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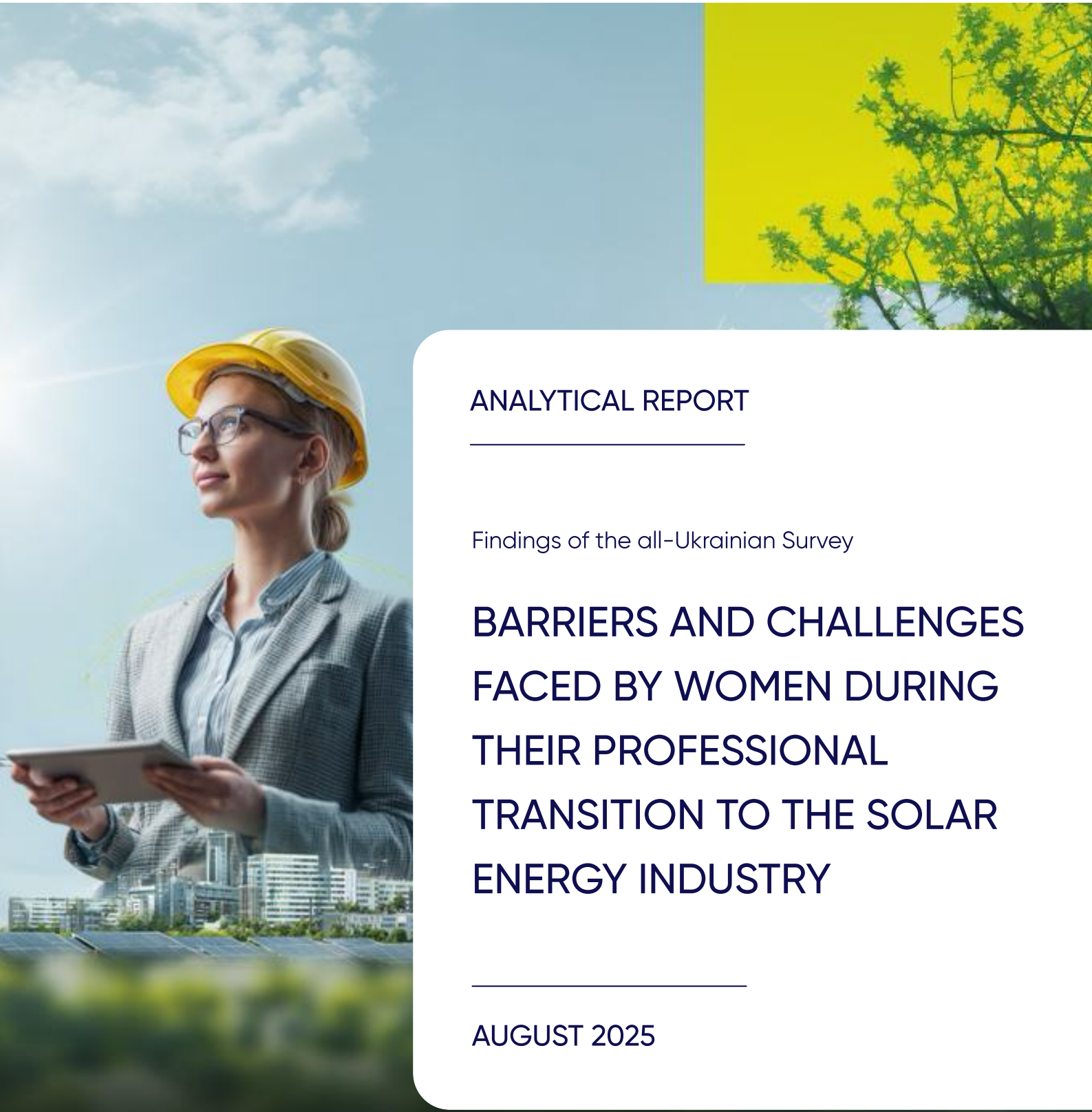

ANALYTICAL REPORT

Findings of the all-Ukrainian Survey

BARRIERS AND CHALLENGES FACED BY WOMEN DURING THEIR PROFESSIONAL TRANSITION TO THE SOLAR ENERGY INDUSTRY

AUGUST 2025

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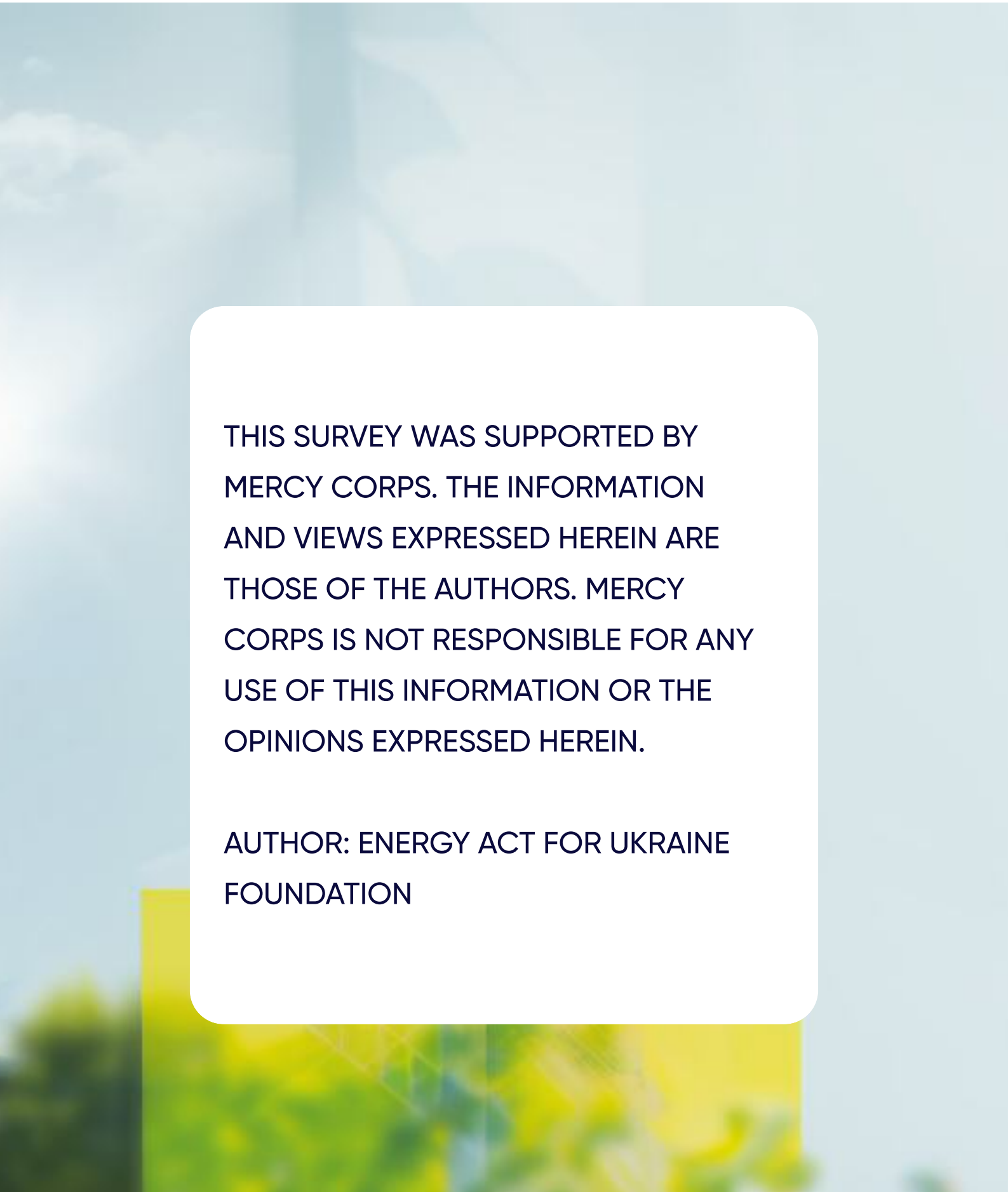

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AUTHOR: ENERGY ACT FOR UKRAINE FOUNDATION

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INTRODUCTION

SURVEY OBJECTIVES:

The survey aimed to assess women's awareness level, motivation for, and barriers to transitioning to solar energy.

SURVEY CONTEXT:

In recent years, renewable energy sources (RES), including solar energy, have become particularly important in Ukraine, accounting for 10% of total electricity generation. This is due to several factors.

1. Due to constant russian attacks on energy infrastructure, over 70% of energy facilities have been damaged, occupied, or destroyed, and every Ukrainian is trying to increase their energy independence. Solar energy is one of the most effective tools for ensuring an uninterrupted power supply during the current energy crisis.

2. Like the rest of the world, Ukraine is moving towards environmentally friendly and innovative development within the framework of the National Energy and Climate Plan. According to this plan, the share of renewable energy sources in the energy balance should be at least 25% by 2030.

3. Due to the human capital crisis caused by the full-scale war in Ukraine and migration, approximately 75% of employers are facing a manpower shortage. At the same time, Ukrainians have mostly adapted to life in a state of war and declare their openness to learning, retraining, and realising their potential in new areas.

Despite the industry's growing popularity, women still face barriers and obstacles when it comes to development opportunities in this field. According to global statistics, women account for only around 30% of people involved in solar energy, indicating significant challenges to their integration into the industry. In Ukraine, women make up 23–27% of the energy sector workforce, compared to 54% in other areas of economic activity.

Taking this into account, and given that an increasing number of Ukrainian women are seeking opportunities to develop in new fields, the Energy Act for Ukraine Foundation conducted a survey to identify the factors preventing or hindering women from professional transition to the solar energy industry. The findings of this survey will help to create the training programmes by providing women with more opportunities for professional development.

CONCEPTUALISATION

The survey aims to identify the factors hindering or complicating the professional transition of Ukrainian women to the solar energy industry, and to outline the conditions under which more women will be able to engage successfully in this field.

The survey has an applied focus, aiming to identify the barriers and needs of the target audience in order to develop recommendations for their professional growth in solar energy.

HYPOTHESES TESTED

At the beginning of the survey, several assumptions were made to form the basic structure of the questionnaire and interview scenario. Testing these assumptions provided insight into the main barriers, motivations, and needs experienced by women considering a career in solar energy.

1. Women demonstrate a high willingness to learn and change their field of activity, especially if clear and accessible training formats with clear employment prospects are available.
2. Low awareness of career opportunities in the solar energy industry is one of the key barriers for women when deciding on a career change.
3. Social stereotypes about the 'unfeminine' nature of energy affect women's perceptions of their capabilities and of the available career opportunities.
4. A lack of systemic support (from the state, employers, and educational institutions), as well as an absence of role models and professional communities, makes it difficult to attract women to the industry.
5. Internal psychological barriers, such as fear of failure, self-doubt, and anxiety due to war or domestic (family) responsibilities, can significantly impact women's readiness for a professional transition.

These hypotheses determined the structure of the survey. Each one was reflected in the survey variables and interview topics. This enabled us to verify the extent to which they were confirmed by real data. The overall aim was to establish how willing women are to learn and transition to a new field, what obstacles they face, the impact of a lack of information and stereotypes, and the conditions and incentives that could encourage them to join the industry. These aspects formed the basis of the results analysis.

SURVEY PROCEDURE

The data was collected in two stages.

- First stage: October 2024 - March 2025 (distribution of an electronic questionnaire through the Foundation's internal channels and partner networks).

- Second stage: May–June 2025 (semi-structured in-depth interviews with participants). The total duration of data collection was eight months.

The interviews lasted up to 45 minutes by telephone or via Zoom online calls. The conversations were recorded with the participants' consent, after which the audio was transcribed and the texts were coded by theme. No cross-code verification was carried out – the interpretation is based on the independent analysis of the researcher-interviewer. To increase the reliability of the findings, the interpretations were checked by reviewing the transcripts and comparing them with key quotes. Confidentiality rules were observed during the interviews. The qualitative stage allowed us to clarify and contextualise individual trends identified during the quantitative analysis.

DATA COLLECTION AND PROCESSING PROCEDURE

The socio-demographic profile of the participants emerged naturally. After data collection, any possible duplicates were removed. This compensated for any gaps in the data, which was then cleaned and classified according to the survey's thematic focus. The initial analysis was conducted using Excel and Python (frequency analysis and cross-tabulations). All data was stored anonymously and processed in accordance with internal confidentiality policies.

NUMBER OF FEMALE RESPONDENTS: 696

696 - surveys and 15 - interviews

TARGET GROUP: Women aged 18 and over

TERRITORY:

The potential territory for questionnaire distribution– Ukraine (except for territories where military operations are or have been conducted, and temporarily occupied territories), with no controlled stratification.

METHODOLOGY:

Quantitative stage: an anonymous online survey via Google Forms and Microsoft Forms (25 closed questions).

Qualitative stage: semi-structured in-depth interviews (online or by telephone, 30-45 minutes long).

PERIOD:

quantitative stage – 29 October 2024 – 21 March 2025;

qualitative stage – May - June 2025;

overall timeframe until 30 June 2025

! The sample does not reflect the statistical distribution of all Ukrainian women, and the findings are indicative for the involved audience.

LIMITATIONS

We acknowledge a number of limitations, which should be taken into account when interpreting the findings:

1. The sample was formed using the convenience sampling method, primarily through the Foundation's open and online channels. This may result in an underrepresentation of individuals lacking internet access or belonging to professional communities. The data does not reflect Ukraine's regional structure. The findings only describe the surveyed female respondents and do not claim to be statistically representative of the entire population.

2. Participation was voluntary, which may have led to a predominance of individuals with a higher level of motivation and interest in the topic. This could bias the assessment of barriers and challenges.

3. The field phase covered the period from October 2024 to June 2025 (including the quantitative and qualitative phases). Events or political and economic changes after this period may affect the relevance of some of the findings.

4. No data on place of residence or professional experience in the energy sector was collected. The survey focuses on barriers and challenges rather than measuring the current employment level in the sector. The profile of the female respondents may be partially revealed through other variables. The findings reflect the collective experience and interest of the female respondents in the transition to solar energy.

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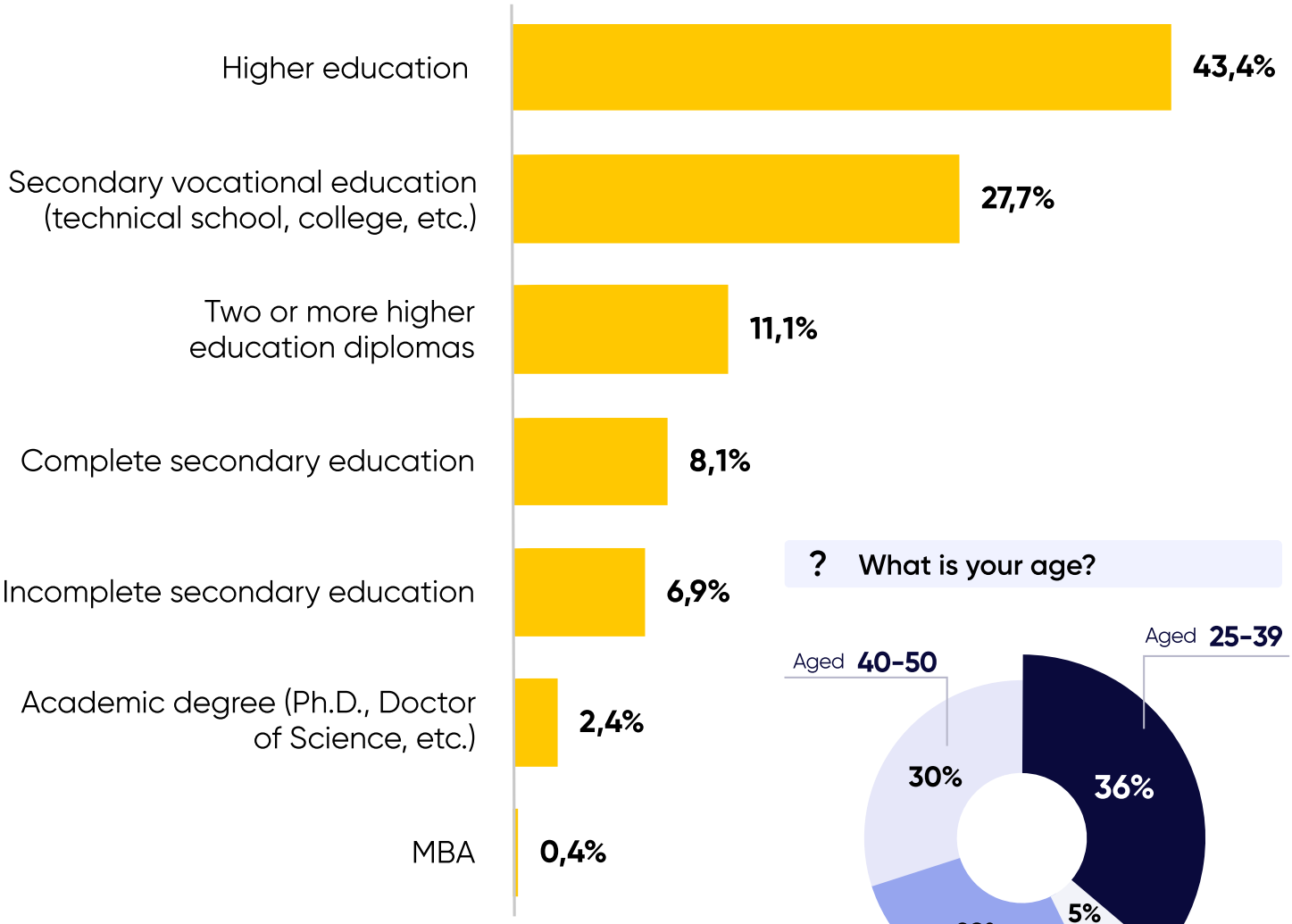
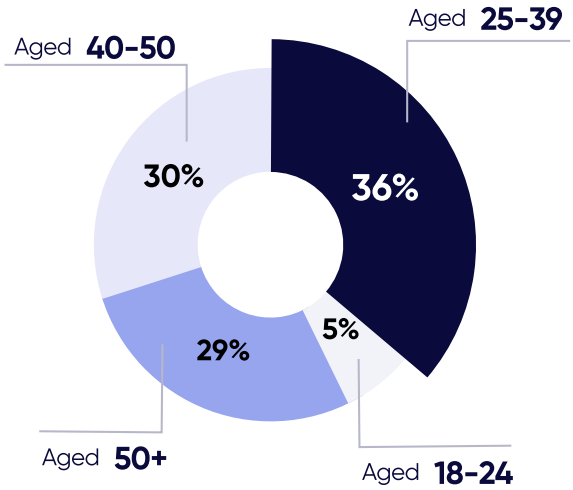
FEMALE RESPONDENTS' PROFILE

FEMALE RESPONDENTS' PROFILE

? You have:



? What is your age?

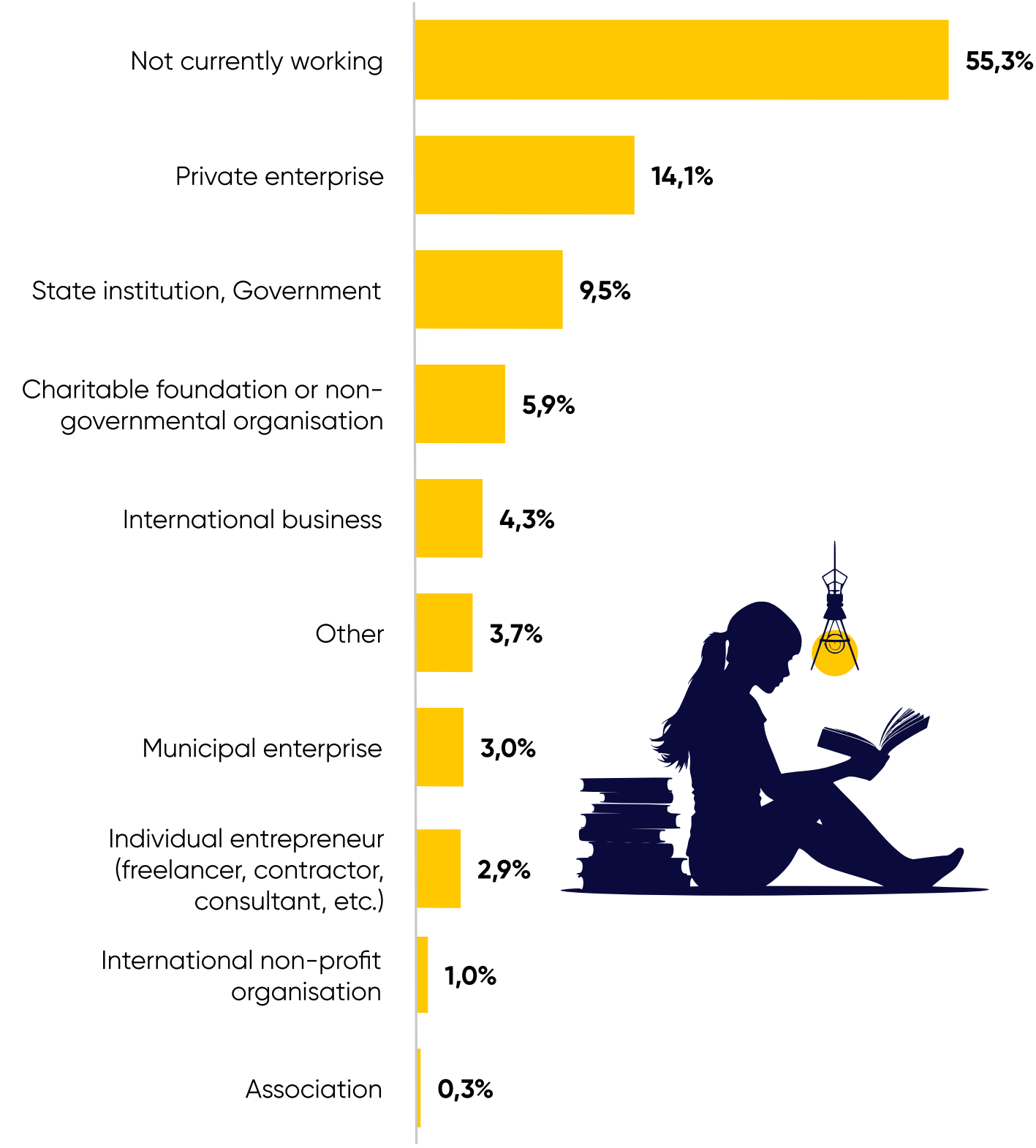


The survey involved 696 women aged 18 and over. The sample primarily reflects the views of middle-aged and older women. Most respondents were aged 25–50 (66%). Women aged 50+ accounted for 29% of the sample, while those aged 18-24 accounted for 5%.

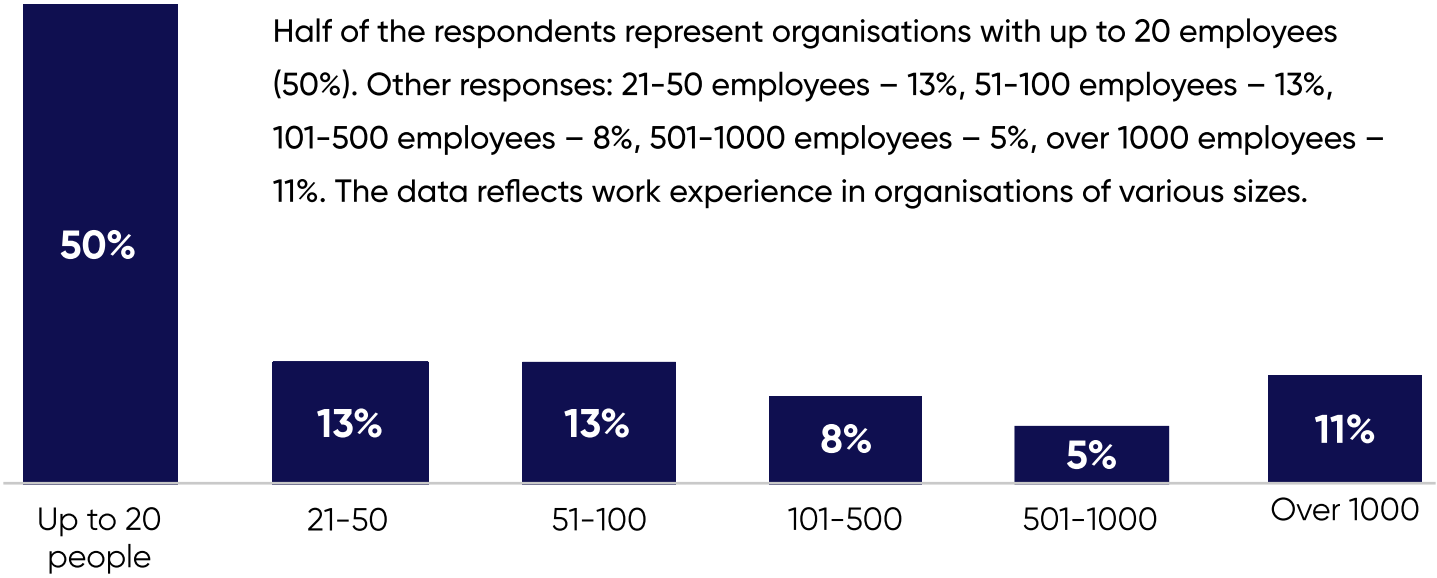
43.4% of respondents obtained higher education, 27.7% obtained secondary vocational education (technical school, college, etc.), 11.1% obtained two or more diplomas, 2.4% obtained academic degrees, and 0.4% obtained MBAs. Only 15% completed (8.1%) or were in the process of completing (6.9%) secondary education. Overall, the sample is characterised by a predominance of formal post-secondary education.

At the time of the survey, 55% of participants were unemployed. The rest worked mainly in the private sector (14%), governmental institutions (9.5%), non-governmental organisations (6%), or international business (4%).

? You work in/at:

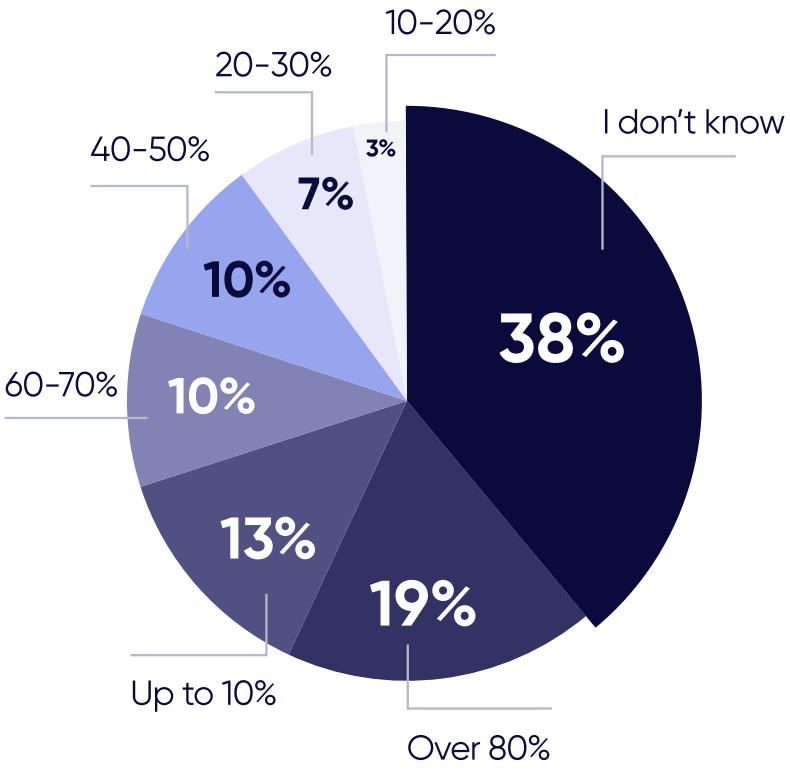


? Please indicate the size of the organisation you represent:



Half of the respondents represent organisations with up to 20 employees (50%). Other responses: 21-50 employees – 13%, 51-100 employees – 13%, 101-500 employees – 8%, 501-1000 employees – 5%, over 1000 employees – 11%. The data reflects work experience in organisations of various sizes.

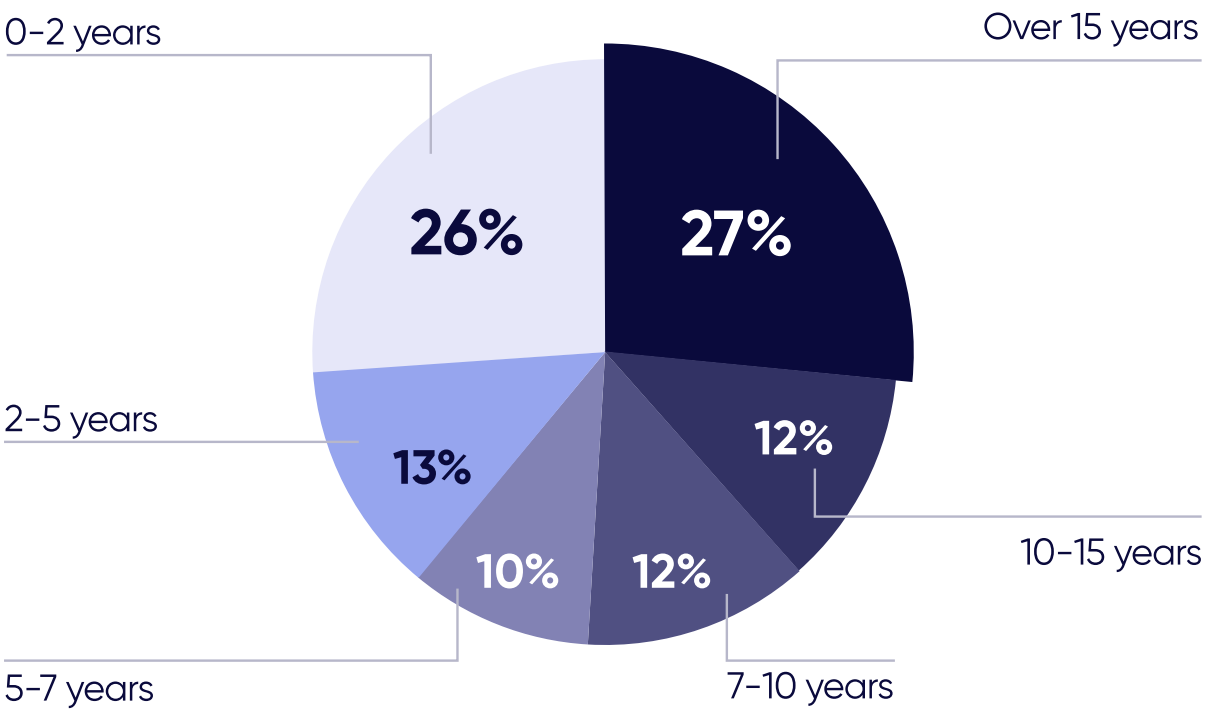
? How many women are employed by your organisation?



The high percentage of 'I don't know' responses may indicate an ineffective way of providing information on inclusiveness or a lack of attention to gender balance in the workplace.

The distribution of responses shows that respondents work in teams with varying gender compositions, ranging from predominantly female to predominantly male.

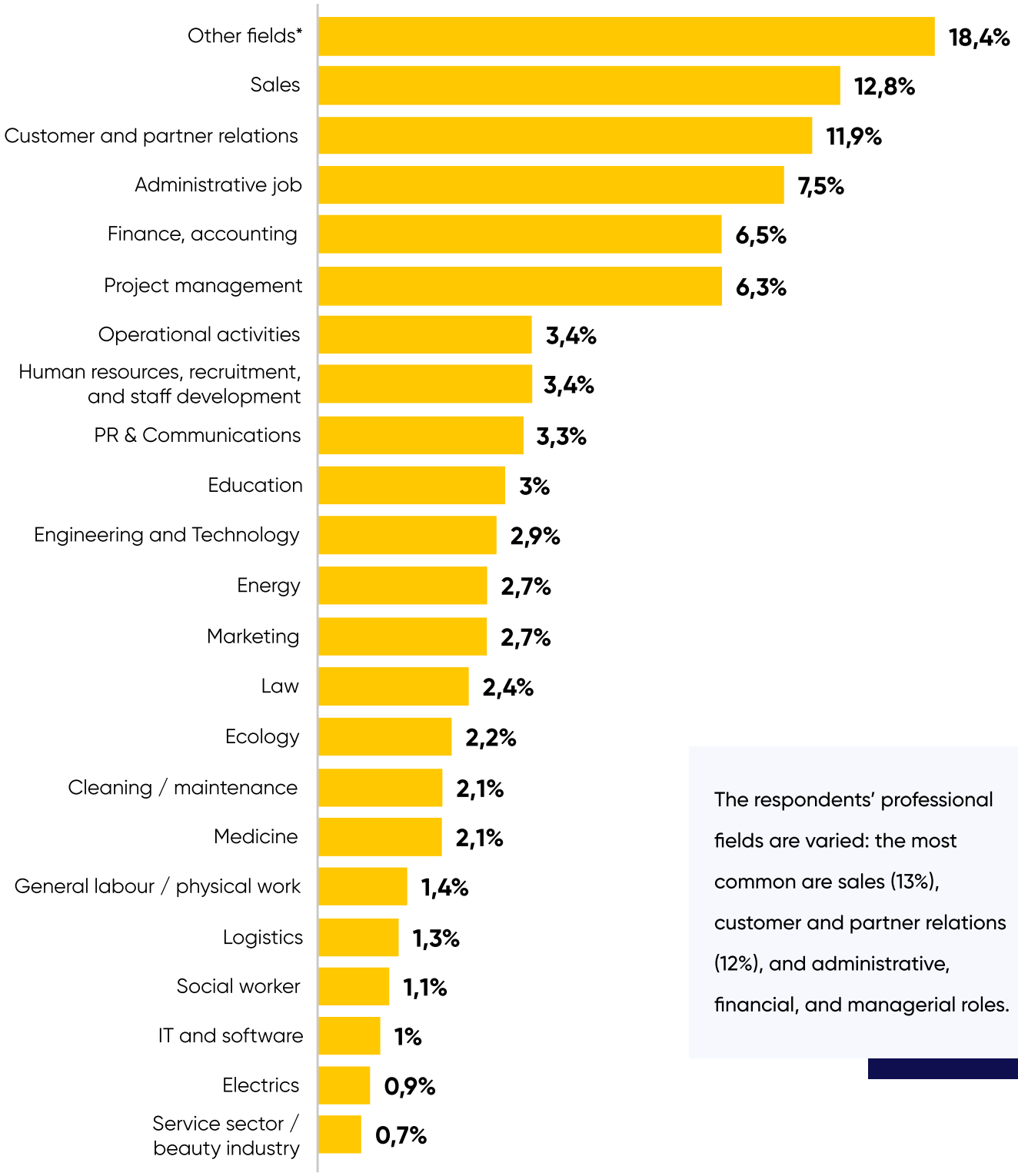
? Please indicate how long you have been working in your profession:



? Your position at your current job:

Specialist	26%
Junior	25%
Junior specialist	11%
Senior specialist	11%
Management	11%
Top management	6%
Owner	5%
Student	5%

What field do you currently work in?



The respondents' professional fields are varied: the most common are sales (13%), customer and partner relations (12%), and administrative, financial, and managerial roles.

The data demonstrates diversity in professional experience, with an emphasis on areas where skills can be adapted to meet the needs of the solar energy industry.

*Other fields are not included in the main survey list.

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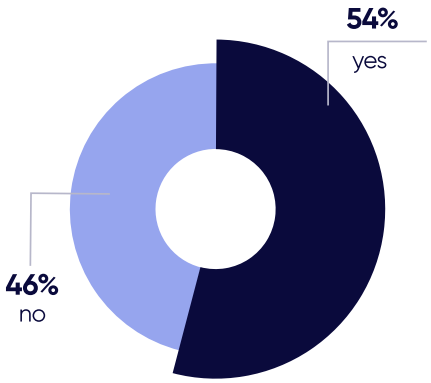
PROFESSIONAL BARRIERS

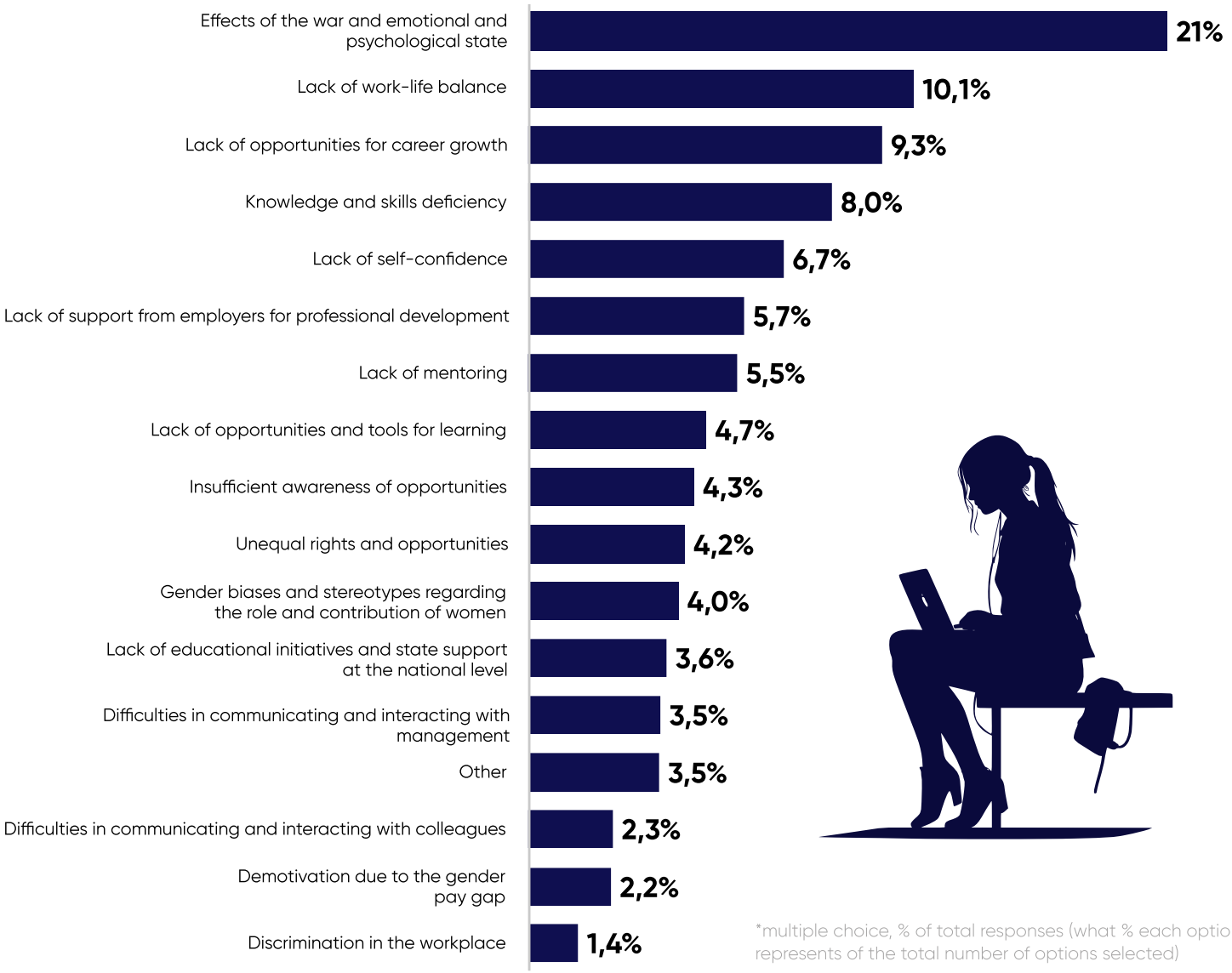
PROFESSIONAL BARRIERS

? Have you ever faced any barriers or obstacles in your career path?



Over half of the women surveyed (54%) said they had encountered barriers in their careers. This indicates the prevalence of various challenges in the process of realising career potential among the respondents. This allows for further research into the specific factors that systematically influence their professional participation.

? What challenges and difficulties have you faced in your professional development? Please select 1–5.



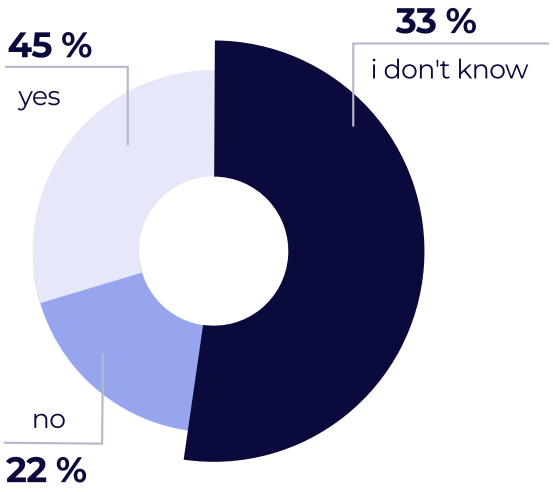
*multiple choice, % of total responses (what % each option represents of the total number of options selected)

The most common difficulty is the emotional and psychological state resulting from the war. This option was chosen by 21% of respondents, making it the main barrier to choosing a career. This finding is consistent with the results of in-depth interviews. This refers to an inability to plan for the long term, constant stress, and uncertainty about the future. The data show that full-scale war is a key external factor that negatively affects women's ability to build or continue their careers. Therefore, professional integration strategies must consider mental health and the traumatic consequences.

Other frequently mentioned factors included lack of work-life balance (10%), lack of career opportunities (9.3%), knowledge and skills deficiency (8%), and lack of self-confidence (6.7%). These responses suggest the presence of both external (structural) and internal (personal) barriers. This makes it possible to identify points of intervention in human resource management, as well as in educational and psychological support for women.

At the same time, less than 4% of female respondents mentioned discrimination or pay gaps, which may indicate either low visibility of these issues or different priorities in the perception of difficulties.

? Has the organisation you represent faced challenges in hiring staff due to the current labour situation in the country?



45% of women said that their organisation had experienced difficulties in hiring staff. 22% responded 'No', and 33% were unable to answer. This suggests that some organisations are experiencing a manpower shortage, but it also indicates limited awareness among respondents of strategic or operational hiring processes.

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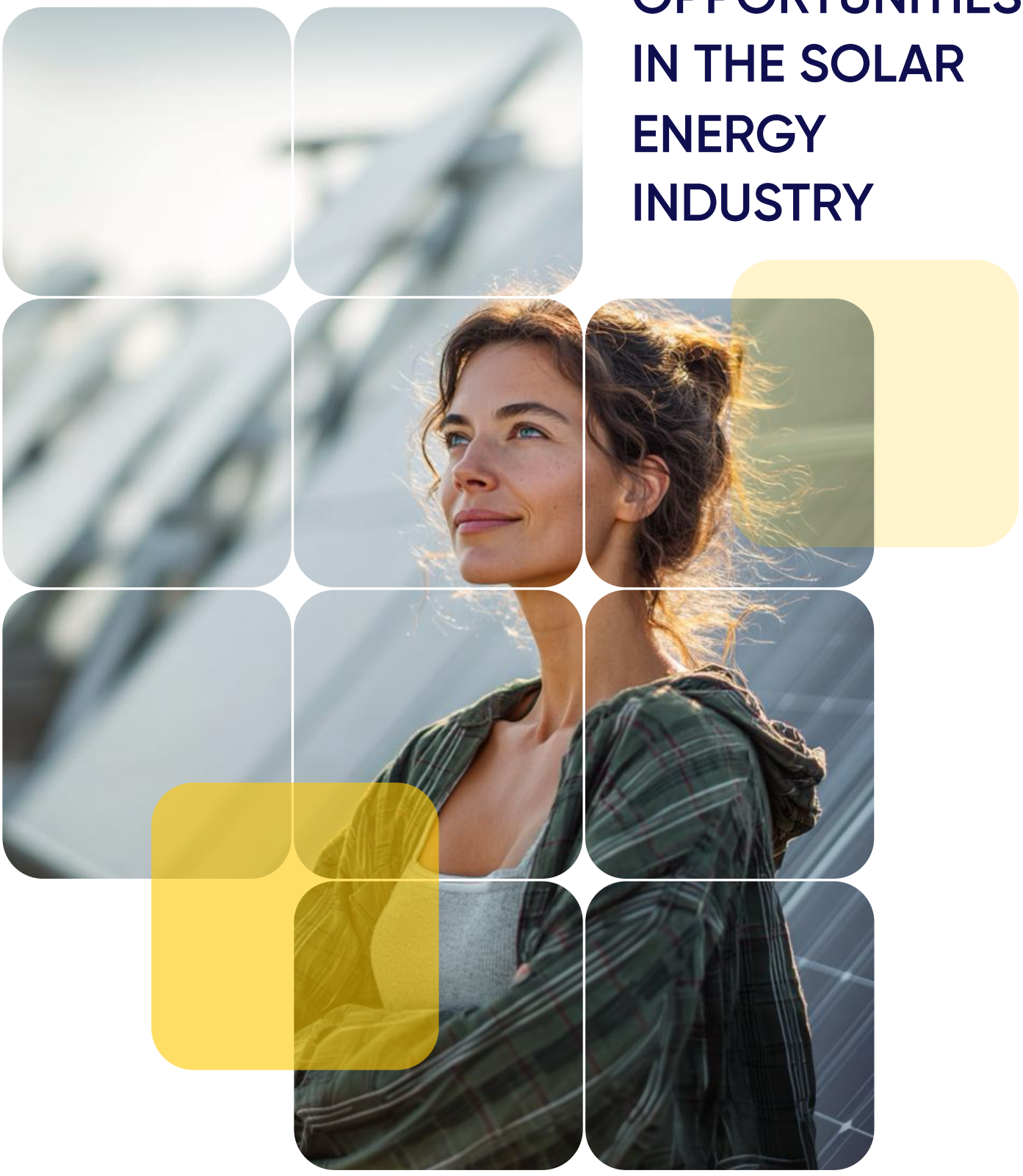
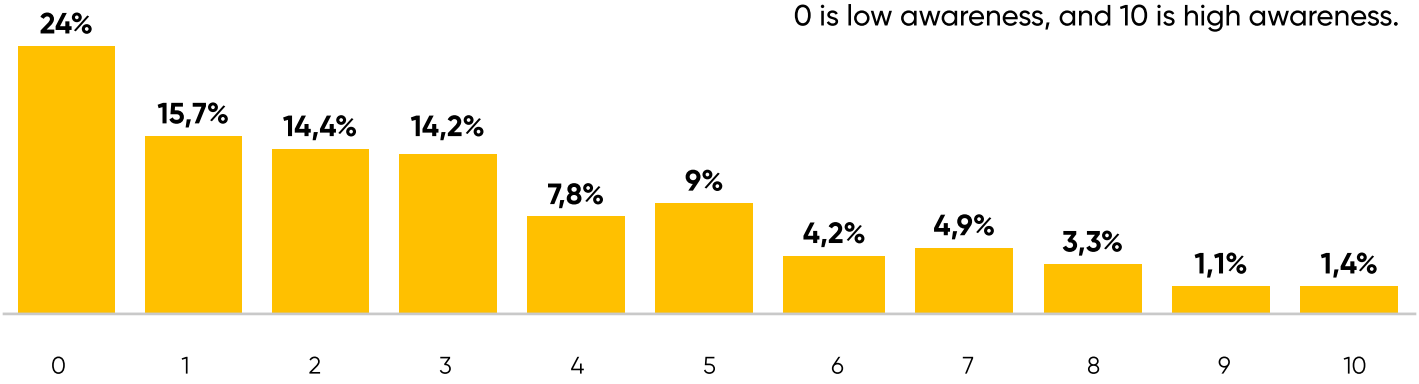
OPPORTUNITIES IN THE SOLAR ENERGY INDUSTRY



OPPORTUNITIES IN THE SOLAR ENERGY INDUSTRY

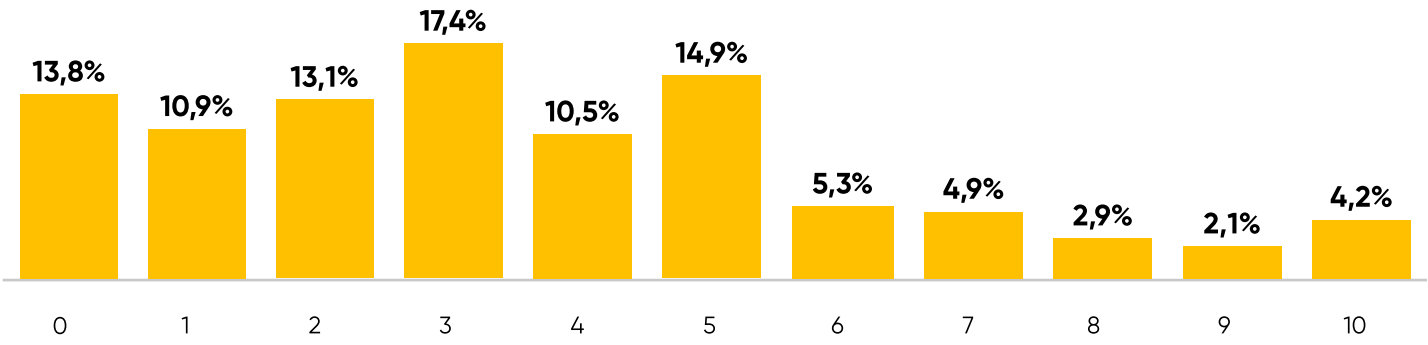
? How would you rate your awareness level of solar energy?

0 is low awareness, and 10 is high awareness.



? Do you think there is currently enough information available about the development of solar energy in Ukraine?

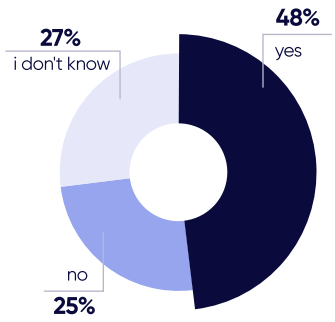
0 is low awareness, and 10 is high awareness.



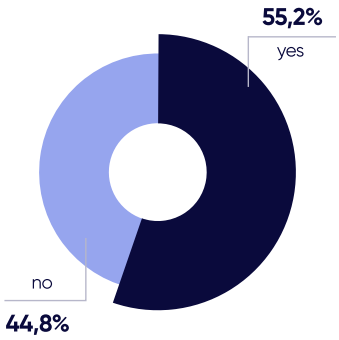
55% of respondents rated the level of available information about the development of solar energy in Ukraine as below 5 out of 10. Only 11% said they were aware of employment opportunities and career prospects in this field, while 89% were not.

Interim conclusion: To raise awareness of career opportunities in the solar energy industry, it is important to establish a consistent presence in the media, on social networks, and on educational and training platforms, as well as in women's communities and at career guidance events. Actively shaping the public image of the industry as being open to women is essential for generating interest.

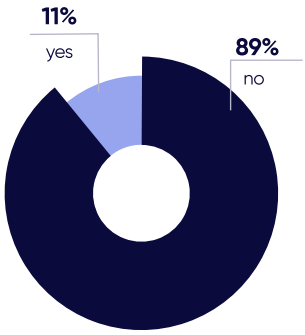
Have you ever thought about changing your career?



Would you consider working in the solar energy industry if suitable training and development opportunities were available?



Are you aware of the employment opportunities and career prospects that the solar energy industry offers in Ukraine?



48% of survey participants have considered changing their career in the near future, while 27% are undecided. This suggests that there is a certain demand for professional change. Almost every second woman is looking for new opportunities or is potentially open to them.

Women who are undecided represent an additional pool of talent that could be engaged. This confirms the existence of a target audience for professional transition campaigns, especially if they include clearly structured learning pathways, mentoring, and job guarantees.

Despite low awareness, over half of the respondents (55%) said that they would consider working in the solar energy industry if the necessary training and development tools were in place. Women do not reject the industry as a potential workplace, but the key barrier is the lack of clear entry points, such as educational programmes, support, and internships.

There is therefore potential for the development of professional transition programmes, such as short-term courses, internships, and educational events, which are tailored to women without technical experience. There is interest, so there is great potential for converting it into future female professionals in the industry.

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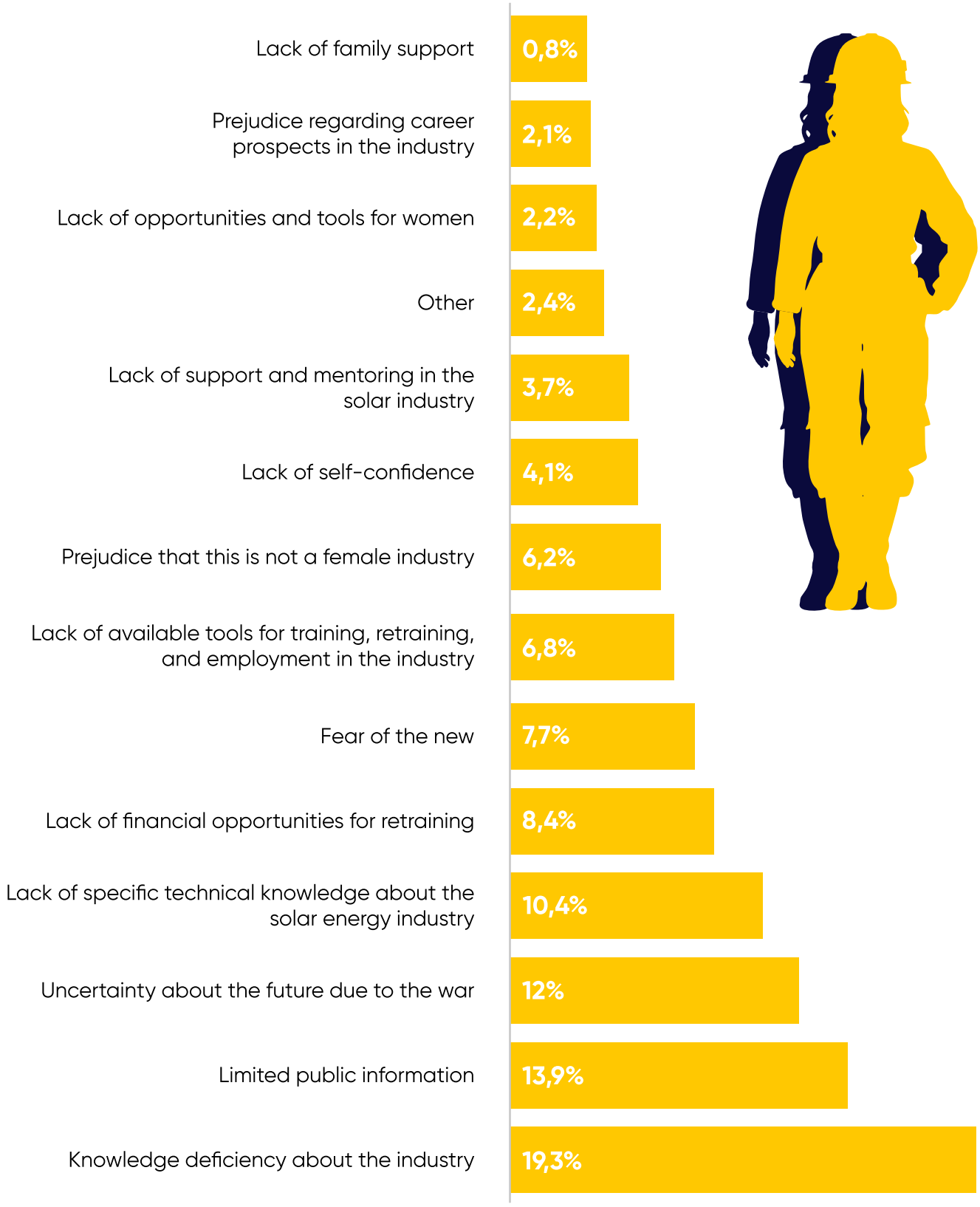
PROFESSIONAL TRANSITION TO THE SOLAR ENERGY INDUSTRY

PROFESSIONAL TRANSITION TO THE SOLAR ENERGY INDUSTRY

? **What challenges have you faced, or are currently facing, in making the professional transition to the solar energy industry?**



*multiple choice, % of total responses (what % each option represents of the total number of options selected)

According to the survey findings, the two most common difficulties are a lack of knowledge about the industry (19%) and limited public information (13.9%).

This means that without a targeted information campaign and educational programmes, entry into the industry will remain limited for most potential candidates.

The unstable security situation caused by the war creates uncertainty (12%) and hinders professional transition plans. Additionally, one in four women cited a lack of technical knowledge about the solar energy industry, indicating a need for introductory technical courses tailored to newcomers. The lack of financial means to learn a new profession (8.4%) and fear of the new (7.7%) are also significant factors. Therefore, the decision to transition is related not only to education, but also to emotional security and accessibility — women are reluctant to take risks without guarantees.

A lack of available tools for training, retraining, and employment in the industry (6.8%) also hinders full training. This barrier is most likely related to a lack of knowledge about the industry as a whole and its specific opportunities.

!

Stereotypes about the 'unfeminine' nature of energy proved to be a less significant barrier than the hypothesis expected. Only 6.2% of respondents chose the option 'prejudice that this is not a female industry'.

WOMEN'S PERSPECTIVES ON THE STEREOTYPE OF A 'MALE' INDUSTRY EXPRESSED IN IN-DEPTH INTERVIEWS

"I have never thought about it. Well, it sounds like a man's job, but I don't believe there are any jobs women can't do.

"No, not at all. I believe women can learn to install panels, configure equipment, and manage processes. It's not a question of gender; it's about desire and training.

"No, no, no — there's no such thing as a purely male job.

"No, definitely not. Definitely not.

"We probably think of it in a stereotypical way. Energy and technology are something male-dominated.

"I have worked at substations as an operator with working shifts and performing serious technical tasks. Women can do it just as well!

"I think the workforce should be 50/50. Everyone has their own approach. In teamwork, especially, it's important to have both male and female perspectives.

THE MAIN CHALLENGES FOR TRANSITIONING TO SOLAR ENERGY THAT WOMEN HIGHLIGHTED DURING IN-DEPTH INTERVIEWS:

"It's not for people like me. It's for 'special' people.

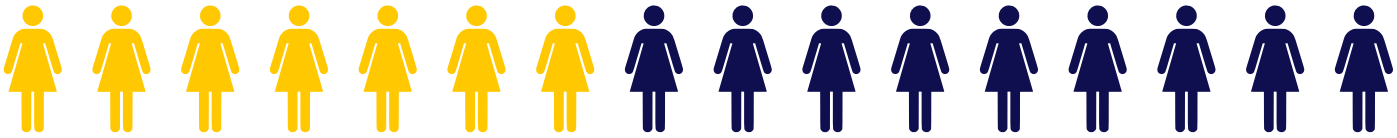
"I didn't have a single woman to turn to for advice – I was the only woman in the department.

"I don't know what skills are needed to work in the solar energy industry.

"I'm also unsure whether this job pays well or offers opportunities for career growth.

"I don't understand what roles exist in the industry or what kind of work is done there.

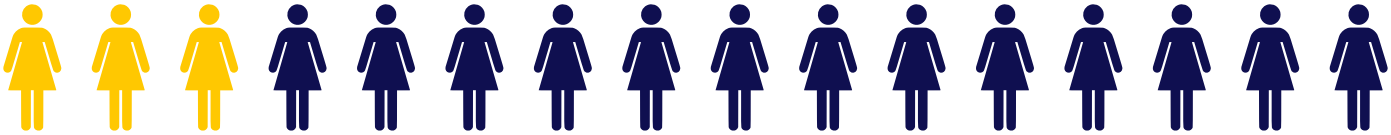
? Would you be willing to take a 1.5 – 2-month free training course, with the aim of retraining and potential employment in the solar energy industry?



46%
YES

54%
NO

? Would you be willing to take a paid retraining course in the solar energy industry?



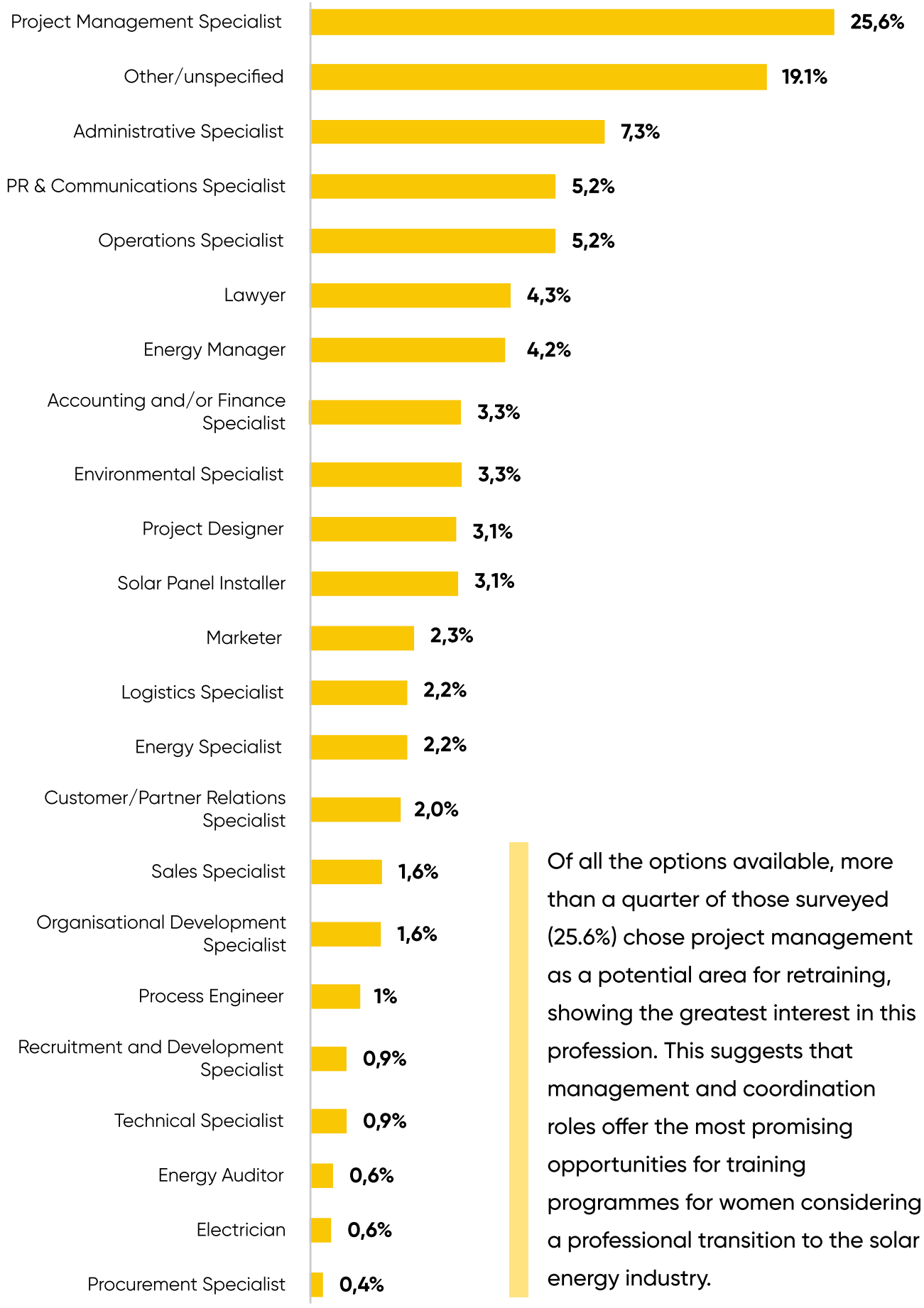
16%
YES

84%
NO

Despite the existing challenges, a part of the respondents is willing to learn. 45.8% agreed to take a free 1.5–2-month course focusing on retraining and subsequent employment. This indicates a demand for training, but only if the barriers preventing it are removed.

Conversely, only 16.4% would be willing to pay for training themselves, indicating a limited willingness to invest in a new field without guarantees.

? If so, what profession would you be willing to learn?*



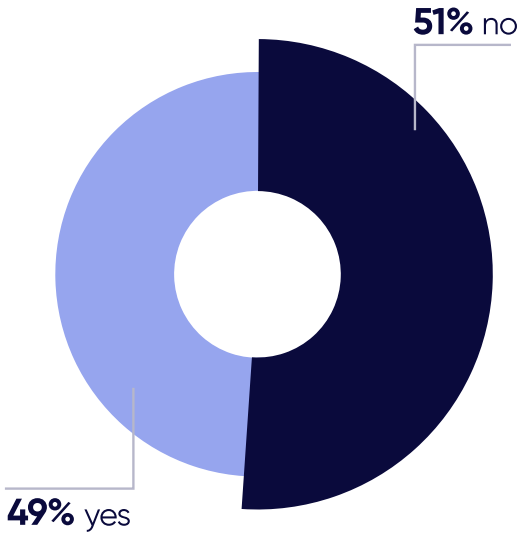
Of all the options available, more than a quarter of those surveyed (25.6%) chose project management as a potential area for retraining, showing the greatest interest in this profession. This suggests that management and coordination roles offer the most promising opportunities for training programmes for women considering a professional transition to the solar energy industry.

*multiple choice, % of total responses (what % each option represents of the total number of options selected)

Meanwhile, 18.8% of female respondents were unable to decide on a specific profession, which may indicate a lack of awareness of career paths in the industry and a need for career guidance at the beginning of training programmes.

Other popular areas include administrative roles (7.3%), operational activities, communications (5.2% each), law (4.3%), energy management (4.2%), and technical specialties, including solar panel installers (3.2%), designers (3.2%), process engineers and electricians (total about 1.7%).

? **Would you become a project management specialist if practical training tools and employment opportunities were available?**



Despite the high level of interest in project management, only 49% of respondents expressed willingness to this profession if such tools and opportunities were available.

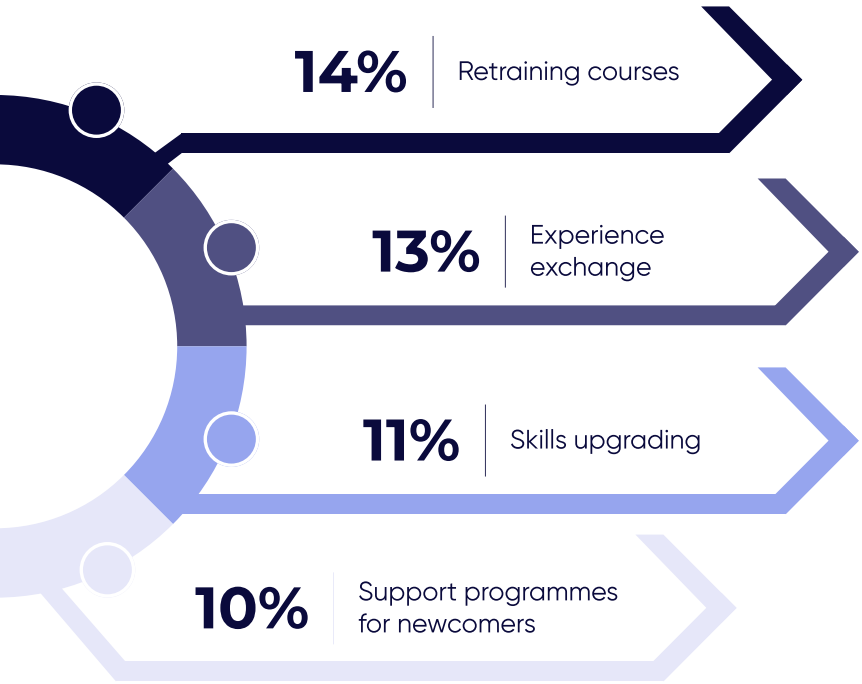
? **In your opinion, which of the following 'hard' skills are essential for professionals to transition to the solar energy industry? Please select 1–5*.**

Higher technical education	**12,6%**
Experience in the energy industry	**11,1%**
Retraining courses	**9,6%**
Ability to work with technical documentation	**9,0%**
Other	**7,1%**
Knowledge of renewable energy technologies	**6,5%**
Experience of working with project documentation	**6,3%**
Experience of working in a similar position, but in a different field	**5,9%**
Knowledge of health and safety regulations	**5,2%**
Ability to read electrical diagrams	**5,2%**
Knowledge of regulatory requirements and standards	**4,8%**
Knowledge of legislation	**3,5%**
Experience of designing and implementing renewable energy systems	**2,6%**
Project management strategies	**2,4%**
Ability to select equipment	**1,8%**
Higher non-technical education	**1,7%**
Knowledge of logistics processes and supply chains	**1,4%**
Hard skills are not essential for a professional transition to the solar industry	**1,3%**
Skills in working with logistics information systems	**1,2%**
Knowledge of transport and customs procedures	**0,8%**

The survey participants identified the following as the most important factors for transitioning to the solar energy industry: higher technical education (12.6%), work experience in the industry (11%), retraining courses (9.6%), and the ability to work with technical documentation (9%). This suggests that women view entry into the industry as a complex process requiring in-depth knowledge or specialised training.

*multiple choice, % of total responses (what % each option represents of the total number of options selected)

? Which tools do you think would have a positive impact on your professional development in the solar industry? Please select 5*

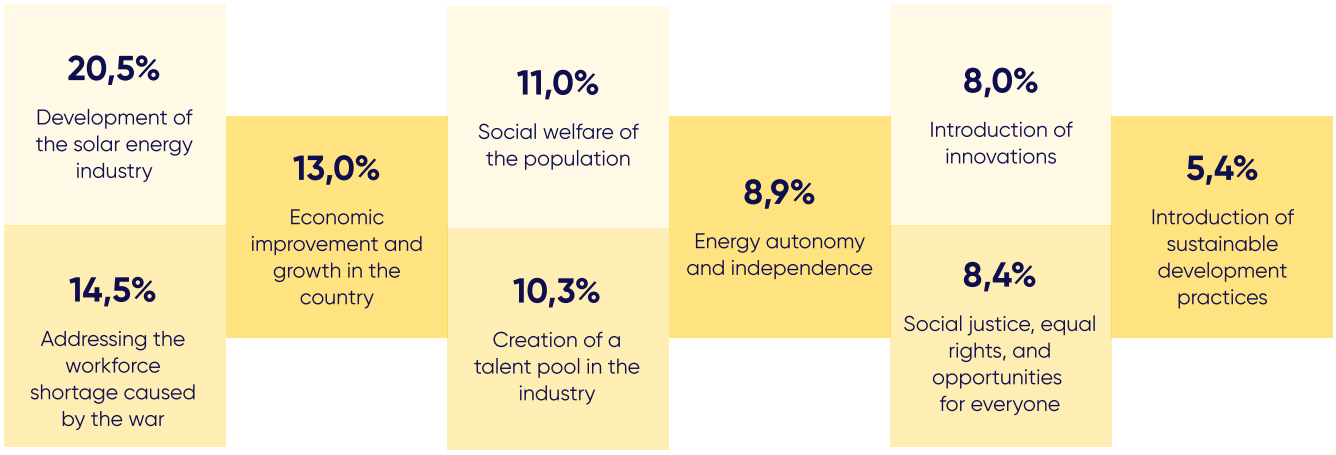


9%	Other
7%	Obtaining higher education
7%	Mentoring and coaching
7%	Application of foreign practices
6%	Involvement in a community of like-minded people
5%	Higher education
3%	Support from male colleagues
3%	Quotas for women
2%	Publicity and recognition of the role and contribution of female experts
2%	Availability of role models
1%	Implementation of gender-sensitive practices and policies

The greatest demand is for retraining courses (14%), followed by experience sharing (13%), skills upgrading (11%), and support programmes for beginners (10%). This means that women require an educational system that provides new knowledge and a safe environment to take their first steps in the industry.

Other popular options include mentoring (7%), applying foreign practices (7%), and involvement in a community of like-minded people (6%). Therefore, it is important not only to acquire knowledge but also to have access to experience and networks.

? What advantages could lead more women to get involved in the solar energy industry, in your opinion?



*multiple choice, % of total responses (what % each option represents of the total number of options selected)

THE FOLLOWING QUOTES ARE TAKEN FROM IN-DEPTH INTERVIEWS WITH WOMEN WHO ARE LOOKING TO TRANSITION TO THE SOLAR ENERGY INDUSTRY

- «Mentoring, role models, financial clarity, and a roadmap for transition».
- «Basic knowledge of the new industry, practical experience, and probably a little more confidence. But with support from the employer, it would definitely be easier».
- «It would be great if the school or courses you attend offered employment opportunities, but that's very rare».
- «For me, it is very important that my education and new profession guarantee employment».
- «I think it's money first and foremost, but in an ideal world it would be doing something you enjoy or are good at».

FINDINGS

The female respondents' profile indicates a group with significant potential for professional transition. Most of the survey participants are women of mature professional age (aged 25–50+) who have received higher or specialised education. At the same time, more than half are either actively seeking a new role or are temporarily unemployed.

Awareness of the solar energy industry among respondents remains low, with 68% rating their knowledge at 0–3 on a 10-point scale. 46% of respondents said that they would consider a transition to the solar energy industry if a free training course was available. This indicates openness to new career opportunities when clear conditions and prospects are available. The discrepancy between knowledge and interest underscores the importance of awareness campaigns, accessible retraining programmes, and targeted communications for newcomers.

The biggest barrier identified by respondents was a lack of knowledge about the industry (19%), while 14% said that they could not find any relevant information in the public domain. Furthermore, 89% were completely unaware of the career and training opportunities in the solar energy industry.

In their professional lives, women encounter a variety of barriers, both external and internal. The most frequently cited issues are the effects of war, emotional instability, difficulties achieving work-life balance, and self-doubt. Respondents also noted structural constraints such as a lack of support from employers, a lack of mentoring, and limited access to training. Together, these factors create a challenging environment for professional advancement, particularly in new or technology-focused industries.

The hypothesis that the energy industry is perceived as a 'male industry' has not been convincingly confirmed. Only 6% of respondents mentioned gender bias as a barrier. While those surveyed do not consider gender to be a determining factor preventing them from entering the industry, it is still present in wider society.

Participants express a willingness to retrain, but are mainly focused on free training formats. Only 16% are open to paid programmes. There is the most interest in short-term, practice-oriented formats with mentoring and the creation of a community for sharing experience.

FINDINGS

In terms of expected professional development, women demonstrate an interest in management and support roles, particularly in project management, administration, communications, and logistics. Technical specialisations attract less interest, suggesting the need for training programmes to be additionally adapted to suit the starting level of candidates with no prior technical experience.

The key conditions for attracting women to the industry are accessible education, industry visibility in the information space, and a broader context of socio-economic stability. Women's participation in solar energy development is inextricably linked to human resource shortages, economic growth, inclusivity, and public policy. This highlights the need for a comprehensive approach combining individual support programmes with institutional changes at the industry level.

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ABOUT THE ENERGY ACT FOR UKRAINE FOUNDATION

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The Energy Act for Ukraine Foundation is a Ukrainian charitable organisation established in 2022 in response to the full-scale russian invasion of Ukraine.

In 2022, the Foundation launched two campaigns – **100 Solar Schools** and **50 Solar Hospitals**, aiming to install 150 hybrid solar power plants for schools and hospitals in Ukraine over five years, focusing on communities most affected by the military conflict. The Foundation is also actively engaged in outreach activities on sustainable development and green energy.

50 Solar Hospitals

Despite power outages and other challenges, medical facilities must continue to operate. Even a one-minute power cut in an intensive care unit, maternity ward, or operating theatre can be critical. This is why the Foundation is installing hybrid solar power stations in 50 hospitals over five years, ensuring doctors have the conditions necessary to provide quality care.

100 Solar Schools

Over the next five years, the Foundation aims to install 100 solar power plants in Ukrainian schools. This will enable children to continue their education, even during the darkest of times, and will encourage them to see renewable energy as the norm, even in the smallest of communities.

Solar Water Utilities

In 2024, the Foundation began installing solar power plants on water supply systems across different regions, ensuring that Ukrainians would have access to vital resources such as water even during power outages.

Solar Step

The Solar Step training course for women, initiated by the Energy Act for Ukraine Foundation, offers Ukrainian women the chance to become solar energy project managers free of charge. The first cohort of the course will begin in September 2025.

Course for Children

An optional course on Sustainable Development and Green Energy is being actively implemented in Ukrainian schools. The future leaders of Ukraine are learning about environmentally friendly behaviour and introducing sustainable habits into their daily lives, becoming more conscious users of natural resources in the process.

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