



GREEN TRANSITION AND ITS LABOUR MARKET IMPACTS IN HUNGARY'S REGIONS

JUST TRANSITION
FROM
A BUSINESS PERSPECTIVE

Empirical Analysis and Policy Recommendations

CORE2-101145659

THIS STUDY WAS PREPARED IN COLLABORATION BETWEEN THE
NATIONAL FEDERATION OF EMPLOYERS AND INDUSTRIALISTS (MGYOSZ)
AND ÖKOPANNON NONPROFIT KFT.

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INTRODUCTION

THE CONCEPT AND ECONOMIC FRAMEWORK OF THE GREEN TRANSITION

The green transition refers to the structural economic and social process by which fossil fuel-based, resource-intensive production and consumption systems are gradually transformed into a low-carbon, resource-efficient, circular economic model. This is not a single event but a multi-decade transitional process. In the European Union, the main framework for this process is the European Green Deal (2019). The EU aims to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels, and to achieve climate neutrality by 2050. The Fit for 55 package, the REPowerEU plan, and the EU's industrial policy strategy are the specific regulatory and financing instruments of this process. [EU1]

The green transition is simultaneously a technological, economic, and social process. Technologically, it entails new solutions (renewable energy, circular economy, electric mobility); economically, it requires investment and structural change; and it directly affects the labour market. This last dimension is of particular relevance for this study. According to OECD estimates, approximately 20% of the workforce in OECD countries is employed in occupations directly affected by the green transition. This means that not only are new jobs being created and old ones disappearing — the content of existing roles is also transforming. [13]

THE CONCEPT AND SIGNIFICANCE OF JUST TRANSITION

Just transition refers to the requirement that the costs and benefits of the green economic transformation be distributed fairly across different groups, regions, and generations of society. The concept was introduced into policy thinking by the

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International Labour Organisation (ILO) in its 2015 guidelines, which identify five key areas: macroeconomic and growth policy, industrial policy and economic diversification, enterprise and local economic development, social protection, and active labour market policy. [I11]

In the European Union, the principle of just transition is embodied in the Just Transition Mechanism (JTM), whose main financial instrument is the Just Transition Fund (JTF). The fund provides nearly €20 billion, primarily for regions most affected by the transformation of carbon-intensive economic structures. The dual objective is to diversify economic structures and retrain workers. [EU3] Hungary benefits from JTF resources in three regions: Baranya (cement industry decarbonisation) and Heves and Borsod-Abaúj-Zemplén (lignite phase-out, Mátra power plant), totalling €250.6 million. [EU2, EU3]

Just transition, however, is not merely a question of resource allocation. The European Economic and Social Committee emphasises that successful transition depends on social dialogue, collective bargaining, and worker involvement, not solely on compensatory instruments. [EU1] According to Eurofound

(2024), European social partners — employer organisations and trade unions — are taking on an increasingly active role in managing the green transition at the enterprise and sectoral level, for example through tripartite agreements and collective contracts. [EU6]¹

The European employer side, particularly BusinessEurope, broadly supports the goal of just transition, while emphasising that its implementation can only be sustainable if it simultaneously ensures the achievement of climate targets and the preservation of European competitiveness. In their view, just transition should not be interpreted merely as a redistributive or compensatory tool, but as an economic policy framework that supports the adaptation and investment capacity of enterprises.

¹ European Foundation for the Improvement of Living and Working Conditions, a decentralised agency of the European Commission. One of three tripartite agencies (CEDEFOP, EU-OSHA, EUROFOUND), whose governance is shared with social partners in a tripartite structure. EUROFOUND's primary purpose is to provide evidence to support decision-making by social partners and Member States on living and working conditions.

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BusinessEurope highlights that the social acceptance of the green transition depends largely on whether companies are able to preserve jobs and create new ones, especially in industrial and energy-intensive sectors. This requires a predictable regulatory environment, adequate financing instruments, and strengthened skills development and retraining. At the same time, it points out that excessive regulatory burdens or measures that undermine competitiveness may jeopardise the success of the transition, particularly in global competition.

The organisation considers the role of social partners to be pivotal in managing the transition: enterprise-level solutions, collective bargaining, and worker involvement are indispensable for the success of adaptation processes. Accordingly, BusinessEurope supports an approach to just transition built on economic realities, investment incentives, and active support for labour market adaptation, rather than a primary focus on redistribution. [13]

WHY THIS TOPIC MATTERS - AND WHY NOW

The green transition and just transition are of particular significance because the transformation does not affect economic actors equally. Those most exposed to change — low-skilled workers, carbon-intensive regions, small and medium-sized enterprises — often have the least capacity to adapt. If the transition is not a process accompanied by deliberate policy intervention but merely structural change driven by market forces, social and territorial inequalities will not shrink but grow.

This topic is of strategic importance to MGYOSZ for two reasons. First, employers' competitiveness interest: in an economy where the number of job vacancies in green occupations is nearly three times the average (OECD 2024: 88% scarcity in Hungary, compared to an OECD average of 29%), the lack of green skills represents a direct production and innovation constraint. Second, the responsibility of social dialogue: employer federations — and MGYOSZ in particular, through its embeddedness in BusinessEurope and the IOE — are the intermediary institutions capable of connecting policy frameworks with business reality. [11, E4]

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Hungary occupies a particular position in this process. The National Energy and Climate Plan (NECP 2024) and the Recovery and Resilience Plan (RRP 2023) set ambitious targets, yet the human capacity development strategy needed for implementation remains absent. KKV-sector innovation participation (21.2%) is less than half the EU average (41.2%). Adult learning participation (7.9%) remains below the EU-27 average (11%), and according to the Cedefop European Skills Index, Hungary ranks 26th in this indicator. These are not abstract statistics: they signal that the human resource dimension of the green transition in Hungary is structurally underprepared. [H1, H2, I7, S2]²

PURPOSE AND STRUCTURE OF THE STUDY

This study was prepared within the framework of the Green Transition and Its Labour Market/Social Impacts project (CORE2-101145659), a MGYOSZ–Ökopannon strategic foresight project. Its primary purpose is to provide an empirical evidence base for MGYOSZ's advocacy work, particularly in policy representation for green skills development, SME-level green investment incentives, and the social dimension of just transition.

The study combines three methods. First, it draws on a survey of 314 companies (January 2025 – February 2026). Second, it incorporates trend analysis from scenario planning workshops held in Budapest and four NUTS2 regions (Székesfehérvár, Pécs, Debrecen, Győr). Third, it includes a labour market and social impact analysis from a World Café workshop. Results were supplemented with external data sources (including OECD, Cedefop, Eurostat, CEE Bankwatch, GINOP programme data). The methods are not substitutes for one another but complementary: the survey provides firm-level data, while the workshops enable exploration of system-level connections and stakeholder experiences.

Beyond statistical analysis, the study also applies a foresight interpretive framework. Within this framework, it identifies key drivers and critical

² CEDEFOP is the European Centre for the Development of Vocational Training, which collects data on vocational training from all Member States using a unified methodology, with the aim of supporting evidence-based decision-making in the EU.

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uncertainties of the green transition, and sketches three possible development pathways. This is not a forecast, but a structured thinking framework to help decision-makers, employers, and social partners prepare for different possible future scenarios.

This study aims to provide an empirical foundation for MGYOSZ's advocacy work, supporting evidence-based decision-making.

EXECUTIVE SUMMARY

This study was prepared within the framework of the Green Transition and Its Labour Market Impacts in Hungary's Regions project (CORE2-101145659). The research combines three methods: a survey of 314 companies (January 2025 – February 2026); trend analysis from regional scenario planning workshops covering key drivers; and a World Café workshop on labour market and social impacts. Results were supplemented with external data sources (OECD, Cedefop, Eurostat, CEE Bankwatch, GINOP programme data) through secondary research.

THREE KEY FINDINGS

- **Firm size is the strongest predictor of green transition engagement.** Development activity ranges from 36.1% for micro-enterprises to 96.4% for large companies — a 60 percentage-point, highly significant (***) $p < 0.001$ difference. A consistent, size-dependent increasing trend is observed for every indicator examined. 90% of Hungary's enterprise population consists of micro or small enterprises: their lagging behind represents a fundamental risk to aggregate green performance.
- **Optimistic passivity is a systematic cognitive pattern.** 76.5% of companies expect positive impacts over the next 10 years, yet only 11% plan to create new roles. This is not a random deviation, but a size-dependent cognitive equilibrium confirmed by the World Café: a positive outlook does not generate pressure to act in the absence of external compulsion.
- **The green labour market is already tight; the training system is not keeping pace.** According to OECD 2024 data, Hungary has 88% more job postings per employed person in green occupations than the average (OECD average: 29%). Meanwhile, adult learning participation stands at 7.9% (EU average: 11%), and Hungary ranks 26th in the Cedefop

FIVE STRUCTURAL TRENDS AND THEIR IMPACTS

1. Transformation of labour markets and skills systems³

The dual green and digital transition is increasingly widening the gap between skills demand and supply in the labour market. Companies face growing demand for workers with higher-level green and digital competencies, while the training system adapts more slowly. As a result, the required skills do not appear quickly enough in the labour market, and the risk of displacement for low-skilled workers increases.

2. Increasing complexity of energy supply

The structural transformation of energy supply creates growing uncertainty for both enterprises and households. Industrial energy prices in certain consumption bands are exceptionally high, directly affecting competitiveness and investment decisions. Simultaneously, the risk of energy poverty among households is intensifying, which may lead to social tensions.

3. Growing competitiveness pressures

The green transition places significant competitive pressure on companies, particularly SMEs. Survey data show that only 7.4% of micro-enterprises have accessed green investment support, indicating clear access barriers. Hungary's SMEs' innovation performance lags behind the EU average: the rate of business process innovation is 21.2%, compared to the EU's 41.2%.

4. Reconfiguration of supply chains

The green transition is accelerating structural change in supply chains. In Hungary, concrete examples are the JTF-affected regions — particularly Baranya, Heves and Borsod-Abaúj-Zemplén — where industrial restructuring directly affects local supplier networks. Company feedback indicates that greening frequently appears not as an internal strategic decision but as adaptation to customer expectations, while price remains the dominant factor in procurement.

³ Trends and their drivers were identified through scenario planning workshops held in 2025 in Budapest and four major Hungarian cities.

5. Changing predictability of the policy and regulatory environment

The success of the green transition is fundamentally shaped by the predictability of the regulatory and support environment. In Hungary's case, the use of the JTF's €250.6 million is conditional, which increases implementation uncertainty. The repeated postponement of the Mátra power plant transformation illustrates that political decision-making is not always predictable.

MOST LIKELY DEVELOPMENT PATHWAY: TWO-SPEED GREEN TRANSITION

Among the three scenarios, the 'two-speed green transition' is the most likely based on current patterns. This means that large companies complete the green transition, while the SME sector is characterised by only moderate investment activity (rising from 36% to 45–50%). As a result, the labour market structure increasingly bifurcates. If the support system does not change, the risk of the 'stalled transition' scenario also remains moderate.

KEY POLICY RECOMMENDATIONS

MGYOSZ (employer side)

- Advocacy for targeted green programmes specifically designed to reach SMEs, helping smaller companies to engage with the transition.
- Active representation in strengthening the social component of the Just Transition Fund (JTF).

Government / Policy

- Development of a differentiated green incentive system tailored to the size and capacities of SMEs.
- Prioritised treatment of the Northern Great Plain region due to its catch-up challenges.
- Fulfilment of JTF conditions and ensuring effective uptake of funds.

Training Institutions

- Integration of green content into the vocational training outcomes system through sectoral skills councils — not by strengthening the centralised framework, but through partnerships.
- Introduction of financing solutions based on individual learning accounts (HUN-ILA).
- Strengthening dual training partnerships between companies and training institutions.

Since the data collection for this study closed (February 2026), the macro environment has changed in one significant respect: Hungary is expected to gain access to the previously conditional Recovery and Resilience Facility (RRF) resources, potentially amounting to €10 billion. This has direct implications for one of the study's most important findings: 50.4% of companies are currently uncertain whether they will be able to access green investment support in the future (Q22), and this uncertainty — according to the study's systems thinking element — is one of the main mechanisms stabilising optimistic passivity. If access to resources genuinely becomes more transparent and predictable, this could break the cognitive equilibrium in which companies think positively about the green transition but do not act.

However, the conditions for the green transition are not automatic. Hungary's energy system is not yet infrastructurally ready for a meaningful departure from fossil fuels. Expanding storage capacity, integrating renewable energy into the grid, and improving energy efficiency require investments for which RRF funding access is particularly critical — without them, the pace of the green transition will be stalled by capital shortages. Creating the infrastructural and financing conditions is, however, not sufficient in itself. Study data indicate that the workforce needed for effective implementation of green investments is currently absent. The number of job postings in green occupations in Hungary is nearly three times the available labour supply (OECD 2024), while the paradox between training system adaptation (Q37,39 responses) lags far behind demand. Capital shortfalls and human capacity shortfalls are mutually reinforcing constraints: resolving one without the other yields only partial results.

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For this reason, the policies accompanying RRF funds require bridging solutions — instruments that simultaneously help bridge both the capital gap and the labour gap needed for implementing green investments. These include accelerated retraining programmes, micro-credential-based green training, and combined financing and capacity-building packages targeting SMEs. It is especially important that these instruments reach the enterprise and regional actors that are most left behind according to this study: micro-enterprises, of which only 7.4% have accessed green support to date, and the Northern Great Plain, where both development activity and programme awareness are simultaneously at their lowest.

Methodological note: The study integrates three complementary methods: questionnaire survey (N=314, statistical analysis), scenario planning workshops (trends and drivers, intuitive method), World Café workshop (labour market and social impacts, qualitative). The foresight chapter is an interpretive framework, not a forecast. The sample is non-random (Ökopannon network); self-reported data may be upwardly biased.

1. METHODOLOGY AND DATA QUALITY

1.1 DATA COLLECTION AND DATABASE STRUCTURE

The survey was conducted online in 2025 and in February 2026. The database contains 314 rows and 58 columns, covering administrative data, company profile variables (size, industry, type, county), and 47 content questions. For multiple-response questions (Q3, Q16, Q38, Q40–Q44), only code 1 could be identified in the exported database due to compound coding; detailed evaluation of these requires more precise re-coding of the raw data.

Data cleaning steps: (1) NUTS2 codes were not filled in the original file — these were manually reconstructed from the Q4 (county) variable; (2) financial variables Q8 and Q9 were converted from text to numeric format; (3) for filter questions (Q14, Q15, Q24–Q27), only data from the subsample that answered 'yes' to the preceding question are meaningful.

1.2 SAMPLE CHARACTERISTICS

The full sample contains 314 respondents. Budapest (HU11) and Pest county (HU12) each have only n=6 — statistically unreliable; for information purposes only. The territorial analysis is based on six regional NUTS2 regions (n=39–68). By company type (Q2): 58.3% independent SME, 25.5% subsidiary of large company, 10.2% non-profit/other, 3.8% self-employed, 2.2% public/municipal.

Table 1: Sample distribution by NUTS2 region

NUTS2 Region	n	Share	County/ies
Southern Transdanubia (HU23)	68	21.7%	3 counties
Southern Great Plain (HU33)	60	19.10%	3 counties

1. METHODOLOGY AND DATA QUALITY

NUTS2 Region	n	Share	County/ies
Northern Great Plain (HU32)	49	15.60%	3 counties
Central Transdanubia (HU21)	44	14.00%	3 counties
Western Transdanubia (HU22)	42	13.40%	3 counties
Northern Hungary (HU31)	39	12.4%	3 counties
Pest (HU12) △	6	1.90%	1 counties
Budapest (HU11) △	6	1.90%	1 counties
Total	314	100.00%	20 counties

△ Budapest and Pest county: n=6, statistically unreliable. Source: MGYOSZ–Ökopannon enterprise survey, 2026.

Table 2: Sample distribution by company size

Size Category	n	Share	Employees
Micro-enterprise	115	36.6%	1-9
Small enterprise	100	31.8%	10-49
Medium enterprise	53	16.9%	50-249
Large (250-999)	12	3.8%	250-999
Large enterprise (1000+)	34	10.8%	1000+
Total	314	100.0%	-

Source: MGYOSZ–Ökopannon enterprise survey, 2026.

1.3 STATISTICAL METHODS APPLIED

*Chi-square test (χ^2) for associations between binary and nominal variables; Kruskal–Wallis H-test (KW) for non-parametric testing of Likert-scale questions; Spearman correlation for financial indicators; descriptive statistics for all questions. Significance levels: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; n.s. = not significant.*

2. COMPANY PROFILE AND SUSTAINABILITY INSTITUTIONALISATION

2.1 SUSTAINABILITY STRATEGY (Q5)

Q5: Does your company have a sustainability strategy?

Q5 covers all 314 respondents. 77.1% of companies have some form of sustainability strategy; 22.9% do not. The highest share of unequivocal 'yes' responses is found among micro-enterprises (78.3%), which can be explained by the normative bias typical of self-reported surveys — smaller companies tend to answer simply 'yes', while larger companies differentiate more precisely according to the degree of formalisation.

2.1 SUSTAINABILITY ROLES AND ORGANISATIONAL UNITS (Q6, Q7)

Q6: Does your company have a role dedicated to sustainability?

Q7: Does your company have an organisational unit dedicated to sustainability?

Based on Q6: 72.6% have a sustainability-related role, 17.2% plan to create one, 10.2% do not. Q7 (organisational unit) shows a similar pattern. These figures should be interpreted with the upward bias typical of self-reported data.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

3.1 PROGRAMME AWARENESS (Q13)

Q13: Have you heard of the green transition programme?

264 valid responses. 69.7% of respondents are aware of the programme; 30.3% are not. By NUTS2 region: ranges from 54.8% (Northern Great Plain) to 82.1% (Western Transdanubia) — not significant ($p=0.115$). The effect of company size is significant (* $p=0.015$): 58.3% for micro-enterprises, 90% for large companies.

3.2 PLANNED MEASURES AND BARRIERS (Q14, Q15)

Q14: If you are aware of the programme, do you plan any related measures at your company?

Q15: If you answered yes to the previous question, is there any factor that hinders their implementation?

Among those aware of the programme ($n=211$), 46.9% plan measures. Among those with intent to act ($n=150$), two thirds of companies face some implementation constraint: 42.0% report clear barriers, 26.7% partial barriers, and only 31.3% report no obstacles.

3.3 PERCEIVED CHALLENGE, KNOWLEDGE IMPORTANCE, AND ALIGNMENT (Q17, Q18, Q19)

Q17: To what extent do you perceive achieving sustainability goals as a challenge for your company?

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

Q18: How important do you consider expanding sustainability knowledge?

Q19: To what extent is sustainability knowledge embedded in your company's strategy?

The survey examined companies' relationship with sustainability through three closely interrelated questions: how much of a challenge they perceive it to be (Q17), how important they consider expanding the necessary knowledge (Q18), and how much this knowledge is embedded in corporate strategy (Q19).

The Q17 result (perceived challenge) has a mean of 3.60 (SD: 1.63), indicating a moderate level of challenge perception. However, the distribution is not uniform: responses cluster into two groups (bimodal distribution) and are **strongly dependent on company size. Micro-enterprises perceive a lower average challenge level (2.98), while large companies perceive it as distinctly high (4.61)**. The difference is statistically significant (* $p < 0.001$). This suggests that smaller companies often do not yet face sustainability requirements directly, while large companies already operate under strong regulatory, market, and supply chain pressure.

The Q18 result (importance of expanding knowledge) has a mean of **4.47**, the highest value among the Likert-scale questions examined. More than one third of respondents (**35.2%**) **gave the maximum score**. This clearly indicates that companies widely recognise the importance of sustainability-related knowledge and competencies for the future.

The Q19 mean (knowledge-strategy alignment) is, however, only **3.68**, significantly lower than the Q18 value (** $p = 0.003$ by size; * $p = 0.036$ by region). The nearly one-unit difference between the two values is **one of the study's most important findings**. It means that while companies consider expanding sustainability knowledge important, this knowledge is not consistently embedded in their operations and decision-making.

This 'gap' points to a structural adaptation problem. At the company level, the main obstacle is not a lack of awareness but the fact that knowledge is not being translated into concrete strategy, investment, or organisational practice. This phenomenon is consistent with other findings in the study, particularly the pattern

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

of 'optimistic passivity': companies have a positive outlook and recognise the need for change, but this does not translate into proportionate action.

3.4 DEVELOPMENT ACTIVITY IN THE PAST 3 YEARS (Q20)

Q20: Has your company carried out any green transition-related development/investment in the past 3 years?

60.6% of companies reported completed development. By NUTS2: Northern Hungary (74.2%) and Southern Transdanubia (70.8%) lead; Northern Great Plain (45.2%) lags — not significant ($p=0.108$). The size effect is extremely strong ($*** p<0.001$): 36.1% for micro-enterprises, 96.4% for large companies. This is the most robust finding of the analysis.

Green development activity primarily depends on company size: while large companies have almost universally carried out transition-related investments, a significant proportion of micro-enterprises have not yet taken steps, which represents one of the most important structural constraints on the green transition.

3.5 SUPPORT ACCESS (Q21) AND FINANCING INTENT (Q22)

Q21: Has the company received support for the green transition?

Q22: Do you plan to apply for state support in connection with the green transition?

Only 20.5% of companies have received support; among micro-enterprises, this is 7.4%. The size-dependent difference is $*** p=0.0003$. Regarding future state support, 50.4% are uncertain — signalling the unpredictability of the financing and regulatory environment and a lack of institutional trust. By size: 18.5% of micro-enterprises plan to apply for funding, compared to 60–90% of large companies.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

Access to green support is strongly size-dependent and limited, while more than half of companies are uncertain about future fund acquisition, pointing to transparency and accessibility gaps in the financing system.⁴

3.6 EXPECTED IMPACTS AND LABOUR MARKET EXPECTATIONS (Q23, Q29, Q30, Q37, Q39)

Q23: What impacts do you expect from the green transition at your company over the next 10 years?

Q29: What are your labour market expectations regarding the green transition? Headcount:

Q30: What are your labour market expectations regarding the green transition? Changes in job roles:

Q37: Do you consider it necessary to train/retrain employees in support of the green transition?

Q39: Does your company plan to create new job roles during the green transition?

76.5% of companies expect positive impacts over the next 10 years, but only 11.0% plan to create new roles; only 7.6% forecast headcount growth (Q29). The 57.6% 'yes' rate on Q37 (training need) is strongly significant with a size-dependent gradient (*** $p < 0.001$): 42.6% for micro-enterprises, 96.4% for large companies.

Expected Impacts of the Green Transition and Labour Market Consequences (Q24–Q29)

Questions Q24–Q29 collectively examine the extent to which companies expect positive and negative impacts from the green transition, and how these are reflected

⁴ The high uncertainty rate may reflect several factors, including the complexity of support systems, lack of information, and uncertainties and delays around access to EU funds.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

ted in labour market expectations. The analysis reveals significant differences both by region and by company size.

Companies overall expect more positive than negative impacts, although these tend to be moderate in intensity and are in many cases accompanied by a perception of negative impacts. This indicates that the green transition does not appear as a uniformly positive or negative process, but as a mixed adaptation challenge.

Labour market expectations (Q29) are, however, considerably more subdued: only a small proportion of companies anticipate headcount growth or the creation of new roles. This clearly indicates that positive impact expectations do not automatically translate into employment growth.

Regional Differences

The intensity of impact expectations varies by region. In the Southern Great Plain and, to some extent, the Northern Great Plain, companies perceive higher positive impacts, yet the estimated intensity of negative impacts is also relatively high in these regions. This suggests that in these areas, the green transition appears simultaneously as both an opportunity and a risk.

In Central Transdanubia and Northern Hungary, both positive and negative impact intensity is lower, pointing more to low exposure or delayed adaptation.

Southern Transdanubia presents a more balanced picture, with relatively strong perception of positive impacts and more active labour market expectations.

The regional differences overall indicate that the green transition is not a homogeneous process but is tied to the differing economic structures and adaptive capacities of each territory.

Differences by Company Size

Even more pronounced differences are observed along company size lines. Large companies expect higher-intensity positive impacts, but also perceive negative impacts more strongly. For them, the green transition is an actively managed, complex strategic process that carries both business opportunities and risks.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

Micro-enterprises, by contrast, report both positive and negative impacts with low intensity, suggesting that for them the green transition is still less tangible and often does not appear as a direct business decision factor.

SMEs occupy an intermediate position, but in many cases are closer to the micro-enterprise pattern, particularly regarding labour market expectations.

Labour Market Consequences (Q29)

The Q29 results show that most companies do not anticipate significant headcount growth as a consequence of the green transition. Despite positive impact expectations, the creation of new jobs remains limited.

This confirms one of the study's central findings: the green transition primarily operates through the transformation of existing roles, not through the mass creation of new jobs.

In terms of labour market impacts, data show that the effects of the green transition are simultaneously positive and risk-laden, vary significantly by region and company size, while favourable expectations are only partially reflected in concrete labour market adaptation.⁵

⁵ Responses to Q24–Q26 are recorded on a coded scale (1–10) in the exported database, not as direct percentages, and are therefore treated as intensity indicators in the analysis. For Q25 and Q27, response categories are coded without corresponding text labels, limiting detailed content-level breakdown. Part of the Q24–Q29 questions are filter questions; results therefore apply to relevant subsamples rather than the full sample. Methodological note: Q23, Q29, Q30, Q37 and Q39 were analysed using descriptive statistics; size-based differences were tested with chi-square tests, and Likert-scale variables with Kruskal–Wallis tests, at a 5% significance level.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

3.7 CIRCULAR ECONOMY (Q33–Q36) AND LOCAL FACTORS (Q45)

Table 3: Circular economy dimensions (Q33–Q36)

Question (circular economy)	Yes (%)	No(%)
Q33 – Impact on product design?	41.3%	58.7%
Q34 – Impact on waste recyclability?	60.6%	39.4%
Q35 – Impact on repairability of products?	39.0%	61.0%
Q36 – Impact on reuse of packaging?	60.2%	39.8%

Source: MGYOSZ–Ökopannon enterprise survey, 2026.

The four circular economy questions measure company perception of the green transition across different stages of the value chain. The upstream–downstream distinction is important for interpretation. Product design (Q33) and repairability (Q35) appear at the beginning of the value chain, while waste recycling (Q34) and packaging reuse (Q36) appear at the end.

The Upstream–Downstream Awareness Gap

Among the four dimensions, downstream indicators show substantially higher values: 60.6% of companies perceive an impact on waste recycling (Q34), and 60.2% on packaging reuse (Q36). In contrast, 41.3% indicate change in product design (Q33), and 39.0% in repairability (Q35). This represents a 19–21 percentage-point difference between the beginning and end of the value chain.

This difference is not coincidental. In downstream areas — waste management, packaging — companies have long operated under regulatory pressure. Waste management directives, extended producer responsibility (EPR), and packaging regulations have been in place and enforceable for decades. Companies know these because they have had to adapt.

Upstream dimensions — product design and repairability — belong to the new wave of EU regulation that began in 2024. The survey data suggest that companies are less prepared for these.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

Hungary's Circular Performance — European Context

There is a measurable gap between company perception and actual performance. According to European Environment Agency (EEA, 2024) data, Hungary's circular material use rate is 6.8%, and material productivity is USD 1.8/kg. This is significantly below the EU average of USD 2.9/kg.

Across the EU as a whole, the circular material use rate was 12.2% in 2024, representing only slow improvement from 10.7% in 2010. This also justifies the European Commission's plan to adopt a binding Circular Economy Act in 2026. [EU7]

Hungary's 6.8% figure is approximately half the EU average, while 60% of companies perceive the importance of waste recycling. This is a classic perception–performance gap: perception is positive, but actual transformation is slower.

This picture is further nuanced by two significant, regulation-driven developments in 2023–2024. From 1 July 2023, Hungary launched the concession-based extended producer responsibility (EPR) scheme, operated by MOL Waste Management Ltd. (MOHU) under a profit-oriented concession framework. The new system fundamentally transformed waste management obligations for producers and distributors, particularly for packaging, plastics, electronics, and other product streams.

Building on this, from 1 January 2024 — also as part of the MOHU concession system — Hungary launched a mandatory deposit return scheme (DRS), introducing a deposit-based collection system for glass, plastic, and metal beverage packaging nationwide. Producers were required to register in the MOHU system from April 2023. The introduction of the DRS triggered direct and enforced adaptation from companies, partly explaining the high Q36 value (60.2%). This clearly demonstrates that corporate behaviour responds strongly to regulatory and economic incentives, especially when these appear within mandatory and centralised concession frameworks. [EU7]

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

The EU's 2024 Regulatory Wave — Strengthening the Upstream Dimensions

The survey period coincided with EU regulation beginning to mandatorily target upstream dimensions as well.

The Ecodesign for Sustainable Products Regulation (ESPR) entered into force in July 2024. It provides a new framework for product design and broadly extends requirements for durability, reparability, and recyclability.

The prohibition on destroying unsold products applies to large companies from 2026 and to medium-sized companies from 2030.

The Right to Repair Directive also entered into force in 2024, obliging manufacturers to provide for repair and incentivising repair over replacement. In parallel, the new Packaging and Packaging Waste Regulation (PPWR) introduces mandatory reuse targets. [EU8, EU9, EU10]

This means that the low values for Q33 and Q35 signal not only low awareness, but also approaching compliance pressure. Upstream dimensions will progressively become mandatory from 2026.

Link to the Labour Market

There is a direct connection between the circular economy dimensions and labour market trends.

The 39% value for Q35 (reparability) points to a specific future labour market impact. The goal of the Right-to-Repair initiative is to make repair economically viable and to create new jobs. Related training programmes and repair systems have demonstrably created employment in several countries. In Hungary, the directive must be transposed by 31 July 2026, which presents a direct training challenge. [EU9, I8]

Q33 (product design) also requires new professional roles. The ESPR introduces digital product passports and new ecodesign requirements. These demand professions that barely exist in Hungary.

3. QUESTION-BY-QUESTION ANALYSIS OF THE GREEN TRANSITION

OECD (2024) data show that green job scarcity in Hungary is 88%. The circular economy-related professions are precisely among the most scarce areas.

The two findings together give a clear message: companies are least prepared in precisely those areas where most new jobs will be created.

Q45 and the Local Dimension

Q45 measures the impact of local and social factors on investments, and is closely linked to the circular economy. Both point to connections with local value chains.

42.0% of respondents to Q45 answered yes; in Southern Transdanubia this rises to 50.0% — the region with the most developed circular industry infrastructure.

For large companies, the indicator is 67.9%, consistent with the fact that they are the direct addressees of regulations. This reinforces the general pattern: large companies respond proactively to regulatory changes; smaller ones less so.

Summary

The circular economy analysis connects trends and the foresight framework well. The EU's new regulations — ESPR, Right-to-Repair, PPWR — are directly linked to energy efficiency, supply chain transformation, and regulatory uncertainty.

This also means that the circular economy is not just a corporate-level adaptation question, but also an advocacy challenge. MGYOSZ's room for manoeuvre lies primarily in preparing SMEs and shaping national and European regulation, particularly in relation to the 2026 deadlines.

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Table 4: Aggregate KPIs — main indicators of the green transition

Indicator (question)	Value	Valid n
Aware of green transition programme (Q13)	69.7% (Yes)	264
Plans measures — among those aware (Q14)	46.9% (Yes)	211
Development/investment in past 3 years (Q20)	60.6% (Yes)	264
Received state/EU support (Q21)	20.5% (Yes)	264
Plans to apply for state support (Q22)	40.2% Yes; 50.4% uncertain	264
Expects positive impacts over next 10 years (Q23)	76.5% (Positive)	264
Considers employee training necessary (Q37)	57.6% (Yes)	264
Plans to create new roles (Q39)	11.0% (Yes)	264
Local factors influence investment (Q45)	42.0% (Yes)	264
Has sustainability strategy (Q5, any form)	77.1%	314
Perceives sustainability as challenge (Q17, 1–6)	Mean: 3.60; SD: 1.63	264
Considers expanding knowledge important (Q18, 1–6)	Mean: 4.47; SD: 1.59	264
Knowledge–strategy alignment (Q19, 1–6)	Mean: 3.68; SD: 1.47	264

Source: MGYOSZ–Ökopannon enterprise survey, 2026. Likert means on 1–6 scale.

4. SUMMARY STATISTICAL TABLES

Table 5: Key indicators by NUTS2 region

NUTS2	Q13%	Q20%	Q21%	Q23%	Q37%	Q45%	Q17	Q19
S. Transdanubia	81.2	70.8	20.8	72.9	72.9	50.0	3.73	4.06
S. Great Plain	68.4	64.9	29.8	82.5	49.1	42.1	3.44	3.47
N. Great Plain	54.8	45.2	14.3	81.0	54.8	45.2	3.43	3.93
C. Transdanubia	63.9	58.3	13.9	75.0	58.3	38.9	3.56	3.72
W. Transdanubia	82.1	53.8	20.5	69.2	53.8	35.9	3.74	3.44
N. Hungary	64.5	74.2	19.4	74.2	61.3	45.2	4.03	3.81
Budapest [△]	80.0	60.0	20.0	80.0	40.0	20.0	4.20	3.60
Pest [△]	66.7	33.3	16.7	83.3	50.0	16.7	2.00	1.67

[△] Budapest and Pest: n=5–6, indicative only. Q17 and Q19: Likert mean (1–6). Source: Ökopannon, 2026.

Table 6: Key indicators by company size category

Size category	Q13%	Q20%	Q21%	Q23%	Q37%	Q39%	Q17	n
Micro (1-9)	58.3	36.1	7.4	67.6	42.6	0.9	2.98	108
Small (10-49)	75.3	67.1	28.8	82.2	54.8	9.6	3.68	73
Medium (50-249)	80.0	80.0	33.3	84.4	66.7	22.2	4.16	45
Large (250-999)	90.0	90.0	40.0	90.0	90.0	30.0	4.40	10
Large enterprise (1000+)	75.0	96.4	21.4	78.6	96.4	28.6	4.61	28

Source: MGYOSZ–Ökopannon enterprise survey, 2026.

4. SUMMARY STATISTICAL TABLES

Table 7: Summary of chi-square and Kruskal–Wallis tests

Variable	Test (NUTS2)	p-value	Sig.	Test (Size)	p-value	Sig.
Programme awareness (Q13)	chi ²	0.1153	n.s.	chi ²	0.0153	*
Development last 3 years (Q20)	chi ²	0.1076	n.s.	chi ²	<0.001	***
Received support (Q21)	chi ²	0.6486	n.s.	chi ²	0.0003	***
Positive impact expectation (Q23)	chi ²	0.8452	n.s.	chi ²	0.0678	n.s.
Training necessity (Q37)	chi ²	0.3685	n.s.	chi ²	<0.001	***
Local factors (Q45)	chi ²	0.6745	n.s.	chi ²	0.0171	*
Perceived challenge Q17 (Likert)	KW	0.2698	n.s.	KW	<0.001	***
Importance of knowledge Q18 (Likert)	KW	0.9895	n.s.	KW	0.0132	*
Knowledge–strategy alignment Q19	KW	0.0359	*	KW	0.0025	**

chi² = chi-square test; KW = Kruskal–Wallis H-test. *** p<0.001; ** p<0.01; * p<0.05; n.s. = not significant.

5. ECONOMIC LINKAGES (Q8)

Q8 examines companies' value added per employee — an important indicator of productivity. 133 valid responses were received, approximately 42% of the total sample. Results should therefore be interpreted with caution: the data are not comprehensive but are suitable for indicating main patterns.

The distribution is strongly asymmetric. Average value added is HUF 27.4 million/person/year, while the median is only HUF 3.0 million. This means that most of the sample consists of lower-productivity companies, but a few very high values significantly pull the average upward. In other words, corporate productivity is highly concentrated, with significant differences between firms.

The relationship between productivity and green development activity was examined using Spearman correlation. The result ($r = -0.018$; $p = 0.846$) shows no statistically demonstrable relationship between the two variables. In other words, higher-productivity companies do not necessarily undertake more green investment, and lower productivity does not preclude such developments.

This leads to an important conclusion. Participation in the green transition is not determined solely by economic performance. Based on earlier results, firm size, regulatory exposure, and access to support appear to be far stronger factors. In other words, green investments do not follow the simple logic of 'the wealthier, the greener', but are influenced by institutional, financial, and size-related factors.

In the macroeconomic context, this is consistent with one of the structural challenges of the Hungarian labour market. According to Eurostat (2023) data, adult learning participation in Hungary is 7.9%, below the EU-27 average of 11%. This suggests that companies — regardless of their productivity level — operate with limited training capacity. This may contribute to the slower implementation of the labour market dimension of the green transition.

5. ECONOMIC LINKAGES (Q8)

Productivity alone does not explain green development activity; participation in the green transition is more strongly determined by institutional, financial, and size-related factors.

6. POLICY CONCLUSIONS

6.1 FIRM SIZE IS THE STRONGEST PREDICTOR OF GREEN TRANSITION ENGAGEMENT

Size significantly determines almost every green indicator examined. The 60 percentage-point difference in development activity between micro-enterprises (36.1%) and large companies (96.4%) is the most robust finding of the analysis. Consistent size-dependent variable: programme awareness (58%→90%), training willingness (43%→96%), perceived challenge (2.98→4.61), knowledge–strategy alignment (3.38→4.36).

Policy implication: A differentiated approach is required by size category. For micro-enterprises, raising awareness is insufficient: targeted financial and technical support with low administrative burden is needed.

6.2 SUPPORT ACCESS IS SIZE-DEPENDENT AND TERRITORIALLY UNEQUAL

The rate of support received (20.5%) is low; for micro-enterprises, 7.4%. The high share of uncertain responses (50.4%, Q22) signals a communication gap. The Northern Great Plain shows a double disadvantage: low development activity (45%) and programme awareness (55%). The GINOP Plus 3.2.4-23 programme's 52% success rate indicates a lack of administrative capacity.

Policy implication: Simplification and territorial decentralisation of the financing system is particularly warranted in the Northern Great Plain and Northern Hungary regions. MGYOSZ as an employer organisation can play a valuable intermediary role.

6. POLICY CONCLUSIONS

6.3 OPTIMISTIC PASSIVITY: HIGH EXPECTATIONS, LOW INTENT TO ACT

The gap between 76.5% positive impact expectations (Q23) and 11% intent to act (Q39) is a systematic cognitive pattern. According to the World Café, this is reinforced by uncertainty and trust deficit: lack of information and an unpredictable regulatory environment lead to decision deferral.

Policy implication: Raising awareness is insufficient — interventions must remove barriers between the planning and implementation phases.

6.4 SOUTHERN TRANSDANUBIA AS MOST AFFECTED, NORTHERN GREAT PLAIN AS INTERVENTION PRIORITY

Southern Transdanubia consistently leads in measured green transition indicators — programme awareness (81.2%), development activity (70.8%), training willingness (72.9%), knowledge–strategy alignment (4.06/6). This finding, however, requires interpretive caution: the region is economically one of the most disadvantaged in Hungary, and Ökopannon's network presence may cause overrepresentation in the sample. The high indicators may partly reflect structural adaptation pressures on the JTF region (Baranya), not just company capacity. The Northern Great Plain, by contrast, is the only region where programme awareness falls below 55% and development activity is also lowest (45.2%), while positive impact expectations are high (81.0%) — the clearest regional manifestation of optimistic passivity.

Policy implication: For the Northern Great Plain, intervention is urgent and concrete: targeted programme awareness campaigns, simplified fund access points, and direct outreach through existing employer networks (MGYOSZ member organisations, chambers) are warranted. For Southern Transdanubia, a more cautious approach is needed: the background to the high indicators — particularly whether they stem from company capacity or external compulsion — cannot be treated as a replicable model without deeper qualitative investigation. In the meantime, the documented experiences of the JTF process (Baranya) can offer valuable lessons for other affected regions.

7. FORESIGHT INTERPRETIVE FRAMEWORK

7.0 METHODOLOGICAL INTRODUCTION

This chapter connects the results of three methodological sources. First, the measured data from the enterprise survey; second, the trends and drivers identified during the regional scenario planning workshops; and third, the labour market and social impact analysis from the World Café workshop.

The findings of the foresight chapter are not forecasts but interpretive frameworks. It examines how the survey results and secondary data confirm or nuance the trends identified through systems thinking in the workshops.

The chapter's aim is to connect the different methods — data-driven analysis and expert, future-oriented approaches — within a common interpretive framework.

The results of the analysis reflect not only a current state but a structural transitional phase whose outcome carries significant uncertainty. Based on current patterns, it is not a single, unified transition that emerges, but multiple, parallel adaptation pathways.

7.1 THE 5 WORKSHOP TRENDS — WITH SURVEY EVIDENCE

Table 8: The 5 workshop trends and their relationship to the enterprise survey

Workshop trend	Survey coverage	Survey evidence	Supplement from secondary source
1. Transformation of labour markets and skills systems	Direct	Q37: 57.6%; Q39: 11%; Q18–Q19 gap (4.47 vs. 3.68). *** $p < 0.001$.	Industry differentiation; regional training capacity (Q3 blind spot)

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Workshop trend	Survey coverage	Survey evidence	Supplement from secondary source
2. Increasing complexity of energy supply	Incomplete	Partially through Q33–Q36 circular economy dimensions	Energy market liberalisation; distribution costs — full desk research
3. Growing competitiveness pressures	Direct	Q20: micro 36.1% vs. 96.4%; Q21: 20.5%; Q22: 50.4%. *** p<0.001.	Technology ROI; tariffs, protectionism
4. Reconfiguration of supply chains	Partial	Q45: 42.0% signals local factor impact; Q34/Q36 circular.	Transport mode choice; food production localisation
5. Changing predictability of the policy and regulatory environment	Indirect	Q22: 50.4% uncertainty; Q21 low SME access (7.4%).	Lobbying interests; support policy focus areas

Direct = survey data directly measure firm behaviour linked to this trend; Partial = indirect data; Incomplete = desk research required.

Trend 1: Transformation of labour markets and skills systems

The enterprise survey supports this trend most strongly. Based on Q37, 57.6% of companies consider training or retraining of employees necessary, yet only 11% plan to create new roles (Q39). This means companies recognise the need for skills development, but this is not accompanied by any meaningful expansion of the workforce.

The knowledge–strategy gap (Q18: 4.47 vs. Q19: 3.68) reinforces this further. The importance of sustainability knowledge is acknowledged, but this is not consistently embedded in company operations. This points to organisational learning lag.

International data support this picture. Cedefop (2024) indicates that the gap in green skills is particularly significant among SMEs in Hungary. Based on OECD (2024) data, green occupations have 88% more job postings per employed person than average occupations (OECD average: 29%). This clearly signals a tight market characterised by labour shortages.

Trend 2: Increasing complexity of energy supply

The enterprise survey does not contain direct data on energy supply, though the circular economy dimensions (Q33–Q36) indirectly touch on this area.

Based on external sources, energy supply is one of the most important sources of uncertainty. According to the OECD Economic Survey Hungary (2024), Hungary's green transition needs to be accelerated, particularly in wind and geothermal energy. Eurostat (2025 H1) data show that in certain industrial consumption bands, Hungary has the highest electricity prices in the EU.

This duality — limited renewable capacity and high industrial energy prices — represents a direct competitiveness risk for companies.

One of the most concrete dimensions of Trend 2's complexity is the asymmetry between the rapid expansion of weather-dependent renewable energy production and the level of development of energy storage infrastructure. Hungary's installed solar capacity reached 8,588 MW by end of April 2026, representing 53.2% of total domestic installed capacity — and by the share of solar in electricity generation, Hungary ranks among Europe's leading countries. This very rapid expansion, however, creates structural tensions: production is weather- and time-of-day-dependent, peak production and actual consumption demand do not coincide, and the grid — originally fed by a few large power plants — is today loaded by hundreds of thousands of households feeding back into the network.

Battery storage capacity grew from 35.3 MW at end-2024 to 217.4 MW in early 2026 — a spectacular expansion, but still far from what is needed. The National Energy and Climate Plan (NEKT) sets a target of 1 GW of dispatch capacity by 2030, which is only approximately 12% of current solar capacity. The distance between current and required capacity suggests that developing storage infrastructure will remain a bottleneck of the energy system for years — and directly influences corporate investment decisions: grid stability uncertainty is one of the most important reasons energy-intensive sectors are waiting before making green investments [S7].

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Trend 3: Growing competitiveness pressures

Competitiveness pressures in the survey primarily appear along firm size lines. Green development activity is strongly size-dependent (***) $p < 0.001$: there is a significant difference between micro-enterprises and large companies. This signals asymmetric competitiveness loading.

This pattern is also supported by external data. Only 21.2% of Hungarian SMEs have carried out business process innovation, compared to the EU average of 41.2% [S3]. Financing differences are also significant: access to support for micro-enterprises is 7.4%, while for large companies it is much higher (Q21). Additionally, 50.4% of companies are uncertain about future fund acquisition (Q22).

This means that the costs and opportunities of the green transition are not equally distributed, which may lead to widening competitiveness disparities.

Trend 4: Reconfiguration of supply chains

The survey only partially covers this trend. Based on Q45, 42.0% of companies perceive the impact of local factors on investment decisions. Downstream circular economy dimensions also signal connections to supply chains. The World Café workshops complement this: greening in practice often occurs under customer pressure, while price remains the determining factor in procurement. This means sustainability considerations are secondary in many cases.

The JTF-affected regions provide concrete examples of what this means in practice.

In Heves county, the transformation of the industrial ecosystem built around the Mátra power plant is underway. The lignite phase-out affects not only the power plant but the entire local supplier system. The uncertainty around the timing of the transition — with the deadline shifted from 2025 to 2029 — also risks access to financing. [I1, EU2, EU3, H1]

In Baranya, change occurs through the building materials industry. The cement industry transition is not just a matter for one company, but affects the entire

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local value chain, from mining through logistics to municipal revenues. The shift to alternative fuels has already begun, but creates new supplier and training needs. [S1]

In Borsod-Abaúj-Zemplén, the situation is even more complex: the lignite phase-out and the chemical industry restructuring are happening simultaneously. Here, supply chain transformation means the restructuring of an entire industrial ecosystem.

The three examples together show that supply chain transformation is not just a technological issue. Local employment, tax revenues, and SME networks are also transforming. This is one of the greatest risks of the just transition.

Trend 5: Changing predictability of the policy and regulatory environment

The impact of the regulatory environment is primarily manifested through uncertainty. 50.4% of companies are uncertain whether they will be able to access support in the future (Q22), while micro-enterprise support access is only 7.4% (Q21).

This points to limitations in the support system and a lack of predictability. According to CEE Bankwatch, Hungary accesses JTF resources under a conditional agreement, which increases implementation uncertainty. The repeated postponement of the Mátra power plant transformation is a concrete example of this.

7.2 LABOUR MARKET AND SOCIAL IMPACTS OF THE 5 TRENDS — WORLD CAFÉ

Table 9: Labour market and social impacts of the 5 trends — World Café summary

Trend	Labour market opportunities	Labour market tensions	Social impacts
1. Labour & training	Demand: highly skilled + green/digital competence; competency-based selection grows	Skills gap deepens; low-skilled may be displaced; training system slow to respond	Polarisation: growing divide between skilled and less skilled groups
2. Energy supply	New energy and energy efficiency professions	High uncertainty; opaque system	Energy poverty risk; unequal household adaptation
3. Competitiveness	Job transformation at adaptive companies; new green roles	SMEs particularly vulnerable; high investment and admin burdens	Income disparities grow; transitional losers; distrust
4. Supply chains	Green logistics and localised production roles; high value added	Greening under customer pressure; price dominates procurement	Local economy may strengthen; not all actors can participate
5. Policy & regulation	Stable regulation enables more long-term green investment	Unpredictability defers decisions; project-based employment grows	Social polarisation if green transition becomes a political fault line

Source: Summary of World Café workshop findings. Qualitative, based on participant knowledge.

CROSS-CUTTING LABOUR MARKET AND SOCIAL PATTERNS

Spanning across trends, the World Café identified five structural phenomena, each directly readable alongside the survey data:

- Growing labour market polarisation: high vs. low skilled; adapters vs. laggards.
- Competency-centred transformation: knowledge and skills become the most important resource.

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- Adaptive capacity as a key factor: significant differences between individuals, companies, and institutions — paralleling the size-dependent differences identified in the survey.
- Uncertainty and trust deficit: this explains the underlying cognitive mechanism behind optimistic passivity.
- Dual impact: the green transition simultaneously increases competitiveness and social risks.

7.3 CROSS-CUTTING PATTERNS: READING THE TWO METHODS TOGETHER

Table 10: Reading the enterprise survey and World Café together

Phenomenon	Survey evidence	World Café finding	Cross reading
Skills gap and training paradox	Q37 (57.6%) vs. Q39 (11%) — measured gap	Slowly responding training system; need for competency-based transformation	STRONG AGREEMENT
SME vulnerability	Q20: micro 36% vs. large 96%; Q21: 7.4% micro access	SMEs particularly vulnerable in competitiveness pressure	STRONG AGREEMENT
Optimistic passivity / trust deficit	Q23 (76.5%) vs. Q39 (11%) — measured cognitive gap	Uncertainty and trust deficit; deferral of decisions	COMPLEMENT — World Café explains survey pattern
Regional differences	Consistent but statistically n.s. NUTS2 differences	Not all actors can connect to the local economy	PARTIAL AGREEMENT
Customer pressure in supply chains	Q45 partial signal (42%)	Greening under customer pressure; price dominates procurement	World Café UNIQUE CONTRIBUTION
Energy poverty risk	No survey data	Unequal adaptive capacity; energy poverty	World Café UNIQUE CONTRIBUTION
Industry differentiation	Q3 coding blind spo	Sectoral impacts not detailed	SHARED BLIND SPOT

STRONG AGREEMENT = both methods identify; COMPLEMENT = one explains the other's pattern; World Café UNIQUE = only workshop identifies; SHARED BLIND SPOT = neither covers adequately.

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Points where the two methods do not reinforce each other require explanation: A proportion of micro-enterprises lack the capital, capacity, or digital infrastructure needed to enter new, greener supply chains. In practice, this means they cannot meet the ESG expectations or quality certification requirements of larger buyers. A similar constraint appears in the labour market. Lower-skilled workers cannot necessarily transition from disappearing traditional roles into new green logistics or localised production roles, as these require different skills. This is consistent with Cedefop findings that during the green transition, skills requirements change faster than training systems' adaptive capacity. Territorial differences reinforce this further. Peripheral areas and smaller enterprises — particularly in the Northern Great Plain and Northern Hungary — are also disadvantaged in terms of infrastructure and social capital.

This means that localisation is not automatically an inclusive process: benefits typically accrue to those already closer to the necessary resources and conditions.

Differential Adaptive Capacity and Energy Poverty

The risk of energy poverty in Hungary presents a seemingly contradictory picture at first glance. In international comparison, Hungarian households report heating difficulties at relatively low rates — in some surveys as low as 7%, well below the EU average.

However, this favourable picture does not stem from households' high income levels, but primarily from regulated, artificially low energy prices. According to Eurostat data, household electricity prices in Hungary were among the lowest in the EU in the second half of 2023, while in several Western European countries they were several times higher.

This situation carries risk for the green transition. Any restructuring of the energy market — for example, incorporating real costs or network development into prices — may most affect the most vulnerable households. Regional analyses suggest that households in the eastern part of the country — particularly in Northern Hungary and the Great Plain regions — are more vulnerable to changes in energy prices, with energy costs representing a higher burden for lower-income groups. [S7]

Based on this, the risk of energy poverty appears not primarily in the current situation, but in the transition process itself: when regulations change, those groups least able to adapt will face the greatest hardship.

The most important message of the table is that both methods consistently identify the two-speed transition and optimistic passivity. The survey quantifies these; the World Café methodology provides the explanation.

Energy poverty risk and customer pressure are the World Café’s unique contributions. The shared blind spot is the detailed differentiation of industry-level impacts.

7.4 DRIVER AND IMPACT-UNCERTAINTY MATRIX

Table 11: Key drivers — 3,3 zone (high impact, high uncertainty)

Driver	Impact	Uncert.	Trend	Survey / WC coverage
Energy market liberalisation	3	3	2 Energy	Not covered by survey — desk research required
Energy distribution costs	3	3	2 Energy	World Café: energy poverty risk; desk research
Feasibility of international targets	3	3	5. Policy	Not covered by survey — desk research required
Poor development priorities	3	3	3. Competitiveness	Indirect: Q23 vs. Q20 tension
Level and accessibility of support	3	3	3. Competitiveness	DIRECT: Q21 (20.5%; micro 7.4%), Q22 (50.4%)
Level of state counter-interest	3	3	5. Policy	World Café: trust deficit and decision deferral

3,3 zone = most important advocacy target; simultaneously high impact and high unpredictability.

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Table 12: Important drivers — 3,2 zone (high impact, lower uncertainty)

Driver	Impact	Uncert.	Trend	Survey / WC coverage
Skilled labour shortage	3	1	1. Training	DIRECT: Q37 (57.6%); WC: competency-based transformation
Number of available training programmes	3	1	1. Training	DIRECT: Q37 x size *** significant
Modernisation of vocational training	3	1	1. Training	Q19 knowledge–strategy gap (4.47 vs. 3.68)
Supply chain buyer expectations	3	1	4. Supply chain	PARTIAL: Q45; World Café: customer pressure
Fossil fuel subsidies	3	1-2	2 Energy	OECD survey: wind, geothermal unexploited
Energy price level and predictability	2-3	2	2 Energy	Eurostat: outstanding prices in industrial bands

Source: workshop summary + enterprise survey + World Café + secondary research

7.5 COMPANY-LEVEL STRUCTURAL PATTERNS

- Two-speed green transition (very strong):** The extremely strong difference in green development activity (micro: 36.1% vs. large: 96.4%, *** $p < 0.001$) shows that the green transition is not a uniform process within the business sector. Large companies have almost universally undertaken transition-related developments, while a significant proportion of micro-enterprises have not yet moved in this direction. This 'two-speed' operation is one of the basic mechanisms behind competitiveness disparities: large companies are simultaneously better able to adapt and to turn the transition to their advantage, while the lagging of smaller firms is structurally reproduced.
- Optimistic passivity (very strong):** 76.5% of companies expect positive impacts from the green transition (Q23), yet only 11% plan to create new roles (Q39). This duality indicates that positive expectations do not translate into concrete company steps. Companies are fundamentally optimistic about the future, but this optimism is not accompanied by active adaptation. The trust

7. FORESIGHT INTERPRETIVE FRAMEWORK

deficit narrative emerging in the World Café workshops further nuances this: companies wait because they perceive the environment as uncertain, making action deferral a rational decision.

- **Financing bottleneck (strong):** Only 20.5% of companies have accessed green transition-related support; for micro-enterprises this is just 7.4% (** $p=0.0003$). This shows that the financing system does not reach the business sector equally. The limited access to funds directly affects the implementation of green developments, particularly for smaller companies. This pattern is one of the most concrete, empirically supported manifestations of the competitiveness driver identified earlier.
- **Knowledge–strategy gap (strong):** There is a difference of nearly 0.8 units between the assessment of sustainability knowledge importance (Q18: 4.47) and its strategic embeddedness (Q19: 3.68) (** $p=0.003$). This indicates that company awareness is high, but this is not fully reflected in their operations. In other words, companies 'know what should be done', but this knowledge has not yet become organisational practice. This phenomenon is one of the key constraints on organisational adaptation and is closely linked to training and capacity deficiencies.
- **Regional differences (consistent, but not significant):** Regional differences are not statistically significant in all cases, but patterns consistently recur. Southern Transdanubia shows a more favourable position on several indicators, while the Northern Great Plain consistently performs weaker. These differences are not isolated phenomena but appear in all major trends and in the World Café results. This suggests that the territorial dimension of the green transition is real, even if the available sample does not always allow statistical proof.

7.6 SCENARIO SKETCHES

The three scenarios are based on the two most robustly measured uncertainty axes: X = SME adaptive capacity (Q20, Q37, Q21 data); Y = effectiveness of the state support system (Q21, Q22 data + World Café trust deficit).

Table 13: The scenario matrix

SME adaptation vs. Support	Support system WORKS	Support system DOES NOT WORK
SMEs catch up	Accelerated transition (low probability)	Partial transition (less likely)
SMEs fall behind	Two-speed economy (CURRENT MOST LIKELY)	Stalled transition (risk pathway)

Top-left quadrant (SMEs catch up + support does not work) is structurally unlikely.

Scenario 1: Accelerated Transition

Conditions: The support system simplifies and reaches the SME sector; regulatory pressure reaches micro-enterprises. Micro and small enterprises gradually enter: investment rate rises from 36% toward 55–60%. Training need (Q37: 57.6%) translates into actual retraining programmes. Trust deficit identified by World Café dissolves. Probability: low to moderate. Conditions needed are currently absent.

Scenario 2: Two-Speed Green Transition — Current Most Likely

Conditions: Current drivers and patterns continue roughly on the current trajectory. Large companies complete the green transition; the SME sector is characterised by at most moderate activity growth. Employment structure becomes dual. Optimistic passivity and trust deficit persist. Labour market polarisation identified by World Café strengthens. Probability: high. The current size-dependent gradient and low SME access point in this direction.

Scenario 3: Stalled Transition

Conditions: Regulatory uncertainty increases, the financing system does not reform, external economic shock reduces investment willingness. Growth of green investments stalls; optimistic passivity becomes a widespread equilibrium. Energy poverty risk and social distrust signalled by World Café strengthens. Probability: moderate. Low SME access and the conditionality of €250.6M JTF indicate this risk pathway.

8. SECONDARY RESEARCH — SUPPLEMENTARY EXTERNAL DATA SOURCES

8.0 PURPOSE OF THE SECONDARY RESEARCH

This chapter supplements the foresight interpretive framework of previous chapters with external, primarily European institutional data sources. The secondary research serves a dual purpose. First, it supports the trends identified in workshops where the enterprise survey contains no direct data — particularly for Trends 2 and 5. Second, it places the survey results in a European and OECD-level context.

8.1 GREEN LABOUR MARKET AND TRAINING CAPACITY (TREND 1)

Green Job Scarcity — OECD 2024

The key finding from the OECD 2024 Job Creation and Local Economic Development (Hungary country note): in Hungary, green occupations have on average 88% more job postings per employed person than average occupations — compared to an OECD average of 29% [1].

Table 14: Green labour market scarcity by region (OECD, 2024)

Region / level	Green labour market scarcity (above-average postings/employed)	Interpretation
Southern Great Plain (HU33)	128%	Highest scarcity — paradox: low development activity in survey
National average	88%	Triple OECD's 29% average — structural shortage
Budapest (HU11)	33%	Lowest scarcity regionally

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Region / level	Green labour market scarcity (above-average postings/employed)	Interpretation
OECD average (comparison)	29%	Hungary: nearly triple relative scarcity

Source: OECD (2024), Job Creation and Local Economic Development 2024 – Hungary Country Note. [S1]

The Southern Great Plain's 128% value is particularly noteworthy: it is the region where programme awareness and development activity are low in the survey, but positive impact expectations are high. The OECD data reveal what lies behind the paradox: it is precisely in this region where the green labour market is tightest, simultaneously signalling both opportunity and capacity shortfall.

Cedefop European Skills Index 2024

Hungary ranks 13th (out of 27 EU Member States), improving by 6 places since 2017. However, it is at the bottom in two indicators: adult learning participation (7.9%, 26th place) and early training leavers (6.9%, 27th place). This macroscopically confirms the Q37–Q39 paradox: intent is high (57.6%), but system capacity is structurally limited.

Table 15: Hungary's key indicators in the Cedefop European Skills Index 2024

Indicator	Value	EU 27 ranking
Overall ranking	13th place	2017: 19th place — improved by 6
Training participation (recent training)	7.9%	26th place — bottom quarter of EU-27
Early training leavers	6.9%	27th place — last place
Qualification mismatch	21.3%	3rd place — among best
VET participation	49.7% (2022)	Strong improvement since 2015 (23.2%)

Source: Cedefop European Skills Index Technical Report (2024).

8.2 ENERGY PRICES AND PACE OF TRANSITION (TREND 2)

Eurostat's latest energy price statistics (nrg_pc_205, 2025 H1) present a seemingly contradictory picture. For household consumers, Hungary has the EU's lowest electricity prices (10.40 EUR/100 kWh) — a result of price subsidies. However, in certain industrial consumption bands (500–2000 MWh/year), Hungary shows the highest non-household electricity prices in the EU. This scissor effect is one of the most important economic drivers of Trend 2.

According to the OECD Economic Survey Hungary 2024, Hungary's green transition needs to be accelerated. The current energy strategy (NECP 2024) focuses on solar and biomass, while wind and geothermal energy remain unexploited. The lag in grid investment hinders the integration of intermittent renewables. [S1]

8.3 SME COMPETITIVENESS AND FINANCING ABSORPTION (TREND 3)

Based on Eurostat/KSH 2020–2022 data, only 21.2% of Hungarian SMEs have carried out business process innovation, compared to the EU average of 41.2% — a 20 pp gap, 25th place in the EU. This figure directly confirms externally the survey's size-dependent development activity divide.

Table 16: GINOP Plus SME programme absorption data (2023–2024)

Programme	Target area	Applications	Supported	Success rate
GINOP Plus 3.2.4-23 (SME capacity)	N. Hungary, N. & S. Great Plain, S. Transdanubia	1,080	560 (352 EU + 208 domestic)	51.9%
GINOP Plus 2.1.3-24 (SME innovation)	Whole Hungary	N/A	~3,700 expected	N/A (HUF 75bn budget)

Source: OFA Nonprofit Kft. (2024), GINOP Plus 3.2.4-23 programme summary; NKFI Office (2024), GINOP Plus 2.1.3-24 call.

8. SECONDARY RESEARCH — SUPPLEMENTARY EXTERNAL DATA SOURCES

GINOP Plus 3.2.4-23's 51.9% success rate (560/1080) suggests that the complexity of application conditions and the lack of administrative capacity represent a real barrier — consistent with the survey's Q22 result (50.4% uncertain about future access). [H5]

8.4 JTF TERRITORIAL PLANS AND SUPPLY CHAIN TRANSFORMATION (TREND 4)

Table 17: Hungary's JTF allocation and transition challenges by region

Region (NUTS2)	Main challenge	JTF allocation	Main use
Baranya (HU23)	Cement industry decarbonisation	~€83M	Skills development, enterprise development
Heves (HU31)	Mátra power plant lignite phase-out	~€84M	Retraining, renewable energy
Borsod-A.-Z. (HU31)	Chemical industry and lignite	~€84M	Diversification, SME development
Total	3 regions	€250.6M	~19% for retraining (€48M) — outstanding in CEE

Source: CEE Bankwatch Network (2023), Following the Money – Hungary.

According to the CEE Bankwatch assessment, Hungary's JTF plans barely finance social aspects — the bulk of resources go to economic and environmental projects, while worker retraining is underfunded. Hungary's heavy industry monosectoral model (particularly in Borsod) may persist despite JTF investment if local diversification does not receive priority — this is one of the concrete territorial risks of the stalled transition scenario [EU2].

8.5 POLITICAL AND REGULATORY RISKS (TREND 5)

The CEE Bankwatch analysis documents that Hungary received its JTF allocation of €250.6 million under a conditional agreement — full disbursement depends on EU rule-of-law conditions (judicial independence, academic freedom). This regula-

8. SECONDARY RESEARCH — SUPPLEMENTARY EXTERNAL DATA SOURCES

tory uncertainty is direct external confirmation of the 3,3 driver (state counter-interest and reliability of support). The extension of the Mátra power plant's operating licence until 2029 as a political decision shifted the lignite phase-out timeline — the clearest Hungarian illustration of Trend 5.

MGYOSZ as a social partner is entitled to a seat at the table for strengthening the JTF social component. This is the most direct advocacy intervention point in the 3,3 zone.

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Table 18: Labour market and social impacts of the 5 green transition trends — summary

Trend	Labour market impacts	Social impacts	Data evidence
1. Transformation of labour markets and skills systems	Deepening skills gap; displacement of low-skilled; slowly responding training system	Labour market polarisation; skilled vs. less skilled; regional differences	Q37: 57.6% vs. Q39: 11%; OECD: 88% green scarcity; Cedefop ESI: 26th
2. Increasing complexity of energy supply	Energy costs indirectly affect wages; new energy professions	Energy poverty risk; unequal household adaptation	Eurostat: outstanding prices in industrial bands; OECD: acceleration needed
3. Growing competitiveness pressures	SMEs vulnerable; jobs may transform	Income disparities grow; transitional losers; distrust	Q20: micro 36% vs. large 96%; KSH: SME innovation 21.2% vs. EU 41.2%
4. Reconfiguration of supply chains	Green logistics; localised production	Local economy may strengthen; not all actors can participate	Q45: 42% local factors; JTF: Baranya, Heves, Borsod transformation
5. Changing predictability of the policy and regulatory environment	Stable regulation enables more investment, project employment grows	Polarisation if green transition becomes a political fault line	Q22: 50.4% uncertain; CEE Bankwatch: JTF conditional

Source: own analysis based on Ökopannon enterprise survey, regional scenario planning workshops, World Café workshop, and secondary research.

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The Two-Speed Green Transition as an Emerging Structure

The consistent finding across all three methods is that the green transition is currently creating a two-speed economy in Hungary. Significant differences are visible between large companies (50+ employees) and micro-enterprises on every examined dimension. This is not just a competitiveness issue. It also has direct employment consequences, since the lagging segment — micro and small enterprises — employs the largest proportion of Hungary's workforce.

The current most likely development pathway for the green transition is the 'Two-Speed Economy' scenario: large companies complete the transition, while the SME sector will not voluntarily move in the absence of external compulsion. If the financial and regulatory system does not change, this structure will stabilise.

Optimistic Passivity as a Systemic Challenge

One of the most important findings of the analysis is that 76.5% of companies expect positive impacts from the green transition, while only 11% take concrete steps. This is not simply an individual attitude but a self-sustaining pattern characteristic of the SME sector.

The trust deficit and unpredictable regulatory environment identified in the World Café reinforce this further. Escape from this situation is typically triggered by external factors: growing ESG expectations, supply chain pressure, or more easily accessible financial incentives.

The Most Important Contribution of Secondary Research

External data sources in several places not only confirm but also make more interpretable the enterprise survey results. First, the OECD-signalled 88% green labour market scarcity helps understand the paradox identified in Q37–Q39. Most companies signal training needs, while the labour market is already tight, yet companies still do not respond with meaningful expansion or creation of new roles.

Second, Cedefop data — particularly Hungary's low 26th place in adult learning — also validates at the macro level that the training deficiency observed at

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company level is not an isolated phenomenon but a systemic problem. Third, external data on the financing environment — the JTF conditionality and GINOP programme fund uptake indicators — suggest that the financing difficulties signalled by companies do not merely stem from information or communication deficiencies, but can be traced to deeper structural constraints.

These constraints are identifiable at several points. They include unequal access to financing (Q21), administrative complexity and access difficulties for programmes (GINOP), unpredictability of the regulatory and financing environment (Q22, JTF conditionality), and capacity and training deficiencies of SMEs (Q37, Cedefop).

The Key Challenges of a Fair and Effective Transition

The green transition entails profound labour market and social transformation. These are not isolated problems but inequalities resulting from the functioning of the current economic and institutional system. Based on the analysis, workshops, and secondary research, five closely interrelated challenges emerge.

1. The Structural Risk of Double Marginalisation

One of the most critical vulnerability points of just transition is that the shift simultaneously creates inequalities along firm size and territorial lines, and the two reinforce each other. Survey data show a clear pattern: micro-enterprises are most vulnerable precisely in the regions where economic and institutional capacity is also lowest. The Northern Great Plain — where programme awareness falls below 55% and development activity is weakest — also has the tightest green labour market according to OECD data (128% scarcity). This means that the transition is most urgent precisely where conditions for it are least in place.

2. The Skills Gap is Structural, Not Cyclical

The consistent message from Cedefop, OECD, and the enterprise survey is that the green labour market is already tight, while the training system is not keeping pace. Adult learning participation in Hungary (7.9%) is below the EU average of 11%, and the country ranks 26th in the Cedefop European Skills Index on this indicator. Meanwhile, 57.6% of companies consider employee retraining

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necessary, but only 11% actually plan to create new roles. This is not merely a timing question, but a structural misalignment between the training system and the labour market. The required competencies are not a future challenge — they are already absent, and the current slow and fragmented training capacity cannot address this in time.

3. Optimistic Passivity as a Self-Reinforcing System Trap

One of the study's most important findings is that optimistic passivity is not merely an individual attitude but a systemic trap. If companies see that others are also not acting, and the financing system is inaccessible or uncertain — as signalled by the 50.4% future uncertainty — then waiting becomes a rational strategy. This pattern is particularly problematic from a just transition perspective. It conceals real inequalities: most companies speak positively about the future while the burdens of adaptation are unevenly distributed. Large companies advance due to internal pressures and ESG expectations, while sufficient external pressure does not materialise for the SME sector to translate positive attitudes into actual action. As long as this pattern persists, the green transition cannot function effectively at a systemic level.

4. Underfunding of the JTF Social Component

According to the CEE Bankwatch analysis, Hungary plans to use resources in the three affected JTF regions (Baranya, Heves, Borsod-Abaúj-Zemplén) primarily for economic and environmental projects, while the social — retraining and worker — component is underfunded. This directly contradicts the basic principle of just transition. Precisely in the territories where the lignite phase-out and industrial restructuring may threaten approximately 6,300 direct and 7,000 indirect jobs, the strongest social buffer is needed. The proportion of available resources is not low in itself: approximately 19% of the total JTF budget, nearly €48 million, is allocated for retraining — an exceptionally high ratio in the Central and Eastern European region. However, this only has a real impact if resources actually reach the affected workers. This requires adequate absorption capacity and targeted outreach — currently both are uncertain.

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5. Trust Deficit as an Amplifying Mechanism for All Other Challenges

The unambiguous finding from reading the World Café and survey results together is: companies, workers, and households do not trust the system. It is not intent that is missing. The survey and workshops consistently show that actors recognise the necessity of the transition. Yet decisions are still deferred. The reasons are: unpredictable regulatory environment, uncertainty regarding future financing (50.4%), contradictory political messages, and administrative burdens of the application system, as well as the conditionality of JTF fund access. Trust deficit is not a standalone problem but an amplifying factor. It amplifies all previous challenges: stabilises optimistic passivity, slows the addressing of skills gaps, hinders fund uptake, and perpetuates the double marginalisation.

For this reason, the green transition is not merely a financing or training management question. One of the fundamental preconditions for success is strengthening institutional trust. This requires a predictable regulatory environment, a transparent and easily accessible financing system, and meaningful worker involvement.

The central paradox of the fair and effective transition: those who need the most support are the ones the current system reaches least. Micro-enterprises, low-skilled workers, and structurally vulnerable regions are simultaneously excluded from financing, training, and information — and this is concealed by the cultural pattern of optimistic passivity, as everyone speaks positively about the future while the internal logic of the system reproduces inequalities.

Recommendations

Based on the study's findings, we formulate 10 policy recommendations, assigned to three levels. Each recommendation has a data-based justification — directly citable in MGYOSZ position statements.

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A. MGYOSZ IN ITS ADVOCACY ROLE

Table 19: Policy recommendations — MGYOSZ advocacy

ID	Recommendation	Content	Evidence
1.	Green SME access programme	Simplified support programme for micro and small enterprises: low administrative burden, group training opportunities, non-repayable component.	Q21 (7.4% micro access); GINOP 3.2.4-23 (52% success rate)
2.	Sectoral green skills council	Establishment of a green skills council based on the Vocational Training 4.0 sectoral council model; identification of green skills gaps by sector, training content development.	Cedefop ESI 26th place; Q19 knowledge–strategy gap
3.	JTF social component	Hungary's JTF plans barely finance social aspects (CEE Bankwatch). MGYOSZ as a social partner can initiate an increase in the training fund.	CEE Bankwatch (2023); Q37: 57.6% training need

Source: own analysis

B. TOWARDS GOVERNMENT AND POLICY DECISION-MAKERS

Table 20: Policy recommendations — Government/policy

ID	Recommendation	Content	Evidence
4.	SME-differentiated green incentives	Size-category-specific incentives (tax relief, small non-repayable grants) that do not require complex application processes.	Q20 *** size gradient; Q21 (micro 7.4% vs. large 40%)
5.	National Green Skills Strategy with SME focus	To meet NECP 2024 and RRP commitments (50,000 workers trained by 2026), measurable SME-level, regional targets are needed.	Eurostat adult learning 7.9%; OECD 88% green scarcity

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ID	Recommendation	Content	Evidence
6.	Northern Great Plain priority	The only NUTS2 region where programme awareness falls below 55% and development activity is lowest (45%) — targeted communication and simplified fund access justified.	NUTS2 analysis; OECD Northern Great Plain 128% green scarcity
7.	Fulfilment of JTF conditions	Just transition in Baranya, Heves, and Borsod regions (€250.6M + 6,300 jobs at risk) is conditional on meeting EU rule-of-law requirements	CEE Bankwatch (2023): conditional agreement

Source: own analysis

C. TOWARDS TRAINING INSTITUTIONS AND SOCIAL PARTNERS

Table 21: Policy recommendations — Training institutions

ID	Recommendation	Content	Evidence
8.	Integration of green content through sectoral skills councils	Integration of energy efficiency, circular economy, ESG basics into training outcomes for five affected industries. The Vocational Training 4.0 framework is centralised and content-rigid — embedding green content is effective not through top-down system-level modification, but through professional recommendations of sectoral skills councils.	Cedefop (2025): green skills integration is sporadic; OECD (2023): lack of systematic assessment
9.	Decentralisation of regional training capacity	HUN-ILA individual learning account model for targeted financing of green/digital modules; especially for Northern Great Plain and Northern Hungary, local capacity building.	Q45 regional differences; Cedefop ESI 26th; OECD NUTS2 scarcity

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ID	Recommendation	Content	Evidence
10.	Dual training partnerships in the green sector	Adaptation of the Danish model: green technology partnership between companies and VET schools; involvement of MGYOSZ member companies in practical training.	Denmark good practice (Cedefop/ReferNet Denmark 2024); MGYOSZ note: companies open

Source: own analysis

FINAL SUMMARY

The analysis — based on survey data from 314 companies, regional workshops, World Café, and secondary research — paints a coherent picture. Hungary's green transition will not happen automatically and uniformly.

Intent and positive expectations are present. This is shown simultaneously by companies' 76.5% positive impact expectations and the OECD-signalled 88% green labour market scarcity. Yet action lags: the training system is not keeping pace with transformation, financing resources do not adequately reach the most affected actors, and the trust deficit further reinforces waiting.

Based on the analysis, these are not independent problems but mutually reinforcing structural mechanisms.

In this situation, MGYOSZ's role goes beyond collecting and presenting data. The employer advocacy role — particularly in supporting SMEs, sectoral skills development, and representing the social dimension of just transition — can fulfil an intermediary institutional role capable of connecting policy frameworks with the everyday experience of business operations.

This study aims to provide an empirical foundation for this advocacy work, supporting evidence-based decision-making.

Prepared by: MGYOSZ – Ökopannon · January 2025 – February 2026 · CORE2-101145659 · Statistical processing: Python (pandas, scipy) · NUTS2 classification reconstructed from Q4 county variable

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The study draws on MGYOSZ's research and policy work, as well as the professional materials of BusinessEurope, the IOE, and the OECD BIAC. The findings reflect the position of MGYOSZ and do not necessarily reflect the official position of our partners or any public institution.