to decide which organisations and who are the people to interview. Rejlers Oy assisted in finding the organisations and the most promising people to interview.

When all the parties were satisfied with the theme interview template and the potential interviewees were decided, the actual implementation could begin. The interviews were conducted in autumn 2014 between September and November. Firstly, invitations were sent to the chosen organisations via email describing the nature of the project, objectives of the interviews, what is the data used for and some practicalities (see appendix 3). Additionally, possible times for interviews were suggested. After couple of days from sending the invites, each person was called to describing again the meaning of the interviews and to settle a date and time for the interview. If the right person was not reached via email invitation, the organisation was contacted for reaching an employee who had the best knowledge about energy management in the particular organisation. A precise date and time of the interview was then settled via telephone conversation. All interviewees were informed that the interview could be arranged in the facilities of the interviewee's organisation. Lastly, after the telephone conversation an email remainder was sent to each interviewee, describing the date, time and place of the interview. The first two interviews were so-called pilot interviews for testing that the theme interview worked as planned. After the pilot interviews we were aloud to start inviting more organisations to take part in our project.

The interviews were divided between the fellow student and myself in a way that each handled individually approximately the same amount of interviews. The interviews took place in the facilities of the interviewed organisations, except for one. This one was organised in the facilities of Rejlers Oy in Jyväskylä at the request of the interviewee. With permission from each interviewee all the interviews were recorder using an audio recorder. Finally, all the eleven interviews that were included in this study were transcribed relatively carefully, although leaving out unnecessary repetitions of filler words. The same method was applied to all the data transcriptions. However, as the interviews included some amount of data that was not even remotely answering the research questions of this particular study, these parts were not transcribed at all. Only the data that belonged to the themes of this study was transcribed.

3.2.4 Content of the theme interviews

The aim of the theme interviews in the interview study project was to examine the current state of energy management in Finland. However, the interviews needed also to answer the matters related to employee commitment, as that is what this study examines. In addition, the fellow student studied measuring energy efficiency. In order to create an overall picture of energy management, and to answer all the different needs of the two Masters Theses, the interviews concerned various different aspects and themes of energy management.

A theme interview follows the chosen themes and more specific questions related to those themes (Tuomi & Sarajärvi, 2009). Former literature on energy management and employee commitment was studied in order to examine what kind of themes and questions should be included in the interview template. However, the structure and order of the questions need not to be followed

strictly in a theme interview (Hirsjärvi & Hurme, 2008). Thus, in this interview some example questions, sentences or words were listed under each theme, in a way that the interviewer can easily check that the most important questions are not forgotten to ask. The questions were formed in a way that the interviewee could easily discuss and open up about the topic. Whenever possible open-ended questions were used and if necessary some additional questions were asked to gain more information about a significant subject.

As mentioned, the theme interview template was tested with two pilot interviews in organisations representing a public real estate and an industrial company. As these two fields might have some differences in their ways to practice energy management, both were tested. Even though there was only one person interviewing at a time, both interviewers and the project manager from Rejlers Oy attended the pilot interviews. While one interviewed, others listened and followed the interview. After the pilot interviews were completed, only few minor changes were made to the theme interview template. It was decided to delete one question completely and to make few small corrections to some other questions. These changes did not influence the contents of the interviews thus making it possible to use the pilot interviews as empirical data if necessary.

The themes and questions regarding this study's topic were chosen with the help of former literature. The aim was to form the kind of questions that could help in answering the research questions of this study. Former literature on energy management and employee commitment offered many possibilities. However, as these topics have never been studied in relation to each other, there was no support or examples found about specific interview questions. Hence, the researcher's assumptions and interests towards specific areas of energy management and employee commitment strongly affected the chosen themes and questions. The final themes related to this study covered topics such as meanings, attitudes and motivation towards energy efficiency, decision-making and cooperation, as well as human resource management practices such as management support, feedback, compensation, communication and training, all in relation to energy management or energy efficiency. Table number 2 presents the themes and shortly describes the information obtained as well as theoretical references related to each theme. See appendix 1 and 2 for more detailed information on the theme interview structure and content in Finnish and English. The interviews were conducted in Finnish, as that is the native language for all the interviewees but the research findings are presented in English.

Topic	Information obtained	Theoretical reference
Background information	Occupation/job description Former experience (job/education) on energy efficiency	
Meanings of energy	Organisational and personal	

efficiency	motivation towards energy efficiency Opportunities Challenges	
Decision-making and cooperation	Possibilities to influence decision-making and practices (empowerment) Management support Motivation Opportunities Challenges	Antunes et al. (2014); Coppinger (2010); Fornes et al. (2008); Stone (2005); Tuomaala and Virtanen (2011); Van Corp (2004); Fornes et al. (2008); Govindarajulu and Daily (2004); Vance (2006)
Attitudes and motivation	Attitudes and motivation towards energy efficiency Opportunities Challenges	Becker et al. (1996); Collier & Esteban (2007), Fornes et al. (2008)
Management support	Management's roles in energy management Importance of management support Opportunities and challenges in management support	Antunes et al. (2014); Carbon Trust (2015); Coppinger (2010); Dusi and Schultz (2012); Govindarajulu and Daily (2004); ISO (2011); Kannan and Boie (2003); Motiva Oy (2014a,b); SEAI (2006, as cited in Antunes et al. 2014); SEAI (2015); Stone (2005)
Feedback	Methods used for giving and receiving feedback People involved with giving and receiving feedback Benefits of giving/receiving feedback Development proposals	Fornes et al. (2008); Govindarajulu and Daily (2004); Whitener (2001)
Compensation	Compensation methods related to energy efficiency Indicators used for compensation Benefits of compensation Development proposals	Fornes et al. (2008); Govindarajulu and Daily (2004); Kannan and Boie (2003); Vance (2006); Whitener (2001)
Communication	Communication channels and methods used Contents of communication The effects of communication on motivation	Dusi and Schultz (2012); Govindarajulu and Daily (2004); ISO (2011, as cited in Antunes et al., 2014); Nijhof et al. (1998); Stone

	Development proposals	(2005)
Training	Training methods used Benefits of training Development proposals	Bartlett and Kang (2004); Govindarajulu and Daily (2004); Nijhof et al. (1998); Vance (2006); Whitener (2001)

TABLE 2 Main topics of the theme interviews

Even though this study focuses on employee commitment to energy management, the interview questions are often related to energy efficiency, as seen in table 2. There are two reasons for this. Firstly, this study defines energy management as means to improve energy efficiency. Thus, it is relevant to ask questions related to energy efficiency because it is the ultimate aim of energy management. Secondly, energy management as a concept is not commonly used in working life in a sense that it is here presented. Hence, this theme interview construct almost avoided using the term energy management or used the term energy efficiency instead. This way the interview was more simple and understandable for the interviewee but it maintained the core meaning of the interviews in terms of finding the answers to the research questions.

Other interview themes, unrelated to this study's topic, examined energy consumption in an organisation, practical implementation of energy management practices, data systems, measurement data management, Key Performance Indicators, environmental and energy management systems, energy efficiency practices, energy efficiency investments, and future prospects such as energy efficiency targets and practices. These themes were not considered as a part of this particular study, thus they were not transcribed or analysed and had no influence on the results of this study. Even though there was a significant amount of topics in one interview, all the subjects were related to energy management and thus worked well together. None of the subjects felt unrelated to the general topic and that is why it was possible to combine all the themes needed to just one interview.

3.3 Data analysis

Data analysis is one of the most interesting but challenging phases in conducting a research (Hirsjärvi & Hurme, 2008). The challenge in analysing qualitative data often appears when the data reveals multiple interesting aspects that the researcher has not even considered beforehand (Tuomi & Sarajärvi, 2009). The researcher might present too detailed information when actually the key is to think critically of what is relevant in regard with understanding the phenomenon and answering the research questions (Hirsjärvi & Hurme, 2008). The ultimate aim of the analysis is to develop a more conceptual perception of the studied phenomenon, which is based on researcher's interpretation and deduction. The researcher aims at

understanding the interviewees from their perspectives at all phases of the analysis. (Tuomi & Sarajärvi, 2009.)

For this study, the collected data is analysed by following thematic analysis. Thematic analysis highlights what has been said about each individual theme (Tuomi & Sarajärvi, 2009). The themes that help in understanding the research task will be gathered from the data and grouped according to each theme (Eskola & Suoranta, 1998). Thematic analysis thus enables comparing the occurrence and appearance of certain themes in the material (Eskola & Suoranta, 1998). In regard with formulating the themes, the researcher may use various means (Hirsjärvi & Hurme, 2008). If the data has been collected with theme interviews the grouping of the data is rather simple as the interview themes may form the structure for the analysis (Tuomi & Sarajärvi, 2009). As in this study most of the themes to be analysed were similar to the themes in the theme interview template, but some were completely new. Some new interesting themes may come up from the data, forming other themes (Hirsjärvi & Hurme, 2008).

The methodological literature presents plenty of different methods and terms used in data analysis. According to Hirsjärvi and Hurme (2008), in qualitative research, data analysis applies the following phases: description, classification (thematising), consolidation (coding) and interpretation of the data. In this study, after transcription, the data was organised into specific themes. Already before transcribing the data the themes for analysis were quite clear. The interviewees were numbered and the data was organised with the help of using colour codes. Each theme was highlighted with its own colour and thus making the organisation of the data systematic and simple. The data was then grouped according to their individual themes. After that, the data was coded for finding similarities and differences within and between the themes. Finally, research findings were presented according to each theme and the most meaningful or interesting comments were quoted. All the quotations were translated from Finnish to English as accurately as possible, maintaining the true meanings of the quotations.

The data analysis in this study was divided into two main parts that aim at answering the research questions (see figure 2). The first part aims at answering the question of why do employees commit to energy management. The themes in this part are: motives, opportunities and challenges. The themes were formed most importantly based on the need to answer the research questions but also the data itself influenced the formation of final themes. The second part aims to discover human resource management (HRM) practices that may strengthen employee commitment towards energy management. These themes were selected mainly based on the interview themes that were developed with the support of former literature. The themes related to HRM practices are: management support, feedback, compensation, communication, and training.



FIGURE 2 Themes in thematic analysis

4 RESEARCH FINDINGS

The aim of this chapter is to present the main research findings of this study. The findings of the study should help in understanding the relation between employee commitment and energy management, while answering the research questions of this study. This chapter is divided into two main sections. The first section aims at finding answers to why employees commit to energy management. The second section presents the findings answering the question of how employee commitment to energy management may be enhanced through human resource management practices.

4.1 Employee commitment to energy management

This section aims at answering the question of why employees commit to energy management. Research findings of the section include three themes: motives, opportunities, and challenges. The first theme presents the most significant motives that employees might have towards energy management. In the second theme, opportunities in committing to energy management are introduced. The section ends with the third theme that includes the most relevant challenges in committing to energy management.

4.1.1 Motives

In terms of understanding better what drives employees to commit to energy management, this theme presents the motives employees have towards energy management. The research findings revealed that the most significant motives towards energy management are financial benefits, preserving the environment, pursuing energy efficiency targets, personal interests, and gaining social acceptance.

One aspect of energy management that seems to motivate all is money. All the interviewees appeared to agree that energy management and energy efficiency can create significant savings and financial benefits to the

organisation due to the decreased consumption of energy. Many interviewees even considered energy efficiency as strictly related to cost efficiency. The more the organisation saves energy, the more it saves finances as well. These two go hand in hand and it seems like a self-evident matter to all the employees in the organisation. When asked about the meaning of energy efficiency, for many interviewees financial aspect was among the first things they mentioned. Besides the financial benefits created to the organisation, energy efficiency can create savings at home as well, and if the organisation uses a compensation system the employee might get financial compensation from well performed energy efficiency work. Hence, according to the research findings, financial benefits appeared to be the most motivating aspect towards energy management.

"Ultimately, it (energy efficiency) of course means euros." (Interview 11)

"... in practice, it (energy efficiency) is very essential in terms of expenses." (Interview 10)

Another motive concerns preserving the environment. Environmental benefits that energy efficiency and energy management induce seem to motivate employees. Many interviewees appeared to be genuinely interested in the environmental benefits that energy efficiency creates. Some interviewees mentioned the environment several times during the interview and many organisations had environmental strategy, policy, or goals somehow linked together with energy management, or energy efficiency targets. This seems to indicate that energy efficiency is sometimes integrated into a bigger picture that includes issues of environmental responsibility. In addition, showing that the organisation cares about the environment by practicing energy management may also improve organisational image. However, this aspect seems to motivate some employees more than others. Surprisingly, some interviewees did not mention the environment at all, and thus seemed to be motivated by other aspects than preserving the environment.

"We have noticed that firstly, this (energy efficiency) is very profitable business, but of course we also want to be active when it comes to the environment and we have done a great job in it." (Interview 7)

The findings of the interviews suggest that one motive towards energy management is related to energy saving or energy efficiency targets set for the organisation. Many organisations have set some goals or targets, which often include a target for improving energy efficiency. Having an energy efficiency target seems to motivate employees because, as a couple of interviewees mentioned, the targets are written down, they are clear to all employees, and thus the organisation must at least aim at reaching those targets. Even though setting these targets is often voluntary, the fact that they are something concrete and available to all, for the employees and the public, may motivate employees. Based on the interviews the ideology of working together for common good could also be behind this motive. Finally, this aspect seemed to be one of the strongest motives towards energy management.

Motives towards energy management and energy efficiency may also arise from personal values and interests of the employees. Many interviewees themselves seemed highly motivated towards energy management and that

was quite obvious given that all of their jobs were related to energy management. When asked what energy efficiency means to them personally, it meant various different things. A few talked about financial savings it may create at homes while others considered the environmental aspect. Some interviewees associate energy efficiency to riding by bike instead of car, recycling, or even consumer behaviour. However, not all employees are interested in energy efficiency or energy management. Some concentrate on their own job and if it is not related to energy management, personal interests influence highly whether the employee is motivated or not.

"It's a question of attitude. Some recycle, some don't." (Interview 5)

The last aspect that motivates employees to energy management is gaining social acceptance of others. As mentioned, not all employees are interested in energy efficiency, but everyone at least understands what it means. It almost seems like a trend that everyone should be aware of and be interested in, even if they are not. Thus, some employees might be motivated due to the fact that nowadays energy efficiency and thus energy management is a "hot topic" that should be pursued and by pursuing it, the employee might feel accepted by other employees and by the organisation.

"That's the word of the day, this whole energy saving and energy efficiency..." (Interview 6)

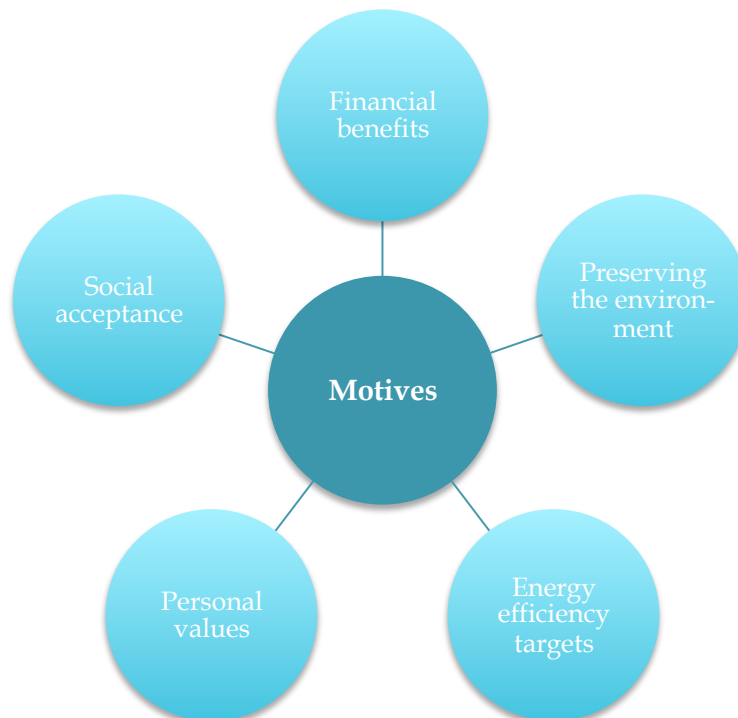


FIGURE 3 Motives towards energy management

4.1.2 Opportunities

This theme deals with opportunities in committing to energy management. The findings suggest that employee commitment to energy management involves significant opportunities. These opportunities are related to increased

awareness of energy efficiency, management support, increasing demand for energy efficiency investments, improved energy efficiency, financial benefits, and preserving the environment. The first three aspects concern the opportunities that may enhance employee commitment to energy management and the next three aspects are dealing with the opportunities that the committed employees may create to the organisation.

The interviews clearly demonstrated the growing awareness of energy efficiency among all employees. As a concept it is familiar to most employees and thus all employees know what it means. Employees have mostly positive feelings and attitudes towards energy efficiency and no one is against it. Energy management seems to have a meaningful role in most of the interviewed organisations. Some interviewees mentioned that it is simply a must, because the organisation consumes a considerable amount of energy. In some organisations energy efficiency is pursued throughout the organisation and it is part of the organisation's strategy and organisational culture. Some interviewees mention that energy management has a long history in the organisation and that energy efficiency is constantly improved. It can only be assumed that the increased awareness may increase motivation and thus commitment to energy management.

"I think the employees in our organisation understand well how important it is to us, and a cost factor, and even in offices people think about it." (Interview 10)

"We operate in an energy intensive field and these values (energy efficiency) are important to the company..." (Interview 9)

Management support appears to have significant influence and opportunities for motivating employees towards energy management. In the organisations where the top management is highly interested and involved in energy management, energy management seems to be a strong part of the organisational culture. The management supports energy management by encouraging employees, setting energy efficiency targets, allocating finances for energy efficiency investments, and communicating frequently about energy management related issues. Thus, the management has a great power over many aspects of energy management, making management support necessary. Hence, if the management is committed to energy management and supports it, it seems more likely that all the other employees will be too.

There seems to be an increasing demand for new energy efficiency investments. Even though the organisations might not see it as an opportunity, for the sake of employee commitment to energy management, it is. Especially in public real estates the need to repair old and build new is always bringing new opportunities to energy management practices. Usually, when repairing old or building new, energy efficiency is carefully considered as a part of the investments. Even though the renovation was not particularly related to energy efficiency, it is still taken into account. When it comes to industrial companies, they might be obligated by law to improve energy efficiency or reduce CO₂ emissions and thus are now looking for new energy efficiency investments. Finally, there is no employee commitment to energy management without energy efficiency investments and thus making the increasing demand significant for commitment.

"When we make new investments we aim at examining them in a way that they would not consume as much energy." (Interview 2)

Based on the interviews it is suggested that employee commitment to energy management might create improved energy efficiency and thus improved financial benefits. This study suggests that employees who are motivated and committed to energy management are more eager to improve energy efficiency and more efficient in their jobs related to energy management. They might create more efficient ways of working, new innovations and thus improved energy efficiency. Committed employees see more benefits in energy management and are more motivated in working for it. Additionally, through improved energy efficiency, employee commitment to energy management ultimately can create financial savings.

Finally, the last opportunity is preserving the environment. Like already mentioned, some interviewees mentioned the importance to the environment. For those employees who seem committed to energy management, energy management is often a part of a bigger picture, environmental values. However, not all employees appear to be aware of the environmental benefits of energy management and sharing this information throughout the organisation might enhance employee commitment to energy management. However, it is suggested that committed employees may help in preserving the environment.

"There's the financial aspect of course and the other one is the emission aspect and consuming of energy. The less we consume energy the less we cause emissions." (Interview 1)

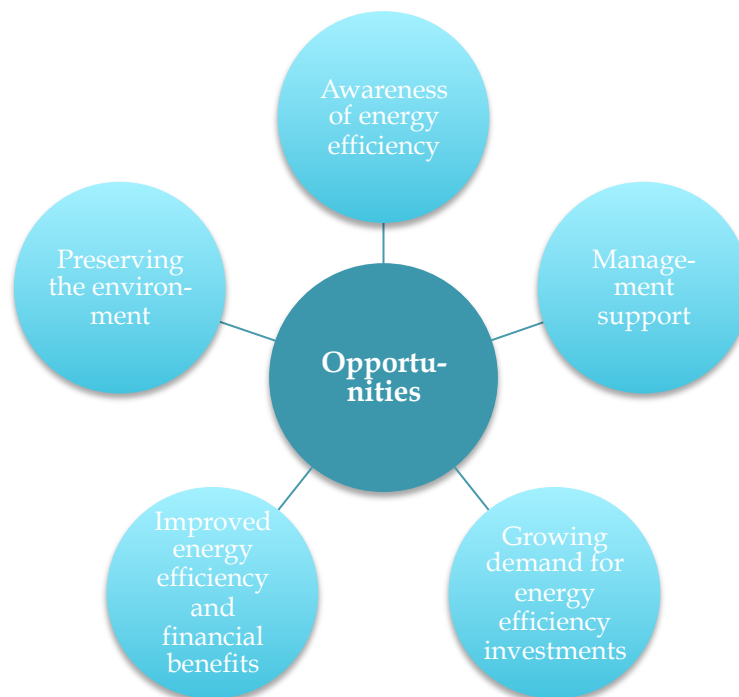


FIGURE 4 Opportunities in committing to energy management

4.1.3 Challenges

According to the findings of this study, the challenges in committing to energy management consists of lack of resources, all the “easy” energy efficiency investments are already implemented, dependency on management support, other things might be more important compared to energy management, lack of personal interests of the employees, and insecurity about the future. This study suggests that these challenges might be frustrating for those pursuing energy efficiency through energy management and thus hinder their commitment towards energy management. Hence, this could affect the commitment of all employees in an organisation and reveal why some employees do not commit to energy management. However, overcoming these challenges might help in enhancing employee commitment.

Probably the most challenges in employee commitment to energy management are caused by the difficult financial situations of many organisations, thus causing lack of resources. Many interviewees felt that the financial situation of the organisation is slowing down or even restraining the improvement of energy efficiency and this reflects directly to energy management. Poor financial situation may reflect as lack of resources such as financial and human resources. Lack of financial resources can often mean more stringent requirements on repayment period and less approved energy efficiency investments. However, especially in public real estates, it is suggested that organisations should exploit more the opportunities of applying for external financing. Lack of workforce is also troubling because it often causes situations, where employees cannot handle all their responsibilities on time or that their performance is not of high quality. In addition, another challenge related to the quality of work might be the lack of necessary skills and even indolence. The problems caused by the difficult financial situation in most organisations may also affect the general atmosphere and motivation towards energy management.

“Sometimes it feels like it’s difficult to make a difference especially because of this financial perspective. Because even if you justify that it will pay itself back, then still if there’s no investment money there’s not much left to do.” (Interview 1)

“When we operate on these preconditions such as financial and maybe even lack of resources, and even thought there are people who are unemployed for some people the things pile up developing these lack of human activities.” (Interview 4)

Another challenge is related to the fact that often all the easiest and inexpensive energy efficiency investments are already implemented. What are left are the investments that might cost more, they may be more complicated or require longer repayment periods. This means that in order to constantly improve energy efficiency the practices are becoming more difficult, more technical and more expensive to carry through. Hence, it might be more challenging to get the investments approved by the management.

“Of course, energy efficiency is the kind of thing that all these easy practices are already done. And so, often these energy efficiency investments include insecurity. We have very difficult financial situation in our company and all the investments must be extremely well justified...” (Interview 10)

As already mentioned, if the management is supporting and committed to energy management, other employees might more eagerly commit as well. However, if the management is not supporting energy management enough this creates major challenges for commitment. The management has such a significant influence on energy management that if there is no support from it, it can challenge the commitment of all employees.

Energy management can sometimes be challenged because there may be many other things that are more important for the organisation. In many public real estates it is mentioned that the management, especially top management, have so much more things to do that energy efficiency is not always the most important thing to be considered and the so-called more important issues exceed the importance of energy management, hence neglecting energy management. In regard with real estates, indoor air problems, safety, healthiness, comfort, and use of space are often considered more important than energy efficiency of the facilities. Industrial companies on the other hand emphasise the necessity of energy use because it is needed to keep the business running. However, using energy efficiently is not a must for the sake of the business. Usually there is also the question of finances. If all the money is invested in fixing indoor air problems there might not be that much finances left for energy efficiency investments.

"The need to repair old is pretty much dictated by the need to repair facilities with mould problems, they of course are more important than anything else. And besides, as a growing city there's the overall need for facilities and that's where all the money goes." (Interview 3)

Another challenge is related to lack of personal interests of the employees. The interviews revealed that not all employees are interested in energy efficiency or energy management. Even though energy efficiency is a familiar topic to most employees, it still does not guarantee that all the employees are constantly pursuing it. In regard with real estates, it is important that the users of the facilities, whether they are employees or customers, understand the importance of energy efficiency and act upon it. One interviewee mentioned that it seems like some users of the facilities do not care about energy efficiency, because of the attitude that if it is not his/her own facility, they do not need to care. If energy efficiency is not a part of the employees' own job or daily routines, it might be neglected. Even though some employees are simply not interested in energy efficiency, at least no one is against it.

"It's not that people are not aware, that's not the case, obviously they are probably interested but if you think about their daily routines then there must be completely other things in the centre of their attention instead of lighting conditions." (Interview 11)

Besides the above-mentioned challenges, uncertainty about the future is another challenges affecting employee commitment to energy management. Insecurity might consist of matters related to organisational changes, fluctuation in energy prices, changing laws and regulation, and the financial instability of the organisation. If an organisation has a major changes going on, energy efficiency is possibly among the first things to be considered. During a significant organisational change no one wants to hear about energy efficiency.

Additionally, fluctuations in energy prices create instability about the future and thus causing uncertainty in energy management especially in regard with industrial companies. Finally, many organisations felt insecure about the upcoming new energy efficiency law and how it affects the organisation.

“Now, I don’t know, now we are living at a time of change in our company and the future will tell where we are heading...” (Interview 7)



FIGURE 5 Challenges in committing to energy management

4.1.4 Summary of employee commitment to energy management

Motives	Opportunities	Challenges
<ul style="list-style-type: none"> • Financial benefits • Preserving the environment • Pursuing energy efficiency targets set by the organisation • Personal interests • Gaining social acceptance of others 	<ul style="list-style-type: none"> • Increased awareness of energy efficiency • Management support has a positive impact on energy management • Increasing demand for energy efficiency investments • Improved energy efficiency and thus financial benefits • Environmental benefits 	<ul style="list-style-type: none"> • Lack of resources • All the “easy” and inexpensive investments are already implemented • Dependency on management support • Other things might be more important • Lack of personal interest • Uncertainty about the future

TABLE 3 Summary of employee commitment to energy management

4.2 Human resource management practices

Even though it is suggested that commitment is essential in energy management, there is no evidence on what kind of human resource management (HRM) practices influence employee commitment in relation to energy management. This study pays especial attention to five themes that are management support, feedback, compensation, communication and training. The aim of the interviews was to find out how are these HRM practices currently utilised in terms of energy management and how they could further enhance employee commitment to energy management.

4.2.1 Management support

This study suggests that the meaning of management support is significant in terms of committing to energy management. The most meaningful findings of management support are related to management responsibilities including making investment decisions, setting energy efficiency targets, and ensuring communication throughout the organisation. Other findings concern the affects of the management's personal interests, as well as financial and organisational challenges threatening management support.

The most visible and meaningful way to demonstrate the support of the management is by making decisions concerning energy efficiency investments. The more the management allocate resources to energy management and energy efficiency investments, the more supported the employees feel. The management is responsible for approving energy efficiency investment proposals whereas other employees involved with energy management are often responsible for reporting, preparing investment proposals and in some cases, for implementing energy efficiency practices, among other tasks. Hence, if the management is not approving the investment proposals prepared by the employees, employees might feel that the management does not support energy management and this on the other hand could affect the commitment.

"It (top management support) is seen in whether the investment money is granted for energy efficiency investments or not. So far it has been granted fairly and even large energy saving investments have been implemented." (Interview 7)

Another aspect that reflects the support of the management is setting energy efficiency targets. That seems clearly one of the responsibilities of the management and something that increases employee motivation towards energy management. Employees trust the decisions made by the management and thus setting reasonable targets is important. If the management regularly evaluates and set the targets for energy efficiency, employees feel supported by the management.

"It's good that the lower organisational levels handle the practical matters and present them from lower levels to upper levels in a way that in the decision making level they can make the decisions based on real facts and then again they set the targets to be aimed at. This way there would be no high level decision

making in the lower levels, where the decisions might be done based on own interests or what ever other reasons one might have.” (Interview 3)

Ensuring communication throughout the organisation is one of the aspects that can reflect management support. According to the interviewees, it is valuable that all the employees understand the importance of energy efficiency, and spreading this word is considered as a job for the management. Especially communicating about energy efficiency targets and energy efficiency investments is valuable. The management needs to make sure that energy management issues are communicated within the employees involved in energy management while guaranteeing the information flow throughout the organisation.

Whether the management supports energy management and energy efficiency is dependent on the personal interest of the managers. Many interviewees seem to think that the interests of the managers define largely on how much the organisation is willing to put effort into energy management. Most employees feel that the management is eagerly supporting energy management. However, in some organisations the lack of support from the management is explained by the lack of interest towards energy efficiency.

“If the manager is interested and thinks about... then happens a lot more than if the manager is more administrative and doesn't care. At us, when the managers have changed, it has been clear that it's very dependent on the top management that where is their interest.” (Interview 1)

The level of management support is not always explained by the personal interests of the management. Sometimes there are challenges, such as financial and organisational challenges, that might affect the support by complicating the work of the management. In terms of financial challenges, these might significantly influence the support of the management. Hence, even though the management would like to support energy management, there might simply not be enough investment money to spare to all energy efficiency investments. On the other hand, one employee felt that if the top management is truly committed to energy management there are always ways to find some finances for energy efficiency investments.

Another aspects that may harm management support are the already mentioned organisational challenges. Also uncertainty about the future in regard with energy management is considered as a challenge especially for the management. For example if the management positions change or the organisation is going through employee cooperation negotiations it could influence the level of support. In addition, if the future expectations are uncertain, it might be difficult for the management to support something that he/she is not aware of, such as the influence of the new energy efficiency law.



FIGURE 6 Management support

4.2.2 Feedback

In regard with giving feedback on energy management related work, it appears like the most important findings concern uncertainty about giving feedback, positive feedback motivates, the importance of face-to-face interaction, emphasis on giving feedback especially to employees involved with energy management and the frequency of giving feedback.

Of all the HRM practices covered in the interviews, feedback received the most uncertainty. Even though all the employees seemed to consider feedback as valuable and sometimes even necessary, it seemed like a topic that is not often thought of. Giving feedback may raise uncertainty because sometimes it is not that easy to give. Some interviewees pointed out that it might be easier to give feedback to some employees than others. Giving feedback may be easy when the results of the job are visible and easy to measure. However, if the job is something that its performance is not possible to calculate or measure, feedback might be harder to give. In regard with how feedback is given, naturally, it often does not have certain rules to be followed but instead it is something that comes naturally. It appears like feedback is often a part of normal every day work and it is not systematic but it is given whenever needed.

"If you think about our organisation in general, then giving feedback is very minor and that's probably something that we all need to improve. (Interview 5)

It appears like employees are motivated by positive feedback, although all the feedback is valuable. Most interviewees told that it is always nice to hear positive feedback, but any kind of feedback is welcome whether it is positive or

negative. Feedback seems always to be useful because it may raise employees awareness about energy efficiency, it might also bring out new innovations, it may help in correcting errors or it could motivate employees towards energy management. In some cases, positive feedback is given to encourage employees even though the outcome has not been quite what was planned. Additionally, it seems like giving negative feedback is uncomfortable for the giver as well as for the receiver and thus not preferred.

“For the sake of our jobs, it is always worthwhile to get feedback, whether it is positive or negative feedback.” (Interview 1)

“It’s always good to receive feedback. The more people look through a certain thing, and maybe from a different viewpoint, the more someone else can discover something new. (Interview 8)

What appears to be important to many employees is that giving feedback should always happen face-to-face. Feedback is usually addressed to a specific person, thus the way of giving feedback should be personal as well. However, if the matter concerns more than just one person, feedback should be addressed to all of those involved. In many organisations feedback is given in energy management meetings. This way all the employees involved in energy management hear the feedback and thus at the same time will be informed about the newest events in energy management. In addition, often these teams meet quite regularly, thus offering a prominent way for sharing feedback.

“I myself am a relatively social person and I feel that it is definitely better to talk about these things face-to-face and motivate in that way, instead of writing a number five to some chart.” (Interview 7)

According to the interviewees, feedback about energy management should be mainly given to employees actually involved in energy management. Giving feedback involves challenges, such as who should receive feedback and how to equally give feedback to all employees. In addition, giving feedback to all employees of the organisation is not even considered as necessary. Most employees seemed to think that feedback regarding energy efficiency should be given especially to employees working in relation to energy management. In public real estates, it is also relevant to give feedback to the users of the facilities, even though, it might be challenging because the users may change frequently.

“But I guess this is related to the same thing that because we don’t have this kind of energy management tool or a forum, and so it (giving feedback) is an area that requires development.” (Interview 9)

Finally, most employees feel that feedback should be given more often. It seems like many employees working among energy management do not know for sure how, to whom and what kind of feedback should be given. In one organisation feedback was given at least once a year in performance appraisals. However, as the field of energy management is constantly changing receiving feedback only once a year is certainly not enough. Some employees told honestly that feedback is given too rarely and it should be given more often.

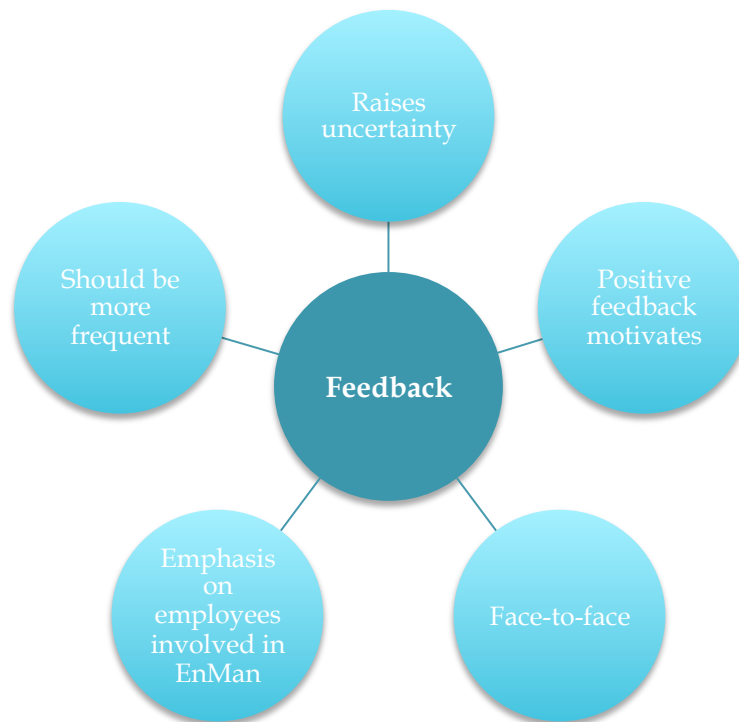


FIGURE 7 Feedback

4.2.3 Compensation

In regard with compensation, the most relevant findings concern the differences between industrial companies including, which suggest that compensation is more often used in industrial companies than in public real estates. Other significant findings include the benefits compensation may create, the challenges involved in compensation and the need for constant development.

There are some differences between public real estates and industrial companies concerning the use and importance of compensation. Only rarely does a public real estate have a compensation system in use, although many seem interested in the possibility of using one in the future. In public real estates the users of the facilities can make a tremendous effect on energy consumption, and thus compensation might motivate users to pursue energy efficiency more actively. Hence, some organisations have organised competitions for this purpose. Additionally, a couple of public real estates have developed a reward and sanction system with outsourced real estate maintenance companies. According to this system, if the real estate maintenance company reaches the goal set by the public organisation, it receives a reward. And if not, then the real estate maintenance company must pay penalties.

In contradiction to public real estates, all the interviewed industrial companies had some kind of a compensation system in use. The reward is given based on individual performance but in some cases it can be given to a team or a unit or it might depend on the performance of the whole organisation and thus concern all the employees. The indicators used for compensation, are

almost always based on energy consumption. Another important indicator is financial. Additionally, gatherings where the best innovations are presented to other employees are considered as a valuable compensation even though the reward is only verbal.

Compensation may offer many different benefits to employees and the organisation when used properly. Compensation is seen as a highly useful way of motivating employees or other users of the facilities towards energy efficiency and energy management. It can relatively fast lead to behavioural changes of using facilities more energy efficiently. Compensation may also create positive competition that helps companies in creating new innovations and saving more energy, and thus more resources. Money appears to be an excellent incentive for motivating employees towards energy efficiency.

"I claim that the best incentive is money, that's what I argue. I believe in the greediness of people, in a positive sense. That's what guides people and especially in this case because the intention is also good." (Interview 9)

Even though compensation in regard with energy management is considered mainly as beneficial, it has several challenges especially in the public sector. Not all kind of compensation is useful. The reward must be allocated to the right employees and the indicators should be carefully selected. If the incentives are "too good" it might lead to undesirable solutions. Energy efficiency should never be pursued "no matter what". That is why setting proper indicators is a priority for compensation. Many employees think that energy saving should not be the only indicator. Another challenge in compensation is to whom it should be addressed to. All the employees who are involved with energy efficiency should be able to pursue the reward. Additionally, sometimes compensation is considered as challenging, especially in public real estates, because it does not promote fairness. It might even raise negative competition causing jealousy and some see it as too complicated for the public sector.

"These rewarding systems, they are quite complicated issues often in the public sector. It's because of this narrow structure that influences quite a lot and there's also the matter of fairness that who has been promoting and..." (Interview 5)

Finally, in a constantly changing field of energy efficiency and energy management, compensation requires constant evaluation and updating. It is a complicated matter that requires thorough consideration in terms of who should be involved in it, what are the indicators used, and finally what is the proper amount of compensation.

"Compensation is a matter that needs to be developed constantly. Things live under the surface and of course compensation needs to be focused to those new things that have changed. At worst, it might encourage to something old that we want to get rid of. Instead, compensation is very hectic and it must constantly evolve among the operational activities." (Interview 11)

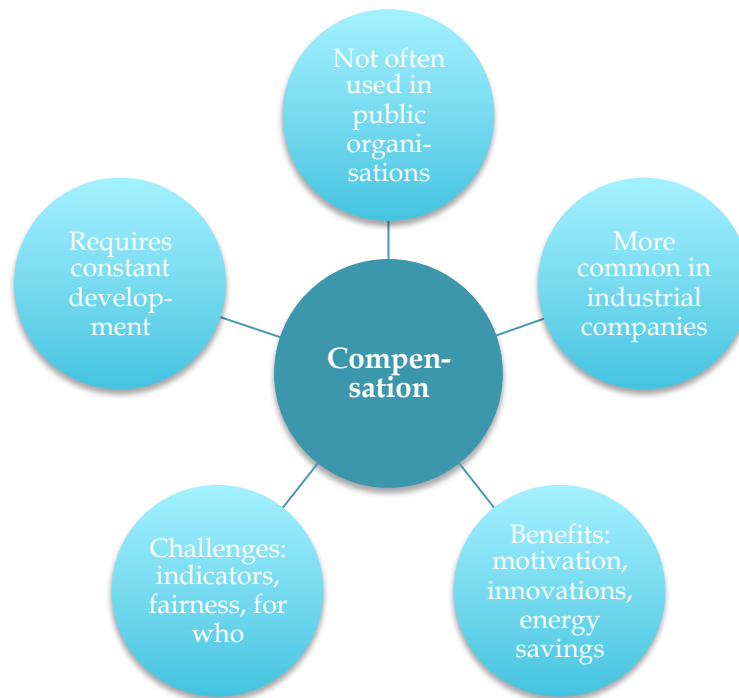


FIGURE 8 Compensation

4.2.4 Communication

In terms of communicating about energy efficiency or energy management related issues, this theme indicates great potential. The findings cover topics of benefits (increasing awareness and motivation), external communication channels, internal communication channels, contents of communication, challenges in communication channels, the importance of choosing the right way and time of communicating about energy efficiency, and collaboration with the communication department.

All the interviewees seemed to agree with each other that communication is important for energy management. By sharing information about energy efficiency increases the awareness and thus may lead to some behavioural changes. Most interviewees felt that communication may increase motivation towards energy efficiency. However, communicating both externally and internally about energy efficiency has great differences between organisations. Some organisations are interested in and devoted to sharing the news of energy efficiency whereas others might consider it as a task for the department of communication. Even though many see great potential in communication, there seems to be room for development.

"Of course when you bring something forward then it's in your mind at least for awhile." (Interview 11)

This study revealed that the most common channel of external communication is the official website of the organisation. Most of the interviewees explained that there is at least some information related to energy efficiency in their website. Another important communication channel is public

reports in industrial companies. Annual reports and sustainability reports often entail some information concerning energy efficiency. In a few organisations sometimes local newspapers write about the organisations, for instance to tell about significant investments related to energy efficiency. Use of other external channels seems rare and largely dependent on the organisation. These channels may include client newsletters, radio, television, social media such as facebook and twitter, competitions, campaigns, and meetings or seminars outside the organisation. Hence, there are multiple other ways to communicate about energy efficiency besides official website.

In regard with internal communication, the channels of communication are not that simple to point out, as it is often considered as a part of daily working routines, such as face-to-face interactions. In addition to face-to-face conversations, usually employees communicate about energy management and energy efficiency via emails or intranet. However, whether intranet is the best way to share information about energy efficiency divides opinions. Many organisations also arrange regular or irregular meetings, in which energy efficiency is the main agenda or part of another agenda. These meetings seems to be the most preferred method for communication

"We have intranet and then we have regularly financial review meetings and in these we generally go through these energy projects." (Interview 10)

The contents of external and internal communication are somewhat different depending on the organisation. Most of the organisations communicate externally about the most important matters related to energy efficiency such as energy efficiency investments. Public real estates also often communicate about energy saving tips. Especially communicating about energy efficiency to the users of the facilities is important. In industrial companies the most common issue to communicate externally besides energy efficiency investments is the development of energy efficiency in general. Communicating about energy efficiency targets is also important. However, some organisations communicate a wide range of energy efficiency related information, not forgetting even the smallest projects if those entail interesting elements in relation to energy efficiency.

"We communicate about energy efficiency in general in a group level and how it has developed. And usually we communicate about these main energy efficiency investments." (Interview 10)

The challenges of internal communication are often related to choosing the most effective channels to communicate in a way that it motivates the employees. On one hand, it is suggested to use more electronic communication channels, such as intranet, because it is a fast way to communicate and reach employees even in distant places. On the other hand, it is proposed to use other methods such as emails and meetings, because the message in intranet does not necessarily reach all employees. An employee's personal interests greatly define whether he/she reads the features about energy efficiency in the intranet. In some cases email, for instance, is considered as a better way to communicate than intranet because it is more personal. However, email has also its challenges because employees receive so many emails that there is a risk that the message will not be read. However, some interviewees considered whether

it even is necessary to reach all the employees, because apparently not all employees need to know everything about energy efficiency. It is more important to have fluent communication between the employees who are involved in energy management especially in regard with decision making. For these purposes meetings and face-to-face interactions are considered the most effective ways of to communicate.

“And there (in intranet) is sometimes told about these larger investments, but it could be a channel that is used even more in these kind of issues (energy efficiency).” (Interview 7)

Besides choosing the right way to inform employees about energy efficiency, how and when the message is told are other issues that require thorough consideration. If the organisation is going through major organisational changes, energy efficiency is most likely not a top priority. Timing should be right because energy efficiency is usually considered the most when the circumstances are favourable. Additionally, the message should be simple and clear to all. One interviewee suggested that the information that is presented to top management about energy efficiency should be as clear and simple as possible, because they might not be the experts of energy management but they are the ones who have the final say in regard with energy efficiency. Finally, it was pointed out that the message should never be misleading and the information should always be based on real facts. Communication to all the employees should include not only the positive happenings in energy management, but criticism is welcomed as well.

“And then there’s the matter of right timing and the right way of communication, that how it’s communicated. And it must be noted that if there are some major organisational changes or something else, then it’s pointless to start thinking about switching off lights kind of things.” (Interview 1)

“Even though the things are done right and the actions are done right, the way it’s communicated and how it’s received and experienced, can be the determining factor in whether the action has meant anything or not.” (Interview 9)

Finally, this study revealed the importance of collaboration with the department of communication. Those organisations that communicate diversely about energy efficiency usually mentioned tight cooperation with the department of communication. The interviewees who knew a great deal about communicating externally about energy efficiency, often considered communication as valuable for energy management. In these organisations communicating about energy efficiency is continuous and versatile in terms of means and contents of communication. However, some interviewees seemed to consider communication as a separate matter that should be handled by the communication department. In these cases the interviewee often mentioned that the collaboration between energy management and communication department should be improved.

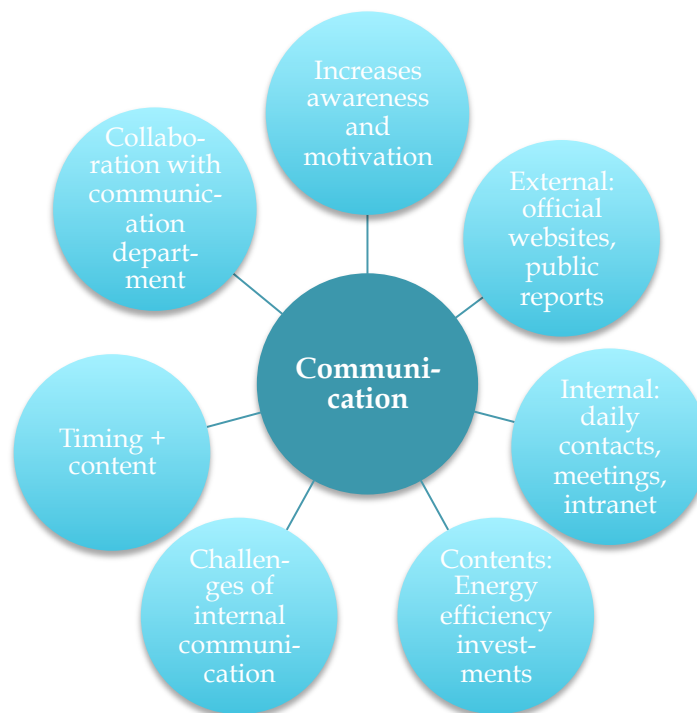


FIGURE 9 Communication

4.2.5 Training

The theme concerning energy efficiency related training suggests that the following findings are the most relevant: the importance to stay up to date, organising training in operative level, dependency on personal interests, challenges in who and how to train, and the idea that not all training is necessary.

Training related to energy efficiency is mostly seen as an opportunity to any organisation because it may offer many benefits in the fields of energy efficiency and energy management. Increasing and sharing new information is important because it will help staying updated in a field that is constantly changing and evolving. Training might help in learning about the newest technologies, equipments and systems related to energy efficiency. It is also valued because by training, one might find out new ways of working for now and for the future.

"...we always want to have the latest information that there is." (Interview 2)

"It (training) is necessary. That's obvious. If people cannot use the systems then the outcome is bad." (Interview 11)

Usually, training is organised for employees working in operative level. They are often the ones most involved with concrete energy efficiency improvement activities. In public real estates, they may be property managers or service men. In industrial companies training is also arranged in operative level, mostly for those working in production sites or other facilities. Additionally, a few interviewees mentioned equipment training being important. This is necessary whenever new equipment is bought, and

employees need to learn how to operate it. Even though trainings in operative level might be most common, there are other forms of training organised such as eco-support training (only in public organisations) and trainings that is related to certain events, exhibitions or campaigns, among others. Additionally, many consider meetings as training as well, because new information is shared among employees.

Training is quite often dependent on the personal interests of an employee. This might significantly affect the level of individual training. It appears like the employee can often decide how much he/she is willing to take part in trainings. This has its good and bad sides. The good side is that if the employee is highly motivated in energy management and wants to take part in trainings, most organisations support it and arrange training for the employee. A couple of interviewees mention, that also education arranged at employee's own time is encouraged even though it might cause some challenges in work, such as absence. However, the bad side of this is that if the employee is not interested in training, it seems like he/she does not need to get much training. This might lead to the situation that there are employees with different levels of knowledge performing same kind of tasks in the organisation.

"We can for example attend Motiva's trainings but it requires employee's own initiative and so it is not built in our systems." (Interview 7)

Training involves some challenges such as deciding who should be offered training to and what kind of training is useful. Training should be targeted to employees that can truly benefit from it. However, it was noticed that many interviewees did not seem to know much about training opportunities in their organisation. In addition, a few organisations revealed that there is not much training available in regard with energy efficiency and that some improvements should be made in that area. It seems like the ones who participate trainings only rarely are not as convinced about the benefits of training compared to employees who have participated trainings more often.

Even though training is seen as important, it must be exactly suited for its purpose and thus, not all training is necessary. There is no point in wasting resources on training if it is not absolutely necessary. In addition, very high-level training might not be useful and the level of training must be carefully considered. Especially some industrial companies felt that external trainings might not respond to their needs. These basic energy efficiency trainings are in sometimes beneficial but often in industrial companies training requires more specific knowledge of the industrial processes and external trainings might not be able to provide any new information than there already is available. Some argued that the most benefit is gained by sharing the information within the organisation by training each other. In regard with public real estates, it was mentioned that they might benefit greatly from sharing information between other public real estates because quite often they struggle with same issues and might find new solutions from other organisations.

"There are maybe two ways. Either telling what has already been accomplished in our organisation, or if one's absolutely certain that this is how it should be done, then tell that do it like this. So not any sort of visioning or something..." (Interview 4)

“Let’s just say that we can learn from each other, from our different sites, much more than we can learn from outside of our organisation...” (Interview 7)



FIGURE 10 Training

4.2.6 Summary of the human resource management practices

Management support	Feedback	Compensation	Communication	Training
Responsibilities in making investment decisions	Uncertainty about giving or receiving feedback	Compensation is only rarely used in public real estates	Benefits related to increased motivation and raising the awareness	The need to stay up to date
Setting energy efficiency targets	Positive feedback is motivating	Most industrial companies use compensation systems	External channels used: official websites and public reports	Operative level is trained the most.
Ensuring communication throughout the organisation	The best way to give/receive feedback is face-to-face	Compensation creates benefits such as increased motivation, energy savings and innovations	Internal channels used: daily contact (face-to-face, emails), meetings, intranet	Employee’s personal interests can affect on how much he/she is trained

Manager's personal interest influence the level of support	Feedback should be given especially to employees involved with energy management	Challenges in who should be involved in it, what indicators to use, and fairness	Contents of communication: energy efficiency investments, energy saving tips, recent development	Challenges in who and how to train
Financial challenges	Feedback should be given more frequently	Compensation requires constant development	Challenges of internal communication	Not all training is useful.
Organisational challenges			Timing and content of communication should be carefully considered	
			Collaboration with communication department is essential	

TABLE 4 Summary of the HRM practices

5 DISCUSSION

The final chapter summarises the most significant research findings of the study and discusses their relation with former literature. Managerial implications are presented followed by the evaluation of the study. Reliability and validity of the study are evaluated. Finally, limitations of the study are discussed and suggestions for future research are presented.

5.1 Summary of the study

The purpose of this study was to create a better understanding of employee commitment to energy management. The data collection was conducted with theme interviews, interviewing 14 employees working in energy management related positions in five industrial companies and six public real estates. The results revealed several reasons why employees might commit to energy management. This was studied by finding out the motives employees have towards energy management and the possibilities and challenges in employee commitment to energy management. In addition, the results also argue that human resource management (HRM) practices, such as management support, feedback, compensation, communication, and training may enhance employee commitment to energy management.

The former literature suggests that employee commitment is influenced by the motives and targets of the commitment (Becker et al., 1996). This study relates to the argument and thus studied the motives towards energy management and adds that personal interests can affect the commitment. The findings of the study revealed that probably the most important reason why employees commit to energy management is to gain financial benefits. Energy management is practised as it leads to substantial energy savings (Ates & Durakbasa, 2012), and thus to reduced energy costs (Antunes et al., 2014). For many organisations, energy management has been an important instrument for insuring business survival and success (Ates & Durakbasa, 2012). Hence, the research findings strongly support the former literature. However, besides

opportunities, there are some challenges related to financial aspects. Energy efficiency practices can be costly and lack of resources and financial insecurity about the future might challenge employee commitment to energy management. Additionally, because most of the easiest and inexpensive investments are already done, energy efficiency investments might only become increasingly expensive and more complicated.

Another reason for committing to energy management comes from the need to preserve the environment and improve organisational image. The need of being environmentally responsible is pushing organisations to practise more effective energy management (Carbon Trust, 2015; Kannan & Boie, 2003). Additionally, many organisations practice energy management in order to improve their corporate image (Antunes et al., 2014) and to impress nongovernmental organisations (Dörr et al., 2013). However, the findings revealed contradictory results that not all employees commit to energy management because of the environmental benefits it creates. And even though many organisations practice energy management in order to comply with environmental laws and regulations, this seems not to be a reason for employee commitment to energy management. The need to preserve the environment seems to arise from personal values or a strong organisational culture towards promoting environmental matters.

Employee commitment is affected by employee's feelings and attitudes about the commitment (Brown, 1996). Results of the study argue, that personal interests and values of an employee explain to some extent, why employees might commit to energy management. This mainly creates opportunities for employee commitment to energy management. All the employees know what energy efficiency means and no one is against it. However, some employees are clearly more interested in energy management and energy efficiency than others. The fact is that not all employees are interested in energy management and this might be challenging the commitment. On the other hand, the results also suggest that because energy efficiency is such a hot topic, employees might commit to energy management because of the need to gain social acceptance of others.

Former literature argues that setting an energy saving target is a necessary activity for energy management (Ates & Durakbasa, 2012), whereas the results suggest that employees might commit to energy management because they are interested in pursuing the energy efficiency targets set by the organisation. Employees seem to feel part of the common good and targets are something concrete and easy to understand. However, the targets must be clear and communicated to all employees.

Besides the already mentioned, this study found some opportunities and challenges in the pressure towards practising more efficient energy management. The fact that energy efficiency must be constantly improved and it is always considered when repairing old or building new, offers opportunities for committing to energy management. However, the challenge is that other things might be more important compared to energy management. In regard with real estates, indoor air problems, safety, healthiness, comfort, and use of space are often considered more important than energy efficiency. In

industrial companies the most important thing is to maintain a profitable business and everything else might be less important.

In regard with enhancing employee commitment to energy management, this study focused on examining what is the influence of (HRM) practices such as management support, feedback, compensation, communication and training. All of these confirmed the former literature in which good HRM practices may enhance employee commitment (Collier & Esteban, 2007; Whitener, 2001). The results of this study together with former literature present the most significant findings in regard with management support. The findings support former literature on the importance of management support and commitment. One crucial aspect of management commitment is to ensure all the necessary resources for energy management such as financial, human and technological resources (Antunes et al., 2014; Carbon Trust, 2015; Coppinger, 2010). Management commitment is also needed for creating an energy policy, promoting and communicating about energy management inside the organisation, and defining energy objectives and targets (Antunes et al., 2014). It is assumed that if the management is committed it will support energy management. The results agree with former literature by arguing that management support is needed for making energy efficiency related investment decisions, setting energy efficiency targets and for ensuring communication throughout the organisation. Hence, management support offers many opportunities because it has great power over energy management and thus employee commitment. On the other hand, lack of support can have a negative impact on employee commitment to energy management.

In addition to management support, other HRM practices that seem to have great potential in enhancing employee commitment to energy management are compensation and communication. Compensation however, seems to enhance external commitment, although internal commitment is needed as well (Argyris, 1998). For industrial companies compensation systems are important, even necessary, whereas in public real estates they might involve challenges. In public real estates it is important to maintain fairness and compensation systems are not always possible to implement, even though they might be considered useful. It is important to regularly evaluate whether the compensation system is addressed to right people and it includes right indicators.

In terms of communication, increasing employee awareness about energy management might enhance the interest and motivation towards the subject and thus create employee commitment to energy management. Dusi and Schultz (2012) suggest that communication is required in energy management. It is essential that managers communicate frequently about programs, initiatives, goals and priorities in order for employees to understand what is expected in achieving the goals (Govindarajulu & Daily, 2004). There are many possibilities in using various channels for communication, which some organisations utilise but others do not. Timing and the way of communication must be carefully considered. It is also essential to stay in touch with employees who work in the department of communication in order to find the best ways to communicate about energy efficiency and energy management.

The least support by the former literature and by the results was received from feedback and training. Comprehensive training and development activities are the kind of activities that affect employee commitment and motivation (Whitener, 2001). Fornes et al. (2008) on the other hand propose that giving feedback is a valuable practice for building commitment. The findings suggest that giving positive feedback might motivate employees and thus create employee commitment to energy management. It may lead to correcting mistakes and informing employees about the recent event in energy management. In terms of training, it might also increase the awareness of employees about energy management. It is valuable for energy management because many organisations wish to stay updated about the constantly changing field and technology.

Even though former literature has offered some support for the themes covered in this study, this study has gone further and deeper into employee commitment to energy management and thus there is not always literature available to support the arguments. Especially in regard with HRM practices, former literature only suggests that some practices might enhance commitment but does not help in understanding how they are related to energy management and utilised in working environment. The further section will aim at filling this gap by introducing suggestions for practitioners on how employee commitment to energy management might be enhanced.

5.2 Managerial implications

This study provides valuable insights for the managers and business practitioners about the relation between employee commitment and energy management. It is a step forward in creating a better understanding of the so far unfamiliar topic and for putting that knowledge into good use in working life. Environmental laws and regulations and the need to create financial savings are pushing organisations to practice more efficient energy management (Ates & Durakbasa, 2012), and committed employees might enhance the process. Thus, this study proposes that in order to practise the most effective energy management, employee commitment is required (Antunes et al., 2014; Coppinger, 2010; Dusi & Schultz, 2012; Kannan & Boie, 2003; Motiva Oy, 2014a, Tuomaala & Virtanen, 2011; Van Gorp, 2004) and it should be acknowledged in all organisations aiming to improve their energy efficiency. This section will assist practitioners for understanding how to utilise the motives towards energy management for strengthening employee commitment. It will also propose how HRM practices could help in enhancing employee commitment to energy management. However, it must be acknowledged that because of the novelty of the topic, former literature does not provide much support for the managerial implications but instead these rely heavily on the research findings of this study.

Organisations that are eager to enhance employee commitment to energy management should pursue motivating employees. This study suggests that

motives towards employee commitment are financial benefits, preserving the environment, pursuing energy efficiency targets, personal interests, and gaining social acceptance. In regard with financial benefits, especially in public real estates, it is suggested that organisations should exploit more the opportunities of applying for external financing. This might ease the financial pressure. In addition, not relying too much on short repayment periods but instead considering the benefits in a long run, could help for implementing more energy efficiency investments. Also the matters of environmental benefits should be communicated clearly and throughout the organisation for all its employees. In terms of energy efficiency targets, this study suggests that setting energy efficiency targets might motivate employees to energy management. Setting an energy saving target is a necessary activity for energy management (Ates & Durakbasa, 2012). If the organisation does not already have clear energy efficiency targets, it should set them immediately and again communicate them to all the employees. The personal interests and values, as well as the fact that some might commit to energy management in order to gain acceptance, might be hard to influence. However, this study presents some HRM practices that might help in enhancing employee commitment to energy management.

In regard with HRM practices, this study argues that all the practices including management support, feedback, compensation, communication, and training might enhance employee commitment to energy management. The most significant practice is definitely management support, because it is a necessity for many energy management practices and for implementing other HRM practices as well. The importance of management support cannot be stressed enough in regard with committing to energy management. Hence, it is recommended that the management make sure to fill all his/her responsibilities in energy management while motivating employees towards energy management. The management should also invest in the following HRM practices.

Another approach for increasing motivation and thus employee commitment is compensation. This is especially useful in industrial companies but might be challenging in public real estates because it may create the feelings of unfairness. However, the indicators determining the compensation must be carefully thought through. If the rewards are too high or too easy to achieve and the only indicator used is energy consumption, this may lead to unwanted situation in which energy efficiency is pursued no matter what. Thus, this study proposes using compensation systems especially in industrial companies, and in public real estates only when carefully thought through.

Increasing the awareness of energy efficiency seems to enhance employee commitment to energy management. It is also essential because energy management and energy efficiency is constantly changing and thus it is important for the employees to have the latest knowledge in the field. Hence, this study suggests that increasing the awareness can be pursued through HRM practices: giving feedback, improving communication, and increasing the opportunities for training. Giving feedback, especially positive feedback, is recommended. It is important that feedback is given face-to-face to.

Increasing the opportunities for training is proposed. In public real estates the organisations could learn from each other's, whereas in industrial companies training inside the organisation is recommended. Sometimes external training is not necessary and the organisation can learn a lot by simply sharing information within the organisation through training and communication.

In terms of communication, all kind of communication regarding energy efficiency and energy management is encouraged. Besides the most common and traditional communication channels like official website of the organisation and public reports, organisations should consider using more other external channels such as social media. In regard with internal communication, meetings with energy management teams are necessary and thus highly recommended. If the organisation does not yet have a team dedicated for energy management, addressing the team should be done. It is essential to have an addressed team or individuals in charge of energy management in an organisation (Antunes et al., 2014; Dusi & Schultz, 2012). Even though intranet has some challenges as an internal communication channel, it is still suggested to utilise it more for sharing energy management related news, because it reaches employees fast and even in distant places. Finally, instead of looking energy management as a separate matter, integrating it throughout the whole organisation might assist in taking it to the next level.

Lastly, the world of energy management is constantly changing and becoming increasingly valuable to different organisations. While some organisations might only concentrate on finding new and more effective technical solutions, the human aspects could be neglected. At the same time there will be a decreasing amount of lucrative energy efficiency investments left to implement, thus employees might be the ones who can affect the most on energy efficiency and energy management. Hence, the subject of employee commitment could become increasingly important for energy management practitioners.

5.3 Reliability and validity

The most common ways to evaluate the credibility of a study or a research are related to concepts of reliability and validity (Tuomi & Sarajärvi, 2009). However, evaluating a qualitative study by means of reliability and validity has been criticised because the concepts have been designed to meet the needs of quantitative studies (Tuomi & Sarajärvi, 2009). They are based on the assumption that a study can be evaluated objectively (Hirsjärvi & Hurme, 2008). However, a qualitative study must still aim at revealing the credibility of the study and depending on the nature of the study, reliability and validity can mean different things (Hirsjärvi & Hurme, 2008).

Reliability concerns the quality of the research data (Hirsjärvi & Hurme, 2008). Most importantly it means the repeatability of the results, thus the ability to present non-coincidental results (Hirsjärvi, Remes & Sajavaara, 2007). This

means that if the research were duplicated, the results would remain the same (Kananen, 2014). Hence, reliability aims to evaluate the researcher's methods and credibility of the data analysis (Hirsjärvi & Hurme, 2008). Reliability is mainly involved with the execution of a research (Kananen, 2014). The risk of unreliability has been minimised by carefully explaining the whole process of the theme interviews. The researcher should report accurately and honestly about all the phases of the study (Hirsjärvi et al., 2007). Especially conditions of the interviews need to be explained as well as the time spent for interviews, possible distractions, misinterpretations and self evaluation of how one performed as an interviewer (Hirsjärvi et al., 2007).

This interview study acknowledges a few possible aspects that may have affected the reliability of this study. In terms of the interview conditions, in two cases the numbers of participants in the interviews broke the pattern of having one interviewer and one interviewee involved in the occasion. In the first interview the whole project team attended the interview involving two employees from Rejlers Oy and another student from University of Jyväskylä. The risk of affecting the interview was minimised by letting the interviewer be in charge of the situation while other participants were observing the situation. In addition, instead of only one interviewee participating per each interview, in case of two interviews more than one person took part in the interview. In one organisation two employees participated the interview and in another organisation even three employees wanted to take part in the interview. Having more than one interviewee seemed to have two different outcomes. In the event of two interviewees, the process went fluently and both interviewees seemed eager to tell their opinions without any discomfort or having the need to agree with the other interviewee. However, in case of three interviewees, the process was a slightly more difficult to handle. The interviewees did not appear as keen on sharing their thoughts out loud, especially when it came to asking personal opinions. However, by reading the room and occasionally asking additional questions, the interviewees became more relaxed and willing to discuss more openly.

Another aspect that may have affected the reliability of this study is the fact that the same interviews had multiple other purposes as well. Because the interviews were a part of the project conducted for Rejlers Oy and they were also used as a data for another Master's Thesis, the structure of the interviews entailed many other aspects besides issues related to employee commitment. This might have had an influence to the interviewee's answers. However, the impact might not have been significant because all the themes were related to energy management and fit well together forming a coherent interview structure. Hence, it is difficult to evaluate what kind of an effect did they have to the results. The risk of unreliability was minimised by defining clear themes to the interview structure and arranging them in a logical order.

In regard with self-evaluation, the interviewer's lack of experience cannot be disregarded. As the interviewer did not have any previous experience in conducting interviews, it is impossible to expect that the quality will measure up to interviews conducted by professionals. However, with careful preparation and background research on the topic, the risk of not producing

unreliable data was minimised. The theme interview template was structured in a way that it was logical and easy to follow, thus making it as fluent as possible for the interviewer to ask all the right questions. The interviewer had written down some example questions that may have been used in case of having difficulties to form the questions in the interview situation. In addition, by writing down some notes while the interview proceeded, the interviewer guaranteed not repeating the already asked questions, while making sure all the relevant aspects are covered in the interview.

Validity means that the research is studying the things that it has promised (Tuomi & Sarajärvi, 2009). It involves planning of the research and setting the research frame, and then again analysing the results accordingly (Kananen, 2014). The interpretations must be compatible with the descriptions of the study (Hirsjärvi et al., 2007). Hence, validity is evaluated by examining whether the results of the study truly answer the research task and questions of the study. A prerequisite for validity is decent documentation (Kananen, 2014). The researcher must be able to document how he/she has interpreted the interviewees the way he/she did (Hirsjärvi & Hurme, 2008). It requires justifying the decisions and results made throughout the study (Kananen, 2014). Hence, this study has been describing as accurately as possible all the decisions made through the entire process of conducting the study. In addition, the validity has been improved by adding direct citations to the analysis of the results. This may enrich the readers experience while strengthening the credibility of the analysis (Hirsjärvi et al., 2007).

There are ways to measure validity of a study such as triangulation, addressing the credibility of the interviewees and referring to former literature in the analysis phase (Hirsjärvi & Hurme, 2008). Because the subject of this study is relatively new, triangulation is not possible to put into practice. In triangulation, research results are compared with data obtained from other sources (Hirsjärvi & Hurme, 2008). However, referring to literature when analysing the results of the study, is implemented as far as possible in order to increase the validity of the study. Additionally, when analysing the data, it is important to explain the background and justify reasons for classification of the data (Hirsjärvi et al., 2007). In this study, supporting the chosen themes with former literature strengthens reliability. However, as the subject has not been studied before, it is impossible to find comprehensive support from the literature to all the results of the study.

One way to improve the validity of this study was to carefully choose the interviewees. The interviewees were selected based on their knowledge on energy management and energy efficiency in their organisations. If the right person was not immediately found through Rejlers Oy or searching through Internet, the organisation was called to and asked who is in charge of energy management issues. In two cases, as mentioned, the people invited to the interview felt that there might be other employees who could know even more about the subject, and that is why they were also allowed to attend the interview.

5.4 Limitations and suggestions for future research

All studies have some limitations that need to be considered. The most relevant limitations of this study are related to the project in which context the data was collected, outlining the data collection into industrial companies and public real estates, timing of the interviews and the lack of support from the former literature. These matters have the greatest potential impact on the quality of the findings and the ability to answer the research questions of the study. Future research is encouraged to overcome these limitations as well as to deepen the understanding of the studied phenomenon.

The project, in which the data was collected for this study, might have caused some limitations to the study. Because the data was collected in the project conducted for Rejlers Oy, it limited the possibilities in using other data collection methods besides a theme interview. If this limitation did not exist, depth interviews might have been an alternative data collection method for creating even deeper understanding of employee commitment to energy management. However, conducting depth interviews require excellent interview skills, whereas thematic interviews do not demand as much experience from the interviewer. Thus, thematic interviews might have been less risky method for an inexperienced interviewer. It also suited well for the purpose of studying something relatively new, and thus might have been the best choice after all.

While this study sees opportunities in narrowing the study to involve public real estates and industrial companies, some might consider it as a limitation. If the study was to involve only one organisation, as a case study, a deeper understanding of employee commitment to energy management in that specific organisation may have been discovered. The method would have enabled interviewing other employees of the organisation, not narrowing the results to perspectives of the employees who already know widely about energy management. Another opportunity would have been to include many different types of organisation to this study. However, this study specifically examined the perceptions of the employees most involved with energy management, and in public real estates and industrial companies, in order to create an understanding of the phenomenon in the fields that consume a tremendous amount of energy and thus ought to value energy management more than organisations in which energy consumption is insignificant.

Another limitation of the study is timing. The interviews were conducted during financially challenging times and thus most of the organisations were struggling to find resources for energy management practices. This might affect on committing to energy management in some level. Another limitation in regard with timing was the forthcoming energy efficiency law. During the time of the interviews the content of the energy efficiency law was not yet revealed. Hence, the interviewees felt insecure about the future and were not able to make long-term decisions. This insecurity might challenge committing to energy management or at least seem like it does. However, the results of this

study might still be the same if the interviews were conducted a year or two later.

The final relevant limitation of the study involves the novelty of the topic. As mentioned several times, employee commitment in relation to energy management has not received academic attention, meaning there is no former literature available concerning the topic. Thus, the background of this study relies heavily on the former literature on energy management, employee commitment and even organisational commitment but not the relation between these concepts. Additionally, research findings of the study were only merely supported by the former literature and the rest relies purely on interpretations made by the researcher, myself.

As the subject of this study has not been researched before, any future research on the subject is encouraged. Despite the lack of former literature on the subject, this study has formed an excellent basis for any future studies or research in relation to employee commitment to energy management or energy efficiency. This phenomenon could be studied further using different data collection methods. Whether conducting a case study focusing only on a specific organisation, or duplicating this study with minor changes on the selection of different business fields, are all opportunities in creating a deeper understanding of the subject.

Studying different elements related to employee commitment and its relation to energy management is also highly encouraged. While this study focused on understanding of why do employees commit to energy management and how it may be enhanced, another interesting aspect would be to study further the benefits committed employees may create to energy management. Additionally, researchers and business practitioners of energy management might be interested to research further the effectiveness of the studied HRM practices as well as finding other possible HRM practices that could enhance commitment to energy management. It is suggested to study especially management support, compensation and communication because they revealed great potential in this study.

To this end, it is recommended to study the relation of employee commitment and energy management after the energy efficiency law is enabled and during more financially stable times in order to see whether these conditions truly affect commitment towards energy management.

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APPENDICES

Appendix 1. Theme interview: Survey on the current state of energy management

English version (translation of the original Finnish version)

1 BACKGROUND INFORMATION

- Occupation and job description
- Former work experience regarding energy efficiency
- Former education regarding energy efficiency

2 WARM UP QUESTIONS (+ MEANING)

- Meaning of energy efficiency to the organisation
- Meaning of energy efficiency to the interviewee

3 DECISION-MAKING AND COOPERATION

- Own possibilities to influence decision-making and practices
- Other employees' possibilities to influence decision-making and practices
- Cooperation with the management
- Cooperation with other employees (e.g. energy management team)
- How is energy efficiency visible in employees' daily work?

4 ATTITUDES AND MOTIVATION

- Employees' attitudes and motivation towards energy efficiency
- Challenges in employee attitudes
- Suggestion on improving employee motivation

5 MANAGEMENT SUPPORT

- Management's roles in decision-making
- Management support in relation to energy efficiency practices
- Lack of management support in relation to energy efficiency practices

6 FEEDBACK

- Methods used for giving and receiving feedback
- People involved with giving and receiving feedback
- Benefits of giving/receiving feedback
- Suggestions for improvements

7 COMPENSATION

- Description of the compensation methods related to energy efficiency
- Indicators used for compensation
- Suggestions for improvements
- Benefits of compensation

8 COMMUNICATION

- Channels used for external and internal communication
- Contents of external and internal communication
- Suggestions for improvements
- The effects of communication on motivation towards energy efficiency

9 TRAINING

- Description of the training organised for the employees
- Frequency of training
- Benefits of training
- Suggestions for improvements

10 CONCLUSIONS

- Additional comments

** Appendix 1 includes only the interview themes and their contents that are used as an empirical data in this study*

Appendix 2. Teemahaastattelu: Energiahallinnan nykytilan kartoitus*

Suomenkielinen versio

1 TAUSTATIEDOT

- Ammatti ja työn kuvaus
- Aikaisempi työkokemus energiatehokkuuden saralta
- Aikaisempi opiskelutausta energiatehokkuuden saralta

2 LÄMMITTELYKYSYMYKSET (+ MERKITYS)

- Energiatehokkuuden merkitys organisaatiolle
- Energiatehokkuuden merkitys haastateltavalle

3 PÄÄTÖKSENTEKO JA YHTEISTYÖ

- Omat vaikutusmahdollisuudet energiatehokkuuden päätöksiin ja käytänteisiin
- Muun henkilöstön vaikutusmahdollisuudet
- Yhteistyö johdon kanssa
- Yhteistyö muun henkilöstön kanssa (esim. energiatiimissä)
- Miten energiatehokkuus näkyy henkilöstön jokapäiväisessä työssä?

4 ASENTEET JA MOTIVAATIO

- Henkilöstön motivaatio ja suhtautuminen energiatehokkuutta kohtaan
- Haasteet henkilöstön suhtautumisessa
- Ehdotuksia henkilöstön motivaation parantamiselle

5 JOHDON TUKI

- Johdon roolit päätöksentekoon
- Johdon tuki suhteessa energiatehokkuuden toimiin
- Johdon tuen puute suhteessa energiatehokkuuden toimiin

6 PALAUTE

- Palautteen antamisen tai saamisen keinot
- Ketkä antavat palautetta ja kenelle?
- Palautteen antamisen/saamisen hyödyllisyys
- Kehitysehdotuksia

7 PALKITSEMINEN

- Energiatehokkuustyöstä palkitsemisen kuvailu
- Palkitsemiseen käytettävät indikaattorit
- Kehitysehdotuksia
- Palkitsemisen hyödyt

8 VIESTINTÄ

- Ulkoisen ja sisäisen viestinnän kanavat
- Ulkoisen ja sisäisen viestinnän sisältö
- Kehitysehdotuksia
- Viestinnän vaikutukset motivaatioon energiatehokkuutta kohtaan

9 KOULUTUS

- Henkilöstölle järjestetyn koulutuksen kuvailu
- Koulutuksen yleisyys (Kuinka usein koulutuksia järjestetään?)
- Koulutuksen hyödyllisyys
- Kehitysehdotuksia

10 LOPETUS

- Mahdolliset lisäkommentit

** Liite 2 sisältää ainoastaan tässä tutkimuksessa hyödynnetyt haastatteluteemat ja niiden sisällöt*

Appendix 3. Haastattelukutsu

Aihe: Haastattelu Pro Gradu -työhön energiatehokkuuden johtamisesta

Haastattelukutsu

Olemme ympäristöjohtamisen opiskelijoita Jyväskylän Yliopiston Kauppakorkeakoulusta. Työskentelemme mukana energiatehokkuuden johtamisen projektissa ja kirjoitamme tältä pohjalta Pro gradu -työmme. Taustalla on TEKES-hanke Rejlers Oy:n kanssa, jossa kehitetään uutta konseptia energiatehokkuuden johtamiselle. Tähän liittyen toteutamme haastattelututkimuksen, jonka kohteena ovat teollisuuden ja kiinteistöalan yritykset sekä julkisyhteisöt.

Haluaisimme kuulla näkemyksiänne aiheen tiimoilta haastattelemalla Teitä. Kyseessä on avoin haastattelu jossa selvitetään haastateltavan näkökulmaa energiatehokkuuden johtamisen käytänteistä. Haastatteluun kannattaa varata aikaa noin 1-1,5 tuntia ja se voidaan toteuttaa organisaationne tiloissa. Haastattelutilanne on keskustelunomainen, jossa haetaan haastateltavan näkökulmaa aiheista eikä ns. oikeita vastauksia kysymyksiin ole.

Haastattelussa kerättyjä tietoja käytetään kahden gradun aineistona. Toivomme haastattelun herättävän ajatuksia ja ideoita myös oman energiatehokkuustyönne kehittämiseksi.

Arvostamme suuresti osallistumistanne ja saatte halutessanne myös valmiit gradutyömme luettavaksenne. Mahdollisia haastattelupäiviä ovat esimerkiksi: viikolla 45 tiistai 4.11 tai keskiviikko 5.11. Ilmoitattehan kumpi näistä päivistä sopii Teille parhaiten. Olemme teihin vielä yhteydessä puhelimitse sopiaksemme tarkemman haastatteluajan. Kiitos jo etukäteen ajastanne.

Ystävällisin terveisin,

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