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**The attitudes of buyers, vendors, tenants, and landlords concerning
environmental questions - an analysis based on different national
empirical surveys**

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Abstract:

Climate change and an increased awareness of environmental questions have led to much tougher environmental laws globally. In accordance with the Kyoto treaty Germany is striving hard to fulfil its environmental obligations.

Increasingly stringent environmental laws and soaring energy prices are therefore forcing the Real Estate sector to respond. While new buildings must comply with the new regulations, older buildings need to be upgraded as well; that means "greening" existing properties becomes a political and commercial priority. When improvements are necessitated in existing properties, the new regulations force the owners to upgrade the building to the higher standards.

This paper researches and analyses these environmental issues relevant to the house buyers, vendors, tenants, and landlords to determine the importance of sustainable housing to the general public.

The paper is based on a national empirical survey from spring 2015; the paper also compares and analyses data from six different surveys (from 2009 to 2015) carried out by the author.

1. Overview

Climate change and an increased awareness of environmental issues have resulted in many countries in legislation to reduce the carbon footprint. Germany is striving hard to fulfill the obligations of Kyoto, and subsequent conferences (Tiefensse, 2007; Piebalgs, 2007), as well as the G7-resolutions (e.g. the Elmau-meeting and its new obligations). Following the nuclear disaster at Fukushima, Japan in March 2011, Germany's pro-nuclear policy changed substantially with the "energy about-turn" ("Energiewende"). The target now is to vastly increase the use the different forms of renewable energy vastly.

Over the last few years, more stringent environmental legislation (especially the "Energieeinsparverordnung ENEV" - Energy Performance of Buildings Directive) together with soaring energy prices (Matthes 2007) has placed pressure on the real estate industry to deliver substantial carbon dioxide co2 reductions. When improvements are necessitated in existing properties, the new regulations force owners to upgrade the building to the substantially higher standards. This obliges property owners to look seriously at the Life Cycle Costs (LCC) of their buildings, for as others have established, failure to do so will become a risk factor and may lead to property value reductions (Luetzendorf et al, 2015)

This paper via the vehicle of surveys which, beginning in 2010, were carried out over the last six years, discusses the environmental issues facing the German residential sector, and in particular concentrates on the attitudes, and perceptions of the various actors to the residential property transaction process, viz: tenants, home owners, landlords, vendors, buyers together with the managers of the transaction, the real estate agent.

The study examines, among other things, the interactions between energy efficiency and the marketing of residential properties. In addition to this subject area, a further catalog of questions relates on the energy performance certificate. Since 1 May 2014, according to the Energy Performance of Buildings Directive (EnEV 2014), this certificate has to be presented when properties are sold or leased.

Furthermore it is analyzed, which measures to upgrade the energy status of a property are recommended by brokers to their customers, when properties are sold or leased. The paper also examines the advantages or disadvantages of a property in the marketing, which has the latest energy standards and ratings reported. In addition the study deals with the implementation of the duty to present the energy performance certificate and the consequences that arise for brokers in the marketing process as a result.

2. Literature review

In Germany it is an important issue is to analyse to which degree environmental issues have an impact on the real estate market, and whether there is an increased awareness of sellers, landlords and tenants concerning ecological topics, whether this awareness is cost-driven or based on an ecological attitude. It is also analysed what tenants expect on one hand the government to do and on the other hand their landlords. This paper also analyses why and where people are trying to save energy.

Until now there are only a few studies available, which examine environmental questions from such a perspective.

Study	Author	method
"current issue" of the German tenant association (Deutscher Mieterbund)"	German tenant association (Deutscher Mieterbund)	survey via the homepage of the German tenant association (2007)
„energy saving measures“	survey by Gfk Marktforschung (2007) for the Bavarian Association of Housing Companies (Verband Bayerischer Wohnungsunternehmen)	oral interviews (with Pen Pads in August 2007)
"survey 2008 energy saving“	survey by the Forschungsinstitut Analyse & Konzepte - Beratungsgesellschaft für Wohnen, Immobilien und Tourismus for the Northern German Association of Housing Companies (Verband norddeutscher Wohnungsunternehmen e.V. VNW)	telephone survey (January - February 2008)
„habitation and ecology in Germany“	Immowelt AG (one of Germany's leading real estate sites)	internet based survey 2008 (people interested in renting or buying properties)
Questions on energy efficiency as part of the "Mietwohnindex"	survey by Gfk for the German Association of Housing Companies (VdW)	oral interviews annually either for Germany or only Bavaria. 2015 only for Bavaria
Public awareness of 'green' residential property – an empirical survey "Marktmonitor Immobilien" published annually since 2010	Kippes	survey of real estate companies (Immowelt panel)

3. Methodology and research design

3.1. Basis of research and methodology

Research basis is the “MARKTMONITOR IMMOBILIEN 2015”, a recent survey carried out in spring 2015 (Kippes, 2015). The survey was conducted via the organization Immowelt. The real estate platform, Immowelt, originated from the company Data Concept, and later on became a joint venture between the Holtzbrink, WAZ, and Münchener Zeitungs-Verlag, three of Germany’s leading publishing companies. The platform Immowelt is quite similar to the American real estate websites realtor.com, homestore.com or move.com, or rightmove.co.uk in the UK and the web page of the Real Estate Institute of Australia (<http://www.reiaustralia.com.au>).

On the basis of the discussions that real estate agents have with buyers, vendors, landlords and tenants, they are in a position to provide a more insightful view of the attitude of these players on the property markets to specific house attributes, compared to the attitudes once the sale has been completed or the property has been rented. It is noted that not all these players will be totally honest in relation to their discussions with real estate agents. However, the extensive coverage of agents in this survey negates this concern. Beside that “real estate companies feature prominently in the implementation and development of sustainable policies” (Cajias et al., 2012).

3.2 Definitions and data: total population of the survey of recent and predicted levels of demand

3.2.1 Definition of real estate companies used in survey

There are 33,305 companies who, according to the German Bureau of Statistics, operate in the business of renting, letting or managing third party properties (WZ 70.3 in the Structure Analysis of Service Companies, the German “Dienstleistungsstrukturhebung”).

Of these companies, individual enterprises account for over half of the companies (18,779). Real Estate agencies are relatively small, and the average number of employees per company is 5. Over 94% of the companies have a staff of less than 9 employees.

3.2.2. Database of this survey

The data is derived from the participating members of the “Immobilien-Professional-Panel” of Immowelt. The respondents of this panel originate from the Immowelt address data of companies who are renting, or letting properties, which were either customers of Immowelt, or were listed in the data base of Immowelt. The data pool comprises 25,000 – 30,000 addresses, which is probably equivalent to the “Structure Analysis of Service Companies”, (the German “Dienstleistungsstrukturhebung”).

Since Immowelt covers all parts of Germany, and all company sizes, there is the same probability for all German real estate companies to become part of the sample.

Each respondent who wanted to become part of the panel had to fill out a comprehensive questionnaire. Random samples based on panels are more accurate than other samples.

To populate the survey, 3,530 participants were selected at random from the participant members of the panel. Following the verification of the data a sample of 604 brokers were selected. The descriptive margins were as follows: margin of error 1.72 % (share value of 5%) und 3.95% (share value of 50%), confidence level 95 %.

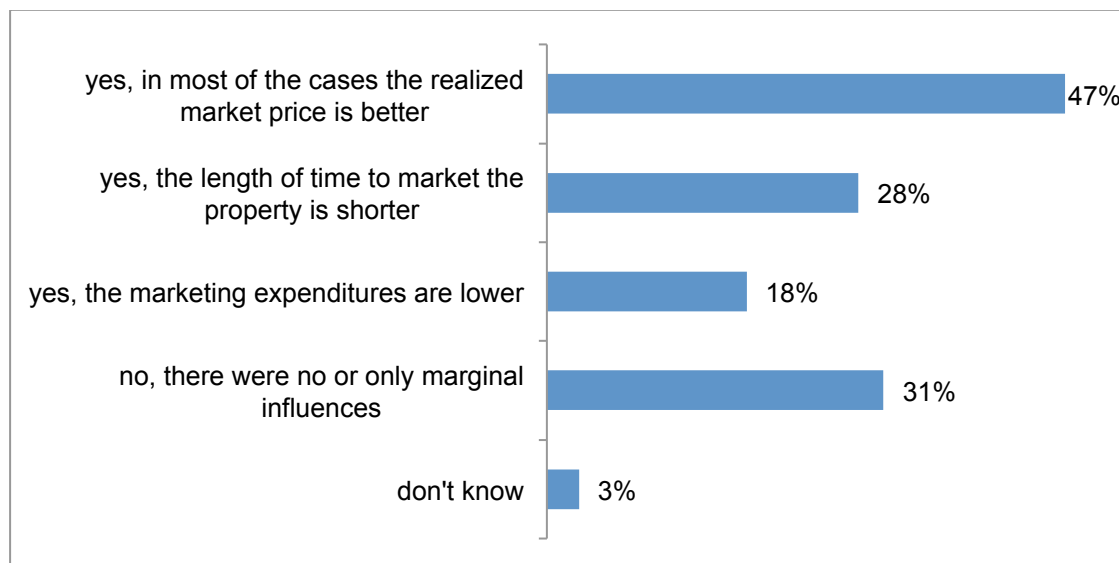
Additionally there is a quota arrangement within the survey representative of both to the German federal states, and zip code areas. This is loaded, according to zip areas, and company sizes (employees working in the company). The sample is randomized, based on the German federal states and regional groups (within the quota arrangement)

Since the maximum deviation was below 1% it was not considered necessary to weight results according to the zip code areas. In addition weighting the data according to the company sizes of the German Bureau of Statistics was also not considered as relevant, since the deviation would also be minimal.

4. Results and Analysis

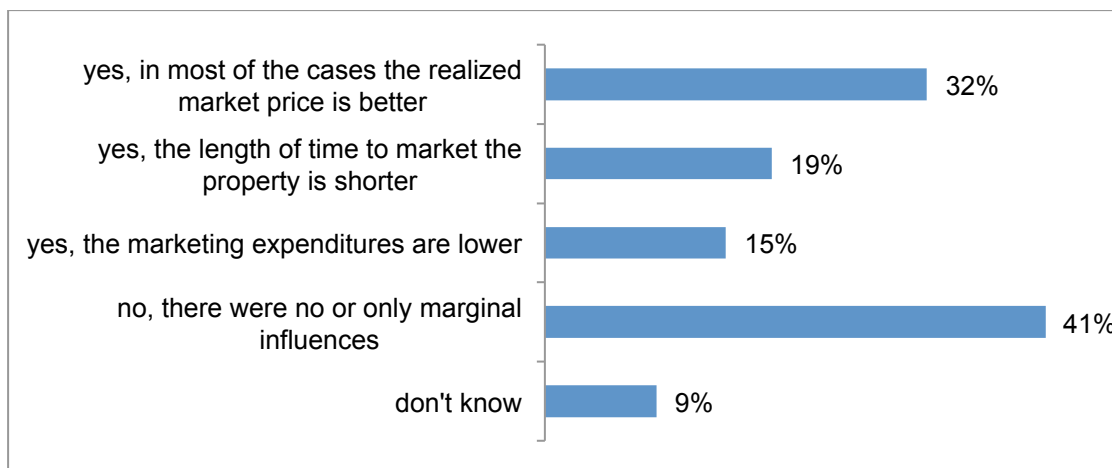
Using the research methodology outlined above a series of questions was posed to the Immowelt (real estate agents) panel. The results together with comparison with earlier surveys for this panel are given and analyzed below.

Chart 1:
Impact of a good energy status of a property (selling, existing property) 2015



In the 2010 survey 60% of the respondents, stated that concerning the sale of (existing) properties, a good energy status had a positive impact on the realized market price. This figure dropped to only 47% in 2015 (chart 1). This may have been caused by the fact that the financial crisis created a real estate boom, and that a strong demand for properties outweighs considerations about the energy efficiency of a certain property.

**Chart 2:
Impact of a good energetic status of a property (letting, existing property) 2015**



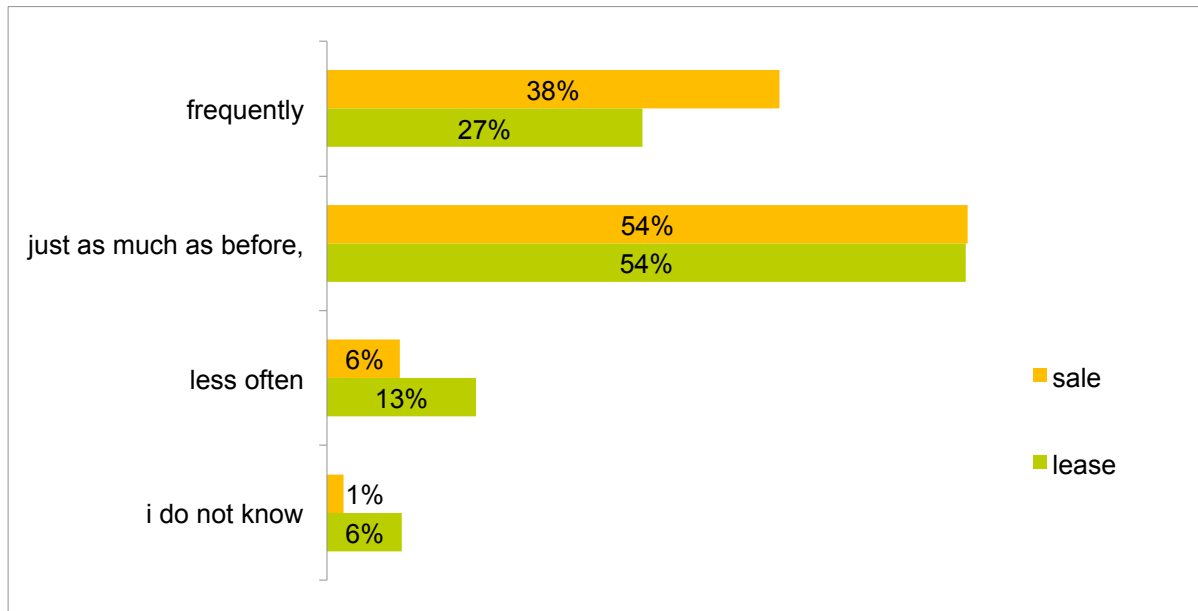
When properties are let, in general a good energy efficiency profile of a property e.g. energy performance certificate (EPC) would appear to have a lower impact on the price, marketing costs and the time a property remains on the market, than when a property is sold (chart 2). This is true for, the length of time of the marketing (28% when properties are sold, compared to 19% when they are let), the marketing costs (18% compared to 15%), as well as the realized market price (47% compared to 32%). 2015

This suggests that there are considerable differences in perceptions between properties on the market for sale as compared with rental or leased accommodation.

It would appear that the issue of energy efficiency is less in the focus of potential tenants as of potential buyers, because a real estate purchase is a much more far-reaching decision than just renting a property for a certain period of time. In addition on a tight rental market with only a small number of rental properties on offer many potential customers are not in a position to tackle the subject energy efficiency when they are in the process of renting a specific property.

Chart 3:

Are potential buyers/tenants asking more concerning the energy efficiency of residential properties than they did a year ago?



Questioned whether customers (buyers/tenants) asked more often about environmental features of a property (chart 3), real estate agents experienced a clear change within the last year. 38% of the brokers reported that potential buyers were asking more often concerning the energy efficiency of residential properties than they did a year ago (potential tenants 27%). This can be explained by the fact that the topic comes up automatically because of the legal obligation to present the energy performance certificate, and the media around the introduction of EnEV 2014 frequently reported it.

It is understandable that potential buyers are asking more often than tenants because once they buy a property with a poor energy profile (EPC) they are stuck with high energetic costs, as well as with a property, which is hard to market. Tenants are in a much better position: once they are no longer satisfied with the energy situation they can terminate their lease and move to a more favorable, and energy efficient property.

The introduction of the “Energy performance certificate” has made some significant changes. It appears that irrespective of no specific “energy” events i.e. such as sharp energy price increases, that client and broker interest has risen in the energy performance of buildings. In addition it has forced brokers to invest in the knowledge of energy performance and increased sales and letting costs to the broker.

In the following section the questions are an attempt to discover the most important energy saving features when marketing a property.

**Chart 4:
Which investment would you advise owners of existing properties with respect to a future sale?**

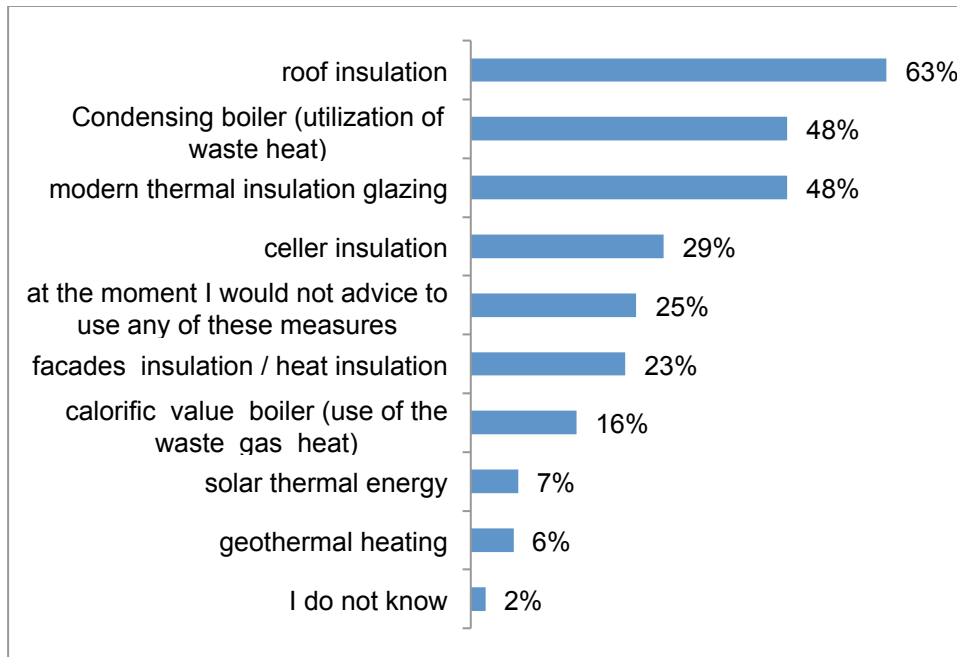
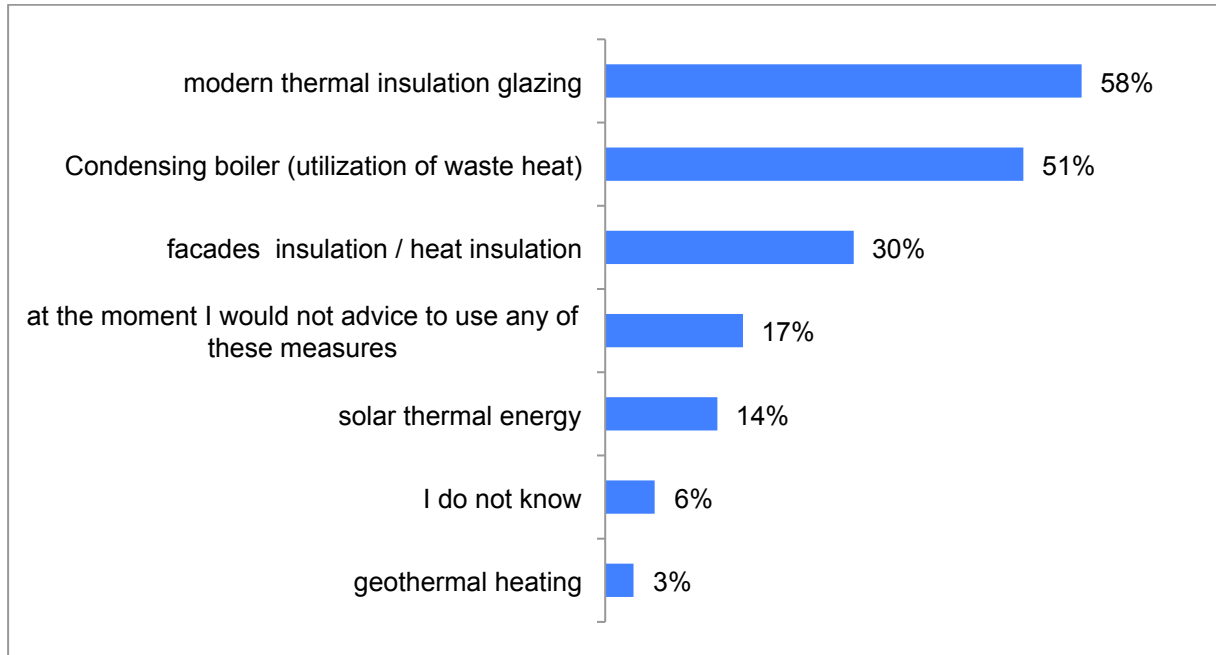


Chart 4 indicates that of the energy saving features researched, brokers advise owners of existing properties with respect to a future sale especially of 3 measures. These are as follows: roof Insulation (63%), modern thermal insulation glazing (48%), condensing boiler (48%).

It is striking that the insulation of the facades is relatively low on the agenda. The reason for this may lie in the growing debate to what extent an intense insulation of facades makes sense. Criticisms here are the costs, mildew, recycling problems of the insulating material, and even the subject of fire danger (Der Spiegel, 2015).

Chart 5: Investment advises by brokers to owners of existing properties with respect to letting the property in future.



Concerning the letting of properties (chart 5), brokers advise owners concerning modern thermal insulation glazing (58%), and condensing boilers (48%). Other energy-saving measures achieve only relatively low support by the brokers.

Almost every single measure scored the lowest level since the first survey in 2010. Compared to these surveys since 2010 the number of brokers who recommended no remedial measure at all reached an all-time high in 2015: in case of selling a property 25 percent, and in the case of letting 17 percent of the brokers would not recommend any of the measures listed.

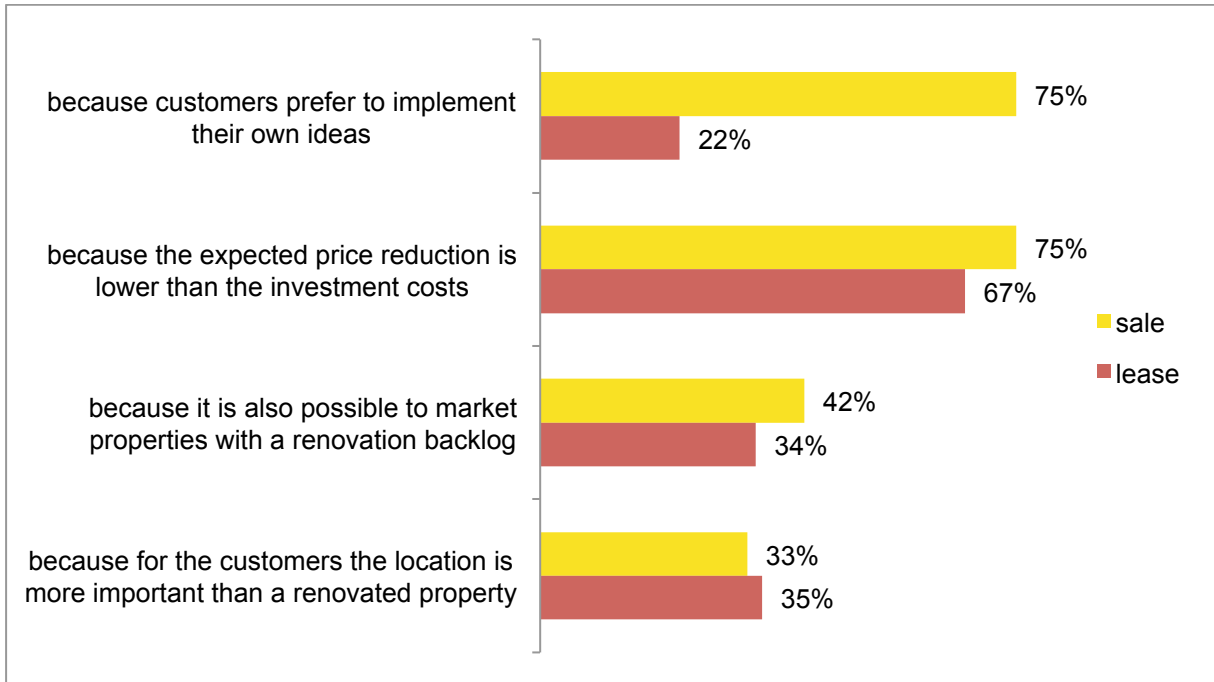
There are mainly two reasons for this development:

- Firstly, it became clear in recent studies that it takes significant events to increase awareness of energy efficiency of both agents and their customers. In the past, the Fukushima nuclear disaster created a huge awareness, which is fading by now; hence the interest in energy efficiency is decreasing. To deduce from the fact that the interest in the energy performance certificate increased, that the interest in eco-topics is on the upturn may be misleading. The growth in the interest concerning the energy performance certificate is due to legal changes, and the fact that this document has to be presented at a certain period of time.
- In addition to concerns for the environment and the global climate is the second major motivation to invest in remedial measures, to a large extent driven by a financial ratio. This means that the investment will bring a reasonable long-term return. But often this may not be the case.

To test these findings, the study participants were also asked why they do not recommend any energy saving measures. When properties are sold without any energetic improvements the most important reason is that customers usually have their own vision how the property should be upgraded. There is for example no point to install a condensing boiler if potential customers are planning other measures. Beside that there is the question whether such investments make sense under economic terms.

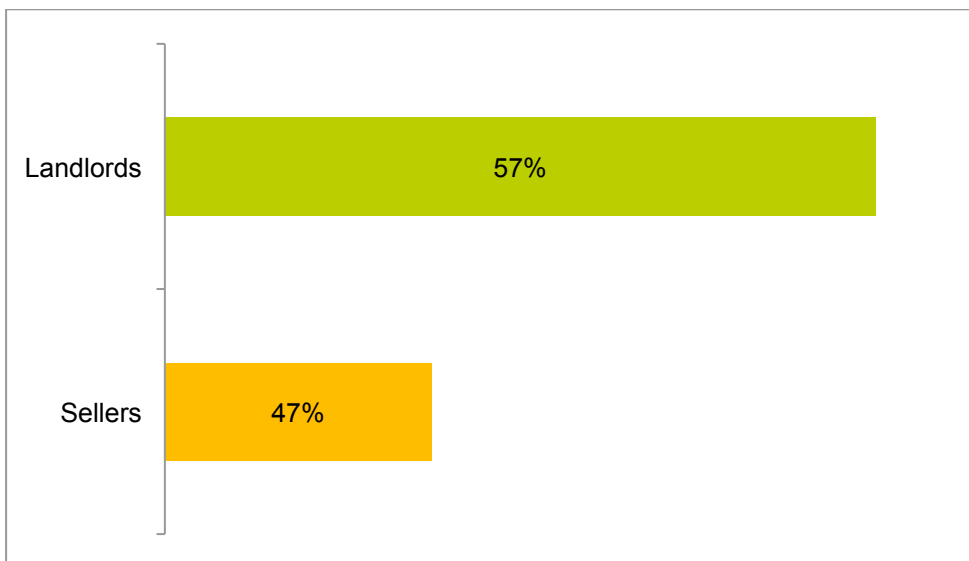
For rental properties the most important reason not to recommend any measures, is the dubious profitability. Even if certain markdowns with regard to the rent must be accepted due to a lack of energetic rehabilitation, these are often lower than the cost of a renovation. In contrast to this, areas that are characterized by a large vacancy rate, migration and low-rent, higher rents because of energetic improvements are difficult to enforce because there are enough cheaper alternatives for tenants.

Chart 6: Why would you advise sellers/landlords currently none of these measures?



To test this hypothesis, the study participants were also asked why they do not recommend measures to improve the energetic state of the building. The main reason is that customers who buy properties usually have their own vision how to upgrade these properties, and because there is no economic advantage (both 75%).

Chart 7: How many sellers/landlords already have an energy performance certificate for their property when they hire the broker?



In 2008 the energy certificate for residential properties introduced. The aim was to make the energy consumption and the associated costs transparent. Since May 1th,

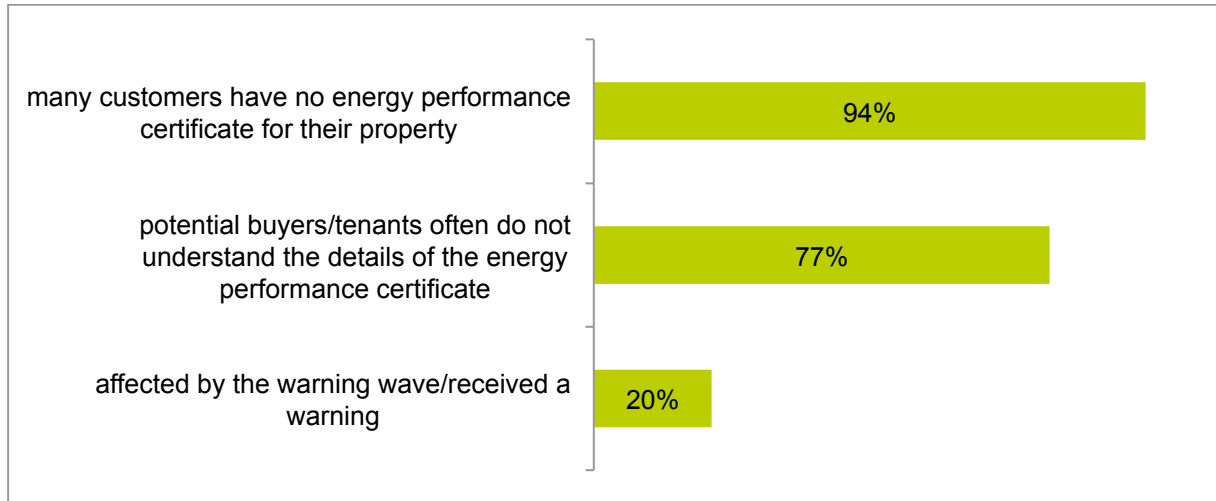
On 1 May 2014, the duty to present for the energy performance certificate was revised. Therefore it was analyzed how brokers deal with this additional obligation in their daily work.

Chart 8: When the Energy Performance Certificate is presented by the broker.



Looking at the time-lime it becomes evident that nearly 90 percent of the brokers submit the energy performance certificate with the sales brochure or during the inspection of the property. 7 percent do this when both parties sign the contract, 6 percent do not present an energy performance certificate at all. Thus, at least 13 percent of the brokers are behaving clearly illegal.

Chart 9: Problems encountered by brokers due to the requirements of the new energy performance certificate.



The vast majority of respondents felt hampered by the many customers who have no energy performance certificate, and that they had to organize it before they could begin the actual work. Also there is criticism that that may prospective customers do not understand it, because the energy performance certificate is too complicated or incomprehensible, and the respondents were faced with many questions or complaints.

Just over a third of all brokers complained about problems or additional expenditures by the new EnEV 2014. In 20 percent of this third - about 7 percent overall - this additional expenditures were due to a caution based on competition law. Far more brokers are however affected by additional work because they have to procure the energy performance certificate on behalf of their customers.

5. Conclusion and discussion

The energy performance certificate creates a substantial amount of additional work for real estate companies, despite the fact that the information gained by this document is limited and sometimes even misleading. To ensure that an energy performance certificate is available is now part of the consulting tasks and also the services of brokers. The new version of the EnEV 2014 (Energy Conservation Act) leads to the situation that the question of energy efficiency is an integral part of marketing negotiations. The disclosure of information provides indirectly more attention to the issue of energy efficiency, which otherwise probably would have had a significantly lower awareness.

The latest surveys and analysis, would indicate that whilst there is a general increase in environmental awareness since the first surveys, this is by and large somewhat mediocre given the relative importance by policy makers to improve the quality of new and existing housing stock, to meet the energy and emission requirements (i.e. reduction in consumption of energy) needed to be achieved. This is even more critical to success in policy, given the recent change in policy due to the Fukushima nuclear catastrophe and predicted soaring energy prices.

The results and analysis broadly lead us to the following conclusions:

- In the 2010 survey by the author 60% of the respondents, stated that concerning the sale of (existing) properties, a good energy status had a positive impact on the realized market price. This figure dropped to only 47% in 2015. Increased demand for residential properties, created largely by exigent forces such as overseas investment and a low supply, had a negative effect on environmental issues.
- There is therefore a significant gap in the perceived importance of energy efficiency on a sale rather than a lease. The issue of energy efficiency is less in the focus of potential tenants as of potential buyers, because a real estate purchase is a much more far-reaching decision than just renting a property for a certain period of time. In addition on a tight rental market with only a small number of rental properties on offer many potential customers are not in a position to tackle the subject energy efficiency when they are in the process of renting a specific property.
- Real estate agents experienced a clear change within the last year, because they were questioned more frequently about environmental features of properties. 38% of the brokers reported that potential buyers were asking more often concerning the energy efficiency of residential properties than they did a year ago (potential tenants 27%).

The explanation for this might be due to the legal enactment of EnEV in May 2014; now the topic comes up automatically because of the legal obligation to present an EPC and subsequent media interest and articles providing increased public awareness.

- The energy saving features brokers mostly advise owners of existing properties with respect to a future sale roof insulation (63%), modern thermal insulation glazing (48%), condensing boiler (48%). The insulation of the facades is relatively low on the agenda. The reason for this may lie in the growing debate

to what extent an intense insulation of facades makes sense. Criticisms here are the costs, mildew, recycling problems of the insulating material, and even the subject of fire danger.

- Since May 1st, 2014, it is mandatory to present the energy performance certificate at latest for the inspection of the property. Looking at the time-lime 7 percent do this when both parties sign the contract, 6 percent do not present an energy performance certificate at all. Thus the figures produced in the surveys would suggest that at least 13% of property brokers may be failing in their obligations to their clients.

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