

12.4.2024

# Energy Poverty in Finland

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# 1 Introduction

This report, prepared by Gaia Consulting, has been commissioned by the Finnish Energy Authority to explore the manifestation of energy poverty within the context of Finland. As a Nordic nation characterized by historically and climatically driven high standards of energy-efficient construction, sophisticated electrical and heating systems, and one of the world's most advanced and comprehensive social security frameworks, Finland has not traditionally recognized energy poverty as a significant societal concern. Consequently, energy poverty has not been distinguished as a unique category of impoverishment or low income. Instead, it has been perceived as a facet of general poverty and has been addressed through the nation's existing welfare system, supported by initiatives aimed at enhancing energy efficiency and the quality of housing in Finland.

The report adopts a logical framework in which energy poverty is examined through two distinct viewing points. The first concerns the cost of electricity and heating, specifically assessing an individual's or household's capacity to afford these essential utilities. The second addresses the challenges associated with construction, housing, and heating methods, which can impact an individual's or household's ability to meet the financial demands of the first category, and to maintain a home at an appropriate and safe temperature and healthy living conditions.

The chapter 2 and chapter 3 of this report delve into the Finnish social security system and various public subsidies in Finland, examining their connection to energy poverty. The second chapter provides an overview of the Finnish social security system's framework, highlighting its key intersections with energy poverty. Subsequently, the third chapter explores the subsidy system for energy efficiency and additional support mechanisms, analyzing how these initiatives supplement the social security system with regard to preventing energy poverty.

Chapter 4 provides a summary and conclusions from an overarching analysis of social security and other support systems. The chapter contends that instead of seeking a single, general definition of energy poverty within the Finnish context and attempting to quantify the number of individuals potentially affected by it, different approaches are needed, both quantitative and qualitative. Quantitative approach would help to assess the quantity of the households in the risk of energy poverty or in energy poverty. Qualitative approach would be especially useful when focusing on particular demographic groups and geographical areas, allowing for the development of effective, and targeted policy interventions that address the distinct needs of these populations.

The chapter 5 reviews the EU indicators for energy poverty in light of what has been presented in the report before and few additional indicators are presented. In chapter 6, a conclusions and recommendations are drawn.

## 2 Social security and its relation to energy poverty in Finland

### 2.1 Social security system in Finland

Section 19 of the Finnish Constitution asserts that individuals who "...cannot obtain the means necessary for a life of dignity have the right to receive indispensable subsistence and care..." provided by the state. The Constitution ensures that "Everyone shall be guaranteed by an Act the right to basic subsistence in the event of unemployment, illness, and disability and during old age as well as at the birth of a child or the loss of a provider. The public authorities shall guarantee for everyone, as provided in more detail by an Act, adequate social, health and medical services and promote the health of the population."<sup>1</sup>

This statement is fundamentally applicable in protection of people possibly vulnerable to energy poverty, ensuring that their basic needs, including housing and energy, are met through social security measures. This chapter explores these measures and examines their connection to energy poverty. A more comprehensive analysis and conclusions regarding the relationship between social security and energy poverty are presented in Section 2.1.7. This report describes the social security system in Finland up to the time of the report's publication.

*Table 1. Finnish social security system from the perspective of energy poverty is essentially made up of six different types of benefits, as shown in the table.*

Benefit	Relevance for compensating heating and electricity costs
General Housing Allowance	Strong
Pensioners Housing Allowance	Strong
Social Assistance	Strong
Temporary Assistance with Electricity Costs	Moderate
Study Grant	Moderate
Social Lending	Moderate

<sup>1</sup> Finlex. (2024). <https://www.finlex.fi/fi/laki/kaannokset/1999/en19990731.pdf>. Accessed 1.3.2024

## 2.1.1 General Housing Allowance

The General Housing Allowance is the most important form of social support for small income households related to housing costs. The allowance can be granted for households consisting of a single person or several persons. The allowance can cover at most 70% of reasonable housing costs accepted by the Social Insurance Institution of Finland and the amount of the allowance is affected by the incomes of all household members.<sup>2</sup> The acceptable housing costs are presented in Table 2.

The accepted types of housing for the benefit are:

- rental homes
- right-of-occupancy homes
- part-ownership homes<sup>3</sup>

Table 2. The acceptable housing cost under the General Housing Allowance.<sup>4</sup>

Type of housing	Acceptable housing costs under the allowance*	Heating costs compensated by the benefit
Rental home	<ul style="list-style-type: none"> <li>▪ Rent</li> <li>▪ Charges for water if not included into the rent</li> <li>▪ Charges for heating if not included into the rent (conventionally heating is included in the rent in rental apartments in Finland)</li> </ul>	<p>Heating charges are accepted as housing costs if they are paid separately and on top of the rent.</p> <ul style="list-style-type: none"> <li>▪ For 1-person households the amount of heating charges accepted is 66 € per month. If the household consists of more than one person, 22 € per month is added for each additional person.</li> <li>▪ In South Savo, North Savo and North Karelia up to 69 € per month is accepted as heating costs for a 1-person household. 24 € per month is added for each additional person.</li> <li>▪ In North Ostrobothnia, Kainuu and Lapland up to 71 € per month is accepted as heating costs for a 1-person household. 24 € per month is added for each additional person.</li> </ul>
Right-of-occupancy home	<ul style="list-style-type: none"> <li>▪ Maintenance charge</li> <li>▪ Charges for water and heating if they are not included into the rent</li> </ul>	<ul style="list-style-type: none"> <li>▪ Heating charges are accepted as housing costs if you pay them separately and on top of the rent.</li> <li>▪ Same sums for compensation apply as in rental homes.</li> </ul>

<sup>2</sup> The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/general-housing-allowance>. Accessed 11.12.2023.

<sup>3</sup> The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/general-housing-allowance-eligibility>. Accessed 11.12.2023.

<sup>4</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/general-housing-allowance-for-different-types-of-housing#single-family-homes>. Accessed 11.12.2023.

Unit in a housing cooperative unit owned by the occupant	<ul style="list-style-type: none"> <li>▪ Maintenance charge</li> <li>▪ Water and heating charges which are paid separately</li> <li>▪ 73% of the interest on housing loan</li> </ul>	<ul style="list-style-type: none"> <li>▪ Heating charges are accepted as housing costs if you pay them separately and on top of the maintenance charge.</li> <li>▪ Same sums for compensation apply as in rental homes.</li> </ul>
Part-ownership home	<ul style="list-style-type: none"> <li>▪ Rent</li> <li>▪ Charges for water and heating that are not part of the rent</li> </ul>	<ul style="list-style-type: none"> <li>▪ Heating charges are accepted as housing costs if they are paid separately and on top of the rent.</li> <li>▪ Same sums for compensation apply as in rental homes.</li> </ul>

Table 3. Numbers describing the General Housing Allowance granted during in 2018-2023<sup>56</sup>.

Year	Number of beneficiary households	Amount of assistance paid in total annually
2023	404 662	1 684 214 127 €
2022	382 232	1 565 008 002 €
2021	391 611	1 590 774 842 €
2020	402 559	1 566 478 510 €
2019	379 667	1 490 952 605 €
2018	376 529	1 488 941 160 €

## 2.1.2 Housing Allowance for Pensioners

In addition to the General Housing Allowance, there is a separate Housing Allowance for Pensioners that can be used to cover housing and heating costs. The allowance covers 85 % of the housing costs after deductibles that are done based on the income of the individual (Table 5).<sup>7</sup>

<sup>5</sup> The data is available in: The Social Insurance Institution of Finland. (2024). [https://raportit.kela.fi/ibi\\_apps/WFServlet?IBIF\\_ex=NIT100AL](https://raportit.kela.fi/ibi_apps/WFServlet?IBIF_ex=NIT100AL). Accessed 25.3.2024.

<sup>6</sup> The data is available in: The Social Insurance Institution of Finland. (2024). [https://raportit.kela.fi/ibi\\_apps/WFServlet?IBIF\\_ex=NIT219AL](https://raportit.kela.fi/ibi_apps/WFServlet?IBIF_ex=NIT219AL). Accessed 25.3.2024.

<sup>7</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/housing-allowance-for-pensioners-amount-and-payment>. Accessed 11.12.2023.

- The basic deductible is 681.39 € per year, which is done from the annual housing costs. After this 85 % of accepted housing costs are covered.<sup>8</sup>

Table 4. The maximum accepted housing costs under the allowance<sup>9</sup>.

Location of the home	Maximum housing costs of the pension recipient (and possible spouse/partner)
Class 1 municipality	9 287 € per year (about 774 € per month)
Class 2 municipality	8 541 € per year (about 712 € per month)
Class 3 municipality	7 493 € per year (about 624 € per month)

- The additional deductible of 41.3 % of individuals income is implemented, if the income exceeds certain limits, presented in Table 5.<sup>10</sup>

Table 5. The income limits affecting the amount of the allowance.

Category	Income limit
Living alone	10 280 € annually
Persons who are married or cohabiting or live in a registered partnership and whose spouse or partner is not eligible for a housing allowance	14 676 € annually
Persons who are married or cohabiting or live in a registered partnership and whose spouse or partner is eligible for a housing allowance	16 783 € annually

Table 6. The acceptable housing cost categories under the allowance<sup>11</sup>.

Type of housing	Accepted housing cost categories
Rental home	<ul style="list-style-type: none"> <li>▪ Rent</li> <li>▪ When not included in the rent, water and heating are taken into account on the basis of the fixed charges</li> </ul>

<sup>8</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/housing-allowance-for-pensioners-amount-and-payment>. Accessed 11.12.2023.

<sup>9</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/housing-allowance-for-pensioners-maximum-allowable-housing-costs>. Accessed 11.12.2023.

<sup>10</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/housing-allowance-for-pensioners-amount-and-payment>. Accessed 11.12.2023.

<sup>11</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/housing-allowance-for-pensioners-housing-costs>. Accessed 11.12.2023.



Right-of-occupancy or partial-ownership home	<ul style="list-style-type: none"> <li>▪ Maintenance charge or rent (on average, heating is included in the maintenance charge or rent)</li> <li>▪ Water charges</li> <li>▪ Interest on loans for acquisition of the right-of-occupancy or partial-ownership home</li> </ul>
Residential care home	<ul style="list-style-type: none"> <li>▪ Rent (heating is included in the rent)</li> </ul>
Unit in a housing cooperative	<ul style="list-style-type: none"> <li>▪ Maintenance charge (on average, heating is included in the maintenance charge)</li> <li>▪ Separate water charge payable in connection with the maintenance charge</li> <li>▪ Interest on loan for acquisition of the home</li> </ul>
Single-family house	<ul style="list-style-type: none"> <li>▪ Housing costs are calculated based on average costs for heating, water and maintenance and repair<sup>12</sup></li> <li>▪ Ground rent</li> <li>▪ Interest on loan for acquisition and repair of the home.</li> </ul>

### 2.1.3 Social Assistance

Social Assistance is the last resort benefit that an individual and families can receive when their income and assets do not cover their essential daily expenses and are not covered from any other benefit. Basic Social Assistance consists of a 1) basic amount and 2) other basic expenses which can be paid on top of the basic amount.

- 1) The basic amount described in the table 7. covers expenses such as “food, clothing, minor medical expenses (e.g., over-the-counter medication), personal hygiene and keeping your home clean, public transport, newspaper subscription, telephone and internet, hobbies and recreation and other comparable expenses of daily living”.<sup>13</sup>

Table 7. Basic amount of the Social Assistance to different beneficiary categories.<sup>14</sup>

Category	Basic amount of the assistance
Persons living alone, no dependent children	555,11 € per month
Persons over 18 sharing a household (85% of the basic amount for persons living alone)	471,84 € per month

<sup>12</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/housing-allowance-for-pensioners-maintenance-costs-for-a-single-family-home>. Accessed 11.12.2023.

<sup>13</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/social-assistance-types-of-expenses-for-which-you-can-get>. Accessed 11.12.2023.

<sup>14</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/social-assistance-basic-amount>. Accessed 11.12.2023.

Single parents (basic amount for persons living alone + 14%)	632,83 € per month
Persons aged 18 or over living with their parent(s) (73% of the basic amount for persons living alone)	405,23 € per month
Children (under 18 years old) <sup>15</sup>	327,51-421,88 € per month

- 2) The basic amount does not include heating and electricity, but they can be compensated from *the other basic expenses* covering housing costs, including heating and household electricity (distribution, usage and basic charges) up to a reasonable amount.<sup>16,17</sup> In addition, if the energy company requires low-income customers to provide a security deposit (for securing that the individual can fulfil the obligations of the contract), the Social Insurance Institution of Finland can provide this deposit as part of the social assistance<sup>18,19,20</sup>.

Table 8. The amount of recognized housing costs under social assistance's other basic expenses that can be used to cover also heating and household electricity.<sup>21</sup>

<sup>15</sup>The Social Insurance Institution of Finland. (2023). A more specific calculus on the amount of benefit for children can be found at <https://www.kela.fi/social-assistance-basic-amount>. Accessed 11.12.2023.

<sup>16</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/social-assistance-types-of-expenses-for-which-you-can-get>. Accessed 11.12.2023.

<sup>17</sup>The Social Insurance Institution of Finland. (2023). [https://www.kela.fi/documents/20124/411887/recognised\\_housing\\_costs\\_2023.pdf/1b8b0812-a04e-fda2-3016-ccb3010c02da?t=1669184060439](https://www.kela.fi/documents/20124/411887/recognised_housing_costs_2023.pdf/1b8b0812-a04e-fda2-3016-ccb3010c02da?t=1669184060439). Accessed 11.12.2023.

<sup>18</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/yhteistyokumppanit-toimeentulotuki-maksusitoumukset-sahkovakuus>. Accessed 11.12.2023.

<sup>19</sup><https://www.kela.fi/yhteistyokumppanit-toimeentulotuki-sahkovakuus-sahkovakuuden-hakeminen>. Accessed 11.12.2023.

<sup>20</sup> According to the "[Terms of Electricity Sales](#)" recommended by the Finnish Energy in accordance to the Electricity Market Act (2013/588) "The vendor may require that the consumer lodge a reasonable security or advance payment, when a sale contract is concluded as well as when such a contract is in force. When a sale contract is in force, a security or advance payment may be required only if the consumer has materially failed to meet his liability to pay. The vendor shall have a very weighty reason for his claim for a security or advance payment both when concluding a sale contract and when such a contract is in force. The very weighty reasons may include the following: i) the sale of electricity to the consumer has been interrupted because of a failure to pay; ii) the vendor has outstanding receivables related to electricity sales, electricity supply or the power network service from the consumer, the amount of which can be considered substantial compared to the amount of invoicing based on electricity sales; or iii) the credit rating of the consumer shows that he is apparently incapable of making the payments based on the sale contract."

<sup>21</sup>The Social Insurance Institution of Finland. (2024). <https://www.kela.fi/documents/d/guest/hyvaksyttavien-asumismenojen-kuntakohtaiset-rajat-2024-voimassa-01042024-31122024>. Accessed 25.3.2024.

Category	Amount of the assistance for housing costs based on municipality
Single-person household	363-715 € per month
Two persons	452-895 € per month
Three persons	529-1023 € per month
Four persons	617-1122 € per month
+ each additional person	96-122 € per month

In addition, for a person living in a rented detached house, the impact of cold season during winter is taken in consideration when assessing the heating costs, so that the housing costs are allowed to exceed the accepted norm moderately (~5 %) during the winter months.<sup>22 23</sup>

In recent years 2020-2022, the number of people receiving Social Assistance has remained fairly stable, as shown in the table 9. It is noteworthy that although Social Assistance can be granted to cover heating costs, there has been no significant change in the number of people applying for the benefit for covering heating costs in 2020-2022. However, in 2022 the amounts granted for heating costs increased, in October 2021 the average heating costs taken into account for the Social Assistance being 151 € per household, whereas in October 2022 the corresponding figure was 208 €.<sup>24</sup>

Table 9. Numbers describing the Social Assistance granted during in 2020-2023<sup>25</sup>.

Year	Number of beneficiaries	Amount of assistance paid in total annually
2023	250 493	718 462 857
2022	251 958	678 391 090
2021	267 511	686 452 825

<sup>22</sup> The Social Insurance Institution of Finland. (2024). <https://www.kela.fi/etti/Toimeentulotuki.pdf?version=1677549968103> . 25.3.2024.

<sup>23</sup> The Social Insurance Institution of Finland. (2024). <https://www.kela.fi/etti/Toimeentulotuki.pdf?version=1677549968103#page=71&zoom=100,94,469> . 25.3.2024.

<sup>24</sup> The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/ajankohtaista/4906025/sahkon-hintanaky-jo-perustoimeentulotuessa-huomioiduissa-taloussahko-ja-lammitysmenoissa-tuensaajien-maara-on-tavanomaisella-tasolla>. Accessed 11.12.2023.

<sup>25</sup> The data is available in: The Social Insurance Institution of Finland. (2023). [https://raportit.kela.fi/ibi\\_apps/WFServlet?IBIF\\_ex=NIT100AL](https://raportit.kela.fi/ibi_apps/WFServlet?IBIF_ex=NIT100AL). Accessed 25.3.2024.

2020	288 329	784 025 858
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## 2.1.4 Temporary Assistance with Electricity Costs

In 2022, energy consumer prices in Finland increased by almost 31%<sup>26</sup>. Energy prices started to rise in the aftermath of the covid-19 pandemic in 2021 when the demand for energy began to recover and, at the same time, disruptions in supply restricted the availability. The rise in prices continued during 2022 as a result of the energy crisis prompted by the Russian invasion of Ukraine. In December of 2022, the government enacted a law<sup>27</sup> on a temporary assistance for compensating high electricity costs, to be granted by the Tax Administration and the Social Insurance Institution of Finland. The assistance was implemented through two instruments:

- 1) The primary way to receive the assistance was to apply for a tax deduction from the Tax Administration. The tax compensation was calculated as 60 % of electricity costs that exceeded 2000 € during the four months between January and April 2023. Compensation could be admitted to a maximum of 2 400 € in total. The tax reduction was made directly from taxes cumulated during the year 2023.<sup>28</sup>
- 2) If a household did not have enough taxes to pay due to low annual income, they were able to apply for an Electricity Allowance from the Social Insurance Institution of Finland, instead.<sup>29</sup> The allowance was available for electricity costs, value-added tax and basic charges, but not for electricity transmission costs or for late payment penalty fees. The own-liability threshold for the assistance was 400 € per month, meaning that for one to be eligible for the allowance, the electricity costs needed to be over 400 € per month. The amount of the allowance was 60% of the amount of the electricity bill, excluding the cost of electricity transmission and the own-liability of 400 €. The limit for the allowance was 660 € for month, 2640 € in total.<sup>30</sup>

Considering the tax limit, it can be argued, that the Electricity Allowance was a benefit targeted at low-income households. However, the relatively significant level of own-liability excluded low-income households with significant electricity costs that did not, however, exceed

<sup>26</sup>Statista. (2023) <https://www.statista.com/statistics/1271437/finland-monthly-wholesale-electricity-price/> Accessed 11.12.2023.

<sup>27</sup> Laki väliaikaisesta sähkötuesta (1152/2022). (2022). <https://www.finlex.fi/fi/laki/alkup/2022/20221152>. Accessed 11.12.2023.

<sup>28</sup>Finnish Tax Administration. (2023). <https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/deductions/tax-credit-for-electricity/>. Accessed 11.12.2023.

<sup>29</sup>Finnish Tax Administration. (2023). <https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/deductions/tax-credit-for-electricity/>. Accessed 11.12.2023.

<sup>30</sup> The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/assistance-with-electricity-costs>. Accessed 11.12.2023.

the monthly own-liability limit of 400 €. Thus, it can be argued, that the benefits capacity to prevent potential temporary energy poverty among low-income people was relative.

The allowance was granted for 2795 people, 622 236 € in total, as shown in the table 10. (some of the allowance being paid retroactively).

Table 10. The Electricity Allowance granted during 1.1.2023 - 1.2.2024.<sup>31</sup>

Month	Number of beneficiaries (2795 in total)	Assistance paid (578 418 € in total)	Average per person
2024-2	3	2 143 €	714,22 €
2024-1	44	18 855 €	428,51 €
2023-12	45	13 431 €	298,46 €
2023-11	43	9 390 €	218,38 €
2023-10	33	11 297 €	342,34 €
2023-9	36	10 051 €	279,20 €
2023-8	65	19 463 €	299,44 €
2023-7	129	39 883 €	309,17 €
2023-6	221	56 638 €	256,28 €
2023-5	324	80 766 €	249,28 €
2023-4	436	103 644 €	237,72 €
2023-3	909	185 446 €	204,01 €
2023-2	497	70 514 €	141,88 €
2023-1	10	715 €	71,48 €

<sup>31</sup> The data is available in: The Social Insurance Institution of Finland. (2024). [https://raportit.kela.fi/ibi\\_apps/WFServlet?IBIF\\_ex=NIT100AL](https://raportit.kela.fi/ibi_apps/WFServlet?IBIF_ex=NIT100AL). Accessed 25.13.2024.

## 2.1.5 Study Grant

Students in secondary education and in higher education are eligible to apply for Study Grant paid by the Social Insurance Institution of Finland. From the perspective of energy poverty, the Study Grant is not a benefit directly targeted at covering heating and electricity costs, and Study Grant receivers can also apply for basic housing allowance. In addition, the majority of students in Finland live in rental apartments, where heating costs are included in the rent, making them not particularly vulnerable to rapid changes in heating costs. The electricity usage for students living in rental apartments can be also estimated to be moderate on average. The amount of Study Grant varies based on certain criteria, but the most common amount of the grant is 279 € for students of minimum 18 years of age living alone or in shared apartments<sup>32</sup>.

Table 11. The amounts of Study Grant for different groups of beneficiaries.<sup>33</sup>

Category	The amounts of the grant for different beneficiaries
Students in secondary education	<ul style="list-style-type: none"> <li>▪ The amount of the benefit varies between 43,15 - 401,43 € per month based on whether the student is e.g. provider of a minor child, is under 18 years old, or lives with parents<sup>34</sup></li> </ul>
Students in higher education	<ul style="list-style-type: none"> <li>▪ The amount of the benefit varies between 43,15 - 401,43 € per month based on whether the student is e.g. provider of a minor child, is under 18 years old, or lives with parents<sup>35</sup></li> </ul>

## 2.1.6 Social Lending

Social Lending is a system, where a wellbeing services county can grant a loan to a person who due to low income and assets is unable to obtain a loan in any other way, but who nevertheless has the ability to repay the loan. The system aims to prevent financial exclusion and

<sup>32</sup> The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/financial-aid-for-students-study-grant>. Accessed 11.12.2023.

<sup>33</sup>The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/financial-aid-for-students-study-grant>. Accessed 11.12.2023.

<sup>34</sup>A more specific calculus can be found at: The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/financial-aid-for-students-study-grant>. Accessed 11.12.2023.

<sup>35</sup>A more specific calculus can be found at: The Social Insurance Institution of Finland. (2023). <https://www.kela.fi/financial-aid-for-students-study-grant>. Accessed 11.12.2023.

over-indebtedness and to support low-income people's autonomy. Social credit may be granted on basis of:

- to balance the budget
- to break the debt cycle
- to buy a home
- to support employment or rehabilitation
- to secure housing
- resolving crisis situations<sup>36</sup>

The Social Lending systems relation to energy poverty is not direct, but in practice it can be used for costs related to heating, energy and energy efficiency, however, this being rather unlikely according to past data on the usage of the instrument<sup>37</sup>.

### 2.1.7 Conclusions on social security and its relation to energy poverty

Within the Finnish social security system, the Housing Allowance can be used to compensate heating costs and other housing costs directly. The benefit is also very widely used, not only by extremely low-income people, but by many full-time employed people as well. Also, groups such as majority of students are directly dependent on the Housing Allowance.

For the low-income individuals and families without income to cover their essential daily expenses, the Social Assistance creates the last resort benefit, which can also be used to compensate housing costs, as well as heating and electricity costs. In addition, the Social Assistance does not exclude receiving the Housing Allowance at the same time, and in most cases the individual or the family receives these both benefits at the same time.

Finland has experience and historical evidence on the ability to implement temporary instruments to compensate for disproportionately high electricity bills in exceptional circumstances, as witnessed by the Temporary Electricity Allowance. If such instrument would be designed with more time and precision, the 2023 temporary assistance provides an important example of the type of social policy instrument, that could be used to compensate high electricity bills and to prevent energy poverty in situations of exception in future.

In addition, there are several other benefits, such as Study Grant, Unemployment Benefit and Social Lending, that are not directly linked to heating or energy costs but contribute to the prevention of poverty and supporting low-income people in general.

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<sup>36</sup>Ministry of Social Affairs and Health. (2023). <https://stm.fi/en/income-security/social-lending>. Accessed 11.12.2023.

<sup>37</sup> [Sosiaalinen luototus 2019 - Kuntakyselyn osaraportti](#). Finnish institute for health and welfare statistics report 21/2020.

As a conclusion, it can be argued, that the Finnish social security is relatively comprehensive as it does compensate housing, heating and electricity costs, alongside with other daily expenses and financial needs of low-income people.

It is important to note, that from the perspective of social security, other sub-categories of poverty than energy poverty could be defined as well, e.g., medicine poverty or inability to access internet and digitalization due to low-income. However, it would be problematic to design the social security system and individual benefits based on different forms of poverty, as this would make the social security system extremely complicated and inefficient to implement. This would be contrary to the objectives of the social security system, which is to make it as accessible as possible, the top priority being to ensure that the basic social security has the overall ability and agility to effectively respond to different life situations and forms of poverty.

Currently, the most significant barrier for an individual to benefit from the social security system is the lack of information about all the benefits the individual is entitled to and how to apply for these benefits. Still, the mitigation measures needed to make the system more easily understandable and usable concern the whole social security system, not energy poverty measures in specific, and falls under the Finnish Social Insurance Institution's general duties.

It should also be noted that while only certain benefits or a part of a benefit are directly targeted to cover heating costs or electricity, a much larger part of the benefits are targeted to general essential costs of living. Since energy poverty never exists in isolation from other forms of poverty experienced by the individual (general lack of money), other benefits can help to reduce energy poverty as well, as the individual does not have to prioritize one essential cost of living over another (for example choosing between covering food, medicine or heating costs).

Therefore, it is difficult to justify treating energy poverty as a distinct type of poverty that requires separate consideration within the social security system.

### 3 Other instruments to prevent energy poverty in Finland

Alongside the social security system, there are other instruments in place in Finland that are used or can be used to prevent energy poverty.



Firstly, the ARA system (ARA being an abbreviation for the Finnish Housing Finance and Development Centre), through which the state indirectly supports people with their housing costs, funds social housing and affordable homeownership<sup>38</sup>.

Secondly, there are energy renovation subsidies in place to motivate homeowners to conduct energy renovations.

Thirdly, there is a publicly funded nation-wide network of energy advisors for energy efficiency and renovation issues, and lastly, national Energy Efficiency Agreements in place.

In this chapter, these four mechanisms are presented, and light analysis is given on the issue.

### 3.1.1 The ARA system

In Finland, the state supports social and affordable housing by providing interest rate subsidies and state guarantees for loans taken to create social and affordable housing, as well as various starting and investment grants for projects. The Finnish Housing Finance and Development Centre (ARA<sup>39</sup>) is a public agency whose mandate is to implement this state support directed at production, procurement, and basic renovation of apartments<sup>40</sup>.

The aid is discretionary and based on e.g. the law and the state budget.<sup>41</sup> ARA operates under the supervision of the Ministry of Environment.

In practice, ARA grants subsidies, grants, and guarantees both for housing and construction. It monitors and directs the process to make sure that the management of finances and the allocation of government subsidies is done in a proper way. It also supervises the use of the ARA housing stock.<sup>42</sup>

For the construction of apartments or basic renovation ARA can grant 1) subsidized loans, 2) investment grants to improve housing for people with special needs, 3) other aid, or 4) a state guarantee for a loan that is granted for such a project.<sup>43</sup>

In 2022, the ARA subsidies were 277M€ (183M€ in 2019) and its interest subsidy and guarantee loan entitlements totaled 2335M€ (1795M€ in 2019).<sup>44</sup>

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<sup>38</sup> Housing 2030. (2023). <https://www.housing2030.org/project/ara-housing-finance-development-centre-of-finland/#:~:text=The%20Housing%20Finance%20and%20Development,construction%2C%20purchase%2C%20and%20renovation>. Accessed 7.12.2023.

<sup>39</sup> Asumisen rahoitus- ja kehittämiskeskus

<sup>40</sup> ARA. (2021). [https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis\\_ ja\\_ suunnitteluopas\(40242\)](https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis_ ja_ suunnitteluopas(40242)). Accessed 7.12.2023.

<sup>41</sup> ARA. (2021). [https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis\\_ ja\\_ suunnitteluopas\(40242\)](https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis_ ja_ suunnitteluopas(40242)). Accessed 7.12.2023.

<sup>42</sup> ARA. (2023). [https://www.ara.fi/en-US/About\\_Ara/Ara\\_implements\\_Finlands\\_housing\\_policy\(843\)](https://www.ara.fi/en-US/About_Ara/Ara_implements_Finlands_housing_policy(843)). Accessed 7.12.2023.

<sup>43</sup> ARA. (2021). [https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis\\_ ja\\_ suunnitteluopas\(40242\)](https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis_ ja_ suunnitteluopas(40242)). Accessed 7.12.2023.

<sup>44</sup> [https://www.ara.fi/download/noname/%7B4C3CFB00-BB8E-4DC8-AB21-9EFE82A9B275%7D/171913\\_PDF-download](https://www.ara.fi/download/noname/%7B4C3CFB00-BB8E-4DC8-AB21-9EFE82A9B275%7D/171913_PDF-download)

ARA also allows municipalities and other landowners to apply for a preliminary ruling about a lower price of its land.<sup>45</sup> When a municipality sells or leases land to ARA production below the market price, the difference in price is considered state aid paid by the municipality. Such aid can be considered under EU law as SGEI (Services of General Economic Interest) aid.<sup>46</sup>

Ultimately, people live in rented ARA apartments where the rent is regulated, and the persons that can get an apartment are chosen based on e.g., their low-income level – there are city-specific limits for the wealth of the people living in ARA apartments. Homeless people, others in severe need of housing, and those with least wealth and/or income are prioritized<sup>47</sup>. In 2019, there were approximately 600 000 people living in ARA apartments<sup>48</sup>. About a third of Finnish apartments have been constructed using state subsidies managed by the ARA<sup>49</sup>.

The ARA system is unique in Europe<sup>50</sup> and is a significant part of the system through which Finland effectively averts poverty caused by housing costs. As energy costs are included in the rent for ARA residents, the system protects those with less wealth. Some of the energy renovation subsidies presented next are also under the ARA mandate.

### 3.1.2 Energy renovation subsidies

In recent years, different kinds of subsidies have been available for households for energy renovation. The applicant has to choose which grant suits the renovation project best. Same renovation project cannot get multiple grants. The main criteria for each subsidy are presented in table 12.

Table 12. Energy renovation subsidies in Finland.

Subsidy	In effect
Tax credit for household expenses to improve energy efficiency (Kotitalousvähennys energiatehokkuuden parantamiseen)	yes
Increased tax credit for household expenses to replace oil heating (Korotettu kotitalousvähennys verotuksessa öljylämmityksestä luopumiseen)	2022-2027
Tax deductibility of a renovation project for a housing cooperative (Taloyhtiön korjaushankkeen verovähennysoikeus)	yes

<sup>45</sup> ARA. (2021). [https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis\\_ ja\\_ suunnitteluopas\(40242\)](https://www.ara.fi/fi-FI/Tietopankki/Oppaat/Rakennuttamis_ ja_ suunnitteluopas(40242)). Accessed 7.12.2023.

<sup>46</sup> ARA. (2018). [Raportointivelvollisuus EU:lle kunnan tontin luovuttamisesta sosiaaliseen asuntotuotantoon](#). PDF download. Accessed 7.12.2023.

<sup>47</sup> ARA (2023) <https://www.ara.fi/asukasvalinta>. Accessed 7.12.2023.

<sup>48</sup> ARA. (2021). [ARA-asutokannan ja asukkaiden kehitys 2010-luvulla](#). Selvitys 5/2021. PDF download. Accessed 7.12.2023.

<sup>49</sup> ARA. (2023). [https://www.ara.fi/en-US/ARA\\_housing\\_stock](https://www.ara.fi/en-US/ARA_housing_stock). Accessed 7.12.2023.

<sup>50</sup> Information retrieved from a project meeting 28.11.2023.

Subsidy to renew district heating equipment in residential buildings (Avustus matalalämpöiseen kaukolämpöön siirtymiselle) (ARA)	2020-2023
Energy renovation subsidy for housing cooperatives, and detached houses and other small residential buildings (Energia-avustus taloyhtiöille ja pientaloille) (ARA)	2020-2023
Subsidy to replace oil heating in detached houses and other small residential buildings (Avustus öljylämmityksestä luopumiseen pientaloille) (ELY Centre)	until 2025 the latest
Subsidy to replace gas heating in detached houses and other small residential buildings (Avustus kaasulämmityksestä luopumiseen pientaloille) (ELY Centre)	until 2025 the latest
Guarantee loan for the renovation of housing cooperatives (Takauslaina asunto-osakeyhtiön perusparannukseen) (ARA)	yes
Repair subsidy for the renovation of housing for elderly and disabled people (ARA)	yes

### Tax credit for household expenses to improve energy efficiency<sup>51</sup>

Tax credit for household expenses can be used for energy efficiency projects (maintenance, basic renovation). Only the work costs can be deducted. The maximum sum is 2 250 € per year per person. The subsidy is ongoing. Housing cooperatives cannot be granted the tax credit. The tax administration manages the system.

### Increased tax credit for household expenses to replace oil heating<sup>52</sup>

The tax credit for individual's household expenses is bigger if it is used to replace oil heating. The exception is in effect 2022-2027. The maximum is 3 500€. Housing cooperatives cannot be granted the tax credit. The tax administration manages the system.

### Tax deductibility of a renovation project for a housing cooperative<sup>53</sup>

A housing cooperative can prepare for renovation projects in future years by collecting money from its shareholders in advance. If the result for the financial year is going to be in

<sup>51</sup> Motiva, "Kotitalousvähennys energiatehokkuuden parantamiseen", [https://www.motiva.fi/ratkaisut/energiatehokkuuden\\_rahoitus/kansallinen\\_rahoytus\\_tuet\\_ja\\_avustukset/kotitalousvahennys](https://www.motiva.fi/ratkaisut/energiatehokkuuden_rahoitus/kansallinen_rahoytus_tuet_ja_avustukset/kotitalousvahennys). Accessed 23.11.2023

<sup>52</sup> Motiva, "Kotitalousvähennys energiatehokkuuden parantamiseen", [https://www.motiva.fi/ratkaisut/energiatehokkuuden\\_rahoitus/kansallinen\\_rahoytus\\_tuet\\_ja\\_avustukset/kotitalousvahennys](https://www.motiva.fi/ratkaisut/energiatehokkuuden_rahoitus/kansallinen_rahoytus_tuet_ja_avustukset/kotitalousvahennys). Accessed 23.11.2023

<sup>53</sup> Motiva. (2022). [https://www.motiva.fi/ratkaisut/energiatehokkuuden\\_rahoytus/kansallinen\\_rahoytus\\_tuet\\_ja\\_avustukset/taloyhtion\\_korjaushankkeen\\_verovahennysoikeus](https://www.motiva.fi/ratkaisut/energiatehokkuuden_rahoytus/kansallinen_rahoytus_tuet_ja_avustukset/taloyhtion_korjaushankkeen_verovahennysoikeus). Accessed 23.11.2023.

surplus, the housing cooperative can, under certain conditions, make a provision for housing and deduct it from its tax bill. The tax administration manages the system.

### **Subsidy to renew district heating equipment in residential buildings<sup>54</sup>**

The subsidy is in place for the replacement of low-temperature district heating installations in residential buildings, and the adjustment and balancing of the heating system. A subsidy may be awarded for renovations of residential buildings that are occupied at least half of the year by permanent residents. The subsidy is granted from the State Housing Fund and the amount is determined annually in the State budget. Depending on the type of building, up to €2000-4000 per heat exchanger and €500-2000 per building-specific heating system adjustment can be granted. In total, 10M€ in 2022 and in 2023, 98,67M€ were granted combined with the energy renovation subsidy. The subsidy was in effect 2022-2023. It is managed by The Housing Finance and Development Centre of Finland (ARA).

### **Energy renovation subsidy for housing cooperatives, and detached houses and other small residential buildings**

The ARA energy renovation subsidy is meant for both for small houses and housing cooperatives. Examples of the types of renovations that can receive the grant are replacing oil heating, replacement of the ventilation system with heat recovery, and replacing a fireplace with a heat storing fireplace. There are requirements for the improvement of the energy efficiency to receive the subsidy. The money received can be up to 6 000€ per house or per apartment (=50 % of the total costs). The subsidy was in place 2020-2023 and was managed by The Housing Finance and Development Centre of Finland (ARA).

### **Subsidy to replace oil heating in detached houses and other small residential buildings <sup>55</sup>**

This state aid is available for owners of small houses<sup>56</sup> in year-round residential use to remove the oil heating system and replace it with non-fossil forms of heating. 2 500- 4000 € is available per project. On 30.10.2023, there were 25 271 positive decisions made. The subsidy will be in place until all the money allocated has been granted, August 2025 being the deadline<sup>57</sup>. The system is managed by the Centre for Economic Development, Transport and the Environment (ELY Centre).

### **Tax credit for installing heat pump**

For installation and maintenance of an air source heat pump in a detached house or holiday home, there is an indirect subsidy through the tax credit granted by the Finnish Tax

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<sup>54</sup> ARA. (2023). [https://www.ara.fi/fi-FI/Lainat\\_ja\\_avustukset/Avustus\\_matalalamppoiseen\\_kaukolampoon\\_siirtymiseksi](https://www.ara.fi/fi-FI/Lainat_ja_avustukset/Avustus_matalalamppoiseen_kaukolampoon_siirtymiseksi). Accessed 23.11.2023.

<sup>55</sup> ELY Centre. (2023). [Avustus pientalon öljylämmityksestä luopumiseksi](https://www.ely-keskus.fi/-/oljy-ja-kaasulammituksesta-luopumiseksi). Accessed 23.11.2023.

<sup>56</sup> Single-family house or semi-detached house

<sup>57</sup> ELY Centre. (2023). <https://www.ely-keskus.fi/-/oljy-ja-kaasulammituksesta-luopumisen-avustusta-riittaa-vielayli-10-000-pientalon-omistajalle?redirect=%2F>. Accessed 23.11.2023.

Administration.<sup>58</sup> The amount of tax credit is 40 % of the work, with a 2250 € upper limit with 100 € own-liability threshold. In case the heat pump replaces an oil heating, the upper limit is 3500 €<sup>59</sup>. In Finland, heat pumps produce 16 % of the heating of Finland, and in under 10 years the amount of investments to heat pumps has more than doubled<sup>60,61</sup>.

### **Subsidy to replace gas heating in detached houses and other small residential buildings**<sup>62,63</sup>

The state aid is available for owners of small houses<sup>64</sup> in year-round residential use to remove their gas heating system and replace it with non-fossil forms of heating. Available per project is 2500- 4000 €. The subsidy will be in place until all the money allocated has been granted, August 2025 being the deadline.<sup>65</sup> It was estimated there were only 4 000 households that could get the grant. In June 2023, 1 000 households had applied the subsidy (note: all may not have got the subsidy). The system is managed by the Centre for Economic Development, Transport and the Environment (ELY Centre).

### **Guarantee loan for the renovation of housing cooperatives**<sup>66</sup>

ARA can approve a loan to housing cooperatives as a guarantee loan. The main focus of the system is on measures that are essential for maintenance, such as plumbing, external cladding and energy efficiency repairs. The system has been in place since 2015 and still is. Maximum of 70 % of the basic renovation costs can be included in the guarantee loan. It is managed by The Housing Finance and Development Centre of Finland (ARA).

### **Repair subsidy for the renovation of housing for elderly and disabled people**<sup>67</sup>

ARA can give a subsidy for people over 65 years or for disabled people to repair their (owned) small house or apartment. The amount of the subsidy out of the total cost is 50 % for the elderly and 70 % for veterans, their spouses, and disabled people. There are limits for income and wealth in the subsidy, and the recipient must have lived in the apartment for at least 5

<sup>58</sup> Finnish Tax Administration. (2024). <https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/deductions/Tax-credit-for-household-expenses/taulukko-kotitalousv%C3%A4hennykseen-oikeuttavista-%C3%B6ist%C3%A4/>. Accessed 1.3.2024

<sup>59</sup> Finnish Tax Administration. (2024). <https://www.vero.fi/en/individuals/tax-cards-and-tax-returns/deductions/Tax-credit-for-household-expenses/>. Accessed 1.3.2024

<sup>60</sup> Finnish Heat Pump Association. (2024). <https://www.sulpu.fi/finland-become-a-heat-pump-superpower-hps-produce-14-twh-a-16-of-the-heating-of-finland-80-twh-a-according-to-the-finlands-country-report-to-iea-hpc/>. Accessed 1.3.2024

<sup>61</sup> Finnish Heat Pump Association. (2024). <https://www.sulpu.fi/after-a-peak-year-heat-pump-sales-normalised-to-the-level-of-previous-years/>. Accessed 1.3.2024

<sup>62</sup> Ministry of Environment. (2022). <https://ym.fi/-/maakaasulammituksen-vaihtajia-tuetaan-uedella-avustuksella-fossiilisesta-lammityksesta-luopuville-tarjolla-useita-eri-tilanteisiin-sopivia-tukimuotoja>. Accessed 23.11.2023.

<sup>63</sup> ELY Centre. (2023). <https://www.ely-keskus.fi/kaasulammituksen-vaihtajalle>. Accessed 23.11.2023.

<sup>64</sup> omakotitalo or paritalo

<sup>65</sup> ELY Centre. (2023). <https://www.ely-keskus.fi/-/oljy-ja-kaasulammityksesta-luopumisen-avustusta-riittaa-vielayli-10-000-pientalon-omistajalle?redirect=%2F>. Accessed 23.11.2023.

<sup>66</sup> ARA. (2020). [https://www.ara.fi/fi-FI/Lainat\\_ja\\_avustukset/Perusparannuksen\\_lainoitus/Asuntoosakeyhtiotalot](https://www.ara.fi/fi-FI/Lainat_ja_avustukset/Perusparannuksen_lainoitus/Asuntoosakeyhtiotalot). Accessed 23.11.2023.

<sup>67</sup> ARA. (2023.) [https://www.ara.fi/fi-FI/Lainat\\_ja\\_avustukset/Korjausavustukset/Korjausavustus\\_iak-kaiden\\_ja\\_vammaisten\\_henkiloiden\\_asuntoihin](https://www.ara.fi/fi-FI/Lainat_ja_avustukset/Korjausavustukset/Korjausavustus_iak-kaiden_ja_vammaisten_henkiloiden_asuntoihin). Accessed 22.12.2023.

years.<sup>68</sup> This subsidy can also be used for energy renovations (changing of heating method, window renovations) if the current system is broken or causes health risks. Only energy efficiency improvement is not reason enough on its own. There will be cuts to the budget for the subsidy from 2024 onwards.<sup>69</sup>

### 3.1.3 Energy guidance

The Finnish Energy Authority funds energy guidance in all regions in the mainland Finland. This energy guidance is given by the Sustainable Development Company of the Finnish State Motiva, cities, city companies or consultancy companies. Energy guidance gives basic information about energy related issues such as energy saving, heat pumps, energy efficient construction, solar power and heat, emissions, subsidies for households. Energy advisors give advice via phone or email, give presentations, implement campaigns, do communication and marketing, school visits etc. <sup>70</sup> Energy advisory is cost-free and objective. Advisors does not advise about companies or products, but rather give overall information and steps forward.

There are several binding requirements related to energy guidance at the energy efficiency directive (EED) by the European Union<sup>71</sup>. The energy guidance funded by the Finnish Energy Authority is implementing these requirements.

#### General consumer energy advice by Motiva

Guidance (“Asiaa energiasta”)<sup>72</sup> is given e.g. about saving energy, choosing and replacing the heating method, and energy efficiency in heating and in using electronics. The regular newsletter via email reaches several thousands of subscribers. Social media, Facebook, Instagram are important channels for communication and marketing. At Motiva’s webpage is an extensive amount of information related to issues around energy efficiency and guidance.

Motiva also coordinates yearly campaigns for energy savings (e.g. yearly energy saving week), that are implemented nationally and also in regions by local energy advisors. The energy advisors at Motiva are also often interviewed by media, so the visibility of the energy efficiency information and guidance is broad.

Motiva also trains the advisors and produce advise materials from different subjects. This ensures the quality of the advisory.

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<sup>68</sup> Turun kaupunki. (2023.) <https://www.turku.fi/asuminen-ja-ymparisto/rakentaminen/neuvonta-ja-avustukset/ikaantyneiden-ja-vammaisten-henkiloiden>. Accessed 22.12.2023.

<sup>69</sup> The information was retrieved from a project interview.

<sup>70</sup> The Finnish Energy Authority (2023). <https://energiavirasto.fi/energianeuvonta>. Accessed 2.2.2024.

<sup>71</sup> European Parliament. (2023). [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOL\\_2023\\_231\\_R\\_0001&qid=1695186598766](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AJOL_2023_231_R_0001&qid=1695186598766) . Accessed 2.2.2024.

<sup>72</sup> Motiva. (2023). <https://www.motiva.fi/koti-ja-asuminen/asiaa-energiasta-kuluttajien-energianeuvonta>. Accessed 23.11.2023.

## Local consumer energy advice

Commissioned by the Energy Authority, there are energy advisors placed in Finnish regions. The guidance is often given by the city, a local energy office or a consulting company. Energy advisors are highly educated and have broad expertise either from energy or construction industry.

The energy guidance in all regions of the mainland Finland has been active from 2018. Furthermore, some advisors have e.g. thermal cameras to be lent.<sup>73</sup> The energy advisory organizations are presented in the picture 1 below. At the local level energy advisory is done in a close cooperation with other local organizations or associations, related e.g. real estate, private home, pensions, business, libraries, municipalities.



Picture 1. The regional energy advisor organizations funded by the Finnish Energy Authority.

There are also few other energy guidance services in the Helsinki regions that are funded by the municipalities: Such examples include HSY Climate info in the Helsinki Region, The City of Helsinki also has its own guidance for housing cooperatives in the city.

## Other services for energy guidance

The South Ostrobothnia Centre for Economic Development, Transport and the Environment (ELY Centre) offers advice on renewable energy permitting to the whole of Finland<sup>74</sup>. The

<sup>73</sup> Motiva. (2023). [https://www.motiva.fi/koti\\_ja\\_asuminen/asiaa\\_energiasta\\_-\\_kuluttajien\\_energianeuvonta](https://www.motiva.fi/koti_ja_asuminen/asiaa_energiasta_-_kuluttajien_energianeuvonta). Accessed 23.11.2023.

<sup>74</sup> ELY Centre. (2023). <https://www.ely-keskus.fi/web/uusiutuvan-energian-lupaneuvonta>. Accessed 23.11.2023.

Finnish Association for the Welfare of Older Adults offers repair and renovation advice for the elderly and Omakotiliitto (the homeowners' association) provides guidance to its members.

The Finnish Association for the Welfare of Older Adults gives important help for elderly. They give free-of-charge home repair advice for elderly over 65 years. This advice is nationwide. There are around 15 regional home repair experts who help veterans and other older people in assessing and planning house renovation and applying for repair allowances that were mentioned earlier. This includes also e.g. change of heating method, improvement of energy efficiency.<sup>75</sup>

### 3.1.4 Energy efficiency agreements

In Finland, there are voluntary Energy Efficiency Agreements in place to fulfill the EU energy efficiency directive requirements. Agreements are an important part of Finland's energy and climate strategy – and a primary tool to improve energy efficiency. Finland has shown that the voluntary agreements are working and gain the targets. The current agreements are valid until the end of 2025, and 159 municipalities in Finland have signed the agreement, alongside over 776 companies.<sup>76,77</sup> The energy consumption of the sectors covered by the agreements accounts for around 60% of Finland's total energy consumption, and the population of the municipalities that have signed up is as high as 80% of Finland's population. The savings in energy use, 12,5TWh, are the result of more than 24 500 individual energy efficiency measures and investments in energy efficiency made by the signatories over a six-year period between 2017-2022<sup>78,79</sup>.

Related to vulnerable people, it is important to acknowledge, that under the Energy Efficiency Agreement for Property Sector is the Rental Housing Property Action Plan. There are 40 different rental housing companies joined to this action plan with 45 locations and nearly 280 000 apartments.<sup>80</sup> During 2017-2022 there have been more than 3000 energy efficiency actions in rental houses. These actions have saved 231 GWh per year. The investments done to energy efficiency are 41 million euros.<sup>81</sup>

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<sup>75</sup> VTKL - The Finnish Association for the Welfare of Older Adults <https://vtkl.fi/in-english>. Accessed 2.2.2024.

<sup>76</sup> Energy Efficiency Agreements. (2023). <https://energiatehokkuussopimukset2017-2025.fi/en/agreements/>. Accessed 11.12.2023.

<sup>77</sup> Energy Efficiency Agreements. (2024). <https://energiatehokkuussopimukset2017-2025.fi/sopimukseen-liittyneet/>. Accessed 12.4.2024.

<sup>78</sup> 2017-2022

<sup>79</sup> Energy Efficiency Agreements. (2022). <https://energiatehokkuussopimukset2017-2025.fi/tulokset/sopimusten-tulokset-yhteensa/tiivistelma-tuloksista/>. Accessed 11.12.2023.

<sup>80</sup> Rental housing property action plan. <https://energiatehokkuussopimukset2017-2025.fi/sopimukseen-liittyneet/#vuokra-asuntoyhteisot>. Accessed 2.2.2024.

<sup>81</sup> Energy Efficiency Agreements. (2022). <https://energiatehokkuussopimukset2017-2025.fi/tulokset/kiinteisto-ala/toimenpideohjelmait/>. Accessed 2.2.2024.



### 3.1.5 State support for municipalities to give housing guidance, 2023-27

Currently, there is a law<sup>82</sup> in place that aims to encourage municipalities to better the accessibility of housing guidance by giving grants (max 80 % of the costs of the service) for producing and developing housing guidance services. The services include guidance on the maintenance of the apartment and it is available for everyone regardless of if they own the apartment or not. There is 4,3M€ available annually.<sup>83</sup>

### 3.1.6 Conclusions and analysis on other instruments to prevent energy poverty in Finland

Energy renovation subsidies are, in general, a good way to motivate people change their heating method.

However, it must be recognized that due to the significant disparities in regional vitality and land values across Finland, it may not always be economically justifiable to renovate houses in certain areas - presenting a political quandary. Even with subsidies, renovations may not be financially viable in some regions or for certain properties if the improvements do not enhance the house's value. In regions with stable or growing populations, housing cooperatives and private individuals can secure bank loans for renovations, with the upgraded property serving as collateral. Conversely, in areas where property values are declining, obtaining a loan can be more challenging.

According to a study made in 2021, ELY and ARA grants were typically granted to buildings from the 1970s for renovations replacing oil boilers with air-to-water heat pumps<sup>84</sup>. The majority of ARA energy renovation subsidies were granted in the Uusimaa region - and least subsidies were granted in the regions of Kainuu, North Karelia, Lapland and South Ostrobothnia. The majority of the subsidies were granted to houses built before 1980. There is no data available on the households' socio-economic status. However, less than 25 % (<500 out of the total over 2000) of energy renovation subsidies were granted for homes in the areas previously identified as risk areas for energy poverty: South Savo, North Karelia, Kainuu, Satakunta, Kymenlaakso, South Karelia, North Savo and Lapland.<sup>85</sup>

It can be argued that the subsidy system may have inadvertently favored technically-savvy individuals who can navigate the often intricate details of renovations and have the financial capacity to invest. Energy guidance services can, to some extent, help with the planning of

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<sup>82</sup> Finlex. (2022). Laki asumisneuvonnan tuesta kunnille vuosina 2023-2027 (1036/2022). <https://www.finlex.fi/fi/laki/alkup/2022/20221036>. Accessed 18.1.2024.

<sup>83</sup> Valtioneuvosto. (2022). Hallituksen esitys laiksi asumisneuvonnan tuesta kunnille vuosina 2023-2027. <https://valtioneuvosto.fi/hanke?tunnus=YM003:00/2022>. Accessed 18.1.2024.

<sup>84</sup> Sankelo et al. (2022). Renovation Results of Finnish Single-Family Renovation Subsidies: Oil Boiler Replacement with Heat Pumps. *Energies* 2022, 15(20), 7620.

<sup>85</sup> Information received from ARA.

the renovation and thus make the subsidies more available. Apart from energy renovation subsidies, the Repair Subsidy for Housing Renovations for the Elderly and Disabled appears to be the support system with the greatest potential to address energy poverty among low-income seniors, who are also at increased risk of experiencing energy poverty.

Two critical issues stand out concerning these additional measures. First, the subsidies might not be reachable for those experiencing energy poverty since they were designed primarily to tackle the climate crisis, not energy poverty. Currently Second, the current Finnish government has decided to discontinue many of these measures. Despite their popularity, many of the subsidies will end in 2023<sup>86</sup>, and it remains unclear if and when the government will introduce new measures to take their place. Thus, it is essential that such systems are sustained and are evaluated for their potential to simultaneously address climate concerns and energy poverty.

## 4 Additional Perspectives on Assessing Energy Poverty in Finland

To better comprehend the structures of Finnish society, chapter 4.1. briefly explores the evolution of energy costs in the energy market, which significantly affects household energy affordability. Furthermore, its subchapters present the variability of electricity contracts available to Finnish consumers and the legislative protections that prevent electricity disconnection for vulnerable households. Chapter 4.2 provides an overview of the energy efficiency levels in the Finnish building stock. After presenting these essential factors that influence consumer energy expenses in Finland, chapter 4.3. outlines the framework in which energy poverty could be approached in Finland.

### 4.1 Energy market in Finland: Trends and developments in heating and electricity

In 2021, 45% of residential and service buildings in Finland were heated through district heating, while 18% used electricity and 17% relied on heat pumps for their heating needs. Only some 13% of residential and service buildings were heated with wood, 6% with oil and

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<sup>86</sup> see e.g. [Yle](#) 3.11.2023.

around 1% with other forms of heating.<sup>87</sup> In conclusion, the most critical elements for tracking energy expenses in Finland are the prices for electricity and district heating.

The price of district heating in Finland has evolved relatively steady for the past 10 years although the rise in fuel prices caused a small peak in district heating prices towards the end of 2022.<sup>88</sup> The price of electricity also peaked during the winter between 2022 and 2023, but since then, the average electricity costs paid by household customers have fallen significantly, almost by a third from those peak levels. Currently the total electricity price for consumers in Finland, which is around 20,0 cents/kWh, is below the EU level average of 25,0 cents/kWh.<sup>89</sup> Putting the period of energy crisis in 2022 and 2023 aside, we can see that the Finnish electricity and district heating market is stable and that the development of electricity and district heating costs is quite steady and predictable in long term.

Regarding the development of energy costs, it is also important to note that the statistics compiled by the Finnish Energy Authority on Finland's electricity use and output indicate that the country is progressing rapidly towards self-sufficiency in electricity. The amount of electricity consumption in Finland has been steady since 2020 while thanks to new wind power production and the unit 3 of Olkiluoto nuclear power plant (OL3) starting to operate in May 2023 Finland's total energy production capacity has increased drastically. Finland still imports electricity but at the same time Finnish electricity export has grown into a share of net electricity imports only 1,9 % of the total electricity consumption in the year 2022. For the first time in history, Finland was also a net exporter of electricity at times during the year 2022. The electricity production in 2023 did not yet reach the peak of Finland's entire electricity production capacity which gives a positive view into the future of Finland's electricity market.<sup>90</sup>

#### 4.1.1 Electricity market and contract types

Finland is part of the European wholesale electricity market and within it Finland participates in the market-based power exchange of NordPool. The customers' needs determine how much electricity is procured: produced or imported – and at what price. The price of electric energy is determined in the wholesale market, and the retail market operates between the electricity suppliers and customers. All electricity customers, such as households and businesses, can buy their electricity from an electricity supplier of their choice. The market has been open for over 20 years.

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<sup>87</sup> Finnish Energy (*Energiateollisuus ry*). "Energiavuosi 2023 Kaukolämpö". (2024). [https://energia.fi/wp-content/uploads/2024/01/Kaukolampovuosi-2023\\_ennakkograafit.pdf](https://energia.fi/wp-content/uploads/2024/01/Kaukolampovuosi-2023_ennakkograafit.pdf). Accessed 25.1.2024

<sup>88</sup> Finnish Energy (*Energiateollisuus ry*). "Kaukolämmön hinta 1.1.2024". (2024). <https://energia.fi/tilastot/kaukolammon-hintatilasto/>. Accessed 25.1.2024

<sup>89</sup> Energy Authority. "Sähkömarkkinat nyt - katsaus vuoteen 2023". (2024). <https://energiavirasto.fi/documents/11120570/199565096/Energiavirasto+mediainfo+23012024.pdf/5697715f-e854-813c-f241-80de809d9c34/Energiavirasto+mediainfo+23012024.pdf?t=1705992096426>. Accessed 25.2.2024

<sup>90</sup> Energy Authority. (2024), "Sähkömarkkinat nyt - katsaus vuoteen 2023". <https://energiavirasto.fi/documents/11120570/199565096/Energiavirasto+mediainfo+23012024.pdf/5697715f-e854-813c-f241-80de809d9c34/Energiavirasto+mediainfo+23012024.pdf?t=1705992096426>. Accessed 25.2.2024

Since late 1998, all electricity users in Finland, including private households, have been able to choose their preferred electricity supplier. By the close of 2022, there were 53 retail suppliers providing electricity to households and other small-scale consumers in the Finnish electricity market.<sup>91</sup> When selecting an electricity contract, households in Finland can choose between three primary options: a fixed-term contract with a stable electricity price, a dynamic electricity price contract where the price fluctuates every hour based on day-ahead wholesale market price or an open-ended contract in which the price is not linked with the wholesale spot-prices but instead the prices can be fixed for 1-3 months or changed on irregular intervals decided by the supplier. The Finnish Energy Authority collects data from electricity retailers on the types of electricity contracts Finnish households use. The statistics from the past five years show that fixed-term electricity contract have become the most frequently used type of electricity contract while the share of contracts with an indefinite duration has steadily decreased. When the electricity market is experiencing unpredictability and sharp increases in the wholesale and derivative electricity prices, electricity retailers hedge their electricity purchase prices and are prone to mainly offer dynamic electricity price contracts as new electricity contracts. This was the case during the winter 2022-2023 but as the market improved in the beginning of 2023, the supply of different types of electricity contracts recovered.<sup>92</sup> In dynamic electricity price contracts, the price customers pay is linked to hourly day-ahead wholesale electricity market prices. This setup enables customers to take advantage of extremely low or even negative hourly prices, but it also exposes them to the risk of high electricity costs when the daily market price surges.

In 2023, the wholesale electricity market calmed down from the 2022 crisis which reflected on the prices of electricity contracts being significantly lower than at their peak in 2022. Furthermore, new electricity contracts with affordable prices have lowered the average cost of household electricity bills, resulting in consumer electricity prices in Finland falling below the average consumer price in the EU. The market has also diversified and seen the emergence of so-called hybrid contracts, where in addition to a fixed price, a consumption impact component based on the time of use is added to the electricity price.<sup>93</sup>

The electricity market also allows electricity consumers to practice small-scale electricity production and sell the energy on the market. Thus, households are becoming active players in the electricity market.

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<sup>91</sup> Energy Authority (2023), "National Report on the state electricity and gas markets in Finland to the Agency for the Cooperation of Energy Regulators and to the European Commission. Year 2022. Finland" <https://energiavirasto.fi/en/-/national-report-on-electricity-and-natural-gas-markets-in-2022>. Accessed 26.3.2024

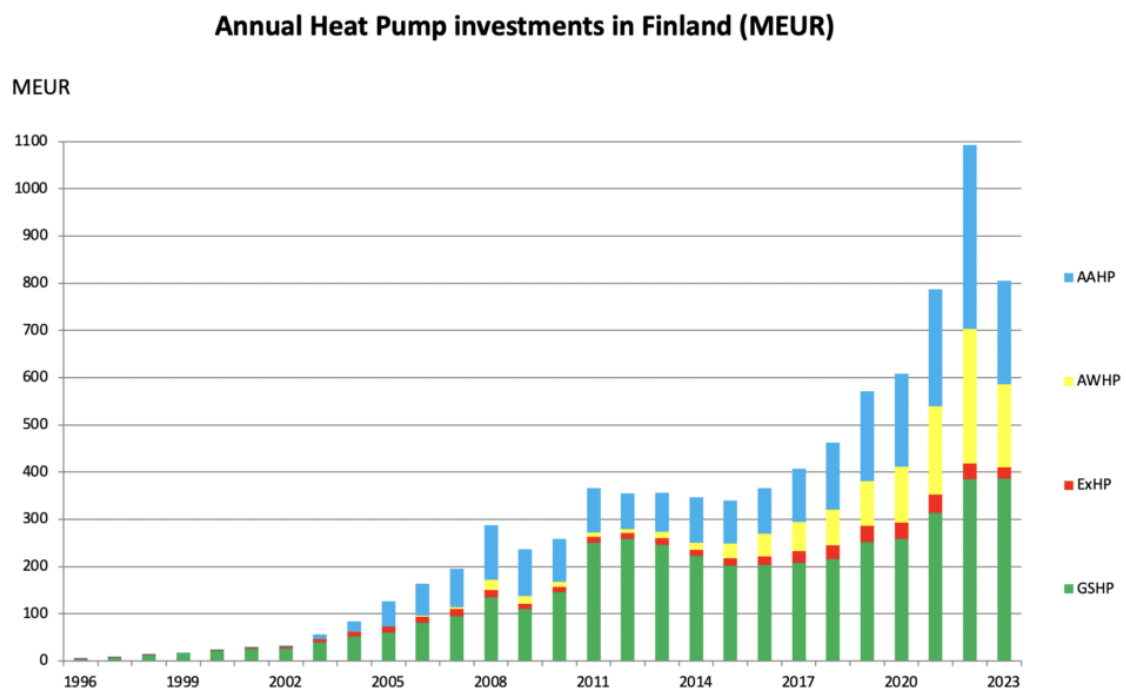
<sup>92</sup> Energy Authority. (2023). <https://energiavirasto.fi/-/porssihintaisten-sahkosopimusten-osuus-nousi-lahes-14-prosenttiin-vuonna-2022>. Accessed 25.2.2024.

<sup>93</sup> Energy Authority. (2024) "Sähkömarkkinat nyt - katsaus vuoteen 2023". <https://energiavirasto.fi/documents/11120570/199565096/Energiavirasto+mediainfo+23012024.pdf/5697715f-e854-813c-f241-80de809d9c34/Energiavirasto+mediainfo+23012024.pdf?t=1705992096426>. Accessed 25.2.2024

## 4.1.2 Heat pumps in Finnish households

Finland has become a trailblazer in adoption of heat pumps, with more installed per capita than any other European country in 2022-2023. Currently nearly 200 000 heat pumps are sold annually in Finland<sup>94</sup>. The number of installations have increased in the past few years, driven by recent higher energy prices – partly triggered by Russia’s full-scale invasion of Ukraine – as well as state subsidies for replacing oil boilers and climate concerns of citizens. The amount of annual heat pump investments is depicted in picture 2.

According to the European Heat Pump Association (EHPA), nearly 70 heat pumps per thousand households were sold in Finland. By 2023, more than EUR 9 billion has been invested in the installation of 1.6 million heat pumps across Finland. These pumps now account for approximately 20 percent of Finland's building heating.



Picture 2. Heat Pump investments in Finland in MEUR until 2023

In the Finnish climate, heat pumps are frequently a practical and cost-effective option for heating residential buildings, thereby enhancing the energy efficiency. Given that heat pumps can serve dual purposes—both heating and cooling buildings, they are poised to become an integral component of Finnish households, especially as the demand for cooling rises due to warmer summers. Historically, Finnish buildings have been constructed with cold

<sup>94</sup> The Finnish Heat Pump Association. (2024). <https://www.sulpu.fi/after-a-peak-year-heat-pump-sales-normalised-to-the-level-of-previous-years/>. Accessed 25.2.2024.

climates in mind and often do not include cooling systems. However, the recent trend of hotter summers has highlighted the growing need for cooling solutions.

As energy poverty considers indoor air quality and good living conditions related to energy use, availability of cooling can also be considered as relevant perspective.

### 4.1.3 Protection against electricity disconnection in Finnish legislation

Finnish legislation guarantees that an unpaid electricity bill will not result in a disconnection of service during the heating season for a residence that relies on electricity for heating before 4 months has elapsed since the due date for payment. Heating season is the period from the beginning of October until the end of April. Section 103 in the Finnish legislation on electricity markets, the Electricity Market Act (588/2013), contains provisions on the suspension of electricity supply for non-payment and social-economic related obstacles. The electricity supply or delivery may be disconnected at the earliest five weeks after the first notification to the end-user of the due payment or other breach of contract and the breach of contract has not been rectified in time before the notified disconnection date.<sup>95</sup>

If the non-payment is due to the end-user's payment difficulties caused by serious illness, unemployment, or other special circumstances mainly through no fault of his own, the electricity supply or delivery may be interrupted at the earliest two months after the due date for payment. The supply of electricity may not be interrupted for reasons of non-payment in respect of a building or part of a building used as a dwelling for which heating is dependent on electricity during the period from the beginning of October to the end of April before four months have elapsed since the due date for payment of the arrears. Also, before the electricity supply is interrupted, a written notice of non-payment or other breach of contract must be sent to the customer, together with a separate disconnection notice at the earliest two weeks after the notice is sent. The disconnection notice sent to the consumer must state how the consumer must proceed in order to invoke the rights referred in Electricity Market Act and guide the consumer in clarifying the matter and finding payment options.<sup>96</sup>

To demonstrate the amount of disconnection of energy supply, Finnish Energy as the industry representative in Finland conducted a survey on disconnection of electricity supply among their member companies in 2021. A total of seven grid companies responded to the survey, representing about half of the electricity outlets in the country. Responses were received from a wide range of companies and from all over Finland. Data was available for the period 2018-2020, and it presented, that around one percent (1%) of consumer customers are affected by disconnection of electricity supply annually. Of these, less than 20% are disconnected for long periods (more than 2 weeks). Of all consumer customers, less than 0.3%

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<sup>95</sup> Sähkömarkkinalaki. (2024.) <https://www.finlex.fi/fi/laki/ajantasa/2013/20130588>. Accessed 12.4.2024.

<sup>96</sup>Sähkömarkkinalaki. (2024.) <https://www.finlex.fi/fi/laki/ajantasa/2013/20130588>. Accessed 12.4.2024.

are in long-term outages on an annual basis. Not all respondents were able to distinguish between permanent and holiday homes in the data on long term outages, i.e. the figures include also holiday homes.<sup>97</sup>

#### 4.1.4 Consumer protection in energy markets

In Finland, consumers are protected by consumer protection, derived from the Consumer Protection Act (38/1978) and supervised by the Finnish Competition and Consumer Authority. Under the Finnish Competition and Consumer Authority, the consumers rights are supervised by the Consumer Ombudsman, which is also responsible for supervising consumers rights in electricity services<sup>98, 99</sup>. The Consumer Ombudsman can be contacted for advisory in the following topics:

- on the legality and reasonableness of contractual terms and conditions
- the legality of debt collection
- misleading or untruthful marketing of an electricity product
- conduct in customer relations
- other breaches of the consumer protection provisions of the Electricity Market Act or the Consumer Protection Act<sup>100</sup>.

In cases of disputes between the consumer and the service provider, the Finnish Competition and Consumer Authority provides a consumer advisory services, that provide information and guidance related to consumer law questions and disputes. According to the Finnish Competition and Consumer Authority, typical reasons for contacting the advisory services on matters related to energy markets are the following:

- billing and disconnection disputes
- termination of contract or change of price
- information on contract changes
- difficulty in contacting customer service
- disputes concerning damages and contractual penalties
- guarantee requirements for contracts
- disputes over the content and interpretation of the contract
- ambiguities about the contract price

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<sup>97</sup> Data provided by the Finnish Energy.

<sup>98</sup> The Finnish Competition and Consumer Authority. (2024). <https://www.kkv.fi/en/consumer-affairs/consumer-ombudsman/>. Accessed 12.4.2024.

<sup>99</sup> Tuorila, H. (2024). [Kuluttajansuojan keinot energiaköyhyyden torjumisessa](#). The Finnish Competition and Consumer Authority. Accessed 12.4.2024.

<sup>100</sup> Tuorila, H. (2024). [Kuluttajansuojan keinot energiaköyhyyden torjumisessa](#). The Finnish Competition and Consumer Authority. Accessed 12.4.2024.

- contractual ambiguities in telephone sales<sup>101</sup>.

If, there is a unsettled dispute between the service provider and the customer e.g. on the interpretation of the electricity sales contract, the consumer has the right to bring the dispute to the Consumer Disputes Board, which is responsible for giving recommendations on solving disputes arising in the markets between the consumers and the service providers<sup>102</sup>. The Consumer Disputes Board operates under the ministry of justice, but the decisions and recommendations made by the board are not legally binding, but create precedents for settling disputes.

The Finnish Competition and Consumer Authority carried out a literature review based study in 2024, where they analyzed the energy crisis of 2022-2023 and its effects on energy markets and consumers in terms of energy poverty in Finland. The report presents, that current consumer protection regulation in Finland helps and protects consumers when the electricity markets are not stable. "Consumer protection can support many vulnerable groups of consumers, such as digitally excluded consumers and temporarily energy vulnerable consumers. In addition, consumer advice can improve consumers' knowledge of the electricity market so that they can make better decisions on electricity contracts and energy consumption. Consumer protection is complementary to social policy, as in best scenarios it prevents vulnerable consumers from falling into energy poverty and to become dependent on social security. Consumer protection supports consumer empowerment and self-empowerment in the electricity market, while social security acts as a safety net of last resort in the event of financial problems caused by electricity bills. Consumer protection and social security form an important combination in the electricity market to protect vulnerable consumers."<sup>103</sup>

## 4.2 Energy efficiency in Finnish building stock

As of early 2020, Finland's total building floor space, including both residential and non-residential structures, amounted to 415 million square meters across 1.4 million buildings. Out of these buildings 1.2 million were designated for residential use and housed 3 million apartments.<sup>104</sup> Energy use in buildings covers approximately 40% of the Finnish energy end use. Finnish households live in block of flats (1,4 million housing units), single-family and semi-detached houses (1,2 million housing units) and terraced houses (0,4 million housing

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<sup>101</sup> Tuorila, H. (2024). [Kuluttajansuojan keinot energiaköyhyyden torjumisessa](#). The Finnish Competition and Consumer Authority. Accessed 12.4.2024.

<sup>102</sup> Tuorila, H. (2024). [Kuluttajansuojan keinot energiaköyhyyden torjumisessa](#). The Finnish Competition and Consumer Authority. Accessed 12.4.2024.

<sup>103</sup> Tuorila, H. (2024). [Kuluttajansuojan keinot energiaköyhyyden torjumisessa](#). The Finnish Competition and Consumer Authority. (English translation in the direct reference made from the original text by Gaia.) Accessed 12.4.2024.

<sup>104</sup> Ministry of Environment (2020), "Pitkän aikavälin korjausrakentamisen strategia 2020-2050. Suomi. Rakennusten energiatehokkuusdirektiivin (2010/31/EU), muutettuna direktiivillä 2018/844/EU, artiklan 2a mukainen ilmoitus". Accessed 12.3.2024.



units)<sup>105</sup>. According to a comparison of living condition in European countries (Living Conditions, Eurostat), Finnish block of flats housing units are in extremely good condition. The statistics show that less than 5% of the population in Finland live in housing units that are in poor condition<sup>106</sup>.

Average heating energy consumption levels of blocks of flats are lower in newer buildings. In Finland, the energy efficiency of new buildings has been continuously improved since the energy the 1970s, particularly through building regulations for new construction. The average heating energy consumption (heating of premises, ventilation/air-conditioning, water, electricity for heating systems) level of buildings completed prior to 1960 is 190 kWh/m<sup>2</sup>, while the average consumption level of buildings completed after 2010 is only 85 kWh/m<sup>2</sup> (Table 13).<sup>107</sup>

Table 13. Development of average heating energy consumption of Finnish buildings.

Indicator	Unit	-1959	1960-69	1970-79	1980-89	1990-09	2000-09	2010-19
Average heating consumption	kWh/m <sup>2</sup>	190	185	175	165	175	130	85

Energy certificates for buildings have been produced in Finland for over 10 years and have become established as a standard document associated with buildings. The calculation methods are set in law (Laki rakennuksen energiatodistuksesta 50/2013) and the latest changes to it took effect at the beginning of 2018, and since then, new types of energy certificates have been issued.<sup>108</sup> The distribution of energy certificates across Finnish building base in 2018 are depicted in picture 3<sup>109</sup>.

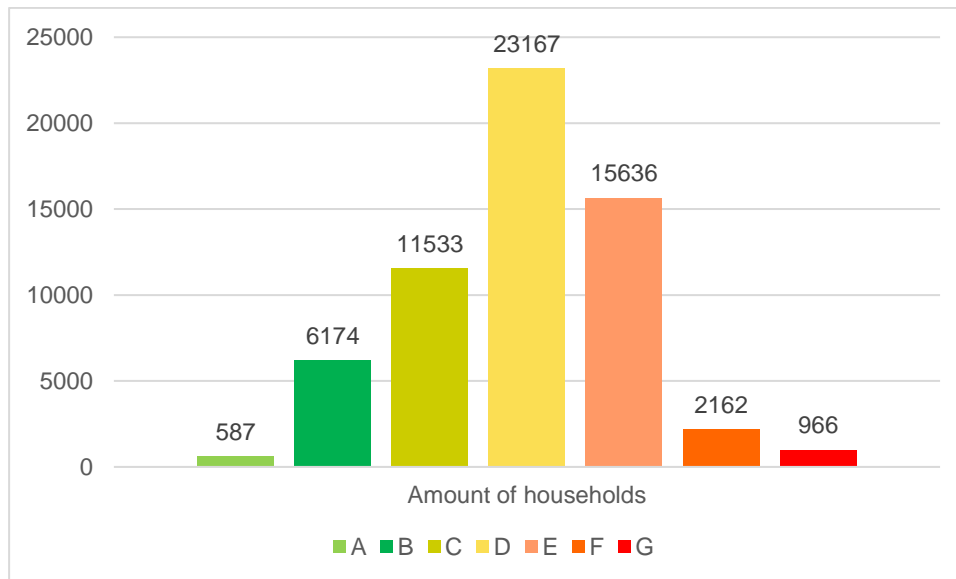
<sup>105</sup> Ministry of Environment (2020), "Pitkän aikavälin korjausrakentamisen strategia 2020-2050. Suomi. Rakennusten energiatehokkuusdirektiivin (2010/31/EU), muutettuna direktiivillä 2018/844/EU, artiklan 2a mukainen ilmoitus". Accessed 12.3.2024.

<sup>106</sup> Ministry of Environment (2020), "Pitkän aikavälin korjausrakentamisen strategia 2020-2050. Suomi. Rakennusten energiatehokkuusdirektiivin (2010/31/EU), muutettuna direktiivillä 2018/844/EU, artiklan 2a mukainen ilmoitus". Accessed 12.3.2024.

<sup>107</sup> Ministry of Environment (2020), "Pitkän aikavälin korjausrakentamisen strategia 2020-2050. Suomi. Rakennusten energiatehokkuusdirektiivin (2010/31/EU), muutettuna direktiivillä 2018/844/EU, artiklan 2a mukainen ilmoitus". Accessed 12.3.2024.

<sup>108</sup> ARA Housing and Finance Development Center of Finland, "ARasta tietoa rakennusten energiatehokkuudesta". [https://www.ara.fi/fi-FI/Ajankohtaista/Energiatodistus/ARasta\\_tietoa\\_rakennusten\\_energiatehokku\(48316\)](https://www.ara.fi/fi-FI/Ajankohtaista/Energiatodistus/ARasta_tietoa_rakennusten_energiatehokku(48316)). Accessed 22.3.2024.

<sup>109</sup> Ministry of Environment (2020), "Pitkän aikavälin korjausrakentamisen strategia 2020-2050. Suomi. Rakennusten energiatehokkuusdirektiivin (2010/31/EU), muutettuna direktiivillä 2018/844/EU, artiklan 2a mukainen ilmoitus". Accessed 12.3.2024.



Picture 3. Distribution of energy certificates across Finnish building base in 2018. Source: Statistics of ARA Housing and Finance Development Center of Finland.

On 10<sup>th</sup> of March 2020, Finland published its long-term renovation strategy as required by Article 2a of Directive 2010/31/EU on the energy performance of buildings (recast) to “support the renovation of the national stock of residential and non-residential buildings, both public and private, into a highly energy efficient and decarbonized building stock by 2050”. To achieve Finland's long-term renovation strategy goal of a highly energy-efficient and decarbonized building stock by 2050, one of the objectives is to elevate all 1.4 million buildings built by early 2020 to an energy class of A, B, or C. Building energy efficiency is indicated by an energy class that ranges from A, the highest, to G, the lowest, as determined by the Decree of Ministry of the Environment 1048/2017. Buildings constructed after 2020 are required to meet the A, B, or C energy class standards and are therefore not the primary focus of the long-term renovation strategy.<sup>110</sup> Table 14 presents per decade the expected share of buildings built in 2010s or earlier which through renovations will get a A, B and C energy class according to Finland’s long-term renovation strategy. Table 15 presents per decade the expected share of buildings in poor conditions, with an energy class of F or G.

<sup>110</sup> Ministry of Environment (2020), “Pitkän aikavälin korjausrakentamisen strategia 2020-2050. Suomi. Rakennusten energiatehokkuusdirektiivin (2010/31/EU), muutettuna direktiivillä 2018/844/EU, artiklan 2a mukainen ilmoitus”. Accessed 12.3.2024.

Table 14. Expected shares of buildings built in 2010s or earlier with an energy class of A, B or C according to Finland's long-term building renovation strategy.

Share of buildings built in 2010s or earlier with an energy class of A, B or C	2020	2030	2040	2050
Detached and semi-detached houses	26 %	50 %	98 %	100 %
Terraced houses	22 %	54 %	99 %	100 %
Apartment buildings	23 %	67 %	98 %	100 %
Office buildings	48 %	77 %	100 %	100 %
Commercial buildings	69 %	89 %	100 %	100 %
Educational buildings and kindergartens	40 %	57 %	90 %	100 %

Table 15. Share of buildings in poor conditions, with an energy class of F or G according to Finland's long-term building renovation strategy.

Share of buildings in poor conditions, with an energy class of F or G	2020	2030	2040	2050
Detached and semi-detached houses	6 %	0 %	0 %	0 %
Terraced houses	4 %	0 %	0 %	0 %
Apartment buildings	10 %	1 %	0 %	0 %
Office buildings	7 %	2 %	0 %	0 %
Commercial buildings	9 %	3 %	0 %	0 %
Educational buildings and kindergartens	20 %	9 %	0 %	0 %

## 4.3 Energy poverty as a phenomenon in Finland

Due to the fact, that energy poverty has not been seen in Finland as a social issue that would need to be observed separately from, or as a sub-category of poverty and low-income in general, the occurrence of energy poverty in Finland has been studied relatively little historically.

The most relevant past analysis in Finland is based on two assessments of energy poverty carried out by the Ministry of the Environment in 2013 and 2015, containing the most thorough descriptions and analysis of energy poverty in Finland available. However, both are some ten years old, and the observations made in reports are based on rather limited premises when describing the phenomena. As these assessments are consistently referred to when energy poverty in Finland is mentioned or analyzed elsewhere, they affect also the secondary deductions and conclusions made on basis of these previous studies.

The second group of literature consists of three scientific articles, from which one has commented the phenomena of energy poverty in Finland qualitative terms<sup>111</sup> and one quantitatively with limited geographical study<sup>112</sup>. The third group of literature consists of policy documents and publications by the government that refer to energy poverty, but do not provide any new qualitative or quantitative information or analysis of the phenomenon<sup>113,114,115,116</sup>.

**A study on Energy Poverty: The energy costs of households (orig. Selvitys energiaköyhyydestä: Kotitalouksien energiakustannukset)<sup>117</sup>, Reports of the Ministry of Environment of Finland 21/2013.**

The report examines energy poverty in Finland defining the concept of energy poverty and identifying the proportion and types of households that may be affected by energy poverty. In this report, energy poverty is defined as the inability of a household to meet essential heating and electricity costs.

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<sup>111</sup> Castaño-Rosa, R. et. al. (2022). Energy Poverty in Finland: Reality and Challenges in the Face of Climate Change. In: Rubio-Bellido, C., Solis-Guzman, J. (eds) Energy Poverty Alleviation. Springer, Cham. [https://doi.org/10.1007/978-3-030-91084-6\\_8](https://doi.org/10.1007/978-3-030-91084-6_8)

<sup>112</sup> Lehtonen, O. et al. (2024). Emerging spatial clusters of energy poverty vulnerability in rural Finland—Byproducts of accumulated regional development. In Energy Research & Social Science 109 (2024) 103418. <https://doi.org/10.1016/j.erss.2024.103418>.

<sup>113</sup> Selvitys korkeahintaisten määräaikaisten sähkönmyyntisopimusten piirissä olevien kuluttajien aseman helpottamisesta. Reports of the Ministry of Economic Affairs and Employment of Finland 30/2023.

<sup>114</sup> Hiilineutraali Suomi 2035 – kansallinen ilmasto- ja energiastrategia. The government report 6/2022.

<sup>115</sup> Sähköistyvän yhteiskunnan ja energiamurroksen vaikutukset sosiaaliseen oikeudenmukaisuuteen. The Finnish Climate Change Panel report 3/2021.

<sup>116</sup> Paavola, J-M. (2021). Ilmasto- ja energiastrategian sukupuolivaikutusten arviointi. Reports of the Ministry of Economic Affairs and Employment of Finland 52/2021.

<sup>117</sup> Oja, L. et. al. (2013). A study on Energy Poverty: The energy costs of households (orig. Selvitys energiaköyhyydestä: Kotitalouksien energiakustannukset). Reports of the Ministry of Environment of Finland 21/2013.

The report indicates that energy poverty in Finland affects a small proportion of households as a part of other forms of poverty. According to the report, those at risk of energy poverty are mainly low-income households who i) live outside urban areas ii) in large apartments iii) that are not energy efficient, but does not provide evidence or data on the actual quantitative number of energy poverty in Finland. Examples identified were

- low-income pensioners, especially those living in private houses built before the 1980s with electric or oil heating
- low-income people living outside urban areas; households with multiple problems; other low-income people
- and young families with small children whose finances are under pressure due to large investments<sup>118</sup>.

**The Energy Poverty of a Low-Income Homeowner: Further analysis of energy poverty regarding heating renovations and energy costs of apartments (orig. Pienituloisen omistusasujan energiaköyhyys: Energiaköyhyyden jatkoselvitys liittyen asuntojen lämmitysremontteihin ja energiakuluihin)<sup>119</sup>, Reports of the Ministry of the Environment of Finland 6/2015.**

The report serves as further analysis for the report conducted in 2013. The report examines the link between the risk of energy poverty and renovating apartments or changing the heating system in apartments owned by low-income households. In this report, energy poverty is defined as the difficulty of maintaining basic needs due to energy costs.

According to the report, energy poverty can be found especially among elderly people. The report states there are 60 000 -100 000 home-owning households in risk of energy poverty, but does not provide evidence or data on the actual quantitative number of energy poverty in Finland:

- low-income households in 1960-70's apartment buildings: less than 38 000 households;
- households in big detached houses heated with oil: 8 000 small-income households and 20 000 households below average income;
- small detached houses with oil heating that need energy renovation: 7 000 low income households and 13 000 below average income households;

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<sup>118</sup> It is to be noted, that the report's observation on families under pressure due to large investments can be questioned, as the term poverty is relative in situation where the household has financial capacity for large investments.

<sup>119</sup> Runsten, S. et al. (2015). The Energy Poverty of a Low-Income Home Owner: Further analysis of energy poverty regarding heating renovations and energy costs of apartments (orig. Pienituloisen omistusasujan energiaköyhyys: Energiaköyhyyden jatkoselvitys liittyen asuntojen lämmitysremontteihin ja energiakuluihin), Reports of the Ministry of the Environment of Finland 6/2015.

- other low income households living in detached houses built before 1980 that have not gone through basic renovation: 20 000.

### Energy Poverty in Finland: Reality and Challenges in the Face of Climate Change, 2022<sup>120</sup>

The article by R. Castaño-Rosa , J. Taylor , S. Pelsmakers , M. Gullman, and H. Sukaden published in *Energy Poverty Alleviation* by Springer, reviews different definitions and estimates of energy poverty in Finland, comments on different housing types and heating systems from the perspective of energy poverty and analyses the social security systems relation to energy poverty. On the nature of the energy poverty in Finland, the article states that the energy poverty affect especially elderly people with low-income living in energy-inefficient detached houses in rural areas with oil or electrical heating, not having access to district heating.

### Emerging spatial clusters of energy poverty vulnerability in rural Finland–Byproducts of accumulated regional development, 2024<sup>121</sup>

O. Lehtonen, A. Hiltunen, L. Okkonen and K. Blomqvist have conducted an analysis on the prevalence of energy poverty in Finland, focusing especially on North-Karelia in eastern Finland. The article argues, that especially rural areas have the risk to energy poverty, compared to urban areas, which is due to geographical socioeconomic status and building stock characteristics, resulting from clustered negative impacts of regional development in rural areas of Finland in a longer period of time. Article presents, that as energy poverty is issue especially during the colder winter months, the measures targeted to energy poverty should also consider the annual changes in temperature.

What can be drawn as a conclusion from these sources, is that an analytical and systematic quantitative assessment on the amount of energy poverty in Finland is lacking. The first reason for this is that there is no single workable qualitative definition of energy poverty that could be simultaneously applied to all different groups possibly affected by energy poverty, and would be analytic and exact in describing the phenomena. Based on interviews conducted in Gaias project, with leading specialists in the subject in Finland<sup>122</sup>, energy poverty is fragmented among several different kind of demographical groups, affected by several subjective factors such as what temperature an individual is used to or how an individual prioritizes and values his or her financial choices, and what is the potential of an individual to remedy

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<sup>120</sup> Castaño-Rosa, R. et al. (2022). Energy Poverty in Finland: Reality and Challenges in the Face of Climate Change. In: Rubio-Bellido, C., Solis-Guzman, J. (eds) *Energy Poverty Alleviation*. Springer, Cham. [https://doi.org/10.1007/978-3-030-91084-6\\_8](https://doi.org/10.1007/978-3-030-91084-6_8)

<sup>121</sup> Lehtonen, O. et al. (2024). Emerging spatial clusters of energy poverty vulnerability in rural Finland–Byproducts of accumulated regional development. In *Energy Research & Social Science* 109 (2024) 103418. <https://doi.org/10.1016/j.erss.2024.103418>.

<sup>122</sup> During the project on state of energy poverty in Finland, Gaia interviewed 3 leading researchers on the topic, and 9 other experts on the subject matter.

his or her situation, if being exposed to energy poverty-related issues. The second reason is that in Finland there is no single unambiguous source, or multiple sources that could be combined, to cover all aspects of the phenomena, to produce a reliable quantitative analysis on the amount of energy poverty. If this were done, the result would be a figure that is very difficult to validate in reality, thus being possibly a misleading as data to be used on designing policy measures.

However, it can be argued, that there are reliable estimations of different kind of demographic groups, which, in case there would exist energy poverty, would be the groups most likely affected by it. What can be drawn from the structure of Finnish society and the existing qualitative analysis of energy poverty, the most significant group is the low-income elderly people living in sparsely populated areas, whose homes are in need of repair in terms of energy efficiency and insulation, or who have a problematic form of heating that is either expensive or inadequate, and who have financial difficulties and lower capabilities to fix these issues.

Therefore, examining energy poverty based on a hypothetical figure drawn to represent the amount of all assumed people vulnerable to energy poverty in Finland and defining measures based on this does not seem a sensible and efficient policy action. The most logical approach to energy poverty in Finland, would be to map it in known or assumed risk areas and target groups that can be identified through qualitative analysis, and thus target measures directly at them and their needs. In this way, energy poverty could be addressed directly through specific and already existing measures in Finland, rather than through major reforms of social policy or energy policy, which would be complicated, and not necessarily targeted to actual risk groups in a meaningful and necessary way.

## 5 Review of the EU indicators for energy poverty and their applicability for Finland

The European Union (EU) is dedicated to addressing energy poverty and making certain that at-risk consumers can access necessary energy services and products. The concept of energy poverty was initially introduced to EU law in the 2009 Directive on common rules for the internal electricity market (2009/72/EC) and since then within the context of a just and fair energy transition, the EU has intensified its efforts, elevating energy poverty to a fundamental concept in its policies. The latest legal instrument to address energy poverty is the revised Energy Efficiency Directive (EU) 2023/1791 (EED) as part of the Fit for 55 package.<sup>123</sup>

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<sup>123</sup> European Commission, Energy poverty. (2024). [https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumer-rights/energy-poverty\\_en](https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumer-rights/energy-poverty_en). Accessed 25.2.2024.

In October 2020, the European Commission issued its first recommendation on energy poverty, which included a concise definition of energy poverty as "a situation in which households are unable to access essential energy services." Now the most comprehensive definition of energy poverty is in Article 2, point (52) of EED as follows:

"energy poverty means a household's lack of access to essential energy services, where such services provide basic levels and decent standards of living and health, including adequate heating, hot water, cooling, lighting, and energy to power appliances, in the relevant national context, existing national social policy and other relevant national policies, caused by a combination of factors, including at least non-affordability, insufficient disposable income, high energy expenditure and poor energy efficiency of homes"

In October 2023, the European Commission published its latest recommendation on energy poverty<sup>124</sup> urging Member States to "take swift steps to transpose and implement" the definition of energy poverty outlined in the EED into their national legislation. Recital 11 of the Commission recommendation states that by incorporating this definition into national law, the Commission aims to prompt all key stakeholders at local, regional, national, and Union levels to address the three primary causes of energy poverty it has identified: low income, higher energy bills and low energy efficiency of buildings and appliances.

Article 3(3), point (d), of Regulation (EU) 2018/1999 of the European Parliament and of the Council (Energy Union Regulation) requires Member States to assess the number of households in energy poverty, establish an objective to reduce that number if it is significant, and to describe the policies and measures addressing energy poverty in their integrated national energy and climate plans. The 2023 Commission Recommendation on energy poverty asks member states to "consider indicators provided at national and EU levels for determining the number of households affected by energy poverty". Such union level indicators are found in Article 8(3), subsection 3 of EED and provided by the Energy Poverty Advisory Hub (EPAH). The EED requires Member States to consider the indicators in Article 8(3) when assessing the proportion of households affected by energy poverty, whereas the EPAH indicators are intended to assist Member States in selecting and defining appropriate indicators at the national and local levels.

In October 2022, EPAH published a report that built upon the foundation of 28 energy poverty indicators established by the EU Energy Poverty Observatory (EPOV), an initiative that was active from 2017 to 2020. From these EPOV indicators, EPAH derived 21 indicators to analyze energy poverty. These were sorted into two categories: primary indicators, which directly represent energy poverty, and secondary indicators, which elucidate the factors leading to vulnerability. These indicators, mainly drawn from Eurostat datasets and national

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<sup>124</sup> European Commission. Commission Recommendation (EU) 2023/2407 of 20 October 2023 on energy poverty. (2023). [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AL\\_202302407](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ%3AL_202302407). Accessed 25.2.2024.



Household Budget Surveys, aimed to assess the intricate dimensions of energy poverty across different national contexts. The 2022 efforts by the EPAH team to scrutinize, offer insights, and refresh these indicators are showcased in the updated online dashboard found in the national energy poverty indicators section on the EPAH website.<sup>125</sup>

## 5.1 Energy poverty indicators in EED

To alleviate energy poverty and empower and protect vulnerable customers, Article 24(2) of EED requires Member States to take measures as defined in Article 8(3) of the Directive. Paragraph 3 of Article 8(3) sets out four indicators that the Member States are required to consider in their assessment of the share of energy poverty. Already in the 2020 Recommendation on energy poverty, the Commission acknowledged that due to the multi-dimensional nature of energy poverty, no single indicator can entirely encompass all its aspects. This implies that not all indicators are effective in assessing energy poverty across various situations. Next, we will briefly discuss the applicability of each EED indicators in the context of energy poverty in Finland. Neither the EED nor its proposal offers an explanation for the selection of the four indicators used in the energy poverty assessment mandated by the directive. However, each EED indicator appears to have a counterpart in the EPAH set of indicators. Consequently, the corresponding EPAH indicators are utilized as a tool to evaluate the relevance of each indicator for Finland.

### 5.1.1 The inability to keep the home adequately warm

The first EED indicator (Art. 8(3), paragraph 3, point (a)) is derived from the EU-SILC survey dataset [ilc\_mdcs01] which is based on a survey question "Can your household afford to keep its home adequately warm?"

The problem with the survey question that serves as the basis for this indicator is its subjective framing. Each respondent may have a different notion of what constitutes an adequate temperature for their household. In Finland, residents typically maintain high indoor temperatures due to the effective insulation of buildings, even though such high temperatures might not be objectively necessary. To reflect the reality of energy poverty more accurately, the survey should define what room temperature is considered necessary for health.

Furthermore, the subjective experience that the indicator measures is dependent on time, as households with energy contract with varying hourly prices might opt to temporarily reduce their room temperature when energy costs are exceptionally high. In its current form, this indicator does not account for this temporal aspect of energy poverty it intends to measure. However, this type of budgeting isn't a definitive sign of energy poverty; households

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<sup>125</sup> Energy Poverty Advisory Hub. Energy Poverty - National Indicators - Insights for a more effective measuring. (2022). [https://energy-poverty.ec.europa.eu/discover/publications/publications/energy-poverty-national-indicators-insights-more-effective-measuring\\_en](https://energy-poverty.ec.europa.eu/discover/publications/publications/energy-poverty-national-indicators-insights-more-effective-measuring_en). Accessed 25.2.2024.

may be financially capable of heating their homes to the usual temperature but opt to reduce heating expenses temporarily, rendering the survey question phrased as "afford to keep" can once again subjective.

### 5.1.2 The arrears on utility bills

The second EED indicator (Art. 8(3), paragraph 3, point (b)) is derived from the EU-SILC dataset [ilc\_mdcs07] which is based on a survey question "In the last twelve months, has the household been in arrears, i.e., has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?"

There are many reasons why citizens may end up not paying household bills on time and most of them do not correlate with energy poverty. Due to privacy principles energy companies need to follow, it is difficult to survey reliably why someone has left their utility bill unpaid. Arrears on utility bills might occur because the bill has simply been forgotten to be paid by the due date or in some cases there might have been issues with the delivery of the bill.

It is arguable that instead of surveying arrears on utility bills, data on payment default entries or disconnected energy contracts might be more indicative of energy poverty. However, even then the data should be viewed critically, as an energy contract can end up being disconnected without a link to energy poverty, for example in the case a non-resident dwelling is being neglected by its owners for some reason.

As an alternative, more descriptive indicator could be used to look at how many electricity or heating contracts end up being terminated yearly due to unpaid bills, as this number is significantly lower than that of over-due bills, and describes better a situation, where an individual is not able to cover the heating or electricity costs.

### 5.1.3 The total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor

The third EED indicator (Art. 8(3), paragraph 3, point (c)) is derived from EU-SILC dataset [ilc\_mdho01] which is based on a survey question "Do you have any of the following problems with your dwelling/accommodation? A leaking roof, damp walls/floors/foundation or rot in window frames or floor".

This indicator can measure energy poverty in the case the presence of leaks or rot is a sign of building deterioration due to an unheated or ineffectively heated home. However, energy poverty is not the sole reason for the presence of the conditions listed in the indicators, which is arguably the case most often in Finland. Most of Finland's building stock is continuously heated and if leaks, dampness, or rot occur in the structures of buildings, it is mainly due to structural damages or accidents like burst pipes and dealt without unnecessary delay thanks to home insurances. For this reason, the third EED indicator poorly measures energy poverty in Finland.

#### 5.1.4 At-risk-of-poverty rate (cutoff point: 60 % of median equivalized income after social transfers)

The fourth EED indicator (Art. 8(3), paragraph 3, point (d)) is derived from EU-SILC and ECHP survey dataset [ilc\_li02].

This indicator addresses general poverty, and although most households it identifies are experiencing energy poverty, there is evidence that some segments of the population are in energy poverty without being in income poverty or lacking other basic needs.<sup>126</sup> Conversely, a household can experience energy poverty without being considered economically poor in other respects, particularly during temporary periods when energy costs are peaking. Some causes of energy poverty are distinct from other forms of economic poverty and can vary significantly between countries and regions. Using a generalized poverty risk indicator to represent energy poverty may obscure the more complex factors contributing to energy poverty.

## 6 Conclusions and recommendations

As indicated in the report, energy poverty in Finland is not typically addressed as an independent issue but rather as part of broader efforts to alleviate low income and economic poverty, as well as through policy measures and initiatives that promote energy efficiency and improve housing quality under energy and climate policies. The Finnish society has not been distinguishing energy poverty as a unique category of impoverishment or low income.

Finland employs two complementary approaches to prevent energy poverty. The first approach involves the basic social security system and housing-related benefits, which help cover heating and electricity costs. The second consists of various energy efficiency subsidies, advisory services, and support structures focusing on heating solutions and energy efficiency. Together, these measures aim to proactively prevent energy poverty and provide direct assistance to low-income households at risk.

This study questions the reasoning to define and observe energy poverty as a separate form of poverty separately from poverty as such, as there is no clear evidence why this would be more justified, than observing any other form of poverty as a separate category of poverty, and to design separate policy measures based on that.

However, the study does identify certain characteristics that may set energy poverty apart from other poverty forms in Finland. Unlike general poverty, energy poverty is typically:

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<sup>126</sup> Energy Poverty Advisory Hub. Energy Poverty - National Indicators - Insights for a more effective measuring. (2022). [https://energy-poverty.ec.europa.eu/discover/publications/publications/energy-poverty-national-indicators-insights-more-effective-measuring\\_en](https://energy-poverty.ec.europa.eu/discover/publications/publications/energy-poverty-national-indicators-insights-more-effective-measuring_en). Accessed 25.2.2024.

- Strongly associated with factors related to housing (regional location, house ownership model, sizing, heating source etc.) and unlike other forms of poverty, also manifested among homeowners.
- Subject to seasonal and market fluctuations, meaning a household might experience energy poverty during e.g. coldest months and exceptionally high market prices.

The most effective and reasonable way to strengthen the prevention of energy poverty in Finland would be using measures within the existing structures. In the case of the social security system, this would mean considering the already existing conventional measures to improve social security as a whole i.e., making the system as easy to use as possible and targeted as effectively as possible at people who are eligible for and in need of social benefits. In terms of other energy efficiency and energy advisory instruments, this would mean continuing to promote energy efficiency in Finland as one of the key objectives under the current housing and construction policies. It is also good to be aware that the current system of social security system is subject to political decisions. At the time of writing this report, it is already known that the current Finnish government will make some changes to the support system in the future. These changes will be monitored by the expert group to be set up under the Energy Efficiency Directive.

An analytical and systematic quantitative assessment on the exact amount of energy poverty in Finland is difficult to produce as energy poverty is a phenomena demographically fragmented, affected by several subjective factors, and there is no single unambiguous source of data, or multiple sources that could be combined, to cover all aspects of the phenomena, to produce a reliable quantitative analysis on the amount of energy poverty. Thus, the best way to analyze energy poverty would be through qualitative analysis supported by selected data sources such as housing income data, data on the building stock and house ownership, geographical data, data from the social security system etc., instead of an ambiguous quantitative estimation. This would serve designing and implementing policy measures, that would most likely address the issue more efficiently and according to the relevant needs of people affected by energy poverty.

It should be critically reviewed, what alternative indicators there could be for the 4 suggested EED indicators, and whether different kind of regional indicators should be sought to represent the geographical differences in EU (e.g. observing similar countries such as Finland and Sweden as one separate entity).

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