

Energy consulting: A tool for inclusion?

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This case study was conducted within the framework of the Austrian task participation IEA User-Centred Energy Systems Empowering all: Gender equality for the energy transition and analyzes to what extent the instrument of company-independent energy consulting in Austria addresses different target groups and takes gender and diversity aspects into account.

Energy efficiency, climate neutrality in heating and electricity consumption are relevant aspects for the implementation of the energy transition. In addition, longer-term cost reduction for energy use is increasingly relevant for consumers and households. In Austria, therefore, company-independent energy consulting is offered and required renovations are partially subsidized (Stadt Wien, 2022).

From a gender and diversity perspective, the following questions arise in this context: Who can take advantage of energy consulting? Who benefits from energy consulting? Are gender aspects, migration, age and socio-economic factors, as well as the overlaps of mentioned aspects (intersectionality) taken into account? What should be considered in gender and diversity friendly energy consulting? What could be a suitable approach for gender- and diversity-friendly energy consulting?

In order to answer these questions, results of the international literature on the aspect of inclusion in energy consulting were first compiled, which were used for the development of the guideline for the data collection tools and for the data analysis. Based on this, internet research on the implementation of company-independent energy consulting and its funding opportunities in Austria was conducted. The unanswered questions about the systematics and processes of energy consulting were answered in a semi-structured expert interview with a person who conducts energy consulting.

The case study is structured as follows: First, essential terms are explained. Then, the relevance of the case study for Austria as well as the international state of research are presented. This is followed by the results of the research and the interview along the guiding themes and the discussion of the results. Finally, the results are summarized, and recommendations are elaborated.

I. Glossary

The following section defines the terms intersectionality, precarity/vulnerability, and diversity.

Intersectionality

Intersectionality describes the overlapping and consequently the multiplication of experiences of discrimination. Individuals can be oppressed and disadvantaged within social and political power dynamics due to multiple affiliations with discriminated groups. Classism, queer identities, age, disabilities, and religious affiliations, as well as sexism and racism, are categories that need to be understood as well as analyzed in an intersectional, interlocking way (Cho et al., 2013; Collins, 2003; Crenshaw, 2017).

Vulnerability/Precariousness

Precarity refers to the disadvantageous exclusion of privileges for certain groups of people who experience structural disadvantages as a result. Vulnerable persons are more affected by discrimination and social exclusion than non-vulnerable groups. This includes, for example, that precarious or vulnerable groups are not protected by political regulations, while privileged groups benefit from advantages and protection. Precariousness, like vulnerability, is often described in terms of financial insecurity and lack of resources to meet life-relevant needs (Birkmann & Wisner, 2006; Butler, 2012b).

Diversity

Diversity is understood as a realistic representation of different groups, such as different genders, origins, sexual identities, ages, etc., living in social systems. In the organizational context, diversity is also understood as respectful treatment of the diversity of people. Through diverse teams, different questions can be analyzed and answered closer to reality through the perspectives of different groups. The more perspectives are included, the more inclusively and objectively topics can be named, processed, and understood (Benedikt, 2022; Fehr, 2011).

II. Relevance for Austria

Energy efficiency, long-term cost reduction and climate neutrality in heating and electricity consumption are increasingly relevant for consumers and households. In Austria, independent energy consulting is offered to owners of residential and service buildings of all sizes. In addition, these consultations and possible renovations are partially subsidized (Stadt Wien, 2022). Greater efficiency in the use of energy and climate-friendly heating should be possible and applied across the board. The federal and state governments prescribe minimum criteria for implementation and promote consulting and implementation with different funding rates for different target groups, depending on the quality of the work. One example is the funding initiative „*Sauber Heizen für Alle*“ (Clean Heating for All): Low-income persons (lower 20% income bracket) who own single-family homes with fossil-fuel heating systems can receive funding of up to 100% of the investment costs for new heating systems from the Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology (BMK) (Kommunalkredit Public Consulting GmbH, 2022).

Energy-related renovations, especially consultations for a redesign of energy systems in Austrian households for more climate friendliness, energy efficiency and savings, require sensitivity regarding structural, overall societal dynamics, so that they can be carried out efficiently and with low barriers. Decision-making skills and competencies in technology-related areas play a strong role, as do monetary, linguistic and structural resources for, for example, refurbishment or new acquisition of more cost- and energy-efficient systems for homes (Knoll & Spreitzer, 2015).

With this case study, the factors of precarity and vulnerability (Birkmann & Wisner, 2006) were analyzed thematically using the variables of gender, age, migration and socio-economic status. For a representation that more comprehensively corresponds to the lived realities of different precarious and vulnerable groups, work was also done using the notion of intersectionality (Cho et al., 2013; Crenshaw, 2017) to think along intersections and the interlocking as well as intensification of discrimination. Specific recommendations for integrating these factors subsequently emerged.

Austria is home to about nine million people. Slightly more than half of them are women and slightly less than 50% of the population is male (Statistik Austria, 2022a). Other genders (e.g., non-binary persons) also account for a percentage. However, there are no published data on this yet. In 2021, 2,240,000 people with migration biographies lived in Austria (Statistik Austria, 2022b).

1.7 million people are in the precarious bottom 20% of income brackets (Statistik Austria); in 2020, an additional 1.6 million people were considered to be at risk of poverty (ÖGB, 2021). Women, children, single parents, the long-term unemployed and people without citizenship are particularly at risk of poverty (Armutskonferenz, 2021). Thus, the affordability of energy and heating affects a significant proportion of people living in Austria.

III. International Research

An international observation underlines that people from different cultural backgrounds show different behaviors in energy consumption and use. Different approaches are also evident between genders. For example, men tend to be the main users of energy use and consumption and prefer apps for using energy systems, whereas women increasingly prefer directly installed devices, such as batteries. Energy use as well as competence in energy issues also differentiates by age, education level, local origins, and financial resources, and thus is essential to include in the systematics around energy advice, climate change mitigation, and sustainability issues (Aggeli et al., 2022).

Tjørring (2016) investigated gender-related aspects of energy refurbishments in Denmark. These renovations offer great potential for reducing energy consumption. However, according to Tjørring's research, gender aspects are largely left out, as are aspects of language, often financial security, and an intersectional approach. Tjørring (2016) also describes the problem of different technical competences of consumer groups. Households are inherently complex and heterogeneous, yet actors in energy economics and policy tend to refer to a standard user per household. However, energy consumption, use and demand differ strongly between the genders, thus highlighting the relevance of naming women specifically, identifying reasons for inequalities and making them visible. Furthermore, gender-sensitive approaches should be accentuated in consulting activities (Tjørring, 2016). This means that an evaluation of the entire systematics of energy consultations is necessary to make visible whether there are diverse (reality-depicting) teams in all levels of energy consultation. Sensitized knowledge about the factors of precariousness and vulnerability, especially related to gender, migration, age, and socio-economic status, are also relevant in energy consulting trainings.

Djaloeis et al. (2010) developed a model to measure competencies and professionalism of energy consultants in order to raise standards and to integrate the heterogeneity of energy consumers and their different life realities. One dimension of this model integrates a reflection step. However, the model developed in Germany still needs additional work to be implemented in practice.

Since energy consultation tends to be staffed by men, self-reflection by people in consultation and in key positions can be helpful, for example, to show that the perspectives of male consultants differ from the realities of life of many women in households who, for example, perform household chores such as cooking or cleaning, look after children and care for relatives. Energy use in households differs not only due to gender aspects of unpaid work, but also due to cultural differences-examples include behaviors related to cooking, gathering, or

heating settings (Aggeli et al., 2022). In Norway, for example, it was common in the 1990s for the entire living area to be heated, whereas in Japan only one room tended to be heated, which inevitably had a major impact on energy consumption per household (Wilhite et al., 1996). Age also plays an indirect role in energy consumption and in terms of energy and technical competencies. An energy literate person is defined as someone who can report the energy consumption of household appliances, knows how much energy can be saved through energy conservation activities in the home, can make financially efficient energy decisions, or someone who meets all of these requirements and also exhibits general energy knowledge, positive energy attitudes and values, and energy-saving behaviors (van den Broek, 2019). Older people often live in older houses that are not efficiently insulated, in part because they lack energy literacy, which can lead to higher energy consumption (Zong et al., 2022). This particularly affects older women because statistically they have lower energy and technical skills than younger women. Young men usually have high energy competencies and are also technology-savvy (Breukers, 2022). Accordingly, competencies in energy consulting require a view of the different categories and factors already mentioned as well as a sensitized knowledge of diversity, vulnerability and precariousness.

IV. Results of the case study

Systematics of the training energy consulting

In order to work as an energy consultant for company-independent energy consulting in Austria, specific training courses are required (Ausbildung Energieberater*in: Grundkurs in Wien, 2023). Individuals have to bear the costs of the courses themselves in most cases. The cost of the first course (A) is just under € 1,000 and the cost of the second course (F) is just under € 2,000. In some cases, participants must already have completed a specialized training in order to participate in the course. People with specialized training have the option of attending only course F without having completed course A beforehand. In terms of content, these courses are oriented toward knowledge of new construction and renovation of buildings with a focus on energy efficiency of the building envelope and the use of renewable energy sources for building use (heating, domestic electricity, operating electricity). Specifically, trainees acquire knowledge about building service systems (heating, hot water, ventilation) and their components, efficient building envelopes (insulation, windows), building types, and specific know-how related to energy production and consumption, as well as funding opportunities for implementation (eNu, 2023a; eNu, 2023b). Likewise, energy consultations are practiced in the courses - first by means of fictitious examples within the groups of participants, later also through real consultations, which are supervised by experienced energy consultants. According to the interviewee, what is relevant is competence and know-how in energy-related matters, and no distinction is made as to who is involved in the energy consultation. Gender, age and migration history play no role in the courses. The courses are organized in cooperation with *Wif1*, *Umweltberatung*² and *ARGE Bildungsstandard*³.

¹ The Institute for Economic Promotion (WIFI) is a service institution of the Vienna Chamber of Commerce (WKO) and aims to improve professional and entrepreneurial qualifications as well as to provide assistance with company-specific issues (WIFI Wien, 2023).

² The *Umweltberatung* (Environmental Consulting) Austria offers individual consulting for private persons as well as for companies and cooperates in environmental protection projects (DIE UMWELTBERATUNG, 2023).

³ The *Arbeitsgemeinschaft Energieberater:innen-Ausbildung* is responsible for the quality assurance and further development of the training for energy consultants in Austria (ARGE-EBA, 2023).

According to the statements made in the interview, the professional employees in energy consulting are largely male, white and speak German. The energy consultations are offered exclusively in German, but many of the energy consultants also speak English. If another language is spoken, the consultations can also be conducted in this language. However, clients cannot specify in advance which language should be spoken during the consultation.

The interview also shows that the professional backgrounds of the energy consultants are very diverse and range from trade to scientific professions to social professions. In addition, there is little information about external energy consultants who work on a freelance basis.

Energy consulting process

People who want to make use of (e.g. subsidized) energy consulting must be owners of the buildings that are the subject of the consulting. Tenants do not have such a claim and likewise no legal support, for example, to demand energy consulting from landlords for a (subsidized) more efficient, less expensive heating system in their rental properties. The interview also shows which steps are necessary for energy consulting: In order to receive energy consulting, data must be submitted to the consulting energy company. An online form asks for gender (female/male) family, name, address and technical information on the heating system, construction method, building type and insulation method. It also asks for energy consumption, year of last renovation, and number of people in the household. If the upload is successful, the people to be consulted are contacted and an appointment is subsequently made for an energy consultation. Due to the nationwide promotion „*Sauber Heizen für Alle*“ (Kommunalkredit Public Consulting GmbH, 2022), there are indications for the vulnerable group of low-income persons during an energy consulting appointment. The systematic inquiry of the criteria for the qualification for this promotion is not a general part of the consultation appointment but has to be checked by the promotion applicants themselves. Vulnerable people who receive social assistance, minimum pensioners and people with an exemption from *GIS*⁴ and prescription fees⁵ qualify for a subsidy. These qualifications were defined by the federal government. In the course of the interview, it became clear that people can also qualify for the energy subsidy if it can be proven that their salary is in the lower 20% of the Austrian income.

If persons qualify for the „*Sauber Heizen für Alle*“ subsidy (Kommunalkredit Public Consulting GmbH, 2022), the energy consulting will be covered in full. Otherwise, a deductible of € 40 will be charged. The rest of the costs are covered by the respective authority, depending on the federal state. According to the interview, the energy consultations take place without addressing individual characteristics of the persons to be consulted. This suggests that all energy consultations have similar procedures and take place regardless of gender, age, and socio-economic status. Before each consultation, the consultants go through the data provided, which is information about the buildings, heating systems and appliances. The characteristics of the persons to be consulted (gender, language, age or origin) are not requested. "A standard resident" is assumed. Guidelines for the advisory process are only available in German. However, it emerged from the interview that in the past these were also offered in Serbian and Turkish but were discontinued due to lack of interest. However, multilingualism is to receive more attention again, as it is planned to offer the guides again in - at least - Serbian and Turkish. According to the interviewed person, more languages are

⁴ The *GIS* (Gebühren Info Service) is responsible for collecting and settling Austria's broadcasting fee (GIS, 2023).

⁵ For each drug prescribed on prescription by a contracted physician, a prescription fee per package must be paid directly to the pharmacy (ÖGK, 2023).

planned, but these were not yet known at the time of the interview. The website is available in German and English.

V. Discussion of the results

Material vulnerability is considered on the basis of age and socioeconomic status.

Explicit mention is made in the system of energy consultations of vulnerable groups, which are mostly named with the aspect of low-income. Within this group, there is room for the variable age, because as recipients of minimum pensions, people fall into the category of vulnerability. These vulnerable groups can receive up to 100% subsidies for energy consulting and replacement/renovation of their heating systems.

Tenants are not entitled to energy consultation.

It is particularly important to discuss the fact that ownership of the buildings is a prerequisite for independent energy consulting. Owners of real estate in Austria are to a large extent not in the precarious income range and not minimum pensioners. Non-immigrant Austrians are also to a larger extent owners than Austrians with a migration biography (Statistik Austria, 2022c). Moreover, these characteristics are multiplied from an intersectional perspective. This means, for example, that minimum pensioners who also have a migration biography probably have even less material security for a homestead than minimum pensioners without a migration biography. For the energy consulting system, this means that a large part of precarious, vulnerable people, who also have to pay energy costs and should be able to heat in a climate-friendly way, have no right to energy consultations, as well as no legal right to a more efficient heating system. The privilege of the funding measures thus benefits only real estate owners. Tenants can only take advantage of energy-saving tips from social institutions such as Caritas.

In Sweden, on the other hand, heating up to certain temperatures is included in the rent, which obliges landlords to ensure that indoor temperatures in apartments remain between 20 and 23 degrees Celsius throughout the year. In summer, temperatures should not exceed 26 degrees Celsius, and in winter they should not fall below 18 degrees Celsius. If the temperatures deviate, the landlord must act to that effect and arrange for any renovations. The tenant is entitled to a rent reduction for the period in which the indoor temperature deviates (Hyresgastforeningen, 2023).

In Austria, however, a lack of access to energy consulting and, subsequently, a failure to renovate the home can lead to health impairments as well as energy poverty. Energy poverty means that households have inadequate access to modern energy services. This causes poverty, high energy costs, ill health, social isolation, and poor housing quality. These problems could be further exacerbated as the energy transition progresses, because those households will not be able to invest in energy-saving and sustainable technologies such as insulation or solar panels. An equitable and inclusive energy transition can only happen if all households have access to affordable, reliable and clean energy services - such as energy advice and associated subsidies. Everyone should have the opportunity to participate in decision-making processes about changes in the energy system. In addition, the problems caused by energy poverty and the unequal opportunities associated with the energy transition must be acknowledged (Middlemiss et al., 2020).

Energy and digital skills are assumed and help to gain advantages.

Financial energy literacy is the ability to assess the financial impact of one's own energy consumption and to achieve financial savings through energy-saving investments (van den Broek, 2019). People without (financial) energy literacy usually do not know that or how energy consumption can be minimized, nor that there is the possibility to get consultation in this regard.

In addition, the survey form for the consultation is only available online, which puts people without digital skills at a disadvantage. The form is intended to help provide more individualized consulting. Further contact is possible via telephone, e-mail or letters. In connection with this, the interviewee relates that an older person came directly to the company to obtain information about energy consulting. This example describes the problem with digital information dissemination. People without digital skills, smartphone or a computer as well as a stable internet connection, do not have the possibility to fill out the online survey form in advance in order to receive more individualized consulting.

Lack of or low energy and/or digital skills may depend on gender, age and/or educational background, among other factors. For example, more older women than younger men lack the technical and digital skills to seek energy advice and become more energy efficient, for example. Women also tend to feel more often that they are failing or incompetent when trying to acquire these skills (Breukers, 2022).

Gender and cultural aspects in the design of everyday life do not take a place in energy consulting.

For example, household chores and care activities, which are primarily performed by women, are not included in the content of the consultation. The culturally determined differences in everyday life, for example, the elaborate preparation of meals or the cultural norm of which rooms should be heated or cooled, are also not taken into account.

Linguistic aspects can be improved.

According to the interview, the energy consultations are offered exclusively in German, but many of the energy consultants also speak English. If another language is spoken, the consultations can also be conducted in this language. However, it is not possible to specify in advance which language is to be spoken during the consultation, although this would be useful. As already mentioned, the guidelines for energy consulting are to be translated into several languages for the customers - which languages were not yet known at the time of the interview.

The consulting team appears to be largely homogeneous.

According to the interview, the energy consulting company of the interviewee has a high proportion of women (almost 60%), although the management of the energy consulting company is uniformly staffed by men. The management of the various divisions is equally divided between the two sexes. Nevertheless, the energy consultants are largely male, with only two women employed as energy consultants in the company. In addition, there are a total

of 83 external energy consultants who provide freelance consulting services for the company. Of these, only twelve are read female.⁶

In the course of the application for the position of energy consultant, it is explicitly mentioned that "in the sense of gender diversity" "especially female and foreign-language specialists" are sought. Even if this is a first step towards bringing more diversity into the team, one sentence in the job posting, for example, is not sufficient to motivate more women to apply. The entire job posting needs to be inclusive - not just in terms of language (Hausner, 2019). On a positive note for diversity, however, it should be mentioned that according to interviews, the professional backgrounds of energy consultants are very diverse and range from handicraft professions, to scientific professions, to social professions. Nevertheless, one can only partially speak of a diverse team of energy consultants who are able to understand the different realities of their clients' lives.

In summary, some of the aspects analyzed are integrated into the energy consultations (precariousness, financial vulnerability due to low income). However, this integration does not have any further consequences because, for example, the nationwide promotion „*Sauber Heizen für Alle*“ only applies if the energy consumers are owners themselves.

Neither gender nor migration nor socio-economic status are comprehensively integrated within the consultations. Moreover, there is no intersectional approach that considers the overlaps between these aspects.

VI. Recommendations

A detailed, wide-ranging, well-founded and interdisciplinary integration of vulnerability based on the aspects of gender, migration, age and socio-economic status is recommended for all steps of the systematics of energy consultations.

For all elements of the energy consulting system, internal and external knowledge-creating measures are recommended, which help to understand and include the mentioned aspects in detail. This includes the integration of the factors in the education and training of the energy consultants, in the documents that are prepared for the energy consultants as well as for the information of the consumers of the energy consulting.

More diverse teams with different language skills and perspectives can lead to more inclusive energy consulting. By knowing the needs of different (vulnerable) groups, specific solutions can be developed in the next step.

Diverse teams lead to more objectivity in knowledge cultures, which has a positive effect on the integration of the factors examined in this case study - also in the case of energy consulting. Diverse energy consulting should also be conducted in different languages so that people with little, if any, knowledge of German are also provided with the best possible advice. From a gender and diversity perspective, an accessible website that offers content in multiple languages would also be beneficial.

⁶ Through socialization, the binary gender concept has been internalized, whereby people are automatically categorized as male or female based on biological gender characteristics or names. Persons read as female are those who at first glance appear to be female because their name and facial features are perceived as such. However, the person in question may feel that they belong to another gender, several genders, or none.

Making counseling accessible to tenants.

Priority is given to those people who live precariously and need access to subsidized energy consulting. This includes low-income persons, who are explicitly mentioned in the context of the defined vulnerable groups. After the energy consulting, it is possible to talk to the owners of the buildings in order to show the advantages of the renovations as well as the costs. This allows the tenants to participate in the decision-making process and can significantly improve the living situation. The example from Sweden goes one step further. If indoor temperatures deviate from certain values, landlords are obligated to arrange for renovation. This appears to be an efficient measure because it is binding.

Note intersectionality.

In addition, cultural, gender-related and, above all, intersectional factors should be taken into account. In concrete terms, this means that consultants and stakeholders in the energy consulting system need information about the differences within the analyzed variables in order to be able to take them into account. This includes, for example, information on what energy consumption vulnerable people (e.g., migrant and low-income women) have compared to non-vulnerable people (white and tech-savvy men). In addition, it would be helpful if this knowledge was already taught in the two training courses and if appropriate ways of dealing with these factors were practiced during the fictitious consultations that are conducted in the course.

When individuals or groups are affected by multiple variables - gender, age, migration, and socioeconomic status - simultaneously, vulnerability can be amplifying and exacerbate disadvantage. An intersectional approach can mitigate these effects. Vulnerable individuals in particular often lack the information, skills, or opportunities to take advantage of available grants and programs due to low levels of education (e.g., lack of literacy skills) or limited technical skills and language proficiency, even when grants are specifically designed for them. In order to provide comprehensive advice to individuals, it is important not to assume the "standard user" and to see the person being advised as an individual, including potential vulnerabilities. The survey form could be expanded to refer to possible subsidies if necessary.

Include reflection step.

Djaloeis et al. (2010) recommend incorporating a reflection step in their model to evaluate and, if necessary, improve one's own behavior and consultation.

Critical analysis of exclusion in education and employment as an energy consultant.

In this context, it not only makes sense to expand the training and the consulting process to include social aspects, but also to carry out a critical analysis of the job description of an energy consultant, including the day-to-day work in this profession, in order to define the barriers for women and other underrepresented groups. There is also a need for easily accessible funding opportunities, for example, to provide specific support for (low-income) women to be trained as energy consultants. In addition, the call for energy consultants needs a critical revision to target vulnerable individuals and motivate them to apply. It needs inclusive language and inclusive content of the job posting to reach women who speak more languages to subsequently benefit from their perspectives and experiences in the course of the consultations. Energy consulting can only benefit from including as many different perspectives as possible in the consultations. This is the only way to provide inclusive energy advice that considers the different needs of the clients.

VII. References

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